

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

Date: 18-Nov-2011

Reviewed by:

Tony Bird
Principal Process Engineer - Fyfe

Date: 18-Nov-2011

Client Accepted:

Anthony Comerford
Pipeline Engineer – APA Group

Date:

Manager:

Henry Dupal
Engineering Manager - APA Group Northern Territory

Date:

FYFE EARTH PARTNERS

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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 A	Report on integrity of explosion protected equipment in hazardous areas
UTE NES 107	Install explosion-protected equipment and wiring systems (Ex)
UTE NES 707	Design 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/manufacture 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.*
- l) 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.

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 (Ex 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

National Provider Code 51160

Date of Issue: 5 December 2007



This statement of attainment is recognised within the Australian Qualifications Framework



This is to certify that
Neville Green
of
GPA Engineering Pty Ltd

Completed the 3 day
Electrical Safety in
Hazardous Areas

Training Course
26th to 28th February 2001

Signed: *CR Baker*

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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- 12 Schedule of equipment and conditions requiring compliance status attention

Revision History:

Rev.	Status	Date	Prepared	Reviewed	Approved
A	Preliminary issue for client's review	28-Sep-2011	AZP	TCB	
0	Original Issue	18-Nov-2011	AZP	TCB	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 has 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 as 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

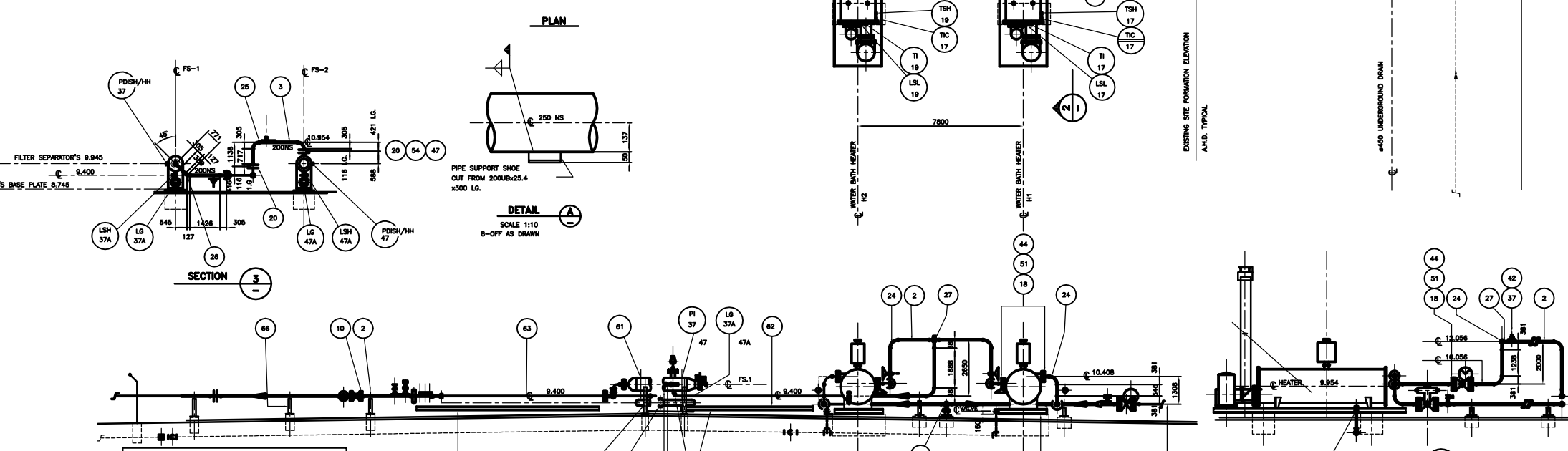
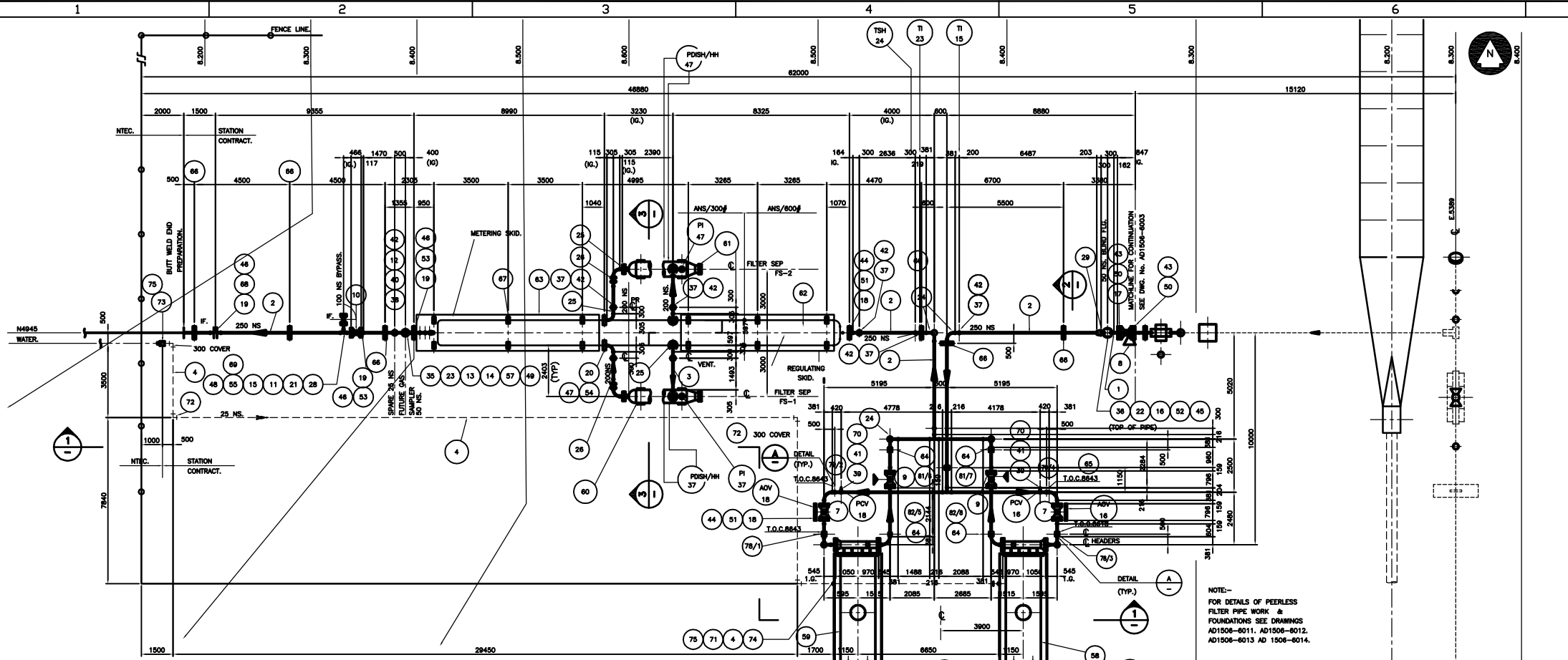
Coriolis meter, but the turbine meter can be operated in series or parallel. Both meters are provided with temperature and pressure correction. Downstream of the meters the combined outlet has a PSV, local manual vent, temperature transmitter and pressure transmitter.

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.

Drawing Number	Description	Revision
<i>APA Group Arrangement Drawing</i>		
AD 1510-6001	Channel Island Station Piping Arrangement Sheet 1 of 2	0
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
<i>Fyfe Updated Plot Plan</i>		
AD 1510-6014	Meter Station– Channel Island	0
<i>P&ID</i>		
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



PROPLANT	SPRING	SUPPORT
ITEM No's	INSTALL LOAD(N)	PIPE SUPPORT HEIGHT
78/1	5915	NIL
78/2	8106	NIL
78/3	6082	NIL
79/4	7641	NIL
80/5	4989	974
81/6	13730	959
81/7	13569	1014
80/8	5018	1029

ITEM	QTY.	DESCRIPTION	CODE NO
76			
77			
78	2	PIPE SUPPORT SPRING PROPLANT FIG.35 TYPE 'F' SIZE 10	C1046
79	2	PIPE SUPPORT SPRING PROPLANT FIG.35 TYPE 'F' SIZE 11	C1047
80	2	PIPE SUPPORT SPRING PROPLANT FIG.35 TYPE 'F' SIZE 9	C1045
81	2	PIPE SUPPORT SPRING PROPLANT FIG.35 TYPE 'F' SIZE 13	C1048

ITEM	QTY.	DESCRIPTION	CODE NO
70	2	VALVE BALL 20 NS 600# SW/NPT	C0241
71	2	VALVE GLOBE 25 NS. BRONZE BODY SCR BSP	C0447
72	5	ELBOW 90° 25 NS HEAVY SCR BSP GALV. BS1740	
73	1	COUPLING 25 NS HEAVY SCR BSP GALV. BS1740	
74	1	TEE EQUAL 25 NS HEAVY SCR BSP GALV. BS1740	
75	3	PLUG HEX HD. 25 NS SCR BSP GALV. BS1740	

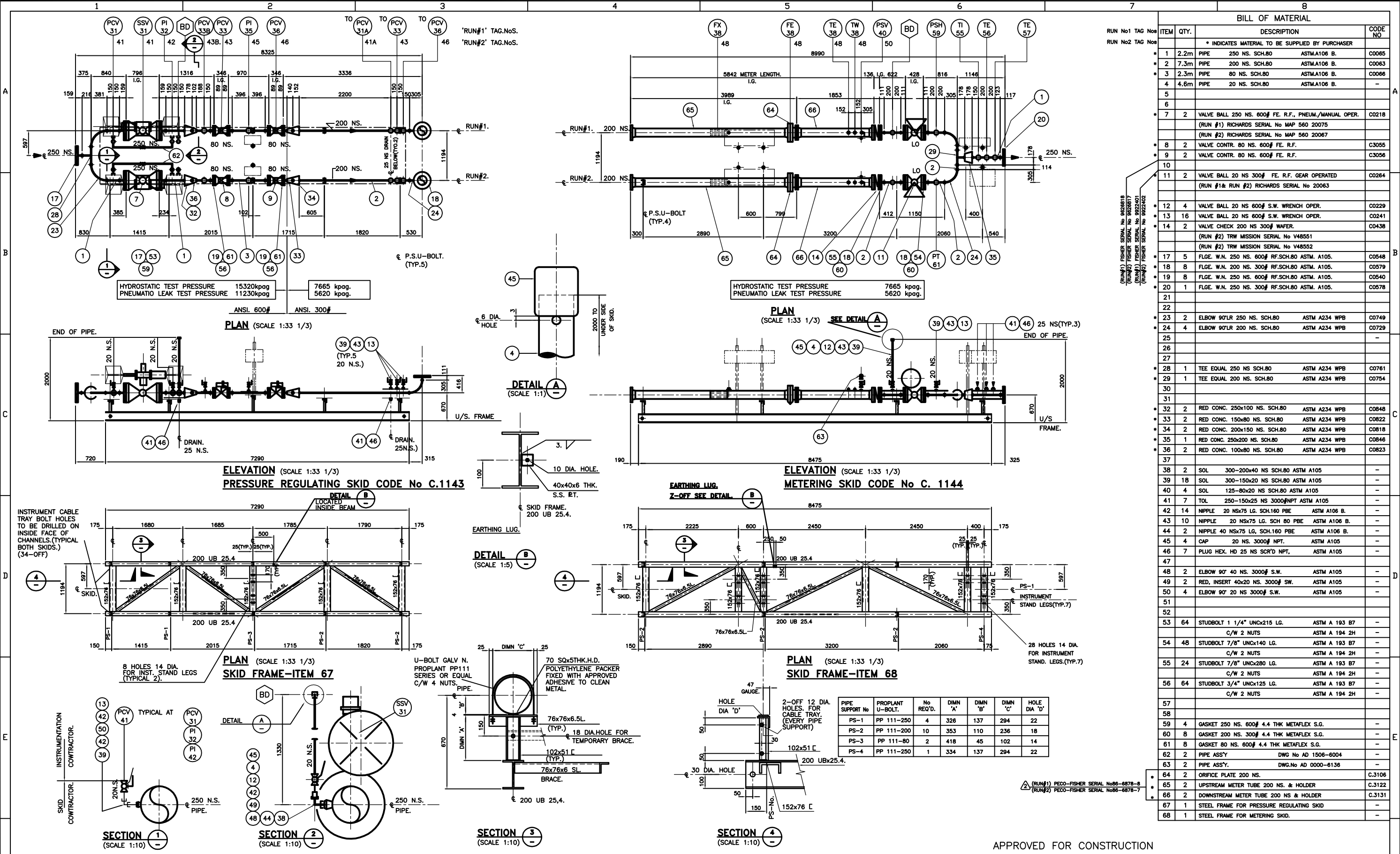
BILL OF MATERIAL				CODE NO	
ITEM	QTY.	DESCRIPTION			
* INDICATES MATERIAL TO BE SUPPLIED BY PRINCIPAL					
1		0.6m PIPE 300 NS SCH 80 ASTM A106 B		C0054	
2		57.0m PIPE 250 NS SCH 80 ASTM A106 B		C0055	
3		9.0m PIPE 200 NS SCH 80 ASTM A106 B		C0063	
4		55.2m PIPE 25 NS HEAVY GALV. AS1074			
5					
6					
7	2	VALVE BALL 250 NS 600# FE/RF		C0218	
PNEUMATIC OPERATED.					
8	1	VALVE BALL 300 NS 600# FE/RF		C0202	
9	2	VALVE BALL 250 NS 600# FE/RF		C0203	
10	1	VALVE BALL 250 NS 300# FE/RF		C0263	
11	1	VALVE BALL 100 NS 300# FE/RF		C0266	
12	1	VALVE BALL 25 NS 600# SW/NPT		C0240	
13	1	VALVE BALL 50 NS 300# FE/RF		C0268	
14	1	FLGE. BLIND 50 NS 300# RF	ASTM A105	C0598	
15	1	FLGE. BLIND 100 NS 300# RF	ASTM A105	C0594	
16	1	FLGE. BLIND 50 NS 600# RF	ASTM A105	C0585	
17	1	FLGE. WN 300 NS 600# RF SCH 80	ASTM A105	C0547	
18	13	FLGE. WN 250 NS 600# RF SCH 80	ASTM A105	C0548	
19	5	FLGE. WN 250 NS 300# RF SCH 80	ASTM A105	C0578	
20	8	FLGE. WN 200 NS 300# RF SCH 80	ASTM A105	C0579	
21	1	FLGE. WN 100 NS 300# RF SCH 80	ASTM A105	C0581	
22	1	FLGE. WN 50 NS 600# RF SCH 80	ASTM A105	C0541	
23	1	FLGE. WN 50 NS 300# RF SCH 80	ASTM A105	C0583	
24	15	ELBOW 90° LR. 250 NS SCH 80	ASTM A234 WPB	C0749	
25	8	ELBOW 90° LR. 200 NS SCH 80	ASTM A234 WPB	C0729	
26	2	ELBOW 45° LR. 200 NS SCH 80	ASTM A234 WPB	C0737	
27	2	TEE EQUAL 250 NS SCH 80	ASTM A234 WPB	C0761	
28	1	TEE RED 250x100 NS SCH 80	ASTM A234 WPB	C0836	
29	1	RED CONC 300x250 NS SCH 80	ASTM A234 WPB	C0843	
30					
31					
32					
33					
34					
35	1	WOL 250-200x50 NS SCH 80	ASTM A105	C0772	
36	1	WOL 450-300x50 NS SCH 80	ASTM A105	C0771	
37	9	TOL 250-150x25 NS 3000#SCR NPT	ASTM A105		
38	1	SOL 250-150x25 NS 3000#	ASTM A105		
39	2	SOL 300-150x20 NS 3000#	ASTM A105		
40	1	NIPPLE 25 NSx100 SCH 160 PBE	ASTM A106 B		
41	2	NIPPLE 20 NSx75 SCH 160 PBE	ASTM A106 B		
42	10	PLUG HEX. HD. 25 NS SCR NPT	ASTM A105		
43	40	STUDBOLT 1/4" UNSx220	ASTM A193 B7		
				C/W 2 NUTS	ASTM A194 2H
44	208	STUDBOLT 1/4" UNSx215	ASTM A193 B7		
				C/W 2 NUTS	ASTM A194 2H
45	16	STUDBOLT 5/8" UNx110	ASTM A193 B7		
				C/W 2 NUTS	ASTM A194 2H
46	64	STUDBOLT 1" UNx160	ASTM A193 B7		
				C/W 2 NUTS	ASTM A194 2H
47	96	STUDBOLT 7/8" UNx140	ASTM A193 B7		
				C/W 2 NUTS	ASTM A194 2H
48	16	STUDBOLT 3/4" UNx115	ASTM A193 B7		
				C/W 2 NUTS	ASTM A194 2H
49	16	STUDBOLT 5/8" UNx90	ASTM A193 B7		
				C/W 2 NUTS	ASTM A194 2H
50	2	GASKET 300 NS 600# 4.4 THK	METAFLEX SG.		
51	13	GASKET 250 NS 600# 4.4 THK	METAFLEX SG		
52	1	GASKET 50 NS 600# 4.4 THK	METAFLEX SG		
53	3	GASKET 250 NS 300# 4.4 THK	METAFLEX SG		
54	8	GASKET 200 NS 300# 4.4 THK	METAFLEX SG		
55	1	GASKET 100 NS 300# 4.4 THK	METAFLEX SG		
57	2	GASKET 50 NS 300# 4.4 THK	METAFLEX SG		
58	1	WATER BATH HEATER H-1		C1160	
59	1	WATER BATH HEATER H-2		C1170	
60	1	FILTER SEPARATOR. FS-1		C1167	
61	1	FILTER SEPARATOR. FS-2		C1167	
62	1	PRESSURE REGULATING SKID. DWG. No. AD-1506-6002		C1143	
63	1	METERING SKID. DWG. No. AD-1506-6002		C1144	
64	4	PIPE SUPPORT. DWG. No. AD 0000-6145			
65	1	PIPE SUPPORT. DWG. No. AD 0000-6146			
66	6	PIPE SUPPORT. DRG. No. AD 0000-6143			
67	12	W.D. ASSEMBLY. DRG. No. AD 0000-1052			
68	1	SET INSULATING KIT 250 NS 300# RF		C1026	
69	1	SET INSULATING KIT 100 NS 300# RF		C1029	

APPROVED FOR CONSTRUCTION

REV.	REVISION DESCRIPTION	DRAWN	CHECK'D	APP'D	DATE	REFERENCE DRAWINGS	APPROVED
0	NEW DWG NO. REF AD1506-6001 REV 5	BP	ML	HD	11/2/10	AD1506-6014 AD1506-6013 AD1506-6012 AD1506-6011 AD1510-7003 AD1510-7002	PIPE SECTION (FILTER PIPEWORK.) PIPE SECTIONS (FILTER PIPE WORK.) ARRGT. OF FOUNDATIONS. PIPEWORK ARRGT. (PEERLESS FILTER.) P & I DIAGRAM P & I DIAGRAM

N.T. GAS
 Pty. Limited
 ACN 050 221 415
 16 Georgina Crescent PALMERSTON NT
 PO Box 7 PALMERSTON NT 0831
 Telephone: (08) 8935 1611
 Facsimile: (08) 8932 1663

TITLE	AMADEUS BASIN TO DARWIN PIPELINE CHANNEL ISLAND STATION PIPING ARRANGEMENT SHT 1 OF 2		
DRG. SIZE	SCALE	DRAWING NUMBER	REV.
A1	1:100	AD1510-6001	0

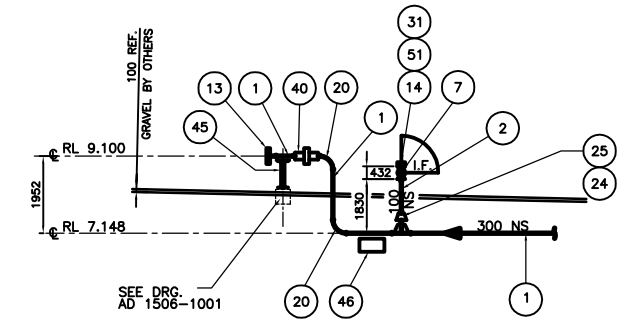
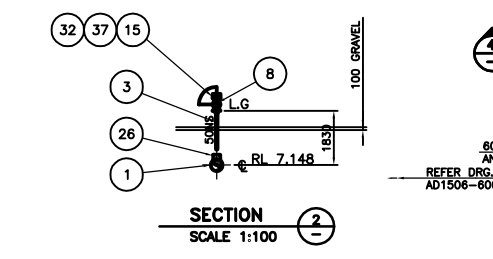
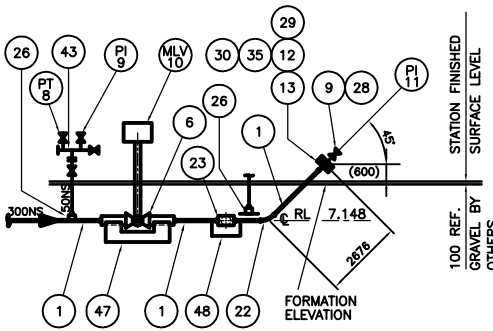
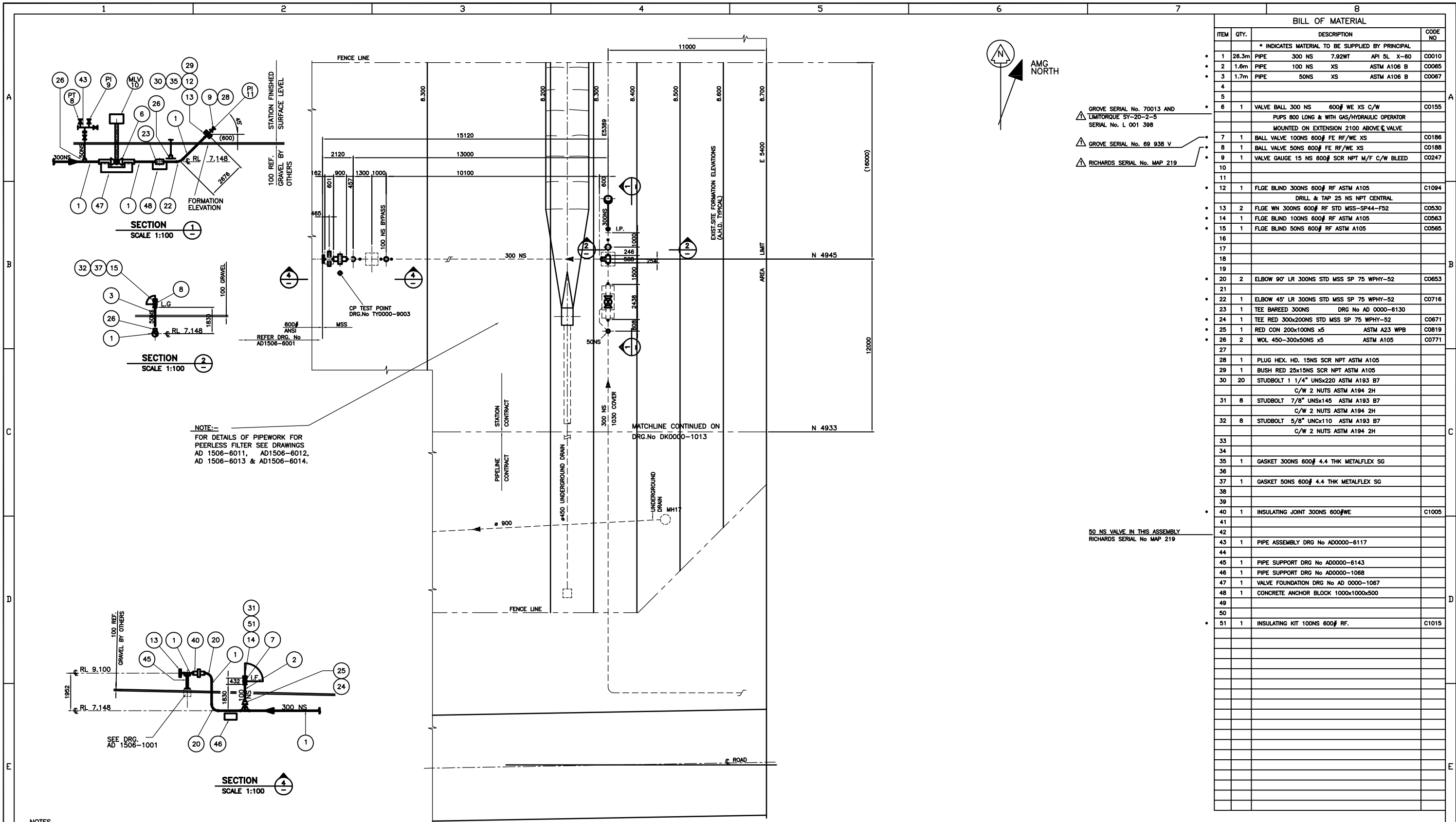


BILL OF MATERIAL		ITEM	QTY.	DESCRIPTION	CODE NO
* INDICATES MATERIAL TO BE SUPPLIED BY PURCHASER					
1	2.2m	PIPE	250 NS. SCH.80	ASTMA106 B.	C0065
2	7.3m	PIPE	200 NS. SCH.80	ASTMA106 B.	C0063
3	2.3m	PIPE	80 NS. SCH.80	ASTMA106 B.	C0066
4	4.6m	PIPE	20 NS. SCH.80	ASTMA106 B.	-
5					
6					
7	2	VALVE BALL	250 NS. 600# FE. R.F. PNEUM./MANUAL OPER.		C0218
(RUN #1) RICHARDS SERIAL No MAP 560 20075					
(RUN #2) RICHARDS SERIAL No MAP 560 20067					
8	2	VALVE CONTR.	80 NS. 600# FE. R.F.		C3055
9	2	VALVE CONTR.	80 NS. 600# FE. R.F.		C3056
10					
11	2	VALVE BALL	20 NS. 300# FE. R.F. GEAR OPERATED		C0284
(RUN #1 & RUN #2) RICHARDS SERIAL No 20063					
12	4	VALVE BALL	20 NS. 600# S.W. WRENCH OPER.		C0229
13	16	VALVE BALL	20 NS. 600# S.W. WRENCH OPER.		C0241
14	2	VALVE CHECK	200 NS. 300# WAFER.		C0438
(RUN #2) TRW MISSION SERIAL No V48551					
(RUN #2) TRW MISSION SERIAL No V48552					
17	5	FLGE. W.N.	250 NS. 600# RF.SCH.80 ASTM. A105.		C0548
18	8	FLGE. W.N.	200 NS. 300# RF.SCH.80 ASTM. A105.		C0579
19	8	FLGE. W.N.	250 NS. 600# RF.SCH.80 ASTM. A105.		C0540
20	1	FLGE. W.N.	250 NS. 300# RF.SCH.80 ASTM. A105.		C0578
21					
22					
23	2	ELBOW 90°LR	250 NS. SCH.80	ASTM A234 WPB	C0749
24	4	ELBOW 90°LR	200 NS. SCH.80	ASTM A234 WPB	C0729
25					
26					
27					
28	1	TEE EQUAL	250 NS. SCH.80	ASTM A234 WPB	C0761
29	1	TEE EQUAL	200 NS. SCH.80	ASTM A234 WPB	C0754
30					
31					
32	2	RED CONC.	250x100 NS. SCH.80	ASTM A234 WPB	C0848
33	2	RED CONC.	150x80 NS. SCH.80	ASTM A234 WPB	C0822
34	2	RED CONC.	200x150 NS. SCH.80	ASTM A234 WPB	C0818
35	1	RED CONC.	250x200 NS. SCH.80	ASTM A234 WPB	C0846
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.	125-80x20 NS. SCH.80 ASTM A105		-
41	7	TOL.	250-150x25 NS. 3000#NPT ASTM A105		-
42	14	NIPPLE	20 NSx75 LG. SCH.160 PBE	ASTM A106 B.	-
43	10	NIPPLE	20 NSx75 LG. SCH. 80 PBE	ASTM A106 B.	-
44	2	NIPPLE	40 NSx75 LG. SCH.160 PBE	ASTM A106 B.	-
45	4	CAP.	20 NS. 3000# NPT.	ASTM A105	-
46	7	PLUG HEX.	HD 25 NS. SCR'D NPT.	ASTM A105	-
47					
48	2	ELBOW 90°	40 NS. 3000# S.W.	ASTM A105	-
49	2	RED. INSERT	40x20 NS. 3000# SW.	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 B7	-
				C/W 2 NUTS	ASTM A 194 2H
54	48	STUDBOLT	7/8" UNCx140 LG.	ASTM A 193 B7	-
				C/W 2 NUTS	ASTM A 194 2H
55	24	STUDBOLT	7/8" UNCx280 LG.	ASTM A 193 B7	-
				C/W 2 NUTS	ASTM A 194 2H
56	64	STUDBOLT	3/4" UNCx125 LG.	ASTM A 193 B7	-
				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	80 NS. 600# 4.4 THK METAFLEX S.G.		-
62	2	PIPE ASS'Y.	DWG No AD 1506-6004		-
63	2	PIPE ASS'Y.	DWG.No AD 0000-6136		-
64	2	ORIFICE PLATE	200 NS.		C.3106
65	2	UPSTREAM 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.		-

APPROVED FOR CONSTRUCTION

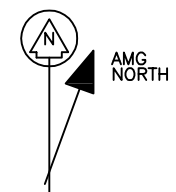
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														AMADEUS BASIN TO DARWIN PIPELINE CHANNEL ISLAND STATION PRESSURE REGULATING & METERING SKID	
0		NEW DWG NO. REF AD1506-6002 REV 5		BP ML HD		11/2/10		AD1510-7003		PIPING & INSTRUMENT DIAGRAM.		DRG. SIZE		SCALE	
REV.		REVISION DESCRIPTION		DRAWN		CHECK'D		APP'D		DATE		REFERENCE DRAWINGS		DRAWING NUMBER	
1				2		3		4		5		6		7	
												16 Georgina Crescent PALMERSTON NT PO Box 7 PALMERSTON NT 0831 Telephone: (08) 8935 1611 Facsimile: (08) 8932 1663		A1 1:33 1/3,1:10,1:1,1:5	
												AD1510-6002		REV. 0	





NOTE:-
FOR DETAILS OF PIPEWORK FOR
PEERLESS FILTER SEE DRAWINGS
AD 1506-6011, AD1506-6012,
AD 1506-6013 & AD1506-6014.

NOTES
1. CHANNEL ISLAND GRID (C.I.G.) FLAT EARTH GRID
ORIGIN IS 5000 EAST & 5000 NORTH COINCIDING WITH
AUSTRALIAN MAP GRID (A.M.G.) 702475 EAST &
8811200 NORTH, ZONE 52 C.I.G.
NORTH IS ORIENTATED 20° 50' WEST OF AMG
ZONE 52 NORTH.
HEIGHT DATUM IS AUSTRALIAN HEIGHT DATUM (A.H.D.)



- ▲ GROVE SERIAL No. 70013 AND LIMITORQUE SY-20-2-5 SERIAL No. L 001 398
- ▲ GROVE SERIAL No. 69 938 V
- ▲ RICHARDS SERIAL No. MAP 219

50 NS VALVE IN THIS ASSEMBLY
RICHARDS SERIAL No MAP 219

BILL OF MATERIAL			
ITEM	QTY.	DESCRIPTION	CODE NO
* INDICATES MATERIAL TO BE SUPPLIED BY PRINCIPAL.			
1	26.3m	PIPE 300 NS 7.92WT API 5L X-60	C0010
2	1.6m	PIPE 100 NS XS ASTM A106 B	C0065
3	1.7m	PIPE 50NS XS ASTM A106 B	C0067
4			
5			
6	1	VALVE BALL 300 NS 600# WE XS C/W PUPS 800 LONG & WITH GAS/HYDRAULIC OPERATOR MOUNTED ON EXTENSION 2100 ABOVE VALVE	C0155
7	1	BALL VALVE 100NS 600# FE RF/WE XS	C0186
8	1	BALL VALVE 50NS 600# FE RF/WE XS	C0188
9	1	VALVE GAUGE 15 NS 600# SCR NPT M/F C/W BLEED	C0247
10			
11			
12	1	FLGE BLIND 300NS 600# RF ASTM A105 DRILL & TAP 25 NS NPT CENTRAL	C1094
13	2	FLGE WN 300NS 600# RF STD MSS-SP44-F52	C0530
14	1	FLGE BLIND 100NS 600# RF ASTM A105	C0563
15	1	FLGE BLIND 50NS 600# RF ASTM A105	C0565
16			
17			
18			
19			
20	2	ELBOW 90° LR 300NS STD MSS SP 75 WPHY-52	C0653
21			
22	1	ELBOW 45° LR 300NS STD MSS SP 75 WPHY-52	C0716
23	1	TEE BAREED 300NS DRG No AD 0000-6130	C0671
24	1	TEE RED 300x200NS STD MSS SP 75 WPHY-52	C0671
25	1	RED CON 200x100NS x5 ASTM A23 WPB	C0819
26	2	WOL 450-300x50NS x5 ASTM A105	C0771
27			
28	1	PLUG HEX. HD. 15NS SCR NPT ASTM A105	
29	1	BUSH RED 25x15NS SCR NPT ASTM A105	
30	20	STUDBOLT 1 1/4" UNSx220 ASTM A193 B7 C/W 2 NUTS ASTM A194 2H	
31	8	STUDBOLT 7/8" UNSx145 ASTM A193 B7 C/W 2 NUTS ASTM A194 2H	
32	8	STUDBOLT 5/8" UNCx110 ASTM A193 B7 C/W 2 NUTS ASTM A194 2H	
33			
34			
35	1	GASKET 300NS 600# 4.4 THK METALFLEX SG	
36			
37	1	GASKET 50NS 600# 4.4 THK METALFLEX SG	
38			
39			
40	1	INSULATING JOINT 300NS 600#WE	C1005
41			
42			
43	1	PIPE ASSEMBLY DRG No AD0000-6117	
44			
45	1	PIPE SUPPORT DRG No AD0000-6143	
46	1	PIPE SUPPORT DRG No AD0000-1068	
47	1	VALVE FOUNDATION DRG No AD 0000-1067	
48	1	CONCRETE ANCHOR BLOCK 1000x1000x500	
49			
50			
51	1	INSULATING KIT 100NS 600# RF.	C1015

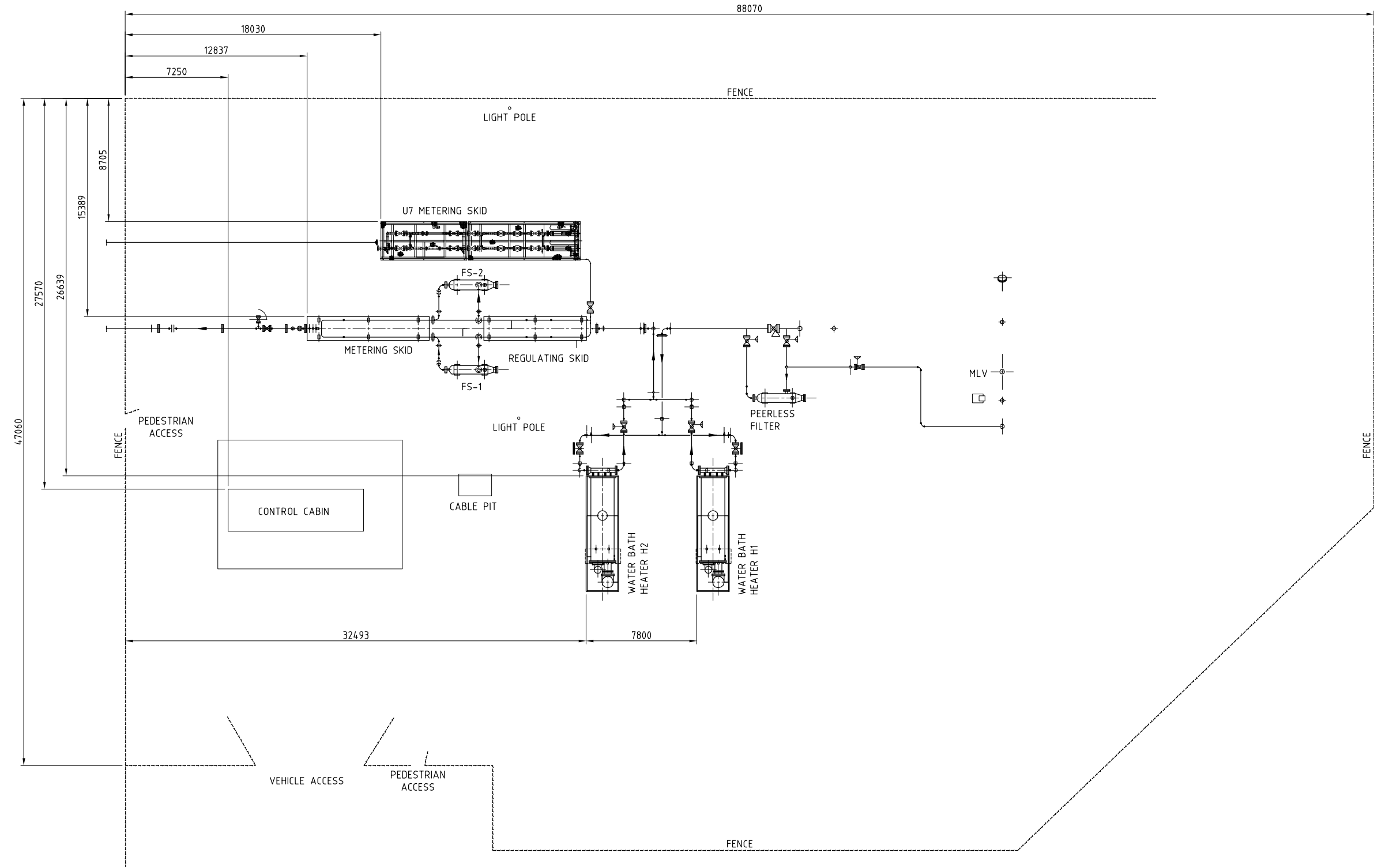
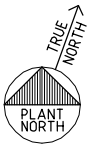
APPROVED FOR CONSTRUCTION

REV.	REVISION DESCRIPTION	DRAWN	CHECK'D	APP'D	DATE	REFERENCE DRAWINGS	APPROVED	INITS.	SIGNATURE	DATE
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						AD1506-6014				
						AD1506-6013				
						AD1506-6012				
						AD1506-6011				

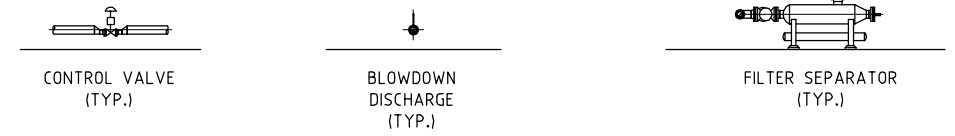
N.T. GAS
Pty. Limited
ACN 050 221 415

16 Georgina Crescent PALMERSTON NT
PO Box 7 PALMERSTON NT 0831
Telephone: (08) 8935 1611
Facsimile: (08) 8932 1663

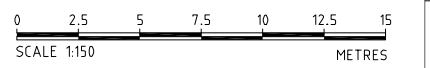
TITLE	AMADEUS BASIN TO DARWIN PIPELINE CHANNEL ISLAND STATION PIPING ARRANGEMENT SHEET 2 OF 2		
DRG. SIZE	SCALE	DRAWING NUMBER	REV.
A1	1:100, 1:20	AD1510-6003	0



PLAN VIEW
SCALE 1:150



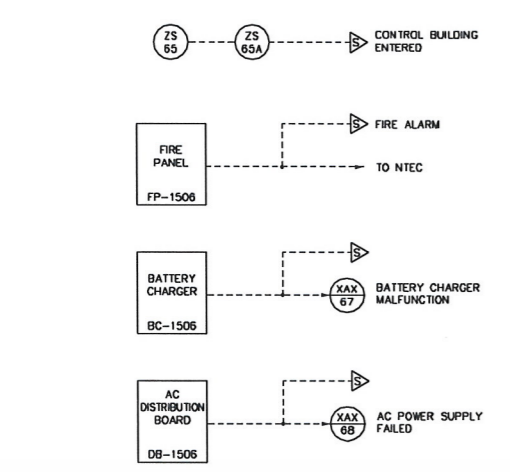
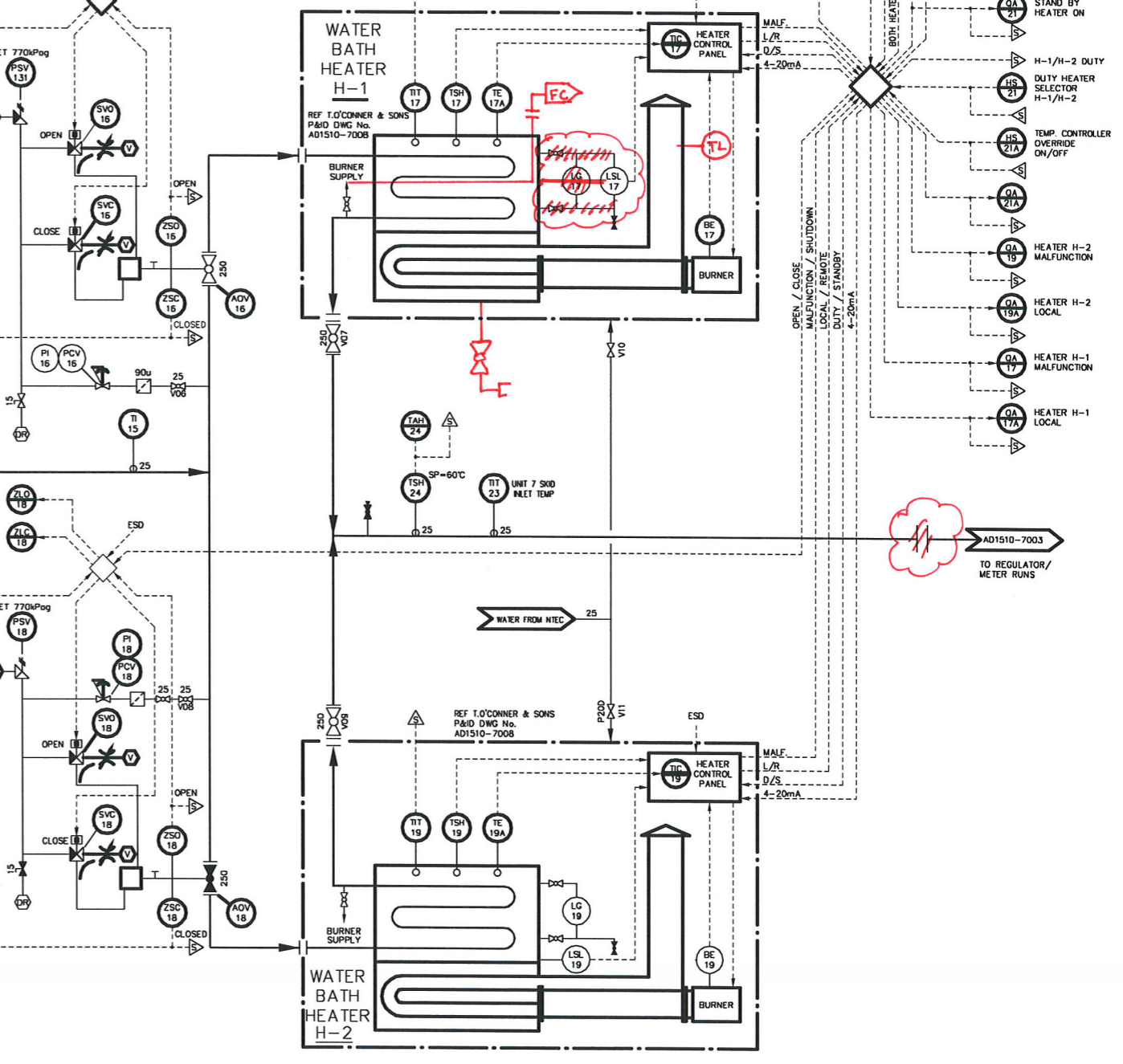
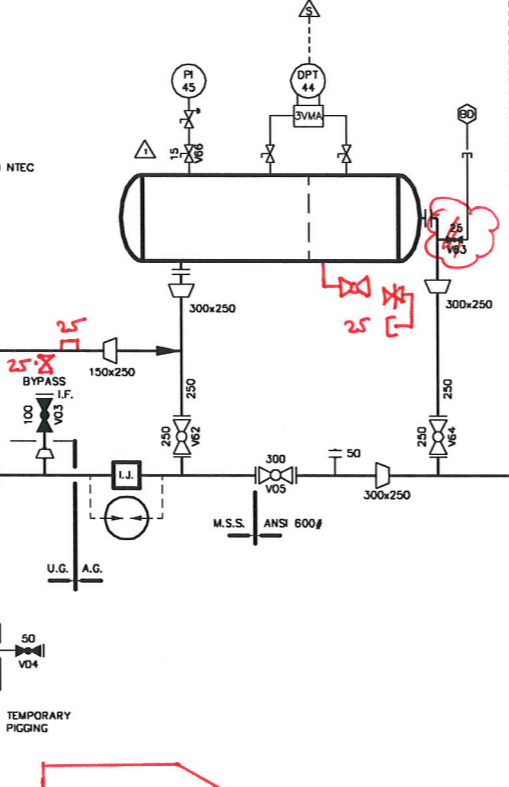
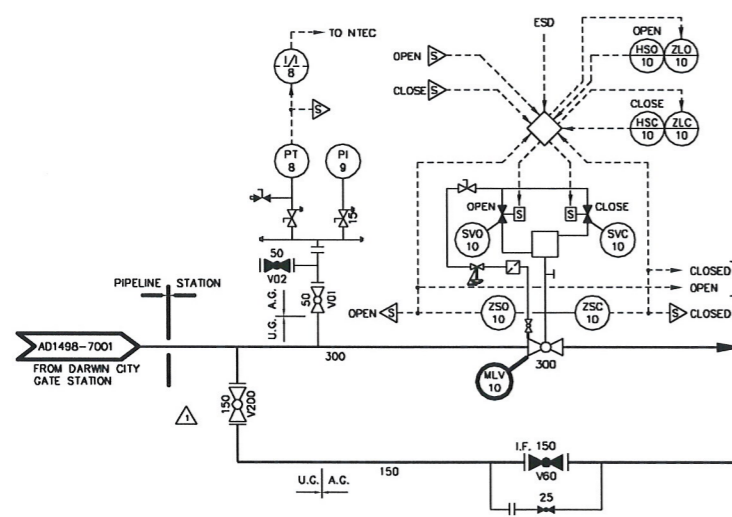
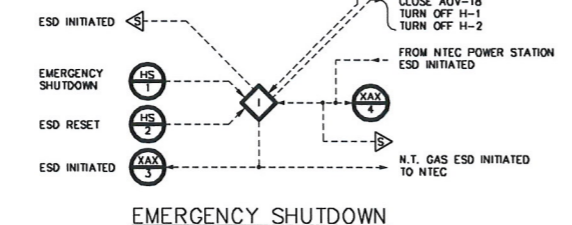
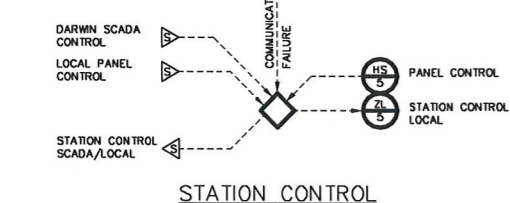
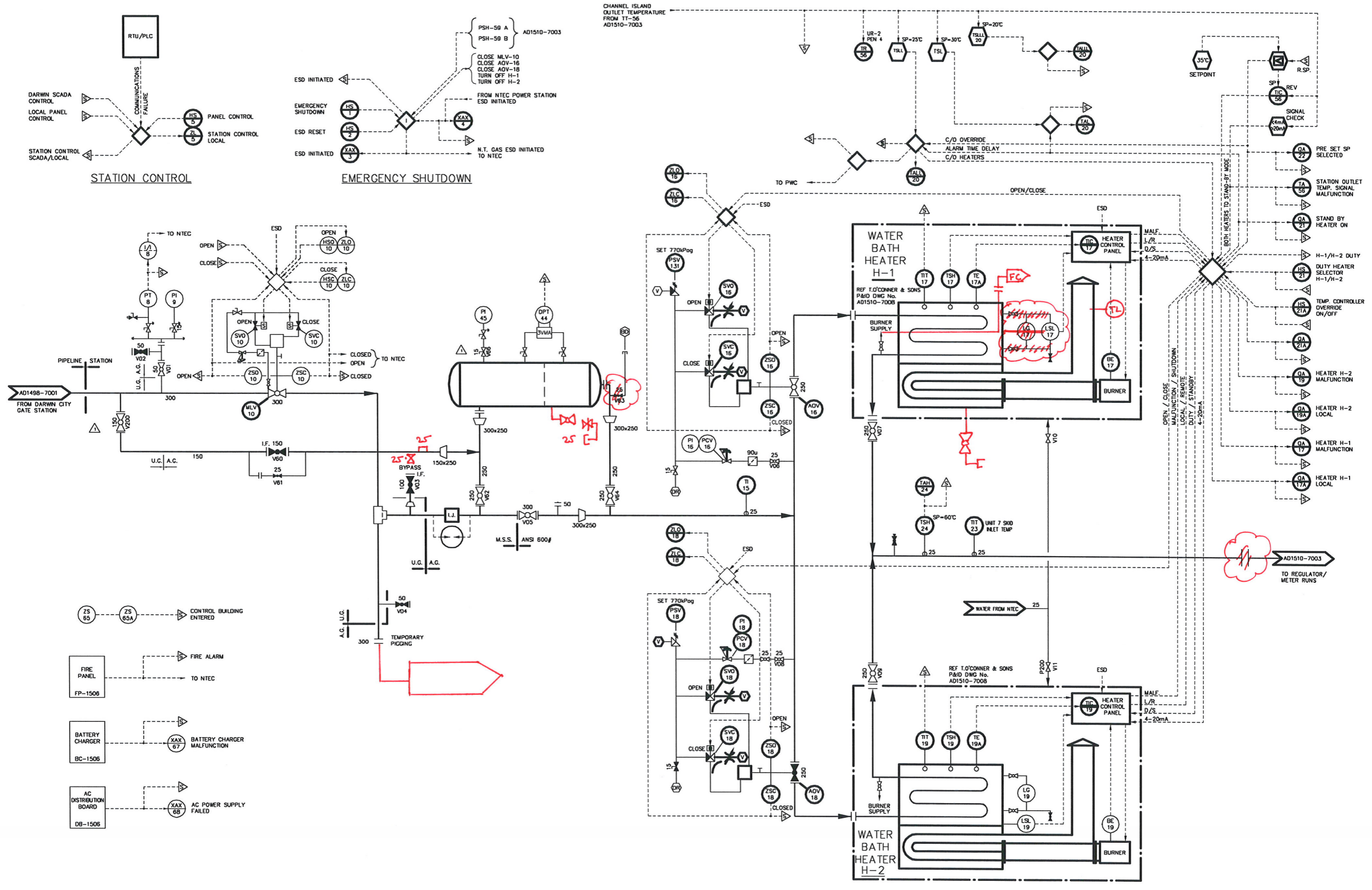
ELEVATIONS
SCALE 1:150



NOTES:
1. LOCATION OF UNDERGROUND SERVICES NOT CONFIRMED AND NOT SHOWN ON THIS DRAWING, REFER TO DRAWING AD1510-6001 FOR ALL PIPING DETAILS.
2. ALL DIMENSIONS ARE BASED ON 3D SCAN DATA. ALL 3D DATA RETAINED BY FYFE

REV	REVISION DESCRIPTION	DATE	DWG. NO.	APP.	REFERENCE DRAWING	GROUP
1						
2						

<p>FYFE Earth Partners AD1510-6001</p>	<p>APA Group</p>	SHEET NO. 11 LEVEL DRAWING PLOT POSITION: 11/15	SCALE: 1:150 PLAN SCALE: AS SHOWN DATE: 20/11/2024 DRAWN: J. WILSON CHECKED: J. WILSON APPROVED: J. WILSON	PROJECT: AMADEUS BASIN TO DARWIN PIPELINE TITLE: METERING STATION PLOT PLAN - CHANNEL ISLAND CHANNEL ISLAND PLOT PLAN
		PROJECT NO. AD1510-6001 DRAWING NO. AD1510-6001-11 REV. 0		

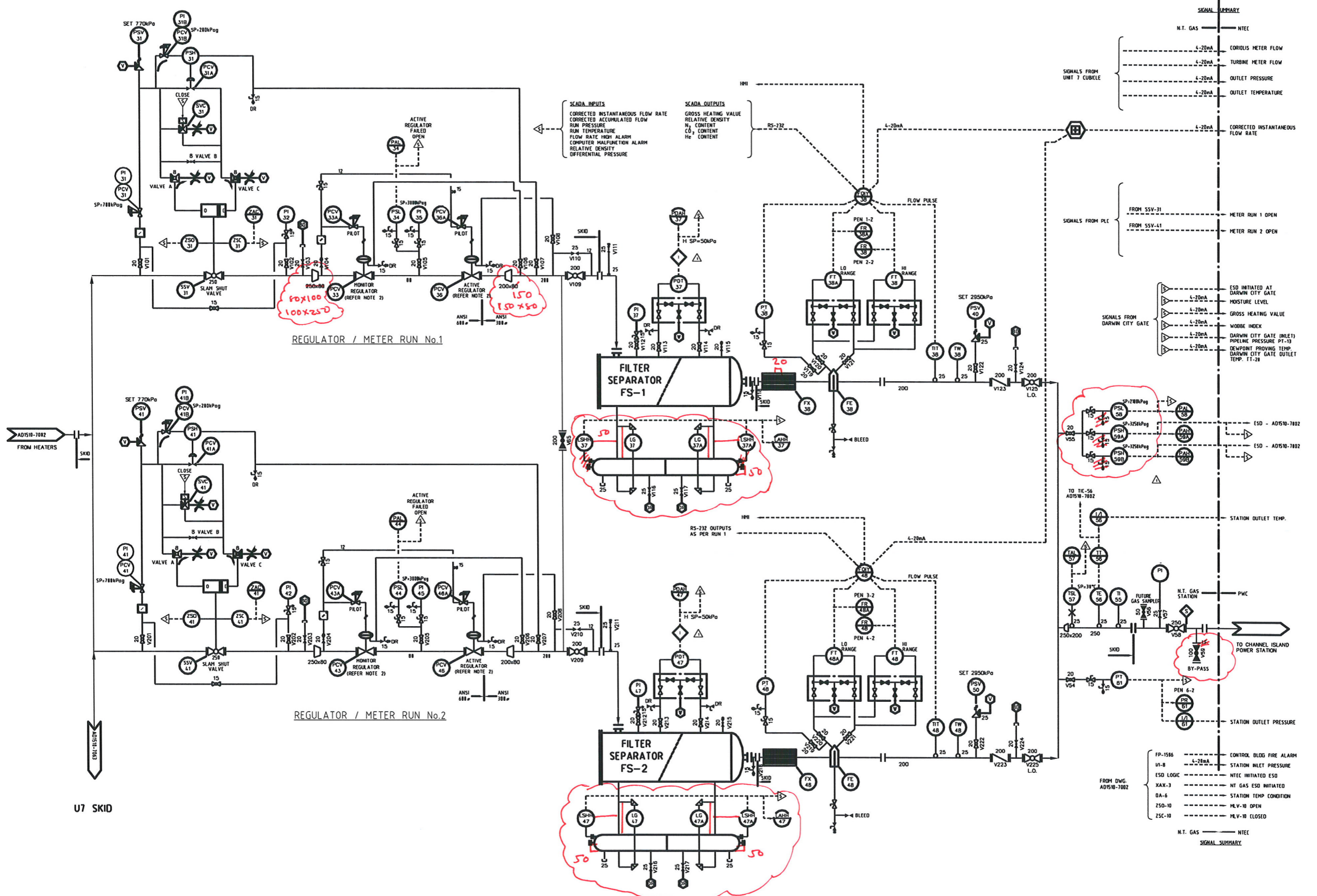


NOTES
 1. ALL EQUIPMENT/INSTRUMENT TAG NUMBERS SHALL BE SUFFIXED WITH THE STATION NUMBER eg. PT-8-1506
 2. VALVE ADDED DURING HOT TAP. NO HANDLE.

NO.	DATE	REVISION	BY	CHKD	ENG	CHKD MGR	PROJ MGR	APPRD
1	13-10-09	ADDED HOT-TAP VALVE FOUND DURING COATING REPAIR, V05 VALVE NUMBER	BP	ML	HD			
0	10-06-08	NEW DRAWING NUMBER, REFERENCE PREVIOUS DRG NO AD1506-7002 REV13	DCH	BP	HD			

CMPS&F PTY LIMITED ENGINEERS AND PROJECT MANAGERS 67 ALBERT AVENUE, CHATSWOOD, NSW, AUSTRALIA 2067 TEL: (+61) 21 9412 9999 FAX: (+61) 21 9412 9855		CLIENT N.T. GAS	
COPYRIGHT INFORMATION CONTAINED ON THIS DRAWING IS THE COPYRIGHT OF CMPS&F PTY LIMITED. COPYING OR USING THIS DRAWING IN WHOLE OR PART WITHOUT WRITTEN PERMISSION INFRINGES COPYRIGHT.		TITLE AMADEUS BASIN TO DARWIN PIPELINE CHANNEL IS. REGULATING/METER STATION P & I DIAGRAM MAINLINE VALVE AND HEATERS	
DRG. NO. B1	SCALE NTS	JOB NO. 6850-000	DRAWING NO. AD 1510-7002
			REV. 1

DRG. NO.	REFERENCE DRAWINGS
AD1510-7004	P & I DIAGRAM WATER BATH HEATER
AD1510-7003	P & I DIAGRAM REGULATING/METERING



AD1510-7002 FROM HEATERS

U7 SKID

REGULATOR / METER RUN No.1

REGULATOR / METER RUN No.2

FILTER SEPARATOR FS-1

FILTER SEPARATOR FS-2

SIGNAL SUMMARY	
N.T. GAS	NTEC
4-20mA	CORIOLIS METER FLOW
4-20mA	TURBINE METER FLOW
4-20mA	OUTLET PRESSURE
4-20mA	OUTLET TEMPERATURE
4-20mA	CORRECTED INSTANTANEOUS FLOW RATE
SIGNALS FROM UNIT 7 CUMBLE	
FROM SSV-31	METER RUN 1 OPEN
FROM SSV-41	METER RUN 2 OPEN
SIGNALS FROM PLE	
4-20mA	ESD INITIATED AT DARWIN CITY GATE
4-20mA	MOISTURE LEVEL
4-20mA	GROSS HEATING VALUE
4-20mA	WOBBE INDEX
4-20mA	DARWIN CITY GATE (INLET) PIPELINE PRESSURE PT-13
4-20mA	DEMPONT PROVING TEMP. DARWIN CITY GATE OUTLET TEMP. FT-24
SIGNALS FROM DARWIN CITY GATE	
4-20mA	ESD - AD1510-7002
4-20mA	ESD - AD1510-7002
TO TIC-56 AD1510-7002	
4-20mA	STATION OUTLET TEMP.
N.T. GAS STATION - PWC	
TO CHANNEL ISLAND POWER STATION	
4-20mA	BY-PASS
4-20mA	STATION OUTLET PRESSURE
FROM DWG. AD1510-7002	
FP-1586	CONTROL BLOC FIRE ALARM
VI-8	4-20mA STATION INLET PRESSURE
ESD LOGIC	NTEC INITIATED ESD
XAX-3	N.T. GAS ESD INITIATED
DA-6	STATION TEMP. CONDITION
250-10	MLV-10 OPEN
ZSC-10	MLV-10 CLOSED
N.T. GAS	
SIGNAL SUMMARY	

NOTES

- 1) ALL EQUIPMENT/INSTRUMENT TAG NUMBERS SHALL BE SUFFIXED WITH THE STATION NUMBER, eg. PT-38-1506.
- 2) MONITOR AND ACTIVE REGULATORS - FAIL OPEN ON LOSS OF SIGNAL, FAIL CLOSED ON LOSS OF PILOT POWER.

NO.	DATE	REVISION	BY	CHKD	ENG	ENG MGR	PROJ MGR	APP'D	NO.	DATE	REVISION	BY	CHKD	ENG	ENG MGR	PROJ MGR	APP'D	
1	14-10-09	ADDED RUN 2 DETAILS, CHANGED METER RUN VALVE NOS AND FILTER DP LOGIC, UPDATED DWG REFERENCES.	BP	ML	H.D.													
0	10-06-08	NEW DRAWING NUMBER, REFERENCE PREVIOUS DWG NO AD1510-7003 REV13	DCH	H.D.	H.D.													

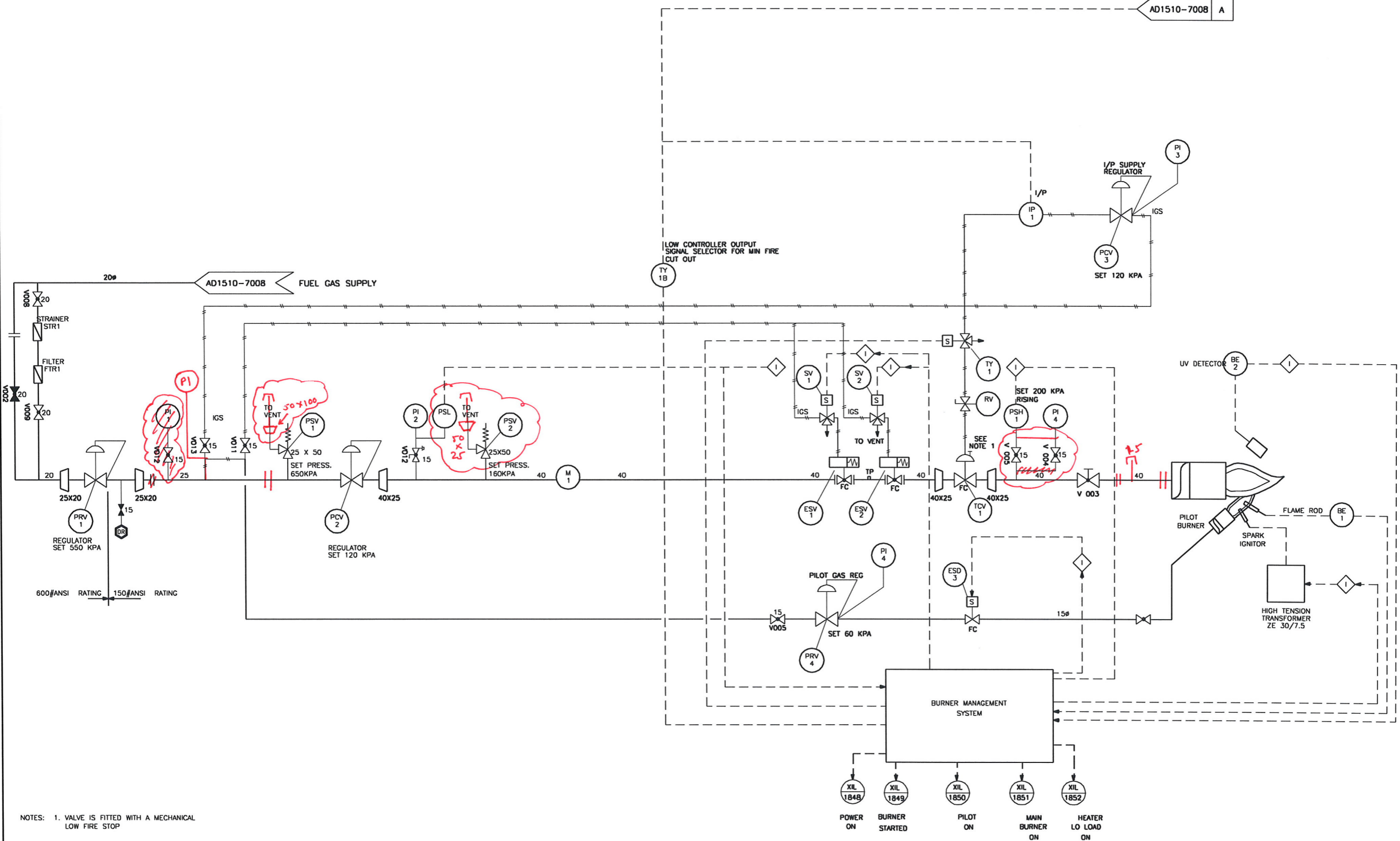
CMPS&F PTY LIMITED
 ENGINEERS AND PROJECT MANAGERS
 67 ALBERT AVENUE, CHATSWOOD, NSW, AUSTRALIA 2067
 TEL: I - 61 21 9412 9999 FAX: I - 61 21 9412 9655

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CLIENT		N.T. GAS	
TITLE		AMADEUS BASIN TO DARWIN PIPELINE CHANNEL ISLAND REGULATING/METER STATION	
		P&I DIAGRAM	
		PRESSURE REGULATING/METERING	
DRG. NO.	SCALE	JOB NO.	DRAWING NO.
01	NTS	6850-000	AD 1510-7003
REV.			1

PRINT SIZE

FROM BATH TEMPERATURE CONTROLLER
AD1510-7008 A



NOTES: 1. VALVE IS FITTED WITH A MECHANICAL LOW FIRE STOP

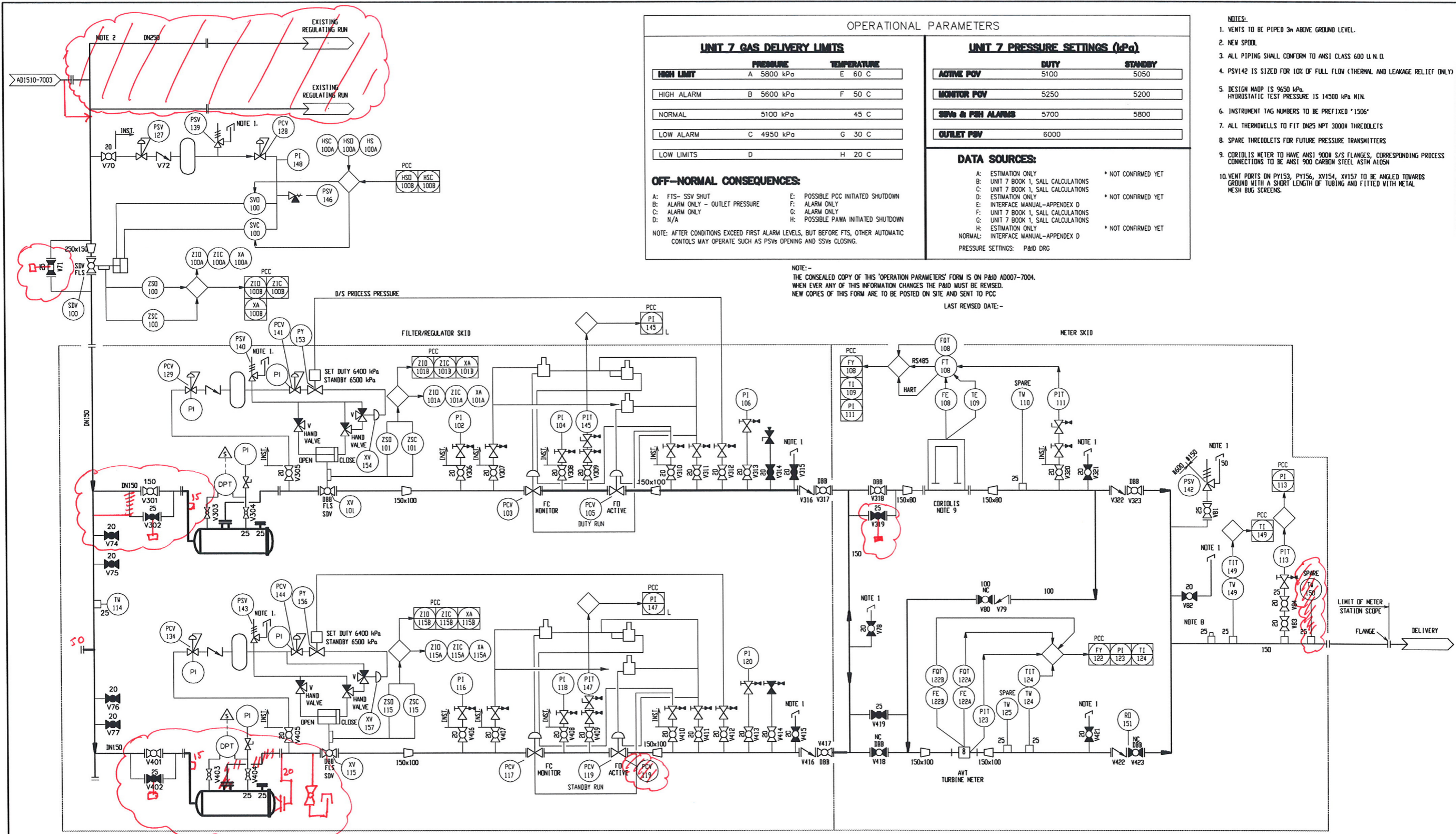
WATER BATH HEATER NO 1

MAJOR DESIGN PTY. LTD.
Year of 1st. Publication 1991
PLEASE NOTE: THAT UPON ACCEPTANCE OF THIS DRAWING IT IS EXPRESSLY AGREED THIS DRAWING IS THE PROPERTY OF MAJOR DESIGN PTY. LTD. THIS DRAWING AND ANY ATTACHED SPECIFICATIONS AND INFORMATION THEREIN CONTAINED ARE THE PROPERTY OF THE COMPANY AND WILL NOT BE, WITHOUT WRITTEN CONSENT, COPIED OR OTHERWISE DISPOSED OF, DIRECTLY OR INDIRECTLY, AND WILL NOT BE USED IN WHOLE OR IN PART TO ASSIST IN PRODUCTION OF OR TO FURNISH ANY INFORMATION FOR THE MAKING OF ANY DRAWINGS, PHOTOCOPIES, PRINTS, OR OTHER REPRODUCTIONS THEREOF, OR FOR THE MANUFACTURE OR MAKING OF ANY APPARATUS OR PARTS THEREOF.

H.D.	ML	1	BP	UPDATED DRAWING REFERENCES	OCT'09
H.D.	BP	0	TL	NEW DRAWING NUMBER, REFERENCE PREVIOUS DRG NO LF862-F-002 REV3	OCT'07
App'r'd	Chk'd	Rev.	Drawn	Revision	Date

LIGHTNING FABRICATIONS
FACTORY 2/11 GARDNER COURT
BAYSWATER VIC 3153
Ph: 03 9761 5252
Fax: 03 9761 5272
Client: N T GAS
Ultimate User: N T GAS

Title		WATER BATH HEATER - FUEL GAS TRAIN PIPING & INSTRUMENTATION DIAGRAM CHANNEL ISLAND HEATER NO 1	
Location		DARWIN NT	
Dwg. No.	Scale	Rev.	1
AD1510-7005	-		



OPERATIONAL PARAMETERS

UNIT 7 GAS DELIVERY LIMITS	
	TEMPERATURE
HIGH LIMIT	A 5800 kPa
HIGH ALARM	B 5600 kPa
NORMAL	5100 kPa
LOW ALARM	C 4950 kPa
LOW LIMITS	D

UNIT 7 PRESSURE SETTINGS (kPa)		
	DUTY	STANDBY
ACTIVE PCV	5100	5050
MONITOR PCV	5250	5200
SSVs & PSV ALARMS	5700	5800
OUTLET PCV	6000	

DATA SOURCES:

A: ESTIMATION ONLY	* NOT CONFIRMED YET
B: UNIT 7 BOOK 1, SALL CALCULATIONS	
C: UNIT 7 BOOK 1, SALL CALCULATIONS	
D: ESTIMATION ONLY	* NOT CONFIRMED YET
E: INTERFACE MANUAL-APPENDIX D	
F: UNIT 7 BOOK 1, SALL CALCULATIONS	
G: UNIT 7 BOOK 1, SALL CALCULATIONS	
H: ESTIMATION ONLY	* NOT CONFIRMED YET
NORMAL: INTERFACE MANUAL-APPENDIX D	

NOTE: AFTER CONDITIONS EXCEED FIRST ALARM LEVELS, BUT BEFORE FTS, OTHER AUTOMATIC CONTROLS MAY OPERATE SUCH AS PSVs OPENING AND SSVs CLOSING.

- NOTES:**
- VENTS TO BE PIPED 3m ABOVE GROUND LEVEL.
 - NEW SPOOL
 - ALL PIPING SHALL CONFORM TO ANSI CLASS 600 U.N.D.
 - PSV142 IS SIZED FOR 10% OF FULL FLOW (THERMAL AND LEAKAGE RELIEF ONLY)
 - DESIGN MAP IS 9650 kPa. HYDROSTATIC TEST PRESSURE IS 14500 kPa MIN.
 - INSTRUMENT TAG NUMBERS TO BE PREFIXED '1506'
 - ALL THERMOWELLS TO FIT DN25 NPT 300MM THREADETS
 - SPARE THREADETS FOR FUTURE PRESSURE TRANSMITTERS
 - CORLIOLIS METER TO HAVE ANSI 900# S/S FLANGES, CORRESPONDING PROCESS CONNECTIONS TO BE ANSI 900 CARBON STEEL ASTM A105#
 - VENT PORTS ON PY153, PY156, XV154, XV157 TO BE ANGLED TOWARDS GROUND WITH A SHORT LENGTH OF TUBING AND FITTED WITH METAL MESH BUG SCREENS.

NOTE: - THE CONCEALED COPY OF THIS 'OPERATIONAL PARAMETERS' FORM IS ON PAID ADO007-7004. WHEN EVER ANY OF THIS INFORMATION CHANGES THE PAID MUST BE REVISED. NEW COPIES OF THIS FORM ARE TO BE POSTED ON SITE AND SENT TO PCC

LAST REVISED DATE: -

<p>Worley Limited ACH 001 279 812</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>DESCRIPTION</th> <th>DRN</th> <th>DATE</th> <th>APPD</th> <th>DRG NO</th> <th>TITLE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VALVE RENUMBERING, UPDATE REFERENCE DRAWINGS</td> <td>BP</td> <td>11/09</td> <td>HD</td> <td>AD1506-6017</td> <td>REGULATING / METERING SKIDS G.A.</td> </tr> <tr> <td>0</td> <td>NEW DRAWING NUMBER. REF PREVIOUS DRG NO AD1506-7063 REV 11</td> <td>DCH</td> <td>06/08</td> <td>HD</td> <td>AD1506-2009</td> <td>SITE PLAN</td> </tr> </tbody> </table>	NO	DESCRIPTION	DRN	DATE	APPD	DRG NO	TITLE	1	VALVE RENUMBERING, UPDATE REFERENCE DRAWINGS	BP	11/09	HD	AD1506-6017	REGULATING / METERING SKIDS G.A.	0	NEW DRAWING NUMBER. REF PREVIOUS DRG NO AD1506-7063 REV 11	DCH	06/08	HD	AD1506-2009	SITE PLAN	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DRAWING STATUS</th> <th>APPD</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>P PRELIMINARY/PROPOSED</td> <td></td> <td></td> </tr> <tr> <td>T TENDERING PURPOSES ONLY</td> <td></td> <td></td> </tr> <tr> <td>AC APP. FOR CONSTRUCTION</td> <td></td> <td></td> </tr> <tr> <td>AI AS INSTALLED</td> <td></td> <td></td> </tr> <tr> <td>C CANCELLED/SUPERSEDED</td> <td></td> <td></td> </tr> </tbody> </table>	DRAWING STATUS	APPD	DATE	P PRELIMINARY/PROPOSED			T TENDERING PURPOSES ONLY			AC APP. FOR CONSTRUCTION			AI AS INSTALLED			C CANCELLED/SUPERSEDED			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DRAWN</td> <td>W. Thomas</td> <td>04.11.99</td> <td>REV</td> <td>2</td> </tr> <tr> <td>DESIGNED</td> <td>B.R.W.</td> <td>15.12.99</td> <td></td> <td></td> </tr> <tr> <td>CHECKED</td> <td>J. DOWIE</td> <td>15.12.99</td> <td></td> <td></td> </tr> <tr> <td>APPROVED</td> <td>P.GOWER</td> <td>15.12.99</td> <td></td> <td></td> </tr> <tr> <td colspan="2">Worley No. B99-5212</td> <td colspan="3">LAST UPDATE 01 Feb 2000, 10:10</td> </tr> <tr> <td colspan="5">h:\pawa\08607789\B99-5212.DGN</td> </tr> </table>	DRAWN	W. Thomas	04.11.99	REV	2	DESIGNED	B.R.W.	15.12.99			CHECKED	J. DOWIE	15.12.99			APPROVED	P.GOWER	15.12.99			Worley No. B99-5212		LAST UPDATE 01 Feb 2000, 10:10			h:\pawa\08607789\B99-5212.DGN				
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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

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Revision History:

Rev.	Status	Date	Prepared	Reviewed	QA
A	Preliminary Issue	30/08/2010	YZW	TCB	
B	Revised to Incorporate Information from 2011 Site Inspection	24/08/2011	TCB	RDK	
C	Revised to Incorporate Comments from Client	19/09/2011	TCB	RDK	
D	Revised to following Part 3 and Part 4 site inspections	26/09/2011	TCB	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	KP
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 “source-by-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 an averaging chamber and 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 has 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.

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.

Table 1 Operating pressures and temperatures

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

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.

Table 2 Gas Composition

Component	Symbol	mol%
Methane	CH ₄	86.954
Ethane	C ₂ H ₆	2.557
Propane	C ₃ H ₈	0.829
i-Butane	C ₄ H ₁₀	0.118
n-Butane	C ₄ H ₁₀	0.216
i-Pentane	C ₅ H 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 (mixture)		0.62

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 consist of condensate, compressor lubrication oil or water, which is removed from the gas by the filter separators. The condensate is considered to be a 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 a 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 declared 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 piping 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 multi-cyclone, 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

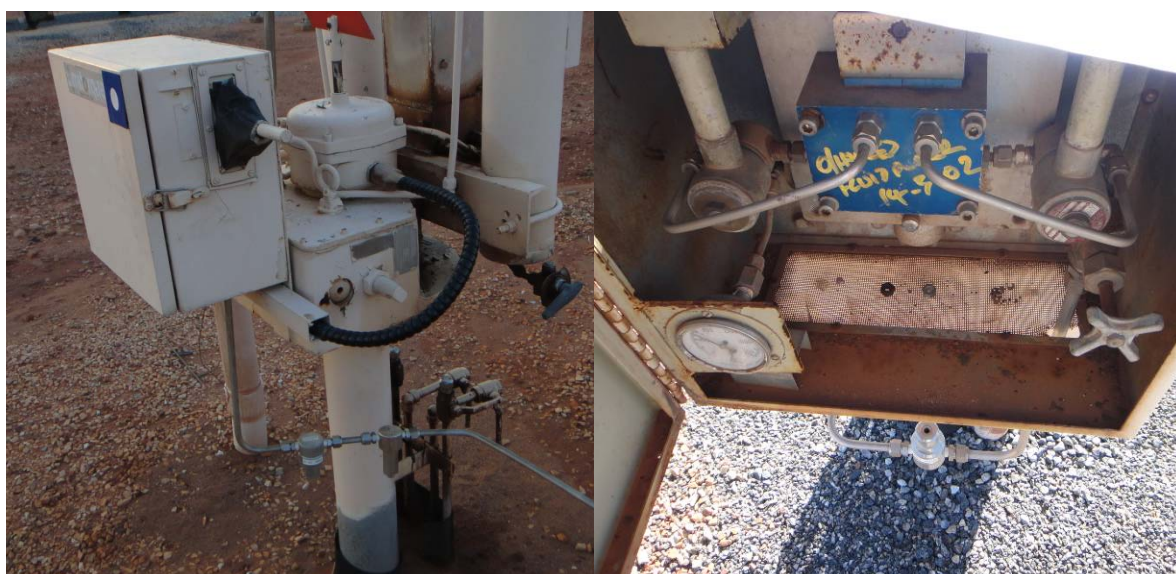
2.7.1.6 Mainline Valves

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 arrester 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 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 identified 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 through 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 shell. 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 1** 0.5 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.



Zone 1 0.5 m radius from the pump

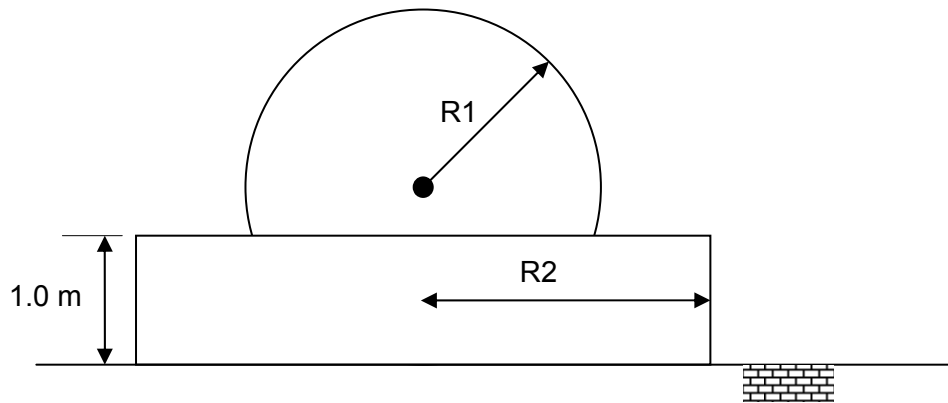
2.7.10 GROUND EFFECT

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.

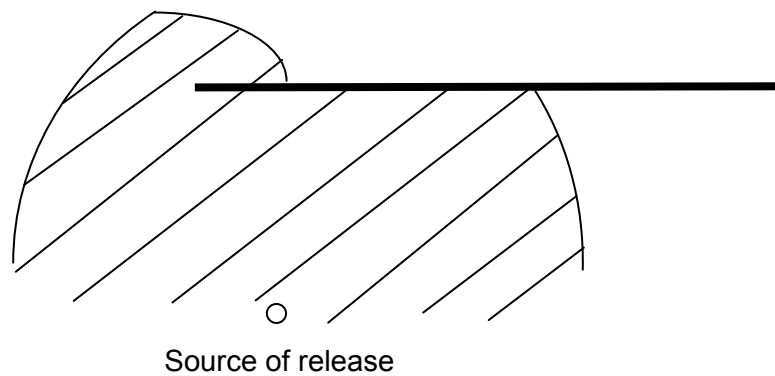
The main process pipework has a hazardous area of radius 2 m, and is located less than 2 m above grade. The direction of release from flanged joints and screwed fittings could be in any direction, therefore ground effects are to be considered. Other hazardous area zones will be sufficiently above grade 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.



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								Revision:	A	B	C	D	
Flammable material list and characteristics								Author:	YZW	TCB	TCB	TCB	
Amadeus Basin to Darwin Pipeline								Checked:	TCB	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 °C	ASTM D86 5%(vol) Point of Stabilised Liquid at Atmospheric Pressure	Relative Density Of Fluid Vapour (Air SG=1) Liquid (Water SG=1)	Flash Point of Stabilised Liquid at Atmospheric Pressure °C	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	C	82	-	0.939 (liquid) 3.06 (vapour)	-8	1.1*	12.1*	224	T3*	IIA	AS/NZS 60079.20 MSDS
Condensate	Liquid	3	C	69 [†]	-	2.97 [†]	-21 [†]	1.0 [†]	8.4 [†]	233 [†]	T3 [†]	IIA	AS/NZS 60079.20

* Values obtained for Tetrahydrothiophene

[†] Based on Hexane

Part II – Sheet 1 of 4

List of sources of release

Amadeus Basin to Darwin Pipeline

Surface facilities



Revision:	A	B	C	D	
Author:	YZW	TCB	TCB	TCB	
Checked:	TCB	RDK	RDK	RDK	
QA:	ARD				
Date:	31/08/2011	24/08/2011	19/09/2011	26/09/2011	

Process Equipment Item			Flammable Material	Operating Conditions Pressure and Temperature	Description of Flammable Material Containment	Ventilation	Source Of Release		Distance From Source To			Equipment Group and Temperature Class	Section
No.	Description	Location					Description	Grade*	Boundary of Zone 0	Boundary of Zone 1	Boundary of Zone 2		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Process piping	Amadeus Basin to Darwin Pipeline surface facilities	Vap. Cat "G(i)"	≤ 9,650 kPag ≤ 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)"	≤ 770 kPag ≤ 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		Vap. Cat "G(i)"	≤ 700 kPag ≤ 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		Vap. Cat "G(i)"	≤ 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)"	≤ 9,650 kPag ≤ 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)"	≤ 9,650 kPag ≤ 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)"	≤ 9,650 kPag ≤ 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

List of sources of release

Amadeus Basin to Darwin Pipeline

Surface facilities



Revision:	A	B	C	D	
Author:	YZW	TCB	TCB	TCB	
Checked:	TCB	RDK	RDK	RDK	
QA:	ARD				
Date:	31/08/2011	24/08/2011	19/09/2011	26/09/2011	

Process Equipment Item			Flammable Material	Operating Conditions Pressure and Temperature	Description of Flammable Material Containment	Ventilation	Source Of Release		Distance From Source To			Equipment Group and Temperature Class	Section
No.	Description	Location					Description	Grade*	Boundary of Zone 0	Boundary of Zone 1	Boundary of Zone 2		
1	2	3	4	5	6	7	8	9	10	11	12	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	12 m laterally, 6 m below and 8 m above vent tip	IIA, T1	2.7.1.8
9	Pipeline blowdown	Amadeus Basin to Darwin Pipeline surface facilities	Vap. Cat "G(i)"	≤ 9,650 kPag ≤ 60 °C	Valves and piping discharging vertically upwards	Natural (open air)	Pipe vent to atmosphere	S	N/A	N/A	A cylinder of radius 15 m extending 30 m vertically upwards and 1 m downwards from discharge point HOLD – To be confirmed	IIA, T1	2.7.1.9
10	Low velocity vents		Vap. Cat "G(i)"	≤ 9,650 kPag ≤ 60 °C	Valves and piping discharging vertically upwards	Natural (open air)	Pipe vent to atmosphere	S	N/A	N/A	Radius of 1 m extending in all directions from the point of discharge	IIA, T1	2.7.1.10
11	Scraper vessels		Vap. Cat "G(i)"	≤ 9,650 kPag ≤ 60 °C	Enclosed system with closures	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	3 radius in all directions from quick opening closure As per section 2.7.1.1 for piping for remainder of the vessel	IIA, T1	2.7.2
12	Multicyclone and filter separators		Vap. Cat "G(i)"	≤ 9,650 kPag ≤ 60 °C	Enclosed vessels with quick opening closures	Natural (open air)	Flanges, joints, valve seals, drains and vents	S	N/A	N/A	3 m radius around the closures and 2 m radius from the edge of the vessels	IIA, T1	2.7.3
			Liq. Cat "C"	≤ 9,650 kPag ≤ 60 °C	Liquid drain pipework	Natural (open air)	Piping connections	S	N/A	N/A	2 m in all directions down to ground level	IIA, T3	2.7.1.1

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

Part II – Sheet 3 of 4

List of sources of release

Amadeus Basin to Darwin Pipeline

Surface facilities



Revision:	A	B	C	D	
Author:	YZW	TCB	TCB	TCB	
Checked:	TCB	RDK	RDK	RDK	
QA:	ARD				
Date:	31/08/2011	24/08/2011	19/09/2011	26/09/2011	

Process Equipment Item			Flammable Material	Operating Conditions Pressure and Temperature	Description of Flammable Material Containment	Ventilation	Source Of Release		Distance From Source To			Equipment Group and Temperature Class	Section
No.	Description	Location					Description	Grade*	Boundary of Zone 0	Boundary of Zone 1	Boundary of Zone 2		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
13	Slop tanks	Amadeus Basin to Darwin Pipeline surface facilities	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
14	Water bath heaters		Vap. Cat "G(i)"	≤ 9,900 kPag ≤ 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
15	Knockout pots		Vap. Cat "G(i)"	≤ 9,900 kPag ≤ 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
16	Gas chromatograph systems		Vap. Cat "G(i)"	≤ 140 kPag ≤ 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
17	Water dew point analysers / gas samplers		Vap. Cat "G(i)"	≤ 140 kPag ≤ 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
18	Odorant injection system pipework		Vap. Cat "C"	≤ 9,650 kPag ≤ 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

List of sources of release

Amadeus Basin to Darwin Pipeline

Surface facilities



Revision:	A	B	C	D	
Author:	YZW	TCB	TCB	TCB	
Checked:	TCB	RDK	RDK	RDK	
QA:	ARD				
Date:	31/08/2011	24/08/2011	19/09/2011	26/09/2011	

Process Equipment Item			Flammable Material	Operating Conditions Pressure and Temperature	Description of Flammable Material Containment	Ventilation	Source Of Release		Distance From Source To			Equipment Group and Temperature Class	Section	
No.	Description	Location					Description	Grade*	Boundary of Zone 0	Boundary of Zone 1	Boundary of Zone 2			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
19	Odorant injection system storage tanks	Amadeus Basin to Darwin Pipeline surface facilities	Vap. Cat "C"	15 kPag ≤ 60 °C	Enclosed vessel	Shelter with open sides (open air)	Connections	S	N/A	N/A	1.5 m in all directions down to ground level	IIA, T3	2.7.9.2	
					Blanket gas vent		Pipe vent to atmosphere	P			Radius of 1.5 m in all directions from vent tip			Within cylindrical volume below Zone 1
					Pressure relief valve and piping discharging vertically upwards		Pipe vent to atmosphere	S			N/A			Radius of 1.5 m in all directions from vent tip
20	Odorant injection system pumps		Vap. Cat "G(i)"	≤ 400 kPag ≤ 60 °C	Pneumatic pump instrument gas exhaust	Shelter with open sides (open air)	Piping connections and vents	C	N/A	N/A	Radius of 0.5 m	IIA, T1	2.7.9.3	
21	Ground effect		Vap. Cat "G(i)"	≤ 9,650 kPag ≤ 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	

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

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
AD 1510-OFI-1 Pressure Transmitter AD 1510-PT-8	Cable has no ID tags.	Fit ID tags.
	Blue sheath to cabling required.	Fit cabling with blue sheath.
	Cable has no support.	Provide cable support.
	Provide equipotential bond at instrument stand.	Repair as description.
AD 1510-OFI-2 Valve Limit Switch AD 1510-ZSO-10 AD 1510-ZSC-10	Visible corrosion.	Repair as description.
	Nil Hazardous area certification detail to Australian Standards available.	Get certificate of conformity or replace equipment.
	Poor condition of equipment, corrosion throughout.	Review as necessary.
	Equipment ID incorrectly labelled with respect to P&ID (MLV-10).	Repair as description.
	Tighten loose cable gland.	Repair as description.
AD 1510-OFI-3 Solenoid Valve AD 1510-SVO-10 AD 1510-SVC-10	Cable UV damage to sheath.	Repair as description.
	Equipment and conduit ID required.	Fit ID tags.
	Equipment in poor condition.	Suggest replacing prior to failure.
AD 1510-OFI-4 Differential Pressure Transmitter AD 1510-DPT-44	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.
	Blue sheath to cabling required.	Fit cabling with blue sheath.
	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
AD 1510-OFI-5 Solenoid Valve AD 1510-SVO-16 AD 1510-SVC-16	Circuit ID required.	Fit ID tag.
	Corrosion visible externally.	Repair as description.
	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 Junction Box AD 1510- JB-16	Replace perished seal, uncertified plug and elbow	Repair as description and provide relevant certification.
	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 Switch AD 1510-ZSO-16 AD 1510-ZSC-16	Equipment ID required.	Fit ID tags.
	Verify installation of I.S barrier.	Review as required.
	Blue sheath to cabling required.	Fit cabling with blue sheath.
AD 1510-OFI-8 Temperature Element AD 1510- TE-17A	Equipment not in hazardous area.	Review hazardous area zones and repair.
	Equipment and cable I.D required.	Fit ID tags.
	Sheath has UV damage	Repair as description.
AD 1510-OFI-9 Low Level Switch AD 1510- LSL-17	Equipment and cable require ID labels.	Fit ID tags.
	Nil certification for adaptor JB, suggest replacement with flameproof equipment.	Repair as description.
	Surface corrosion exists.	Repair as required.
AD 1510-OFI-10 Temperature Transmitter AD 1510-TIT-17	Equipment and cable I.D required.	Fit I.D tags.
	UV damage and mechanical damage at conduit entry.	Repair as description.
	Blue sheath to cabling required.	Fit cabling with blue sheath.
	Re-route cable exposed to flue heat radiation.	Repair as description.

OFI No.	Description	Proposed Remedy
AD 1510-OFI-11 Temperature Switch AD 1510-TSH-17	Equipment and circuit I.D required.	Fit I.D tags.
	Replace uncertified plug.	Repair as description.
	Equipment and circuit I.D required.	Fit I.D tags.
	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 AD 1510-DPT-44	Equipment and cable I.D. required.	Repair as description.
	Replace uncertified gland and JB.	Repair as description and obtain certification.
AD 1510-OFI-13 Pressure Convertor AD 1510-IP-1	Equipment and circuit I.D required.	Fit I.D tag.
	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.
AD 1510-OFI-14 Solenoid AD 1510- TY-1	Equipment and cable I.D required.	Fit I.D. tags.
	Tighten bolt to JB.	Repair as description.
	Equipotential bond equipment to surrounding steel.	Repair as description.
	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 AD 1510-PSH	Equipment and cable I.D required.	Fit I.D tags.
	Tighten loose cable gland.	Repair as required.
	Replace uncertified plug.	Replace as description.
AD 1510-OFI-16 Pressure Switch AD 1510- PSL	Equipment cable I.D required.	Fit I.D tags.
	Replace uncertified plug.	Replace as description.

OFI No.	Description	Proposed Remedy
AD 1510-OFI-17 Solenoid AD 1510- SV-2	Equipment and cable I.D required.	Fit I.D tags.
	Replace uncertified cable gland.	Review as description.
	Remediate cable sheath.	Repair as required.
AD 1510-OFI-18 Solenoid AD 1510- SV-1	Equipment and cable I.D required.	Fit I.D tags.
	Replace uncertified cable gland.	Review as description.
	Replace equipment due to cracked electrical entry.	Review as description.
AD 1510-OFI-19 Solenoid Valve AD 1510-SVO-18 AD 1510-SVC-18	Circuit I.D required.	Fit I.D tag.
	Remediate UV damaged flexible conduit.	Repair as description.
	Visible external corrosion	Repair as required.
	Replace solenoids due to age and condition (suggest new JB and cable connected to new solenoids).	Repair as description.
AD 1510-OFI-20 Junction Box AD 1510- JB-18	Replace perished seal, uncertified plug and elbow	Repair as description and obtain certification for plug and elbow.
	Remediate UV damaged cable and flexible conduit.	Repair as description.
	Verify Ex rating of enclosure, replace as required (suggests new JB and cable connected to new solenoids).	Repair as description.
AD 1510-OFI-21 Valve Limit Switch AD 1510-ZSO-18 AD 1510-ZSC-18	Equipment I.D required.	Fit I.D tags.
	Verify installation of I.S barrier.	Repair as required.
	Cable with exposed armour.	Re-terminate.
	Blue sheath to cabling required.	Fit cabling with blue sheath.
AD 1510-OFI-22 Temperature Element AD 1510-TE-19A	Equipment and cable I.D required.	Fit I.D tag.
	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.
AD 1510-OFI-24 Temperature Transmitter AD 1510-TIT-19	Equipment and cable I.D required.	Fit I.D tags.
	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 Temperature Switch AD 1510-TSH	Equipment and cable I.D required.	Fit I.D tags.
	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 Pressure Switch AD 1510-PSH	Equipment and cable I.D required.	Fit I.D tag.
	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-OFI-31 Solenoid Valve AD 1510-TY-1	Equipment and cable I.D required.	Fit I.D tag.
	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 Pressure Convertor AD 1510-I/P	Equipment and cable I.D required.	Fit I.D tag.
	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.
AD 1510-OFI-35 Solenoid Valve AD 1510-SVC-31	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.
	Corrosion external, UV faded.	Repair as description.
	Uncertified adaptor to JB.	Review as description.
AD 1510-OFI-36 Junction Box AD 1510-JB-31	Replace with respect to age and condition.	Replace equipment.
	Replace perished seal and corroded bolts.	Replace as description.
	Remediate UV damage sheath and provide cable support.	Repair as description.
	Replace uncertified gland and adaptor.	Replace as description.
	Suggest removal and direct connect cabling to new solenoid valve.	Repair as description.
AD 1510-OFI-37 Valve Limit Switch AD 1510-ZSO-31 AD 1510-ZSC-31	Equipotential bond equipment stand.	Repair as description.
	Equipment and cable I.D required.	Fit I.D tag.
	Remediate UV damaged sheath and replace perished blue sheath.	Replace as description.
AD 1510-OFI-38 Pressure Switch AD 1510-PSL-34	Verify I.S barrier within control hut.	Verify as description.
	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 Differential Pressure Transmitter AD 1510-FT-38	Cable I.D required.	Fit I.D tag.
	Cable/gland with exposed armour.	Re-terminate.
	Remediate blue sheath and support cable.	Repair as description.
AD 1510-OFI-41 Pressure Transmitter AD 1510-PT-38	Circuit I.D required.	Fit I.D tag.
	Tighten loose gland.	Repair as description.
	Remediate blue sheath and support cable.	Repair as description.
AD 1510-OFI-42 Temperature Transmitter AD 1510-TIT-38	Equipment and circuit I.D required.	Fit I.D tag.
	Remediate blue sheath and support cable.	Repair as description.
	Provide sun cover/shield.	Repair as description.
AD 1510-OFI-43 Junction Box AD 1510-ISJB-1	'I.S circuits inside' label required.	Fit label as description.
	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.
AD 1510-OFI-46 Solenoid Valve AD 1510-SVC-41	Illegible name plate, nil Ex detail available.	Repair as description.
	External corrosion, UV faded.	Repair as required.
	Uncertified adaptor to JB.	Review as description.
	Replace with respect to age and condition.	Repair as description.
AD 1510-OFI-47 Junction Box AD 1510-JB-41	Replace perished seal.	Repair as description.
	Remediate UV damaged sheath, provide cable support.	Repair as description.
	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 Valve Limit Switch AD 1510-ZSO-41 AD 1510-ZSC-41	Equipment I.D required.	Fit I.D tag.
	Remediate blue cable sheath.	Repair as description.
	Verify I.S barrier installation.	Repair as description.
AD 1510-OFI-49 Pressure Switch AD 1510-PSL-44	Remediate blue sheath.	Repair as description.
	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 Element AD 1510-TE-48	Cable I.D required.	Fit I.D tag.
	Blue cable sheath required.	Repair as description.
AD 1510-OFI-55 Junction Box AD 1510-ISJB-2	'I.S circuit inside' label required.	Fit label as description.
	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 Pressure Switch AD 1510-PSL-58	Remediate blue sheath and cable support.	Repair as description.
	Verify I.S barrier installation.	Verify as description.
	Illegible nameplate, corrosion. Suggest replacement.	Repair as description.
AD 1510-OFI-60 Pressure Switch AD 1510-PSH-59A/59B	Circuit I.D required (59B only).	Fit I.D tag.
	Remediate blue sheath and provide cable support.	Repair as description.
	Verify I.S barrier installation.	Verify as required.
AD 1510-OFI-61 Temperature Element AD 1510-TE-56	Equipment I.D required.	Fit I.D tag.
	Remediate blue sheath and provide cable support.	Repair as description.
	Surface corrosion visible.	Repair as description.
AD 1510-OFI-62 Pressure Transmitter AD 1510-PT-61	Tighten loose gland.	Repair as description.
	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 equipment.
	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	Nil Ex certification to Australian Standards. Conformity assessment or equipment replacement required.	Review as description.
AD 1510-SVO-100		
AD 1510-SVC-100	Replace uncertified cable glands.	Repair as description.
AD 1510-OFI-65	Equipment I.D required.	Fit I.D tag.
Junction Box		
AD 1510-JB	Verify Ex ratings of cable glands.	Review as description.
AD 1510-OFI-66	Equipment and cable I.D required.	Fit I.D tag.
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 Differential Transmitter	Provide cable support.	Repair as description.
	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
AD 1510-OFI-69 Pressure Transmitter AD 1510-PIT-147	Equipment and circuit I.D required.	Fit I.D tags.
	Remediate sheath to suit installation of Ex i or Ex d.	Repair as description.
	Nameplate appears flameproof only rather than I.S hence Ex d considered.	Review as description.
	Replace uncertified plug.	Repair as description.
	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 Flow-meter AD 1510-FE-122A	Equipment and cable I.D required.	Fit I.D tag.
	Remove sun cover to identify Ex certification and method of protection.	Repair as description.
AD 1510-OFI-71 Pressure Transmitter AD 1510-PIT-123	Equipment and cable I.D required.	Fit I.D tag.
	Flameproof device installed with blue sheath. Further investigation required to verify I.S barrier installation.	Review as description.
AD 1510-OFI-72 Temperature Transmitter AD 1510-TT-124	Cable I.D required.	Fit I.D tag.
	Re-terminate cable gland with damaged sheath.	Repair as description.
	Flameproof device installed with blue sheath. Verify I.S barriers.	Review as description.
	Provide cable support and sun cover.	Repair as description.
	Replace faded label.	Repair as description.

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

OFI No.	Description	Proposed Remedy
AD 1510-OFI-78 Pressure Transmitter AD 1510-PIT-111	Equipment and cable I.D required. (Equipment stamped)	Fit I.D tag.
	Cable support required.	Repair as description.
	Replace uncertified plug.	Repair as description.
AD 1510-OFI-79 Temperature Transmitter AD 1510-TIT-149	Circuit I.D required.	Fit I.D tag.
	Cable support required.	Repair as description.
	Verify I.S barrier installed.	Review as description.
AD 1510-OFI-80 Pressure Transmitter AD 1510-PIT-113	Obtain replacement Ex nameplate from vendor.	Repair as description.
	Circuit I.D required.	Fit I.D tag.
	Recommend equipment label in conjunction with nameplate stamp.	Repair as description.
AD 1510-OFI-81 Junction Box AD 1510-JB-002	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 Junction Box AD 1510-JB-002	Blue sheathing required to cables.	Repair as description.
	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	The PSV discharge is not straight, the stress on the discharge pipe work during relief will be increased	Undertake pipe stress analysis or alter pipework route. This may require the PSV to be rotated one bolt hole on the inlet flange.

OFI No.	Description	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
AD 1510-OFI-86 P&Ids	P&IDs are not up to date in accordance with the installed equipment. Plant modifications do not appear to 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.	Description	Proposed Remedy
<p>AD 1510-OFI-89 Redundant Equipment</p>	<p>Redundant equipment not removed. Supports left in place on the skid</p>	<p>Remove redundant equipment and supports and terminate cables correctly.</p>
<p>AD 1510-OFI-90 Crash Gate</p>	<p>Crash gate obstructed by concrete sump and crash barrier installed on the road. There are trees going on the road side of the fence.</p>	<p>Consider removal of crash gate</p>
<p>AD 1510-OFI-91 Personnel Access and Egress</p>	<p>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.</p> <p>APA should conduct a review of the site access and egress. Building Code Australia (BCA) provides recommendations.</p>	<p>Conduct risk assessment and if required include additional access gates</p>
<p>AD 1510-OFI-92 Unprotected Cables</p>	<p>Unprotected earth cables providing trip hazardous and possibility of damage, refer photo.</p>	<p>Install in suitable conduit</p>
<p>AD 1510-OFI-93 Pyrophoric Iron</p>	<p>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</p>	<p>Install a water trough close to the filter vessels with drain point and update filter change out procedures</p>
<p>AD 1510-OFI-94 Exposed Grid</p>	<p>Exposed grid in places, this provides a trip hazard. It is assumed that the grid is to provide stability to the blue metal covering on the station.</p>	<p>Re-cover grid to a suitable depth.</p>

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

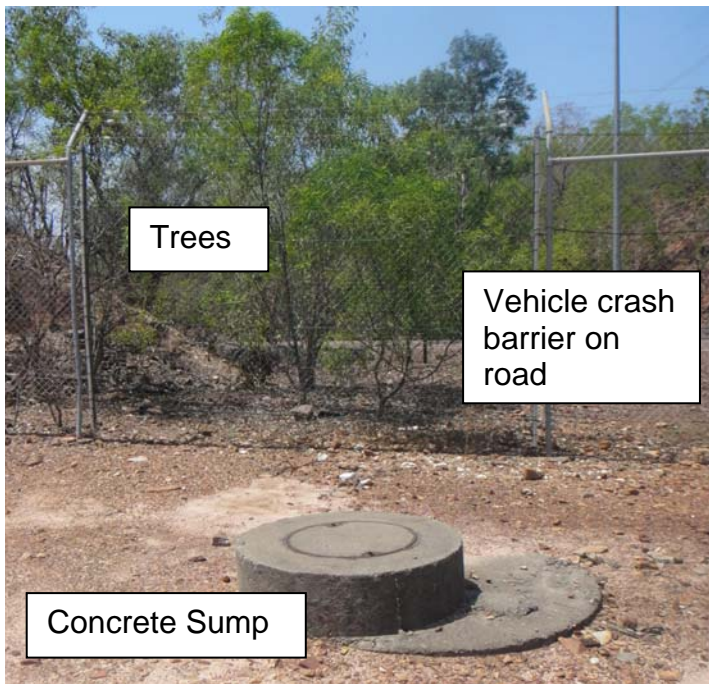
Evidence of water ingress and corrosion



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



AD 1510-OFI-90 - Crash gate obstruction

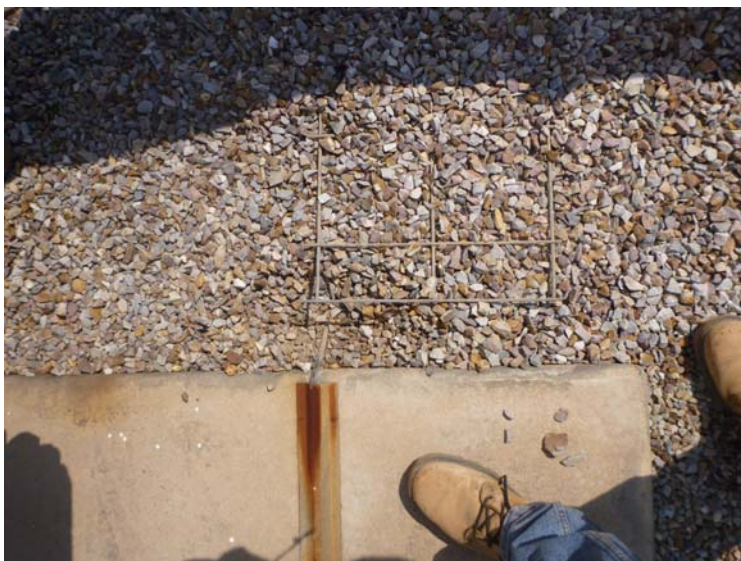


AD 1510-OFI 92 Unsecured earth cables

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



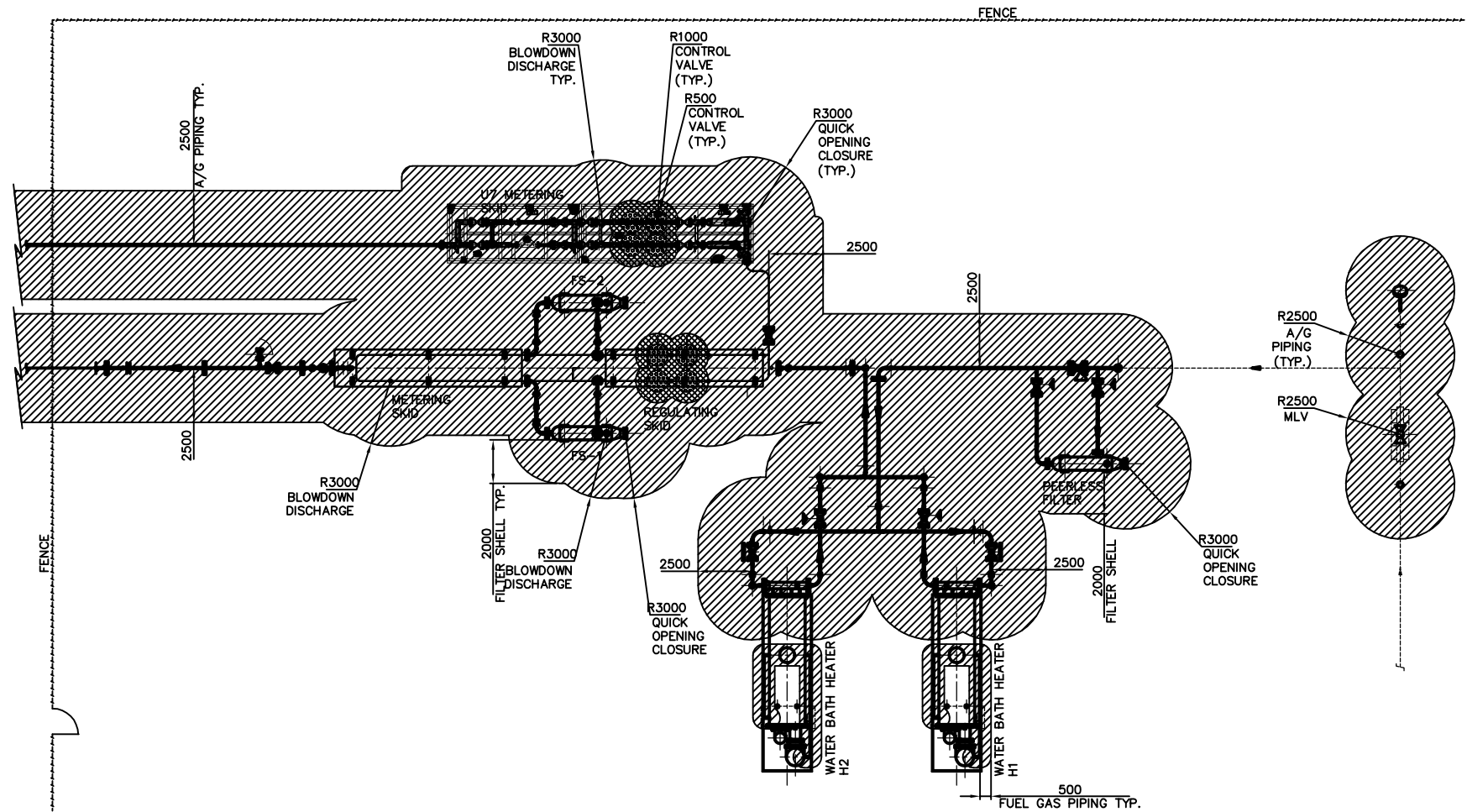
AD 1510-OFI 94 – Exposed grid



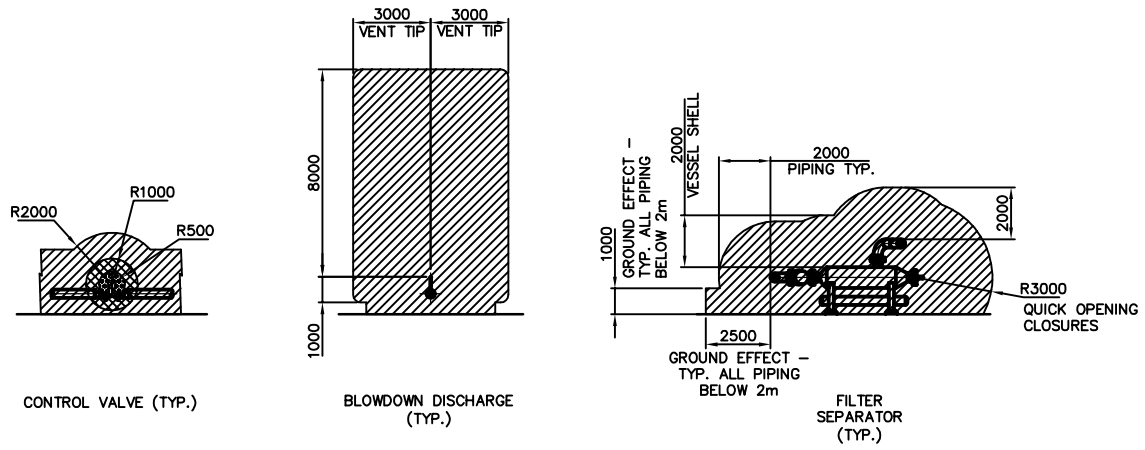
4 Hazardous Area Mapping Drawings

This section contains the hazardous area mapping drawings.

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



PLAN VIEW
SCALE 1:150

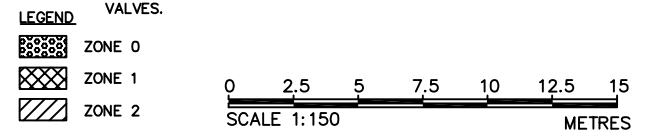


ELEVATIONS
SCALE 1:150

EQUIPMENT No.	DESCRIPTION	LOCATION	FLAMMABLE MATERIAL	OPERATING PRESSURE	DESCRIPTION OF FLAMMABLE & MATERIAL CONTAINMENT	VENTILATION	SOURCE OF RELEASE			EQUIPMENT GROUP AND TEMPERATURE CLASS	REMARKS		
							DESCRIPTION	GRADE	DISTANCE OF SOURCE TO				
1	2	3	4	5	6	7	8	9	10	11	12	13	14
-	PROCESS PIPING, JOINTS, VALVES & INSTRUMENT PIPING, JOINTS, VALVES & CONTROL VALVES	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤9,650 kPag ≤60°C	CLOSED SYSTEM WITH FLANGES, PIPING, VALVES & PACKED GLAND/ POSITIONER/ EXHAUST	NATURAL (OPEN AIR)	FLANGES, JOINTS, VALVE SEALS,	S	N/A	N/A	2m RADIUS FROM EDGE OF PIPING ROUTES.	IIA, T1	SECTION 7.1.1 & SECTION 7.8
-	PROCESS PIPING, JOINTS, VALVES & INSTRUMENT PIPING, JOINTS, VALVES & CONTROL VALVES	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤770 kPag ≤60°C	CLOSED SYSTEM WITH FLANGES, PIPING, VALVES & PACKED GLAND/ POSITIONER/ EXHAUST	NATURAL (OPEN AIR)	FLANGES, JOINTS, VALVE SEALS,	S	N/A	N/A	1m RADIUS FROM EDGE OF PIPING ROUTES.	IIA, T1	SECTION 7.1.2
-	PROCESS PIPING, JOINTS, VALVES & INSTRUMENT PIPING, JOINTS, VALVES & CONTROL VALVES	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤650 kPag ≤60°C	CLOSED SYSTEM WITH FLANGES, PIPING, VALVES & PACKED GLAND/ POSITIONER/ EXHAUST	NATURAL (OPEN AIR)	FLANGES, JOINTS, VALVE SEALS,	S	N/A	N/A	0.5m RADIUS FROM EDGE OF PIPING ROUTES.	IIA, T1	SECTION 7.1.3
-	PRESSURE RELIEF VALVES	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤9,650 kPag ≤60°C	VALVES & PIPING DISCHARGING VERTICALLY UPWARDS	NATURAL (OPEN AIR)	PIPE VENT TO ATMOSPHERE	P & S	N/A	N/A	AS CLASSIFIED FOR PIPING.	IIA, T1	SECTION 7.1.4
-	BLOWDOWN DISCHARGES	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤9,650 kPag ≤60°C	VALVES & PIPING DISCHARGING VERTICALLY UPWARDS	NATURAL (OPEN AIR)	PIPE VENT TO ATMOSPHERE	S	N/A	N/A	6m RADIUS FROM VALVE TIPS	IIA, T1	SECTION 7.1.5
-	BLOWDOWN DISCHARGES	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤9,650 kPag ≤60°C	VALVES & PIPING DISCHARGING VERTICALLY UPWARDS	NATURAL (OPEN AIR)	PIPE VENT TO ATMOSPHERE	S	N/A	N/A	8m RADIUS FROM VALVE TIPS	IIA, T1	SECTION 7.1.6
FS-1 FS-2	FILTER SEPARATORS	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤9,650 kPag ≤60°C	ENCLOSED VESSELS WITH QUICK OPENING CLOSURES	NATURAL (OPEN AIR)	FLANGES, JOINTS, VALVE SEALS, DRAINS & VENTS	S	N/A	N/A	2m RADIUS FROM THE QUICK OPENING CLOSURES AND 2m RADIUS FROM THE VESSEL HP GAS CONNECTIONS.	IIA, T1	SECTION 7.3
H-1 H-2	WATER BATH HEATERS	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤9,650 kPag ≤60°C	ENCLOSED VESSELS	NATURAL (OPEN AIR)	PIPING CONNECTIONS	S	N/A	N/A	2m RADIUS FROM VESSEL HP GAS CONNECTIONS.	IIA, T1	SECTION 7.5
-	GROUND EFFECT	CHANNEL ISLAND STATION	VAP. CA "G(i)"	≤9,650 kPag ≤60°C	CLOSED SYSTEM WITH FLANGES, PIPING, JOINTS & VALVES	NATURAL (OPEN AIR)	FLANGES, JOINTS, VALVE SEALS, DRAINS & VENTS	S	N/A	N/A	LATERALLY AND EXTENDING TO 1m ABOVE GRADE FOR ALL PROCESS PIPING LESS THAN 2m ABOVE GRADE.	IIA, T1	SECTION 7.8

* C = CONTINUOUS, P = PRIMARY, S = SECONDARY

- NOTES:
- THIS HAZARDOUS AREA CLASSIFICATION IS BASED ON CALCULATION 18756-1-REP-001 "HAZARDOUS AREA REPORT FOR NT GAS REGULATING AND METERING STATIONS".
 - GAS APPARATUS GROUP IIA AND GAS TEMPERATURE CLASS T1 ARE APPLIED TO HAZARDOUS AREA CALCULATIONS.
 - A ZONE 1 AREA OF 0.3m RADIUS EXISTS AROUND THE QUICK OPENING CLOSURES ON THE FILTERS.
 - A ZONE 1 AREA OF 0.3m RADIUS EXISTS AROUND ALL CONTROL VALVES.



DWG. No.		REFERENCE DRAWINGS										CLIENT NT GAS		FYFE		AMADEUS BASIN TO DARWIN PIPELINE	
														© THIS DRAWING IS THE PROPERTY OF N.T. GAS PTY. LTD. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED WITHOUT PRIOR WRITTEN PERMISSION		CHANEL ISLAND STATION HAZARDOUS AREA PLAN	
0 ORIGINAL ISSUED FOR DOSSIER														DRAWING NUMBER AD1510-9401		SHEET A1	
A ISSUED FOR HAZARDOUS AREAS CLASSIFICATION														REVISION 0			
REV	DESCRIPTION	PROJ. ENGINEER	DATE	FYF	DRAWN	DATE	CHECKED	DATE	PROJ. MANAGER	DATE	CLIENT	DATE	FYFE REF No				

5 Hazardous Area Equipment Register and Certificates of Conformity

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



Channel Island Meter Station Hazardous Area Equipment Register

Color Code Notes:

Certification is not Australian

Doc No.: 18756-5-70-009
Rev: 0
Date: 18-Nov-2011

APA Group

Tag	P&ID No.	Location	Instrument Type	Manufacturer	Model	Serial No.	Hazard Area Drawing No.	Haz Area Classification			Ex Protection	Certification
								Zone	Gas Group	Temp.		
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	3051CD2A22A1AB4M5I7	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	3051CD2A22A1AB4M5I7	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	3051CD3A02A1BM5K7S5	RS0880414	AD 1510-9401	2	IIA	T1		
AD-1510-ZSC/ZSO-115	AD 1510-7063	Unit 7 standby run	Limit switch	Westlock	3449-BY-_-2300-000		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	JB15455-1GP-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	3051CD3A02A1BM5K7S5	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



Channel Island Meter Station Hazardous Area Equipment Register

Color Code Notes:

Certification is not Australian

Doc No.: 18756-5-70-009

Rev: 0

Date: 18-Nov-2011

APA Group

Tag	P&ID No.	Location	Instrument Type	Manufacturer	Model	Serial No.	Hazard Area Drawing No.	Haz Area Classification			Ex Protection	Certification
								Zone	Gas Group	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	JB15455-1GP-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-HSC-10	AD 1510-7002	1510-MLV-10	Valve hand switch (close)	-	-		-				Not in hazardous area	
AD-1510-HSO-10	AD 1510-7002	1510-MLV-10	Valve hand switch (open)	-	-		-				Not in hazardous area	
AD-1510-PSH-31	AD 1510-7003	Slam shut valve SSV-31	High pressure switch	NA	NA		AD 1510-9401	2	IIA	T1		
AD-1510-PSH-41	AD 1510-7003	Slam shut valve SSV-41	High pressure switch	NA	NA		AD 1510-9401	2	IIA	T1		
AD-1510-ZLC-10	AD 1510-7002	1510-MLV-10	Light switch (close)	-	-		-				Not in hazardous area	
AD-1510-ZLO-10	AD 1510-7002	1510-MLV-10	Light switch (open)	-	-		-				Not in hazardous area	
AD-1510-RTU	-	Control room	Remote terminate unit	-	-		-				Not in hazardous area	



FYFE
Earth Partners
ENVIRONMENT
DEVELOPMENT
RESOURCES

Channel Island Meter Station Hazardous Area Equipment Register

Color Code Notes:

Certification is not Australian

Doc No.: 18756-5-70-009

Rev: 0

Date: 18-Nov-2011

APA Group

Tag	P&ID No.	Location	Instrument Type	Manufacturer	Model	Serial No.	Hazard Area Drawing No.	Haz Area Classification			Ex Protection	Certification
								Zone	Gas Group	Temp.		

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex 1249X **Issue 0:** Original Issue 17/7/1991
Issue 5: 30/05/2003 (Revalidation)

Date of Expiry: 30/05/2013

Certificate Holder: Fisher-Rosemount Pty Ltd
471 Mountain Highway
BAYSWATER Victoria 3153

Electrical Equipment: Model 3051-series Pressure Transmitter and Model 3001-series Hydrostatic Pressure Transmitter, including optional Fieldbus/Profibus outputs, LCD indicator and T1 Transient-protection Terminal Board.

Type of Protection: Ex ia
Ex n

Marking Code: Ex ia IIC T4 (T_{amb} = 70 °C) / T5 IP66 (for non-Fieldbus)
Ex ia IIC T4 (T_{amb} = 60 °C) / T5 IP66 (for Foundation Fieldbus/Profibus)
Ex n IIC T4 (T_{amb} = 70 °C) / T5 IP66
AUS Ex 1249X

Manufactured By: Rosemount Inc
8200 Market Boulevard
Chanhassen MN 55317 USA

Emerson Process Management		
Document Control		
PDC No: 4-70538561-001	Rev: 0	Date: 31/7/03
ORDER NUMBERS		
Customer: 626973		
Emerson: 70538561		

Issued by:



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



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

STANDARDS AUSTRALIA

Certification 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 (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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Certification of

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 the 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 LCD 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 List below)		

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EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

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Ex 1249X-5

Addendum to Certificate No.....

Certified Equipment: (Continued)

(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 LCD 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 below)		

(c) Analog/HART Transmitter Configuration		
Ref.	Description	Drawing No.
Any one of the 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 Assembly:		
Micro.c	Micro Brd 5, Coated & Spot Potted, 3051/3001 & Probar	03031-0584
Optional LCD Indicator assembly:		
Dis.b	Shrouded/Spot-Potted/Labelled LCD Board, 2 Line	03031-0591
Any one of the sensor boards can be used: (Refer to Sensor Board List below)		

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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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex 1249X-5

Variations Permitted By Issue 5:

- 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:

- 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.
- It is a condition of safe use that the following parameters are to be taken into account for Intrinsic Safety applications:

(a) Foundation Fieldbus/Profibus Transmitter Configuration	
Entity Parameters	With or without transient protected T1 option
Ui	30 V
Ii	300 mA
Pi	1.3 W
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
Ii	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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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

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 $P_o \leq (U_o \times I_o) / 4$.
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.
7. 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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Acc No. Z2221100AS

STANDARDS AUSTRALIA



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

Certification of

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

Document No.	Document Title	Sheets	Issue	Date
00268-0031	Index of I.S. Barrier System for MOD.268 Smart Family Interface	1 to 7	M	08/04/1993
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	H	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

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Addendum to Certificate No. Ex 1249X-5

Drawings Relating to Variations Permitted by Issue 5 (Continued)

Document No.	Document Title	Sheets	Issue	Date
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, 3051/3001 & Probar	1 to 4	AK	04/03/2002
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 Board, 2 Line	1 to 3	AF	19/06/2000
03031-0604	Schematic Diagram 3051C Low Power Terminal Block	1 of 1	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. Block, 3051C	1 to 3	AC	07/08/1997
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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Certification of

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 No.	Document Title	Sheets	Issue	Date
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	C	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 Safe	1 to 6	AH	30/11/2000
03031-1022	Model 3051C/L/P/H, 3001C/S Intrinsically Safe and Type N Configuration, SAA	1 to 10	AG	28/05/2003
03031-1026	SAA I.S. 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	K	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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REVISIONS

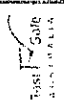
REV	DESCRIPTION	CHG. NO.	APP'D	DATE
AA	UPDATE ENTITY PARAMETERS	RTC1002910	J.D.J.	12/2/97
AB	ADD FIELDBUS AND PROFIBUS	RTC1006448	J.D.J.	4/26/99

SAA ENTITY CONCEPT APPROVALS

3051C 3001C
 3051L 3001CL
 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

TestSafe Australia
 This drawing forms part of certification
 documents under Certificate Number
 AUS Ex 12491-5
 Amendments require Supplementary
 Certification



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

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.

CAD Maintained, (MICROSTATION)

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES [mm]. REMOVE ALL BURRS AND SHARP EDGES, MACHINE SURFACE FINISH 125 -TOLERANCE- .X ± .1 [2,5] .XX ± .02 [0,5] .XXX ± .010 [0,25] FRACTIONS ANGLES ± 1/32 ± 2° DO NOT SCALE PRINT	CONTRACT NO.	ROSEMOUNT MEASUREMENT		Rosemount Inc. 12001 Technology Drive Eden Prairie, MN 55344 USA
	DR. Mike Dobe 12/30/91	FISHER-ROSEMOUNT		
	CHK'D	TITLE		
	APP'D. GLEN MONZO 5/8/92	SAA I.S. INDEX FOR 3051 & 3001		
	APP'D. GOVT.	SIZE A	FSCM NO.	DWG NO. 03031-1026
	SCALE	N/A	WT.	SHEET 1 OF 4

REVISIONS				
REV	DESCRIPTION	CHG. NO.	APP'D	DATE
AB		RTC1006448		

OUTPUT CODE "A" (4-20MA / HART) SAA ENTITY CONCEPT APPROVALS

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

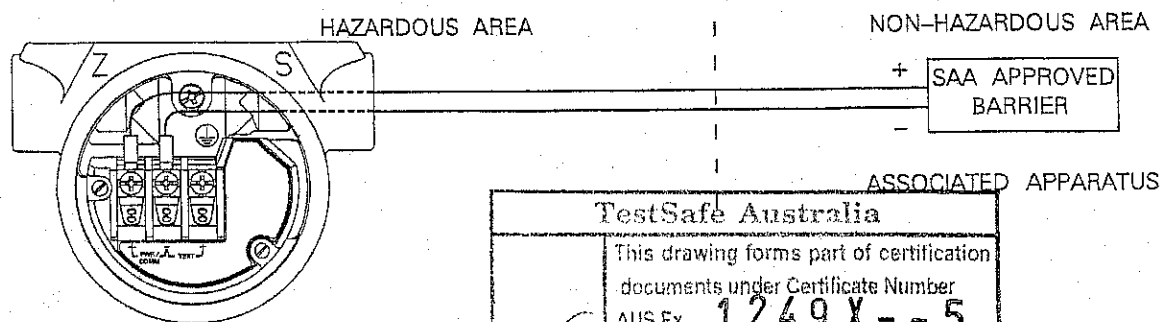
3051C 3051H 3001C 3001S
 3051L 3051T 3001CL
 3051P 3051CA 3001CH

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

APPARATUS PARAMETER	BARRIER PARAMETER
$V_{max} = 30V$ $I_{max} = 200mA$ $P_{max} = 0.9W$ $C_i = 0.01\mu F$ $L_i = 10\mu H$ FOR T1 OPTION ONLY $I_{max} = 160mA$ $L_i = 1.05mH$	V_{oc} IS LESS THAN OR EQUAL TO 30V I_{sc} IS LESS THAN OR EQUAL TO 200mA $\frac{V_{oc} * I_{sc}}{4}$ IS LESS THAN OR EQUAL TO 0.9W C_a IS GREATER THAN 0.01 MICROFARADS L_a IS GREATER THAN 10 MICROHENRIES I_{sc} IS LESS THAN OR EQUAL TO 160mA L_a IS GREATER THAN 1.05 MILLIHENRIES

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.



Rosemount Inc.
 12001 Technology Drive
 Eden Prairie, MN 55344 USA

DR. **Mike Dobe**
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TestSafe Australia
 This drawing forms part of certification documents under Certificate Number
 AUS Ex **1249X-5**
 Amendments require Supplementary Certification

CAD Maintained, (MICROSTATION)

SIZE A	FSCM NO	DWG NO. 03031-1026
SCALE N/A	WT.	SHEET 2 OF 4

REVISIONS				
REV	DESCRIPTION	CHG. NO.	APP'D	DATE
AB		RTC1006448		

**OUTPUT CODE "M" (LOW POWER)
SAA ENTITY CONCEPT APPROVALS**

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

APPROVED TRANSMITTERS WITH LOW POWER CONFIGURATION

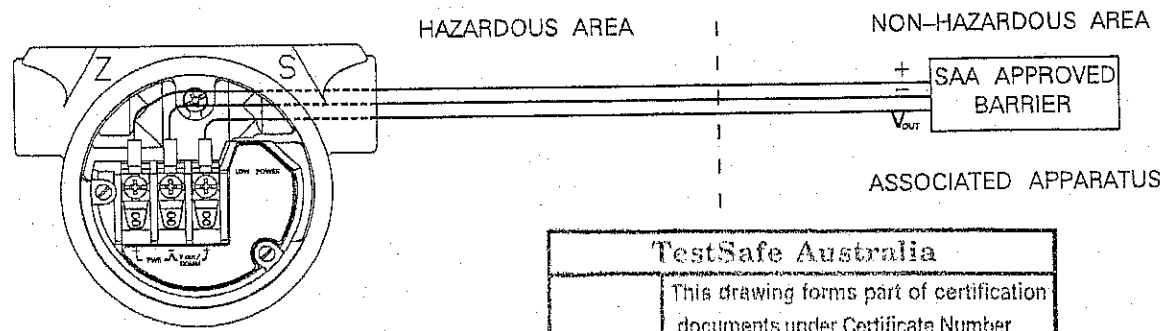
- | | |
|-------|--------|
| 3051C | 3051T |
| 3051L | 3051CA |
| 3051P | |
| 3051H | |

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

APPARATUS PARAMETER	BARRIER PARAMETER
$V_{max} = 30V$ $I_{max} = 200mA$ $P_{max} = 0.9W$ $C_i = 0.042\mu F$ $L_i = 10\mu H$ FOR T1 OPTION ONLY $L_i = 0.75mH$	V_{oc} IS LESS THAN OR EQUAL TO 30V I_{sc} IS LESS THAN OR EQUAL TO 200mA $\frac{V_{oc} * I_{sc}}{4}$ IS LESS THAN OR EQUAL TO 0.9W C_a IS GREATER THAN 0.042 MICROFARADS L_a IS GREATER THAN 10 MICROHENRIES L_a IS GREATER THAN 0.75 MILLIHENRIES

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.



Rosemount Inc.
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Eden Prairie, MN 55344 USA

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This drawing forms part of certification documents under Certificate Number
 AUS Ex **1249X--5**
 Amendments require Supplementary Certification
 CAD Maintained (MICROSTATION)

DR.	Mike Dobe	SIZE	FSCM NO	DWG NO.	03031-1026
ISSUED		SCALE	N/A	WT.	
					SHEET 3 OF 4

REVISIONS				
REV	DESCRIPTION	CHG. NO.	APP'D	DATE
AB		RTC1006448		

OUTPUT CODE F /W (FIELD BUS, PROFIBUS) SAA ENTITY CONCEPT APPROVALS

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

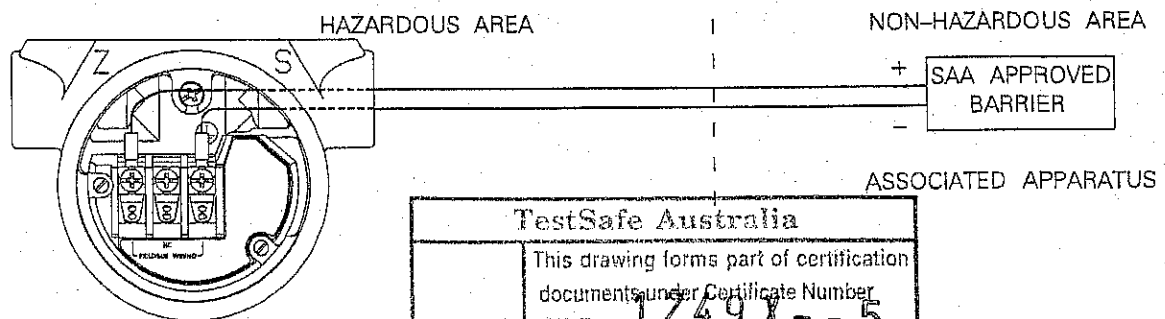
3051C	3051H	3001C	3001S
3051L	3051T	3001CL	
3051P	3051CA	3001CH	

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

APPARATUS PARAMETER	BARRIER PARAMETER
$V_{max} = 30V$ $I_{max} = 300mA$ $P_{max} = 1.3W$ $C_i = 0 \mu F$ $L_i = 0 \mu H$	V_{oc} IS LESS THAN OR EQUAL TO 30V I_{sc} IS LESS THAN OR EQUAL TO 300mA $\frac{V_{oc} * I_{sc}}{4}$ IS LESS THAN OR EQUAL TO 1.3W C_a IS GREATER THAN 0 MICROFARADS L_a 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.



Rosemount Inc.
12001 Technology Drive
Eden Prairie, MN 55344 USA

TestSafe Australia

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AUS Ex **1249X--5**
Amendments require Supplementary Certification

DR. **Mike Dobe**
ISSUED

CAD Maintained, (MICROSTATION)

SIZE A	FSCM NO	DWG NO. 03031-1026
SCALE N/A	WT.	SHEET 4 OF 4

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AUSEx_2541X

Price: \$27.50 (incl 10 % GST)

Certificate #: AUSEx_2541X **Issue Date:** 19/03/2002
Issue #: 0 **Expiry Date:** 19/03/2012
Status: Valid

Certificate Holder: Parker Hannifin (Australia) Pty Limited
Address: 9 Carrington Road CASTLE HILL NSW 2154 Australia
Manufacturer: Parker Skinner Valve & Parker Lucifer SA
Product Description: Solenoid Coils
Equipment Category: Solenoids
Protection Type: m
Gas Group: IIA
Marking Group:
IP Rating: N/A
Test Report #: NE02/0004 **Issued by:** SIMTARS
Standards: AS 2431-1981
Notes: N/A

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12 AUG 1980

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

SUPPLEMENTARY CERTIFICATE FOR EXPLOSION PROTECTED
ELECTRICAL EQUIPMENT

No. FLP 693 - 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 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.

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

STANDARDS ASSOCIATION OF AUSTRALIA

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STANDARDS HOUSE, 80 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 1L	One position was to stay put. Now both positions no stay put and external modification.
1S.1 (1M) FNP 1S.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 modification.
FNP 11M.1 (1M) FNP 11M.2 (2M)	Push Button Station Palm operated 1 position	FNP 1L	One position deleted and no position stay put and external modification.
FNP 11S.1 (1M) FNP 11S.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 1L	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 1L	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 or 240 V a.c. 15A 2 ways	FNS 51	Changing interiors of switch to Ring-Grip FS 169/15 DP.

.....
J. H. Wray
 Director
 Standards Association of Australia

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CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

SCHEDULE 1 (Continued)

Continuation of Certificate No. FLP 693 -

New Cat. No.	Short Description	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 15B10302 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	FNS 51	Changing interiors of switch to Kraus & Naimer type B11 and U17 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 11SG.1 (1M) FNP 11SG.2 (2M)	Push Button Station 1 position with padlocking facility	FNP 1L	One position deleted and no position to stay put and external modification.

.....
J. R. Gray
 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. TLP 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.

.....
J. H. Gray
.....
Director

Standards Association of Australia

STANDARDS ASSOCIATION OF AUSTRALIA

Sheet of Sheet 2

INCORPORATED BY ROYAL CHARTER

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

CERTIFICATE FOR FLAMEPROOF 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 Electrical Equipment, Including Amendment No.(s).....

This Certificate applies only to the flameproof features 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 I and II.

DETAILS OF EQUIPMENT:

"S.A.E." Flameproof Enclosures, Cert. Nos.
FIJ1, FIJ2, FHS51, FNL11 and FNP1L.

See Sheet 2 of 2 for a description of enclosures.

DRAWING NUMBER:

1483 GA5-1, 1483 GA4-1, 148328-2, 148330-3, 148330-1,
148319-2, 053917-1, 148322-1, 148321-1, 0107127-2,
148327-1, "Retainer Clip" information sheet, ED/211/2.

GROUPING AND CLASSIFICATION:

GROUP III Enclosures; Temperature Classification T6

APPLICANT:

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

MANUFACTURER:

Metalcraft Engineering Co. Pty. Ltd.,
26-28 Kent Road,
MASCOT, N.S.W. 2060

TESTING STATION AND REPORT No.:

SCC TR. 10,46601

REMARKS:

DETAILS OF ENCLOSED ELECTRICAL COMPONENTS

Cat. No. FIJ1 - Four-way terminal block "Siemens BK4"
Cat. No. FIJ2 - Four-way terminal block "Siemens BK4"
Cat. No. FHS51 - One "Federal" 3 pole 15 A switch
Cat. No. FNL11 - Two "Klockner-Hoeller" Lampholders 2.5W,
Two B.S.9.S. size lamps
Cat. No. FNP1L - Two "Klockner-Hoeller" push button switches


Chairman of Committee EL/29


Director, Standards Association of
Australia

EL/29

Date 13. 6. 74

STANDARDS ASSOCIATION OF AUSTRALIA

Sheet 2 of Sheet 2

INCORPORATED BY ROYAL CHARTER

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

CERTIFICATE FOR FLAMEPROOF ENCLOSURE

No. FLP 693

REMARKS:

CAST ALUMINIUM ENCLOSURES

Cat. No. FNJ1, Junction Box - One bore and spigot joint,
four $\frac{3}{4}$ 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 $\frac{3}{4}$ 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 $\frac{3}{4}$ in. or 1 in. conduit entries
16 T.P.I. Two indicator Lamp
inspection windows.

Cat. No. FNP11, Push Button Station - One bore and spigot joint,
Four $\frac{3}{4}$ in. or 1 in. conduit entries
16 T.P.I. Two operating rods.

Chairman of Committee EL/29

Director, Standards Association of
Australia

EL/29

Date 3.6.74

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No. Ex: 157 Issue 0: Original Issue 24/2/1993
Issue 1: 21/9/1982
Issue 2: 30/6/1988
Issue 3: 15/12/1993

Date of Expiry: 15/12/2003

Certificate Holder: Govan Drewburn Pty Ltd
156 Bamfield Road
WEST HEIDELBERG Victoria 3081

Electrical Equipment: FW Range of Flameproof Enclosures

Type of Protection and Marking Code: Ex d IIB T6 IP65 Class I Zone 1

Manufactured By: Govan Drewburn Pty Ltd
156 Bamfield Road
WEST HEIDELBERG Victoria 3081

Issued by:



Londonderry Occupational Safety Centre

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

STANDARDS AUSTRALIA

Certification 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, AS 2380.2-1991 (incorporating Amendment No 1) and AS 1939-1990

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

Test Report No: LOSC 9955
File Reference: 93/5071

K.J. Fiske
Signed for and on behalf of issuing authority
Coordinator Approval by Certification
Position
15/12/1993
Date of issue

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:

	Londonderry Occupational Safety Centre 132 Londonderry Road LONDONDERRY NSW 2753 Phone: (047) 244 900 Fax: (047) 244 999
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STANDARDS AUSTRALIA

Certification of
EXPLOSION PROTECTED ELECTRICAL EQUIPMENT
Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No. Ex: 157 Issue: 3 Date of Issue: 15/12/1993

Equipment: A range of Flameproof Enclosures designated Series FW. The range includes both control stations and junction boxes in various configurations and having up to 5 entries, as required.

Allowable Variations:
Alterations to the range of certified equipment.

This supplementary certificate also covers revalidation of the entire range of enclosures.

Drawing Schedule

C2031	Revision 1	28 July 1993
C2359	Original	8 February 1993
C2353	Original	3 February 1993
C0774-Rev.2	Revision 2	21 June 1991
C1510	Original	22 October 1992

Issued by:



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STANDARDS AUSTRALIA



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

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 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> <u>Series L-1100 and L-1200</u>	Hazardous Location Class I Zone 1
	Type of Protection Ex d IIB T6
	Certificate Holder Murphek Pty Ltd 215 Parramatta Road AUBURN NSW 2144
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	Manufacturer Frank W Murphy Manufacturer Inc 3131 South Sheridan Tulsa OKLAHOMA 74145 USA
Certification Conditions	Test Report No(s) SCC TR NO: 60015
	Australian Standard(s) AS 2480-1981
	SAA File Reference P/3: 84122/M121
Remarks	Effective Date 1985-09-05
	Date of Issue 1985-09-06

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Director—Administration & Approvals
Standards Association of Australia

 <h2 style="text-align: center;">IECEx Certificate of Conformity</h2>	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres <small>for rules and details of the IECEx Scheme visit www.iecex.com</small>	
Certificate No.:	IECEx BAS 07.0002X Issue No.: 0
Status:	Current Certificate history: 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
Applicant:	Rosemount Incorporated 12001 Technology Drive Eden Prairie Minnesota 5344-3695 United States of America
Electrical Apparatus:	Model 3144P HART Temperature Transmitter <i>Optional accessory:</i>
Type of Protection:	Intrinsic Safety
Marking:	IECEx BAS 07.0002X Ex ia IIC T6 (-60°C ≤ Ta ≤ +50°C) Ex ia IIC T5 (-60°C ≤ Ta ≤ +70°C)
Approved for issue on behalf of the IECEx Certification Body:	R S Sinclair
Position:	Managing Director
Signature: (for printed version)	_____
Date:	_____
<p>1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.</p>	
Certificate issued by: <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> <p>Baseefa (2001) Ltd. Rockhead Business Park Staden Lane Buxton Derbyshire SK17 9RZ United Kingdom</p> </div> <div style="text-align: center;">  </div> </div>	
 <h2 style="text-align: center;">IECEx Certificate of Conformity</h2>	
Certificate No.:	IECEx BAS 07.0002X
Date of Issue:	2007-02-20 Issue No.: 0
	Page 2 of 3
Manufacturer:	Rosemount Incorporated 12001 Technology Drive Eden Prairie Minnesota 5344-3695 United States of America
Manufacturing location(s):	
<p>This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.</p>	
<p>STANDARDS: The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:</p>	
IEC 60079-0 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-11 : 1999 Edition: 4	Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic safety 'i'

000001.4

This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/BAS/ExTR07.0003/00

Quality Assessment Report:

GB/BAS/QAR06.0058/00

GB/BAS/QAR06.0072/00

GB/BAS/QAR06.0078/00



IECEx Certificate of Conformity

Certificate No.: IECEx BAS 07.0002X

Date of Issue: 2007-02-20

Issue No.: 0

Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Model 3144P HART Temperature Transmitter is designed to convert the input from up to two temperature sensors into a 4 to 20mA signal for measurement purposes. The apparatus comprises an encapsulated main printed circuit board (PCB), a feed-through filter, terminal facilities and an optional liquid crystal display (LCD), all housed in an aluminium or stainless steel enclosure. The external connections are made using screw terminals via one of two tapped holes in the terminal compartment of the enclosure. The loop connections, marked '+' and '-' may also be used for serial communications. See annex for electrical and load parameters.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. When fitted with the transient terminal options, the apparatus is not capable of withstanding the 500V electrical strength test as defined in Clause 6.4.12 of IEC 60079-11: 1999. This must be taken into account during installation.

Annexe: IECEx BAS 07.0002X Annex.pdf

		<h1>IECEX Certificate of Conformity</h1>	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres <small>for rules and details of the IECEX Scheme visit www.iecex.com</small>			
Certificate No.:	IECEX UL 03.0001	Issue No.:	1
Status:	Current	Certificate history: Issue No. 4 (2009-9-1) Issue No. 3 (2009-4-23) Issue No. 2 (2007-6-22) Issue No. 1 (2005-3-30)	
Date of Issue:	2005-03-30	Page 1 of 4	
Applicant:	United Electric Controls Company 180 Dexter Avenue Watertown, MA 02472 United States Of America		
Electrical Apparatus: Optional accessory:	Pressure and Temperature Switches, refer to Annexe for 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 behalf of the IECEX Certification Body:	Kerry McManama Position: General Manager		
Signature: (for printed version)	_____		
Date:	_____		
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEX Website .			
Certificate issued by: Underwriters Laboratories Inc (UL) 333 Pfingsten Road Northbrook IL 60062-2096 United States of America			
			
		<h1>IECEX Certificate of Conformity</h1>	
Certificate No.:	IECEX UL 03.0001		
Date of Issue:	2005-03-30	Issue No.:	1
Page 2 of 4			
Manufacturer:	United Electric Controls Company 180 Dexter Avenue Watertown, MA 02472 United States of America		
Manufacturing location(s):			
This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended.			
STANDARDS: The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:			
IEC 60079-0 : 2000 Edition: 3.1	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements		
IEC 60079-1 : 2001 Edition: 4	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosures 'd'		

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

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

IECEx ATR:
US/UL03NK18933
US/UL05NK03600

File Reference:
03NK18933
05NK03600



IECEx Certificate of Conformity

Certificate No.: IECEx UL 03.0001

Date of Issue: 2005-03-30

Issue No.: 1

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The pressure and temperature-operated switches consist of a die-cast aluminium switch housing containing a single or dual snap switch, which is operated by an operating rod forming a joint with the enclosure. The electrical wires between the snap switch and the one or two sets of terminal blocks are permanently mounted by the manufacturer and can not be replaced. See Annexe for Nomenclature

CONDITIONS OF CERTIFICATION: NO



IECEx Certificate of Conformity

Certificate No.: IECEX UL 03.0001

Date of Issue: 2005-03-30

Issue No.: 1

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

The upper ambient w as revised to +75C.

Annexe: [Annexe_UL_03.0001.pdf](#)


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[HOME](#) > [EPEE](#) > [EX 3032](#)

EPEE Certificate: Ex 3032



Certificate No.	Ex 3032	Latest Issue	Issue 3
		Issue Date	13-11-2001
Expiry Date	15-03-2004		
Certificate Holder	Ascomation Pty Ltd		
	12/25 Frenchs Forest Road East		
	Frenchs Forest New South Wales 2086		
	Australia		
Equipment Category	Solenoids		
Product Description	Coil Series EA & PA The solenoids consist of a coil which is mounted in a mild steel yoke.		
Protection Type	Type m Type DIP		
Marking Code	* see schedule Class I Class II Zone 1		
Gas Group	I		
	IIC		
IP Rating	IP 65		
Manufacturer	Ascomation Pty Ltd		
Test Report Number	LOSC7102, 15734, 17532, and 20768		
Issued By	TestSafe Australia		
Standard	AS 2236-1994 AS 2431-1981		

NOTES

[HOME](#) > [EPEE](#) > [EX 3032](#)

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Certification of

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 Pty Ltd
1-2 Welder Road
SEVEN HILLS NSW 2147

Electrical Equipment: Solenoid magnetic coil AC10 to suit various valves (As per Schedule)

Type of Protection: Ex m e I IP 65 Class I Zone 1
Ex m IIC T* (T_{amb} = °C) IP65 Class I Zone 1, also DIP Class II
Ex m e IIC T*(T_{amb} = °C) IP65 Class I Zone 1, also DIP Class II
(*See Schedule)

Marking Code: Ex m e I IP65, Ex m IIC T*(T_{amb} = °C) IP65, Ex m e IIC T*(T_{amb} = °C) IP65
and DIP T*(T_{amb} = °C) IP65 (*See Schedule)
AUS Ex 3616X

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



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

6

Page 1 of

Certification of

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

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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 3616X

Addendum to Certificate No.....

Certified Equipment:
- continued

The solenoids 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 Voltage	Nominal Current	Effective Power	Ambient	Temp. Class
AC10-Z3-5-PD47	12 ... 400 V	0.68 ... 0.02 A	7 W	-30...60°C	T4
AC10-Z3-5-PD48	12 ... 400 V	0.33 ... 0.01 A	4 W	-30...50°C	T5
AC10-Z3-5-PD49	12 ... 400 V	0.25 ... 0.007 A	3 W	-30...60°C	T5
AC10-Z3-5-PD50	12 ... 400 V	0.25 ... 0.007 A	3 W	-30...40°C	T6
AC10-Z3-5-PD51	12 ... 400 V	0.19 ... 0.005 A	2.25 W	-30...50°C	T6
AC10-Z3-5-PD52	12 ... 400 V	0.114 ... 0.003 A	1.25 W	-30...60°C	T6
AC10-Z3-6-PD53	12 ... 400 V	0.8 ... 0.02 A	9 W	-30...60°C	T4
AC10-Z3-6-PD54	12 ... 400 V	0.31 ... 0.009 A	3.5 W	-30...60°C	T5
AC10-Z3-6-PD55	12 ... 400 V	0.16 ... 0.005 A	1.8 W	-30...60°C	T6
AC10-Z3-4-PD56	12 ... 400 V	0.35 ... 0.01 A	4 W	-30...50°C	T5
AC10-Z3-4-PD57	12 ... 400 V	0.25 ... 0.007 A	3 W	-30...60°C	T5
AC10-Z3-4-PD59	12 ... 400 V	0.13 ... 0.003 A	1.5 W	-30...60°C	T6
AC10-Z3-5-PD60	12 ... 400 V	0.68 ... 0.02 A	7 W	-40...60°C	T4
AC10-Z3-5-PD61	12 ... 400 V	0.33 ... 0.01 A	4 W	-40...50°C	T5
AC10-Z3-5-PD62	12 ... 400 V	0.25 ... 0.007 A	3 W	-40...60°C	T5
AC10-Z3-5-PD63	12 ... 400 V	0.25 ... 0.007 A	3 W	-40...40°C	T6

Issued by:



Londonderry Occupational Safety Centre

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STANDARDS AUSTRALIA

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

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Ex 3616X

Addendum to Certificate No.....

Schedule 1 - continued

Type Number	Nominal Voltage	Nominal Current	Effective Power	Ambient	Temp. Class
AC10-Z3-5-PD64	12 ... 400 V	0.19 ... 0.005 A	2.25 W	-40...50°C	T6
AC10-Z3-5-PD65	12 ... 400 V	0.114 ... 0.003 A	1.25 W	-40...60°C	T6
AC10-Z3-6-PD66	12 ... 400 V	0.8 ... 0.02 A	1.25 W	-40...60°C	T6
AC10-Z3-6-PD67	12 ... 400 V	0.31 ... 0.009 A	3.5 W	-40...60°C	T5
AC10-Z3-6-PD68	12 ... 400 V	0.16 ... 0.005 A	1.8 W	-40...60°C	T6
AC10-Z3-4-PD69	12 ... 400 V	0.35 ... 0.01 A	4 W	-40...50°C	T5
AC10-Z3-4-PD70	12 ... 400 V	0.25 ... 0.007 A	3 W	-40...60°C	T5
AC10-Z3-4-PD72	12 ... 400 V	0.13 ... 0.003 A	1.5 W	-40...60°C	T6
AC10-Z3-5-PD73	12 ... 400 V	0.68 ... 0.02 A	7 W	-30...40°C	T4
AC10-Z3-5-PD74	12 ... 400 V	0.25 ... 0.007 A	3 W	-30...50°C	T5
AC10-Z3-5-PD75	12 ... 400 V	0.19 ... 0.005 A	2.25 W	-30...40°C	T6
AC10-Z3-5-PD76	12 ... 400 V	0.114 ... 0.003 A	1.25 W	-30...60°C	T6
AC10-Z3-4-PD77	12 ... 400 V	0.33 ... 0.01 A	4 W	-30...40°C	T5
AC10-Z3-4-PD78	12 ... 400 V	0.25 ... 0.007 A	3 W	-30...50°C	T5
AC10-Z3-4-PD79	12 ... 400 V	0.13 ... 0.003 A	1.5 W	-30...55°C	T6
AC10-Z3-5-PD80	12 ... 400 V	0.68 ... 0.02 A	7 W	-40...40°C	T4
AC10-Z3-5-PD81	12 ... 400 V	0.25 ... 0.007 A	3 W	-40...50°C	T5
AC10-Z3-5-PD82	12 ... 400 V	0.19 ... 0.005 A	2.25	-40...40°C	T6
AC10-Z3-5-PD83	12 ... 400 V	0.114 ... 0.003 A	1.25 W	-40...60°C	T6
AC10-Z3-4-PD84	12 ... 400 V	0.33 ... 0.01 A	4 W	-40...40°C	T5
AC10-Z3-4-PD85	12 ... 400 V	0.25 ... 0.007 A	3 W	-40...50°C	T5
AC10-Z3-4-PD86	12 ... 400 V	0.13 ... 0.003 A	1.5 W	-40...55°C	T6

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

Certification of

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	I	21/11/96
F1-637 297	Spulenkörper 28 mm	I	21/9/95
F1-637 298	Spulenkörper 32 mm	D	7/2/96
F1-637 299	Spulenkörper 40 mm	B	15/1/96
F1-637 311	Schutzleiter	B	21/11/95
F1-637 804	Druckschraube	B	4/3/96
F1-640 396	Kappe	E	22/3/96
F1-640 397	Druckstück	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

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

Certification of

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:

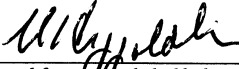
- AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements (incorporating Amendment 1)
- AS 2380.6-1988 Electrical equipment for explosive atmospheres - Explosion-protection techniques - Increased safety 'e'
- AS 2236-1994 Electrical equipment 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 TR18196

File Reference: LOSC 98/8687


Signed for and on 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



STANDARDS AUSTRALIA



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

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

For the 120 series Temperature and Pressure Controls 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

File: P/3: 92220

Date of Issue: 21 December 1992

Date of Expiry of Validity: 21 April 2002

Page 1 of 1

Signed for and on behalf of Standards Australia



General Manager
Quality Assurance Services

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**QUALITY ASSURANCE
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Standards Australia

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 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.

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

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J. Palmer
.....
Director—Administration & Approvals
Standards Association of Australia

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CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 542

(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 or more of the following options:

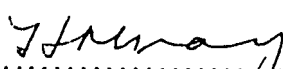
- M315 enclosure with epoxy coating
- M430 cover lock option
- M440 cover chain option
- M505 overtravel actuating plunger
- XXXX other options which may occur and will have no bearing on explosion-protection nor electrical properties.

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.
2. Controls equipped 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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Standards Association of Australia

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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	Issue C
E6296-186	Issue C
E6296-187	Issue B
E12259	Issue A
E12260	Issue A
E12261	Issue A
E12262	Issue B
E12263	Issue B
E12264	Issue B
E12265	Issue A
E12266	Issue A
E12267	Issue A
E12198	Issue A
E12200	Issue A
D6201-167	Issue B
D6201-203	Issue A
D6201-204	Issue A
UEA-1200G	Original
UEA-1200L	Revision 2

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Standards Association of Australia

STANDARDS ASSOCIATION OF AUSTRALIA

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

Schedule

Description of Modifications

1. Addition of various pressure sensors to the pressure controls type J120, J120K, H121, H121K, H122 and H122K.
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 G120, 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 & 2, Issue C
E-6296-278 Sheets 1 & 2, Issue B
E-6296-279 Issue B
E-12559 Sheet 1 Issue B
E-12559 Sheet 2 Issue D
E-12262 Sheet 1 Issue C
E-12262 Sheet 2 Issue D
E-12263 Issue A
E-12264 Issue A
E-12265 Sheet 1 Issue B
E-12265 Sheet 2 Issue C
UEA-1200G Issue B
UEA-1201G Issue A

Page 1 of 2

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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

Type of Protection: Ex d IIB T6 IP66

Test Report: LOSC 2010 to AS 2480-1986 and 1939-1986

File: P/3: 85015/M137

Date of Issue: 28 July 1987

Page 1 of 2



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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 120 Series Temperature and Pressure Controls are hereby extended to include modifications as detailed in the following schedule.

SCHEDULE

Description of modifications:

Change of gas group to IIC

Models in the range

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

Pressure controls (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

Pressure controls (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, S157, S157B, 36,
37, 38, 39, 40, 183, 184, 185, 186, 188, 189, 612, 616,
50, 51, 52, 53, 54, 55

Page 1 of 2

Signed for and on behalf of Standards Australia



General Manager
Quality Assurance Services

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**QUALITY ASSURANCE
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Standards Australia

Certificate of Compliance

Drawings:

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
E-12265 Sheet 2	Revision D	12 February 1986
EUA-1200 G	Revision B	5 July 1985
UEA-1201 G	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

TYPE OF PROTECTION: Ex d IIC T6 IP66 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

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General Manager
Quality Assurance Services

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**QUALITY ASSURANCE
SERVICES** 
Standards Australia

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

for the 120 series Temperature and Pressure Controls 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

File: P/3: 92220

Date of Issue: 21 December 1992

Date of Expiry of Validity: 21 April 2002

Page 1 of 1

Signed for and on behalf of Standards Australia


General Manager
Quality Assurance Services

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QUALITY ASSURANCE
SERVICES 
Standards Australia

Certification of
EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex 3498
Issue 0: Original Issue 22/12/1997
Issue 1: 1/11/1999

Date of Expiry: 22/12/2007

Certificate Holder: Ascotation Pty Ltd
Unit 12, 25 Frenchs Forest Road East
FRENCHS FOREST NSW 2986

Electrical Equipment: Series 'VM' and 'WSVM' Solenoid Types 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 ZG Scherpenzeel
The Netherlands

COPY

Issued by:

Test  Safe
AUSTRALIA

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

STANDARDS AUSTRALIA

Certification 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.

Ex 3498-1

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:

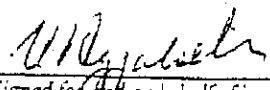
- AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques - General requirements (incorporating Amendment 1)
- AS 2380.6-1988 Electrical equipment for explosive atmospheres - Explosion-protection techniques - Increased safety 'e'
- AS 2431-1981 Electrical equipment 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 16866

File Reference: TestSafe 97/8360


 Signed for and on behalf of issuing authority
 Technical Services Manager
 TestSafe Australia
 Position

1/11/1999
Date of issue

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Issued by:

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STANDARDS AUSTRALIA

Certification of 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 an 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 proof Solenoid Operator - IP 67 Series VM And WSVM Type: MXX And M12-II	A	9/1/98
C-034	Cross Reference "EM" Coils	0	3/2/97
136043	Nameplate, Series VM and WSVM Solenoid Assemblies	original	6/97
FH-109264	Encapsulant Coils	H	17/5/91
GH-112264	Magnet Wire Enamelled Copper	E	6/12/94
HV-123022	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	F	29/11/95
GV-131409	Gasket Cover	A	6/2/95
V-131410	Connector Conduit	C	10/9/96
V-131681	Screw-Sems	A	20/12/96
GV-131683	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'.

COPY

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Test  Safe
AUSTRALIA

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STANDARDS AUSTRALIA



*Certification of***EXPLOSION PROTECTED ELECTRICAL EQUIPMENT**

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex 1003X

Issue 0:	4/9/1991	(Original Issue)
Issue 2:	20/12/2002	(Withdrawn)
Issue 3:	3/2/2003	(Revalidation)

Date of Expiry: 3/2/2013

Certificate Holder: Fisher Controls Pty Ltd
8 Walker Place
Wetherill Park NSW 2164

Electrical Equipment: Type 646 Transducer, Type 582i, 3622, and 3722 Electro-Pneumatic Converters

Type of Protection: Ex d Zone 1

Marking Code: Ex d IIB T6 IP54 (Type 3622 and 3722 Converter)
Ex d IIC T6 IP54 (Type 646 Transducer and Type 582i Converter)
AUS Ex 1003X

Manufactured By: Fisher Controls International Inc.
Marshalltown
Iowa 50158 USA

Issued by:



919 Londonderry Road Londonderry NSW 2753

Phone: (02) 4724 4900

Fax: (02) 4724 4999

STANDARDS AUSTRALIA

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

Certification 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 (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)


This certificate does not ensure compliance with electrical safety requirements and performance other than those included in the standards 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: TestSafe 22738A

File Reference: TestSafe 2002/002091



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

Position

3/2/2003

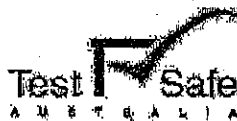
Date of issue

Ex 1003X-3

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STANDARDS AUSTRALIA



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*Certification of***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

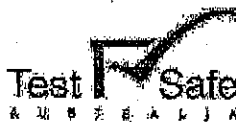
Certified Equipment:

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 1/2" - NPT conduit entry and requires the use of a Standards Australia certified cable gland or Standards Australia certified conduit adaptor.

Conditions of Certification:

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.

Issued by:**919 Londonderry Road Londonderry NSW 2753**

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STANDARDS AUSTRALIA

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No..... **Ex 1003X-3**

Drawing Schedule related to Issue 3

42B4279 SHEET 1	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS CERTIFICATION DRAWING	P	28/07/97
42B4279 SHEET 2	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS CERTIFICATION DRAWING	P	29/07/97
42B4279 SHEET 3	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS CERTIFICATION DRAWING	P	30/7/97
42B4279 SHEET 7	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS CERTIFICATION DRAWING	U	2/12/02
42B4279 SHEET 8	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS CERTIFICATION DRAWING	U	2/12/02
42B4279 SHEET 9	TYPE 3622, 582i, 646 & 3661, ELECTRO PNEUMATIC INSTRUMENTS CERTIFICATION DRAWING	V	10/12/02
43B6881 SHEET 1 OF 3	TYPE 3722, ELECTRO PNEUMATIC INSTRUMENT CERTIFICATION DRAWING	G	2/12/02
43B6881 SHEET 3 OF 3	TYPE 3722, ELECTRO PNEUMATIC INSTRUMENT CERTIFICATION DRAWING	G	2/12/02

Issued by:



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 Phone: (02) 4724 4900 Fax: (02) 4724 4999

STANDARDS AUSTRALIA



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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 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

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

Description of Equipment <u>'Dresser and Ashcroft' B7 and D7</u> <u>Series Pressure and Differential</u> <u>Pressure switches</u> <u>Refer Schedule 1</u> Drawing No(s) 476C103 Rev G, BD-003-03, 476C104 Rev HH, 552A105 Rev M, 110A124, 117A168, 117A117 Rev H and AD-003-04 Rev 2 Certification Conditions Remarks	Hazardous Location Class I Zone 1 Type of Protection Ex d IIB T6 Certificate Holder Austral Engineering Supplies Pty Ltd Mary Street ERMINGTON NSW 2115 Manufacturer Dresser Instrument Division Stratford CONNECTICUT 06497 USA. Test Report No(s) SCC TR NO: 59294 Australian Standard(s) AS 2480-1981 SAA File Reference P/3: 84016/M117 Effective Date 1984-07-09 Date of Issue 1984-07-16
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.....
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 EQUIPMENT

Continuation of Certificate No: Ex 547

(Sheet 2 of 2)

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

SCHEDULE 1

DESCRIPTION

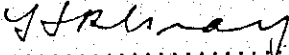
An aluminium enclosure incorporating:

- (a) One - 3 5/8 inch 16UN2B threaded joint
- One - Neoprene 'O' ring gasket
- Two - 1/2 inch NPT conduit entries or
alternatively:
- Two - 3/4 inch NPT conduit entries

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

SUPPLEMENTARY CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. Ex 547-1

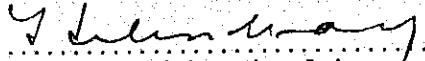
This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements.

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.

<p><u>Description of Modification</u></p> <p><u>Dresser Ashcroft T7 Series</u> <u>Temperature Switches</u></p> <p>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.</p> <p><u>Drawing No(s)</u></p> <p>451B149; 451B154; 451B157 and 577A118</p>	<p><u>Hazardous Location</u></p> <p>Class I Zone 1</p> <p><u>Type of Protection</u></p> <p>Ex d IIB T6</p> <p><u>Certificate Holder</u></p> <p>Austral Engineering Supplies Pty Ltd Mary Street ERMINGTON NSW 2115</p> <p><u>Manufacturer</u></p> <p>Dresser Instrument Division 250 East Main Street STRATFORD CONN 06497 USA</p> <p><u>Test Report No(s)</u></p> <p><u>Australian Standard(s)</u></p> <p>AS 2480-1981</p> <p><u>SAA File Reference</u></p> <p>P/3: 86132/M132</p> <p><u>Effective Date</u></p> <p>1986-09-10</p> <p><u>Date of Issue</u></p> <p>1986-10-13</p>
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Director—Administration & Approvals
Standards Association of Australia

 <h2 style="text-align: center;">IECEx Certificate of Conformity</h2>	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres <small>for rules and details of the IECEx Scheme visit www.iecex.com</small>	
Certificate No.:	IECEx TSA 06.0010X issue No.:1
Status:	Current Certificate history: 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:	Terminal Head and Temperature Probe assembly types TC20FIXTA (with fixed nipple probe) and TC20SPRTA (with spring loaded nipple probe)
Optional accessory:	
Type of Protection:	Exd, Exe
Marking:	For fixed nipple probe: Temperature Controls Pty Ltd Type TC20FIXTA, Ex ed IIC T6 IP66 40V 3WATT SERIAL NO., IECEx TSA 06.0010X or, for spring loaded probe: Temperature Controls Pty Ltd Type TC20SPRTA, Ex ed IIC T6 IP66 40V 3WATT SERIAL NO., IECEx TSA 06.0010X
Approved for issue on behalf of the IECEx Certification Body:	Ujen Singh
Position:	Quality and Certification Manager
Signature: (for printed version)	_____
Date:	_____
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website .	
Certificate issued by: TestSafe Australia 919 Londonderry Road Londonderry NSW 2753	
 <h2 style="text-align: center;">IECEx Certificate of Conformity</h2>	
Certificate No.:	IECEx TSA 06.0010X
Date of Issue:	2007-02-19 Issue No.: 1
	Page 2 of 5
Manufacturer:	Temperature Controls P/L 7 Yamma St Sefton NSW 2162 Australia
Manufacturing location(s):	
This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.	
STANDARDS: The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:	
IEC 60079-0 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
IEC 60079-7 : 2001	Electrical apparatus for explosive gas atmospheres - Part 7: Increased safety 'e'

Edition: 3

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

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

AUTSA/EXTR06.0012/00
AUTSA/EXTR06.0137/00

AUTSA/EXTR06.0013/00

AUTSA/EXTR06.0121/00

Quality Assessment Report:

AUTSA/QAR06.0018/00



IECEx Certificate of Conformity

Certificate No.: IECEx TSA 06.0010X

Date of Issue: 2007-02-19

Issue No.: 1

Page 3 of 5

Schedule**EQUIPMENT:**

Equipment and systems covered by this certificate are as follows:

The model TC20FIXTA and the model TC20SPRTA temperature assemblies consist of a terminal enclosure and a temperature probe.

The terminal enclosure is a circular, cast aluminium alloy enclosure with a screw-on lid. There is a threaded side entry intended to accept 20mm screwed conduit and a ½" NPT bottom entry intended for a temperature probe.

The temperature probes consist of a stainless steel nipple with a ½" NPT thread for introduction into the terminal enclosure. The actual probe consists of a MIMS cable of varying length, with a welded steel end cap enclosing the thermo-couple or the RTD. The probe may be fixed in the nipple (assembly model TC20FIXTA) or be spring loaded (assembly model TC20SPRTA).

CONDITIONS OF CERTIFICATION: YES as shown below:

1. Each apparatus is to be supplied with an Instruction Manual.
2. The probe may be installed in an atmosphere with an ambient temperature between -20 DegC and +60 DegC and be used for media with a maximum temperature of 450 DegC.
3. When the probe is installed in a media with temperatures exceeding 80 DegC, a lagging extension must be used to maintain temperature class of T6 on the Terminal Head (in an ambient temperature up to +60 DegC).



IECEx Certificate of Conformity

Certificate No.: IECEx TSA 06.0010X
Date of Issue: 2007-02-19 Issue No.: 1
Page 4 of 5

EQUIPMENT(continued):

>



IECEx Certificate of Conformity

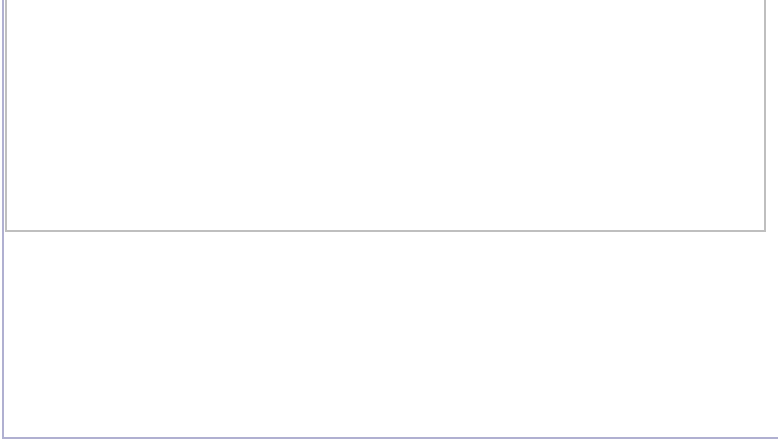
Certificate No.: IECEx TSA 06.0010X
Date of Issue: 2007-02-19 Issue No.: 1
Page 5 of 5

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

This issue 1 of the certificate was issued to correct several typing errors in the Annexe to certificate IECEx TSA 06.0010X

11/17/11

Certificate of Conformity: IECEx TSA 06.0010X



Annexe: [Annexe to certificate IECEx TSA 06 0010X.pdf](#)

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex 319 **Issue 0:** Original Issue 1/6/1982
Issue 6: 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: Ex d I/IIC T6 IP66/IP67 Class I Zone 1
ELS10: 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

Certification of

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

K. J. Jisk

Signed for and on behalf of issuing authority

Coordinate Approvals & Certification

Position

29/9/1998

Date of issue

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

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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

Certification 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 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.

Issued by:



Londonderry Occupational Safety Centre

919 Londonderry Road LONDONDERRY NSW 2753

Phone: (02) 4724 4900

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STANDARDS AUSTRALIA



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

3

Page 3 of

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 Pressure Transmitter

Product Option Code E7

Fisher-Rosemount Pty Ltd
471 Mountain Highway
BAYSWATER VIC 3153

ORDER NUMBERS:

Customer: 058333

F-R: 609481

Fisher-Rosemount Document Control

PDC No. A-609481-003 Rev. 0 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



General Manager
Quality Assurance Services

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QUALITY ASSURANCE
SERVICES 
Standards Australia

ELECTRICAL EQUIPMENT

Continuation of
Certificate No

Ex 1347X

Certificate of Compliance

SCHEDULE

Description of Equipment:

The Model 3051C 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
Rosemount Data Sheet 4622
Rosemount Data Sheet 2623

Issue C	13 August 1991
Revision 2	11 June 1992
Revision	August 1990
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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QUALITY ASSURANCE
SERVICES 
Standards Australia

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex 1347X

Issue 0: Original Issue 13/7/1992

Issue 2: 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 3001

Type of Protection and Marking Code: Ex d IIC T5(T_{amb}=80°C)/T6 IP65
DIP T5(T_{amb}=80°C)/T6 IP65
AUS Ex 1347X

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



STANDARDS AUSTRALIA

Certification of

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 16521

File Reference: LOSC 94/5884

Signed for and on behalf of issuing authority

Coordinator, Approvals & Certification
Position

22/12/1997
Date of issue

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Issued by:



Londonderry Occupational Safety Centre

919 Londonderry Road LONDONDERRYNSW 2753

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



STANDARDS AUSTRALIA

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No: AUS Ex 1347X Issue: 2 Date of Issue: 22/12/1997

Certified Equipment: The Model 3051C 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 a cemented glass lens. The terminal compartment has two threaded cable entries.

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 4.3 of AS 2380.2 at a pressure of 1020kPa or 1.5 times the maximum working pressure, whichever is the 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.

Schedule of Variations

Variations Permitted by Issue 1:

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.
4. The inclusion of Temperature Classification T5 based on an 80°C ambient.

Issued by:



Londonderry Occupational Safety Centre

919 Londonderry Road LONDONDERRY NSW 2753

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



STANDARDS AUSTRALIA



Certification of

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	C	21/5/93

Variations Permitted by Issue 2:

1. Addition of alternative models to the 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.

Table 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
3051T	Gauge and absolute pressure transmitter
3001C and 3001S	Hydrostatic pressure transmitter
3001CH and 3001SH	High process temperature hydrostatic pressure transmitter

Drawings Relating to Variations Permitted by Issue 2

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

Issued by:



Londonderry Occupational Safety Centre

132 Londonderry Road LONDONDERRY NSW 2753

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



STANDARDS AUSTRALIA

Certification of

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

Electrical Equipment: Model 3051C Pressure Transmitter

Type of Protection and Marking Code: Ex d IIC T6/T5(80°C ambient) Class I Zone I

Manufactured By: Rosemount Instruments Inc

Issued by:



Londonderry Occupational Safety Centre

*132 Londonderry Road LONDONDERRY NSW 2753
Phone: (047) 244 900 Fax: (047) 244 999*

STANDARDS AUSTRALIA



Certification 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

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

Test Report No: LOSC 11498

File Reference: LOSC 94/5884

K. J. Fisher

Signed for and on behalf of issuing authority

Coordinator, Approvals & Certification

Position

17/9/1994

Date of issue

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Issued by:



Londonderry Occupational Safety Centre

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

STANDARDS AUSTRALIA

Certification of

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: The Model 3051C 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 a cemented glass lens. The terminal compartment has two threaded cable entries.

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

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

Issued by:



Londonderry Occupational Safety Centre

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

STANDARDS AUSTRALIA

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex 03.1347X **Issue 0:** Original Issue 13/7/1992
Issue 4: 22/7/2003 (Revalidation)

Date of Expiry: 22/7/2013

Certificate Holder: Fisher-Rosemount Pty Ltd
471 Mountain Highway
BAYSWATER Victoria 3153

Electrical Equipment: Model 3051-series Pressure Transmitter and Model 3001-series Hydrostatic Pressure Transmitter, including optional Fieldbus/Profibus outputs, LCD Indicator and/or T1 Transient-protection Terminal Block

Type of Protection: Ex d Zone 1
DIP Zone A21

Marking Code: Ex d IIC T5(T_{amb}=80°C)/T6(T_{amb}=40°C) IP66
DIP A21 T5(T_{amb}=80°C)/ T6(T_{amb}=40°C) IP66
AUS Ex 03.1347X

Manufactured By: Rosemount Inc
8200 Market Boulevard
Chanhassen, MN 55317 USA

Issued by:



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



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

STANDARDS AUSTRALIA



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

Certification 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:

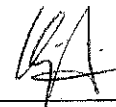
- AS/NZS 60079.0:2000 Electrical apparatus for explosive gas atmospheres Part 0: General requirements
- AS/NZS 60079.1:2002 Electrical apparatus for explosive gas atmospheres Part 1: Flameproof enclosures 'd'
- AS/NZS 61241.1.1:1999 Electrical apparatus for use in the presence of combustible dust
Part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

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

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Issued by:



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

JAS-ANZ



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

STANDARDS AUSTRALIA



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

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

Certificate No: AUS Ex 03.1347X

Issue: 4

Date of Issue: 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 Table 1:

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.

Issued by:



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Phone: (02) 4724 4900 Fax: (02) 4724 4999



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

STANDARDS AUSTRALIA



Certification 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

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

Issued by:



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Phone: (02) 4724 4900 Fax: (02) 4724 4999

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STANDARDS AUSTRALIA



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

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AUEx_3271X

Price: \$27.50 (incl 10 % GST)

Certificate #: AUEx_3271X **Issue Date:** 14/07/2000
Issue #: 1 **Expiry Date:** 28/08/2006
Status: EXPIRED

Certificate Holder: Fisher-Rosemount Pty Ltd

Address: 471 Mountain Highway Bayswater Melbourne Victoria 3153 Australia

Manufacturer: Rosemount Inc

Product Description: " T/Transm. 3144,3244 | The model 3144 and 3244 Temperature Transmitters are designed to convert the input from a temperature sensor into a 40/20mA signal. "

Equipment Category: Transmitters

Protection Type: d

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

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EXPLOSION PROTECTED 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



General Manager
Quality Assurance Services

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QUALITY ASSURANCE
SERVICES 
Standards Australia

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of
Certificate No

Ex 1390X

Certificate of Compliance

SCHEDULE

Description of Equipment:

The RPT 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 content is less than 0.4%: ASTM B85, 413.0(S120), 360.0(SG100B).

Drawings:

300 1041	Revision A	26 July 1991
300 1072	Revision B	20 November 1991
300 1370	Revision A	23 January 1992
EB-300 1070 Sheets 1,2	Revision A	6 June 1991
EB-300 0465	Revision D	11 November 1991
EB-300 0464 Sheets 1 to 4	Revision F	11 November 1991
EB-300 0967	Revision B	11 November 1991
EB-300 0463	Revision B	undated

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:

The NPT threaded entries shall be marked "NPT".

Page 2 of 2

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Standards Australia

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

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

SUPPLEMENTARY

Certificate No

Ex 1390X-1

Certificate of Compliance

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 Model RFT 9739 Flow Transmitter is hereby extended to include additions as detailed in the following schedule.

SCHEDULE

Description of additions:

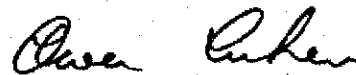
Inclusion of sensor types CMF025, 050, 100, 200, 300 on the certificate

Drawings:

EB-3000463	Revision B	Undated
EB-3000467	Revision B	23 August 1991
EB-3000967	Revision B	28 January 1991
EB-3000464 Sheet 1	Revision F	11 November 1991
EB-3000464 Sheets 2,3,4	Revision F	27 April 1990
EB-3000465	Revision D	11 November 1991
EB-3001070 Sheets 1,2	Revision A	06 June 1991
3001072	Revision B	20 November 1991
3001157	Revision A	26 July 1991
ES-0704800	Revision A	July 1991
E-0701500 Sheet 1	Revision F	26 July 1991
E-0701500 Sheet 2	Revision E	23 October 1991
ES-0701500	Revision D	October 1990
3000836 Sheets 1,2	Revision A	10 September 1990
3000836 Sheet 3	Revision A	18 October 1990
3000836 Sheet 4	Revision A	undated
ES-0704500 Sheets 1,2	Revision A	July 1991
ES-0704600 Sheets 1,2	Revision A	July 1991
ES-0704700 Sheets 1,2	Revision A	July 1991
ES-3001078	Revision A	26 July 1991
ES-0702400	Revision H	August 1991
ES-3000999	Revision A	18 March 1991

Page 1 of 2

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Quality Assurance Services

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**QUALITY ASSURANCE
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Standards Australia

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

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

SUPPLEMENTARY

Continuation of
Certificate No

Ex 1390X-1

Certificate of Compliance

Drawings (cont'd)

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 Instruction	Undated

Certification Conditions for user:

1. The equipment must be installed in accordance with AS 2381.7-1989
2. The system must be installed in accordance with installation instruction 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.

Page 2 of 2 (Issue 2)
Signed for and on behalf of Standards Australia


General Manager
Quality Assurance Services

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**QUALITY ASSURANCE
SERVICES** 
Standards Australia

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

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

SCHEDULE

Description of modifications:

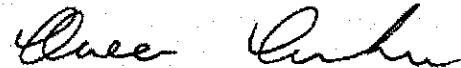
1. Replacing the microprocessor and output/communication boards with one board.
2. Increase the size of the motherboard to provide connections for the entire system. This replaces internal connection cables.
3. Change non intrinsically safe terminal block from 7 position to 8 position.
4. Combine two 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	Revision B	November 1992
ES-0707100 Page 2	Revision B	12 March 1992
E-0707100	Revision A	23 November 1992
3001459 Page 1	Revision B	17 November 1992
3001459 Pages 2,3	Revision B	27 April 1992
Es-0707400 Page 1	Revision B	November 1992
ES-0707400 Page 2	Revision B	16 March 1992

Page 1 of 3

Signed for and on behalf of Standards Australia



General Manager
Quality Assurance Services

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**QUALITY ASSURANCE
SERVICES** 
Standards Australia

Certificate of Compliance

DRAWINGS - (CONTINUED)

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

Queen Carter
General Manager
Quality Assurance Services

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QUALITY ASSURANCE SERVICES
Standards Australia

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.
2. The equipment must be installed in accordance with AS 2381.1-1991 and AS 2381.7-1989.

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: Redbank NI93/0009 to AS 2380.1-1989 and AS 2380.7-1987

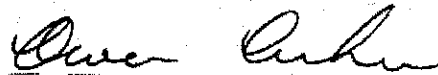
File: P/3: 93028.M172

Date of Issue: 19 July 1993

Date of Expiry of Validity: 13 July 2002

Page 3 of 3

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Quality Assurance Services

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**QUALITY ASSURANCE
SERVICES** 
Standards Australia

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

**CERTIFICATION OF
EXPLOSION PROTECTED ELECTRICAL EQUIPMENT**
Administered by: Standards Australia
Quality Assurance Services

Certificate of Conformity

Certificate No.: Ex 1390X Issue 0: Original issue 13 July 1992
1: 18 January 1993
2: 19 July 1993
3: 9 September 1993
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, QLD 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 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:

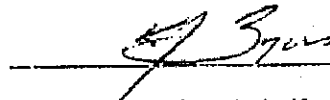
AS 2380.1-1989: Electrical Equipment for Explosive Atmospheres - Explosion Protection Techniques; Part 1: General Requirement

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



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:



Redbank Testing and Certification Centre

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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

Equipment:

The RFT 9739 Transmitter is a mass flow transmitter designed for use in hazardous locations. This supplementary certificate covers the following modifications:

- 1.1 Increase 25 Ω resistors on barrier board to 75 Ω .
- 1.2 Change of manufacturer for fuse on barrier board.
- 1.3 Approve the use of 'D' type sensor: D6, D12, D25, D40, D65, D100, D150, D300, DL100, DL200 previously certified with RFT9712 for use with RFT9739 P2: .
- 1.4 Add Hastelloy sensors: CMF025H, CMF050H CMF100H CMF200H, CMF300H to approval.

Drawings

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	B	-
EB-3001700	Appvl, CMF025H Sensor	A	28 May 93
EB-3001701	Appvl, CMF050H Sensor	A	28 May 93
EB-3001702	Appvl, CMF100H Sensor	A	28 May 93
EB-3001703	Appvl, CMF200H Sensor	B	18 Jun 93
EB-3001704	Appvl, CMF300H Sensor	A	28 May 93

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**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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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.: Ex 1390X

Issue 0:	13 July 1992	Original Issue
1:	18 January 1993	Add CMF Sensors
2:	19 July 1993	Redesign Product
3:	9 September 1993	Add D Series Sensors
4:	22 November 1993	Change Cert Holder Name

Date of expiry: 13 July 2002

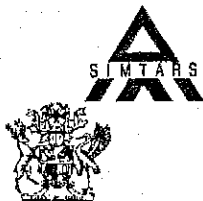
Certificate Holder: **Fisher - Rosemount Pty Ltd**
471 Mountain Hwy
BAYSWATER VIC 3153

Electrical Equipment: **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**
USA

Issued by:



Redbank Testing and Certification Centre

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



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

Certification 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 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

22 November 1995

Date of issue

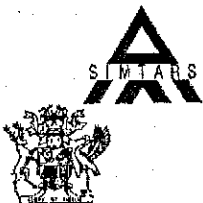
This certificate and schedule may not be reproduced except in full.

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Certificate No.: Ex 1390X

Issue: 4

Issued by:



Redbank Testing and Certification Centre

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

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

Certification 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.

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

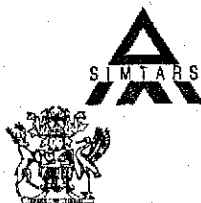
The name of the certificate holder has also been changed.

EQUIPMENT	PROTECTION TYPE	APPARATUS GROUP	TEMPERATURE CLASSIFICATION	DEGREE OF PROTECTION
RFT9739 TRANSMITTER	Ex d (ib)	IIC	T4	IP66
CMF 025, 050 SENSORS	Ex ib	IIC	T5	---
CMF 100 SENSORS	Ex ib	IIC	T6	---
CMF 200, 300 SENSORS	Ex ib	IIB	T6	---
D AND DL SERIES SENSORS	Ex ib	IIB	T4	---

Table 1: Equipment Schedule

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

Issued by:



Redbank Testing and Certification Centre

2 Smith Street, REDBANK, QLD 4301, Australia
Postal Address: PO Box 467, GOODNA, QLD 4300, Australia
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Quality System Certified to
AS3902/ISO9002
Registration No 6039

STANDARDS AUSTRALIA



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

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. : Ex 1390X
 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:

CABLE PARAMETERS	DRIVE COIL		POSITION COIL	
	GROUP IB	GROUP IIA	GROUP IB	GROUP IIA
<i>C</i> (μF)	4.5	12	27	72
<i>L</i> (mH) *	0.057	0.152	9	17
<i>L/R</i> ($\mu H/\Omega$)	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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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.:	Ex 1390X	Issue 0:	13 July 1992	Original Issue
		Issue 1:	18 January 1993	Add CMF Sensors
		Issue 2:	19 July 1993	Redesign Product
		Issue 3:	9 September 1993	Add D Series Sensors
		Issue 4:	22 November 1995	Change Cert Holder Name
		Issue 5:	5 February 1997	Additions 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: 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**
USA

Issued by:



Engineering, Testing and Certification Centre

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Certification of

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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.

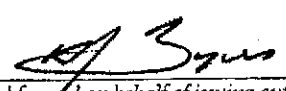
The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:

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)


Signed for and on behalf of issuing authority

Manager - Engineering, Testing and Certification Centre

Position

05 February 1997

Date of issue

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Certificate No.: Ex 1390X Issue: 5

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Quality System Certified to
AS3902/ISO9002
Registration No 6039



STANDARDS AUSTRALIA

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

Certification of

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)	IIC	T4	IP66
RFT9739 TRANSMITTER WITH LDO	Ex (ib)	IIC	-	-
CMF 025, 050 SENSORS	Ex ib	IIC	T5	-
CMF 100 SENSORS	Ex ib	IIC	T6	-
CMF 200, 300 SENSORS	Ex ib	IIB	T6	-
D AND DL SERIES SENSORS	Ex ib	IIB	T4	-

TABLE 1: EQUIPMENT SCHEDULE

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

Issued by:



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Certification of

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 RFT9739 P3 LDO	-	09/03/96
E-0700100 (Shts 1,4/9)	E050M, SENSOR	K	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	B	7/31/96
3002089 (2 Shts)	PLATE, INTERIOR LDO RFT9739	B	7/5/96
3002091 (3 Shts)	COVER, HOUSING RFT9739 LDO PNT	B	7/5/96
ES-3002118 (3 Shts)	SCHEM, DRIVE/SIG PROCESSOR RFT9739 P3	B	11/01/95
ES-3002120 (4 Shts)	SCHEM, COMBO RFT9739 P3	B	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	B	10/24/95
ES-3002130 (2 Shts)	SCHEM, TERMINAL RFT9739 P3	B	10/24/95

(DRAWINGS CONTINUED NEXT PAGE)

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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.	DRAWING TITLE	REVISION NO.	DRAWN/REVISION DATE
ES-3002132	SCHEM, POWER 85-250VAC RFT9739 P3	D	09/03/96
3002164	ASSY, COVER RFT9739 LDO	B	7/1/96
EB-3002199	Installation Instructions Type SAA-D-IS	D	-
EB-3002200	Installation Instructions Type SAA-D-IS	D	-
ES-3002290 (2 Shts)	SCHEM, POWER 12-30 VDC RFT9739 P3	A	11/15/95
ES-3002411	SCHEM, SWITCH/LDO RFT9739 P3	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	B	12/6/96

Conditions of Certification:

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

Cable Parameters	RFT9739 Flow Transmitter with CMF Sensors	
	Group IIB	Group IIC
C (μF)	≤ 4.5	≤ 1.5
L (μH) *	≤ 57	≤ 19
L/R ($\mu H/\Omega$)	≤ 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:



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Quality System Certified to
 AS3902/ISO9002
 Registration No 6039

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Certification of

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 Parameters	Drive Coil		Position Coil	
	Group IIA	Group IIB	Group IIA	Group IIB
$C_i (\mu F)$	≤ 12	≤ 4.5	≤ 72	≤ 27
$L_i (\mu H) *$	≤ 152	≤ 57	≤ 17000	≤ 9000
$L/R (\mu H/\Omega)$	≤ 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:



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Quality System Certified to
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Registration No 6039

STANDARDS AUSTRALIA



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

Page 6 of 6

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.: **Ex 1390X**

Issue 0:	13 July 1992	Original Issue
Issue 1:	18 January 1993	Add CMF Sensors
Issue 2:	19 July 1993	Redesign Product
Issue 3:	9 September 1993	Add D Series Sensors
Issue 4:	22 November 1995	Change Cert Holder Name
Issue 5:	5 February 1997	Additions to System
Issue 6:	7 October 1997	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

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**
USA

Issued by:



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QUALITY MANAGEMENT SYSTEM
ISO 9002 MARK CERTIFIED
Quality System Certified to
AS/NZS ISO 9002
Registration No 6039

STANDARDS AUSTRALIA



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

Certification 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 - 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



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Quality System Certified to
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Registration No 6039

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

Certification of

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;

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)	IIC	T4	IP66
RFT9739 TRANSMITTER WITH LDO	Ex (ib)	IIC	-	-
CMF 010, 025, 050 SENSORS	Ex ib	IIC	T5	-
CMF 100 SENSORS	Ex ib	IIC	T6	-
CMF 200, 300 SENSORS	Ex ib	IIB	T6	-
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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QUALITY MANAGEMENT SYSTEM
ISO 9001:2000 CERTIFIED
Quality System Certified to
AS/NZS 150002
Registration No 6039

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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

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

Drawings:

ADDITIONAL DRAWINGS FOR CMF010, CMF200 AND CMF300

DRAWING No.	DRAWING TITLE	REVISION No.	DRAWN/ REVISION DATE
EB-3002409	APPVL, E200/E300 PICKOFF COIL	B	2/3/97
EB-3002572	APPVL, CMF010M SENSOR	B	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

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 Registration No 6039



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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. **Ex 1390X**

Issue: **6**

Date of Issue: **7 October 1997**

Conditions of Certification:

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

Cable Parameters	RF 19/39 Flow Transmitter with CMF Sensors	
	Group IIB	Group IIC
$C (\mu F)$	≤ 4.5	≤ 1.5
$L (\mu H) *$	≤ 57	≤ 19
$L/R (\mu H/\Omega)$	≤ 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 Parameters	Drive Coil		Position Coil	
	Group IIA	Group IIB	Group IIA	Group IIB
$C_i (\mu F)$	≤ 12	≤ 4.5	≤ 72	≤ 27
$L_i (\mu H) *$	≤ 152	≤ 57	≤ 17000	≤ 9000
$L/R (\mu H/\Omega)$	≤ 71.2	≤ 26.7	≤ 1077	≤ 538

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

Issued by:



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 Registration No 6039



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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 0:	13 July 1992	Original Issue
		Issue 1:	18 January 1993	Add CMF Sensors
		Issue 2:	19 July 1993	Redesign Product
		Issue 3:	9 September 1993	Add D Series Sensors
		Issue 4:	22 November 1995	Change Cert Holder Name
		Issue 5:	5 February 1997	Additions to System
		Issue 6:	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

Issued by:



Engineering, Testing and Certification Centre

2 Smith Street, REDBANK, QLD 4301, Australia
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Certification 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:

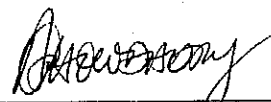
- | | |
|------------------|---|
| AS 2380.1 - 1989 | Electrical equipment for explosive atmospheres - Explosion-protection techniques - Part 1 : General requirements (Amdt 1, 5 September 1998) |
| AS 2380.7 - 1987 | Electrical equipment for explosive atmospheres - Explosion-protection techniques - Part 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

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Certification of

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.

TABLE 1: EQUIPMENT SCHEDULE

EQUIPMENT	PROTECTION TYPE	APPARATUS GROUP	TEMPERATURE CLASSIFICATION	DEGREE OF PROTECTION
RFT9739 TRANSMITTER WITHOUT LDO	Ex d (ib)	IIC	T4	IP66
RFT9739 TRANSMITTER WITH LDO	Ex (ib)	IIC	-	IP66
CMF010, 025, 050 SENSORS	Ex ib	IIC	T5	-
CMF100 SENSORS	Ex ib	IIC	T6	-
CMF200, 300 SENSORS	Ex ib	IIB	T6	-
D AND DL SERIES SENSORS	Ex ib	IIB	T4	-

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

Issued by:



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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No.....Ex.1390X

Issue: 7

Date of Issue: 23 July 2001

Drawings:

DRAWING NO.	DRAWING TITLE	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.

TABLE 2: CABLE PARAMETERS FOR CMF SENSORS

Cable Parameters	RFT9739 Flow Transmitter with CMF Sensors	
	Group IIB	Group IIC
C (μF)	4.5	1.5
L (μH)*	57	19
L/R ($\mu H/\Omega$)	26.4	8.8

TABLE 3: CABLE PARAMETERS FOR D AND DL SENSORS

Cable Parameters	Drive Coil		Position Coil	
	Group IIA	Group IIB	Group IIA	Group IIB
C (μF)	12	4.5	72	27
L (μH) *	152	57	17000	9000
L/R ($\mu H/\Omega$)	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

2 Smith Street, REDBANK, QLD 4301, Australia
 Postal Address: PO Box 467, GOODNA, QLD 4300, Australia
 Phone: + 61 7 3810 6381 Fax: + 61 7 3810 6366



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

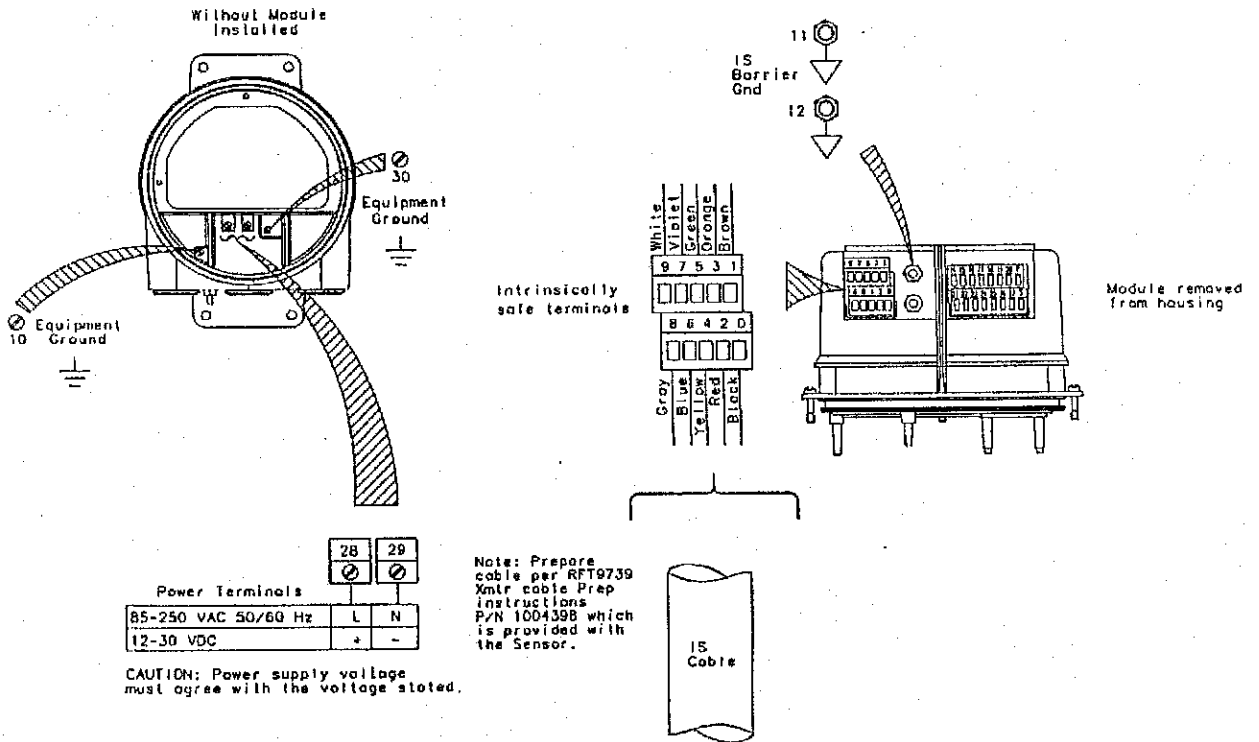
STANDARDS AUSTRALIA



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

Remote Flow Transmitter
model RFT9739 with
Sensor Model D, DL

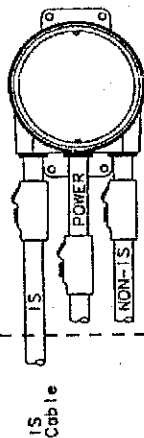
Installation instructions
Type SAA-D-1S



For installation in
Hazardous Area
Exd [ib] IIC T4
(RFT9739E with conduit seals)

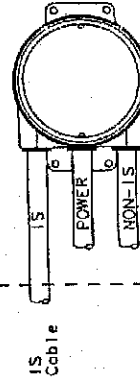
Conduit Seals Required

To prevent ignition of hazardous atmospheres disconnect from supply circuit before opening enclosure. Keep tightly closed when circuits are alive.



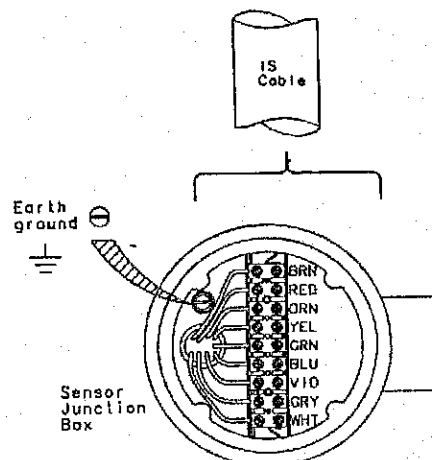
OR

For installation in
Non-Hazardous Area
(RFT9739E without conduit seals)



Hazardous Area
Ex ib IIB T4

CAUTION:
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the RFT9739 Transmitter and Sensor must be properly grounded.



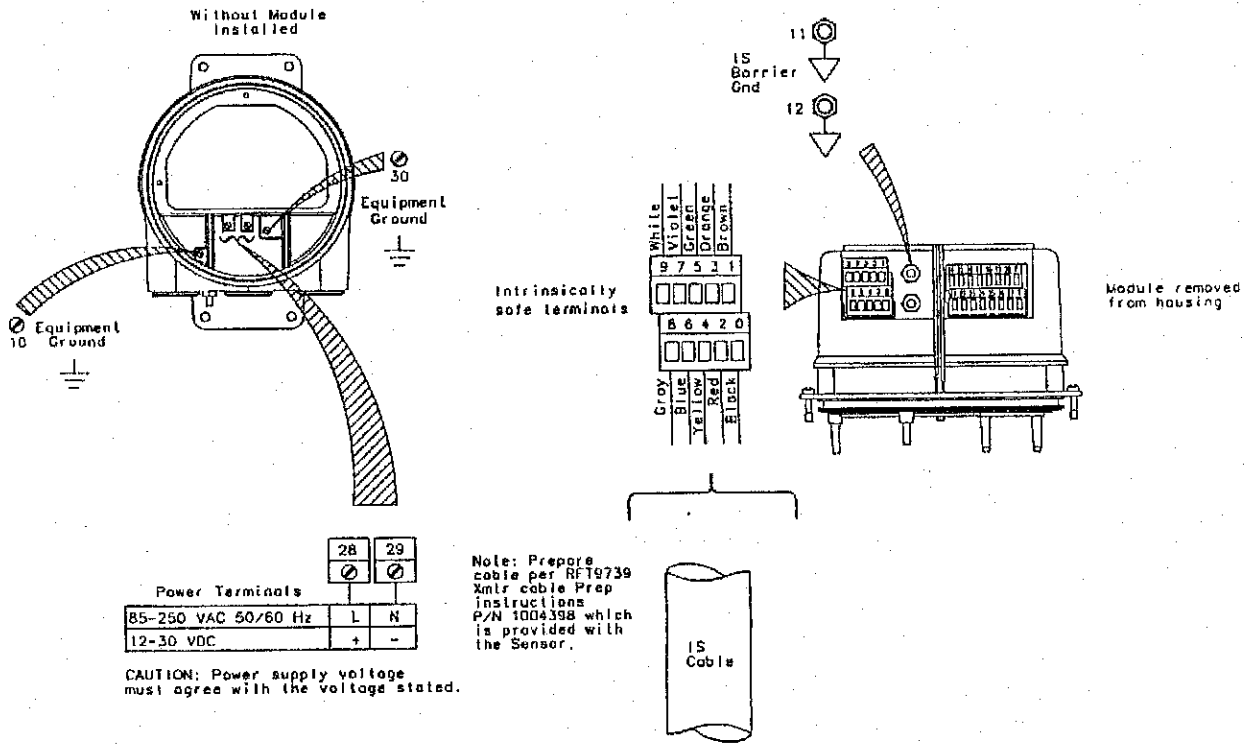
Micro Motion mass
Flowmeter system
connection for
intrinsically safe
operation

Electronics: RFT9739
Sensor: D,DL

Models: D6, D12, D25, D38, D40
D65, D100, D150, D300
DL65, DL100, DL200
Supplied as intrinsically safe.

Remote Flow Transmitter
model RFT9739 with
Sensor CMF025-300

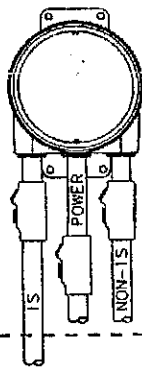
Installation Instructions
Type SAA-D-15



For installation in Hazardous Area Exd (ib) IIC T6 (RFT9739E with conduit seals)

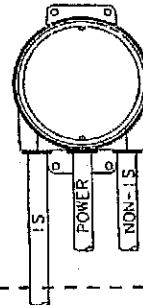
Conduit Seats Required

To prevent ignition of hazardous atmospheres disconnect from supply circuit before opening enclosure. Keep tightly closed when circuits are alive.



OR

For installation in Non-Hazardous Area (RFT9739E without conduit seats)



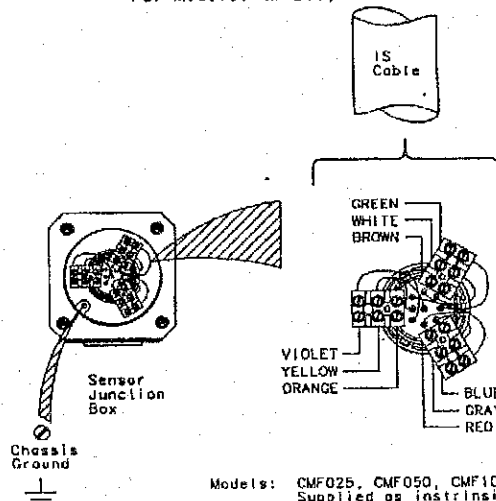
Hazardous Area

Ex ib IIC T5
For models: CMF025, CMF050

Ex ib IIC T6
For models: CMF100

Ex ib IIB T6
For models: CMF200, CMF300

CAUTION:
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the RFT9739 Transmitter and Sensor must be properly grounded.



Micro Motion mass flowmeter system connection for intrinsically safe operation

Electronics: RFT9739
Sensor: CMF

Models: CMF025, CMF050, CMF100, CMF200
Supplied as intrinsically safe.



FLPW

ALCO FLPW NICKEL PLATED CABLE GLAND IP66/68

STANDARDS ASSOCIATION OF AUSTRALIA

Incorporated by Royal Charter

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

SHEET 11-12

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. Ex 591

(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 amended 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.

<p>Description of Equipment A range of Cable Glands, Type FLPW As detailed in Schedule 1</p> <p>Drawing No(s) 2-212 Rev B, 2-213 Rev B, 2-214 Rev A, 2-215 Rev B, 2-218 Rev B, 2-219 Rev B, 2-462, 2-463, 2-554, 2-555, 2-700, 2-701</p> <p>Certification Conditions</p> <p>Remarks This certificate supersedes SAA Certificate Nos Ex 69 and DIP 91</p>	<p>Hazardous Location Class I Zone 1 Class II Divisions 1 & 2 Type of Protection Ex IIC IPXS</p> <p>Certificate Holder Reliance Manufacturing Co 160 Breakfast Creek Road NEWSTEAD QLD 4006</p> <p>Manufacturer Reliance Manufacturing Co 160 Breakfast Creek Road NEWSTEAD QLD 4006</p> <p>Test Report No(s) SCC TR NO: 58360 and 60179</p> <p>Australian Standard(s) AS 1823-1984 and AS 1939-1981</p> <p>SAA File Reference P/3: 84089/M122</p> <p>Effective Date 1985-02-14</p> <p>Date of Issue 1985-02-19</p>
--	---

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J. L. ...
 Director - Administration & Approvals
 Standards Association of Australia

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Incorporated by Royal Charter

STANDARDS HOUSE, 60 ARTHUR STREET, NORTH SYDNEY, N.S.W.

SHEET 12-12

CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Continuation of Certificate No: Ex 591 (Sheet 2 of 2)

SCHEDULE 1 DESCRIPTION OF EQUIPMENT (cont'd)

A series of plated brass cable glands, incorporating neoprene seals, intended for use with single steel wire armoured circular cables.

The series includes the following glands:

Gland Series	Nominal Mounting Thread Dimensions	
	Diameter	Length
	mm	mm
FLPW202	20	15.3
FLPW203	20	15.3
FLPW204	20	15.3
FLPW205	20	15.3
FLPW206	20	15.3
FLPW253	25	19.0
FLPW254	25	19.0
FLPW255	25	19.0
FLPW256	25	19.0
FLPW323	32	25.4
FLPW324	32	25.4
FLPW325	32	25.4
FLPW326	32	25.4
FLPW403	40	25.4
FLPW404	40	25.4
FLPW405	40	25.4

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J. Helen Stoney
 Director—Administration & Approvals
 Standards Association of Australia



FLPW

ALCO FLPW NICOTE PLATED CABLE GLAND IP66/68

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

SHEET 2-12

Certificate No: AUS Ex 591 Issue 0: Original Issue 19/02/1985
 Issue 2: 10/10/1995

Date of Expiry: 10/10/2005

Certificate Holder: Reliance Manufacturing Company
 40-42 Ross Street
 NEWSTEAD Queensland 4006

Electrical Equipment: Range of Cable Terminating Glands "Alco" Series FLPW 202 to FLPW 755

Type of Protection and Marking Code: Ex I/IIc IP66/IP68 (30 metres) Class I Zone 1 and Class II

Manufactured By: Reliance Manufacturing Company
 40-42 Ross Street
 NEWSTEAD Queensland 4006

Issued by:



Londonderry Occupational Safety Centre

152 Londonderry Road LONDONDERRY NSW 2753

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

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Standards Australia Quality Assurance Services Pty Limited A.C.N. 090 811 612



FLPW

ALCO FLPW NICOTE PLATED CABLE GLAND 1866/82

Certification 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 1828-1984 Electrical Equipment for Explosive Atmospheres - Cable Glands
- AS 1939-1990 Degrees of Protection Provided by Enclosures of Electrical Equipment (IP Code)

SHEET 3-12

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

Test Report No: LOSC 12689

File Reference: LOSC 94/6708

G. Langford
 Signed for and on behalf of testing authority
Testing Engineer
 Position

10.10.1996
Date of issue

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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Schedule

SHEET 4-12

Certificate No: AUS Ex 591 Issue: 2 Date of Issue: 10/10/95

Certified Equipment: The Reliance "Alco" series "FLPW" Cable Terminating Glands provide for termination of armoured cables having nominal overall diameters over bedding ranging from a minimum of 6.00mm to a maximum of 66.70 mm. Sealing of the cable entry is achieved by means of compression washers which grip the cable sheath and bedding when the gland nut and sleeve are tightened. The armour wires are clamped by merging cones when the sleeve is tightened.

The cable glands are suitable for installation in enclosures having type of explosion-protection Ex "d", "o", "p", "n" and DIP.

Allowable Variations:

- The range of cable glands is consolidated into one certificate Ex 591 and Group I is included.
- Because of the method of product stockholding, it is agreed that "FLPW" glands which currently carry the Certificate No: Ex 585 may continue to be sold for a period of twelve months from the date of issue of this certificate.
Certificate Ex 585 will be withdrawn on the 10th October 1996.
- Abbreviated marking is permitted because of space and tooling problems. The following marking detail need not be shown on each assembly:
 - "Ex" and
 - Suffix "X" providing the Certificate Holder complies with the conditions of manufacture.

Issued by:



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132 Londonderry Road LONDONDERRY NSW 2753
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FLPW

ALCO FLPW NICKEL PLATED CABLE GLAND IP66/68

Page 5 of 29 for FLPW glands

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex: 391-3

Conditions of Certification:

SHEET 5-12

It is a condition of manufacture that:

1. 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.

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4 of 9



FLPW

ALCO (FLPW) NICOTE PLATED CABLE GLAND IP66/68

Certification of EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex: 591-2

SCHEDULE

SHEET 6-12

RANGE OF "Alco" CABLE GLANDS FOR LISTING UNDER ONE
CERTIFICATE NUMBER - AUS Ex: 591

GLAND Ref No.	MOUNTING THREAD		GLAND Ref. No.	MOUNTING THREAD	
	dia. mm	Length mm		dia. mm	Length mm
FLPW 202	20	15.8	FLPW 502	50	28.6
FLPW 203	20	15.8	FLPW 503	50	28.6
FLPW 204	20	15.8	FLPW 504	50	28.6
FLPW 205	20	15.8	FLPW 505	50	28.6
FLPW 206	20	15.8	-	-	-
FLPW 253	25	19.0	FLPW 634	63	28.6
FLPW 254	25	19.0	FLPW 634	63	28.6
FLPW 255	25	19.0	FLPW 635	63	28.6
FLPW 256	25	19.0	FLPW 636	63	28.6
FLPW 323	32	25.4	-	-	-
FLPW 324	32	25.4	-	-	-
FLPW 325	32	25.4	-	-	-
FLPW 326	32	25.4	-	BSP	-
FLPW 403	40	25.4	FLPW 753	2 1/2"	28.6
FLPW 404	40	25.4	FLPW 754	2 1/2"	28.6
FLPW 405	40	25.4	FLPW 755	2 1/2"	28.6
Original Certificate AUS Ex 591			Original Certificate AUS Ex 585		

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Page 6 of 29

Certification of EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex: 591-2

Drawing Schedule

SHEET 7-12

Drawing No	Drawing Title	Revision/ Issue	Date
FLPW 202-405 (Range)			
2-219	Gland Details	D	14 Sep 1993
2-212	Gland Details	D	14 Sep 1993
2-213	Gland Details	D	14 Sep 1993
2-214	Gland Details	C	14 Sep 1993
2-215	Gland Details	D	14 Sep 1993
2-218	Gland Details	D	14 Sep 1993
463	Gland Details	F	14 Sep 1993
2-463	Gland Details	B	14 Sep 1993
2-700	FLPW Cable Gland Schedule Min. Cable Diameters	Original	20 Nov 1984
2-701	FLPW Cable Gland Schedule Min. Cable Diameters	Original	20 Nov 1984
1-1202	Seal Detail	D	24 May 1993
1-1203	Seal Detail	D	24 May 1993
1-1204	Seal Detail	D	24 May 1993
1-1205	Seal Detail	D	24 May 1993
1-1206	Seal Detail	E	24 May 1993
1-1207	Seal Detail	D	24 May 1993
1-1208	Seal Detail	D	24 May 1993
162-405	FLPW Seal Details	F	25 May 1993
FLPW 244-263	Mounting Thread Seal	Initial	28 Jun 1993
FLPW 282-405	Marking Details - FLPW Cable Gland	Initial	16 May 1995
FLPW 502-755 (Range)			
FLPW 502-755 Sheet 1 of 2	Marking Details - FLPW Cable Glands	Initial	15 May 1995
FLPW 502-755 Sheet 2 of 2	Cable Glands	A	31 Aug 1994
FLPW 59	Clamp	A	20 Oct 1991

Issued by:



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Standards Australia Quality Assurance Services Pty Limited (A.C.N. 050 611 610)

Page 6 of 9

Certification of EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex: 591-2

SHEET 8-12

Drawing No.	Drawing Title	Revision Issue	Issue Date
FLPW 502-755 (Range)			
continued			
KLPW 60	Body	A	16 Oct 1991
FLPW 61	Cone	A	20 Oct 1991
FLPW 63/67/502/503	Sleeve	A	23 Oct 1991
WG 502-WG 755	Seal Details	B	26 May 1993
FLPW 502-635	Seal Details	D	25 May 1993
FLPW 62	Nut	C	05 Jan 1990
FLPW 64	Body	A	16 Oct 1991
FLPW 65	Cone	A	20 Oct 1991
FLPW 66	Nut	C	05 Jan 1990
FLPW 68	Clamp	A	20 Oct 1991
FLPW 69	Body	A	16 Oct 1991
FLPW 70	Cone	A	20 Oct 1991
FLPW 71	Nut	C	05 Jan 1990
FLPW 72/76/504/505	Sleeve	A	27 Oct 1991
FLPW UEP1A-UPTS	Seal Details	B	26 May 1993
FLPW 73	Body	A	16 Oct 1991
FLPW 74	Cone	A	20 Oct 1991
FLPW 75	Nut	C	05 Jan 1990
FLPW 77	Body	A	27 Oct 1991
FLPW 78	Clamp	A	15 Feb 1994

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Page 7 of 29

Certification of EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. **Ex 591-2**

Drawing No.	Drawing Title	Revision/Issue	Date
SHEET 9-12			
FLPW 502-755 (Range) - continued			
FLPW 79	Cone	A	29 Nov 1991
FLPW 80	Nut	B	05 Jan 1990
FLPW 81	Sleeve	A	16 Feb 1994
FLPW 82	Body	A	27 Oct 1991
FLPW 83	Clamp	A	15 Feb 1994
FLPW 84	Cone	A	29 Nov 1991
FLPW 85	Nut	B	05 Jan 1990
FLPW 86	Sleeve	A	16 Feb 1994
FLPW 87	Body	A	27 Oct 1991
FLPW 88	Clamp	A	15 Feb 1994
FLPW 89	Cone	A	29 Nov 1991
FLPW 90	Nut	C	28 Feb 1994
FLPW 91	Sleeve	A	16 Feb 1994
FLPW 92	Body	A	27 Oct 1991
FLPW 93	Cone	A	29 Nov 1991
FLPW 94	Nut	C	28 Feb 1994
FLPW 95	Sleeve	A	16 Feb 1994
FLPW 97	Clamp	A	15 Feb 1994
FLPW 99	Nut	B	05 Jan 1990
FLPW 100	Sleeve	A	16 Feb 1994

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E1

Standards Australia Quality Assurance Services Pty Limited A.C.N. 058 611 642

Page 9 of 29



FLPW

ALCO 'FLPW' NICOTE PLATED CABLE GLAND IP66/68

Page 10 of 29 for FLPW glands

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Addendum to Certificate No. Ex: 591-2

SHEET 10-12

Drawing No.	Drawing Title	Revision	Date
FLPW 502-753 (Range) - continued			
FLPW 102	Clamp	A	15 Feb 1994
FLPW 104	Nut	B	03 Jan 1990
FLPW 105	Sleeve	A	16 Feb 1994
FLPW 107	Clamp	A	15 Feb 1994
FLPW 109	Nut	B	03 Jan 1990
FLPW 110	Sleeve	A	16 Feb 1994
1-1421	Body	Original	08 Jun 1979
1-1423	Conc	Original	11 Jun 1979
SW.FLPW 8/95	Table - ALCO "FLPW" Cable Glands	No reference	Aug 1995
SW.FLPW 8/95.A.	Appendix II - FLPW Fitting Instructions	No reference	Aug 1995

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Standards Australia Quality Assurance Services Pty Limited AC/N. 089 611 042

Page 9 of 9

4

VERIFIED COPY OF ORIGINAL CERTIFICATE

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.: Ex 1498U Issue: 0 (original) Date of Issue: 4 October 1994

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

Manufactured by: GERARD INDUSTRIES PTY LTD
South Australia

VERIFIED COPY OF ORIGINAL CERTIFICATE
Date... 20.3.02
Issued By...

VERIFIED COPY OF ORIGINAL CERTIFICATE

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

Certification 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 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

Test 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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Quality Assurance Services

A subsidiary of Standards Australia
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Telephone (02) 746 4900 Fax (02) 746 8460

STANDARDS AUSTRALIA

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)
DCP	Dust-Excluding Ignition - Proof (DIP) Plugs

Variations to Original Issue:

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

Issued by:

Certificate No: Ex 1498U

Issue: 1

Quality Assurance Services 

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Telephone (02) 9746 4900 Fax (02) 9746 8460

STANDARDS AUSTRALIA

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	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

Issued by:

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Telephone (02) 746 4900 Fax (02) 746 8460

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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No.: Ex 1498U Issue: 0 (original) Date of Issue: 4 October 1994
Issue: 1 Date of Issue: 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 { For Exd/DIP Product
Aus Ex 1498U {

DIP T6 IP66 Class II {
Aus Ex 1498U { For DIP only Product

Manufactured by: Clipsal Stahl Ex Pty Ltd

**VERIFIED COPY
OF
ORIGINAL CERTIFICATE**

Issued by:

VERIFIED COPY OF ORIGINAL CERTIFICATE
Date... 20.3.02
Issued By.....

Quality Assurance Services

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

Certification 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 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

AS 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

Test Report No: SCC 58569, ITACS 676A, ITACS 1185

File Reference: TT354


Signed for and on behalf of issuing authority

Technical Manager - Certification

Position

30 September 1997

Date of issue

Certificate No: Ex 1498U Issue: 1

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:

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1 The Crescent Homebush NSW 2140 Australia Mail: Locked Bag 2032 Strathfield NSW 2135 Australia
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STANDARDS AUSTRALIA



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)

Conditions of Certification:

1. 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

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

Certification of

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	B	17 March 1997
W-516	Flameproof hexagon nipples	B	16 May 1997
W-518	Flameproof adaptors (BSP male thread to metric conduit female thread)	B	16 May 1997
W-519	Flameproof adaptors (NPT male thread to metric conduit female thread)	B	16 May 1997
W-646	DIP Metric threaded conduit plugs	A	8 July 1997

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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)

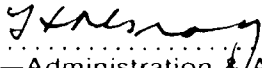
This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements.

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

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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 GUADA.	(i) 20mm- $\frac{3}{4}$ " ET- $\frac{1}{2}$ " N.P.T.- $\frac{1}{2}$ " BSP (ii) 25mm-1" ET- $\frac{3}{4}$ " N.P.T.- $\frac{3}{4}$ " BSP
EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA and EABDA.	(i) 20mm- $\frac{3}{4}$ " ET- $\frac{1}{2}$ " N.P.T.- $\frac{1}{2}$ " BSP (ii) 25mm-1" ET- $\frac{1}{4}$ " N.P.T.- $\frac{3}{4}$ " 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-GA2 Issue 2 D/- 15.2.82 and
21-148-16 Original D/- 17.2.82

Type of Protection

1. For enclosures, Cat. Nos: GUALA; GUACA; GUATA; GUAXA; GUAMA;
GUAWA; GUABA and GUADA.

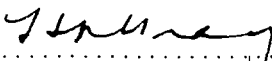
Ex d IIB T6 IP65

2. For enclosures, Cat. Nos: EABLA; EABCA; EABTA; EABXA; EABMA;
EABWA; EABBA; and EABDA.

Ex d IIC T6 IP65

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CERTIFICATE FOR EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

No. Ex 319 (Sheet 1 of 2)

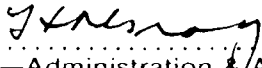
This certifies that the equipment described hereunder has been examined and tested in accordance with the requirements of the Australian standard(s) specified herein, and such equipment has been found to comply with these requirements.

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

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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 GUADA.	(i) 20mm- $\frac{3}{4}$ " ET- $\frac{1}{2}$ " N.P.T.- $\frac{1}{2}$ " BSP (ii) 25mm-1" ET- $\frac{3}{4}$ " N.P.T.- $\frac{3}{4}$ " BSP
EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA and EABDA.	(i) 20mm- $\frac{3}{4}$ " ET- $\frac{1}{2}$ " N.P.T.- $\frac{1}{2}$ " BSP (ii) 25mm-1" ET- $\frac{1}{4}$ " N.P.T.- $\frac{3}{4}$ " 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-GA2 Issue 2 D/- 15.2.82 and
21-148-16 Original D/- 17.2.82

Type of Protection

1. For enclosures, Cat. Nos: GUALA; GUACA; GUATA; GUAXA; GUAMA;
GUAWA; GUABA and GUADA.

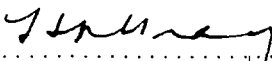
Ex d IIB T6 IP65

2. For enclosures, Cat. Nos: EABLA; EABCA; EABTA; EABXA; EABMA;
EABWA; EABBA; and EABDA.

Ex d IIC T6 IP65

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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.

<p>Description of Equipment</p> <p><u>"Crouse-Hinds" Enclosures</u></p> <p>Refer Schedule 1</p> <p>Drawing No(s)</p> <p>Refer Schedule 1</p> <p>Certification Conditions</p> <p>Remarks</p>	<p>Hazardous Location</p> <p>Class I Zone 1</p> <p>Type of Protection</p> <p>Refer Schedule 1</p> <p>Certificate Holder</p> <p>Crouse-Hinds Aust Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196</p> <p>Manufacturer</p> <p>Crouse-Hinds Aust Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196</p> <p>Test Report No(s)</p> <p>Londonderry Centre TR No. LFP 698</p> <p>Australian Standard(s)</p> <p>AS 2480-1981 and AS 1939-1981</p> <p>SAA File Reference</p> <p>P/3: 81194/M101</p> <p>Effective Date</p> <p>1982.05.05</p> <p>Date of Issue</p> <p>1982.06.01</p>
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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 GUADA.	(i) 20mm- $\frac{3}{4}$ " ET- $\frac{1}{2}$ " N.P.T.- $\frac{1}{2}$ " BSP (ii) 25mm-1" ET- $\frac{3}{4}$ " N.P.T.- $\frac{3}{4}$ " BSP
EABLA; EABCA; EABTA; EABXA; EABMA; EABWA; EABBA and EABDA.	(i) 20mm- $\frac{3}{4}$ " ET- $\frac{1}{2}$ " N.P.T.- $\frac{1}{2}$ " BSP (ii) 25mm-1" ET- $\frac{1}{4}$ " N.P.T.- $\frac{3}{4}$ " 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-GA2 Issue 2 D/- 15.2.82 and
 21-148-16 Original D/- 17.2.82

Type of Protection

- For enclosures, Cat. Nos: GUALA; GUACA; GUATA; GUAXA; GUAMA;
GUAWA; GUABA and GUADA.

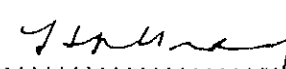
Ex d IIB T6 IP65

- 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.

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 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.

<p>Description of Modification</p> <p><u>'Crouse-Hinds' Enclosures, Cat Nos GUA Series and Variants ELS and ELFS Series</u></p> <p>This supplementary certificate relates to the following items:</p> <p>(a) Modification of existing marking to improve its legibility.</p> <p>(b) Modification of the cover design to include the optional centre boss as a label screw attachment.</p> <p>(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.</p> <p><u>Drawing No(s)</u></p> <p>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</p>	<p>Hazardous Location</p> <p>Class I Zone 1</p> <p>Type of Protection</p> <p>Ex d IIB T6 IP 65</p> <p>Certificate Holder</p> <p>Crouse-Hinds Australia Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196</p> <p>Manufacturer</p> <p>Crouse-Hinds Australia Pty Ltd 31 Moxon Road PUNCHBOWL NSW 2196</p> <p>Test Report No(s)</p> <p>Londonderry Centre TR NO: 1701</p> <p>Australian Standard(s)</p> <p>AS 2480-1981 AS 1939-1981</p> <p>SAA File Reference</p> <p>P/3:83161/M118</p> <p>Effective Date</p> <p>1984-08-15</p> <p>Date of Issue</p> <p>1984-08-16</p>
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J. J. Murray
 Director—Administration & Approvals
 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. 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.

<p>Description of Modification</p> <p>'Crouse Hinds' Junction Box</p> <p>Model GUACA 16M</p> <p>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.</p> <p><u>Drawing</u> 21-148-GA11 Issue 2</p> <p><u>Certification condition</u></p> <p>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).</p>	<p>Hazardous Location</p> <p>Class I Zone 1</p> <p>Type of Protection</p> <p>Ex d IIB T6 IP65</p> <p>Certificate Holder</p> <p>Crouse Hinds (Aust.) Pty. Ltd. 31 Moxon Road PUNCHBOWL. N.S.W. 2196</p> <p>Manufacturer</p> <p>Crouse Hinds (Aust.) Pty. Ltd. 31 Moxon Road PUNCHBOWL N.S.W. 2196</p> <p>Test Report No(s)</p> <p>SCC TR No. 61271</p> <p>Australian Standard(s)</p> <p>AS 2480-1981 with Amendment No. 1</p> <p>SAA File Reference</p> <p>P/3: 85 137/M128</p> <p>Effective Date</p> <p>1986.02.18</p> <p>Date of Issue</p> <p>1986.03.06</p>
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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.

<p>Description of Modification</p> <p><u>"Crouse-Hinds" GUA and EAB</u> <u>Series Junction Boxes</u></p> <p>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</p> <p>Drawing No(s)</p> <p>21-148-2 Sheets 1 and 2, Issue 4 21-148-4 Issue 6 21-148-5 Issue 7 21-148-7 Sheet 1 Issue 5 21-148-7 Sheet 2 Issue 4 21-148-7 Sheet 3 Issue 5 21-148-16 Issue 2 21-148-18 Issue 4 21-148-GA2 Sheet 1 Issue 3 21-148-GA3 Sheet 1 Issue 4</p>	<p>Hazardous Location Class I Zone 1</p> <p>Type of Protection Ex d IIB T6 IP65-GUA Series Ex d IIC T6 IP65-EAB Series</p> <p>Certificate Holder Crouse-Hinds (Aust) Pty. Ltd., 31 Moxon Road PUNCHBOWL. N.S.W. 2196</p> <p>Manufacturer Crouse-Hinds (Aust) Pty. Ltd., 31 Moxon Road PUNCHBOWL. N.S.W. 2196</p> <p>Test Report No(s) N/A</p> <p>Australian Standard(s) AS 2480-1981 AS 1939-1981</p> <p>SAA File Reference P/3: 86026/M128</p> <p>Effective Date 1986-02-18</p> <p>Date of Issue 1986.03.24</p>
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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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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 "Crouse Hinds Junction Box Model GUA" 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

2. 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

Drawings: 21-148-GA11 Issue 6 18 November 1991
21-148-GA20 Issue 6 18 November 1991
21-148-GA22 Issue 5 18 November 1991

TYPE OF PROTECTION: 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

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**QUALITY ASSURANCE
SERVICES** 

Standards Australia

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

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

Administered by: Standards Australia Quality Assurance Services

Certificate of Conformity

Certificate No: AUS Ex 319 **Issue 0:** Original Issue 1/6/1982
Issue 6: 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: Ex d I/IC T6 IP66/IP67 Class I Zone 1
ELS10: Ex d IIB T6 IP65 Class I Zone 1

Marking Code: GUA16: Ex d I/IC 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



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

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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

K. J. J. J. J.

Signed for and on behalf of issuing authority

Coordinator, Approvals & Certification

Position

29/9/1998

Date of issue

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STANDARDS AUSTRALIA

Certification 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 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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Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

AUSEx Scheme

Certificate of Conformity

Certificate No: AUS Ex 03.3904 **Issue 0:** 21/11/2003
Issue 1: 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

Type of Protection: Ex d I/IIC
Ex e I/II
DIP

Marking Code: Ex d I/IIC Ex e I/II DIP A21 IP66/IP68 (30 m)
AUS Ex 03.3904

Manufactured By: Chi An Industrial Co Ltd
Changhwa Taiwan ROC

Issued by:



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Australia

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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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AUSEx Scheme

Schedule

Certificate No: AUS Ex 03.3904

Issue: 1

Date of Issue: 12/04/2005

Certified Equipment:

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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AUSEx Scheme

Addendum to Certificate No. AUS Ex 03.3904-1

Certified Equipment continued:

Alco HAW Range of Cable Glands (Compression Configuration)

Gland Code Number	Mounting Thread Dia x Length (mm)	Tightening Torque (Nm)	SWA Diameter (mm)		Cable Diameter (mm)					
					Over Bedding				Over Cable	
					Inner Seal B		Inner Seal A		Seal A	
			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

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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 (mm)	Tightening Torque (Nm)	Max Dia Over Cable Cores (mm)	Max No. of Cores in Compound / Core CSA (mm ²)	SWA Diameter (mm)	
					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

* 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		
ALCHAWFLMPH	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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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 Dia x Length (mm)	Tightening Torque (Nm)	SWA Diameter (mm)		Cable Diameter (mm)					
					Over Bedding				Over Cable	
					Inner Seal B		Inner Seal A		Seal A	
			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 Length (mm)	Tightening Torque (Nm)	Max Dia Over Cable Cores (mm)	Max No. of Cores in Compound / Core CSA* (mm ²)	SWA Diameter (mm)	
					Min	Max
					ALCHAW20SB	M20 x 16

*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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AUSEx Scheme

Addendum to Certificate No. AUS Ex 03.3904-1

Drawings relating to issue 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 Pages 1 & 2	Elmako Pty Ltd - Alco Glands HAW Series Glands – Fitting Instructions	1.5	16/03/05
ALCHAWSPEC	Elmako Pty Ltd Alco Glands HAW Range Specifications	1.1	01/12/04
ALCHAWBARLIM	Alco - HAW Range – Barrier Glands	1.1	19/03/04
ALCHAWSCHDRG	Alco Glands – Schedule of Drawings HAW Range – Hazardous Area, Armoured Weatherproof	1.2	02/06/04
ALCHAWFLMPH	Elmako Pty Ltd Alco Glands HAW Range Flameproof Joint Data	1.1	19/03/04

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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.

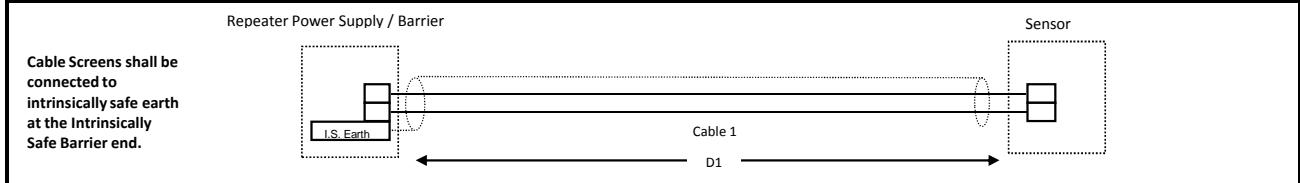
This section contains sample calculation sheet for intrinsically safe barrier assessment and extracts from AS 2381.6-1993 and AS 2381.7-1989.

Intrinsically Safe Barrier Assessment Sheet



Document No:		Prepared By:	
Site:		Checked:	
Loop Description:		QA:	
Loop Drawing Number:		Approved:	
		Date:	

Hazardous Area: H. A. Report: <input style="width: 100%;" type="text"/> H. A. Drawing No.: <input style="width: 100%;" type="text"/>	Area Class: <input style="width: 100%;" type="text"/> Gas Group: <input style="width: 100%;" type="text"/> Temperature Class: <input style="width: 100%;" type="text"/>
--	---



I.S. Device details (Hazardous Area) [Note 2]	
Tag: <input style="width: 100%;" type="text"/> Type of instrument: <input style="width: 100%;" type="text"/> Manufacturer: <input style="width: 100%;" type="text"/> Model Number: <input style="width: 100%;" type="text"/> Serial No: <input style="width: 100%;" type="text"/> Certificate Number: <input style="width: 100%;" type="text"/> Certifying Authority: <input style="width: 100%;" type="text"/> Protection Type: <input style="width: 100%;" type="text"/>	Max Voltage Um: <input style="width: 100%;" type="text"/> V O/C Voltage Uo: <input style="width: 100%;" type="text"/> V S/C Current Io: <input style="width: 100%;" type="text"/> mA Power Po: <input style="width: 100%;" type="text"/> mW Allowable Cap. Co: <input style="width: 100%;" type="text"/> uF Allowable Ind. Lo: <input style="width: 100%;" type="text"/> mH L/Ro: <input style="width: 100%;" type="text"/> uH/Ohm

Cables:		
Cable 1: Tag: <input style="width: 100%;" type="text"/> Capacitance: <input style="width: 100%;" type="text"/> uF/m Inductance: <input style="width: 100%;" type="text"/> mH/m L/Rc: <input style="width: 100%;" type="text"/> mH/Ohm Length(D1): <input style="width: 100%;" type="text"/> m	Cable 2: Tag: <input style="width: 100%;" type="text"/> Capacitance: <input style="width: 100%;" type="text"/> uF/m Inductance: <input style="width: 100%;" type="text"/> mH/m L/Rc: <input style="width: 100%;" type="text"/> mH/Ohm Length(D2): <input style="width: 100%;" type="text"/> m	Total Cable: Capacitance: <input style="width: 100%;" type="text"/> uF Inductance: <input style="width: 100%;" type="text"/> mH Max L/Rc: <input style="width: 100%;" type="text"/> mH/Ohm

I.S. Apparatus Parameters (Hazardous Area):	
Tag: <input style="width: 100%;" type="text"/> Type of instrument: <input style="width: 100%;" type="text"/> Manufacturer: <input style="width: 100%;" type="text"/> Model Number: <input style="width: 100%;" type="text"/> Serial No: <input style="width: 100%;" type="text"/> Certificate Number: <input style="width: 100%;" type="text"/> Certifying Authority: <input style="width: 100%;" type="text"/> Protection Type: <input style="width: 100%;" type="text"/>	O/C Voltage Ui: <input style="width: 100%;" type="text"/> V S/C Current li: <input style="width: 100%;" type="text"/> mA Power Pi: <input style="width: 100%;" type="text"/> mW Capacitance Ci: <input style="width: 100%;" type="text"/> uF Inductance Li: <input style="width: 100%;" type="text"/> mH

Checks:		PASS/FAIL/NA	
1	$U_o \leq U_i$	\leq	
2	$I_o \leq I_i$	\leq	
3	$P_o \leq P_i$	\leq	
4	$C_i + C_{Cable} \leq C_o$	\leq	
6	$L_i + L_{Cable} \leq L_o$	\leq	
OR			
7	$L/R_{Cable} < L/R_o$	$<$	
Conclusion: The circuit IS Loop Calculation <input style="width: 100%;" type="text"/>			

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 LSL 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_o).
 - (ii) Maximum output current (I_o).
 - (iii) Maximum external capacitance (C_o).
 - (iv) Maximum external inductance (L_o).
 - (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) $C_i + C_{\text{cable}} < C_o$; and
- (b) either $L_i + L_{\text{cable}} < L_o$, or $L/R_{\text{cable}} < L/R$.

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) $C = 0.11 \mu\text{F}/\text{km}$.
- (b) $L = 0.8 \text{ mH}/\text{km}$.
- (c) $L/R = 56 \mu\text{H}/\Omega$.

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.

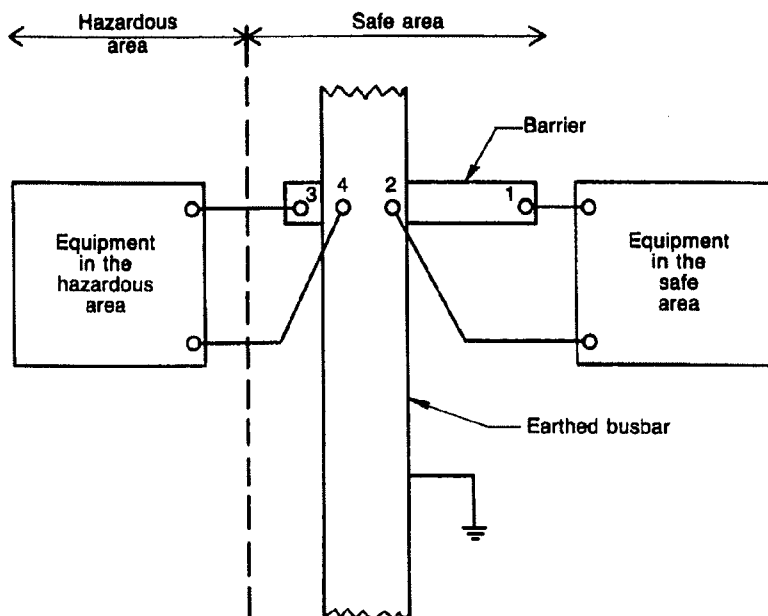
TABLE A1
EXTERNAL PARAMETERS
MAXIMUM VALUES FOR GROUP IIC (HYDROGEN)*

Barrier type	Permissible configuration	Max. permissible capacitance μF	Max. permissible inductance mH	Max. permissible L/R ratio $\mu\text{H}/\Omega$
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.

† The L/R ratio of the cable is defined as follows:

$$L/R \text{ ratio} = \frac{\text{Inductance per unit length } (\mu\text{H})}{\text{Resistance per unit length } (\Omega)}$$



NOTE: Barrier can be either positive or negative.

FIGURE A1 INSTALLATION CONFIGURATION 2-WIRE SYSTEM
WITH SINGLE BARRIER

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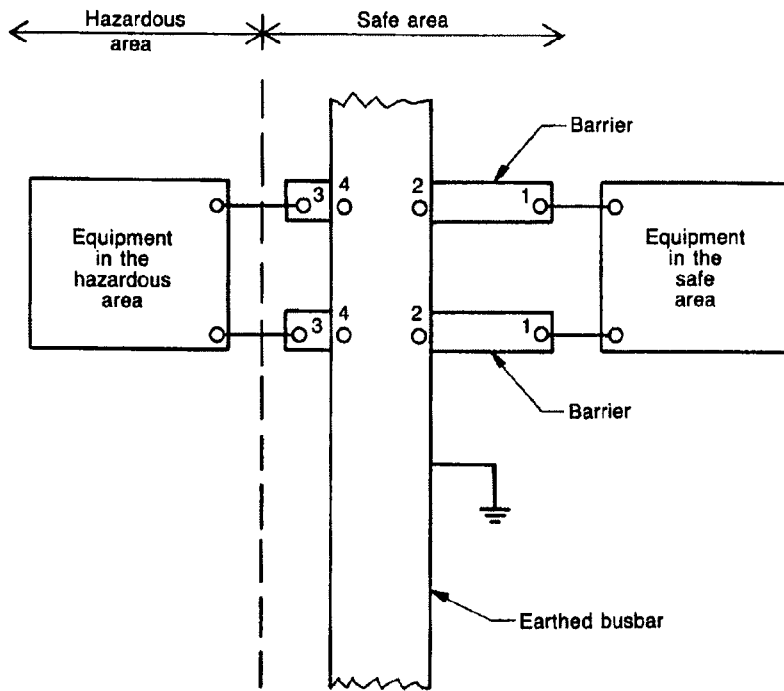


FIGURE A2 INSTALLATION CONFIGURATION 2-WIRE SYSTEM WITH TWO BARRIERS OF LIKE POLARITY

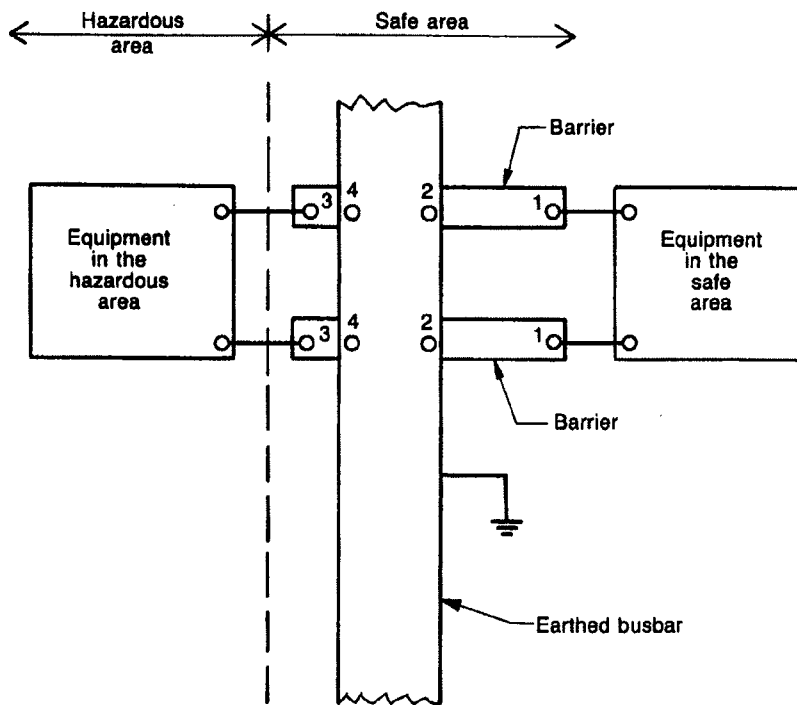


FIGURE A3 INSTALLATION CONFIGURATION 2-WIRE SYSTEM WITH TWO BARRIERS OF OPPOSITE POLARITY

TABLE A2
TYPICAL CABLE CHARACTERISTICS FOR PVC CABLES WITH 0.3 mm
RADIAL THICKNESS

Nominal conductor size, number and dia. of wires	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
L/R ratio (μH/ohm)	20

APPENDIX C
SELECTION OF Ex e COMPONENTS
(Normative)

C1 GENERAL Each enclosure is allocated a permissible maximum dissipating power, expressed in watts, taking into account—

- (a) the dissipation per component for a given cable conductor size;
- (b) the size of each cable used and the resistance of its length, equal to the diagonal of 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:

$$\text{Dissipation per terminal: } P = I^2[R_t + L \times R_c] \quad \dots \text{ E(1)}$$

$$P = I^2[R_t + R_d] \quad \dots \text{ E(2)}$$

where

P = power dissipation, in watts

I = current through terminal (max. allowable or limited by cable size)

R_t = internal resistance of terminal, in ohms

R_c = cable resistance per metre, in ohms

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_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:

$$MDP = aP_1 + bP_2 + cP_3 \dots + zP_n \quad \dots \text{ E(3)}$$

where

aP₁; *bP₂*; *cP₃*, ... *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—

$$(60 \times P_1) + (6 \times P_2) + (3 \times P_3) + (3 \times P_4)$$

$$(60 \times 0.092) + (6 \times 0.763) + (3 \times 0.530) + (3 \times 0.790)$$

Total Heat Dissipation is—

$$5.52 + 4.578 + 1.590 + 2.37 = \mathbf{14.058 \text{ Watt}}$$

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.

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	$\frac{\text{ohms}/1000\ m \times L}{1000}$ where L is in metres				
1.0					
2.5					
4.0					
6.0					
10.0					
16.0					
25.0					
35.0					
50.0					
70.0					
95.0					

TABLE C2
TERMINAL/COMPONENT RESISTANCE (R_c)

Component type	Average resistance (ohms)
TBK 2.5	Determined by test
TBK 4	
TBK 6	
TBK 10	
TBK ... n	

From Tables C1 and C2, details for each enclosure can be derived:

Assume Enclosure type box No. 1. **MDP = 15 watt**

Ex e component			Cable	Total
Type	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
Enclosure 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.



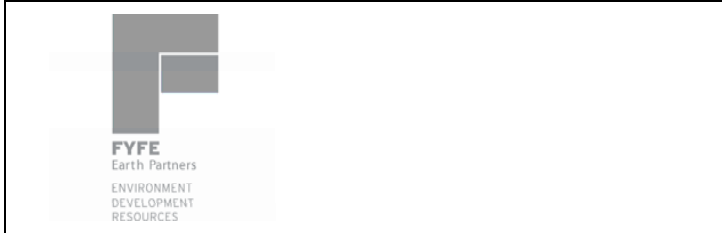
FYFE
Earth Partners
ENVIRONMENT
DEVELOPMENT
RESOURCES

**MAINTENANCE
REGISTER**

APA Group 

Site:

DATE	DESCRIPTION	ASSOCIATED TAGS	DOSSIER UPDATE AS REQUIRED (YES / NO / NA)								REMARKS
			P&ID	DATASHEET	HA EQUIPMENT REGISTER	CERTIFICATE OF CONFORMITY	INSTALLATION CHECK LIST	REPAIR & EXAMINATION REPORT	HA CLASSIFICATION	HA DRAWING	



MAINTENANCE REGISTER

Site: _____

DATE	DESCRIPTION	ASSOCIATED TAGS	DOSSIER UPDATE AS REQUIRED (YES / NO / NA)								REMARKS
			P&ID	DATASHEET	HA EQUIPMENT REGISTER	CERTIFICATE OF CONFORMITY	INSTALLATION CHECK LIST	REPAIR & EXAMINATION REPORT	HA CLASSIFICATION	HA DRAWING	

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\bsj12\fyf1 fyfe Pty Ltd hazardous areas reporting award 28.07.11\fyf3 fyfe northern end pipeline\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.

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 flame-paths 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.
8. 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: I:\data\sitzler\company operations\darwin\lenders\bsbj11\yft1 - 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-8	Asset: STATION INLET
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE TRANSMITTER	Type of protection: (d, e, i, n, p etc) Ex Ia
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIC
Full model number: 3051TG4A2021BB4KM	Temp class: (T1-T6) T5(40°C), T4(70°C)
Serial number: 01609699 ST1	Certificate number: AUS Ex 1249X
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	ALCO		BUNG.
Model:	WG202		REDAPT M20
Gland type of protection: (d,e)	NO CERT.		EErd

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
1	Equipment (incl group and temp class) is appropriate for area classification	all	X	
2	Equipment ID or circuit ID is correct	all	X	
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	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	Entropy calculation/documentation is available	i	X	X

CIRCUIT NO

B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

CABLE SUPPORT - UV
NO EARTH ON INSTR STAND

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Corrosion

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): <i>D. Williams</i>	Inspector	Supervisor	Client (write):	Inspector
Date: <i>9/9/11</i>			Date:	

Device ID or tag

Action required to make device compliant:

- Cable I.O required.
- Blue sheath required.
- Provide cable support.
- provide equipotential band at instrument stand.
- visible corrosion.

Reviewed by: *N. GREEN*
 Date: *22/9/11*
 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\sitzler\company operations\darwin\vendors\sbsj11\fy1 - 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

↓ REID TAG.

Device ID or tag: (ZSC/ZSO-10) - MLV-6	Asset: STATION INLET
Circuit ID: 3040	Physical location: LAANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB / LIMIT SWITCH	Type of protection: (d,e, i, n, p etc)
Manufacturer: LIMITORQUE	Gas group: (IIA/B/C)
Full model number:	Temp class: (T1-T6)
Serial number:	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

} NO CER
DETAILS

Number of cables:

For each cable entry	ADAPTOR gland 1	MALE-MALE NIPPLE gland 2	COUPLING others
Gland manufacturer:			
Model:			
Gland type of protection: (d,e)	NO CER	NO CER	NO CER

GLAND - ?

Inspection

		Circle as checked		
		Applicable to protection type:	Internal	External
A Equipment				
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	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	⊗
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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	⊗
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

BOLTS AND NIPPLES
LOOSE GLAND
UV

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

Corrosion

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- N:1 AUSEx certification available, poor condition of aged equipment, corrosion throughout.
- Equipment I.O. incorrectly label with respect to P&ID (MLV-10).
- Loose cable gland to be tightened.
- cable UV damage to sheath, remediate.

Reviewed by: *N. GREEN*
Date: *23/9/11*
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\sitzler\company operations\dwintenders\sbsj11\fy1 - 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

X2 *↓ MW TAG.*

General	
Device ID or tag: <i>(SVC-10) MCV-6</i>	Asset: <i>INLET</i>
Circuit ID: <i>2040</i>	Physical location: <i>CHANNEL ISLAND</i>
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) <i>SOLENOID VALVE</i>	Type of protection: (d,e, i, n, p etc) <i>EX m</i>
Manufacturer: <i>SKINNER VALVE</i>	Gas group: (IIA/B/C) <i>CLASS I IIA GROUP CII</i>
Full model number: <i>X52HLB22501</i>	Temp class: (T1-T6) <i>T3c</i>
Serial number: <i>X52HLB22501</i>	Certificate number: <i>AUS Ex 2541 X</i>
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer: <i>CONDUIT WORK</i>			
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

*- Room
- Circuit*

*CONDUIT
CONDITION*

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Corrosion

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): <i>Inspector</i>	Supervisor	Client (write): <i>Inspector</i>
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + conduit I.D. required.
- Nil AUSEX certification available.
- Suggest replacement prior to failure.

Reviewed by: *N. GREEN*
 Date: *22/9/11*
 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: (DPT-44) DPT 01	Asset: STATION PLET.
Circuit ID: -	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE DIFFERENTIAL TRANSMITTER	Type of protection: (d,e, i, n, p etc)
Manufacturer: HOSEMOUNT	Gas group: (IIA/B/C)
Full model number: 3051403A22A1AMSBR4E7L	Temp class: (T1-T6)
Serial number: R50385952 4T1	Certificate number: AUS Ex 1249x
IP Class	Test authority: (BAS, PTB, SAA etc)

NOT VISABLE.

Number of cables: **1**

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	?		ADAPTOR
Model:			
Gland type of protection: (d,e)			NO CERT

BUNK
NO CERT

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X

LABELL DPT-01

BUNK

B Installation

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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

CABLE SUPPORT + UV

*** MECHANICAL PROTECTION REQUIRED**

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment label not as per R&IO (APT-44)
- Cable T.O. required
- Remediate sheath + provide blue sheath.
- Provide instrument stand and associated earthing, cable protection and re-tube to vessel etc...
- Remove sun cover and verify I.S. certification.
- Cable resting upon vessel.

Reviewed by: *N. Green*
 Date: *23/9/11*
 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: SVO/SVC-16	Asset: AOV-16 WRH #1 INLET
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	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, SAA etc)

Handwritten notes: "ILLEGIBLE" with arrows pointing to Manufacturer and Serial number fields. "ILLEGIBLE" with arrows pointing to Type of protection and Test authority fields.

Number of cables:

For each cable entry			
Gland manufacturer:	gland-1 REX	gland-2 ELBOW	others ADAPTOR
Model:	R460	?	CUPRAL
Gland type of protection: (d,e)	EL27-300	NIL	ex d

Inspection

		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

Handwritten notes: "CCF" next to row 3, "UV" next to row 1 of section B.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

compliance

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Circuit I.O. required
 - Remediate UV damaged flexible conduct.
 - Corrosion visible externally.
 - Replace Solenoids due to age + condition.
- (Suggest new IS + cable connected to new solenoids.)

Reviewed by: *N. GREEN*
 Date: *26/9/11*
 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: JR16	Asset: AOV-16 WSK #1 INLET
Circuit ID: J047	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB	Type of protection: (d,e, i, n, p etc) d?
Manufacturer: SAE	Gas group: (IIA/B/C) IIB
Full model number: FNT1	Temp class: (T1-T6) T6
Serial number:	Certificate number: FL069J
IP Class	Test authority: (BAS, PTB, SAA etc) SAA

Number of cables: **x1 x2 (flex low volt)**

For each cable entry	gland 1 x 1	gland 2 flex	others
Gland manufacturer:	RYCO	RYCO	PLUG / ELBOW
Model:	E27-700		LOW VOLT
Gland type of protection: (d,e)			

Inspection

		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)
No:
 Yes:

List action required

Contractor (write): Inspector N. GREEN Supervisor	Client (write): Inspector
Date: 10/9/11	Date:

Device ID or tag

Action required to make device compliant:

- Replace perished seal, uncertified plug + elbow.
 - Verify ex rating of enclosure, replace as required.
 - Remediate UV damaged cable and flexible conduit.
- (Suggest new IS + cable connected to new solenoids.)

Reviewed by: N. GREEN
Date: 24/9/11
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: (2SC/250-16)	Asset: WRM # 1 AOV-16
Circuit ID: 5803	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) LIMIT SWITCH	Type of protection: (d,e, i, n, p etc) INTEGRAL
Manufacturer: -	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:

For each cable entry	gland 1	gland 2	others rotation
Gland manufacturer:	?		?
Model:	?		?
Gland type of protection: (d,e)	?		?

Inspection

		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector	Supervisor <i>N. GREEN</i>	Client (write): Inspector
Date: <i>16/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment I.O. required.
- Remediate blue cable sheath.
- Verify installation of I.S. barrier.

Reviewed by: <i>N. GREEN</i>
Date: <i>24/9/11</i>
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: NONE (TE-17A) -	Asset: WATER BATH HEATGLI
Circuit ID: NONE -	Physical location: CHANNEL ISLAND (CPS SIDE)
Area classification: NH	Environment: (hot?) OUTDOOR HOT

(CONTROL PANEL)

Data from Label

Apparatus type: (light, JB, Motor) JB (PTD?)	Type of protection: (d, e, i, n, p etc) d
Manufacturer: GOVAN	Gas group: (IIA/B/C) II B
Full model number: FW 4W	Temp class: (T1-T6) T6
Serial number: -	Certificate number: AUS Ex. 157
IP Class 65	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry

	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	NO INFO		NOT CERTIFIED
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

EQ CIRCUIT

OV

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

UV

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Equipment not in hazardous area.
- Provide equipment + cable labels.
- Remediate UV damaged sheath.

Reviewed by: *N. GREEN*
 Date: *23/9/11*
 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: (LSL 17) -	Asset: WBH 1 FLEW END
Circuit ID: NONE	Physical location: CHANNEL ISLAND
Area classification: NH	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) MURPHY LEVELSWITCH	Type of protection: (d, e, i, n, p etc) - (Exd) ?
Manufacturer: MURPHY	Gas group: (IIA/B/C) - (IIB) ?
Full model number: L1100?	Temp class: (T1-T6) - (T6) ?
Serial number:	Certificate number: - (AUS Ex 609) ?
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	ADAPTOR JB gland 1	gland 2	others
Gland manufacturer:	PYROTENX	UNKNOWN	
Model:	UNKNOWN		
Gland type of protection: (d,e)			

NO ACCESS

NO ACCESS

Inspection

	A Equipment	Applicable to protection type:	Circle as checked	
			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)
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	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	Entropy calculation/documentation is available	i	X	X

CIRCUIT & EQ

	B Installation	Applicable to protection type:	Circle as checked	
			Internal	External
1	Type of cable is appropriate, cables are undamaged	all	X	(X)
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

CLOSE TO FLEW END INSULATION?

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

CORROSION

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D required
- Nil certification for adaptor JB, suggest replacement with flameproof equipment.
- Surface corrosion exists.

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
 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: (TIT 17) -	Asset: WBH 1 - FLUE END
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification: NH?	Environment: (hot?) OUTDOOR RADIANT HEAT

Data from Label

Apparatus type: (light, JB, Motor) TEMP. TX	Type of protection: (d,e, i, n, p etc) Ex i n
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) II C
Full model number: 3144 P D Z A I K M S T I Q 4 X A	Temp class: (T1-T6) TSP 75°C / T6 @ 50°C
Serial number: 0:793012	Certificate number: IECEX BAS 07.0002X
IP Class IP 66/68	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1	ADAPTOR gland 2	others ADAPTOR
Gland manufacturer:	ALCO ?	CLIPAL ?	ADAPTA FLEY
Model:			
Gland type of protection: (d,e)			

← NO ACCESS →

Inspection

		Applicable to protection type:	Internal	External	
A Equipment					
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)	4RC ID EQ ID
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	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)	SHEATH CORROSION HOT,
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X	(X)	
14	Entropy calculation/documentation is available	i	X	X	
B Installation					
1	Type of cable is appropriate, cables are undamaged	all	X	(X)	-TEMP. FOR FLUE
2	Sealing of ducts and/or conduits is satisfactory	all	X	X	-Damage @ conduit.
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

HEAT.

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment and cable I.D. required.
- Remediate sheath with U.V. damage + mechanical damage @ conduit entry.
- Provide blue sheath.
- Re-route cable exposed to blue heat radiation.

Reviewed by: <i>N. GREEN</i>
Date: <i>23/9/11</i>
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: # - (TSK17?)	Asset: WBH1 FGAS SIDE
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?) OUTDOOR

Data from Label

Apparatus type: (light, JB, Motor) THERMOCOUPLE TEMP SWITCH	Type of protection: (d,e, i, n, p etc) d
Manufacturer: UNITED ELECTRIC	Gas group: (IIA/B/C) IIC
Full model number: C120-120-1213	Temp class: (T1-T6) T6 @ 60°C
Serial number: 0434?	Certificate number: IECEX U-03.001
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry

	gland 1	ADAPTOR gland 2	others
Gland manufacturer:	ALCO	CLIPSAL	BUNG RUSTED
Model:	FLPW 202	FAZIN M	UNCERTIFIED
Gland type of protection: (d,e)	d	d	

AusEx 571

AusEx 1498U

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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

EQ CIRC ID

B Installation

1 Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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	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	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cot IO required
- Replace unconfined plug.

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
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: FSHM (TSM?) -	Asset: WBH1 FG SIDE
Circuit ID: NONE	Physical location: CHANNEL ISLAND
Area classification: ZONE 2	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMP SWITCH	Type of protection: (d, e, i, n, p etc) CLASS 1 BC&D
Manufacturer: UNITED ELECTRIC	Gas group: (IIA/B/C) CLASS 2 EF&G
Full model number: ILLEGIBLE	Temp class: (T1-T6)
Serial number:	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry

	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	ALCO		SPLIT - CRACKED
Model:	VK 202		NO ID
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

CIRCL EQ ID

ALAND + ADAPT. CERT.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Equipment & cat I.P. required
- Nil AUSEX certification, hence \Rightarrow replace/review as required.
- Replace cracked adapter, and uncertified gland.

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
 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: ESD 3 (NOT LABELLED)	Asset: WATER BATH HEATER PILOT GAS
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification: ZONE 2	Environment: (hot?) OUT DOOR

Data from Label

Apparatus type: (light, JB, Motor) SOLENOID	Type of protection: (d,e, i, n, p etc) M
Manufacturer: ASCO	Gas group: (IIA/B/C) IIC
Full model number: FA8262C90 [VALVE]	Temp class: (T1-T6) T4
Serial number: FA801641 [Subprod]	Certificate number: Aus Ex. 3032
IP Class G5	Test authority: (BAS, PTB, SAA etc)

Number of cables: **(1)**

For each cable entry	gland 1	gland 2	others JB
Gland manufacturer:	ALCO		PYRO TENIX
Model:	WG 202		UNLABELLED
Gland type of protection: (d,e)	-		

Inspection

		Circle as checked		
		Applicable to protection type:	Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required
- Replace uncertified gland + IS.

Reviewed by: *N. GREEN*
Date: *23/9/11*
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: 1/P1 NOT LABELLED	Asset: WBH4 FUEL GAS TV
Circuit ID: NONE	Physical location: CHANNEL ISLAND
Area classification: ZONE 2	Environment: (hot?) OUTDOOR

Data from Label

Apparatus type: (light, JB, Motor) 1/P	Type of protection: (d, e, i, n, p etc) ?
Manufacturer: FISHER	Gas group: (IIA/B/C)
Full model number: 646	Temp class: (T1-T6)
Serial number: 19942396	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

**FM / CSA CERTIFIED TRIPLE C
LEAKAGE**

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	ALCO		CLIPSAL
Model:	ALC HPAW26M20		FA11NM
Gland type of protection: (d,e)	d,e		

AUSEX 1498 U

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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 Entry calculation/documentation is available	i	X	X

**EQ ID
CABLE**

?

B Installation			
1 Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

**SHEATH
DAMAGED
FROM
PRESSURE
SWITCH**

?

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	ⓧ
2	No undue accumulation of dust or dirt	all	X	ⓧ
3	Electrical insulation is clean and dry	all	X	

ps/cable

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cct I.D. required
- Ex d.n.i certified to EM/CSA and not Australian Hence conformity assessment or replacement required.
- Remediate and re-route cable sheath resting on adjacent pressure switch

Reviewed by: *N. GREEN*
Date: *23/9/11*
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: (TY1) NOT LABELLED	Asset: WATER BATH I TCV 1
Circuit ID: -	Physical location: L HANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) SOLENOID	Type of protection: (d, e, i, n, p etc)
Manufacturer: ASCO - LABEL	Gas group: (IIA/B/C)
Full model number: UNREADABLE	Temp class: (T1-T6)
Serial number:	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: (1)

For each cable entry	gland 1	ADAPTOR gland 2	others JB
Gland manufacturer:	ALCO	UNKNOWN	CROUSE HINDS
Model:	FALCHA U20 M20		CUA
Gland type of protection: (d,e)	d		EX d Aus Ex 319

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

EQ IDS
CABLE IDS
JB BOLT
LOOSE

JB GLAND
FILLED
WITH
SILICONE
EARTH TO
STAND/
BRACKET

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. LAEEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable IP required
- Tighten bolt to TB.
- Equipotential bond equipment to surrounding steel.
- Remediate TB top entry containing silicone sealant.
- Illegible coil Ex rating.
- Hence suggest to replace complete assembly.

Reviewed by: *N. LAEEN*
Date: *23/9/11*
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: (PSK:) (UNLABELLED)	Asset: W&H 1 MAIN FLAME
Circuit ID: ABNCE	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?) OUTDOOR

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE SWITCH	Type of protection: (d,e, i, n, p etc) d
Manufacturer: UE	Gas group: (IIA/B/C) II C
Full model number: D120 - 156	Temp class: (T1-T6) T6
Serial number:	Certificate number: PEGEX UL 03-0001
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	BUNG gland 2	others ADAPTOR
Gland manufacturer:	ALCO	UNCERTIED	CLIPSAE
Model:	ALPHA 220 M20		FAR WINM
Gland type of protection: (d,e)	d		

Inspection

		Circle as checked		
		Applicable to protection type:	Internal	External
A Equipment				
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)
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	(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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	(X)
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	(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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required.
- Tighten loose cable gland.
- Replace uncertified plug.

Reviewed by: *N. GREEN*
Date: *21/9/11*
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: (PSL) - (NOT LABELLED)	Asset: WBH1 - ADJACENT PIZ
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE SWITCH	Type of protection: (d,e, i, n, p etc) d
Manufacturer: UE	Gas group: (IIA/B/C) IIC
Full model number: J120 - 156	Temp class: (T1-T6) T6
Serial number:	Certificate number: IECEX UL 03.0001
IP Class: 44	Test authority: (BAS, PTB, SAA etc)

Number of cables:



For each cable entry	gland 1	BUNK gland.2	others BUNK ADAPTON
Gland manufacturer:	ALCO	UNCERTIFIED	BUNNENBAY CLIPSAK
Model:	ALCIA W20 M20		FA3 WINN
Gland type of protection: (d,e)	d		9
	Aus Ex 03.394		ANSEY 1448U

Inspection

		Applicable to protection type:	Internal	External	
A Equipment					
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 ID
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	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	Entropy calculation/documentation is available	i	X	X	
B Installation					
1	Type of cable is appropriate, cables are undamaged	all	X	(X)	
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	(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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D required.
- Replace uncertified plug.

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
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: <u>SV2</u>	Asset: <u>WBH1 FA. CLOSE TO HTR (ESV2)</u>
Circuit ID: <u>-</u>	Physical location: <u>CHANNEL 15Amp</u>
Area classification: <u>ZONE2</u>	Environment: (hot?) <u>OUTDOOR</u>

Data from Label

Apparatus type: (light, JB, Motor) <u>SOLENOID</u>	Type of protection: (d,e, i, n, p etc) <u>EE+me</u>
Manufacturer: <u>BURKETT</u>	Gas group: (IIA/B/C) <u>II</u>
Full model number: <u>35690C</u>	Temp class: (T1-T6) <u>T6</u>
Serial number: <u>WZBU090085</u>	Certificate number: <u>AuEx 3616X</u>
IP Class <u>65</u>	Test authority: (BAS, PTB, SAA etc)

Number of cables: 1

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	<u>ALCO</u>		
Model:	<u>WA202</u>		
Gland type of protection: (d,e)	<u>2 non Ex.</u>		

Inspection

		Circle as checked	
		Internal	External
A Equipment	Applicable to protection type:		
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts; pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.P. required.
- Replace uncertified cable gland.
- Remediate cable sheath.

Reviewed by: *N. GREEN*
 Date: *23/9/11*
 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: SV1	Asset: WBH1 FG MAIN FLAME
Circuit ID: NONE	Physical location: CHANGEL ISLAND
Area classification: ZONE 2 II A	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) SOLENOID	Type of protection: (d,e, i, n, p etc) me
Manufacturer: BURKERT	Gas group: (IIA/B/C) II
Full model number: 6519 W 06.0 NBR PA	Temp class: (T1-T6) T6
Serial number: AH 29723 138690C W28UUC90084	Certificate number: Aus Ex 3616 X
IP Class 65	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1	gland 2	others
Gland manufacturer: ALCO			
Model: WA 202			
Gland type of protection: (d,e)	2 Non Ex.		

Inspection

		Applicable to protection type:	Circle as checked		
			Internal	External	
A Equipment					
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)	EQ CIRC ID.
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	(X)	
4	There are no damage or evidence of unauthorised modifications	all	X	(X)	CRACKED ENTRY
5	Bolts, cable entries and blanking elements are correct and tight	all	X	(X)	LOOSE GLAND
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	Entropy calculation/documentation is available	i	X	X	
B Installation					
1	Type of cable is appropriate, cables are undamaged	all	X	(X)	
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	(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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
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:

Device ID or tag

Action required to make device compliant:

- Equipment & cable I.D. required
- Replace uncertified cable gland.
- Replace equipment due to cracked electrical entry.

Reviewed by: N. GREEN
 Date: 23/9/11
 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: SVO/SVC-18	Asset: AOV-18 WRN# 2 INLET
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	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, SAA etc)

ILLEGIBLE (written above the first two columns)

Number of cables:

For each cable entry

Gland manufacturer:	gland 1 Flex	gland 2 B&W	others ADAPTOR
Model:	R46	-	CAPITAL
Gland type of protection: (d,e)	E27-700	M	d

Inspection

		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

correct

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Circuit J.O. required
- Remediate UV damaged flexible conduit
- Visible external corrosion
- Replace solenoids due to age + condition.
(suggest new IS + cable connected to new solenoids.)

Reviewed by: *N. GREEN*
Date: *20/9/11*
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: JB18	Asset: ADV-18 WBK + 2 INLET
Circuit ID: T048	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB	Type of protection: (d,e, i, n, p etc) d!
Manufacturer: SAE	Gas group: (IIA/B/C) IIB
Full model number: FM31	Temp class: (T1-T6) Tb
Serial number:	Certificate number: FLR 697
IP Class	Test authority: (BAS, PTB, SAA etc) S.A.A.

Number of cables:

For each cable entry

	gland 1 x 1	gland 2 PLEX	others FLOW / PLUG
Gland manufacturer:	?	RALCO	CHINA
Model:	?	EL27-700	?
Gland type of protection: (d,e)	?		

Inspection

		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	X PROPER
4	There are no damage or evidence of unauthorised modifications	all	X	X PLUG
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 required	i	X	X
14	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X 6V
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
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: 10/9/11

Date:

Device ID or tag

Action required to make device compliant:

- Replace pitted seal, uncertified plug + elbow.
 - Remediate UV damaged cable and flexible conduit.
 - Verify Ex rating of enclosure, replace as required.
- (Suggest new JB + cable connected to new identifier.)

Reviewed by: N. GREEN

Date: 26/9/11

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: (ZSC/250-18) -	Asset: WBK # 2 AOV-18
Circuit ID: 5004	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) UNIT SWITCH.	Type of protection: (d, e, i, n, p etc) ILVCLUBE
Manufacturer: -	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:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	MOAE		
Model:	?		
Gland type of protection: (d,e)	-		

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment I.O. required
- Remediate blue cable sheath
- Re-terminate cable with exposed armour
- Verify installation of I.S. barrier.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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: (TE-19A) -	Asset: WBK # 2 (FINE END)
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification: NH?	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB	Type of protection: (d, e, i, n, p etc) Ex d
Manufacturer: GOVAN	Gas group: (IIA/B/C) IIB
Full model number: FW 4W	Temp class: (T1-T6) T6
Serial number: -	Certificate number: AUS Ex 157
IP Class IP65	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1	ELBOW gland 2	others
Gland manufacturer:	ALCO	?	
Model:	FLPW 203	?	
Gland type of protection: (d,e)		?	


Inspection

		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

- EQ - corr.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.O. required.
- Replace uncertified elbow (if deemed H.A.).

Reviewed by: *N. GREEN*
Date: *26/9/11*
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



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Specifications

General

Device ID or tag: (LSL19) -	Asset: WSK # 2 (FLUE GND)
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification: NH?	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) LEVEL SWITCH	Type of protection: (d,e, i, n, p etc) LIMITED ACCESS.
Manufacturer: MVAPM	Gas group: (IIA/B/C) CL1 GROUP G.O.
Full model number:	Temp class: (T1-T6)
Serial number: Mfg Date: 02/06	Certificate number: CSA ??
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: 1

For each cable entry

	gland 1	gland 2	others
Gland manufacturer: PYROTEX			
Model: ?			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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	Hemetically 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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

beat.

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.O. required.
- Replace adaptor (IS) containing nil evidence of certification.
- Provide insulation to cable to minimise the effects of blue ~~heat~~ temperature.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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



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Specifications

General

Device ID or tag: (T1719) -	Asset: WISH # 2 (FLUE END)
Circuit ID: -	Physical location:
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMP. TRANSMITTER	Type of protection: (d,e, i, n, p etc)
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C)
Full model number: 3144 DII7MSFS	Temp class: (T1-T6)
Serial number: 0903376	Certificate number:
IP Class IP 66/68	Test authority: (BAS, PTB, SAA etc)

NOT ACCESSIBLE (OV FASED) ↓

Number of cables: 1

For each cable entry	gland 1	ADAPTOR gland 2	others
Gland manufacturer:	ALCO ?	CURSAL ?	
Model:			
Gland type of protection: (d,e)			

NOT ACCESSIBLE

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

- EQ - CLT
SHEATH DAMAGE
FLUE HEAT - SUPPORT.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

WEAT

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required.
- Remediate ^{the} sheath with O.V. damage
- Provide cable support and insulation to minimize the effects of flame temperature.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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: (TSK14) -	Asset: WEN#2 FAN SIDE
Circuit ID: -	Physical location: CHANNEL WIND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMP SWITCH.	Type of protection: (d,e, i, n, p etc) Ex d
Manufacturer: UNITED ELECTRIC	Gas group: (IIA/B/C) II C
Full model number: C120-120 OPTION 127?	Temp class: (T1-T6) T6 (-40 to 60°C)
Serial number: 0434?	Certificate number: IEC Ex UL 03.0001
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**


For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO	ALCO	PLUG.
Model:	ALCUB W10 M20	FAZIM	M12
Gland type of protection: (d,e)	Ex d	Ex d	M12

Inspection

		Applicable to protection type:	Internal	External
A Equipment				
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
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	X
7	Lamp rating, type and position correct	all	X	X
8	Electrical connections are tight	all	X	X
9	Hermetically sealed devices are undamaged	n	X	X
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X	X
11	Motor fans have sufficient clearance	motors only	X	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
2	Sealing of ducts and/or conduits is satisfactory	all	X	X
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	X	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	X
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X	X
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	X	X
9	Special certification conditions U,X or B have been complied with	all	X	X
10	Cables/spare cores are terminated satisfactorily	all	X	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)	p	X	X
14	Protective gas flow/pressure is adequate	p	X	X
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X	X
16	Pre-energising purge period is adequate	p	X	X
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	X

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.O. required
- Replace uncertified plug.
- Blue cable sheath indicated I.S., verify installation of I.S. and review accordingly.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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: (75K?) -	Asset: WBMW 2 FUEL GAS SIDE
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) Ex d
Manufacturer: UNITED ELECTRIC	Gas group: (IIA/B/C) II B
Full model number: C120-120	Temp class: (T1-T6) T6
Serial number:	Certificate number: ADS Ex 542x
IP Class IP66	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	ADAPTOR gland 2	others
Gland manufacturer: ALCO		CABLE ?	
Model: W6 202			
Gland type of protection: (d,e) Look			

Inspection

		Applicable to protection type:	Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required.
- Tighten loose cable gland.
- Verify Ex rating (if any) of adaptor + replace w/ necessary.

Reviewed by: *N. GREEN*
Date: *24/9/11*
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: (SV2) - NO TAG	Asset: WISH#2 - FUEL GAS
Circuit ID: -	Physical location: Channel 15.
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) SOLENOID	Type of protection: (d,e, i, n, p etc) EEx m, e
Manufacturer: RURKGET	Gas group: (IIA/B/C) IIC
Full model number: AC10-23-G-PDSS-JA02	Temp class: (T1-T6) T6
Serial number: W280009008J	Certificate number: PTS Ex-95-0-2043X / A05Ex 7616X
IP Class 65	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1 x1	gland 2	others ADAPTOR x1
Gland manufacturer:	?		?
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable ID required
- Remediate sheath with UV damage and remove blue sheath indicating IS installation.
- Verify glands + adaptors are suitably Ex rated.
- Re-route cable to provide adequate support.

Reviewed by:

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

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Specifications

General

Device ID or tag: (SV11) - NO TAG.	Asset: WBH #2 - FUEL GAS
Circuit ID: -	Physical location: CHANNEL 15,
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) SOLENOID	Type of protection: (d,e, i, n, p etc) EEx m.e
Manufacturer: BURKEPT	Gas group: (IIA/B/C) II C
Full model number: AC10-23-6-PD55-3A02	Temp class: (T1-T6) T6
Serial number: W28U0098886	Certificate number: PTB Ex-95.0.2043X / Aussea 2616X
IP Class 65	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1 x 1	gland 2	others ADAPTOR
Gland manufacturer:	?		?
Model:			
Gland type of protection: (d,e)			

Inspection

		Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

- CCT
- EQ

- UV
- BDE RUM?
- CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required
- Remediate sheath with UV damage and remove blue sheath indicating I.S. installation.
- Verify gland + adapters are suitably Ex rated.
- Re-route cable to have adequate support.

Reviewed by: *N. GREEN*
Date: *25/9/11*
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: (PSL?) -	Asset: WBH # 2
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRES. SWITCH.	Type of protection: (d,e, i, n, p etc) Ex d
Manufacturer: UNITED ELECTRIC	Gas group: (IIA/B/C) IIc
Full model number: J120 156	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 542
IP Class IP 66	Test authority: (BAS, PTB, SAA etc)

Number of cables:


For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO		MARTON CLIPAL
Model:	?		
Gland type of protection: (d,e)	d ?		d

Inspection

		Circle as checked	
		Internal	External
A Equipment	Applicable to protection type:		
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required.
- Blue sheath indicating I.S., verify barriers, installation etc. and review accordingly.
- Provide cable support.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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: (PSH?) -	Asset: WSK # 2
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d, e, i, n, p etc) Ex d
Manufacturer: UNITED ELECTRIC	Gas group: (IIA/B/C) IIC
Full model number: 3120-156	Temp class: (T1-T6) T6
Serial number:	Certificate number: IECEx 06.03.0001
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2 PLUG	others ADAPTOR
Gland manufacturer:	ALCO ?	REDANT	CLIPAL
Model:	1	PA00	FAZINM
Gland type of protection: (d,e)	d	d	d

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required.
- Provide cable support.
- Verify gland Ex rating.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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: (ESD 3) -	Asset: WBH # 2 FUEL GAS ROBE
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) SOLENOID VALVE	Type of protection: (d,e, i, n, p etc) Ex m2e
Manufacturer: ASCO	Gas group: (IIA/B/C) IIC
Full model number: VMA 9B 2628210	Temp class: (T1-T6) T3 (40°C)
Serial number: 14880A-1	Certificate number: AUS Ex 3498
IP Class IP 67	Test authority: (BAS, PTB, SAA etc)

Number of cables: 1

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO		
Model:	WG 202		
Gland type of protection: (d,e)	IIc		

Inspection

		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

- CR2 - CR1

now Ex. GLANDS

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required
- Replace uncasted cable gland.

Reviewed by: <i>N. GREEN</i>
Date: <i>26/9/11</i>
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: (711) -	Asset: NSU # 2 FUEL GAS SIDE.
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) SOLENOID	Type of protection: (d,e, i, n, p etc)
Manufacturer: ASCOMATION	Gas group: (IIA/B/C)
Full model number: EA5120A / EA800302	Temp class: (T1-T6)
Serial number: 90244A-2	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

LEGIBLE.

Number of cables:

For each cable entry	gland 1	ADAPTOR gland 2	others = B
Gland manufacturer:	ALCO	?	CROUSE HINDS
Model:	ALCHA WLO M20	?	GDA
Gland type of protection: (d,e)	d	?	Ex d IIC ES

ADJEN 03.3904?? **AUS 03 319 1P51/67**

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.O. required.
- Blue sheath to be removed / covered with black sheath.
- Nil Ex detail available to verify.

Reviewed by: *N. GREEN*
 Date: *26/9/11*
 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: <u>110</u>	Asset: <u>HEATER 2</u>
Circuit ID: <u>-</u>	Physical location: <u>CHANNEL ISLAND</u>
Area classification: <u>ZONE 2</u>	Environment: (hot?) <u>OUTDOOR</u>

Data from Label

Apparatus type: (light, JB, Motor) <u>1/P</u>	Type of protection: (d,e, i, n, p etc) <u>ia</u> <u>d</u>
Manufacturer: <u>FISHER</u>	Gas group: (IIA/B/C) <u>IIC</u> <u>IIC</u>
Full model number: <u>646</u>	Temp class: (T1-T6) <u>T4</u> <u>T6</u>
Serial number: <u>0016701681</u>	Certificate number: <u>AUSEX IEC 529</u> <u>AUSEX 1000SX</u>
IP Class <u>54</u>	Test authority: (BAS, PTB, SAA etc) <u>989.X</u>

Number of cables:

For each cable entry	<u>Not applicable</u>	<u>gland 1 2</u>	<u>gland 2</u>	<u>others ADAPTOR</u>
Gland manufacturer:				
Model:				<u>F111NM</u>
Gland type of protection: (d,e)				<u>d</u>

Inspection

		Circle as checked		
		Applicable to protection type:	Internal	External
A Equipment				
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	<u>⊗</u>
3	Enclosure, sealing gaskets or compounds are satisfactory	all	X	<u>⊗</u>
4	There are no damage or evidence of unauthorised modifications	all	X	<u>⊗</u>
5	Bolts, cable entries and blanking elements are correct and tight	all	X	<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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	<u>⊗</u>
2	Sealing of ducts and/or conduits is satisfactory	all	X	<u>⊗</u>
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	<u>⊗</u>
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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment & cable I.O. required
- Re-route cable supported by adjacent regulator and provide cable support.

Reviewed by: *N. GREEN*
Date: *23/9/11*
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: TSH-24	Asset: WBU 1/2 OUTLET
Circuit ID: J005	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) HIGH TEMPERATURE SWITCH	Type of protection: (d,e, i, n, p etc) Ex d
Manufacturer: ASHCROFT	Gas group: (IIA/B/C) IIB
Full model number: T7	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 5417
IP Class	Test authority: (BAS, PTB, SAA etc)

NOT LIKELY

Number of cables: 1

For each cable entry

	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	ALCO		
Model:	WG203		
Gland type of protection: (d,e)	NO CERT.		NO CERT.

Inspection

Circle as checked

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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	X
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	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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

UV
INSTRUMENT STAND EARTH

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

CALL FOR SUPPORT

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Remediate UV damaged the sheath.
- Equipotentially bond instrument support stand to adjacent structural steel.
- Provide adequate support to capillary tube.

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
 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: TIT-23	Asset: OUTLET. WATER BH 1/2
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMP TRANSMITTER	Type of protection: (d, e, i, n, p etc) ILLEGIBLE
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C)
Full model number: 3144Q267M504	Temp class: (T1-T6)
Serial number: 0639914	Certificate number:
IP Class 66	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	?		ROSEMOUNT
Model:			95C1031189U
Gland type of protection: (d,e)			EX d.

Inspection



		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
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	X
7	Lamp rating, type and position correct	all	X	X
8	Electrical connections are tight	all	X	X
9	Hermetically sealed devices are undamaged	n	X	X
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X	X
11	Motor fans have sufficient clearance	motors only	X	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	Entropy calculation/documentation is available	j	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
2	Sealing of ducts and/or conduits is satisfactory	all	X	X
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	X	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	X
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X	X
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	X	X
9	Special certification conditions U,X or B have been complied with	all	X	X
10	Cables/spare cores are terminated satisfactorily	all	X	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)	p	X	X
14	Protective gas flow/pressure is adequate	p	X	X
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X	X
16	Pre-energising purge period is adequate	p	X	X
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	X

CABLE USED AS TIT-114
BOND CIRCUIT.

CABLE SUPPORT + UV

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable F.O. required.
- provide cable support
- Remediate UV damaged cable sheath
- Verify gland is suitably Ex rated.
- Obtain replacement Ex data plate from vendor and verify Ex method 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
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: SCU - 3	Asset: MOTOR RUN 1 SSV 31
Circuit ID: J649	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) SOLINGO UNDER	Type of protection: (d,e, i, n, p etc) ILLEGIBLE
Manufacturer: RICHARDS	Gas group: (IIA/B/C)
Full model number:	Temp class: (T1-T6)
Serial number:	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

NA

NA

Number of cables:

For each cable entry

	gland 1	gland 2 MAXIMUM MAKE	others ADAPTOR
Gland manufacturer:			
Model:			
Gland type of protection: (d,e)		NUL	NO USE

Inspection

Circle as checked

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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	X UV
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

CORROSION

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- ILLEGIBLE nameplate, nil Ex detail available.
- Corrosion external, UV faded.
- Uncertified adaptor to TB.
- Replace with respect to age + condition.

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
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: JB-31	Asset: SSV-31 MR#1
Circuit ID: JD49	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, p etc)
Manufacturer: SATE	Gas group: (IIA/B/C) GROUP IIB CLASS FOR DIV 2
Full model number: FNJ1 20mm	Temp class: (T1-T6) T6
Serial number:	Certificate number: FLA 693
IP Class	Test authority: (BAS, PTB, SAA etc) SAA

Number of cables: **1**

For each cable entry

	ELBOW gland 1	gland 2	others
Gland manufacturer:	CLIBAL	ALCO	
Model:		WG	
Gland type of protection: (d,e)	NO CROU		

Inspection

		Applicable to protection type:	Circle as checked	
			internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

Perished - corroded bolts

UV & CABLE SUPPORT. EARTH TO STAND (REC)

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

 Yes:

List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Replace perished ^{seal} and corroded bolts.
- Remediate UV damaged sheath and provide cable support.
- Replace uncertified gland + adaptor,
- Suggest removal and direct connect cabling to new solenoid valve.
- Equipotential bond equipment stand.

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

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: ZSC1250-31	Asset: BSD 31 MR #1
Circuit ID: J007	Physical location: CITANIEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) LIMIT 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, SAA etc)

NOT CERTIFIED

NOT CERTIFIED

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:			ADAPTOR
Model:		?	
Gland type of protection: (d,e)			NO CERT

Inspection

		Circle as checked	
		Internal	External
A Equipment	Applicable to protection type:		
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

EQ

BLUE ? verify.

UV

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
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 <i>D. Williams</i> Supervisor	Client (write): Inspector
Date: <i>7/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Equipment IO required.
- Remediate UV damaged sheath and replace perished blue sheath.
- Verify I.S. barrier within control hut.

Reviewed by: *N. GAFFIN*
 Date: *25/9/11*
 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: PSL-34	Asset: METER RUN # 1
Circuit ID: 7005	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) LOW PRESSURE SWITCH	Type of protection: (d, e, i, n, p, etc) Ex d
Manufacturer: ASHCROFT ✓	Gas group: (IIA/B/C) II B
Full model number: P7	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 547
IP Class	Test authority: (BAS, PTB, SAA etc)

ILLCWRLE

Number of cables: _____

For each cable entry

	gland 1 x 1	gland 2	others ADAPTOR x 1
Gland manufacturer:	?		?
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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	⊗
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	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	⊗
13 Safety barriers/isolators installed as per certification and securely earthed where required	i	X	⊗
14 Entity calculation/documentation is available	i	X	X

CHPAT 11

B Installation

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	X	
5 Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

UV

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Remediate UV damaged cable sheath and provide blue sheath
- Illegible nameplate, severe corrosion, suggest replacement.
- Verify I.S. barrier installation.

Reviewed by: <i>N. GREEN</i>
Date: <i>27/9/11</i>
Priority:

Comments:
All action items now completed: <input type="checkbox"/>
Job closed: <input type="checkbox"/>

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: FT-38A	Asset: METER RUN #1
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) DIFFERENTIAL PRESSURE FLOW TR TX	Type of protection: (d,e, i, n, p etc) Ex ia
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIc
Full model number: 30SIP08A22A1M15I7L4Q4	Temp class: (T1-T6) T6
Serial number: 0393459	Certificate number: AUSEX 1249X
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1	Adaptors gland 2	others
Gland manufacturer:			Donk - Pneumatic fitting.
Model:			
Gland type of protection: (d,e)		NO CERT	NO CERT

Inspection

		Applicable to protection type:	Internal	External	
			Circle as checked	Circle as checked	
A Equipment					
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 ID
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	LOOSE GRANKS
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	Entropy calculation/documentation is available	i	X	X	
B Installation					
1	Type of cable is appropriate, cables are undamaged	all	X	X	BN + CABLE 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	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		
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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Cable I.O. required.
- Tighten loose gland.
- Remediate blue cable sheath and support cable.
- Replace plug (swagelock fitting) with electrical type plug.

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
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: FT-38 F58A	Asset: METER RUN #1
Circuit ID: -	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, IB, DIFFERENTIAL PRESSURE OR FLOW TRANSMITTER)	Type of protection: (d,e, i, n, p etc) EX ia
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIc
Full model number: 305LDD2A22A1A1M5T7L404	Temp class: (T1-T6) T5(40°C), T4(70°C)
Serial number: 0393460	Certificate number: AUS Ex 1249X
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1	ADAPTOR gland 2	others BUNG
Gland manufacturer:			
Model:			
Gland type of protection: (d,e)		NO CERT.	NO CERT.

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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	⊗
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	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	⊗
13 Safety barriers/isolators installed as per certification and securely earthed where required	i	X	⊗
14 Entity calculation/documentation is available	i	X	X

CIRCUIT ID
LOOSE & INCORRECT GLAND



BLUE

	Applicable to protection type:	Circle as checked	
		Internal	External
B Installation			
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	X	
5 Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

UV + CABLE SUPPORT.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Cable I.O. required
- Re-terminate cable/gland with exposed armour
- Remediate blue sheath and support cable.

Reviewed by: <i>N. GREEN</i>
Date: <i>23/9/11</i>
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: PT - 38	Asset: METER RUN #1
Circuit ID: -	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE TRANSMITTER	Type of protection: (d, e, i, n, p etc) EX ic
Manufacturer: BOSEMOUNT	Gas group: (IIA/B/C) IIC
Full model number: 3051PGSAZZAHAMSTJL44	Temp class: (T1-T6) T5 (40°C) T4 (70°C)
Serial number: 03 93 461	Certificate number: AUS Ex 1249X
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	MCO		BUNL
Model:	WR203		
Gland type of protection: (d,e)			NO CERT

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	j	X


CIRCUIT ID
LOOSE COIL

B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

UV & CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Circuit I.O. required
- Tighten loose cable gland
- Remediate blue sheath and support cable.

Reviewed by: <i>N. GREEN</i>
Date: <i>28/9/11</i>
Priority:

Comments:
All action items now completed: <input type="checkbox"/>
Job closed: <input type="checkbox"/>

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: (TIT-38) -	Asset: MOTOR RUN 1
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMPERATURE TRANSMITTER	Type of protection: (d,e, i, n, p etc) EX La
Manufacturer: ROSE MOUNT	Gas group: (IIA/B/C) IIC
Full model number: 3144PDIAT7MSF504	Temp class: (T1-T6) T6 (50°C) T5 (75°C)
Serial number: 02443227	Certificate number: AUS EX 02.3794X IBC EX
IP Class 66/68	Test authority: (BAS, PTB, SAA etc) BAS EIFA BAS 07.0002X

Number of cables:

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	ALCO	ADAPTOR FLEX	ROSE MOUNT
Model:	FLPW 262	NO CERT	1/2" NPT M20
Gland type of protection: (d,e)			RESIDE

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entity calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

-CIRCUIT EQUIP.

BLUE

UV + CABLE SUPPORT.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment and circuit I.P. required.
- Remediate blue sheath and support cable
- Provide sun cover/shield.

Reviewed by: <i>N. Green</i>
Date: <i>23/9/11</i>
Priority:

Comments:
All action items now completed: <input type="checkbox"/>
Job closed: <input type="checkbox"/>

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: ISSB-1	Asset: METER RUN 1/2
Circuit ID:	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB	Type of protection: (d, e, i, n, p, etc) Ex ia EEx	} NA
Manufacturer: CHOUSE - HINDS ?	Gas group: (IIA/B/C) IIc	
Full model number: WIDU 2.5 ?	Temp class: (T1-T6) T6	
Serial number:	Certificate number: NOT SAA APPROVED	
IP Class 06	Test authority: (BAS, PTB, SAA etc)	

Number of cables: **6**

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	?		
Model:			
Gland type of protection: (d,e)			

Inspection → Circle as checked

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	X
7 Lamp rating, type and position correct	all	X	X
8 Electrical connections are tight	all	X	X
9 Hermetically sealed devices are undamaged	n	X	X
10 Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X	X
11 Motor fans have sufficient clearance	motors only	X	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

	Applicable to protection type:	Circle as checked	
		Internal	External
B Installation			
1 Type of cable is appropriate, cables are undamaged	all	X	X
2 Sealing of ducts and/or conduits is satisfactory	all	X	X
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	X	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	X
7 Insulation resistance is satisfactory (check only during initial inspection)	all	X	X
8 Automatic electrical protective devices are set correctly and operate within permitted limits	all	X	X
9 Special certification conditions U,X or B have been complied with	all	X	X
10 Cables/spare cores are terminated satisfactorily	all	X	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)	p	X	X
14 Protective gas flow/pressure is adequate	p	X	X
15 Pressure and/or flow indicators, alarms and interlocks function correctly	p	X	X
16 Pre-energising purge period is adequate	p	X	X
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	X

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Corrosion

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>D. J. Lyons</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- "I.S. circuits Inside" label required
- Corrosion external evident, internal inspection required.
- UV damaged sheath requiring remediation
- cable support required.

Reviewed by: *N. GREEN*
 Date: *21/9/11*
 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: LSHH-37/137A (x2)	Asset: FS 1
Circuit ID: J010 / J011	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) HIGH HIGH LEVEL SWITCH	Type of protection: (d, e, i, n, p, etc) EX d
Manufacturer: MURPHY	Gas group: (IIA/B/C) IIB
Full model number: L-1200 DPOT	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 609
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO	WILCO	
Model:	WGT 203		
Gland type of protection: (d,e)	NO CERT.	NO CERT.	NO CERT.

JK

ADAPTER

JUNK

NO CERT

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X

EQUIP

?

B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

UV + CABLE SUPPORT.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

CORROSION

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): <i>D. Williams</i>	Inspector	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>			Date:

Device ID or tag

Action required to make device compliant:

- Equipment I.D required
- Remediate blue sheath and support cable.
- Verify I.S. barrier installation.
- Surface corrosion visible.

Reviewed by: *N. GREEN*
 Date: *23/9/11*
 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: PDI-37	Asset: FS-1
Circuit ID: J009	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE DIFFERENTIAL TRANSMITTER	Type of protection: (d, e, i, n, p etc) EX i
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIC
Full model number: 305LCD2AZZAKS4MS17	Temp class: (T1-T6) T5(40°C), T4(70°C)
Serial number: 232135	Certificate number: AUS Ex 1249X
IP Class	Test authority: (BAS, PTB, SAA etc)

Not LEGALISE

Number of cables:

For each cable entry	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	ALCO		
Model:	FLWP 203		
Gland type of protection: (d,e)	IIC		NO CERT

BUNK NO CERT

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entity calculation/documentation is available	i	X

LABELLED A PDI-37

B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

OV

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Remediate blue cable sheath.
- Obtain earthing details from vendor, review and reprimed.

Reviewed by: <i>N. GREEN</i>
Date: <i>27/9/11</i>
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: SVC 41	Asset: SSV 41 - METOR RUN 2
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?) OUTDOOR

Data from Label

Apparatus type: (light, JB, Motor) SOLENOID VALVE	Type of protection: (d,e, i, n, p etc) NO INFORMATION
Manufacturer: ASCO	Gas group: (IIA/B/C)
Full model number: FAB 0163 FA	Temp class: (T1-T6)
Serial number: S397 91-4 5832064	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: ①

For each cable entry	gland 1	gland 2	others ADAPTOR UNKNOWN
Gland manufacturer:			
Model:			
Gland type of protection: (d,e)			

Inspection

		Applicable to protection type:	Circle as checked	
			Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Corrosion

Faults found? (circle as appropriate)

No:

Yes List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Illegible nameplate, nil Ex detail available.
- External corrosion, UV faded.
- Uncertified adaptor to JB.
- Replace with respect to age + condition.

Reviewed by: *N. GREEN*
 Date: *23/9/11*
 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: JB 41	Asset: SSV 41 M-RUN 2
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB	Type of protection: (d,e, i, n, p etc) CLASS I & 2 Div 1 & 2
Manufacturer: LOWE SAE	Gas group: (IIA/B/C) IIB
Full model number: FM 01	Temp class: (T1-T6) T6
Serial number:	Certificate number: FLP 693
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	ELBOW gland 2	others REOUCLR
Gland manufacturer: ALCO	CLIPSALE	UNKNOWN	
Model: WG 206			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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)
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	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

CIRCUIT PERISHED SEAL

	Applicable to protection type:	Circle as checked	
		Internal	External
B Installation			
1 Type of cable is appropriate, cables are undamaged	all	X	(X)
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	(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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

UV

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Replace perished seal.
- Remediate UV damaged sheath, provide cable support.
- Replace uncertified gland + adaptor
- Suggest removal and direct connect cabling to new solenoid valve.
- Circuit I.D required.

Reviewed by: *N. GREEN*
 Date: *25/9/11*
 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: ZSD / ESC 41	Asset: SSV 41 - METZER RUN 2
Circuit ID: JO 13	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?) OUTDOOR

Data from Label

Apparatus type: (light, JB, Motor) LIMIT SWITCH	Type of protection: (d,e, i, n, p etc) NO DETAILS
Manufacturer:	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:

For each cable entry

	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	ALCO		UNKNOWN
Model:	WA 203		
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector Date: 9/9/11	Supervisor N. GREEN	Client (write): Inspector Date:
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Device ID or tag

Action required to make device compliant:

- Equipment I.O. required.
- Remediate blue cable sheath.
- Verify I.S. barrier installation.

Reviewed by: N. GREEN
Date: 23/9/11
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: <u>PSL-44</u>	Asset: <u>METER RUN 2</u>
Circuit ID: <u>5014</u>	Physical location: <u>CHANEL ISLAND</u>
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) <u>LOW PRESSURE SWITCH</u>	Type of protection: (d,e, i, n, p etc) <u>EX d NO CERTIFICATION</u>
Manufacturer: <u>ASHCROFT</u>	Gas group: (IIA/B/C) <u>II B</u>
Full model number: <u>B424B ?</u>	Temp class: (T1-T6) <u>T6</u>
Serial number:	Certificate number: <u>AUS EX 547</u>
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: 1

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	<u>ALCO</u>		<u>ADAPTER</u>
Model:	<u>WA 203</u>		<u>NO DETAILS</u>
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Corrosion

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Remediate blue sheath.
- Illegible nameplate, severe corrosion, suggest replacement.
- Verify I.S. barrier installation

Reviewed by: <i>N. GREEN</i>
Date: <i>23/9/11</i>
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: FT-48A	Asset: METER RUN # 2
Circuit ID: 3625	Physical location: CHANNEL ISLAND.
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) DIFFERENTIAL PRESSURE TX	Type of protection: (d, e, i, n, p etc) 19
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) 11C
Full model number: 3051P02A22A1AM5I7L404	Temp class: (T1-T6) T6
Serial number: 0459797	Certificate number: AUS EX 1249X ✓
IP Class ?	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1	ADAPTOR gland-2	others
Gland manufacturer:	ALCO		BUNG
Model:	NG 203		
Gland type of protection: (d, e)	NO CERT	NO CERT	NO CERT

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	⊗
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 Entry calculation/documentation is available	i	X	X

LOOSE G-BANDS

	Applicable to protection type:	Circle as checked	
		Internal	External
B Installation			
1 Type of cable is appropriate, cables are undamaged	all	X	⊗
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	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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

UV + CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>D. WILLYAM</i> Date: <i>9/2/11</i>	Supervisor	Client (write): Inspector Date:
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Device ID or tag

Action required to make device compliant:

- Tighten loose gland
- Remediate blue sheath + provide cable support.

Reviewed by: *N. GREEN*
Date: *23/9/11*
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: FT-48 FT8A	Asset: METER RUN # 2
Circuit ID:	Physical location: CHANEL ISLAND
Area classification:	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) ^{DIFF APPL.} FLOW TRANSMITTER	Type of protection: (d, e, i, n, p etc) Ex ia
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIC
Full model number: 30S (PD2A22A1AM517L494)	Temp class: (T1-T6) T540°C T4 (70°C)
Serial number: 045 9796	Certificate number: AUS Ex 1249x ✓
IP Class ?	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2 ^{APPROX}	others ^{BUNK}
Gland manufacturer:	ALCO		
Model:	W6FD3		
Gland type of protection: (d,e)	NO CERT	NO CERT	NO CERT

Inspection

		Applicable to protection type:	Internal	External	
A Equipment					
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	⊗	CIRCUIT ID
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	X	⊗	RE TERMINATE
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	⊗	
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X	⊗	
14	Entropy calculation/documentation is available	i	X	X	
B Installation					
1	Type of cable is appropriate, cables are undamaged	all	X	⊗	UV + CABLE SUPPORT
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 cross section	all	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Cable I.P. required.
- Re-terminate cable @ gland
- Remediate blue sheath + provide cable support.

Reviewed by: *N. GREEN*
Date: *23/9/11*
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: DT-48	Asset: METER RUN 2
Circuit ID: J027	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE TRANSMITTER	Type of protection: (d, e, i, n, p etc) EX-TC CLASS I DIV 2 GROUP A B C D
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) ATE
Full model number: 3051PGSAZZA1AM5I7L4	Temp class: (T1-T6) T5 (100°C), T4 (70°C)
Serial number: 045 9809	Certificate number: AUSEX 1249X
IP Class E ?	Test authority: (BAS, PTB, SAA etc)

Number of cables: _____

For each cable entry	gland 1	ADAPTOR gland 2	others
Gland manufacturer:	ALCO		BUNGE
Model:	WG 203		
Gland type of protection: (d,e)		NO CERT	NO CERT RUSTY

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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

	Applicable to protection type:	Circle as checked	
		Internal	External
B Installation			
1 Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

LOOSE GLAND

UN + LOOSE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>7/19/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Tighten cable gland
- Remediate glue sheath and provide cable support.
- Device contains nil AUS Ex certification. Conformity assessment or device replacement required.

Reviewed by: *N. GIBSON*
Date: *27/9/11*
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\sitzler\company operations\darwin\lenders\bsbj11\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: <u>(TIT-48) -</u>	Asset: <u>METER RUN # 2</u>
Circuit ID: <u>-</u>	Physical location: <u>CHANEL ISLAND</u>
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) <u>TEMPERATURE TRANSMITTER</u>	Type of protection: (d, e, i, n, p etc) <u>Ex Ia</u>
Manufacturer: <u>ROSEMOUNT</u>	Gas group: (IIA/B/C) <u>IIC</u>
Full model number: <u>3144PDI1I7MSFSQ4</u>	Temp class: (T1-T6) <u>T6 (50°C) T5 (75°C)</u>
Serial number: <u>02443228</u>	Certificate number: <u>AUS EX 023194X 12C Ex 07.000 2X</u>
IP Class <u>66/68.</u>	Test authority: (BAS, PTB, SAA etc)

Number of cables: 2.

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	<u>ALPHA W20 R20</u>	<u>90° BLOW ADAPTOR FLEX</u>	<u>ADAPTOR X2</u>
Model:	<u>" "</u>	<u>" "</u>	<u>" "</u>
Gland type of protection: (d,e)	<u>Exd</u>	<u>NO CERT</u>	<u>Exd</u>

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entity calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

EQUIP CIRCUIT

IS LABEL

UV + CABLE SUPPORT.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>D. WILLIAMS</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required
- Blue cable sheath + cable support required.

Reviewed by: <i>N. GREEN</i>
Date: <i>23/9/11</i>
Priority:

Comments:
All action items now completed: <input type="checkbox"/>
Job closed: <input type="checkbox"/>

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: TE-48 ✓	Asset: METER RUN 2
Circuit ID: -	Physical location: UTANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMP ELEMENT.	Type of protection: (d, e, i, n, p etc) Exde
Manufacturer: TCA	Gas group: (IIA/B/C) II C
Full model number: TC20SPRAA	Temp class: (T1-T6) T6
Serial number: 680108	Certificate number: IECEx TSA06-0010
IP Class 66	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:			
Model:	ALCHA WZOM20		
Gland type of protection: (d,e)	Ex d		

Inspection

	A Equipment	Applicable to protection type:	Circle as checked	
			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	⊗
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	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	⊗
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X	⊗
14	Entropy calculation/documentation is available	i	X	X
B Installation				
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	X	
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

~~IS LABEL~~
CIRCUIT

IS LABEL

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>D. H. Green</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Cable I.D. required
- Blue cable sheath required.

Reviewed by: *N. Green*
 Date: *23/9/11*
 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: ISSB-2	Asset: METER RUN 1/2
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (tight, JB, Motor) SB	Type of protection: (d,e, i, n, p, etc) Ex ia
Manufacturer: CHOUSE-HENDS	Gas group: (IIA/B/C) IIc
Full model number: WDO 2.5	Temp class: (T1-T6) T6
Serial number:	Certificate number: NOT SAA APPROVED
IP Class 66	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:			
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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	⊗
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	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	⊗
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	⊗
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 cross section	all	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 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	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)	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	p	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	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	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Corrosion

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- " I.S. circuits inside " label required.
- External corrosion, internal inspection required.
- Remediate w/ damaged sheath + support cables.

Reviewed by: <i>N. GREEN</i>
Date: <i>23/9/11</i>
Priority:

Comments:
All action items now completed: <input type="checkbox"/>
Job closed: <input type="checkbox"/>

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



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Specifications

General

Device ID or tag: LSHH-47147A	Asset: FS-2
Circuit ID: 5016? / 5017	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) HIGH HIGH LEVEL SWITCH	Type of protection: (d,e, i, n, p etc) EX d
Manufacturer: MURPHY	Gas group: (IIA/B/C) IIB
Full model number: L-1200 DPDT	Temp class: (T1-T6) T6
Serial number: ?	Certificate number: AUS Ex 609
IP Class ?	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry	gland 1	ADAPTOR gland 2	others
Gland manufacturer:	ALCO		BUNG
Model:	W6203		
Gland type of protection: (d,e)		NO CERT	NO CERT

JO
NO CERT

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

CIRCUIT EQUIP

CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	⊗ CORROSION
2	No undue accumulation of dust or dirt	all	X	⊗
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable ID¹⁵ required (1 cable only).
- Provide cable support.
- Verify I.S. barrier installation
- Surface corrosion visible.

Reviewed by: *N. GREEN*
Date: *23/9/11*
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: DPT-47 POT	Asset: FS 2
Circuit ID: J015	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE DIFFERENTIAL TRANSMITTER	Type of protection: (d,e, i, n, p etc) EX L0
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIc
Full model number: 305LC02AZ2A1A04MS I7	Temp class: (T1-T6) T5 (40°C) T4 (70°C)
Serial number: 232133	Certificate number: AUS Ex 1249X
IP Class ?	Test authority: (BAS, PTB, SAA etc)

NOT CLEAR

Number of cables:

For each cable entry

	gland 1	ADAPTOR gland 2	others
Gland manufacturer:	ALCO		DUNG
Model:	FLPW 204		
Gland type of protection: (d,e)		NO CRAT	NO CRAT.

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entity calculation/documentation is available	i	X

CANCELLED AS PDI 47

EGG

BLUE SWEAT

B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

OU + CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>D Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Remediate blue sheath + support cable.
- Obtain Ex rating nameplate from vendor, review as required.

Reviewed by: <i>N. GREEN</i>
Date: <i>27/9/11</i>
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: TSL-57	Asset: MR 1/2 SKID OUTLET
Circuit ID: J018	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) LOW TEMPERATURE SWITCH	Type of protection: (d,e, i, n, p etc) EX d
Manufacturer: AS ELECTROFT	Gas group: (IIA/B/C) II B
Full model number: 17	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 547
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry



	gland 1	gland 2 90° BEND ELBOW	others ADAPTER
Gland manufacturer:	?		
Model:			
Gland type of protection: (d,e)		NO CERT	NO CERT

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entity calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Remediate blue cable sheath.
- Verify I.S. barrier installation.
- Illegible nameplate, corrosion, suggest replacement.

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
 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: PSL-58	Asset: MR1/2 SLID OUTLET
Circuit ID: J019	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) LOW PRESSURE SWITCH	Type of protection: (d,e, i, n, p etc) EX d
Manufacturer: ASHCROFT	Gas group: (IIA/B/C) II B
Full model number: PT	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 547
IP Class	Test authority: (BAS, PTB, SAA etc)

Not Legible

Number of cables: **1**

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO		ADAPTOR
Model:	W6203		
Gland type of protection: (d,e)	NO CERT		NO CERT

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entity calculation/documentation is available	i	X

ISLATH. ?

B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

WU + CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Corrosion

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>D Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Remediate blue sheath + support cable
- Verify I.S. barrier installation.
- Illegible nameplate, corrosion, suggest replacement.

Reviewed by: <i>N. GREEN</i>
Date: <i>23/9/11</i>
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: PSW 5913	Asset: METER RUN 1/2 OUTLET.
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE SWITCH	Type of protection: (d,e, i, n, p etc)	} NA
Manufacturer: ALCO BRADLEY	Gas group: (IIA/B/C)	
Full model number: 836T-T256J	Temp class: (T1-T6)	
Serial number:	Certificate number:	
IP Class 66.	Test authority: (BAS, PTB, SAA etc)	

Number of cables:

For each cable entry	gland 1	ADAPTOR gland 2	others
Gland manufacturer:	ALCO		
Model:	W&Z 22		
Gland type of protection: (d,e)	NO CERT.	NO CERT.	

Inspection

		Applicable to protection type:	Internal	External	
A Equipment					
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	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	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	Entropy calculation/documentation is available	i	X	X	
B Installation					
1	Type of cable is appropriate, cables are undamaged	all	X	X	OV + CABLE 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	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		
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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>[Signature]</i>	Supervisor	Client (write): Inspector
Date: <i>19/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Circuit I.D. required.
- Remediate blue sheath + support cable.
- Verify I.S. barrier installation.

Reviewed by: *N. Gibson*
 Date: *23/9/11*
 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: PSH-59 A	Asset: MR 1/2 I/O OUTLET
Circuit ID: J020	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) HIGH PRESSURE SWITCH	Type of protection: (d,e, i, n, p etc)
Manufacturer: ALLEN-BRADLEY	Gas group: (IIA/B/C)
Full model number: BUL 836T-T236S	Temp class: (T1-T6)
Serial number:	Certificate number: NOT SAA APPROVED
IP Class 66.	Test authority: (BAS, PTB, SAA etc)

NA.

Number of cables:

For each cable entry	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	?		
Model:			
Gland type of protection: (d,e)			NO LEFT

Inspection

Circle as checked

		Applicable to protection type:	Internal	External
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

BEWE STANDARDS ?

UV F. LABEL SURVEILLANT.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Remediate blue sheath + support cable.
- Verify I.S. barrier 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
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: TE-56	Asset: M.R. 1/2 OUTLET
Circuit ID: T029	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMPERATURE TRANSDUCER ELEMENT	Type of protection: (d, e, i, n, p etc) Ex d
Manufacturer: ASHCROFT	Gas group: (IIA/B/C) HB
Full model number: T7	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 547
IP Class	Test authority: (BAS, PTB, SAA etc)

*NO
DETAIL*

Number of cables: 1

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	?		
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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	⊗
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	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	⊗
13 Safety barriers/isolators installed as per certification and securely earthed where required	i	X	⊗
14 Entity calculation/documentation is available	i	X	X

*EWIP
Gases*

TRUCK (UV)

	Applicable to protection type:	Circle as checked	
		Internal	External
B Installation			
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	X	
5 Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

*UV +
CABLE
SUPPORT.*

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Corrosion

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/14</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment I.P. required
- Remediate blue heath + support cable.
- Surface corrosion visible.

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
 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: PT-61	Asset: MR 1/2 SILO OUTLET.
Circuit ID: JD 32	Physical location: CHANNEL ISLAND
Area classification :	Environment: {hot?}

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE TRANSMITTER	Type of protection: (d, e, i, n, p etc) EX d Eia
Manufacturer: ASHCROFT ROSSMOUNT	Gas group: (IIA/B/C) IB IIC
Full model number: PT 305TPG4A2B21R34K	Temp class: (T1-T6) T6 T5
Serial number: 01609701 7MST1	Certificate number: AUSEX 547 AUSEX 1269X
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	ALCO	KEQMT	
Model:	NK 203	PA-D	
Gland type of protection: (d,e)	NO CERT		

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

LOOSE GLAND

UV + CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>D. Williams</i>	Supervisor	Client (write): Inspector
Date: <i>9/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Tighten loose gland
- Remediate blue sheath + support cable.

Reviewed by: *N. GREEN*
Date: *23/9/11*
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: <u>ZSC-100 / ZSO-100</u>	Asset: <u>SDV-100 UNIT 7 SKID INLET.</u>
Circuit ID: <u>510T</u>	Physical location: <u>CHANEL ISLAND</u>
Area classification:	Environment: (hot?) <u>OUTDOOR</u>

Data from Label

Apparatus type: (light, JB, Motor) <u>VALVE LIMIT SWITCH</u>	Type of protection: (d, e, i, n, p etc) <u>Ex d</u> <u>NO CERTIFICATION</u>
Manufacturer: <u>BETTS WESTLOCK</u>	Gas group: (IIA/B/C) <u>11B</u>
Full model number: <u>3B-021 3449 BY2200</u>	Temp class: (T1-T6) <u>T6</u>
Serial number: <u>-000</u>	Certificate number: <u>AUS Ex 95</u>
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: 1

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	<u>ORSCORP</u>		
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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	X
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	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 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	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)	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	p	X	
17 Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

OPEN ENTRY

i.s.?

CABLE SUPPORT ON PIPE

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Weather

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector Date: 10/9/11	Supervisor N. GREEN	Client (write): Inspector Date:
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Device ID or tag

Action required to make device compliant:

- Provide support to cable resting upon pipework.
- Nil Ex certification available.
- Open entry requiring blank plug.
- Review installation method of protection which currently has nil Ex protection unless I.S. barrier installed.
- Equipment I.D. required.

Reviewed by: N. GREEN
Date: 26/9/11
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: <u>SVC-100 / SVO-100</u>	Asset: <u>SOU-100 UNIT 7 SICID IMLET</u>
Circuit ID: <u>-</u>	Physical location: <u>CHANNEL ISLAND</u>
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) <u>SOLENOID VALVE</u>	Type of protection: (d,e, i, n, p, etc) <u>Ex d</u>
Manufacturer: <u>BIFOLD</u>	Gas group: (IIA/B/C) <u>IIIC</u>
Full model number: <u>38-961</u>	Temp class: (T1-T6) <u>T6</u>
Serial number: <u>0100-0694/0100-0692</u>	Certificate number: <u>ABS Ex 01-1551X</u>
IP Class <u>IP6</u>	Test authority: (BAS, PTB, SAA etc) <u>BASEGFA</u>

Number of cables: 2

96D1079

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	<u>ALCO</u>	<u>ALCO</u>	
Model:	<u>WG 202</u>	<u>WG 202</u>	
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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

CIRCUIT - EQ

B Installation			
1 Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Equipment & cable I.D required
- N:1 Ex certification to AUS. Standards. Conformity assessment or equipment replacement required.
- Replace uncertified cable glands.

Reviewed by: <i>N. GREEN</i>
Date: <i>24/9/11</i>
Priority:

Comments:
All action items now completed: <input type="checkbox"/>
Job closed: <input type="checkbox"/>

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: (JB - UNKNOWN) -	Asset: SDV SBV 100 JB 07 5140 INLET
Circuit ID: J100	Physical location: CHANNEL
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB	Type of protection: (d,e, i, n, p etc) Ex d
Manufacturer: GOVAN	Gas group: (IIA/B/C) II B
Full model number: FW4W	Temp class: (T1-T6) T6
Serial number: -	Certificate number: AUS6157
IP Class 65	Test authority: (BAS, PTB, SAA etc)

Number of cables: **3**

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO ?		
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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)
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	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	Entropy calculation/documentation is available	i	X	X

B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	(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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>14/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment I.O. required
- Verify ex ratings of cable glands.

Reviewed by: <i>N. GREEN</i>
Date: <i>26/9/11</i>
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: (JR-UNKNOWN)	Asset: UNIT 7 SKID - ENG
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TB	Type of protection: (d,e, i, n, p etc) Ex d
Manufacturer: CROUSE HINDS	Gas group: (IIA/B/C) IIc
Full model number: GUA	Temp class: (T1-T6) T6
Serial number:	Certificate number: AUS Ex 319
IP Class 66/67	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:			
Model:			
Gland type of protection: (d,e)			

Inspection

		Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)
No:
 Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i> Supervisor Date: <i>10/19/11</i>	Client (write): Inspector Date:
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Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required.
- Provide conduit support to black sheathed cable.
- Provide blue sheath to black sheathed cable.

Reviewed by: <i>N. GREEN</i> Date: <i>10/19/11</i> Priority:

Comments:

All action items now completed:
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 other Ex devices



Based on AS/NZS 60079 part 17

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photo 884/885

Specifications

General

Device ID or tag: DPT - NO TAG	Asset: UNIT #7 STANDBY ROW
Circuit ID: -	Physical location: CHANNEL 15
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) DIFF. PRES. TRANC.	Type of protection: (d, e, i, n, p etc)
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C)
Full model number: SD51 CD3A02A1BMSK7 55	Temp class: (T1-T6)
Serial number: RSD880414	Certificate number:
IP Class -	Test authority: (BAS, PTB, SAA etc)

INACCESSIBLE.

Number of cables: **1**

For each cable entry

	gland 1 x1	gland 2	others RUB
Gland manufacturer:	2		ROEMPT
Model:			PA-D
Gland type of protection: (d,e)			d

Inspection

	Applicable to-protection type:	Circle as checked		
		Internal	External	
A Equipment				
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	⊗
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	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	⊗
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X	⊗
14	Entropy calculation/documentation is available	i	X	X
B Installation				
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	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	
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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required
- Provide cable support
- Remediate Blue sheath.
- Verify I.S. barrier installed + Ex rating of device.

Reviewed by: <i>N. GREEN</i>
Date: <i>26/9/11</i>
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

Device ID or tag: (250/25C 115) -	Asset: UNIT # 7 STANBY RUN
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?) OUTDOOR

Data from Label	
Apparatus type: (light, JB, Motor) LIMIT SWITCH	Type of protection: (d, e, i, n, p etc)
Manufacturer: WEST LOCK	Gas group: (IIA/B/C)
Full model number: 3449 - BY - ... - 2300	Temp class: (T1-T6)
Serial number: -000	Certificate number:
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables:

For each cable entry	gland 1	BUNG gland 2	others ADAPTOR
Gland manufacturer:	ALLO ?	UNCERTIFIED	CROUSE HINDS
Model:			AMN11
Gland type of protection: (d,e)			Ex d

Inspection → **Circle as checked**

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	X
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	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	Entropy calculation/documentation is available	i	X	X

B Installation		Applicable to protection type:	Internal	External
1	Type of cable is appropriate, cables are undamaged	all	X	(X)
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required
- Cable support required
- Nil Ex certification available, further review of protection method required.
- Uncertified bung installed.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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: <u>PIT-147</u>	Asset: <u>UNIT 7</u> <u>STANDBY RUN</u>
Circuit ID: <u>NONE</u>	Physical location: <u>CHANNEL ISLAND</u>
Area classification :	Environment: (hot?) <u>OUTDOOR SUN SHADE</u>

Data from Label

Apparatus type: (light, B, Motor) <u>PRESSURE TRANSMITTER</u>	Type of protection: (d, e, i, n, p etc) <u>EX d</u>
Manufacturer: <u>ROSEMOUNT</u>	Gas group: (IIA/B/C) <u>IIC</u>
Full model number: <u>30SLTA 9A2B 2IBS 4MS E7</u>	Temp class: (T1-T6) <u>T4(70°C), T5 (40°C)</u>
Serial number: <u>RS0619849</u>	Certificate number: <u>AUS EX 1249X/1347X</u>
IP Class <u>IP65</u>	Test authority: (BAS, PTB, SAA etc)

"PARTIALLY LEGIBLE"

INDICATIVE ONLY

Number of cables: 1

For each cable entry

	gland 1	ADAPTOR gland 2	others
Gland manufacturer:	<u>ALCO</u>	<u>ROSEMOUNT</u>	<u>BUNG</u>
Model:	<u>FLW 202</u>	<u>ISSIP</u>	<u>NON CERTIFIED</u>
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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 Enty calculation/documentation is available	i	X	X

CIRC REC DOC TAG

? BLUE SIGNATURE

	Applicable to protection type:	Circle as checked	
		Internal	External
B Installation			
1 Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	<input checked="" type="checkbox"/>

Dirt / insect!

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cct J.O. required
- Remediate sheath to suit installation of Ex i or Ex d.
- Nameplate partially legible + appeared flameproof only, rather than I.S. Hence Ex d considered.
- Replace uncertified plug.
- Flange path @ gland compromised by dust / insect nesting.
↳ Cleaning required @ gland entry.
- Verify I.S. versus flameproof method of protection.

Reviewed by: <i>N. GREEN</i>
Date: <i>26/9/11</i>
Priority:

Comments:
All action items now completed: <input type="checkbox"/>
Job closed: <input type="checkbox"/>

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: (FE 122A 1B) -	Asset: UNIT 7 STANDBY RUN
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?) OUTDOOR

Data from Label

Apparatus type: (light, JB, Motor) TURBIDE FLOWMETER	Type of protection: (d,e, i, n, p etc) -
Manufacturer: TRZ - ELSTER	Gas group: (IIA/B/C) -
Full model number: G400 DNDD ANSI 600	Temp class: (T1-T6) -
Serial number: 20046289 (2000)	Certificate number: -
IP Class -	Test authority: (BAS, PTB, SAA etc) -

ILLEGIBLE DUE TO COVER

Number of cables:

For each cable entry	gland 1	gland 2	others
Gland manufacturer:			
Model:	-		
Gland type of protection: (d,e)	-		

VENDOR ADAPTOR TRANSMITTER

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

-EQ - CCT

?

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector Date: 10/9/11	Supervisor N. GREEN	Client (write): Inspector Date:
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Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required
- Remove sun cover to identify Ex certification and method of protection.

Reviewed by: N. GREEN
Date: 26/9/11
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: PIT-123	Asset: UNIT 7 STANDBY RUN
Circuit ID: NONE	Physical location: CHANNEL ISLAND
Area classification: ZONE 2	Environment: (hot?) OUTDOOR - SUN SHADE

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE TRANSMITTER	Type of protection: (d, e, i, n, p etc) EX-ia
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIc
Full model number: 3051T64A2B21B64E7M5Q4	Temp class: (T1-T6) T5(40°C) T4 (70°C)
Serial number: R30648148	Certificate number: AUS Ex 1249X
IP Class 65	Test authority: (BAS, PTB, SAA etc)

Number of cables: **1**

For each cable entry

	gland 1	gland 2	others
Gland manufacturer:	KLCO		REOAPT
Model:	FLP W 202		M20
Gland type of protection: (d,e)			d

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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
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	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 Enty calculation/documentation is available	i	X	X

B Installation			
	Applicable to protection type:	Internal	External
1 Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

SURFACE CORROSION

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.O. required
- Flameproof device installed with 4ue sheath. Further investigation required to verify I.S. barrier installation.

Reviewed by: <i>N. GREEN</i>
Date: <i>26/9/11</i>
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: TT 124 ✓	Asset: UNIT 7 STANDBY
Circuit ID: NONE	Physical location: CHANNEL ISLAND
Area classification:	Environment: (hot?) OUTDOOR

Data from Label

LABEL SUN FADED

Apparatus type: (light, JB Motor) TEMP TX	Type of protection: (d,e,i,n,p etc) d
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIC
Full model number: 3144 D2E7M5 Q14	Temp class: (T1-T6) T6
Serial number: 063 99 15	Certificate number: AUSEX 3271
IP Class IP 66/68	Test authority: (BAS, PTB, SAA etc)

Number of cables: ①

For each cable entry

	gland 1	gland 2	others ADAPT
Gland manufacturer:	ALCO		ROSEMOUNT
Model:	FLPW 207		END RFF EP
Gland type of protection: (d,e)			EXD

Inspection

		Circle as checked	
		Applicable to protection type:	
			Internal External
A Equipment			
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
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 X
7	Lamp rating, type and position correct	all	X X
8	Electrical connections are tight	all	X X
9	Hermetically sealed devices are undamaged	n	X X
10	Restricted breathing enclosure is satisfactory to enclosure and/or covers	n	X X
11	Motor fans have sufficient clearance	motors only	X 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	Entropy calculation/documentation is available	i	X X
B Installation			
1	Type of cable is appropriate, cables are undamaged	all	X X
2	Sealing of ducts and/or conduits is satisfactory	all	X X
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	X 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 X
7	Insulation resistance is satisfactory (check only during initial inspection)	all	X X
8	Automatic electrical protective devices are set correctly and operate within permitted limits	all	X X
9	Special certification conditions U,X or B have been complied with	all	X X
10	Cables/spare cores are terminated satisfactorily	all	X 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)	p	X X
14	Protective gas flow/pressure is adequate	p	X X
15	Pressure and/or flow indicators, alarms and interlocks function correctly	p	X X
16	Pre-energising purge period is adequate	p	X X
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X X

CIR

CABLE DAMAGED
CABLE SUPPORT REQ'D

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>28/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Cable ID required
- Re-terminate at cable gland with damaged sheath.
- Flameproof device installed to blue sheath. Verify I.S. barriers.
- Provide cable support and sun cover.
- Replace faded Ex label.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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: JB-001	Asset: UNIT # 7 METER SK10
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB	Type of protection: (d,e, i, n, p etc) ia
Manufacturer: CROUSE HINDS	Gas group: (IIA/B/C) IIC
Full model number: JBIS455-1GP-L083261	Temp class: (T1-T6) T6
Serial number:	Certificate number: -
IP Class IP66	Test authority: (BAS, PTB, SAA etc) -

Number of cables: **12**

For each cable entry	gland 1	gland 2	others
Gland manufacturer:			
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

REMOVE LABEL

TERMINATE

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

Corrosion

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- "I.S. circuit Inside" label required
- Blue 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: <i>N. GREEN</i>
Date: <i>26/9/11</i>
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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PHOTO 883

Specifications

General

Device ID or tag: DPT-XXX NO TAG	Asset: UNIT 7 DUTY RUN FILTER
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE DIFFERENTIAL TRANSMITTER	Type of protection: (d,e, i, n, p etc) EX IIC	INDICATIVE ONLY
Manufacturer: HOSEMOUNT	Gas group: (IIA/B/C) IIC	
Full model number: BOSI CD3A02A1BMSK755	Temp class: (T1-T6) T5(40°C), T4(70°C)	
Serial number: RSD 880413	Certificate number: AUS Ex. 1249X	
IP Class 65	Test authority: (BAS, PTB, SAA etc)	

Number of cables: ①

For each cable entry

	gland 1	gland 2	others BUNG
Gland manufacturer:	NOT ACCESSIBLE		REDAPT
Model:			PAOM30 SIRA
Gland type of protection: (d,e)			d

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X

B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

EQ ID

CABLE DAMAGED @ Glands PROVIDE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required.
- Retermenate exposed armour at cable gland.
- Provide cable support.

Reviewed by: <i>N. GREEN</i>
Date: <i>24/9/11</i>
Priority:

Comments:

<p>All action items now completed: <input type="checkbox"/></p> <p>Job closed: <input type="checkbox"/></p>

<p>Device now fully compliant, spreadsheet register has been updated</p> <p>Supervisor (write):</p> <p>Date:</p>
--

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\fy1 - 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: (250/252 101) -	Asset: UNIT # 7 DUTY RUN
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) LIMIT SWITCH	Type of protection: (d, e, i, n, p etc)
Manufacturer: WESTLOCK	Gas group: (IIA/B/C)
Full model number: 3449-BY-00-2200-000	Temp class: (T1-T6)
Serial number: -	Certificate number:
IP Class -	Test authority: (BAS, PTB, SAA etc)

SEE DETAIL

Number of cables: **1**

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	?		
Model:			
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X
B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

-EQ -CET

CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.O. required.
- Provide cable support.
- Nil Ex certification, verify installation method of protection.

Reviewed by: <i>N. GREEN</i>
Date: <i>10/9/11</i>
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\sitzler\company operations\darwin\enders\bsbj11\y1 - 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

PHOTO ~~###~~

Specifications

General

Device ID or tag: (PIT-145) -	Asset: UNIT 7 DUTY RUN
Circuit ID: NONE -	Physical location: CHANEL ISLAND
Area classification:	Environment: (hot?) OUTDOOR SUNSHADE

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE TRANSMITTER	Type of protection: (d,e, i, n, p etc) Ex ia	Exd IIC TS@40°C AUS Ex 1249X AUS Ex 1347X
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIC	
Full model number: 3055PCA4A2B21884MSE7	Temp class: (T1-T6) T5(40°C) T4(70°C)	
Serial number: RS0608416	Certificate number: AUS Ex 1249X	
IP Class 65	Test authority: (BAS, PTB, SAA etc)	

Number of cables: (1)

For each cable entry

	gland 1	ADAPTOR gland 2	others BUNG
Gland manufacturer:	ALCO	ROSEMOUNT	REPAIRED
Model:	FLPW 202	IFFEP	UNCERTIFIED
Gland type of protection: (d,e)		d	Ex d?

Inspection

Circle as checked

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
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)
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	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

	Applicable to protection type:	Circle as checked	
		Internal	External
B Installation			
1 Type of cable is appropriate, cables are undamaged	all	X	(X)
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	(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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i> Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- > Equipment + cable J.O. required
- Re-terminate cable due to damaged sheath @ gland.
- Remove sun cover and verify plug rating.
- Verify End installation by confirming nil J.S. barrier. Remove the sheath as required.

Reviewed by: *N. GREEN*
 Date: *26/9/11*
 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: FE-108	Asset: UNIT #7 DUTY RUN
Circuit ID:	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor)	Type of protection: (d,e, i, n, p etc) ib
Manufacturer: MICROMOTION - ROSEMOUNT	Gas group: (IIA/B/C) II B
Full model number: CHFIP0M 9999 NS 6540	Temp class: (T1-T6) T6
Serial number: 395281	Certificate number: AUS 1390X
IP Class	Test authority: (BAS, PTB, SAA etc)

Number of cables: **(1)**

** Verify later **

For each cable entry



	gland 1	gland 2	others ADAPTOR
Gland manufacturer:	ALCO		UNKNOWN
Model:	A-20A		
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	(X)
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	(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 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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	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: 10/9/11		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.O. required.
- Verify matching sensor/Tx number requirements with vendor

Reviewed by: N. GREEN
 Date: 26/9/11
 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: (FI-122A 108) -	Asset: UNIT 7 DUTY RUN
Circuit ID: -	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?) OUTDOOR -

Data from Label

Apparatus type: (light, JB, Motor) MASS FLOW METERING	Type of protection: (d,e,i,n,p etc) Ex d (ib)
Manufacturer: ELITE	Gas group: (IIA/B/C) IIB/IIIc
Full model number: BFT 9739 E555A	Temp class: (T1-T6) T6
Serial number: 354913 2054909	Certificate number: AUS. Ex. 1390X
IP Class -	Test authority: (BAS, PTB, SAA etc)

Number of cables: **3**

*** verify sensor ***

For each cable entry

	gland 1	gland 2 X 2	others
Gland manufacturer:	ALCO	ALCO	
Model:	GA-20A	FLP 204	
Gland type of protection: (d,e)		Ex-d	

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X

- CCT - EA

B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<i>Ⓟ</i>
2	No undue accumulation of dust or dirt	all	X	<i>Ⓟ</i>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes

List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Equipment + cable I.D. required
- Verify matching sensor + transmitter requirements with vendor.

Reviewed by: <i>N. GREEN</i>
Date: <i>26/9/11</i>
Priority:

Comments:
All action items now completed: <input type="checkbox"/>
Job closed: <input type="checkbox"/>

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: PIT-111	Asset: UNIT 7 OILY RUN
Circuit ID: NONE	Physical location: CHANEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) PRESSURE TRANSMITTER	Type of protection: (d,e, i, n, p etc) EX Ia	Exd IIC T6 40°C AusEx 1347X
Manufacturer: HOSEMOUNT	Gas group: (IIA/B/C) IIC	
Full model number: 3051TC4A2B21884E7MSR7	Temp class: (T1-T6) T5 (90°C), T4 (70°C)	
Serial number: RS0648146	Certificate number: AUS/EX 1249X	
IP Class 65	Test authority: (BAS, PTB, SAA etc)	

Number of cables: **1**

For each cable entry

	gland 1	gland 2	others BUNG
Gland manufacturer:	ALCO		REOAPT
Model:	FLPW 207		M20
Gland type of protection: (d,e)			EX Ia

Inspection

IIC BAS No 831218 u
 Circle as checked

A Equipment		Applicable to protection type:	Circle as checked	
			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
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	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	Entropy calculation/documentation is available	i	X	X

CIRCLE RECOMMENDED DOCTAG

B Installation		Applicable to protection type:	Internal	External
1	Type of cable is appropriate, cables are undamaged			
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

SUPPORT.

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

 Yes:

List action required

Contractor (write): Inspector N. GREEN Supervisor Date: 10/9/11	Client (write): Inspector Date:
---	---

Device ID or tag

Action required to make device compliant:

- Provide equipment + cable I.O. (equipment stamped).
- cable support required.
- Replace uncodified dug.

 Reviewed by: **N. GREEN**

 Date: **26/9/11**

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: TIT-149	Asset: UNIT 7 DUTY RUN
Circuit ID: NAN	Physical location: CHANNEL ISLAND
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) TEMPERATURE TRANSMITTER	Type of protection: (d, e, i, n, p etc) EX ia
Manufacturer: ROSEMOUNT	Gas group: (IIA/B/C) IIc
Full model number: 314402E7MSX1	Temp class: (T1-T6) T6 (50°C) T5 (75°C)
Serial number: 0640152	Certificate number: AUS Ex: 3270X
IP Class 68	Test authority: (BAS, PTB, SAA etc)

NO INFORMATION

INDICATIVE

Number of cables: **1**

For each cable entry	gland 1	gland 2	others
Gland manufacturer:	ALCO		ADAPTOR ROSEMOUNT
Model:	FLW 202		
Gland type of protection: (d,e)			

Inspection

	Applicable to protection type:	Circle as checked	
		Internal	External
A Equipment			
1	Equipment (incl group and temp class) is appropriate for area classification	all	X
2	Equipment ID or circuit ID is correct	all	X
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	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
13	Safety barriers/isolators installed as per certification and securely earthed where required	i	X
14	Entropy calculation/documentation is available	i	X

CIRC

B Installation			
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	X
5	Earthing and bonding connections are tight, in good condition and of sufficient cross section	all	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 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	d	X
12	Ducts, pipes and enclosures are in good condition	p	X
13	Protective gas is substantially free from contaminants (water, oil, dirt)	p	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

CABLE SUPPORT

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	<input checked="" type="checkbox"/>
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Circuit I.O required
- Cable support required.
- Verify I.S. barrier installed
- Obtain replacement Ex nameplate from vendor.

Reviewed by: *N. GREEN*
Date: *26/9/11*
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\sitzler\company operations\dwain\enders\sbj11\yfy1 - 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: <u>PIT-113</u>	Asset: <u>UNC # 7 LINE PRESSURE.</u>
Circuit ID: <u>-</u>	Physical location: <u>CHANEL ISLAND</u>
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) <u>PRESSURE TRANSMITTER</u>	Type of protection: (d, e, i, n, p etc) <u>EX / La</u>	Ex d IIC TS (40°C) Aus Ex 1347X
Manufacturer: <u>ROSEMOUNT</u>	Gas group: (IIA/B/C) <u>IIC</u>	
Full model number: <u>3051TG4AZB2J8B4E7M504</u>	Temp class: (T1-T6) <u>T4(70°C) T5 (40°C)</u>	
Serial number: <u>RS0698197</u>	Certificate number: <u>AUS Ex 1249X</u>	
IP Class <u>IP65</u>	Test authority: (BAS, PTB, SAA etc)	

Number of cables: (1)

For each cable entry



	gland 1	gland 2	others
Gland manufacturer:	<u>ALCO</u>		<u>BUNG</u>
Model:	<u>FLPW 202</u>		<u>REOAPT</u>
Gland type of protection: (d,e)			<u>MED EXA</u>

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
2	Sealing of ducts and/or conduits is satisfactory	all	X	X
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	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	
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	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)	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	p	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 documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	
2	No undue accumulation of dust or dirt	all	X	
3	Electrical insulation is clean and dry	all	X	

Faults found? (circle as appropriate)

No:

Yes:

Contractor (write): Inspector Supervisor <i>N. GREEN</i>	Client (write): Inspector
Date: <i>16/9/11</i>	Date:

Device ID or tag

Action required to make device compliant:

- Circuit I.D. required
- Recommend Equipment label in conjunction with nameplate stamp.
- Cable support required.
- Replace uncertified plug.

Reviewed by: *N. GREEN*
Date: *26/9/14*
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: \\data\sitzler\company operations\darwin\tenders\bsbj111\fy1 - 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: JE-002	Asset:
Circuit ID:	Physical location:
Area classification :	Environment: (hot?)

Data from Label

Apparatus type: (light, JB, Motor) JB	Type of protection: (d,e, i, n, p etc) ia
Manufacturer: CROUSE HINDS	Gas group: (IIA/B/C) II C
Full model number: TB15455-1 GP-LD87260	Temp class: (T1-T6) T6
Serial number: -	Certificate number: -
IP Class IP66	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)			

Inspection

	Applicable to protection type:	Circle as checked		
		Internal	External	
A Equipment				
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
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	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	Entropy calculation/documentation is available	i	X	X
B Installation				
1	Type of cable is appropriate, cables are undamaged	all	X	X
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	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 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	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)	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	p	X	
17	Condition of spark/particle barriers of ducts exhausting the gas into hazardous area are satisfactory	p	X	

BLUE + LARA

18	Cables are installed and screens are earthed in accordance with the documentation	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	X	

C Environment

1	Apparatus adequately protected from corrosion, weather, vibration, other	all	X	<input checked="" type="checkbox"/>
2	No undue accumulation of dust or dirt	all	X	X
3	Electrical insulation is clean and dry	all	X	

CO. APPROV.

Faults found? (circle as appropriate)

No:

Yes: List action required

Contractor (write): Inspector <i>N. GREEN</i>	Supervisor	Client (write): Inspector
Date: <i>10/9/11</i>		Date:

Device ID or tag

Action required to make device compliant:

- Provide "I.S. circuits Inside" label.
- Blue sheathing required to cables.
- Severe corrosion at gland plate requires remediation.
- Replace damaged washer to front door locking bolt.

Reviewed by: <i>N. GREEN</i>
Date: <i>26/9/11</i>
Priority:

Comments:

All action items now completed:
 Job closed:

Device now fully compliant, spreadsheet register has been updated

Supervisor (write):

Date:

INSPECTION CHECK SHEET
Intrinsically Safe Ex i



TAG/IDENTIFICATION	DESCRIPTION									
Area Classification - Zone 0 1 2 20 21 22 Non Hazardous - Group I IIA IIB IIC - Temp T1 T2 T3 T4 T5 T6										
Record Name Plate Details							Record other nameplate information that may be relevant			
Manufacturer		Vin		Chin						
Serial No.		Lin		Lin						
Model										
Certificate no.		T		IP						
Certifying authority										
Inspection Type Performed (I=Initial, P=Periodic, S=Sample)						I	P	S		
Inspection Grade Performed (D=Detailed, C=Close, V=Visual)						D	C	V	Detailed requires de-energization	
Equipment Y=OK, N=Not Acceptable, N/A=Not Applicable, N/C=Not Checked							Inspect Grade	Remarks		
Equipment is Australian or IEC Certified	Y	N	N/A	N/C	DCV					
EX markings are suitable for the area	Y	N	N/A	N/C	DCV					
Equipment is clearly marked and has appropriate tag/identification details	Y	N	N/A	N/C	DCV					
Enclosure is not damaged and maintains its weatherproofing	Y	N	N/A	N/C	DCV					
Terminations are tight	Y	N	N/A	N/C	DC					
All unused conductors terminated	Y	N	N/A	N/C	DC					
Bolts, bungs, plugs/blank plates installed and tight	Y	N	N/A	N/C	DCV					
Fuses and lamps are correct rating	Y	N	N/A	N/C	DCV					
No unauthorised modifications (Y=OK)	Y	N	N/A	N/C	DCV					
Installation							Grade	Remarks		
Cable type is as per the documentation	Y	N	N/A	N/C	D					
IS Entity and cable parameters are suitable for installation	Y	N	N/A	N/C	D					
The device is securely mounted	Y	N	N/A	N/C	DC					
Cables/conduits in acceptable condition	Y	N	N/A	N/C	D					
Cables/conduit entry correct, complete, and tight	Y	N	N/A	N/C	DCV					
No excessive vibration present that may cause conductors to work loose (Y=OK)	Y	N	N/A	N/C	DCV					
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 equipotential bonding satisfactory	Y	N	N/A	N/C	D					
Insulation resistance is satisfactory (NB Danger of MEGGER testing HA)	Y	N	N/A	N/C	D					
Cable screens earthed as per documentation (normally one point only)	Y	N	N/A	N/C	D					
Barriers							Grade	Remarks		
Record Safety Barriers manufacturer and model no. (available on device = Y)	Y	N	N/A	N/C	DC					
Equipment is Australian or IEC Certified (Enter certification details in 'Remarks')	Y	N	N/A	N/C	DCV					
Record Safety Barriers certification details (available on device = Y)	Y	N	N/A	N/C	DC					
Safety Barriers are the correct type as per the drawings	Y	N	N/A	N/C	DC					
Safety Barriers are securely connected to the earth bar	Y	N	N/A	N/C	DCV					
Barrier/Isolator terminations are tight	Y	N	N/A	N/C	DCV					
Maximum voltage on the safe side of the barrier/isolator is 240V	Y	N	N/A	N/C	DCV					
IS circuits are all free from external power circuit infiltration	Y	N	N/A	N/C	DCV					
No energy storing devices in excess of the max energy permitted	Y	N	N/A	N/C	DC					
Relays acting as safety barriers are in good condition	Y	N	N/A	N/C	DCV					
Earth continuity from barrier bar to the transformer neutral point is <1ohm	Y	N	N/A	N/C	D		Check one connection at a time			
Environment							Grade	Remarks		
Equipment adequately protected against corrosion, weather, vibration, etc	Y	N	N/A	N/C	DCV					
Dust and dirt on the equipment and cable are within acceptable limit	Y	N	N/A	N/C	DCV					
Special conditions							Grade	Remarks		
Special conditions on certificate are satisfied	Y	N	N/A	N/C	D					
Notes:										
Inspected: _____ Date: _____ Checked: _____ Date: _____										

INSPECTION CHECK SHEET - Increased Safety Ex e

TAG/IDENTIFICATION	DESCRIPTION							
Area Classification - Zone 0 1 2 Non Hazardous - Group I IIA IIB IIC - Temp T1 T2 T3 T4 T5 T6								
Record Name Plate Details					Record other nameplate information that may be relevant			
Manufacturer		KW		FLC				
Serial No.		Volts		RPM				
Model								
Certificate No.		T		IP				
Certifying authority								
Inspection type performed (I=Initial, P=Periodic, S=Sample)					I	P	S	
Inspection Grade Performed (D=Detailed, C=Close, V=Visual)					D	C	V	
Equipment Y=OK, N=Not Acceptable, N/A=Not Applicable, N/C=Not Checked					Inspect Grade		Remarks	
Equipment is Australian or IEC Certified	Y	N	N/A	N/C	DCV			
EX markings are suitable for the area	Y	N	N/A	N/C	DCV			
Equipment is clearly marked and has appropriate tag/identification details	Y	N	N/A	N/C	DCV			
Enclosure is not damaged and maintains its weatherproofing (min IP54)	Y	N	N/A	N/C	DCV			
Enclosure gaskets are in a satisfactory condition	Y	N	N/A	N/C	D			
Bolts, bungs, plugs/blank plates installed and tight	Y	N	N/A	N/C	DCV			
Terminals are sized correctly for the rating	Y	N	N/A	N/C	D			
Conductors > 0.5mm ² for multistranded and 1mm ² for single strand	Y	N	N/A	N/C	D			
No chafing parts that may cause local hot spots (motor fans) (Y=OK)	Y	N	N/A	N/C	D			
Guards are correctly fitted	Y	N	N/A	N/C	D			
No unauthorised modifications (Y=OK)	Y	N	N/A	N/C	DCV			
Lamp rating, type and position are correct	Y	N	N/A	N/C	D			
Installation					Grade		Remarks	
Equipment carries correct circuit identification at switchboard and local isolator	Y	N	N/A	N/C	D			
Effective means of isolation of all live conductors (including neutral)	Y	N	N/A	N/C	D			
Installation is in compliance with documentation	Y	N	N/A	N/C	DC			
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, and tight (Exd or Exe glands used)	Y	N	N/A	N/C	DCV			
Exd glands have additional weatherproofing	Y	N	N/A	N/C	DCV			
Electrical connections are tight	Y	N	N/A	N/C	D			
Creepage and clearance distance are maintained	Y	N	N/A	N/C	D			
All unused conductors terminated in Exe terminals	Y	N	N/A	N/C	D			
Earthing and equipotential bonding satisfactory	Y	N	N/A	N/C	DCV			
Insulation resistance is satisfactory (NB Danger of MEGGER testing HA)	Y	N	N/A	N/C	D			
Motor parameters (Ia/In and te) and TOLs coordinate (record TOL mfr/model)	Y	N	N/A	N/C	D			
Cable Glands and adaptors					Grade		Remarks	
Cable glands details available, record (available=Y, not recorded=N/C)	Y	N	N/A	N/C	DCV			
Cable glands certificate details available, record (available=Y, not recorded=N/C)	Y	N	N/A	N/C	DCV			
Adaptors and plugs details available, record (available=Y, not recorded=N/C)	Y	N	N/A	N/C	DC			
Glands and adaptors Ex markings are suitable for area	Y	N	N/A	N/C	DCV			
Environment					Grade		Remarks	
Equipment adequately protected against corrosion, weather, vibration, etc	Y	N	N/A	N/C	DCV			
Dust and dirt on the equipment and cable are within acceptable limit	Y	N	N/A	N/C	DCV			
Special conditions					Grade		Remarks	
Special conditions on certificate are satisfied	Y	N	N/A	N/C	D			
Notes:								
Inspected: _____ Date: _____ Checked: _____ Date: _____								

Hazardous Area Check Sheet Flameproof Ex d



TAG/IDENTIFICATION	DESCRIPTION												
Area Classification - Zone 0 1 2 Non Hazardous - Group I IIA IIB IIC - Temp T1 T2 T3 T4 T5 T6													
Record Name Plate Details						Record other nameplate information that may be relevant							
Manufacturer		KW		FLC									
Serial No.		Volts		RPM									
Model													
Certificate No.		T		IP									
Certifying authority													
Inspection Type Performed (I=Initial, P=Periodic, S=Sample)								I	P	S			
Inspection Grade Performed (D=Detailed, C=Close, V=Visual)								D	C	V	Detailed requires de-energization		
Equipment Y=OK, N=Not Acceptable, N/A=Not Applicable, N/C=Not Checked								Inspect Grade	Remarks				
Equipment is Australian or IEC Certified								Y	N	N/A	N/C	DCV	
EX markings are suitable for the area								Y	N	N/A	N/C	DCV	
Equipment is clearly marked and has appropriate tag/identification details								Y	N	N/A	N/C	DCV	
Enclosure is not damaged and maintains 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 operate correctly and are tight								Y	N	N/A	N/C	DC	
Bolts, bungs, plugs/blank plates installed and tight								Y	N	N/A	N/C	DCV	
Sealing gaskets and components in acceptable condition								Y	N	N/A	N/C	DCV	
Flange faces are clean and undamaged								Y	N	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 (minimum dimensions 40mm)								Y	N	N/A	N/C	DCV	
No chafing parts that may cause local hot spots (motor fans) (Y=OK)								Y	N	N/A	N/C	D	
Guards are correctly fitted								Y	N	N/A	N/C	D	
Lamp rating, type and position are correct								Y	N	N/A	N/C	D	
Installation								Grade		Remarks			
Equipment carries correct circuit identification at switchboard and local isolator								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, and tight with sufficient threads								Y	N	N/A	N/C	DCV	
Sealing of conduits, ducts or other connections is satisfactory								Y	N	N/A	N/C	D	
Integrity of conduit system and mixed system interface satisfactory								Y	N	N/A	N/C	D	
Earthing and equipotential bonding satisfactory								Y	N	N/A	N/C	DCV	
Insulation resistance is satisfactory (NB Danger of MEGGER testing HA)								Y	N	N/A	N/C	D	
Protection devices (Limit sws, phase rot, TOLs) operate correctly								Y	N	N/A	N/C	D	
Cable Glands and adaptors								Grade		Remarks			
Cable glands details available, record (available=Y, not recorded=N/C)								Y	N	N/A	N/C	DCV	
Cable glands certificate details available, record (available=Y, not recorded=N/C)								Y	N	N/A	N/C	DCV	
Adaptors and plugs details available, record (available=Y, not recorded=N/C)								Y	N	N/A	N/C	D	
Adaptors and plugs have sufficient engaged threads								Y	N	N/A	N/C	DCV	
Glands and adaptors Ex markings are suitable for area								Y	N	N/A	N/C	DCV	
Environment								Grade		Remarks			
Equipment adequately protected against corrosion, weather, vibration, etc								Y	N	N/A	N/C	DCV	
Dust and dirt on the equipment and cable are within acceptable limit								Y	N	N/A	N/C	DCV	
Special conditions								Grade		Remarks			
Special conditions on certificate are satisfied								Y	N	N/A	N/C	D	
Notes:													
Inspected: _____ Date: _____ Checked: _____ Date: _____													

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:

Condition upon receipt:.....

Old repair label details:.....

Reported fault (if any):.....

Repair action:.....

Parts replaced:.....

Test performed:.....

Results:

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	

Certification drawing no(s):.....

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 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 inspection - Yes / No		
Covers and fasteners:	Base of enclosure:	
Threaded holes:	External corrosion:	
Surface coating:	Gland entries and glands:	
General external condition:		
Enclosure dismantled:	Degree of protection: IP	
Internal Condition - Dust/Liquids:	Corrosion:	Heat:
Missing parts:		
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')



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:

Equipment 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			
(l)	Overcurrent, overload and earth-fault devices			
(m)	Earth-fault trip devices			
(n)	Timing devices			
(o)	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:..... MΩ

Primary winding to earth:..... MΩ

Secondary winding to earth:..... MΩ

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

Certification no(s).....

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 FLAMEPROOF ENCLOSURE (EX'd')



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:

Equipment 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	

Main control panel

1. Max. out of plane of box flanges:.....
2. Max. out of plane of cover:.....
3. Max. flameproof gap when bolted up:.....
4. Max. diametral clearance of spindles:.....
5. Max. diametral clearance of gland to gland apertures:.....
6. Static pressure test – pressure:.....
7. Water jacket – pressure test:.....Capacity:.....

Certification drawing no(s):.....

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:...../...../.....

12 Schedule of Equipment and Conditions Requiring Compliance Status Attention

Tag	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).

Tag	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.

APA GROUP – AMADEUS BASIN TO DARWIN PIPELINE
CHANNEL ISLAND METER STATION HAZARDOUS AREA DOSSIER

