

CHANNEL ISLAND METER STATION HAZARDOUS AREA DOSSIER

FYFE REFERENCE: 18756-5-HAD-009 APA REFERENCE: HAD DATA REPOSITORY/ ADP_1510_CMS

Prepared by:

Arjun Patel Graduate Mechanical Engineer

Reviewed by:

Tony Bird Principal Process Engineer - Fyfe

Date:

Date: 18-Nov-2011

Date: 18-Nov-2011

Client Accepted:

Anthony Comerford Pipeline Engineer – APA Group

Manager:

Date:

Henry Dupal Engineering Manager - APA Group Northern Territory

FYFE EARTH PARTNERS 80 FLINDERS STREET, ADELAIDE 5000 PHONE (08) 8201 9600 - FAX (08) 8201 9650 - EMAIL <u>info@fyfe.com.au</u> FYFE



Credential Exposure

PERSONNEL

Tony Bird from Fyfe Pty Ltd is a principal process engineer with over ten years of experience in hazardous area classifications of new and existing projects. His experience in the development of retrospective hazardous area classifications includes Palm Valley gas plant, Torrens Island power station, Pelican Point power station and numerous Santos facilities.

His experience covers oil and gas pipeline and facility projects during all stages of design from concept, feasibility, and FEED through to detailed design. He also has experience in procurement, construction supervision, commissioning and operations support of pipeline facilities.

Tony's responsibilities for this project included the examination of site, confirmation of installed equipment, and development of hazardous area classification and hazardous area mapping drawings.

Neville Green from Sitzler Pty Ltd is an electrical engineer with over ten years of experience in the design, construction, commissioning and inspection of installation in hazardous environment in the oil and gas industry. Neville has the following competencies in accordance to AS/NZS 4761(Refer attachments):

UTE NES 010 AReport on integrity of explosion protected equipment in hazardous areasUTE NES 107Install explosion-protected equipment and wiring systems (Ex)UTE NES 707Design electrical installations in hazardous areas (Ex)

Neville's role was to perform close inspection of all electrical equipment in accordance to AS/NZS 60079 series on site to verify installation. His role was also to review inspection sheets and provide recommendations for remedial actions to ensure compliance.

David Bourke from Fyfe Pty Ltd is the surveyor who completed three dimensional (3D) scanning and photography of the facilities. The 3D images were used by Fyfe drafters to update site arrangement drawings. The 3D scan data is retained by Fyfe for future use if required by APA Group.

METHODOLOGY

The Hazardous Area Verification Dossier is produced to ensure that the installation complies with the appropriate certification documents as well as with AS/NZS 2381.1 and any other relevant part of the AS/NZS 2381 and AS/NZS 60079 series. In addition equipment and installations where hazardous areas exist are required to comply with the applicable regulations of the applicable Australian State or Territory. It should be borne in mind that an installation can come under the jurisdiction of several authorities with different areas of responsibility, e.g. mining, electrical safety, handling and transport of flammable materials and occupational health and safety.



This dossier has been prepared in accordance with the following codes and standards:

- Dossiers AS 2381.1:2005 Electrical equipment for explosive gas atmospheres -Selection, installation and maintenance Part 1: General requirements
- Hazardous area AS/NZS 60079.10.1:2009 Explosive atmospheres: Classification of areas - Explosive gas atmospheres (IEC 60079-10-1, Ed. 1.0 (2008) MOD) (2009)
- AS/NZS 60079.17:2009 : Explosive atmospheres Electrical installations inspection and maintenance (IEC 60079-17, Ed.4.0 (2007) MOD)

Note that a Hazardous Area Verification Dossier is a living document and should be updated by APA and / or its contractors. Any modifications to electrical equipment, including removing an instrument cover should be recorded and stored within the Dossier. Changes to the operation or equipment installed within the station will require a review of the hazardous area classification and may require revision of the classification, hazardous area mapping drawings, hazardous area equipment lists and associated certificates of conformity. An extract from AS 2381.1 (2005) is included to provide guidance to APA.

Equipment requires conformity to the following standards:

- AUS Ex
- IEC Ex

Previously AS / NZS Ex and FLP have been recognised certification standards for equipment in hazardous areas and may have been applicable at the time of construction / installation. Equipment that was identified as having any of the certification to show conformity to the above standards was deemed to be acceptable. Where no certification was available or certification was available to standards not recognised in Australia, a conformity assessment document (CAD) is required. The CAD shall be completed by a suitably qualified organisation and the associated residual risk shall be accepted by the head of APA. For new installations, equipment with the correct certificates of conformity should be used unless no item exists and then a CAD should be produced. No information on the date of installation/ of equipment purchase/manufacturer has been provided of the site. Therefore no checking has been undertaken to determine the currency of the certificate at the time of installation.

DISCLAIMER

Opportunities for improvements (OFI) are provided for items associated with hazardous area and general engineering. The scope of work for the project was to identify hazardous area and provide visual inspection of the equipment. The visual inspection did not include opening of equipment and the OFIs are limited to the level of inspection. General engineering OFIs are non-exhaustive and require APA to confirm the OFI and the recommendation.



Extract from AS 2381.1 (2005)

1.6 DOCUMENTATION

It is necessary to ensure that any installation complies with the appropriate certification documents as well as with this Standard and any other requirements specific to the plant on which the installation takes place.

To achieve this result, a verification dossier shall be prepared for every plant and shall be either kept on the premises or stored in another location in which case a document shall be left on the premises indicating who the owner or owners are and where that information is kept, so that when required, copies may be obtained. This dossier should contain the information detailed in the appropriate Parts of this series of Standards for the types of protection concerned.

Up-to-date information typically required is as follows:

- a) Where applicable a statement of the identity of the person(s) having legal ownership of the installation or parts thereof and where the verification dossier is located.
- b) The classification of hazardous areas and the Standards used for the classification.
- c) Equipment group and temperature class.
- d) Installation instructions.
- e) Documentation/certification for electrical equipment, including those items with special conditions, for example, equipment with certificate numbers that have the suffix 'X'.
- f) Descriptive system document for the intrinsically safe system.
- g) Documentation relating to the suitability of the equipment for the area and environment to which it will be exposed, e.g. T rating, Ex rating, IP rating, corrosion resistance.
- *h)* Documentation certifying that the equipment is rated for the voltages and frequency applied during normal operation.
- *i)* Manufacturer's/qualified person's declaration, e.g. tradesperson's documentation and inspector's inspection reports.
- *j)* Records sufficient to enable the explosion-protected equipment to be maintained in accordance with its type of protection (for example, list and location of equipment, spares, technical information).
- k) Records covering any maintenance, overhaul and repair of the equipment.
- *I)* Records of selection criteria for cable entry systems for compliance with the requirements for the particular explosion technique.
- m) Drawings and schedules relating to circuit identification (see Clause 3.8.16).
- n) In New Zealand, the Hazardous Area Statement of Periodic Verification on completion of a periodic inspection. (Refer to Appendix B).



Where alternative methods of equipment identification are used for inspection in accordance with Clause 4.3 then additional documentation to support the traceability of the equipment shall be provided.

It shall be the responsibility of the person(s) having legal ownership of the installation or parts thereof to ensure that the relevant information is produced but the preparation of the document may be delegated to expert bodies/organizations. The dossier may be kept as hard copy or in electronic form.

1.7 QUALIFICATIONS OF PERSONNEL

The design, construction, maintenance, testing and inspection of installations covered by this Standard shall be carried out only by competent persons whose training has included instruction on the various types of protection and installation practices, relevant rules and regulations and on the general principles of area classification. The competency of the person shall be relevant to the type of work to be undertaken.

Appropriate continuing education or training should be undertaken by personnel on a regular basis.

Competency may be demonstrated in accordance with AS/NZS 4761, Competencies for working with electrical equipment for hazardous areas (EEHA), or equivalent training and assessment framework.

MOXI / SKILL + LEARNING

This is a Statement that

Neville Owain Green

has been assessed as having fulfilled the following requirements

UTE NES 010 A	Report on the integrity of explosion-protected equipment in hazardous areas
UTE NES 107 TA	Install explosion-protected equipment & wiring systems (Ex mixed)
UTE NES 107 WA	Install explosion-protected equipment & wiring systems (Ex n)
UTE NES 107 XA	Install explosion-protected equipment & wiring systems (Ex i)
UTE NES 107 YA	Install explosion-protected equipment & wiring systems (Ex e)
UTE NES 107 ZA	Install explosion-protected equipment & wiring systems (Ex d)
UTE NES 707 TA	Design electrical installations in hazardous areas (Ex mixed)
UTE NES 707 WA	Design electrical installations in hazardous areas (Ex n)
UTE NES 707 XA	Design electrical installations in hazardous areas (Ex i)
UTE NES 707 YA	Design electrical installations in hazardous areas (Éx e)
UTE NES 707 ZA	Design electrical installations in hazardous areas (Ex d)

in partial completion of the following qualification Certificate IV in Electrotechnology (Explosion-protection) UTE 4 07 99

Prepared by Sarah Petrides Administration Assistant

Approved by Sam Zacha Managing Director

Date of Issue: 5 December 2007



This statement of attainment is recognised within the Australian Qualifications Framework

Certificate No.: 1089-1-07

National Provider Code 51160

This is to certify that

Neville Green

GPA Engineering Pty Ltd

Completed the 3 day Electrical Safety in Hazardous Areas



26th to 28th February 2001

Signed:



Colin Baker CEng, MIEE, MInstMC, FIICA Partner, Principal Consultant & H-Class Electrical Inspector

Certificate Number: 2001.02.26-28/05

This 24 hour short course is recognised by The Institution of Engineers, Australia, for Continuing Professional Development (CPD) purposes

Explosion Protection Technology, 8 Kirkfell Court, Berwick, Victoria 3806, Australia



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- 7 Calculations
- 8 Manufacturer's Data Report (MDR) and Installation, Operation and Maintenance (IOM) Manual
- 9 Maintenance Records
- 10 Inspection Records
- 11 Overhaul, Repair and Modification Records
- 12 Schedule of equipment and conditions requiring compliance status attention

Revision History:

Rev.	Status	Date	Prepared	Reviewed	Approved
А	Preliminary issue for client's review	28-Sep-2011	AZP	ТСВ	
0	Original Issue	18-Nov-2011	AZP	ТСВ	EZG



1 Site Information

An inspection on the Channel Island meter station site was performed on 9 & 11 September 2011 by Tony Bird, a principal process engineer from Fyfe, Neville Green, an electrical engineer from Sitzler and David Bourke a surveyor from Fyfe.

Channel Island meter station is located at KP1510 on the ADP.

Channel Island regulating and metering station receives gas from Darwin City Gate meter station. The Channel Island Regulating Meter Station consists of two water bath heaters, solids filter, four filter separators, slam shut valves, active and monitor regulators, meters, pressure relief valves, local vent points and the associated valving and pipework.

The gas passes to a solids filter. The filter is fitted with a pressure indicator, differential pressure transmitter, local vent point and local drain. The filter has a quick opening closure and a bypass, with manual valving. The filtered gas is then heated to approximately 60°C in two parallel water bath heaters. One water bath heater is operating and the other is in hot-standby. Actuated valves at the heater inlets control the gas flow.

The combined outlet line from the water heaters as a high temperature switch, temperature indicator and temperature transmitter. The line then passes to one of two filter, regulation and metering runs to supply gas to either Unit 1 or Unit 7 at the Channel Island Power Generation Site.

The Unit 1 filter, regulation and metering run comprises of two parallel runs each containing actuated valve, active-monitor pressure regulators, filter separators and meters. The actuated valves are both normally open and are closed on either signal from the control system or high pressure downstream of the regulators. The pressure regulators are self acting and externally sensed. The gas of each regulator pair flows to the corresponding filter separator. The filter separators are horizontal and fitted with quick opening closures to allow removal of the filter elements. The liquids removed from the gas are collected in a drain boot underneath the filter separator. No slops tank is installed at site at liquids are drained from the filter separators manually. The filter separators are fitted with the following instrumentation and connections; pressure indicator, differential pressure transmitter, level glasses, high-high level switches, local drains and level controllers. The filtered gas is metered in orifice meters, each meter is fitted with flow conditioner, pressure transmitter, high and low range differential pressure transmitters and temperature transmitters. Additional overpressure protection is provided by a PSV. The combined outlet from the Unit 1 regulation, filter and metering runs is fitted with low pressure switch and high pressure switches that all initiate an ESD, and a pressure transmitter, pressure indicator, temperature transmitter, temperature indicator, low temperature switch connection for future gas analysis and an isolation valve.

The Unit 7 filter, regulation and metering run comprises of two parallel runs each consisting of filter separator, pressure regulators, metering and associated instrumentation and valving. There is an actuated valve at the inlet before a split to two filters. The filters are fitted with pressure indicator and differential pressure transmitter. Downstream of each filter is an actuated valve. The valves are normally open and are closed on signal from the control system or high pressure downstream of the pressure regulators. Metering is provided by a Coriolis meter and a AVT turbine meter. The primary duty meter is the



Coriolis meter, but the turbine meter can be operated in series or parallel. Both meters are provided with temperature and pressure correction. Downstream of the meters the combined outlet has a PSV, local manual vent, temperature transmitter and pressure transmitter.

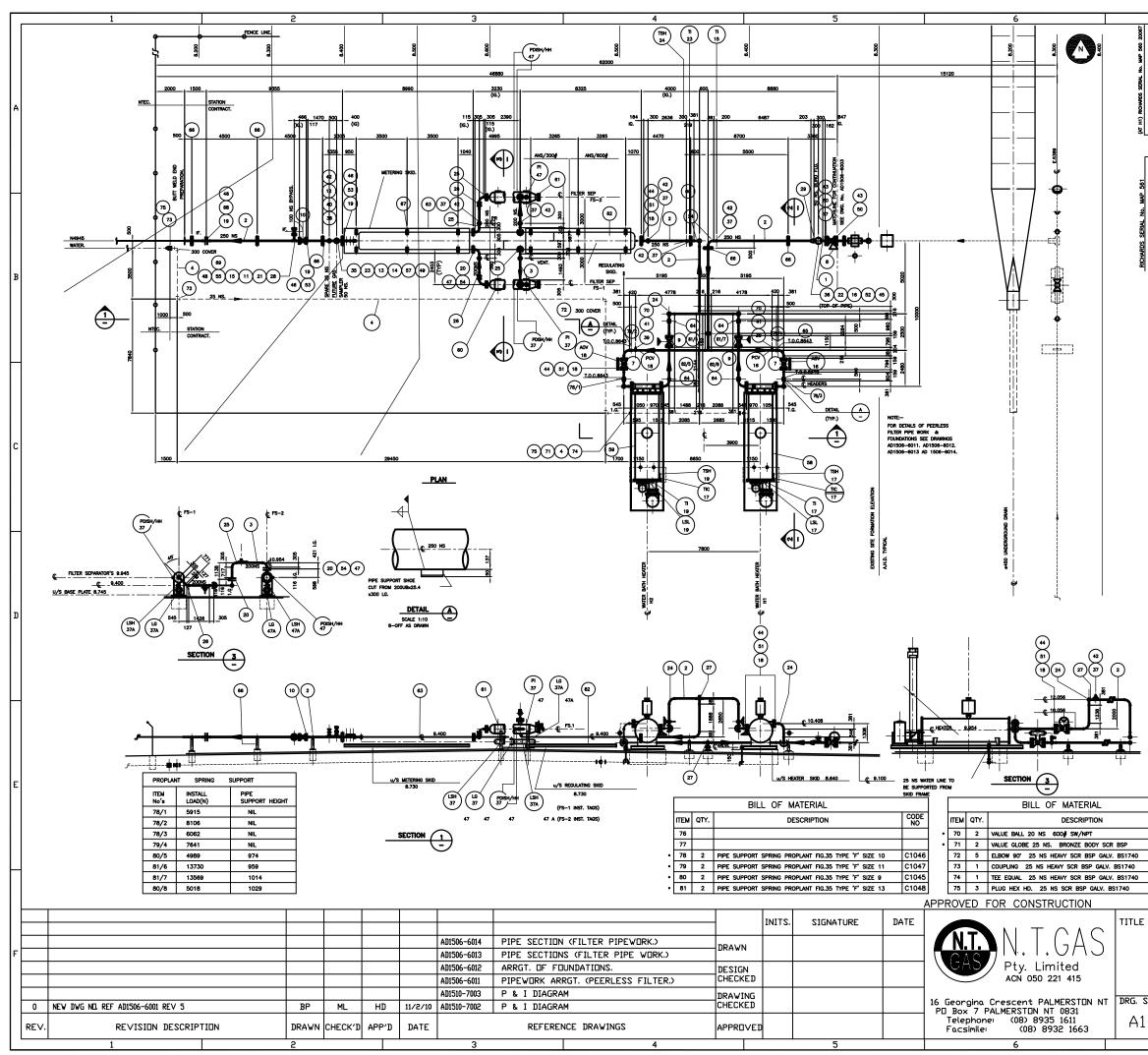
Instrument gas is conditioned locally for each actuated valve.

A control system provides measurement and telemetry for the various process instruments. The control system allows remote operator shutdown. The control system is powered by single phase 230 VAC power supply, with back up batteries.

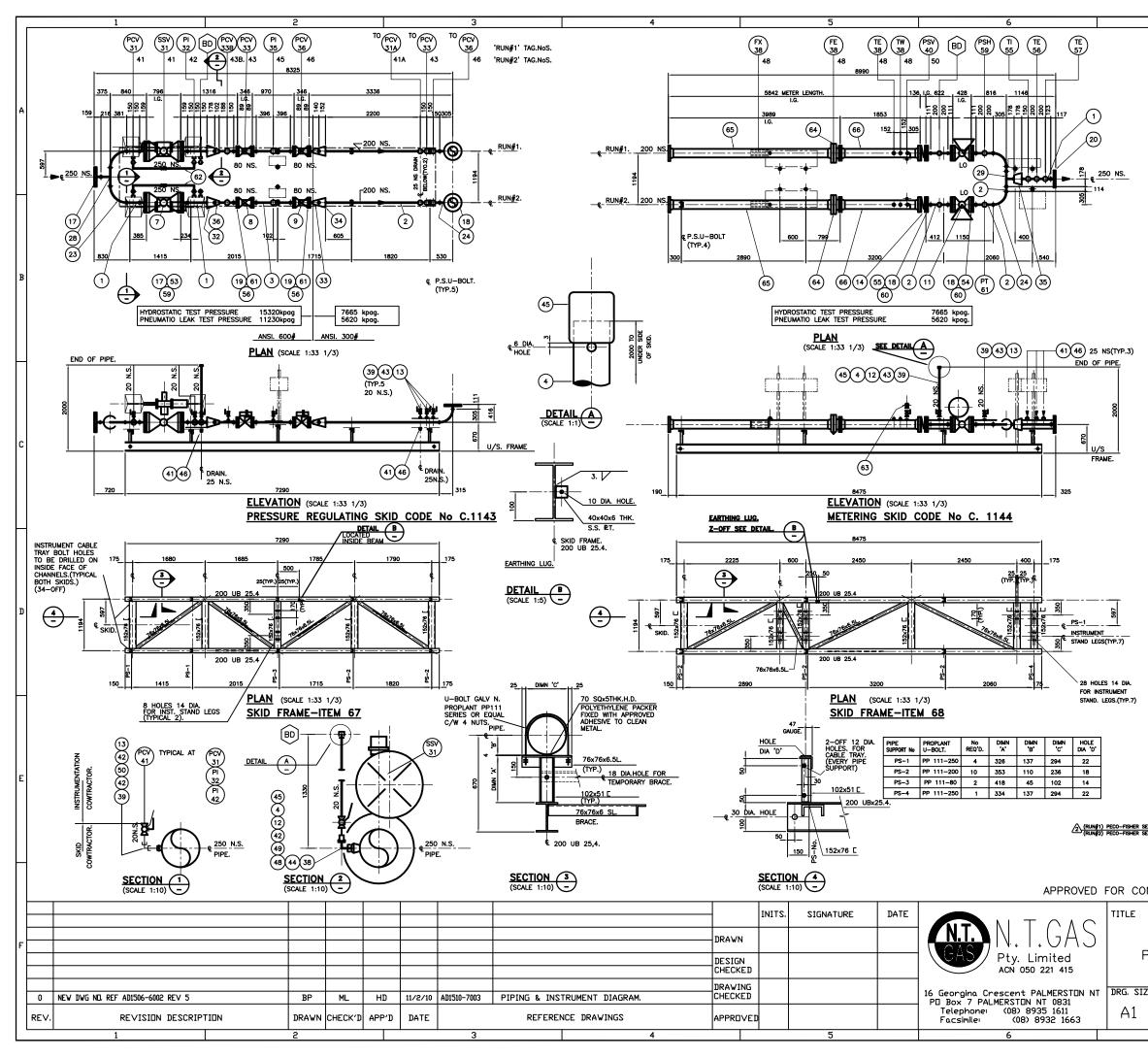


The site arrangement drawings and P&IDs for Channel Island meter station can be found overleaf.

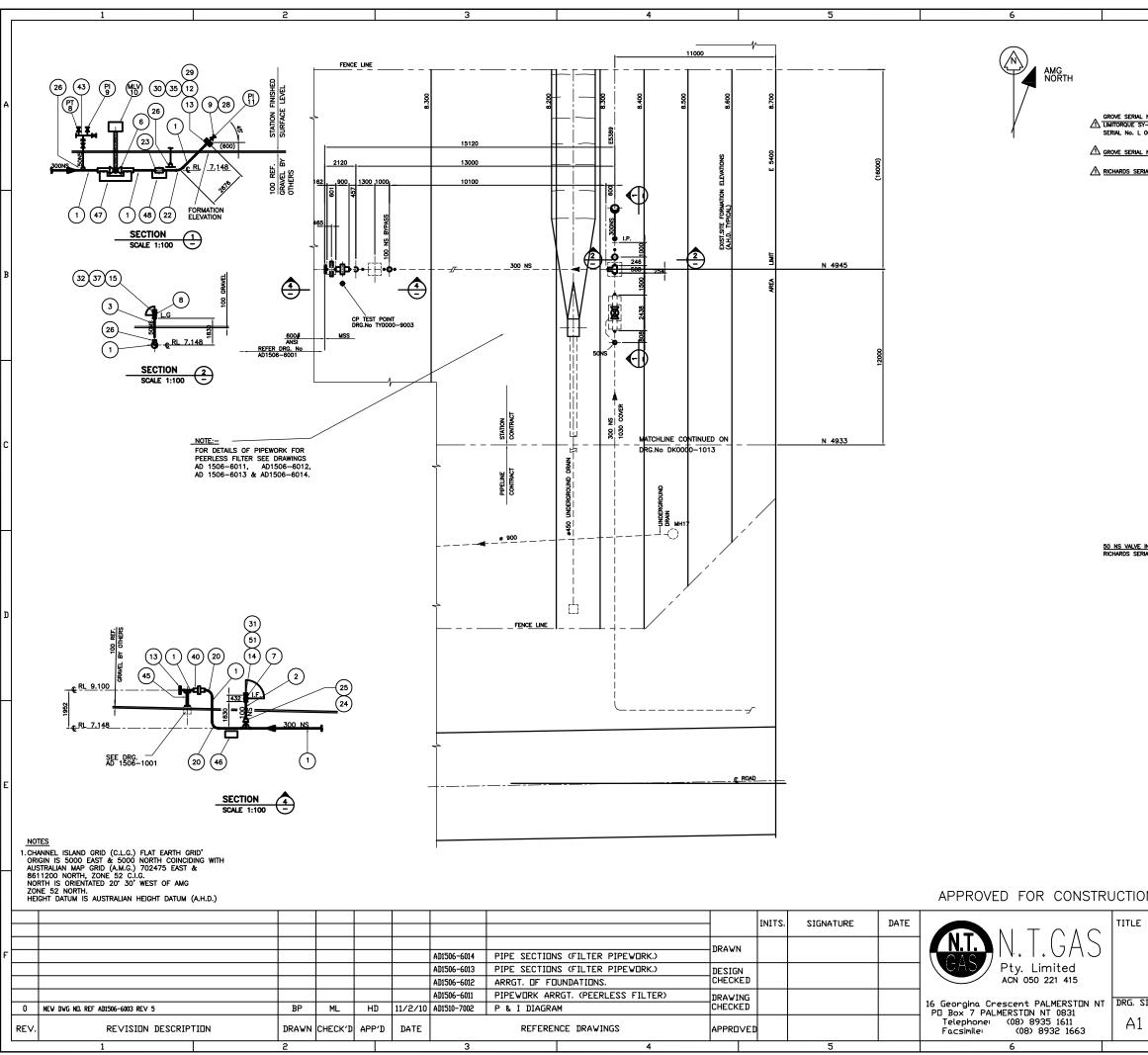
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AD 1510-6002	Channel Island Station Pressure Regulator and Metering Skid	0				
AD 1510-6003	Channel Island Station Piping Arrangement Sheet 2 of 2	0				
Fyfe Updated I	Plot Plan					
AD 1510-6014	Meter Station– Channel Island	0				
P&ID						
AD 1510-7002	Channel Island Regulating / Meter Station Mainline Valve & Heaters	1				
AD 1510-7003	Channel Island Regulating / Meter Station Pressure Regulator and Metering	1				
AD 1510-7005	Channel Island Meter Station Water Bath Heater No. 1	1				
AD 1510-7063	Channel Island Unit 7 Gas Supply System Regulating and Metering Skids	1				



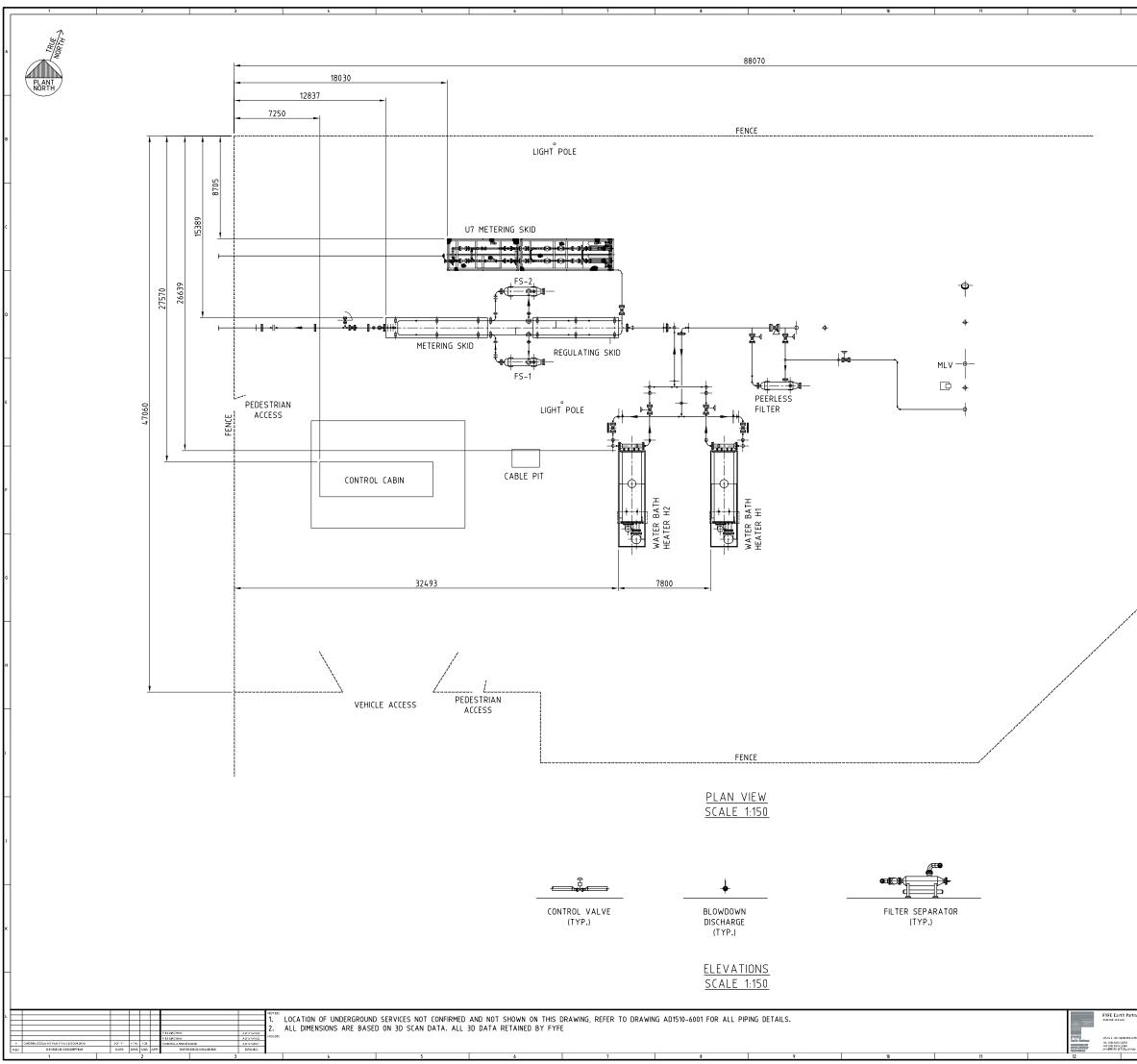
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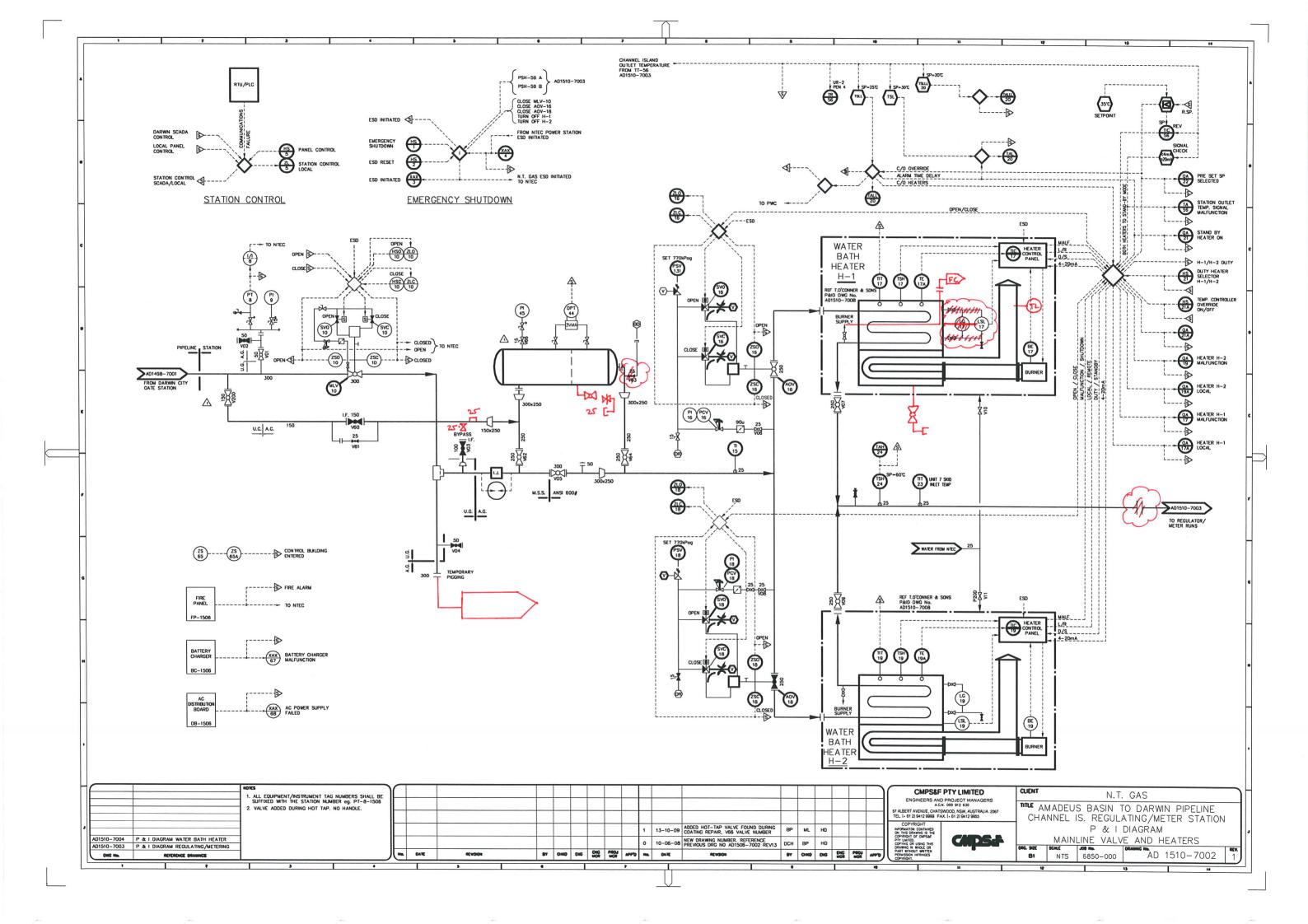
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30 31 32 2 RED CONC. 250:100 NS. SCH.80 ASTM A234 WPB COB45 C 33 2 RED CONC. 20000. 150:06. SCH.80 ASTM A234 WPB COB45 C	•		1	TEE EQUAL 250 NS SCH.80 ASTM A234 WPB	C0761	
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32 2 2 RED CONC. 250x100 N5. SCH.80 ASTM A234 WFB COB4E C 33 2 RED CONC. 2000 N5. SCH.80 ASTM A234 WFB COB2C C					<u> </u>	
33 2 RED CONC. 150x60 NS. SCH.80 ASTM A234 WFB CODE C 34 2 RED CONC. 200450 NS. SCH.80 ASTM A234 WFB CODE			2	RED CONC. 250x100 NS. SCH.80 ASTA A234 WDB	00848	
• 34 2 RED CONC. 200x150 NS. SCH.80 ASTM A234 WPB C00418 • 36 1 RED CONC. 200x150 NS. SCH.80 ASTM A234 WPB C0044 • 36 2 RED CONC. 200x10 NS. SCH.80 ASTM A234 WPB C0043 37 2 SOL 300-200x40 NS SCH.80 ASTM A105 - 38 2 SOL 300-126-20 NS SCH.80 ASTM A105 - 40 4 SOL 128-8020 NS SCH.80 ASTM A105 - 41 T TOL 220-15020 NS SCH.80 ASTM A105 - - 42 14 MPPLE 20 NS75 LG. SCH 80 PBE ASTM A106 B. - 45 4 CAP 20 NS.3000/ SW. ASTM A105 - - 46 7 PLUB HEX. HD 25 NS 3000/ SW. ASTM A105 - - - 47 1 BUD HEX. HD 25 NS 3000/ SW. ASTM A105 - - - - - - - - - - - - - -					-	С
* 36 2 RED CONC. 100x80 NS. SCH.80 ASTM A234 WPB C0823 37 38 2 SOL. 300-200x40 NS SCH.80 ASTM A105 - 39 18 SOL 300-150x20 NS SCH.80 ASTM A105 - 40 4 SOL 128-80x20 NS SCH.80 ASTM A105 - 41 7 TOL 220 NS.75 L6. SCH.80 ASTM A105 - 42 14 NEPLE 20 NS.75 L6. SCH.80 ASTM A105 - 43 10 NEPLE 20 NS.75 L6. SCH.80 PE ASTM A106 B. - 43 10 NEPLE 20 NS.75 L6. SCH.80 PE ASTM A105 - 44 2 1. WIPLE 40 NS.75 L6. SCH.80 PE ASTM A105 - 45 4 C4P 20 NS.75 L6. SCH.80 PE ASTM A105 - 46 7 PLUO HEX. H0 25 NS SCH.80 NEPL ASTM A105 - 46 7 PLUO HEX. H0 25 NS SCH.80 NEPL ASTM A105 - 47 - 48 2 RED. INSERT 40x20 NS. 3000# SW. ASTM A105 - 49 2 RED. INSERT 40x20 NS. 3000# SW. ASTM A105 - 50 4 ELGOW 60 20 NS 3000# SW. ASTM A105 - 51 - 52 - 53 64 STUDBOLT 1 1/4" UNC:215 L6. ASTM A 193 B7 - - C/W 2 NUTS ASTM A 194 2H - 54 48 STUDBOLT 7/8" UNC:410 L6. ASTM A 193 B7 - C/W 2 NUTS ASTM A 194 2H - 55 24 STUDBOLT 7/8" UNC:140 L6. ASTM A 193 B7 - C/W 2 NUTS ASTM A 194 2H - 55 24 STUDBOLT 7/8" UNC:20 L6. ASTM A 194 2H - 57 - 57 - 57 - 58 - 60 8 GKSET 200 NS. 300# 4.4 THK METAFLEX S.6. - 60 8 GKSET 200 NS. 300# 4.4 THK METAFLEX S.6. - 61 8 GKSET 200 NS. 300# 4.4 THK METAFLEX S.6. - 62 2 PFE ASSY DWG NA A0 1506-6004 - 63 2 PFE ASSY DWG NA A0 1506-6004 - 65 2 PFE ASSY DWG NA A0 1506-6004 - 65 2 UPSTREAM METHER TUBE 200 NS. 4NUDER C.3108 - 66 8 GKSET 200 NS. 300# 4.4 THK METAFLEX S.6. - 61 8 GKSET 200 NS. 300# 4.4 THK METAFLEX S.6. - 61 8 GKSET 200 NS. 300# 4.4 THK METAFLEX S.6. - 61 8 GKSET 200 NS. 300# 4.4 THK METAFLEX S.6. - 63 2 PFE ASSY DWG NA A0 1506-6004 - 64 2 OPHICE PLATE 200 NS. 4NUDER - 57 - 57 - 58 - 64 2 OPHICE PLATE 200 NS. 4NUDER - 57 - 58 - 59 4 GASKET 200 NS. 300# 4.4 THK METAFLEX S.6. - 64 1 STEEL FRAME FOR METER TUBE 200 NS. 4NUDER - 51 - 64		34			C0818	
37 30 2 SOL 300-200-40 NS SCH.80 ASTM A105	•					
38 2 SOL 300-300-400 NS SCH.80 ATM 105 - 40 4 SOL 300-150-020 NS SCH.80 ASTM A105 - 41 7 TOL 250-150-025 NS 3000/PT ASTM A105 - 42 14 HIPPLE 20 NS75 SCH.80 ASTM A106 - 43 10 NIPPLE 20 NS 3000/PT ASTM A106 - 44 2 NIPPLE 20 NS 3000/PT ASTM A106 - 45 4 CAP 20 NS 3000/PSW ASTM A105 - 46 7 PULD HEX. HD 25 NS 3000/PSW ASTM A105 - 50 4 ELBOW 97 20 NS 3000/PSW ASTM A108 - - 51 - - C/W 2 NUTS ASTM A103 - - 52 4 STUDBOLT 7/9" UNCA140 LG ASTM A 193 27 - - 54 48 <td< td=""><td>*</td><td></td><td>2</td><td>RED CONC. 100x80 NS. SCH.80 ASTM A234 WPB</td><td>C0823</td><td></td></td<>	*		2	RED CONC. 100x80 NS. SCH.80 ASTM A234 WPB	C0823	
39 18 SOL 300-150/20 INS SCH.80 ASTM A105 - 40 4 SOL 122-80/20 INS SCH.80 ASTM A105 - 41 7 TOL 220-150/20 INS 3000/#PT ASTM A105 - 42 14 MPPLE 40 INS/75 LG. SCH 80 PRE ASTM A106 B. - 44 2 INFPLE 40 INS/75 LG. SCH 80 PRE ASTM A106 B. - 45 4 CAP 20 INS. 3000/# NPT. ASTM A105 - 45 4 CAP 20 INS. 3000/# SW. ASTM A105 - 46 7 PLUG HEX. HD 25 INS SCR'D NPT. ASTM A105 - 47 4 5 EBOW 90' 40 INS. 3000/# SW. ASTM A105 - 50 4 ELBOW 90' 20 INS 3000/# SW. ASTM A105 - - 52 - - - C/W 2 INITS ASTM A 183 BT - 54 48 STUDBOLT 7/# UNCX105 LG. ASTM A 183 BT - - 55 24 STUDBOLT 7/# UNCX102 LG. ASTM A 183 BT <td< td=""><td></td><td></td><td>2</td><td>501 300-200-40 NS 504 80 ASTM A105</td><td>-</td><td></td></td<>			2	501 300-200-40 NS 504 80 ASTM A105	-	
41 7 TOL 220-150.25 NS 3000/NPT ASTM A106 - 42 14 NMPPLE 20 NS/75 LG. SCH 100 PRE ASTM A106 - 43 10 NMPPLE 20 NS/75 LG. SCH 100 PRE ASTM A106 - 44 2 NMPPLE 40 NS/75 LG. SCH 100 PRE ASTM A106 - - 45 4 CAP 20 NS/75 LG. SCH 100 PRE ASTM A105 - 47 - - - ASTM A105 - - 47 - - - ASTM A105 - - 48 2 LEDOW 90* 40 NS. 3000/J SW. ASTM A105 - - 50 4 ELDOW 90* 20 NS 3000/J SW. ASTM A105 - - 51 - <td></td> <td>\vdash</td> <td></td> <td></td> <td>- 1</td> <td></td>		\vdash			- 1	
42 14 NPPLE 20 NSX75 LG. SCH 160 PBE ASTM A106 B. 43 10 NIPPLE 20 NS.X75 LG. SCH 160 PBE ASTM A106 B. 44 2 NIPPLE 20 NS.X000 PT. ASTM A106 B. 45 14 CAP 20 NS.X000 PT. ASTM A105 45 14 CAP 20 NS.X000 PT. ASTM A105 46 7 PLUG HEX. HD 25 NS SCR'D NPT. ASTM A105 47 48 2 ELBOW 90" 40 NS. 3000§ SW. ASTM A105 50 4 ELBOW 90" 20 NS 3000§ SW. ASTM A105 - 51 - - - - - - - 51 4 STUDBOLT 7/8" UNCx140 LG. ASTM A 193 E7 - <td< td=""><td></td><td>40</td><td>4</td><td></td><td>-</td><td></td></td<>		40	4		-	
43 10 NIPPLE 20 NS/75 LG. SCH. BD PEE ASTM A106 D. 44 2 NIPPLE 40 NS/75 LG. SCH. BD PEE ASTM A106 D. 45 4 CAP 20 NS. 3000# NIT. ASTM A105 - 46 7 PLUG HEX. HD 25 NS. SORD MPT. ASTM A105 - 47 2 RED., INSERT 40-20 NS. 3000# S.W. ASTM A105 - 50 4 ELBOW 90* 20 NS. 3000# S.W. ASTM A105 - 51 - - - - - - - 52 -		-		TOL 250-150x25 NS 3000#NPT ASTM A105	-	
44 2 NIPPLE 40 NSX75 LG, SCH.180 PBE ASTM A105 - 45 4 CAP 20 NS, 30000 NPT. ASTM A105 - 47 - - - ASTM A105 - 47 - - - ASTM A105 - 48 2 ELBOW 90* 40 NS. 30000 S.W. ASTM A105 - 48 2 ELBOW 90* 20 NS 30000 S.W. ASTM A105 - 50 4 ELBOW 90* 20 NS 30000 S.W. ASTM A105 - 51 - - - - - 52 - - - - - 54 45 STUDBOLT 7.0" UNCX100 LG. ASTM A 193 B7 - 55 24 STUDBOLT 7.0" UNCX100 LG. ASTM A 193 B7 - 55 24 STUDBOLT 7.0" UNCX102 LG. ASTM A 193 B7 - 56 64 STUDBOLT 7.0" UNCX102 LG. ASTM A 193 B7 - 57 - - - - -					-	
45 4 CAP 20 NS. 3000 / NPT. ASTM A105 - 46 7 PLUG HEX. HD 25 NS SORD NPT. ASTM A105 - 47 - 48 2 ELBOW 90' 40 NS. 3000 / S.W. ASTM A105 - 48 2 ELBOW 90' 40 NS. 3000 / S.W. ASTM A105 - - 50 4 ELBOW 90' 20 NS 3000 / S.W. ASTM A105 - - 51 - - - - - - 52 - - - - - - 53 64 STUDBOLT 1 1/4" UNCx215 LG. ASTM A 193 87 - 54 49 STUDBOLT 7/8" UNCx280 LG. ASTM A 193 87 - 55 24 STUDBOLT 7/4" UNCx280 LG. ASTM A 193 87 - 56 64 STUDBOLT 7/4" UNCx120 LG. ASTM A 193 87 - 57 - - - - - 58 - 0 STM A 194 2H - -		-			-	
46 7 PLUG HEX. HD 25 NS SOR'D NPT, ASTM A105 - 47		<u> </u>			- 1	
48 2 ELBOW 807 40 NS. 3000# S.W. ASTM A105 - 49 2 RED, INSERT 40:20 NS. 3000# S.W. ASTM A105 - 50 4 ELBOW 807 20 NS 3000# S.W. ASTM A105 - 51 - - - - - 52 - - - - - 53 64 STUDBOLT 1 1/4" UNCx215 LG. ASTM A 193 B7 - 54 48 STUDBOLT 7/6" UNCx280 LG. ASTM A 193 B7 - - - - - - - 55 24 STUDBOLT 7/6" UNCx280 LG. ASTM A 193 B7 - - - - - - - - 56 64 STUDBOLT 3/4" UNCx280 LG. ASTM A 194 2H - - 57 - - - - - - - 57 - - - - - - - - 58 4 GASKET 220 NS. 600# 4.4 THK METAFLEX S.G. - - - - - <t< td=""><td></td><td>46</td><td>7</td><td></td><td>-</td><td></td></t<>		46	7		-	
49 2 RED, INSERT 40x20 NS. 3000# SW. ASTM A105 - 50 4 ELBOW 90* 20 NS 3000# SW. ASTM A105 - 51 - - - - 53 64 STUDBOLT 1 1/4" UNCX216 LG. ASTM A 193 B7 - - - - - - - 54 48 STUDBOLT 7/8" UNCX140 LG. ASTM A 193 B7 - - - - - - - 55 24 STUDBOLT 7/8" UNCX120 LG. ASTM A 193 B7 - - - - - - - 55 24 STUDBOLT 7/8" UNCX120 LG. ASTM A 193 B7 - - - - - - - 56 64 STUDBOLT 7/8" UNCX125 LG. ASTM A 193 B7 - 57 - - - - - 58 - - - - - 59 4 OKSKET 200 NS. 600# 4.4 THK METAFLEX S.0. - - 61 8 OKSKET 200		-				
50 4 ELBOW 80* 20 NS 3000# S.W. ASTM A105 - 51 52 -				~	-	D
51						
53 64 STUDBOLT 1 1/4" UNCX215 LG. ASTM A 193 B7 - 54 48 STUDBOLT 7/8" UNCX10 LG. ASTM A 194 2H - 55 24 STUDBOLT 7/8" UNCX20 LG. ASTM A 194 2H - 55 24 STUDBOLT 7/8" UNCX20 LG. ASTM A 194 2H - 56 64 STUDBOLT 7/4" UNCX20 LG. ASTM A 193 B7 - 56 64 STUDBOLT 7/4" UNCX20 LG. ASTM A 193 B7 - 57 C/W 2 NUTS ASTM A 194 2H - - 57 C/W 2 NUTS ASTM A 194 2H - - 57 C/W 2 NUTS ASTM A 194 2H - - 57 C/W 2 NUTS ASTM A 194 2H - - 57 C/W 2 NUTS ASTM A 194 2H - - 57 C/W 2 NUTS ASTM A 194 2H - - 57 C/W 2 NUTS ASTM A 194 2H - - 58 GASKET 200 NS. 600# 4.4 THK METAFLEX S.G. - - 61 8		-			<u> </u>	
C/W 2 NUTS ASTM A 194 2H - 54 48 STUDBOLT 7/8" UNCX140 LG. ASTM A 193 2F - 55 24 STUDBOLT 7/8" UNCX280 LG. ASTM A 194 2H - 55 24 STUDBOLT 7/8" UNCX280 LG. ASTM A 194 2H - 56 64 STUDBOLT 7/8" UNCX125 LG. ASTM A 194 2H - 56 64 STUDBOLT 3/4" UNCX125 LG. ASTM A 194 2H - 57 - - - - - 59 4 GASKET 250 NS. 600# 4.4 THK METAFLEX S.G. - - - 60 8 GASKET 80 NS. 800# 4.4 THK METAFLEX S.G. - - 66 - - 66 2 PIPE ASSY DWG No AD 1506-6004 - - 66 2 2 PIPE ASSY DWG No AD 1506-6004 - - - 66 2 2 PIPE ASSY DWG No AD 1506-6004 - - - - - - - - - - - -		52				
54 48 STUDBOLT 7/8" UNCX140 LG. ASTM A 193 B7 - 55 24 STUDBOLT 7/8" UNCX120 LG. ASTM A 194 2H - 55 24 STUDBOLT 7/8" UNCX120 LG. ASTM A 194 2H - 56 64 STUDBOLT 7/8" UNCX125 LG. ASTM A 193 B7 - 56 64 STUDBOLT 7/8" UNCX125 LG. ASTM A 193 B7 - 56 64 STUDBOLT 3/4" UNCX125 LG. ASTM A 194 2H - 57 - - C/W 2 NUTS ASTM A 194 2H - 59 4 GASKET 250 NS. 600# 4.4 THK METAFLEX S.G. - - 60 8 GASKET 200 NS. 300# 4.4 THK METAFLEX S.G. - - 61 8 GASKET 200 NS. 4000# 6.40 D 1506-6004 - - 63 2 PIPE ASSY DWG No AD 1506-6004 - 63 2 PIPE ASSY DWG No AD 1506-6004 - 65 2 UPSTREAM METER TUBE 200 NS. & HOLDER C.3108 66 2 DONNSTREAM METER TUBE 200 NS. & HOLDER		53	64	-	-	
C/W 2 NUTS ASTM A 194 2H - 55 24 STUDBOLT 7/8" UNCX280 L6. ASTM A 193 B7 - 56 64 STUDBOLT 7/8" UNCX280 L6. ASTM A 194 2H - 56 64 STUDBOLT 3/4" UNCX125 L6. ASTM A 193 B7 - 57 - - C/W 2 NUTS ASTM A 194 2H - 57 - - - - - - 58 - - - - - - - 59 4 OASKET 200 NS. 600# 4.4 THK METAFLEX S.G. - - - - - 62 2 PIPE ASSY DWG No AD 1506-6004 - - 62 2 PIPE ASSY DWG No AD 1000-6136 - - 65 - - 65 2 USTREAM METER TUBE 200 NS. & HOLDER C.3106 - - 65 2 USTREAM METER TUBE 200 NS. & HOLDER C.3131 - - - - - - - - - - <			40	•	-	1
55 24 STUDBOLT 7/8" UNCX280 LG. ASTM A 193 B7 - 56 64 STUDBOLT 3/4" UNCX125 LG. ASTM A 194 2H - 57 - - - - - 58 - - - - - 59 4 GASKET 250 NS. 600# 4.4 THK METAFLEX S.G. - - 60 8 GASKET 200 NS. 300# 4.4 THK METAFLEX S.G. - - 61 8 GASKET 200 NS. 600# 4.4 THK METAFLEX S.G. - - 62 2 PIPE ASSY DWG No AD 1506-6004 - 63 2 PIPE ASSY DWG No AD 1506-6004 - 63 2 PIPE ASSY DWG No AD 1000-6136 - 64 2 ORIFICE PLATE 200 NS. & HOLDER C.3100 * 64 2 ORIFICE PLATE 200 NS. & HOLDER C.3131 67 1 STEEL FRAME FOR PRESSURE REGULATING SKID - 68 1 STEEL FRAME FOR METERING SKID - 0NSTRUCT		34	48		+ -	
C/W 2 NUTS ASTM A 194 2H - 56 64 STUDBOLT 3/4" UNCX125 LG. ASTM A 193 B7 - 57 - - C/W 2 NUTS ASTM A 194 2H - 58 - </td <td></td> <td>55</td> <td>24</td> <td></td> <td>- 1</td> <td></td>		55	24		- 1	
C/W 2 NUTS ASTM A 194 2H - 57 - - - 58 - - - - 59 4 GASKET 250 NS. 600# 4.4 THK METAFLEX S.G. - - 60 8 GASKET 200 NS. 300# 4.4 THK METAFLEX S.G. - - 61 8 GASKET 200 NS. 300# 4.4 THK METAFLEX S.G. - - 62 2 PIPE ASSY DWG No AD 1506-6004 - 63 2 PIPE ASSY DWG No AD 0000-6136 - 64 2 ORIFICE PLATE 200 NS. C.3106 - 66 2 DUMNSTREAM METER TUBE 200 NS. & HOLDER C.3122 66 2 DOWNSTREAM METER TUBE 200 NS. & HOLDER C.3131 67 1 STEEL FRAME FOR PRESSURE REGULATING SKID - 68 1 STEEL FRAME FOR METERING SKID - 68 1 STEEL FRAME FOR METERING SKID - 0NSTRUCTION AMADEUS BASIN TO DARWIN PIPELINE - CHANNEL ISLAND STA					-	
57 58 59 4 OASKET 250 NS. 600# 4.4 THK METAFLEX S.G. - 60 8 GASKET 200 NS. 300# 4.4 THK METAFLEX S.G. - - 60 8 GASKET 200 NS. 600# 4.4 THK METAFLEX S.G. - - 61 8 GASKET 200 NS. 600# 4.4 THK METAFLEX S.G. - - 62 2 PIPE ASSY DWG No AD 1506-6004 - 63 2 PIPE ASSY DWG.No AD 0000-6136 - 65 2 OPERAM METER TUBE 200 NS. & HOLDER C.3106 65 2 DETAFLAM METER TUBE 200 NS. & HOLDER C.3131 67 1 STEEL FRAME FOR PRESSURE REGULATING SKID - 68 1 STEEL FRAME FOR METERING SKID - 0NSTRUCTION AMADEUS BASIN TO DARWIN PIPELINE CHANNEL ISLAND STATION PRESSURE REGULATING & METERING SKID -		56	64		-	
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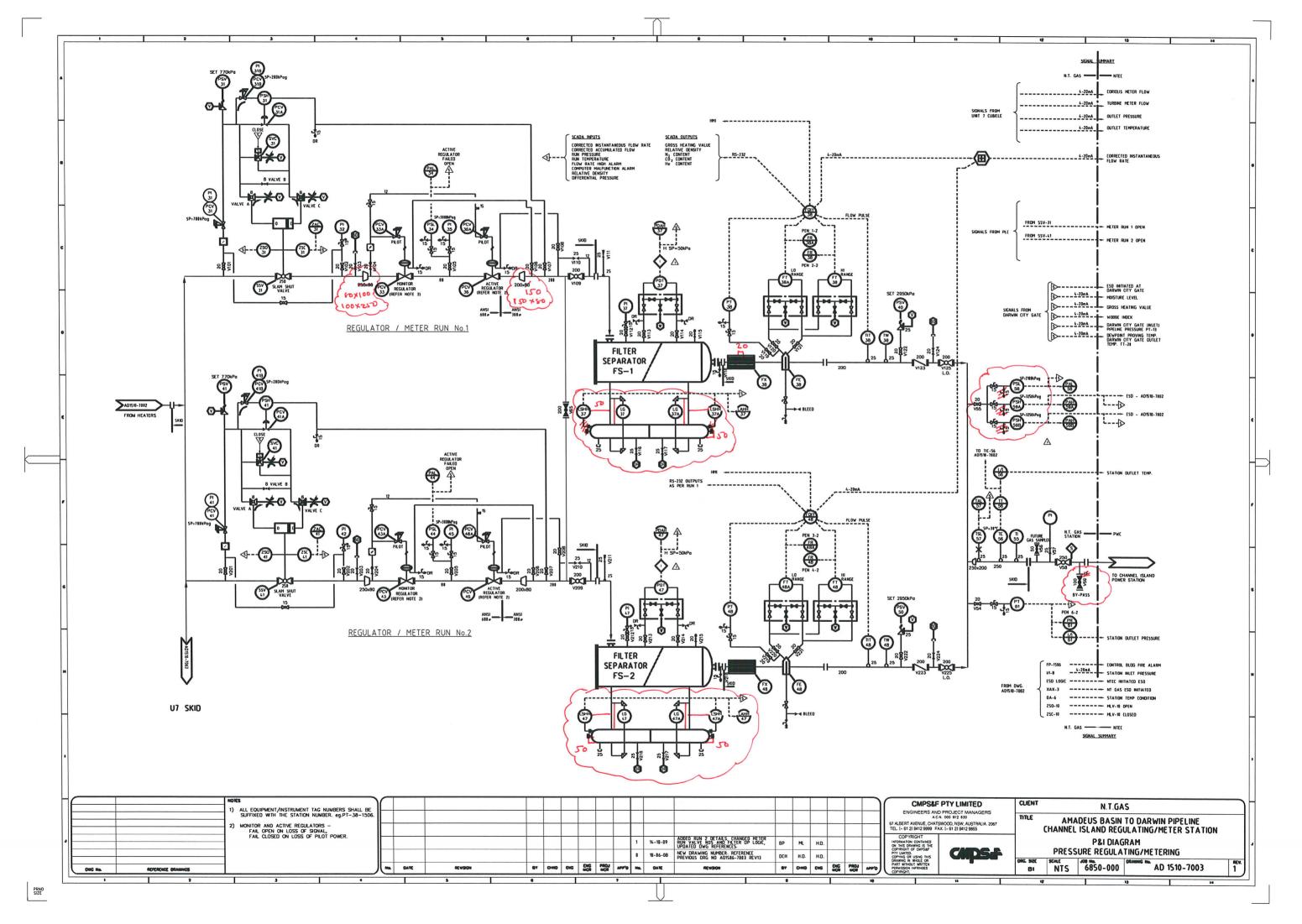


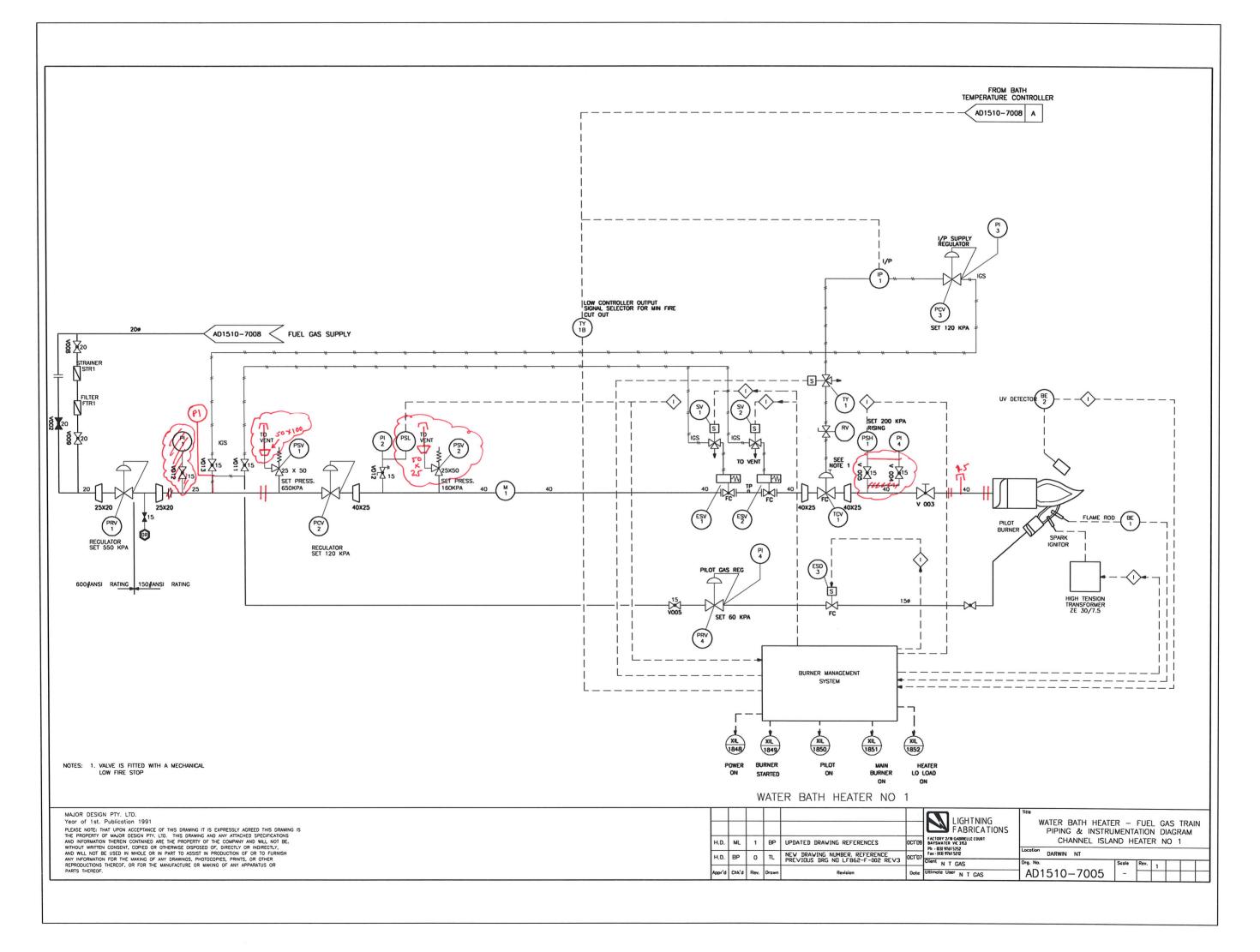
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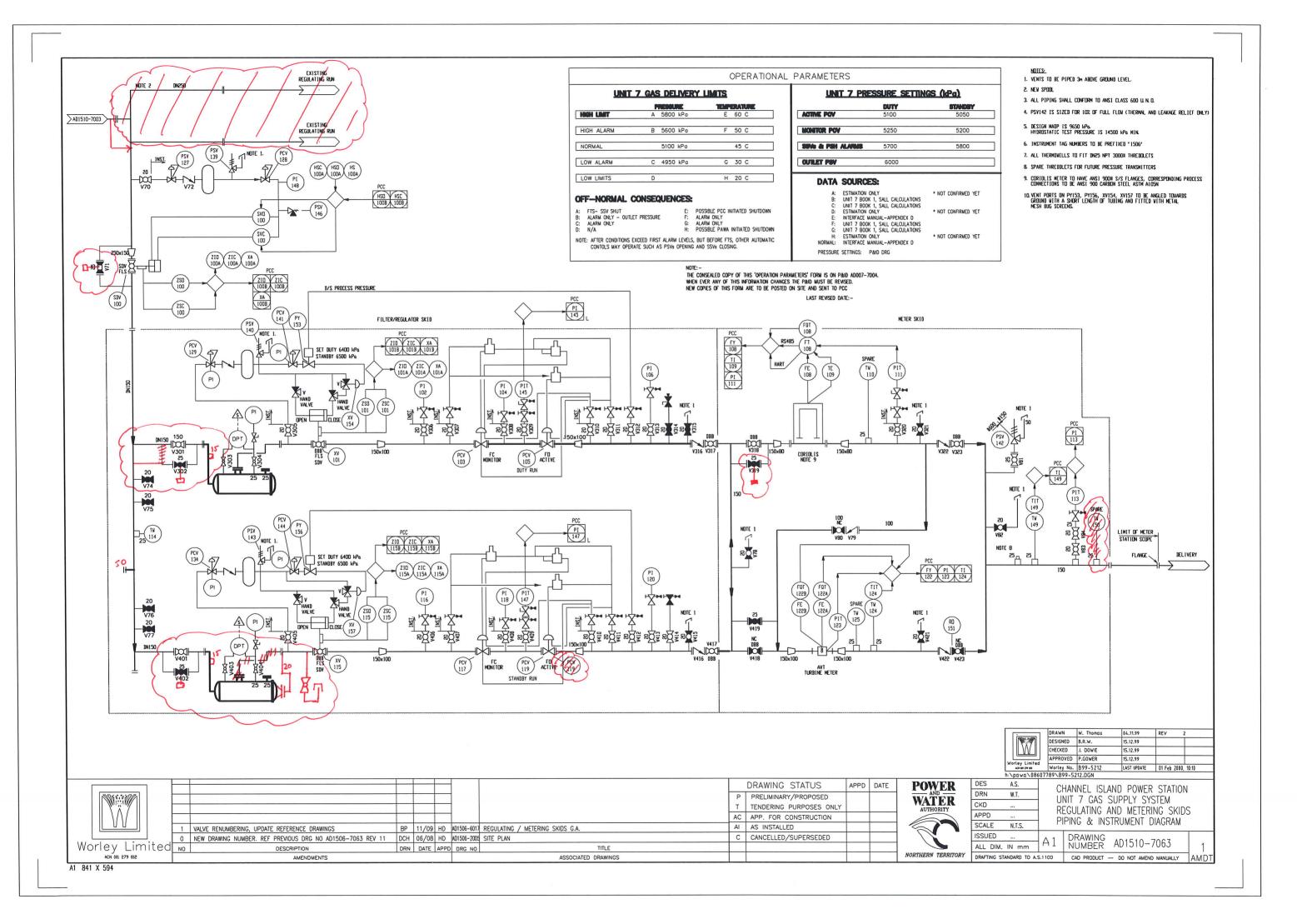


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2 Hazardous Area Classification Report

This section contains the hazardous area classification report written for the Amadeus Basin to Darwin pipeline facilities.





AMADEUS BASIN TO DARWIN PIPELINE HAZARDOUS AREA CLASSIFICATION

FYFE REFERENCE: 18756-4-HAD-001

APA REFERENCE: HAD DATA REPOSITORY/ADP_XXXX_SECTION_2

Prepared by:

Tony Bird Principal Process Engineer - Fyfe

Reviewed by:

Date: 26-Sep-2011

26-Sep-2011

Rowan Kilsby Manager, Mechanical Engineering - Fyfe

Client Accepted:

Anthony Comerford Pipeline Engineer – APA Group

Manager:

Date:

Date:

Date:

Henry Dupal Engineering Manager – APA Group Northern Territory

FYFE EARTH PARTNERS 80 FLINDERS STREET, ADELAIDE 5000 PHONE (08) 8201 9600 - FAX (08) 8201 9650 - EMAIL info@fyfe.com.au



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Revision History:

Rev.	Status	Date	Prepared	Reviewed	QA
А	Preliminary Issue	30/08/2010	YZW	ТСВ	
В	Revised to Incorporate Information from 2011 Site Inspection	24/08/2011	ТСВ	RDK	
С	Revised to Incorporate Comments from Client	19/09/2011	ТСВ	RDK	
D	Revised to following Part 3 and Part 4 site inspections	26/09/2011	ТСВ	RDK	



2.1 INTRODUCTION

2.1.1 OBJECTIVE

The hazardous area classification covers the above ground gas regulating and metering stations, scraper stations and mainline valves in the Northern Territory Gas Network.

The pipeline and facilities were originally constructed in 1985 with the additional facilities added to supply new users and supply points. No hazardous area documentation was completed at the time of the construction as there were no Australian Standards for hazardous area classification in 1985. The selection, installation and maintenance of electrical equipment were covered by AS 1076 series (1977).

This report documents the results of a Hazardous Area Classification undertaken for the facilities mentioned in Section 2.4.

The interpretation and application of this classification should take into account that Hazardous Area Classifications are inherently "imprecise" and involve assumption based estimates, code interpretation and engineering judgement.



2.1.2 SCOPE OF STATIONS

The scope of stations covered by this hazardous area classification is shown below:

Station	Description	КР
Palm Valley	Meter station	0000
Palm Valley Alice Springs	Meter Station	0000
Mereenie	Meter Station	0000*
Tylers Pass	Transfer Station	0045
Tanami Road	Scraper Station	0161
Aileron	Mainline valve	0241
Ti Tree	Scraper Station	0316
Barrow Creek	Mainline valve	0401
Wauchope	Scraper Station	0458
Kelly Well	Mainline valve	0546
Tennant Creek	Meter Station	
Warrego	Scraper Station ONLY	0610
Morphett Creek	Mainline valve	0660
Renner Springs	Scraper Station	0733
Fergusson	Mainline valve	0791
Elliot Meter Station	Meter Station	
Daly Waters	Meter Station	0982
Newcastle Waters	Scraper Station	0844
Katherine Offtake	Scraper Station	0000**
Katherine	Meter Station	0005**
Larrimah	Mainline valve	1053
Mataranka	Scraper Station	1108
Tindal	Mainline valve	1209
Helling	Scraper Station	1243
Pine Creek	Meter Station	1317
Ban Ban Springs	Scraper Station	1378
Batchelor	Mainline valve	1441
Acacia	Mainline valve	1465
Berry Springs	Mainline valve	1486
Darwin City Gate	Meter Station	1498
Channel Island	Meter Station	1510

* On Mereenie to Tylers Pass Pipeline

** On ADP to Katherine Pipeline



2.1.3 EXCLUSIONS

The following stations are excluded from this hazardous area classification

- Alice Springs facilities (owned and operated by Envestra),
- McArthur River Mine pipeline lateral facilities,
- Warrego compression facilities (scraper facilities are included),
- Tenant Creek offtake,
- Katherine offtake,
- Helling scraper station training pipework,
- Cosmo Howley facilities,
- Mt Todd facilities,
- Weddell facilities,
- Mataranka meter station.

The hazardous area classification does not consider the hazardous area associated with equipment not included in the pipeline licence, e.g. gas plants at Mereenie and Palm Valley, and the gas reticulation facilities at Darwin.

2.1.4 **REVISION HISTORY**

2.1.4.1 Revision A

The hazardous area classification was raised and issued following the inspection of four sites on the Amadeus Basin to Darwin Pipeline in 2010, as listed below:

- Darwin City Gate Station
- Channel Island Station
- Helling Scraper Station
- Pine Creek Station

2.1.4.2 Revision B

Further inspection of sites was undertaken in August 2011 and the hazardous area classification updated to incorporate sources of hazardous release from the equipment at these sites. The additional sites inspected were:

- Mereenie Station
- Palm Valley Meter Station
- Palm Valley Interconnect / Alice Springs Meter Station
- Tylers Pass Station
- Tanami Road Scraper Station
- Aileron Valve Site
- Ti Tree Scraper Station

2.1.4.3 Revision C

The hazardous area classification updated to incorporate comments and recommendations from APA.



2.1.4.4 Revision D

Further inspection of sites was undertaken in September 2011 and the hazardous area classification updated to incorporate sources of hazardous release from the equipment at these sites. The additional sites inspected were:

- Katherine Meter Station
- Mataranka Scraper Station
- Ban Ban Springs Scraper Station
- Batchelor Valve Site
- Berry Springs Valve Site



2.2 METHODOLOGY

This Hazardous Area Classification has been carried out in accordance with the "sourceby-source" guidance taken from AS/NZS 60079.10.1 (Standards Association of Australia and New Zealand), in association with IP Code Part 15 (Institute of Petroleum – UK) and API RP 505 (American Petroleum Institute – USA).

The potential leaks that can be anticipated in both normal and abnormal operations have been considered, such as the failure of a valve gland and the partial failure of a gasket flange. The application of explosion proof (Ex) equipment will make sure that ignition does not take place. The classification does not allow for catastrophic failure of pipework or equipment where the associated mechanical effects are almost certain to cause ignition.

The extent of Zone 0, 1 and 2 areas has been identified by investigating each relevant source or type of source.

Due to the imprecision inherent in hazardous area classification, the designation of small non-hazardous area within larger hazard areas has been avoided.

Natural boundaries have been used to define zone limits where reasonably practical. In some cases, where believed adequate, this has reduced the assigned area to some extent. In other cases, where there is no economic disadvantage, the zone areas have been extended to simplify their arrangement.

The equipment and pipework in the stations are installed in open outdoor (all sides of the compounds are open and the stations are not installed in natural depressions), therefore they are considered adequately ventilated. This classification assumes that all stations on the ADP covered by this report are well maintained at all times.



2.3 REFERENCES

2.3.1 AUSTRALIAN STANDARDS

AS/NZS 60079.10.1:2009	Explosive atmospheres Part 10.1: Classification of areas – Explosive gas atmospheres (IEC 60079-10-1, Ed.1.0(2008) MOD)
AS/NZS 60079.20:2000	Electrical apparatus for explosive gas atmospheres Part 20: Data for flammable gases and vapours, relating to the use of electrical apparatus

2.3.2 INTERNATIONAL STANDARDS

IP 15 Third Edition, 2005	Model code of safe practice Part 15: Area classification code for installations handling flammable fluids
API RP 505 First Edition, 1997	Classification of locations for electrical installations at petroleum facilities classified as Class I, Zone 0, Zone 1, and Zone 2



2.4 PROCESS DESCRIPTION AND OPERATIONS

2.4.1 PROCESS DESCRIPTION

2.4.1.1 Overview

The Amadeus Darwin Pipeline (ADP) was constructed to deliver gas from the Palm Valley and Mereenie gas plants in the south of the Northern Territory to Darwin in the north of the territory. Several offtakes have been added to supply users along the length of the pipeline. The pipeline is approximately 1,513 km long.

Currently, the majority of the gas is supplied to the ADP from Wadeye via the Bonaparte pipeline. The Bonaparte pipeline connects in to the ADP at Ban Ban Springs.

Typically drains and vents in the facilities are fitted with plugs or caps and therefore are not a source of release during normal operation. Drains are operated only when then the pipeline is depressured and do not require further consideration, vent points marked with BD on the P&IDs are assumed to be operated during routine operation and maintenance of the station and require consideration as a source of release.

2.4.1.2 Mereenie

Gas to the Mereenie station comes from the Santos operated Mereenie gas plant. Currently there is no contract for the supply of gas from Mereenie, however the station remains pressurised and can be returned to operation if required.

The station consists of DN 200 above ground connection to the Mereenie gas plant. Close to the connection point are temperature and pressure transmitters and high temperature and pressure trips and a station limit valve (SLV). The SLV is pneumatically actuated from instrument gas conditioned locally. The instrument gas system is provided with a local PSV that vents to atmosphere.

The gas then passes to two parallel filter separators. The filter separators are horizontal and fitted with quick opening closures to allow removal of the filter elements. The filter separators have been swapped with the filters originally installed at Palm Valley and this required some pipework modifications. The liquids removed from the gas are collected in a drain boot underneath the filter separator. The liquids are drained back to the Mereenie production facility. The filter separators are fitted with the following instrumentation; pressure indicator, differential pressure transmitter, level glasses, high level switches and a PSV.

From each filter separator the gas flows to a meter run. The flow meters are orifice meters that are fitted with flow conditioners, pressure transmitter, a low range and a high range differential pressure transmitter and a temperature transmitter. A blowdown point is provided on each meter run that can blow down the meter run and filter separator.

The pipework downstream of each meter run joins to a common line. There is a DN 20 blowdown point and an insertion sample probe installed to provide gas samples for the gas chromatograph and dew point analyser.

The gas then passes underground through a manual station limit valve to the Mereenie to Tylers Pass pipeline. There is a scraper launcher installed with quick opening closure, pressure indicator, blow down vent and associated valving for the launching of pigs.



2.4.1.3 Palm Valley

The Palm Valley metering station receives gas from the Magellan Petroleum operated Palm Valley gas plant.

The station consists of DN 300 above ground connection to the Palm Valley gas plant. Close to the connection point are temperature and pressure transmitters and high value trips and a station limit valve (SLV). The SLV is pneumatically actuated from instrument gas conditioned locally. The instrument gas system is provided with a local PSV that vents to atmosphere.

The gas then passes to two parallel filter separators. The filter separators are horizontal and fitted with quick opening closures to allow removal of the filter elements. The filter separators have been swapped with the filters originally installed at Mereenie; the filters are installed in the same location and have required minimal pipework modifications. The liquids removed from the gas are collected in a drain boot underneath the filter separator. Liquids are removed to temporary containers. The filter separators are fitted with the following instrumentation; pressure indicator, differential pressure transmitter, level glasses, high level switches and a PSV.

From each filter separator the gas passes to a meter run. The flow meters are orifice meters that are fitted with flow conditioners, pressure transmitter, a low range and a high range differential pressure transmitter and a temperature transmitter. A blowdown point is provided on each meter run that can blow down the meter run and filter separator.

The pipework downstream of each meter run joins to a common line. There is a DN 20 blowdown point and an insertion sample probe installed to provide gas samples for the gas chromatograph and dew point analyser.

The gas then passes underground through a manual station limit valve to the Palm Valley to Tylers Pass pipeline. The underground section of pipe is fitted with a blowdown point. A connection point and additional valve has been installed on the blowdown stack to provide gas to the Palm Valley to Alice Springs station. The connection point for the gas analyser has been relocated to this section of pipework to allow measurement of the gas that passes from the Amadeus Darwin Pipeline to the Alice Springs Pipeline. The pipework to the Palm Valley to Alice Springs Pipeline passes underground to a point adjacent to the Palm Valley to Alice Springs compound. There is a flanged connection to the compound fence line.

There is a scraper launcher installed with quick opening closure, pressure indicator, blow down vent and associated valving for the launching of pigs to the ADP.

2.4.1.4 Palm Valley Alice Springs

The Palm Valley Alice Springs site, also referred to as the Palm Valley Interconnect receives gas from either the Magellan operated Palm Valley gas plant or from the ADP via the Palm Valley metering station.

The gas supply from the ADP is fed to a skid. The skid has recently been modified by APA, although no information is available. From the existing P&IDs and inspection; the pipe from the Palm Valley station is DN 100. The pipe decreases to DN 80 on the skid. At the inlet to the skid there is a pressure transmitter and indicator. The gas passes to a flow meter with pressure and temperature correction. Isolation valves and a manual bypass are provided. The skid is supplied with two pressure control valves, the main one is electro-pneumatic and the stand-by one is pneumatic controlled and actuated. Downstream of the control valves is an actuated valve fitted with pressure pilots and solenoids. The instrument gas for the control valves is conditioned from the transmission gas. The instrument gas is fitted with dual pressure regulators, knock out pot, filter, a PSV and high and low pressure pilots that close the actuated valve. The vents from all two valve instrument manifolds are tubed to a location at the edge of the skid roof.



The line from the Palm Valley gas plant is DN 100 which increases to DN 200. The gas then passes to a restriction orifice (RO). Upstream of the RO is the DN 50 kicker line connection to the scraper launcher. Downstream of the RO is the connection from the ADP. Next there is a station limit valve (SLV) that isolates Palm Valley to Alice Springs pipeline from both gas feeds. The SLV is pneumatically actuated from instrument gas conditioned locally and closes when a low pressure is sensed in the pipeline.

The scraper launcher is fitted with a quick opening closure, a pressure indicator, pressure relief valve and valves to allow operation.

Parallel to the scraper launcher is a wall. The wall is 1.8 m away from the centre line of the scraper launcher. The impact of the wall on the hazardous zones will be to extend the size of the hazardous area zone (refer section 2.7.11).

2.4.1.5 Tylers Pass

At Tylers Pass the gas from Mereenie and Palm Valley are commingled and odorant is added. The DN 250 pipeline from Mereenie passes to an above ground scraper receiver, fitted with pig sig, vent, pressure indicator, quick opening closure and valving to allow operation. During normal operation the gas bypasses the scraper vessel via underground pipework. A pipeline riser is fitted with pressure transmitter, pressure indicator and high pressure trip. Downstream, there is a buried valve with above ground pneumatic actuator. The actuator is powered by instrument gas conditioned locally from the transmission gas.

The gas from Palm Valley is similar to the Mereenie connection but does not have a scraper receiver. The pipeline is DN 350 and includes a riser with pressure transmitter and pressure indicator upstream of a buried valve with above ground pneumatic actuator. The actuator is powered by instrument gas conditioned locally from the transmission gas.

There is a DN 200 vertical blowdown stack fitted with quick opening closure. The stack has buried connections and valves to the pipeline sections to Mereenie, Palm Valley and Tanami Road, as well as the scraper receiver.

Downstream of the two actuated valves the two pipeline sections join and are fitted with a temperature transmitter, pressure transmitter, pressure indicator, instrument gas offtake and odorant injection point.

The odorant injection package consists of an odorant storage pressure vessel, instrument gas conditioning and control and odorant dosing pumps. The storage vessel is fitted with a pressure relief valve, pressure indicator, two level glasses, a level transmitter and a continuous vent fitted with adsorption vapour filter. The vent from the tank is fitted with a cap so that the discharge point is vertically downwards. The instrument gas conditioning equipment comprises two regulators to reduce the pressure to 400 kPag. The tank blanket instrument gas is regulated to 15 kPag by a pressure regulator / over pressure shut off (OPSO) valve. The injection pump instrument gas is regulated to 400 kPag by a regulator. Control of the odorant injection pumps is by solenoid valves. The odorant dosing pumps suction is connected to the bottom of the odorant storage vessel. The discharge of each odorant dosing pump is fitted with a flow switch and pressure relief valve. The odorant injection point is fitted with a site flow indicator.

Note that there is no gas supply from Mereenie or Palm Valley and the gas flow through Tylers Pass is in the reverse direction. At the time of inspection the odorant plant was not operating.



2.4.1.6 Katherine Offtake

The Katherine Offtake is installed on the ADP at approximately KP 1,221. The site consists of a take-off from the mainline. The offtake is fitted with a DN 100 buried valve. The valve is manual operated and has above ground gear box, maintenance ports and cavity bleed. The valve has DN 50 risers either side of the valve fitted with manual valves. A scraper launcher is installed at the site. The scraper vessel is fitted with pressure indicator, PSV and local vent. An above ground DN 100 valve with DN 50 bypass is also provided at the station. The valve may be a plug valve, a ball valve or a globe valve in accordance with the P&ID, details drawing or site photographs respectively.

2.4.1.7 Katherine Meter / Regulating Station

The Katherine Meter/Regulating Station includes two filter separator, two water bath heaters, a slop tank, a main line valve, control valves, pressure relief valves and the related pipework and valving.

The inlet to the station is DN 100 and consists of a buried station limit valve (MLV 11) with above ground actuator, maintenance ports and cavity bleed. A scraper receiver vessel is installed in parallel to MLV 11. The scraper vessel is fitted with local vent, PSV, pressure indicator and associated pipework and valving. The closure on the vessel is a blind flange.

The following instrumentation is installed at the inlet; pressure indicator, a pressure transmitter and a temperature indicator.

The gas then passes through two parallel filter separators. Upstream of both filter separators are temperature control valves that reduce the pressure to 4,400 kPag / 16°C [based on operating conditions at the site visit]. The temperature control valves are provided with cascade control for pressure and temperature. One valve is fitted with a pneumatic controller to continue supply during outage of the electronic control system. The filter separators are fitted with differential pressure transmitter, pressure indicator, high liquid level switches and high-high liquid level switches. The liquids are drained manually to an elevated slops tank. The slop tank is fitted with a liquid level glass and a hose to allow emptying. Gas from filter separators is then heated by indirect fired water bath heaters up to approximately 60 °C. The water bath heaters are operated as duty - standby, with the standby heater remaining "hot" to allow quick change over of the that is controlled by actuated valves on the inlet to each heater.

The heated gases from heaters pass through two parallel regulator / meter runs. The regulator / meter runs are operated in duty - standby and each contains active - monitor pressure regulators. The meter skids are provided with two actuated valves that close on high pressure downstream of the regulators. Additional high pressure switches at the station outlet provide a station ESD. Further over pressure protection is provided by a PSV at the station outlet. A meter is provided in each run. The meters are orifice meters with upstream flow conditioners, temperature transmitters, pressure transmitters and high and low range differential pressure transmitters. Each run is provided with a local blowdown point, pressure indicators and valving.

The station outlet is provided with a temperature indicator, temperature transmitter and low temperature switches. There is also provision for the installation of a future gas sampler. The connection to the Katherine power generation site is DN 100.

Instrument gas is conditioned locally for each actuated valve and temperature control valve. Gas is conditioned at each water bath heater to provide fuel gas for the pilot and main burners. The fuel gas conditioning trains comprise of pre-heat coil, strainer, primary pressure regulating valve, actuated ESD valves, secondary pressure regulating valve, meter and temperature control valve.



The gas released in emergency directs to the vent stack that discharges to atmosphere and the liquid removed from the gas flows to the slop tank. The maximum PSV set point is 3,200 kPag and the temperature limit is set at 60 °C in the station.

A control system provides control and telemetry for the various process measurement parameters. The control system provides flow control and high pressure automatic shutdown functionality and allows remote operator shutdown. The control system is powered by single phase 230 VAC power supply, with back up batteries.

2.4.1.8 Pine Creek

The Pine Creek pressure reduction and metering station receives gas from ADP to supply the Pine Creek power generation site. The Pine Creek Station comprises of a dry gas filter vessel, a filter separator, a knockout pot, two water bath heaters, an atmospheric slop tank, control valves, pressure relief valves, and the related pipework instrumentation and valving.

The Pine Creek station is located close to the ADP and a mainline valve is located within the station. The inlet connection to the station has two DN 80 manual valves. One valve is fitted with a insulation flange and a surge arrestor, the second is fitted with a pressurising bypass. Downstream of the manual valves is an actuated valve that is also fitted with a pressurising bypass. The gas then passes to a dry filter vessel that is fitted with a pressure indicator, PSV, a vent valve, pressurising line and a bypass line to allow maintenance of the filter. From the filter, the gas passes to a duty standby temperature control valve that drops the gas pressure from 7,800 to 4,200 kPag and a temperature of 16°C [based on observations during the site visit]. The gas then passes to a filter separator that is fitted with level gauge, level controller, level control valve, high level switch, pressure indicator, PSV, vent valve and differential pressure transmitter. In parallel to the filter separator is a knock out pot to allow maintenance on the filter separator. The knock out pot is fitted with level gauge, pressure indicator, PSV, vent valve and drain valve.

Gas from filter separator / knock out pot is then heated by indirect fired water bath heaters up to approximately 60 °C. The water bath heaters are operated as duty - standby, with the standby heater remaining "hot" to allow quick change over of the that is controlled by actuated valves on the inlet to each heater.

The heated gas then passes to parallel pressure control valves. The valves are operated as duty and standby. The valves are pneumatically controlled. Over pressure protection is provided by a PSV downstream of the pressure control valves. Gas metering is by a single orifice meter fitted with a pressure transmitter; high and low range differential pressure transmitters and a temperature transmitter. A bypass is provided around the meter for maintenance.

Metered gas then passes to a second knock out pot fitted with a drain valve, PSV and level gauge. The piping from the knock out pot contains a temperature transmitter, temperature indicator, high pressure switches and a pressure transmitter. A double block and bleed valving arrangement is provided. The connection to the Pine Creek power generation site is via an underground pipework and the above ground flange is provided with an insulation gasket. A spare flange is provided at the connection point for a future connection to the Pine Creek power generation site, the flange is fitted with a blind flange, insulation gasket and a surge arrestor.

Liquids collected from the dry filter, filter separator and knock out pots is sent to an elevated slops tank. The slops tank is fitted with a safety relief valve (SRV, pressure vacuum vent valve, flame arrestor, pressure indicator, high liquid level switch and hose for emptying.

Vents and PSV discharges from the dry filter, filter separator and knock out pots and vents from instrument manifolds and pneumatic controllers are sent to a local vent stack. The vent stack is fitted with a flame arrestor.



Instrument gas is conditioned centrally for the site from a connection from the outlet knock out pot.

Gas is conditioned at each water bath heater to provide fuel gas for the pilot and main burners. The fuel gas conditioning trains comprise of pre-heat coil, strainer, primary pressure regulating valve, actuated ESD valves, secondary pressure regulating valve, meter and temperature control valve. A control system provides control and telemetry for the various process measurement parameters. The control system provides flow control and high pressure automatic shutdown functionality and allows remote operator shutdown. The control system is powered by single phase 230 VAC power supply, with back up batteries.

2.4.1.9 Darwin City Gate

Darwin City Gate receives gas from the ADP. Gas flows to three locations, Wickham Point, Channel Island and Trunk Package Offtake Station (TPOTS). The Wickham Point (Corroco Philips, Darwin LNG plant) pipeline can be reversed to ensure gas supply to Darwin/Channel Island. The gas supply to Wickham point is fitted with an actuated valve. The gas supply to Channel Island and TPOTS is filtered, reduced in pressure to 5800 kPag and the gas composition and moisture dew point is analysed. The gas to TPOTS is regulated to a 850 kpag and metered.

The Darwin City Gate Station comprises of scraper vessels, a multicyclone, two filter separators, an atmospheric slop tank, gas chromatograph system, moisture analyser, control valves, pressure regulator, pressure relief valves, blowdown stack and the related pipework. Liquids (condensate, water and compressor lube oil) removed from the gas is stored in the slop tank for batch treatment.

The station consists of DN 300 above ground connection. A scraper receiver is installed with buried hydraulically actuated valve. The actuated valve includes electric solenoids to allow remote operation. During normal operation gas bypasses the scrapers and flows through the actuated valve, the scraper vessels are closed and isolated from the pipeline. At the station inlet, the pipeline divides in two, with one supplying gas to Weddell interconnect and one supplying to the City Gate station. The main line is installed with DN20 blowdown, temperature transmitter and pressure transmitter. The line then divides in to two, the normal flow is through the multi-cyclone to remove solids. The multicyclone is fitted with a PSV with a set point of 9,650 kPag. Both parallel streams include a temperature control valve and a filter separator. The filter separators are horizontal and fitted with quick opening closures to allow removal of the filter elements. The liquids removed from the gas are collected in a drain boot underneath the filter separator and flow under level control to a slop tank. The filter separators are fitted with the following instrumentation and connections; pressure indicator, differential pressure transmitter, level glasses, high level switches, high high level switches, local drains and level controllers. The temperature and level control valves are pneumatically controlled and actuated. Local instrument gas conditioning skid is provided with PSV to provide over pressure protection.

Common line of the outlet from the filter separators is installed with temperature indicators, temperature transmitter, pressure indicators, and pressure transmitters. The connection point for the gas chromatograph and dew point analyser has been installed to this section of pipework to allow analysis of the gas. The gas chromatograph and dew point analyser are installed in a shelter adjacent to the filter skid. The chromatograph receives a sample of the transmission gas at a pressure of approximately 140 kPag from an insertion regulator installed in the pipe. The carrier and calibration gases are stored in gas bottles and regulated for use at 140 kPag. The chromatograph vents gas to exhaust vents above the analyser shelter roof. The mainline then passes through a mainline valve. Downstream of the mainline valve is installed with pressure indicator and transmitter before the pipeline directed to Channel Island meter station.



A separate offtake to TPOTS passes gas to a DN 50 pressure regulation and metering skid. The skid has duty and standby arrangement with each containing active and monitor pressure regulators and turbine meters. A high pressure trip is provided that closes an actuated valve at the inlet. The meter runs, with one serving as duty run and other as standby run. The gas is then directed to Berrimah Road.

A control system provides measurement and telemetry for the various process instruments. The control system allows remote operator shutdown. The control system is powered by single phase 230 VAC power supply, with back up batteries.

2.4.1.10 Channel Island

Channel Island regulating and metering station receives gas from Darwin City Gate meter station. The Channel Island Regulating Meter Station consists of two water bath heaters, solids filter, four filter separators, slam shut valves, active and monitor regulators, meters, pressure relief valves, local vent points and the associated valving and pipework.

The gas passes to a solids filter. The filter is fitted with a pressure indicator, differential pressure transmitter, local vent point and local drain. The filter has a quick opening closure and a bypass, with manual valving. The filtered gas is then heated to approximately 60°C in two parallel water bath heaters. One water bath heater is operating and the other is in hot-standby. Actuated valves at the heater inlets control the gas flow.

The combined outlet line from the water heaters as a high temperature switch, temperature indicator and temperature transmitter. The line then passes to one of two filter, regulation and metering runs to supply gas to either Unit 1 or Unit 7 at the Channel Island Power Generation Site.

The Unit 1filter, regulation and metering run comprises of two parallel runs each containing actuated valve, active-monitor pressure regulators, filter separators and meters. The actuated valves are both normally open and are closed on either signal from the control system or high pressure downstream of the regulators. The pressure regulators are self acting and externally sensed. The gas of each regulator pair flows to the corresponding filter separator. The filter separators are horizontal and fitted with quick opening closures to allow removal of the filter elements. The liquids removed from the gas are collected in a drain boot underneath the filter separator. No slops tank is installed at site at liquids are drained from the filter separators manually. The filter separators are fitted with the following instrumentation and connections; pressure indicator, differential pressure transmitter, level glasses, high-high level switches, local drains and level controllers. The filtered gas is metered in orifice meters, each meter is fitted with flow conditioner, pressure transmitter, high and low range differential pressure transmitters and temperature transmitters. Additional overpressure protection is provided by a PSV. The combined outlet from the Unit 1 regulation, filter and metering runs is fitted with low pressure switch and high pressure switches that all initiate an ESD, and a pressure transmitter, pressure indicator, temperature transmitter, temperature indicator, low temperature switch connection for future gas analysis and an isolation valve.

The Unit 7 filter, regulation and metering run comprises of two parallel runs each consisting of filter separator, pressure regulators, metering and associated instrumentation and valving. There is an actuated valve at the inlet before a split to two filters. The filters are fitted with pressure indicator and differential pressure transmitter. Downstream of each filter is an actuated valve. The valves are normally open and are closed on signal from the control system or high pressure downstream of the pressure regulators. Metering is provided by a Coriolis meter and a AVT turbine meter. The primary duty meter is the Coriolis meter, but the turbine meter can be operated in series or parallel. Both meters are provided with temperature and pressure correction. Downstream of the meters the combined outlet has a PSV, local manual vent, temperature transmitter and pressure transmitter.



Instrument gas is conditioned locally for each actuated valve

A control system provides measurement and telemetry for the various process instruments. The control system allows remote operator shutdown. The control system is powered by single phase 230 VAC power supply, with back up batteries.

2.4.1.11 Scraper Stations

The scraper stations are provided along the length of the pipeline to allow cleaning and inspection of the pipeline. The scrapers stations are installed at Tanami Road, Ti Tree, Wauchope, Renner Springs, Newcastle Water, Helling and Ban Ban Springs. Additionally scraper vessels are included at some of the stations along the pipeline. A scraper receiver and launcher are installed at each site along with a buried hydraulically actuated valve. The actuated valve includes electric solenoids to allow remote operation. During normal operation gas bypasses the scrapers and flows through the actuated valve, the scraper vessels are closed, isolated from the pipeline and depressured.

The pipeline is provided with buried isolation valves. A pressure transmitter and indicator are installed on a pipe riser either side of the actuated valve. A temperature transmitter is installed downstream of the actuated valve.

The scraper vessels are fitted with quick opening closures, a DN 25 local vent, a pressure gauge and connections with valves to allow operation. The vessels also include connections for pressure relief valves that have been removed on some / all scraper vessels. Pig passage indicators are installed on the pipeline and scraper vessels.

There is also a pipeline vent installed at the site within a separate compound. During normal operation the vent is closed with a quick opening closure.

The scraper station at Ban Ban Springs also includes an off take connection to Cosmo-Howley and a supply connection from the Wadeye pipeline. The off take to Cosmo Howley is a blind flange on a pipeline riser. The pipeline is decommissioned and the meter station has been removed. The connection from the Wadeye pipeline is underground pipework from the Ban Ban Springs meter station. The pipeline connections is to the upstream connection for a future compressor. There is an above ground valve with bypass installed adjacent to the connection.

At the Helling scraper station there are pipework and vents that are used for training The training pipework is not connected to the station pipework during normal operation of the pipeline and the training pipework is unpressurised. No records have been provided for the training pipework and it is not included in the hazardous area classification.

2.4.1.12 Mainline Valves

There are several mainline valve sites located at Aileron, Barrow Creek, Kelly Well, Morphett Creek, Fergusson, Larrimah, Tindal, Acacia and Berry Springs. The data used for classifying the mainline valves' hazardous area is obtained solely from the Aileron site. Each of the sites is assumed to be identical and comprises of a buried valve with an above ground bypass and vent points with no instrumentation installed on the mainline valve. The buried valve has a manual actuator and gear box, injection ports and cavity bleed extended above ground. This is shown in the photograph below.





2.4.1.13 Bachelor Mainline Valve

The Batchelor mainline valve site is located at KP 1441 between Ban Ban Springs and Darwin City Gate. The Batchelor Mainline valve site is similar to other mainline valve sites but the mainline valve has an actuator, similar to the scraper stations. The mainline valve consists of a DN300 underground valve with an above ground actuator, maintenance ports and cavity bleed. The valve has an above ground DN100 bypass. Pressure transmitters are fitted either side of the valve. The site also has a control room.

2.4.2 OPERATING CONDITIONS

The maximum operating pressures and temperatures at the stations are summarised in Table 1.

Temperature	Pressure (Process)	Pressure (Fuel gas)	Pressure (Instrument gas)
Max. (°C)	Max. (kPag)	Max. (kPag)	Max. (kPag)
60	9,650	≤ 650	770

Table 1 Operating pressures and temperatures



2.4.3 VENTILATION

Each of the sites is in the open air and is considered to have good ventilation. Some equipment is installed in open-sided shelters. These are not considered to have any impact on ventilation.



2.5 PROPERTIES OF HAZARDOUS MATERIALS

2.5.1 GASES HANDLED

The gas processed through the regulating and metering stations contains mainly methane (typically 87 mol%) and nitrogen (about 8 mol%), along with small quantities of hydrocarbons (C2+) and carbon dioxide (totally < 5 mol%). The specific gravity of the gas is 0.62, which is lighter than air (SG=1.0). It is classified as a Category G(i) fluid in accordance with IP15 Section 1 (Table 1.2 – fluid categories) and as a Group IIA in accordance to AS/NZS 60079.20 section 4.6. The composition of the gas is shown in Table 2.

Note that on release from high pressure, the gas will be cooled due to Joule-Thomson cooling. At lower temperatures the gas is less dense and the dispersion in air will be slightly impacted, but the flammable range is reduced. Similarly, for higher temperatures the flammable range is increased, but the dispersion is increased. At the dilute concentrations at the lower explosive limit, the gas-air mixture temperature will be close to ambient temperature therefore, there will be no additional consideration for temperature effects.

Component	Symbol	mol%
Methane	CH ₄	86.954
Ethane	C ₂ H ₆	2.557
Propane	C_3H_8	0.829
i-Butane	C_4H_{10}	0.118
n-Butane	C_4H_{10}	0.216
i-Pentane	C_5H_{12}	0.066
n-Pentane	C ₅ H ₁₂	0.054
n-Hexane	C ₆ H ₁₄	0.074
n-Heptane	C ₇ H ₁₆	0.017
n-Octane	C ₈ H ₁₈	0.004
n-Nonane	C ₉ H ₂₀	0.004
Carbon Dioxide	CO ₂	0.936
Nitrogen	N ₂	8.172
Total		100
Specific Gravity (r	nixture)	0.62

Table 2 Gas Composition

The chromatograph used for gas composition analysis requires carrier and calibration gases. The carrier gas (helium) is not flammable, while the calibration gas (mainly methane) is classified as a Category G(i) fluid with similar compositions as process gas.



2.5.2 LIQUIDS HANDLED

2.5.2.1 Filter Separator Drains

The liquids handled at the facilities may consists of condensate, compressor lubrication oil or water, which is removed from the gas by the filter separators. The condensate is considered to be flammable liquid and based on hexane is considered to be a group IIA liquid in accordance to AS/NZS 60079.20. The compressor lube oil used in the stations is combustible, but not flammable, with a typical flash point (closed cup) over 60 °C. Therefore, it is treated as a non-hazardous material for the purpose of the hazardous area classification. Water is considered to be non-hazardous liquid.

2.5.2.2 Odorant

Odorant is injected into the pipeline at Tylers Pass. The odorant is SpotLeak 1005 and is a flammable liquid. It consists of Thiophene, Propanethiol and methyl as per the product specification. The odorant is classified as group IIA in accordance to AS/NZS 60079.20 and category C fluid in accordance with IP15 Section 1 (Table 1.2 – fluid categories).



2.6 EQUIPMENT SELECTION

The general requirements for selection, installation and maintenance of explosion proof (Ex) electrical equipment are described in AS/NZS 2381.1:2005.

To ensure the Ex electrical equipment performs satisfactorily, without the risk of ignition, the data shown in Table 3 must be used as area specification requirements.

Table 3 Gas Group and Temperature Class

Performance Criterion	Requirement	Reference
Ambient temperature	0 - 50 °C	Bureau of Meteorology
Auto-ignition temperature (Methane)	537 °C	AS/NZS 60079.20
Apparatus Group	IIA	AS/NZS 60079.20
Temperature Class	T1 / T3	AS/NZS 60079.20

The recommendations on equipment group and temperature class should be regarded as *minimum* requirements. Equipment selection must take into account local conditions, such as the presence of hot surfaces close by and electrical equipment design.



2.7 CLASSIFICATION

2.7.1 PIPING

2.7.1.1 Process Piping

Welded piping at the stations is designed and constructed to ANSI/ASME B 31.3 and is not considered as a source of release. However, the possible release of flammable material occurs at flanges, valves and fittings due to the possible leakage from a gasket or seal. A majority of process gas service pipework installed in the stations is flanged. The screwed connections are limited to the small bore piping with a nominal size less than DN25. The screwed piping has tapered threads with similar leakage integrity to the flanged connections. The piping in the facilities is a permanent fixture and not subject to vibration.

All flanges and infrequently used valves are considered to be well maintained and located in an adequately ventilated area in the gas regulating and metering stations. Leakage of the flammable material at connection points is considered abnormal and the quantity of the hazardous material released is considered minor. Consequently, they are regarded as sources of *Secondary* grade release and a hazardous Zone 2 within a sphere area with 2 m radius from the potential leakage points is claimed around the piping with flanges or threaded joints, meters or regulators and valves other than relief valve in accordance with AS/NZS 60079.10.1 Clause ZA.6.6.2.4 for high pressure gas transmission system.

As a worst case the liquid piping is assumed to carry condensate which is a flammable liquid in accordance with AS/AZS 60079.10.1 clause ZA 5.2.8 that claims a hazardous area of Zone 2 of 1.5m in all directions of potential release points. However the liquid drain lines may contain sufficient quantities of dissolved and entrained. Since this hazardous area classification must account for a number of installations with a range of process conditions, liquid piping is classified as gas piping.

All process drains and vents used infrequently for maintenance or start-ups are normally plugged. Similarly, the sample points are taken on an infrequent or as required basis (maximum once every six months). To simplify hazardous area management, the classification for process gas piping will be assigned to the uncommonly operated process drains, vents and sample points, meaning a Zone 2 area of radius 2 m is declared around those potential leakage points.

The hazard zones adopted for the process piping, flanges, joints, valves and fittings are summarised below:

Zone 2 2 m radius from the edge of the process piping routes, including infrequently used process drains, vents and sample points

2.7.1.2 Instrument Gas Piping

The instrument gas pipework is fabricated from screwed pipe and tube with compression fittings. Similar to process gas piping, the instrument gas piping has potential leakage points at connection points. The leakage is considered abnormal with minor quantities of flammable material. Hence, they are regarded as sources of *Secondary* grade release and the associated hazardous area zone will be classified as Zone 2.

According to AS/NZS 60079.10.1 Clause ZA.6.4.2.3c, for the lighter-than-air flammable gas operating with a pressure between 700 and 2,000 kPag, a hazardous Zone 2 within a sphere area with 1 m radius from the potential leakage points is assigned to the piping with flanged and screwed joints.

The hazard zone adopted for instrument gas piping is summarised below:

Zone 2 1 m radius from the edge of the instrument gas piping routes



2.7.1.3 Fuel Gas Piping

Fuel gas piping is fabricated with screwed connections, except those pipes with a nominal diameter less than DN25 and with flanges for larger diameters. The screwed piping has tapered threads with similar leakage integrity to flanged connections. The leakage is considered abnormal with the presence of minor quantities of flammable material. Hence, they are regarded as sources of *Secondary* grade release and the associated hazardous area zone will be classified as Zone 2.

According to AS/NZS 60079.10.1 Clause ZA.6.4.2.3c, for the lighter-than-air flammable gas operating with a pressure between 100 and 700 kPag, a hazardous Zone 2 within a sphere area with 0.5 m radius from the potential leakage points is declaimed around the piping with flanged and screwed connections.

The hazard zone adopted for fuel gas piping is summarised below:

Zone 2 0.5 m radius from the edge of the fuel gas piping routes

2.7.1.4 Control Valves

There are several shut down valves, pressure / temperature control valves and level control valves installed in the stations. Similar to process piping, the process connections of control and actuated valves are considered well maintained and leakage is considered abnormal. Therefore connection points are considered the same as process pining as described in Sections 2.7.1.1, 2.7.1.2 and 2.7.1.3.

In addition, the control valves are in regular use and leakage is more likely due to wear on the packing. An additional *Primary* grade of release (Zone 1) with a nominal hazard radius of 0.3 m around the glands is claimed in accordance with IP15 Section 5.4.5.1.

Control valves will release minor amounts of flammable gas with a small continuous bleed from the positioners or exhausts at a low discharge velocity in normal operation. It contributes a *Continuous* grade of release and in accordance with AS/NZS 60079.10.1 clause ZA 6.6.2.5, a Zone 1 area with a 0.5m radius will be claimed. A larger region that represents infrequent higher gas velocities that may exist surrounding the Zone 1 area due to abnormal operation or failure of the valves. A Zone 2 area within 1 m radius in all directions is assigned to the low velocity vents.

The additional hazard zones adopted for the control valves are summarised below:

- **Zone 1** 0.5 m radius around the control valve positioners and exhausts
 - 0.3 m radius around the control and actuated valve glands
- **Zone 2** 1 m radius around the control valve positioners and exhausts

2.7.1.5 Pressure Relief and Safety Relief Valves

Pressure relief valves (PSVs) and safety relief valves (SRVs) are mounted on the multicyclone, filters, process gas piping, fuel gas and instrument pipework to provide the protection against operational overpressure for the piping and equipment.

Note that SRVs in Pine Creek Station piped to the vent stack do not contribute to the extent of the hazardous classification except as discussed under Section 2.7.1.1 for process piping.

PSVs and SRVs venting directly to atmosphere are normally treated as a *Secondary* grade of release due to no action on normal operating conditions, and as a result the associated hazard zone will be classified as Zone 2. In accordance with AS/NZS 60079.10.1 Clause ZA.6.6.2.9, a Zone 2 area is assigned within 6 m diameter cylinder with its axis on the line



of discharge from 1 m behind the points of discharge to a distance 8 m in front of the points of discharge.

The seats on the PSVs and SRVs will be metal to metal and tight shut-off, which will contribute to a small leakage at the vent tips during the normal operation. In line with the specification described in IP15 Section 5.4.4.5, a Zone 2 area of nominal 1 m radius should be placed around the end of the discharge point to account for any small leakages. It is recommended to upgrade the *Secondary* grade of release to a *Primary* grade of release accounting for the presence of the flammable material in the normal operating. Hence, an additional Zone 1 area with a nominal hazard radius of 1 m is claimed around the PSV and SRV discharge points to account for the minor leak through the valve seats.

The hazard zones of the PSVs and RSVs are considered to be the same due to lack of the discharge rates, which actually affect the extending zone of hazardous area.

The hazard zones adopted for the PSVs and RSVs are summarised below:

- **Zone 1** 1 m radius from the vent tips
- **Zone 2** 6 m laterally, 8 m above and 1 m below the discharge points

2.7.1.6 Mainline Valves

Some of the actuated mainline valves (MLV) installed at the scraper stations as shown in the following photographs include an enclosure containing the solenoids and a hand pump for the valve. The solenoids vent to a location outside of the enclosure, however the tubing connections to the solenoid are a *Secondary* source of release. The enclosure has minimal ventilation and released gas can accumulate within the enclosure. Therefore a Zone 1 hazardous area is claimed within the enclosure.

Body bleeds valves maintenance ports and instrument gas connections from the buried valve are brought above grade. These provide potential leak sources and are treated the same as process piping connections as per section 2.7.1.1.

The hazard zone adopted for the actuated valve enclosures is summarised below:

- **Zone 1** Within the solenoid valve enclosure
- **Zone 2** 2m radius from point of discharge





2.7.1.7 Local Vent Point

There are several local vent points installed in the facilities to allow the purging of gas from the stations following isolation. Each manual vent generally consists of a ball valve to control blow down rate. The ball valve provides high integrity isolation and wear is not considered on the valves. Hence, no leak is taken into account during the normal operation.

The hazardous area classification for those points is considered to be the same as PSVs and RSVs due to the similar operation which happens only during the period of system depressurisation. Therefore, they are treated as a *Secondary* grade of release and a Zone 2 area within 6 m diameter cylinder with its axis on the line of discharge from 1 m behind the points of discharge to a distance 8 m in front of the points of discharge are declared in accordance with AS/NZS 60079.10.1 Clause ZA.6.6.2.9.

Note: Majority of the vents are fitted with a cap and have a hole drilled in the vent pipe.

The hazard zone adopted for the local vent points is summarised below:

Zone 2 6 m laterally, 8 m above and 1 m below the discharge points

2.7.1.8 Pine Creek Vent Stack

There is a vent stack installed in the Pine Creek Station. Gas released from the PSVs, instrument manifold vents and vented instrument gas from the pneumatic controllers is sent to the vent stack. During normal operation, there is minimal flow from the vent stack from the pneumatic controllers. The vent stack is fitted with a flame arrester that offers protection against fire and explosion from outside sources of ignition. The flame arrestor is fitted with a cover to prevent rain ingress but also acts to direct gas downwards. and will increase the diameter of the hazardous area.

The hazardous area is increased to a Zone 2 area within 12 m diameter cylinder and 6 m below the discharge point is claimed, compared with 8 m distance stated for vertical up discharge.

Furthermore, minor leakage of flammable mixture may occur through the PSV seats under normal operation as analysed in Section 2.7.1.5. As a result, it contributes to a *Primary* grade of release and an additional Zone 1 hazardous area with a nominal radius of 1 m is claimed around the vent stack discharge point to account for any small leakages from safety relief valve seats.

The continuous bleed from the pneumatic controllers also vents through the vent stack. As per Section 2.7.1.4, a 0.5 m Zone 1 hazardous area is claimed. This is within the hazardous area claimed for leakage through PSV seats.

The pipework to the vent stack is flanged and will generally be at close to atmospheric pressure. However for continuity the claimed hazardous area will be claimed to be as for process pipework, refer section 2.7.1.2.

The hazard zones adopted for the vent stack are summarised below:

- **Zone 1** 1 m radius from the vent tip
- **Zone 2** 12 m laterally, 6 m below and 8 m above the vent tip

2.7.1.9 Pipeline Blowdown

There are pipeline blowdown points at the scraper stations and meter stations. The vents are approximately 2.4 m tall, discharge vertically upwards and are fitted with quick opening closures. Pipeline blowdowns have the potential to release large volumes of gas to atmosphere and to obtain a representative hazardous area zone it would be required to



undertake plume analysis based on the blowdown conditions. An estimate of the extent of the plume from previous experience for pipeline blowdown vents is a cylinder with a radius of 15 m and a length of 30 m extending in the direction of the discharge and 1 m below the discharge point to account for the localised turbulence at the vent tip. Pipeline blowdowns are a done infrequently and therefore a *Secondary* release that results in a Zone 2 hazardous area. The discharge is vertically upwards and therefore no ground effect would occur.

During normal operation a quick opening closure in the closed position is considered to provide similar containment as a pipe flange or fitting. Therefore the associated release would be *Secondary* providing a Zone 2 hazardous area of 2 m as per AS/NZS 60079.10.1 Clause ZA.6.4.2.4.

- **Zone 2** A cylinder of radius 15 m extending 30 m vertically upwards and 1 m downwards from the point of discharge
- **HOLD** The exact shape of the hazardous area zone should be determined using plume dispersion modelling based on the blowdown operation and conditions.
- 2.7.1.10 Low Velocity Vents

There are numerous pressure relief valves installed on instrument gas systems, for example on the station limit valves. The relief from these pressure relief valves are similar to low velocity vents in accordance with AS/NZS 60079.10.1 ZA.6.6.2.8 that has an associated Zone 1 hazardous area of 0.5 m in all directions surrounded by a Zone 2 hazardous area of 1.0 m from the point of discharge. The pressure relief valves will not typically be relieving gas and the release will be *Secondary*, therefore the Zone 1 area is not appropriate. Therefore a Zone 2 hazardous area of 1 m radius from the point of discharge is claimed.

The hazard zone adopted for the instrument gas relief and vent points is summarised below:

Zone 2 Radius of 1 m extending in all directions from the point of discharge



2.7.2 SCRAPER VESSELS

The scraper vessels shall be operated such that it is normally isolated from the pipeline. There are no regular pigging operations. It is expected that the scraper vessels are opened at approximately yearly intervals and the small quantities of flammable gas may occur at the closures. Accordingly, they are treated as sources of *Secondary* grade release and a hazardous Zone 2 within a radius of 3 m centred at the closure is claimed as indentified in AS/NZS 60079.10.1 ZA.6.6.2.2b for the equipment located at an adequately ventilated area.

The scraper vessels are enclosed vessels containing nozzle connections with piping, valves and fittings, which are also potential release sources. These are classified as piping as per section 2.7.1.1.

The hazard zone adopted for the pig receivers and launchers is summarised below:

Zone 2 3 m radius in all directions from quick opening closure

As per section 2.7.1.1 for piping for remainder of the vessel

2.7.3 MULTICYCLONE AND FILTER SEPARATORS

Similar to receiving traps, the multicyclone and filter separators have quick opening closures that are operated at approximately yearly intervals under normal operation. The hazard zone assigned to the receiving traps in accordance with AS/NZS 60079.10.1 ZA.6.6.2.2b is also applicable to the filter coalescers, resulting in a hazardous Zone 2 area within 3 m radius around the discharge points is claimed.

Since the multicyclone and filter coalescers are enclosed vessels which handle process gas and liquids removed from the gas, the nozzle connections with piping, valves and fittings are also potential release points. To simplify hazardous area management, the classification for process gas piping will be applied to the vessels meaning a Zone 2 area of radius 2 m will be declared from the shell of the vessels.

The hazard zone adopted for the multicyclone and filter coalescers is summarised below:

Zone 2 3 m radius around the quick opening closures and 2 m radius from the edge of the vessels

2.7.4 SLOP TANKS

The slop tank installed at some stations are above ground storage tank used to collect condensate, compressor lube oil and water from the filter separators. The liquids in the tank are treated as a flammable fluid. The capacity of the tanks are approximately 1 kL. The tanks are provided with a vent that discharges to atmosphere. During the short period of the drainage from the filter coalescers to slop tank, the liquids may form a flammable mist and additionally the gas may break through into the drain tank. The freely vented tank allows vapour/air mixtures to be released during the normal operation.

Therefore, the slop tank will contain flammable vapours and a range of hazard zones is required. As such, it is likely that a small amount of flammable gas mixture would continuously exist in the tank and within close proximity of the tank vent, surrounded by a larger region that may sometimes exist due to occasional higher gas quantities and an even larger region that represents very infrequent high gas quantities.

The slop tank installed at the Pine Creek Station has a pressure vacuum vent set at 2 kPa pressure / vacuum. The vapour or released gas is directed to atmosphere though the vent that installed in conjunction with an inline flame arrester and a cap. The flame arrester is required to provide protection against internal fire and explosion from outside sources of ignition. The vented gas will be discharged vertical downwards to the surrounding



equipment or pipework due to the installation of the cap. However, the additional extent zones are not claimed considering the relatively low operating pressure in the tank.

In accordance with API RP 505 Section 8.2.1, a Zone 0 area within 0.5 m radius, a Zone 1 area within 1.5 m radius and a Zone 2 area within 3 m radius of the vent point are declared. It is also stated in API RP 505 Section 8.2.1, a Zone 0 area should be claimed inside the tank above the liquid level due to the possibility of the continuous presence of the flammable mixture and a Zone 2 area with radius of 3 m should be placed around the shell of the equipment.

The hazard zones adopted for the slop tanks in the stations are summarised below:

- **Zone 0** Inside the tanks above the liquid level and 0.5 m radius from the tank discharge points
- **Zone 1** 1.5 m radius from the tank discharge points
- **Zone 2** 3 m radius around the shell of the tanks and from the tank discharge points

2.7.5 WATER BATH HEATERS

The indirect fired water bath heaters are fitted in some stations to heat the high pressure gas up to a temperature of 60 °C prior to pressure reduction, which prevents hydrate formation that may occur due to the Joule-Thomson effect when the temperature drops. The water bath heater consists of an insulated shell, removable process coils, removable fire tubes, stack burners, fuel gas conditioning train and control system.

During normal operation, a flame is projected into a submerged "fire-tube" located at the bottom of a horizontal cylindrical shelf. Energy is transferred through the tube wall to the surrounding bath fluid water. By means of natural convection, the water then transfers the required amount of energy into a series of process coils located at the top of the heater shell.

The water bath burners are continuously flaming and provided with burner elements to ensure that the flame is maintained. On loss of flame the fuel gas supply is shut down. Therefore it no hazardous area zones are claimed from the stacks.

The process tube within the water bath is fully welded with no potential points for release and would not normally provide a hazardous area. If there was a history of failure of the process coils leading to corrosion or erosion of the tubes, then a hazardous area should be claimed on the vent of the water bath heater. APA has not indicated that there have been failures of the process coils. Further, the maximum operating temperature of the water bath heaters is 95°C, the pH and the nitrate content of the water in the baths is checked frequently and APA has confirmed that the water bath heaters are treated with oxygen scavenger. Therefore no hazardous area is claimed from the water bath vent.

The potential release points on the vessels are process connections to the heaters. The classification for process piping will be applied to the process connections resulting in a *Secondary* grade of release and a related Zone 2 area with 2 m radius from the connection points in accordance with AS/NZS 60079.10.1 Clause ZA.6.4.2.4.

The hazard zone adopted for the water bath heaters is summarised below:

Zone 2 2 m radius from the high pressure gas connections of the vessel

2.7.6 KNOCKOUT POTS

The knockout pots are enclosed vessels which do not contribute to the hazardous area classification. However, the nozzle connections with piping, valves and fittings on the vessels are potential release points where small amounts of flammable mixture may



present. To simplify hazardous area management, the classification for process gas piping will be applied to the vessels meaning a Zone 2 area of radius 2 m will be declared from the shell of the vessels.

The hazard zone adopted for the knockout pots is summarised below:

Zone 2 2 m radius from the edge of the vessels

2.7.7 GAS CHROMATOGRAPH SYSTEM

Gas chromatograph (GC) system is a specific analyser to determine natural gas stream composition and anticipated concentration of the selected components.

The chromatograph system comprises of several components: the analyser, sample tubing, process vents, pressure control valve, pressure safety valve, carrier gas cylinders and tubing, calibration gas cylinder and tubing. The chromatograph system is located under a shelter with open sides, therefore it is considered as being adequately ventilated.

The process tubing and analyser contain gas at approximately 140 kPag. The tubing will be well maintained and minor release of the flammable gas may occur at the connections due to leakage, and as a result the grade of release is considered to be *Secondary*. Therefore, a Zone 2 hazardous area with 0.5 m radius is assigned around the whole chromatography system to cover the process tubing potential leakage points according to AS/NZS 60079.10.1 Clause ZA.6.4.2.3c, for the lighter-than-air flammable gas operating at a pressure between 100 and 700 kPag.

The carrier gas is helium that is a non-hazardous material and therefore the carrier gas cylinders and tubing do not contribute to the hazardous zone.

The calibration gas comprises mainly methane and stores in a gas cylinder with an approximate volume of less than 10 L. AS/NZS 60079.10.1 Clause ZA.6.4.2.6d states that cylinder located in ventilated area, whether in storage or installed for use, is not associated with a hazardous zone when the gas capacity is less than 30 m³. Therefore, no hazardous zone is claimed around the calibration gas cylinder. The calibration gas tubing is at the same operating pressure as the process tubing and will have the same Zone 2 hazardous with 0.5 m radius around the calibration gas tubing connections.

The chromatograph system has several vent points that release the sample line contents at low velocity during the normal operation. The amount of the released gas will be small and the discharge rate will be slow and readily dispersed. Consequently, they are regarded as sources of *Primary* grade release and a hazard Zone 1 within a sphere area with 0.5 m radius is declared from the vent tips in accordance with AS/NZS 60079.10.1 Clause ZA.6.6.2.8 for the low velocity vents in adequately ventilated area.

In addition, a larger region that represents infrequent higher gas quantities may exist surrounded the Zone 1 area due to the failure of pressure regulator or PSV. It results a *Secondary* grade of release and an additional Zone 2 area with 1 m radius is considered around the vents in accordance with AS/NZS 60079.10.1 Clause ZA.6.6.2.8.



The pressure relief valve will be activated in emergency. To simplify the hazardous area arrangement, it is treated the same as a vent as described above.

The hazard zones adopted for the chromatograph system are summarised below:

- **Zone 1** 0.5 m radius from the vent tips
- **Zone 2** 0.5 m radius around the gas chromatograph system, excluding the cylinders

1.0 m radius around the vent tips

2.7.8 WATER DEW POINT ANALYSER / GAS SAMPLER

The water dew point analyser uses a chilled mirror to determine the dew point of the gas. The analysers receive gas from the sampler as shown in the photographs below. The gas sampler consists of an insertion regulator installed in the pipework, a heated capillary tube a sample cylinder, solenoid valve, further regulators and pressure relief valves. A solenoid valve is installed inside a box with a removable cover. The box prevents ventilation and therefore the declared hazardous area zone is increased to Zone 1 for the interior of the box.

The water dew point analyser comprises of several components: the analyser, sample tubing, process vents, pressure control valve, pressure safety valve, gas cylinders and tubing, calibration gas cylinder and tubing. The analyser system is located under a shelter with open sides, therefore it is considered as being adequately ventilated.

The process tubing and analyser contain gas at approximately 140 kPag. The tubing will be well maintained and minor release of the flammable gas may occur at the connections due to leakage, and as a result the grade of release is considered to be *Secondary*. Therefore, a Zone 2 hazardous area with 0.5 m radius is assigned around the whole analyser system to cover the process tubing potential leakage points according to AS/NZS 60079.10.1 Clause ZA.6.4.2.3c, for the lighter-than-air flammable gas operating at a pressure between 100 and 700 kPag.

The water dew point analyser and gas sampler have local vents that will frequently vent gas at low velocity to atmosphere during the normal operation. The amount of the released gas will be small and the discharge rate will be slow due to the characterisation of the systems. Consequently, they are regarded as sources of *Primary* grade release and a hazard Zone 1 within a sphere area with 0.5 m radius is declared from the vent tips in accordance with AS/NZS 60079.10.1 Clause ZA.6.6.2.8 for the low velocity vents in adequately ventilated area.





The hazard zone adopted for the water dew point analyser / gas sampler is summarised below:

- Zone 10.5 m radius from the vent tips
 - Inside the sampler box
- **Zone 2** 0.5 m radius around the water dew point analyser system
 - 1.0 m radius around the vent tips

2.7.9 ODORANT INJECTION SYSTEM

2.7.9.1 Odorant Pipework

A majority of the odorant pipework is tubing fitted with compression fittings, these are considered to be well maintained and infrequently operated. This provides a *Secondary* source of release and a Zone 2 hazardous area. In accordance with AS/NZS 60079.10.1 Clause ZA.5.2.8 the associated hazardous area is 1.5 m in all directions down to ground level.

Zone 2 1.5 m in all directions extending down to ground level

2.7.9.2 Odorant Storage Tank

The odorant storage tank is a pressure vessel supplied with a natural gas blanket and a pressure relief valve.

AS/NZS 60079.10.1 Clause ZA.5.2.1.2c describes the hazardous area associated with the above ground vent on a storage tank as Zone 1 within 1.5 m radius in all directions from point of discharge and Zone 2 within the cylindrical volume below the Zone 1 area. This is applicable for a vent on a storage vessel. There will be a constant release from the vent however the volume of release is small and is considered to be a *Primary* and a Zone 1 area is claimed.

The connections on the pressure vessel will have the same Zone 2 hazardous area as the odorant pipework.

The tank pressure relief valve will provide a *Secondary* release. This will result in a Zone 2 hazardous area. The extent of the hazardous area will be as the Zone 1 area for the vent, but without the additional Zone 2 area.

- **Zone 1** 1.5 m in all directions from vent tip
- **Zone 2** Cylindrical volume below the Zone 1 area

1.5 m in all directions extending down to ground level for tank connections

2.7.9.3 Odorant Injection Pumps

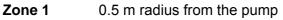
The odorant injection pumps are pneumatically powered from instrument gas that is derived from the transmission gas. During operation of pumps there will be a continuous vent of gas. There will be a *Continuous* release from the pump discharge through a bug screen located on the pump, refer photograph below. The minimum diameter of the instrument gas is small. It is reasonable to assume that the solenoid valve has a reduced bore, and a typical size is 1/8" (3.2 mm). Based on Table C9(a) from IP15 for a G(i) gas, a pressure of 5 bar(a) (400 kPag) and a 5 mm hole the hazard radius is <1 m. Therefore a hazardous radius of 0.5 m is claimed around the pump.

The pump is a high integrity positive displacement pump capable of developing high discharge pressures to the odorant, therefore it is assumed that any hazardous area



associated with leakage from the pump seals would be small and within the hazardous zone associated with the gas vent.





2.7.10 GROUND EFFECT

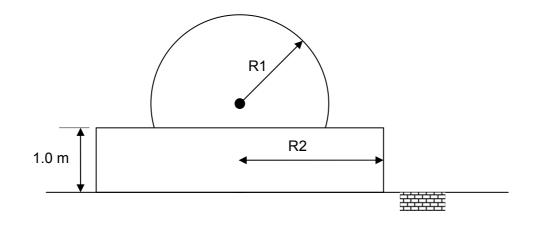
IP 15 Section 5.5 states that the determination of the full three dimensional envelope of the hazardous area zone shall consider the location of the release. The shape factor depends on height and orientation of the release. The key factors are:

- 1. For sources of release that are higher from grade than the hazardous radius, there is no impact due to ground effect.
- 2. For sources of release that are higher than 1 m from grade but less than the hazardous radius, there is a ground effect, up to 1 m above grade.
- 3. For sources of release that are 1 m or less from grade, there is a ground effect up to 1 m above grade.

The main process pipework has a hazardous area of radius 2 m, and is located less than 2 m above grade. The direction of release from flanged joints and screwed fittings could be in any direction, therefore ground effects are to be considered. Other hazardous area zones will be sufficiently above grade so that there is no ground effect, or the direction of release will be upwards and therefore ground effect is negligible.

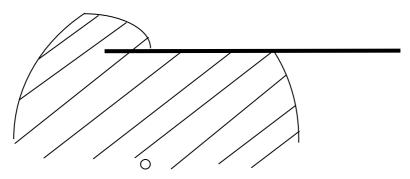
The ground effect increases the hazardous radius in accordance with IP 15 Table C9(b). A majority of the pipework in the facilities is to be located less than 1 m above grade. Interpolation of IP 15 Table C9(b) shows that the hazardous area for ground effect is 0.5 m larger than the hazardous area radius defined above, from the figure below, R2 = R1 + 0.5. Therefore the hazardous area at grade for gas pipework at transmission pressure will be 2.5 m to a height of 1 m.





2.7.11 VAPOUR BARRIERS

At Palm Valley Alice Springs and Mereenie the hazardous area zone impacts on a wall and the control hut, respectively. At these locations the hazardous area zone will extend around the barrier as shown in the diagram below. This is in accordance with AS/NZS 60079.10.1 Clause ZA.2 for measurements of distances.



Source of release



APPENDIX A HAZARDOUS AREA CLASSIFICATION DATA SHEET

Part I : Flammable material list and characteristics Part II : List of sources of release

Part I – Sheet 1 of 1								Revisio	on:	A	В	С	D	
Flammable material list and	d characte	ristics					-	Author:	:	YZW	тсв	ТСВ	тсв	
Amadeus Basin to Darwin Pi	peline							Checke	ed:	ТСВ	RDK	RDK	RDK	
Surface facilities								QA:						
								Date:		31/08/2011	24/08/2011	19/09/2011	26/09/2011	
Material	Phase	ADG Class	IP 15 Fluid Category	Boiling Point ⁰C	ASTM D86 5%(vol) Point of Stabilised Liquid at Atmospheric Pressure	Relative Density Of Fluid Vapour (Air SG=1) Liquid (Water SG=1)	Flash Poin Stabilise Liquid a Atmosphe Pressur ⁰C	ed It eric	Vapour LEL (Vol %) In Air	Vapour UEL (Vol %) In Air	Ignition Temperature °C	Temperature Class	Equipment Group	Source Of Data
1	2	3	4	5	6	7	8		9	10	11	12	13	14
Process gas and calibration gas (mixture)	Vapour	2.1	G(i)	-162	-	0.62	Gas	()	4.4 Methane)	17 (Methane)	537 (Methane)	T1	IIA	AS/NZS 60079.20
Odorant (tetrahydrothiophene and tertiary butyl mercaptan)	Liquid	3	С	82	-	0.939 (liquid) 3.06 (vapour)	-8		1.1*	12.1*	224	T3*	IIA	AS/NZS 60079.20 MSDS
Condensate	Liquid	3	С	69 [†]	-	2.97 [†]	-21 [†]		1.0 [†]	8.4 [†]	233 [†]	T3 [†]	IIA	AS/NZS 60079.20

Part	II – Sheet 1 of 4							Revision:	А	В	С	D	
List o	of sources of rel	ease					Ale and a second se	Author:	YZW	ТСВ	тсв	тсв	
Amac	leus Basin to Da	rwin Pipeline						Checked:	ТСВ	RDK	RDK	RDK	
Surfa	ce facilities						Earth Partners	QA:	ARD				
							DEVELOPMENT RESOURCES	Date:	31/08/2011	24/08/2011	19/09/2011	26/09/2011	
Р	rocess Equipm	ent Item	Flammable	Operating Conditions	Description of Flammable	Ventilation	Source Of R	elease	elease Distance From Source To			Equipment Group and	Section
No.	Description	Location	Material	Pressure and Temperature	Material Containment	Ventilation	Description	Grade*	Boundary of Zone 0	Boundary of Zone 1	Boundary of Zone 2	Temperature Class	occion
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Process piping		Vap. Cat "G(i)"	<u><</u> 9,650 kPag <u><</u> 60 °C	Closed system with flanges, piping joints and valves	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	2 m radius from the edge of piping routes	IIA, T1	2.7.1.1
2	Instrument gas piping		Vap. Cat "G(i)"	<u><</u> 770 kPag <u><</u> 60 °C	Closed system with flanges, piping joints and valves	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	1 m radius from the edge of piping routes	IIA, T1	2.7.1.2
3	Fuel gas piping	Amadeus	Vap. Cat "G(i)"	<u><</u> 700 kPag <u><</u> 60 °C	Closed system with flanges, piping joints and valves	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	0.5 m radius from the edge of piping routes	IIA, T1	2.7.1.3
4	Control valves	Basin to Darwin Pipeline surface facilities	Vap. Cat "G(i)"	<u>≤</u> 9,650 kPag _≤ 60 °C	Valves with packed gland / positioner / exhaust	Natural (open air)	Valve glands, positioners and connections	C&P&S	N/A	0.5 m radius around control valve positioners and exhaust	1 m radius around control valve positioners and exhausts;	IIA, T1	2.7.1.4
5	Pressure relief and safety relief valves		Vap. Cat "G(i)"	<u>≤</u> 9,650 kPag <u>≤</u> 60 °C	Valves and piping discharging vertically upwards	Natural (open air)	Pipe vent to atmosphere	C & P	N/A	1 m radius from vent tips	6 m laterally, 8 m above and 1 m below discharge points	IIA, T1	2.7.1.5
6	Mainline valves		Vap. Cat "G(i)"	<u>≤</u> 9,650 kPag <u>≤</u> 60 °C	Closed system with flanges, piping joints and valves	Natural (open air)	Connections and valve seals	S	N/A	Within solenoid valve enclosure	As Piping	IIA, T1	2.7.1.6
7	Local Vent Points		Vap. Cat "G(i)"	<u>≤</u> 9,650 kPag <u>≤</u> 60 °C	Valves and piping discharging vertically upwards	Natural (open air)	Pipe vent to atmosphere	S	N/A	N/A	6 m laterally, 8 m above and 1 m below discharge points	IIA, T1	2.7.1.7
* C –	Continuous; S –	Secondary; P	– Primary										

Part	II – Sheet 2 of 4	4						and the second	Revision:	А	В	С	D	
List	of sources of re	elease							Author:	YZW	тсв	тсв	тсв	
Ama	deus Basin to D	arwin Pipelin	e						Checked:	ТСВ	RDK	RDK	RDK	
Surfa	ce facilities							YFE arth Partners WIRONMENT	QA:	ARD				
							DI	NVIRONMENT EVELOPMENT ESOURCES	Date:	31/08/2011	24/08/2011	19/09/2011	26/09/2011	
Pr	ocess Equipmo	ent Item		Operating Conditions	Description of		Source Of	Release		Distance From	Source To		Equipment	
No.	Description	Location	Flammable Material	Pressure and Temperature	Flammable Material Containment	Ventilation	Description	Grade*	Boundary of Zone 0	Boundary of Zone 1	Boundary	of Zone 2	Group and Temperature Class	Section
1	2	3	4	5	6	7	8	9	10	11	1	2	13	14
8	Pine Creek Vent stack	Pine Creek	Vap. Cat "G(i)"	Atmospheric pressure Ambient temperature	Valves and piping discharging vertically upwards	Natural (open air)	Pipe vent to atmosphere	P&S	N/A	1 m radius from the vent tip		ly, 6 m below bove vent tip	IIA, T1	2.7.1.8
9	Pipeline blowdown		Vap. Cat "G(i)"	<u><</u> 9,650 kPag _≤ 60 °C	Valves and piping discharging vertically upwards	Natural (open air)	Pipe vent to atmosphere	S	N/A	N/A	extending 3 upwards downwards f	f radius 15 m 0 m vertically s and 1 m rom discharge bint be confirmed	IIA, T1	2.7.1.9
10	Low velocity vents	Amadeus Basin to	Vap. Cat "G(i)"	<u>≤</u> 9,650 kPag <u>≤</u> 60 °C	Valves and piping discharging vertically upwards	Natural (open air)	Pipe vent to atmosphere	S	N/A	N/A	Radius of 1 r all directions	n extending in from the point charge	IIA, T1	2.7.1.10
11	Scraper vessels	Darwin Pipeline surface facilities	Vap. Cat "G(i)"	<u><</u> 9,650 kPag <u><</u> 60 °C	Enclosed system with closures	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	quick oper As per secti piping for rer	directions from ning closure on 2.7.1.1 for nainder of the ssel	IIA, T1	2.7.2
12	Multicyclone and filter separators		Vap. Cat "G(i)"	<u>≤</u> 9,650 kPag <u>≤</u> 60 °C	Enclosed vessels with quick opening closures	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	closures an	around the d 2 m radius of the vessels	IIA, T1	2.7.3
			Liq. Cat "C"	<u><</u> 9,650 kPag <u><</u> 60 °C	Liquid drain pipework	Natural (open air)	Piping connections	S	N/A	N/A		ctions down to d level	IIA, T3	2.7.1.1

Part II – Sheet 3 of

List of sources of re

Amadeus Basin to Da

Surface facilities

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rt	II – Sheet 3 of 4							Revision:	А	В	С	D	
st e	of sources of relea	se					- Contraction of the local division of the l	Author:	YZW	ТСВ	тсв	ТСВ	
nad	deus Basin to Darwi	n Pipeline					EVEE	Checked:	тсв	RDK	RDK	RDK	
rfa	ce facilities						Earth Partners	QA:	ARD				
							DEVELOPMENT RESOURCES	Date:	31/08/2011	24/08/2011	19/09/2011	26/09/2011	
	Process Equipme	nt Item	Flammable	Operating Conditions	Description of Flammable		Source	Of Release	Dist	ance From Sou	urce To	Equipment Group and	
).	Description	Location	Material	Pressure and Temperature	Material Containment	Ventilation	Description	Grade*	Boundary of Zone 0	Boundary of Zone 1	Boundary of Zone 2	Temperature Class	Section
	2	3	4	5	6	7	8	9	10	11	12	13	14
3	Slop tanks		Vap. Cat "G(i)"	Atmospheric pressure Ambient temperature	Open vessels	Natural (open air)	Piping connections and vents	C&P&S	Inside the tank above liquid level and 0.5 m radius from tank discharge points	1.5 m radius from tank discharge points	3 m radius from around shell of tanks and from tank discharge points	IIA, T1	2.7.4
Ļ	Water bath heaters	Amadeus	Vap. Cat "G(i)"	<u><</u> 9,900 kPag <u><</u> 60 °C	Enclosed vessels	Natural (open air)	Piping connections	S	N/A	N/A	2 m radius from high pressure gas connections of vessel	IIA, T1	2.7.5
5	Knockout pots	Basin to Darwin Pipeline	Vap. Cat "G(i)"	<u><</u> 9,900 kPag <u><</u> 38 °C	Enclosed vessels	Natural (open air)	Piping connections	S	N/A	N/A	2 m radius from edge of vessels	IIA, T1	2.7.6
6	Gas chromatograph systems	surface facilities	Vap. Cat "G(i)"	≤ 140 kPag <u><</u> 60 °C	Closed tubing systems with joints and vents	Shelter with open sides (open air)	Tubing joints, drains and vents	P&S	N/A	0.5 m radius from vent tips	0.5 m radius around system, excluding cylinders 1.0 m radius around vent tips	IIA, T1	2.7.7
,	Water dew point analysers / gas samplers		Vap. Cat "G(i)"	<u><</u> 140 kPag <u><</u> 60 °C	Closed tubing systems with joints and vents	Shelter with open sides (open air)	Tubing joints, drains and vents	P&S	N/A	0.5 m radius from vent tips Inside sampler box	0.5 m radius around the system, 1.0 m radius around vent tips	IIA, T1	2.7.8
3	Odorant injection system pipework		Vap. Cat "C"	<u>≤</u> 9,650 kPag <u>≤</u> 60 °C	Closed system with flanges, piping joints and valves	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	1.5 m in all directions down to ground level	IIA, T3	2.7.9.1

* C – Continuous; S – Secondary; P – Primary

Part	II – Sheet 4 of 4	4						Revision:	А	В	С	D	
List	of sources of re	elease					atter the state of	Author:	YZW	ТСВ	ТСВ	ТСВ	
Amad	deus Basin to D	arwin Pipelir	ie					Checked:	ТСВ	RDK	RDK	RDK	
Surfa	ce facilities						Earth Partners	QA:	ARD				
							DEVELOPMENT RESOURCES	Date:	31/08/2011	24/08/2011	19/09/2011	26/09/2011	
Pr	ocess Equipm	ent Item	Flammable	Operating Conditions	Description of Flammable		Source C	of Release	Dis	tance From Sour	се То	Equipment Group and	Ocation
No.	Description	Location	Material	Pressure and Temperature	Material Containment	Ventilation	Description	Grade*	Boundary of Zone 0	Boundary of Zone 1	Boundary of Zone 2	Temperature Class	Section
1	2	3	4	5	6	7	8	9	10	11	12	13	14
					Enclosed vessel		Connections	S		N/A	1.5 m in all directions down to ground level		
19	Odorant injection system		Vap. Cat "C"	15 kPag	Blanket gas vent	Shelter with open sides	Pipe vent to atmosphere	Р	N/A	Radius of 1.5 m in all directions from vent tip	Within cylindrical volume below Zone 1	IIA, T3	2.7.9.2
	storage tanks	Amadeus Basin to Darwin Pipeline surface		<u>≤</u> 60 °C	Pressure relief valve and piping discharging vertically upwards	(open air)	Pipe vent to atmosphere	S		N/A	Radius of 1.5 m in all directions from vent tip		
20	Odorant injection system pumps	facilities	Vap. Cat "G(i)"	≤ 400 kPag <u><</u> 60 °C	Pneumatic pump instrument gas exhaust	Shelter with open sides (open air)	Piping connections and vents	с	N/A	N/A	Radius of 0.5 m	IIA, T1	2.7.9.3
21	Ground effect		Vap. Cat "G(i)"	<u>≤</u> 9,650 kPag <u>≤</u> 60 °C	Closed system with flanges, piping joints and valves	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	2.5 m laterally and extending to 1 m above grade for all process piping less than 2 m above grade	N/A	2.7.10



APPENDIX B HAZARDOUS AREA MAPPING DRAWINGS

For hazardous area mapping drawings, refer to Section 4 of the Hazardous Area Dossiers for each site.



3 Observation For Improvement (OFI)

OFI No.	Description	Proposed Remedy
	Cable has no ID tags.	Fit ID tags.
AD 1510-OFI-1	Blue sheath to cabling required.	Fit cabling with blue sheath.
Pressure	Cable has no support.	Provide cable support.
Transmitter AD 1510-PT-8	Provide equipotential bond at instrument stand.	Repair as description.
	Visible corrosion.	Repair as description.
	Nil Hazardous area certification detail to Australian Standards available.	Get certificate of conformity or replace equipment.
AD 1510-OFI-2 Valve Limit	Poor condition of equipment, corrosion throughout.	Review as necessary.
Switch AD 1510-ZSO-10	Equipment ID incorrectly labelled with respect to P&ID (MLV-10).	Repair as description.
AD 1510-ZSC-10	Tighten loose cable gland.	Repair as description.
	Cable UV damage to sheath.	Repair as description.
AD 1510-OFI-3	Equipment and conduit ID required.	Fit ID tags.
Solenoid Valve AD 1510-SVO-10	Equipment in poor condition.	Suggest replacing prior to failure.
AD 1510-SVC-10	Nil Hazardous area certification detail to Australian Standards available.	Get certificate of conformity or replace equipment.
	Equipment ID not as per P&ID (DPT- 44)	Replace equipment I.D according to P&ID
	Cable has no ID tags.	Fit ID tags.
AD 1510-OFI-4	Blue sheath to cabling required.	Fit cabling with blue sheath.
Differential Pressure Transmitter AD 1510-DPT-44	Provide instrument stand and associated earthing, cable protection and re-tube to vessel.	Repair as description.
	Remove sun cover and verify I.S certification.	Repair as description.
	Cable resting upon vessel.	Provide cable support.



OFI No.	Description	Proposed Remedy
	Circuit ID required.	Fit ID tag.
AD 1510-OFI-5	Corrosion visible externally.	Repair as description.
Solenoid Valve AD 1510-SVO-16 AD 1510-SVC-16	Solenoids are old and in bad condition.	Suggest replacing (suggest new JB and cable connected to new solenoids).
	Flexible conduit has UV damage.	Repair as description.
AD 1510-OFI-6	Replace perished seal, uncertified plug and elbow	Repair as description and provide relevant certification.
Junction Box AD 1510- JB-16	Verify Ex rating of enclosure, replace as required	Review as description.
	Remediate UV damage cable and flexible conduit	Suggest replacing.
AD 1510-OFI-7 Valve Limit	Equipment ID required.	Fit ID tags.
Switch AD 1510-ZSO-16	Verify installation of I.S barrier.	Review as required.
AD 1510-ZSC-16	Blue sheath to cabling required.	Fit cabling with blue sheath.
AD 1510-OFI-8 Temperature	Equipment not in hazardous area.	Review hazardous area zones and repair.
Element	Equipment and cable I.D required.	Fit ID tags.
AD 1510- TE-17A	Sheath has UV damage	Repair as description.
	Equipment and cable require ID labels.	Fit ID tags.
AD 1510-OFI-9 Low Level Switch AD 1510- LSL-17	Nil certification for adaptor JB, suggest replacement with flameproof equipment.	Repair as description.
	Surface corrosion exists.	Repair as required.
	Equipment and cable I.D required.	Fit I.D tags.
AD 1510-OFI-10 Temperature	UV damage and mechanical damage at conduit entry.	Repair as description.
Transmitter	Blue sheath to cabling required.	Fit cabling with blue sheath.
AD 1510-TIT-17	Re-route cable exposed to flue heat radiation.	Repair as description.



OFI No.	Description	Proposed Remedy
	Equipment and circuit I.D required.	Fit I.D tags.
AD 1510-OFI-11	Replace uncertified plug.	Repair as description.
Temperature	Equipment and circuit I.D required.	Fit I.D tags.
Switch AD 1510-TSH-17	Adaptor cracked and uncertified gland.	Replace adaptor and gland and obtain certification for gland.
	Nil Australian certification.	Replace/review as required.
AD 1510-OFI-12 Solenoid	Equipment and cable I.D. required.	Repair as description.
AD 1510-DPT-44	Replace uncertified gland and JB.	Repair as description and obtain certification.
AD 1510-OFI-13	Equipment and circuit I.D required.	Fit I.D tag.
Pressure Convertor AD 1510-IP-1	Ex d, n, i certified to EM/CSA and not Australian, hence conformity assessment or replacement required.	Review as description.
	Remediate and re-route cable sheath resting on adjacent pressure switch.	Repair as description and provide cable support.
	Equipment and cable I.D required.	Fit I.D. tags.
	Tighten bolt to JB.	Repair as description.
AD 1510-OFI-14	Equipotential bond equipment to surrounding steel.	Repair as description.
Solenoid AD 1510- TY-1	Remediate JB top entry containing silicone sealant.	Repair as description.
	Illegible coil Ex rating.	Repair as description.
	Suggest to replace complete assembly	Review as description.
AD 1510-OFI-15 Pressure Switch	Equipment and cable I.D required.	Fit I.D tags.
AD 1510-PSH	Tighten loose cable gland.	Repair as required.
	Replace uncertified plug.	Replace as description.
AD 1510-OFI-16 Pressure Switch	Equipment cable I.D required.	Fit I.D tags.
AD 1510- PSL	Replace uncertified plug.	Replace as description.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-17	Equipment and cable I.D required.	Fit I.D tags.
Solenoid	Replace uncertified cable gland.	Review as description.
AD 1510- SV-2	Remediate cable sheath.	Repair as required.
AD 1510-OFI-18	Equipment and cable I.D required.	Fit I.D tags.
Solenoid	Replace uncertified cable gland.	Review as description.
AD 1510- SV-1	Replace equipment due to cracked electrical entry.	Review as description.
	Circuit I.D required.	Fit I.D tag.
AD 1510-OFI-19 Solenoid Valve	Remediate UV damaged flexible conduit.	Repair as description.
AD 1510-SVO-18	Visible external corrosion	Repair as required.
AD 1510-SVC-18	Replace solenoids due to age and condition (suggest new JB and cable connected to new solenoids).	Repair as description.
	Replace perished seal, uncertified plug and elbow	Repair as description and obtain certification for plug and elbow.
AD 1510-OFI-20 Junction Box AD 1510- JB-18	Remediate UV damaged cable and flexible conduit.	Repair as description.
AD 1510- JB-16	Verify Ex rating of enclosure, replace as required (suggests new JB and cable connected to new solenoids).	Repair as description.
AD 1510-OFI-21	Equipment I.D required.	Fit I.D tags.
Valve Limit	Verify installation of I.S barrier.	Repair as required.
Switch AD 1510-ZSO-18	Cable with exposed armour.	Re-terminate.
AD 1510-ZSC-18	Blue sheath to cabling required.	Fit cabling with blue sheath.
AD 1510-OFI-22 Temperature	Equipment and cable I.D required.	Fit I.D tag.
Element AD 1510-TE-19A	Replace uncertified elbow (if deemed H.A).	Replace as description.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-23 Low Level Switch AD 1510- LSL-19	Equipment and cable I.D required.	Fit I.D tags.
	Replace adaptor/JB containing nil evidence of certification.	Review as description.
	Provide insulation to cable to minimise the effects of flue temperature.	Repair as required.
	Equipment and cable I.D required.	Fit I.D tags.
AD 1510-OFI-24 Temperature Transmitter AD 1510-TIT-19	Remediate blue sheath with UV damage.	Repair as description.
	Provide insulation and support to cable to minimise the effects of flue temperature.	Repair as required.
AD 1510-OFI-25 Temperature Switch AD 1510-TSH-19	Equipment and cable I.D required.	Fit I.D tags.
	Blue cable sheath indicator I.S, verify installation of I.S and review accordingly.	Repair as description.
	Replace uncertified plug.	Review as description.
AD 1510-OFI-26	Equipment and cable I.D required.	Fit I.D tags.
Temperature Switch AD 1510-TSH	Tighten loose cable gland.	Repair as description.
	Verify Ex rating (if any) of adaptor and replace as necessary.	Repair as description.
AD 1510-OFI-27 Solenoid AD 1510-SV-1 AD 1510-SV-2	Equipment and cable I.D required.	Fit I.D tags.
	Remediate sheath with UV damage and remove blue sheath indicating I.S installation.	Repair as description.
	Verify glands and adaptors are suitably Ex rated.	Review as description.
	Re-route cable to provide adequate support.	Repair as description.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-28 Pressure Switch AD 1510-PSL-2	Equipment and cable I.D required.	Fit I.D tag.
	For blue sheath indicating I.S, verify barriers, installation and review accordingly.	Review as description.
	Provide cable support.	Repair as description.
AD 1510-OFI-29	Equipment and cable I.D required.	Fit I.D tag.
Pressure Switch AD 1510-PSH	Provide cable support.	Repair as description.
	Verify gland Ex rating.	Review as description.
AD 1510-OFI-30 Solenoid Valve AD 1510-ESD-3	Equipment and cable I.D required.	Fit I.D tag.
	Replace uncertified cable gland.	Repair as description.
AD 1510 OEL 21	Equipment and cable I.D required.	Fit I.D tag.
AD 1510-OFI-31 Solenoid Valve AD 1510-TY-1	Blue sheath to be removed/ covered with blank sheath.	Repair as description.
	Nil Ex detail available to verify	Verify Ex protection.
AD 1510-OFI-32	Equipment and cable I.D required.	Fit I.D tag.
Pressure Convertor AD 1510-I/P	Re-route cable supported by adjacent regulator and provide cable support.	Repair as description.
AD 1510-OFI-33 Temperature Switch AD 1510-TSH-24	Remediate UV damaged blue sheath.	Repair as description.
	Equipotentially bond instrument support stand to adjacent structural steel.	Repair as description.
	Provide adequate support to capillary tube.	Provide capillary tube support.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-34 Temperature Transmitter AD 1510-TIT-23	Equipment and cable I.D required.	Fit I.D tag.
	Provide cable support.	Repair as description.
	Remediate UV damaged cable sheath.	Repair as description.
	Verify gland is suitably Ex rated.	Verify Ex protection.
	Obtain replacement Ex data plate from vendor and verify Ex method of installation.	Review as description.
	Illegible name plate, nil Ex detail available.	Review as description.
AD 1510-OFI-35 Solenoid Valve	Corrosion external, UV faded.	Repair as description.
AD 1510-SVC-31	Uncertified adaptor to JB.	Review as description.
	Replace with respect to age and condition.	Replace equipment.
AD 1510-OFI-36	Replace perished seal and corroded bolts.	Replace as description.
	Remediate UV damage sheath and provide cable support.	Repair as description.
Junction Box AD 1510-JB-31	Replace uncertified gland and adaptor.	Replace as description.
	Suggest removal and direct connect cabling to new solenoid valve.	Repair as description.
	Equipotential bond equipment stand.	Repair as description.
AD 1510-OFI-37	Equipment and cable I.D required.	Fit I.D tag.
Valve Limit Switch AD 1510-ZSO-31 AD 1510-ZSC-31	Remediate UV damaged sheath and replace perished blue sheath.	Replace as description.
	Verify I.S barrier within control hut.	Verify as description.
AD 1510-OFI-38 Pressure Switch AD 1510-PSL-34	Remediate UV damage sheath and provide blue sheath.	Repair as description.
	Illegible nameplate, severe corrosion, suggests replacement.	Repair as description.
	Verify I.S barrier installation.	Verify as description.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-39 Differential Pressure Transmitter AD 1510-FT-38A	Cable I.D required.	Fit I.D tag.
	Tighten loose gland.	Repair as description.
	Remediate blue cable sheath and support cable.	Repair as description.
	Replace plug (Swagelock fitting) with electrical type plug.	Repair as description.
AD 1510-OFI-40	Cable I.D required.	Fit I.D tag.
Differential Pressure	Cable/gland with exposed armour.	Re-terminate.
Transmitter AD 1510-FT-38	Remediate blue sheath and support cable.	Repair as description.
AD 1510-OFI-41	Circuit I.D required.	Fit I.D tag.
Pressure	Tighten loose gland.	Repair as description.
Transmitter AD 1510-PT-38	Remediate blue sheath and support cable.	Repair as description.
AD 1510-OFI-42	Equipment and circuit I.D required.	Fit I.D tag.
Temperature Transmitter	Remediate blue sheath and support cable.	Repair as description.
AD 1510-TIT-38	Provide sun cover/shield.	Repair as description.
	'I.S circuits inside' label required.	Fit label as description.
AD 1510-OFI-43 Junction Box AD 1510-ISJB-1	Corrosion external evident, internal inspection required.	Review as description.
	UV damaged sheath's requiring remediation.	Repair as description.
	Cable support required.	Repair as description.
AD 1510-OFI-44 High High Level Switch AD 1510-LSHH- 37/37A	Equipment I.D required.	Fit I.D tag.
	Remediate blue sheath and support cable.	Repair as description.
	Verify I.S barrier installation.	Repair as description.
	Surface corrosion visible.	Review as description.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-45 Pressure Differential Transmitter AD 1510-PDT-37	Remediate blue cable sheath.	Repair as description.
	Obtain Ex rating details from vendor, review as required.	Review as description.
	Illegible name plate, nil Ex detail available.	Repair as description.
AD 1510-OFI-46	External corrosion, UV faded.	Repair as required.
Solenoid Valve AD 1510-SVC-41	Uncertified adaptor to JB.	Review as description.
	Replace with respect to age and condition.	Repair as description.
	Replace perished seal.	Repair as description.
	Remediate UV damaged sheath, provide cable support.	Repair as description.
AD 1510-OFI-47 Junction Box AD 1510-JB-41	Replace uncertified gland and adaptor.	Replace as description.
	Suggest removal and direct connect cabling to new solenoid valve.	Review as description.
	Circuit I.D required.	Fit I.D tag.
AD 1510-OFI-48	Equipment I.D required.	Fit I.D tag.
Valve Limit Switch	Remediate blue cable sheath.	Repair as description.
AD 1510-ZSO-41 AD 1510-ZSC-41	Verify I.S barrier installation.	Repair as description.
AD 1510-OFI-49	Remediate blue sheath.	Repair as description.
AD 1510-OFI-49 Pressure Switch AD 1510-PSL-44	Illegible nameplate, severe corrosion. Suggest replacement.	Repair as description.
	Verify I.S barrier installation.	Repair as description.
AD 1510-OFI-50 Differential Pressure Transmitter AD 1510-FT-48A	Tighten loose gland.	Repair as description.
	Remediate blue sheath and provide cable support.	Repair as description.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-51 Differential Pressure Transmitter AD 1510-FT-48	Cable I.D required.	Fit I.D tag.
	Re-terminate cable at gland.	Repair as description.
	Remediate blue sheath and provide cable support.	Repair as description.
AD 1510-OFI-52 Pressure Transmitter AD 1510-PT-48	Tighten cable gland.	Repair as description.
	Remediate blue sheath and provide cable support.	Repair as description.
	Device contains nil AUS Ex certification. Conformity assessment or device replacement required.	Review as description.
AD 1510-OFI-53 Temperature Transmitter AD 1510-TIT-48	Equipment and cable I.D required.	Fit I.D tag.
	Blue cable sheath and cable support required.	Repair as description.
AD 1510-OFI-54 Temperature	Cable I.D required.	Fit I.D tag.
Element AD 1510-TE-48	Blue cable sheath required.	Repair as description.
	'I.S circuit inside' label required.	Fit label as description.
AD 1510-OFI-55 Junction Box AD 1510-ISJB-2	External corrosion, internal inspection required.	Review as description.
	Remediate UV damaged sheath and support cables.	Repair as description.
AD 1510-OFI-56 High High Level Switch AD 1510-LSHH- 47/47A	Equipment and cable I.D's required (1 cable only)	Fit I.D tags.
	Provide cable support.	Repair as description.
	Verify I.S barrier installation.	Verify as description.
	Surface corrosion visible.	Repair as description.
AD 1510-OFI-57 Pressure Differential Transmitter AD 1510-PDT-47	Remediate blue sheath and cable support.	Repair as description.
	Obtain Ex rating details from vendor, review as required.	Review as description.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-58 Temperature Switch AD 1510-TSL-57	Remediate blue cable sheath.	Repair as description.
	Verify I.S barrier installation.	Verify as description.
	Illegible nameplate, corrosion. Suggest replacement.	Repair as description.
AD 1510-OFI-59	Remediate blue sheath and cable support.	Repair as description.
Pressure Switch	Verify I.S barrier installation.	Verify as description.
AD 1510-PSL-58	Illegible nameplate, corrosion. Suggest replacement.	Repair as description.
AD 1510-OFI-60	Circuit I.D required (59B only).	Fit I.D tag.
Pressure Switch AD 1510-PSH-	Remediate blue sheath and provide cable support.	Repair as description.
59A/59B	Verify I.S barrier installation.	Verify as required.
AD 1510-OFI-61	Equipment I.D required.	Fit I.D tag.
Temperature Element	Remediate blue sheath and provide cable support.	Repair as description.
AD 1510-TE-56	Surface corrosion visible.	Repair as description.
AD 1510-OFI-62 Pressure	Tighten loose gland.	Repair as description.
Transmitter AD 1510-PT-61	Remediate blue sheath and provide cable support.	Repair as description.
AD 1510-OFI-63 Valve Limit Switch AD 1510-ZSO- 100 AD 1510-ZSC- 100	Provide support to cable resting upon pipe-work.	Repair as description.
	Nil Ex certification available.	Obtain Ex certification or replace the equipoment.
	Open entry requiring blank plug.	Repair as description.
	Review installation method of protection which currently has nil Ex protection unless I.S barrier installed.	Repair as description.
	Equipment I.D required.	Fit I.D tag.



OFI No.	Description	Proposed Remedy
AD 1510-OFI-64	Equipment and cable I.D required.	Fit I.D tag.
Solenoid Valve AD 1510-SVO- 100	Nil Ex certification to Australian Standards. Conformity assessment or equipment replacement required.	Review as description.
AD 1510-SVC- 100	Replace uncertified cable glands.	Repair as description.
AD 1510-OFI-65 Junction Box	Equipment I.D required.	Fit I.D tag.
AD 1510-JB	Verify Ex ratings of cable glands.	Review as description.
	Equipment and cable I.D required.	Fit I.D tag.
AD 1510-OFI-66 Junction Box	Provide conduit support to black sheathed cable.	Repair as description.
AD 1510-JB	Provide blue sheath to black sheathed cable.	Repair as description.
AD 1510-OFI-67	Equipment and cable I.D required.	Fit I.D tag.
Pressure	Provide cable support.	Repair as description.
Differential Transmitter	Remediate blue sheath.	Repair as description.
AD 1510-PDT	Verify I.S barrier installed and Ex rating of device.	Review as description.
AD 1510-OFI-68	Equipment and cable I.D required.	Fit I.D tags.
Valve Limit Switch	Cable support required.	Repair as description.
AD 1510-ZSO- 115	Nil Ex certification available, further review of protection method required.	Review as description.
AD 1510-ZSC- 115	Uncertified bung installed.	Obtain certification for bung.



OFI No.	Description	Proposed Remedy
	Equipment and circuit I.D required.	Fit I.D tags.
	Remediate sheath to suit installation of Ex i or Ex d.	Repair as description.
AD 1510-OFI-69 Pressure	Nameplate appears flameproof only rather than I.S hence Ex d considered.	Review as description.
Transmitter	Replace uncertified plug.	Repair as description.
AD 1510-PIT-147	Flamepath at gland compromised by Dust/insect nesting. Cleaning required at gland entry.	Repair as description.
	Verify I.S method of flameproof protection.	Review as description.
AD 1510-OFI-70	Equipment and cable I.D required.	Fit I.D tag.
Flow-meter AD 1510-FE- 122A	Remove sun cover to identify Ex certification and method of protection.	Repair as description.
AD 1510-OFI-71	Equipment and cable I.D required.	Fit I.D tag.
Pressure Transmitter AD 1510-PIT-123	Flameproof device installed with blue sheath. Further investigation required to verify I.S barrier installation.	Review as description.
	Cable I.D required.	Fit I.D tag.
AD 1510-OFI-72	Re-terminate cable gland with damaged sheath.	Repair as description.
Temperature Transmitter	Flameproof device installed with blue sheath. Verify I.S barriers.	Review as description.
AD 1510-TT-124	Provide cable support and sun cover.	Repair as description.
	Replace faded label.	Repair as description.



OFI No.	Description	Proposed Remedy
	'I.S circuit inside' label required.	Fit label as description.
	Blue sheathing to cabling required.	Repair as description.
AD 1510-OFI-73	Terminate unused conductors.	Repair as description.
Junction Box AD 1510-JB-001	Corrosion evident at gland plate. Provide locking nut at gland plate and remediate glands.	Repair as description.
	Remediate door seal.	Repair as description.
AD 1510-OFI-74	Equipment and cable I.D required.	Fit I.D tag.
Pressure Differential	Cable gland with exposed armour.	Re-terminate.
Transmitter AD 1510-PDT	Provide cable support.	Repair as description.
AD 1510-OFI-75	Equipment and cable I.D required.	Fit I.D tag.
Valve Limit Switch	Provide cable support.	Repair as description.
AD 1510-ZSO- 101 AD 1510-ZSC- 101	Nil Ex certification, verify installation method of protection.	Review as description.
	Equipment and cable I.D required.	Fit I.D tag.
AD 1510-OFI-76	Re-terminate cable due to damaged sheath at gland.	Repair as description.
Pressure Transmitter	Remove sun cover and verify plug rating.	Repair as description.
AD 1510-PIT-145	Verify Ex d installation by confirming nil I.S barrier. Remove blue sheath as required.	Verify and review as description.
AD 1510-OFI-77 Flow-meter	Equipment and cable I.D required.	Fit I.D tag.
AD 1510-FE-108 AD 1510-FT-108	Verify matching sensor/transmitter requirements with vendor.	Review as description.



OFI No.	Description	Proposed Remedy		
AD 1510-OFI-78 Pressure	Equipment and cable I.D required. (Equipment stamped)	Fit I.D tag.		
Transmitter	Cable support required.	Repair as description.		
AD 1510-PIT-111	Replace uncertified plug.	Repair as description.		
	Circuit I.D required.	Fit I.D tag.		
AD 1510-OFI-79 Temperature	Cable support required.	Repair as description.		
Transmitter	Verify I.S barrier installed.	Review as description.		
AD 1510-TIT-149	Obtain replacement Ex nameplate from vendor.	Repair as description.		
	Circuit I.D required.	Fit I.D tag.		
AD 1510-OFI-80 Pressure Transmitter AD 1510-PIT-113	Recommend equipment label in conjunction with nameplate stamp.	Repair as description.		
	Cable support required.	Repair as description.		
	Replace uncertified plug.	Repair as description.		
	Provide 'I.S circuits Inside' label.	Fit label as description.		
AD 1510-OFI-81	Blue sheathing required to cables.	Repair as description.		
Junction Box AD 1510-JB-002	Severe corrosion at gland plate requires remediation.	Repair as description.		
	Replace damaged washer to front door locking bolt.	Repair as description.		
AD 1510-OFI-82 Access Gap The access gap between the pipe work going to and from the heaters is spaced to provide a gap. The gap is not adequate for personnel and should not be used for access. However, the location of the gap provides an access route to the equipment at the inlet of the station and the new equipment for unit 8.		Modify pipework		
AD 1510-OFI-83 PSV Discharge PSV Discharge AD 1510-OFI-83 PSV Discharge AD 1510-OFI-83 PSV Discharge AD 1510-OFI-83 The PSV discharge is not straight, the stress on the discharge pipe work during relief will be increased AD 1510-OFI-83 PSV Discharge AD 1510-OFI-83 PSV Discharge				



OFI No.	Proposed Remedy	
AD 1510-OFI-84 Fibreglass Surge Diverter Box	Fibreglass surge diverter box is decomposed	Replace
AD 1510-OFI-85 Corrosion in IS Junction Box	Evidence of moisture ingress into the junction box through the door seal. This had caused corrosion on the gland locking nuts had suffered excessive corrosion caused by galvanic corrosion with the stainless steel box	Replace glands, Replace door seal
	P&IDs are not up to date in accordance with the installed equipment. Plant modifications do not appear to	
AD 1510-OFI-86 P&lds	be accurately monitored. The P&IDs did not reflect the installed equipment at the site. Only one generic P&ID of the water bath heaters was provided and was only relevant to the fuel gas conditioning train.	Update P&IDs
AD 1510-OFI-87 Ladders and Platform Non Compliance	Ladders and platforms on the water bath heaters are not compliant with AS 1657 "Fixed platforms, walkways, stairways and ladders - Design, construction and installation". The angle of the ladder is 90°, the riser is adjacent to the support structure and does not provide sufficient space for a safe hand grip, the transition between the ladder and the platform requires the operator to remove hands from the riser, and there is no chain across the opening.	Modify ladder in accordance with Australian standard.
AD 1510-OFI-88 Sunshades of Transmitters	Inconsistency in the inclusion of sunshades of transmitters. The sunshades should be easily removable for access to the instrument for inspection and maintenance	Add sunshades



OFI No.	OFI No. Description Proposed Remo					
AD 1510-OFI-89 Redundant Equipment	Redundant equipment not removed. Supports left in place on the skid	Remove redundant equipment and supports and terminate cables correctly.				
AD 1510-OFI-90 Crash Gate	Consider removal of crash gate					
AD 1510-OFI-91 Personnel Access and Egress	The addition of equipment at the site has limited the access and egress. The site has two personnel gates and one vehicle gate; both of these are located adjacent to the control hut. One side of the compound is a cliff and does not provide an access / egress route. Two other sides of the site are formed by the Chanel Island Power Station. APA should conduct a review of the site access and egress. Building Code Australia (BCA) provides recommendations.	Conduct risk assessment and if required include additional access gates				
AD 1510-OFI-92 Unprotected Cables	Unprotected earth cables providing trip hazardous and possibility of damage, refer photo.	Install in suitable conduit				
AD 1510-OFI-93 Pyrophoric Iron	Pipeline corrosion products collected in the filter elements can spontaneously combust on exposure to the atmosphere. This can be rectified by immersing the elements in water as they are removed from the filter vessel	Install a water trough close to the filter vessels with drain point and update filter change out procedures				
AD 1510-OFI-94 Exposed Grid	that the grid is to provide stability to					

Additional Information

AD 1510-OFI-082 – Access Gap

The access gap is too narrow as demonstrated in the photo below.







AD 1510-OFI-83 – PSV and Vent Discharges

The PSV and vent discharge pipe work is not straight and additional stress on the discharge pipe work.



AD 1510-OFI-85– Junction Box Corrosion

Evidence of water ingress and corrosion





AD 1510-OFI-87 - Non compliant access ladders to water bath heaters



AD 1510-OFI-90 - Crash gate obstruction





AD 1510-OFI 92 Unsecured earth cables

Unsecured earth cables, refer photo for OFI 13 for suitable cable protection.



AD 1510-OFI 94 – Exposed grid

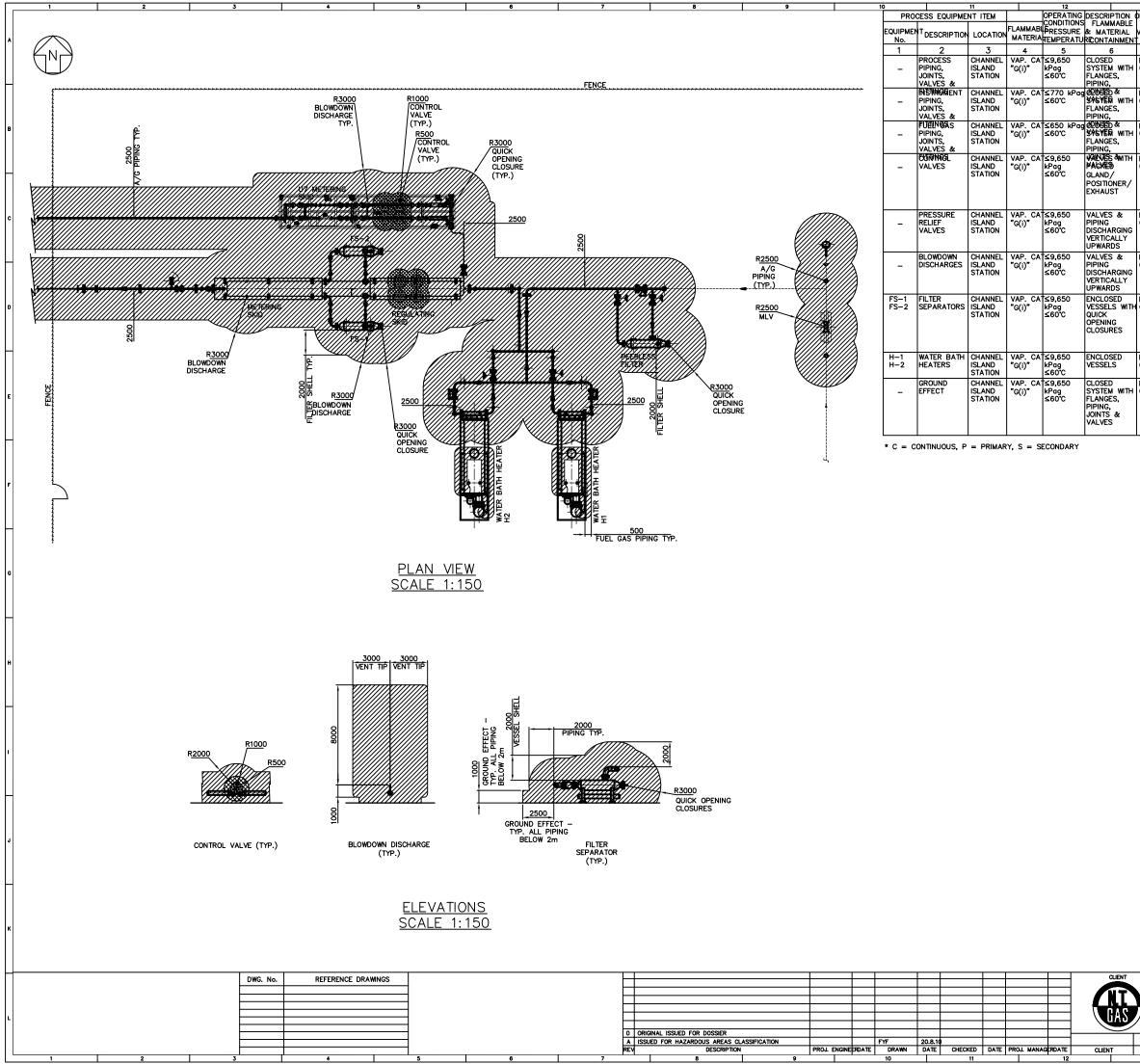




4 Hazardous Area Mapping Drawings

This section contains the hazardous area mapping drawings.

Drawing Number	Description	Revision
AD 1510-9401	Channel Island Meter Station Hazardous Area	0



NOTES: 1. THIS HAZARDOUS AREA CLASSIFICATION IS BASED ON CALCULATION 18756-1-REP-001 "HAZARDOUS AREA REPORT FOR NT GAS REGULATING AND METERING STATIONS". 2. GAS APPARATUS GROUP IIA AND GAS TEMPERATURE CLASS TI ARE APPLIED TO HAZARDOUS AREA CALCULATIONS. 3. A ZONE 1 AREA OF 0.3m RADIUS EXISTS AROUND THE QUICK OPENING CLOSURES ON THE FILTERS. 4. A ZONE 1 AREA OF 0.3m RADIUS EXISTS AROUND ALL CONTROL VALVES. LEGEND ZONE 0 ZONE 1 ò 2,5 5 7,5 10 12.5 15 ZONE 2 SCALE 1:150 METRES AMADEUS BASIN TO DARWIN PIPELINE CHANEL ISLAND STATION HAZARDOUS AREA PLAN © THIS DRAWING IS THE PROPERTY ON THIS DRAWING IS THE PROPERTY ON THIS DRAWING HOLD ALL COPYRIGHT. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITT WITHOUT PRIOR WRITTEN PERMISSION DRAWING NUMBER SHEET REVISION AD1510-9401 A1 0 DATE FYFE REF No

13			14	15		16		
DF	SOURCE OF	-		ISTANCE OF S				
VENTILATIO	NDESCRIPTIO	IGR AD	BOUNDARY O ZONE 0	BOUNDARY OF ZONE 1	BOUNDARY ZONE 2	GROUP AN OTEMPERATUI CLASS	REMARK	S A
7	8	9	10	11	12	13	14	
NATURAL (OPEN All	QOINTS, VALVE SEALS,	S	N/A	N/A	2m RADIUS FROM EDGE OF PIPING ROUTES.	IIA, T1	SECTION 7.1.1 & SECTION 7.8	
(OPEN AII	VALVE SEALS,	s	N/A	N/A	1m RADIUS FROM EDGE OF PIPING ROUTES.	IIA, T1	SECTION 7.1.2	
(OPEN AI	VALVE SEALS,	S	N/A	N/A	0.5m RADIU: FROM EDGE OF PIPING ROUTES.	S IIA, T1	SECTION 7.1.3	в
(OPEN AI	ÉOSITIONERS & CONNECTION	C, P &S	0.5m RADIUS AROUND FLOW CONTROL POSITIONERS EXHAUSTS	FLOW CONTROL	as Classified For Piping.	IIA, T1	SECTION 7.1.4	
NATURAL (OPEN AII	PIPE VENT RIJO ATMOSPHERE	P & S	N/A	Pros riadners / Erichiusent Tips	6m LATERALLY, 8m ABOVE AND 1m BELOW THE	IIA, T1	SECTION 7.1.5	c
NATURAL (OPEN AII	PIPE VENT RIO ATMOSPHERE	S	N/A	N/A	BISCHARGE LATERALLY, 8m ABOVE AND 1m BELOW THE	IIA, T1	SECTION 7.1.6	_
NATURAL (OPEN AII	FLANGES, QOINTS, VALVE SEALS, DRAINS & VENTS	S	N/A	N/A	AROUND THE QUICK OPENING CLOSURES AND 2m RADIUS FROI	M	SECTION 7.3	D
NATURAL (OPEN AII	PIPING CONNECTION	S	N/A	N/A	2HE RAGES FROM VESSE HP GAS	L IIA, T1	SECTION 7.5	
NATURAL (OPEN AII		s	N/A	N/A	2.9MNECTION LATERALLY AND EXTENDING 1m ABOVE GRADE FOR ALL PROCES	IIA, T1 ro	SECTION 7.8	E
					PIPING LESS THAN 2m			

ABOVE GRADE.



5 Hazardous Area Equipment Register and Certificates of Conformity

This section contains the hazardous area equipment register and associated certificates of conformity.

		Color Code Notes:	
		Certification is not Australian	
			-
	Channel Island Meter Station		-
			-
FYFE	Hazardous Area Equipment Register		-
Earth Partners		Doc No.: 18756-5-70-009	
ENVIRONMENT DEVELOPMENT		Rev: 0	
RESOURCES		Date: 18-Nov-2011	

Tog		Location	Instrument Type	Monufacturar	Madal	Sorial No.	Hazard Area	Haz	Area Classifi	ication	Ex Protection	Certification
Tag	P&ID No.	Location	Instrument Type	Manufacturer	Model	Serial No.	Drawing No.	Zone	Gas Group	Temp.	Ex Protection	Certification
AD-1510-PT-8	AD 1510-7002	DN300 inlet process pipe	Pressure transmitter	Rosemount	3051TG4A2B21BB4K7M5TI	01609699	AD 1510-9401	2	IIA	T1	Ex ia IIC T5 (40°C) Ex ia IIC T4 (70°C)	Aus Ex 1249X
AD-1510-ZSC/ZSO-10	AD 1510-7002	1510-MLV-6	Valve limit switch (close)/(open)	Limitorque			AD 1510-9401	2	IIA	T1	. ,	
AD-1510-SVC/SVO-10	AD 1510-7002	1510-MLV-6	Solenoid valve (close)/(open)	Skinner valve	X52HLB22501		AD 1510-9401	2	IIA	T1	Ex m class I group C & D T3C	Aus Ex 2541X
AD-1510-DPT-44	AD 1510-7002	Station inlet	Pressure differential transmitter	Rosemount	3051CD3A22AIAM5B4I7L4T1	RS0385952	AD 1510-9401	2	IIA	T1		Aus Ex 1249X
AD-1510-SVC/SVO-16	AD 1510-7002	Control valve AOV-16	Solenoid valve (close)/(open)	Skinner valve			AD 1510-9401	2	IIA	T1	illegible	illegible
AD-1510-JB-16	-	Control valve AOV-16	Junction box	SAE	FNJI		AD 1510-9401	2	IIA	T1	Ex d IIB T6 IP65	SAA FLP 693
AD-1510-ZSC/ZSO-16	AD 1510-7002	Control valve AOV-16	Valve limit switch (close)/(open)	-			AD 1510-9401	2	IIA	T1		
AD-1510-JBs	AD 1510-7002	Water bath heaters	Junction box	Govan	FW 4W		AD 1510-9401	2	IIA	T1	Ex d IIB T6 IP65	Aus Ex 157
AD-1510-LSL-17	AD 1510-7002	Water bath heater H-1	Low level switch	Murphy	L-1200		AD 1510-9401	2	IIA	T1	Ex d IIB T6	AUS Ex 609
AD-1510-TIT-17	AD 1510-7002	Water bath heater H-1	Temperature transmitter	Rosemount	3144PD2A1K7M5T1Q4XA	01793012	-	Not	in hazardous	s area	Ex ia, IIC T5 (75°C) T6 (50°C) IP 66/68	IECE BAS 07.0002x
AD-1510-TSH-17	AD 1510-7002	Water bath heater H-1	High temperature switch	United Electric	C120-120-1273	0434?	-	Not	in hazardous	sarea	Ex d, IIC, T6 (60°C)	IECE UL 03.0001
AD-1510-TSH	AD 1510-7002	Water bath heater H-1	High temperature switch	United Electric	Illegible		-		in hazardous		class 1 B, C & D, class 2, E, F & G, class 3	
AD-1510-ESD-3	AD 1510-7002	Water bath heaters pilot gas	Emergency shut down solenoid	Asco	EAB262C90(valve)/ EA801G41(solenoid)		-	Not	in hazardous	s area	Ex m, IIC T4 IP 65	AUS Ex 3032
AD-1510-I/P-1	AD 1510-7002	Water bath heater H-1	Pressure convertor	Fisher	646	19942396	AD 1510-9401	2	IIA	T1		
AD-1510-TY-1	AD 1510-7002	Water bath heater H-1	Solenoid	Asco			AD 1510-9401	2	IIA	T1		
AD-1510-PSH	AD 1510-7002	Water bath heater H-1	High pressure switch	United Electric	J120-156		AD 1510-9401	2	IIA	T1	Ex d IIC T6	IECE UL 03.0001
AD-1510-PSL	AD 1510-7002	Water bath heater H-1	low pressure switch	United Electric	J120-156		AD 1510-9401	2	IIA	T1	Ex d IIC T6	IECE UL 03.0001
AD-1510-SV-2	AD 1510-7002	Water bath heater H-1	Solenoid	Burkett	38690C	W2BUU090085	AD 1510-9401	2	IIA	T1	EX me, II, T6 IP 65	AUS Ex 3616x
AD-1510-SV-1	AD 1510-7002	Water bath heater H-1	Solenoid	Burkett	6519W06.0NBRPA	138690CW28UU090084	AD 1510-9401	2	IIA	T1	EX me, II, T6 IP 65	AUS Ex 3616x
AD-1510-SVC/SVO-18	AD 1510-7002	Control valve AOV-18	Solenoid valve (close)/(open)	Skinner valve			AD 1510-9401	2	IIA	T1	illegible	illegible
AD-1510-JB-18	-	Control valve AOV-18	Junction box	SAE	FNJI		AD 1510-9401	2	IIA	T1	Ex d IIB T6	SAA FLP 693
AD-1510-ZSC/ZSO-18	AD 1510-7002	Control valve AOV-18	Valve limit switch (close)/(open)				AD 1510-9401	2	IIA	T1		0,0,1 2, 000
AD-1510-JB	AD 1510-7063	SDV 100 JB unit 7 skid inlet	Junction box	Govan	FW 4W		AD 1510-9401	2	IIA	T1	Ex d IIB T6 IP 65	AUS Ex 157
AD-1510-LSL-19	AD 1510-7002	Water bath heater H-2	Low level switch	Murphy			AD 1510-9401	2	IIA	T1	class 1 group C & D	
AD-1510-TIT-19	AD 1510-7002	Water bath heater H-2	Temperature transmitter	Rosemount	3144D137M5F5	903376	-	Not	in hazardous	s area	IP 66/68	
AD-1510-TSH-19	AD 1510-7002	Water bath heater H-2	High temperature switch	United Electric	C120-120-1273	0434?	-	Not	in hazardous	s area	Ex d, IIC, T6 (-40°C to 60°C)	IECE UL 03.0001
AD-1510-TSH	AD 1510-7002	Water bath heater H-2	High temperature switch	United Electric	C120-120		-	Not	in hazardous	sarea	Ex d, IIB, T6 IP 66	AUS Ex 542
AD-1510-SV-2	AD 1510-7002	Water bath heater H-2	Solenoid	Burkett	ACID-23-6-PD55-JA02	W28UUQ90083	AD 1510-9401	2	IIA	T1	EX me, IIC, T6 IP 65	PTB Ex 95-0-2043x / AUS Ex 3616x
AD-1510-SV-1	AD 1510-7002	Water bath heater H-2 - fuel gas side	Solenoid	Burkett	ACID-23-6-PD55-JA02	W28UUQ90086	AD 1510-9401	2	IIA	T1	EX me, IIC, T6 IP 65	PTB Ex 95-0-2043x / AUS Ex 3616x
AD-1510-PSL	AD 1510-7002	Water bath heater H-2	Pressure switch	United Electric	J120-156		AD 1510-9401	2	IIA	T1	Ex d IIC T6 IP 66	AUS Ex 542
AD-1510-PSH	AD 1510-7002	Water bath heater H-1	High pressure switch	United Electric	J120-156		AD 1510-9401	2	IIA	T1	Ex d IIC T6	IECE UL 03.0001
AD-1510-ESD-3	AD 1510-7002	Water bath heater H-2 - fuel gas side	Solenoid valve	Asco	VMAGB2628210	14880 A-1	AD 1510-9401	2	IIA	T1	Ex me, IIC T3 (40°C) IP 67	AUS Ex 3498
AD-1510-TY1	AD 1510-7002	Water bath heater H-2 - fuel gas side	Solenoid	Ascomation	EABJ20A / EA800302	90244 A-2	AD 1510-9401	2	IIA	T1		
AD-1510-I/P	AD 1510-7002	Water bath heater H-2	Pressure convertor	Fisher	646	0016701681	AD 1510-9401	2	IIA	T1	Ex ia, d IIC T4, T6 IP 54	AUS Ex 959x/ IEC 529/ AUS Ex 1003x
AD-1510-TSH-24	AD 1510-7002	Water bath heater H-2 outlet	High temperature switch	Ashcroft	Τ7		AD 1510-9401	2	IIA	T1	Ex d IIB T6	Aus Ex 547
AD-1510-TIT-23	AD 1510-7002	Outlet water bath heater 1/2	Temperature transmitter	Rosemount	3144D2E7M5Q4	0639914	AD 1510-9401	ſ		1	IP 66	
AD-1510-SVC-31	AD 1510-7003	Slam shut valve SSV-31	Solenoid valve (close)	Asco			AD 1510-9401	2	IIA	T1		
AD-1510-JB-31	-	Control valve AOV-31	Junction box	SAE	FNJI		AD 1510-9401	2	IIA	T1	Group IIB class 1 & 2 Div 1 & 2 T6	SAA FLP 693
AD-1510-ZSC/ZSO-31	AD 1510-7003	Slam shut valve SSV-31	Valve limit switch (close)/(open)				AD 1510-9401	2	IIA	T1		
AD-1510-PSL-34	AD 1510-7003	DN 80 process piping between PCV-33 & 36	Low pressure switch	Ashcroft	P7		AD 1510-9401	2	IIA	T1		
AD-1510-FT-38A	AD 1510-7003	Flow meter FE-38	Pressure differential transmitter	Rosemount	3051PD2A22A1AM5I7L4Q4	0393459	AD 1510-9401	2	IIA	T1	Ex ia IIC T6	Aus Ex 1249X
AD-1510-FT-38	AD 1510-7003	Flow meter FE-38	Pressure differential transmitter	Rosemount	3051PD2A22A1AM5I7L4Q4	0393460	AD 1510-9401	2	IIA	T1	Ex ia IIC T5 (40°C) Ex ia IIC T4 (70°C)	Aus Ex 1249X

APA Group

		Color Code Notes:	
		Certification is not Australian	
	Channel Island Meter Station		
FYFE	Hazardous Area Equipment Register		
Earth Partners		Doc No.: 18756-5-70-009	
ENVIRONMENT DEVELOPMENT		Rev: 0	
RESOURCES		Date: 18-Nov-2011	

Тад	P&ID No.	Location	Instrument Type	Manufacturer	Model	Serial No.	Hazard Area	Haz	Area Classifi	cation	Ex Protection	Certification
Tag	T GID THU.	Location	instrument Type	Manalacturer	Woder	Conditivo.	Drawing No.	Zone	Gas Group	Temp.	Extrocodion	Ocraneation
AD-1510-PT-38	AD 1510-7003	Flow meter FE-38	Pressure transmitter	Rosemount	3051PG5A22A1AM5I7L4Q4	0393461	AD 1510-9401	2	IIA	T1	Ex ia IIC T5 (40°C) Ex ia IIC T4 (70°C)	Aus Ex 1249X
AD-1510-TIT-38	AD 1510-7003	Flow meter FE-38	Temperature transmitter	Rosemount	3144PDIA1I7M5F5Q4	02443227	AD 1510-9401	2	IIA	T1	Ex ia IIC T6 (50 °C) Ex ia IIC T5 (75 °C) IP 66/68	IECE BAS 07.0002x
AD-1510-ISJB-1	-	FS-1	Junction box	Crouse-Hinds	WDU 2.5		AD 1510-9401	2	IIA	T1	IP 66	
AD-1510-LSHH-37/37A	AD 1510-7003	Filter separator FS-1	High high level switch	Murphy	L-1200 DPDT		AD 1510-9401	2	IIA	T1	Ex d IIB T6	Aus Ex 609
AD-1510-DPT-37	AD 1510-7003	Filter separator FS-1	Pressure differential transmitter	Rosemount	3051CD2A22AIAB4M5I7	232135	AD 1510-9401	2	IIA	T1	Ex ia IIC T5 (40°C) Ex ia IIC T4 (70°C)	Aus Ex 1249X
AD-1510-SVC-41	AD 1510-7003	Slam shut valve SSV-41	Solenoid valve (close)	Asco	FA8 0163	S397 91-4 FA832064	AD 1510-9401	2	IIA	T1		
AD-1510-JB-41	-	Control valve SSV-41 meter run 2	Junction box	SAE	FNJI		AD 1510-9401	2	IIA	T1	Group IIB class 1 & 2 Div 1 & 2 T6	SAA FLP 693
AD-1510-ZSC/ZSO-41	AD 1510-7003	Slam shut valve SSV-41	Valve limit switch (close)/(open)				AD 1510-9401	2	IIA	T1		
AD-1510-PSL-44	AD 1510-7003	Meter run -2	Low pressure switch	Ashcroft	B42 4B		AD 1510-9401	2	IIA	T1		
AD-1510-FT-48A	AD 1510-7003	Meter run -2	Pressure differential transmitter	Rosemount	3051PD2A22A1AM5I7L4Q4	0459797	AD 1510-9401	2	IIA	T1	Ex ia IIC T6	Aus Ex 1249X
AD-1510-FT-48	AD 1510-7003	Meter run -2	Pressure differential transmitter	Rosemount	3051PD2A22A1AM5I7L4Q4	0459796	AD 1510-9401	2	IIA	T1	Ex ia IIC T5 (40°C) Ex ia IIC T4 (70°C)	Aus Ex 1249X
AD-1510-PT-48	AD 1510-7003	Flow meter FE-48	Pressure transmitter	Rosemount	3051PG5A22A1AM5I7L4Q4	0459809	AD 1510-9401	2	IIA	T1	Class 1 Div 2 Group A B C D T4	
AD-1510-TIT-48	AD 1510-7003	Flow meter FE-48	Temperature transmitter	Rosemount	3144PDIA1I7M5F5Q4	02443228	AD 1510-9401	2	IIA	T1	Ex ia IIC T6 (50 °C) Ex ia IIC T5 (75 °C) IP 66/68	IECE BAS 07.0002x
AD-1510-TE-48	AD 1510-7003	Meter run -2	Temperature Element	TCA	TC20SPRIA	680/08	AD 1510-9401	2	IIA	T1	Ex d e IIC T6 IP66	IECE TSA 06.0010
AD-1510-ISJB-2	-	Meter run -1/2	Junction box				AD 1510-9401	2	IIA	T1		
AD-1510-LSHH-47/47A	AD 1510-7003	Filter separator FS-2	High high level switch	Murphy	L-1200 DPDT		AD 1510-9401	2	IIA	T1	Ex d IIB T6	Aus Ex 609
AD-1510-DPT-47	AD 1510-7003	Filter separator FS-2	Pressure differential transmitter	Rosemount	3051CD2A22AIAB4M5I7	232133	AD 1510-9401	2	IIA	T1	Ex ia IIC T5 (40°C) Ex ia IIC T4 (70°C)	Aus Ex 1249X
AD-1510-TSL-57	AD 1510-7003	Meter run 1/2 skid outlet	Low temperature switch				AD 1510-9401	2	IIA	T1		
AD-1510-PSL-58	AD 1510-7003	Meter run 1/2 skid outlet	Low pressure switch	Ashcroft			AD 1510-9401	2	IIA	T1		
AD-1510-PSH-59B	AD 1510-7003	Meter run 1/2 skid outlet	High pressure switch	Allen-Bradley	BUL 836T-T236J		AD 1510-9401	2	IIA	T1	IP 66	
AD-1510-PSH-59A	AD 1510-7003	Meter run 1/2 skid outlet	High pressure switch	Allen-Bradley	BUL 836T-T236J		AD 1510-9401	2	IIA	T1	IP 66	
AD-1510-TE-56	AD 1510-7003	Meter run 1/2 skid outlet	Temperature element				AD 1510-9401	2	IIA	T1		
AD-1510-PT-61	AD 1510-7003	Meter run 1/2 skid outlet	Pressure transmitter	Rosemount	3051TG4A2B21BB4K7M5TI	01609701	AD 1510-9401	2	IIA	T1	Ex ia IIC T5	Aus Ex 1249X
AD-1510-ZSC/ZSO-100	AD 1510-7063	Unit 7 skid inlet	Valve limit switch (close)/(open)	Westlock	3449 BY22000-000		AD 1510-9401	2	IIA	T1		No certification
AD-1510-SVC/SVO-100	AD 1510-7063	Unit 7 skid inlet	Solenoid valve (close)/(open)	Bifold	38-961	0100-0694/ 0100-0692	AD 1510-9401	2	IIA	T1	Ex d IIC T6 IP 6	BASEEFA 96D1079
AD-1510-JB	AD 1510-7063	Unit 7 skid end	Junction box	Crouse-Hinds	GUA		AD 1510-9401	2	IIA	T1	Ex d IIB T6 IP 66/67	AUS Ex 319
AD-1510-DPT	AD 1510-7063	Unit 7 standby run	Differential pressure transmitter	Rosemount	3051CD3A02AIBM5K7S5	RS0880414	AD 1510-9401	2	IIA	T1		
AD-1510-ZSC/ZSO-115	AD 1510-7063	Unit 7 standby run	Limit switch	Westlock	3449-BY2300-000		AD 1510-9401	2	IIA	T1		
AD-1510-PIT-147	AD 1510-7063	Unit 7 standby run	Pressure transmitter	Rosemount	3051TG4A2B21BB4M5E7	RS0619849	AD 1510-9401	2	IIA	T1	Ex d IIC T5 (40°C) Ex d IIC T4 (70°C) IP 65	Aus Ex 1347x
AD-1510-FE-122A/B	AD 1510-7063	Unit 7 standby run	Turbine flowmeter	Elster	TRZG400 DN800ANSI600	80046289/2000	AD 1510-9401	2	IIA	T1	Ex d IIB T6	illegible
AD-1510-PIT-123	AD 1510-7063	Unit 7 standby run	Pressure transmitter	Rosemount	3051TG4A2B21BB4E7M5Q4	RS0648148	AD 1510-9401	2	IIA	T1	Ex d IIC T5(40°C) IP 65	Aus Ex 1347x
AD-1510-TT-124	AD 1510-7063	Unit 7 standby run	Temperature transmitter	Rosemount	3144D2E7M5Q4	0639915	AD 1510-9401	2	IIA	T1	Ex d IIC T6 IP 66/68	AUS Ex 3271
AD-1510-JB-001	AD 1510-7063	Unit 7 meter skid	Junction box	Crouse Hinds	JBI5455-1GP-LD83261		AD 1510-9401	2	IIA	T1	Ex ia IIC T6 IP 66	
AD-1510-DPT-xxx	AD 1510-7063	Unit 7 duty run filter	Pressure differential transmitter	Rosemount	3051CD3A02AIBM5K7S5	RS0880413	AD 1510-9401	2	IIA	T1	Ex ia IIC T5 (40°C) T4 (70°C) IP 65	Aus Ex 1249X
AD-1510-ZSC/ZSO-101	AD 1510-7063	Unit 7 duty run	Limit switch	Westlock	3449-BY-00-2200-000		AD 1510-9401	2	IIA	T1		
AD-1510-PIT-145	AD 1510-7063	Unit 7 duty run	Pressure transmitter	Rosemount	3051TG4A2B21BB4M5E7	RS0608416	AD 1510-9401	2	IIA	T1	Ex d IIC T5 (40°C) IP 65	AUS Ex 1347x
AD-1510-FE-108	AD 1510-7063	Unit 7 duty run	Metering	Rosemount	CHF300M999NS6540	395381	AD 1510-9401	2	IIA	T1	Ex i IIB T6	Aus Ex 1390X
AD-1510-FT-108	AD 1510-7063	Unit 7 duty run	Mass flow metering	Elite	BFT 9739 E5SSA	354913(sensor) 2054909 (unit)	AD 1510-9401				Ex d IIB/IIC T6	AUS Ex 1390x

		Color Code Notes:	
		Certification is not Australian	4
Cha	annel Island Meter Station		
	ous Area Equipment Register		-
Earth Partners	ous Area Equipment Register		1
ENVIRONMENT DEVELOPMENT		Doc No.: 18756-5-70-009 Rev: 0	
RESOURCES		Date: 18-Nov-2011	

Тад	P&ID No.	Location	Instrument Type	Manufacturer	Model	Serial No.	Hazard Area		Area Classif		Ex Protection	Certification
_							Drawing No.	Zone		Temp.		
AD-1510-PIT-111	AD 1510-7063	Unit 7 duty run	Pressure transmitter	Rosemount	3051TG4A2B21BB4E7M5Q4	RS0648146	AD 1510-9401	2	IIA	T1	Ex d IIC T6 (40°C) IP 65	Aus Ex 1347x
AD-1510-TIT-149	AD 1510-7063	Unit 7 duty run	Temperature transmitter	Rosemount	314402E7M5X1	0640152	AD 1510-9401	2	IIA	T1		
AD-1510-PIT-113	AD 1510-7063	Unit 7 line pressure	Pressure transmitter	Rosemount	3051TG4A2B21BB4E7M5Q4	RS0648147	AD 1510-9401	2	IIA	T1	Ex d IIC T5 (40°C) IP 65	Aus Ex 1347x
AD-1510-JB-002			Junction box	Crouse Hinds	JBI5455-1GP-LD83260		AD 1510-9401	2	IIA	T1	Ex ia IIC T6 IP 66	
AD-1510-ESV-1/2	AD 1510-7005	Water bath heater fuel gas supply line	Transducer	Fisher	646		AD 1510-9401	2	IIA	T1	Ex d IIC T6	Aux Ex 1003X
AD-1510-PSL-xxx	AD 1510-7005	Water bath heater fuel gas supply line	Low pressure switch	United Electric	J120-156		AD 1510-9401	2	IIA	T1	Ex d IIC T6	Aus Ex 542
AD-1510-SV-1/2	AD 1510-7005	Water bath heater fuel gas supply line	Solenoid valve	Asco	VMAGB262B210		AD 1510-9401	2	IIA	T1	Ex me IIC IP67	Aus Ex 3498
AD-1510-TT-xxx	AD 1510-7005	Water bath heater fuel gas supply line	Temperature transmitter	United Electric	C120-120		AD 1510-9401	2	IIA	T1	Ex d IIC T6	Aus Ex 542
		······					AD 1510-9401	2	IIA	T1		7403 EX 042
AD-1510-HSC-10	AD 1510-7002	1510-MLV-10	Valve hand switch (close)	-	-		-		in hazardous			
AD-1510-HSO-10	AD 1510-7002	1510-MLV-10	Valve hand switch (open)	-	-		-		in hazardous			
AD-1510-PSH-31	AD 1510-7002	Slam shut valve SSV-31	High pressure switch	NA	NA		AD 1510-9401	2	IIA	T1		
AD-1510-PSH-31		Slam shut valve SSV-31		NA	NA				IIA	T1		
	AD 1510-7003		High pressure switch	INA	NA		AD 1510-9401	2				
AD-1510-ZLC-10	AD 1510-7002	1510-MLV-10	Light switch (close)	-	-		-		in hazardous			
AD-1510-ZLO-10	AD 1510-7002	1510-MLV-10	Light switch (open)	-	-		-		in hazardous			
AD-1510-RTU	-	Control room	Remote terminate unit	-	-		-	Not	in hazardous	s area		
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FYFE	Channel Island Meter Station Hazardous Area Equipment Register	Color Code Notes: Certification is not Australian	
Earth Partners		Doc No.: 18756-5-70-009	
ENVIRONMENT DEVELOPMENT		Rev: 0	
RESOURCES		Date: 18-Nov-2011	

Ter		Leasting	la eta une e et True e	Manufactures Madel Cariel Na		dal Sarial No. Hazard Area Haz A		Area Classifi	cation	Eu Droto stie r	Opstification	
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Earth Partners		Doc No.: 18756-5-70-009	
ENVIRONMENT DEVELOPMENT		Rev: 0	
RESOURCES		Date: 18-Nov-2011	

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Earth Partners		Doc No.: 18756-5-70-009	
ENVIRONMENT DEVELOPMENT		Rev: 0	
RESOURCES		Date: 18-Nov-2011	

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Earth Partners		Doc No.: 18756-5-70-009	
ENVIRONMENT DEVELOPMENT		Rev: 0	
RESOURCES		Date: 18-Nov-2011	

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No:	AUS Ex 1249X	Issue 0: Issue 5:	Original Issue 17/7/1991 30/05/2003 (Revalidation)	
Date of Expiry:	30/05/2013			
Certificate Holder:	Fisher-Rosemount Pty Ltd 471 Mountain Highway BAYSWATER Victoria	. *		en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la comp
Electrical Equipment:		ional Fieldbus/I	nd Model 3001-series Hydrostat Profibus outputs, LCD indicator	
Type of Protection:	Ex ia Ex n			
Marking Code:	Ex ia IIC T4 ($T_{amb} = 70$ °C Ex ia IIC T4 ($T_{amb} = 60$ °C Ex n IIC T4($T_{amb} = 70$ °C AUS Ex 1249X)/T5 IP66 (for	r non-Fieldbus) Foundation Fieldbus/Profibus)	
Manufactured By:	Rosemount Inc 8200 Market Boulevard Chanhassen MN 55317	USA	Emerson Proces	
Issued by:			ORDER N Customer:	UMBERS 23
	919 Londonderry Re Phone: (02) 4724		02) 4724 4999 Accredital System of	JAS-ANZ JOSE ion by the Joint Accreditation (Australia and New Zealand, Acc No. Z2221100AS
	STANDA	ARDS AUS	STRALIA	9
	Standards Australia Quality Assu	rance Services Ptv L	imited A.B.N. 67 050 611 642	Page 1 of

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements (incorporating Amendment 1)

AS 2380.7-1987 Electrical Equipment for explosive atmospheres - Explosion-protection techniques - Intrinsic safety 'i'

AS 2380.9-1991 Electrical Equipment for Explosive atmospheres - Explosion-protection Techniques - Non-sparking Apparatus - Type of protection 'n'

AS 1939-1990 Degrees of protection provided by enclosures of electrical equipment (IP Code)

This certificate does not ensure compliance with electrical safety requirements and performance other than those included in the Standards listed above.

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: LOSC 11812; 16864; 16910 and TestSafe 20320, 21599 and 22468

File Reference: TestSafe 94/5985-TSA 0007

Signed for and on behalf of issuing authority Laboratory Systems Manager TestSafe Australia

Position 30/05/2003

Date of issue

Ex 1249X-5

This certificate and schedule may not be reproduced except in full.

This certificate is not transferable and remains the property of Standards Australia Quality Assurance Services and must be returned in the event of its being revoked or not renewed.

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Standards Australia Quality Assurance Services Pty Limited A.B.N. 67 050 611 642

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No: AUS Ex 1249X

Issue: 5

Date of Issue:

30/05/2003

Certified Equipment:

The range of transmitters is designed to convert signals from a pressure transducer into an electrical signal. The electronics provide an analogue 4-20 mA output with HART, or optionally a d.c. output for low power applications or Foundation Fieldbus, or Profibus output for Fieldbus applications. The transmitter is intended for connection to separately certified apparatus having a source of potential not exceeding 30 Volts d.c. and a short circuit current not exceeding 200 mA for the low power and analog/HART output or 300 mA for the Fieldbus output.

The equipment may be manufactured in a number of combinations from the ranges of optional boards according to the configurations, and they are tabulated in the following tables.

(a) Foundation Fieldbus/Profibus Transmitter Configuration					
Ref.	Description	Drawing No.			
Any one of t	he following terminal boards:	· · · · · · · · · · · · · · · · · · ·			
Ter.e	Standard 3051 Fieldbus	03031-0467			
Ter.f	Transient Protection 3051 Fieldbus (T1 Option)	03031-0486			
Micro-board	assembly:				
Micro.a1	3051 Fieldbus Analog	03031-0477			
Micro.a2	3051 Fieldbus Digital	03031-0481			
Optional LC	D Indicator assembly:				
Dis.c	CCA, Vortex Shrouded, LCD Board, 2 Line	08800-7611			
Any one of	the sensor boards can be used: (Refer to Sensor Board Lis	st below)			

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certified Equipment: (Continued)

Ex 1249X-5 Addendum to Certificate No.....

	(b) Low Power Transmitter Configuration	
Ref.	Description	Drawing No.
Any one of	the following terminal boards can be used:	
Ter.a	Potted Low Power Terminal Block Assembly	03031-0607
Ter.b	Transient Protection Terminal Brd, 3-Wire (T1 Option)	03031-0506
Microboard	assembly:	
Micro.b	Low Power Microboard Conformal Coated	03031-0275
Optional LC	D Indicator assembly:	
Dis.a	Coated CCA Meter/LCD Board	03031-0162
Any one of	the sensor boards can be used: (Refer to Sensor Board List be	elow)

	(c) Analog/HART Transmitter Configuration				
Ref.	Description	Drawing No.			
Any one of th	e following terminal boards can be used:				
Ter.c	4-20mA Standard Terminal Block Assembly	03031-0657			
Ter.d	Standard Transient Protection Terminal Block Assembly (T1 Option)	03031-0665			
Microboard A	Assembly:				
Micro.c	Micro Brd 5, Coated & Spot Potted, 3051/3001 & Probar	03031-0584			
Optional LCI	D Indicator assembly:				
Dis.b	Shrouded/Spot-Potted/Labelled LCD Board, 2 Line	03031-0591			
Any one of th	e sensor boards can be used: (Refer to Sensor Board List belo	w)			

Sensor Boards List					
Ref.	Description	Drawing No.			
Sen.a	Low Cost Sensor Card Conformal Coated	03031-0283			
Sen.b	Sensor Board 3, Uncoated, 3051C	03031-0587			
Sen.c	Sensor Board IV Coated, 3051C	03031-0817			
Sen.d	AP Sensor Card Conformal Coated	03031-2011			
Sen.e	Sensor Board, Coated, 3051T	03031-0923			
Sen.f	Sensor Taconite, Coated, 3051/2088	03031-0929			

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Variations Permitted By Issue 5:

Addendum to Certificate No ... Ex 1249X-5

1. The complete range of the equipment has been classified as documented in the Certified Equipment.

Conditions of Certification relating to Variations Permitted by Issue 5:

- 1. It is a condition of manufacture that the 3051 or 3001 pressure transmitters that do not include the transient protection on the terminal board assembly must be capable of withstanding a test voltage of not less than 500 Volts, 48 Hz to 62 Hz applied between input terminals and case for a period not less than 1 minute.
- 2. It is a condition of safe use that the following parameters are to be taken into account for Intrinsic Safety applications:

ſ	(a) Foundation Fieldbus/Profibus Transmitter Configuration						
	Entity Parameters	With or without transient protected T1 option					
ſ	Ui	30 V	· · · ·				
	Ii	300 mA	1 A. 14				
I	Pi	1.3 W					
I	Ci	0 μF					
	Li	0 µH					

(b) Low Power Transmitter Configuration						
Entity Parameters	Without transient protected T1 option	With transient protected T1 option				
Ui	30 V	30 V				
li	200 mA	200 mA				
Pi	0.9 W	0.9 W				
Ci	0.042 μF	0.042 μF				
Li	10 µH	0.75 mH				

	(c) Analog/HART Transmitter Configuration				
Entity Parameters	Without transient protected T1 option	With transient protected T1 option			
Ui	30 V	30 V			
Ii	200 mA	160 mA			
Pi	0.9 W	0.9 W			
Ci	0.01 µF	0.01 µF			
Li	10 µH	1.05 mH			

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

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Addendum to Certificate No....Ex 1249X-5

Conditions of Certification relating to Variations Permitted by Issue 5: (continued)

- 3. It is a condition of safe use that the apparatus may only be used with a passive current limited power source for Intrinsic Safety applications. The power source parameters must be such that $Po \le (Uo \times Io)/4$.
- 4. It is a condition of safe use that for models using transient protection in the terminal assembly (T1 transient protection models) the apparatus enclosure is to be electrically bonded to the protective earth. The conductor used for the connection shall be equivalent to a copper conductor of 4 mm² minimum cross-sectional area.
- 5. It is a condition of safe use that the Fieldbus option is to be supplied from a voltage source not exceeding 35.0 V dc for Non-Sparking applications. The Low Power and Analog/HART options are to be supplied from a voltage source not exceeding 55 V dc for Non-sparking applications
- 6. It is a condition of safe use that where the equipment is installed such that there is an unused conduit entry, the entry must be sealed with a suitable blanking plug to maintain the minimum degree of protection of IP66 for Non-Sparking applications.
 - It is a condition of safe use that upon completion of commissioning the apparatus with a label plate with more than one marking on it, the irrelevant marking code(s) shall be permanently scribed off.

Issued by:

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No... Ex 1249X-5

Document	Document Title	Sheets	Issue	Date
No.	Ladar of LC Device for MOD 202 Street Family	1 to 7	M	08/04/1993
00268-0031	Index of I.S. Barrier System for MOD.268 Smart Family Interface	1.07	IVI	08/04/1995
03031-0059	Label, Nameplate / Customer Tag	1 to 16	AY	17/12/2001
03031-0060	Label, Approvals, 3051C	1 to 8	BG	04/04/2002
03031-0087	Schematic Diagram, 3051/3001 CENELEC I.S. Approval	1 of 1	AC	10/10/1997
03031-0160	Schematic Diagram, Meter/LCD Board	1 of 1	Н	07/05/1990
03031-0161	Printed Wiring Board LCD/Meter Board	1 to 4	U	05/08/1996
03031-0162	Coated CCA Meter/LCD Board	1 of 1	AC	22/11/1999
03031-0272	Schematic Diagram 3051C Low Power	1 of 2	AA	17/02/1999
03031-0273	Printed Wiring Board Low Power Microboard	1 to 4	J	06/08/1996
03031-0275	Circuit Card Assy Low Power Microboard Conformal Coated	1 to 3	AB	10/11/1999
03031-0280	Schematic Diagram Low Cost Sensor BRD	1 of 1	F	12/01/1995
03031-0281	Printed Wiring Board Low Cost Sensor Card	1 to 4	G	06/08/1996
03031-0283	Circuit Card Assy Low Cost Sensor Card Conformal Coated	1 of 1	F	21/03/1991
03031-0464	Schematic Drawing Standard Terminal Block, 3051 Fieldbus	1 of 1	AA	20/03/1998
03031-0467	Terminal Block Assy, Standard 3051 Fieldbus	1 to 2	AC	12/1998
03031-0475	3051 Fieldbus Analog Electronics	1 to 2	AC	12/1998
03031-0476	Printed Wiring Board - Fieldbus Analog	1 to 3	AC	10/06/1998
03031-0477	Circuit Card Assy 3051 Fieldbus Analog	1 to 2	AH	29/05/2001
03031-0479	3051 Fieldbus Digital Electronics	1 of 1	AB	12/1998
03031-0480	Printed Wiring Board - 3051 Fieldbus Digital	1 to 3	AC	12/1998
03031-0481	Circuit Card Assy - 3051 Fieldbus Digital	1 to 3	AD	01/2000
03031-0483	Schematic Drawing Transient Terminal Block, 3051 Fieldbus	1 of 1	AB	22/02/2001
03031-0484	Printed Wiring Board Transient Protection 3051 Fieldbus	1 to 3	AC	22/02/2001
03031-0486	Terminal Block Assy, Transient Protection, 3051 Fieldbus	1 to 2	AC	12/1998
03031-0488	Ass'y Output Electronics, Fieldbus	1 of 1	AG	29/05/2001
03031-0504	Schematic Diagram Terminal Block 3-wire Configuration	1 of 1	C	21/05/1991
03031-0505	Printed Wiring Board Terminal Board, 3-Wire Configuration	1 to 2	E	23/06/1995
03031-0506	Circuit Card Assy, Transient Protection Terminal BRD, 3-Wire	1 to 3	AA	24/08/1998

Drawings Relating to Variations Permitted by Issue 5

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STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No Ex 1249X-5

Drawings Relating to Variations Permitted by Issue 5 (Continued)

Document	Document Title	Sheets	Issue	Date
.No.				10/00/2001
03031-0519	3051P Label, Nameplate / Customer Tag	1 to 8	AG	10/08/2001
03031-0520	Label, Approvals, 3051P	1 to 8	AJ	06/01/2000
03031-0521	Label, Nameplate / Customer Tag 3051C-Low Power	1 to 7	AH	15/02/2001
03031-0535	Label, Nameplate / Customer Tag 3051P-Low Power	1 to 3	F	19/05/1995
03031-0581	Schematic Drawing Micro Board #5 3051C	1 to 3	AD	01/03/2002
03031-0582	Printed Wiring Board, Micro BRD 5, 3051C	1 to 3	AD	17/07/2000
03031-0584	Shrouded Assembly Micro BRD 5, Coated & Spot Potted,	1 to 4	AK	04/03/2002
	3051/3001 & Probar			10/11/100/
03031-0585	Schematic Sensor Board 3	1 to 2	B	13/11/1995
03031-0586	Printed Wiring Board Sensor Board 3 3051C	1 to 4	AA	08/10/1997
03031-0587	Circuit Card Assy Sensor Board 3, Uncoated, 3051C	1 to 2	AC	25/06/1998
03031-0589	Schematic Diagram 160 Segment LCD Board	1 to 1	A	31/01/1995
03031-0590	Printed Wiring Board LCD Board, 2 Line	1 to 4	AA	30/11/1998
03031-0591	Circuit Card Assembly Shrouded/Spot-Potted/labeled LCD	1 to 3	AF	19/06/2000
	Board, 2 Line			10/00/1007
03031-0604	Schematic Diagram 3051C Low Power Terminal Block	<u>1 of 1</u>	A	12/02/1996
03031-0605	Printed Wiring Board, Low Power, Terminal, Block, 3051C	1 to 3	A	12/02/1996
03031-0607	Potted Low Power Terminal Block Assembly	1 of 1	AC	15/11/2001
03031-0655	Schematic Diagram 4-20mA Standard Terminal Block	1 of 1	AB	15/10/2001
03031-0656	Printed Wiring Board, Standard 4-20mA, Terminal Block, 3051C	1 to 3	AD	20/06/2000
03031-0657	4-20mA Standard Terminal Block Assembly	1 to 2	AF	15/11/2001
03031-0663	Schematic Diagram Standard Trans. Protection Terminal Block	1 of 1	AB	10/2001
03031-0664	Printed Wiring Board, Transient Protection Standard, Term.	1 to 3	AC	07/08/1997
	Block, 3051C			
03031-0665	Standard Transient Protection Terminal Block Assembly	1 to 2	AD	15/11/2001
03031-0687	Schematic Diagram, 3051 Fieldbus CENELEC I.S. Approval	1 of 1	AB	16/08/2001
03031-0815	Schematic Sensor Board IV	1 to 2	AE	13/01/1999
03031-0816	Printed Wiring Board Sensor Board IV, 3051C	1 to 3	AE	11/06/1998

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

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Addendum to Certificate No... Ex 1249X-5

Drawings Relating to Variations Permitted by Issue 5 (Continued)

Document	Document Title	Sheets	Issue	Date
No. 03031-0817	Circuit Card Assy Sensor Board IV Coated, 3051C	1 to 2	AH	13/01/1999
03031-0920	Schematic Sensor, 3051T	1 to 2	G	13/12/1995
03031-0921	Printed Wiring Board, Sensor Board 3051T	1 to 3	С	25/02/1997
03031-0923	Circuit Card Assy Sensor Board Coated, 3051T	1 of 1	AA	07/10/1997
03031-0926	Schematic Sensor, 3051TAC	1 to 3	AE	01/04/2001
03031-0927	Printed Wiring Board Sensor Taconite, 3051/2088	1 to 3	AF	25/05/2001
03031-0929	Circuit Card Assembly Sensor Taconite, Coated, 3051/2088	1 of 1	AJ	01/04/2001
03031-1017	Approval Drawing For Module Housing Ass'y, Intrinsically	1 to 6	AH	30/11/2000
	Safe			
03031-1022	Model 3051C/L/P/H, 3001C/S Intrinsically Safe and Type N	1 to 10	AG	28/05/2003
	Configuration, SAA			
03031-1026	SAA LS. Index For 3051 and 3001	1 to 4	AB	26/04/1999
03031-2008	Schematic Diagram AP Sensor Brd	1 of 1	L	23/09/1996
03031-2009	Printed Wiring Board AP Sensor Card	1 to 4	<u> </u>	23/09/1996
03031-2011	Circuit Card Assy AP Sensor Card Conformal Coated	1 of 1	AA	07/10/1997
03031-2041	3051T Sensor Board Standoff	1 of 1	AC	05/09/2000
08800-7609	Schematic Diagram, Vortex LCD Board	1 of 1	AA	15/10/1997
08800-7610	Printed Wiring Board, LCD 2 Line	1 to 3	AA	15/10/1997
08800-7611	CCA, Vortex, Shrouded, LCD Board, 2 Line	1 to 2	AE	06/07/2000

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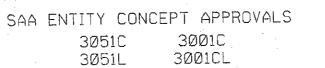
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STANDARDS AUSTRALIA

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9 9 Page of

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	AA	UPDATE ENTITY PARAMETERS	RTC1002910	J.D.J.	12/2/97
	AB	ADD FIELDBUS AND	RTC1006448	J.D.J.	4/26/99
		PROFIBUS			<u> </u>



3051P 3001CH 3051H 3001S 3051CA 3051T

OUTPUT CODE A (4-20 mA HART) SEE SHEETS 2 OUTPUT CODE M (LOW POWER) SEE SHEETS 3 OUTPUT CODE F / W (FIELDBUS, PROFIBUS) SEE SHEETS 4

THE ROSEMOUNT PRESSURE TRANSMITTERS LISTED ABOVE ARE INTRINSICALLY SAFE WHEN USED IN THE CURCUIT WITH SAA APPROVED BARRIERS WHICH MEET THE LIST ENTITY PERAMETERS.

TO ASSURE AN INTRINSICALLY SAFE SYSTEM, THE TRANSMITTER AND BARRIER MUST BE WIRED IN ACCORDANCE WITH THE BARRIER MANUFACTURER'S FIELD WIRING INSTRUCTIONS AND THE APPLICABLE CIRCUIT DIAGRAM.

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This drawing forms part of

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TestSafe

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THE ROSEMOUNT PRESSURE TRANSMITTERS LISTED BELOW ARE INTRINSICALLY SAFE WHEN USED IN THE CIRCUIT WITH SAA APPROVED BARRIERS WHICH MEET THE LISTED ENTITY PARAMETERS.

APPROVED TRANSMITTERS

 3051C
 3051H
 3001C
 3001S

 3051L
 3051T
 3001CL
 3051P
 3051CA
 3001CH

ENTITY PARAMETER FOR Ex in IIC T5 CLASS I, ZONE 0 PROTECTION:

APPARATUS PARAMETER	BARRIER PARAMETER
Vmax = 30V Imax = 300mA Pmax = 1.3W	Voc IS LESS THAN OR EQUAL TO 30V Isc IS LESS THAN OR EQUAL TO 300mA Voc * Isc 4 IS LESS THAN OR EQUAL TO 1.3W
Ci = 0 μF Li = 0μH	Ca IS GREATER THAN 0 MICROFARADS La IS GREATER THAN 0 MICROHENRIES

THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF INTRINSICALLY SAFE APPARATUS NOT SPECIFICALLY EXAMINED IN COMBINATION AS A SYSTEM.

TO ASSURE AN INTRINSICALLY SAFE SYSTEM THE TRANSMITTER AND BARRIER MUST BE WIRED IN ACCORDANCE WITH THE BARRIER MANUFACTURERS FIELD WIRING INSTRUCTIONS AND THE CIRCUIT DIAGRAM SHOWN BELOW.

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STANDARDS ASSOCIATION OF AUSTRALIA

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STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

SUPPLEMENTARY CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. FJ.P 693 - 1

This certifies that the equipment described hereunder has been examined and tasted in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements.

This pertificate may be withdrawn at any time if in the opinion of SAA Committee EL/29, Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Modification Hazardous Location N/A To recognize changes in the components and catalogue numbers of the following instruments Type of Protection (....) (a) Switch Enclosure Cat. No. FNS51 N/A (b) Pilot Light System Cat. No. FNL11 **Certificate Holder** (c) Push-button Station Cat. No. FNP1L Safe Appliance and Equipment Co. Pty. Ltd., as detailed in Schedule 26-28 Kent Road MASCOT, NSW, 2020. Manufacturer Metalcraft Engineering Co. 26-28 Kent Road MASCOT, NSW, 2020. Drawing Nos. Test Report No(s) From 79 - 007 - AD - 002 Issue A to 79 - 023 - AD - 002 Issue A N/A inclusive Australian Standard(s) N/A SAA File Reference EL/29: 79068/M90 **Effective Date** 1980-02-20 Date of Issue 1980-07-03

Director Standards Association of Australia

STANDARDS ASSOCIATION OF AUSTRALIA

Incorporated by Royal Charter

STANDARDS HOUSE, BO ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

SCHEDULE 1

Continuation of Certificate No. FLP 693 -1

New Cat. No.	Short Description	Originated from	Changes
FNL 1.1 (1M) FNL 1.2 (2M)	Indicating Lamp Single Position	FNL 1"	One position deleted
FNP 1.1 (1M) FNP 1.2 (2M)	Push Button Station 2 Positions	FNP 11	One position was to stay put. Now both positions no stay put and external modification.
FNP 15.2 (2M)	Push Button Station 2 Positions	FNP 1L	As for FNP 1.1/FNP 1.2 but with both buttons shrouded
FNP 11.1 (1M) FNP 11.2 (2M)	Push Button Station 1 position	FNP 1L	One position deleted and no position stay put and external modification.
FNP 11K.1 (1M) FNP 11K.2 (2M)	Push Button Station Key operated 1 position	FNP 1L	One position deleted and external modufication.
FNP 11M.1 (1M) FNP 11M.2 (2M)	Push Button Station Palm operated 1 positio	FNP 1L	One position deleted and no position stay put and external modification.
FNP 118.1 (1M) FNP 118.2 (2M)	Push Button Station 1 position (shrouded)	FNP 1L	One position deleted and no position stay put with button shrouded and external modification
FNP 1K.1 (1M) FNP 1K.2 (2M)	Push Button Station 2 positions with 1 key operated	FNP 1L	External modification
FNP 11L.1 (1M) FNP 11L.2 (2M)	Push Button Station 1 position stay put	FNP 11.	One position deleted and single position stay put only and external modification.
FNP L1 (1M) FNP L2 (2M)	Push Button Station and Pilot Light combined.	FNP IL	Combinations of FNP 1L and FNL 11 with one button position deleted and pilot light deleted.
FNS 15.1 (1M) FNS 15.2 (2M)	Switch 240 V a.c. 15A DPDT	FNS 51	Changing interiors of switch to Ring-Grip FS 169/15 DP.
	ог 240 V а.с. 15А 2 ways		

Jun Director Btenderds Association of Australia



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STANDARDS ASSOCIATION OF AUSTRALIA

Incorporated by Royal Charter

STANDARDS HOUSE, BO ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

SCHEDULE 1 (Continued)

Continuation of Certificate No. FLP 693 -

New Cat. No.	Short Desctiption	Originated from	Changes
FNS 52.1 1M) FNS 52.2 2M)	Switch 500 V a.c. 15A DP 3 positions	FNS 51	Changing interiors of switch to Federal type 15510302 PM1 and external excutcheon plate
FNS 51K.2 1M) FNS 52K.2 2M)	Switch with key lockable device 500 V a.c. 15A	FNS 51	Changing interiors of switch to Kraus & Naimer type B11 B2K911 and external locking device.
FNS 65/*1 (1M) FNS 65/*2 (2M)	Switch 500 V a.c. 20 A 3 positions	FNS 51	Changing interiors of switch to Kraus & Naimer type B11 and U17 series
FNS 66/*1 (1M) FNS 66/*2 (2M)	Switch 500 V a.c. 20 A Multi-positions	FINS 51	Changing interiors of switch to Kraus & Naimer type B11 and C17 series and external modification.
FNP 18G.1 (1M) FNP 18G.2 (2M)	Push button Station 2 position with pad- locking facility	FNP 1L	One position was to stay put Now both positions no stay put with both buttons shrouded and external modification.
FNP 118G.1(1M) FNP 118G.2(2M)	Push Button Station 1 position with padlocking facility	FNP 1L	One position deleted and no position to stay put and external modification.

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Director Standards Association of Australia



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STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No. FLP 693 -

SCHEDULE 1 (Continued)

NOTES:

Code of Cat. No.

Suffix .1 denotes 0.75 in entries Suffix .1M denotes 20 mm entries Suffix .2 denotes 1 in entries Suffix .2M denotes 25 mm entries

2. The * for switches FNS 65 and FNS 66 will be a number which is allocated to denote a switch function from one of the Fraus & Naimer B11 or C17 switch series.

л Director

Standards Association of Australia

sheat of Sheet 2

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR FLAMEPECOF ENCLOSURE

No. FW. 693

This certifies that the flameproof enclosure described hereunder has been EXAMINED and TESTED and has been found to comply with the requirements for a flameproof enclosure in accordance with AS C98- Flameproof Enclosure of Flactrical Equipment, including Amendment No.(s).....

This Certificate applies only to the flameproof faatures of the equipment described herein and does not purport, nor is it intended to certify compliance with the relevant electrical safety requirements of the SAA Wiring Rules, AS CCI Parts 1 and 11.

DETAILS OF EQUIPMENT:

"S.A.E." Flamoproof Enclocurec, Cert. Nos, FIU1, FIJ2, FIIS51, FIL11 and FNP1L

See Sheet 2 of 2 for a description of enclosures.

DRAWING	NUMDER:
manufacture and a second second second second	785- Same party production and production

1483 GA5-1, 1433 GA4-1, 148328-2, 148330-3, 148330-1, 140319-2, 053917-1, 148322-1, 148321-1, 0107127-2, 148327-1, "Retainer Clip" information shoet, EO/211/2.

GROUP IIE Enclosures; Temperature Classification T6

GROUPING AND CLASSIFICATION:

APPLICANT:

MANUFACTURER:

Safe Appliance and Equipment Co. Pty. Ltd., 26-28 Kert Road, MASCOT N.S.W. 2060 Netalcraft Engineering Co. Pty.Ltd.,

2060

TESTING STATION AND REPORT No.:

REMARKS:

SCC TR. 10,46601

26-28 Kert Road, MASCOT. N.S.W.

DETAILS OF ENCLOSED ELECTRICAL COMPONENTS

Cat. No. FNJ1 - Four-way terminal block "Siemens BK4" Cat. No. FNJ2 - Four-way terminal block "Siemens BK4" Cat. No. FNS1 - Une "Federal" 3 pole 15 A switch Cat. No. FNL11 - Two "Klockner-Hoeller" Lampholders 2.5%, Two B.S.9.S. size Lamps Cat. No. FNF1L - Two "Klockner-Hoeller" push button switches

Chairman of Committee EL/29

F. Director, Standards Association of Australia

EL/ 29

Date 13, 6,74

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lieet 2 of Sheet 2 INCORPORATED BY BOYAL CHARTER

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY. NSW

CERTIFICATE FOR FLAMEPROOF ENCLOSURE

No. FLP 693

REMARKS:

CAST ALUMINIUM ENCLOSURES

Cat. No FNJ1, Junction Box - One bore and spigot joint, four 3 in. conduit entries 16 T.P.I.

Cat. No.FNJ2, Junction Box - One bore and spigot joint Four 1" conduit entries 16 T.P.I.

Cat, No.FNS51, Isolating Switch - One bore and spigot joint, Four ‡ in. or 1 in, conduit entries 16 T.P.I. One operating spindle.

Cat, No.FNL11, Pilot Lamp Station - One bore and spigot joints, Four 7 in, or 1 in, conduit entries 16 I.P.I. Iwo indicator Lamp inspection windows.

Cat. No.FNP1L, Push Button Station - One bore and spigot joint, Four ‡ in, or 1 in, conduit entries 16 T.P.I. Two operating rods.

b

Chairman of Opmmittee BL/29

Director, Standards Association of Australia

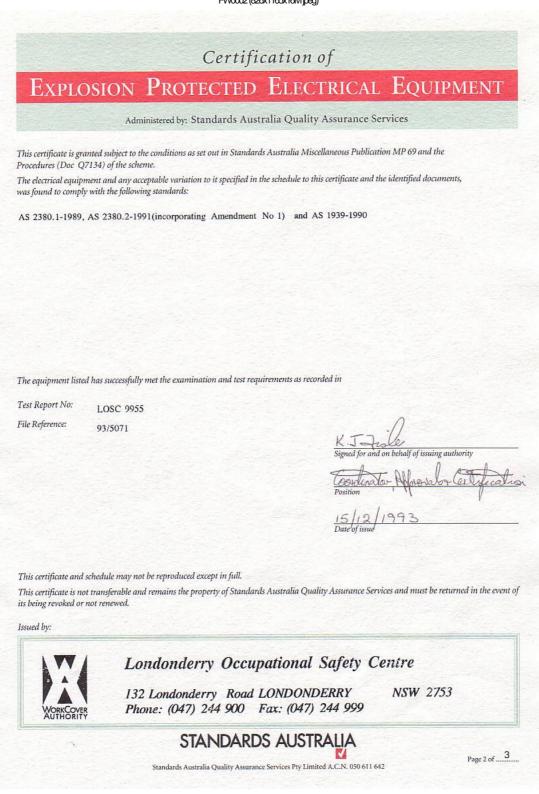
E1/29 Date 3.6.74

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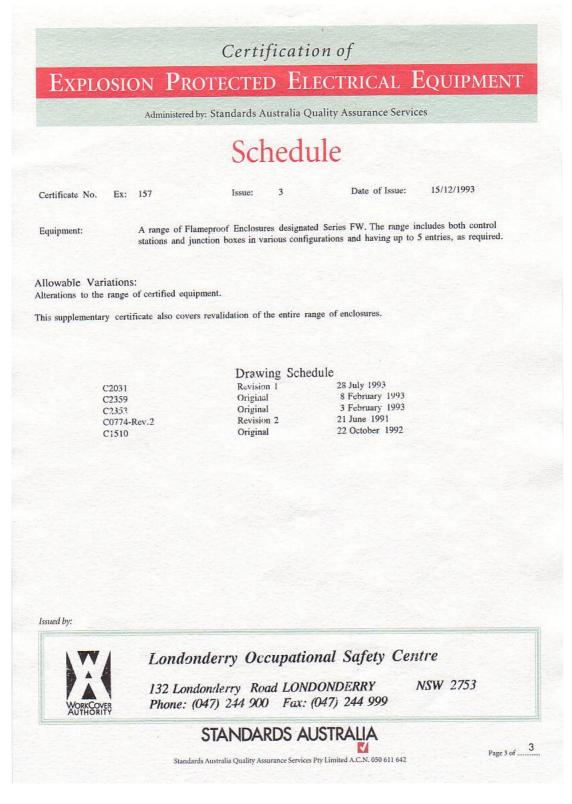
FW0001 (826x1165x16M jpeg)

EXPLOSIO				EQUIPMENT wices
	Administered by: Stand	arus Australia Qua	anty Assurance Sel	vices
(Certifica	te of Co	onform	nity
ertificate No.	Ex: 157	Issue 0: Issue 1:	Original Issue 24 21/9/1982	1/2/1993
		Issue 2:	30/6/1988	
		Issue 3:	15/12/1993	
ate of Expiry:	15/12/2003			
ertificate Holder:	Govan Drewburn H 156 Bamfield Road WEST HEIDELBE		181	
lectrical Equipment:	FW Range of Flam	neproof Enclosures		
ype of Protection and	Marking Code:	Ex d IIB T	6 IP65 Class I Zone	1
fanufactured By:	Govan Drewburn 1 156 Bamfield Road WEST HEIDELBE		981	
ied by:				
NW4	Londonderry	Occupation	al Safety C	entre
WorkCover	132 Londonderry Phone: (047) 24			NSW 2753

FW0002 (826x1165x16M jpeg)



FW0003 (826x1165x16M jpeg)



Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. Ex 609

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements. This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3. Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Equipment

<u>'Murphy' Liquid Level Switches,</u> Series L-1100 and L-1200

Drawing No(s) 15-00-0197; 15-00-0195; 15-00-0155; 15-00-0154; 15-01-0082 Rev C; 15-05-344 Rev P; 15-05-345 Rev J; 15-05-346 Rev G; 15-05-348 Rev G; 15-05-349 Rev A; 15-05-376 Rev R; 15-05-474; 15-05-497 Rev E; 15-05-650 Rev A; 15-05-0466 Rev D; 65.05.403 Rev D; Bulletin LL7434; 15-01-0090 Rev 1; 15-05-0462 Sheets 1 & 2 Rev R; Sketch No L1100/L1200

Certification Conditions

Remarks

Hazardous Location

Class I Zone l

Type of Protection

Ex d IIB T6

Certificate Holder

Murphek Pty Ltd 215 Parramatta Road AUBURN NSW 2144

Manufacturer

Frank W Murphy Manufacturer Inc 3131 South Sheridan Tulsa OKLAHOMA 74145 USA

Test Report No(s)

SCC TR NO: 60015

Australian Standard(s)

AS 2480-1981

SAA File Reference

P/3: 84122/M121

Effective Date

1985-09-05

Date of Issue 1985-09-06

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This certificate is not transferable and remains the property of the Standards Association of Australia and must be returned to the Association in the event of it being revoked.

Director-Administration & Approvals Standards Association of Australia

Certificate of Conformity: IECEx BAS 07.0002X

	x IE	CEx Certified	
	ertification Sche	CTROTECHNICAL CC me for Explosive Attr the IECEx Scheme visit www.lecex.c	nospheres
Certificate No.:	IECEX BAS 07.0002X	issue No.:0	Certificate history:
Status:	Current		Issue No. 2 (2010-8-12) Issue No. 1 (2009-9-23) Issue No. 0 (2007-2-20)
Date of Issue:	2007-02-20	Page 1 of 3	ISSUE NO. 0 (2007-2-20)
App l icant:	Rosemount Incorporat 12001 Technology Drive Eden Prairie Minnesota 5344-3695 United States of Americ		
Electrical Apparatus: Optional accessory:	Model 3144P HART Tem	perature Transmitter	
Type of Protection:	Intrinsic Safety		
Marking:	IECEx BAS 07.0002X Ex ia IIC T6 (−60°C ≤ Ta ≤ Ex ia IIC T5 (−60°C ≤ Ta ≤		
Approved for issue on Certification Body:	behalf of the IECEx	R S Sinclair	
Position:		Managing Director	
Signature: (for printed version)			
Date:			
3. The Status and author Certificate issued by:	transferable and remains the enticity of this certificate may l Baseefa (2001) Ltd. Rockhead Business Park Staden Lane Buxton Derbyshire SK17 9RZ United Kingdom	be verified by visiting the Official IEC	aseefa
	× IE	CEx Certifie of Conform	
Certificate No.:	IECEx BAS 07.000	2X	
Date of Issue:	2007-02-20	lssu	e No.: 0
Manufacturer:	Rosemount Inco 12001 Technology I Eden Prairie Minnesota 55344-3695 United States of	rporated Drive	∋2 of 3
found to comply with th covered by this certific	ed as verification that a sample ne IEC Standard list below and ate, was assessed and foun	e(s), representative of production, w that the manufacturer's quality syste to comply with the IECEx Quality sy out in IECEx Scheme Rules, IECEx 02	em, relating to the Ex products stem requirements. This
	is and any acceptable variatio I to comply with the fo l lowing	ns to it specified in the schedule of th standards:	is certificate and the identified
IEC 60079-0 : 2004	Electrical apparatus fo	r explosive gas atmospheres - Part 0	: General requirements
Edition: 4.0	Bectrical apparatus fo	r explosive gas atmospheres - Part 1	1: Intrinsic safety 'i'

iecex.iec.ch/iecex/iecexweb.nsf/.../IECEx BAS 07.0002X issue No. 0?opend...

11/17/11

Certificate of Conformity: IECEx BAS 07.0002X

This Certificate doe		
	s not indicate compliance with electrical safe expressly included in the Standa	ety and performance requirements other than tho ards listed above.
TEST & ASSESSMENT	FREPORTS:	inction and tool convicements on recorded in
Test Report:	ipment insted has successiony met the exam	mation and test requirements as recorded in
GB/BAS/ExTR07.0003/	00	
Quality Assessment Re	eport:	
GB/BAS/QAR06.0058/0	00 GB/BAS/QAR06.0072/00	GB/BAS/QAR06.0078/00
IFC <i>TECE</i>		Certificate
—	of Co	onformity
Certificate No.:	IECEX BAS 07.0002X	
Date of Issue:	2007-02-20	Issue No.: 0
		Page 3 of 3
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Certificate of Conformity: IECEx UL 03.0001

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	ertification Sche	CTROTECHNICAL CC me for Explosive Atr the IECEx Scheme visit w w w .iecex.c	nospheres
Certificate No.:	IECEx UL 03.0001	issue No.:1	Partificata history
Status:	Current		Certificate history: Issue No. 4 (2009-9-1) Issue No. 3 (2009-4-23)
Date of Issue:	2005-03-30	Page 1 of 4	Issue No. 2 (2007-6-22) Issue No. 1 (2005-3-30)
Applicant:	United Electric Controls 180 Dexter Avenue Watertow n, MA 02472 United States Of Americ		
Electrical Apparatus: Optional accessory:	Pressure and Temperat	ure Switches, refer to Annexe fo	or Nomenclature
Type of Protection:	Ex d IIC T6		
Marking:	IECEx UL 03.0001 Ex d IIC T6 Tamb= -40 C to +75 C		
Approved for issue on Certification Body:	behalf of the IECEx	Kerry McManama	
Position:		General Manager	
Signature: (for printed version)			
Date:			
 This certificate is not The Status and authority 	schedule may only be reproduc t transferable and remains the enticity of this certificate may l		īx Website.
	rwriters Laboratories Inc (333 Pfingsten Road Vorthbrook IL 60062-2096 United States of America		Working for a safer world
	× IE	CEx Certifie	
Certificate No.:	ECEx UL 03.0001		ity
Date of Issue:	2005-03-30	Issue	ə No.: 1
		Page	2 of 4
Manufacturer:	United Electri 180 Dexter Ave Watertow n, MA United States	02472	
Manufacturing location	n(s):		
found to comply with covered by this certifi	the IEC Standard list below and cate, was assessed and foun	e(s), representative of production, w d that the manufacturer's quality syst d to comply with the ECEx Quality sy t out in IECEx Scheme Rules, ECEx 02	em, relating to the Ex products stem requirements. This
	us and any acceptable variatic d to comply w ith the fo l ow ing	ons to it specified in the schedu l e of t standards:	his certificate and the identified
IEC 60079-0 : 2000		r explosive gas atmospheres - Part 0): General requirements
Edition: 3.1 IEC 60079-1 : 2001 Edition: 4	Electrical apparatus fo	r explosive gas atmospheres - Part 1	: Flameproof enclosures 'd'
THOMELA			: a at at at

iecex.iec.ch/iecex/iecexweb.nsf/certificatesAjax/IECEx UL 03.0001 issue No...

11/17/11	This Certificate does no	t indicate compliance with elec	ertificate of Conformity: IECEx U trical safety and performance requirements othe the Standards listed above.	
	TEST & ASSESSMENT RE A sample(s) of the equipme		the examination and test requirements as recor	ded in
	IECEX ATR: US/UL03NK18933 US/UL05NK03600		File Reference: 03NK18933 05NK03600	
			Ex Certificate Conformity	
	Certificate No.:	IECEx UL 03.0001		
	Date of Issue:	2005-03-30	lssue No.: 1	
			Page 3 of 4	
		Sch	edule	
	EQUIPMENT: Equipment and systems cover	red by this certificate are as fol		
	dual snap switch, which is op	perated by an operating rod form or two sets of terminal blocks an	a die-cast aluminium switch housing containing a ning a joint with the enclosure. The electrical wire re permanently mounted by the manufacturer and and by the manufacturer and the second	es betw een
	CONDITIONS OF CERTIFICAT			
			Ex Certificate	

of Conformity

11/17/11

Certificate of	Conformity:	IECEX UI	03.0001

	ECEX UL 03.0001	
Date of Issue:	2005-03-30	Issue No.: 1
		Page 4 of 4
AILS OF CERTIFICATE	ECHANGES (for issues 1 and above):	
upper ambient was rev	rised to +75C.	

Annexe: Annexe_UL_03.0001.pdf

EPEE Certificate: Ex 3032

Page 1 of 1

Search | Home | SAI Global

Explosion Protection Electrical Equipment

HOME > EPEE > EX 3032

EPEE Certificate: Ex 3032

S A	I Global Assurance Services	Certificate No.	Ex 3032	Latest Issue	Issue 3
				Issue Date	13-11-2001
		Expiry Date	15-03-2004		
		Certificate Holder	Ascomation Pty L	td	
			12/25 Frenchs For	est Road East	
			Frenchs Forest Ne Australia	w South Wale	s 2086
		Equipment Category	Solenoids		
		Product Description	Coil Series EA & I mounted in a mild		oids consist of a coil which is
		Protection Type	Type m Type DIP		
		Marking Code	* see schedule Cl	lass I Class I	I Zone 1
		Gas Group	I		
		IP Rating	IP 65		
		Manufacturer	Ascomation Pty La	td	
		Test Report Number	LOSC7102, 15734	l, 17532, and 2	20768
		Issued By	TestSafe Australia		
		Standard	AS 2236-1994 AS	\$ 2431-1981	

NOTES HOME > EPEE > EX 3032

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10/09/2003

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No:	AUS Ex 3616X	Issue 0:	Original Issue	12/7/1999
Date of Expiry:	12/7/2009			
Certificate Holder:	Burkert Contromatic Aust Pt 1-2 Welder Road SEVEN HILLS NSW 214	•		
Electrical Equipment:	Solenoid magnetic coil AC10) to suit vario	us valves (As pe	r Schedule)
Type of Protection:	Ex m e I IP 65 Class I Zon Ex m IIC T* ($T_{amb} = *^{\circ}C$) Ex m e IIC T*($T_{amb} = *^{\circ}C$ (*See Schedule)	IP65 Class I		
Marking Code:	Ex m e I IP65, Ex m IIC and DIP T*($T_{amb} = *^{\circ}C$) II AUS Ex 3616X			e IIC T*(T _{amb} = *°C) IP65
Manufactured By:	Burkert GMBH			

Issued by:



Londonderry Occupational Safety Centre



919 Londonderry Road LONDONDERRY NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999



Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

6

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No: AUS Ex 3616X Issue: 0 Date of Issue: 12/7/1999

Certified Equipment: The solenoids are designed to convert electrical signals into mechanical movements that serve to actuate valves. Each solenoid coil is made of insulated enamelled copper wire and is mounted on the guide tube. The cable plug assembly contains the terminal connections and a rectifier bridge to allow usage of either AC (with frequencies up to and including 60 Hz) or DC current and eliminate the rising current problem if blockage occurs.

The solenoids are available in packages suitable for Group I or Group II. The coil assembly and the terminal assembly are contained in separate moulds of encapsulating material.

For group I, the encapsulated solenoids are fitted with an increased safety junction box containing the terminal connection and fitted with a gasketed lid affording it a degree of protection of IP65. The cable entry is fitted with a metric tread adaptor.

Group II solenoids come in two versions, fully encapsulated or fitted with the increased safety junction box as for group I solenoids. The fully encapsulated version has a cable permanently connected to the terminal compartment made via a cable gland assembly. The cavity is then filled with epoxy resin to a minimum thickness of 3 mm. This also bonds together the terminal assembly and the coil assembly.

Issued by:



Londonderry Occupational Safety Centre



919 Londonderry Road LONDONDERRY NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999



Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

6

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 3616X

Addendum to Certificate No.....

Certified Equipment:	
- continued	

The solenoi	ds bear a type designation number, AC10-Z3-X-PDXX, where:
AC10:	Type of coil (unchanged throughout the submitted range)
Z3:	Type of interface (unchanged throughout the submitted range)
X:	A number, 4, 5 or 6, which identifies the coil size.
PDxx:	PD followed by a two-digit number ranging between 47 and 86, which denote the material, the reference ambient temperature and the temperature
	classification.

The range of solenoids are as per Schedule 1.

Schedule 1					
Type Number	Nominal	Nominal Current	Effective	Ambient	Temp.
	Voltage		Power		Class
AC10-Z3-5-PD47	12 400 V	0.68 0.02 A	7 W	-3060°C	T4
AC10-Z3-5-PD48	12 400 V	0.33 0.01 A	4 W	-3050°C	T5
AC10-Z3-5-PD49	12 400 V	0.25 0.007 A	3 W	-3060°C	T5
AC10-Z3-5-PD50	12 400 V	0.25 0.007 A	3 W	-3040°C	T6
AC10-Z3-5-PD51	12 400 V	0.19 0.005 A	2.25 W	-3050°C	T6
AC10-Z3-5-PD52	12 400 V	0.114 0.003 A	1.25 W	-3060°C	T6
AC10-Z3-6-PD53	12 400 V	0.8 0.02 A	9 W	-3060°C	T4
AC10-Z3-6-PD54	12 400 V	0.31 0.009 A	3.5 W	-3060°C	T5
AC10-Z3-6-PD55	12 400 V	0.16 0.005 A	1.8 W	-3060°C	T6
AC10-Z3-4-PD56	12 400 V	0.35 0.01 A	4 W	-3050°C	T5
AC10-Z3-4-PD57	12 400 V	0.25 0.007 A	3 W	-3060°C	T5
AC10-Z3-4-PD59	12 400 V	0.13 0.003 A	1.5 W	-3060°C	T6
AC10-Z3-5-PD60	12 400 V	0.68 0.02 A	7 W	-4060°C	T4
AC10-Z3-5-PD61	12 400 V	0.33 0.01 A	4 W	-4050°C	T5
AC10-Z3-5-PD62	12 400 V	0.25 0.007 A	3 W	-4060°C	T5
AC10-Z3-5-PD63	12 400 V	0.25 0.007 A	3 W	-4040°C	T6

Issued by:



Londonderry Occupational Safety Centre

919 Londonderry Road LONDONDERRY NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999



STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 3616X

Addendum to Certificate No.....

Schedule 1 - continued					
Type Number	Nominal	Nominal Current	Effective	Ambient	Temp.
	Voltage		Power		Class
AC10-Z3-5-PD64	12 400 V	0.19 0.005 A	2.25 W	-4050°C	T6
AC10-Z3-5-PD65	12 400 V	0.114 0.003 A	1.25 W	-4060°C	T6
AC10-Z3-6-PD66	12 400 V	0.8 0.02 A	1.25 W	-4060°C	T6
AC10-Z3-6-PD67	12 400 V	0.31 0.009 A	3.5 W	-4060°C	T5
AC10-Z3-6-PD68	12 400 V	0.16 0.005 A	1.8 W	-4060°C	T6
AC10-Z3-4-PD69	12 400 V	0.35 0.01 A	4 W	-4050°C	T5
AC10-Z3-4-PD70	12 400 V	0.25 0.007 A	3 W	-4060°C	T5
AC10-Z3-4-PD72	12 400 V	0.13 0.003 A	1.5 W	-4060°C	T6
AC10-Z3-5-PD73	12 400 V	0.68 0.02 A	7 W	-3040°C	T4
AC10-Z3-5-PD74	12 400 V	0.25 0.007 A	3 W	-3050°C	T5
AC10-Z3-5-PD75	12 400 V	0.19 0.005 A	2.25 W	-3040°C	T6
AC10-Z3-5-PD76	12 400 V	0.114 0.003 A	1.25 W	-3060°C	T6
AC10-Z3-4-PD77	12 400 V	0.33 0.01 A	4 W	-3040°C	T5
AC10-Z3-4-PD78	12 400 V	0.25 0.007 A	3 W	-3050°C	T5
AC10-Z3-4-PD79	12 400 V	0.13 0.003 A	1.5 W	-3055°C	T6
AC10-Z3-5-PD80	12 400 V	0.68 0.02 A	7 W	-4040°C	T4
AC10-Z3-5-PD81	12 400 V	0.25 0.007 A	3 W	-4050°C	T5
AC10-Z3-5-PD82	12 400 V	0.19 0.005 A	2.25	-4040°C	T6
AC10-Z3-5-PD83	12 400 V	0.114 0.003 A	1.25 W	-4060°C	T6
AC10-Z3-4-PD84	12 400 V	0.33 0.01 A	4 W	-4040°C	T5
AC10-Z3-4-PD85	12 400 V	0.25 0.007 A	3 W	-4050°C	T5
AC10-Z3-4-PD86	12 400 V	0.13 0.003 A	1.5 W	-4055°C	T6

Issued by:



Londonderry Occupational Safety Centre



919 Londonderry Road LONDONDERRY NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999





EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 3616X

Addendum to Certificate No.....

Conditions of Certification:

- 1. It is a condition of manufacture that each solenoid is capable of withstanding a test voltage of not less than 1800 Volts 50 Hz applied between input terminals and earth for a period not less than 1 minute.
- 2. It is a condition of manufacture that each unit must be routine tested with 1.5 times the maximum process pressure.
- 3. It is a condition of safe use that the coil must be always mounted on the armature guide tube.

Drawing Schedule					
Drawing No	Drawing Title	Issue	Date		
F1-645 166	Einweg-Schlitzschraube	1	21/11/96		
F1-637 297	Spulenkorper 28 mm	I	21/9/95		
F1-637 298	Spulenkorper 32 mm	D	7/2/96		
F1-637 299	Spulenkorper 40 mm	В	15/1/96		
F1-637 311	Schutzleiter	В	21/11/95		
F1-637 804	Druckschraube	В	4/3/96		
F1-640 396	Kappe	E	22/3/96		
F1-640 397	Druckstuck	F	7/4/97		
F1-640 465	Klebeschild	Original	25/1/95		
F1-645 106	Verschlusskappe	A	25/10/96		
G1-638 335	Jochpaket	Original	7/3/95		
G1-637 820	Einsatz Kpl	A	25/2/98		
Z1-253 49S/2	Approval Drawing Ex m T4/T5/T6	Original	10/5/99		
AC10-Z1 253 49S sht 1 & 2	Stuckliste Zur Genehmigungszeichnung	Original	8/3/95		
Z2-253-49S	Zulassungszeichnung – Nachtrag	A	29/1/99		
AC10-Z2 253 49S sht 1 & 2	Stuckliste Zur Genehmigungszeichnung	Original	5/2/99		
AUS 298/2	Label	Original	6/6/99		
AUS 298/3	Label Junction Box	Original	6/6/99		
982SA	PG 13,5-20mm Conduit. Adaptor	Original	24/2/98		

Drawing Schedule

Issued by:



Londonderry Occupational Safety Centre



919 Londonderry Road LONDONDERRY NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999



Explosion Protected Electrical Equipment

Administered by: Standards Australia Quality Assurance Services

Ex 3616X

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements (incorporating Amendment 1)

AS 2380.6-1988 Electrical equipment for explosive atmospheres - Explosion-protection techniques - Increased safety 'e'

AS 2236-1994 Electrical equipment for explosive atmospheres - Dust-excluding Ignition-proof (DIP) enclosures

AS 2431-1981 Electrical equipment for explosive atmospheres – Encapsulated apparatus – Type of protection m

AS 1939-1990 Degrees of protection provided by enclosures of electrical equipment (IP Code)

This certificate does not ensure compliance with electrical safety requirements and performance other than those included in the Standard(s) listed above

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No:LOSC TR18196File Reference:LOSC 98/8687

Ully lak

Signed for and in behalf of issuing authority Technical Services Manager Londonderry Occupational Safety Centre

Position

12/7/1999

Date of issue

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Issued by:



Londonderry Occupational Safety Centre

919 Londonderry Road LONDONDERRY NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999





Cartificate No

Ex 542-3

Certificate of Compliance

EOUPPER SUPPLEMENTARY

This is to certify that Standards Australia Certificate No Ex 542. Ex 542-1 and Ex 542-2 issued to:

United Electric Controls (Aust) Pty LTd

- PROJECTED

for the <u>120 series Temperature and Pressure Controls</u> are hereby extended to include changes as detailed in the following schedule.

SCHEDULE

<u>Description of changes:</u>

NOIRON

Change of Address of Certificate Holder to:

Unit 2, 615 Warrigal Road Ashburton Vic 3147

File: P/3: 92220

Date of Issue: 21 December 1992

Date of Explry of Validity: 21 April 2002

Page 1 of 1

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Signed for and on behalf of Standards Australia

General Monoger Genity Assurance Services

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Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. Ex 542

(Sheet of 3)

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements. This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3, Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Equipment A range of Pressure and Temperature	Hazardous Location
Controls, 120 Series.	Class I Zone 1
	Type of Protection
As detailed in Schedule 1	Ex d IIB T6 IP66
	Certificate Holder
	United Electric Controls (Aust) Pty Ltd 83 Murphy Street RICHMOND VIC 3121.
Drawing No(s)	Manufacturer
Refer Schedule 2	United Electric Controls Co 83 School Street Watertown MASSACHUSETTS USA
	Test Report No(s)
Certification Conditions	Londonderry Centre TR NO: 974
Refer Schedule 1	Australian Standard(s)
	AS 2480-1939 and AS 1939-1981
	SAA File Reference P/3: 82153/M117
Remarks	
	Effective Date
	1984-10-29
	Date of Issue 1984-10-30

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STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 542 (St

(Sheet 2 of 3

SCHEDULE 1 Description of Equipment cont'd

PRESSURE AND TEMPERATURE CONTROLS, 120 SERIES

- (a) Pressure controls, Types J120, J120H, J120K, J120KH, H121, H122, H121K and H122K
- (b) Temperature controls, Types B121, B122, C120, C120H, F120, F120H, E121, E122, 820E and 822E.

Each control comprises one or two snap switches and externally attached temperature or pressure sensor.

Each control may be provided with one ormore of the following options:

M315 enclosure with expoxy coating M430 cover lock option M440 cover chain option M505 overtravel actuating plunger XXXX other options which may occur and will have no bearing on explosion-protection nor electrical properties.

Certification Conditions cont'd

- 1. As the threaded entries are NPT, flameproof thread adaptors shall be used to permit the use of SAA certified flameproof cable glands.
- Controls equippped with the manual reset arrangement, as detailed in Drawing No: E6296-185 Issue C, shall not be marked 'IP66'.
- 3. Shell petroleum jelly EDP code 82287 may be used for the lid thread

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CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

	Continuation	of Certificate No.	Ex 542	(Sheet 3 of 3)
SCHEDULE 2	Drawing No	(s) cont [*] d		
	E6296-185 E6296-186 E6296-187 E12259 E12260 E12261 E12262 E12263 E12264 E12265 E12266 E12266 E12267 E12267 E12198 E12200 D6201-167 D6201-203 D6201-204	Issue C Issue C Issue B Issue A Issue A Issue B Issue B Issue A Issue A Issue A Issue A Issue A Issue A Issue A Issue A Issue A		

Original

Revision 2

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UEA-1200G

UEA-1200L

Francia

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STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 542-1

This is to certify that SAA Certificate Nos Ex 542 issued to:

United Electric Controls (Aust) Pty LTd 83 Murphy Street RICHMOND VIC 3121

for the <u>120</u> series range of Pressure and Temperature controls, is hereby extended to include modifications as detailed in the following schedule.

Schedule

Description of Modifications

- Addition of various pressure sensors to the pressure controls type J120, J120K, H121, H121K, H122 and H112K.
- 2. Addition of the weather protected junction or indication box, fitted externally to flameproof control enclosure.
- 3. Removal of an unused second adjustment shaft hole from type H121 control enclosures.
- 4. Addition of option 1010, which includes replacement of DPDT switch for controls type C120, F120, J120,E121, B121 and H121.
- 5. Removal of the flat gasket type B, and replacement with the uniform O-ring gasket type A for the fitting of pressure sensors.

Drawings

E-6296-277 Sheets 1 &	3	Tanua	c
E-6296-278 Sheets 1 &	2,	Issue	В
E-6296-279 Issue B	-		
E-12559 Sheet 1 Issue	B		
E-12559 Sheet 2 Issue	D		
B-12262 Sheet 1 Issue	С		
E-12262 Sheet 2 Issue	D		
E-12263 Issue A			
E-12264 Issue A			
E-12265 Sheet 1 Issue	В		
E-12265 Sheet 2 Issue	С		
UEA-1200G Issue B			
UEA-1201G Issue A			

Page 1 of 2

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STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 542-1

Certification Conditions

The conditions specified in certificate Ex 542 shall apply to Ex 542-1

<u>Type of Protection</u>: Ex d IIB T6 IP66 <u>Test Report</u>: LOSC 2010 to AS 2480-1986 and 1939-1986 <u>File</u>: P/3: 85015/M137 Date of Issue: 28 July 1987

Page 2 of 2



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SUPPLEMENTARY Certificate No

Ex 542-2

Certificate of Compliance

This is to certify that Standards Australia Certificate Nos Ex 542 and Ex 542-1 issued to:

United Electric Controls (Aust) Pty Ltd 83 Murphy Street Richmond Vic 3121

for the <u>120 Series Temperature and Pressure Controls</u> are hereby extended to include modifications as detailed in the following schedule.

SCHEDULE

Description of modifications:

EXPLOSION PROTECTED

Change of gas group to IIC

Models in the range

Pressure controls

Pressure controls

Temperature controls B121 series: 119,120,121, E121, E122, C120, B122, F120 series: 2ACA, 2ASA, 2BCA, 2BSA, 2CCA, 2CSA, 2ACB, 2ASB, 2BCB, 2BSB, 2CCB, 2CSB, 3AC, 3AS, 3BC, 3BS, 3CC, 3CS, 4AC, 4AS, 4BC, 4BS, 4CC, 4CS, 5AC, 5AS, 5BC, 5BS, 5CC, 5CS, 8AC, 8AS, 8BC, 8BS, 8CC, 8CS, M9AA, M9BA, M9CA, M9BB, M9CB, 1BS, 2BS, 6BS, 7BS, M9B

(non-vented) J120, J120K, H121, H122 series: 126, 137, 144, 134, 152, 156, 164, S126, S137, S144, S134, S152, S156, S164, S126B, S137B, S144B, S134B, S152B, S156B, S164B, 450, 451, 452, 453, 454

(vented) J120, J120K, H121, H122, H121K, H122K series: 270, 274, 358, 361, 376, 550, 551, 552, 553, 554, 555, 612, 614, 455, 456, 457, 559, 701, 702, 703, 704, 705, 190, 191, 192, 193, 194, 147, S147, S147B, 157, S157B, 36, 37, 38, 39, 40, 183, 184, 185, 186, 188, 189, 612, 616, 50, 51, 52, 53, 54, 55

Page 1 of 2

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Continuation of SUPPLEMENTARY Certificate No

Ex 542-2

Certificate of Compliance

UIPMENT

Drawings:

EXPLOSION PROTECTED

E-6296-277 Sheet 1	Revision D	28 January 1992
E-6296-277 Sheet 2	Revision C	12 February 1986
E-6296-278 Sheet 1	Revision C	28 January 1992
E-6296-278 Sheet 2	Revision B	2 July 1985
E-6296-279	Revision C	28 January 1992
E-12259 Sheet 1	Revision C	28 January 1992
E-12259-Sheet 2	Revision E	29 January 1992
E-12262 Sheet 1	Revision D	28 January 1992
E-12262 Sheet 2	Revision D	12 February 1986
E-12263	Revision B	28 January 1992
E-12264	Revision B	28 January 1992
E-12265 Sheet 1	Revision C	28 January 1992
	Revision D	12 February 1986
	Revision B	5 July 1985
	Revision A	8 July 1985
UEA-1200 L	Issue E	undated
E-12260	Revision B	29 January 1992
E-12261	Revision B	29 January 1992
E-12266	Revision B	29 January 1992
E-12267	Revision B	29 January 1992
N	ACVIDION D	72 Addres 7525

TYPE OF PROTECTION: Ex d HIC T6 HP66 Class I Zone 1

Test Report No: NET 92/024 to AS 2380.1-1989 and AS 2380.2-1991

File: P/3: 91193.M165

Date of Issue: 21 April 1992

Date of Expiry of Validity: 21 April 2002

Page 2 of 2

Seneral Manager Quality Assurance Services

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Certificate No

Ex 542-3

Certificate of Compliance

This is to certify that Standards Australia Certificate No Ex 542, Ex 542-1 and Ex 542-2 issued to:

United Electric Controls (Aust) Pty LTd

ELECTRICAL EQUIPMENTSUPPLEMENTARY

for the <u>120 series Temperature and Pressure Controls</u> are hereby extended to include changes as detailed in the following schedule.

SCHEDULE

Description of changes:

Change of Address of Certificate Holder to:

Unit 2, 615 Warrigal Road Ashburton Vic 3147

EXPLOSION PROMECTED

File: P/3: 92220

Date of Issue: 21 December 1992

Date of Expiry of Validity: 21 April 2002

Page 1 of 1

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Page 4/7

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMEN

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No:	AUS Ex 3498	Issue 0: Issue 1:	Original [ssue 2] 1/11/1999	2/12/1997
Date of Expiry:	22/12/2007			
Certificate Holder:	Ascomation Pty Ltd Unit 12, 25 Frenchs Forest FRENCHS FOREST NST	Road East W 2986		
Electrical Equipment:	Series 'VM' and 'WSVM' Sc	lenoid Types I	MXX and M12-II	
Type of Protection:	Ex me IIC T* IP67			
Marking Code:	Ex me IIC T* IP67 AUS Ex 3498 (* see Page 4)			
Manufactured By:	Asco Controls BV Industrielaan 21 3925 ZO Scherpenzeel The Netherlands			



Issued by:

 $\left\{ \cdot \right\}$



919 Londonderry Road Londonderry NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999

STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Ex 3498-1 Procedures (Doc. Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989	Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements
AS 2380.6-1988	Electrical equipment for explosive atmospheres - Explosion-protection techniques - Increased safety 'e'
AS 2431-1981	Electrical equipment for explosive atmospheres - Explosion-protection techniques - Increased safety 'e'
AS 1939-1990	Electrical equipment for explosive atmospheres - Encapsulated apparatus - Type of protection 'm' Degrees of protection provided by enclosures of electrical equipment (IP Code)
	enclosures of electrical equipment (IP Code)

This certificate does not ensure compliance with electrical safety requirements and performance other than those included in the Standard(s) listed above

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: LOSC 16866

File Reference: TestSafe 97/8360

behalf of issuing authority

Technical Services Manager TestSafe Australia

0-----

1/11/1999 Date of issue

Position

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STANDARDS AUSTRALIA

Standards Accession on the second

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No: AUS Ex 3498

Issue: 1

Date of Issue:

1/11/1999

Certified Equipment:

The Series 'VM' and 'WSVM' Solenoid Types MXX and M12-II which comprise ar encapsulated coil with 'Ex e' terminals housed in a metallic enclosure with a cover and integral cable gland. The VM series housing is manufactured using steel and the WSVM series housing is manufactured using stainless steel. The solenoids are rated for operation from 6 to 250 Vdc or 6 to 380 Vac and provide for a Temperature Classification as indicated in Table 1.

Drawings Relating to Original Issue	
-------------------------------------	--

Drawing No	Drawing Title	Issue	Date
136057 Sht 1	Explosionproof Solenoid Operator - IP 67 Series VM And WSVM Type: MXX And M12-II	original	10/97
136057 Sht 2	Explosion roof Solenoid Operator - IP 67 Series VM And WSVM Type: MXX And M12-II	A	9/1/98
C-034	Cross Reference "EM" Coils		
136043	Nameplate, Series VM and WSVM Solenoid Assemblies	0	3/2/97
FH-109264	Encapsulant Coils	original	6/97
GH-112264		H (17/5/91
HV-123022	Magnet Wire Enamelled Copper	ε	6/12/94
	Terminal Screw	G	7/6/95
GH-123246	Gland Cable	D	29/11/95
HV-131403	Cover Housing	F	1/5/96
HV-131408	Housing Assy		
GV-131409	Gasket Cover	E.	29/11/95
/-131410	Connector Conduit	A	6/2/95
1131681	Screw-Sems	С	10/ 9 /96
GV-131683		A	20/12/96
<u>[07-151065</u>]	Board PC/Fuse	A	6/6/96

Schedule of Variations

Variations Permitted by Issue 1:

To correct typographical errors in the Table on 'Summary of Certified Equipment and Temperature Classification'.



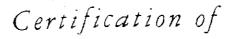
Test Safe

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STANDARDS AUSTRALIA

C1

Issued by:



EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex 3498.

Table 1: Summary of Certified Equipment and Temperature Classification

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Issued by:



919 Londonderry Road Londonderry NSW 2753 • Phone: (02) 4724 4900 Fax: (02) 4724 4999

STANDARDS AUSTRALIA

Scinducts A scentra Quality Assurance Services Pty Limited A C N: 050/614/642

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Issued by.

4

Page 1 of .



EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by, Standards Australia Quality Assurance Services

Certificate of Conformity

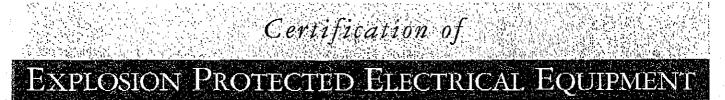
Certificate No:	AUS Ex 1003X		Issue 0: Issue 2: Issue 3:	4/9/1991 20/12/2002 3/2/2003	(Original Issue) (Withdrawn) (Revalidation)
1 			н. Т		
Date of Expiry:	3/2/2013		. ·		1 - L
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		• • • • • • •		
Certificate Holder:	Fisher Controls I 8 Walker Place Wetherill Park N	•			
Electrical Equipment:	Type 646 Transc	lucer, Type :	582i, 3622, ar	nd 3722 Electro-	Pneumatic Converters
Type of Protection:	Ex d 2	Zone 1			
Marking Code:	Ex d IIB T6 IP54 Ex d IIC T6 IP54 AUS Ex 1003X	(Type 646			onverter)
anufactured By:	Fisher Controls I Marshalltown Iowa 50158 USA		Inc		



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STANDARDS AUSTRALIA



Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements (incorporating Amendment 1)

AS 2380.2-1991 Electrical equipment for explosive atmospheres - Explosion-protection techniques - Flameproof enclosure 'd' (incorporating Amendment 1)

AS 1939-1990 Degrees of protection provided by enclosures of electrical equipment (IP Code)

 \neg vis certificate does not ensure compliance with electrical safety requirements and performance other than those included in the \neg and and a listed above.

It is the certificate holder's responsibility to ensure any relevant routine tests in the above Standards are carried out.

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: TostSafe 22738A

Issued by:

File Reference: TestSafe 2002/002091

Signed for and on babalf of issuing authority Laboratory Systems Manager TestSafe Australia

Position

3/2/2003 Date of issue

Ex 1003X-3

4

Page 2 of

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STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No: AUS Ex 1003X

Issue: 3

Date of Issue: 3/2/2003

4 Page 3 of

Certified Equipment:

This document deals with revalidation of this certificate for the transducer type 646 and electro-pneumatic converters type 582i, 3622, and 3722. All these instruments have similar flameproof enclosures comprising of a cast aluminium base and screwed cover. Each enclosure is provided with two flame arresters fitted into breather hole and process pressure connection channel. The electro-pneumatic devices convert a 4 to 20 milliampere signal to proportional pneumatic output signal through a nozzle/flapper arrangement. The nozzle pressure provides input signal pressure to pneumatic positioners.

Electrical access for power and control wiring is via ½"- NPT conduit entry and requires the use of a Standards Australia certified cable gland or Standards Australia certified conduit adaptor.

Conditions of Certification:

Issued by:

- 1. It is a condition of safe use that the enclosure must be connected to external circuits via Standards Australia certified Ex d cable gland or conduit adaptor with a minimum rating of IP54.
- 2. It is a condition of safe use that the equipment must be mounted in position between upward and horizontal such that the vent is facing downwards or horizontally.
- 3. It is a condition of safe use that the irrelevant explosion protection marking codes on the certification label are permanently scribed off upon completion of commissioning.



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STANDARDS AUSTRALIA

Issued by:

Certification of EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by Standards Australia Quality Assurance Services

ل سرام الم الم	to Certificate No.	EX 1003A-3
naaenaum	to Certificate No.	

Drawing Schedule related to Issue 3				
ADdaying No. 2		ad Santes		
42B4279	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS	Р	28/07/97	
SHEET 1	CERTIFICATION DRAWING			
42B4279	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS	P	29/07/97	
SHEET 2	CERTIFICATION DRAWING			
42B4279	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS	P	30/7/97	
SHEET 3	CERTIFICATION DRAWING		-	
42B4279	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS	υ	2/12/02	
THEET 7	CERTIFICATION DRAWING			
42B4279	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS	U	2/12/02	
SHEET 8	CERTIFICATION DRAWING			
42B4279	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS	$\mathbf{V} \leq$	10/12/02	
SHEET 9	CERTIFICATION DRAWING			
43B6881	TYPE 3722, ELECTRO PNEUMATIC INSTRUMENT CERTIFICATION	G	2/12/02	
SHEET 1 OF 3	DRAWING			
43B6881	TYPE 3722, ELECTRO PNEUMATIC INSTRUMENT CERTIFICATION	G	2/12/02	
SHEET 3 OF 3	DRAWING			



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 Londonderry NSW 2753

 Phone: (02) 4724 4900
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STANDARDS AUSTRALIA

Standards Australia Quality Assurance Services Pty Limited A.B.N. 67 050 611 642

4

Page

STANDARDS ASSOCIATION OF AUSTRALIA

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT.

NoEx 547

(Sheet 1 of 2) !

This certifies that the equipment described hereunder has been examined of the Australian standard(s) specified herein, and such equipment has l	t and tested in accordance with the requirements been found to comply with these requirements.
This certificate may be withdrawn at any time if in the opinion of SAA Con for Hazardous Locations, the relevant standard has been altered or revi considered suitable for installation in the hazardous location stated, or if the or conditions under which this certificate was issued Austral Er 36-38 Rick	sed to a decree that the equipment is no longer
Tel: (08) 2	297 2677. Telex: AA82368.
Description of Equipment	Hazardous Location
'Dresser and Ashcroft! B7 and D7	Class I Zone 1
Series Pressure and Differential	Type of Protection
Pressure switches	Ex d IIB T6
Refer Schedule 1	Certificate Holder
	Austral Engineering Supplies Pty Ltd
	Mary Street
	ERMINGTON NSW 2115
Drawing No(s)	Mānufacturer
476C103 Rev G, BD-003-03, 476C104	Dresser Instrument
Rev HH, 552A105 Rev M, 110A124,	Division
117A168, 117A117 Rev H and AD-003-04	Stratford CONNECTICUT 06497 USA
Rev 2	CONNECTION 08497 034
	Test Report No(s)
	SCC TR NO: 59294
Certification Conditions	
	Australian Standard(s)
	AS 2480-1981
	SAA File Reference
Remarks	P/3: 84016/M117
	Effective Date
	1984-07-09
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	1984-07-16
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14 Director-Administration & Approvals Standards Association of Australia

STANDARDS ASSOCIATION OF AUSTRALIA

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIL MENT

Continuation of Certificate No: Ex 547 (Sheet 2 of 2)

1

Austral Engineering Supplies Pty. Limited, 36-38 Richmond Road, Keswick, S.A. 5035. Tel: (08) 297 2677. Telex: AA82368.

SCHEDULE 1

DESCRIPTION

1

An aluminium enclosure incorporating:

	and the second second	
a)	One -	3 5/8 inch 16UN2B threaded joint
		Neoprene 'O' ring gasket
n An a sti	Two -	1 inch NPT conduit entries or
		alternatively:
	Two -	3/4 inch NPT conduit entries
4 C - 1		

(b) A pressure operated actuator seal assembly with:

- One Plunger (see Drawing No. 552A105 Rev M)
- One Nut (see Drawing No. 117A168)
- One Guide (see Drawing No. 110A124)

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york

Director—Administration & Approvals Standards Association of Australia

STANDARDS ASSOCIATION OF AUSTRALIA

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

SUPPLEMENTARY CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. Ex 547-1

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements.

This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3, Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Modification

Dresser Ashcroft 17 Series Temperature Switches Hazardous Location

Class I Zone 1 Type of Protection

Ex d IIB T6

This supplementary certificate has been issued to cover the optional fitting of T7 series Temperature Switches to the enclosures certified on Ex 547, to replace the Pressure or Differential Pressure Switches.

Certificate Holder Austral Engineering Supplies

ERMINGTON	NSW	2115
Mary Street		
Pty Ltd		
	- - -	

Manufacturer

DResser Instrument Division 250 East Main Street STRATFORD CONN 06497 USA

Drawing No(s)

451B149; 451B154; 451B157 and 577A118

Test Report No(s)

Australian Standard(s)

AS 2480-1981

SAA File Reference

P/3: 86132/M132

Effective Date

1986-09-10

Date of Issue

1986-10-13

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Director—Administration & Approvals Standards Association of Australia Certificate of Conformity: IECEx TSA 06.0010X

	1	Ex Certific Conformi	
	NATIONAL ELECTRO ertification Scheme for for rules and details of the IECE	or Explosive Atn	nospheres
Certificate No.:	IECEx TSA 06.0010X	issue No.:1	Certificate history:
Status:	Current		Issue No. 2 (2008-9-5) Issue No. 1 (2007-2-19)
Date of Issue:	2007-02-19	Page 1 of 5	
Applicant:	Temperature Controls P/L 7 Yamma St Sefton NSW 2162 Australia		
Electrical Apparatus: Optional accessory:	Terminal Head and Temperatur nipple probe) and TC20SPRTA (
Type of Protection:	Exd, Exe		
Marking:	For fixed nipple probe: Temperature Controls Pty Ltd Type TC20FIXTA, Ex ed IIC T6 IP 40V 3WATT SERIAL NO.,IECEX TS or, for spring loaded probe: Temperature Controls Pty Ltd Type TC20SPRTA, Ex ed IIC T6 II 40V 3WATT SERIAL NO., IECEX T	SA 06.0010X P66	
Approved for issue on b Certification Body:	ehalf of the IECEx Ujen	Singh	
Position:	Quali	ty and Certification Manager	
2. This certificate is not t	chedule may only be reproduced in ful transferable and remains the property nticity of this certificate may be verifie	of the issuing body.	Website.
ertificate issued by:	TestSafe Australia		
	919 Londonderry Road Londonderry NSW 2753		
		Ex Certific	
		Conformi	ty
Certificate No.:		Conformi	ty
Certificate No.: Date of Issue:	of		ty No.: 1
	ECEx TSA 06.0010X	lssue Page	
Date of Issue:	of ECEx TSA 06.0010X 2007-02-19 Temperature Controls P 7 Yarma St Sefton NSW 2162 Australia	lssue Page	No.: 1
Date of Issue: Manufacturer: Manufacturing location(s This certificate is issued found to comply with the covered by this certificate	of ECEx TSA 06.0010X 2007-02-19 Temperature Controls P 7 Yarma St Sefton NSW 2162 Australia	Issue Page /L esentative of production, w as manufacturer's quality syster Jy with the ECEX Quality syster	No.: 1 2 of 5 s assessed and tested and n, relating to the Ex products em requirements. This
Date of Issue: Manufacturer: Manufacturing location(s This certificate is issued found to comply with the covered by this certifica certificate is granted sub amended. STANDARDS: The electrical apparatus	of ECEx TSA 06.0010X 2007-02-19 Temperature Controls P 7 Yamma St Sefton NSW 2162 Australia	Issue Page /L esentative of production, was manufacturer's quality syster by with the ECEx Quality syst Ex Scheme Rules, IECEx 02 a pecified in the schedule of this	No.: 1 2 of 5 s assessed and tested and n, relating to the Ex products rem requirements. This and Operational Documents as
Date of Issue: Manufacturer: Manufacturing location(s This certificate is issued found to comply with the covered by this certifica certificate is granted sub amended. STANDARDS: The electrical apparatus documents, w as found t IEC 60079-0 : 2004	of ECEx TSA 06.0010X 2007-02-19 Temperature Controls P 7 Yamma St Sefton NSW 2162 Australia s): thas verification that a sample(s), repre- le ICC Standard list below and that the tet, was assessed and found to comp bject to the conditions as set out in EC	Issue Page /L esentative of production, w as manufacturer's quality syste manufacturer's quality syst Xex Scheme Rules, IECEx 02 a Secified in the schedule of this s:	No.: 1 2 of 5 e assessed and tested and n, relating to the Ex products rem requirements. This and Operational Documents as
Date of Issue: Manufacturer: Manufacturing location(s This certificate is issued found to comply with the covered by this certificate certificate is granted sub amended. STANDARDS: The electrical apparatus documents, w as found t	of ECEx TSA 06.0010X 2007-02-19 Temperature Controls P 7 Yamma St Sefton NSW 2162 Australia s): A as verification that a sample(s), repro- big C Standard list below and that the tie, was assessed and found to comp bject to the conditions as set out in EC	Issue Page /L /L with the FOEx Quality system by with the EOEx Quality system by with the EOEx Quality syst Ex Scheme Rules, IECEx 02 a pecified in the schedule of this s: re gas atmospheres - Part 0:	No.: 1 2 of 5 3 assessed and tested and n, relating to the Ex products em requirements. This and Operational Documents as a certificate and the identified General requirements

11/17/11

Certificate of Conformity: IECEx TSA 06.0010X

	Certificat	te of Conformity: IECEx TSA 06.00
Edition: 3 This Certificate does no	t indicate compliance with electrical saf expressly included in the Stand	fety and performance requirements other than tho lards listed above.
TEST & ASSESSMENT RE	PORTS:	
		nination and test requirements as recorded in
Test Report: AU/TSA/ExTR06.0012/00	AU/TSA/ExTR06.0013/00	AU/TSA/ExTR06.0121/00
AU/TSA/ExTR06.0137/00	70/10/12/1100.0010/00	10/10/12/100-012/100
Quality Assessment Report	<u>.</u>	
AU/TSA/QAR06.0018/00		
	IECEV	Certificate
IEC <i>IEĈEx</i>		
	of Co	onformity
Certificate No.:	ECEX TSA 06.0010X	
Date of Issue:	2007-02-19	Issue No.: 1
		Page 3 of 5
	Schedule	
EQUIPMENT:		
	ered by this certificate are as follows:	
enclosing the thermo-cou		e of varying length, with a welded steel end xed in the nipple (assembly model TC20FIX
CONDITIONS OF CERTIFICA	TION: YES as shown below:	
	e supplied with an Instruction Manua stalled in an atmosphere with an a	l. ambient temperature between -20 DegC a
	r media with a maximum temperatu alled in a media with temperatures (re of 450 DegC. exceeding 80 DegC, a lagging extension m
be used to maintain ter to +60 DegC).	nperature class of T6 on the Ter	minal Head (in an ambient temperature
IFC TECEX	IECEx	Certificate
	of Co	onformity

of Conformity

11/17/11

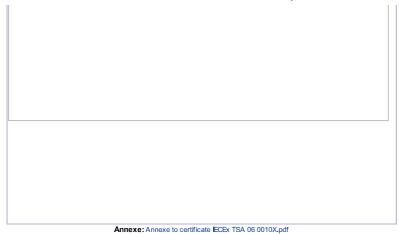
Certificate of Conformity: IECEx TSA 06.0010X

Certificate No.:	ECEX TSA 06.0010X	
Date of Issue:	2007-02-19	Issue No.: 1
		Page 4 of 5
QUIPMENT(continued):		

		c Certificate Conformity
Certificate No.:	ECEx TSA 06.0010X	
Date of Issue:	2007-02-19	Issue No.: 1
		Page 5 of 5
DETAILS OF CERTIFICATE	CHANGES (for issues 1 and above)	:
his issue 1 of the certificat	e was issued to correct several typing	errors in the Annexe to certificate IECEx TSA 06.00102
ecex/iecexweb.nsf/	/IECEx TSA 06.0010X is	sue No. 1?opend

11/17/11

Certificate of Conformity: IECEx TSA 06.0010X



EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No:	AUS Ex 319		Issue 0: Issue 6:	Original Issue1/6/1982 29/9/1998
Date of Expiry:	29/9/2008			
Certificate Holder:	Crouse-Hinds (391 Park Road REGENTS PA			
Electrical Equipment:	Series GUA16	Junction Box	and ELS10 Li	mit Switch
Type of Protection:	GUA16: ELS10:		F6 IP66/IP67 5 IP65 Class	Class I Zone 1 I Zone 1
Marking Code:	GUA16: ELS10: AUS Ex 319	Ex d I/IIC 7 Ex d IIB To	T6 IP66/IP67 5 IP65	
Manufactured By:	Crouse-Hinds 391 Park Road REGENTS PA			

Issued by:



Londonderry Occupational Safety Centre

919 Londonderry Road LONDONDERRY NSW 2753

Fax: (02) 4724 4999

Phone: (02) 4724 4900

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Page 1 of

STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 319-6

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements

AS 2380.2-1991 Electrical equipment for explosive atmospheres - Explosion-protection techniques - Flameproof enclosure 'd' (incorporating Amendment 1)

AS 1939-1990 Degrees of protection provided by enclosures of electrical equipment (IP Code)

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: LOSC 17734

File Reference: LOSC 97/8300

of issuing authority

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Londonderry Occupational Safety Centre

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3 Page 2 of



EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

 Certificate No: AUS Ex
 319
 Issue:
 6
 Date of Issue:
 29/9/1998

 Certified Equipment:
 The GUA16 Series Junction Boxes consist of a base and screwed access cover, both manufactured from aluminium, cast iron, stainless steel or high tensile brass. The aluminium version of the equipment is suitable only for group II applications. Electrical connections to

The ELS10 Series Limit Switch is similar in design and construction to junction box except that the base has provision a single threaded entry and an opening fitted with an operator that actuates a switch block mounted in the base. Table 1 includes a summary of the limit switch variants covered by the certificate.

Table 1: Summary of Limit Switch Variants

the equipment is provided by up to 4 threaded entries in the base.

Cat No	Description	Operator
ELS10/FL	Float Switch	ZCK D59
ELS10/P	Plunger Operated Limit Switch	ZCK D10
ELS10/RL	Roller Arm Limit Switch	ZCK D21
ELS10	Foot Pedal Switch	ZCK D21

Drawing	Schedule
---------	----------

Drawing No	Drawing Title	Issue	Date
21-148-GA029	General Arrangement of ELS10 Type Limit Switches	2	13/7/98
21-148-GA22	General Arrangement	7	14/7/98

Schedule of Variations

Variations Permitted by Issue 6: Re-validation of the Certificate of Conformity.

Issued by:



Londonderry Occupational Safety Centre

919 Londonderry Road LONDONDERRY NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999



3 Page 3 of

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

STANDARDS AUSTRALIA

CERTIFICATE Hazardous Area Certificate for Flameproof Equipment SAA Approval for Ex d IIC T6/T5(80C) Class I Zone 1 Model 3051C Smart Pressure Transmitter Model 3001 Hydrostatic Presssure Transmitter Product Option Code E7 Fisher-Rosemount Pty Ltd 471 Mountain Highway BAYSWATER VIC 3153

1	
	ORDER NUMBERS:
	Customer:
	F-R: 609481

Fisher-Rosemount Document Control PDC No.4.-6094.81-003 Rev. O. Date: 15/2/00

ELECTRICAL EQUIPMENT

.

Certificate No

Ex 1347X

Certificate of Compliance

This certificate is issued for the electrical equipment:

Model 3051C Pressure Transmitter

Submitted for certification by: Rosemount Instruments Pty Ltd 471 Mountain Highway Bayswater Vic 3153

and manufactured by: Rosemount Instruments Inc

This electrical equipment and any acceptable variation thereto is specified in the Schedule or Schedules attached hereto and in the documents referred to ·therein.

This certifies that the equipment described has been found to comply with AS 2380.1-1989 and AS 2380.2-1991.

TYPE OF PROTECTION: Ex d IIC T6 Class I Zone 1

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP42 and any additional conditions as may be prescribed by Standards Australia.

Test Report No: LOSC 7575

File: P/3: 90202.M166

Date of Issue: 13 July 1992

Date of Expiry of Validity: 13 July 2002

Page 1 of 2 Signed for and on behalf of Standards Australia

eral Manaper

Quality Assurance Services

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ELECTRICAL EQUIPMENT

Continuation of Certificate No

and states -

- Constant and

Ex 1347X

Certificate of Compliance

SCHEDULE

Description of Equipment:

The Model 305IC Pressure Transmitter consists of an aluminium alloy or stainless steel enclosure having two compartments containing a terminal block and electronic circuitry. Access to both compartments is via screwed joints and covers. The enclosure may be fitted with an optional display module and a meter cover incorporating cemented glass lens. The terminal compartment has two cable entries tapped with one of the following optional threads:

> 1/2" NPT M20 X 1.5 PG 13.5 1/2" PF

Drawings:

03031-1004 Sheets 1 to 9 ST2233	Issue C Revision 2	13 August 1991
Rosemount Data Sheet 4622	Revision 2	11 June 1992
Rosemount Data Sheet 2623		August 1990
Lood and Data Difeet 2023	Revision	August 1990

Certificate Condition for user:

A certified flameproof thread adaptor shall be supplied with every transmitter enclosure having cable entry thread other than the metric conduit thread

Page 2 of 2

Signed for and on behalf of Standards Australia

General Manager

Quality Assurance Services

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<u>Slandards Australia Quality Assurance Services Phylimited A.C.N. 050 611 6</u>

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex	1347X	Issue 0: Issue 2:	Original Issue 13/7/1992 22/12/1997
Date of Expiry:	13/7/2002		
Certificate Holder:	Fisher-Rosemount Pty Ltd 471 Mountain Highway BAYSWATER Victoria	3153	·
Electrical Equipment:	Pressure Transmitter Model	3051C and 300)1
Type of Protection and Marking Code:	Ex d IIC T5(T_{amb} =80°C)/ DIP T5(T_{amb} =80°C)/T6 I AUS Ex 1347X	/T6 IP65 P65	
Manufactured By:	Rosemount Inc 12001 Technology Drive Eden Prairie MN 55344	USA	

Issued by:



Londonderry Occupational Safety Centre

919 Londonderry Road LONDONDERRYNSW 2753 Phone: (047) 244 900 Fax: (047) 244 999





Page 1 of

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 1347X-2

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements
 AS 2380.2-1991 Electrical equipment for explosive atmospheres - Explosion-protection techniques - Flameproof enclosure 'd' (incorporating Amendment 1)
 AS 2236-1994 Electrical equipment for explosive atmospheres - Dust-excluding Ignition-proof (DIP) enclosures
 AS 1939-1990 Degrees of protection provided by enclosures of electrical equipment (IP Code)

The equipment listed has successfully met the examination and test requirements as recorded in

) Test Report No:	LOSC	1
File Reference:	LOSC	9

4/5884

6521

N 050 KTEK15

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Standards Australia Quality Assurance Services Pty Limited A C



4 Page 2 of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certific	ate No: AUS Ex	1347X	Issue:	2	Date of Issue:	22/12/1997
Certified Equipment: The Model 3051C Pressure Transmitter consis having two compartments containing a termina				onsists of an aluminium alloy or stainless steel enclosure minal block and electronic circuitry. Access to both overs. The enclosure may be fitted with an optional display cemented glass lens. The terminal compartment has two		
Conditi 1.	ions of Certification It is a condition of r with clause 4.3 of A	: nanufacture that all S 2380.2 at a press	l pressure sensor sure of 1020kPa	s of a weld or 1.5 time	ded construction be subjected to a pr es the maximum working pressure, v	essure test in accordance whichever is the greater
2.	It is a condition of s equipment be utilis	afe use for transmi	itter enclosures l	naving a ca	ble entry thread other than metric co	nduit thread that the

Schedule of Variations

Variations Permitted by Issue 1:

369433

- A change in the name of the Certificate Holder to Fisher-Rosemount Pty Ltd. 1.
- Alterations to the construction of the equipment and the addition of power configuration output code 'M'. 2.
- The addition of Solid State Hydrostatic Pressure Transmitter Model 3001 to the range of certified equipment. 3.
- The inclusion of Temperature Classification T5 based on an 80°C ambient. 4.

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 1347X-2

Addendum to Certificate No.....

Schedule of Variations (continued)

Drawings Relating to Variations Permitted by Issue 1

Drawing No	Drawing Title	Issue	Date
03031-1004 Shts 1 to 13	Approval Drawing for Model 03051C/L/P/H, 3001C/S Flameproof Configuration, SAA	F	30/6/94
03031-1007 Shts 1 to 6	Approval Drawing Modular Housing Ass'y, Explosion Proof	с	21/5/93

Variations Permitted by Issue 2:

- 1. Addition of alternative models tot he range of certified equipment. The range of equipment now covered by the Certificate of Conformity is shown in Table 1.
- 2. Addition of DIP to the Type of Protection and Marking Code.

3051T

3001CH and 3001SH

3001C and 3001S

1 able 1: Summary of Certified Equipment							
Model	Description						
3051C and 3051CA	Pressure transmitter						
3051P	High pressure version						
3051L	Liquid level transmitter						
3051H	High temperature configuration						
3051CL and 3051SL	Flush mounted hydrostatic pressure transmitter						

Table 1. Comments of Confided Faultment

Drawings Relating to Variations Permitted by Issue 2

transmitter

Gauge and absolute pressure transmitter

High process temperature hydrostatic pressure

Hydrostatic pressure transmitter

Drawing No	Drawing Title	Issue	Date
13031-1004 Shts 1 to 13	Approval Drawing for Model 03051C/L/P/H/T, 3001C/S Flameproof	AB	16/9/97
1	Configuration, SAA		
03031-1007 Shts 1 to 6	Approval Drawing Module Housing Ass'y, Explosion Proof	AB	16/9/97

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Londonderry Occupational Safety Centre

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.	Ex:	1347X	Issue 0:	Original Issue 13/7/1992	
			Issue 1:	17/9/1994	
			Issue 2:		
,			Issue 3:		
Date of Expiry:		13/7/2002			
Certificate Holder:		Fisher-Rosemount Pty Ltd			
		471 Mountain Highway BAYSWATER Victoria	3153		
. I					
Electrical Equipment:		Model 3051C Pressure Tran	smitter		
Turn of Destantion and	X - 13	·			
Type of Protection and	wark	ng Code:	EX & IIC 10/1.	5(80°C ambient) Class I Zone I	
Manufactured By:		Rosemount Instruments Inc			
billing by:		Resembling mist drients me			
Issued by:					
	···: : :			··· · ,	
	r	ondonderry Occ	unational	Safaty Contro	
	L	Underry Occ	αραιιστιαι	Sujery Centre	
	1.	32 Londonderry Rod	ad LOI	NDONDERRY N	√SV

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Page 1 of



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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

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This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989 Electrical Equipment for Explosive Atmospheres-Explosion-protection Techniques -, General Requirements AS 2380.2-1991 Electrical Equipment for Explosive Atmospheres-Explosion-protection Techniques - Flameproof Enclosure d

The equipment listed has successfully met the examination and test requirements as recorded in

Lest Report No:	LOSC 11498
File Reference:	LOSC 94/5884

Signed for and on behalf of issuing aythority

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No.	Ex:	1347X	Issue:	I	Date of Issue:	17/9/1994
Equipment:		having two comparts compartments is via	nents contain screwed join cover incorpo	ing a termin ts and cover	ists of an aluminium alloy or hal block and electronic circui rs. The enclosure may be fitte mented glass lens. The termin	try. Access to both d with an optional display

Allowable Variations:

- 1. A change in the name of the Certificate Holder to Fisher-Rosemount Pty Ltd.
- 2. Alterations to the construction of the equipment and the addition of power configuration output code 'M'.
- 3. The addition of Solid State Hydrostatic Pressure Transmitter Model 3001 to the range of certified equipment.
- The inclusion of Temperature Classification T5 based on an 80°C ambient.

Conditions of Certification:

1. A certified flameproof thread adaptor shall be supplied with every transmitter enclosure having a cable entry thread other than the metric conduit thread.

Drawing	Schedule
B	Soundard

rawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
03031-1004 Shts 1-8 03031-1007	Approval Drawing for Model 03051C/L/P/H, 3001C/S Flameproof Configuration, SAA	F	30/6/94
Shts 1-4	Approval Drawing Modular Housing Ass'y, Explosion Proof	С	21/5/93

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No:	AUS Ex 03.1347X	Issue 0: Issue 4	Original Issue 13/7/1992 22/7/2003 (Revalidation)
Date of Expiry:	22/7/2013		
Certificate Holder:	Fisher-Rosemount Pty Ltd 471 Mountain Highway BAYSWATER Victoria	3153	
Electrical Equipment:		nal Fieldbus/P	nd Model 3001-series Hydrostatic Pressure rofibus outputs, LCD Indicator and/or T1
Type of Protection:	Ex dZone 1DIPZone A21		
Marking Code:	Ex d IIC T5(T _{anb} =80°C)/T6 DIP A21 T5(T _{anb} =80°C)/T6 AUS Ex 03.1347X		
Manufactured By:	Rosemount Inc 8200 Market Boulevard Chanhassen, MN 55317 US.	A	
Issued hy:			JAS-ANZ

Accreditation by the Joint Accreditation System of Australia and New Zealand, Acc No. Z2221100AS

STANDARDS AUSTRALIA

919 Londonderry Road Londonderry NSW 2753 Phone: (02) 4724 4900 Fax: (02) 4724 4999

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS/NZS 60079.0:2000Electrical apparatus for explosive gas atmospheres Part 0: General requirementsAS/NZS 60079.1:2002Electrical apparatus for explosive gas atmospheres Part 1: Flameproof enclosures 'd'AS/NZS 61241.1.1:1999Electrical apparatus for use in the presence of combustible dustPart 1.1: Electrical apparatus protected by enclosures and surface temperature limitation - Specification for
apparatusAS 1939-1990Degrees of protection provided by enclosures of electrical equipment (IP Code)

This certificate does not ensure compliance with electrical safety requirements and performance other than those included in the Standards listed above.

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: TestSafe 23605

File Reference: TestSafe 2002/032123

Signed for and on behalf of issuing authority Laboratory Systems Manager TestSafe Australia

Position 22/7/2003

Date of issue

Ex 03.1347X-4

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Standards, Australia Quality Assurance Services Pty Limited A.B.N. 67 050 611 642

4 Page 2 of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No: AUS Ex 03.1347X

Issue: 4

Date of Issue:

ae: 22/7/2003

Certified Equipment:

The 3051-series Pressure Transmitter and Model 3001-series Hydrostatic Pressure Transmitter consists of a polyurethane-coated aluminium alloy or stainless steel enclosure (having two compartments, one containing a terminal block and the other electronic circuitry) and a pressure sensor module. The pressure sensor module is available with either dual coplanar pressure diaphragms for measurement of differential pressure, or a single pressure diaphragm for measurement of absolute or gauge pressure.

The electronic circuitry provides a 4-20 mA/HART output, or alternatively a Foundation Fieldbus, Profibus, or a low voltage (0.8/1.0-3.2/5.0 Vdc) output. Access to both compartments in the housing is via threaded covers. Electrical connection is via two threaded entries.

The transmitter may optionally include an LCD digital indicator with an associated cover with a cemented glass window, and/or a T1 transient-protected terminal block in place of the standard terminal block.

All the models are summarised in Table1:

Table 1			
Model	Description		
3051C and 3051CA	Pressure transmitter		
3051P	High pressure version		
3051L	Liquid level transmitter		
3051H	High temperature configuration		
3051CL and 3051SL	Flush mounted hydrostatic pressure transmitter		
3051T	Gauge and absolute pressure transmitter		
3001C and 3001S	Hydrostatic pressure transmitter		
3001CH and 3001SH	High process temperature hydrostatic pressure transmitter		

As the model 3051 housings passed pressure tests at 4 times the reference pressures, and are not of welded construction, they may be exempted from the routine pressure test of Clause 16 of AS/NZS 60079.1:2002.

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4 Page 3 of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex 03.1347X-4

Conditions of Certification:

- 1. It is a condition of manufacture that all pressure sensors of a welded construction be subjected to a pressure test in accordance with Clause 16 of AS/NZS 60079.1:2002 at a pressure of 1020 kPa or 1.5 times the maximum working pressure, whichever is greater.
- 2. It is a condition of safe use for transmitter enclosures having a cable entry thread other than metric conduit thread that the equipment be utilised with an appropriately certified thread adaptor or cable gland.
- 3. It is a condition of safe use, where only one entry is used for connection to external circuits, the unused entry shall be closed by means of the blanking plug supplied by the equipment manufacturer or by suitable certified blanking plugs.
- 4. It is a condition of safe use that the irrelevant explosion protection marking code shall be permanently scribed off the certification marking label upon completion of commissioning, where the equipment is supplied with a certification marking label showing more than one explosion protection marking code.

Drawings Schedule

		The second and a second s	Contraction of the second second second second second second second second second second second second second s
Drawing No	Drawing Title	Issue	Date
03031-1004	Approval Drawing for Model 03051C/LP/H/T, 3001C/S Flameproof	AE	8/7/03
Sheets 1 to 10	Configuration, SAA		
03031-1007	Approval Drawing for Module Housing Ass'y, Explosion Proof	AD	2/2/00
Sheets 1 to 6			
03031-0097	Clamp, Cover	В	26/6/91
Sheets 1 to 2			

Issued by:



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AUSEx_3271X

Price: \$27.50 (incl 10 % GST)				Advanced Search
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Issue #:	1	Expiry Date:	28/08/2006	Password
		Status:	EXPIRED	
				Login
Certificate	Fisher-Rosemoun	t Pty Ltd		Lost Password?
Holder:		,		No account yet? Register

Address: 471 Mountain Highway Bayswater Melbourne Victoria 3153 Australia Manufacturer: Rosemount Inc " T/Transm. 3144,3244 | The model 3144 and 3244 Temperature Transmitters are designed Product **Description:** to concvert the input from a temperature sensor into a 40/20mA signal. Equipment Transmitters Category: Protection d Type: Gas Group: IIC Marking Group:

 IP Rating:
 IP 65

 Test Report #:
 20106
 Issued by:
 Londonderry Occupational Safety Centre

 Standards:
 AS 2380.1-1989 AS 2380.2-1991 AS 1939-1990

 Notes:
 N/A

more categories

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ELECTRICAL EQUIPMENT

Certificate No

Ex 1390X

Certificate of Compliance

This certificate is issued for the electrical equipment:

Model RFT 9739 Flow Transmitter Enclosure

Submitted for certification by:

Rosemount Instruments Pty Ltd 471 Mountain Highway Bayswater Vic 3153

and manufactured by: Micro Motion Inc

This electrical equipment and any acceptable variation thereto is specified in the Schedule or Schedules attached hereto and in the documents referred to therein.

This certifies that the equipment described has been found to comply with AS 2380.1-1989, AS 2380.2-1991 and AS 1939-1990.

TYPE OF PROTECTION: Ex d IIC (Hydrogen only) T6 IP66 Class I Zone 1

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP42 and any additional conditions as may be prescribed by Standards Australia.

Test Report No: NE 92/0102

File: P/3: 92015.M167

Date of Issue: 13 July 1992

Date of Expiry of Validity: 13 July 2002

Page 1 of 2 Signed for and on behalf of Standards Australia

Que

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Continuation of Certificate No

Ex 1390X

Certificate of Compliance

SCHEDULE

Description of Equipment:

The RFT 9739 Flow Transmitter Enclosure has three NPT threaded entries around the base. The cover is secured by means of a threaded joint. The enclosure may be constructed of any of the following aluminium alloys whose magnesium contact is less than 0.4%: ASTM B85, 413.0(S120). 360.0(SG100B).

Drawings:

300 1041	Revision A
300 1072	Revision B
300 1370	Revision A
EB-300 1070 Sheets 1,2	Revision A
EB-300 0465	Revision D
EB-300 0464 Sheets 1 to 4	Revision F
EB-300 0967	Revision B
EB-300 0463	Revision B

20 November 1991 23 January 1992 6 June 1991 11 November 1991 11 November 1991 11 November 1991 undated

26 July 1991

Certificate Conditions for user:

1. Cable glands used shall comply with AS 1828

2. The following shall be marked on the equipment "Isolate elsewhere before opening"

Certificate Condition for manufacturer:

Signed for and on behalf of Standards Australia

The NPT threaded entries shall be marked "NPT".

Page 2 of 2

Que General Managei

Quality Assurance Services

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Certificate of Compliance

ELECTRICAL EQUIPMENT SUPPLEMENTARY Certificate No

This is to certify that Standards Australia Certificate No Ex 1390X issued to:

Rosemount Industries Pty Ltd 471 Mountain Highway Bayswater Vic 3153

for the <u>Model RFT 9739 Flow Transmitter</u> is hereby extended to include additions as detailed in the following schedule.

SCHEDULE

Description of additions:

Inclusion of sensor types CMF025, 050, 100, 200, 300 on the certificate

Revision B

Revision B

Revision B

Revision F

Revision F

Revision D

Revision A

Revision B

Revision A

Revision A

Revision F

Revision E

Revision D

Revision A

Revision A

Revision A

Revision A

Revision A

Revision A

Revision A

Revision H

Revision A

Drawings:

EB-3000463 EB-3000467 EB-3000967 EB-3000464 Sheet 1 EB-3000464 Sheets 2,3,4 EB-3000465 EB-3001070 Sheets 1,2 3001072 3001157 ES-0704800 E-0701500 Sheet 1 E-0701500 Sheet 2 ES-0701500 3000836 Sheets 1,2 3000836 Sheet 3 3000836 Sheet 4 ES-0704500 Sheets 1,2 ES-0704600 Sheets 1,2 ES-0704700 Sheets 1,2 ES-3001078 ES-0702400 ES-3000999

Ex 1390X-1

Page 1 of 2

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Signed for and on behalf of Standards Australia

Awe General Manager

Quality Assurance Services

18 March 1991

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ELECTRICAL EQUIPMENT SUPPLEMENTARY Continuation of Certificate No

Ex 1390X-1

Certificate of Compliance

Drawings (cont'd)

TRACTED REPERTED

ES-3001000	Revision A	18 March 1991
ES-3001001	Revision A	18 March 1991
3001041	Revision A	26 July 1991
E1-3000428	Revision D	26 July 1991
3001370	Revision A	23 January 1992
EB-3000840	Revision G	20 October 1992
EB-3000841	Revision G	20 October 1992
EB-3000842	Revision F	1 January 1993
EB-3000851	Revision E	20 October 1992
EB-3000852	Revision E	1 November 1990
EB-3000952	Revision C	14 October 1991
EB-3000953	Revision C	14 October 1991
EB-3000941	Revision D	14 October 1991
EB-3000942	Revision C	14 October 1991
EB-3000853	Revision C	14 October 1991
EB-3000856	Revision C	14 October 1991
EB-3000854	Revision C	14 October 1991
3001350	Revision A	18 December 1990
3001351	Revision B	18 December 1990
3001352	Revision A	18 December 1990
SAA-D-IS	Installation Instructio	
ATT N-TO		

Certification Conditions for user:

- The equipment must be installed in accordance with AS 2381.7-1989 1.
- The system must be installed in accordance with installation instruction 2. SAA-D-IS (drawing EB-30001375 Rev A)

TYPE OF PROTECTION: Ex ib IIC T5 Class I Zone 1 for CMF 025,050 Ex ib IIC T6 Class I Zone 1 for CMF 100 Ex ib IIB T6 Class I Zone 1 for CMF 200, 300

Test Report No: NI 92/010 to AS 2380.1-1989 and AS 2380.7-1987

File: P/3: 92015.M170

Date of Issue: 31 May 1993

Date of Expiry of Validity: 13 July 2002

Remarks: Page 2 is reissued to correct an error in the Type of Protection.

Signed for and In benetif of Standards Australia

General Manage Quality Assurance Services

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ELECTRICAL EQUIPMENT SUPPLEMENTARY Certificate No

Certificate of Compliance

This is to certify that Standards Australia Certificate Nos. Ex 1390X and Ex 1390X-1 issued to:

Rosemount Instruments Pty Ltd 471 Mountain Highway BAYSWATER VIC 3153

法自动密切所。2.200mmGC出的

for the Model RFT 9739 Flow Transmitter are hereby extended to include modifications as detailed in the following schedule.

SCHEDULE

Description of modifications:

- 1. Replacing the microprocessor and output/communication boards with one board.
- 2. Increase the size of the motherboard to provide connections for the entire system. This replaces internal connection cables.
- 3. Change non intrincisally safe terminal block from 7 position to 8 position.
- 4. Combine two nameplates into one.
- 5. Change of coil wire in CMF025 and CMF050 sensors from 48AWG to 46AWG.
- 6. Increase the value of the CMF025 and CMF050 sensors from 130 ohm \pm 1% to 180 ohm \pm 5%.

DRAWINGS:

ES-0707100 Page 1 ES-0707100 Page 2 E-0707100 3001459 Page 1 3001459 Pages 2,3 Es-0707400 Page 1 ES-0707400 Page 2 Revision B Revision A Revision A Revision B Revision B Revision B Revision B November 1992 12 March 1992 23 November 1992 17 November 1992 27 April 1992 November 1992 16 March 1992

Page 1 of 3

Signed for and on behalf of Standards Australia

Quee General Manager Quality Assurance Services

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CELOT SOLED ELECTRICAL EQUIPMENT SUPPLEMENTARY Continuation of Certificate No

Ex 1390X-2

Certificate of Compliance

DRAWINGS - (CONTINUED)

		and the second second second second second second second second second second second second second second second
E-0707400	Revision C	23 November 1992
3001462 Pages 1, 2, 3	Revision B	17 November 1992
3001529	Revision A	-
0707201	Revision C	_
0707301	Revision B	_`
0707101	Revision A	-
0707401 Pages 1,2,3	Revision D	-
EB-3001642	Revision A	02 March 1993
EB-3000840	Revision H	23 March 1993
EB-3000841	Revision H	23 March 1993
EB-3001533	Revision B	25 August 1993
EB-3001538	Revision A	17 June 1992
EB-3001540	Revision B	-
3001592 Page 1	Revision A	02 November 1992
ES-3001529	Revision A	23 November 1992
3001529	Revision A	November 1992
3001530 Pages 1,2	Revision A	17 November 1992
3001530 Pages 3,4	Revision A	27 August 1992
3001534 Pages 1,2	Revision B	25 August 1992
EI-3001531	Revision A	24 August 1992
ES-3001472	Revision C	23 November 1992
3001472 Page 1	Revision C	17 November 1992
3001472 Pages 2,3	Revision C	13 May 1992
ES-0707200	Revision B	November 1992
E-0707200	Revision C	23 November 1992
3001460 Pages 1, 2	Revision C	22 May 1992
3001460 pages 3,4	Revision C	06 May 1992
ES-0707300	Revision A	November 1992
E-0707300	Revision B	23 November 1992
3001461 Page 1	Revision B	17 November 1992
3001461 Page 2	Revision B	26 May 1992
3001461 Pages 3,4	Revision B	25 March 1992

Page 2 of 3

Signed for and on behalf of Standards Australia

General Manager Quality Assurance Services

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ELECTRICAL EQUIPMENT SUPPLEMENTARY Continuation of Certificate No

Ex 1390X-2

Certificate of Compliance

CERTIFICATION CONDITION FOR USER:

- 1. The system must be installed in accordance with drawing EB-30001540 Revision B and Installation Instruction Type SAA-D-IS.
- The equipment must be installed in accordance with AS 2381.1-1991 and 2. AS 2381.7-1989.

TYPE OF PROTECTION: Ex ib IIC T5 Class I Zone 1 for CMF 025, 050 Er ib IIC T6 Class I Zone 1 for CMF 100 Ex ib IIB T6 Class I Zone 1 for CMF 200. 300

Test Report No: Redbank NI93/0009 to AS 2380.1-1989 and AS 2380.7-1987

File: P/3: 93028.M172

Date of Issue: 19 July 1993

Date of Expiry of Validity: 13 July 2002

Page 3 of 3

Signed for and on behalf of Standards Australia

General Monuper

Quality Assurance Service:

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CERTIFICATION OF EXPLOSION PROTECTED ELECTRICAL EQUIPMENT Administered by: Standards Australia

Quality Assurance Services

Certificate of Conformity

Certificate No.:	Ex 1390X	Issue O: 1:	Original Issue 13 July 1992 18 January 1993
		2:	19 July 1993
		3:	9 September 1993
		J.	Circuit Modifications, extension of
			sensor range
	·		

Date of expiry:

13 July 2002

Certificate Holder:

Rosemount Instruments Pty Ltd

471 Mountain Highway Bayswater Vic 3153

Electrical Equipment:

Micro Motion Inc. Model RFT 9739 Flow Transmitter

With the following sensors: D6, D12, D25, D40, D65, D100, D150, P300, DL100, DL200, CMF025H, CMF050H CMF100H CMF200H, CMF300H

Type of Protection and Marking Code:

Ex (ib) IIC T4 IP20 Class 1 Zone 1 AUS Ex 1390X

Manufactured by:

Micro Motion Inc

Issued by:



Redbank Testing and Certification Centre

2 Smith Street, REDBANK, ULD 4301, Australia Postal Address: PO Box 467. GOODNA, QLD 4300, Australia Phone: (07) 288 2788 Fax: (617) 818 1402

CERTIFICATION OF EXPLOSION PROTECTED ELECTRICAL EQUIPMENT Administered by: Standards Australia

Quality Assurance Services

Certificate No.: Ex 1390X Issue: 3

This Certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP69 and the Procedures (Doc 07134) of the scheme.

The Electrical Equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989: Electrical Equipment for Explosive Atmospheres - Explosion Protection Technique: Part 1: General Requirement

AS 2380.7-1987: Electrical Equipment for Explosive Atmospheres - Explosion Protection Techniques. Intrinsic Safety i

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No.: NI93/0021,

File Reference: 30/003/0077

Sycin

Signed for and on behalf of issuing authority

Manager - Redbank Testing and Certification Centre

Date of Issue: 9 September 1993

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Issued by:



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2 Smith Street, REDSANK, OLO 4301. Australia Postal Address: PO Box 467, GOODWA, OLD 4300, Australia Phone: (07) 288 2753 Fax: (617) 318 1402

CERTIFICATION OF EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia **Quality Assurance Services**

Schedule

						. •		
Certi	ficate No.:	Ex 1390X	Issue:	3	Date of Issu	ie: 9 Se	ptember 19	93
Equi	oment:							•
The F suppl	IFT 9739 Trar ementary cert	nsmitter is a mass fl ificate covers the fo	low transmitte Nowing modifie	r de: catio	signed for use in I ns:	ıazardous	locations.	This
1.1	Increase 25	Ω resistors on barr	ier board to 75	Ω.			1999 - 19	

- 1.1
- Change of manufacturer for fuse on barrier board. 1.2
- Approve the use of 'D' type sensor: D6, D12, D25, D40, D65, D100, D150, D300, DL100, 1.3 DL200 previously certified with RFT9712 for use with RFT9739 P2: .
- Add Hastelioy sensors: CMF025H, CMF050H CMF100H CMF200H, CMF300H to approval. 1.4

Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
ES-0710200	Schem, Barrier RFT9739 P2	A	Apr 93
0710201	PCA, Barrier RFT9739 P2		21 Apr 93
E-0710200	PCA, Barrier RFT9739 P2	A	19 Apr 93
EB-3001626	Installation Instructions Type SAA-D-IS	В	-
EB-3001700	Appvl, CMF025H Sensor	A	28 May 93
EB-3001701	Appvi, CMF050H Sensor	A	28 May 93
EB-3001702	Appvl, CMF100H Sensor	A	28 May 93
EB-3001703	Appvi, CMF200H Sensor	В	18 Jun 93
EB-3001704	Appvl, CMF300H Sensor	A	28 May 93

Drawings

Issued by:



Redbank Testing and Certification Centre

2 Smith Street, REDUANK, QLD 4301, Australia Postal Address: PO Box 467, GOODNA, QLD 4300, Australia Fax: (617) 818 1402 Phone: (07) 288 2788

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

Page 3 of 4

CERTIFICATION OF EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No.: Ex 1390X

Issue: 3 Date of Issue: 9 September 1993

Conditions of Certification:

The system shall be installed in accordance with drawing EB-3001626 Revision B, installation Instructions type SAA-D-IS

The equipment shall be installed in accordance with AS 2381.1-1991 and AS 2381.7-1989

Issued by:



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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

0:

1:

2:

3:

4

Issue

Certificate No .:

Ex 1390X

13 July 1992 18 January 1993 19 July 1993 9 September 1993 22 November 1993

Original Issue Add CMF Sensors Redesign Product Add D Series Sensors Change Cert Holder Name

Date of expiry:

13 July 2002

Certificate Holder:

Fisher - Rosemount Pty Ltd 471 Mountain Hwy BAYSWATER VIC 3153

Electrical Equipment:

t: Micro Motion Inc

Model RFT 9739 Flow Transmitter With the following sensors: D6, D12, D25, D38, D40, D65, D100, D150, D300, DL100, DL200, CMF025, CMF050, CMF100, CMF200, CMF300

Type of Protection and Marking Code: Ex d ib II * T * IP66 (See Table 1 - Equipment Schedule) AUS Ex 1390X

Manufactured by:

Micro Motion Inc

Issued by:



Redbank Testing and Certification Centre

MATA

A\$3902/I\$09002

Registration No 6039

Quality System Certified to

2 Smith Street, REDBANK, QLD 4301, Australia Postal Address: PO Box 467, GOODNA, QLD 4300, Australia Phone: (07) 3810 6381 Fax: (617) 3810 6366



Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc. Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1 - 1989	Electrical equipment for explosive atmospheres - Explosion-protection techniques Part 1: General requirements
AS2380.2 - 1991 (Including Amdt No 1 July 1992)	Electrical equipment for explosive atmospheres - Explosion-protected techniques Part 2: Flameproof enclosure d
AS 2380.7 - 1987	Electrical equipment for explosive atmospheres - Explosion-protection techniques Part 7: Intrinsic safety i
AS 1939 - 1990	Degrees of protection provided by enclosures for electrical equipment (IP Code) (IEC 529:1989)

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: 195/0525 File Reference: 95/0003

Signed for and on behalf of issuing authority

Manager - Redbank Testing and Certification Centre
Position

Date of issue

22 November 1995

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Certificate No.: Ex 1390X Issue: 4

Issued by:



Redbank Testing and Certification Centre

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Quality System Certified to AS3902//SO9002 Registration No 5039

STANDARDS AUSTRALIA

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

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Page 2 of ..

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Equipment:

The RFT 9739 Transmitter is a mass flow transmitter designed for use in hazardous locations with a range of flowmeters. This assessment report covers the addition of Flowmeter Model D38 to the range and the following modifications.

- a) Change to the coil parameters for the Drive and Position Sensor coils fitted to Flowmeter Models D100, D150 and DL100.
- b}
- Replacement of diodes fitted with Drive coils of Models D100, D150 and DL100 with series 33Ω resistor.
- c) Minor changes to the coil parameters for Flowmeter Models D25 and D40.

The name of the certificate holder has also been changed.

EQUIPATENT	DROILCHICK.		SERVICOUSIES CONTRACTOR	PEGREE-OF- PROFECTION
RFT9739 TRANSMITTER	Ex d (ib)	nc	T4	11266
CMF 025, 050 SENSORS	Ex ib	IIC	T 5	
CMF 100 SENSORS	Ex ib	ПС	T6	
CMF 200, 300 SENSORS	Ex ib	ПВ	T6	
D AND DL SERIES SENSORS	Ex ib	IIB	[*] • * T 4	

Table 1: Equipment Schedule

Issued by:



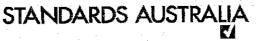
Redbank Testing and Certification Centre

Certificate No.: Ex 1390X Issue: 4 Date of Issue: 22 November 1995

2 Smith Street, REDBANK, QLD 4301, Australia Postal Address: PO Box 467, GOODNA, QLD 4300, Australia Phone: (07) 3810 6381 Fax: (617) 3810 6366



Quality System Certified to AS3902/ISO9002 Registration No 6039



Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

4 Page 3 of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

: Ex 1390X

Addendum to Certificate No..... Issue: 4

Date of Issue: 22 November 1995

Conditions of Certification:

The cable parameters listed below for the 'D' and 'DL' series Flowmeters shall not be exceeded:

41. D	CABLE	DRIVE	con		эх <i>соц</i>
1000000	PARAMUTICKS	C SKOCP IIB		GROCETIB	GROUP IIA
	С (µF)	4.5	12	27	72
	L (mII) *	0.057	0.152	9	17
	L/R (μH/Ω)	26.7	71.2	538	1077

Table 2: Parameters

* These values may be exceeded provided that the L/R ratio of the cable is not exceeded.

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Redbank Testing and Certification Centre

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Page

of

Quality System Certified to AS3902/ISO9002 Registration No 6039



EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.:

Ex 1390X

 Issue 0:
 13 July 1992

 Issue 1:
 18 January 1993

 Issue 2:
 19 July 1993

 Issue 3:
 9 September 1993

 Issue 4:
 22 November 1995

 Issue 5:
 5 February 1997

Original Issue Add CMF Sensors Redisign Product Add D Series Sensors Change Cert Holder Name Additions to System

Jate of expiry:

13 July 2002

Certificate Holder:

Fisher - Rosemount Pty Ltd

471 Mountain Highway BAYSWATER VICTORIA 3153

Electrical Equipment:

Micro Motion Inc Model RFT9739 Flow Transmitter With the following sensors: D6, D12, D25, D38, D40, D65, D100, D150, D300, DL100, DL200, CMF025, CMF050, CMF100, CMF200, CMF300

Type of Protection and Marking Code:

Ex d* (ib)* II* T* IP66 Class I Zone 1 * Refer Table 1 for individual component protection types and marking codes AUS Ex 1390X

Manufactured by:

Micro Motion Inc

Issued by:



Engineering, Testing and Certification Centre

2 Smith Street, REDBANK, QLD 4301, Australia Postal Address: PO Box 467, GOODNA, QLD 4300, Australia Phone: (07) 3810 6370 Fax: (617) 3810 6366

STANDARDS AUSTRALIA

Page 1 of

Quality System Certified to AS3902/ISO9002 Registration No 6039

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1 - 1989	Electrical equipment for explosive atmospheres - Explosion-protection techniques - Part 1 : General Requirements
AS 2380.7 - 1987	Electrical equipment for explosive atmospheres - Explosion-protection techniques - Part 7 : Intrinsic Safety i
AS 1939 - 1990	Degrees of protection provided by enclosures for electrical equipment (IP Code)

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: NI96/0019 File Reference: 95/0384

(P80252)

on behalf of issuing authority Signed for

Manager - Engineering, Testing and Certification Centre

Position

05 February 1997

Date of issue

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Certificate No.: Ex 1390X Issue: 5

Issued by:



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Page 2 of6

Quality System Certified to A\$3902/ISO9002 Registration No 6039

STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Equipment:

The RFT9739 Transmitter is a mass flow transmitter designed for use in hazardous locations with a range of flowmeter sensors.

This supplementary certificate covers the following additions and modifications to the RFT 9739 transmitter:

- Addition of the new phase 3 electronics design, resulting in the model number RFT9739 P3.
- Addition of the new Local Display Option (LDO).
- Addition of the new LDO housing.

The RFT9739 P3 can be installed in one of two ways;

- 1. Ex d (ib) when installed in the flameproof enclosure where the LDO module is not fitted.
- 2. Ex (ib) when installed in a safe area with or without the LDO module fitted.

EQUIPMENT	PROTECTION TYPE	APPARATUS GROUP	TEMPERATURE CLASSIFICATION	DEGREE OF PROTECTION
RFT9739 TRANSMITTER	Ex d (ib)	пс	T4	IP65
RFT9739 TRANSMITTER WITH LDO	Ex (ib)	лс	-	-
CMF 025, 050 SENSORS	Ex ib	IIC	T5	-
CMF 100 SENSORS	Ex ib	nc	. Тб	-
CMF 200, 300 SENSORS	Ex ib	IIB	Т6	
D AND DL SERIES SENSORS	Ex ib	IIB	T4	-

TABLE 1: EQUIPMENT SCHEDULE

Issued by:

Certificate No.: Ex 1390X Issue: 5 Date of Issue: 5 February 1997



Engineering, Testing and Certification Centre

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Quality System Certified to AS3902/ISO9002 Registration No 6039



Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

Page 3 of6....

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No.Ex 1390X Issue: 5 Date of Issue: 5 February 1997

Drawings:

RFT9739 P3 DRAWINGS

DRAWING NO.	DRAWING TITLE	Revision No.	DRAWN/ REVISION DATE
-	Transmitter - RFT9739 Field Mount		-
-	BILL OF MATERIAL PCA, BARRIER RFT9739 P2/P3	_	05/10/96
-	BILL OF MATERIAL ASSY, COVER RF19739 P3 LDO	•	09/03/96
E-0700100 (Shts 1,4/9)	E050M, SENSOR	κ	9/23/96
E-0713500 (3 Shts)	FUSE, 5X20MM, AXIAL LEAD	A	05/06/96
3002037	PCA, BARRIER RFT9739 P2/P3	A	05/06/96
ES-3002037	SCHEM, BARRIER RFT9739 P2/P3	A	5/10/96
3002038 (Sht 3/3)	PCB, BARRIER RFT9739 P2/P3	A	05/06/96
3002088 (4 Shts)	PLATE, EXTERIOR LDO RFT9739	В	7/31/96
3002089 (2 Shts)	PLATE, INTERIOR LDO RFT9739	В	7/5/96
3002091 (3 Shts)	COVER, HOUSING RFT9739 LDO PNT	В.	7/5/96
ES-3002118 (3 Shts)	SCHEM, DRIVE/SIG PROCESSOR RFT9739 P3	В	11/01/95
ES-3002120 (4 Shts)	SCHEM, COMBO RFT9739 P3	В	10/26/95
EI-3002122	INTCON DIAG, RFT9739 P3	A .	9/29/95
ES-3002122	SCHEM, SWITCH/LED RFT9739 P3	A	10/02/95
ES-3002126	SCH, LDO INTERFACE RFT9739 P3	A	10/06/95
3002129 (2 Shts)	PCB, TERMINAL RFT9739 P3	В	10/24/95
ES-3002130 (2 Shts)	SCHEM, TERMINAL RFT9739 P3	В	10/24/95

(DRAWINGS CONTINUED NEXT PAGE)

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Quality System Certified to AS3902/ISO9002 Registration No 6039

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STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No.**Ex.1390X**.... Issue: **5**

Date of Issue: 5 February 1997

(DRAWINGS CONTINUED)

DRAWING NO.	BRAWING TITLE	REVISION	DRAWN! REVISION DAT
FO 0000400	DOUGH DOWED & STOVAC BETOZZO B2	D	09/03/96
ES-3002132	SCHEM, POWER 85-250VAC RFT9739 P3	В	7/1/96
3002164	ASSY, COVER RFT9739 LDO		-
EB-3002199	Installation Instructions Type SAA-D-IS		
EB-3002200	Installation Instructions Type SAA-D-IS SCHEM, POWER 12-30 VDC RFT9739 P3	A	11/15/95
ES-3002290 (2 Shts) ES-3002411	SCHEM, POWER 12-50 VDC RE19/59 F3	A	3/15/96
3005616 (Sht 1/2)	TAG. RFT9739 P3 W/O LDO SAA	A	12/6/96
3005617 (Sht 1/2)	TAG, RFT9739 P3 LDO SAA	в	12/6/96

Conditions of Certification:

The cable parameters, as listed below for the CMF sensors shall be observed.

Cable	RFT9739 Flow Trans	imitter with CMF Sensors
Parameters	Group (18	Group IIC
C (µF)	≤4.5	≤1.5
L' (µH) ★	≤57	≤19
L/R (μΗ/Ω)	≤26.4	≤8.8

* These values may be exceeded provided the L/R ratio of the cable is not exceeded.

The system shall be installed in accordance with the installation instructions listed in drawings EB-3002199 Rev. D and EB-3002200 Rev. D.

Issued by:



Engineering, Testing and Certification Centre



Pag5...... o6......

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Quality System Certified to AS3902/IS09002 Registration No 6039

STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No.Ex.1390X

Issue: 5

Date of Issue: 5 February 1997

Conditions of Certification (Continued)

The cable parameters listed below for the D and DL series flowmeter sensors shall be observed.

Cable	Drive	Coll	Positio	on Coll
Parameters	Group IIA	Group IIB	Group IIA	Group JIB
C;(µF)	≤12	≤4.5	⊴72	≤ 27
L, µН) *	≤152	≤57	≤17000	≤9000
L/R (μΗ/Ω)	≤71.2	≤26.7	≤1077	≤538

* These values may be exceeded provided the L/R ratio of the cable is not exceeded.

The apparatus shall be installed in accordance with AS2381.1 and AS2381.7.

Issued by:



Engineering, Testing and Certification Centre

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Quality System Certified to AS3902/ISO9002 Registration No 6039

STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No .:

Ex 1390X

 Issue 0:
 13 July 1992

 Issue 1:
 18 January 1993

 Issue 2:
 19 July 1993

 Issue 3:
 9 September 1993

 Issue 4:
 22 November 1995

 Issue 5:
 5 February 1997

 Issue 6:
 7 October 1997

Original Issue Add CMF Sensors Redesign Product Add D Series Sensors Change Cert Holder Name Additions to System Addition and modifications to system

Date of expiry:

13 July 2002

Certificate Holder:

Fisher - Rosemount Pty Ltd 471 Mountain Highway BAYSWATER VICTORIA 3153

Electrical Equipment:

Micro Motion Inc Model RFT9739 Flow Transmitter With the following sensors only: D6, D12, D25, D38, D40, D65, D100, D150, D300, DL100, DL200, CMF010, CMF025, CMF050, CMF100, CMF200, CMF300

ype of Protection and Marking Code:

Ex d* (ib)* II* T* IP66 Class I Zone 1 * Refer Table 1 for individual component protection types and marking codes AUS Ex 1390X

Manufactured by:

Micro Motion Inc

Issued by:



Engineering, Testing and Certification Centre

2 Smith Street, REDBANK, QLD 4301, Australia Postal Address: PO Box 467, Goodna, QLD 4300, Australia Phone: (07) 3810 6370 Fax: (617) 3810 6366



Quality System Certified to AS/NZS ISO9002 Registration No 6039

5

Page 1 of

STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1 - 1989	Electrical equipment for explosive atmospheres - Explosion-protection techniques - Part 1 : General requirements
AS 2380.7 - 1987	Electrical equipment for explosive atmospheres - Explosion-protection techniques - Part 7 : Intrinsic safety i
AS 1939 - 1990	Degrees of protection provided by enclosures for electrical equipment (IP Code)

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: NI97/0024 File Reference: 97/0096

(P80494)

Signed for and on behalf of issuing authority

Senior Engineer - Certification Engineering, Testing and Certification Centre · Position

7 October 1997

Date of issue

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Issued by:

Certificate No.: Ex 1390X

Issue: 6



Engineering, Testing and Certification Centre

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Quality System Certified to AS/NZS IS09002 Registration No 6039

STANDARDS AUSTRALIA

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Equipment:

General

The Model RFT9739 is a mass flow transmitter designed for use in hazardous locations with a range of flowmeter sensors.

Additions and Modifications

The following additions and modifications have been made to the previously certified equipment:

- Addition of the CMF010 to the range of flowmeter sensors.
- Reduction in the inductance and resistance of the 'pick-off' coils used in the CMF200 and CMF300 flowmeter sensors.

The RFT9739 P3 can be installed in one of two ways;

- Ex d (ib) when installed in the flameproof enclosure where the LDO module is not fitted. 1.
- Ex (ib) when installed in a safe area with or without the LDO module fitted. 2.

EQUIPMENT	PROTECTION TYPE	APPARATUS GROUP	TEMPERATURE CLASSIFICATION	DEGREE OF
RFT9739 TRANSMITTER	Ex d (ib)	lic	T4	1P66
RFT9739 TRANSMITTER WITH LDO	Ex (ib)	lic		-
CMF 010, 025, 050 SENSORS	Ex ib	lic	Τ5	-
CMF 100 SENSORS	Ex ib	нс	т6	-
CMF 200, 300 SENSORS	Ex ib	IIB	Ť6	-
D AND DL SERIES SENSORS	Ex ib	IIB	T4	-

TABLE 1: EQUIPMENT SCHEDULE

Certificate No.: Ex 1390X Issue: 6 Date of Issue: 7 October 1997

Issued by:



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Engineering, Testing and Certification Centre stem Certified to Quality AS/NZS ISO9002 Registration No 6039

5

Page 3 of

C Á Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No......

Date of Issue: 7 October 1997

Drawings:

Additional Drawings for CMF010, CMF200 and CMF300

DRAWING NO.	DRAWING TITLE	Revision e	DRAWN/ REVISION DATE
EB-3002409	APPVL, E200/E300 PICKOFF COIL	В	2/3/97
EB-3002572	APPVL, CMF010M SENSOR	В	3/14/97
EB-3001703	APPVL, CMF200H SENSOR	F	4/3/97
EB-3001704	APPVL, CMF300H SENSOR	E	4/3/97

Issued by:



Engineering, Testing and Certification Centre

2 Smith Street, REDBANK, QLD 4301, Australia Postal Address: PO Box 467, GOODNA, QLD 4300, Australia Phone: (07) 3810 6370 Fax: (617) 3810 6366 Q U A L I T Y MANAGEMENT

Quality System Certified to AS3902/ISO9002 Registration No 6039

> **4 5** Դ.... մի

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Ex 1390X

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendu	m to	Cer	tificate	: Ex No	1390X
•		~			

Date of Issue: 7 October 1997

Issue:

Conditions of Certification:

The cable parameters, as listed below for the CMF sensors shall be observed.

Caple Parameters	Bin 9739 Blow Links	mitterwith CMF Sensors
С (µF)	≤4.5	≤1.5
L (µH) *	≤57	≤19
L/R (μΗ/Ω)	≤26.4	≤8.8

* These values may be exceeded provided the L/R ratio of the cable is not exceeded.

The system shall be installed in accordance with the installation instructions listed in drawings EB-3002199 Rev. D and EB-3002200 Rev. D.

The cable parameters listed below for the D and DL series flowmeter sensors shall be observed:

Cable	Diye	Col	Positi	an Coll
Parameters	Group IIA	and a second second	Group UA	at configure apport soo, poor shore see
C; (µF)	≤12	<u>≤</u> 4.5	≰72	≤27
L, μΗ) *	≤152	≤57	≤17000	≤9000
L/R (μΗ/Ω)	<u>≤</u> 71.2	≤26.7	≤1077	≤538

* These values may be exceeded provided the L/R ratio of the cable is not exceeded.

Issued by:



Engineering, Testing and Certification Centre



2 Smith Street, REDBANK, QLD 4301, Australia Postal Address: PO Box 467, Goodna, QLD 4300, Australia Phone: (07) 3810 6370 Fax: (617) 3810 6366 Management S Y S T E M Bunut as washing Quality System Certified to AS3902/ISO9002 Registration No 6039

> . **5 5** Page of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.:

Ex 1390X

	n .	42 1002	Original Issue
Issue	0:	13 July 1992	
Issue	1:	18 January 1993	Add CMF Sensors
Issue	2:	19 July 1993	Redesign Product
Issue		9 September 1993	Add D Series Sensors
issue		22 November 1995	Change Cert Holder Name
Issue		5 February 1997	Additions to System
Issue		7 October 1997	Addition and modifications
		• • •	to system
Issue	7:	23 July 2001	Change of RTD manufacturer and minor modifications

Date of expiry:

13 July 2002

Certificate Holder:

Fisher - Rosemount Pty Ltd 471 Mountain Highway BAYSWATER VICTORIA 3153

Electrical Equipment: Micro Motion Inc Model RFT9739 Flow Transmitter With the following sensors only: D6, D12, D25, D38, D40, D65, D100, D150, D300, DL100, DL200, CMF010, CMF025, CMF050, CMF100, CMF200, CMF300

Type of Protection and Marking Code:

Ex d* (ib)* II* T* (T_{amb}= -20°C to +40°C) IP66* AUS Ex 1390X * Refer Table 1

Manufactured by:

Micro Motion Inc. 7070 Winchester Drive BOULDER COLORADO 80301 USA

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Page 1 of 4

Quality System Certified to AS/NZS ISO 9001 Certification No 6039

STANDARDS AUSTRALIA

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1 - 1989

Electrical equipment for explosive atmospheres - Explosion-protection techniques - Part 1 : General requirements (Amdt 1, 5 September 1998)

AS 2380.7 - 1987

Electrical equipment for explosive atmospheres - Explosion-protection techniques - Part 7 : Intrinsic safety i

This certificate does not ensure compliance with electrical safety and performance requirements other than those included in the standards listed above.

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No: 101/0010

File Reference: 01/0037

(P80942)

Signed for and on behalf of issuing authority

A/Senior Engineer - Certification Engineering, Testing and Certification Centre Position

23 July 2001

Date of issue

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Certificate No.: Ex 1390X

Issue: 7

Issued by:



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Page 2 of4

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Equipment:

The Model RFT9739(P3) is a mass flow transmitter designed for use in hazardous locations with a range of flowmeter sensors (refer Table 1).

The RFT9739(P3) can be installed in one of two ways:

- 1. Ex d (ib) when installed in the flameproof enclosure where the Local Display Option (LDO) module is not fitted.
- 2. Ex (ib) when installed in a safe area with or without the LDO module fitted.

This supplementary certificate covers the following modifications:

Replace an RC network on the AC power supply with a 5W zener diode. Change of manufacturer from 'Heraeus' to 'Innovative Sensor Technology' for the RTD temperature sensors.

EQUIPMENT	PROTECTION TYPE	APPARATUS GROUP	TEMPERATURE CLASSIFICATION	DEGREE OF PROTECTION
RFT9739 TRANSMITTER WITHOUT LDO	Ex d (ib)	lic	T4	IP66
RFT9739 TRANSMITTER WITH LDO	Ex (ib)	lic	• •	IP66
CMF010, 025, 050 SENSORS	Ex ib	IIC	Т5	-
CMF100 SENSORS	Ex ib	IIC	тб	-
CMF200, 300 SENSORS	Ex ib	IIB	Т6 -	-
D AND DL SERIES SENSORS	Ex ib	IIB	T4	· ·

TABLE 1: EQUIPMENT SCHEDULE

Certificate No.: Ex 1390X Issue: 7 Date of Issue: 23 July 2001

Issued by:



Engineering, Testing and Certification Centre

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No Ex. 1390X

Issue:

Date of Issue: 23 July 2001

7

Drawings:

DRAWING NO.		REVISION No.	DRAWN/ REVISION DATE
ES-3002132	SCHEM, POWER 85-250VAC RFT9739 P3	E	11/09/00

Conditions of Certification:

The cable parameters listed in Table 2 for the CMF sensors and Table 3 for the D and DL sensors shall not be exceeded.

Cable	RFT9739 Flow Transmitter with CMF Sensors		
Parameters	Group IIB	Group IIC	
C (μF)	4.5	1.5	
L (μH)*	57	19	
L/R (μΗ/Ω)	26.4	8.8	

TABLE 3: CABLE PARAMETERS FOR D AND DL SENSORS
--

Cable	Drive	Coil	Positie	on Coil
Parameters	Group IIA	Group IIB		Group IIB
С (µF)	12	4.5	72	27
L (µH) *	152	57	17000	9000
L/R (μΗ/Ω)	71.2	26.7	1077	538

* These values may be exceeded provided the L/R ratio of the cable is not exceeded.

The system shall be installed in accordance with the installation instructions listed in drawings EB-3002199 Rev. D and EB-3002200 Rev. D.

Issued by:

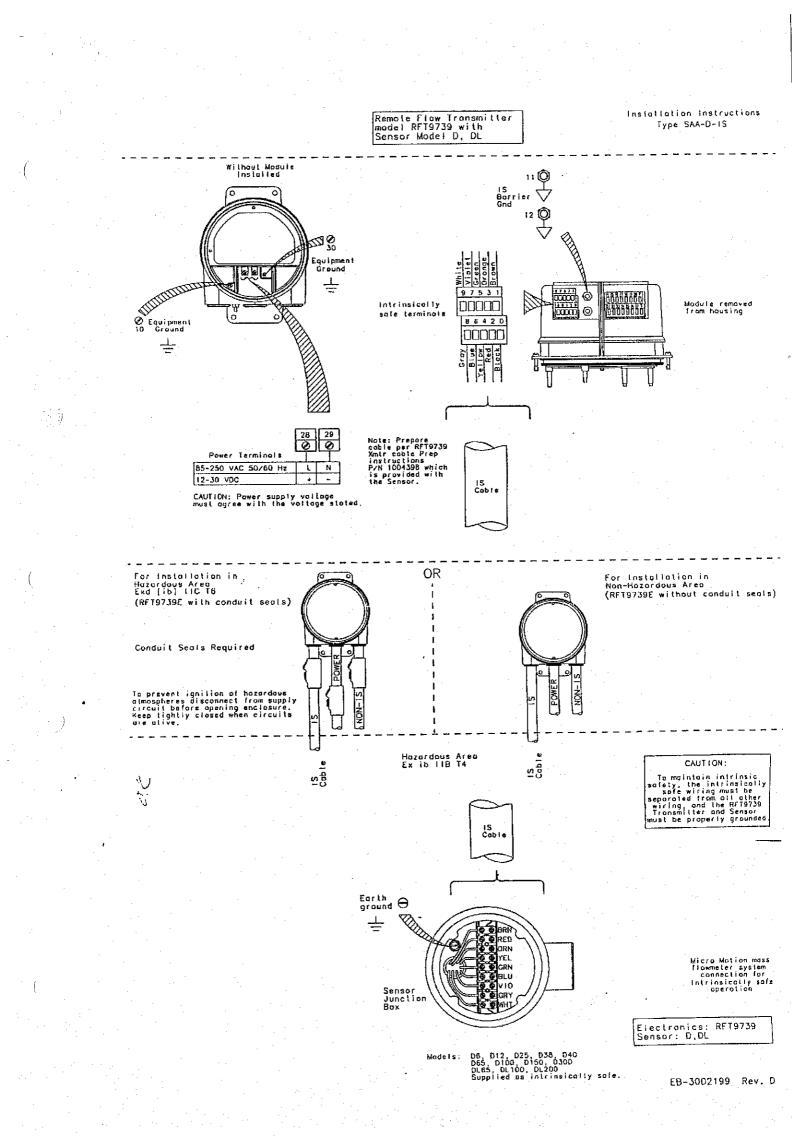


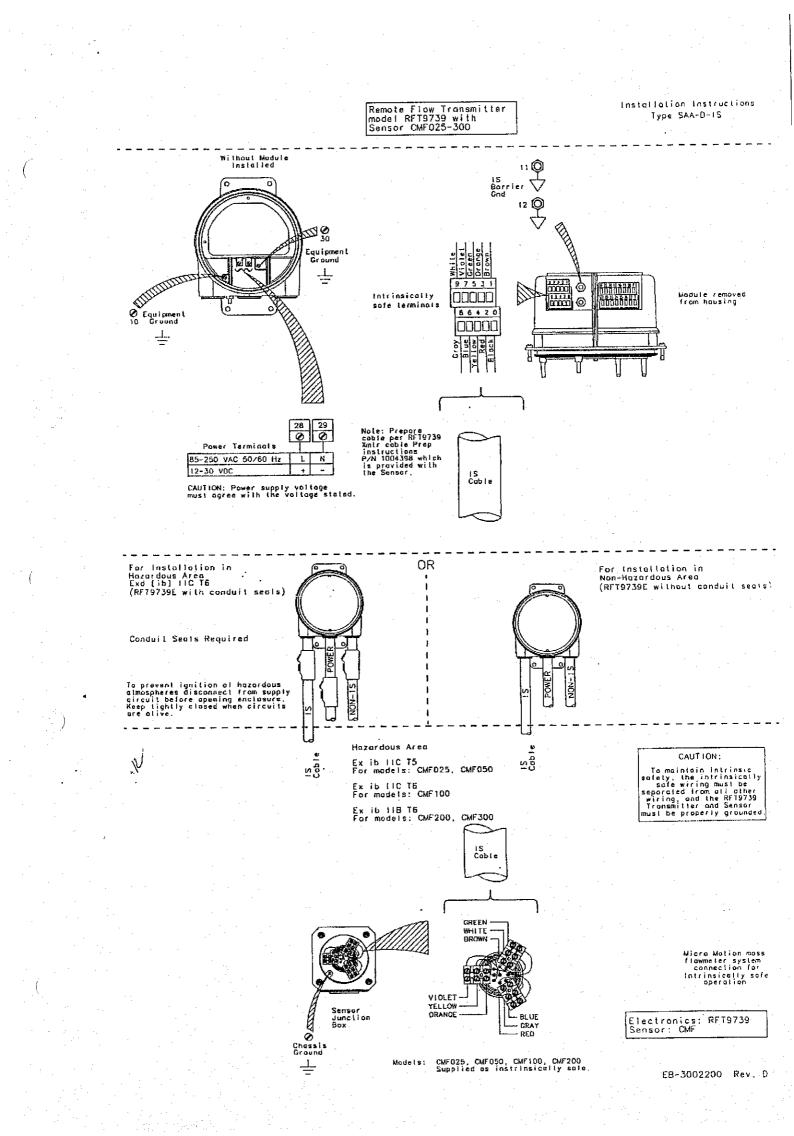
Engineering, Testing and Certification Centre

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Quality System Certified to AS/NZS ISO 9001 Certification No 6039





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Page 11 of 29 for F	LPW glands		

	STANGAROS HOUSE, 80 ARTHUR STREE	T. NORTH SYDNEY, N.S.W. SHEET 11-12
	CERTIFICATE FOR EXPLOSION PROTECT	ed electrical equipment
	No. Ex	.591 (Sheet 1 of 2)
	This certilies that the arcitoment described hersunder has been exam	Intel statistics in anyonestrought, the contracts
	This certifies that the equipment described hereunder has been assant of the Australian startized excellent herein, and such equipment he This certificane may be withdrawn at any time if in the ophilon of SAA I for fiezardous Locations. The clarant standard has been started or considered subsidies for installation in the baserdous ionation stated, or or considered subsidies for installation in the baserdous ionation stated, or	as been lound to comply with these requirements. Committee PCS, Castification of Electrical Equipment existent to a degree that has aculation to no longer liths cartificate holder has broached by of the torms
	Description of Equipment	Hazardaus Location
	A range of Coble Glands; Type FLPW As detailed in Schedule 1	Class I Zone I TSPass Hallysions 1 & 2
· .		Ex IIC IPX8
		Certificate Holder
-		Reliance Manufacturing Co 160 Breakfast Creek Road NEWSTEAD O'LD 4006
	Drawing Note)	Manufacturer
	2-212 Rev B, 2-213 Rev B, 2-214 Rev A, 2-215 Rev B, 2-215 Rev B, 2-219 Rev B, 2-462, 2-463, R-554, 2-555, 2-700, 2-701	Rellance Manufacturing Go 160 Breakfast Creek Road NEWSTEAD O'LD 4006
·		
		Test Report Nots) SCC TR NOT 59360 and 60179
	Contineation Conditions	Austratian Standard(s)
·		As 1823-1924 and As 1939-1981
		SAA File Reference P/3: 84089/M122
	Remarks This certificate supersedes SAA Costificate Nos Ex 59 and DJP 91	Effective Date 1985-02-14
	a transformation and a start and a	Date of Issue
	This document shall not be moroduced except in full.	1 1935-02-19
	This cardiocate as not transference and encourt of the Marcards Association of Australia and investigation of property of the Standards Association of Australia and invested to the description of the Association in the event of it being mysted.	Director-Administration & Approvids Standards Association of Australia

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Page 12 of 29 for FLPW plands

STANDARDS ASSOCIATION OF AUSTRALIA incorporated by Royal Charter

STANDARDS HOUSE, CO ARTHUR STREET, NORTH SYDNEY, N.S.W.

SHEET 12-12

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CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Cartificate No: Ex 591

ALCOVFLEW NICOTE PLATED CABLE GLANDIPODE

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(Sheet 2 of 2)

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SCHEDULE I DESCRIPTION OF EQUIPMENT (cont'd)

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A series of plated brazs cable glands, incorporating neoprene seais, intended for use withsingle steel wire armoured circular cables.

The series includes the following glands:

Gland Series	Nominal Mounting	Thread Dimensions
	Diameter	Length
	um)	mm
FLPW202	20	15.8
FLPW201	20	13.8
FLPW204	20	15.8
FLPW205	20	15.8
FLPW206	20	15.8
FLPW253	25	19.0
FLPW254	- 25	19.0
FLPW255	25	19.0
FLPW236	25	19.0
Fl.PW323	32	254
PLPW324	32	25.4
FLPW325	32	25.4
PLPW325	\$2	25.4
FLPW403	40	25.4
FLPW404	40	25.4
FL2 1405	40	25.4

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Director-Administration & Approvals Standarda Association of Australia

page 12, Jul 6, 2000

Page 2 of 29 for FLPW glands

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FEB,2002

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

ALGO HLPW NICOTE PLACED CABLE GEAND PEG/68

Administered by Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex

Ex 591

Issue 0: Ori Issue 2: 10/

Original Issue 19/02/1985 10/10/1995

Date of Expiry:

10/10/2005

'ontificate Holder:

Reliance Manufacturing Company 40-42 Ross Street NEWSTBAD Queenshand 4006

Electrical Equipment:

Range of Cable Terminating Glands "Alco" Series PLPW 202 to FLPW 755

Type of Protection and Marking Code:

Ex MIC IP66/IP68 (30 metres) Class I Zone 1 and Class II

Manufactured By:

Reliance Manufacturing Company 40-42 Ross Street NEWSTEAD Qurensjand 4006

Issued by:



Londonderry Occupational Safety Centre

132 Londonderry Road LONDONDERRYNSW 2753 Phone: (047) 244 900 Fax: (047) 244 999

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Page 1 of marching

page 2, Jul 6, 2000

Page 3 of 29 for FLPW glands

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the columns.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 1828-1984 Electrical Equipment for Explosive Atmospheres - Cable Glands

AS 1939-1990 Degrees of Protection Provided by Enclosures of Electrical Equipment (IP Code)

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ND R66

The equipment litted has successfully must the examination and test requirements as recorded in

Test Report Noi LOSC 12689 File Reference: LOSC 94/6708

icitiii Constan 10.10.1996

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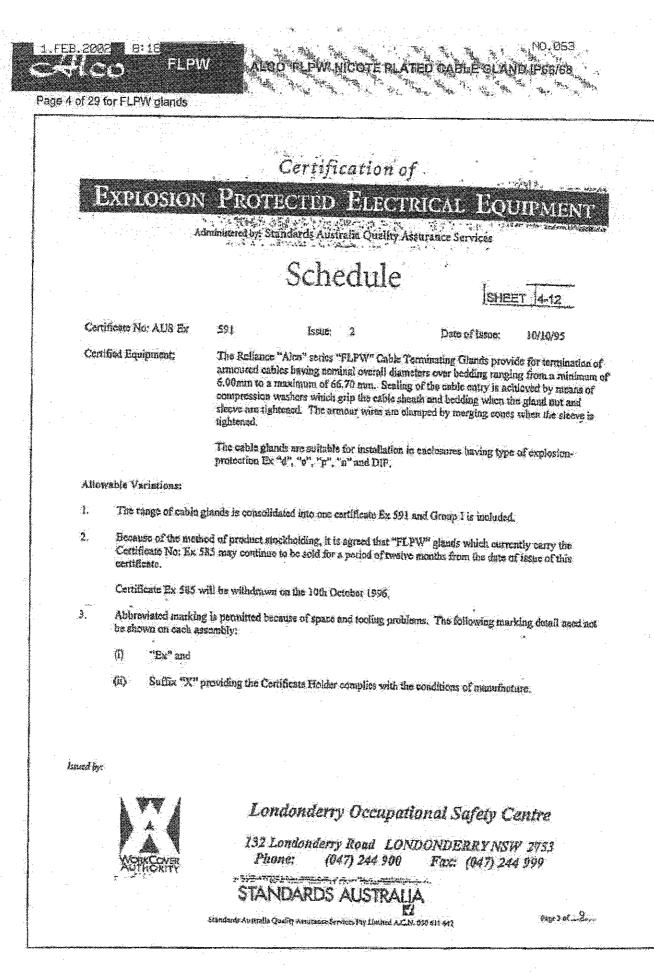
Date of inu

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Page 6 of 29 for FLPW glands

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

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Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex: \$91-3

NO.063

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Conditions of Cartification:

1

It is a condition of manufacture that:

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ALCO

SHEET 5-12

The manufacturer's instructions for the installation of the cable glands shall be made available for use by the installer.

Each gland shall be supplied with an impervious washer for the mounting thread as specified in the product catalogue to maintain the Degree of Protection IP68 at the point of entry to the enclosure when the installation so requires.

issued by:



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Page 6 of 29 for FLPW glands

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addentium to Certificate Mo. Ex: 591-2

LATED CABLE GLAND PEORS

SCREDULE

SHEET 6-12

BANGE OF "Alco" CABLE GLANDS FOR LISTING UNDER ONE CERTIFICATE NUMBER - AUS Es 593

GLAND	MOUNTING THREAD		GLAND	MOUNTING TEREAD	
Ref No:	dis.	Length mm	Ref. No.	dis. pm	Length
FLPW 202	20	15.8	FLPW S02	50	
FLPW 203	20	15,8	FLPW 503	50	28.6
FLPW 204	20	15.8	FLPW 504	30	28.6
FLPW 205	20	15.8	FLPW SOS	50	28.6
FLPW 206	20	15.8	**		
FLPW 253	25	19,0	FLPW 633	63	28.6
RLPW 254	2.5	19.0	FLPW 634	63	28.6
FLPW 255	2,5	19.0	FLPW 635	63	28.6
FLPW 256	25	19,0	FLPW 636	63	28.6
ULPW 323	32	25,4	÷		
J.PW 324	32	25.4	*		az
LFW 325	32	25,4		·	***
T.PW 326	32	25.4		BSP	
LFW 403	• 40	25.4	FLPW 753	255"	28.6
LFW 404	40	25.4	FLPW 754	21/2" .	28.6
LPW 405	40	25.4	FLPW 755	21/20	-28.6
Original I	UA etapilitus	S Ex 591	Örig	inal Cortificate AU	S 12x 585

issued by:



Londonderry Occupational Safety Centre

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 LONDONDERRY NSW 2753

 Phone:
 (047) 244 900
 Fax:
 (047) 244 999

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Page 7 of 29 for FLPW glands

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Staudards Australia Quality Assurance Services

Addendum to Certificate No. 5x: 591-2

NO.063

GLANDIPEEIER

Drawing Schedulo				
Drawing No	Drawing Title	Revision	Dilei	
FLPW 202-405 (Range)	**************************************	1. 400 and		
2-219	Gland Details	b	145- 1000	
2-212	Cland Details	Ď	14 Sep 1993	
2-213	Gland Details	b	14 Sep 1993	
2-214	Gland Details	č	14 Sep 1993	
2-215	Gland Details	ă	14 Sep 1993	
7-218	Gland Datails	lp.	14 Sep 1993	
462	Gland Denniks	B	14 Sep 1993	
2-463	diand Details	l 🖁	14 Sep 1993	
2-700	FLPW Cable Gland Schedule Min, Cable Diameters	4 22 2	14 Sep 1993	
2-701	FLPW Cable Gland Schedule Mis. Cable Diameters	Original	20 Nov 1984	
1-1202	Seal Dehill	Original D	20 Nov 1984	
1-1203	Seal Detail		24 May 1993	
1-1204	Seal Detail		24 May 1993	
1.1205	Seal Datail	ď	24 May 1993	
1-1206	Soal Detail	E	24 May 1993	
-1207	Seal Detail		24 Mey 1993	
-1208	Seal Detail		24 May 1993	
62-405	FLPW Seni Details		24 May 1993	
LPW 244-263	Mounting Thread Seal	1 ÷	25 May 1993	
LPW 202-405	Marking Dotails - FLPW Cable Gland	Initial	28 Jun 1993	
	I wantering available the W CHORD CHIRD	Initial	76 May 1995	
LPW \$02-755 (Rauge)			*	
LPW 502-755 Sheet 1 of 2	Marking Dotails - FLPW Cable Glands	Initial	15-May 1995	
"PW 502-755 Sheet 2 of 2	Cable Ginner	A	21 A 181 1923	
7LPW 59	Clamp	Å	31 Aug 1994	
······································		LM.	20 Oct 1991	

luned by:



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Pege 8 of 29 for FLPW glands

Certification of

OO 'FLEW' NICOTE PLATED CABLE GLAND (P65/68 N.S.

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PROTECTED ELECTRICAL EQUIPMENT DAN DAMAN

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex: 591-2 SHEET 8-42 all Indiana No. Statuting Tatle Revision/ C. Dine of the FLPW 502-755 (Range) continued RLPW 60 Body Å 16 Oct 1991 FLPW 61 Conc ٨ 20 Oct 1991 FLFW 63/67/502/503 Sleove 23 Oct 1991 À WG 502-WG 755 Scal Details B 26 May 1993 Seal Details FLPW 502-635 DCAACA 25 May 1993 FLFW 62 Nut. 05 Jan 1990 Body 16 Oct 1991 FLPW 65 Cone 20 Oct (99) FLPW 66 Nut 05 Jan 1990 FLPW 68 Clamp 20 Oct 1991 XLPW 69 A. As Body 16 Oct 1991 FLPW 70 Conc 20 Oct 1991 FLPW 71 Mut CAB 05 Jan 1990 FLPW 72/76/504/505 Sleeve 27 Oct 1991 FLPW UPPIA-UPPS Scal Details 26 May 1993 FLPW 73 Body A 16 Oct 1991 ELPW 74 Cons A 20 Oct 1991 FLPW 75 Nut C 05 Jan 1990 FLPW 77 Body A 27 Oct 1991 FLPW 78 Clamp 15 Feb 1994 ્ર્યુ

Israed by:



Londonderry Occupational Safety Centre

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Page 9 of 29 for FLPW glands

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Certification of

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administened by: Standards Australia Quality Assarance Services

Addendum to Certificate No., Ex: 591-2 SHEET 8-12 Drawing Joil Revision FLPW 502-755 (Range) continued FLPW 79 Cóne Á 29 Nov 1991 FLPW SO Nut P 05 Jan 1990 FLPW 81 Sleeve A 16 Feb 1994 FLPW 82 Body Å 27 Oct 1991 FLPW 83 Clamp 15 Peb 1994 A FLPW 84 Cone A B 29 Nov 1991 PLPW 85 Nut 05 Jan 1990 LPW 86 Sleeve A 16 Peb 1994 FLPW 87 Body A 27 Oct 1991 FLPW 38 Clamp Å 15 Feb 1994 FLPW 89 Cone A C 29 Nov 1991 **FLPW 90** Nut 28 Feb 1994 FLPW 91 Sleeve A 16 Feb 1994 FLPW 92 Body A 27 Oct 1991 RLPW 93 ACA Cone 29 Noy 1991 FLPW 94 Mint 28 Feb 1994 FLPW 95 Sloeve 16 Feb 1994 **FLPW 97** Clamp Å. 15 Feb 1994 FLPW 99 Nuc B 05 Jan 1990 FLPW 100 Sleeve á 16 Feb 1994

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Page 10 of 29 for FLPW glands

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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

ALCO FLOW MCOTE PLATED ONBLE GLAND

Administered by: Standards Australia Quality Assurance Services

	Ad	ldendem to Certific	ste No. Bx- 59		
*	SHEET 10-12				
Drawing No.	Drawing Titles 200 and 100 and 100 and 100 and 100 and 100 and 100 and 100 and 100 and 100 and 100 and 100 and	Ecusion/			
FLPW 502-755 (Range) -					
continued					
FLPW 102	Clamp	A-	LS Feb 1994		
FLPW 104	Nut	B	05 Jan 1990		
FLPW 105	Sloeve	A	16 Feb 1994		
FLFW 107	Clamp	A	15 Feb 1994		
PLPW 109	Nut	8	05 Jan 1990		
FLPW 110	Sleave	A.	16 Feb 1994		
1422	Body	Originat	08 Jun 1979		
1-1423	Conc	Original	11 Jun 1979		
SW.FLPW 8/95	Table - ALCO "FLPW" Cable Glands	No	Aug 1995		
د. موجد باز مرتوست الا	And Markey and Annal and Anna	reference	States and the second second second second second second second second second second second second second second		
SW.FLPW 8/95.A.	Appendix II - FLPW Fitting Instructions	No	Aug 1995		
كيويوني تستنف المتناف		raference	the second second second second second second second second second second second second second second second s		

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Standards Australia Quality Assurance Services Pay Limited ACON, Q59 611 043

NO.063

P66/68





EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2236-1985 - Electrical equipment for explosive atmospheres - Dust-excluding ignition-proof (DIP) enclosure

AS 2380.1-1994 - Electrical equipment for explosive atmospheres - Explosion protection techniques. Part 1: General Requirements

AS 2380.2-1991 - Electrical equipment for explosive atmospheres - Explosion protection techniques. Part 2: Flameproof enclosure d

The equipment listed has successfully met the examination and test requirements as recorded in

est Report No: SCC 58569, ITACS 676A File Reference: TT354

Signed for and on behalf of issuing authority

General Manager

Position

4 October 1994

Date of issue

Certificate No: Ex 1498U Issue: 0

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Issued by:

Quality Assurance Services

A subsidiary of Standards Australia 1 The Crescent Homebush NSW 2140 Australia Mail: PO Box 1055 Strathfield NSW 2135 Australia Telephone (02) 746 4900 Fax (02) 746 8460

STANDARDS AUSTRALIA

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

' Page 2 of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Equipment:

This certificate covers the following flameproof conduit accessories:

SERIES	DESCRIPTION		
FCP	Flameproof conduit plugs 16-63 mm series		
FR	Flameproof metric reducers		
FN	Flameproof hexagon nipples		
FCL	Flameproof couplings		
FA (BSP)	Flameproof adaptors (BSP male thread to metric conduit female thread)		
FA (NPT)	Flameproof adaptors (NPT male thread to metric conduit female thread)		
DCP	Dust-Excluding Ignition - Proof (DIP) Plugs		

Variations to Original Issue:

- 1. Inclusion of the new DCP range of DIP Plugs
 - Modifications to certified conduit accessories covered by Issue 0

Issued by:

Certificate No: Ex 1498U

Issue: 1

Quality Assurance Services

A subsidiary of Standards Australia 1 The Crescent Homebush NSW 2140 Australia Mail: Locked Bag 2032 Strathfield NSW 2135 Australia Telephone (02) 9746 4900 Fax (02) 9746 8460



Standarde Australia Quality Assurance Sancices Pty Timited & CN 050 611 6

Page 3 of4

97 16:12 FROM:CLIPSAL STAHL EX PTY 0297905949

TO: GIPL NUDGEE

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 1498U

Addendum to Certificate No.....

Issue: 0

DRAWING NO	DRAWING TITLE	REVISION NO	DRAWN/ REVISION DATE
W-514	Flameproof conduit plugs 16-63 mm series	А	8 August 1994
W-515	Flameproof metric reducers	A	8 August 1994
W-516	Flameproof hexagon nipples	A	8 August 1994
W-517	Flameproof couplings	А	8 August 1994
W-518	Flameproof adaptors (BSP male thread to metric conduit female thread)	A	8 August 1994
W-519	Flameproof adaptors (NPT male thread to metric conduit female thread)	A	8 August 1994

Issued by:

Quality Assurance Services

A subsidiary of Standards Australia 1 The Crescent Homebush NSW 2140 Australia Mail: PO Box 1055 Strathfield NSW 2135 Australia Telephone (02) 746 4900 Fax (02) 746 8460

STANDARDS AUSTRALIA

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

Page 4 of 4

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.:

Ex 1498U

Issue: 0 (original) Issue: 1 Date of Issue: Date of Issue: 4 October 1994 30 September 1997

Date of Expiry:

4 October 2004

Certificate Holder:

GERARD INDUSTRIES PTY LTD 12 Park Terrace Bowden SA 5007

Electrical Equipment:

"Clipsal/Wilco' explosion protected conduit accessories (Refer schedule for type of accessory and identification)

Type of Protection and Marking Code:

Ex d/IIC, Class I, Zone 1 { DIP T6 IP66 Class II { Fo Aus Ex 1498U {

{ For Exd/DIP Product

{ For DIP only Product

DIP T6 IP66 Class II Aus Ex 1498U

Manufactured by:

Issued by:

Clipsal Stahl Ex Pty Ltd

VERIFIED COPY OF ORIGINAL CERTIFICATE

VERIFIED COPY OF ORIGINAL CERTIFICATE Date 20:3.03 Issued By

Quality Assurance Services

A subsidiary of Standards Australia 1 The Crescent Homebush NSW 2140 Australia Mail: Lcoked Bag 2032 Strathfield NSW 2135 Australia Telephone (02) 9746 4900 Fax (02) 9746 8460

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RICAL LOU

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2236-1994 - Electrical equipment for explosive atmospheres - Dust-excluding ignition-proof (DIP) enclosure

AS 2380.1-1989 - Electrical equipment for explosive atmospheres - Explosion protection techniques. Part 1: General Requirements

S 2380.2-1991 Inc Amdt No 1 - Electrical equipment for explosive atmospheres - Explosion protection techniques. Part 2: Flameproof enclosure d

The equipment listed has successfully met the examination and test requirements as recorded in

SCC 58569, ITACS 676A, ITACS 1185 Test Report No: File Reference: TT354

nd on behalf of issuing authority Signed for

Technical Manager - Certification Position

30 September 1997

Issue: 1

Date of issue

Certificate No: Ex 1498U

This certificate and schedule may not be reproduced except in full.

This certificate is not transferable and remains the property of Standards Australia Quality Assurance Services and must be returned in the event of its being revoked or not renewed.

Issued by:

Quality Assurance Services

A subsidiary of Standards Australia 1 The Crescent Homebush NSW 2140 Australia Mail: Locked Bag 2032 Strathfield NSW 2135 Australia Telephone (02) 9746 4900 Fax (02) 9746 8460

STANDARDS AUSTRALIA 7

_~-97 16:11

FROM:CLIPSAL STAHL EX PTY 0297905949

TO: GIPL NUDGEE

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Equipment:

This certificate covers the following flameproof conduit accessories:

SERIES DESCRIPTION			
FCP Flameproof conduit plugs 16-63 mm series			
FR	Flameproof metric reducers		
FN	Flameproof hexagon nipples		
FCL	Flameproof couplings		
FA (BSP)	Flameproof adaptors (BSP male thread to metric conduit female thread)		
FA (NPT)	Flameproof adaptors (NPT male thread to metric conduit female thread)		

onditions of Certification:

- The fittings shall be used in accordance with AS 2381 Electrical equipment for explosive atmospheres -Selection, installation and maintenance.
- 2. The fittings shall be installed so as the required IP rating to AS 1939 Degrees of protection provided by enclosures of electrical equipment, is maintained for the equipment concerned.

Issued by:

Certificate No: Ex 1498U

Issue: 0

' Page 3 of4

Quality Assurance Services

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STANDARDS AUSTRALIA

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex 1498U

Issue: 1

DRAWING NO.	DRAWING TITLE	REVISION NO.	DRAWN/ REVISION DATE
W-514	Flameproof conduit plugs 16-63 mm series	A	8 August 1994
W-515	Flameproof metric reducers	A	8 August 1994
W-516	Flameproof hexagon nipples	A	8 August 1994
W-517	Flameproof couplings	A	8 August 1994
W-518	Flameproof adaptors (BSP male thread to metric conduit female thread)	A	8 August 1994
W-519	Flameproof adaptors (NPT male thread to metric conduit female thread)	A	8 August 1994
W-515	Flameproof metric reducers	В	17 March 1997
W-516	Flameproof hexagon nipples	В	16 May 1997
W-518	Flameproof adaptors (BSP male thread to metric conduit female thread)	В	16 May 1997
W-519	Flameproof adaptors (NPT male thread to metric conduit female thread)	В	16 May 1997
W-646	DIP Metric threaded conduit plugs	A	8 July 1997

Issued by:

Quality Assurance Services

A subsidiary of Standards Australia

1 The Crescent Homebush NSW 2140 Australia Mail: Locked Bag 2032 Strathfield NSW 2135 Australia Telephone (02) 9746 4900 Fax (02) 9746 8460



Standarde Australia Quality Accurance Consider Dire Limited & C M OFD (11 (1)

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No.Ex 319 (Sheet 1 of 2)

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements. This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3, Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Equipment	Hazardous Location
"Crouse-Hinds" Enclosures	Class I Zone 1
Refer Schedule 1	Type of Protection Refer Schedule 1
	Certificate Holder
	Crouse-Hinds Aust Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196
Drawing No(s)	Manufacturer Crouse-Hinds Aust Pty Ltd 31 Moxon Road
Refer Schedule 1	PUNCHBOWL NSW 2196
Certification Conditions	Test Report No(s) Londonderry Centre TR No. LFP 698 Australian Standard(s)
	AS 2480-1981 and
	AS 1939-1981
	SAA File Reference
Remarks	P/3: 81194/M101
	Effective Date
	1982.05.05
	Date of Issue 1982.06.01

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Junes Director—Administration & Approvals Standards Association of Australia '

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 319 (Sheet 2 of 2)

SCHEDULE 1 Description of Equipment (Continued)

"Crouse-Hinds" Enclosures

Cat. Nos.	Entries
GUALA; GUACA; GUATA; GUAXA; GUAMA: GUAWA; GUABA and	(i) 20mm-34" ET-1/2" N.P.T1/2" BSP
GUADA.	(ii) 25mm-1" ET-¾" N.P.T¾" BSP
EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA and	(i) 20mm-¾" ET-½" N.P.T½" BSP
EABDA.	(ii) 25mm-1" ET-"/4 N.P.T¾" BSP

Drawing No(s)

21-148-4 Issue 5 D/- 18.2.82; 21-148-5 Issue 6 D/- 18.2.82; 21-148-7 Sheet 1 Issue 4 D/- 18.2.82; 21-148-7 Sheet 2 Issue 3 D/- 18.2.82; 21-148-7 Sheet 3 Issue 4 D/- 18.2.82; CH-3 Issue 6 D/- 18.2.82; 21-148-2 Sheet 1 Issue 3 D/- 18.2.82; 21-148-2 Sheet 2 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 1 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 2 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 3 Sh

Type of Protection

 For enclosures, Cat. Nos: GUALA; GUACA; GUATA; GUAXA; GUAMA; GUAWA; GUABA and GUADA.
 Ex d IIB T6 IP65
 For enclosures, Cat. Nos: EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA; and EABDA.

Ex d IIC T6 IP65

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Junin Director—Administration & Approvals Standards Association of Australia

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No.Ex 319 (Sheet 1 of 2)

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements. This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3, Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Equipment	Hazardous Location
"Crouse-Hinds" Enclosures	Class I Zone 1
Refer Schedule 1	Type of Protection Refer Schedule 1
	Certificate Holder
	Crouse-Hinds Aust Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196
Drawing No(s)	Manufacturer Crouse-Hinds Aust Pty Ltd 31 Moxon Road
Refer Schedule 1	PUNCHBOWL NSW 2196
Certification Conditions	Test Report No(s) Londonderry Centre TR No. LFP 698 Australian Standard(s)
	AS 2480-1981 and
	AS 1939-1981
	SAA File Reference
Remarks	P/3: 81194/M101
	Effective Date
	1982.05.05
	Date of Issue 1982.06.01

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STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 319 (Sheet 2 of 2)

SCHEDULE 1 Description of Equipment (Continued)

"Crouse-Hinds" Enclosures

Cat. Nos.	Entries
GUALA; GUACA; GUATA; GUAXA; GUAMA: GUAWA; GUABA and	(i) 20mm-34" ET-1/2" N.P.T1/2" BSP
GUADA.	(ii) 25mm-1" ET-¾" N.P.T¾" BSP
EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA and	(i) 20mm-¾" ET-½" N.P.T½" BSP
EABDA.	(ii) 25mm-1" ET-"/4 N.P.T¾" BSP

Drawing No(s)

21-148-4 Issue 5 D/- 18.2.82; 21-148-5 Issue 6 D/- 18.2.82; 21-148-7 Sheet 1 Issue 4 D/- 18.2.82; 21-148-7 Sheet 2 Issue 3 D/- 18.2.82; 21-148-7 Sheet 3 Issue 4 D/- 18.2.82; CH-3 Issue 6 D/- 18.2.82; 21-148-2 Sheet 1 Issue 3 D/- 18.2.82; 21-148-2 Sheet 2 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 1 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 2 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 3 Sh

Type of Protection

 For enclosures, Cat. Nos: GUALA; GUACA; GUATA; GUAXA; GUAMA; GUAWA; GUABA and GUADA.
 Ex d IIB T6 IP65
 For enclosures, Cat. Nos: EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA; and EABDA.

Ex d IIC T6 IP65

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STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No.Ex 319 (Sheet 1 of 2).

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements. This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3, Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Equipment	Hazardous Location
"Crouse-Hinds" Enclosures	Class I Zone 1
Refer Schedule 1	Type of Protection Refer Schedule 1
	Certificate Holder
	Crouse-Hinds Aust Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196
Drawing No(s) Refer Schedule 1	Manufacturer Crouse-Hinds Aust Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196
Refer Schedule (
Certification Conditions	Test Report No(s) Londonderry Centre TR No. LFP 698
	Australian Standard(s) AS 2480-1981 and AS 1939-1981
	SAA File Reference
Remarks	P/3: 81194/M101
	Effective Date
	1982.05.05
	Date of Issue 1982.06.01

This certilicate is not transferable and remains the property of the Standards Association of Australia and must be returned to the Association in the event of it being revoked.

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STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 319 (Sheet 2 of 2)

SCHEDULE 1 Description of Equipment (Continued)

"Crouse-Hinds" Enclosures

Cat. Nos.	Entries
GUALA; GUACA; GUATA; GUAXA; GUAMA: GUAWA; GUABA and	(i) 20mm-4" ET-1/2" N.P.T1/2" BSP
GUADA.	(ii) 25mm-1" ET-4" N.P.T4" BSP
EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA and	(i) 20mm-¾" ET-½" N.P.T½" BSP
EABDA.	(ii) 25mm-1" ET-"/4 N.P.T%" BSP

Drawing No(s)

21-148-4 Issue 5 D/- 18.2.82; 21-148-5 Issue 6 D/- 18.2.82; 21-148-7 Sheet 1 Issue 4 D/- 18.2.82; 21-148-7 Sheet 2 Issue 3 D/- 18.2.82; 21-148-7 Sheet 3 Issue 4 D/- 18.2.82; CH-3 Issue 6 D/- 18.2.82; 21-148-2 Sheet 1 Issue 3 D/- 18.2.82; 21-148-2 Sheet 2 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 1 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 2 Issue 3 D/- 18.2.82; 21-148-GA3 Sheet 3 D/- 18.2.82; 21-148-

Type of Protection

1. For enclosures, Cat. Nos: GUALA; GUACA; GUATA; GUAXA; GUAMA; GUAWA; GUABA and GUADA.

Ex d IIB T6 IP65

2. For enclosures, Cat. Nos: EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA; and EABDA.

Ex d IIC T6 IP65

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Director-Administration & Approvals Standards Association of Australia

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

SUPPLEMENTARY CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. Ex 319-1

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements. This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3. Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer or conditions under which this certificate was issued.

considered suitable for installation in the hazardous location stated, or if th or conditions under which this certificate was issued.	sed to a degree that the equipment is no longer the certificate holder has breached any of the terms
Description of Modification	Hazardous Location
'Crouse-Hinds' Enclosures, Cat Nos GUA Series	Class I Zone 1
and Variants ELS and ELFS Series	Type of Protection
This supplementary certificate relates to the following items:	Ex d IIB T6 IP 65
	Certificate Holder
(a) Modification of existing marking to improve its legibility.	Crouse-Hinds Australia Pty Ltd
(b) Modification of the cover design to include the optional centre boss as a label screw attachment.	31 Moxon Road PUNCHBOWL NSW 2196 Manufacturer
 (c) Extension of the range of equipment already certified under SAA Certificate No. Ex 319 to include Limit Switch Cat. No. ELS-10 and Foot Pedal Switch Cat. No. ELFS-10 Series. 	Crouse-Hinds Australia Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196
	Test Report No(s)
	Londonderry Centre
Drawing No(s)	TR NO: 1701
3-148-GA1 Issue 2; 3-148-GA2 Issue 4; 3-148-GA3 Original; 3-148-3 Issue 3 and 21-148-18 Issue 3	Australian Standard(s) AS 2480-1981 AS 1939-1981
	SAA File Reference
	P/3:83161/M118
	Effective Dete
	Effective Date
	Date of Issue
· · · · · · · · · · · · · · · · · · ·	1984-08-16

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J.J.M. Director—Administration & Approvals Standards Association of Australia

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

SUPPLEMENTARY CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. EX 319-2

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements. This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3, Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Modification

'Crouse Hinds' Junction Box

Model GUACA 16M

This supplementary certificate relates to the addition of a mild steel adaptor to facilitate connection of this junction box to an air conditioner compressor unit. The junction box was previously certified under SAA Certificate No. Ex 319 & 319-1.

Drawing 21-148-GAll Issue 2

<u>Certification</u> condition

The manufacturer must carry out on all enclosures a routine pressure test to Clause 3.3.3, i.e. 1,005kPa (1.5 times the reference pressure of 670 kPa). Hazardous Location Class I Zone 1

Type of Protection Ex d IIB T6 IP65

Certificate Holder Crouse Hinds (Aust.) Pty. Ltd., 31 Moxon Road

PUNCHBOWL. N.S.W. 2196

Manufacturer Crouse Hinds (Aust.) Pty. Ltd.,

31 Moxon Road

PUNCHBOWL N.S.W. 2196

Test Report No(s)

SCC TR No. 61271

Australian Standard(s) AS 2480-1981 with Amendment No.1

SAA File Reference P/3: 85 137/M128

Effective Date 1986.02.18

Date of Issue 1986.03.06

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Director-Administration & Approvals Standards Association of Australia

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

SUPPLEMENTARY CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. Ex 319-3

This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements.

This certificate may be withdrawn at any time if in the opinion of SAA Committee P/3, Certification of Electrical Equipment for Hazardous Locations, the relevant standard has been altered or revised to a degree that the equipment is no longer considered suitable for installation in the hazardous location stated, or if the certificate holder has breached any of the terms or conditions under which this certificate was issued.

Description of Modification

Drawing No(s)

21-148-2

21-148-4

21-148-5

21-148-7

21-148-7 Sheet 2

21-148-7 Sheet 3

21-148-16 Issue 2 21-148-18 Issue 4

21-148-GA3 Sheet 1

"Crouse-Hinds" GUA and EAB Series Junction Boxes

This Supplementary Certificate relates to the addition of grade 316 stainless steel as a material option for equipment previously certified under SAA Certificates Ex 319, Ex319-1, & Ex319-2

Sheets 1 and 2, Issue 4

Issue 4

Issue 5

Issue 4

Sheet 1 Issue 5

Issue 6

Issue 7

21-148-GA2 Sheet 1 Issue 3

Hazardous Location Class I Zone 1

Type of Protection Ex d IIB T6 IP65-GUA Series

Ex d IIC T6 IP65-EAB Series

Certificate Holder

Crouse-Hinds (Aust) Pty. Ltd., 31 Moxon Road PUNCHBOWL. N.S.W. 2196

Manufacturer

Crouse-Hinds (Aust) Pty. Ltd. 31 Moxon Road PUNCHBOWL. N.S.W. 2196

Test Report No(s)

N/A

Australian Standard(s)

AS 2480-1981 AS 1939-1981 SAA File Reference

P/3: 86026/M128

Effective Date

1986-02-18

Date of Issue 1986.03.24

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Director—Administration & Approvals Standards Association of Australia

Incorporated by Royal Charter

STANDARDS HOUSE, 80 ARTHUR STREET, NORTH SYDNEY, N.S.W.

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 319-4

This is to certify that SAA Certificate Nos Ex 319, Ex 319-1, Ex 319-2 and Ex 319-3 issued to:

Crouse Hinds (Aust) Pty Ltd 31 Moxon Road PUNCHBOWL NSW

for 'Crouse Hinds' Junction Box Model GUA are hereby modified as detailed in the following Schedule.

Schedule

Description of Modification

The GUA series air conditioner junction box has had a cast iron adaptor added and the range has been extended to cover 32 mm entries and Group 1 compliance.

Drawings

21-148-GA20 Issue 3 21-148-GA22 Issue 2

Type of Protection: Ex d IIB T6 IP65 for GUALA16 series air conditioner junction box Ex d I/IIB T6 IP65 for GUA series junction boxes Cat No GUA Ex d IIC T6 IP65 for GUA series junction boxes Cat No EAB

Test Report: LOSC 2892 to AS 2480-1986 and AS 1939-1986

File: P/3: 87031/M137

Remarks: This supersedes SAA Certificate No Ex 319-3 dated 21 July 1987 which contained typographical errors.

Date of Issue: 29 July 1987

Page 1 of 1

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ELECTRICAL EQUIPMENT SUPPLEMENTARY Certificate No

Ex 319-5

Certificate of Compliance

This is to certify that Standards Australia Certificate No Ex 319, Ex 319-1, Ex 319-2, Ex 319-3 and Ex 319-4 issued to:

Crouse Hinds (Australia) Pty Ltd

for the <u>"Crouse Hinds Junction Box Model GUA</u> are hereby extended to include changes as detailed in the following schedule.

SCHEDULE

Description of changes:

1. Change of address of certificate holder to:

391 Park Road Regents Park NSW 2143

Delete EAB series from the certificate

- 3. Change apparatus group of GUA series from IIB to IIC
- 4. Change apparatus group of GUA series Air Conditioner Junction Boxes from IIB to IIC

5. Increase degree of protection from IP65 to IP66/IP67

<u>Drawings</u>: 21-148-GA11 Issue 6 18 November 1991 21-148-GA20 Issue 6 18 November 1991 21-148-GA22 Issue 5 18 November 1991

<u>TYPE OF PROTECTION</u>: Ex d IIC T6 IP66/IP67 for GUA series air conditioner junction box Ex d I/IIC T6 IP66/IP67 for GUA series junction boxes

Test Report No: LOSC 6953 to AS 2480-1986 and AS 1939-1990

File: P/3: 91137.M164

Date of Issue: 23 December 1991

Date of Expiry of Validity: 29 July 1997

Page 1 of 1 Signed for and on behalf of Standards Australia

General Manager Quality Assurance Services

This certificate is not transferable and remains the property of Standards Australia and must be returned in the event of its being revaked or not renewed



Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No:

AUS Ex 319

Issue 0: Issue 6: Original Issue1/6/1982 29/9/1998

Date of Expiry:

29/9/2008

Certificate Holder:

Crouse-Hinds (Australia) Pty Ltd 391 Park Road REGENTS PARK NSW 2143

Electrical Equipment: Series GUA16 Junction Box and ELS10 Limit Switch

Type of Protection: GUA16: ELS10: Ex d 1/IIC T6 IP66/IP67 Class I Zone 1 Ex d IIB T6 IP65 Class I Zone 1

Marking Code:

GUA16: Ex d I/IIC T6 IP66/IP67 ELS10: Ex d IIB T6 IP65 AUS Ex 319

Manufactured By:

Crouse-Hinds (Australia) Pty Ltd 391 Park Road REGENTS PARK NSW 2143

Issued by:



Londonderry Occupational Safety Centre

 919 Londonderry Road LONDONDERRY NSW 2753

 Phone: (02) 4724 4900
 Fax: (02) 4724 4999



STANDARDS AUSTRALIA

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

3 Page 1 of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP 69 and the Procedures (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements AS 2380.2-1991 Electrical equipment for explosive atmospheres - Explosion-protection techniques - Flameproof enclosure 'd' (incorporating Amendment 1)

AS 1939-1990 Degrees of protection provided by enclosures of electrical equipment (IP Code)

The equipment listed has successfully met the examination and test requirements as recorded in

est Report No:	LOSC 17734
File Reference:	LOSC 97/8300

on behalf of issuing authority

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STANDARDS AUSTRALIA

Standards Australia Quality Assurance Services Pty Limited A.C.N. 050 611 642

Ex 319-6

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

319 Certificate No: AUS Ex

Issue:

Date of Issue:

29/9/1998

Certified Equipment:

The GUA16 Series Junction Boxes consist of a base and screwed access cover, both manufactured from aluminium, cast iron, stainless steel or high tensile brass. The aluminium version of the equipment is suitable only for group II applications. Electrical connections to the equipment is provided by up to 4 threaded entries in the base.

The ELS10 Series Limit Switch is similar in design and construction to junction box except that the base has provision a single threaded entry and an opening fitted with an operator that actuates a switch block mounted in the base. Table 1 includes a summary of the limit switch variants covered by the certificate.

Table 1: Summary of Limit Switch Variants

Cat No	Description	Operator
ELS10/FL	Float Switch	ZCK D59
ELS10/P	Plunger Operated Limit Switch	ZCK D10
ELS10/RL	Roller Arm Limit Switch	ZCK D21
ELS10	Foot Pedal Switch	ZCK D21

Drawing Schedule

Drawing No	Drawing Title	Issue	Date
21-148-GA029	General Arrangement of ELS10 Type Limit Switches	2	13/7/98
21-148-GA22	General Arrangement	7	14/7/98

Schedule of Variations

Variations Permitted by Issue 6: Re-validation of the Certificate of Conformity.

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STANDARDS AUSTRALIA

3

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

AUSEx Scheme

Certificate of Conformity

Certificate No:	AUS Ex 03.3904	Issue 0: Issue 1:	21/11/2003 12/04/2005
Date of Expiry:	21/11/2013		
Certificate Holder:	Elmako Pty Ltd 9 Damosh Ave Carrum Downs Vic 3201		
Electrical Equipment:	HAW Range of Cable Glands	i.	
Type of Protection:	Ex d I/IIC Ex e I/II DIP		
Marking Code:	Ex d I/IIC Ex e I/II DIP A21 AUS Ex 03.3904	IP66/IP68 (3	30 m)
Manufactured By:	Chi An Industrial Co Ltd Changhwaa Taiwan ROC		

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AUSEx Scheme

This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP69 and the Procedure (Doc Q7134) of the scheme.

The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

AS/NZS 60079.0:2000	Electrical apparatus for explosive gas atmospheres – Part 0: General requirements
AS/NZS 60079.1:2002	Electrical apparatus for explosive gas atmospheres – Part 1: Flameproof enclosures 'd'
AS/NZS 60079.7:2002	Electrical apparatus for explosive gas atmospheres – Part 7: Increased safety 'e'
AS/NZS 61241.1.1:1999	Electrical apparatus for use in the presence of combustible dust – Part 1.1: Electrical apparatus protected
	by enclosures and surface temperature limitation - Specification for apparatus
AS 1939-1990	Degrees of protection provided by enclosures for electrical equipment (IP Code)

This certificate does not ensure compliance with electrical safety requirements and performance other than those included in the Standards listed above.

The equipment listed successfully met the examination and test requirements as recorded in

Test Report No: TestSafe 24225, 25530

File Reference: TestSafe 2002/034451, 2004/015114

Signed for and on behalf of issuing authority

Quality & Certification Manager Position

12 April 2005 Date of Issue

AUS Ex 03.3904-1

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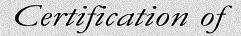
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AUSEx Scheme

Schedule

Certificate No: AUS Ex	03.3904	Issue: 1	Date of Issue:	12/04/2005
Certified Equipment:	Ŷ	f cable glands is suitable for inse	U	

The HAW range of cable glands is suitable for inserting circular steel wire armoured cables into flameproof (Ex d) enclosures having threaded entries and increased safety (Ex e) or dust ignition protection (DIP) equipment having either plain or threaded entries. Each gland may be used as either a compression gland, utilizing the supplied inner seals, or a barrier gland, utilizing the supplied insert filled with Epoxy Putty #E14M06 manufactured by Polymeric Systems Inc. The glands consist of a body, cone, ring, sleeve, inner seal (A or B), outer seal, nut and insert. Attachment of the glands to an enclosure is facilitated by means of the male threaded portion on the body. A locknut and flat washer is required for securing glands to equipment having plain entries.

When the glands are used as compression glands, the cable inner sheath is passed through the appropriate sized inner seal and sealing of the cable is achieved by compressing the inner seal between the body and cone. In this case, the insert is not required. When the glands are used as barrier glands, the cable cores are passed through the insert and sealing of the cable is achieved by filling the insert with setting compound. In this case, the inner seal is not required. The cable wire armour is clamped between the male tapered portion on the cone and the female tapered portion on the ring. An 'O' ring is used to seal the joint between the body and sleeve to prevent dust and moisture ingress to the wire armour clamping facility. The outer seal forms a seal on the outer sheath of the cable. The outer seal also clamps the cable to prevent pulling or twisting forces from being transmitted to the conductor connections.

The HAW range is manufactured from brass alloy to Japanese Standard JIS C3604 B, which is nickel plated, and has ISO (1.5 mm pitch) mounting threads. All metallic components of the glands are manufactured from the same material. The inner and outer seals and 'O' rings for all gland ranges are made from 'NBR 1052 Rubber' manufactured by Li Ming Industrial Co., Taiwan. An entry thread seal made of red fibre is provided for DIP and IP66/IP68 applications to maintain ingress protection of the equipment on which the glands are mounted. Each gland is marked with the certification information by means of laser etching. The glands may also be used with intrinsically safe circuits, in which case the glands will have specific parts painted light blue.

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Certification of

AUSEx Scheme

Addendum to Certificate No. AUS Ex 03.3904-1

Certified Equipment continued:

Gland Code Number	Mounting Thread	Tightening Torque	SV Dian			Cal	ble Dian	neter (mi	m)	
	Dia x					Over B	edding		Over Cable	
	Length		(m	m)	Inner	Seal B	Inner	Seal A	A Seal A	
	(mm)	(Nm)	Min	Max	Min	Max	Min	Max	Min	Max
ALCHAW20	M20 x 20	26	0.8	1.25	6.5	8.0	8.0	10.0	11.5	16.0
ALCHAW25A	M25 x 20	41	0.8	1.25	10.0	12.0	12.0	14.0	16.0	20.0
ALCHAW25B	M25 x 20	41	1.25	1.6	14.0	16.0	16.0	18.0	20.0	24.0
ALCHAW32A	M32 x 20	68	1.25	1.6	18.0	19.5	19.5	21.5	24.0	28.0
ALCHAW32B	M32 x 20	68	1.6	2.0	21.5	23.0	23.0	25.0	28.0	32.0
ALCHAW40A	M40 x 20	106	1.6	2.0	25.0	27.0	27.0	29.0	32.0	37.0
ALCHAW40B	M40 x 20	106	2.0	2.5	28.5	31.0	31.0	33.5	37.0	42.0
ALCHAW50A	M50 x 20	166	2.0	2.5	33.0	35.0	35.0	37.5	41.0	46.0
ALCHAW50B	M50 x 20	166	2.0	2.5	36.5	39.0	39.0	42.0	45.0	51.0
ALCHAW63A	M63 x 25	260	2.5	3.15	42.0	44.5	44.5	47.0	51.0	57.0
ALCHAW63B	M63 x 25	260	2.5	3.15	47.0	50.0	50.0	53.0	57.0	63.0
ALCHAW75A	M75 x 25	375	2.5	3.15	52.5	55.5	55.5	58.5	62.0	69.0
ALCHAW75B	M75 x 25	375	2.5	3.15	58.0	61.0	61.0	64.0	66.0	75.0
ALCHAW90A	M90 x 25	540	2.5	3.15	63.0	66.0	66.0	69.0	73.0	82.0
ALCHAW90B	M90 x 25	540	2.5	3.15	68.0	71.5	71.5	75.0	81.0	90.0

Alco HAW Range of Cable Glands (Compression Configuration)

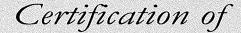
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AUSEx Scheme

Addendum to Certificate No. AUS Ex 03.3904-1

Certified Equipment continued:

Alco HAW Range of Cable Glands (Barrier Configuration)										
Gland Code Number	Mounting Thread Dia x Length	Tightening Torque	Max Dia Over Cable Cores	Max No. of Cores in Compound /	Dian	VA 1eter m)				
	(mm)	(Nm)	(mm)	Core CSA (mm ²)	Min	Max				
ALCHAW20	M20 x 20	26	7.8	7 / 0.5	0.8	1.25				
ALCHAW25A	M25 x 20	41	11.8	16/0.5	0.8	1.25				
ALCHAW25B	M25 x 20	41	15.8	21 / 0.5	1.25	1.6				
ALCHAW32A	M32 x 20	68	19.1	37/0.5	1.25	1.6				
ALCHAW32B	M32 x 20	68	22.6	51 / 0.5	1.6	2.0				
ALCHAW40A	M40 x 20	106	26.6	51/1.5	1.6	2.0				
ALCHAW40B	M40 x 20	106	31.1	51/2.5	2.0	2.5				
ALCHAW50A	M50 x 20	166	34.5	51 / 4.0	2.0	2.5				
ALCHAW50B	M50 x 20	166	39.0	4 / >16.0*	2.0	2.5				
ALCHAW63A	M63 x 25	260	44.0	4 />16.0*	2.5	3.15				
ALCHAW63B	M63 x 25	260	50.0	4 />16.0*	2.5	3.15				
ALCHAW75A	M75 x 25	375	55.0	4 />16.0*	2.5	3.15				
ALCHAW75B	M75 x 25	375	60.5	4 />16.0*	2.5	3.15				
ALCHAW90A	M90 x 25	540	64.4	4 />16.0*	2.5	3.15				
ALCHAW90B	M90 x 25	540	70.4	4 / >16.0*	2.5	3.15				

Alco HAW Range of Cable Glands (Barrier Configuration)

* For conductors greater than 16 mm² the largest number of cores permitted is four plus any required earth core(s).

Conditions of Certification:

1. The manufacturer shall provide the mounting instructions with the cable glands.

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AUSEx Scheme

Addendum to Certificate No. AUS Ex 03.3904-1

Drawing Schedule									
Drawing No	Drawing Title	Issue	Date						
487-42	HAW20	Original	15/09/03						
487-42A	Alco HAW Glands Marking	Original	30/09/03						
487-42B	Alco HAW Glands Marking	Original	30/09/03						
487-42C	Alco HAW Glands Marking	Original	30/09/03						
487-43	HAW25A	Original	15/09/03						
487-44	HAW25B	Original	15/09/03						
487-45	HAW32A	Original	15/09/03						
487-46	HAW32B	Original	15/09/03						
487-47	HAW40A	Original	15/09/03						
487-48	HAW40B	Original	15/09/03						
487-49	HAW50A	Original	15/09/03						
487-50	HAW50B	Original	15/09/03						
487-51	HAW63A	Original	15/09/03						
487-52	HAW63B	Original	15/09/03						
487-53	HAW75A	Original	15/09/03						
487-54	HAW75B	Original	15/09/03						
487-55	HAW90A	Original	15/09/03						
487-56	HAW90B	Original	15/09/03						
ALCHAWGEN	Hagemeyer Australia Alco Glands HAW Range	1.1	30/09/03						
ALCHAWINST	Hagemeyer Australia Alco Glands	1.0	18/11/03						
Pages 1 & 2	HAW Series Glands – Fitting Instructions								
ALCHAWFLMPTH	Hagemeyer Australia Alco Glands	1.0	09/09/03						
	HAW Range Flameproof Joint Data								
ALCHAWSPEC	Hagemeyer Australia Alco Glands	1.0	17/09/03						
	HAW Range Specification								
ALCHAWBARLIM	Alco - HAW Range – Barrier Glands	1/0	17/09/03						
ALCHAWSCHDRG	Alco Glands – Schedule of Drawings	1.0	30/09/03						
	HAW Range – Hazardous Area, Armoured Weatherproof								

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Certification of

AUSEx Scheme

Addendum to Certificate No. AUS Ex 03.3904-1

Schedule of Variations

Variations permitted by issue 1

- a) Addition of an HAW20SB cable gland to the HAW Range.
- b) A change of epoxy sealing compound used for the barrier glands from Epoxy Putty #E14M06 manufactured by Polymeric Systems Inc to "Kneadaseal" epoxy putty manufactured by Polymeric Systems Inc.
- c) A change in the permissible operating temperature range for the HAW Range of barrier glands from -20 °C to +75 °C to -20 °C to +100 °C, as specified in the HAW Series Glands Fitting Instructions.
- d) Modification of the gland sleeve on the HAW20 cable gland to allow easier fitment on the cable.

Alco HAW20SB Cable Gland (Compression Configuration)

Gland Code Number	Mounting Thread	Tightening Torque	SWA Diameter (mm)			Ca	ble Dian	neter (m	m)	
	Dia x	•				Over B	Bedding		Over	Cable
	Length				Inner	Seal B	Inner	Seal A	Se	al A
	(mm)	(Nm)	Min	Max	Min	Max	Min	Max	Min	Max
ALCHAW20SB	M20 x 16	26	0.8	1.25	-	-	9.1	12.3	14.0	18.0

Alco HAW20SB Cable Gland (Barrier Configuration)

Gland Code Number	Mounting Thread Dia x	Tightening Torque	Max Dia Over Cable	Max No. of Cores in Compound	SV Dian	VA neter
	Length		Cores	1	(m	.m)
	(mm)	(Nm)	(mm)	Core CSA* (mm ²)	Min	Max
ALCHAW20SB	M20 x 16	26	10.0	10 / 0.5	0.8	1.25

*For conductors greater than 16 mm² the largest number of cores permitted is four plus any required earth core(s).

Conditions relating to issue 1

All previous conditions still apply.



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Addendum to Certificate No. AUS Ex 03.3904-1

Drawing No	Drawing Title	Issue	Date
487-42	HAW20	Original	15/09/03
487-110	HAW20SB	Original	17/03/04
487-110-11	HAW20SB - Markings	Original	02/06/04
ALCHAWGEN	Elmako Pty Ltd Alco Glands HAW Range	1.3	01/12/04
ALCHAWINST	Elmako Pty Ltd - Alco Glands	1.5	16/03/05
Pages 1 & 2	HAW Series Glands – Fitting Instructions		
ALCHAWSPEC	Elmako Pty Ltd Alco Glands	1.1	01/12/04
	HAW Range Specifications		
ALCHAWBARLIM	Alco - HAW Range – Barrier Glands	1.1	19/03/04
ALCHAWSCHDRG	Alco Glands – Schedule of Drawings	1.2	02/06/04
	HAW Range – Hazardous Area, Armoured Weatherproof		
ALCHAWFLMPTH	Elmako Pty Ltd Alco Glands	1.1	19/03/04
	HAW Range Flameproof Joint Data		

Drawings relating to issue 1

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6 Equipment Datasheets and Electrical Drawings

Documentation in relation to this section is to be included and maintained by APA Group.



7 Calculations

Documentation in relation to this section is to be included and maintained by APA Group.

Calculations need to be confirmed for equipment installed in hazardous areas. These include heat dissipation calculation for Ex e and intrinsically safe barrier assessment for Ex i, which are relevant for the ADP sites.

This section contains sample calculation sheet for intrinsically safe barrier assessment and extracts from AS 2381.6-1993 and AS 2381.7-1989.

Intrinsically Safe Barrier Assessment Sheet



Document No:	-				Prepared By:		
Site:					Checked:		
Loop Description:					QA:		
					Approved:		
Loop Drawing Number:					Date:		
Hazardous Area:							
	H. A. Report	:			Area Class:		
Н. /	A. Drawing No.	:			Gas Group:		
			-		Temperature Class:		
Repeater	Power Supply / Bar	rier			Se	nsor	
Cable Screens shall be							
connected to		\				-	
intrinsically safe earth						-	
at the Intrinsically Safe Barrier end.	I.S. Earth	/	Ca	ole 1	· · · · · · · · · · · · · · · · · · ·	-	
Sule Burrer endi	•	•	(01	>	i	
I.S. Device details (Hazardous Ar	rea) [Note 2]						
				T	Man Valta an U		V
Tag: Type of instrument:				-	Max Voltage Um:		V V
				_	O/C Voltage Uo:		•
Manufacturer:				-	S/C Current lo:		mA
Model Number:				_	Power Po:		mW
Serial No:				_	Allowable Cap. Co:		uF
Certificate Number:				_	Allowable Ind. Lo:		mH
Certifying Authority:				_	L/Ro:		uH/Ohm
Protection Type:							
Cables:							
Cable 1:		Cable 2:			Total Cable:		
Tag:		Tag:		7			
Capacitance:	uF/m	Capacitance:		uF/m	Capacitance:		uF
Inductance:	mH/m	Inductance:		mH/m	Inductance:		mH
L/R _c :	mH/Ohm	L/R _c :		mH/Ohm	Max L/Rc		mH/Ohm
Length(D1):	m	Length(D2):		m	-		
I.S. Apparatus Parameters (Haza	rdous Aros)						
i.S. Apparatus Parameters (naza	iluous Alea).						
Tag:					O/C Voltage Ui:		V
Type of instrument:					S/C Current Ii:		mA
Manufacturer:					Power Pi:		mW
Model Number:					Capacitance Ci:		uF
Serial No:					Inductance Li:		mH
Certificate Number:							
Certifying Authority:							
Protection Type:							
Chasks							
Checks:		1 Uo <= Ui	<	=	PASS/FAIL/NA		
		2 lo <= li		=			
		3 Po <= Pi		=			
			1				
	4	4 Ci+C _{Cable} <= Co	<	=			
	(6 Li+L _{Cable} <= Lo		=			
		OR	1		1		
	-	7 L/R _{Cable} < L/Ro		<			
Conclusion: The circuit IS Loc	op Calculation]				

Notes:

1- Calculation is based on AS.NZS 2381.1:2005, AS2381.7-1989 & AS/NZS 60079.25:2004 for a single power supply loop in an intrinsically safe system.

2- The I.S. Barrier is an integral part of the discrete input wireless transmitter.

3- The above calculation, check and conclusion are also applicable to wireless transmitter LSL and LSLL level switch I.S.

circuits used for pump 1161C/D, 1162C/D, 1163C/D and 1164C/D sealoil pots.

4- The level switch in this I.S. Circuit is classified as simple device.

APPENDIX A

DETERMINATION OF EXTERNAL CIRCUIT PARAMETERS FOR INTRINSICALLY SAFE SYSTEMS

(This Appendix forms an integral part of this Standard.)

A1 CERTIFICATION METHODS. As specified in Clause 1.4, intrinsically safe electrical equipment may be certified under one of three categories as follows:

- (a) *Self-contained equipment*. Since this equipment has no external cabling, there are no external parameters to be specified, and hence, such equipment will not be considered further in this Appendix.
- (b) *Entity concept equipment.*
- (c) Integrated systems.

A2 PARAMETERS TO BE DEFINED.

A2.1 Entity concept equipment. For certified entity concept equipment the following parameters should be defined:

- (a) Associated electrical equipment.
 - (i) Maximum open circuit voltage (U_0) .
 - (ii) Maximum output current (I_0) .
 - (iii) Maximum external capacitance (C_0) .
 - (iv) Maximum external inductance (L_0) .

(v) Maximum external connected inductance to resistance ratio (L/R).

- (b) Intrinsically safe equipment.
 - (i) Maximum input voltage (U_i) .
 - (ii) Maximum input current (I_i) .
 - (iii) Maximum internal capacitance (C_i) .
 - (iv) Maximum internal inductance (L_i) .

The parameters are marked on the equipment or specified in the accompanying documentation.

A2.2 Integrated systems. For integrated systems, either one of the following cable parameters should be defined:

(a) Maximum capacitance, inductance, and inductance to resistance ratio.

(b) Maximum cable lengths for defined cable types.

These parameters are specified in the system documentation or the certificate.

A3 INSTALLATION OF ENTITY CONCEPT EQUIPMENT. For entity concept equipment to be installed, the total of the cable parameters and those for the intrinsically safe equipment shall be less than those permitted to be connected to the associated electrical equipment, i.e.

(a) $C_i + C_{cable} < C_o$; and

(b) either $L_i + L_{cable} < L_o$, or $L/R_{cable} < L/R$.

Also, the voltage and current allowed for the intrinsically safe equipment shall be greater than those available from the associated electrical equipment, i.e. $U_i > U_o$, $I_i > I_o$.

Where shunt diode safety barriers are being used and their capacitance, inductance and L/R ratio parameters have not been specified in the documentation, the values specified in Table A1 may be used.

A4 INSTALLATION OF INTEGRATED SYSTEMS. For an integrated system to be installed correctly, the cable characteristics shall be below those specified in the system certification, i.e. the total cable capacitance and either the total lumped cable inductance or the L/R ratio must be less than those shown in the certificate or installation diagram. Cable characteristics may be obtained from the manufacturer or the values specified in Tables A2 and A3 may be used.

Alternatively, the following cable characteristics represent probable maximums:

- (a) $C = 0.11 \, \mu F/km$.
- (b) L = 0.8 mH/km.
- (c) $L/R = 56 \ \mu H/\Omega$.

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If the parameters are only specified in the system certification for Group IIC they may be multiplied by 3 for Group IIB, by 8 for Group IIA, or by 10 for Group I installations.

Where the system documentation specifies cable types and corresponding lengths it is simply a matter of adhering to those specific requirements.

TABLE A1

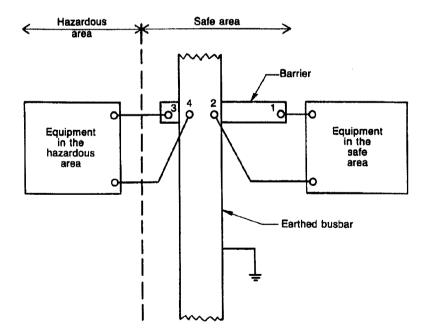
EXTERNAL PARAMETERS MAXIMUM VALUES FOR GROUP IIC (HYDROGEN)*

Barrier type	Permissible configuration	Max. permissible capacitance µF	Max. permissible inductance mH	Max. permissible <i>L/R</i> ratio μΗ/Ω
27 V 270 Ω	Figure A1	0.15	3.7	55
22 V 150 Ω	Figure A1	0.2	1.5	40
15 V 100 Ω	Figure A1	0.8	1.5	60
	Figure A2	0.8	1.5	60
10 V 47 Ω	Figure A1	3.0	1.0	80
	Figure A2	3.0	1.0	80
	Figure A3	0.2	1.0	40
47 V 10 Ω	Figure A1	>1 000	0.16	100
	Figure A2	>1 000	0.16	100
	Figure A3	3.0	0.16	50
1 V 2 Ω	Figure A1	>1 000	0.16	320
	Figure A2	>1 000	0.16	320
	Figure A3	>1 000	0.16	160

* For most practical purposes, the value for gases of Group IIB are 3 times these values, and for gases of Group IIA are 8 times these values.

 \dagger The *L/R* ratio of the cable is defined as follows:

L/R ratio = $\frac{\text{Inductance per unit length (µH)}}{\text{Resistance per unit length (}\Omega\text{)}}$



NOTE: Barrier can be either positive or negative.

FIGURE A1 INSTALLATION CONFIGURATION 2-WIRE SYSTEM WITH SINGLE BARRIER

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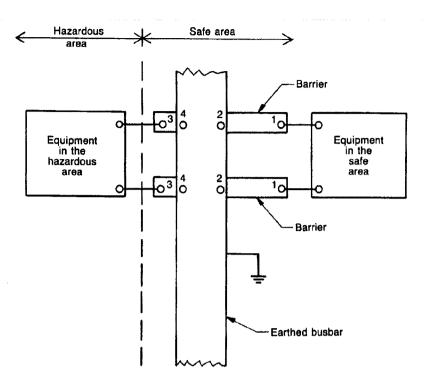


FIGURE A2 INSTALLATION CONFIGURATION 2-WIRE SYSTEM WITH TWO BARRIERS OF LIKE POLARITY

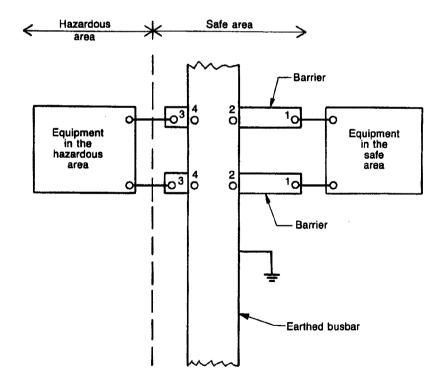


FIGURE A3 INSTALLATION CONFIGURATION 2-WIRE SYSTEM WITH TWO BARRIERS OF OPPOSITE POLARITY

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TABLE A2

15

TYPICAL CABLE CHARACTERISTICS FOR PVC CABLES WITH 0.3 mm RADIAL THICKNESS

Nominal conductor size, number and dia. of wires Screening	7/0.3 mm (0.5 mm ²)		7/0.5 mm (1.5 mm ²)	
	Screened	Unscreened	Screened	Unscreened
Conductor resistance at 20°C (Ω/100 m)	3.8	3.8	1.4	1.4
Capacitance of pairs (µF/km)	0.145	0.090	0.2	0.12
Inductance at 1 kHz (mH/km)	0.9	0.9	0.8	0.8
L/R ratio (µH/ohm)	12	12	31	31

TABLE A3 TYPICAL CABLE CHARACTERISTICS FOR 2-CORE MICC CABLE

Nominal conductor size (mm ²)	1	
Conductor resistance single core (Ω /100 m)	3.45	
Capacitance of pairs (µF/km)	0.1194	
Capacitance, conductor to earth (µF/km)	1.1612	
Inductance at 1 kHz (mH/km)	0.684	
<i>L/R</i> ratio (µH/ohm)	20	

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APPENDIX C

27

SELECTION OF Ex e COMPONENTS

(Normative)

GENERAL Each enclosure is allocated a permissible maximum dissipating power, C1 expressed in watts, taking into account-

- the dissipation per component for a given cable conductor size; (a)
- the size of each cable used and the resistance of its length, equal to the diagonal of (b) the enclosure:
- (c) the maximum allowable current for the Ex e component or the maximum current allowable for each cable, if below the maximum allowable for the terminal block; and
- (d) the bunching of cables within each enclosure and the effect this has in producing 'hot spots'.

The selection of an acceptable combination in any assembly is based upon the requirement that enclosures shall not exceed a specified total dissipation of power (in watts) from the cables and the components which are to be housed within each enclosure.

The permissible maximum dissipating power (MDP) for the temperature classification of the enclosure, determined by test, will appear on the manufacturer's rating plate, e.g. 15.5 W.

Having established maximum dissipation of power from the enclosures, the wired assembly may be expressed in power loss in the following way:

Dissipation per terminal:
$$P = I^2[R_t + L \times R_c]$$
 E(1)
 $P = I^2[R_t + R_s]$ E(2)

$$P = P[R_{\rm t} + R_{\rm d}] \qquad \dots \quad E(2)$$

where

Р = power dissipation, in watts

Ι = current through terminal (max. allowable or limited by cable size)

 R_1 = internal resistance of terminal, in ohms

= cable resistance per metre, in ohms R_{c}

L = length of cable equal to the diagonal of the enclosure, in metres

MDP = maximum dissipating power, in watts—the sum total of all terminals and wiring within the enclosure

 $R_{\rm d}$ = resistance of a length of cable equal to the diagonal of the enclosure

Therefore, for a combination of terminals and cables the watts loss can be calculated from the basic test information and cable data as follows:

$$MDP = aP_1 + bP_2 + cP_3 \dots + zP_n$$
 E(3)

where

 aP_1 ; bP_2 ; cP_3 , ... zP_n represent the heat dissipation of different combinations and numbers (a; b; c ... z) of terminals and cables.

C2 EXAMPLE: SELECTION OF TERMINAL BLOCKS FOR COMPLIANCE WITH T6 CLASSIFICATION

Assume that the following is derived from tests:

Enclosure MDP = 15 watt

Terminal block TBK2.5 = 15 A max. Terminal block TBK16 = 47 A max. L = 270 mm

A. P (TBK2.5) for

- P_1 3 amps 0.5 mm² cable = 0.092 W
- P_2 12 amps 1.0 mm² cable = 0.763 W
- P_3 15 amps 2.5 mm² cable = 0.530 W

B. *P* (TBK16) for

 P_4 47 amps 16 mm² cable = 0.790 W Maximum number of allowable terminals:

$$P_{1} \text{ only } = \frac{15.0}{0.092} = 163; \text{ or}$$

$$P_{2} \text{ only } = \frac{15.0}{0.763} = 19; \text{ or}$$

$$P_{3} \text{ only } = \frac{15.0}{0.530} = 28; \text{ or}$$

$$P_{4} \text{ only } = \frac{47.0}{0.790} = 59;$$

Now assume the following combination of terminals-

 $(60 \times P_1) + (6 \times P_2) + (3 \times P_3) + (3 \times P_4)$ (60 × 0.092) + (6 × 0.763) + (3 × 0.530) + (3 × 0.790)

Total Heat Dissipation is-

5.52 + 4.578 + 1.590 + 2.37 = **14.058** Watt

It is concluded that the combination of terminals and cables does not exceed MDP of 15 W and is therefore satisfactory for T6.

NOTE: The cables should not be bunched in quantities greater than the number of cores from each cable or conduit entering the enclosure and in any case should not exceed six per bunch.

C3 CABLE SELECTION v TERMINAL SELECTION The maximum current density permitted in any conductor inside or outside the enclosure is to be established as though the conductors are insulated with V75 material and enclosed in conduit in air and derated according to the ambient temperature and in any case not less than 50° C as established according to AS 3008.1. Additional derating factors may be necessary where bunching of cables occurs.

However, where the cables are run in situations that allow an increase of current-carrying capacity, the Ex e installation is placed at risk, particularly when the cable enters the terminal enclosure.

It is important to keep in mind that—

- (a) the Ex e terminal block rated current must not be exceeded; and
- (b) the cable connected to each terminal block is of a size acceptable to that block and the current carried by that cable complies with the requirements of Clause 2.7.2.

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C4 FACTORS TO BE CONSIDERED IN SELECTING EQUIPMENT CERTIFIED

TO Ex e The establishment of criteria which can lead to practical installation of terminal boxes for use in Class I, Zones 1 and 2 hazardous areas can only be made by testing and from the tests a manufacturer can tabulate and mark—

- (a) maximum power for each enclosure to meet the temperature class—generally T6 or as certified;
- (b) maximum current per Ex e terminal—marked thereon, in amps;
- (c) resistance per terminal, in ohms;
- (d) average length per conductor—box diagonal in metres;
- (e) resistance per conductor length, in ohms;
- (f) actual load current per terminal for the installation in amps; and
- (g) maximum current per conductor, in amps in accordance with AS 3008.1.

For a particular manufacturer's terminal box, these criteria lead to the following tabulations:

TABLE C1

CONDUCTOR RESISTANCE PER BOX FOR EACH CONDUCTOR SIZE

Size mm ²	Enclosure types No. 1 No. 2 No. 3 No. 4 No. 5
0.5	
1.0	
2.5	ohms/1000 m \times L
4.0	1000
6.0	
10.0	
16.0	
25.0	
35.0	
50.0	where L is in metres
70.0	
95.0	

TABLE C2

TERMINAL/COMPONENT RESISTANCE (R_t)

Component type	Average resistance (ohms)			
TBK 2.5 TBK 4 TBK 6 TBK 10 TBK n	Determined by test			

From Tables C1 and C2, details for each enclosure can be derived: Assume Enclosure type box No. 1. MDP = 15 watt

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Ex	e compoi	Cable	Total		
Туре	Qty	Load or rating A	mm ²	W	
TBK 2.5	60	3.0	0.5	5.52	
TBK 2.5	6	12.0	1.0	4.578	
TBK 2.5	3	15.0	2.5	1.590	
TBK 16	3	47.0	16.0	2.37	
		Enclosu	re Total =	14.058	

It is possible to determine a large variety of enclosure combinations for different components, given-

- (a) conductor resistance;
- (b) component resistance;
- (c) current drawn through each cable and component; and
- (d) enclosure MDP.

The manufacturer should be able to supply details of certified components and enclosures. Cable resistances are readily available from tables or the enclosure manufacturer may provide the values for each enclosure size and each cable length, equal to the enclosure diagonals.

C5 ENCLOSURE CONTENTS AND LABEL Having established the contents for each enclosure for a known application, it is important that any spare space within is **not** filled at some later stage with equipment which—

- (a) exceeds the certified MDP;
- (b) is not certified Ex e; or
- (c) arcs or sparks.

The user or the supplier should attach to the inside of the enclosure a label showing-

- (i) certified MDP;
- (ii) original component contents; and
- (iii) calculated total power dissipation of original installed components.

If the user changes the contents, it would be his responsibility to secure a revised list, having first established that the enclosure temperature class and certified MDP will not be exceeded by the proposed changes.



8 Manufacturer's Data Report (MDR) and Installation, Operation and Maintenance (IOM) Manual

Documentation in relation to this section is to be included and maintained by APA Group.



9 Maintenance Register

Documentation in relation to this section is to be included and maintained by APA Group. This section includes sample maintenance sheet.

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10 Inspection Register

Close visual inspection to confirm equipment installations was performed by Neville Green, an electrical engineer from Sitzler during a site visit on 9 and 11 September 2011.

This Section contains the inspection sheets. The Section also contains sample inspection sheet(s) for future inspection.

Documentation in relation to this section is to be maintained by APA Group.



Ref: I:\data\sitzler\contracts\darwin\sbsj12\fyf1 fyfe pty Itd hazardous areas reporting award 28.07.11\fyf3 fyfe northern end pipline\reports\darwin city gate\electrical equipment for hazardous area summary report - darwin city gate 22.09.11.docx

27 September 2011

FYFE PTY LTD Level 3, 80 Flinders St Adelaide SA 5000

Attention: Tony Bird

Dear Tony,

RE: AMADEUS PIPELINE – CHANNEL ISLAND REGULATING/METER STATION

HAZARDOUS AREA ELECTRICAL INSPECTION REPORTING

Please find attached hazardous area device inspection sheets for the above site as part of the visual grade of inspection reporting completed on September 10th 2011. A broad range of findings have been identified and documented within the 'action required' section of each check sheet in order to identify the non compliance of the equipment/installation with respect to current standards.

We list the items of deliverables requested by FYFE below and trust the scope of work delivered is in accordance with the specified requirements.

- 1. Preparation of hazardous area device inspection check-sheets
- 2. Attend sites and inspect all electrical equipment at each site
- 3. Complete inspection check-sheets for each instrument
- 4. Production of a memo stating what work was done and a summary of rectification work
- 5. To provide ongoing support to the client, it is recommended that a cost estimate is provided for any rectification work.

The level of electrical inspections were carried out in accordance with the Australian/New Zealand Standard AS/NZS 60079 series for explosive atmospheres and in particular parts 14 and 17 relating to electrical installations, design, selection, inspections and maintenance.

The grade of inspection completed was a combination of visual and close techniques only as defined within the above standards. Detailed equipment/installation inspections in accordance with the above standards were not performed however it is a requirement that detailed inspections be performed prior to initial energising of equipment installed within hazardous classified areas and in the absence of any information it is assumed this has been completed by others.

The visual inspections were conducted on energised equipment with emphasis on the condition reporting of the equipment and installation techniques applicable to the hazardous area classification and associated environment. It is also acknowledged that at the commissioning date of the original installation the Australian standards have since been revised which has been taken into consideration in the compliance evaluation of each device.

In some cases the nameplate detail of the installed equipment was illegible and hence the equipment method of protection and associated certification could not be identified.

Darwin 100 Pruen Road, Berrimah, NT 0828, PO Box 39062 Winnellie NT 0821 tel: +61 8 8922 4000 fax: +61 8 8922 4044 email: admin@sitzler.com.au www.sitzler.com.au



A compilation of the inspection findings/actions across the installation is provided as follows:

- 1. Tighten loose cable glands and accessories.
- 2. Terminate loose cabling within junction boxes appropriately and earth.
- 3. Re-termination of cabling at equipment with exposed cable armour and where flamepaths have been compromised.
- 4. Replace/remediate cabling where long term ultraviolet damage has occurred.
- 5. Re-route cabling located in close proximity of heat sources or provide insulation from the source causing damage to cable insulation (such as water bath heater exhaust flues).
- 6. Provide equipotential bonding (or at least testing for compliance) of conductive equipment/stands for the control of undesirable static electricity.
- 7. Remediate/replace junction box seals, locking nuts/washers and damaged cable glands to prevent further effects of corrosion.
- Equipment and cable identification labelling required (where not provided) and alteration
 of existing where incorrectly labelled in accordance with the piping and instrumentation
 diagrams and electrical loop drawings.
- 9. Application of blue cable sheathing and/or labelling to clearly identify intrinsically safe installations.
- 10. Provide additional cable/sensor support and cover to prevent further mechanical and ultraviolet damage and where resting on process piping/equipment.
- 11. Provide sun cover to exposed instrumentation.
- 12. Replacement of uncertified hazardous area installed equipment and insufficiently ingress protected/damaged components with certified equipment.
- 13. Verification of explosion-proof installation & design techniques with respect to mixed certified adaptors, uncertified equipment, blue sheathed cabling for non-I.S. installations and unidentified I.S. barriers. Rectify installation as required.
- 14. Provide approved vendor replacement labels to poorly legible explosion proof equipment.
- 15. Verify matching sensor/transmitter details from vendor.
- 16. Replacement equipment impending failure due to either the effects of corrosion, age or poor condition.
- 17. Verification of installed explosion proof equipment, however not certified to Australian standards, by performing conformity and/or fitness for purpose assessments to Australian standards.

It is evident that the lifetime expectancy of some equipment installed would be considered approaching a nominal design life of 30 years. Where nil evidence of Australian hazardous area certification exists, and nameplate details are illegible, we recommend replacement with Australian certified equipment. Where evidence of Australian certification was valid at the time of installation, and the general condition is acceptable for use within the hazardous area, minor remediation works can be completed with minimal operational impacts. The establishment of a regular periodic maintenance regime with respect to hazardous area compliance is also recommended as a minimum in accordance with AS/NZS 60079 Part 14/17.

We look forward to providing further advice and discussions with FYFE in order to assist the client with a remediation plan and associated cost estimating of the works. Trusting the above is satisfactory, please do not hesitate to contact the undersigned should you require any further information on the above or attached.

Yours faithfully,

Neville Green Engineering Services Manager Encl. Device Inspection Sheets.

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17

Ref: 1:/data/sitzier/company operations/dar/win/lenders/sbsj11/lyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

	General	
6 2.2.29 364	Device ID or tag: PT ~ 8	Asset: STATION INLET
	Circuit ID:	Physical location: CHANEL JSLAND
	Area classification :	Environment: (hot?)

Type of protection: (d,e, i, n, p Ex La
Gas group: (IIA/B/C) ,
1 Temp class: (T1-T6) 75(40%), T4(70°C)
Certificate number: AUS Ex 1249 X
Test authority: (BAS, PTB, SAA etc)

For each cable entry	gland 1	gland 2	others BUNG.
Gland manufacturer:	ALCO		REDAPT
Model:	w le loz		120;
Gland type of protection: (d,e)	NO CERT.		EErd

			,			
Insp	ection		Circle a	s checked	1	
		Applicable to		Ļ		
	A Equipment	protection type:	Internal	External		
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	- ELKLUIT H	2
2	Equipment ID or circuit ID is correct	all,	X	8	- Groot is	_
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X,	x		
4	There are no damage or evidence of unauthorised modifications	all	X	X		
5	Bolts, cable entries and blanking elements are correct and tight	all	X	X		
6	Flange facings are clean and undamaged	ď	X			
7	Lamp rating, type and position correct	all	X			
8	Electrical connections are tight	all	X			
9	Hermetically sealed devices are undamaged	n'.	×			
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	ก	X			
11	Motor fans have sufficient clearance	motors only	X··			
12	Installation clearly labelled	i	Х	Х		
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	х	х		
14	Entity calculation/documentation is available	i	X	Х		

B Installation

	Type of cable is appropriate, cables are undamaged	all	Х	I D
	Sealing of ducts and/or conduits is satisfactory	all	Х	X
	Stopper boxes or barrier glands are properly filled	d	Х	
	Integrity of conduit system and interface with mixed system is maintained	all	X	
	Earthing and bonding connections are tight, in good condition and of sufficient cross section	สป	X	Ø
	Fault loop impedance is satisfactory	power outlets	X	
	Insulation resistance is satisfactory (check only during initial inspection)	all	Х	
	Automatic electrical protective devices are set correctly and operate within permitted limits	all	Х	
	Special certification conditions U,X or B have been complied with	all	Х	
	Cables/spare cores are terminated satisfactorily	all	Х	
i	No obstructions adjacent to flameproof flanged joint	d	Х	X
	Ducts, pipes and enclosures are in good condition	p	Х	X
	Protective gas is substantially free from contaminants (water, oil, dirt)	р	Х	X
	Protective gas flow/pressure is adequate	P	Х	
	Pressure and/or flow indicators, alarms and interlocks function correctly	p	Х	
	Pre-energising purge period is adequate	ρ	Х	
	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	х	

Amadeus Pipeline Electrical Inspections



		1		
18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Environment			0	
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	(\otimes)	CORROSION
2	No undue accumulation of dust or dirt	all	X	X	
3	Electrical insulation is clean and dry	all	Х	10	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector	Supervisor	Client (write): Inspector	
N. Williams	•		
Date: 9/9/11		Date:	
· · · · · · · · · · · · · · · · · · ·			

Device ID or tag	
Action required to make device compliant:	
- Cable I.O required.	
- Blue sheath required.	
- Provide cable support.	1
- provide equipotential band at instrument stand	(.
- Visible corrolion ,	

Review	wed k	y:		N.	GREEN
Date:	22	91	1		
Priorit	v	.,			

Comments:			_
All action items now completed: Job closed:			

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. 1:\data\sitzle/company operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,exi,ex-n.ex-p and other ex devices.doc

Specifications	- PEID	TAG.				
General	5				_	
Device ID or tag:	(xc/250-10)	- MLV-6	Asset: TATION IN	LTIT		
Circuit ID:	3040		Physical location:	CHANEL	Iscano	
Area classification	:		Environment: (hot?)			

Data from Label

Motor) U.S. / LIMIT SusiFCH etc) Manufacturer: LIMITOR QUIS Gas group: (IIA/B/C) Full model number: Temp class: (T1-T6) Serial number: Certificate number: IP Class Test authority: (BAS, PTB, SAA etc)	Number of cables:	ADAPTOR gland 1	MANG-MALLE gland 2	others		Greanso -
Motor) U.S. /LIMIT SWITCH etc) Manufacturer: LIMITORQUIS Gas group: (IIA/B/C) Full model number: Temp class: (T1-T6) Serial number: Certificate number:						
Motor) US /LIMIT SWITCH etc) Manufacturer: LIMITORQUE Gas group: (IIA/B/C)	Serial number:				/	
Motor) US /LIMIT SWITCH etc) Manufacturer: LIMITORQUE Gas group: (IIA/B/C)	Full model number:	_	Temp class: (T1-T6)		{	DETRILS
	Manufacturer: LIMITOR	RU13	Gas group: (IIA/B/C)		4	NOCEN
Apparatus type: (light, JB, To]	Apparatus type: (light, JB, Motor)	B /LIMIT SWITCH	Type of protection: (d,e, i, n, p etc))

For each cable entry	gland 1	gland 2	others	
Gland manufacturer:				
Model:				\neg
Gland type of protection: (d,e)	HO CENT	NO CER	No-CRACT	

Insp	ection		Circle a	is checked	4
	A Equipment	Applicable to protection type:	Internal	External	_
1	Equipment (incl group and temp class) is appropriate for area classification	all	Х	X	
2	Equipment ID or circuit ID is correct	all	X	Ø	Loosi Loosi
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	X	Marcaes
4	There are no damage or evidence of unauthorised modifications	all	X	X	
5	Bolts, cable entries and blanking elements are correct and tight	alf	X	\otimes	Loosi
6	Flange facings are clean and undamaged	ď	Х	0 -	una
7	Lamp rating, type and position correct	all	Х		
8	Electrical connections are tight	all	Х		
9	Hermetically sealed devices are undamaged	n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	Х	X	
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	×	
14	Entity calculation/documentation is available	i	X	X	1
	B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	Ø.	01/
2	Sealing of ducts and/or conduits is satisfactory	all	Х	X	
3	Stopper boxes or barrier glands are properly filled	d	X		
4	Integrity of conduit system and interface with mixed system is maintained	all	X]
5	Earthing and bonding connections are tight, in good condition and of sufficient	all		v	

4	Integrity of conduit system and interface with mixed system is maintained	all	∧	
5	Earthing and bonding connections are tight, in good condition and of sufficient	all	x –	×
	cross section		^	^
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X	
8	Automatic electrical protective devices are set correctly and operate within	all	X	
	permitted limits		^	
9	Special certification conditions U,X or B have been complied with	all	Х	
10	Cables/spare cores are terminated satisfactorily	all	Х	
11	No obstructions adjacent to flameproof flanged joint	d	Х	Х
12	Ducts, pipes and enclosures are in good condition	р	X	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	X
14	Protective gas flow/pressure is adequate	р	Х	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X _	
16	Pre-energising purge period is adequate	р	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	P	×	

Amadeus Pipeline Electrical Inspections

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18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	í	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

				\cap	
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	\otimes	Concosion
2	No undue accumulation of dust or dirt	all	X	X	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

No:

List action required

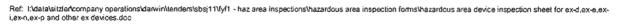
Contractor (write): Inspector	Supervisor	Client (write): Inspector	
P. WIRCIANS			
		Detai	
Date:		Date:	

201100100	
Action requ	uired to make device compliant:
-	N:1 AUSExcertification available, pour condition
	N:1 AUSER certification available, poor condition of aged equipment, corrosion shrongout. Equipment I.O. incorrectly label with respect
-	Equipment 1.0. incorrectly lover in the
	to P&ID (MLV-10). LOOSE cable gland to be tightened. cable EV damage to sheath isemediate.
-	Loose cable gland to be tightened.
-	cable OV domage to sheath semediate.

Reviewed by: N. GREEN Date: 22/9/11 Priority:

Comments:			
 According to the second state 			
1			
All action items now completed:			
Job closed:			
Device now fully compliant, spreadshee	t register has beer	updated	
Supervisor (write):		•	
Date:			
Date.			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



Specifications

Specifications		MIN TAG.
General	(SV0-10) A & (
Device ID or tag:	SUC-10) MW.	6 Asset: INLET
Circuit ID:	Joyo _	Physical location: CHANEL JSLAND
Area classification	;	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) SOLENOTO VALVE	Type of protection: (d,e, i, n, p
Manufacturer: SKINNER VALVE	Gas group: (IIA/B/C) CLATES (HER GROUP CO
Full model number: _ X 5 2.44-8 22501	Temp class: (T1-T6) T3 C
Serial number: X52 HL B 2250	Certificate number: AUS Ex 25211 X
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	CONDON NOCK		
Model:		+ - X	· · · · · · · · · · · · · · · · · · ·
Gland type of protection: (d,e)			
Ingraation	1		Circle on checked
Inspection ————	· · ·		> Circle as checked

Inspection -

			-: ·		
		Applicable to	Ļ	Ţ	
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	Χ.	
2	Equipment ID or circuit ID is correct	all	X	(X)	-ROUM
3	Enclosure, sealing gaskets or compounds are satisfactory	all	Х	× ×	- CINCOT
4	There are no damage or evidence of unauthorised modifications	all	X	(8)	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	R	
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	. n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X · ·		
12	Installation clearly labelled	i	X	X	
13	Safety barriers/isolators installed as per certification and securely earthed where	í	X	X	
	required		^	^	
14	Entity calculation/documentation is available	ii	X	X	

B Installation

	Difficultion			
1	Type of cable is appropriate, cables are undamaged	alí	X	<u>A</u>
2	Sealing of ducts and/or conduits is satisfactory	all	X	
3	Stopper boxes or barrier glands are properly filled	d	X	
4	Integrity of conduit system and interface with mixed system is maintained	all	X	
5	Earthing and bonding connections are tight, in good condition and of sufficient	all	x	
	cross section		^	(a
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	ail	X	
8	Automatic electrical protective devices are set correctly and operate within	all	x	
	permitted limits		^	
9	Special certification conditions U,X or B have been complied with	all	X	
10	Cables/spare cores are terminated satisfactorily	all	X	
11	No obstructions adjacent to flameproof flanged joint	d	X	X
12	Ducts, pipes and enclosures are in good condition	р	X	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	X
14	Protective gas flow/pressure is adequate	р	X	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X	
16	Pre-energising purge period is adequate	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	v	
	the documentation		^	

	C Environment			~	
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	UK.	CORNOSION
2	No undue accumulation of dust or dirt	all	X	8	-
3	Electrical insulation is clean and dry	all	Х		

Faults found? (circle as appropriate)

No:

Yes: List action required

	•	
Contractor (write): Inspector	Supervisor	Client (write): Inspector
Contractor (write): Inspector		
		Dete
Date: 9 9 19 11		Date:

Device ID or tag

Action required to make device compliant: - Equipment + conduit I.D. required. - N:1 AUSEX contribution anna. Table. - Saggett replacement prior to failure.

Reviewed by: N. GREEN Date: 23/9/1 Priority:

Comments:			
All action items now completed:	E		
Job closed:			

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and Other Ex devices

Based on AS/NZS 60079 part 17

Ref: I:\data\sitzler\company operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

Oper	PETO TH	G.					
Gen	eral						_
Devi	ce ID or tag: DPT- 44	1) DPT DI	Asset: STA	TOP PLET.			
Circi	uit ID:		Physical location: (HANFL TS	LANN		
Area	a classification :		Environment: (hot?)				1
-							1
	from Label						2
Appa	aratus type: (light, JB,	FEERENTTAL TRANSMITTE	Type of protection: (d,e, i, n, p			
						_	INOT
Man	ufacturer: BOSEM		Gas group: (IIA/B/C)				UISABLE.
	model number: 305.	103A22A1AM58417	Lemp class: (T1-T6)				1
Seria	al number: RS038	Caco 411	Certificate number:	AUS Ex 1	140x		Ν
		<u></u>	Test authority: (BAS				V
IP C	lass		SAA etc)	, ,		$ _ \bigcirc$	ſ
Num	ber of cables:		1				
INUIT		•	1		•		A (7)
For	each cable entry	gland 1	gland 2	others	ADA	MOR	BUNG NO GERT
	id manufacturer:	<u> </u>					
Mod	el: d type of protection: (d,e)	(*. *	NO CO	11	ALD ISAT
Gian							NOV YUL
Inspe	ection ———		,		Circle as	checked]
		•		· · · · ·	· •	Ť	
	AEquipment			Applicable to protection type:	Internal	▼ External	
1		temp class) is appropriate for area	a classification	all	X	X	and and
2	Equipment ID of circuit ID		· · · · · · · · · · · · · · · · · · ·	, all -	Y X	\otimes	DPT-01
3	Enclosure, sealing gasket	s or compounds are satisfactory		all	X	R	Del-ol
4		evidence of unauthorised modificati		all	. ·X	0	-
5		anking elements are correct and tig	ght .	all	X	X	
6 7	Flange facings are clean a Lamp rating, type and pos			d	· x X		
8	Electrical connections are			all	X		
9	Hermetically sealed device			n 39399	T AX		
10 /		sure is satisfactory to enclosure an	nd/or covers	n	X		
11 V	Motor fans have sufficient			motors only	X		0
12 0	Installation clearly labelled			i	X	Q	Bint
13	Safety barriers/isolators in required	stalled as per certification and sec	urely earthed where	i i	X	Q	
14	Entity calculation/documer	ntation is available		i	X	Х	
	B Installation					- 65	CABLE SUPPORT
1		te, cables are undamaged			X	Ŵ	+ UV
2 3	Sealing of ducts and/or co Stopper boxes or barrier g			all	X X	X	4 0 4
4		and interface with mixed system is	s maintained	ail	X		
5		nections are tight, in good condition		all		<i>(</i>)	
-	cross section				Х	\bigotimes	
6	Fault loop impedance is sa			power outlets	X		
7		tisfactory (check only during initial		all	X		
8	Automatic electrical protect permitted limits	ctive devices are set correctly and o	operate within	all	X		
9		ions U,X or B have been complied	with	all	X		
10	Cables/spare cores are te	rminated satisfactorily		all	X		1
11	No obstructions adjacent t			d	X	X	
12	Ducts, pipes and enclosur		- 9 - 41 - 43	р	X	X	
13		ally free from contaminants (water,	, oii, dirt}	p	X	X	
14	Protective gas flow/pressu	ire is adequate ators, alarms and interlocks function		p	X X		
15 16	Pressure and/or flow indic Pre-energising purge perio			p P	X		
17		barriers of ducts exhausting the g	as into hazardous	p p			
	area are satisfactory				X		1

* MECHANICAL PROTECTION& Developedeus Pipeline Electrical Inspections REQUINED



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	i	Y	l
20	Separation is maintained with non-IS circuits		~	l
20	Separation is maintained with non-is circuits		X	L
21	As applicable, short circuit protection of the power supply is in accordance with	i	v	1
	the documentation		~	1
		•	•	
	C Environment			

	C Environment	-		0
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	X
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

. _

No: Ves: List action required	
Contractor (write): Inspector Supervisor	Client (write): Inspector
Date: 1 9 11	Date:

Device ID or tag
Action required to make device compliant:
- Equipment label not as per 14ID (PPT-444).
- Cable I.O. reymed
- Remediate shenth + provide bure sheath.
- provide instrument stand and appointed earling,
cable protection and re-tube to vessel etc
- Remove sum cover and verity I.S. certification.
- Cable resting upon vessel.

Reviewed by: N. CREEN Date: 23/9/ N Priority:

Comments:		
,		
All action items now completed: Job closed:		_

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

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Specifications

General

Device ID or tag:	SV0/SV (-16	Asset: AOV-16 WEH= 1 WLET
Circuit ID:	-	Physical location: CHANNAL ISLAND
Area classification :		Environment: (hot?)

Data from Label	LLEGI	ant	luta Bris
Apparatus type: (light, JB, Motor)	1	Type of protection: (d,e, i, n, p etc)	1
Manufacturer:	/	Gas group: (IIA/B/C)	
Full model number:		Temp class: (T1-T6)	
Serial number:		Certificate number:	
IP Class	V	Test authority: (BAS, PTB, SAA etc)	V

Number of cables:

7

For each cable entry	gland 1 REX	gland 2 ELBOW	othere NOAPTOR
Gland manufacturer:	Ryco	2	CUPSAL
Model:	EL27-300	2	
Gland type of protection: (d,e)		NIL	it d

Insp	ection		 Circle as checked 		
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	Х	Х	
2	Equipment ID or circuit ID is correct	all	Х	8	- 56 6
3	Enclosure, sealing gaskets or compounds are satisfactory	all	Х	X	•
4	There are no damage or evidence of unauthorised modifications	all	X	8	1
5	Bolts, cable entries and blanking elements are correct and tight	all	Х	18	1
6	Flange facings are clean and undamaged	d	X	C	1
7	Lamp rating, type and position correct	all	X		1
8	Electrical connections are tight	all	X		1
9	Hermetically sealed devices are undamaged	n	X		1
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		1
11	Motor fans have sufficient clearance	motors only	X		1
12	Installation clearly labelled	1	X	X	1
13	Safety barriers/isolators installed as per certification and securely earthed where required	ì	X	×	1
14	Entity calculation/documentation is available	i	Х	Х]
	B Installation				- 61
1	Type of cable is appropriate, cables are undamaged	all	Х	Ø	
2	Sealing of ducts and/or conduits is satisfactory	all	X	X	
-			1.4		-

2	Sealing of ducts and/of conduits is satisfactory	all	~	2
3	Stopper boxes or barrier glands are properly filled	d	X	
4	Integrity of conduit system and interface with mixed system is maintained	all	- X	
5	Earthing and bonding connections are tight, in good condition and of sufficient	all	х	2
	cross section		^	6
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	all	Х	
8	Automatic electrical protective devices are set correctly and operate within	all	X	
	permitted limits			
9	Special certification conditions U,X or B have been complied with	all	X	
10	Cables/spare cores are terminated satisfactorily	all	X	
11	No obstructions adjacent to flameproof flanged joint	d	X	X
12	Ducts, pipes and enclosures are in good condition	р	X	Х
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	X	Х
14	Protective gas flow/pressure is adequate	p	X	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X	
16	Pre-energising purge period is adequate	Р	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous	p	×	
	area are satisfactory		X	



18	Cables are installed and screens are earthed in accordance with the	i	х	
	documentatioOn			
19	The circuit is isolated from earth or earthed at one point only	ì	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	×	
	the documentation		^	

	C Ellanolument				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	R	(01340)(100
2	No undue accumulation of dust or dirt	all	Х	Ø	
3	Electrical insulation is clean and dry	all	Х	~	Í

Faults found? (circle as appropriate)

No:

(es:	List action required		_	
Contra	ctor (write): Inspector	Supervisor	Client (write): Inspector	
	No. GATEN			
Date:	10/9/11		Date:	

Device ID or tag

Action re	equired to make device compliant:
	Circuit I.D. required
11	femediate UV damaged flexitle underit. Corression visible enternally. Replace Solenvids due to use + condition.
-	replace solenoids due to age + condition.
C	suggest new JB + calle computed to new solonoids.)

Reviewed by: N. GREEN Date: 26/9/11 Priority:

Comments:			
All action items now completed:			
Job closed:	H		
			_
But the second all second Based and a laborat	and the second second	 	

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

SITZLER

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Specifications

General

5

6

7

8

9 10

11

12 13 14

15 16 17

cross section

Fault loop impedance is satisfactory

Device ID or tag:	JR16	Asset: AOV-16 WENKEL INVET
Circuít ID:	J047	Physical location: CHANNEL IRAND
Area classification	:	Environment: (hot?)

Data from Label

Apparatus type: (light, Motor)	JB, 38	Type of protection: (d,e, i, n, etc)	P d?
Manufacturer:	SAG	Gas group: (IIA/B/C)	ne
Full model number:	FNJI	Temp class: (T1-T6)	76
Serial number:		Certificate number:	FLP 693
IP Class		Test authority: (BAS, PTB, SAA etc)	SAA

Number of cables: × 2 × NOUT

For each cable entry	gland 1 🛌 👔	gland 2 FUE	others	PLUG 1	errow -
Gland manufacturer:	a .	RYCO		?	/ CLIPERT.
Model:	2	E427-300			
Gland type of protection: (d,e)					

Insp	nspection		Circle a	is checke	d
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	1
2	Equipment ID or circuit ID is correct	all	X	\otimes	
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	8	-PGAUS HES
4	There are no damage or evidence of unauthorised modifications	all	X	8	scal
5	Bolts, cable entries and blanking elements are correct and tight	all	X	Ø	pub
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X		7
8	Electrical connections are tight	all	X		1
9	Hermetically sealed devices are undamaged	n	X		1
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		1
11	Motor fans have sufficient clearance	motors only	X		1
12	Installation clearly labelled	i	X	X	7
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	X	
14	Entity calculation/documentation is available	i	X	Х]
	B Installation				_
1	Type of cable is appropriate, cables are undamaged	aíl	X	Q.	00
2	Sealing of ducts and/or conduits is satisfactory	all	X	8	
3	Stopper boxes or barrier glands are properly filled	d	X		
4	Integrity of conduit system and interface with mixed system is maintained	all	X		

all	×	
all	X	
all	X	
d	Х	X
p	Х	X
р	Х	X
p	Х	
р	X	
р	X	
р	х	
	all	all X all X d X p X p X p X p X p X p X p X p X p X p X p X p X p X p X

Earthing and bonding connections are tight, in good condition and of sufficient

Insulation resistance is satisfactory (check only during initial inspection)

Х

Х

Х

0

all

power outlets

all



			~	117012/3412
18	Cables are installed and screens are earthed in accordance with the	ì	Х	
	documentatio0n			
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	~	
	the documentation		^	

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø
2	No undue accumulation of dust or dirt	all	X	R
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

 Ves:
 List action required

 Contractor (write): Inspector
 Supervisor

 Date:
 Voltation

 Date:
 Date:

Device ID or tag	vice ID or t	taq
------------------	--------------	-----

	· · ·	device compliant						
-	Replace	per: Shed	Seal	, unce	stified plu	y +	elbow	•
-	Varity	ex rating	01	endosus	e, Replace	al	require	el.
					and flor:			
					come that			

Reviewed by: D. GREEN Date: 26(7/11 Priority:

Comments:		-	
All action items now completed: Job closed:			
Device now fully compliant, spreadshee	et register has b	een updated	

Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

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Specifications

Device ID or tag: (35C/250-16)	Asset: WBK \$1 AOV-16
Circuit ID: 5003	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)
Data from Label	INESIRVE
Apparatus type: (light, JB, LIMIT SWITCH	Type of protection: (d,e, i, n, p etc)

Manufacturer:	<u> </u>	Gas group: (IIA/B/C)	
Full model number:	-	Temp class; (T1-T6)	
Serial number:	-	Certificate number:	
IP Class	1	Test authority: (BAS, PTB, SAA etc)	1

Number of cables:

For each cable entry	gland 1	gland 2	others a prom
Gland manufacturer:	?		-
Model:	2		
Gland type of protection: (d,e)	n		~

Insp	ection		Circle a	is checke	d
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X]
2	Equipment ID or circuit ID is correct	all	X	8	ea
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	X	
4	There are no damage or evidence of unauthorised modifications	all	X	X	1
5	Bolts, cable entries and blanking elements are correct and tight	all	X	X	1
6	Flange facings are clean and undamaged	đ	X		1
7	Lamp rating, type and position correct	all	Х		1
8	Electrical connections are tight	all	X]
9	Hermetically sealed devices are undamaged	n	X]
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	Х]
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	Ø	BLUE
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	×	Ø.	1
14	Entity calculation/documentation is available	i	Х	Х]
	B Installation				7
1	Type of cable is appropriate, cables are undamaged	all		X	UV

1	Type of cable is appropriate, cables are undamaged	all	X	X
2	Sealing of ducts and/or conduits is satisfactory	all	X	\mathbf{X}
3	Stopper boxes or barrier glands are properly filled	d	X	
4	Integrity of conduit system and interface with mixed system is maintained	ail	X	
5	Earthing and bonding connections are tight, in good condition and of sufficient	ail	x	Va
	cross section		^	2
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	all	Х	
8	Automatic electrical protective devices are set correctly and operate within	all	X	
	permitted limits		^	
9	Special certification conditions U,X or B have been complied with	alí	X	
10	Cables/spare cores are terminated satisfactorily	all	X	
11	No obstructions adjacent to flameproof flanged joint	d	X	X
12	Ducts, pipes and enclosures are in good condition	р	X	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	X
14	Protective gas flow/pressure is adequate	р	X	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	Х	
16	Pre-energising purge period is adequate	р	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C FRAIDHINGH			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	8
2	No undue accumulation of dust or dirt	all	Х	X
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes?	List action required		
Contrac	tor (write): Inspector	Client (write): Inspector	
Date:	16/9/11	Date:	

Device ID or tag

Action re	equired to m	nake devid	e complia	ant:			
-	Equip	ment	J. 0	. rey	med,		
-	Rend	te l	she	cuble.	shee	xh.	
						burner.	

Reviewed by: N. GREEN Date: 269/11 Priority:

Comments:			
	_		
All action items now completed:			
Job closed:			
Device now fully compliant, spreadsheet	register has been upd	ated	
Supervisor (write):			
Date:			
Patoi			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER

Based on AS/NZS 60079 part 17

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Spec	ifications					(Con	PANGL)
Gene	eral					× /	PANEL)
Devid	elDortag: NONE	(TE-17A) -	Asset: WATER	BATH HEA	FIGR 1		
Circu	110	C. S. M.	Physical location:	CHANNEL	152AND	(CPS	DE)
Area		1H	Environment: (hot?)		HOT		
Alea]
Data	from Label						
Appa Moto	ratus type: (light, JB, J	B (PTD?)	Type of protection: (etc)	d,e, i, n, p	d		
	ifacturer: (B (PTD P) GOVAN	Gas group: (IIA/B/C))	πß		
Full n	nodel number: FL	141	Temp class: (T1-T6)		Th		
Seria	I number:		Certificate number:	AUS EX.	157		
		55	Test authority: (BAS				
			SAA etc)				
Num	per of cables:]				
-					GOACTAD	102	
	each cable entry	gland 1	gland 2	oth	NOT CERT		1
Mode	d manufacturer:	NO INFO			NOT CERT	-n-regj	
	d type of protection: (d,e)				_		
			· · · ·				1
Inspe	ction — — —			Applicable to	Circle as	s checked	
	A Equipment			protection type:	Internal	External	
1		d temp class) is appropriate for are	a classification	all	<u> </u>	× x	C/n
2	Equipment ID or circuit ID			all	X		EQ
3 4		ts or compounds are satisfactory evidence of unauthorised modificati		all	X X	X	CIRCUIT
5		lanking elements are correct and tig		all	- Â	X	
6	Flange facings are clean a		grit	d		~	
7	Lamp rating, type and pos			all	X		
8	Electrical connections are			all	X		
9	Hermetically sealed devic			n	X		
10	Restricted breathing enclo	osure is satisfactory to enclosure an	nd/or covers	n	X		
11 [Motor fans have sufficient			motors only	X		
12	Installation clearly (abelled			i	X	X	
13	Safety barriers/isolators in required	nstalled as per certification and sec	urely earthed where	i	×	х	
14	Entity calculation/docume	ntation is available		i	X	Х	
-	B Installation						
1 [ate, cables are undamaged		all	X	Q	OV
2	Sealing of ducts and/or co			all	X	X	
3	Stopper boxes or barrier g	glands are properly filled		d	X		
4 [n and interface with mixed system i		all	Х		
5	Earthing and bonding con cross section	nections are tight, in good condition	n and of sufficient	all	X	×	
6	Fault loop impedance is s			power outlets			ļ
7		tisfactory (check only during initial		all	X		
8		ctive devices are set correctly and	operate within	all	×		
9	permitted limits	tions U,X or B have been complied	with	all	X		
10	Cables/spare cores are te		will i	all	x		1
11		to flameproof flanged joint		d d	x	Х	1
12	Ducts, pipes and enclosur			р р	X	X	1
13	Protective gas is substant	tially free from contaminants (water	r, oil, dirt)	p	X	X	1
14	Protective gas flow/pressu			p P	X		1
15		cators, alarms and interlocks function	on correctly	р	X		
16	Pre-energising purge peri-	od is adequate		р	X		
17	Condition of spark/particle	e barriers of ducts exhausting the g	as into hazardous	р	x		
l	area are satisfactory						J

Amadeus Pipeline Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	_

	C Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	8	UV
2	No undue accumulation of dust or dirt	all	X	Х	
3	Electrical insulation is clean and dry	ali	Х		

Faults found? (circle as appropriate)

No:		
List action required		
	· · · · · · · · · · · · · · · · · · ·	
Contractor (write): Inspector Supervisor	Client (write): Inspector	
Date: 9/9/11	Date:	

Device ID or tag

Action	required to make de	evice comp	liant:				
-	Equipment	not	in	has	2210	Lou S	area.
-	Provide	equipo	-ert	+	Ca	de.	labels.
-	Remediate	UV	dan	-age	d	She	ath.

Reviewed by: $N - GR \in \mathbb{Z}$ Date: 23/9/NPriority:

Comments:				
All action items now completed:				
Job closed:				
Device now fully compliant, spreadsheet	t register has he	on undated		
Our service now runy compliant, spreadsneet	register nas be	en apaaled		
Supervisor (write):				
Date:				

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices



Based on AS/NZS 60079 part 17

Ref. I:\data\sitzlercompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-p, and other ex devices.doc

Specifications

General	
Device ID or tag: (LSL (7) -	Asset: WBH FLUE END
Circuit ID: NONG	Physical location: CHANNEL ISLAND
Area classification : INIH	Environment: (hot?)
Data from Label	NOT ACCESSIRE
Apparatus type: (light, JB, MURPHY LEVEL SWITCH	Type of protection: (d,e, i, n, p etc) - (Exd) ?
Manufacturer: MURPH Y	Gas group: (IIA/B/C) _ (IIA) ?
Full model number: LILIDD ?.	Temp class: (T1-T6) - (T6)
Serial number:	Certificate number: - (QUSEx 609)?
IP Class	Test authority: (BAS, PTB, SAA etc)
Number of cables:	
ADAPTOR JB	devid 0 sthews

	ADAPTOR JB			
For each cable entry	-gland 1	gland 2	others	
Gland manufacturer:	PYROTENIX	VNKNOWN	•	
Model:	UNKNOWN			
Gland type of protection: (d,e)				
	NO ACCESS	NO ACCESS		

insp	ection	>	Circle a	s checked	ł
		Applicable to			
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	
2	Equipment ID or circuit ID is correct	. all	X _	\otimes	CIRCUIT
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	X	LEQ
4	There are no damage or evidence of unauthorised modifications	all	X	X	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	X	
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	X	
13	Safety barriers/isolators installed as per certification and securely earthed where	i	х	X	
	required				
14	Entity calculation/documentation is available	i	X	X]

	Type of cable is appropriate, cables are undamaged	all	X _	(x)	FUE
	Sealing of ducts and/or conduits is satisfactory	all	X	X	INSULAT
- H-	Stopper boxes or barrier glands are properly filled	d	Х		
	Integrity of conduit system and interface with mixed system is maintained	all	X		
	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	х	×	
	Fault loop impedance is satisfactory	power outlets	Х		
	Insulation resistance is satisfactory (check only during initial inspection)	all	Х	_	
Γ	Automatic electrical protective devices are set correctly and operate within permitted limits	all	Х		
	Special certification conditions U,X or B have been complied with	all	X		
	Cables/spare cores are terminated satisfactorily	all	Х		
	No obstructions adjacent to flameproof flanged joint	d	Х	X	
	Ducts, pipes and enclosures are in good condition	p	Х	X	
	Protective gas is substantially free from contaminants (water, oil, dirt)	p	Х	X	
	Protective gas flow/pressure is adequate	p	Х		
	Pressure and/or flow indicators, alarms and interlocks function correctly	p	Х		
	Pre-energising purge period is adequate	р	X		
	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	P	Х		



			100	
18	Cables are installed and screens are earthed in accordance with the	i	Х	
	documentatio0n			
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with	i	×	
	the documentation		^	

	C Environment			~	\sim
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	\otimes	CORROSIA
2	No undue accumulation of dust or dirt	all	X	Х	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

No:

List action required

Contractor (write): Inspector Supervisor	Client (write): Inspector
Date: 9/9/11	Date:

Device ID or tag

	required to make device compliant:	
-	Equipment + cable I.D required	
-	Nil certification for adaptor JB, suggest replacement with flome proof equipment.	
	Surface curros. on exists.	

Reviewed by: N. GREEN Date: 27/9/11 Priority:

Comments:		
oominente:		
All action items now completed:		
Isk sloos de		
Job closed:		
Device fully compliant	winter has been undeted	
Device now fully compliant, spreadsheet re	egister has been updated	
Supervisor (write):		
Date:		
Date.		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. 1:/data/sitzlencompany operations/darwin/tenders/sbsj11/fyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

Spec	incations							
Gene								
Devi	ce ID or tag:	17) -	Asset: WBHI - FLUE END					
Circu	uit ID:	, , ,	Physical location: CHAN, VEL ISLAND					
Area	classification : N	47	Environment: (hot?)	DUTD	oor R	ADIA	NTHEAT	
Data	from Label							
	arotus tupo: /light /P		Type of protection: (d.e. i. n. p		:	_]
Moto	or) [/	EMP. TX	etc)		Ex			
Man	ufacturer: Kos	SEMOUN 7	Gas group: (IIA/B/C)		ŢŢ	C		
Full	model number: 3144 P	DZAIKIMSTIQUXA	Temp class: (T1-T6)		· C/T	<u>6</u> @	50°C	
Seria	al number: 0:7	93012	Certificate number:	IECEX	BAS	01.1	2002X	
IP C	lass IP (66 / 68	Test authority: (BAS SAA etc)	, PTB,				
Niumo	ber of cables:	<u>A</u>	1					
	ber of cables:		ADINTO	2	,	1		
For	each cable entry	gland 1		-	others f	HUAPTO	bR	
	d manufacturer:	gland 1. ALCO	<u>gland 2</u> CLIPSAL		ÂVJA	PTAF	LEY	
Mod							_	
Glan	d type of protection: (d,e)							
			E NOACLESS	\rightarrow				
Inspe	ection ———					ircie a	s checked	
				Applicable I	0	1	1	
	A Equipment			protection to		ternal	External	
1		temp class) is appropriate for area	a classification	all	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	X	X	
2	Equipment ID or circuit ID		_	all		X	\overline{x}	yrc ID
3		s or compounds are satisfactory	_	all		Х	X	EQUD
4	There are no damage or e	vidence of unauthorised modification	ons	all		X	X	
5		anking elements are correct and tig		all		X	X	
6	Flange facings are clean a			d		Х		
7	Lamp rating, type and pos			all		Х		
8	Electrical connections are	tight		all		Х		
9	Hermetically sealed device			n		Х		
10	Restricted breathing enclo	sure is satisfactory to enclosure an	nd/or covers	n		Х		
11	Motor fans have sufficient	clearance		motors	only	Х		-
12	Installation clearly labelled			i		X	(X)	SHEATH
13	Safety barriers/isolators in required	stalled as per certification and secu	urely earthed where	i		х	R	conneol.
1 4	Entity calculation/docume	ntation is available		i		Х	x	LUT,
	B Installation							TEMP. FOR
1		te, cables are undamaged		all		Х	(\mathbf{X})	
2	Sealing of ducts and/or co			all		Х	X	FLUE - Panage @ condit.
3	Stopper boxes or barrier g			d		Х		panage
4	Integrity of conduit system	and interface with mixed system is	s maintained	all		Х		@ condink
5	Earthing and bonding con cross section	nections are tight, in good condition	n and of sufficient	all		x	x	
6	Fault loop impedance is s	atisfactory		power ou	utlets	Х		
7	Insulation resistance is sa	tisfactory (check only during initial i	inspection)	all		Х		[
8	Automatic electrical protect permitted limits	ctive devices are set correctly and o	operate within	all		Х		
9		ions U,X or B have been complied	with	all		Х		
10	Cables/spare cores are te		•••	all		X		
11		o flameproof flanged joint		d		X	Х	1
12	Ducts, pipes and enclosur			p		X	X	
13		ially free from contaminants (water,	, oil, dirt)	p		X	X	1
14	Protective gas flow/pressu			q	i	Х		1
15	Pressure and/or flow indic	ators, alarms and interlocks function	on correctly	p		Х		
16	Pre-energising purge perio			p		Х		
17		barriers of ducts exhausting the ga	as into hazardous	р		Х		
	area are satisfactory					^		

SITZLER



i	x	
í –	X	
i	X	
i	~	
	^	
	X	
	i i i i	i X i X i X i X i X

	C Environment	_		0	HEAT
1	Apparatus adequately protected from corrosion, weather, vibration, other	alí	Х	\checkmark	
2	No undue accumulation of dust or dirt	all	Х	X	
3	Electrical insulation is clean and dry	all	Х		

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector	Supervisor	Client (write): Inspector	
N. GREEN			
alal		Deter	
Date: <u>9/9/11</u>		Date:	

Device	ID	or	taq
DC*:00	. –	Ui	ug

-	Equipment and cable I.D. required.
-	Remediate sheath with U.V. damage + mochanical
	damage @ conduit entry.
-	Draide Island Steath
	Re-route cube exposed to five heat radiation.

Reviewed by: N. CREEN Date: 23/9/4 Priority:

Comments:				
All action items now completed:				
Job closed:				
				 _
			-	
Device now fully compliant, spreadshee	t register has be	en updated		
Supervisor (write):				
Date:				
Date:				

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



Ref: I:\data\sitzleAcompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

area are satisfactory

Spec	cincations						
Gen							-
Devi	ice ID or tag: 776 -	- (TSK17?)	Asset: WBH (FGAS SI	DE		
Circ	uit ID;	,	Physical location:	CHANNEL	ISLANS	>	
Area	a classification :		Environment: (hot?) DUTDODR				
Dete	from Lobol						
	a from Label	TEMA	Type of protection: (deign /			7
Moto		TERMOCOUPEE SWITCH	etc)			_	4
Man		D FLECTRIC	Gas group: (IIA/B/C)	14	<u> </u>		
Full	model number: C(20-120-1273	Temp class: (T1-T6)		<u>6</u> 60		_
Seria	al number: 0434	2	Certificate number:	IECEX U	LO3.00) (
IP C	lass		Test authority: (BAS SAA etc)	, PTB,			
Nur	nber of cables:		1				_
INUIT	iber of cables.	-	ADAPTOR		0	0	
For	each cable entry	gland 1	gland 2	other	s BUNG		D
	nd manufacturer:	ALCO	(LIPSAL	(4)	NCERTIE	ied -	
Mod		FLPW 202	FALINM	·			_
Glar	nd type of protection: (d,e)		d la c Bi				
	47	AUSER 511 A	lusEx 14984		Civala		J
Inspe	ection — —				Circle a	s checked	1
				Applicable to	T	1	
	A Equipment			protection type:	Internal	External	
1		d temp class) is appropriate for are	a classification	all	X	X	50
2	Equipment ID or circuit ID			all	X	\odot	GRC ID
3	Enclosure, sealing gaske	ts or compounds are satisfactory		all	X	\square	CILC
4	There are no damage or e	evidence of unauthorised modificat	ions	ali	X	Ø	
5		lanking elements are correct and ti	ght	all	X	$\overline{\aleph}$	[
6	Flange facings are clean			d	X	~	1
7	Lamp rating, type and pos			all	X		-
8	Electrical connections are			all	X		-
9	Hermetically sealed device	es are undamaged		n	X		-
10		osure is satisfactory to enclosure a	rid/or covers	n meters estu			-
11 12	Motor fans have sufficien Installation clearly labelle			motors only	1 x	- <u>x</u>	-
12		nstalled as per certification and sec	urely earthed where	i			1
44	required			i		X X	-
14	Entity calculation/docume			1	^	· ^	1
	B Installation						7
1		ate, cables are undamaged		aíl	<u> </u>	- 😸 -	4
2	Sealing of ducts and/or co			all	X		-
3	Stopper boxes or barrier			d	X		-
4		n and interface with mixed system i		all	X	-	-{
5	cross section	nections are tight, in good conditio	in and or sufficient	all	X	X	
6	Fault loop impedance is satisfactory			power outlets	X		_
7	Insulation resistance is satisfactory (check only during initial inspection)		all	X		-	
8	Automatic electrical protective devices are set correctly and operate within		all	X			
9	permitted limits	tions U,X or B have been complied	1 with	all	X		-
10	Cables/spare cores are te			all	X		-
11		to flameproof flanged joint		d	X –	Q	-
12	Ducts, pipes and enclosu			p	X	X	-
13		tially free from contaminants (water	r, oil, dirt)	p p	X	X	1
14	Protective gas flow/press	ure is adequate		p p	X		1
15	Pressure and/or flow india	cators, alarms and interlocks function	on correctly	p	X	-]
16	Pre-energising purge peri	od is adequate		p	X		
17		e barriers of ducts exhausting the g	as into hazardous	р	X]
	area are satisfactory				^		



i	X	
i	X	
j	X	
í	X	
		L
	i i i	i X i X i X i X

	C Environment			2
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	X
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:				
Yes:	List action required			
L				
Contrac	tor (write): Inspector	Supervisor	Client (write): Inspector	
Date:	9/9/11		Date:	

Device ID or tag

5

Action r	equired to make de	evice compliant:			
-	Equipment	t cot IO	required		
-	Replace	uncertified p	lug.		

Reviewed by: Date: 23/9/11 Priority:

Comments:			
All action items new completed			
All action items now completed: Job closed:			
Device now fully compliant, spreadshe Supervisor (write):	et register has been upd	ated	
Date:			

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. 1:\data\sitzler\company operations\\darwin\\enders\sbsj11\\yf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag:	FSHH (TSM?) -	Asset: WBHI FG SIDE
Circuit ID:	NONE	Physical location: CHANNEL (SLAND
Area classification :	ZONJE 2	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, TEMP SWITCH	Type of protection: (d,e, i, n, p CLASS BCLD etc) CLASS 2 SF&G
Manufacturer: UNITED ELECTRIC	Gas group: (IIA/B/C) CLASS 3
Full model number: ILLEG IBLE	Temp class: (T1-T6)
Serial number:	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)
Number of cables:	

For each cable entry	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	HUD		SPLIT - CRACITED
Model:	V14 202		NOID
Gland type of protection: (d,e)			

Inspection -

A Fauinment	Applicable to		External	
		X]
		X	Ô	CIRC ID
		X	D	EQ ID
There are no damage or evidence of unauthorised modifications	all	X	X	-
Bolts, cable entries and blanking elements are correct and tight	all	X		1
Flange facings are clean and undamaged	d	X		1
Lamp rating, type and position correct	all	X		1
Electrical connections are tight	all	X		1
Hermetically sealed devices are undamaged	n	X		7
Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		1
Motor fans have sufficient clearance	motors only	X		1
Installation clearly labelled	i	X	Х]
Safety barriers/isolators installed as per certification and securely earthed where	i	×	v	1
required		^	^	
Entity calculation/documentation is available	i	X	Х]
	Boits, cable entries and blanking elements are correct and tight Flange facings are clean and undamaged Lamp rating, type and position correct Electrical connections are tight Hermetically sealed devices are undamaged Restricted breathing enclosure is satisfactory to enclosure and/or covers Motor fans have sufficient clearance Installation clearly labelled Safety barriers/isolators installed as per certification and securely earthed where required	A Equipment protection type: Equipment (incl group and temp class) is appropriate for area classification all Equipment ID or circuit ID is correct all Enclosure, sealing gaskets or compounds are satisfactory all There are no damage or evidence of unauthorised modifications all Boits, cable entries and blanking elements are correct and tight all Flange facings are clean and undamaged d Lamp rating, type and position correct all Electrical connections are tight all Hermetically sealed devices are undamaged n Restricted breathing enclosure is satisfactory to enclosure and/or covers n Motor fans have sufficient clearance motors only Installation clearly labelled i Safety barriers/isolators installed as per certification and securely earthed where i	A Equipment protection type: Internal Equipment (incl group and temp class) is appropriate for area classification all X Equipment ID or circuit ID is correct all X Enclosure, sealing gaskets or compounds are satisfactory all X There are no damage or evidence of unauthorised modifications all X Boits, cable entries and blanking elements are correct and tight all X Flange facings are clean and undamaged d X Lamp rating, type and position correct all X Electrical connections are tight all X Hermetically sealed devices are undamaged n X Restricted breathing enclosure is satisfactory to enclosure and/or covers n X Installation clearly labelled i X Safety barriers/isolators installed as per certification and securely earthed where i X	A Equipmentprotection type:InternalExternalEquipment (incl group and temp class) is appropriate for area classificationallXXEquipment ID or circuit ID is correctallXXEnclosure, sealing gaskets or compounds are satisfactoryallXXThere are no damage or evidence of unauthorised modificationsallXXBolts, cable entries and blanking elements are correct and tightallXXFlange facings are clean and undamageddXXElectrical connections are tightallXXHermetically sealed devices are undamagednXXHermetically sealed devices are undamagednXXInstallation clearly labellediXXSafety barriers/isolators installed as per certification and securely earthed whereiXX

B Installation

	Standton			
1 Type	e of cable is appropriate, cables are undamaged	all	X	X
2 Sea	ing of ducts and/or conduits is satisfactory	all	X	Ø
	per boxes or barrier glands are properly filled	d	X	5
Integ	rity of conduit system and interface with mixed system is maintained	all	X	
i Eart	hing and bonding connections are tight, in good condition and of sufficient	all	X	0
CLOS	section		_ ^	\bigotimes
i Faul	t loop impedance is satisfactory	power outlets	X	
/ Insu	ation resistance is satisfactory (check only during initial inspection)	all	X	
3 Auto	matic electrical protective devices are set correctly and operate within	all	X	
регл	nitted limits		×	
Spe	cial certification conditions U,X or B have been complied with	all	X	
0 Cab	es/spare cores are terminated satisfactorily	all	X	0
1 No c	bstructions adjacent to flameproof flanged joint	d	X	X
2 Duc	s, pipes and enclosures are in good condition	p	X	X
3 Prot	ective gas is substantially free from contaminants (water, oil, dirt)	p	X	Х
4 Prot	ective gas flow/pressure is adequate	p	X	
5 Pres	sure and/or flow indicators, alarms and interlocks function correctly	p	X	
6 Pre-	energising purge period is adequate	p	X	
7 Con	dition of spark/particle barriers of ducts exhausting the gas into hazardous	р	x	
area	are satisfactory		^	

ROA

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Circle as checked

•



18	Cables are installed and screens are earthed in accordance with the documentatio0n	í	Х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C Environment			0-
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	X
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No: Ver List action required Contractor (write): Inspector Date: 9/9/11 Date:

Device ID or tag

Action required t	to make device compliant:
-	Equipment & cct I.P. required
	N:1 AUSER cartification, hence & replace/serien as required.
-	Replace cracked adapter and uncertified gland.

Reviewed by: N. GROZN Date: 27/9/11 Priority:

Comments:		
All action items now completed:		
All action items now completed.	H	
Job closed:	<u> </u>	
Device now fully compliant, spreadsheet regist	er has been updated	
Supervisor (write):		
Date:		

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. 1:\data\sitzleAcompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

General		/	
Device ID or tag:	ESD 3	NOT LABGUED)	Asset: WATER BATH HEATER PILLOT GAR
Circuit ID:			Physical location: CHANNEL ISLANY
Area classification :	ZONE	2	Environment: (hot?) OUT DODR

Data from Label

Apparatus type: (light, JB, SOLENOID	Type of protection: (d,e, i, n, p
Manufacturer: ASCO	Gas group: (IIA/B/C)
Full model number: EA8262 C90 VAW	Temp class: (T1-T6)
Serial number: 1 EA 801661 LSOGRAD	Certificate number: AUS Ex. 303 2
IP Class 65	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others JB
Gland manufacturer:	ALCO		PYROTENIX
Model:	WG 202		UN LABELLED
Gland type of protection: (d,e)			

Inspection

	A Equipment	Applicable to protection type:	Internal	External	<i>C:0</i>
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	CIRCUT
2	Equipment ID or circuit ID is correct	all	X	\propto	GQ.
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X –	X	J.B CERT
4	There are no damage or evidence of unauthorised modifications	all	X	Ø	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	R]
6	Flange facings are clean and undamaged	d	X		1
7	Lamp rating, type and position correct	alí	X]
8	Electrical connections are tight	all	X]
9	Hermetically sealed devices are undamaged		X]
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X]
11	Motor fans have sufficient clearance	motors only	X]
12	Installation clearly labelled	ì	X	X	
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	х	×	
14	Entity calculation/documentation is available	i	X	X	1

B Installation

	Binstallation			1	66
	Type of cable is appropriate, cables are undamaged	all	X	× ·	c
	Sealing of ducts and/or conduits is satisfactory	all	X	8	
	Stopper boxes or barrier glands are properly filled	d	X		
	Integrity of conduit system and interface with mixed system is maintained	all	X]
	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	x	Ø	
[Fault loop impedance is satisfactory	power outlets	Х]
	Insulation resistance is satisfactory (check only during initial inspection)	all	Х]
	Automatic electrical protective devices are set correctly and operate within permitted limits	ail	X		
	Special certification conditions U,X or B have been complied with	all	X]
	Cables/spare cores are terminated satisfactorily	all	X		
	No obstructions adjacent to flameproof flanged joint	d	X	X	
- 1	Ducts, pipes and enclosures are in good condition	p	Х	X	
	Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	Х	
	Protective gas flow/pressure is adequate	р	Х		
	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X]
	Pre-energising purge period is adequate	р	X]
	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	Х		

Amadeus Pipeline Electrical Inspections

SITZLER

- 0

Circle as checked



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	×	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	
2	No undue accumulation of dust or dirt	all	X	\otimes
3	Electrical insulation is clean and dry	all	X	-

Faults found? (circle as appropriate)

 No:

 Ves:

 List action required

 Contractor (write): Inspector

 No:

 Date:

 9/9/11

Date:

Device ID or tag

Date:

Action requir	ed to make device	compliant:		. /	
-	Equipmen	A + Calle	I.D. regi	men	
-	Replace	uncertified	gland +	JR.	

Reviev	ved by: N. GREEN	
Date:	23/9/11	
Priority	V:	

Comments:			
All action items now completed: Job closed:			
	-		-
Device now fully compliant, spreadshee	et register has be	en updated	
Supervisor (write):		••••••••••••••••••••••••••••••••••••••	

Amadeus Pípeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



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3 .

SHEATH DAMAG=0

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FROM PRESSURE SLATCIA

Ref: 1:\data\sitz\ar\company operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Spec	ifications					
Gene						
Devi	CelD or tag: I/PI NOT LABELLE-D	Asset: WBH	1 FUEL	- GA	S TE	\mathcal{A}
Circu	nit ID: NONG	Physical location:	CHANN	EL	ISLAND	>
Area	classification : ZONE2	Environment: (hot?)	00	TDO	OR	
Data	from Label					
Appa Moto	aratus type: (light, JB, I/P	Type of protection: (etc)	d,e, i, n, p	?)	
Man	Ifacturer: FISHER	Gas group: (IIA/B/C)			
Full	nodel number: 646	Temp class: (T1-T6)				
Seria	11 number: 19942396	Certificate number:				
IP CI	ass	Test authority: (BAS SAA etc)				
Num	ber of cables:		ICSA		RTS TR	IPLEC
NUID			EXPLOSIO~			
For	each cable entry gland 1	gland 2		others	ADAF	TOR
	d manufacturer: ALCO el: ALCO			CLI	PSAL	
Mode	el: ALEHAW20M2	.0		Ē	FINN	
Glan	d type of protection: (d,e)					
_				Aus	SEX 14	
Inspe	ction			\rightarrow	Circle a	s chepked
			Applicable		🕈 .	+
. г	A Equipment		protection t	уре:	Internal	External
1	Equipment (incl group and temp class) is appropriate for a	rea classification			X	X
2	Equipment ID or circuit ID is correct		all		X	
34	Enclosure, sealing gaskets or compounds are satisfactory There are no damage or evidence of unauthorised modific		all		X X	(A) (A)
4 5	Bolts, cable entries and blanking elements are correct and		all		<u>x</u>	
5 6	Flange facings are clean and undamaged	light	alld		x x	
7	Lamp rating, type and position correct				$\hat{\mathbf{x}}$	├ ───
8	Electrical connections are tight		all		X	
9	Hermetically sealed devices are undamaged				<u> </u>	
10	Restricted breathing enclosure is satisfactory to enclosure	and/or covers	<u></u>		X	├ ──┥
11	Motor fans have sufficient clearance		motors	only	X	<u>+</u>
12	Installation clearly labelled	-	i		X	X
13	Safety barriers/isolators installed as per certification and s required	ecurely earthed where	i		X	X
14	Entity calculation/documentation is available		í		X	Х
	P la stallation					Ś
1 [B Installation Type of cable is appropriate, cables are undamaged		all		x	
2	Sealing of ducts and/or conduits is satisfactory		all		X	- K
3	Stopper boxes or barrier glands are properly filled		d		x	~~~
4	Integrity of conduit system and interface with mixed system	n is maintained	all		X	
5	Earthing and bonding connections are tight, in good condition		all		x	2
6	cross section Fault loop impedance is satisfactory		power of	itlate	X	<u></u>
7	Insulation resistance is satisfactory (check only during initi	al inspection)	all	11013	X	
8	Automatic electrical protective devices are set correctly an		all		x	
e l	permitted limits Special certification conditions U,X or B have been compli-	ad with	الم		X	
9 10	Cables/spare cores are terminated satisfactorily		lie all		X	
11	No obstructions adjacent to flameproof flanged joint		d		x	X
12	Ducts, pipes and enclosures are in good condition		p d		x -	X
13	Protective gas is substantially free from contaminants (wat	er, oil, dirt)	p p		x -	X
14	Protective gas flow/pressure is adequate	,	p p		X -	
15	Pressure and/or flow indicators, alarms and interlocks fund	ction correctly	p p		X -	
16	Pre-energising nurge period is adequate				X	

Condition of spark/particle barriers of ducts exhausting the gas into hazardous

17

area are satisfactory

Amadeus Pipeline Electrical Inspections

Х

р



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	1	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Environment				achella
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	8	MJ/Coole
2	No undue accumulation of dust or dirt	all	Х	S	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector	Supervisor	Client (write): Inspector	
N. GREEN			
alal			
Date: 9/9/11		Date:	

Device ID or tag

	quired to make device compliant:
-	Equipment + cct J.D. required
-	Ex hin is contified to Em[csa and not postation
	Mence conformity assassment or replacement required.
	Remediate and re-route cable sheath retting on
	adjacent prelieve smitch

Reviewed by: N. GREEN Date: 25/9/11 Priority:

		_	
Comments:			
]			
All action items now completed:			
Job closed:			
JOD CIOSED:		-	
Device now fully compliant, spreadsheet re	egister has been updated		
Supervisor (write):			
Date:			

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref: I:\\data\sitzler\company operations\\darwin\\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

•									
Gene									
Devi	ce ID or tag: TYI!	NOT LAB	ELLEN	Asset: WATE	VE BAT	HI	TOV	(]
Circuit ID:			Physical location: LHANNEL ISLAND					1	
Area	classification :			Environment: (hot?)					1
									1
	from Label								_
	aratus type: (light, JB,	SOLENO		Type of protection: (d,e, i, л, р	,]
Moto	. /			_etc)		<u> </u>			-
Мап	ufacturer: ASCC	- LABO		Gas group: (IIA/B/C))]
Full	model number:	- V.V.R.C	SADIBLE	Temp class: (T1-T6)				_	
Seria	al number:			Certificate number:					
IP C	ass	V		Test authority: (BAS	, PTB,				
				SAA etc)		U.		_]
Num	ber of cables:	$(\hat{1})$	_]					
		0 -		ADAPTO		others	NR		
	each cable entry		nd 1	gland 2		others	- 00		1
	d manufacturer:	ALCO		UNKNOUN	1		JSE HI	<u>105</u>	-
Mod			U20 M20			úu			-
Gian	d type of protection: (d,e)	d				Auch	Ex (1]
						1703 (Ex 319		
Inspe	ection ———						Circle a	s chepked	
					A				
					Applicable		▼ Internal	€xternal	
1	A Equipment Equipment (incl group and	d temp class) is	appropriate for area	n classification	protection t all	ype	X	<u> </u>	,
2	Equipment ID or circuit ID		appropriate for area		all		X		EQ ID'S
3	Enclosure, sealing gasket		are satisfactory		all		X	X	CABLE ID'S
4	There are no damage or e	evidence of una	uthorised modificati	005	all		x	X	
5	Bolts, cable entries and b				all		X	(Å)	JB BOLT
6	Flange facings are clean a				d d		X		LOOSE
7	Lamp rating, type and pos				all	_	X		e conce
8	Electrical connections are				all		X		
9	Hermetically sealed devic		ed		n		X		
10	Restricted breathing enclo			nd/or covers	n		X		
11	Motor fans have sufficient				motors	only	X		
12	Installation clearly labelied				i		Х	Х	
13	Safety barriers/isolators in	nstalled as per c	ertification and sec	urely earthed where	i		X	X	
14	required Entity calculation/docume	ntation is availa	ble		i		Х	x	
	B Installation							3	CLAND
	Type of cable is appropria				ail		Х		CLAND
2	Sealing of ducts and/or co				all		Х	\otimes	FILCED
3	Stopper boxes or barrier g				Ь		X		LIZIT
4	Integrity of conduit system				all		X		SILICONE
5	Earthing and bonding con cross section	inections are tig	ht, in good conditio	n and of sufficient	all		Х	X	EAZTHTO
6	Fault loop impedance is s	atisfactory		_	power o	iflets	X		STAND/
7	Insulation resistance is sa		k only during initial	inspection)	all		X		GRACITET
8	Automatic electrical prote				all				1 [.]
	permitted limits		-				Х]
9	Special certification condi-			with	all		Х		1
10					all		Х		4
11				d		Х	Х	1	
12				Р		Х	X	4	
13				, oil, dirt)	р		Х	X	4
14	Protective gas flow/press				р		Х		4
15	Pressure and/or flow indic		nd interlocks function	on correctly	p		X		4
16	Pre-energising purge peri	od is adequate			р		Х		4
17	Condition of spark/particle	e barriers of duc	ts exhausting the g	as into hazardous	P		Х		
	area are satisfactory								



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	ì	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	x	

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	R
2	No undue accumulation of dust or dirt	all	Х	8
3	Electrical insulation is clean and dry	all	X	0

Faults found? (circle as appropriate)

No: Yes: List action required Contractor (write): Inspector Supervisor N.LAEEN Date: 9/9/11 Date:

Device ID or tag

Action required to make device compliant:
- Equipment + cable I.P required
- Tighten balt to IR.
- Equipotential bund equipment to Incoming
sted.
- Remediate TB top entry containing silicone Redent. - Ikegible coil Ex raking.
- Illegible coil Ex rating.
- Hence Snggelt to repolace complete allembly,

Reviewed by: N. GREEN Date: 22/9/11 Priority:

Comments:			
All action items now completed:			
An action items now completed.	H		
Job closed:		-	
Device now fully compliant, spreadsheet r	egister has been und	ated	
Superviser (unite):	egistal has been apa		
Supervisor (write):			
Date:			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref. 1/data/sitzlencompany operations/darwin/tenders/sbsj11/tyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

Gen	eral	1						
<u> </u>	ce ID or tag: (PSK:)	(UNLABELLED)	Asset: WEH	MAIN	FLA.M	E		7
<u> </u>	Lit ID:		Physical location: CHANNEL ISLAND					-
	classification :		Environment: (hot?)		DUO		_	-
/ 100					000	<u> </u>		
Data	from Label							_
Appa	aratus type: (light, JB, Par	ESSURE SLITCH	Type of protection: (etc)	d,e, i, n, p	d			
	ufacturer: UE		Gas group: (IIA/B/C)) .	T	-	_	1
Full		-156	Temp class: (T1-T6)		<u></u> τ6			-
Seria	al number:	· _	Certificate number:			03.00		1
IP C	lass		Test authority: (BAS SAA etc)]
hlum	har of applicat		1					
NUN	ber of cables:		BUNG	4		4		
	each cable entry	gland 1	gland 2		others	ADAPTO!	2	_
	d manufacturer:	ALLO	UNCERTIE	2	CLI	PSAL		
Mod	el: d type of protection: (d,e)	ALEMA W20 M20			FA2	WIN	Μ	-
Glan	a type of protection. (d,e)	<i>d</i>			Aus	Ex 149	หน	
Inspe	ection					,	s checked	ł
				Applicable t		↓	_ +	
1	A Equipment	d temp class) is appropriate for are		protection types	/ре:	Internal X	External X	GQ .
2	Equipment ID or circuit ID			all		$\frac{x}{x}$	ŵ	CIRC ID
3		ts or compounds are satisfactory	-	all		X		LICC
4		evidence of unauthorised modificati	ions	all		X	X	1.
5	Bolts, cable entries and b	lanking elements are correct and ti	ght	all		X	(X)	LOOSE
6	Flange facings are clean a			b		Х	0	KUND .
7	Lamp rating, type and pos			aìl		Х		
8	Electrical connections are		_	aíl		X		(
9	Hermetically sealed devic			n		X		
10		osure is satisfactory to enclosure an	nd/or covers	<u> </u>		<u> </u>		
11	Motor fans have sufficient			motors o	only	X	x	-
12 13		nstalled as per certification and sec	urely earthed where	<u>i</u> i		x	×	
14	required Entity calculation/docume	ntation is available				X	x	-
14	Entry calculation/docume		_				~]
	B Installation							-
1		ate, cables are undamaged		all		X	8	4
2	Sealing of ducts and/or co	onduits is satisfactory		all		X	\bigotimes	-
3	Stopper boxes or barrier		a maintained	d		X		4
4 5		n and interface with mixed system i inections are tight, in good conditio		ali			0	-
	cross section					X	Ø	1
6	Fault loop impedance is satisfactory power outlets X Insulation resistance is satisfactory (check only during initial inspection) all X						4	
7				all		X		-
8	Automatic electrical protective devices are set correctly and operate within all permitted limits					x		
9	Special certification conditions U,X or B have been complied with			all		Х		
10	Cables/spare cores are terminated satisfactorily			all		X	0	4
11	No obstructions adjacent to flameproof flanged joint			d		X	$\overline{\otimes}$	4
12	Ducts, pipes and enclosures are in good condition			p p		<u> </u>	X	4
13	Protective gas is substantially free from contaminants (water, oil, dirt)					X	X	4
14	Protective gas flow/pressu		an earranthy	p		<u> </u>		4
15 16	Pressure and/or flow indic Pre-energising purge period	cators, alarms and interlocks function	on correctly	p p		X X		4
16 17		barriers of ducts exhausting the g	as into hazardous	<u>р</u> р				-
.,	area are satisfactory	servers of addis exhibiting the g		,		X		



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	X	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	Ø
2	No undue accumulation of dust or dirt	all	X	$\overline{\mathbf{X}}$
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector Supervisor	Client (write): Inspector	
N. GREEN		
11		
Date: 9/9/4	Date:	

Device ID or tag

- Tighten loose cable gland.
- Replace uncertified plug.

Reviewed by: N- 6 Ree No Date: 2.3/9/11 Priority:

Comments:			
All action items now completed: Job closed:			
Device now fully compliant, spreadshe	et register has been	n updated	

Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref: I:\data\sitzler\company operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-e, ex-e, ex-e, ex-p, and other ex devices.doc

Specifications

Gene	eral							
Devi	ce ID or tag: (PSL)	- (NOT LABELLED)	Asset: WBH1	- A04	ACENT	PIZ	-	
Circu	uit ID:	-	Physical location: CHANNEL ISLAND					7
Area	classification :		Environment: (hot?)					1
	from Label		T					-
Appa Moto	aratus type: (light, JB, Product)	RESSURE SUITCH	Type of protection: (etc)	d,e, i, n, p	d			
	ufacturer: 14C		Gas group: (IIA/B/C)		TT /			1
		0-156						-
Fully	model number: 012	0 -156	Temp class: (T1-T6)		16	• ~		-
Seria	al number:		Certificate number:		<u>c UL</u>	<i>،</i> ک	0001	
IP C	ass by		Test authority: (BAS) SAA etc)	, PTB,				
			SAA EIC)					
Num	ber of cables:			1				
		alard 1	BUNG		-		ADAPTO	N
	each cable entry d manufacturer:	gland 1	_gland.2			and and a	NT CI DE	h.
Mod		ALCHA WZO MZO	UN CEACT 19-16	<i>D</i>	- 710	2 41	NM CLIPS	4tC
	d type of protection: (d,e)	d d			• • •	q		-
		Aus 6x 03-394			AUSEY	140	18U	_
Inspe	ection						as checked	d
				Applicable to		. ↓	. ↓	
	A Equipment		1	protection ty	<u>pe: I</u>	ntemal	<u>External</u>	-
1		d temp class) is appropriate for area	aclassification	all		X X	\mathbf{x}	CIRC
2	Equipment ID or circuit ID		-	alt				EO
3		ts or compounds are satisfactory		all		<u> </u>	R	
4 5		evidence of unauthorised modificati lanking elements are correct and tig		all			R	-
6	Flange facings are clean a		gni	d			-	-
7	Lamp rating, type and pos			all		<u>x</u>		-
8	Electrical connections are			all		<u>x</u>		1
9	Hermetically sealed devic					<u> </u>		1
10		osure is satisfactory to enclosure ar	nd/or covers			<u> </u>		1
11	Motor fans have sufficient			motors c	nly	X		1
12	Installation clearly labelled			i	- <u> </u>	X	X	1
13	Safety barriers/isolators in	nstalled as per certification and sec	urely earthed where	i		х	X	1
14	required Entity calculation/docume	ntation is available		i		<u> </u>	X	-
1-4	Entry calculation/docume		_			~		
	B Installation		_				0	_
1	Type of cable is appropria	ate, cables are undamaged		all		X	N.	
2	Sealing of ducts and/or co			all		<u>X</u>	<u>@</u>	4
3	Stopper boxes or barrier g			d		Х		_
4		n and interface with mixed system is		all		Х	-	4
5	Earthing and bonding con cross section	nections are tight, in good condition	n and of sufficient	all		х	8	
6	Fault loop impedance is s	atisfactory		power ou	tlets	Х		-
7		atisfactory (check only during initial	inspection)	all		Х		1
8	Automatic electrical prote	ctive devices are set correctly and o		all		х		1
~	permitted limits	tions II V or D have been compliant		- "				-
9 10	Cables/spare cores are te	tions U,X or B have been complied	WI(1)	alí all		X		-
11	No obstructions adjacent	to flameproof flanged joint		d		x	Ø.	-
12	Ducts, pipes and enclosur		_	p		X	X	-
13	Protective das is substant	tially free from contaminants (water	oil dirt)	р р		X	X	-
14	Protective gas flow/press		,, u	p		X		1
15		cators, alarms and interlocks function	on correctly	<u>Р</u> Р		X		1
16	Pre-energising purge peri			p		- <u>X</u>		1
17	Condition of spark/particle	e barriers of ducts exhausting the g	as into hazardous	p p				1
	area are satisfactory					х		

SITZLER

'P



18	Cables are installed and screens are earthed in accordance with the	1 1	-	
10		1 '	l X	
	documentatio0n			
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits)	X	
21	As applicable, short circuit protection of the power supply is in accordance with	ì	v	
	the documentation		^	
			_	

	C Fliai Olilleur			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	S
2	No undue accumulation of dust or dirt	all	Х	×
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:		
List action required		
Contractor (write): Inspector Supervisor	Client (write): Inspector	
N. GREEN		
Date: 9/9/11	Date:	

Device ID or tag

Action required to make device compliant: - Equipment + coble I.D required.	
- Replace incertified plug.	
n	

Reviewed by: N. LRECN Date: 27(1) II Priority:

Comments:		
All action items now completed:		
An action items now completed.	H	
Job closed:	<u>L</u>	
Device now fully compliant, spreadsheet	register has been updated	
Supervisor (write):		
Date:		

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. I:\data\sitzler.company operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

Gen	aral						
	ce ID or tag: $\leq V$	2	Asset: WBH(EG SID	GTOH	TR (EC	
<u> </u>	uit ID:	<u> </u>	Physical location:	FG. CLOS CHANNEL	15 1 - 2		
		17-					-
Area	classification : 300	IEZ	Environment: (hot?)	OUTDOOR	<		
	from Label						_
	aratus type: (light, JB,	OLENOID	Type of protection: (d,e, i, n, p EE+			
Moto	1		etc)	~	- ME		-
		BETT SEGOC	Gas group: (IIA/B/C)				-
			Temp class: (T1-T6)	<u> </u>	5		-
Seria	al number: w2&UU		Test authority: (BAS	Au: Ex 3616 >	<		4
IP C	ass a	65	SAA etc)	, РТВ.			
Num	ber of cables:						
NUIT	Der of Cables.						
For	each cable entry	gland 1	gland 2	others	6		_
Glan	d manufacturer:	ALLO					
Mod		126202					-
Gian	d type of protection: (d,e)	2 NON EX.					
Inspe	ection			>	Circle a	s checked	4
				- 14 A			-
				Applicable to	· · · · · •	↓ I	
	A Equipment			protection type:	Internal	External	1
1		d temp class) is appropriate for	area classification		X	X	60
2	Equipment ID or circuit ID			all	X	<u>a</u>	CIRC 10
3		ts or compounds are satisfactor		all	X	8	
4		evidence of unauthorised modif		alí	X	R	{
5		lanking elements are correct ar	nd tight	all	X		LOOSE
6	Flange facings are clean			<u>d</u>	X	+	GUTND
7	Lamp rating, type and pos			all	X	───	-
8	Electrical connections are			all	X	┥	-
9	Hermetically sealed devic			<u>n</u> ,	X	╉────	-
10		osure is satisfactory to enclosur	re and/or covers		X	╡────	-
11	Motor fans have sufficient			motors only	X -		-
12	Installation clearly labelled		a courdly conthad where	i I	X	X	-
13	required	nstalled as per certification and	securely earlied where	1	X	X	
14	Entity calculation/docume	entation is available		i	Х	X]
	B Installation						~
1		ate, cables are undamaged		all	X	X>	CASSE
2	Sealing of ducts and/or co			all	X -	8	5
3	Stopper boxes or barrier			d	X		1
4		n and interface with mixed syste	em is maintained	all	X	+	1
5	Earthing and bonding con	nnections are tight, in good cond		all	x	Ø	-
_	cross section					<u> (</u>	-
6	Fault loop impedance is s			powèr outlets			-
7		atisfactory (check only during in ctive devices are set correctly a		all	<u>×</u>		-
8	permitted limits	cuve devices are set correctly a		all	X		
9		itions U,X or B have been comp	blied with	all	X	1	1
10	Cables/spare cores are te			all	X		1
11		to flameproof flanged joint		d	Х	Х]
12	Ducts; pipes and enclosur	res are in good condition		р	Х	X	
13		tially free from contaminants (w	ater, oil, dirt)	p	Х	X	
14	Protective gas flow/press			р	Х		
15	Pressure and/or flow indic	cators, alarms and interlocks fu	nction correctly	р	Х		
16	Pre-energising purge peri	iod is adequate		p	X		
17	Condition of spark/particle	e barriers of ducts exhausting th	he gas into hazardous	p	X		7
	area are satisfactory						



18	Cables are installed and screens are earthed in accordance with the	i	Х	
	documentatio0n		~	
19	The circuit is isolated from earth or earthed at one point only	ì	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	v	
	the documentation		^	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	X
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	Х	<u> </u>

Faults found? (circle as appropriate)

No:

Date:

Yes? List action required Contractor (write): Inspector Supervisor Client (write): Inspector N. GREEN 9/9/11

Date:

Device ID or tag

Action required to make device compliant: - Equipment + cable I.D. required. - Replace uncertified cake gland. - Remoliate calle theath.

Reviewed by: Date: 23/9/11 N. GREEN Priority:

Comments:		
		/
	_	
All action items now completed:		- 1
Job closed:		
Device now fully compliant, spreadsheet register	r has been updated	
Supervisor (write):	•	
Date:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref: I:\data\sitzlencompany operations\darwin\tenders\sbsj11\fy/1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

-						
General						
		Asset: WBH	FG MAL	I FLAME		1
	ONE		CHANNEL	JS/ANI	<u></u>	1
			CM.14101000	130101)	-
Area classification : Zo	NEZ 11A	Environment: (hot?)				
Data from Label						_
Apparatus type: (light, JB,	SOLENDID	Type of protection: (d,e, i, n, p Me			
Motor)		etc)				-
Manufacturer: BURK		Gas group: (IIA/B/C)	44_			-
Full model number: 65	-19 W OG. O NBRPA	Temp class: (T1-T6)	-76	•		1
Serial number: AU	29723 138690 C		Aus Ex	3616	\times	
IP Class	5	'Test authority: (BAS, SAA etc)	, PTB,			
()		0,0,000				-
Number of cables:]				
			- 11			
For each cable entry Gland manufacturer:	gland 1	gland 2	othe	<u> </u>		٦
Gland manufacturer: Model:						1
Gland type of protection: (d,e		-				1
chang type of proteotion. (0,e	I Non ex.	1		_		-
nspection			`	Circle a	s checked	ł
			r r			-
			Applicable to	Ļ	Ļ	
A Equipment			protection type:	Internal	External	
	and temp class) is appropriate for are	a classification	all	X	X	EQ
Equipment ID or circuit			all	X	(\mathbf{X})	GRE
Enclosure, sealing gas	kets or compounds are satisfactory		all	X	8	~~~
There are no damage of	or evidence of unauthorised modification	ions	all	X	100	~~~~
Bolts, cable entries and	blanking elements are correct and ti	ight	all	X	\otimes	CRP
Flange facings are clea	in and undamaged		d	Х		6~-
Lamp rating, type and p			, ∵all	X		• '- 04
Electrical connections a			all	X	<u> </u>	an
Hermetically sealed dev			п	X		
	closure is satisfactory to enclosure a	nd/or covers	п	X		
1 Motor fans have sufficie			motors only	<u> </u>	<u> </u>	4
2 Installation clearly label			<u>i</u>	X	X	4
	s installed as per certification and sec	curely earthed where	i	X	X	
required			i	X	X	1
4 Entity calculation/docur				^		i -
B Installation					100	
	priate, cables are undamaged		all	Х	∇	٦
	conduits is satisfactory		all	X -	Ø	1
	ar glands are properly filled		d	X	T-e-	1
	em and interface with mixed system i	is maintained	all	Х]
	connections are tight, in good conditio		all	X	>]
cross section					Ø	
Fault loop impedance is			power outlets	X		_
	satisfactory (check only during initial		all	X		_
	otective devices are set correctly and	operate within	all	X		
permitted limits Special certification cor		d weith	-11		┥───	-
	nditions U,X or B have been complied		ail	X	+	-
	e terminated satisfactorily		aíl d	X	x	-
	nt to flameproof flanged joint			X	× –	-
	sures are in good condition antially free from contaminants (water	r oil dirt)	p	X	$\frac{x}{x}$	- ·
 Protective gas is substant Protective gas flow/pres 		i, oii, uirtj	p p	X	+ $-$	1
	dicators, alarms and interlocks function	on correctly	<u>р</u> р	X	<u> </u>	1
6 Pre-energising purge p	eriod is adequate		p p	X	+	1
	icle barriers of ducts exhausting the g	ias into hazardous	<u>p</u>		+	1
area are satisfactory	sis samore of succe exhibiting (no g			X		
a. a. a. a. a. a. a. a. a. a. a. a. a. a						_

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18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	X	
		•		

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	R
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:

Yes:	List action required			
Contra	ctor (write): Inspector	Supervisor	Client (write): Inspector	
Date:	9/4/11		Date:	

Device ID or tag

Action required to make device compliant:		
- Equipment to cable I.D. required		
- Replace incostified cable gland.		
- Replace equipment due to crucked	electrical entry.	
<u> </u>		

Reviewed by: N. LEEN Date: 23/9/11 Priority:

Commenter	
Comments:	
All action items now completed:	
Job closed:	
Device now fully compliant, spreadsheet register has been updated	
Supervisor (write):	
Date:	

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref. 1/data/sitzle/company operations/darwin/tenders/sbsj11/ly/1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag:	5 VO/5 VC - 18	Asset: ADV-18 WBM# 2 INVET
Circuit ID:	-	Physical location: CHAMNAN ISLAMO.
Area classification :	_	Environment: (hot?)

Data from Label	ILLEGIRLE	11	Liebisci
Apparatus type: (light, JB, Motor)	1	Type of protection: (d,e, i, n, p etc)	/
Manufacturer:		Gas group: (IIA/B/C)	
Full model number:		Temp class: (T1-T6)	
Serial number:		Certificate number:	+-
IP Class	Ú	Test authority: (BAS, PTB, SAA etc)	V

Number of cables:

13

14

15

16

17

For each cable entry	gland 1 A.c.	gland 2 B B w	others Approton
Gland manufacturer:	RYLO	-	CLAPIAL
Model:	EL27-300	-	
Gland type of protection: (d.e)		nor	

Insp	ection		Circle a	is checked	
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	Х	
2	Equipment ID or circuit ID is correct	all	Х	8	CCF
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	8	
4	There are no damage or evidence of unauthorised modifications	ali	X	× X	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	8	
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	'n	X		
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	X	
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	X	
14	Entity calculation/documentation is available	i	X	X	
	B Installation	·			
1	Type of cable is appropriate, cables are undamaged	all	X	<u>&</u>	UV
2	Sealing of ducts and/or conduits is satisfactory	all	X	Ø	
3	Stopper boxes or barrier glands are properly filled	d	X		1
4	Integrity of conduit system and interface with mixed system is maintained	all	X		
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	x	x	
6	Fault loop impedance is satisfactory	power outlets	X		1
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X		1
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	x]
9	Special certification conditions U,X or B have been complied with	all	X		1
10	Cables/spare cores are terminated satisfactorily	all	X		1
11	No obstructions adjacent to flameproof flanged joint	d	X	X]
12	Ducts, pipes and enclosures are in good condition	p	X	X	1
					1

Protective gas is substantially free from contaminants (water, oil, dirt)

Pressure and/or flow indicators, alarms and interlocks function correctly

Condition of spark/particle barriers of ducts exhausting the gas into hazardous

Protective gas flow/pressure is adequate

Pre-energising purge period is adequate

area are satisfactory

р

р

р

p

р

Х

Х

X X

Х



Cables are installed and screens are earthed in accordance with the	i	х	
The circuit is isolated from earth or earthed at one point only	i	Х	
Separation is maintained with non-IS circuits	í	Х	
As applicable, short circuit protection of the power supply is in accordance with the documentation	í	х	
	documentatio0n The circuit is isolated from earth or earthed at one point only Separation is maintained with non-IS circuits As applicable, short circuit protection of the power supply is in accordance with	documentatioOn i The circuit is isolated from earth or earthed at one point only i Separation is maintained with non-IS circuits i As applicable, short circuit protection of the power supply is in accordance with i	documentatioOn X The circuit is isolated from earth or earthed at one point only i X Separation is maintained with non-IS circuits i X As applicable, short circuit protection of the power supply is in accordance with i X

	C Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	×	CORDON
2	No undue accumulation of dust or dirt	all	Х	V	
3	Electrical insulation is clean and dry	all	Х		

Faults found? (circle as appropriate)

No:

Yes;	List action required			
Contra	actor (write): Inspector	Supervisor	Client (write): Inspector	
Date:	10/9/11	_	Date:	

Device ID or tag

Action required to make device compliant:	
- Circuit J.D. required	
- Romed the UV domaged flexible conduit	
- Visible external corrosion	
- Replace solaroids dere to aye + condition.	
(suggest now IB + calle compared to now solenoids.)	

Reviewed byr:	NGREEN
Date: 24 1/11	
Priority:	

Comments:		
All action items now completed:		
Job closed:		
Device now fully compliant, spreadsheet register	as been updated	
Supervisor (write):		
Date:		

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref: I:\data\sitzlencompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag:	2818	Asset: ADV-18 WEH = 2 INVET
Circuit ID:	7048	Physical location: CHANNAL ISLAND
Area classification	ו: י	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, etc)	p d !
Manufacturer: 5AE	Gas group: (IIA/B/C)	118
Full model number: TN 3 1	Temp class: (T1-T6)	TO
Serial number:	Certificate number:	FLP 697
IP Class	Test authority: (BAS, PTB, SAA etc)	LA.A.

Number of cables:

13

area are satisfactory

gland 2 PLEx gland 1 y 🕧 others GLEON For each cable entry Gland manufacturer: 2 CUAM RYLO Model: EL27-700 2 Gland type of protection: (d,e)

Insp	ection		Circle a	s checke	d
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X]
2	Equipment ID or circuit ID is correct	all	X	Ø	1
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	X	persuap
4	There are no damage or evidence of unauthorised modifications	all	X	×	pul
5	Bolts, cable entries and blanking elements are correct and tight	all	X	8.	prog
6	Flange facings are clean and undamaged	d	X		1
7	Lamp rating, type and position correct	all	X]
8	Electrical connections are tight	all	X]
9	Hermetically sealed devices are undamaged	n	X]
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X]
11	Motor fans have sufficient clearance	motors only	X]
12	Installation clearly labelled	i	X	X]
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	×]
14	Entity calculation/documentation is available	í	X	X	1
	B Installation				_
1	Type of cable is appropriate, cables are undamaged	all	X	×2	GV
2	Sealing of ducts and/or conduits is satisfactory	ali	X	0	
3	Stopper boxes or barrier glands are properly filled	d	X		
4	Integrity of conduit system and interface with mixed system is maintained	all	Х		
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	×	B	
6	Fault loop impedance is satisfactory	power outlets	X		7
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X		7
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	X		
9	Special certification conditions U,X or B have been complied with	all	Х		
10	Cables/spare cores are terminated satisfactorily	alí	Х		7
11	No obstructions adjacent to flameproof flanged joint	d	X	Х	7
12	Ducts, pipes and enclosures are in good condition	р	X –	Х	

Protective gas is substantially free from contaminants (water, oil, dirt) 14 Protective gas flow/pressure is adequate 15 Pressure and/or flow indicators, alarms and interlocks function correctly Pre-energising purge period is adequate 16 17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous

р

р

D

р

р

Х

Х

Х

Х

х

X

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18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes List action require	d		
Contractor (write): Inspe	ctor Supervisor	Client (write): Inspector	
Date: Jolg/1		Date:	

De	evice	ID	or	tag	J	
					-	

•	Remediate UV lan	agod cable and flaxible condict.
	Verify it rating	of enclosure, replace as required.
		+ cable amoded to now relencids.)

Reviewed by: N. CAGES Date: 25/9/11 Priority:

Comments:			
Comments.			
All action items now completed:			
Job closed:			
		_	 -
Device now fully compliant, spreadshe	et register has beer	n updated	
Supervisor (write):			
Date:			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. 1:\data\sitzlencompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,exi,ex-n,ex-p and other ex devices.doc

Specifications

General		
Device ID or tag:	(ZSC/250-18)	 Asset: WBK+2 AOV-18
Circuit ID:	5004	Physical location: CHANNEL ISLAND
Area classification		Environment: (hot?)

Data from Label		ILVELUEN		
Apparatus type: (light, JB, Motor)	UNIT SWITCH.	Type of protection: (d,e, i, n, p etc)		
Manufacturer:	-	Gas group: (IIA/B/C)		
Full model number:	-	Temp class: (T1-T6)		
Serial number:	-	Certificate number:		
IP Class	-	Test authority: (BAS, PTB, V		

Number of cables:

For each cable entry	gland 1	gland 2	others	
Gland manufacturer:	MOAE			
Model:	3			
Gland type of protection: (d,e)	1			

Insp	ection	`	Circle a	is checke	ď
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	
2	Equipment ID or circuit ID is correct	all	X ·		-ea
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X _	(8)	
4	There are no damage or evidence of unauthorised modifications	all	X _	X	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	Ø]
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	al)	X]
8	Electrical connections are tight	all	X]
9	Hermetically sealed devices are undamaged	n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X –		1
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	æ	sugaru
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	8	2
14	Entity calculation/documentation is available	ì	Х	Х]

B Installation

Type of cable is appropriate, cables are undamaged	all	X	Ø	a
Sealing of ducts and/or conduits is satisfactory	all	Х	(2)	04
Stopper boxes or barrier glands are properly filled	d	Х		
Integrity of conduit system and interface with mixed system is maintained	all	Х		
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	Х	Ø	
Fault loop impedance is satisfactory	power outlets	Х		
Insulation resistance is satisfactory (check only during initial inspection)	all	Х		
Automatic electrical protective devices are set correctly and operate within permitted limits	all	х		
Special certification conditions U,X or B have been complied with	all	Х		
Cables/spare cores are terminated satisfactorily	all	Х		
No obstructions adjacent to flameproof flanged joint	d	X	Х	
Ducts, pipes and enclosures are in good condition	p	× _	Х	
Protective gas is substantially free from contaminants (water, oil, dirt)	р	× _	Х	
Protective gas flow/pressure is adequate	р	X		
Pressure and/or flow indicators, alarms and interlocks function correctly	р	X		
Pre-energising purge period is adequate	р	X		
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	q	х		

Amadeus Pipeline Electrical Inspections

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-JS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	CENVIONMENT			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	\otimes
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:

List action required

Contractor (write): Inspector Supervisor	Client (write): Inspector	
N.GROON		
Date: 10/9/n	Date:	

Device ID or tag

	Equipment				
•	fenediate bi	ne. Cab	le of	eath	
-	Pertaninde .	cuble	with exp	nosed	armour
-	Verty install	ation o	f J. S.	barris	1.

Reviewed by: N. GAZEN Date: 26/9/ U Priority:

Comments:	
All action items now completed:	
Job closed:	
Device now fully compliant, spreadsheet register has been updated	
Supervisor (write):	
Date:	

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref. 1:\data\sit2ler\company operations\\darwin\tenders\sbsj11\\yf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag: (Te-19A) -	Asset: WBH# 2 (FURE CNO)
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification : NK?	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, p etc) $\mathcal{E}_{\lambda} d$
Manufacturer: CLOVAN	Gas group: (IIA/B/C)
Full model number: FW 4W	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 15 P
IP Class JP65	Test authority: (BAS, PTB, SAA etc)

Number of cables:

l

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO	Ĵ.	
Model:	FLPW 203	2	
Gland type of protection: (d,e)			

Inspection .

Insp	ection		Circle a	as checke	d
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	Х	
2	Equipment ID or circuit ID is correct	all	X	Ø	- 64
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	Ø	-cot.
4	There are no damage or evidence of unauthorised modifications	all	Х	80	1
5	Bolts, cable entries and blanking elements are correct and tight	alí	Х	80	
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X]
8	Electrical connections are tight	all	X		1
9	Hermetically sealed devices are undamaged	n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	X	
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	X]
14	Entity calculation/documentation is available	i	Х	X	
	B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	\otimes	
2	Sealing of ducts and/or conduits is satisfactory	all	X	Ø	
3	Stopper boxes or barrier glands are properly filled	d	X	0	7
A	Integrity of conduit system and interface with mixed system is maintained		× ×		7

Stopper boxes of barrier grands are property lined	u		
Integrity of conduit system and interface with mixed system is maintained	all	X	
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	x	8
Fault loop impedance is satisfactory	power outlets	Х	
Insulation resistance is satisfactory (check only during initial inspection)	all	X _	
Automatic electrical protective devices are set correctly and operate within permitted limits	all	x	
Special certification conditions U,X or B have been complied with	all	X	
Cables/spare cores are terminated satisfactorily	all	X	0
No obstructions adjacent to flameproof flanged joint	d	X	\otimes
Ducts, pipes and enclosures are in good condition	р	X	X
Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	X
Protective gas flow/pressure is adequate	р	X	
Pressure and/or flow indicators, alarms and interlocks function correctly	р	X	
Pre-energising purge period is adequate	р	X	
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	р	х	
	Integrity of conduit system and interface with mixed system is maintained Earthing and bonding connections are tight, in good condition and of sufficient cross section Fault loop impedance is satisfactory Insulation resistance is satisfactory (check only during initial inspection) Automatic electrical protective devices are set correctly and operate within permitted limits Special certification conditions U,X or B have been complied with Cables/spare cores are terminated satisfactorily No obstructions adjacent to flameproof flanged joint Ducts, pipes and enclosures are in good condition Protective gas is substantially free from contaminants (water, oil, dirt) Protective gas flow/pressure is adequate Pressure and/or flow indicators, alarms and interlocks function correctly Pre-energising purge period is adequate Condition of spark/particle barriers of ducts exhausting the gas into hazardous	Integrity of conduit system and interface with mixed system is maintained all Earthing and bonding connections are tight, in good condition and of sufficient all cross section power outlets Fault loop impedance is satisfactory power outlets Insulation resistance is satisfactory (check only during initial inspection) all Automatic electrical protective devices are set correctly and operate within all permitted limits special certification conditions U,X or B have been complied with all Cables/spare cores are terminated satisfactorily all all No obstructions adjacent to flameproof flanged joint d Ducts, pipes and enclosures are in good condition Protective gas is substantially free from contaminants (water, oil, dirt) p p Pressure and/or flow indicators, alarms and interlocks function correctly p Pre-energising purge period is adequate p Condition of spark/particle barriers of ducts exhausting the gas into hazardous p	Integrity of conduit system and interface with mixed system is maintained all X Earthing and bonding connections are tight, in good condition and of sufficient all X Fault loop impedance is satisfactory power outlets X Insulation resistance is satisfactory (check only during initial inspection) all X Automatic electrical protective devices are set correctly and operate within all X Special certification conditions U,X or B have been complied with all X Cables/spare cores are terminated satisfactorily all X No obstructions adjacent to flameproof flanged joint d X Ducts, pipes and enclosures are in good condition p X Protective gas is substantially free from contaminants (water, oil, dirt) p X Pressure and/or flow indicators, alarms and interlocks function correctly p X Pre-energising purge period is adequate p X Pre-energising purge period is adequate p X

Amadeus Pipeline Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	×	
19	The circuit is isolated from earth or earthed at one point only	í	Х	
20	Separation is maintained with non-IS circuits	i	x	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	×
2	No undue accumulation of dust or dirt	all	Х	X
3	Electrical insulation is clean and dry	all	X	4

Faults found? (circle as appropriate)

 No:

 Yes:
 List action required

 Contractor (write): Inspector
 Supervisor

 Other:
 Client (write): Inspector

 Date:
 Date:

Device ID or tag

Action rec	quired to make device compliant:	
	Equipment + coble	
-	Replace uncertified	elbow (if deened H.A.).

Reviewed by: N. GREEN Date: 26/9/11 Priority:

Comments:				
All action items now completed:				
Job closed:				
Device you fully compliant approaches	t register here h	a an undeted	 	
Device now fully compliant, spreadsheet	register has b	een updated		
Supervisor (write):				
Date:				

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. 1:\data\sitzlencompany operations\darwin\tenders\sbsj11\fy/1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,exi,ex-n,ex-p and other ex devices.doc

SITZLER

Specifications

Gen	eral							
Dev	ice ID or tag: (LSL]	9 -	Asset: W&W	#2	(FLUE	e eno)		
Circ	uit ID:	· -	Physical location:	CHANNE		LANO		
Area	a classification :	NH?	Environment: (hot?)	Chunt .				-
74100			City of the city o]
Data	a from Label		L	MUTED	Acues	5.		
App	aratus type: (light, JB,	_	Type of protection: (_	
Mot	or)	evel switch	etc)	_				
Mar	ufacturer: MURPW	1	Gas group: (IIA/B/C)	al	choi	op Go		
Full	model number:		Temp class: (T1-T6)]
Seri	al number: Mfg Dole	: 02/06	Certificate number:	CSA	??			
IP C	lass		Test authority: (BAS SAA etc)	, РТВ,		-		
			SAX EIC)					
Nun	hber of cables:							
_	· · · · · ·	313						
	each cable entry ad manufacturer:	gland t Pyloteváx	gland 2		others			1
Mod		1 YROTEWAX		-				
	nd type of protection: (d,e)	-		_				
		NO ALLESS	NO ACLO	13.				
Insp	ection ———				→	Circle a	s checked	
	A Equipment			Applicable protection		 Internal	♦ External	
1		temp class) is appropriate for ar	ea classification	all	уре.	X	X	
2	Equipment ID or circuit ID		ations all			X	Ô	. EQ'+
3		s or compounds are satisfactory				X	X	- CCT.
4		evidence of unauthorised modification				X	Ø	
5		lanking elements are correct and				X	X	
6	Flange facings are clean a				d X			
7	Lamp rating, type and pos			all		X		
8	Electrical connections are			all		X		
9	Hermetically sealed devic	es are undamaged		n		X		
10	Restricted breathing enclo	osure is satisfactory to enclosure a	and/or covers	n		X		
11	Motor fans have sufficient	clearance		motors	only	X		
12	Installation clearly labelled	t		ì		X	X	
13		stalled as per certification and se	curely earthed where	i		X	X	
14	required Entity calculation/docume	ptation is available		i		X	X	
14	Entity calculation/docume	Itation is available			_		<u>^</u>	
	B Installation							CHELS V.
1		te, cables are undamaged	-	all	_	Х	8	FUERE
2	Sealing of ducts and/or co			all		X	X	
3	Stopper boxes or barrier of			b		X		
4		and interface with mixed system	is maintained	all		X		1
5		nections are tight, in good conditi		all		X	X	1
	cross section						^	
6	Fault loop impedance is s			power o	utlets	X		
7		tisfactory (check only during initia		lla		X		ļ
8				all		X		
9	permitted limits Special certification condit	tions U,X or B have been complie	d with	all		x		
5 10	Cables/spare cores are te			all		x		
11		to flameproof flanged joint		d		X	x	
12	Ducts, pipes and enclosur			p d		X	X	
13		ially free from contaminants (wate	er. oil. dirt)	p p		X	x	
14	Protective gas flow/pressu			p p		X	$+$ $\hat{-}$	
15		ators, alarms and interlocks funct	tion correctly	p p		X	1	
16	Pre-energising purge peri			p p		X		
17		barriers of ducts exhausting the	gas into hazardous	<u>р</u> Р				
	area are satisfactory		•			X		



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	<u>i</u>	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

			_		
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø	BEAT
2	No undue accumulation of dust or dirt	all	X	X	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

 Ces:
 List action required

 Contractor (write): Inspector
 Supervisor

 Client (write): Inspector
 Date:

 Date:
 Date:

Device ID or tag

No:

ction	required to make device compliant:	
-	Equipment + cable 3	c.O. required.
1	Replace adapta (35 cut	orining All anodence of callication
1	Provide insulation to	cable . to minimise the effect.
	of the Est tempoe	Aure.

Reviewed by: N. LAZEN Date: 26/9/11 Priority:

Comments:				
All eation items new sempleted				
All action items now completed:	H			
Job closed:			 	_
Device now fully compliant, spreadsheet	t register has b	een updated		
Supervisor (write):				

Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref: [:\data\sitzler\company operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi.ex-n, ex-p and other ex devices.doc

Specifications

General					
Device ID or tag: (711	19) -	Asset: WISH	# 2 (FLUE E	(Dens)	
Circuit ID:		Physical location:	C		
Area classification :		Environment: (hot?)			
		Environment, (not?)			
Data from Label			NOT	HEGIRLE (OV FADED)
Apparatus type: (light, JB,		Type of protection: (d,e, i, n, p		l
Motor) 7	EMP. TEMSMITTOR	etc)			
Manufacturer: Roseme	ONT	Gas group: (IIA/B/C)			
Full model number: 3144 DI 37M5F5 Serial number: 0903276		Temp class: (T1-T6)			
		Certificate number:			
IP Class IP 66/63		Test authority: (BAS SAA etc)	, PTB,	1	
	-				
Number of cables:		1404.0mm			
For each cable entry	gland 1	gland-2	othe	rs	
Gland manufacturer:	ALCO 1	CUPSAL ?			
Model:				_	
Gland type of protection: (d,e)					
	NOT AC	signals is		Civala	a abaalaad
nspection ———			\longrightarrow	Circle a	s checked
			Applicable to	1	1
A Equipment			protection type:	Internal	External
Equipment (incl group a	nd temp class) is appropriate for ar	ea classification	all	X	X
Equipment ID or circuit	D is correct		all	X	× - 24
Enclosure, sealing gask	ets or compounds are satisfactory		all	X	×
	r evidence of unauthorised modifica	ations	all	X	X
	blanking elements are correct and		all	X	X
Flange facings are clear	and undamaged		d	X	
Lamp rating, type and p			all	Х	
Electrical connections a	re tight		all	X	
Hermetically sealed dev			n	Х	
 Restricted breathing end 	closure is satisfactory to enclosure	and/or covers	n	Х	
 Motor fans have sufficie 			motors only	X	A
2 Installation clearly labell			i	X	& she
3 Safety barriers/isolators required	installed as per certification and se	curely earthed where	i	X	8 PAN
4 Entity calculation/docum	nentation is available		i	Х	X
P Instaliation					
B Installation Type of cable is appropriate	nate, cables are undamaged		all	X	R) -FU
Sealing of ducts and/or		_	all	X	-SUN
	r glands are properly filled		d	- <u>x</u>	6
	em and interface with mixed system	n is maintained	all	X	
	onnections are tight, in good conditi		all		
cross section				X	\otimes
Fault loop impedance is	satisfactory		power outlets	Х	
Insulation resistance is a	satisfactory (check only during initia		all	X	
Automatic electrical prot	ective devices are set correctly and		all	X	
permitted limits		d with			↓
	ditions U,X or B have been complie			X	<u> </u>
0 Cables/spare cores are			all	X	
	t to flameproof flanged joint		d		X
	ures are in good condition	or oil dirt)	p	X	X
	ntially free from contaminants (wate		p		X
4 Protective gas flow/pres		Kan annah		X	↓
	licators, alarms and interlocks func	uon correctly	p	X	┥───┤
16 Pre-energising purge pe	cle barriers of ducts exhausting the	goo into bazardavia	<u>р</u>	<u> </u>	┥───┤
17 Condition of spark/partic area are satisfactory	he partiers of ducts exhausting the	gas into nazaroous	p	X	
alea ale salisiaciól y					



				And an and a second
18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	ì	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	ă	Х	

	C Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	\otimes	hear
2	No undue accumulation of dust or dirt	all	X	X	
3	Electrical insulation is clean and dry	all	Х	~	

Faults found? (circle as appropriate)

 No:

 List action required

 Contractor (write): Inspector

 Supervisor

 Other

 Date:

Device ID or tag

-	Equipment.	cable I.	D. required.		
-	Remediate	sleath with	D. required. D.V. damage		
•	Provide colle	e Support	and insulation	40	minimile
	the effects	of Ame	temp arctice.		

Reviewed by: N. GREEN Date: 26/9/11 Priority:

Comments:			
	_		
All action items now completed:			
Job closed:			
Device now fully compliant, spreadsheet	t register has been up	dated	
Supervisor (write):			
Date:			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



Ref. 1:\data\sitzlencompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag:	(TSUIG) -	Asset: WEND2 FAN SIDE
Circuit ID:	-	Physical location: CHANNEL LLAND
Area classification :		Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMP SWITCH.	Type of protection: (d,e, i, n, p etc)
Manufacturer: UNITOD EVERTRIL	Gas group: (IIA/B/C)
Full model number: CI20-120 Ofrow 1227	Temp class: (T1-T6) T6 (-++++++++++)
Serial number: 6 + 3 + 7	Certificate number: IEC Ex UL 03.0001
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

		ADAPTOR	
For each cable entry	gland 1	gland-2	others PLUG.
Gland manufacturer:	ALCO	CUPSAL	poin
Model:	ALCUA WO M20	FALINM	MIL
Gland type of protection: (d,e)	Crid	end	ما د مع

Insp	ection	>	Circle a	s checke	d
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	Х]
2	Equipment ID or circuit ID is correct	all	X	X	.22
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	18	-202-
4	There are no damage or evidence of unauthorised modifications	all	X	R	1
5	Bolts, cable entries and blanking elements are correct and tight	all	X	Ø]
6	Flange facings are clean and undamaged	d	Х	0	
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	Х		
9	Hermetically sealed devices are undamaged	n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		7
11	Motor fans have sufficient clearance	motors only	X]
12	Installation clearly labelled	i	X	X	Bue
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	×	X	
14	Entity calculation/documentation is available	i	X	X]
	B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X		7
2	Sealing of ducts and/or conduits is satisfactory	alí	X	1 A	-

Sealing of ducts and/or conduits is satisfactory all 2 3 X Stopper boxes or barrier glands are properly filled đ Х Integrity of conduit system and interface with mixed system is maintained all 4 5 Earthing and bonding connections are tight, in good condition and of sufficient all Х Ø cross section Fault loop impedance is satisfactory power outlets Х 6 7 Insulation resistance is satisfactory (check only during initial inspection) all Х 8 Automatic electrical protective devices are set correctly and operate within all х permitted limits Special certification conditions U,X or B have been complied with 9 X all Х 10 Cables/spare cores are terminated satisfactorily alí 11 No obstructions adjacent to flameproof flanged joint d Х X 12 Ducts, pipes and enclosures are in good condition р Х × Х 13 🖑 Protective gas is substantially free from contaminants (water, oil, dirt) р Х 14 Protective gas flow/pressure is adequate Х P Pressure and/or flow indicators, alarms and interlocks function correctly 15 Х р Х 16 Pre-energising purge period is adequate р 17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous р х area are satisfactory

Amadeus Pipeline Electrical Inspections

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SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C Environment			0
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	X
2	No undue accumulation of dust or dirt	ali	Х	X
3	Electrical insulation is clean and dry	all	Х	0

Faults found? (circle as appropriate)

 No:

 Ves:

 List action required

 Contractor (write): Inspector

 Supervisor

 Client (write): Inspector

 Date:

 Image: I

Device ID or tag

•	red to make device compliant:
-	Equipment + cake I.O. required
	Replace uncertified pluy.
-	Blue celle sheath indicated I.S., voiity installation of I.B. and review accordingly.

Reviewed by: N_GREEN Date: 26/9/11 Priority:

Comments: All action items now completed: Job closed:		
All action items now completed:	Comments:	
All action items now completed:		
All action items now completed:		
All action items now completed:		
All action items now completed:		
All action items now completed:		
All action items now completed:		
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All action items now completed:		
All action items now completed:		
All action items now completed:		
All action items now completed:		
All action items now completed:		
All action items now completed:		
Job closed:	All action items new completed	
	All action items now completed:	
	Job closed:	
Device now fully compliant, spreadsheet register has been updated	Device now fully compliant, spreadsheet re-	gister has been updated
Supervisor (write):	Supervisor (write):	
Date:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices



Based on AS/NZS 60079 part 17

Ref: 1:\data\sitzler\company operations\\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

oonora		
Device ID or tag:	(75K2.) -	Asset: WBMW 2 FUEL GAS JOE
Circuit ID:	-	Physical location:
Area classification :		Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMP. Switch	Type of protection: (d,e, i, n, p etc)
Manufacturer: UDITED ELECTRIC	Gas group: (IIA/B/C)
Full model number: CI10-120	Temp class: (T1-T6) 76
Serial number:	Certificate number: AUS Ex 542 x
IP Class IP66	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others	
Gland manufacturer:	ALCO	CLAPBEL 2		_
Model:	W6 202	2		
Gland type of protection: (d,e)				
	Loots	· · · · · · · · · · · · · · · · · · ·		

Inspection -

Inspe	ction	\longrightarrow	Circle a	s chepke	d
	A Equipment	Applicable to protection type:	Internal	External	
1 [Equipment (incl group and temp class) is appropriate for area classification	all	X	X	-
2	Equipment ID or circuit ID is correct	all	X	\otimes	-Ele -((t
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	(X)	- cce
4 [There are no damage or evidence of unauthorised modifications	all	X	X	1
5 [Bolts, cable entries and blanking elements are correct and tight	all	X	X	1
6 [Flange facings are clean and undamaged	d	X _	0]
7 [Lamp rating, type and position correct	all	X		1
8 [Electrical connections are tight	all	X		1
9 [Hermetically sealed devices are undamaged	n	X		1
10 [Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X]
11 [Motor fans have sufficient clearance	motors only	X]
12 [Installation clearly labelled	ì	X	Х	1
13	Safety barriers/isolators installed as per certification and securely earthed where required	ì	×	x	1
14	Entity calculation/documentation is available	i	X	Х	1

1	Type of cable is appropriate, cables are undamaged	all	X	\otimes
2	Sealing of ducts and/or conduits is satisfactory	all	X	Ø
3	Stopper boxes or barrier glands are properly filled	d	X	
4	Integrity of conduit system and interface with mixed system is maintained	all	X	
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	×	8
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X	
8	Automatic electrical protective devices are set correctly and operate within	all	X	
	permitted limits			
9	Special certification conditions U,X or B have been complied with	all	X	
10	Cables/spare cores are terminated satisfactorily	all	X	
11	No obstructions adjacent to flameproof flanged joint	d	X	×
12	Ducts, pipes and enclosures are in good condition	р	X	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	Х
14	Protective gas flow/pressure is adequate	р	X	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X	
16	Pre-energising purge period is adequate	р	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	P	x	



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i T	Х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	Ì	Х	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø
2	No undue accumulation of dust or dirt	all	Х	8
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

 No:

 Ist action required

 Contractor (write): Inspector

 No. G < C <</td>

 Date:

 Image: Imag

Device ID or tag

Action r	required to make device compliant:		
-	Equipment + code I.D.	required.	
	Tighton looke cable gland		
-	Veurly Ex raking (it any) necessary.	st adaptor a septrace al	

Reviewed by: 12. GREEN Date: 2 4 9/ 11 Priority:

Commonto			
Comments:			
All action items now completed:			
Job closed:	H		
Device now fully compliant, spreadsheet	t register has beer	n updated	
Supervisor (write):			

Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref: 1:\data\sitzlercompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,exi.ex-n,ex-p and other ex devices doc

Specifications

General		
Device ID or tag:	(SV2)- NO TAG	Asset: WISH #2 - FUEL GAS
Circuít ID:	-	Physical location: Channel 15,
Area classification	:	Environment: (hot?)
-		

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, p etc) EEx m, e	
Manufacturer: RORKGET	Gas group: (IIA/B/C)	
Full model number: #CID -23-6-PD55-JAD 2	Temp class: (T1-T6) + 6	
Serial number: W 28 UUO9 9 28 3	Certificate number: PTB Ex-95-0.2043 X (ADS Cx 76	516X
IP Class 65	Test authority: (BAS, PTB, SAA etc)	

Number of cables:

1

For each cable entry	gland 1 🗙 🕽	gland 2	others ADAPTUR X
Gland manufacturer:			2
Model:			
Gland type of protection: (d,e)			

Inspection -Circle as checked Applicable to A Equipment protection type: Internal External Equipment (incl group and temp class) is appropriate for area classification Х X 1 all -LLT X Ø 2 Equipment ID or circuit ID is correct all EQ 3 Enclosure, sealing gaskets or compounds are satisfactory all Х Ø There are no damage or evidence of unauthorised modifications 4 all Х 8 5 Х Bolts, cable entries and blanking elements are correct and tight all \mathcal{N} 6 Flange facings are clean and undamaged d Х Х 7 Lamp rating, type and position correct all Х 8 Electrical connections are tight all Х 9 Hermetically sealed devices are undamaged n Х 10 Restricted breathing enclosure is satisfactory to enclosure and/or covers n Motor fans have sufficient clearance motors only Х 11 Х 12 Installation clearly labelled Х Safety barriers/isolators installed as per certification and securely earthed where 13 ì Х Х required Х Х Entity calculation/documentation is available 14 i.

B Installation

					4V
1	Type of cable is appropriate, cables are undamaged	all	X		
2	Sealing of ducts and/or conduits is satisfactory	all	X		- BUSE J
3	Stopper boxes or barrier glands are properly filled	b	X	-	- CACLE
4	Integrity of conduit system and interface with mixed system is maintained	all	X		support
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	x	\bigotimes	
6	Fault loop impedance is satisfactory	power outlets	X		
7	Insulation resistance is satisfactory (check only during initial inspection)	all	Х		
3	Automatic electrical protective devices are set correctly and operate within permitted limits	all	×		
)	Special certification conditions U,X or B have been complied with	all	Х		
0	Cables/spare cores are terminated satisfactorily	all	X		
1	No obstructions adjacent to flameproof flanged joint	d	X	X	
2	Ducts, pipes and enclosures are in good condition	р	Х	X	
3	Protective gas is substantially free from contaminants (water, oil, dirt)	р	Х	X	
4	Protective gas flow/pressure is adequate	p	Х		
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X		
16	Pre-energising purge period is adequate	p	Х		
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	P	х		

Amadeus Pipeline Electrical Inspections



				a sector contract
18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i		
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	
2	No undue accumulation of dust or dirt	all	X	Xe
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:			
List action required			
Contractor (write): Inspector	Supervisor	Client (write): Inspector	
Date: 9/9/11		Date:	

Device ID or tag

Action required to make device compliant:
- Equipment + cable ID reynied
- Remediate Reath with UV damage and remove live sheath indicating I.S. instalkation.
live sheath indicating I.S. installation.
- Varity glands + adaptors are smithbly ex voted.
- Re-route cable to provide adequate Support.

Reviewed by: Date: Priority:

Comments:	
All action items new completed	
All action items now completed:	
Job closed:	
Device now fully compliant, spreadsheet register has been updated	
Supervisor (write):	
Date:	

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. L'datastiziencompany operations/darwin/tenders/sbsj11/tyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

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Specifications

General		
Device ID or tag:	(SVI) No TAG.	Asset: WBH #2 - FUEL GAS
Circuit ID:	- 1	Physical location: CHANNEL 15,
Area classification		Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, p etc)	
Manufacturer: BURKEPT	Gas group: (IIA/B/C)	
Full model number: AC10-23-6-PD55-3A02	Temp class: (T1-T6) T6	
Serial number: W28UUØ9 26	Certificate number: PTB 6x-95. D. 2043X 4050	1616×
IP Class 65	Test authority: (BAS, PTB, SAA etc)	

Number of cables:

For each cable entry	gland 1 🙀 📔	gland 2	others Aproton
Gland manufacturer:	2		~
Model:			
Gland type of protection: (d,e)			

Insp	ection		Circle a	is chepke	d
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	Х	
2	Equipment ID or circuit ID is correct	alí	X –	8	-667
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X –	8	-EQ
4	There are no damage or evidence of unauthorised modifications	all	X	8	1
5	Bolts, cable entries and blanking elements are correct and tight	all	X	8]
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X]
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	X]
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	Х]
14	Entity calculation/documentation is available	ì	Х	Х]

B Installation

	BInstanation				
1	Type of cable is appropriate, cables are undamaged	all	X	\otimes	-01
2	Sealing of ducts and/or conduits is satisfactory	all	X	X	-BUE M
;	Stopper boxes or barrier glands are properly filled	d	X	-	- CABLE
	Integrity of conduit system and interface with mixed system is maintained	all	Х		JUPPORT
	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	×	Ø	
	Fault loop impedance is satisfactory	power outlets	Х		7
	Insulation resistance is satisfactory (check only during initial inspection)	all	Х		7
	Automatic electrical protective devices are set correctly and operate within permitted limits	all	Х		
	Special certification conditions U,X or B have been complied with	all	Х		7
)	Cables/spare cores are terminated satisfactorily	alí	Х		7
	No obstructions adjacent to flameproof flanged joint	d	X	X	7
2	Ducts, pipes and enclosures are in good condition	p		X	7
3	Protective gas is substantially free from contaminants (water, oil, dirt)	p	X _	Х	7
1	Protective gas flow/pressure is adequate	p	X		7
5	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X		7
6	Pre-energising purge period is adequate	p	Х		7
7	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X]

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	R
2	No undue accumulation of dust or dirt	all	Х	S
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:

Ves: List action required

Contract	or (write): Inspector Supervisor	Client (write): Inspector	
	or (write): Inspector Supervisor		
Date:	9/9/11	Date:	

Device ID or tag

Action required to make device compliant:	
- Equipment + cable I.D. required	
- Remediate sheath with UV damage and remove blue shouth indicuting J.S. installation.	
- Verity gland + adapters are smithbly Ex rated.	
- Re-route cable to have adequate support.	

Reviewed by: N. AREEN Date: 23/9/11 Priority:

Comments:		
All action items now completed:		
Job closed:		
Jub closed.		
Device now fully compliant, spreadsheet re	egister has been updated	
Supervisor (write):		
Date:		

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Circle as checked

Based on AS/NZS 60079 part 17

Ref: I:\data\sitzlercompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General	
Device ID or tag: (PSL 2) -	Asset: WBN #2
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESJ. SWITCY.	Type of protection: (d,e, i, n, p etc)
Manufacturer: UPITED EVECTRIC	Gas group: (IIA/B/C)
Full model number: 3120 (56	Temp class: (T1-T6) 76
Serial number:	Certificate number: AUS Ex 542
IP Class (P 66	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others warpron-
Gland manufacturer:	ALCO		CLIPIAL
Model:	2		
Gland type of protection: (d,e)	2		d
			AUS Ex 12110 ?

Inspection -

		Applicable to	↓ I	. ↓	
	A Equipment	protection type:	Internal	External	_
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	
2	Equipment ID or circuit ID is correct	all	X	× ×	- ea
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	No.	- cee
4	There are no damage or evidence of unauthorised modifications	all	X	8]
5	Bolts, cable entries and blanking elements are correct and tight	all	Х	8]
6	Flange facings are clean and undamaged	d	X]
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n	X]
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X]
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	X	Eure.
13	Safety barriers/isolators installed as per certification and securely earthed where	i	X	X	
	required		^		
14	Entity calculation/documentation is available	i	X	X	

Type of cable is appropriate, cables are undamaged	all	Х	\otimes
Sealing of ducts and/or conduits is satisfactory	all	X	Ø
Stopper boxes or barrier glands are properly filled	d	x	5
Integrity of conduit system and interface with mixed system is maintained	all	Х	
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	Х	8
Fault loop impedance is satisfactory	power outlets	Х	
Insulation resistance is satisfactory (check only during initial inspection)	all	Х	
Automatic electrical protective devices are set correctly and operate within permitted limits	all	х	
Special certification conditions U,X or B have been complied with	all	Х	
Cables/spare cores are terminated satisfactorily	all	Х	
No obstructions adjacent to flameproof flanged joint	d	X	Х
Ducts, pipes and enclosures are in good condition	р	X	Х
Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	Х
Protective gas flow/pressure is adequate	р	X	
Pressure and/or flow indicators, alarms and interlocks function correctly	р	X	
Pre-energising purge period is adequate	p	Х	
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	х	

Annadeus Pipeline Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the	i	X	
	documentatio0n		~	
19	The circuit is isolated from earth or earthed at one point only	ì	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	v	
	the documentation			

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	8
2	No undue accumulation of dust or dirt	all	Х	X
3	Electrical insulation is clean and dry	all	Х	~

Faults found? (circle as appropriate)

No: Yes: List action required Contractor (write): Inspector N.らんごころ Supervisor Client (write): Inspector Date: 10/9/11

Date:

Device ID or tag	
Action required to make device compliant:	
- Equipment + cable I.D. required.	
- Blue shall indicating I.S., verify etc. and review accordingly.	barriers, installation
- Pro-ide cutte Support.	

Reviewed by: D. GREEN Date: 26/9/11 Priority:

Comments:			
	_		
All action items now completed:			
Job closed:	L		
Device now fully compliant, spreadshe	et register has bee	n updated	
Supervisor (write):			
Date:			

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



Circle as checked

-

Ref. I:\datasitzlencompany operations\darwin\tenders\sbsj11\tyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d.ex-e.ex-i.ex-n.ex-p and other ex devices.doc

Specifications

General

Device ID or tag: (PSH?)		Asset: WBK #	2	
Circuit ID:	-	Physical location:	CHANNEL	15LANDO
Area classification :		Environment: (hot?)		

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, p etc)
Manufacturer: UPITED ELEGRAC	Gas group: (IIA/B/C)
Full model number: 3120-156	Temp class: (T1-T6) 76
Serial number:	Certificate number: (CCEx UL 03.0001
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2 PLUG	others waproe
Gland manufacturer:	ALCO ?	REDADT	CUPSAL
Model:	1	PARO	FAZINM
Gland type of protection: (d,e)	2	d	d

Inspection -

A Equipment	Applicable to protection type:	♦ Internal	External	_
Equipment (incl group and temp class) is appropriate for area classification	all	X	X	
Equipment ID or circuit ID is correct	ail	X	N	-
Enclosure, sealing gaskets or compounds are satisfactory	all	X	8	-
There are no damage or evidence of unauthorised modifications	all	X	Ø	
Bolts, cable entries and blanking elements are correct and tight	all	Х	X	
Flange facings are clean and undamaged	d	Х		
Lamp rating, type and position correct	all	Х		
Electrical connections are tight	all	X		
Hermetically sealed devices are undamaged	п	Х		
Restricted breathing enclosure is satisfactory to enclosure and/or covers	л	Х		
Motor fans have sufficient clearance	motors only	Х		
Installation clearly labelled	i	X	X	
Safety barriers/isolators installed as per certification and securely earthed where required	í	×	X	
Entity calculation/documentation is available	i	X	X	

B Installation

	BInstallation				
1	Type of cable is appropriate, cables are undamaged	all	X	\otimes	support
2	Sealing of ducts and/or conduits is satisfactory	all	Х		
3	Stopper boxes or barrier glands are properly filled	d	X		
4	Integrity of conduit system and interface with mixed system is maintained	all	X]
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	ali	х	8	
6	Fault loop impedance is satisfactory	power outlets	X		
7	Insulation resistance is satisfactory (check only during initial inspection)	all	Х		
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	х		
9	Special certification conditions U,X or B have been complied with	all	X		
10	Cables/spare cores are terminated satisfactorily	all	X		
11	No obstructions adjacent to flameproof flanged joint	d	X	Ø	
12	Ducts, pipes and enclosures are in good condition	p	Х	X]
13	Protective gas is substantially free from contaminants (water, oil, dirt)	Р	X	X]
14	Protective gas flow/pressure is adequate	p	Х		1
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X]
16	Pre-energising purge period is adequate	p	X]
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	х]

Amadeus Pipe line Elect'rical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	R
2	No undue accumulation of dust or dirt	all	Х	X
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:				
Yes:	List action required			
Contra	actor (write): Inspector	Supervisor	Client (write): Inspector	
Date:	10/9/11		Date:	_

Device ID or tag

Action 1	required to make device compliant:	
-	Equipment + cable I.D. Provide cable Support. Verify gland Ex rating	*

Reviewed by: N. CREEN Date: 26/9/11 Priority:

Comments:					
All action items now completed:					
Job closed:	Ē				
			-		
Device now fully compliant, spreadsheet register has been updated					
Supervisor (write):					
Date:					

Based on AS/NZS 60079 part 17

Ref: 1:/data/sitzlen/company operations/darwin/tenders/sbsj11/fy/1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

General			
Device ID or tag:	(ESD 3)	-	Asset: WBH # 2 FUEL GAS MORE
Circuit ID:	-		Physical location: CHANNEL (SLAND
Area classification :			Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) Socess 10 VALVE	Type of protection: (d,e, i, n, p etc)
Manufacturer: ASGO	Gas group: (IIA/B/C)
Full model number: VMAGB 2628210	Temp class: (T1-T6) 73 (40°C)
Serial number: 14880 A-1	Certificate number: AUS Ex 3498
IP Class JP 67	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO		
Model:	WG202		
Gland type of protection: (d,e)	NOLC .		

Inspection -Circle as checked Applicable to A Equipment protection type: Internal External Equipment (incl group and temp class) is appropriate for area classification all X 1 - 02 X 2 Equipment ID or circuit ID is correct all Ø -CLT 3 Enclosure, sealing gaskets or compounds are satisfactory all Х There are no damage or evidence of unauthorised modifications 4 all Х 0 Х X 5 Bolts, cable entries and blanking elements are correct and tight all 6 Flange facings are clean and undamaged d Х Х 7 all Lamp rating, type and position correct Х all 8 Electrical connections are tight X 9 Hermetically sealed devices are undamaged n Х 10 Restricted breathing enclosure is satisfactory to enclosure and/or covers n motors only Х 11 Motor fans have sufficient clearance Х 12 Installation clearly labelled i X Safety barriers/isolators installed as per certification and securely earthed where 13 h Х Х required Х Х Entity calculation/documentation is available ì 14

B Installation 1 Type of cable is appropriate, cables are undamaged all Х X Х 2 Sealing of ducts and/or conduits is satisfactory all R 3 Stopper boxes or barrier glands are properly filled d X X 4 Integrity of conduit system and interface with mixed system is maintained all Earthing and bonding connections are tight, in good condition and of sufficient all 5 Х R cross section 6 power outlets X Fault loop impedance is satisfactory Insulation resistance is satisfactory (check only during initial inspection) all Х 7 8 Automatic electrical protective devices are set correctly and operate within all Х permitted limits Special certification conditions U,X or B have been complied with X 9 ali X 10 Cables/spare cores are terminated satisfactorily all Х No obstructions adjacent to flameproof flanged joint d Х 11 12 Ducts, pipes and enclosures are in good condition р Х Х Protective gas is substantially free from contaminants (water, oil, dirt) X X 13 р Protective gas flow/pressure is adequate Х 14 р 15 Pressure and/or flow indicators, alarms and interlocks function correctly Х р Х 16 Pre-energising purge period is adequate p Condition of spark/particle barriers of ducts exhausting the gas into hazardous 17 р Х area are satisfactory

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Amadeus Pipeline Electrical Inspections

SITZLER



				ALING LAUN AND A
18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	ì	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	Ø
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	C

Faults found? (circle as appropriate)

No:		
Contractor (write): Inspector Supervisor	Client (write): Inspector	
Date: 10/9/ n	Date:	

Device ID or tag

Actio	on	required to make	e device c	ompliant:			
	-	Equipment	f +	colle.	J.D.	require	2
	-	Replace	unces	itial	cuble	gland	

Reviewed by: N. GREEN Date: 26/9/11 Priority:

Comments:				
All action items now completed:				
Job closed:				
Device now fully compliant, spreadshee	et register has b	een updated	-	
Supervisor (write):				
Date:				
Batel				

Amadeus Pipeline Electrical Inspections

Based on AS/NZS 60079 part 17

Ref. 1:/datasitzlencompany operations/darwin/lenders/sbsj11/fyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-p, and other ex devices.doc

Specifications						
General						
Device ID or tag: (77	1) -	Asset: WSH	# 2 TUSE C	AS SIDE		
Circuit ID:		Physical location:	CHANNEL 1.	LAND		
Area classification :		Environment: (hot?)				1
Data from Label			VIE	GIBLE.		,
		Type of protection: (1		1
Motor)	olendia	etc)				
Manufacturer: Asco MAT	(UDA)	Gas group: (IIA/B/C)			
Full model number: EAC	J20A / FA800702	Temp class: (T1-T6))			
Serial number: 90244	and the second sec	Certificate number:	T			
IP Class	•	Test authority: (BAS SAA etc)	с, РТВ, 🚺	7		
			-			•
Number of cables:		0.040	2			
For each cable entry	gland 1	gland 2		TB		
Gland manufacturer:	ALCO	7		LOUSE MIL	290	1
Model:	ALCHA WLO MLO	, i	Gu			
Gland type of protection: (d,e)			Ex	duc t	5]
	AUJEN 03. 3904		A	5 Cx 319		
Inspection	And and the A			Circle a	s checked	
			Applicable to	♦	External	
1 Equipment (incl group a	nd temp class) is appropriate for ar		protection type: all	Internal X	External X	
2 Equipment ID or circuit		ea classification	all	X	<u>×</u>	- 600
	tets or compounds are satisfactory		all	X		- care
4 There are no damage o	r evidence of unauthorised modifica	ations	all	Х	Ø	
	blanking elements are correct and		all	X		
6 Flange facings are clear			d	X		
7 Lamp rating, type and p			alí	X		
8 Electrical connections a			all	X		
9 Hermetically sealed dev			n	X		
10 Restricted breathing en	closure is satisfactory to enclosure	and/or covers	n	X		
11 Motor fans have sufficie			motors only	X	X	~
12 Installation clearly label 13 Safety barriers/isolators	installed as per certification and se	curely earthed where	í			?
required	instance as per certification and se	sourcey cartines where	' 	X	X	
14 Entity calculation/docum	nentation is available		i	Х	Х	
B Installation						
	riate, cables are undamaged		all	X		Rue
2 Sealing of ducts and/or			all	X	X	
3 Stopper boxes or barrie	r glands are properly filled		d	X		
	em and interface with mixed system		all	X		
	onnections are tight, in good conditi	on and of sufficient	all	x	×	
cross section					Ø	
6 Fault loop impedance is			power outlets	X		
	satisfactory (check only during initia		all	X		-
8 Automatic electrical pro permitted limits	tective devices are set correctly and	operate within	all	X		
	ditions U,X or B have been complie	ed with	all	x		1
	terminated satisfactorily		all	X	+	1
	to flameproof flanged joint		d	X	X	1

No obstructions adjacent to flameproof flanged joint 11 12 Ducts, pipes and enclosures are in good condition 13 Protective gas is substantially free from contaminants (water, oil, dirt) 14 Protective gas flow/pressure is adequate

Pressure and/or flow indicators, alarms and interlocks function correctly 15 16 Pre-energising purge period is adequate Condition of spark/particle barriers of ducts exhausting the gas into hazardous 17 area are satisfactory

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Amadeus Pipeline Electrical Inspecticuns

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RLUE?

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i i	×	
19	The circuit is isolated from earth or earthed at one point only	i	x	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	x	

	CEnvironment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	\otimes
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No: Yes: List action required Contractor (write): Inspector Supervisor N. GREEN Date: (0/9/1) Date:

Device ID or tag

Action required to	make device compliant:
- Equ	pronont + cable I.O. required.
- 12 li 11 au	he should to be removed / covered w. The
- N	I in detail annihilde to verify.

Reviewed by: N. GREEN Date: 16/1/11 Priority:

Comments:	-	
oon menta.		
All action items now completed:		
Job closed:	i i i i i i i i i i i i i i i i i i i	
JOD Closed.		
Device now fully compliant, spreadsheet r	egister has been updated	
Supervisor (write):		
Date:		

Based on AS/NZS 60079 part 17

area are satisfactory

Ref. Evaluation to the example of th

Specifications

-							
Gene				_			
Devi	ice ID or tag:	Asset: LIGATER Z					
Circu	uit ID:	Physical location: C	Physical location: CMANNER ISLAW D				
Агеа	a classification : Zave ?	2 Environment: (hot?) OUT (DOD R					
					,		
	a from Label	Turne of another (1 /		
Appa Moto	aratus type: (light, JB,	Type of protection: (etc)	a,e, i, n, p	īq	0		
Man	ufacturer: FISHER	Gas group: (IIA/B/C))	ttc	IC	_	
Full	model number: 64-6	Temp class: (T1-T6)		-14	T-6		
Seria	al number: 0016701681	Certificate number: Test authority: (BAS	AUSER JE	C 529	AUSER	marx.	
IPC	1 4 1	Test authority: (BAS SAA etc)	, PTB, ~98	٩. ٧	1	_ /	
	ber of cables:			/			
Num	iber of cables.			Ar	NOTO		
	each cable entry Not Accountingland 1 2	gland 2		others PTL)APTOR		
Glan Mod	nd manufacturer:			FAIL			
	nd type of protection: (d,e)				<u>vic</u>		
Ulan				AUSER 14	454		
Insne	ection	. •		1	cle as check	(ed	
mape							
			Applicable		. 1		
	A Equipment		protection t	•	nal Externa	al	
1	Equipment (incl group and temp class) is appropriate	for area classification	all	<u>x x x x x x x x x x x x x x x x x x x </u>			
2	Equipment ID or circuit ID is correct		all	X		ea	
3	Enclosure, sealing gaskets or compounds are satisfac		all	X			
	There are no damage or evidence of unauthorised mo		all	x		-	
4						. <u> </u>	
5	Bolts, cable entries and blanking elements are correct	and tight	all	X		_	
6	Flange facings are clean and undamaged		b	×			
7	Lamp rating, type and position correct		all	X			
8	Electrical connections are tight		all	X			
9	Hermetically sealed devices are undamaged		n	X			
10	Restricted breathing enclosure is satisfactory to enclo	sure and/or covers	n	X			
11	Motor fans have sufficient clearance		motors	only X			
12	Installation clearly labelled		i	X		\neg	
13	Safety barriers/isolators installed as per certification a	nd securely earthed where	i	×			
14	required Entity calculation/documentation is available		i	X	_	\neg	
	· · ·						
	B Installation				0	Suppo at	
1	Type of cable is appropriate, cables are undamaged		all	×			
2	Sealing of ducts and/or conduits is satisfactory		all	X			
3	Stopper boxes or barrier glands are properly filled		d	X			
4	Integrity of conduit system and interface with mixed sy	stem is maintained	all	X	(
5	Earthing and bonding connections are tight, in good c	ondition and of sufficient	all	×			
	cross section						
6	Fault loop impedance is satisfactory		power ou	utlets X			
7	Insulation resistance is satisfactory (check only during	initial inspection)	all	X			
8	Automatic electrical protective devices are set correct		all		,		
	permitted limits	- ,		×	•		
9	Special certification conditions U,X or B have been co	mplied with	all	×			
10	Cables/spare cores are terminated satisfactorily		all	×			
11	No obstructions adjacent to flameproof flanged joint		d	X			
12	Ducts, pipes and enclosures are in good condition	(mater all did)	p	X		<u> </u>	
13	Protective gas is substantially free from contaminants		р	×			
14	Protective gas flow/pressure is adequate		p	×			
15	Pressure and/or flow indicators, alarms and interlocks	function correctly	р	×			
16	Pre-energising purge period is adequate		Р	X			
17	Condition of spark/particle barriers of ducts exhaustin	g the gas into hazardous	p	×	,		

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SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i —	Х	
19	The circuit is isolated from earth or earthed at one point only	j	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	X
2	No undue accumulation of dust or dirt	all	Х	Ø
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:				
Yes:	List action required			
Contra	ctor (write): Inspector	Supervisor	Client (write): Inspector	
Date:	9/9/11		Date:	

Device ID or tag

	equired to make device compliant:
	Equipment & cable I.D. required
-	Re-route cable supported by adjacent regulator and provide cable support.
	and provide card append.

Reviewed by: Date: 2.3/9/11 Priority:	N. GREEN	
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Comments:	
All action items now completed: Job closed:	
000 00300.	
Device now fully compliant, spreadsheet reg	yister has been updated
Supervisor (write):	
Date:	

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



Ref: 1:\data\siziercompany operations\darwin\tenders\sbsj11Vyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ax-e, ex-i,ex-n,ex-p and other ex devices.doc

Specifications

11

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No obstructions adjacent to flameproof flanged joint

Protective gas is substantially free from contaminants (water, oil, dirt)

Pressure and/or flow indicators, alarms and interlocks function correctly

Condition of spark/particle barriers of ducts exhausting the gas into hazardous

Ducts, pipes and enclosures are in good condition

Protective gas flow/pressure is adequate

Pre-energising purge period is adequate

area are satisfactory

61 % • •	General	
1.1.11.11	Device ID or tag: TSH - 24	Asset: WBU 1/2 OUTLET
	Circuit ID: Joos	Physical location: CHANEL JSLAND
	Area classification :	Environment: (hot?)

Data	a from Label						
App Mot	aratus type: (light, JB, or) HIGH TEMPPAA	WHE SWITCH	Type of protection: (etc)	d,e, i, n, pEx d			Alan
Mar	nufacturer: ASHCBO	FT	Gas group: (IIA/B/C) IB			1 NOP
Full	model number: 77		Temp class: (T1-T6)	T6			Course
Seri	ial number:		Certificate number:	AUS Ex 5	217) (I
IP C	Class		Test authority: (BAS SAA etc)			Ų	
Nun	nber of cables:	l					
For	each cable entry	gland 1	gland 2	others	ADAD	ton	
Gla	nd manufacturer:	ALCO]
Mod	tel:	W6203	· · · · · ·				1
Gla	nd type of protection: (d,e)	NO LEPT.			NO CE	12T]
	· ·	- 12 X TOY (1	North 1	March South	1. 1. M.		
Insp	ection ———				Circle a	s checked	1
•					· ·		
				Applicable to	· ·	1	
	A Equipment			protection type:	Internal	External	
1	Equipment (incl group and	temp class) is appropriate for are	ea classification	all	, Х	X	
2	Equipment ID or circuit ID i			all	Х	8	
3		or compounds are satisfactory		all	X	Ø	
4		vidence of unauthorised modifica	tions	all	X	8	
5	Bolts, cable entries and bla	inking elements are correct and t	ight	all	X	X	
6	Flange facings are clean an			d	X		
7	Lamp rating, type and posit	tion correct	,	all	Х		
8	Electrical connections are t	ight		all	X		
9	Hermetically sealed device	s are undamaged		n hinter sites	X		
10	Restricted breathing enclose	sure is satisfactory to enclosure a	Ind/or covers	n	.Χ		
11	Motor fans have sufficient of	clearance		motors only	X		
12	Installation clearly labelled			i	X	X	
13	Safety barriers/isolators ins required	stalled as per certification and sec	curely earthed where	í	x	X	
14	Entity calculation/documen	tation is available		i	Х	X	
				•			
	B Installation						
1	Type of cable is appropriate	e, cables are undamaged		all	Х	\otimes	UU
2	Sealing of ducts and/or cor			all	X	\otimes	1
3	Stopper boxes or barrier gli			d	X		1
4		and interface with mixed system	is maintained	all	X		- unto la CAL
5	Earthing and bonding conn cross section	ections are tight, in good condition	on and of sufficient	all	X	Ø	INSTRUMENT - STAND EARTH
6	Fault loop impedance is sa	tisfactory		power outlets	X		GARTH
7	Insulation resistance is sati	sfactory (check only during initial	inspection)	all	X	<u> </u>	
8		ive devices are set correctly and		all	X		
9		ons U,X or B have been complied	d with	all	x		4
9 10	Cables/spare cores are terr		2 WI(I)	all	X		4
10	Cables/spare cores are terr	A Salistacioniy		i dii	<u> </u>	<u> </u>	4

Amadeus Pipeline Electrical Inspections

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18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	x	

	C Environment				CAALLAM
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø	SUAPORE
2	No undue accumulation of dust or dirt	all	X	×.	
3	Electrical insufation is clean and dry	all	X		

Date:

Faults found? (circle as appropriate)

9/11

4

Date:

No: List action required Contractor (write): Inspector Di-Willing Client (write): Inspector

Action required to make device compliant: - Remediate UV damaged the Seath.
- Equipotentially bond instrument support stand to adjacent structural steel. - Provide adequate support to capillony table.

Reviewed by: N. GREEN Date: 2J/9/11Priority:

Comments:		
All action items now completed:	1	
Job closed:		

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



Ref. I\data\sitzler\company operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag: $TIT - 23$	Asset: OUTBLET, WATER BH 1/2
Circuit ID:	Physical location: CHANEL USLAND
Area classification :	Environment: (hot?)

illegiret
Type of protection: (d,e, i, n, p
Gas group: (IIA/B/C)
Temp class: (T1-T6)
Certificate number:
Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others Adaptor
Gland manufacturer:	2		ROSEMOUNT
Model:	(956,10311890
Gland type of protection: (d,e)	· · · · · · · · · · · · · · · · · · ·		IZERd.

inspe	ection	Applicable to	Circle a	AS TIT-114
	A Equipment	protection type:	Internal	External
1	Equipment (incl group and temp class) is appropriate for area classification	all	Х	
2	Equipment ID or circuit ID is correct	all	X	BOUP CIRUM.
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	arcon.
4	There are no damage or evidence of unauthorised modifications	all	X	×
5	Bolts, cable entries and blanking elements are correct and tight	ali	X	X
6	Flange facings are clean and undamaged	d	X	
7	Lamp rating, type and position correct	all	X	
8	Electrical connections are tight	all	X	
9	Hermetically sealed devices are undamaged	n	X	1 '
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X	
11	Motor fans have sufficient clearance	motors only	X	
12	Installation clearly labelled	i	Х	X
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	×	X
14	Entity calculation/documentation is available	j	X	X
	BInstallation			CASLE SUPPORT + UV
1	Type of cable is appropriate, cables are undamaged	all	X	
2	Sealing of ducts and/or conduits is satisfactory	all	X	
3	Stopper boxes or barrier glands are properly filled	d	X	
4	Integrity of conduit system and interface with mixed system is maintained	all	Х	

3	Stopper boxes or barrier grands are properly liled	a	X	
4	Integrity of conduit system and interface with mixed system is maintained	all	Х	
5	Earthing and bonding connections are tight, in good condition and of sufficient	all	x	$\overline{\Omega}$
	cross section			Co la
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X	
8	Automatic electrical protective devices are set correctly and operate within	all	х	
	permitted limits		^	
9	Special certification conditions U,X or B have been complied with	all	X	
10	Cables/spare cores are terminated satisfactorily	all	Х	
11	No obstructions adjacent to flameproof flanged joint	d	X	X
12	Ducts, pipes and enclosures are in good condition	р	Х	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	X
14	Protective gas flow/pressure is adequate	р	Х	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X	
16	Pre-energising purge period is adequate	р	Х	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	р	x	

Amadeus Pipeline Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	х	
	the documentation			
	C Environment			

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø
2	No undue accumulation of dust or dirt	all	Х	Ø
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:

List action required	· · ·	
Contractor (write): Inspector Supervisor	Client (write): Inspector	
Date: 9 9 11	Date:	

Device ID or tag

Action required to make device compliant:	
- Equipment + cable I.D. required.	
- provide cuble support	
- remediate UV damaged cabe Reath	
- Verity gland is suitably the rated.	
- Obtain replacement ix data plate from ven and verity ix method of installation.	dor
and verity is melled of installation.	

Reviewed by: N. GREEN Date: 27/9/11 Priority:

Comments:	
All action items now completed:	
Job closed:	
Device now fully compliant, spreadsheet register has been updated	d
Supervisor (write):	u
Date:	

Amadeus Pipeline Electrical Inspections



Based on AS/NZS 60079 part 17

Ref: I:\data\sitzlencompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Dev	ice ID or tag: SSU _ 3	Asset:	ctore RU	NT	2212
	uit ID: J649	Physical location:	CHANEL	181 AnD	
Area classification :		Environment: (hot?)	0111-00	130010410	
	a from Label (4sco)	LURGABLE			
App Mot	a from Label (Ascol aratus type: (light, JB, Sor GNTO (Arce or) Sor GNTO (Arce mufacturer: Actimatic model number:	Type of protection: (d etc)	e, i, n, p		
Man	nufacturer: Licitanos	Gas group: (IIA/B/C)			
Full	model number:	Temp class: (T1-T6)			
Seri	al number:	Certificate number:			
IP C	lass	Test authority: (BAS, SAA etc)	РТВ,		
Nun	nber of cables:				
For	each cable entry gland 1	gland 2	NE MAUE othe	ers ADAM	(PR
Glar	nd manufacturer:	-			
Mod		-			
Glar	nd type of protection: (d,e)	NUL -		NO UN	cr1
insp	A Equipment		Applicable to protection type:		Externa
1	Equipment (incl group and temp class) is appropriate for an	rea classification_	all	X	<u> </u>
2	Equipment ID or circuit ID is correct		all	X	Ø
3 4	Enclosure, sealing gaskets or compounds are satisfactory There are no damage or evidence of unauthorised modifica	ations	all	X X	X
5	Bolts, cable entries and blanking elements are correct and		all	X	⊢ Â
6	Flange facings are clean and undamaged		d	X	
7	Lamp rating, type and position correct		all	X	
8	Electrical connections are tight		all	X	
9	Hermetically sealed devices are undamaged		n	X	
10	Restricted breathing enclosure is satisfactory to enclosure	and/or covers	<u>n</u>	X	
11	Motor fans have sufficient clearance		motors only	<u> </u>	
12 13	Installation clearly labelled Safety barriers/isolators installed as per certification and se required	ecurely earthed where	i	X	X X
14	Entity calculation/documentation is available		i	Х	X
	BInstallation				<u></u>
1	Type of cable is appropriate, cables are undamaged		all	X	<u> </u>
2	Sealing of ducts and/or conduits is satisfactory		all		<u> </u>
3 4	Stopper boxes or barrier glands are properly filled Integrity of conduit system and interface with mixed system	n is maintained	d all	X -	
4 5	Earthing and bonding connections are tight, in good conditi		all		
	cross section Fault loop impedance is satisfactory	_		X	×
6 7	Insulation resistance is satisfactory (check only during initia	al inspection)	power outlets all	x	
8	Automatic electrical protective devices are set correctly and	d operate within	all	× -	
٥	permitted limits Special certification conditions U,X or B have been complie	ad with		X -	
9 10	Cables/spare cores are terminated satisfactorily		ali	- <u>x</u>	
1.12			d	<u> </u>	x -
	I NO ODSTRUCTIONS ADJACENT TO TRANSPOOT TRANSPOOL				
11	No obstructions adjacent to flameproof flanged joint Ducts, pipes and enclosures are in good condition				
11 12	Ducts, pipes and enclosures are in good condition	er, oil, dirt)	р	X	X
11		er, oil, dirt)			

area are satisfactory

р

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18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	i	x	
20	Separation is maintained with non-IS circuits	ì	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	í	X	
21		· ·	X	

	C Environment			A	1
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	\otimes	CORROSION
2	No undue accumulation of dust or dirt	all	X	X	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write); Inspector	Supervisor	Client (write): Inspector	_
Date: 9 9 11		Date:	

Action req	juired to make device compliant:	
-	ILLEGIBLE nonreplate, nil Ex detail available.	
	Corrosion external, UV taded.	
1	Uncertified adaptor to TB.	
-	Replace with respect to age + undition.	

Reviewed by: N. GREEN Date: 2-7/9/h Priority:

Comments:				
All action items now completed:				
Job closed:				
Device now fully compliant, spreadshe	et register has b	een updated		
Supervisor (write):				
Date:				

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Based on AS/NZS 60079 part 17

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Specifications

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Genera	

General					
Device ID or tag:	JB-31	Asset:	554-31	MR + 1	
Circuit ID:	5049	Physica	l location:	CHANEL	ISLAND
Area classification :		Environ	ment: (hot?)		

Data from Label

Type of protection: (d,e, i, n, p etc)
Gas group: (IIA/B/C) GROUD IIB CAASS DOU
Temp class: (T1-T6) T6
Certificate number: FLA 693
Test authority: (BAS, PTB, SAA etc)
-

For each cable entry	gland 1	gland 2	others	
Gland manufacturer:	CLIDSAL	ALCO		
Model:		NG		
Gland type of protection: (d,e)	No CAMP			

-		
Ins	pection	

Insp	ection	>	Circle a	s checke	d
	A Equipment	Applicable to protection type:		External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	Х]
2	Equipment ID or circuit ID is correct	all	X	\otimes	0 11
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	3	- CORED DED
4	There are no damage or evidence of unauthorised modifications	aíl	X	Ø	- CORRODED
5	Bolts, cable entries and blanking elements are correct and tight	all	X	13	ROLTS
6	Flange facings are clean and undamaged	d	X	-	l
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n	X]
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X]
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	Х	X	
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	×	X])
14	Entity calculation/documentation is available	í	X	X]

13	Safety barriers/isolators installed as per certification and securely earthed where required	i	х	×])
14	Entity calculation/documentation is available	i	X	Х]
			_		
	B Installation				IN J
1	Type of cable is appropriate, cables are undamaged	all	Х	<u> </u>	Conflig Conflig
2	Sealing of ducts and/or conduits is satisfactory	all	Х	(X)	CASCA
3	Stopper boxes or barrier glands are properly filled	b	X		SUPPOR.
4	Integrity of conduit system and interface with mixed system is maintained	ali	Х		
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	х	Q	CABLE SUPPORT. CARTON TO STANDO (REC)
6	Fault loop impedance is satisfactory	power outlets	Х		RECT
7	Insulation resistance is satisfactory (check only during initial inspection)	ali	Х		
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	Х		
9	Special certification conditions U,X or B have been complied with	all	Х		1
10	Cables/spare cores are terminated satisfactorily	all	Х		7
11	No obstructions adjacent to flameproof flanged joint	d	Х	X	7
12	Ducts, pipes and enclosures are in good condition	p	Х	X	7
13	Protective gas is substantially free from contaminants (water, oil, dirt)	D	Х	X	
14	Protective gas flow/pressure is adequate	α	Х		-
15	Pressure and/or flow indicators, alarms and interlocks function correctly	D	Х		-
16	Pre-energising purge period is adequate	p	X		1
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	х		

Amadeus Pipeline Electrical Inspections

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18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	ì	Х	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	8
2	No undue accumulation of dust or dirt	all	Х	X
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:		
Contractor (write): Inspector Supervisor Difference Date: 9 9 4	Client (write): Inspector Date:	

Device ID or tag Action required to make device compliant: ~ Replace perished a cond corroded bits. - Remadiate UV damaged sheath and provide cube support. support. - Replace uncertisted gland + adaptar, - suggest removal and direct connect cabling to new solensid value - Equipolertial bond equipment stand

Reviewed by: N. GREEN Date: 23/4/11 Priority:

Comments:			
All action items now completed:			
Job closed:	Ē		
Device now fully compliant, spreadshee	et register has be	en updated	
Supervisor (write):	-		
Date			



Based on AS/NZS 60079 part 17

area are satisfactory

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Ref: 1/data/sitzlencompany operations/darwin/tenders/sobsj11/tyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-

Specifications							
General			-				_
Device ID or tag: 25C/2		Asset:	151 1	31_1	NR HI	<u> </u>	
Circuit ID: Joo	7	Physical location:		CHANEL	- (8LA	NO	
Area classification :		Environment: (hot?	?)				1
			,				
Apparatus type: (light, JB, Motor)	10.00 01007018	Type of protection:	(d,e, i, n,	Р		5	٦ ٦
	mit switch	etc)				-),
Manufacturer:		Gas group: (IIA/B/	,				Va Re
Full model number:	-	Temp class: (T1-T)			_		-K V
Serial number:	_	Certificate number Test authority: (BA					
IP Class	_	SAA etc)	з, гтв,				Y
Number of cables:							
For each cable entry	gland 1	gland	2	others	ADA	TOR	
Gland manufacturer:	giuna ;	giana]
Model:		1				0 -]
Gland type of protection: (d,e)					NO CE	Rr	
spection				\rightarrow	Circle a	is checked	Ŀ
				able to	•	•	
A Equipment	d to an allow bis and an allow for		protec	tion type:	Internal	External	1
	d temp class) is appropriate for	area classification	-		X	X	EQ
Equipment ID or circuit II			_	all	X	8	~
	ts or compounds are satisfacto		_	all	X	R	-
	evidence of unauthorised modi			all	X	8	
	lanking elements are correct a	nd tight		all	X	Ň	4
Flange facings are clean				d	Х		-
Lamp rating, type and po				all	Х		
Electrical connections ar				all	X		
Hermetically sealed devi				n	X		
Restricted breathing enc	osure is satisfactory to enclosu	re and/or covers		n	X		
 Motor fans have sufficier 	t clearance		mo	otors only	Х		RIL
2 Installation clearly labelle	d			i	X	No.	TSCO
	nstalled as per certification and	securely earthed where		i	x	3	n va
4 Entity calculation/docume	entation is available			i	X	x	j
B Installation							
	ate, cables are undamaged			alí	X	R	UV
Type of cable is appropri Sealing of ducts and/or c				all	X	X	
Stopper boxes or barrier				d	X		1
	n and interface with mixed syst	em is maintained		all	X		1
	nnections are tight, in good con			all		~	1
cross section					X	\boxtimes	
Fault loop impedance is			pov	ver outlets	Х		
Insulation resistance is s	atisfactory (check only during in	iitial inspection)		all	Х		
Automatic electrical prote permitted limits	ective devices are set correctly a	and operate within		all	x]
	itions U,X or B have been com	plied with		all	X	<u> </u>	1
Special certification conc Cables/spare cores are t				all	X		1
	to flameproof flanged joint			d	X	X	1
	res are in good condition			 p	X	X	-
	tially free from contaminants (w	(ater oil dirt)			X	x x	1
		ator, on, and		P	x -		-
4 Protective gas flow/press				p			-
	cators, alarms and interlocks fu	neaon correctly	_	<u>р</u>			-
6 Pre-energising purge per		(+		p	X		-
7 Condition of spark/partic	e barriers of ducts exhausting t	ne das into nazardous	1	Р		1	1

Amadeus Pipeline Electrical Inspections

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				and a real state of the second
18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C E(MIOIIIIeIII			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	(\aleph)
2	No undue accumulation of dust or dirt	all	Х	X
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes List action required

Contractor (write): Inspector Supervisor Client (write): Inspector	
	I
(), Williams	
Date: 7 9 9 9 9	

Device ID or tag

Action required to make device	-	
- Equipment - Remed: ate	IO required. UV damaged health and	h replace perished blue
1) 14	barrier within control	hut.

Reviewed by: N.GAEEN Date: 27/9/11 Priority:

Comments:			
All action items now completed: Job closed:			
Job closed:			
Device now fully compliant, spreadsheet r	egister has beer		 _
Supervisor (write):		. apaacoa	
Date:			



Ref: 1:\data\sizercompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag: PSL - 34	Asset: METER RUN + 1
Circuit ID: JOO5	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) LOW PRESSURE SMITCH	Type of protection: (d,e, i, n, P etc)	7
Manufacturer: ASHCROFT	Gas group: (IIA/B/C)	1
Full model number: P-7-	Temp class: (T1-T6)	> ILLEWELD
Serial number:	Certificate number: AUS Fx 547	
IP Class	Test authority: (BAS, PTB, SAA etc))
Number of a dilace		

Number of cables:

For each cable entry	gland 1 🗙 1	gland 2	-others ADAPTORX)
Gland manufacturer:	2		2 ?
Model:	No. A N		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Gland type of protection: (d,e)			

Inspection			Circle as checked
inspection	100.00	 1	Circle as checked

	Action and a second second	Applicable to	C. H.	Ļ	
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	, ∫alí	/ X ·	X]
2	Equipment ID or circuit ID is correct	all	X	05]
3	Enclosure, sealing gaskets or compounds are satisfactory'	all	X	6]
4	There are no damage or evidence of unauthorised modifications	all	X	Č.]
5	Bolts, cable entries and blanking elements are correct and tight	all	X	82]
6	Flange facings are clean and undamaged	d	X]
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	* n	~ X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X	See.	1947
11	Motor fans have sufficient clearance	motors only	X	- K	THE REPORT OF T
12	Installation clearly labelled	i	X	Ø	Cheat M
13	Safety barriers/isolators installed as per certification and securely earthed where	i	X	(X)	1
	required				
14	Entity calculation/documentation is available	i	X	X]

B Installation 1 Type of cable is appropriate, cables are undamaged all Х Ø Sealing of ducts and/or conduits is satisfactory 2 3 X all Х 3 Stopper boxes or barrier glands are properly filled d 4 Integrity of conduit system and interface with mixed system is maintained all X 5 Earthing and bonding connections are tight, in good condition and of sufficient aíl a X cross section 6 Fault loop impedance is satisfactory Х power outlets Insulation resistance is satisfactory (check only during initial inspection) 7 alí Х 8 Automatic electrical protective devices are set correctly and operate within all X permitted limits 9 Special certification conditions U,X or B have been complied with all X 10 Cables/spare cores are terminated satisfactorily all Х 11 No obstructions adjacent to flameproof flanged joint d Х Х 12 Ducts, pipes and enclosures are in good condition Х Х p 13 Protective gas is substantially free from contaminants (water, oil, dirt) Х Х р Protective gas flow/pressure is adequate X 14 р 15 Pressure and/or flow indicators, alarms and interlocks function correctly Х р 16 Pre-energising purge period is adequate Х D Condition of spark/particle barriers of ducts exhausting the gas into hazardous 17 р Х area are satisfactory

UV

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	î	×	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with	i	~	
	the documentation		^	
	C Environment			

1 _	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	
2	No undue accumulation of dust or dirt	all	X	Ø
3	Electrical insulation is clean and dry	all	Х	_

Faults found? (circle as appropriate)

No: List action required Contractor (write): Inspector N.CREEN Date: 9/9/4 Date:

Device ID or tag

Action requ	ired to make device compliant:
-	Remediate UV damaged cable sheath and ploside blue sheath
	Illegible namerdate, severe corrolion, suggest replacement.
-	Verify I.S. barrier installation.

Reviewe	d by:	N. GREEN	S
Date: Priority:	27	9/11	

Comments:			
All action items now completed:			
Job closed:			

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:



Based on AS/NZS 60079 part 17

Ref: 1:\data\sitzlencompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

14

15

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17

Protective gas flow/pressure is adequate

Pre-energising purge period is adequate

area are satisfactory

Pressure and/or flow indicators, alarms and interlocks function correctly

Condition of spark/particle barriers of ducts exhausting the gas into hazardous

Device ID or tag: FT - 38A	Asset: METER RUN +1
Circuit ID: -	Physical location: CHAMMEL ISLAND
Area classification :	Environment: (hot?)

Data	a from Label						
App Mot		PRENHAL PRESURE	Type of protection: (etc)	d,e, i, n, p E	r ia]
Маг	nufacturer: ROSEM	JUNT	Gas group: (IIA/B/C)	1	12		
Full	model number: 305)P	2A22AMM5176494	Temp class: (T1-T6)	(-]
Serí	ial number: 0393	459	Certificate number:	AUSER	1249)	r]
IP C	Class	1	Test authority: (BAS SAA etc)	, PTB,		_]
Nur	nber of cables:		1				
			KONE	tors	A	0.	A* .
For	each cable entry	gland 1		other	s Bow	r - me	umarcc
Glar	nd manufacturer:						fitting.
Mod	tel:				_		
Glar	nd type of protection: (d,e)		NO CE	RT .	NO CEL	71	1
							-
Insp	ection ———			`	Circle a	s checked	1
•							
				Applicable to	Ļ	Ļ	
	A Equipment			protection type:	Internal	External	
1	Equipment (incl group and	d temp class) is appropriate for area	a classification	alí	X	X	
2	Equipment ID or circuit ID			all	X	<u>a</u>	CIRCUTIC
3	Enclosure, sealing gasket	ts or compounds are satisfactory		all	X	\otimes	-
4		evidence of unauthorised modificati	ons	all	X	Ø	CIRLINIT ID LOOSE Grand
5		lanking elements are correct and tig		all	X	× ×	LAOSO
6	Flange facings are clean a			d	X		MAND
7	Lamp rating, type and pos			all	X		Q - 7 -
8	Electrical connections are			all	X		
9	Hermetically sealed devic				X		
10		osure is satisfactory to enclosure ar	d/or covers	n	X		
11	Motor fans have sufficient			motors only	× ×		
12	Installation clearly labelled			i	<u>x</u>	(2)	
13		nstalled as per certification and secu	rely earthed where	i			
	required				X	×	
14	Entity calculation/docume	ntation is available		<u>i</u>	X	X	l
	B Installation						. With + CARDIE
1		ate, cables are undamaged		all	X	\otimes	SUPPORT
2	Sealing of ducts and/or co			all	X	×	Suprese
3	Stopper boxes or barrier g			d	X		
4		n and interface with mixed system is		all	X		1
5		nections are tight, in good condition	n and of sufficient	all	x	\otimes	
	cross section					L.	
6	Fault loop impedance is s			power outlets	X		
7		tisfactory (check only during initial i		all	X		
8	Automatic electrical protect permitted limits	ctive devices are set correctly and c	operate within	all	x		
9		tions U,X or B have been complied	with	all	X		4
9 10	Cables/spare cores are te		AA 173 [X		4
11		to flameproof flanged joint		alld			4
						X	4
12	Ducts, pipes and enclosur		ail al(at)	p	X	X	1
13	FIDECTIVE gas is substant	ially free from contaminants (water,	οιι, απτ)	р	X	X]

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Х

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Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
The circuit is isolated from earth or earthed at one point only	i	X	
Separation is maintained with non-IS circuits	i	X	
As applicable, short circuit protection of the power supply is in accordance with the documentation	i	x	

	C Environment			
1 [Apparatus adequately protected from corrosion, weather, vibration, other	all	X	8
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	all	X	-

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector Supervis	sor Client (write): Inspector
Date: 9 9 11	Date:

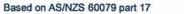
Device ID or tag

Action required to make device	e compliant:
- Cable I.D.	required.
- Tighten 100	se gland.
- Remediate b	we cake sheath and support cake.
	ng (swagelock Siting) with electrical type plug.

Reviewed by:	N. GREEN	
Date: 27.9/11	and the second second	
Priority:		

Comments: All action items now completed:				
Job closed:	Comments:			
Job closed:				
Job closed:	All action items now completed:			
	-		=	
Device now fully compliant, spreadsheet register has been updated	Device now fully compliant, spreadsheet regis	ter has been updated		
Supervisor (write):	Supervisor (write):	• • • •		
Date:				

Amadeus Pipeline Electrical Inspections



Ref: I:/data/sitzier/company operations/danvin/Lenders/sbsj11/ly/1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e.ex-i, ex-n.ex-p and other ex devices.doc

Specifications

General

Device ID or tag: FT-38 138 A	Asset: METER RUN #1
Circuit ID:	Physical location: CHANEL JSLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, DIFFERENTAL PRESSURE TA Motor)	Type of protection: (d,e, i, n, r
Manufacturer: BOSEMOUNT	Gas group: (IIA/B/C)
Full model number: 305 1. PD2A2211445776444	Temp class: (T1-T6) T5 (40°C), 74 (70°C)
Serial number: 0393460	Certificate number: AUS Fx 1249 X
IP Class	Test authority: (BAS, PTB, SAA etc)
Number of cables:	

For each cable entry	- gland 1	ADANFOR	others BUNG
Gland manufacturer:			
Model:		Parameter a se	and a second second second second second second second second second second second second second second second
Gland type of protection: (d,e)		NO CIERT.	NOCERT
· · ·	友。"	1 - " que l'all interes - 1	And a shirt and rack
Inspection	_		Circle as checked

	••	Applicable to			
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	Х	X	
2	Equipment ID or circuit ID is correct	all	Х	Ø	CIRCUIT 10
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X		
4	There are no damage or evidence of unauthorised modifications	all	X		
5	Bolts, cable entries and blanking elements are correct and tight	all	Х	Ø	LOOSE + INCORRELA GUARD
6	Flange facings are clean and undamaged	d	Х		INCORRELA
7	Lamp rating, type and position correct	all	Х		
8	Electrical connections are tight	all	Х		(COMMES
9	Hermetically sealed devices are undamaged	n ,	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	Х		
11	Motor fans have sufficient clearance	motors only	X	1 m	RLUE
12	Installation clearly labelled	i	Х	\otimes	Acos
13	Safety barriers/isolators installed as per certification and securely earthed where	i	х	~	
	required		^	é	
14	Entity calculation/documentation is available	i	Х	X	

UV+ CARSER B Installation Ø 1 Type of cable is appropriate, cables are undamaged all Х SUPPORT 2 Sealing of ducts and/or conduits is satisfactory all Х a 3 Stopper boxes or barrier glands are properly filled Х d 4 Integrity of conduit system and interface with mixed system is maintained all Х 5 Earthing and bonding connections are light, in good condition and of sufficient all 3 Х cross section 6 power outlets Fault loop impedance is satisfactory X 7 Insulation resistance is satisfactory (check only during initial inspection) all Х 8 Automatic electrical protective devices are set correctly and operate within all Х permitted limits Special certification conditions U,X or B have been complied with 9 Х all 10 Cables/spare cores are terminated satisfactorily all X 11 No obstructions adjacent to flameproof flanged joint d Х Х 12 Ducts, pipes and enclosures are in good condition Х х р 13 Protective gas is substantially free from contaminants (water, oil, dirt) р Х Х 14 Protective gas flow/pressure is adequate X р 15 Pressure and/or flow indicators, alarms and interlocks function correctly Х р 16 Pre-energising purge period is adequate х P 17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous p х area are satisfactory

Amadeus Pipeline Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i/	X	
19	The circuit is isolated from earth or earthed at one point only	/ i	X	
20	Separation is maintained with non-IS circuits	ì	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	X	
			I	
	C Environment			

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø
2	No undue accumulation of dust or dirt	all	Х	Ø
3	Electrical insulation is clean and dry	all	Х	-

Faults found? (circle as appropriate)

No:		· · · : · · ·	
es:	List action required		
Contra	ctor (write): Inspector Supervisor	Client (write): inspector	
Date:	9/9/11	Date:	

Device ID or tag	
Action required to make device compliant:	
- Cable I.D. required	
- Re terminate cable/gland with exposed armour	
- Remediate blue sheath and support cable.	

Reviewed by: N. GREEN Date: 2-3/9/H Priority:

Comments:	-		
All action items now completed: Job closed:			

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



Ref: I:\data\sitzlercompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag: DT - 38	Asset: METER RUN =1
Circuit ID:	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE TRANSIVILITER	Type of protection: (d,e, i, n, p etc)
Manufacturer: BOSE MOUNT	Gas group: (IIA/B/C)
Full model number: 3051P4SA22AIAMSTILLA	Temp class: (T1-T6) 75(4p2 計4 (70°C)
Serial number: 03 93 461	Certificate number: AUS Ex 1249 X
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others BUNG
Gland manufacturer:	ALCO		
Model:	W6203	North Martin 1973 1	Mara I.
Gland type of protection: (d,e)			NO CERT
nspection		Net of Star 24	Circle as checked
nspection			

		•			•
	gibber totage have mit a ser	Applicable to	1994 (A)	Ļ	
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	Х	X	1.1111710
2	Equipment ID or circuit ID is correct	all	X	Ø	- CIRCUTIO
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	X	
4	There are no damage or evidence of unauthorised modifications	all	Х	X	1 - 1 - Han
5	Bolts, cable entries and blanking elements are correct and tight	all	X		Loose lotter
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	Х		
8	Electrical connections are tight	all	Х		
9	Hermetically sealed devices are undamaged	n (200 - 200)	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	Χ.		
11	Motor fans have sufficient clearance	motors only	Х		
12	Installation clearly labelled	i	Х	X	
13	Safety barriers/isolators installed as per certification and securely earthed where	i	х	X	
	required		^	<u>^</u>	
14	Entity calculation/documentation is available	j	x —	X	

B Installation

Type of cable is appropriate, cables are undamaged	all	Х		SUD
Sealing of ducts and/or conduits is satisfactory	ail	Х	X	_ 50N
Stopper boxes or barrier glands are properly filled	d	X		
Integrity of conduit system and interface with mixed system is maintained	ail	X		7
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	Х	X]
Fault loop impedance is satisfactory	power outlets	Х		
Insulation resistance is satisfactory (check only during initial inspection)	all	Х		1
Automatic electrical protective devices are set correctly and operate within permitted limits	all	Х		
Special certification conditions U,X or B have been complied with	all	X		
Cables/spare cores are terminated satisfactorily	all	Х		
No obstructions adjacent to flameproof flanged joint	đ	Х	X	7
Ducts, pipes and enclosures are in good condition	p	Х	X	1
Protective gas is substantially free from contaminants (water, oil, dirt)	p	Х	X	1
Protective gas flow/pressure is adequate	p	Х		1
Pressure and/or flow indicators, alarms and interlocks function correctly	p	X		1
Pre-energising purge period is adequate	ρ	X		1
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	х		1

Amadeus Pipeline Electrical Inspections



Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
The circuit is isolated from earth or earthed at one point only	i	X	
Separation is maintained with non-IS circuits	i	X	
As applicable, short circuit protection of the power supply is in accordance with the documentation	i	x	

	CEnaronment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	R
2	No undue accumulation of dust or dirt	all	Х	Ø
3	Electrical insulation is clean and dry	all	Х	~

Faults found? (circle as appropriate)

 No:

 Ist action required

 Contractor (write): Inspector

 Date:

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Device ID or tag	
Action required to make device compliant:	
- Circuit I.O. required - Tighten loose cable gland	
- Remediate blue shouth and	support cable.

Reviewed by: N. GREEN Date: 23/9/11 Priority:

Comments:		
All action items now completed:	П	
Job closed:		

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

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Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices Based on AS/NZS 60079 part 17

Ref: 1:Vdata/sitz/ar/company operations/darwin/tenders/sbsj11/tyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

	opeomoatons	\
	General	
418 B	Device ID or tag: (TIT - 38) ~	Asset: METOR RON 1
	Circuit ID:	Physical location: CHANEL JSZAND
	Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMPERATURE TRANSMETTER	Type of protection: (d,e, i, n, p etc) EX L,ci]
Manufacturer: BOSEIXOUNT	Gas group: (IIA/B/C)	
Full model number: 3144 P DIAL T.7MSFG04	Temp class: (T1-T6) T6 (50°C) T5(75°C)	
Serial number: 02443227	Certificate number: AUS-Ex-02.3794X IEC B	r
IP Class 66 68	Test authority: (BAS, PTB, BAS EEFA L	AS 07.0002X
Number of cables:		_

		AD ADAMION	ADAPTOR
For each cable entry	gland 1	gland_2	others
Gland manufacturer:	ALEO	ADAPTORFLEY	· ROSPMOUNP
Model:	FLPW 202	· · · · · · · · · · · · · · · · · · ·	1/2 INPT M2D.
Gland type of protection: (d,e)		NOCART	REQUE
			, , , , , , , , , , , , , , , , , , , ,

Insp	ection	`	Circle a	is checked	I
	_ A Equipment	Applicable to protection type:		External	
1	Equipment (incl group and temp class) is appropriate for area classification	ali	Х	X	a. 110 at 1 62 m
2	Equipment ID or circuit ID is correct	all	Х	\mathcal{Q}	-CIRCULT -EQUIP
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X		-EQUIP
4	There are no damage or evidence of unauthorised modifications	all	X	8	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	R	
6	Flange facings are clean and undamaged	d	Х		
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	п	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X \	·	
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	í	X		RLUE
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X	R	
14	Entity calculation/documentation is available	i	X	X	

B Installation

 Binstallation			-
Type of cable is appropriate, cables are undamaged	all	X	Ø
Sealing of ducts and/or conduits is satisfactory	all	Х	A
Stopper boxes or barrier glands are properly filled	đ	X –	0.
Integrity of conduit system and interface with mixed system is maintained	all	Х	
 Earthing and bonding connections are light, in good condition and of sufficient cross section	all	х	Q
Fault loop impedance is satisfactory	power outlets	X	
Insulation resistance is satisfactory (check only during initial inspection)	alì	Х	
Automatic electrical protective devices are set correctly and operate within permitted limits	alí	х	
Special certification conditions U,X or B have been complied with	all	X	
Cables/spare cores are terminated satisfactorily	all	Х	
No obstructions adjacent to flameproof flanged joint	d	Х	X
Ducts, pipes and enclosures are in good condition	p	Х	Х
Protective gas is substantially free from contaminants (water, oil, dirt)	p	Х	X
Protective gas flow/pressure is adequate	p	Х	
Pressure and/or flow indicators, alarms and interlocks function correctly	p	Х	
Pre-energising purge period is adequate	p	Х	
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	q	x	

90 CANE SOPPORT.

Amadeus Pipeline Electrical Inspections

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18	Cables are installed and screens are earthed in accordance with the documentatio0n	ì	x	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	×	

	C Ellanomient				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	X	UU
2	No undue accumulation of dust or dirt	ali	X	X	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

 No:

 Ist action required

 Contractor (write): Inspector

 Supervisor

 Client (write): Inspector

 Date:

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 Date:

Device ID or tag

- Equipment and circuit I.D. required.
- remediate the sheath and support cable
- Provide sur coverlshield.

Reviewed by: N. CREEN Date: 27/9/ 11 Priority:

Comments:		
All action items now completed:	П	
Job closed:	ă	

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and ZLER other Ex devices Based on AS/NZS 60079 part 17

Ref: I:Vdtaksiztercompany operations/darwin/lenders/sbsj11/lyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

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NA

- Contrain	/ /
Device ID or tag: 153B-1	Asset: METER RUN 1/2
Circuit ID:	Physical location: CHANEL JSLAND
Area classification :	Environment: (hot?)

Data from Label

	Data from Label	<u>۸</u>	
	Apparatus type: (light, JB, 5 3	Type of protection: (d,e, i, n, p, etc) EX LON EFC	NA
	Manufacturer: CAOUSE - HINDS ?	Gas group: (IIA/B/C)) /~ /
ζ	Full model number: W/DU 2.5	Temp class: (T1-T6)	Ń
	Serial number:	Certificate number: NOT SAA APPROVEN)
	IP Class 66	Test authority: (BAS, PTB, SAA etc)	/

Number of cables:

For each cable entry	glar	nd 1	gland	2	others	
Gland manufacturer:						
Model:	, I	· ,				
Gland type of protection: (d,e)		_	,			

Inspection" -

	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	alt	X	X	
2	Equipment ID or circuit ID is correct	all	X	(A)	
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	(X)	
4	There are no damage or evidence of unauthorised modifications	all	X	X	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	X	
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	aíl	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	'n,	, X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X ¹	0	
12	Installation clearly labelled	i	X	(X)	1. 2.
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	×	×	
14	Entity calculation/documentation is available	i	Х	Х	

B Installation

Binstallation			
Type of cable is appropriate, cables are undamaged	all	X	l 🖉
Sealing of ducts and/or conduits is satisfactory	all	X	X
Stopper boxes or barrier glands are properly filled	d	X	
Integrity of conduit system and interface with mixed system is maintained	all	Х	
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	х	Ø
Fault loop impedance is satisfactory	power outlets	X	
Insulation resistance is satisfactory (check only during initial inspection)	ali	X	
Automatic electrical protective devices are set correctly and operate within permitted limits	all	х	
Special certification conditions U,X or B have been complied with	all	X	
Cables/spare cores are terminated satisfactorily	all	X	
No obstructions adjacent to flameproof flanged joint	ď	Х	X
Ducts, pipes and enclosures are in good condition	р	Х	X
Protective gas is substantially free from contaminants (water, oil, dirt)	p	Х	X
Protective gas flow/pressure is adequate	p	Х	
Pressure and/or flow indicators, alarms and interlocks function correctly	p	X	
Pre-energising purge period is adequate	p	X	
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	х	_

Amadeus Pipeline Electrical Inspections

Circle as checked

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			ABLITER	8 273 613

				and the proves
	Cables are installed and screens are earthed in accordance with the	i	x	
L	documentatio0n			
19 📑	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21 📝	As applicable, short circuit protection of the power supply is in accordance with	i		
t	the documentation			

	C Environment			~	
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	\bigcirc	Concestor
2	No undue accumulation of dust or dirt	all	X	N	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

No:		
List action required		
Contractor (write): Inspector Supervisor	Client (write): Inspector	
Date: 9 9 1	Date:	

Device ID or tag

Action require	ed to make device compliant:	
-	"I.S. circuits Inlide" label required	
-	Corrosion external evident, internal inspections	
-	UV damaged sheath's requiring remediation	
-	calle support required.	

Reviewed by: N. GREEN Date: Urlan Date: Priority:

Comments:		
All action items now completed:		
Job closed:		

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17



Circle as checked

Ref: I:Vdata\sitzlencompany operations\darwin\tenders\sbs\11\fyf) - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

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General					
Device ID or tag:	LSHH-3	7,137A	[x2]	Asset: FS I	
Circuit ID:	5010	1 JUII	(-)	Physical location: (HANEL ISLAND	_
Area classificatior	ו: וו		_	Environment: (hot?)	

Data from Label

Apparatus type: (light, JB, Motor) ガンマチ HIGH ビデンEL SWITCH	Type of protection: (d,e, i, n, p, etc)
Manufacturer: MUBPHY	Gas group: (IIA/B/C)
Full model number: L-1200 0P01	Temp class: (T1-T6) TG
Serial number:	Certificate number: AUS Ex 609
IP Class	Test authority: (BAS, PTB, SAA etc)
Number of cables:	1

Number of cables.		JN	1- 1-0-0-07	
For each cable entry	gland 1	gland-2	ADAPT-R	BUNG
Gland manufacturer:	ALLO	WILCO		7
Model:	WGT 203		1000	
Gland type of protection: (d,e)	NO CHERT.	Nº GRRI	NOLERT] NO CERT
Increation .	The start of the second	And the second second	Cinele as should	· · ·

Inspection -

	In the Way with	Applicable to	Barres		
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X.	Х	1
2	Equipment ID or circuit ID is correct	all	X	0	EQUM
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	X	1
4	There are no damage or evidence of unauthorised modifications	all	X	Ø	1
5	Bolts, cable entries and blanking elements are correct and tight	all	X	Ø	1
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n .	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	'n ',	X		1
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	18	
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	0	1
14	Entity calculation/documentation is available	i	Х	X	J

B Installation

Type of cable is appropriate, cables are undamaged	all	Х	Ø
Sealing of ducts and/or conduits is satisfactory	all	X	K
Stopper boxes or barrier glands are properly filled	d	Х	
Integrity of conduit system and interface with mixed system is maintained	all	Х	
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	х	8
Fault loop impedance is satisfactory	power outlets	Х	
Insulation resistance is satisfactory (check only during initial inspection)	all	Х	
Automatic electrical protective devices are set correctly and operate within permitted limits	all	Х	
Special certification conditions U,X or B have been complied with	all	X	
Cables/spare cores are terminated satisfactorily	all	Х	
No obstructions adjacent to flameproof flanged joint	d	Х	X
Ducts, pipes and enclosures are in good condition	ρ	Х	X
Protective gas is substantially free from contaminants (water, oil, dirt)	р	Х	X
Protective gas flow/pressure is adequate	р	X	
Pressure and/or flow indicators, alarms and interlocks function correctly	р	X	
Pre-energising purge period is adequate	р	Х	
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	р	x	



Cables are installed and screens are earthed in accordance with the	i	v	
documentatio0n		^	
The circuit is isolated from earth or earthed at one point only	î	X	
Separation is maintained with non-IS circuits	i	Х	
As applicable, short circuit protection of the power supply is in accordance with	ĺ	×	
the documentation		~	
	documentatio0n The circuit is isolated from earth or earthed at one point only Separation is maintained with non-IS circuits As applicable, short circuit protection of the power supply is in accordance with	documentatioOn i The circuit is isolated from earth or earthed at one point only i Separation is maintained with non-IS circuits i As applicable, short circuit protection of the power supply is in accordance with i	documentatio0n X The circuit is isolated from earth or earthed at one point only i X Separation is maintained with non-IS circuits i X As applicable, short circuit protection of the power supply is in accordance with i X

1	Apparatus adequately protected from corrosion, weather, vibration, other	alí	Х	R	CORCOSION
2	No undue accumulation of dust or dirt	all	X	Ø	
3	Electrical insulation is clean and dry	all	Х	0	

Faults found? (circle as appropriate)

Contractor (write): Inspector Supervisor Client (write): Inspector	List action required	
Date: 9/9/4 Date:	Divigians	

Device ID or tag

No:

Action re	equired to make devi	ice compli	ant:				
-	Equipment	I.D	required				
-	Remediate	blue	sheath	and	support	colle.	
-	Verify I.	S. ba	rierhft	Mation	~.		
-	surface cu	ros.or	visible.				

Reviewed by: Date: 23/9/1, Priority:

Comments:		
х.		
All action items now completed:	Л	
Job closed:	Н	

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Based on AS/NZS 60079 part 17

Ref: I:\data\sitzlencompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex-devices.doc

Specifications

General	
Device ID or tag: PDI - 37	Asset: FS-1
Circuit ID: JODY	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

						_\
App Mot	oratus type: (light, JB, lor) VHESSUHE DIFFENERAL TRANSPATTIRetc)	ion: (d,e, i, n, į	<u>ج</u>	X ion_		
Mar	NUFACTURET: BOSEMOUNT Gas group: (IIA	/B/C)	11C			SLELABLE
Full	model number: 3051 CD1 AZZAMAS 4415 7 Temp class: (T	1-T6)), T4 ()	10°C)	Stelation
	ial number: 232135 Certificate num		Ex		115 38 3	1 \
IP C	Class Test authority:		LA	10 . 11	1	1)
	SAA etc)		1.4		The second	
Nur	nber of cables:					
For	r each cable entry gland 1 gla	nd 2	other	s ADAP	top	BUNG NO-CERT
Gla	nd manufacturer.			100 Mar 12 P.O.	ALL ALL	
Mod			1			
Gla	nd type of protection: (d,e)		1	NO	FRAT	NO CRAT
	$\Gamma $			C. C. Sala	1988 - 1. P.	
Insp	ection			Circle a	s checked	ł
			-			
		Annling	bla to	S. 81 1	the state of the s	
	A Equipment	Applica		Internal	Endermal	11.00
			on type:	Internal	External	A PDI-37
1	Equipment (incl group and temp class) is appropriate for area classification		all	X	ð	A PN1-27
2	Equipment ID or circuit ID is correct		all	X		11 1 2. 31
3	Enclosure, sealing gaskets or compounds are satisfactory		all	X	X	
4	There are no damage or evidence of unauthorised modifications		all	X	2	
5	Bolts, cable entries and blanking elements are correct and tight		all	X	8	
6	Flange facings are clean and undamaged		d	X	14	
7	Lamp rating, type and position correct		all	X	Sec.	
8	Electrical connections are tight		afl	X	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
9	Hermetically sealed devices are undamaged		n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers			X		02
			n			
11	Motor fans have sufficient clearance	mot	ors only	X	0	
12	Installation clearly labelled		1	X	X	
13	Safety barriers/isolators installed as per certification and securely earthed whe	ere	1	X	$\overline{\mathbb{Q}}$	
	required					
14	Entity calculation/documentation is available		i	X	X	
	B Installation				_	
1	Type of cable is appropriate, cables are undamaged		all	X	- X	100
2	Sealing of ducts and/or conduits is satisfactory		all	X	R	1
3	Stopper boxes or barrier glands are properly filled		d	X	C	1
4	Integrity of conduit system and interface with mixed system is maintained		all	X	1 K K	
5	Earthing and bonding connections are tight, in good condition and of sufficient		all			1
-	cross section			X	S	
6	Fault loop impedance is satisfactory	DOWE	er outlets	x		1
7	Insulation resistance is satisfactory (check only during initial inspection)		all	X		1
8	Automatic electrical protective devices are set correctly and operate within		all			-
0	permitted limits		ali	X		
9	Special certification conditions U,X or B have been complied with		all	X		
10	Cables/spare cores are terminated satisfactorily		all	X		
11	No obstructions adjacent to flameproof flanged joint		d	X	Х]
12	Ducts, pipes and enclosures are in good condition		p	X	Х	1
13	Protective gas is substantially free from contaminants (water, oil, dirt)		p	X	X	1
14	Protective gas flow/pressure is adequate		p	X		1
15	Pressure and/or flow indicators, alarms and interlocks function correctly		<u>р</u>	X		1
16	Pre-energising purge period is adequate			x		1
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous		p			1
.,	area are satisfactory		р	X		

Amadeus Pipeline Electrical Inspections

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	i	X _	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	x	
	C Environment			

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	Ø
2	No undue accumulation of dust or dirt	all	X	Ø
3	Electrical insulation is clean and dry	all	Х	C

Faults found? (circle as appropriate)

No:	
List action required	
Contractor (write): Inspector Supervisor	Client (write): Inspector
Date: 1 9 11	Date:

Device ID or tag

Action re	quired to ma	ake dev	vice compl	iant:		-			
	Remed.	ate	Bue	cuble	Sheath				
-	Obtai.	ë.	-sting	details	from	verdor	, rei.ew	at regimal.	

Reviewed by: N-GREEN Date: 23/9/11 Priority:

		_	
Comments:			
All action items now completed:			
Job closed:	Ħ		
JOD CIUSED.			

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Based on AS/NZS 60079 part 17

Ref. 1:\data\sitzler\company operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

General

oonora	
Device ID or tag: SVC 41	Asset: SSV 41 - METER RUN 2
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?) OUT DOOR

Data from Label

Apparatus type: (light Motor)	JB, SOLENDIS VALVE	Type of protection: (d,e, i, n, p etc)	NO INFORMATION
Manufacturer:	ASCO	Gas group: (IIA/B/C)	
Full model number:	EAS 0163 FA	Temp class: (T1-T6)	
Serial number:	S397 91-4 \$1832069	Certificate number:	
IP Class		Test authority: (BAS, PTB, SAA etc)	

Number of cables:

For each cable entry	gland 1	gland 2	others ADAPTOR
Gland manufacturer:			UNKNOWN
Model:			
Gland type of protection: (d,e)			

Inspection -

		-		
		Applicable to	. ↓	↓
	A Equipment	protection type:	Internal	External
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X
2	Equipment ID or circuit ID is correct	all	X	R
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	R
4	There are no damage or evidence of unauthorised modifications	all	X	Ø
5	Bolts, cable entries and blanking elements are correct and tight	all	X	Ø
6	Flange facings are clean and undamaged	d	Х	
7	Lamp rating, type and position correct	all	X	
8	Electrical connections are tight	ali	Х	
9	Hermetically sealed devices are undamaged	n	X	
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	Х	
11	Motor fans have sufficient clearance	motors only	X	
12	Installation clearly labelled	i	X	X
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	X
14	Entity calculation/documentation is available	i	X	X

B Installation

	Binistanation			-	
1	Type of cable is appropriate, cables are undamaged	all	X	8	
2	Sealing of ducts and/or conduits is satisfactory	all	X	B	
3	Stopper boxes or barrier glands are properly filled	d	X	2	
4	Integrity of conduit system and interface with mixed system is maintained	all	X		7
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	×	Ø]
6	Fault loop impedance is satisfactory	power outlets	Х		
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X		
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	×]
9	Special certification conditions U,X or B have been complied with	all	X		1
10	Cables/spare cores are terminated satisfactorily	all	Х		
11	No obstructions adjacent to flameproof flanged joint	d	X _	X	
12	Ducts, pipes and enclosures are in good condition	р	X	X	
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	<u> </u>	X	7
14	Protective gas flow/pressure is adequate	р	X		7
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X		1
16	Pre-energising purge period is adequate	р	X		
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	q	x]
					-

Amadeus Pipeline Electrical Inspections

SITZLER

Circle as checked

VV



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	X	CORPOSION
2	No undue accumulation of dust or dirt	all	Х	8	
3	Electrical insulation is clean and dry	all	Х		

Faults found? (circle as appropriate)

No:

Yes

List action required

Contractor (write): Inspector Supervisor	Client (write): Inspector
N.GREEN	
Date: 9/9/11	Date:

Device ID or tag

Action required to make device compliant:	
- megitle nameplate, nil Ex detail available.	
- External compsion, UV faded.	
- Uncertified adapter to JR.	
- Replace will respect to age + undition.	

Reviewed by: N. GREEN Date: 23/9/4 Priority:

Comments:			
All action items now completed:			
Job closed:			
		 _	
		_	
Device now fully compliant, spreadsheet register has	been updated		
Supervisor (write):			
Date:	_	 	



Based on AS/NZS 60079 part 17

Ref. I\data\sitzler\company operations\darwin\tenders\sbsj11\fy/1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

17

area are satisfactory

Gen	eral						
Dev	ice ID or tag: JC	q!	Asset:	SSV 4-1	M.RUN 2		
Circ	uit ID:		Physical location:	CHANNEL			-
Area	a classification :		Environment: (hot?)				-
	a from Label						_
	aratus type: (light, JB,	6	Type of protection: (d,e, i, n, p	nss 122	Du 117)
Mot			etc)	,			-
		over SAE	Gas group: (IIA/B/C))	IIB		_
Full	model number:	102	Temp class: (T1-T6)		-16		_
Seri	al number:		Certificate number:	FL	P 693		
IP C	lass		Test authority: (BAS SAA etc)	5, PTB,			
Num	hber of cables:		7				
			ELBOW		0		
For	each cable entry	gland 1	gland 2	-4	others REOLIC	CGR	_
	nd manufacturer:	A-00	CUPSA'-		UNKNUM	<u> </u>	
Mod		WG 206					_
Giar	nd type of protection: (d,e)						
lunn	ection ———				Circle	as checked	
1		temp class) is appropriate for a	rea classification	Applicable to protection typ all	e: Internal	External X]
2	Equipment ID or circuit ID i		_	all	X		CIRCUIT
3		or compounds are satisfactory		all	X	\odot	PERISHED
4 5		vidence of unauthorised modification anking elements are correct and		all all	<u> </u>	<u> </u>	SEAL
6	Flange facings are clean a		ugne	d	X	<u>×</u>	-
7	Lamp rating, type and posi			all	X		1
8	Electrical connections are			all	X]
9	Hermetically sealed device			n	X		_
10		sure is satisfactory to enclosure	and/or covers	<u>n</u>	X		-
11 12	Motor fans have sufficient of Installation clearly labelled	clearance		motors on	ly X X	- x	-
13		stalled as per certification and se	curely earthed where				-
	required	•			X	X	
14	Entity calculation/documen	itation is available			X	X	
	B Installation						_ 、 、 4
1	Type of cable is appropriat			all	X	\otimes	_ 'JV' _
2	Sealing of ducts and/or cor			all	<u> </u>	Ø	4
3	Stopper boxes or barrier gl		in annintaine d	6	X		4
4		and interface with mixed system nections are tight, in good condit		all	X		-
5	cross section			ali	×	\oslash	
6	Fault loop impedance is sa	tisfactory		power outle			
7		isfactory (check only during initia		all	X		_
8	permitted limits	tive devices are set correctly and		all	Х		
9	Special certification conditi	ons U,X or B have been complie	ed with	all	X		
10	Cables/spare cores are ter	minated satisfactorily		all	X		
11	No obstructions adjacent to			d	X	X	4
12	Ducts, pipes and enclosure			p	X	<u> </u>	4
13		ally free from contaminants (wat	er, oil, dirt)	P	X	Х	4
14	Protective gas flow/pressur			p	X	_	4
15		ators, alarms and interlocks func	tion correctly	p	<u>X</u>		4
16	Pre-energising purge perio	a is adequate		l p	X		1

Condition of spark/particle barriers of ducts exhausting the gas into hazardous

Х

Ρ



18	Cables are installed and screens are earthed in accordance with the documentatio0n	ì	x
19	The circuit is isolated from earth or earthed at one point only	í	X
20	Separation is maintained with non-IS circuits	i	X
21	As applicable, short circuit protection of the power supply is in accordance with	i —	Y
	the documentation		~
	C Environment		

1 Apparatus adequately protected from corrosion, weather, vibration, other all X	
Apparates adoquately protocold non concoron, weather wordship the and the and the and the and the adoquately protocold non concoron and the addition of the ad	\otimes
2 No undue accumulation of dust or dirt all X	Ø
3 Electrical insulation is clean and dry all X	

Faults found? (circle as appropriate)

No:	
List action required	
	31
Contractor (write): Inspector Supervisor	Client (write): Inspector
Date: 9/9/4	Date:

Device ID or tag

Action requir	ed to make device compliant:
	Replace perished seal.
-	Remediate un damaged sheath, provide cable Support.
-	Replace uncertisied gland + adapter
-	Suggest removal and direct connect calling to new solenoid value.
-	Circuit I.D required.

Reviewed by Date: 2.7 Priority:	N. GREEN	
Date: 23	aln	
Priority:		_

Comments:		
All action items now completed:		
All action items now completed.		
Job closed:		
Device now fully compliant, spreadsheet re	gister has been updated	
	greener and a solar apaaroa	
Supervisor (write):		
Date:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

area are satisfactory

Ref. I:/data/sitzlen/company operations/darwin/lenders/sbsj11/fyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

eneral					
Device ID or tag: ZSC	75C 41	Asset:	551 41-	MCT3 0	0.113 2
•	013	Physical location:	SSV TI-	1 CIANA)	ICUN C
	210		C'HANNEL		
Area classification :		Environment: (hot?)	out da K		
ata from Label	_		NO	DETAILS	
Apparatus type: (light, JB, [.[/	MIT SWITCH	Type of protection: (etc)	d,e, i, n, p		
/anufacturer:		Gas group: (IIA/B/C))		
ull model number:		Temp class: (T1-T6)			_
Serial number:		Certificate number:			
P Class		Test authority: (BAS SAA etc)	, PTB,		
Number of cables:					
				100.2-	rn A
For each cable entry	gland 1	gland 2	other	s ADA-7	
Bland manufacturer:	ALCO		(A)	KNOWN	
Bland type of protection: (d,e)	wa 203		· · · · ·		
nand type of protection. (d,e)					
spection			` >	Circle as	s checked
			Annlinghts to		
A Equipment			Applicable to protection type:	Infernal	♦ External
A Equipment	temp class) is appropriate fo	r area classification	all	Internal X	X
Equipment ID or circuit ID			all	- Â	
	s or compounds are satisfacto		all	1 x	
				- Â	
	evidence of unauthorised mod		all	_	- Co
	lanking elements are correct a		ali	X	<u>×</u>
Flange facings are clean a Lamp rating, type and pos			d	X	
			all	X	
Electrical connections are		-	all		
Hermetically sealed devic			n	X	
	osure is satisfactory to enclosu	ure and/or covers	n	X	
Motor fans have sufficient			motors only	<u> </u>	
Installation clearly labelled Safety barriers/isolators in			<u> </u>	X	I A A
Safety barriers/isolators in required	stalled as per certification and	d securely earthed where	Î Î	X	\bigotimes
Entity calculation/docume	ntation is available		i	X	X
B Installation					
Type of cable is appropria			all	X	X
Sealing of ducts and/or co			all	X	\otimes
Stopper boxes or barrier of	lands are properly filled		d	X	
Integrity of conduit system	and interface with mixed sys	tem is maintained	all	X	
	nections are tight, in good cor		all	X	\otimes
cross section					N.
Fault loop impedance is s	atisfactory		power outlets	X	
	tisfactory (check only during i		all	X	
Automatic electrical protection permitted limits	ctive devices are set correctly	and operate within	all	x	
	tions U,X or B have been com	plied with	all	X	
Cables/spare cores are te			all	X	
	to flameproof flanged joint		d	X	X
				X	X
Ducts, pipes and enclosur		uniter all did	P n	X	
	ially free from contaminants (р		<u> </u>
Protective gas flow/pressu		instign generative	Р	X	
	ators, alarms and interlocks fu		p	X]
Pre-energising purge peri			р	X	
Condition of spark/particle	barriers of ducts exhausting	the gas into hazardous	р	V 1	

Х



	ables are installed and screens are earthed in accordance with the ocumentatio0n	i	х	
9 Th	ne circuit is isolated from earth or earthed at one point only		Х	
0 Se	eparation is maintained with non-IS circuits	-	Х	
1 As	s applicable, short circuit protection of the power supply is in accordance with	i	~	
the	e documentation		~	

	CE	nviron	ment	
ſ				

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	
2	No undue accumulation of dust or dirt	all	Х	\otimes
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:				
Yes	List action required			
l				•
Contra	ctor (write): Inspector	Supervisor	Client (write): Inspecto	or
	N. GREEN			
Date:	9/9/11		Date:	

Device ID or tag

Action required to n	nake device compliant:	
	Equipment J.D. required.	
	Remediate blue cable sheath.	
-	Verify I.I. borrier inStakation.	

Reviewed by:	N. GREENS
Date: 23/9	14
Priority:	

Comments:		
All action items new completed:		
All action items now completed:		
Job closed:		
Device now fully compliant, spreadsheet n	register has been updated	
Supervisor (write):	-g.ette nee soon apoatou	
Date:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17

Ref: I:\/data\sitzler\company operations\/darwin\tenders\sbsj11\/yf1 - haz area inspections\/hazardous area inspection forms\/hazardous area device inspection sheet for ex-d,ex-e,exi,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag: PSL -44	Asset: AETER RUN 2
Circuit ID: JO14	Physical location: CHANEL JSLAND
Area classification :	Environment: (hot?)

Data	a from Label						_
App Mote	aratus type: (light, JB, or) LOW(PRESSURE SWITCH	Type of protection: (etc)	d,e, i, n, p	K d	NO	CSATIF	CATION
Man	ufacturer: ASHCROFT /	Gas group: (IIA/B/C)) -	TIB			
Fuil	model number: B B + 2 + B ?	Temp class: (T1-T6)	102	16	7]
Seri	al number:	Certificate number:	Aus	Ex 3	547		
IP C	lass	Test authority: (BAS SAA etc)	, РТВ,		• •		
Nur	ber of cables:	· · · · · ·					-
19071]			FIDAP	TFA	
	each cable entry gland 1 ad manufacturer:	gland 2		others	DOET	21/5	1
						1.023	-
Mod	nd type of protection: (d,e)	+					-
Giar						_]
Inco			·		Circle a	s checked	
mspe						S CHELKEU	
			Applicable	-	Ŀ		
	A Equipment		protection t		Internal	External	
1	Equipment (incl group and temp class) is appropriate for area	a classification	all	урс.	X	X	
2	Equipment ID or circuit ID is correct	a classification			<u>x</u>	P	
3	Enclosure, sealing gaskets or compounds are satisfactory		all		X	1×	
	There are no damage or evidence of unauthorised modificati	iona	all		X	- China -	
4					X	-	
5	Bolts, cable entries and blanking elements are correct and tig	gn	all			<u> </u>	
6	Flange facings are clean and undamaged		d		X		
7	Lamp rating, type and position correct	_	all		X		
8	Electrical connections are tight		all		Х		
9	Hermetically sealed devices are undamaged		n		✓ X		
10	Restricted breathing enclosure is satisfactory to enclosure an	nd/or covers	n		X		
11	Motor fans have sufficient clearance		motors	only	X		The second
12	Installation clearly labelled		i		Х	(\mathbf{x})	SHEATH
13	Safety barriers/isolators installed as per certification and sec required	urely earthed where	i		x	8	2
14	Entity calculation/documentation is available		i		X	Х	
	B installation					<u> </u>	
1	Type of cable is appropriate, cables are undamaged		all		Х		10V
2	Sealing of ducts and/or conduits is satisfactory		all		X		
3	Stopper boxes or barrier glands are properly filled		d		X	<u>v</u>	
4	Integrity of conduit system and interface with mixed system is	e maintained	atl		<u> </u>		
5	Earthing and bonding connections are tight, in good condition		all				
5	cross section	IT AND OF SUITICIENT	an		X	X	
c	Fault loop impedance is satisfactory		power ou	ittate	Х		
6	Insulation resistance is satisfactory (check only during initial	inconcetion)			x -		
7			all all				
8	Automatic electrical protective devices are set correctly and permitted limits				Х		
9	Special certification conditions U,X or B have been complied	with	all		Х		
10	Cables/spare cores are terminated satisfactorily		all		Х		
11	No obstructions adjacent to flameproof flanged joint		d		X	X	
12	Ducts, pipes and enclosures are in good condition		р		X	X	
13	Protective gas is substantially free from contaminants (water	, oil, dirt)	р		Х	X	
14	Protective gas flow/pressure is adequate		р		Х		
15	Pressure and/or flow indicators, alarms and interlocks function	on correctly	p		Х		
16	Pre-energising purge period is adequate		p p		X		1
17	Condition of spark/particle barriers of ducts exhausting the g	as into hazardous	p p				1
.,	area are satisfactory				Х		

Amadeus Pipeiïne Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
	documentation			
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	Ì	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Ellanoiment b				0 00 1
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	$\overline{(x)}$	CORRESION
2	No undue accumulation of dust or dirt	all	Х	Ø	1
3	Electrical insulation is clean and dry	all	Х		1

Faults found? (circle as appropriate)

No:				
Jes:	List action required			
Contra	ctor (write): Inspector	Supervisor	Client (write): Inspector	
Date:	glalu		Date:	

Device ID or tag

Action requ	uired to make device compliant:	_	
-	Remediate due sheath.		
-	Tileyible nameplate, severe a replacement.	corrosion, suggest	
-	Verify I.S. burier installation		

Reviewed by: N. GREEN Date: 22/9/4 Priority:

		-
Comments:		
All action items now completed:		
Job closed:		
JOD Closed,		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref: I:/data/sltz/encompany operations/darwin/tenders/sbsj11/fyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

Device ID or tag: FT - 4	84	Asset:	METER R	20 = 1	-	
Circuit ID: F62S		Physical location:	Charner	ISLANDO		1
Area classification :		Environment: (hot?)				
Data from Label						-
Apparatus type: (light JB	ENAMINE ANALL DE TH	Type of protection: (d,e, i, n, p	, ia		1
	EXENTIAL PRECIORE TX	etc)		19		_
Manufacturer: Rosenou		Gas group: (IIA/B/C		1(c		_
	PD2A22AIAM577644			6		
Serial number: 0459	797	Certificate number:	Aus	EX 124	<u>4x</u>	_ √
IP Class ?		Test authority: (BAS SAA etc)	6, РТВ,			
		· · · · · · ·				-
Number of cables:	1	ADA	PTOR	4		
For each cable entry	gland 1	gland-2		rs Bont	1	
Gland manufacturer:	ALLO]
Model:	WG 203]
Gland type of protection: (d,e)	NO CERT	NOC	ert	NO CA	ert	
spection ———				Circle a	as checked	1
A Equipment			Applicable to protection type:	Internal	♦ External	
	temp class) is appropriate for are	a classification	all	X	X	1
Equipment ID or circuit ID			all	X	X	
	s or compounds are satisfactory		all	X	X	
	evidence of unauthorised modificat	ions	alí	X	X	1
	anking elements are correct and ti		all	X	\mathbf{b}	LOOSE
Flange facings are clean a	and undamaged		d	X		Lecse
Lamp rating, type and pos	sition correct		all	X		
Electrical connections are	tight		all	X		
Hermetically sealed devic			n	X		
	osure is satisfactory to enclosure a	nd/or covers	n	X		
Motor fans have sufficient			motors only	X		
2 Installation clearly labelled			i	X	X	
	stalled as per certification and sec	urely earthed where	i	x	X	
required Entity calculation/docume	ntation is available		i	X	X	
				_		
B Installation	te, cables are undamaged		all	X	$\overline{\mathcal{O}}$	UV+CA
Sealing of ducts and/or co			all	X		SUPPOU
Stopper boxes or barrier g			d	- <u>x</u>		1
	and interface with mixed system i	is maintained	all	X		1
	nections are tight, in good conditio		all		~	1
cross section				X	Х	
Fault loop impedance is s			power outlets	x		
	tisfactory (check only during initial		all	X		_
	ctive devices are set correctly and	operate within	all	X		
permitted limits	tions U,X or B have been complied	l with	all	X –		4
Cables/spare cores are te		· •••([1]	all	X	-	4
No obstructions adjacent			d d	X	x	4
2 Ducts, pipes and enclosur				X	x	4
	ially free from contaminants (water	r oil dirt)	p p	X	$\frac{1}{x}$	4
Protective gas flow/press			р р	X	<u> </u>	4
	ators, alarms and interlocks function	on correctly	p p	X		1
Pre-energising purge peri			p	x –	1	1
	barriers of ducts exhausting the g	as into hazardous	p p	x	1	1

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	ì	×
19	The circuit is isolated from earth or earthed at one point only	i	X
20	Separation is maintained with non-IS circuits	ì	X
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	í	x
	C Environment		

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	Х	
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No: List action required	
Contractor (write): Inspector Supervisor	Client (write): Inspector
Date: gla/11	Date:

Device ID or	Y						
	red to make device	•					
	Tighten						
-	Remodiate	blue she	all t	provide	cable	Sopport.	

Reviewed by: N. GREEN Date: 23/9/11 Priority:

		_		
Comments:				
All action items now completed:				
All action items now completed.				
Job closed:			 	
Device now fully compliant, spreadshee	t register has be	en updated	-	
Supervisor (write):				
Date:				
Date.				

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17

Ref: I:Idata/sitzler/company operations/darwin/lenders/sbsj11/lyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d.ex-e.exi.ex-n.ex-p and other ex devices.doc

Specifications

General

Device ID or tag: FT - 48	Asset: METER KUN # 2
Circuit ID:	Physical location: CHANEL TSLAND
Area classification :	Environment: (hot?)

Data from Label

		TRANSMITTER	etc)	d,e, i, n, p Ex (LOI		
Mar	nufacturer: BOSEI	MOUNT	Gas group: (IIA/B/C)	114			
Full	model number: 305 (PD2A22AIAMSI7L4	(T1-T6)	75(402)	174 (70	()°	
Seri	al number: 045 4		Certificate number:	AUS Ex	1249x	7]
IP C	Class 7		Test authority: (BAS SAA etc)	PTB,	1]
			1				
Nun	nber of cables:			~			
For	each cable entry	gland 1	olane 2	other	5 BUNG	ч	
	nd manufacturer:	ALLO					1
Mod		wkno3		12.0			1
Glar	nd type of protection: (d,e)	NO CORT	NO CA	LAT	NOCO	ent]
••				· · · · ·			
Insp	ection ———			>	··· Circle a	s checked	ł
		ر يحمد الأخر ال					
			the second second		4 🔶	+	
	A Equipment			protection type:	Internal	External	
1	Equipment (incl group and	temp class) is appropriate for are	a classification	all	X	è	-CIRCUIT.10 RETARMINA
2	Equipment ID or circuit ID			all	X		Caccorr. IV
3		s or compounds are satisfactory		all	X	Ø	
4		vidence of unauthorised modificati		all	Х	<u> </u>	Derraum
5		anking elements are correct and ti	ght	all	X	W_	KR (mentioned)
6	Flange facings are clean a			d	X		
7	Lamp rating, type and posi			all	X		
8	Electrical connections are			all	Х		
9	Hermetically sealed device			n ·	<u>,</u> • Х		
10		sure is satisfactory to enclosure an	nd/or covers	<u>n</u>	Χ.		
11	Motor fans have sufficient			motors only	X	-	
12	Installation clearly labelled			i	Х	Ø	
13		stalled as per certification and sec	urely earthed where	i	×	Q	
14	required Entity calculation/document	tation is available		i	- x	X	
	B Installation						INIL TRAID
1	Type of cable is appropriat	e, cables are undamaged		all	X	B	SUPPORT
2	Sealing of ducts and/or con			all	X	×	SUPPORT
3	Stopper boxes or barrier g			đ	X		
4		and interface with mixed system i		all	X		
5	Earthing and bonding conr cross section	nections are tight, in good conditio	n and of sufficient	all	x	Ø	
6	Fault loop impedance is sa			power outlets	X		
7		isfactory (check only during initial		all	X		
8	permitted limits	tive devices are set correctly and		all	×		
9	Special certification conditi	ions U,X or B have been complied	with	all	X		
10	Cables/spare cores are ter			all	Х		
11	No obstructions adjacent to			<u>ď</u>	X	X	
12	Ducts, pipes and enclosure			p	X	X	
13		ally free from contaminants (water	r, oil, dírt)	p	X	X	
14	Protective gas flow/pressu			Q	X		4
15		ators, alarms and interlocks function	on correctly	p	X		4
16	Pre-energising purge perio			р	Х		
17	Condition of spark/particle area are satisfactory	barriers of ducts exhausting the g	as into hazardous	p	X		

ZLER



Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
The circuit is isolated from earth or earthed at one point only	i	X	
Separation is maintained with non-IS circuits	i	X	
As applicable, short circuit protection of the power supply is in accordance with	i	X	
the documentation			

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	\bigotimes
2	No undue accumulation of dust or dirt	all	Х	8
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:	· ·
Ves List action required	_
Contractor (unite): Increator Supervisor	Client (write): Inspector
Contractor (write): Inspector Supervisor	Chent (White). Inspector
Date: 9/9/11	Date:

Device ID or tag

- Cable I.D. required. - Reterminate cable @ gland	Action required to make device compliant:	
- Remediate due shouth + provide cable support.	- Reterminate cable @	gland + provide cable support.

Reviewed by: N. CREEN Date: 23/9/11 Priority:

Comments:			
o o mineritas.			
ſ			
	_		
All action items now completed:			
tab staasd			
Job closed:			_

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices

Based on AS/NZS 60079 part 17

Ref. 1:\data\siztercompany operations\darwin\\enders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag: PT - 48	Asset: METER RUN 2
Circuit ID: JO27	Physical location: CHANEL JSLAND
Area classification :	Environment: (hot?)

Data from Label	EN APPROVAL	
Apparatus type: Alight JB. Motor) PRESSUBE TAANSMITTER	Type of protection: (d,e, i, n, p	BIV 2 OUP ABLO
Manufacturer: BOSEMOUNT	Gas group: (IIA/B/C)	
Full model number: 305 PGSA22AIAM51714	Temp class: (T1-T6)	74
Serial number: 045 9889 Q4	Certificate number: AUS Ex 1249-X	
IP Class	Test authority: (BAS, PTB, SAA etc)	

Number of cables:

For each cable entry	gland 1	APAPTOK gland 2	others BUNK
Gland manufacturer.	ALCO		
Model:	WG-203		3
Gland type of protection: (d,e)		NOCCRI	NO VERT (
Inspection	2.	and and and	<i>R UST</i> y ► Circle as checked

	and the second s	Applicable to			
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	·· X · ·	Х	
2	Equipment ID or circuit ID is correct	all	Х	×	
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	Ø	
4	There are no damage or evidence of unauthorised modifications	all	X	R	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	Ø	LOCIE
6	Flange facings are clean and undamaged	d	Х		GLANN
7	Lamp rating, type and position correct	all	Х		
8	Electrical connections are tight	all	Х		
9	Hermetically sealed devices are undamaged	n	· · X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	Ø	
13	Safety barriers/isolators installed as per certification and securely earthed where	i	х	Ø	
	required		~	-	
14	Entity calculation/documentation is available	l <u> i</u>	X	X	

B Installation

	Binstallation			-
1	Type of cable is appropriate, cables are undamaged	all	X	Q
2	Sealing of ducts and/or conduits is satisfactory	all	Х	Ø
3	Stopper boxes or barrier glands are properly filled	d	X	
4	Integrity of conduit system and interface with mixed system is maintained	all	Х	
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	Х	Ø
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X	
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	X	
9	Special certification conditions U,X or B have been complied with	all	X	
10	Cables/spare cores are terminated satisfactorily	all	X	
11	No obstructions adjacent to flameproof flanged joint		Х	X
12	Ducts, pipes and enclosures are in good condition	p	X	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	ρ	X	X
14	Protective gas flow/pressure is adequate	p	X	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X	
16	Pre-energising purge period is adequate	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	x	

UN + LANSCE SUPPORT

Amadeus Pipeline Electrical Inspections



Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
The circuit is isolated from earth or earthed at one point only	i	X	
Separation is maintained with non-IS circuits	i	X	
As applicable, short circuit protection of the power supply is in accordance with the documentation	i	x	

3

	CEllarounient			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	×
2	No undue accumulation of dust or dirt	all	Х	S
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate) · . . .

No:

Yes: List action required

• .			
Contractor (write): Inspector	Supervisor	Client (write): Inspector	
Dullain	•		
Date: 1 / 3 ///		Date:	
<i>į • • į • • •</i>			

Device ID or tag

Action rec	quired to make device compliant:
	Tighten calle gland
-	Remediate Give showth and provide cuble support.
-	perice contains nil AUS Ex certification. Conformity allellment or device replacement required.

Reviewed by: N. LAEZA Date: ~7/9/II Priority:

		_	
Comments:			
Quintients.			
All action items now completed:			
An action items now completed.			
Job closed:			
	 		_

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Circle as checked

Based on AS/NZS 60079 part 17

Ref. 1: data/sitzlencompany operations/darwin/tenders/sbsj11/fyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag: (TT-48)	Asset: METER RUN # 2
Circuit ID:	Physical location: CHANEL JSLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMPEBATURE TBANSMITTER	Type of protection: (d,e, i, n, p etc) $E \times \iota \alpha$
Manufacturer: BOSEMOUNT	Gas group: (IIA/B/C)
Full model number: 3144 PDIAII7MSFSQ4	Temp class: (T1-T6) $(f_6(50 \circ C))$ $(75(75 \circ C))$
Serial number: 02443228	Certificate number: AUSER 023794 IECEY 07.000
IP Class 66 68.	Test authority: (BAS, PTB, 2× SAA etc)
Number of cables: 2	

For each cable entry gland 1 gland 2 Gland manufacturer: AccHR W20 Proc Proc Proc Proc Proc Proc Proc Proc	others
Giand manufacturer: ALCHA W20 M20 ADAPTIC FL	
	0,0
Model:	,2
Gland type of protection: (d,e)	Erd

Inspection -

1 2 3 4 5 6 7 8	A Equipment Equipment (incl group and temp class) is appropriate for area classification Equipment ID or circuit ID is correct Enclosure, sealing gaskets or compounds are satisfactory There are no damage or evidence of unauthorised modifications Bolts, cable entries and blanking elements are correct and tight Flange facings are clean and undamaged Lamp rating, type and position correct Electrical connections are tight	Applicable to protection type: all all all all all d alf all	Internal X X X X X X X X X X X X	External X 20 20 20 20 20 20 20 20 20 20 20 20 20	-EQUM -CIRWIT
9	Hermetically sealed devices are undamaged	n - ,]
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
11	Motor fans have sufficient clearance	motors only	X '		
12	Installation clearly labelled	<u>i</u>	×		13 LABOL
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X	Q	1
14	Entity calculation/documentation is available	i	X	X]
1	B Installation Type of cable is appropriate, cables are undamaged	all		\square	UV + CHALB SUPPORT
2	Sealing of ducts and/or conduits is satisfactory	all	X	8	SUDDAR
-			X		- SUPPORT

1	Type of cable is appropriate, cables are undamaged	all	Х	N/	
2	Sealing of ducts and/or conduits is satisfactory	all	Х	8]
3	Stopper boxes or barrier glands are properly filled	d	Х		
4	Integrity of conduit system and interface with mixed system is maintained	all	Х		
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	х	Ø]
6	Fault loop impedance is satisfactory	power outlets	X		
7	Insulation resistance is satisfactory (check only during initial inspection)	all	Х		
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	х		
9	Special certification conditions U,X or B have been complied with	all	X		
10	Cables/spare cores are terminated satisfactorily	all	X		
11	No obstructions adjacent to flameproof flanged joint	d	X	X	
12	Ducts, pipes and enclosures are in good condition	p	X	X	
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	x	X	
14	Protective gas flow/pressure is adequate	p	Х		
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	Х		
16	Pre-energising purge period is adequate	р	X		
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	р	×		

Amadeus Pipeline Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	×	
	the documentation		^	

 C Environment

 1
 Apparatus adequately protected from corrosion, weather, vibration, other
 all
 X
 Image: Constraint of the c

Faults found? (circle as appropriate)

No: List action required		
Contractor (write): Inspector Supervisor D WICC (Am.) Date: 9/9/11	Client (write): Inspector Date:	

Device ID or tag

		e device cor				1	
-	Egnipa	-ent	+ cable	T.A.	requ	ed	
-	Blue	cable	sheath	+ cub	le sup	port ,	required.

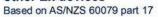
Reviewed by: N. CREEN Date: 2.7/9/11 Priority:

		 	_
Comments:			
All a stign items a pour a second to the			
All action items now completed:			
Job closed:			
Device now fully compliant, spreadsheet re	egister has been updated		

Supervisor (write): Date:

~

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



area are satisfactory

Ref. 1:\data\sitzleAcompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

Gen	eral							
		5-48	Asset:	METER	2 RU	NZ]
<u> </u>	uit (D:		Physical (ocation:			ISLA	NO	1
Area	a classification :		Environment: (hot?)					-
/100								
	from Label					,		_
	aratus type: (light, JB,	TEMP ELENIENT.	Type of protection: (d,e, i, n, p	E.	de		
Moto		<u>n</u>	etc)		_			-
Man	ufacturer: 70	9	Gas group: (IIA/B/C)		110	/		-
Full	model number: TC	LOSPRAA	Temp class: (T1-T6)		TO			
Seria	al number: 680	0108	Certificate number:	IEC	KX X	TSA	06.0010	
IP C	lass G	L	Test authority: (BAS	, PT8,				
		<u> </u>	SAA etc)					
Num	ber of cables:]					
-					- 41-			
	each cable entry	gland 1	gland 2		others		_	1
Mod		ALCHA WZOMUD)					1
Glan	nd type of protection: (d,e)	Rx d]
1	4 ¹	· 1				Circle.	a abasta d	1
inspe	ection —					Circle a	as checked	I
				Applicable	to	↓ ↓	↓	
	A Equipment			protection t	уре:	Internal	<u>External</u>	
1		d temp class) is appropriate for are	a classification			X X	× Ø	0
2 3	Equipment ID or circuit ID	ts or compounds are satisfactory	_	all all		X	× ·	CIRCENT
3 4	There are no damage or a	evidence of unauthorised modificat	ions	all		x	8	0.1
5		lanking elements are correct and ti		ali		×		
6	Flange facings are clean		12 m	a		x		
7	Lamp rating, type and pos			all		X		
8	Electrical connections are			all		X	1	
9	Hermetically sealed devic			n		X		
10		osure is satisfactory to enclosure a	nd/or covers	n		X		
11	Motor fans have sufficient			motors	only	Х		
12	Installation clearly labelled	d		i		X	$\square \oslash$	IS LADER
13		nstalled as per certification and sec	curely earthed where	i		х	\otimes	
14	required Entity calculation/docume	entation is available		i		X	X	
			_					
	B Installation						100	-
1		ate, cables are undamaged		all		<u> </u>	<u>(Ø)</u>	-
2	Sealing of ducts and/or co			all		<u> </u>	Ø	-
3	Stopper boxes or barrier		in maintained	d all		<u>×</u> _		4
4		n and interface with mixed system		all		Х		4
5	Earthing and bonding con cross section	nnections are tight, in good conditio	and of sumclent	all :.		х	Ø	
6	Fault loop impedance is s	satisfactory		power o	utlets	X]
7		atisfactory (check only during initial		all		X		4
8	Automatic electrical prote permitted limits	ctive devices are set correctly and	operate within	all		Х		
9	Special certification condi	itions U,X or B have been complied	1 with	all		X		1
10	Cables/spare cores are te	erminated satisfactorily		all		X		1
11	No obstructions adjacent	to flameproof flanged joint		d		Х	X]
12	Ducts, pipes and enclosu			р		Х	X	
13		tially free from contaminants (water	r, oil, dirt)	р		Х	X	
14	Protective gas flow/press			р		Х		
15		cators, alarms and interlocks functi	on correctly	p		Х		
16	Pre-energising purge peri	iod is adequate		р		Х		
17	Condition of spark/particle	e barriers of ducts exhausting the g	gas into hazardous	P		Х]

Amadeus Pipeline Electrical Inspections

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	×	
	C Environment			

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	$\overline{\otimes}$
2	No undue accumulation of dust or dirt	all	Х	\bigotimes
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required	-		
		<u> </u>	
		•	
Contractor (write): Inspector	Supervisor	Client (write): Inspector	
Duppy	5		
Date: 9916		Date:	

Device ID or tag

Action requi	red to make	e device co	mpliant:	-		
-	Cable	T.D.	regni	ed		
				required.		
-	Alme	Court		required.		

Reviewed by: N.G.R. Reviewed by: N.G.R. Reviewed by: Date: 23/6/ 11 Priority:

Comments:			
All action items now completed:			
Job closed:			
bob croaed.			
Device now fully compliant, spreadsheet	register has been upd	ated	
Supervisor (unite)			
Supervisor (write):			
Date:			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Ref: 1:VataVsitziencompany operationsVdarwin/tenders/sbsj11/Vyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

· .

Ger	eral						
Dev	rice ID or tag: 155B	-2	Asset: METER	E RUN	12		
	wit ID;		Physical location:	CHANFL	JSI AN	\mathcal{N}	-
Area classification : Environment: (hot?)				<u> </u>			
				·		-	1
	a from Label	NA					_
App Mot	eratus type: (light, JB,	2B	Type of protection: ((d,e, i, n, p	(ପ		. 10
			etc)	<u> </u>			MIR
Mar	nufacturer: (12005E	HENDS	Gas group: (IIA/B/C	,	IIC		_
Full	model number:	2.5	Temp class: (T1-T6)	16		
Seri	al number:		Certificate number:	Not St	TA APPB	OVEN	
	class 66		Test authority: (BAS		. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1
	66		SAA etc)	_		· .	
Nun	nber of cables:		1				
			_				
-	each cable entry	gland 1	gland 2	0	thers		1
Mod	nd manufacturer:	,					-
	nd type of protection: (d,e)		-				1
							-
Insp	ection —	· · · ·	· · · · · · · · · · · · · · · · · · ·		 Circle a 	as checked	
				Applicable to	1	. <u>I</u>	
	AEquipment	•	•	protection type	: Internal	External	
1		d temp class) is appropriate for are	a classification	all	X	X	
2	Equipment ID or circuit ID			all	X	8	
3		ts or compounds are satisfactory		all	X		
4		evidence of unauthorised modificat		all	X	3R	
5		lanking elements are correct and ti	ght	all	X	Ø	
6	Flange facings are clean			d	X		
7	Lamp rating, type and pos			all	X		
8	Electrical connections are			all	<u> </u>		
9 10	Hermetically sealed devic			n n	· X		
11	Motor fans have sufficient	osure is satisfactory to enclosure and teleproper	nu/or covers	n motore opli	X .		
12	Installation clearly labelled			motors only	$\frac{x}{x}$	Ø	ES
13		nstalled as per certification and sec	utoly codbod where	ì			- he a
15	required	istalled as per certification and sec	usely carined where	'	X	X	
14	Entity calculation/docume	ntation is available		i	X	X	
1	B Installation	ate, cables are undamaged		all	X	8	-00
2	Sealing of ducts and/or co	onduits is satisfactory		all	- Â	×	-Cablo
3	Stopper boxes or barrier of			d	X		SUPADE
4		n and interface with mixed system i	s maintained	all	X		
5		nections are tight, in good condition		all		0	
	cross section	5 . 5			×	S	
6	Fault loop impedance is s			power outle			
7	Insulation resistance is satisfactory (check only during initial inspection) Automatic electrical protective devices are set correctly and operate within			all	X		
8	Automatic electrical protect permitted limits	ctive devices are set correctly and	operate within	all	x		
9		tions U,X or B have been complied	with	all	x		
10	Cables/spare cores are terminated satisfactorily			all	X	1	
11				d	X	X	
12	Ducts, pipes and enclosur	res are in good condition		р	X	X	
13	Protective gas is substant	ially free from contaminants (water	, oil, dirt)	p	X	X	
14	Protective gas flow/pressu	ure is adequate		p	X		
15		ators, alarms and interlocks function	on correctly	р	X		
16	Pre-energising purge perio			p	X		
17		e barriers of ducts exhausting the g	as into hazardous	p	x		
	area are satisfactory			<u> </u>			

SITZLER



18	Cables are installed and screens are earthed in accordance with the	i	~	
	documentatio0n		^	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	×	
	the documentation		~	

	C Environment				and the local
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø	CORADSISN
2	No undue accumulation of dust or dirt	all	Х	\otimes	
3	Electrical insulation is clean and dry	all	×		

)

Faults found? (circle as appropriate)

No:			
Yes	List action required		·
Contra	actor (write): Inspector	Supervisor	Client (write): Inspector
Date:	9/9/11		Date:

Device ID or tag

Action re	quire	d to make device c $T_{1}S_{2}C_{1}$	ompliant: roots inside "	label veg	med.	
	-	External	corrosion, in	tend intro	tim required.	
					- sagood cubes.	

Reviewed by: Date: 23/9/4 Priority: N. GAEEN

Comments:		
Ail action items now completed:		
Job closed:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices Based on AS/NZS 60079 part 17

Ref. 1:/data/sizter/company operations/darwin/lenders/sbsj11/lyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag: LS HH -47 147A	Asset: FS-2
Circuit ID: 5016 2 5017	Physical location: CHANEL TSLAND
Area classification :	Environment: (hot?)

For each cable entry gland 1	ANAPTOR gland 2 others BUNG
Number of cables:	
IP Class ?	Test authority: (BAS, PTB, SAA etc)
Serial number: ?	Certificate number: $AUS E_X GOq$
Full model number: L-1200 BPDT	Temp class: (T1-T6) 76
Manufacturer: MUBPHY	Gas group: (IIA/B/C) 113
Apparatus type: (light, JB, Motor) HIGH HIGH <u>とEUEL らいすてん</u>	Type of protection: (d,e, i, n, p etc)
Data from Label Apparatus type: (light, JB.	Type of protection: (d e i p n

Gland manufacturer:	7 ALCO	< <u> </u>] \
Model:	(WG203		a Tandara Sud]
Gland type of protection: (d,e)	· ·	NO CERT	NO CERT	NO CERT
			. 6.	•

Inspection -

Insp	ection	1917 - 201	Circle a	s ^t checked
	_A Equipment	Applicable to protection type:	Internat	External
1	Equipment (incl group and temp class) is appropriate for area classification	, all ,	, X, .	. X
2	Equipment ID or circuit ID is correct	all	X	D - CIRWIT
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	2 - CQUIP
4	There are no damage or evidence of unauthorised modifications	all	X	R
5	Bolts, cable entries and blanking elements are correct and tight	all	X	×
6	Flange facings are clean and undamaged	d	X	
7	Lamp rating, type and position correct	all	X	
8	Electrical connections are tight	all	X	
9	Hermetically sealed devices are undamaged	n,	.X.	
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X	
11	Motor fans have sufficient clearance	motors only	X	
12	Installation clearly labelled	i	X	R
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	х	ve ?
14	Entity calculation/documentation is available	i	X	X

B installation

Type of cable is appropriate, cables are undamaged		X	K)	CAULE
Sealing of ducts and/or conduits is satisfactory	all	X	N/	SORDE
Stopper boxes or barrier glands are properly filled	d	X		Source
Integrity of conduit system and interface with mixed system is maintained	all	X		1
Earthing and bonding connections are tight, in good condition and of sufficient cross section	3)	х	\otimes	
Fault loop impedance is satisfactory	power outlets	Х		
Insulation resistance is satisfactory (check only during initial inspection)	all	Х		1
Automatic electrical protective devices are set correctly and operate within permitted limits	all	х		
Special certification conditions U,X or B have been complied with	all	Х		
Cables/spare cores are terminated satisfactorily	all	Х		1
No obstructions adjacent to flameproof flanged joint	d	X	X	
Ducts, pipes and enclosures are in good condition	p	, X	X	1
Protective gas is substantially free from contaminants (water, oil, dirt)	p	X	Х	
Protective gas flow/pressure is adequate	p	Х		1
Pressure and/or flow indicators, alarms and interlocks function correctly	p	Х		
Pre-energising purge period is adequate	р	X		
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	х		

Amadeus Pipeline Electrical Inspections

⊜sı	TZLER
	AIN 17-031 271-013

			~	N CON DICI
18	Cables are installed and screens are earthed in accordance with the	í	Y	
	documentatio0n		^	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	×	
	the documentation		~	

	C Environment			\sim	EPRADSION
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	(8)	provosi
2	No undue accumulation of dust or dirt	ali	Х	Ø	1
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector	Supervisor	Client (write): Inspector
Contractor (write): Inspector		
Date: 9 (8) (1		Date:
{ · // ·		

Device ID or tag

Action	required to make device of	ompliant:
-	Equipment +	calle IO's required (Icable only).
-	Provide cable	Support.
-	Verity I.S.	bourier installation
-	Surface corrol	ion visible.

Reviewed by: N. CREENS Date: 27/9/11 Priority:

Comments:		_	
All action items now completed: Job closed:	H		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER

Based on AS/NZS 60079 part 17

Ref: I:\data\sitz\er\company operations\darwin\lenders\sbsj11\\yf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag: DPT - 47 POT	Asset: FS 2
Circuit ID: JOIS	Physical location: CHANEL ISLANI
Area classification :	Environment: (hot?)

Data	a from Label	7					
App Mot	aratus type: (light, JB, or) 1 からいんと_ りょう	FEBENNIAL TRANSMITTE	Type of protection: (Letc)	d,e, i, n, p	X LON		3
	nufacturer: ROSEM		Gas group: (IIA/B/C)(C) NOT CEAIBLE
Full	model number: 305 L	COLAZZAIA04M5I7	Temp class: (T1-T6)	T5[40	8) T4 (7	90°€)	CEAIBLE
Seri	ial number: 232	33	Certificate number:	AUS EX	1249X		
IP C	Class ?		Test authority: (BAS SAA etc)	, PTB,	· ·		
Nun	nber of cables:		1				-
				MOR	R.C.A.	1.	
	r each cable entry	gland 1	gland 2	<u>oth</u>	ers BUN	4	-
	nd manufacturer:		· · ·				_
Mod		FLPW 204		•	a. 1		
Glar	nd type of protection: (d,e)		NU. CA	2RT	NO CRI	27.	
Inco	ection				Cirolo a	s checked	
msp				. ,		is checked	
				Analiaabla (a			CANELLED AS
	A Faulta mant			Applicable to	· •	•	10147
4	A Equipment			protection type:	Internal	External	10171
1		I temp class) is appropriate for area	a classification	all	<u> </u>	X	EGOD
2	Equipment ID or circuit ID			all	X		HEROKO
3		s or compounds are satisfactory		all	X	8	
4		widence of unauthorised modificati		ail	X	R	
5		anking elements are correct and tig	ght	ati	X	2	
6	Flange facings are clean a	and undamaged		d	X		1
7	Lamp rating, type and pos	ition correct		all	X		
8	Electrical connections are	tight		all	X		
9	Hermetically sealed device	es are undamaged		n	. · X		
10		sure is satisfactory to enclosure ar	nd/or covers	n	X		
11	Motor fans have sufficient			motors only	X		
12	Installation clearly labelled			ì	X	Ø	BLUESHEND
13		stalled as per certification and sec	urely earthed where	i			0-0-0
15	required	staned as per certification and sect			X	Ø	
14	Entity calculation/documer	ntation is available		i	X	X	
	B Installation						
1	Type of cable is appropriat	te, cables are undamaged		all	X	1 D	UV + CUTCLE CUMPORET
2	Sealing of ducts and/or co			all	X		LUPPONT
3	Stopper boxes or barrier g			d	X		
4		and interface with mixed system is	s maintained	all	X		
5		nections are tight, in good condition		all			1
U	cross section				X	Q	
6	Fault loop impedance is sa	atisfactory		power outlets	×	<u> </u>	-
7		isfactory (check only during initial i	inspection)	all	X		-
8		tive devices are set correctly and o		ali			-
	permitted limits		,		X		
9		ions U,X or B have been complied	with	all	X		1
10	Cables/spare cores are ter			all	X		4
11	No obstructions adjacent to			d	X	X	4
12	Ducts, pipes and enclosure			р	X	X	1
13		ally free from contaminants (water,	, oil, dirt)	р	X	X	1
14	Protective gas flow/pressu			р	X		1
15	Pressure and/or flow indic	ators, alarms and interlocks functio	on correctly	р	X]
16	Pre-energising purge perio			р	X]
17		barriers of ducts exhausting the ga	as into hazardous	p	Х]
	area are satisfactory				^]



X X

18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	
	C Environment			0

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	
2	No undue accumulation of dust or dirt	all	
3	Electrical insulation is clean and dry	all	

Faults found? (circle as appropriate)

No:	·	
Kes: List action required		
Contractor (write): Inspector Supervisor	Client (write): Inspector	
Date: 9 9 11	Date:	

Device ID or tag

Reviewed by: N. GREEN Date: 27(9/11 Priority:

Comments:		
•••••••••••		
All action items now completed:		
() []	H	
Job closed:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices



Based on AS/NZS 60079 part 17

Ref: I:\data\sitzler\company operations\danvin\lenders\sbsj11\/yf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

Gen	eral						
Dev	ice ID or tag: TSL-5	77	Asset: MR	1/2 SKID	OUTLET		
Circuit ID: (DIS			Physical location: CHANEL ISLAND				
Διο	a classification :		Елvironment: (hot?)		22110	<u>ــــــــــــــــــــــــــــــــــــ</u>	
710							
	a from Label	illeg. Bue					
App Mot	aratus type: (light, JB, pr) 10~17E <u>NPEP</u>	ATUBE SWITCH	Type of protection: (etc)	d,e, i, n, p	2		
	ufacturer: ASELCA		Gas group: (IIA/B/C)		/		
Full	model number:		Temp class: (T1-T6)	16			
Seri	al number:		Certificate number:	AUG EN	547		
IP C	lass		Test authority: (BAS SAA etc)		2-11		
Nicco							
Nun	ber of cables:		- q0'	BENO	ADAI	OTBR	
	each cable entry	gland 1	gland 2	Elow others	•••=••		
	id manufacturer:						
Mod			A	6.00		1 A-7	
Giar	id type of protection: (d,e)	*			NO CI	ir (
nspe	ection —	<u> </u>		2.8 	Circle a	is checked	
	1 - 15 T - 10 T		3	Applicable to			
	A Equipment		2.0	protection type:	Internal	External	
	.	temp class) is appropriate for are	ea classification	all	X.	X	
	Equipment ID or circuit ID			all	Х	8	
		s or compounds are satisfactory		ali	X	Ø	
		vidence of unauthorised modifica		all	X	8	
		anking elements are correct and t	ight	all	X	Ø	
	Flange facings are clean a			d	X		
	Lamp rating, type and pos			all	X		
	Electrical connections are			all	X		
	Hermetically sealed device			'n,	X		
		sure is satisfactory to enclosure a	and/or covers	n	<u> </u>		
	Motor fans have sufficient			motors only	<u>X</u>		AN
	Installation clearly labelled				X	B	
	required	stalled as per certification and sec	curely earlined where	i	X	0	2
ŀ	Entity calculation/document	ntation is available		i	Х	_X_	
	B Installation					0	
	Type of cable is appropria			all	X	Ø	UU
	Sealing of ducts and/or co			all	X	0	CAR
	Stopper boxes or barrier g			d	X		
		and interface with mixed system		all	X		
	cross section	nections are tight, in good condition	on and of sufficient	all	×		
	Fault loop impedance is satisfactory power outlets				X		
	Insulation resistance is satisfactory (check only during initial inspection) all			Х			
	Automatic electrical protective devices are set correctly and operate within all permitted limits			X			
	Special certification condit	ions U,X or B have been complied	f with	all	X		
[Cables/spare cores are ter			all	Х		
[No obstructions adjacent t	o flameproof flanged joint		d	X	Х	
[Ducts, pipes and enclosure			р	X	X	
[ally free from contaminants (wate	r, oil, dirt)	p	X	X	
	Protective gas flow/pressu	re is adequate		p	X		
ĺ	Pressure and/or flow indication	ators, alarms and interlocks functi	on correctly	p	X		
	Pre-energising purge perio	od is adequate		p	Х		
Ī		barriers of ducts exhausting the g	jas into hazardous	p	X		
	area are satisfactory			-	│ [∧]		



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Enalionment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø
2	No undue accumulation of dust or dirt	all	Х	Ø
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

 No:

 Vest:

 List action required

 Contractor (write): Inspector

 Date:

 9/9/4

 Date:

Device ID or tag

Action required to make device compliant:	
- Remediate blue cable sheath.	
- Verify I.S. barrier installation	
- Illegible aaneydate, corrosion	, suggett replacement.

Reviewed by: Date: 279/11 Priority:

	 _			_
Comments:				
All action items now completed:				
Job closed:				
009 00360.	 			-

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices



Based on AS/NZS 60079 part 17

Ref: I:Vata\sitziencompany operations\darwin\lenders\sbsj11Vyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag: PSL - 58	Asset: MR1/2 SILIA OUTLET,
Circuit ID: JOI9	Physical location: CFLANEL JSLAND
Area classification :	Environment: (hot?)

	a from Label						`
Apr Mot	aratus type: (light, JB lor) LOW PRESSUBE SWITCH	Type of protection: (etc)	(d,e, i, n, p	x d		_]),,
1	nufacturer: ASHCBOFT	Gas group: (IIA/B/C)	IB			Vor CEMSLE
Full	model number:	Temp class: (T1-T6)	16			K LEta SLE
Ser	ial number:	Certificate number:	AUS 1	Ex 5	47]
IP (Class	Test authority: (BAS SAA etc)					
Nur	nber of cables:						
	r each cable entry gland 1	gland 2		others	ADAT	nate	_
	nd manufacturer:	_					_
Mod	del: W 1/203 nd type of protection: (d,e) W 203	and the free lands	Sec. 33	10	NOG		-
Gia					100 01		_
Insp	ection		-		Circle a	s checked	i
			•				
	A Equipment		.Applicable			•	
1	Equipment (incl group and temp class) is appropriate for are		protection all		Internal X	External X	1
2	Equipment ID or circuit ID is correct		all		Â	ŵ	
3	Enclosure, sealing gaskets or compounds are satisfactory		all		X		
4	There are no damage or evidence of unauthorised modification	tions			X		
5	Bolts, cable entries and blanking elements are correct and ti		all		X	8	
6	Flange facings are clean and undamaged		d		X		
7	Lamp rating, type and position correct		all	_	X		(
8	Electrical connections are tight		all		Х		
9	Hermetically sealed devices are undamaged		n		 X 		
10	Restricted breathing enclosure is satisfactory to enclosure a	nd/or covers	n		X		
11	Motor fans have sufficient clearance		rnotors	oniy	X		sheary.
12	Installation clearly labelled		i		X		sound.
13	Safety barriers/isolators installed as per certification and sec required	curely earthed where	i		x	8	?
14	Entity calculation/documentation is available		i		Х	X	
	B Installation						ALC & CAME
1	Type of cable is appropriate, cables are undamaged		all		X	Ø	UU + CARCE
2	Sealing of ducts and/or conduits is satisfactory		all		X	(X)	UV + CALLE SUPPORT
3	Stopper boxes or barrier glands are properly filled		d		Х]
4	Integrity of conduit system and interface with mixed system	is maintained	ałl		Х]

4	Integrity of conduit system and interface with mixed system is maintained	all	X	
5	Earthing and bonding connections are tight, in good condition and of sufficient	aíl	X	42
	cross section		_ ^	~
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	ali	X	
B	Automatic electrical protective devices are set correctly and operate within permitted limits	all	x	
)	Special certification conditions U,X or B have been complied with	all	X	
0	Cables/spare cores are terminated satisfactorily	all	X	
1	No obstructions adjacent to flameproof flanged joint	d	X	X
2	Ducts, pipes and enclosures are in good condition	p	X	Х
3	Protective gas is substantially free from contaminants (water, oil, dirt)	p	X	Х
4	Protective gas flow/pressure is adequate	p	X	
5	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X	
6	Pre-energising purge period is adequate	p	X	
7	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	х	

Amadeus Pipeline Electrical Inspections



Cables are installed and screens are earthed in accordance with the	i		
documentatio0n		X	
The circuit is isolated from earth or earthed at one point only	i	X	
Separation is maintained with non-IS circuits	i	X	
As applicable, short circuit protection of the power supply is in accordance with the documentation	i	X	

	C Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	Q	Correson
2	No undue accumulation of dust or dirt	all	X	(\otimes)	
3	Electrical insulation is clean and dry	all	X	10	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector	Supervisor	Client (write): Inspector
ONILUMUS	-	
Date: 0/9/0		Date:
11		

Device ID or tag

Action required to make device compliant:	
- Remediate due sheath + support cable	
- Verity I.S. barrier installation.	
- Alegible nameplate, consilion, suggest replacement.	

Reviewed by: N. GREEN Date: D.J. 9/11 Priority:

Comments:		_
All action items now completed: Job closed:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref. 1:\data\sitzlencompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General		
Device ID or tag: PSW- 59 B	Asset: METER AUN 1/2 OUTLET.	
Circuit ID:	Physical location: CHANNEL ISLADO	
Area classification :	Environment: (hot?)	

Data from Label					~
Apparatus type: (light, JB, Motor) PRESSURE SMITH Manufacturer: ALLEA BRADZEY	Type of protection: (etc)	(d,e, i, n, p			
Manufacturer: AUTER BRADING	Gas group: (IIA/B/C)			INA
Full model number: 8367 - 72565	Temp class: (T1-T6)			R
Serial number:	Certificate number:				
IP Class 66.	Test authority: (BAS SAA etc)	S, РТВ,]/
Number of cables:					
For each achie entry gland 1	ADAI				
For each cable entry gland 1 Gland manufacturer: ALCO	gland 2)		7
Model:					-
Gland type of protection: (d,e)	No can	4			-
A Equipment		Applicable to protection type:	Internal	External	_
1 Equipment (incl group and temp class) is appropriate	for area classification	all	Х	X]
2 Equipment ID or circuit ID is correct		all	Х	×	area
3 Enclosure, sealing gaskets or compounds are satisfactorial sealing gasket		alt	Х	R]
4 There are no damage or evidence of unauthorised model		all	Х	8	
5 Bolts, cable entries and blanking elements are correct	t and tight	all	Х	Ø	-
Flange facings are clean and undamaged		d	X		-
7 Lamp rating, type and position correct		all	X	<u> </u>	-
B Electrical connections are tight		all	X X	<u> </u>	-
 Hermetically sealed devices are undamaged Restricted breathing enclosure is satisfactory to enclo 	and and an any am	n	X	+	4
Motor fans have sufficient clearance	sure and/or covers	motors only	x	·	-
12 Installation clearly labelled			X		1
3 Safety barriers/isolators installed as per certification a	nd securely earthed where	i	x	Ø	?
required 14 Entity calculation/documentation is available		i	X		•
	-	i			1
B Installation					- OV +
				- <i>n</i> -	

1	Type of cable is appropriate, cables are undamaged	all	X	$\boldsymbol{\omega}$
2	Sealing of ducts and/or conduits is satisfactory	all	X	X
3	Stopper boxes or barrier glands are properly filled	d	X	
4	Integrity of conduit system and interface with mixed system is maintained	all	X	
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	×	х
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X	
8	Automatic electrical protective devices are set correctly and operate within	all	x	
	permitted limits		^	
9	Special certification conditions U,X or B have been complied with	all	X	
10	Cables/spare cores are terminated satisfactorily	all	X	
11	No obstructions adjacent to flameproof flanged joint	d	X	Х
12	Ducts, pipes and enclosures are in good condition	р	X	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	Х
14	Protective gas flow/pressure is adequate	р	X	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X	
16	Pre-energising purge period is adequate	р	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	ρ	Х	

CARSLE SUPPORT

Amadeus Pipeline Electrical Inspections



Cables are installed and screens are earthed in accordance with the			
documentatioon	Î	X	
The circuit is isolated from earth or earthed at one point only	ì	Х	
Separation is maintained with non-IS circuits	i	X	
As applicable, short circuit protection of the power supply is in accordance with the documentation	j	x	

	C Environment		
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х
2	No undue accumulation of dust or dirt	ali	Х
3	Electrical insulation is clean and dry	ali	X

Faults found? (circle as appropriate)

No:

Yes:

List action required

e): Inspector

Device ID or tag

Action required to make device	compliant:		
- Circuit I.D.		1 -	
- Remadiate blue	health + suppo.	it calle.	
- Verity I.S.	barrier installation	· ·	

Reviewed by: N. Gland Date: 23/9/11 Priority:

Comments:				
	_			
All action items now completed:				
Job closed:		_		
Device now fully compliant, spreadsheet	t register has be	en updated	_	
Supervisor (write):				
Date:				
Date:				

Amadeus Pipeline Electrical Inspections

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices Based on AS/NZS 60079 part 17

Ref: I:Vata\sitzler\company operations\darwin\lenders\sbsj11\/yf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag: PSH-59 AM	Asset: MR/2 SILVO DOTLET
Circuit ID: J020	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) HIGSH PRESSURE SWITCH	Type of protection: (d,e, i, n, p etc)	
Manufacturer: ALLEN - BRADLEY	Gas group: (IIA/B/C)) NA.
Full model number: BUL 8367-72363	Temp class: (T1-T6)	5
Serial number:	Certificate number: NOT SAA APPROVED	
IP Class 66.	Test authority: (BAS, PTB, SAA etc)	
	v	

Number of cables:

For each cable entry	gland 1	gland 2	others ASAPTOR
Gland manufacturer:	1		
Model:			
Gland type of protection: (d,e)	,		NO VERT

Inspection -

		Applicable to	Ţ	Ţ	
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	
2	Equipment ID or circuit ID is correct	all	X	Ø	
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	Ø	
4	There are no damage or evidence of unauthorised modifications	all	Х	×	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	×	
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	Х		
9	Hermetically sealed devices are undamaged	n . 4	. Х.		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	Х		
11	Motor fans have sufficient clearance	motors only	X	•	
12	Installation clearly labelled	i	Х		Bruce Sthorton
13	Safety barriers/isolators installed as per certification and securely earthed where	ì	х	8	2
	required				
14	Entity calculation/documentation is available	l i	I X		

0		lation
	Instat	lation

Type of cable is appropriate, cables are undamaged	all	X		
Sealing of ducts and/or conduits is satisfactory	ali	X		Mark Sund
Stopper boxes or barrier glands are properly filled	d	X	~ ~	SUN
Integrity of conduit system and interface with mixed system is maintained	all	X		•
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	x	R	
Fault loop impedance is satisfactory	power outlets	Х		
Insulation resistance is satisfactory (check only during initial inspection)	all	X		
Automatic electrical protective devices are set correctly and operate within permitted limits	all	x		
Special certification conditions U,X or B have been complied with	all	X		
Cables/spare cores are terminated satisfactorily	alf	X		
No obstructions adjacent to flameproof flanged joint	d	X	X	
Ducts, pipes and enclosures are in good condition	р —	Х	X	
Protective gas is substantially free from contaminants (water, oil, dirt)	p	X	X	
Protective gas flow/pressure is adequate	p p	X		
Pressure and/or flow indicators, alarms and interlocks function correctly	p	X		
Pre-energising purge period is adequate	D	Х		
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	q	X		

Amadeus Pipeline Electrical Inspections

Circle as checked



Х

Х

X

all

all

				an cross prices
18	Cables are installed and screens are earthed in accordance with the	í	V V	
	documentatio0n		^	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with	i		
	the documentation		^	
	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	B

No undue accumulation of dust or dirt
 Electrical insulation is clean and dry

Faults found? (circle as appropriate)

 No:

 Vest

 List action required

 Contractor (write): Inspector

 Date:

 Q

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Device ID or tag

Action requ	uired to make device compliant:	
-	Remediate blue theath + support cuble.	
-	Vaity I.S. barrier installation.	
5		
x		

Reviewed by: N. GREEN Date: 27(9/1) Priority:

Comments:		
comments.		
1		
	_	
All action items now completed:		
,	1	
Job closed:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

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Specifications

16

17

Pre-energising purge period is adequate

Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory

e on or all	
Device ID or tag: TE-56	Asset: M.R. 1/2 OUTLET
Circuit ID: (1029	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data	from	Label
ναια	11 OIII	Lanci

Data	a from Label				_		- \
App Mot	aratus type: (light, JB, or) TEMPERAT	UBE THRUSHIER	Type of protection: etc)	d,e, i, n, p])
Manufacturer: ASHCBOGT Gas group: (IIA/B/C) -118-			2 NO		
Full	model number: T7		Temp class: (T1-T6) _16-			2 DOTAIL
Seri	al number:		Certificate number:	ALK EN 50	17] }
JP C	lass		Test authority: (BAS	, PTB,			1)
			SAA etc)				\mathbf{V}
Nun	nber of cables:]				
_			- 				
	each cabie entry nd manufacturer:	gland 1	gland 2	dthers	6		1
							4
Mod	nd type of protection: (d,e)		•				4
Giai	id type of protection. (d,e)	•]
Insp	ection ———			`	Circle a	s checked	1
mep							
				Applicable to	· · ↓	. ↓	
	A Equipment			protection type:	Internal	External	
1	Equipment (incl group and	temp class) is appropriate for are	a classification	all	X	X_	
2	Equipment ID or circuit ID	is correct		all	Х	Ø	-EQUIP
3	Enclosure, sealing gaskets	s or compounds are satisfactory		all	X	Ø	- lune
4		vidence of unauthorised modificat	ions	all	Х	Ø	Cree C
5	Bolts, cable entries and bl	anking elements are correct and ti	ght	all	Х	8	
6				d	X		
7	Lamp rating, type and pos	ition correct		all	Х		
8	8 Electrical connections are tight		all	X			
9 Hermetically sealed devices are undamaged		n' ;	Х				
10		sure is satisfactory to enclosure a	nd/or covers	n	X		
11	Motor fans have sufficient	clearance		motors only	Х	-	Rune (W)
12	Installation clearly labelled	1		i	Х	Ø	Rune (og
13	Safety barriers/isolators in required	stalled as per certification and sec	urely earthed where	i	х	Ø	
14	Entity calculation/documer	ntation is available		i i	x	X	
	B Installation				<u>.</u>		W/+
1		te, cables are undamaged		all	Х	Q	UV+ CANLE SUPRORT
2	Sealing of ducts and/or co			all	X	0	Chine
3	Stopper boxes or barrier g			d	X		SUPROR
4		and interface with mixed system i		all	X		
5	5 Earthing and bonding connections are tight, in good condition and of sufficient cross section			all	x	Ø	
6			power outlets	X		1	
7			all	X			
8 Automatic electrical protective devices are set correctly and operate within		aíl	x				
0	permitted limits	ions U.X or B have been complied			x		4
9 10	Cables/spare cores are ter		with	all all	X		4
10	No obstructions adjacent to			d an	X	x	•
12	Ducts, pipes and enclosure			p	$\frac{x}{x}$	X	{
13		ally free from contaminants (water	oil dirt)	p p	X	x	1
13	Protective gas flow/pressu		, oii, uiit)	р р	x		1
15				p p	x x		1
	Pressure and/or flow indicators, alarms and interlocks function correctly						1

р

Р

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Х



				a composite
18	Cables are installed and screens are earthed in accordance with the	i	× _	
	documentatio0n		^	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	ì	X	
	the documentation		~	

	o Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	· X	\mathbb{Q}	Coopalion
2	No undue accumulation of dust or dirt	all	Х	<u>e</u>	
3	Electrical insulation is clean and dry	all	Х		

Faults found? (circle as appropriate)

 No:

 Ye:

 List action required

 Contractor (write): Inspector

 Date:

 g (g (g)

Device ID or tag

14

Action required to make device compliant:	
- Equipment J.D. required - Romed. ate blue hearth + Eupport catle.	
- Surface corrosion visible.	
serve concern	

Reviewed by: N. GREEN	
Date: 27/9/11	
Date: 27/9/11 Priority:	

Comments:			
All action items now completed:			
Job closed:	🗖		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17

Ref: 1:\data\sittlencompany operations\darwin\lenders\sbsj11\fyf1 + haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,exr,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag: PT-61	Asset: MR 1/2 SILVO OUTVET.
Circuit ID: TO 32	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: Alight, JB, Motor) りんちちんり	TRANSMETTER	Type of protection: (d,e, i, n, p, tec)	
Manufacturer: ASHCROS	T ROSISMOUNT	Gas group: (IIA/B/C)	
Full model number: 27 30	51744A2021 BB4K	Temp class: (T1-T6)	
Serial number: 01609701	TMSTI	Certificate number: AUSEX 547 AUSEX 12	uqx
IP Class	1	Test authority: (BAS, PTB, SAA etc)	
		- 305/TG4A2B21834K7MSTI	
Number of cables:	1		
		- BUNG	
For each cable entry	gland 1	rgland-2 others	
Gland manufacturer:	Alla	REDART	
Model:	N4203	PA-D	
Gland type of protection: (d,e)	NO CERT		

Insp	ection	• • • • •	Circle a	s checked	I
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	
2	Equipment ID or circuit ID is correct	all	X		
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X –	K	
4	There are no damage or evidence of unauthorised modifications	all	x —	Ø	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	82	LOOSR GRAND
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n',	· X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X .		
12	Installation clearly labelled	i	X	$(\varkappa$	
13	Safety barriers/isolators installed as per certification and securely earthed where required	í	x	Q	
14	Entity calculation/documentation is available	i	X	X	

B Installation

Ń

	B Installation				- 11 x - C M
1	Type of cable is appropriate, cables are undamaged	all	X	62	SUPPO
	Sealing of ducts and/or conduits is satisfactory	all	Х	8	SUPPO
	Stopper boxes or barrier glands are properly filled	d	Х		7
	Integrity of conduit system and interface with mixed system is maintained	all	Х		7
	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	х	Ø	
	Fault loop impedance is satisfactory	power outlets	Х		7
	Insulation resistance is satisfactory (check only during initial inspection)	aíl	X		
	Automatic electrical protective devices are set correctly and operate within permitted limits	all	х		
	Special certification conditions U,X or B have been complied with	all	X		
	Cables/spare cores are terminated satisfactorily	alí	X]
	No obstructions adjacent to flameproof flanged joint	d	Х	X	
	Ducts, pipes and enclosures are in good condition	р	Х	X	7
	Protective gas is substantially free from contaminants (water, oil, dirt)	р	Х	Х	7
	Protective gas flow/pressure is adequate	р	Х		7
	Pressure and/or flow indicators, alarms and interlocks function correctly	р	Х		
	Pre-energising purge period is adequate	p	Х]
	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	Х]



Х

all

		1997 - T. S. S. S. S. S. S. S. S. S. S. S. S. S.	-	and the Direct
18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	X	
	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	\otimes

No undue accumulation of dust or dirt Electrical insulation is clean and dry 3

Faults found? (circle as appropriate)

No:	
List action required	
	-
Contractor (write): Inspector Supervisor	Client (write): Inspector
Date: $9(9 1)$	Date:

Device ID or tag

Action r	Action required to make device compliant:				
	-	Tighter	loose	gland	5 × 3
	-	Remarkate	due	sheath	+ support cable.

Reviewed by: N. GREEN Date: 23/9/11 Priority:

Comments:			
			
All action items now completed: Job closed:	E		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices Based on AS/NZS 60079 part 17

Ref: I:/data/sitzler/company operations/darwin/lenders/sbsj11/fyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

	General	,						
15 7	Device ID or tag:	250-100	/ZSO100).	Asse	t: Sî	01-100	UNIT 7	SKID INLE
	Circuit ID:	J10T		Phys	ical location: C	HANEL	JSLAND	
	Area classification	:		Envi	onment: (hot?)	OUTDOO	R	

Data from Label		
Apparatus type: (light, JB, Motor) VALVE LIMIT SWETCH	Type of protection: (d,e, i, n, p etc)	NO CERTIFICATION
Manufacturer: BETTIS WESTLOCK	Gas group: (IIA/B/C)	
Fuil model number: 33-021 3449 BY220	De Temp class: (T1-T6) TG	
Serial number: -000		
IP Class	Test authority: (BAS, PTB, SAA etc)	· · ·
Number of cables:		
For each cable entry gland 1	gland 2 others	
Gland manufacturer: CRCCRRED		

ON

			· · ·				-
Mod	el: ,	· · · · · · · · · · · · · · · ·	1	1.1.1		·· ·	
Glar	nd type of protection: (d,e)						
Insp	ection		Vie Charles and An	 	Circle a	s checked	Ł
			i a provincia de la companya de la companya de la companya de la companya de la companya de la companya de la c	Applicable to		· 🖌	
	A Equipment	*		protection type:	Internal	External	_
1	Equipment (incl group and t	temp class) is appropriate for	area classification	, all.	1, X,	X	
2	Equipment ID or circuit ID is	s correct		all	X	S I	
3	Enclosure, sealing gaskets	or compounds are satisfactory	y	all .	X '	. 0	
4	There are no damage or ev	vidence of unauthorised modifi	cations	all	X	· 🐼	
5	Bolts, cable entries and blai	anking elements are correct an	d tight	. all ·	. X .	: 00	OPEN ENTRY
6	Flange facings are clean an	nd undamaged	· · · · · · · · · · · · · · · · · · ·	d	X	-	ENTON
7	Lamp rating, type and positi	tion correct		all	X		210 (2)
8	Electrical connections are ti	ight		all	X		
9	Hermetically sealed devices	s are undamaged		n .	X		
10	Restricted breathing enclose	sure is satisfactory to enclosure	e and/or covers	n	X		
11	Motor fans have sufficient c			motors only	X	•	
12	Installation clearly labelled			i	X	X	1.5. 2
13		stalled as per certification and s	securely earthed where	i	Х	х	0.6.3
14	Entity calculation/document	tation is available		i	X	X	

Entity calculation/documentation is available

۰.

B Installation CABLE 1 Type of cable is appropriate, cables are undamaged all Х SUPPERT 2 Sealing of ducts and/or conduits is satisfactory X all Х X 3 Stopper boxes or barrier glands are properly filled d PIPE 4 Integrity of conduit system and interface with mixed system is maintained all Х 5 Earthing and bonding connections are tight, in good condition and of sufficient all \otimes х cross section 6 Fault loop impedance is satisfactory power outlets Х Insulation resistance is satisfactory (check only during initial inspection) Х 7 ail 8 Automatic electrical protective devices are set correctly and operate within all Х permitted limits 9 Special certification conditions U,X or B have been complied with all Х 10 Cables/spare cores are terminated satisfactorily all Х 11 No obstructions adjacent to flameproof flanged joint d Х X 12 Ducts, pipes and enclosures are in good condition Х Х p 13 Protective gas is substantially free from contaminants (water, oil, dirt) Х Х р Х Protective gas flow/pressure is adequate 14 p Pressure and/or flow indicators, alarms and interlocks function correctly 15 p Х 16 Pre-energising purge period is adequate Х D 17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous р Х area are satisfactory

Amadeus Pipeline Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	ŝ	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Fliabollineur				CONTRACTOR STATES
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Q	wearwor
2	No undue accumulation of dust or dirt	all	X	8	-
3	Electrical insulation is clean and dry	all	Х		

Faults found? (circle as appropriate)

No:			
Yes:	List action required		_
Contra	ctor (write): Inspector Supervisor	Client (write): Inspector	
Date:	10/9/11 N. GREEN	Date:	

Device ID or tag
Action required to make device compliant:
- Provide support to cable resting upon pipewsk.
- Nil Ex certification available.
- Open entry requiring blank plug.
- Review installation method of protection which unreally
- Review installation method of protection which arreadly has not Ex protection unless I.S. barrier installed.
- Equipment J.D. required.

	Reviewed by: M-GREEN Date: 269 " Priority:
• .	

Comments:		
All action items now completed: Job closed:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17

Ref: 1:\data\sizier\company operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General	1					
Device ID or tag: SVC - 100	/SV0-100	Asset:	SOV	-100	UNIT 7 SI	up incet
Circuit ID:		Physical location:	CHA	NEL	TSLAND)
Area classification :		Environment: (hot	:?)			
Data from Label						

Apparatus type: (light, JB, Motor) SOLE NOTO VALVE	Type of protection: (d,e, i, n, p etc) $\overleftarrow{\xi} \times \overrightarrow{d}$
Manufacturer: BIFOLD	Gas group: (IIA/B/C)
Full model number: 38 - 961	Temp class: (T1-T6) T6
Serial number: 0100 - 0694-0100-0692	Certificate number: ALLS. Ex Otal 1554 X
IP Class IP 6	Test authority: (BAS, PTB, BACEGFA
Number of cables: 2	96D1079

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO	ALEO	
Model:	WG 202	6-6-202- ·	2 · · · · · · · · · · · · · · · · · · ·
Gland type of protection: (d,e)			· · ·
nspection	$\{1,\dots,n\} = \{1,\dots,n\} = \{1,1,\dots,n\}$	e at mithersplac	Circle as checked
inspection			- Circle as checked

Inspection -

msp			Circle a	s chepked	1
	Lack. 12	. •	🙀 n	20	
		Applicable to	+	+	
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	, all	X	X]
2	Equipment ID or circuit ID is correct	all	X	X	-CIRCUIT
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	00	-20
4	There are no damage or evidence of unauthorised modifications	all	X	8	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	(X)	
6	Flange facings are clean and undamaged	· d	X		
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n	'- X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	Х	1	
12	Installation clearly labelled	i	X	X	
13	Safety barriers/isolators installed as per certification and securely earthed where	i	X	X	
	required		^		
14	Entity calculation/documentation is available	i	X	Х	

B Installation

	D Installation			
1	Type of cable is appropriate, cables are undamaged	all	X	Ø
2	Sealing of ducts and/or conduits is satisfactory	all	X	Ø
3	Stopper boxes or barrier glands are properly filled	d	X	
4	Integrity of conduit system and interface with mixed system is maintained	all	X	
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	×	\otimes
6	Fault loop impedance is satisfactory	power outlets	X	
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X	
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	×	
9	Special certification conditions U,X or B have been complied with	all	X	
10	Cables/spare cores are terminated satisfactorily	all	X	0
11	No obstructions adjacent to flameproof flanged joint	d	X	×
12	Ducts, pipes and enclosures are in good condition	р	X	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	X
14	Protective gas flow/pressure is adequate	р	Х	
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X	
16	Pre-energising purge period is adequate	р	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	Î	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	o Environment			
1 [,]	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	R
2	No undue accumulation of dust or dirt	all	Х	ð
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

 No:

 Ver

 List action required

 Contractor (write): Inspector

 Supervisor

 Client (write): Inspector

 Date:

 Image: Im

Device	ID or	tag
--------	-------	-----

•	nake device compliant:	9		
- Equipa	ment a cable	J.D requi	red	
	Ex certification			
	in certified			

Reviewed by: N. GREEN Date: 299/11 Priority:

r		-
Comments:		
All action items now completed:		
Job closed:		
JOD CIOSEA:	LJ	

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref: I:\data\sitzlercompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

Gen	eral							
		UNKNOLUN	Asset: SDV	1 Str	100	JB	UT SI	HO INCET
Circi	uit ID: JIO		Physical location:	CHANNE	_			
Area	a classification :	<u> </u>	Environment: (hot?)		-			1
					_			-
	a from Label aratus type: (light, JB,		Type of protection: //	doippa				1
Moto	or)	JB	Type of protection: (etc)	u,e, i, ii, p <i>E</i> ;				
Man	ufacturer: Go	VAN	Gas group: (IIA/B/C)		IB			
Fuíl	model number: FL	1441	Temp class: (T1-T6)		т6			
Seria	al number:		Certificate number:	Ause	x157			
IP C	lass (5	Test authority: (BAS, SAA etc)	, PTB,]
	6	<u> </u>	SAA elc)]
Num	iber of cables:	3						
For	each cable entry	gland 1	gland 2		others			
	nd manufacturer:	ALLO ?	j				_]
Mod								-
Giar	nd type of protection: (d,e)							1
Inspe	ection ———				→	Circle as	checked	1
						1		
				Applicable			+ .	
4	A Equipment	d temp class) is appropriate for an	an alexation	protection all	ype:	Internal X	External X	
1 2	Equipment ID or circuit ID		ea classification	all		- Â	Ô	Emiliant
23		ts or compounds are satisfactory		all	-	X	X	EQUINMENT
4		evidence of unauthorised modifica	tions	all	_	X	X	'D
4 5		lanking elements are correct and t		all		X	X	
6	Flange facings are clean a		ugnt	d		X		
7	Lamp rating, type and pos			all		X		
8	Electrical connections are			all		X		
9	Hermetically sealed device			an		X		
10	Restricted breathing end	osure is satisfactory to enclosure a	and/or covers			X		
11	Motor fans have sufficient			motors	only	X		
12	Installation clearly labelled			iniotors	Unity	X	Х	
13		nstalled as per certification and se	curely earthed where	ì		x	x	
14	required Entity calculation/docume	ntation is available		i		x	×	
14						Χ	<u> </u>	i -
	B Installation	the appleasance and an and		- 11	_	V	~	-
1		ate, cables are undamaged		all		X	X	-
2	Sealing of ducts and/or co			all d		X X	<u> </u>	-
3	Stopper boxes or barrier g	n and interface with mixed system	is maintained	a(I		X		1
4 5		nections are tight, in good condition		all			<u> </u>	in and
5	cross section	inections are light, in good condu-	on and or sumclent	all		Х	\otimes	EARTH
6	Fault loop impedance is s			power o	utlets	X]
7		atisfactory (check only during initia		all		X		
8		ctive devices are set correctly and	operate within	all		x		
9	permitted limits	tions U,X or B have been complie	d with	all		Х		-
5 10	Cables/spare cores are te			alí		X		1
11		to flameproof flanged joint		d		X	X	1
12	Ducts, pipes and enclosur			p		X	X	1
13		tially free from contaminants (wate	er, oil, dirt)	P P		X	X	1
14	Protective gas flow/press			p p		X	-	1
15		cators, alarms and interlocks funct	tion correctly	p		X		1
16	Pre-energising purge peri			р р		X		1
17		e barriers of ducts exhausting the	gas into hazardous	<u>р</u>				1
	area are satisfactory		-	· ·	_	Х		

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C Environment			0
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	X
2	No undue accumulation of dust or dirt	all	X	$\overline{\mathbf{x}}$
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector	Supervisor	Client (write): Inspector	
N.G.C.	DEN		
Date: 19 al 11		Date:	

Device ID or tag

	ent I.O.			
Varily	Ex radi	gs of	calle	glands.
		d		

Reviewed by: N. CREDN Date: 2 C/9/11 Priority:

Comments:			
All action items now completed:			
All action kents now completed.			
Job closed:			
Device now fully compliant, spreadshee	t register has been u	Indated	
Currentines (unite)	a register filds been b	ipuatou	
Supervisor (write):			
Date:			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref. I:\data\sitzlencompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheel for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Spec	cifications					
Gene	eral					_
Devi	ce ID or tag: (JR-UNICHOWN)	Asset: UNIT	7 SILIO - EA	00		
Circu	uit ID:	Physical location:	CHANNEL	scano]
Area	classification :	Environment: (hot?)				1
Data	from Label	-				-
	anatus turas (light ID	Type of protection: (c	d,e, i, n, p	1		7
Moto		etc)	Ex	d		-
	ufacturer: CROUSE HINDS	Gas group: (IIA/B/C)				_
	model number: GUA	Temp class: (T1-T6)				_
Seria	al number:	Certificate number:	AUS ER 3	21 4		-
IP C	lass 66/67	Test authority: (BAS, SAA etc)	PIB,			
Num	ber of cables:]				
For	each cable entry gland 1	gland 2	other	\$		
	d manufacturer:	giana z				
Mod						
Glan	d type of protection: (d,e)	<u>n</u>			_	
Inspe	ection		Applicable to	Circle a	is checked	ł
	A Equipment	1	protection type:	Internal	External	1
1 2	Equipment (incl group and temp class) is appropriate for area Equipment ID or circuit ID is correct	a classification	all		X	-EQ
3	Enclosure, sealing gaskets or compounds are satisfactory		all	1 x	× ×	- CARLE
4	There are no damage or evidence of unauthorised modificati	ions	all	Х	8	
5	Bolts, cable entries and blanking elements are correct and tig	ght	all	X	Ø	
6 7	Flange facings are clean and undamaged		d all			
8	Electrical connections are tight		all	× X		
9	Hermetically sealed devices are undamaged		n	X		
10	Restricted breathing enclosure is satisfactory to enclosure an	nd/or covers	n	X		
11	Motor fans have sufficient clearance		motors only	X	8	T.S. xi cale
12 13	Installation clearly labelled Safety barriers/isolators installed as per certification and sec	urely earthed where	<u>i</u>	X	×	T.X . RI CONE
14	required Entity calculation/documentation is available		i	- x -	X	
	B Installation					
1	Type of cable is appropriate, cables are undamaged		all	X	R	SUPPORT.
2	Sealing of ducts and/or conduits is satisfactory		all	X	X	
3	Stopper boxes or barrier glands are properly filled		d	X		-
4 5	Integrity of conduit system and interface with mixed system is Earthing and bonding connections are tight, in good condition cross section		all all	X X	X	-
6	Fault loop impedance is satisfactory		power outlets	X		-
7	Insulation resistance is satisfactory (check only during initial	inspection)	all	X		
8	Automatic electrical protective devices are set correctly and permitted limits	operate within	all	x		
9	Special certification conditions U,X or B have been complied	with	all	Х		1
10	Cables/spare cores are terminated satisfactorily		all	X		4
11	No obstructions adjacent to flameproof flanged joint		d	X	X	4
12 13	Ducts, pipes and enclosures are in good condition Protective gas is substantially free from contaminants (water	oil did)	p	X	X	4
13	Protective gas flow/pressure is adequate		p p	$\frac{1}{x}$		1
15	Pressure and/or flow indicators, alarms and interlocks function	on correctly	p	X		1
16	Pre-energising purge period is adequate		p	Х		
17	Condition of spark/particle barriers of ducts exhausting the garea are satisfactory	as into hazardous	р	x		



Cables are installed and screens are earthed in accordance with the documentatio0n	ì	x	I
The circuit is isolated from earth or earthed at one point only	i	X	
Separation is maintained with non-IS circuits	1	X	
As applicable, short circuit protection of the power supply is in accordance with	i	Y	
the documentation		^	
	documentatio0n The circuit is isolated from earth or earthed at one point only Separation is maintained with non-IS circuits As applicable, short circuit protection of the power supply is in accordance with	documentatioOn i The circuit is isolated from earth or earthed at one point only i Separation is maintained with non-IS circuits i As applicable, short circuit protection of the power supply is in accordance with i	documentatio0n X The circuit is isolated from earth or earthed at one point only i X Separation is maintained with non-IS circuits i X As applicable, short circuit protection of the power supply is in accordance with i x

	C Environment			-
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	\bigotimes
2	No undue accumulation of dust or dirt	all	Х	Ø
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

 Contractor (write): Inspector
 Supervisor

 Date:
 Image:

Device ID or tag

Equipment Provide	+ c condu	alle if s	I.D.	re	gine	d.	-1		
	condu	it s	10.001	2	1		-1	A. 1	
				*	to	black	shew	thed	cube.
Provide	line								
	1 - Viac								Provide live should to black theathed calle.

Reviewed by: Date: Call N. CREEN Priority:

Comments:			
All action items now completed:			
Job closed:			
Device now fully compliant, spreadshee	t register has been	updated	
Supervisor (write):		-	
Date:			
Date:			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref: I:\data\sitzlencompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications	
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Photo 884/885

General

Device ID or tag:	DPT - NO TAG	Asset: UPT #7 CTANDBY RON
Circuit ID:	-	Physical location: CHANNEL 15
Area classification :		Environment: (hot?)

Data from Label

Data from Label	HOUEGUBLE.
Apparatus type: (light, JB, DIFF. PRESI, TRAC.	Type of protection: (d,e, i, n, p etc)
Manufacturer: Rosimorat	Gas group: (IIA/B/C)
Full model number: 3051 CD3A02ALBM5K7 55	Temp class: (T1-T6)
Serial number: RSD880444	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1 🖬	gland 2	others Rul
Gland manufacturer:	2		redat
Model:			PA-D
Gland type of protection: (d,e)			d

Inspection -

A Equipment	Applicable to- protection type:	Internal_	External	_
Equipment (incl group and temp class) is appropriate for area classification	` all	X	X	. =()
Equipment ID or circuit ID is correct	all	X	\otimes	-CCT
Enclosure, sealing gaskets or compounds are satisfactory	all	X _	8	
There are no damage or evidence of unauthorised modifications	all	Х	8	
Bolts, cable entries and blanking elements are correct and tight	all	Х	Ø	1
Flange facings are clean and undamaged	ď	X		
Lamp rating, type and position correct	all	X		
Electrical connections are tight	all	X		
Hermetically sealed devices are undamaged	n	X		
Restricted breathing enclosure is satisfactory to enclosure and/or covers	n ·	X –]
Motor fans have sufficient clearance	motors only	X –		
Installation clearly labelled	<u> </u>	X	\otimes	3 Hear
Safety barriers/isolators installed as per certification and securely earthed where required	i	×	8	2
Entity calculation/documentation is available	i	X	X	•

					CAAL
1	Type of cable is appropriate, cables are undamaged	ail	X	\otimes	SUAPPER
2	Sealing of ducts and/or conduits is satisfactory	all	X	X	-00
3	Stopper boxes or barrier glands are properly filled	d	X		-00
4	Integrity of conduit system and interface with mixed system is maintained	all	Х		
5	Earthing and bonding connections are tight, in good condition and of sufficient	all	x	x	
	cross section		^		
6	Fault loop impedance is satisfactory	power outlets	X		
7	Insulation resistance is satisfactory (check only during initial inspection)	all	Х		
8	Automatic electrical protective devices are set correctly and operate within	all	X		
	permitted limits		^		32
9	Special certification conditions U,X or B have been complied with	all	Х		all the second
10	Cables/spare cores are terminated satisfactorily	all	X		The second second
11	No obstructions adjacent to flameproof flanged joint	d	X	X	- Ellan and
12	Ducts, pipes and enclosures are in good condition	p	X _	X	
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	X	X	
14	Protective gas flow/pressure is adequate	p	X		
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X		
16	Pre-energising purge period is adequate	р	X		
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	q	×		

Amadeus Pipeline Electrical Inspections

SITZLER

Circle as checked

-



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

1	Apparatus adequately protected from corrosion, weather, vibration, other	alí	X	×
2	No undue accumulation of dust or dirt	all	Х	\bigotimes
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:

 Contractor (write): Inspector
 Supervisor
 Client (write): Inspector

 Date:
 /0/9/11
 Date:

Device ID or tag

	equired to make device compliant:			
-	Equipment + calle I.D.	request		
	provide calle support			
-	Remediate Blue steath.		1	1
-	Verity I.S. barrier installed	(+ Ex	rodily of	daile.

Reviewed by: N. GREEN Date: 26/9/11 Priority:

Comments:				
All action items now completed:				
Job closed:				
Device now fully compliant, spreadshe	et register has be	en updated	-	
Supervisor (write):		en apacióa		
Date:				

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref. I:\data\sitzlencompany operations\darwin\lenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

•								
Gen								-
Dev	ice ID or tag: (250/25	sc(us) =	Asset: ONIT #	7 STAN	10 182	non		
Circ	uit ID:		Physical location:	CHANNEL	ISLA	NO		
Area	a classification :		Environment: (hot?)	OUTDO	OR		-	1
	a from Label aratus type: (light, JB,		Type of protection: (50 0	TALL		-
Mote		MIT SWITCH	etc)	a,e, I, A, p				
Man	ufacturer: WES	TLOCK	Gas group: (IIA/B/C))				
Full		49 - BY 2300	Temp class: (T1-T6)					
Seri	al number:	-000	Certificate number:			_]
IP C	lass		Test authority: (BAS SAA etc)	, PTB,]
Num	ber of cables:		1					
Han			RUNG			Δ		
	each cable entry	gland 1	BUNG gland 2	-		HARPTOR		_
	nd manufacturer:	ALLO ?	UNCERTIF	FIED		SE HIN	105	
Mod	-					MNI		
Glar	nd type of protection: (d,e)				Ex			
					Ex II	DEU A	! 20	
Insp	ection						s checked	ł
•				Applicable	to	1	T	
	A Equipment			protection t		Internal	External	
1		d temp class) is appropriate for area	a classification	all	ypo.	Х	X	
2	Equipment ID or circuit ID			all		X	Ô	-EQ ID
						X		- 007
3		ts or compounds are satisfactory		alt	•		X	
4		evidence of unauthorised modificati		all		X	X	
5		lanking elements are correct and tig	ght	all		Х	X	
6	Flange facings are clean			d		Х		
7	Lamp rating, type and pos			all		Х		
В	Electrical connections are			all		Х		
9	Hermetically sealed device			n		X		
10	Restricted breathing enclo	osure is satisfactory to enclosure an	nd/or covers	n		Х		
11	Motor fans have sufficient			motors	only	Х		
12	Installation clearly labelle	3		i		X	X	
13	Safety barriers/isolators in required	nstalled as per certification and sec	urely earthed where	i		X	X	
14	Entity calculation/docume	ntation is available		i		Х	x	
	B Installation							
1	Type of cable is appropria	ate cables are undamaged		all		Х	<u>(R)</u>	SUPPOR-
2	Sealing of ducts and/or co			all		X	X	1 SULPER'
3	Stopper boxes or barrier			d d		X	<u> </u>	-
4	Integrity of conduit system	and interface with mixed system is	s maintained	all		<u> </u>		4
		nections are tight, in good condition		all				-
5	cross section					X	X	
6	Fault loop impedance is s			power o	utlets	X		4
7		tisfactory (check only during initial		all		X		1
8	Automatic electrical prote permitted limits	ctive devices are set correctly and o	operate within	all		х		
9		tions U,X or B have been complied	with	all		X		1
10	Cables/spare cores are te			alí		X		1
11		to flameproof flanged joint		d		X	X	1
12	Ducts, pipes and enclosu			p D		X	x -	1
		ially free from contaminants (water	oil did)			X		-
13				p			<u> </u>	4
14	Protective gas flow/press			р		X		-
15		cators, alarms and interlocks function	correctly	p		<u>X</u>		4
16	Pre-energising purge peri	oo is adequate		р		Х		4
17		e barriers of ducts exhausting the g	as into hazardous	P		Х		1
	area are satisfactory			1				1



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	×	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	Ø
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:		
List action required		
Contractor (write): Inspector Supervisor	Client (write): Inspector	
Date: 10/9/11	Date:	_

Device ID or tag

Action requ	aired to make device compliant:
-	Equipment + Cable I.D. required
-	Cable support required
	N:1 Ex certification available; further raview of pritedian
	method required.
-	Oncertified bing in Stalled.

Reviewed by: N. GREZN Date: 26/9/11 Priority:

Comments:			
All action items now completed:			
Job closed:			
Device now fully compliant, spreadsheet	register has been updat	ted	
Supervisor (write):			
eupernoor (mitte)			

Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER

Based on AS/NZS 60079 part 17

Ref: 1:\data\sitzle/company operations\darwin\tenders\sbsj11\yf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,exi,ex-n,ex-p and other ex devices.doc

Specifications

-1

Ge	neral	N					
De	evice ID or tag: PIT - 1	47	Asset: UNIT	7 MA STAN	087 Rui	J]
Cir	rcuit ID: NONE		Physical location:	CHANEL J			1
Are	ea classification :		Environment: (hot?)		OR SUNS		
							11
Da	ta from Label			PARTI,	ALLY LE	SABLE	
	paratus type: (light, B	DE TRAKERETCO	Type of protection: (d,e, i, n, p · E ×	: []]		INDICATIV
		BE TRANSMITTER	etc)	/}	Loj a		ONLY
Ma	anufacturer: ROSEN	LOUNT	Gas group: (IIA/B/C)		11 C		
Fu	ll model number: 3055	TG 9A21321834M5E7	Temp class: (T1-T6)	14(70	2) T5 (410	°C}	
Se	rial number: 🥼 🖉 🖒	061 984-9	Certificate number:	AUS Ex.	299 x	1347%	
IP	Class	1965	Test authority: (BAS SAA etc)	, РТВ,' ́	and the second		
Nข	mber of cables:]				
		0	ADAPT		*		
	or each cable entry	gland 1	gland-2				
-	and manufacturer:	ALCO	RUSEMOUN	T NION	CERTIF	ذلتتي	
	odel: and type of protection: (d,e)	FLPW 202	ISSEP	10.0			
Gla	and type of protection: (d,e)	and the second second second second second second second second second second second second second second second	100 A				
					(1.4.) (1.4.) (1.4.)		
Insp	pection	and the second s	3 40 8 1		Circle as	checked	
					100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100		
	J. c.	section to a section	- Fi	Applicable to	. 🚽	. 🚽	
	A Equipment			protection type:	Intérnal	External	
1	Equipment (incl group and	temp class) is appropriate for are	a classification	all	, X [Χ.	
2	Equipment ID or circuit ID	is correct	· · · .	all'	Y X		CIRC
3	Enclosure, sealing gasket	s or compounds are satisfactory	V	all	X .	R	REC
4	There are no damage or e	evidence of unauthorised modificati	ons	all	· X	*	DOG: TAG
5	Bolts, cable entries and bl	lanking elements are correct and tig	ght	all	X .	Ø	
6	Flange facings are clean a	and undamaged	and the second	d d	· ×		
7	Lamp rating, type and pos	sition correct	tain, N	all .	X 5		
8	Electrical connections are	tight		all	·X		
9	Hermetically sealed device	es are undamaged		n -	۰X		
10	Restricted breathing enclo	osure is satisfactory to enclosure an	nd/or covers	n "	Ϋ́Χ	,	2
11	Motor fans have sufficient	clearance		motors only	X * * *		1
12	Installation clearly labelled			i	X	Х	BLUE SL
13		stalled as per certification and sec	urely earthed where	í	x	x	
	required	ato No. a ta sa salat la					
14	Entity calculation/docume	ntation is available		í <u> </u>	Х	X	
	B Installation						
						_ <u>©_</u>	
1	Type of cable is appropria			all	X	A	
2	Sealing of ducts and/or co	onduits is satisfactory		all	X		
2 3	Sealing of ducts and/or co Stopper boxes or barrier g	onduits is satisfactory glands are properly filled		all d	X X		
2 3 4	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system	onduits is satisfactory glands are properly filled and interface with mixed system is		ail d all	X		
2 3	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con	onduits is satisfactory glands are properly filled		all d	X X		
2 3 4 5	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con- cross section	Induits is satisfactory glands are properly filled n and interface with mixed system is nections are tight, in good condition		ail d all all	X X X X	Ø	
2 3 4 5 6	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is se	Induits is satisfactory glands are properly filled n and interface with mixed system is nections are tight, in good condition alisfactory	n and of sufficient	ail d all ail power outlets	X X X X X	Ø	
2 3 4 5 6 7	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Insulation resistance is sa	Induits is satisfactory plands are properly filled n and interface with mixed system is nections are tight, in good condition atisfactory tisfactory (check only during initial	n and of sufficient	ail d all all power outlets all	X X X X X X X	Ø	
2 3 4 5 6 7	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Insulation resistance is sa Automatic electrical protect	Induits is satisfactory glands are properly filled n and interface with mixed system is nections are tight, in good condition alisfactory	n and of sufficient	ail d all ail power outlets	X X X X X	Ø	
2 3 4 5 6 7 8	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Insulation resistance is sa Automatic electrical protect permitted limits	anduits is satisfactory plands are properly filled n and interface with mixed system is nections are tight, in good condition atisfactory tisfactory check only during initial stive devices are set correctly and o	n and of sufficient	ail d all all power outlets all all	X X X X X X X	0	
2 3 4 5 6 7 8 9	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Insulation resistance is sa Automatic electrical protect permitted limits Special certification condit	anduits is satisfactory plands are properly filled n and interface with mixed system is nections are tight, in good condition atisfactory tisfactory (check only during initial citive devices are set correctly and o tions U,X or B have been complied	n and of sufficient	ail d all all power outlets all all all	X X X X X X X X	0	
2 3 4 5 6 7 8 9 10	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Insulation resistance is sa Automatic electrical protect permitted limits Special certification condit Cables/spare cores are te	anduits is satisfactory plands are properly filled n and interface with mixed system is nections are tight, in good condition atisfactory tisfactory (check only during initial citive devices are set correctly and of tions U,X or B have been complied rminated satisfactorily	n and of sufficient	ail d all all all all all all all	X X X X X X X X X X	2 2 	
2 3 4 5 6 7 8 9 10 11	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Insulation resistance is sa Automatic electrical protect permitted limits Special certification condit Cables/spare cores are te No obstructions adjacent t	anduits is satisfactory plands are properly filled in and interface with mixed system is nections are tight, in good condition alisfactory tisfactory (check only during initial citive devices are set correctly and tions U,X or B have been complied rminated satisfactorily to flameproof flanged joint	n and of sufficient	ail d all all power outlets all all all all all d	X X X X X X X X X X X X		
2 3 4 5 6 7 8 9 10 11 12	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Insulation resistance is sa Automatic electrical protec permitted limits Special certification condit Cables/spare cores are te No obstructions adjacent t Ducts, pipes and enclosur	anduits is satisfactory plands are properly filled in and interface with mixed system is nections are tight, in good condition alisfactory tisfactory (check only during initial otive devices are set correctly and of tions U,X or B have been complied rminated satisfactorily to flameproof flanged joint es are in good condition	n and of sufficient inspection) operate within with	ail d all alł power outlets all all all all d p	X X X X X X X X X X X X X X	X	
2 3 4 5 6 7 8 9 10 11 12 13	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Insulation resistance is sa Automatic electrical protec permitted limits Special certification condit Cables/spare cores are te No obstructions adjacent t Ducts, pipes and enclosur Protective gas is substanti	anduits is satisfactory plands are properly filled in and interface with mixed system is nections are tight, in good condition alisfactory tisfactory (check only during initial otive devices are set correctly and tions U,X or B have been complied rminated satisfactorily to flameproof flanged joint es are in good condition ially free from contaminants (water	n and of sufficient inspection) operate within with	ail d all all power outlets all all all all d p p	X X X X X X X X X X X X X X X X X X X		
2 3 4 5 6 7 8 9 10 11 12 13 14	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con cross section Fault loop impedance is sa Automatic electrical protect permitted limits Special certification condit Cables/spare cores are te No obstructions adjacent t Ducts, pipes and enclosur Protective gas is substanti Protective gas flow/pressu	anduits is satisfactory plands are properly filled and interface with mixed system is nections are tight, in good condition atisfactory tisfactory (check only during initial ctive devices are set correctly and d tions U,X or B have been complied rminated satisfactorily to flameproof flanged joint es are in good condition fally free from contaminants (water- ure is adequate	n and of sufficient inspection) operate within with , oil, dirt)	ail d all all power outlets all all all all d p p p	X X	X	
2345567789101112131415	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding com cross section Fault loop impedance is sa Automatic electrical protect permitted limits Special certification condit Cables/spare cores are te No obstructions adjacent t Ducts, pipes and enclosur Protective gas is substanti Protective gas flow/pressu Pressure and/or flow indic	anduits is satisfactory plands are properly filled and interface with mixed system is nections are tight, in good condition atisfactory tisfactory (check only during initial ctive devices are set correctly and d tions U,X or B have been complied rminated satisfactorily to flameproof flanged joint es are in good condition fally free from contaminants (water ire is adequate ators, alarms and interlocks function	n and of sufficient inspection) operate within with , oil, dirt)	ail d all all all all all all d p p p p	X X	X	
2 3 4 5 6 7 8 9 10 11 12 13 14	Sealing of ducts and/or co Stopper boxes or barrier g Integrity of conduit system Earthing and bonding con- cross section Fault loop impedance is sa Automatic electrical protec permitted limits Special certification condit Cables/spare cores are te No obstructions adjacent t Ducts, pipes and enclosur Protective gas is substanti Protective gas flow/pressu Pressure and/or flow indic Pre-energising purge period	anduits is satisfactory plands are properly filled and interface with mixed system is nections are tight, in good condition atisfactory tisfactory (check only during initial ctive devices are set correctly and d tions U,X or B have been complied rminated satisfactorily to flameproof flanged joint es are in good condition fally free from contaminants (water ire is adequate ators, alarms and interlocks function	n and of sufficient inspection) operate within with , oil, dirt)	ail d all all power outlets all all all all d p p p	X X	X	



		200 Co. St.		
18	Cables are installed and screens are earthed in accordance with the	i	×	
	documentatio0n		^	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	×	
	the documentation		^	

	O Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	\otimes	1
2	No undue accumulation of dust or dirt	all	Х	8	DIRE/INSects
3	Electrical insulation is clean and dry	all	Х		

· Faults found? (circle as appropriate)

No:	64.4	
Yes:	List action required	
Contra	ctor (write): Inspector Supervisor	Client (write): Inspector
Date:	10/9/11	Date:

Device ID or tag

Action re	guired to make device compliant:
-	Equipment + cut I.D. reminized
-	Remediate sheath to smit installation of Exior End.
-	Equipment + cct J.O. required Remediate sheath to smit installation of Exior End. Non-oplate partially legible + appears flame prost
	only rather than I.S. Here Exd undered.
	Replace uncertified plug.
-	Flanepath @ gland compromised by Just / insect nesting.
5.58	Lo cleaning required @ gland entry.
-	Verity I.S. verins flamproof method of protection.
	by: N. GREEN

			_
Comments:			
All action items now completed:			
Job closed:			
	. ,		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref: |:/data/sitzlencompany operations/darwin/tenders/sbsj11/fyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d.ex-e.exi,ex-n,ex-p and other ex devices.doc

Specifications

General Device ID or tag: (FE 122A /B) Asset: UNIT 7 STANDBY RUN Circuit ID: Physical location: Area classification : Environment: (hot?)

Data from Label		LLEGIRLE	DUE TO C	OVER
Apparatus type: (light, JB, TULRIDE ELOW METER	Type of protection: (d,e, i, n, p etc)	、		
Manufacturer: TRZ - ELSTER	Gas group: (IIA/B/C)	~	-	
Full model number: VG400 PNDD NSI 600	Temp class: (T1-T6)	<u> </u>		
Serial number: 800 46289 (2000	Certificate number:	~		
IP Class	Test authority: (BAS, PTB, SAA etc)	~		

Number of cables:

VENDOR ADADTORYTRANSMITIER						
For each cable entry	gland 1	gland 2	others			
Gland manufacturer:						
Model:	-					
Gland type of protection: (d,e)	1					

Insp	ection —		Circle a	s checked	Н
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	
2	Equipment ID or circuit ID is correct	all	Х	Ø	-EQ
3	Enclosure, sealing gaskets or compounds are satisfactory	afl	Х	Ø	- CCT
4	There are no damage or evidence of unauthorised modifications	all	X		
5	Bolts, cable entries and blanking elements are correct and tight	all	X		
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X]
8	Electrical connections are tight	all	X]
9	Hermetically sealed devices are undamaged	n	Х]
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n ·	Х		
11	Motor fans have sufficient clearance	motors only	X ^r]
12	Installation clearly labelled	i	X	X	2
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	×	X	
14	Entity calculation/documentation is available	i	X	X	
	B Installation				-
1	Type of cable is appropriate, cables are undarnaged	all	X	— <u>Ø</u> —	4
2	Sealing of ducts and/or conduits is satisfactory	all	X	<u> </u>	4
3	Stopper boxes or barrier glands are properly filled	d	X		4
4	Integrity of conduit system and interface with mixed system is maintained	all	X		4
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	×	Q.	
6	Fault loop impedance is satisfactory	power outlets	X		
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X		
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	X		

Special certification conditions U,X or B have been complied with 9 all Х Х 10 Cables/spare cores are terminated satisfactorily all 11 No obstructions adjacent to flameproof flanged joint d Х Х Х Ducts, pipes and enclosures are in good condition Х 12 p Х Х Protective gas is substantially free from contaminants (water, oil, dirt) 13 р 14 Protective gas flow/pressure is adequate Х р 15 Pressure and/or flow indicators, alarms and interlocks function correctly p х Х 16 Pre-energising purge period is adequate р 17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous р Х area are satisfactory



18	Cables are installed and screens are earthed in accordance with the documentatio0n	í	х	
19	The circuit is isolated from earth or earthed at one point only	i	x	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	$\overline{\otimes}$
2	No undue accumulation of dust or dirt	all	x	8
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes.	List action required			
Contra	ctor (write): Inspector	Supervisor	Client (write): Inspector	
	N.G.R.	"EN		
Date:	10 9/11		Date:	

Device ID or tag

	device compli		D. Jegu	ied	
Remove		ver to	the id		x certification

Reviewed by: N, GREEN Date: 26/9/4 Priority:

Comments:			
All action items now completed:			
An action items now completed.			
Job closed:			
Device of the second state			
Device now fully compliant, spreadsheet	register has been u	paatea	
Supervisor (write):			
Date:			
Date.			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and OSITZLER

Based on AS/NZS 60079 part 17

Ref: I:\data\siztercompany operations\darwin\tenders\sbsj11\yf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e.exi,ex-n,ex-p and other ex devices.doc

Specifications

	neral			<u> </u>	- 0	() [_	_
De	vice ID or tag: PIT - 12		Asset: UNIT	7 STA	NDBY	RUN		
Cir	cuit ID:	NONE	Physical location:	CHANNE	LI	SLAN	0	
Are	ea classification : 2	Lene 2	Environment: (hot?)	OUTDO	on -	SUN SIA	ADE-	
-								
Dat	ta from Label		Type of protection: (deinn	÷		1	
Mo	tor)	UBE TRANSMITTER	etc)	a,e, i, ii, p	EX -:	ia /	/	4
Ma	nufacturer: ROSE MC		Gas group: (IIA/B/C))		11		
		T64A2B21BB4E7M5Q4			5(40%)	116	'0°C)	T Tš
					,	// \ 		N54134
Sei		48148 13048	Certificate number: Test authority: (BAS	AUS	<u> Ex /</u>	124 4 X		~~*~*IS4
IP (Class 65		SAA etc)	, РТВ,		r	·	
Nu	mber of cables:						,	
Fo	r each cable entry	- gland 1	gland 2		others	ADAPT	io!L/Bu	NG
	ind manufacturer:	RUCO	giand 2		RE	FOAP-7	- /	ΓÌ
Mo	del:	FLAW 202		с.		120 .		7
Gla	nd type of protection: (d,e)					Ø	•	
	and some all	have the state	Another ever	124 124	1 in		1.00	
Insp	ection		_			Circle a	as checke	d
							•	
	an interest in the owner	all the second second second second second second second second second second second second second second second	28 65 XG	Applicable	10	1.1.1.	1	
	A Equipment			protection		Internal	External	
1		temp class) is appropriate for are	a algoritication		.ype.			7
			ea classification	. all		X.		
2	Equipment ID or circuit ID			all		X		CIRC
3		s or compounds are satisfactory		all		Х	8	EQT
4		vidence of unauthorised modifica		all		Χ	<u></u>	RE
5	Bolts, cable entries and bla	anking elements are correct and t	tight	all		Х	X	
6	Flange facings are clean a	and undamaged		d		Х		
7	Lamp rating, type and pos	ition correct		all		Х		
8	Electrical connections are	tight		all		Х		
9	Hermetically sealed device	es are undamaged		n.	12.25	ΥX		7
10	Restricted breathing enclo	sure is satisfactory to enclosure a	and/or covers	n		Χ.		7
11	Motor fans have sufficient			motors	only	X		1
12	Installation clearly labelled			í		X	X	1
13		stalled as per certification and sec	curely earthed where	i				-
	required	etalles de per certification and so	salary contrict milere	'		Х	X	
14	Entity calculation/documer	ntation is available		i		Х	X	1
	P Installation							
1	B Installation	te, cables are undamaged		all		Х	Ø	7
2	Sealing of ducts and/or co	,		all		X	8	-
3	Stopper boxes or barrier g						- ~	-
4		and interface with mixed system	is maintained	b d		<u> </u>		-
				all		X		-1
5	Earthing and bonding conr cross section	nections are tight, in good condition	ori and of sufficient	all		х	R.	
6	Fault loop impedance is sa	atisfactory		power of	utlets	Х		7
7		ince is satisfactory (check only during initial inspection)				X		٦
8	Automatic electrical protection	ali ali				-		
-	permitted limits	211		Х				
9	Special certification conditions U,X or B have been complied with			all		Х		
10	Cables/spare cores are terminated satisfactorily			all d		Х		
11	No obstructions adjacent to	ctions adjacent to flameproof flanged joint				Х	<u> </u>	
12	Ducts, pipes and enclosure	es are in good condition		р		Х	×	1
13		ally free from contaminants (wate	r, oil, dirt)	P		X	X	7
14	Protective gas flow/pressu			p		X	1	-
			on correctly	<u>р</u> р		X	1	1
15		ators, alarms and interlocks functi				· · ·		- 1
		ators, alarms and interlocks functi od is adequate						7
16	Pre-energising purge perio	d is adequate		р		Х		7
15 16 17	Pre-energising purge perio							



				101000040700010
18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	×	

	C Environment				SURPACE
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	8	CORECTION
2	No undue accumulation of dust or dirt	all	X	8	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

 No:

 Ves:
 List action required

 Contractor (write): Inspector
 Supervisor

 N. GREEN
 Date:

	equired to make devi	•						
-	Equipment	+ cuble	J.O.	require	4			
-	Flormeproof	der ce	installed	with	4ne	Sheath	. Further	
							iltollation .	

Reviewed by: Date: 26(9/1)	N. GREEN
Date: 26/9/1	
Priority:	

Comments:		
All action items now completed: Job closed:		
	_	

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and Other Ex devices

Based on AS/NZS 60079 part 17

Ref. I/data/sitzlencompany operations/darwin/tenders/sbsj11/tyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

Gene								_
Devi	ce ID or tag: TT 120	÷ 7	Asset: UNIT	7 ST	ANDB	Y]
Circu	uit ID: NONE		Physical location: CHIXNNEL ISLAND]		
Area	classification :		Environment: (hot?)	OUTDO	oR			
Data	from Lobal		ARE	Scint				
Appa	rom Label aratus type: (light, JB TEM() or)		レヘB EL Type of protection: (d	d,e, i, n, p	1			1
Moto	or)	<u> </u>	etc)	-1-1-1-1-1-	ব			-
Man	ufacturer: ROSEMOUN	リア	Gas group: (IIA/B/C)		<u> </u>	<		
Fuil	model number: 1144 DZE7M		Temp class: (T1-T6)		1.			
Seria	аl литьет: 063.99.15	5	Certificate number:	AUS	Ex '	3271		
IP C	lass JP 66/68		Test authority: (BAS) SAA etc)	, PTB,				
	<u> </u>					· 2		1
Num	ber of cables:					Y		
For	each cable entry	gland 1	gland 2		others	ADAP	T	
	d manufacturer:	VCO	giana z		ROSEN	NOUNT	-	1
Mod	el:	LPW 207			Jar You	S KFF	- 51	
Glan	d type of protection: (d,e)				E	×(]
Inspe	ection —				→ `	Circle a	s checked	
				Applicable	to	1	1	
	A Equipment			protection t		Internal	External	
1	Equipment (incl group and temp cla	ass) is appropriate for are	a classification	all	<u></u>	Х		1.115
2	Equipment ID or circuit ID is correc			all		X ·	× x	CIRE
3	Enclosure, sealing gaskets or com			all		Х	X	
4	There are no damage or evidence		ions .	all		Х	<u>a</u>	
5	Bolts, cable entries and blanking el			all		Х		
6	Flange facings are clean and unda			d		Х	-~	
7	Lamp rating, type and position corr			all		Х		
8	Electrical connections are tight			all		Х		
9	Hermetically sealed devices are un	damaged		п		Х		
10	Restricted breathing enclosure is s	atisfactory to enclosure an	nd/or covers	· n		Х		
11	Motor fans have sufficient clearance			motors	only	X		
12	Installation clearly labelled			i			X	
13	Safety barriers/isolators installed a	s per certification and sec	urely earthed where	i		х	X	
14	required Entity calculation/documentation is	available		í		X X	X	
14	Entry calculation/documentation is	available				Λ		I
	B Installation	are underse		-"	ı	~	- (CABLE
1	Type of cable is appropriate, cable			all		<u>_X</u>	<u>'</u>	PAMAGED
2	Sealing of ducts and/or conduits is			ali d		X		
3	Stopper boxes or barrier glands are		a manimenta in a d	all		- <u>^</u>		CABLE
4 5	Integrity of conduit system and inte Earthing and bonding connections			all				SUPPORT
5	cross section		and of sufficient	an		Х	\otimes	SUPPORT REQ.D
6	Fault loop impedance is satisfactor	у		power o	utlets	Х		
7	Insulation resistance is satisfactory	(check only during initial	inspection)	all		Х		
8	Automatic electrical protective devi			all		х		
	permitted limits							-
9	Special certification conditions U,X		with	all		X		-
10	Cables/spare cores are terminated			all		X		4
11	No obstructions adjacent to flamep			d		X	X	4
12	Ducts, pipes and enclosures are in			р		X	<u> </u>	4
13	Protective gas is substantially free		, oli, dirt)	р		X	X	4
14	Protective gas flow/pressure is ade			p		X		4
15	Pressure and/or flow indicators, ala		on correctly	p		X		4
16	Pre-energising purge period is ade	quate	an inte herenderer	p		Х		4
17	Condition of spark/particle barriers	or ducts exhausting the g	as into nazardous	p		Х		
	area are satisfactory							1



18	Cables are installed and screens are earthed in accordance with the	ì	¥	
	documentatio0n		~	
19	The circuit is isolated from earth or earthed at one point only	í	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with	i	v	
	the documentation		~	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	x	8
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:

.

 Ves:
 List action required

 Contractor (write): Inspector
 Supervisor

 N. GREEN
 Client (write): Inspector

 Date:
 Date:

Device ID or tag

Action rec	required to make device compliant:	
-	- Cable ID required	
-	- Resterminate at cable gland with du - Flameproof device installed to blue the	amaged Sheuth.
	- Provide cable support and sun cour	er.
-	- Replace Fodd En label.	

Reviewed by: Date: 16/9/1, Priority:

Comments:				
All action theme never completed				
All action items now completed:				
Job closed:				

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Based on AS/NZS 60079 part 17

Ref: 1:\data\sitz\encompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

Device ID or tag: 38-001	Asset: UNIT # 7 METER SKID
Circuit ID:	Physical location: CHANNEL (SAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, etc)	p Ča
Manufacturer: CROUSE HOUDS	Gas group: (IIA/B/C)	lic
Full model number: JBI5455-16P-L083261	Temp class: (T1-T6)	т6
Serial number:	Certificate number:	-
IP Class IP 66	Test authority: (BAS, PTB, SAA etc)	-

Number of cables: 12

For each cable entry	gland 1	gla	nd 2	other	ſS
Gland manufacturer:					
Model:					
Gland type of protection: (d,e)					

Insp	ection	→	Circle a	is chepked	1
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X]
2	Equipment ID or circuit ID is correct	all	Х	(X)	1
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	8	
4	There are no damage or evidence of unauthorised modifications	all	X	8	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	Ø	
6	Flange facings are clean and undamaged	ď	X		
7	Lamp rating, type and position correct	all	Х		
8	Electrical connections are tight	all	Х		
9	Hermetically sealed devices are undamaged	n	X		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X		
11	Motor fans have sufficient clearance	motors only	X		TELLAIS .
12	Installation clearly labelled	i	X	8	BLUE +
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X	X	LABEL
14	Entity calculation/documentation is available	i	Х	Х]

B Installation

	D Instandion				
1	Type of cable is appropriate, cables are undamaged	all	X	Ø	
2	Sealing of ducts and/or conduits is satisfactory	all	X	X	
3	Stopper boxes or barrier glands are properly filled	d	X		
4	Integrity of conduit system and interface with mixed system is maintained	all	X]
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	x	8	
6	Fault loop impedance is satisfactory	power outlets	X		1
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X		1
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	×		
9	Special certification conditions U,X or B have been complied with	all	X		the Reserves 6
10	Cables/spare cores are terminated satisfactorily	all	\sim		terments E
11	No obstructions adjacent to flameproof flanged joint	d	X	X	
12	Ducts, pipes and enclosures are in good condition	р	Х	X]
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	Х	X	7
14	Protective gas flow/pressure is adequate	p	X		7
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	X		
16	Pre-energising purge period is adequate	p	× _		
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	р	×		

Amadeus Pipeline Electrical Inspections



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	x	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	8	CAROSION.
2	No undue accumulation of dust or dirt	all	Х	X	
3	Electrical insulation is clean and dry	all	Х		í.

Faults found? (circle as appropriate)

No:	List action required		
Contr	actor (write): Inspector	Supervisor	Client (write): Inspector
Date:	10/9/11		Date:

Device ID or tag

Action required to make device compliant: - J.S. circuit Inside ' labor required - Islave sheathing to cabling required. - Terminate un-used conductors. - Corrosion evident @ gland plate Provide locking nut @ gland plate and remediate glands. - Remediate door seal.

Reviewed by: N. CREEN Date: 26/9/11 Priority:

Comments:		
	_	
All action items now completed:		
Job closed:		
Device now fully compliant, spreadsheet reg	ister has been updated	
Supervisor (write):		
Date:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices Based on AS/NZS 60079 part 17

Ref: I:\data\sitzler\company operations\darwin\lenders\sbsj11\Vyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

PHOTO 883

General	
Device ID or tag: DPT - Xxx NO TAG	Asset: UNIT 7 DUTY RUN FLOER
Circuit ID:	Physical location: CHANNEL JSLAND
Area classification :	Environment: (hot?)

_	Data from Label		ESSIBLE	
	Apparatus type: (light, JB, Motor) MESSURE DIFFERENELAL TRANSMITTE	Туре of protection: (d,e, i, n, p (ζetc)	Exia	
	Manufacturer: BOSEMOUNT	Gas group: (IIA/B/C)	114	(INDKATUE
	Full model number: 3051 CD3/ADZAIBMSK755	Temp class: (T1-T6)	75(408), T4 (70°C)	
	Serial number: RS0880413	Certificate number: AUS	Ex. 1249 x)
	IP Class 65	Test authority: (BAS, PTB, SAA etc)	· * (* 14)	
Ľ	Number of cables:]		
	For each cable entry gland 1	gland 2	others BUNSCY	

For each cable entry	gland 1	gland 2	others Outsiden .
Gland manufacturer:	NOTACCESSIBLE		RE-DAPT.
Model:			LPAO MZO SIRA
Gland type of protection: (d,e)			

13 2. 5.3 <u>. i</u> ² Cîrclê as checked Inspection -

	ст. на ст. с. с. с. с. с. с. с. с. с. с. с. с. с.	Applicable to	al war	- L		
	A Equipment	protection type:	Internal	External		
1	Equipment (incl group and temp class) is appropriate for area classification	all	Х	X	EQ	~
2	Equipment ID or circuit ID is correct	all	Х	\otimes	-	1D
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	8	CIRS	2
4	There are no damage or evidence of unauthorised modifications	all	Х	8		~
5	Bolts, cable entries and blanking elements are correct and tight	all	Х	8		
6	Flange facings are clean and undamaged	d	Х			
7	Lamp rating, type and position correct	all	X			
8	Electrical connections are tight	all	Х			
9	Hermetically sealed devices are undamaged	n., "	ιX			
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n` [·] ·	Х			
11	Motor fans have sufficient clearance	motors only	X •	5 1 1]	
12	Installation clearly labelled	` i	Х	X		
13	Safety barriers/isolators installed as per certification and securely earthed where	i	х	х		
	required		^	^		
14	Entity calculation/documentation is available	i	X	Х		

B installation

	B installation			-	CABLE
1	Type of cable is appropriate, cables are undamaged	all	Х	$\langle X \rangle$	DAMAGED
2	Sealing of ducts and/or conduits is satisfactory	all	Х	\otimes	@Glader
3	Stopper boxes or barrier glands are properly filled	d	X		
4	Integrity of conduit system and interface with mixed system is maintained	ail	X] PEOURS-
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	ail	×	8	COLONDE PLOUDE SUPPORT
6	Fault loop impedance is satisfactory	power outlets	X		1
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X		
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	X		
9	Special certification conditions U,X or B have been complied with	all	X		
10	Cables/spare cores are terminated satisfactorily	all	X		1
11	No obstructions adjacent to flameproof flanged joint	d	X	X	1
12	Ducts, pipes and enclosures are in good condition	р	X	X	1
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	Х	X	1
14	Protective gas flow/pressure is adequate	p	X		1
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X		7
16	Pre-energising purge period is adequate	р	X]
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	x]



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
1 9	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	ì	х	

	CENTROLINEAL			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	alł	Х	

Faults found? (circle as appropriate)

 No:

 Ves:

 List action required

 Contractor (write): Inspector

 Date:

 Iolq(1)

Date:

Action re	required to make device compliant:	
-	- Equipment + calle J.D. required.	
-	e Reterminate exposed armour at cable	gland.
-	- Provide cable support.	

Reviewed by: Date: 26/9/10 Priority:	N. GREEN
L.	

omments:		
Il action items now completed:		
ob closed:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices



Circle as checked

Based on AS/NZS 60079 part 17

Ref. I:\data\sitzler\company operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General

Device ID or tag: (250/256 101) -	Asset: UNIT to 7 DUTY RUN
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label	NEL DETAIL		
Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, p etc)		
Manufacturer: WESTLOCK	Gas group: (IIA/B/C)		
Full model number: 3449 - 87-00-2200-000	Temp class: (T1-T6)		
Serial number:	Certificate number:		
IP Class	Test authority: (BAS, PTB, SAA etc)		

Number of cables: >

For each cable entry	gland	1	 gland 2	others	
Gland manufacturer:	2				
Model:					
Gland type of protection: (d,e))		· · · · ·	•	

Inspection -

	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	.PD
2	Equipment ID or circuit ID is correct	all	X	(X)	115
3 1	Enclosure, sealing gaskets or compounds are satisfactory	all	X	X	-an
4	There are no damage or evidence of unauthorised modifications	all	X	X	1
5	Bolts, cable entries and blanking elements are correct and tight	all	X	X]
6	Flange facings are clean and undamaged	d	Х]
7	Lamp rating, type and position correct	ali	X		
8	Electrical connections are tight	all	Х		
9	Hermetically sealed devices are undamaged	n	Х		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n .	Х		
11	Motor fans have sufficient clearance	motors only	Х		
12	Installation clearly labelled	i	X	X	14.
13	Safety barriers/isolators installed as per certification and securely earthed where required	í	×	х	
14	Entity calculation/documentation is available	i	Х	X]

B Installation

Type of cable is appropriate, cables are un	damaged	all	Х	
Sealing of ducts and/or conduits is satisfact		all	X	X
Stopper boxes or barrier glands are proper	y filled	d	Х	
Integrity of conduit system and interface with	h mixed system is maintained	all	X	
Earthing and bonding connections are tight cross section	, in good condition and of sufficient	ali	х	×
Fault loop impedance is satisfactory		power outlets	X	
Insulation resistance is satisfactory (check	only during initial inspection)	all	X	
Automatic electrical protective devices are permitted limits	set correctly and operate within	all	X	
Special certification conditions U,X or B has	e been complied with	all	x	
Cables/spare cores are terminated satisfac	torily	all	X	
No obstructions adjacent to flameproof flam	ged joint	d	X	X
Ducts, pipes and enclosures are in good co	ondition	p	X	X
Protective gas is substantially free from cor	ntaminants (water, oil, dirt)	р	X	X
Protective gas flow/pressure is adequate		р	Х	
Pressure and/or flow indicators, alarms and	I interlocks function correctly	р	Х	
Pre-energising purge period is adequate		p	X	
Condition of spark/particle barriers of ducts area are satisfactory	exhausting the gas into hazardous	р	х	



18	Cables are installed and screens are earthed in accordance with the	i	x	
	documentatio0n		~	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	j	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	×	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø
2	No undue accumulation of dust or dirt	all	Х	8
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

 No:

 Ves:

 List action required

 Contractor (write): Inspector

 Supervisor

 No:

 Date:

 Date:

 Date:

Device	ID	ог	tag
Device	10		lay

Action	required to make	e device c	ompliant:		-		
-	Equipment	- +	cuble	I.O.	required.		
-	Prov. de	cable	Suppo	A.			
-	Nil Ex	certifi	ication	, Ver	ify installation	method	of protection.

Reviewed by: N. LREEN Date: 161/11 Priority:

Comments:			
Comments.			
All action items now completed:			
Job closed:			
Device new fully compliant encodebast	veninter has here		
Device now fully compliant, spreadsheet Supervisor (write):	register has beer	updated	
Date:			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER other Ex devices

Based on AS/NZS 60079 part 17

Ref: 1:kdataksizter/company operationsk/darwin/lendersksbsj11kyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

PI-10TO E

General

Device ID or tag: (PIT - 145)	Asset: UNIT 7 DUTY RUN
Circuit ID: MONE -	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?) OUTDOOR SUN SHADE

Data from Label

Dat	a morn Laber			()			
App Mot	oaratus type: (light, JB, or)	UBE TBANSMITTER	Type of protection: (etc)	(d,e, i, n, p	ia l		Exd
Mar	nufacturer: 305EM	OUNT	Gas group: (IIA/B/C)	116	\backslash	IIC
		SPG4A2B21BB4MSE7	Temp class: (T1-T6)	T514	08)74(70	261	75@40°C.
Seri	ial number:	0608416	Certificate number:	AUS Ex.	1249 XT	Ause	71347×
IP C	Class	65	Test authority: (BAS SAA etc)	, PTB,]
Nun	nber of cables:			0			
_			ADAPTO	-	rs BUNC		
	each cable entry	gland 1	gland 2		rs ounc	1	
	nd manufacturer:	ALCO	ROSEMOUN		REPART	-	4
Mod		FLPW 202	IFAGA	1 1 0	NGERTIFI	ED 3	+3
Gla	nd type of protection: (d,e)		d	1	5	Ex I	<u>u</u> .
insp	A Equipment	enter miles in		Applicable to protection type:	Internal	s checked	
1		temp class) is appropriate for area	a classification	all	, X	X	
2	Equipment ID or circuit ID			all	X	X	CIRC ID
3		s or compounds are satisfactory	· · · .	all	, X ,	05	FQW
4		evidence of unauthorised modification		all	X	X]
5		anking elements are correct and tig	3ht	alí	X	Ø	
6	Flange facings are clean a			d	X		
7	Lamp rating, type and pos			all	<u> </u>		
8	Electrical connections are			all	Х		
9	Hermetically sealed devic			n 3.5.	X		
10		sure is satisfactory to enclosure an	nd/or covers	n	X,	,	
11	Motor fans have sufficient			motors only	X · ·		
12	Installation clearly labelled			i	X	Х	. 7
13	Safety barriers/isolators in required	stalled as per certification and secu	urely earthed where	i	×	X	Tr. 6
14	Entity calculation/docume	ntation is available		i	X	Х	210-11

B Installation

Binstanation			3
Type of cable is appropriate, cables are undamaged	all	X	X
Sealing of ducts and/or conduits is satisfactory	all	X	8
Stopper boxes or barrier glands are properly filled	d	X	é
Integrity of conduit system and interface with mixed system is maintained	all	X	
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	Х	Q
Fault loop impedance is satisfactory	power outlets	X	
Insulation resistance is satisfactory (check only during initial inspection)	ali	X	
Automatic electrical protective devices are set correctly and operate within permitted limits	all	х	
Special certification conditions U,X or B have been complied with	all	X	
Cables/spare cores are terminated satisfactorily	all	X	
No obstructions adjacent to flameproof flanged joint	d	X	X
Ducts, pipes and enclosures are in good condition	р	X	X
Protective gas is substantially free from contaminants (water, oil, dirt)	p	X	X
Protective gas flow/pressure is adequate	p	Х	
Pressure and/or flow indicators, alarms and interlocks function correctly	p	Х	
Pre-energising purge period is adequate	ρ	Х	
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	ρ	х	



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	х	
19	The circuit is isolated from earth or earthed at one point only	i	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	G Environment			-
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	\mathcal{Q}
2	No undue accumulation of dust or dirt	all	Х	2
3	Electrical insulation is clean and dry	ali	Х	

Faults found? (circle as appropriate)

No: List action required Contractor (write): Inspector Supervisor Date: 16/9/11 Date:

Dev	rice ID or	tag		
Act	ion requ	ired to make device co	npliant:	
	<u>ه</u> م	Equipment +	cable J.O. required	
	-	he -terminate	cuble due to damaged sheath p gland.	
	-	Remove Sun	cable J.O. required cable due to damaged sheath @ gland. cover and verify place rating.	
	-	Verify Exd	installedion by entiring nil J.S. barier. Sheath as required.	
		Remove the	sheath as required.	

Reviewed by: N. G	REED	
Date: 26/4/11 Priority:		
Priority:		-

Comments:	<i></i>	
All action items now completed: Job closed:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and SITZLER

Based on AS/NZS 60079 part 17

Ref: 1:\data\sitz\encompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d,ex-e,exi,ex-n,ex-p and other ex devices.doc

Specifications

	eral ice ID or tag: FE ~1	A 9	Asset: UNIT	4.2 m	TY	NON		
		0 %						_
Circ	uit ID:		Physical location:	Char.	Nel 1	ur Anno		
Area classification : Environment: (hot?)								
Data	a from Label							
Appa Moto	aratus type: (light, JB, or)		Type of protection etc)	1: (d,e, i, n, p	ib			
		ANDN - ROSEMOUNT	Gas group: (IIA/B	(C) (18				
Full	model number: CHFT	DO AQUAR NS 6540	Temp class: (T1-	r6) T				
Seria	al number: 39538	1	Certificate numbe	HUL	1390	×		
IP C			Test authority: (B SAA etc)	AS, PTB,				
Nurr	hber of cables:	$\hat{\mathbf{O}}$	* Veri	by Subo.	- 24			
		gland 1	gland	2	othore	1040		
	each cable entry nd manufacturer:	ALCO		2		KNOWN	TOK	
Mod		A-20 A				TNOVYN	<u> </u>	\neg
	nd type of protection: (d,e)	R-COR			<u> </u>			-
_								
nspe	ection	· ·		•	→.	Circle	as checke	ed
•								
				Applicable	e to	↓	↓ I	
	A Equipment			protection		Internal	Externa	1
	Equipment (incl group and	temp class) is appropriate for area	a classification	a	J	X	X	
2	Equipment ID or circuit ID	is correct		a		X	(%)	-
	Enclosure, sealing gasket	s or compounds are satisfactory		· a		X	(ð)	-
Ĺ		evidence of unauthorised modificati	0000	a		X		-
				a		X	<u></u>	-
5		lanking elements are correct and tig	gnt					-
5	Flange facings are clean			d		X		
,	Lamp rating, type and pos			a		X		
}	Electrical connections are			а	I	Х		
)	Hermetically sealed devic	es_are undamaged		n		Х		
0		osure is satisfactory to enclosure an	nd/or covers	'n		X		
11	Motor fans have sufficient	clearance		motors	sonly	· X		
2	Installation clearly labelled			i		X	Ø	
3		nstalled as per certification and sec	urely earthed where	i i		x	x	
4	Entity calculation/docume	ntation is available		i		X	X	
	B Installation							
	Type of cable is appropria	ate, cables are undamaged		a		X	Ø	
2	Sealing of ducts and/or co	1 14 1 11 6 11		a		Х	Ø	
3	Stopper boxes or barrier			d		Х	- u	
Ļ	Integrity of conduit system	n and interface with mixed system i	s maintained	a		Х		
	Earthing and bonding con cross section	nections are tight, in good condition	n and of sufficient	a		x		
;	Fault loop impedance is s	atisfactory		power	outlets	x		\neg
,	Insulation resistance is ea	tisfactory (check only during initial	inspection)	a		X	1	\neg
3	Automatic electrical proto	ctive devices are set correctly and	nerate within	a				\neg
,	permitted limits	cive devices are set correctly and	operate within	a		X	1	
		tions IIV or P have been complied	with	a	11	X		-
0	Cables/spare cores are te	tions U,X or B have been complied	vvigil			X		-
0			_	a				_
1		to flameproof flanged joint		d		X	X	_
2	Ducts, pipes and enclosur	res are in good condition		p		X	X	
3		ially free from contaminants (water	; oil, dirt)	p		Х	<u> </u>	
4	Protective gas flow/press	ure is adequate		p		Х		
5	Pressure and/or flow indic	ators, alarms and interlocks function	on correctly	p		X		
		ad in adaptuate		Р		X		- 1
6	Pre-energising purge peri	od is adequate		P		~		
1 6 17	Condition of spark/particle	barriers of ducts exhausting the g	as into hazardous	P		x		\neg



18	Cables are installed and screens are earthed in accordance with the	í	X	
	documentatio0n		~	
19	The circuit is isolated from earth or earthed at one point only	ì	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with	i	~	
	the documentation		^	

	C Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	x
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	all	Х	-

Faults found? (circle as appropriate)

No:

List action required			
Contractor (write): Inspector	Supervisor	Client (write): Inspector	
Date: 10/9/11		Date:	

Device ID or tag

Action re	quired to ma	ke device complian	it:			
-	Equip	ment + c	able I.D.	required.		
			Sta Sor/	number	requirents	
	with	vender				

Reviewed by: N-GREEN Date: 26/9/N Priority:

Comments:			
	_		
All action items now completed:			
Job closed:			
Device now fully compliant, spreadsheet	register has be	en undated	
Supervisor (write):	register nus be	on apaaroa	
Date:			

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17

gland 1

ALCO

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Ref: 1:\data\sitzlercompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d.ex-e.exi,ex-n.ex-p and other ex devices.doc

Specifications

General	k
Device ID or tag: (FIT - 1224 - 108 -	Asset: UNIT 7 DUTY RUN
Circuit ID:	Physical location: CHANEL JSLAND
Area classification :	Environment: (hot?) のいてひのパー

Data from Label MASS FLOW	
Apparatus type: (light, JB, METERING	Type of protection: (d,e, i, n, p $\mathcal{E}_X d$ (ib)
Manufacturer: ELITE	Gas group: (IIA/B/C) IIB/IIC
Full model number: BFT 9739 E555A	Temp class: (T1-T6) T6
Serial number: 3.54913 2054909	Certificate number: AUS. Ex. 1390X
IP Class	Test authority: (BAS, PTB, SAA etc)
Number of cables:	4 Verify Sensor 3

Number of cables: _____

Gland manufacturer:

Gland type of protection: (d,e)

Model:

Inspection

*

gland 2 × 2 others

FLPW

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メン、 others

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Circle as checked

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SITZLER

	A Equipment	Applicable to protection type:	Internal	External	_
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	-CCT
2	Equipment ID or circuit ID is correct	all	X	8	
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X		-Ea
4	There are no damage or evidence of unauthorised modifications	all	X	Ø	
5	Bolts, cable entries and blanking elements are correct and tight	all	X	X	
6	Flange facings are clean and undamaged	d	X		1
7	Lamp rating, type and position correct	all	X		
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n	x		
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n ' '	Х,		
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	X	
13	Safety barriers/isolators installed as per certification and securely earthed where	i	X	x	
	required		^	· ·	
14	Entity calculation/documentation is available	i	X	Х	

ALCO

F-tert \

Ex-d

B Installation

Dinstanation			
Type of cable is appropriate, cables are undamaged	all	X	\otimes
Sealing of ducts and/or conduits is satisfactory	alí	X	
Stopper boxes or barrier glands are properly filled	d	X	
Integrity of conduit system and interface with mixed system is maintained	all	X	
Earthing and bonding connections are tight, in good condition and of sufficient	all	×	1
cross section		^	\square
Fault loop impedance is satisfactory	power outlets	X	
Insulation resistance is satisfactory (check only during initial inspection)	all	X	
Automatic electrical protective devices are set correctly and operate within	aíl	~	
permitted limits		^	
Special certification conditions U,X or B have been complied with	all	X	
Cables/spare cores are terminated satisfactorily	all	X	
No obstructions adjacent to flameproof flanged joint	d	X	X
Ducts, pipes and enclosures are in good condition	р	X	X
Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	X
Protective gas flow/pressure is adequate	р	X	
Pressure and/or flow indicators, alarms and interlocks function correctly	ρ	X	
Pre-energising purge period is adequate	Р	X	
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	q	х	
	Sealing of ducts and/or conduits is satisfactory Stopper boxes or barrier glands are properly filled Integrity of conduit system and interface with mixed system is maintained Earthing and bonding connections are tight, in good condition and of sufficient cross section Fault loop impedance is satisfactory Insulation resistance is satisfactory (check only during initial inspection) Automatic electrical protective devices are set correctly and operate within permitted limits Special certification conditions U,X or B have been complied with Cables/spare cores are terminated satisfactorily No obstructions adjacent to flameproof flanged joint Ducts, pipes and enclosures are in good condition Protective gas is substantially free from contaminants (water, oil, dirt) Protective gas flow/pressure is adequate Pressure and/or flow indicators, alarms and interlocks function correctly Pre-energising purge period is adequate Condition of spark/particle barriers of ducts exhausting the gas into hazardous	Sealing of ducts and/or conduits is satisfactory all Stopper boxes or barrier glands are properly filled d Integrity of conduit system and interface with mixed system is maintained all Earthing and bonding connections are tight, in good condition and of sufficient all Fault loop impedance is satisfactory power outlets Insulation resistance is satisfactory (check only during initial inspection) all Automatic electrical protective devices are set correctly and operate within all Special certification conditions U,X or B have been complied with all Cables/spare cores are terminated satisfactorily all No obstructions adjacent to flameproof flanged joint d Ducts, pipes and enclosures are in good condition p Protective gas is substantially free from contaminants (water, oil, dirt) p Pressure and/or flow indicators, alarms and interlocks function correctly p Preserver and/or flow indicators, alarms and interlocks function correctly p Pre-energising purge period is adequate p Condition of spark/particle barriers of ducts exhausting the gas into hazardous p	Sealing of ducts and/or conduits is satisfactory all X Stopper boxes or barrier glands are properly filled d X Integrity of conduit system and interface with mixed system is maintained all X Earthing and bonding connections are tight, in good condition and of sufficient cross section all X Fault loop impedance is satisfactory power outlets X Insulation resistance is satisfactory (check only during initial inspection) all X Automatic electrical protective devices are set correctly and operate within permitted limits all X Special certification conditions U,X or B have been complied with all X No obstructions adjacent to flameproof flanged joint d X No obstructions adjacent to flameproof flanged joint p X Protective gas is substantially free from contaminants (water, oil, dirt) p X Pressure and/or flow indicators, alarms and interlocks function correctly p X Preserver and/or flow indicators, alarms and interlocks function correctly p X



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	x	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	X	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	• x	R
2	No undue accumulation of dust or dirt	all	X	8
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:	and the A state of the		
List action required			
Contractor (write): Inspector Supervisor	Client (write): Inspector		
Date: 10/9/1	Date:		
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -			
Device ID or tag			

Action required to make device compliant: - Equipment + cable I.D. required - Verity matching sensor + transmittar requirements with verdor.

Reviewed by: N. GREEN Date: 269/11 Priority:

Comments:		
	2	
	_	
All action items now completed: Job closed:		
L		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref: I: Votat\sitzlencompany operations\darwin\tenders\sbsj11\fyf1 - haz area inspections\hazardous area inspection forms\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag: $PI + - 111$	Asset: UNIT 7 DUTY RUN
Circuit ID: INONE	Physical location: CHANEL JSLAND
Area classification :	Environment: (hot?)

Data from Label Apparatus type: (light, JB, Malar) PRESSUBE TIMANSI'IFTTER Type of protection: (d,e, i, n, p Exd Ę etc) 0 11C T6 40°C Manufacturer: BOSEMOUNT Gas group: (IIA/B/C) πc Full model number: 3051764A2B216B4E7M584 Temp class: (T1-T6) T4 (70°C) TSWAR Aus Ex 134-7X RS0648146 Serial number: Certificate number: Aυs Æ 2419 Test authority: (BAS, PTB, 65 IP Class SAA etc) Number of cables:

For each cable entry	gland 1	gland 2	others BUNG
Gland manufacturer:	ALLO		12. ED APT
Model:	FLOW 202		m20
Gland type of protection: (d,e)		and a set and a set a set a set a set a set a set a set a set a set a set a set a set a set a set a set a set a	EEXA
			TE BAS No 3312184

Inspection

		Applicable to	· 🚽	A 🗍	
	A Equipment	protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X	
2	Eguipment ID or circuit ID is correct	all	X	(2)	CIRC
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	8	RELOMMEND
4	There are no damage or evidence of unauthorised modifications	all	X	Ø2	DOGTAG
5	Bolts, cable entries and blanking elements are correct and tight	all	X	Ø	
6	Flange facings are clean and undamaged	d	X		
7	Lamp rating, type and position correct	all	X	<u></u>	
8	Electrical connections are tight	all	X		
9	Hermetically sealed devices are undamaged	n, -	. * X	3	
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X	1.5.2	
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	Х	
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	х	
14	Entity calculation/documentation is available	i	X	Х	

B Installation

	B Installation				1 1 1 1 - V
1	Type of cable is appropriate, cables are undamaged	all	X	\square	SUPPORT.
2	Sealing of ducts and/or conduits is satisfactory	alí	X	Х]
3	Stopper boxes or barrier glands are properly filled	d	X]
4	Integrity of conduit system and interface with mixed system is maintained	all	X]
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	х	×	
6	Fault loop impedance is satisfactory	power outlets	Х]
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X]
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	х		
9	Special certification conditions U,X or B have been complied with	alí	X]
10	Cables/spare cores are terminated satisfactorily	all	Х		
11	No obstructions adjacent to flameproof flanged joint	d	Х	X]
12	Ducts, pipes and enclosures are in good condition	p	Х	Х	
13	Protective gas is substantially free from contaminants (water, oil, dirt)	р	Х	X	
14	Protective gas flow/pressure is adequate	р	Х		
15	Pressure and/or flow indicators, alarms and interlocks function correctly	р	Х		
16	Pre-energising purge period is adequate	p	Х		
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	Х		

ZLER

Circle as checked

-



Cables are installed and screens are earthed in accordance with the documentatio0n	i	×	
The circuit is isolated from earth or earthed at one point only	i –	X	
Separation is maintained with non-IS circuits	i	X	
As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	C Environment		_	
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	Ø
2	No undue accumulation of dust or dirt	all	Х	8
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:	
Yes List action required	
Contractor (write): Inspector Supervisor	Client (write): Inspector
N- GREEN	
Date: 10 (9/11	Date:

Device ID or tag

Action re	equired to mak	e device compliant:					-
-	Provide	equipment	+ cuble	J.O.	(Equipment	stamped).	
-	Cable	support requi	wed.				
-	Replace	uncodified	dug.				

Reviewed by: Date: 26/9/11 Priority: N. GREEN

Comments:		
All action items now completed:	Π	
An action items now completed.		
Job closed:		

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and Other Ex devices Based on AS/NZS 60079 part 17

Ref. I:/data/sitzter/company operations/datwin/landers/sbsj11/lyf1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d,ex-e,ex-i,ex-n,ex-p and other ex devices.doc

Specifications

General

Gen	ierai						-
Dev	rice ID or tag: TIT -	149	Asset: MUIT A	TTUD F	RON.		
	uit ID: NAN		Physical location:	CHANEL	TSIAN	()	1
	14 , 1						1
Area	a classification :		Environment: (hot?)	_			
				NO 1	NFORMA-	TIAN	
	a from Label					<u> </u>	
	aratus type: (light, JB,	TRANSMETTER	Type of protection: (etc)	α, e, i, n, p	x ia		1
Mot		אין אווידיוידיין אווידיי					INDICATIVE
Man	nufacturer: BOSEN	OUNT	Gas group: (IIA/B/C)) he			I WE DEATIVE
Full		D2E7MSX1	Temp class: (T1-T6)	76 (50%	1 151	75 0 ()	1
<u> </u>							• }
Seri	ial number: 0640	152	Certificate number:	AUS EX	3270 X		/
10.0	Class	4	Test authority: (BAS				Y
<i>"F</i> C		5	SAA etc)		1 A	- v - l	
	, ())		1				
Nun	nber of cables:	1)			0		
Eas	and anti-	gland 1	aland 2	other	s ADAPT	oR	
	r each cable entry nd manufacturer:	gland 1 ALCO	yianu z		USEMOUN	17	1
Mod		FL/W202			in ,		-
	nd type of protection: (d,e)		1				1
			K. I. a. Sugar and	11 - Cake)+ *		•
Insp	ection		5		Circle a	s checked	
		$1 \sim 10$	· • · · · · ·	· • 22			
				Applicable to	• • •	↓	
	A Equipment			protection type:	Internal	External	
1		(temp class) is appropriate for area	a classification	all	X	X	—
2	Equipment ID or circuit ID	s or compounds are satisfactory		all all			CIRC
3 4		vidence of unauthorised modificati	005	all	$-\hat{\mathbf{x}}$	8	
5		anking elements are correct and tig		all	X	20	
6	Flange facings are clean a			d	X		
7	Lamp rating, type and pos			all	X		
8	Electrical connections are	tight		all	X		
9	Hermetically sealed device			nr 2 a	· 'X		
10		sure is satisfactory to enclosure an	nd/or covers	<u> </u>	<u> </u>	•	
11	Motor fans have sufficient			motors only	<u> </u>	$\overline{\otimes}$	
12 13	Installation clearly labelled	stalled as per certification and seco	uraly earlbed where	i		-	
13	required	stalled as per certification and sect	utery cartined where		X	X	
14	Entity calculation/documer	ntation is available		í	X	X	
					•		
	B Installation						CABLE
1		te, cables are undamaged		all	X	00	SUPPORT
2	Sealing of ducts and/or co			all	X		
3	Stopper boxes or barrier g		a maintainad	d oll	X	<u> </u>	
4 5		and interface with mixed system is nections are tight, in good condition		all all	X		
5	cross section	neelions are light, in good condition			X	X	
6	Fault loop impedance is sa	atisfactory		power outlets	X		
7	Insulation resistance is said	tisfactory (check only during initial i		all	X]
8		tive devices are set correctly and o	operate within	alí	x		
	permitted limits		<u>*1</u>				
9		ions U,X or B have been complied	with	all	X		
10	Cables/spare cores are te No obstructions adjacent t			all d	X	x	
11 12	Ducts, pipes and enclosur			0	x x	X	
13		ally free from contaminants (water,	, oil, dirt)	p p	X	x	
14	Protective gas flow/pressu		,,	<u>р</u>	X]
15	Pressure and/or flow indic	ators, alarms and interlocks function	on correctly	р	X		
16	Pre-energising purge perio			р	Х		
17		barriers of ducts exhausting the ga	as into hazardous	р	X		
	area are satisfactory					1	1



18	Cables are installed and screens are earthed in accordance with the documentatio0n	i	X	
19	The circuit is isolated from earth or earthed at one point only	ì	Х	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	х	

	G Environment			
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	8
2	No undue accumulation of dust or dirt	all	Х	X
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Faults found? (circle as appropriate)

 List action required

 Contractor (write): Inspector
 Supervisor

 N. 6& Client (write): Inspector

 Date:
 16 (9/1)

Device	ID	٥r	tag

	support required.	
- Verify	T.S. barrier in Italled	
- Obtain	replacement Ex nameplate from	verdol.

Reviewe	d by:	N.GREEN
Date:	26/9/1	
Priority:		

Comments:			
All action items now completed:			
Job closed:	ă		

Device now fully compliant, spreadsheet register has been updated Supervisor (write): Date:

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices Based on AS/NZS 60079 part 17

Ref: I:Vdata/sitzler/company operations/darwin/tenders/sbsj11/yr/1 - haz area inspections/hazardous area inspection forms/hazardous area device inspection sheet for ex-d, ex-e, exi, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag: DIT - 113	Asset: UNIT # 7 LINE PRESSURE.
Circuit ID:	Physical location: CHANEL JSLAND
Area classification :	Environment: (hot?)

Data from Label

App Mot	aratus type: (light, dB, or) PDESS	SUBE THANSMITTER	Type of protection: (etc)	(d,e, i, n, p	×	La	1	Exd
Mar	iufacturer: 'BOSEMa	JUNT	Gas group: (IIA/B/C		1.	110/		IIC
Fuli	model number: 3051	TG4A2B2J684E7M5Q4	Temp class: (T1-T6)	14(70%	175/14	10°C)	T5 (40°C)
Seri	al number: RSO	648147	Certificate number:			249x		TS (40°C) Aus G. 1347X
IP C	Class	1965	Test authority: (BAS SAA etc)			ille	16	
Nug	nber of cables:		1					
		']			D		
	each cable entry	gland 1	gland 2		others	ED APT	٦	
	nd manufacturer:	ALCO						
Mod		FLP 1 202				60 .		
Glar	nd type of protection: (d,e)					r¶		
	() · ·		А.		BAS	No 83	12184	\
Inspi	ection .	1 12 10 1 21 10		•		Circle a	s checked	
				Applicable t	0	_ : ↓ _ :	· 🖌	
	AEquipment		· · ·	protection to	ype:	Internal	External	
1		d temp class) is appropriate for are	a classification	all		X	X	- Pr 1
2	Equipment ID or circuit ID			. all		Х		GREID
3		ts or compounds are satisfactory		, ≙•••`all		<u> </u>	Ø	REC
4		evidence of unauthorised modificati		all		X	Ø	DUGTAC
5	Bolts, cable entries and b	lanking elements are correct and tig	ght	all		X _	x	
6	Flange facings are clean	and undamaged		d		X	-	
7	Lamp rating, type and pos	sition correct		all		X		
8	Electrical connections are			all		X		
9	Hermetically sealed devic			n.		X		
10		osure is satisfactory to enclosure ar	nd/or covers	n		X		
11	Motor fans have sufficient			motors	only	X	· · ·	
12	Installation clearly labelled			i	51117	X	X	
13		nstalled as per certification and sec	utely earthed where					
	required	istance as por contineation and see	arely carened where	· ·		Х	X	
14	Entity calculation/docume	ntation is available		i		Х	X	
	D. In stallation							LARLE
1	B Installation	ite, cables are undamaged		all		x	$\langle X \rangle$	CABLE SUPPORT
2	Sealing of ducts and/or co			all		X	18	
3	Stopper boxes or barrier of			d		X	<u>e</u>	
4		and interface with mixed system is	s maintained	al)		X		
5		nections are tight, in good condition		alí			0	
	cross section					X	0	
6	Fault loop impedance is s			power ou	itlets	Х		
7		tisfactory (check only during initial		all		Х		
8	Automatic electrical protect permitted limits	ctive devices are set correctly and o	operate within	all		х		
9		tions U,X or B have been complied	with	all		Х		
10	Cables/spare cores are te	minated satisfactorily		all		Х		
11	No obstructions adjacent t	to flameproof flanged joint		d		Х	Х	
12	Ducts, pipes and enclosur	es are in good condition		ρ		X —	X	
13		ially free from contaminants (water,	, oil, dirt)	p		X	X	
14	Protective gas flow/pressu			p		X		
15		ators, alarms and interlocks function	on correctly	p		X		
16	Pre-energising purge perio			p p		X		
17		barriers of ducts exhausting the ga	as into hazardous	р р				
	area are satisfactory					X		



Cables are installed and screens are earthed in accordance with the documentatio0n	i	Х	
The circuit is isolated from earth or earthed at one point only	i	Х	
Separation is maintained with non-IS circuits	ì	Х	
As applicable, short circuit protection of the power supply is in accordance with the documentation	ì	Х	

	C Environment			
1	Apparatus adequately prótected from corrosion, weather, vibration, other	all	Х	N
2	No undue accumulation of dust or dirt	all	Х	3
3	Electrical insulation is clean and dry	all	Х	

Faults found? (circle as appropriate)

No:

Yes: List action required

	•
Contractor (write): Inspector Superv	isor Client (write): Inspector
N.GREEN	
Date: 16 9 11	Date:

Device ID or tag

Action req	Jired to make device compliant:
-	Circuit J.D. required
-	Recommend Equipment label in conjustion with non-eplate
	Stamp. Cable support required.
-	Cable support of the
	Replace uncertified dug.

Reviewed by: N. GREEN Date: 2. 6/9/4 Priority:

Commenter	
Comments:	
_	
-	
All action items now completed:	
An acaon items now completed.	
Job closed:	

Hazardous area device inspection sheet for Ex-d, Ex-e, Ex-i, Ex-n, Ex-p and other Ex devices

Based on AS/NZS 60079 part 17

Ref. 1:\data\sitz\encompany operations\\darwin\\tenders\\sbsj11\fyf1 - haz area inspections\\hazardous area inspection forms\\hazardous area device inspection sheet for ex-d, ex-e, ex-i, ex-n, ex-p and other ex devices.doc

Specifications

General

Device ID or tag: J2-00 2	Asset:
Circuit ID:	Physical location:
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, etc)	p ia
Manufacturer: CROUSE HINDS	Gas group: (IIA/B/C)	lic
Full model number: TBIS455-1 GP-LD87260	Temp class: (T1-T6)	тб
Serial number:	Certificate number:	-
IP Class LP66	Test authority: (BAS, PTB, SAA etc)	

Number of cables:

11

For each cable entry	gland 1	gland 2	others
Gland manufacturer:			
Model:			
Gland type of protection: (d,e)			1

Inspection -

Insp	ection	>	Circle a	is checked	ł
	A Equipment	Applicable to protection type:	Internal	External	
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	X]
2	Equipment ID or circuit ID is correct	all	X	8	1
3	Enclosure, sealing gaskets or compounds are satisfactory	ali	X	*	1
4	There are no damage or evidence of unauthorised modifications	all	X	\otimes]
5	Bolts, cable entries and blanking elements are correct and tight	all	X	8]
6	Flange facings are clean and undamaged	d	X]
7	Lamp rating, type and position correct	all	X]
8	Electrical connections are tight	all	X]
9	Hermetically sealed devices are undamaged	n	X]
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X]
11	Motor fans have sufficient clearance	motors only	X		
12	Installation clearly labelled	i	X	8	Erres .
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	x	x	LARC
14	Entity calculation/documentation is available	ì	X	Х]

B Installation

Type of cable is appropriate, cables are undamaged	all	X	R
Sealing of ducts and/or conduits is satisfactory	all	X	\otimes
Stopper boxes or barrier glands are properly filled	d	X	
Integrity of conduit system and interface with mixed system is maintained	all	X	
Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	x	8
Fault loop impedance is satisfactory	power outlets	X	
Insulation resistance is satisfactory (check only during initial inspection)	all	X	
Automatic electrical protective devices are set correctly and operate within permitted limits	all	х	
Special certification conditions U,X or B have been complied with	all	X	_
Cables/spare cores are terminated satisfactorily	all	X	_
No obstructions adjacent to flameproof flanged joint	d	X	Х
Ducts, pipes and enclosures are in good condition	p	X	Х
Protective gas is substantially free from contaminants (water, oil, dirt)	р	X	Х
Protective gas flow/pressure is adequate	p	X	
Pressure and/or flow indicators, alarms and interlocks function correctly	p	X	
Pre-energising purge period is adequate	р	X	
Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	P	x	
	Sealing of ducts and/or conduits is satisfactory Stopper boxes or barrier glands are properly filled Integrity of conduit system and interface with mixed system is maintained Earthing and bonding connections are tight, in good condition and of sufficient cross section Fault loop impedance is satisfactory Insulation resistance is satisfactory (check only during initial inspection) Automatic electrical protective devices are set correctly and operate within permitted limits Special certification conditions U,X or B have been complied with Cables/spare cores are terminated satisfactorily No obstructions adjacent to flameproof flanged joint Ducts, pipes and enclosures are in good condition Protective gas is substantially free from contaminants (water, oil, dirt) Protective gas ind/or flow indicators, alarms and interlocks function correctly Pre-energising purge period is adequate Condition of spark/particle barriers of ducts exhausting the gas into hazardous	Sealing of ducts and/or conduits is satisfactory all Stopper boxes or barrier glands are properly filled d Integrity of conduit system and interface with mixed system is maintained all Earthing and bonding connections are tight, in good condition and of sufficient all Fault loop impedance is satisfactory power outlets Insulation resistance is satisfactory (check only during initial inspection) all Automatic electrical protective devices are set correctly and operate within all Special certification conditions U,X or B have been complied with all Cables/spare cores are terminated satisfactorily all No obstructions adjacent to flameproof flanged joint d Ducts, pipes and enclosures are in good condition p Protective gas is substantially free from contaminants (water, oil, dirt) p Preseure and/or flow indicators, alarms and interlocks function correctly p Pre-energising purge period is adequate p Condition of spark/particle barriers of ducts exhausting the gas into hazardous p	Sealing of ducts and/or conduits is satisfactory all X Stopper boxes or barrier glands are properly filled d X Integrity of conduit system and interface with mixed system is maintained all X Earthing and bonding connections are tight, in good condition and of sufficient all X Fault loop impedance is satisfactory power outlets X Insulation resistance is satisfactory (check only during initial inspection) all X Automatic electrical protective devices are set correctly and operate within all X Special certification conditions U,X or B have been complied with all X Cables/spare cores are terminated satisfactorily all X No obstructions adjacent to flameproof flanged joint d X Ducts, pipes and enclosures are in good condition p X Protective gas is substantially free from contaminants (water, oil, dirt) p X Pressure and/or flow indicators, alarms and interlocks function correctly p X Pre-energising purge period is adequate p X Pre-energising purge period is adequate p X

Amadeus Pipeline Electrical Inspections

SITZLER



18	Cables are installed and screens are earthed in accordance with the documentatio0n	í	х	
19	The circuit is isolated from earth or earthed at one point only	i	X	
20	Separation is maintained with non-IS circuits	i	Х	
21	As applicable, short circuit protection of the power supply is in accordance with the documentation	i	Х	

	C Environment				
1	Apparatus adequately protected from corrosion, weather, vibration, other	all	Х	Ø	CORPOSION.
2	No undue accumulation of dust or dirt	all	X	X	
3	Electrical insulation is clean and dry	all	X		

Faults found? (circle as appropriate)

No:

Yest

List action required

Client (write): Inspector	
Date:	

Device ID or tag

Action required to make device compliant: - Provide "I.S. circuits J_side" label. - Elve Sheathing required to cates. - Severe corrosion at glast plate requires rematiation. - Replace damaged mather to front door locking bott.

Reviewed by: N-GREEN Date: 26/9/11 Priority:

			_
Comments:			
All action items now completed:			
Job closed:			
Device now fully compliant, spreadshee	et register has be	en updated	
Supervisor (write):			
Date:			

INSPECTION CHECK SHEET Intrinsically Safe Ex i



TAG/IDI	ENTIFICATI	ION						DESC	CRIPTIC	DN		
Area Classification	n - Zone O	1 2 20 21	22 Non	Hazardous - Group	I IIA	IIB	IIC - T	emp	T1 T2	2 T3 ⁻	T4 T5 T	6
Record Name Plat												ameplate information that may be
Manufacturer					Vin		Chin	I		need	u other r	relevant
Serial No.					Lin		Lin					
Model												
Certificate no.					Т		IP					
Certifying authorit	v					1						
Inspection Type Pe	,	I=Initial, P=Pe	eriodic, S=S	ample)				I	Р	S		
Inspection Grade I				-				D	с	v	De	tailed requires de-energization
Equipment Y=OK,	N=Not Acc	ceptable, N/A=	=Not Appli	cable, N/C=Not Che	ecked				8		Inspect Grade	Remarks
Equipment is Austr	ralian or IF	C Certified					Y	N	N/A	N/C	DCV	
EX markings are su							Y	N	N/A	N/C	DCV	
-			onriate tag/	identification detai	ls		Y	N	N/A	N/C	DCV	
Enclosure is not da	•		• •				Y	N	N/A	N/C	DCV	
Terminations are t	-						Y	N	N/A	N/C	DCV	
All unused conduct	-	nated					Y	N	N/A	N/C	DC	
Bolts, bungs, plugs			nd tight				Ŷ	N	N/A	N/C	DCV	
Fuses and lamps a							Ý	N	N/A	N/C	DCV	
No unautorised mo		_					Ŷ	N	N/A	N/C	DCV	
Installation											Grade	Remarks
Cable type is as pe			foringtalla	tion			Y	N	N/A	N/C N/C	D D	
IS Entity and cable The device is secur	-			ltion			Y Y	N N	N/A N/A	N/C	DC	
Cables/conduits in							r Y	N	N/A	N/C	DC	
Cables/conduit ent	-		nd tight				Y	N	N/A	N/C	DCV	
		-	-	stors to work loose			Y	N	N/A	N/C	DCV	
No excessive vibration present that may cause conductors to work loose (Y=OK) Segregation between IS and non IS circuits at junction boxes				Y	N	N/A	N/C	DCV				
Segregation between IS and non IS circuits in cable ladder and conduit				Y	N	N/A	N/C	DCV				
Earthing and equip							Ý	N	N/A	N/C	D	
Insulation resistant		_		GGFR testing HA)			Ŷ	N	N/A	N/C	D	
Cable screens eart			-	-			Y	N	N/A	N/C	D	
				/ //							1	
Barriers			,								Grade	Remarks
Record Safety Barr							Y	N	N/A	N/C	DC	
				ation details in 'Rer	narks')		Y	N	N/A	N/C	DCV	
Record Safety Barr			-				Y	N	N/A	N/C	DC	
Safety Barriers are				-			Y	N	N/A	N/C	DC	<u> </u>
Safety Barriers are			ne earth ba	1			Y	N	N/A	N/C	DCV	
Barrier/Isolator ter		-	orrige /:!	toric 240V			Y	N	N/A	N/C	DCV	
Maximum voltage IS circuits are all fro							Y Y	N	N/A	N/C	DCV	<u> </u>
No energy storing		•					Y Y	N N	N/A N/A	N/C N/C	DCV DC	
Relays acting as sa				permitteu			Y Y	N	N/A	N/C	DC	
				eutral point is <10	าฑ		Y	N	N/A	N/C	DCV	Check one connection at a time
· · ·							l .	<u> </u>	.,	., •	<u> </u>	
Environment							1				Grade	Remarks
		-		eather, vibration, e	etC		Y	N	N/A	N/C	DCV	
Dust and dirt on th	ie equipme	ent and cable a	are within a	acceptable limit			Y	Ν	N/A	N/C	DCV	l
Special conditions							1	-	-	_	Grade	Remarks
Special conditions	on certifica	ate are satisfie	ed				Y	Ν	N/A	N/C	D	
Notes:												

Checked:

Date:

Inspected:

Date:



INSPECTION CHECK SHEET - Increased Safety Ex e

TAG/IDENTIFICATION							DESC	RIPTION						
Area Classification - Zone 0 1 2 Non Ha	azardous	- Group	I IIA IIB IIC -	Temp	T1	T2	Т3	T4 T5	Т6					
Record Name Plate Details		1						Reco	rd other nar	neplate information that may				
Manufacturer		KW		FLC	;					be relevant				
Serial No.		Volts		RPI	М									
Model		1												
Certificate No.		Т		IP)									
Certifying authority														
Inspection type performed (I=Initial, P=Pe	riodic, S=	Sample)				T	Р	S						
Inspection Grade Performed (D=Detailed,						D	С	v	Detaile	d requires de-energization				
Equipment Y=OK, N=Not Acceptable, N/A	=Not App	licable,	N/C=Not Checked	1					Inspect	Remarks				
				Y	Ν	N	/A	N/C	Grade DCV					
Equipment is Australian or IEC Certified				Y	N		/A /A	N/C	DCV					
EX markings are suitable for the area		/:		Y			/A /A	N/C	DCV					
Equipment is clearly marked and has appro					N									
Enclosure is not damaged and maintains its		proofing	g (min IP54)	Y	N		/A	N/C	DCV					
Enclosure gaskets are in a satisfactory cond				Y	N		/A /A	N/C	D					
Bolts, bungs, plugs/blank plates installed an	nd tight			Y	N		/A	N/C	DCV					
Terminals are sized correctly for the rating				Y	N		/A /^	N/C	D					
Conductors > 0.5mm2 for multistranded an				Y	N		/A /^	N/C	D					
No chafing parts that may cause local hot s	pots (mo	tor fans)	(Y=OK)	Y	N		/A	N/C	D					
Guards are correctly fitted				Y	N		/A	N/C	D					
No unautorised modifications (Y=OK)				Y	N		/A	N/C	DCV					
Lamp rating, type and position are correct				Y	Ν	N	/A	N/C	D					
Installation					1	<u> </u>			Grade	Remarks				
Equipment carries correct circuit identificat isolator	tion at sw	/itchboai	d and local	Y	Ν	N	/A	N/C	D					
Effective means of isolation of all live condu	uctors (in	cluding r	neutral)	Y	N	N	/A	N/C	D					
Installation is in compliance with document				Y	N		/A	N/C	DC					
Cable type is as per the documentation	i i i i i i i i i i i i i i i i i i i			Y	N	N	/A	N/C	D					
The device is securely mounted				Y	N	N	/A	N/C	DCV					
Cables/conduits in acceptable condition				Y	N	N	/A	N/C	DCV					
Cables/conduit entry correct, complete, an	d tight (F	xd or Fx	e glands used)	Y	N	N	/A	N/C	DCV					
Exd glands have additional weatherproofin			8.0	Y	N		/A	N/C	DCV					
Electrical connections are tight	0			Y	N	N	/A	N/C	D					
Creapage and clearance distance are maint	ained			Y	N	N	/A	N/C	D					
All unused conductors terminated in Exe te				Y	N		, /A	N/C	D					
Earthing and equipotential bonding satisfact				Y	N		, /A	N/C	DCV					
Insulation resistance is satisfactory (NB Dar		FGGER t	esting HA)	Y	N		/A	N/C	D					
Motor parameters (la/ln and te) and TOLs of	0		o ,	Y	N		/A	N/C	D					
Cable Glands and adaptors									Grade	Remarks				
Cable glands details available, record (avail	able=Y. n	ot recor	ded=N/C)	Y	Ν	N	/A	N/C	DCV					
Cable glands certificate details available, record (avail														
recorded=N/C)				Y	N	IN	/A	N/C	DCV					
Adaptors and plugs details available, record	d (availab	le=Y, not	t recorded=N/C)	Y	Ν	N	/A	N/C	DC					
Glands and adaptors Ex markings are suitab	ole for ar	ea		Y	Ν	N	/A	N/C	DCV					
Environment				·		1			Grade	Remarks				
Equipment adequately protected against co	orrosion,	weather	, vibration, etc	Y	Ν	N	/A	N/C	DCV					
Dust and dirt on the equipment and cable a	are withir	n accepta	able limit	Y	Ν	N	/A	N/C	DCV					
Special conditions							,		Grade	Remarks				
Special conditions on certificate are satisfie	d			Y	Ν	N	/A	N/C	D					
Notes:														
Inspected: D	ate:		Checked:						Date:					

Hazardous Area Check Sheet Flameproof Ex d



TAG/IDENTIFICATION			DESCRIPTION							
Area Classification - Zone 0 1 2 Not	Hazardous - Group I IIA IIB	IIC - Te	emp T1	L T2 T	ГЗ Т4	L T5	Т6			
Record Name Plate Details							Reco	ord other i	nameplate information that may	
Manufacturer		КW		FLC					be relevant	
Serial No.		Volts		RPM						
Model										
Certificate No.		Т		IP						
Certifying authority				•						
Inspection Type Performed (I=Initial, P	Periodic, S=Sample)				I	Р	S			
Inspection Grade Performed (D=Detail	d, C=Close, V=Visual)				D	С	v	Deta	ailed requires de-energization	
Equipment Y=OK, N=Not Acceptable, N	/A=Not Applicable, N/C=Not Che	ecked						Inspect		
								Grade	Remarks	
Equipment is Australian or IEC Certified				Y	Ν	N/A	N/C	DCV		
EX markings are suitable for the area				Y	Ν	N/A	N/C	DCV		
Equipment is clearly marked and has ap	propriate tag/identification detai	ls		Y	N	N/A	N/C	DCV		
Enclosure is not damaged and maintain	its flameproof characteristics			Y	N	N/A	N/C	DCV		
Locking sealing, fastening devices are of	type certified by manufacturer			Y	N	N/A	N/C	DCV		
Locking sealing, fastening devices operation				Y	Ν	N/A	N/C	DC		
Bolts, bungs, plugs/blank plates installe				Y	N	N/A	N/C	DCV		
Sealing gaskets and components in acce				Y	N	, N/A	N/C	DCV		
Flange faces are clean and undamaged	-			Y	Ν	N/A	N/C	D		
Flange gap dimensions are less than	mm			Y	N	N/A	N/C	DC		
No unauthorised modifications (Y= OK)				Y	N	N/A	N/C	DCV		
Equipment is clear of obstructions (min	mum dimensions 40mm)			Y	N	N/A	N/C	DCV		
No chafing parts that may cause local h				Y	N	N/A	N/C	D		
Guards are correctly fitted				Y	N	N/A	N/C	D		
Lamp rating, type and position are corre	ct			Y	N	, N/A	N/C	D		
Installation								Grade	Remarks	
Equipment carries correct circuit identif		solator		Y	N	N/A	N/C	D		
Effective means of isolation of all live conductors (including neutral)				Y	N	N/A	N/C	D		
Cable type is as per the documentation				Y	N	N/A	N/C	D		
The device is securely mounted				Y	N	N/A	N/C	DCV		
Cables/conduits in acceptable condition				Y	N	N/A	N/C	DCV		
Cables/conduit entry correct, complete				Y	N	N/A	N/C	DCV		
Sealing of conduits, ducts or other conn				Y	N	N/A	N/C	D		
Integrity of conduit system and mixed s				Y	N	N/A	N/C	D		
Earthing and equipotential bonding sati				Y	N	N/A	N/C	DCV		
Insulation resistance is satisfactory (NB				Y	N	N/A	N/C	D		
Protection devices (Limit sws, phase rot	TOLs) operate correctly			Y	Ν	N/A	N/C	D		
Cable Glands and adaptors								Grade	Remarks	
Cable glands details available, record (a	vailable=Y, not recorded=N/C)			Y	Ν	N/A	N/C	DCV		
Cable glands certificate details available		ed=N/C)		Y	N	, N/A	N/C	DCV		
Adaptors and plugs details available, re-				Y	N	, N/A	N/C	D		
Adaptors and plugs have sufficient enga				Y	N	N/A	N/C	DCV		
Glands and adaptors Ex markings are su	-			Y	Ν	, N/A	N/C	DCV		
				-	•	-	-		- ·	
Environment					- /		• • • • -	Grade	Remarks	
Equipment adequately protected agains		etC		Y	N	N/A	N/C	DCV		
Dust and dirt on the equipment and cat	ie are within acceptable limit			Y	Ν	N/A	N/C	DCV		
Special conditions								Grade	Remarks	
Special conditions on certificate are sat	sfied			Y	Ν	N/A	N/C	D		
Notor										
Notes:										

Inspected:

Date:_

Checked:

11 Overhaul, Repair, Modification and Replacement Register

Documentation in relation to this section is to be maintained by APA Group. This Section contains the sample repair and examination report(s).



REPAIR AND EXAMINATION REPORT FOR ENCAPSULATED EQUIPMENT (EX 'm')



General						
Tag no.:	Site:					
P&ID:	Area Classification:					
Equipment Details						
Equipment type:	Gas group (IIA/B/C):					
Manufacturer:	Temp class (T1-T6):					
Model no.:	Certificate no.:					
Serial no.:	Test authority:					
Operator						
Name:	Identification no.:					
Company:	Company registration:					
Old repair label details: Reported fault (if any):						
Item Description of check	Remarks					
(a) Cracks in compound						
(b) Crazing						
(c) Exposure of encapsulated parts						
(d) Flaking						
(e) Shrinking						
(f) Swelling						
(g) Decomposition						
(h) Discoloration						
(i) Failure of adhesion						
(j) Change in hardness						

I,.....confirm that the above equipment, repaired/overhaul/modified (strike out whichever is not applicable) as above, complies/does not comply with the relevant requirements of AS/NZS 3800 (including markings as required by Appendix D) and AS.....and that this Report has been recorded in the logbook of the service facility.

Sign:....

Date:...../...../....../

REPAIR AND EXAMINATION REPORT FOR INTRINSICALLY SAFE EQUIPMENT (EX 'i')



General

Tag no.:	Site:
P&ID:	Area Classification:

Equipment Details

Equipment type:	Gas group (IIA/B/C):
Manufacturer:	Temp class (T1-T6):
Model no.:	Certificate no.:
Serial no.:	Test authority:

Competent Operator

Name:	Identification no.:
Company:	Company registration:

Condition

Condition upon receipt:
Old repair label details:
Reported Fault (if any):

Action

Repair action:
Remarks:

I,.....confirm that the above equipment, repaired/overhaul/modified (strike out whichever is not applicable) as above, complies/does not comply with the relevant requirements of AS/NZS 3800 (including markings as required by Appendix D) and AS.....and that this Report has been recorded in the logbook of the service facility.

Sign:....

Date:...../...../.....

REPAIR AND EXAMINATION REPORT FOR INCREASED SAFETY ENCLOSURES (EX 'e')



General							
Tag no.:		Site:					
P&ID:		Area Classification:					
Equipment Details							
Equipment type:		Gas group (IIA/B/C):					
Manufacturer:		Temp class (T1-T6):					
Model no.:		Certificate no.:					
Serial no.:		Test authority:					
Competent Operator							
Name:		Identification no:					
Company:		Company Registration:					
Enclosure Condition							
Old repair label no.:							
External surface cleaned for inspe	ction - Yes / No						
Covers and fasteners:		Base of enclosure:					
Threaded holes:		External corrosion:					
Surface coating:		Gland entries and glane	ds:				
General external condition:							
Enclosure dismantled:		Degree of protection: IF					
Internal Condition - Dust/Liqui	ids:	Corrosion:	Heat:				
Missing parts:		1					
Cables and terminations:		Terminal blocks:					
Earth terminals:		Insulation:					
Windows and seals:		Actuators and seals:					
Ex 'de' parts:		Meters:					
Lamps:		Transformers:					
Switches:		Others:					
Relays:		Interlocks:					
Luminaire:		Lamp power (W):					
Transparent part:		Lampholders:					
Ballasts:	Capacitors:		Batteries:				
Action							
Repair							

Remarks:	

I,.....confirm that the above equipment, repaired/overhaul/modified (strike out whichever is not applicable) as above, complies/does not comply with the relevant requirements of AS/NZS 3800 (including markings as required by Appendix D) and AS.....and that this Report has been recorded in the logbook of the service facility.

Sign:....

Date:...../...../......

REPAIR AND EXAMINATION REPORT FOR ELECTRICAL EQUIPMENT INSTALLED WITHIN FLAMEPROOF ENCLOSURE (EX'd')



Gene	ral						
Tag n	0.:	Site:					
P&ID:		Area Classification:					
Equip	oment Details						
Equip	ment type:	Gas group (IIA	/B/C):				
Manut	facturer:	Temp class (T	1-T6):				
Model	no.:	Certificate no .:					
Serial	no.:	Test authority:					
Oper	ator						
Name	:	Identification no	0.:				
Comp	any:	Company regis	stration:				
Equip	oment Condition Checklist						
Item	Description of check	No work	Repaired	Replaced			
(a)	Isolator mechanism and switch operation						
(b)	Earthing device and operation						
(C)	All auxiliary mechanisms, trip bars, latching arrangements, etc.						
(d)	All locking devices, function and operation						
(e)	All parts for mechanical condition						
(f)	All insulation checked – no heat, cracks, etc.						
(g)	Phase barriers fitted correctly and functional						
(h)	Oil levels and/or gas pressure						
(i)	Gas pressure-sensing devices						
(J)	All wiring and terminations						
(k)	Earth continuity; phase/earth fault lock units						
(I)	Overcurrent, overload and earth-fault devices						
(m)	Earth-fault trip devices						
(n)	Timing devices						
(0)	Temperature-sensing devices						
(p)	Transformer connections, bolts, tapes. bracing, insulators and fittings, etc.						
(q)	Installation						
(r)	Machine cables and glands						

Details of repair or modification (attach extra pages if required):

Results of insulation resistance tests on transformers:

Transformers ratio:	Capacity:	Serial no.:
Manufacturer:	Type of cooling:	
Tested with: V	(megohmmeter)	
Primary winding to secondary winding:.	ΜΩ	
Primary winding to earth:	ΜΩ	
Secondary winding to earth:	ΜΩ	
Earth continuity of earth screen to core:		

Continued....

REPAIR AND EXAMINATION REPORT FOR ELECTRICAL EQUIPMENT INSTALLED WITHIN FLAMEPROOF ENCLOSURE (EX'd')



Assembled unit tested for insulation resistance with: V megohmmeter, and power frequency tested on the following circuits:

Circuit description	Insulation resistance MΩ	Test voltage kV	Test frequency Hz	Result

I,.....confirm that the above equipment, repaired/overhaul/modified (strike out whichever is not applicable) as above, complies/does not comply with the relevant requirements of AS/NZS 3800 (including markings as required by Appendix D) and AS.....and that this Report has been recorded in the logbook of the service facility.

Sign:....

Date:...../...../......

REPAIR AND EXAMINATION REPORT FOR FLAMEPROOF ENCLOSURE (EX'd')



General

Tag no.:		Site:	
P&ID:		Area Classification:	
Equi	pment Details	-	
Equip	ment type:	Gas group (IIA/B/C):	
Manu	facturer:	Temp class (T1-T6):	
Mode	l no.:	Certificate no.:	
Serial	no.:	Test authority:	
Oper	ator		
Name	:	Identification no.:	
Comp	pany:	Company registration:	
Equi	pment Condition Checklist		
Item	Description of check	Remarks	
(a)	Check of external and internal damage		
(b)	Dimensional check		
(c)	Corrosion on flamepaths		
(d)	Result of static pressure test		
(e)	Check of flanged joint surfaces		
(f)	Check of all threaded holes		
(g)	Check of all windows and lenses		
(h)	Check of breathers		
(i)	Check of all bolt holes, studs, screws,		
(J)	Check of all gland entries and fixing		
(k)	Check of all cables glands		
(l)	Check of all handhole and inspection		
(m)	Check of all mechanical interlocks		
(n)	Check of all flamepath gaps		

	•
1.	Max. out of plane of box flanges:
	Max. out of plane of cover:
	Max. flameproof gap when bolted up:
	Max. diametral clearance of spindles:
5.	Max. diametral clearance of gland to gland apertures:
	Static pressure test – pressure:
	Water jacket – pressure test:Capacity:
Certific	cation drawing no(s).:
Rema	ks:

I,.....confirm that the above equipment, repaired/overhaul/modified (strike out whichever is not applicable) as above, complies/does not comply with the relevant requirements of AS/NZS 3800 (including markings as required by Appendix D) and AS.....and that this Report has been recorded in the logbook of the service facility.

Sign:....

Date:...../...../.....

Based on AS/NZS 3800:2005 "Uncontrolled" Form HAD 1.3 Rev_0



12 Schedule of Equipment and Conditions Requiring Compliance Status Attention

Тад	P&ID No.	Location	Reason for non-compliance
AD 1510-ZSO-10 AD 1510-ZSC-10	AD 1510-7002	Main Line Valve AD 1510-MLV-6	Nil certification details available to Australian Standards.
AD 1510-SVO-10 AD 1510-SVC-10	AD 1510-7002	Main Line Valve AD 1510-MLV-6	Nil certification details available to Australian Standards.
AD 1510-SVO-16 AD 1510-SVC-16	AD 1510-7002	Control valve AOV-16	Solenoids are old and in bad condition.
AD 1510- JB-16		Control valve AOV-16	Replace perished seal, uncertified plug and elbow
AD 1510- LSL-17	AD 1510-7002	Water bath heater H- 1	Nil certification details available to Australian Standards.
AD 1510-TSH-17	AD 1510-7002	Water bath heater H- 1	Nil certification details available to Australian Standards.
AD 1510-DPT-44	AD 1510-7002	Station Inlet	Replace uncertified gland and JB.
AD 1510-IP-1	AD 1510-7002	Water bath heater H- 1	Ex d, n, i certified to EM/CSA and not Australian, hence conformity assessment or replacement required.
AD 1510-PSH	AD 1510-7002	Water bath heater H- 1	Replace uncertified plug.
AD 1510- PSL	AD 1510-7002	Water bath heater H- 1	Replace uncertified plug.
AD 1510- SV-2	AD 1510-7002	Water bath heater H- 1	Replace uncertified cable gland.
AD 1510- SV-1	AD 1510-7002	Water bath heater H- 1	Replace uncertified cable gland.
AD 1510-SVO-18 AD 1510-SVC-18	AD 1510-7002	Control valve AOV-16	Replace solenoids due to age and condition (suggest new JB and cable connected to new solenoids).



Тад	P&ID No.	Location	Reason for non-compliance
AD 1510- JB-18		Control valve AOV-16	Verify Ex rating of enclosure, replace as required (suggests new JB and cable connected to new solenoids).
AD 1510-TSH-19	AD 1510-7002	Water bath heater H- 1	Replace uncertified plug.
AD 1510-ESD-3			Replace uncertified cable gland.
AD 1510-SVC-31	AD 1510-7003	Slam shut valve SSV- 31	Replace with respect to age and condition.
AD 1510-JB-31		Slam shut valve SSV- 31	Replace uncertified gland and adaptor.
AD 1510-PSL-34	AD 1510-7003	DN 80 process piping between PCV-33 & 36	Illegible nameplate, severe corrosion, suggests replacement
AD 1510-SVC-41	AD 1510-7003	Slam shut valve SSV- 41	Replace with respect to age and condition.
AD 1510-JB-41		Slam shut valve SSV- 41	Replace uncertified gland and adaptor.
AD 1510-ZSO-100 AD 1510-ZSC-100	AD 1510-7063	Unit 7 skid inlet	Nil certification details available to Australian Standards.
AD 1510-SVO-100 AD 1510-SVC-100	AD 1510-7063	Unit 7 skid inlet	Nil certification details available to Australian Standards.
AD 1510-ZSO-115 AD 1510-ZSC-115	AD 1510-7063	Unit 7 standby run	Nil certification details available to Australian Standards.
AD 1510-PIT-147	AD 1510-7063	Unit 7 standby run	Flamepath at gland compromised by Dust/insect nesting.
AD 1510-ZSO-101 AD 1510-ZSC-101	AD 1510-7063	Unit 7 duty run	Nil certification details available to Australian Standards.
AD 1510-PIT-111	AD 1510-7063	Unit 7 duty run	Replace uncertified plug.
AD 1510-JB-002			Severe corrosion at gland plate requires remediation.

