



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	<b>IECEX SIR 14.0078X</b>	Page 1 of 5	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 10	Issue 9 (2022-09-26)
Date of Issue:	2024-01-11		Issue 8 (2021-07-08)
Applicant:	<b>TopWorx</b> 3300 Fern Valley Road Louisville Kentucky 40213 <b>United States of America</b>		Issue 7 (2021-05-19)
Equipment:	<b>D-Series Switchbox</b>		Issue 6 (2020-12-04)
Optional accessory:			Issue 5 (2020-09-14)
Type of Protection:	<b>Intrinsic Safety ia and Dust Protection by Enclosure tb</b>		Issue 4 (2020-07-30)
Marking:	Ex ia IIC T4 Gb or Ex ia IIC T5 Gb or Ex ia IIC T6 Gb Ex tb IIIC T°C Db Ta = -°C to +°C The temperature class and ambient temperature depends on the electrical devices that are fitted in the Switchbox.		Issue 3 (2019-03-07)
			Issue 2 (2018-10-22)
			Issue 1 (2017-07-17)
			Issue 0 (2015-07-07)

Approved for issue on behalf of the IECEx  
Certification Body:

**Michelle Halliwell**

Position:

**Director Operations, UK & Industrial Europe**

Signature:  
(for printed version)

Date:  
(for printed version)

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 [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**CSA Group Testing UK Ltd**  
Unit 6, Hawarden Industrial Park  
Hawarden, Deeside CH5 3US  
United Kingdom





# IECEX Certificate of Conformity

Certificate No.: **IECEX SIR 14.0078X**

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Date of issue: 2024-01-11

Issue No: 10

Manufacturer: **TopWorx**  
3300 Fern Valley Road  
Louisville  
Kentucky 40213  
**United States of America**

Manufacturing locations: **TopWorx**  
3300 Fern Valley Road  
Louisville  
Kentucky 40213  
**United States of America**

**Emerson Machinery Equipment (Shenzhen) Co. Ltd**  
101 Building 2, COFCO Park  
Honglang North 2nd Road  
Xin'an Street  
Bao'an District  
Shenzhen 518101  
**China**

**Emerson Automation Fluid Control & Pneumatics Poland Sp. z o. o. (Emerson AFCP Poland Sp. z o.o.)**  
Kurczaki 132  
Lodz 93-331  
**Poland**

## See following pages for more locations

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 equipment 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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

This Certificate **does not** indicate compliance with 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 Reports:

[GB/CSAE/ExTR21.0022/00](#)  
[GB/SIR/ExTR18.0194/00](#)  
[GB/SIR/ExTR20.0155/00](#)  
[GB/SIR/ExTR22.0134/00](#)

[GB/SIR/ExTR15.0178/00](#)  
[GB/SIR/ExTR19.0053/00](#)  
[GB/SIR/ExTR20.0214/00](#)  
[GB/SIR/ExTR24.0006/00](#)

[GB/SIR/ExTR17.0150/00](#)  
[GB/SIR/ExTR20.0142/00](#)  
[GB/SIR/ExTR21.0088/00](#)

#### Quality Assessment Reports:

[BR/ULBR/QAR17.0001/04](#)  
[GB/SIR/QAR07.0041/11](#)

[GB/BAS/QAR06.0020/11](#)  
[NL/DEK/QAR11.0004/07](#)

[GB/SIR/QAR07.0025/11](#)



# IECEX Certificate of Conformity

Certificate No.: **IECEX SIR 14.0078X**

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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The D-Series Switchbox is a valve position indicator. A rotating cam activates a number of internal devices that sense the status of the valve position. The Switchbox consists of an enclosure made up of a body and a lid. All models have a visual valve position indicator underneath a plastic dome. The body has threaded entries to allow the installation of cable glands. The approved internal devices are as shown in the Conditions of Manufacture, refer to Annex.

### Enclosure types

Model	Body	Lid	Dome
DXP	Aluminium	Aluminium	Lexan
DXS	Stainless steel	Stainless steel	Lexan
DXR	Resin	Resin	Lexan

### SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to Annex



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Issue No: 10

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

**This issue, Issue 10, recognises the following change; refer to the certificate annex to view a comprehensive history:**

1. Conditions of Manufacture is revised to replace the Novotechnic WAL305 potentiometer with a generic 10k potentiometer that has a 0.5 mm separation distance through a solid insulation.
2. Manufacturer's Name & Address for IECEx certification is revised to add two new alternate manufacturing locations.
3. Manufacturer's Name & Address for IECEx certification is revised to reflect the latest QARs for the alternate manufacturing locations.



# IECEX Certificate of Conformity

Certificate No.: **IECEX SIR 14.0078X**

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Date of issue: 2024-01-11

Issue No: 10

Additional manufacturing locations:

**ASCO Valve (Shanghai) Co. Ltd**  
No. 480, Xin Miao No. 3 Road  
Xiao Qiao Town, Song Jiang District  
Shanghai 201612  
**China**

**Ascoval Indústria e Comércio Ltda.**  
Rua Goiatuba, 81  
Jardim Mutinga  
Barueri, SP 06465-010  
Brasil  
**Brazil**

**Annex:**

[IECEX SIR 14.0078X Annex Iss 10.pdf](#)

Annexe to: IECEx SIR 14.0078X  
Annexe Issue 10



Applicant: TopWorx

Apparatus: D-Series Switchbox

## Conditions of Manufacture

- i. The manufacturer shall subject 100% of completed units to the dielectric strength test in accordance with IEC 60079-11:2011 clauses 6.3.12 and 10.3, by applying a voltage of 500 Vrms to all input terminals and the outer enclosure for a minimum of 60 s. Alternatively, apply a test voltage of 600 Vrms for 1 sec; or a test voltage of 707 Vdc for 60 sec; or a test voltage of 845 Vdc for 1 sec.. The current flowing during the test shall not exceed 5 mA.
- ii. When the equipment incorporates a 4-20 mA Transmitter Module, the output shall only be connected to a 10k potentiometer that has a 0.5 mm separation distance through a solid insulation.
- iii. The certification codes, ambient temperature ranges and (where applicable) dust temperature marking shall be as shown in the table below. The ambient temperature range marked is dependent on the internal devices fitted and shall reflect the most restrictive values.

Device	Style	Type	Description	Limiting ambient temp. range					
				Ex ia IIC T4 Gb (3.78W max.)		Ex ia IIC T5 Gb (1.36W max.)		Ex ia IIC T6 Gb (1.36W max.)	
				DXS/DXP (8 K internal temp. rise)	DXR (15 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)
Mechanical switch	K	V7	Simple Switch						
Micro/Limit Switch	M	VS10N001C2	Simple Switch						
Reed Switch	P	HSR-V933	Simple Switch	-60°C to	-60°C to	-60°C to	-60°C to	-60°C to	-60°C to
Reed Switch	R	LV-ELE145	Simple Switch	+92°C	+85°C	+85°C	+75°C	+70°C	+60°C

Date: 11 January 2024

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CSA Group Testing UK Ltd.  
Unit 6 Hawarden Industrial Park,  
Hawarden Deeside CH5 3US, UK.

Annexe to: IECEx SIR 14.0078X  
Annexe Issue 10



Applicant: TopWorx

Apparatus: D-Series Switchbox

Device	Style	Type	Description	Limiting ambient temp. range					
				Ex ia IIC T4 Gb (3.78W max.)		Ex ia IIC T5 Gb (1.36W max.)		Ex ia IIC T6 Gb (1.36W max.)	
				DXS/DXP (8 K internal temp. rise)	DXR (15 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)
Go Switch	L/Z	35 Series	Simple Switch						
DPDT Micro Switch	T/8	Cherry Burrell E19 or ITW DPDT-ZZ #26-804	Simple Switch						
Line fault detection	-	-	Not certified. -60°C to +100°C	-60°C to +92°C	-60°C to +85°C	Not permitted	Not permitted	Not permitted	Not permitted
Topworx Cube	PN	2 reed switch with LEDs	Not certified. -60°C to +100°C	-60°C to +92°C	-60°C to +85°C	Not permitted	Not permitted	Not permitted	Not permitted
ASCO Electro-valve	1 or 2	3021....IA	IECEx INE 10.000 2X issue 1; Ex ia IIC T6/T5/T4 -40°C to 40/50/90°C	-40°C to +82°C	-40°C to +75°C	Not permitted	Not permitted	Not assessed for T6	Not assessed for T6

Annexe to: IECEx SIR 14.0078X  
Annexe Issue 10



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Apparatus: D-Series Switchbox

Device	Style	Type	Description	Limiting ambient temp. range					
				Ex ia IIC T4 Gb (3.78W max.)		Ex ia IIC T5 Gb (1.36W max.)		Ex ia IIC T6 Gb (1.36W max.)	
				DXS/DXP (8 K internal temp. rise)	DXR (15 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)
Pepperl & Fuchs Cuboidal Inductive Proximity sensor	E	Type NJ2-V3- N... only (with supply types 1, 2 +3 only)	IECEX PTB 11.0021X issue 0 Ex ia IIC T4/T6 Ga -60°C to +89/73°C	-60°C to +81°C	-60°C to +74°C	Not permitted	Not permitted	-60°C to +70°C	-60°C to +60°C
		All other types (with supply types 1, 2 +3 only)	Ex ia IIC T4/T6 Ga -60°C to +63/55°C	-60°C to +55°C	-60°C to +48°C	Not permitted	Not permitted	-60°C to +52°C	-60°C to +42°C
TopWorx 4-20 mA Transmit ter Module and associat ed potentio meter	X	N/A	IECEX SIR 12.0076U issue 0 Ex ia IIC Ga -40°C to +80°C	-40°C to +72°C	-40°C to +65°C	Not permitted	Not permitted	Not permitted	Not permitted



Annexe to: IECEx SIR 14.0078X  
Annexe Issue 10



Applicant: TopWorx

Apparatus: D-Series Switchbox

Device	Style	Type	Description	Limiting ambient temp. range					
				Ex ia IIC T4 Gb (3.78W max.)		Ex ia IIC T5 Gb (1.36W max.)		Ex ia IIC T6 Gb (1.36W max.)	
				DXS/DXP (8 K internal temp. rise)	DXR (15 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)
TopWorx HART v7 Module	H	N/A	IECEx SIR 16.0107U/1; Ex ia IIC Ga -40°C to +80°C	-40°C to +72°C	-40°C to +65°C	Not permitted	Not permitted	Not permitted	Not permitted
Turk Two Wire Proximity Sensors	N	Type ...-...-.Y1.-.../...	IECEx KEM 06.0036X issue 3 Ex ia IIC T4/T6 Gb -25°C to +70°C	-25°C to +62°C	-25°C to +55°C	Not permitted	Not permitted	-25°C to +67°C	-25°C to +57°C
Pepperl+Fuchs Switches /sensors	N, E, B, F, J, V, 3 and N_+N ---	SC, SJ, NC or NJ (Only one type of switch to be used as per drawing CERT-ES-08677-1 without any other components)	IECEx PTB 11.0021X issue 0, IECEx PTB 11.0091X, issue 1 IECEx PTB 11.0092X, issue 1 IECEx PTB 11.0037X, issue 1	Tamb and Tcode will depend on number of switches inside, as marked on internal labels (reference drawing CERT-ES-08677-1)					

Annexe to: IECEx SIR 14.0078X  
Annexe Issue 10



Applicant: TopWorx

Apparatus: D-Series Switchbox

Device	Style	Type	Description	Limiting ambient temp. range					
				Ex ia IIC T4 Gb (3.78W max.)		Ex ia IIC T5 Gb (1.36W max.)		Ex ia IIC T6 Gb (1.36W max.)	
				DXS/DXP (8 K internal temp. rise)	DXR (15 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)	DXS/DXP (3 K internal temp. rise)	DXR (13 K internal temp. rise)
Group III (dust) minimum ambient temperature (silicone S7395-60 flange O-ring, S70R2 shaft O-rings)				-60°C	-20°C	Not permitted	Not permitted	-60°C	-20°C
Group III (dust) maximum ambient temperature:				As Gp. II	40°C	Not permitted	Not permitted	As Gp. II	42°C
Ex tb IIIC T*°C Db where T*°C is:				Ta(max) + 14 K	T55°C	Not permitted	Not permitted	Ta(max) + 10 K	T55°C
IP rating:				IP66/67	IP67	IP66/67	IP67	IP66/67	IP67

Since the exact composition of the Valve Position Indicators is variable, the manufacturer shall:

- Supply the installer/end user with a full set of appropriate certificates and instructions that are relevant to the contents of the enclosure;
- Ensure that the installer/end user can identify which certified sub-assemblies are fitted to each Valve Position Indicator.



**Specific Conditions of Use**

i. The Switchbox may contain one or more devices covered by the following certificates:

Description	Certificate number
ASCO Electro-valve Module type 3021....IA	IECEX INE 10.0002X issue 1. If fitted, the entity parameters are $U_i = 28\text{ V}$ , $I_i = 300\text{ mA}$ , $P_i = 1.6\text{ W}$ , $C_i = 0$ , $L_i = 0$ .
Pepperl & Fuchs cuboidal inductive sensors, type NJ...	IECEX PTB 11.0021X issue 0 If a T6 temperature class is marked, the input entity parameters to sensors covered by this certificate (if fitted) shall be limited to $U_i = 16\text{ V}$ , $I_i = 25\text{ mA}$ , $P_i = 34\text{ mW}$ ("type 1" supply).
TopWorx HART v7 Module	IECEX SIR 16.0107U issue 1 If fitted, the entity parameters are $U_i = 28\text{V}$ , $I_i = 100\text{mA}$ , $P_i = 700\text{mW}$ , $C_i = 11\text{nF}$ , $L_i = 14\mu\text{H}$ ; $U_o = 7.71\text{V}$ , $I_o = 100\text{mA}$ , $P_o = 700\text{mW}$ , $C_o = 0.993\mu\text{F}$ , $L_o = 3541\mu\text{H}$ .
Turck two-wire proximity sensors type ....-....-Y1.-...../.....	IECEX KEM 06.0036X, issue 3. Refer to certificate for entity parameters specific to the model number.

The installer shall confirm which certified sub-assemblies are contained within the equipment and ensure compliance with the appropriate certificate (with particular reference to entity parameters).

- ii. If fitted, the entity parameters for uncertified simple mechanical or reed switches (including the Topworx R2 and R4 Cubes), with or without line fault detection, are  $U_i = 3\text{ OV}$ ,  $I_i = 200\text{ mA}$  and  $P_i = 0.34\text{ W}$  per switch circuit.
- iii. If fitted, the entity parameters for the Topworx PN Cube are  $U_i = 28\text{ V}$ ,  $I_i = 250\text{ mA}$  and  $P_i = 0.8\text{ W}$  per switch circuit.
- iv. The supplies to all internal devices shall be treated as separate intrinsically safe circuits.
- v. The DXP version of the Switchbox has an enclosure that is manufactured from aluminium alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered when the equipment is installed.
- vi. The plastic parts of the Switchbox may generate an ignition-capable level of electrostatic charge. Therefore the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
- vii. When marked for use in flammable dust, the DXR (resin) enclosure shall only be installed where there is a low risk of mechanical damage.
- viii. The air pressure to the valve block, when fitted, shall not exceed 10.0 bar.
- ix. If the equipment is fitted with a HART v7 Module, it may be supplied with a bonding strap that could be used to connect the shield (screen) of the cable to ground when installed in a metallic enclosure. In this case, the user/installer shall take this into consideration and ensure that earthing arrangements of the final circuitry comply with the requirements of the relevant Code of Practice.
- x. The Switchbox may contain switches/sensors covered by the following certificates, when only one type of switch/sensor is used as per drawing CERT-ES-08677-1 without any other components.

Description	Certificate number
Pepperl+Fuchs Switches/Sensors SC, SJ, NC or NJ	IECEX PTB 11.0021X issue 0, IECEX PTB 11.0091X, issue 1 IECEX PTB 11.0092X, issue 1 IECEX PTB 11.0037X, issue 1

Annexe to: IECEx SIR 14.0078X Issue 10

Applicant: TopWorx

Apparatus: D-Series Switchbox



## Full Certificate Change History

Issue 1 – this Issue introduced the following change:

1. The HART 4-20 mA board was replaced with the HART v7 Module, IECEx SIR 16.0107U, this required additions and amendments to the Specific Conditions of Use and Conditions of Manufacture.

Issue 2 – this Issue introduced the following change:

1. Recognise update to HART v7 Module certificate and thereby modify the Specific Conditions of Use and the Conditions of Manufacture.

Issue 3 – this Issue introduced the following change:

- i. The change of manufacturing location;  
From: Emerson Process Mgmt  
Magyarország  
Holland Fásor 6  
Szekesferhervar, Hungary  
8000  
To: ASCO Numatics Sp.z o.o.  
Kurczaki 132  
93 331 Lodz  
Poland

Issue 4 – this Issue introduced the following change:

1. The change to the name of the facility in Poland was recognised;  
From: ASCO Numatics Sp. z o.o.  
To: Emerson Automation Fluid Control & Pneumatics Poland Sp. z o.o.

Issue 5 – this Issue introduced the following changes:

1. Add new ambient ranges for Pepperl +Fuchs Switches and sensors when used without any other components.
2. Add T5 temperature code for Simple Switches.
3. The Specific Conditions of Use and Conditions of Manufacture were amended.

Issue 6 – this Issue introduced the following change:

1. Addition of an alternative hall effect sensor connected to HART v7, Model ES-04900-1 module certified under IECEx SIR 16.0107U

Issue 7 – this Issue introduced the following change:

1. GB/BAS/QAR13.0005/03 was replaced by NL/DEK/QAR11.0004/06

Issue 8 – this Issue introduced the following change:

1. G Addition of an alternate construction of the external indicator.
2. Manufacturer address change for Shenzhen location

Issue 9 – this Issue introduced the following change:

1. Upgrade standard from IEC 60079-0:2011 Ed.6 to IEC 60079-0:2017 Ed.7.
2. Update Ex component list and evaluate ASCO part "3021...IA" to IEC 60079-0:2017 Ed.7.
3. Update routine dielectric testing requirements by inclusion of 1.2 times AC/DC test voltage options with duration of 1 sec.

Issue 10 – this Issue introduced the following change:

1. Conditions of Manufacture is revised to replace the Novotechnic WAL305 potentiometer with a generic 10k potentiometer that has a 0.5 mm separation distance through a solid insulation.
2. Manufacturer's Name & Address for IECEx certification is revised to add two new alternate manufacturing locations.
3. Manufacturer's Name & Address for IECEx certification is revised to reflect the latest QARs for the alternate manufacturing locations.

Date: 11 January 2024

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