



# 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 UL 20.0070X</b>	Page 1 of 5	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 5	Issue 4 (2022-08-17)
Date of Issue:	2024-05-24		Issue 3 (2021-09-30)
Applicant:	<b>TopWorx Inc.</b> 3300 Fern Valley Road Louisville, KY 40213 <b>United States of America</b>		Issue 2 (2021-04-29)
Equipment:	<b>D2 HART7 PST ESD Switchbox, DX*-S*0***S*****</b>		Issue 1 (2020-09-25)
Optional accessory:			Issue 0 (2020-05-29)
Type of Protection:	<b>Intrinsic Safety "ia"</b>		
Marking:	Ex ia IIC T4 Ga Ex ia IIIC T135°C Db -40°C to +80°C		

Approved for issue on behalf of the IECEx  
Certification Body:

**Katy A. Holdredge**

Position:

**Senior Staff Engineer**

Signature:  
(for printed version)

Date:  
(for printed version)

2024-05-24

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Certificate issued by:

**UL Solutions (US)**  
333 Pfingsten Road  
Northbrook IL 60062-2096  
**United States of America**





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Manufacturer: **TopWorx Inc.**  
3300 Fern Valley Road  
Louisville, KY 40213  
**United States of America**

Manufacturing locations: **TopWorx Inc.**  
3300 Fern Valley Road  
Louisville, KY 40213  
**United States of America**

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

**Emerson Machinery Equipment  
(Shenzhen) Co. Ltd**  
101 Building 2, COFCO Park  
Honglang North 2nd Road  
Xin'an Street  
Bao'an District  
Shenzhen 51801  
**China**

## 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

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:

[US/UL/ExTR20.0072/00](#)  
[US/UL/ExTR20.0072/03](#)

[US/UL/ExTR20.0072/01](#)  
[US/UL/ExTR20.0072/04](#)

[US/UL/ExTR20.0072/02](#)  
[US/UL/ExTR20.0072/05](#)

#### Quality Assessment Reports:

[GB/BAS/QAR06.0020/12](#)  
[NL/DEK/QAR11.0004/07](#)

[GB/SIR/QAR07.0025/12](#)

[GB/SIR/QAR07.0041/11](#)



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**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The D2 HART7 PST ESD, Model DX\*-S\*0\*\*\*S\*\*\*\*\* is an intrinsically safe switchbox monitor. The equipment consists of the DXP/DXS Enclosure and is powered by an associated apparatus. Internal to the enclosure are three boards: the Main Board, the GO-Switch Board, and the Terminal Board.

**Please see Annex for additional information.**

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

- All unused entries must be filled with a suitably certified Ex component blanking plug.
- The plastic parts of the enclosure have the potential to produce electrostatic discharge. Clean only with damp cloth.



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

Issue 1: Nomenclature revised.

Issue 2: Minor enclosure construction change.

Issue 3: Addition of alternate construction.

Issue 4: Correction to marking label.

Issue 5: Additional manufacturing locations added; added new non-protective components and updated the layout for the HART7 ESD Module. Additional non-critical updates were made to the terminal and switch board assemblies.



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Additional manufacturing locations:

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

**Annex:**

[Annex to IECEx UL 20.0070X Issue 5.pdf](#)



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## TYPE DESIGNATION

Nomenclature:

DX	P	SH	O	X	N	4	S	D	A	1	T
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

- I. Basic Series Designation  
DX – Cast Enclosure
- II. Enclosure Material  
P – Aluminum  
S – Stainless Steel
- III. Sensor/Switch Supplement  
SH or SS – D2 HART v7 ESD, Model ES-06762-1, 28 V dc max, 100 mA, 0.7 W input; switch outputs when fitted 24 V dc, 250 mA per switch
- IV. Area Classification  
0 – Class I, Division 1, Groups C and D; Class II, Division 1, Groups E, F and G
- V. Visual Display  
X - Any letter or number
- VI. Shaft  
S - 1/4" DD, 316L SS  
N - NAMUR, 316L SS
- VII. Conduit Entries  
X – Any letter or number
- VIII. O-ring Option  
S - Silicone
- IX. Pilot Type/Action  
Blank - No Pilot Devices  
1 - One 24 V dc 1 W coil pilot for fail open/closed  
D - Two 24 V dc 1 W coil pilots wired in parallel
- X. Spool Valve Material  
Blank - No spool valve  
A - Aluminum Black Anodized  
6 - 316 SS
- XI. Valve CV  
Blank - No valve  
X - Any number or letter
- XII. Manual Override  
Blank - No PST Button  
T - With PST (Partial Stroke Button)



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## PARAMETERS RELATING TO THE SAFETY

Table 1 - INPUTS - Entity Parameters					
	Ui	Ii	Ci	Li	Pi
HART+/HART-	28V	100mA	19nF	14uH	0.7W
P1IN+/P1IN-(Pilot 1)	28V	100mA	0	0	0.7W
P2IN+/P2IN-(Pilot 2)	28V	100mA	0	0	0.7W
C1/NO1 or (C1/NC1)*	24V	250mA	0	0	Neg
C2/NO2 or (C2/NC2)*	24V	250mA	0	0	Neg

\*Internal USER SW1/SW2 are volt-free contacts. Power is negligible.

Table 2 – OUTPUTS – Entity Parameters					
	Uo	Io	Co	Lo	Po
PSNS+/PSNS- (Pressure Transmitter 4-20mA)	28V	100mA	0.082uF	200uH	0.7W
AUX2+/AUX2- or AUX+/AUX- (AUX Sw 2)	5.88V	52mA	36.374uF	1uH	364mW
AUX1+/AUX1- or +5VO/10V+ (AUX Sw 1)	7.14V	52mA	9.87uF	1uH	364mW
P1IN+, 10V+, 10V- (SOV Position Monitor)	5.88V	52mA	26.347uF	1uH	364mW
PST+/PST- (Partial Stroke Button)	5.88V	52mA	26.347uF	1uH	364mW
P1out+/P1out-	28V	100mA	0.082uF	200uH	0.7W
P2out+/P2out-	28V	100mA	0.082uF	200uH	0.7W
ALM/ALM (Alarm) [Optional]	28V	100mA	0.082uF	200uH	0.7W



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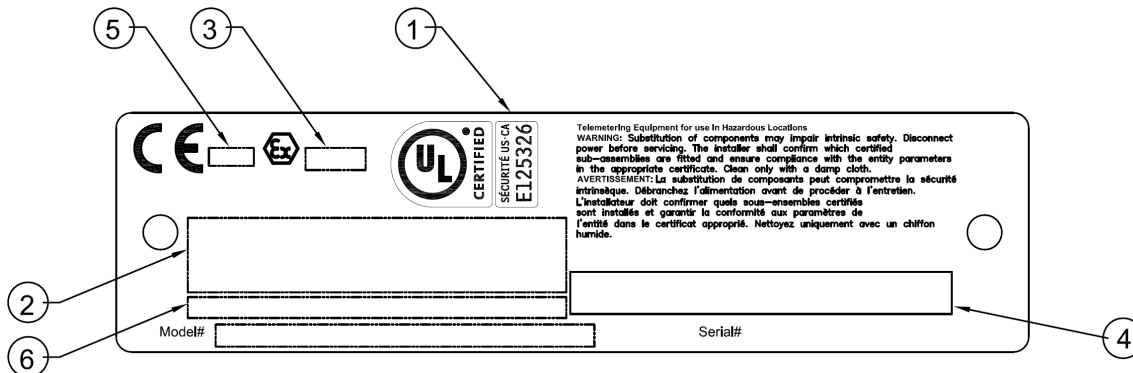
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## MARKING

Marking has to be readable and indelible; it has to include the following indications:



### 2. Model number,

Class I, Zone 0, Div1, GrABCD; Class II, Zone 20, Div1, GrEFG

Ex ia IIC T4 Ga; Ex ia IIIC T135°C Db; IP66/67

Tamb: -40°C TO +80°C (-40°C to +50°C when integral Partial Stroke Test button fitted)

DEMKO 20ATEX 2314X IECEX UL 20.0070X

HART: Ui:28Vdc, Ii:100mA, Ci:0, Li:0, Pi:0.7W

SOLENOID: 24Vdc, Ii:100mA, Ci:0, Li:0, Pi:0.5W (when fitted)

SWITCH: Ui:24VDC, Ii:250mA, Ci:0, Li:0, Pi=0.7W (For 'SS' Option with (2) MiniGO Sws wired separately from the HART module when fitted)



3. Ex MARKING FOR METAL ENCLOSURE WITH T4 CODE: II 1 G  
II 2 D

4. ARTWORK FOR MANUFACTURING FACILITIES:  
TopWorx, 3300 Fern Valley Road, Louisville, KY USA

5. NOTIFIED BODY NUMBER: 2813



6. CONTROL DRAWING REFERENCE:

FOR MODELS FITTED WITH TERMINAL ASSEMBLY ES-06634-1; "INSTALL PER CONTROL DRAWING ES-08359-1"  
FOR MODELS FITTED WITH TERMINAL ASSEMBLY ES-08612-1; "INSTALL PER CONTROL DRAWING ES-08941-1"