

Certification of

EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

ANZEx Scheme

Certificate of Conformity

Certificate No: **ANZEx 11.2002X**

Issue: 0	21 March 2011	Original Issue
Issue: 1	6 November 2012	Modification
Issue: 2	27 August 2013	Modification
Issue: 3	6 August 2014	Additional locations

Applicant: **TopWorx Inc.**
3300 Fern Valley Road
Louisville KY 40213
USA

Electrical Equipment: **Type DXP and DXS Range of Switchboxes**

Type of Protection and Marking Code:	Marking for Gas	Marking for Dust
	Ex d IIC T6 or Ex d IIB+H ₂ T6 -60°C ≤ Ta ≤ 60°C Ex d IIC T5 or Ex d IIB+H ₂ T5 -60°C ≤ Ta ≤ 75°C Ex d IIC T4 or Ex d IIB+H ₂ T4 -60°C ≤ Ta ≤ 110°C Ex d IIC T3 or Ex d IIB+H ₂ T3 -60°C ≤ Ta ≤ 175°C	Ex tb IIIC T85°C Db IP66/IP67 -50°C ≤ Ta ≤ 60°C Ex tb IIIC T100°C Db IP66/IP67 -50°C ≤ Ta ≤ 75°C Ex tb IIIC T135°C Db IP66/IP67 -50°C ≤ Ta ≤ 110°C

Manufactured by: **TopWorx Inc.**
3300 Fern Valley Road
Louisville KY 40213
USA

The certification database located at <http://www.anzex.com.au> shows the currency of this certificate.

Issued by:



Safety in Mines, Testing and Research Station
2 Smith Street, REDBANK QLD 4301, Australia
Postal Address: PO Box 467, GOODNA QLD 4300, Australia
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www.jas-anz.org/register

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Additional
manufacturing
locations:

Emerson Machinery Equipment (Shenzhen) Co. Ltd.

Fisher Controls Division
Bao Heng Technology Industry Park
Liu Xian 1st Road
District 68, Bao'an District
SHENZHEN 51810
CHINA

Emerson Process Management Magyarország Kft

Berenyi Street 72-100
Szekesfehervar
Hungary

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This certificate is granted subject to the conditions as set out in Standards Australia/Standards New Zealand P-008 Ex Mark Management Committee Publication MP87.1.

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: 2011** **Explosive atmospheres –
Part 0: Equipment - General requirements**
- IEC 60079-1: 2007** **Explosive atmospheres –
Part 1: Equipment protection by flameproof enclosures “d”**
- IEC 60079-31: 2008** **Explosive atmospheres –
Part 31: Equipment dust ignition protection by enclosure “t”**

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

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

Test Report No. and Issuing Body: **GB/SIR/ExTR08.0031/00, GB/SIR/ExTR09.0066/00, GB/SIR/ExTR11.0298/00,
GB/SIR/ExTR12.0194/00, GB/SIR/ExTR12.0234/00, GB/SIR/ExTR12.0317/00,
GB/SIR/ExTR12.0318/00; Sira**

Quality Assessment Report No. and Issuing Body: **GB/SIR/QAR07.0025; Sira, GB/BAS/QAR06.0020; Baseefa,
GB/SIR/QAR13.0005; Baseefa**

File Reference: **13/0111**



Signed for and on behalf of issuing authority

Principal Engineer - Certification

Position

6 August 2014

Date of issue

This certificate is not transferable, remains the property of the issuing body and must be returned in the event of its being revoked or not renewed.

Certificate No: ANZEx 11.2002X Issue: 3

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Schedule

Equipment:

The Type DXP Switchbox comprises a rectangular base and a bolt-on cover manufactured in aluminium alloy. The base and cover has a bronze bush, through which passes the switch shaft. Cams with magnets are attached to the shaft to operate sensors within the enclosure. The enclosure is provided with either a flanged joint or a serrated joint for gas group IIB + H₂ or Group IIC applications respectively. The cover securing bolts are Grade A2-70 stainless steel.

The rectangular base and cover can be manufactured from stainless steel to form a Type DXS Switchbox. This enclosure has a flanged joint and is for use in gas group IIB+H₂. This variation of the equipment is not fitted with the bronze bush.

The equipment may contain a combination of switches, fieldbus module, pilot and terminal strips up to the maximum thermal dissipation of 10 W. The pilots provide feedback to control a pneumatic valve attached to the size of the enclosure.

The switchbox is rated up to 240 V, 15 A, 10 W.

Changes covered by Issue 1:

- Change in degree of protection rating.
- Upgrade of standard to IEC 60079-31:2008 from previous IEC 61241-1:2004.
- Introduction of an optional alternative internal arrangement (Type FF 2.0 module).
- The maximum ambient temperature increased to 175°C.
- The external valve block pressure was approved to be increased from 700 kPa to 1000 kPa, the condition of certification being modified accordingly.
- Minor drawing modifications.

Changes covered by Issue 2:

- Upgrade of standard to IEC 60079-0:2011 from previous IEC 60079-0:2007
- For Group II use, ambient temperature range extended to -60°C and routine overpressure testing requirement added.
- Addition of switch types which may be fitted to the equipment.

Certificate No: ANZEx 11.2002X Issue: 3 Date of Issue: 6 August 2014

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Changes covered by Issue 3:

- Added two additional manufacturing locations in China and Hungary

Drawings:

Drawings associated with Issue 3:

Nil

Drawings associated with Issue 2:

Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
S-S01-0007	LOWER CASTING, DXP	25	10/26/2012
S-S01-0012	LOWER CASTING, DXP W/OUT	22	10/26/2012
S-S01-0008	CASTING, UPPER DXP	18	10/26/2012
CERT-ES-03858-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP/DXS -60C, IIB+H2 ANZEx, T6/T5/T4, S7426-60 O-RING	1	06/19/13
CERT-ES-03859-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP/DXS -60C, IIC ANZEx, T6/T5/T4, S7426-60 O-RING	1	06/19/13
CERT-ES-03860-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP/DXS -60C, IIB+H2 ANZEx, T6 W/ STD O-RINGS	1	06/19/13
CERT-ES-03861-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP/DXS -60C, IIC ANZEx, T6 W/ STD O-RINGS	1	06/19/13

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Issue: **3**
Date of Issue: **6 August 2014**

Drawings associated with Issue 1:

Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
ES-00746-1	MODIFICATION, CASTING IIC D-SERIES METAL	3	10/31/2008
ES-00238-1	BOLT, HOUSING DXP/S ENCLOSURE	8	1/20/2010
S-S01-0008	CASTING, UPPEX DXP	16	03/31/10
S-S01-SS07	LOWER CASTING, DXS W/PORTS	14	1/26/2009
S-AV1-0003	COLD TEMP VALVE ASSEMBLY	15	11/2/10
S-A01-0001-M	SPDT MECH SWITCH ASSY	14	2/19/10
S-S01-SS08	UPPER CASTING, DXS	6	02/10/10
S-S01-0016	SHAFT, STANDARD UNIVERSAL	9	4/24/09
S-S01-0017	SHAFT, NAMUR UNIVERSAL	9	4/24/09
S-S01-0012	LOWER CASTING, DXP W/OUT	20	02/11/2010
S-S01-0007	LOWER CASTING, DXP	23	10/1/2008
S-S01-0006	OIL IMPREGNATED	2	11/20/2008
S-A01-0030	T-SWITCH ASSY DPDT MECHANICAL	17	06/04/2010
S-A01-0032	ASSEMBLY, GO-SWITCH SPDT WITH HERMETIC SEAL	12	06/04/2010

(Drawing list continued next page)

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Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
S-A01-0001-F	SWITCH ASSEMBLY P&F P&F NJ2-12GK-N	11	03/16/11
ES-00747-1	MODIFICATION, CASTING IIC D-SERIES METAL	4	11/5/2008
ES-00874-1	ASSEMBLY DXP/DXS-L1 & ESD CUBE ESD CONVENTIONAL	2	5/20/2009
ES-00157-1	SHAFT FOR SCM, DXP	6	7/28/10
S-S01-SS12	LOWER CASTING, DXS W/OUT	14	11/18/2009
CERT-ES-02653-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP/DXS IIB+H2 ANZEx, GAS/DUST MARKING	1	10/05/12
CERT-ES-02654-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP/DXS IIB+H2 ANZEx, GAS MARKING	1	10/05/12
CERT-ES-02655-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP/DXS IIC ANZEx, GAS/DUST MARKING	1	10/05/12
CERT-ES-02656-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP IIC ANZEx, GAS MARKING	1	10/05/12
CERT-ES-03427-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP IIB+H2 ANZEx, T6/T5/T4, S7426-60 O-RING	1	10/05/12
CERT-ES-03428-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP IIC ANZEx, T6/T5/T4, S7426-60 O-RING	1	10/05/12

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Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
CERT-ES-03429-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP IIB+H2 ANZEx, T3, S7426-60 O-RING	1	10/29/12
CERT-ES-03430-1	CERTIFICATE DRAWING ARTWORK, NAMEPLATE DXP IIC ANZEx, T3, S7426-60 O-RING	1	10/29/12

Drawings associated with Issue 0:

Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
ES-00157-1	ASSEMBLY, SHAFT FOR SCM, DXP	3	06/07/07
ES-00238-1	BOLT, HOUSING DXS ENCLOSURE	6	03/11/08
ES-00746-1	MODIFICATION, CASTING IIC D-SERIES METAL	2	11/01/2007
ES-00747-1	MODIFICATION, CASTING IIC D-SERIES METAL	2	11/01/2007
ES-00874-1	ASSEMBLY DXP/DXS-L1 & ESD CUBE ESD CONVENTIONAL	1	05/01/2007
ES-00973-1	NAMEPLATE DXP IIC	6	02/23/09
ES-01068-1	DXP IIC CASTING MATCH	1	8/31/2007
ES-01141-1	DXP/DXS IIC CERT DWG	4	03/19/08
ES-02653-1	ARTWORK, NAMEPLATE DXP/DXS IIB+H2 ANZEx GAS/DUST MARKING	1	02/15/11

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Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
ES-02654-1	ARTWORK, NAMEPLATE DXP/DXS IIB+H2 ANZEx	1	02/15/11
ES-02655-1	ARTWORK, NAMEPLATE DXP/DXS IIC ANZEx GAS/DUST MARKING	1	02/15/11
ES-02655-1	ARTWORK, NAMEPLATE DXP/DXS IIC ANZEx GAS/DUST MARKING	1	02/15/11
PS-00177-1	PLUG,HOLE	3	-
S-A01-0001-F	SWITCH ASSEMBLY P&F P&F NJ2-12GK-N	8	10/10/2007
S-A01-0001-M	SPDT MECH SWITCH ASSY	10	1/14/08
S-A01-0010	TARGET ASSEMBLY	5	01/28/05
S-A01-0030	T- SWITCH ASSY DPDT MECH.	12	6/21/07
S-A01-0032	ASSEMBLY DXP-L2 270°	9	10/11/2007
S-AVI-003	COLD TEMP VALVE ASSEMBLY	13	03/04/2008
S-S01-0017	SHAFT, NAMUR UNIVERSAL	7	1/18/08
S-S01-0006	BUSHING	1	9/3/2003
S-S01-0007	LOWER CASTING, DXP	21	03/14/2008
S-S01-0008	CASTING, UPPER DXP	12	02/01/08
S-S01-0012	LOWER CASTING, DXP W/OUT	17	03/14/2008

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Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
S-S01-0013	FLAME ARRESTOR, DXP	5	12/10/2007
S-S01-0016	SHAFT, STANDARD UNIVERSAL	7	11/8/08
S-S01-SS07	LOWER CASTING, DXS W/PORTS	11	03/14/2008
S-S01-SS08	UPPER CASTING, DXS	5	02/04/08
S-S01-SS12	LOWER CASTING, DXS W/OUT	10	03/14/2008

Conditions of Certification:

The IIC enclosures are excluded from use in carbon disulphide atmospheres.

The air pressure to the valve block, when fitted, shall not exceed 1000 kPa.

For ambient temperature above 110 °C, the degrees protection IP66 and IP67 are not endorsed by this certificate.

Additional Information:

The cover fasteners include the option for the use of a slotted head as per manufacturer's documentation.

Routine pressure testing is to be carried out on each unit to be marked with a - 60°C ambient, in accordance with clause 16 of IEC 60079-1: 2007, at a pressure of not less than below values.

Gas group IIC (kPa)	Gas group IIB+H ₂ (kPa)
2800	1910

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