

Electrical Equipment for Explosive Atmospheres

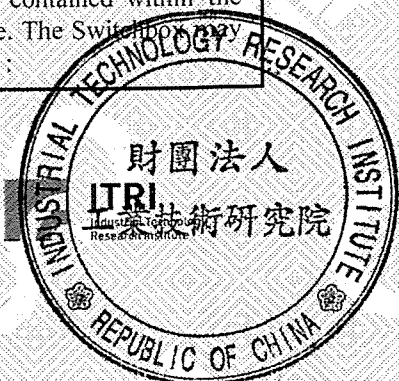
Certificate of Type Verification

Applicant	TopWorx Inc.		
Applicant address	3300 Fern Valley Road Louisville, Kentucky 40213 United States of America	TEL	+1-502-969-8000
Manufacturer	1. TopWorx Inc. 2. Emerson Machinery Equipment (Shenzhen) Co. Ltd. 3. Emerson Automation Fluid Control & Pneumatics Poland Sp. z o. o. (Emerson AFCP Poland Sp. z o.o.)		
Manufacturer address	1. 3300 Fern Valley Road Louisville, Kentucky 40213 United States of America 2. 101 Building 2, COFCO Park Honglang North 2 nd Road, Xin'an Street Bao'an District, Shenzhen 51801 China 3. Kurczaki 132 Lodz 93-331 Poland	TEL	
Name of product Type	Switchbox TX-Series		
Ex marking	Ex ia IIC T* Gb Ex tb IIIC T* C Db The temperature class and maximum surface temperature depend on the electrical device fitted in the Switchbox. Refer to Annex.		
Certificate No.	(ITRI)2021 07-00238X		
Date of first issue	December 07, 2021		
Date of Renewal			
Valid period	December 07, 2021 to December 06, 2024		
Standards:	CNS 3376-0 : 2014 / IEC 60079-0 : 2011 IEC 60079-11 : 2011 IEC 60079-31 : 2013		
Ratings:	Refer to Specific conditions of use.		
Ambient temperature:	The ambient temperature depends on the electrical devices fitted in the Switchbox. Refer to Annex.		
Main components:	Lower casting, upper casting, shaft, switch, O-ring, w/o indicator.		
Type variants:	Refer to Annex.		
Specific conditions of use:	The entity parameters for simple switches that are not covered by a certificate are $U_i=30$ V, $I_i=200$ mA and $P_i=0.72$ W/switch (T4) or $P_i=0.34$ W/switch (T6). The 4-20 mA loop circuit and the various additional sub-assemblies (switches, sensors, valves, etc.) shall be treated as separate intrinsically safe circuit. The installer shall confirm which certified sub-assemblies are contained within the equipment and ensure compliance with the appropriate certificate. The Switchbox may contain one or more devices covered by the following certificates :		

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Applicant	TopWorx Inc.	
	Description	Certificate number
	ASCO Electro-valve Module type 3021...IA	IECEX INE 10.0002X Issue 1. If fitted, the entity parameters are $U_i=28$ V, $I_i=300$ mA, $P_i=1.6$ W, $C_i=0$, $L_i=0$
	IFM inductive proximity switch type NE****, NF****, NG****, NI****, NN****, NT****, NS****	IECEX BVS 06.0003 Issue 4. Refer to certificate for entity parameters specific to the model number.
	Pepperl+Fuchs slot-type initiators, type SJ... & SC...	IECEX TUN 04.00016X Issue 0 Refer to certificate for entity parameters specific to the model number.
	Pepperl+Fuchs cuboidal inductive sensors, type NJ...	IECEX PTB 11.00021X Issue 0 Refer to certificate for entity parameters specific to the model number.
	Hans Turck two-wire proximity sensors type ...-.....Y1.-...../.....	IECEX KEM 06.0036X Issue 3. Refer to certificate for entity parameters specific to the model number.
<p>The plastic parts of the Switchbox, for example the dome, 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.</p> <p>The Switchbox may contain switch/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.</p>		
	Description	Certificate number
	Pepperl+Fuchs Switches/Sensors SC, SJ, NC or NJ	IECEX TUN 04.0016X Issue 0 IECEX TUN 04.0014X Issue 0 IECEX PTB 11.0021X Issue 0 IECEX PTB 11.0091X Issue 1 IECEX PTB 11.0092X Issue 1 IECEX PTB 11.0037X Issue 1
	Cable glands or blanking plugs for enclosure entries are not provided with the equipment. For safe use, certified cable glands or blanking plugs with proper type of protections shall be correctly fitted to maintain the integrity of specified protections.	
Routine tests:	The manufacturer shall carry out the routine tests as prescribed in Clause 6.3.13 and Clause 10.3 of IEC 60079-11. The dielectric test shall be performed at the voltage 500 Vac applied for 60 s.	
Approval reference:	The assessment of the above equipment is based on the review of IECEX Certificate of Conformity (IECEX SIR 14.0045X Issue No : 7) issued by CSA Group Testing UK Ltd (CSAE), UK and the associate test report(s) (GB/SIR/ExTR14.0192/00, GB/SIR/ExTR15.0260/00, GB/SIR/ExTR16.0281/00, GB/SIR/ExTR19.0053/00, GB/SIR/ExTR19.0073/00, GB/SIR/ExTR20.0142/00, GB/SIR/ExTR20.0154/00, GB/SIR/ExTR21.0088/00).	
Certificate history:	Issue 1 (B202100339) (2021-12-07)	

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Applicant	TopWorx Inc.										
Annex:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	TX	P	-	D	2	0	*	*	*	M	0

(1)Series : TX
 (2)Enclosure material : P : aluminum ; S : stainless 316SS
 (3)(4)Bus/sensor
 Code of column (3) : 0, L, M, K, Q, P, R, E, T, N, D, B, F, J, V, 3
 Code of column (4) : X, 1, 2, 3, 4 (Code X is only available with code 0, E, M, T, Q in column (3))
 (5)Area class : 0 : Ex i
 (9)O-ring : M : silicone
 (10)Pilot : 0/blank : not installed ; 1 : 24 Vdc fail O/C ; 2 : 24 Vdc fail L/P
 Column (6), (7), (8) are not related to Ex protection.

ID	Device	Sensing option	Type	Description
1	Mechanical switch	K	V7	Simple switch
2	GO switch	L	35 series	
3	Micro/Limit switch	M	VS10N001C2	
4	Reed switch	P	HSR-V933	
5		R	LV-ELE145	
6	DPDT Micro switch	T	Cherry Burrell E19 or ITW DPDT-ZZ #26-804	
7	ASCO Electro-valve	1 or 2	3021...1A	IECEX INE 10.0002X issue 1
8	IFM Electronic Inductive Proximity Switch	N	N*50**, N95001 &K15030 supply types 1, 2+3	IECEX BVS 06.0003 issue 4
9	Pepperl+ Fuchs Slot Type Initiators	N	SJ... & SC... supply types 1, 2+3	IECEX TUN 04.0016X issue 0
10	Pepperl+ Fuchs Cuboidal Inductive Proximity Sensor	E	Type NJ2-V3-N... supply types 1, 2+3	IECEX TUN 04.0014X issue 0
11			All other types supply types 1, 2+3	IECEX PTB 11.0021X issue 0
12	TopWorx 4-20 mA Transmitter Module and associated potentiometer	X	N/A	IECEX SIR 12.0076U issue 0
13	Hans Turk two wire proximity sensors	N	...-...-Y1.../...	IECEX KEM 6.0036X issue3
14	GO switch	Q	36 series	IECEX BAS 15.0092U
15	GO switch	D	36D series (D2 · D4)	IECEX UL 19.0002U

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Applicant		TopWorx Inc.		
ID	Device	Sensing option	Type	Description
16	Pepperl + Fuchs switches/sensors	N, E, B, F, J, V, 3 and N_+N...	SC、SJ、NC 或 NJ (Only one type of switch to be used as per drawing CERT-ES-08677-1 without any other components)	IECEX TUN 04.0016X issue 0 IECEX TUN 04.0014X issue 0 IECEX PTB 11.0021X issue 0 IECEX PTB 11.0091X issue 1 IECEX PTB 11.0092X issue 1 IECEX PTB 11.0037X issue 1

ID	Gas or dust	Ambient temperature(°C)	Temperature class or T* °C
1-6	Gas	-65~+55	T6
		-65~+70	T5
		-65~+85	T4
		-65~+100	T3
Dust	-50~+55	T75 °C	
	-50~+85	T104 °C	
7	Gas	-40~+56	T4
	Dust		T75 °C
8	Gas	-25~+42	T4
	Dust		T75 °C
9	Gas	-60~+47	T4
	Dust	-50~+47	T75 °C
10	Gas	-60~+56	T4
	Dust	-50~+56	T75 °C
11	Gas	-60~+35	T4
	Dust	-50~+35	T75 °C
12	Gas	-40~+52	T4
	Dust		T75 °C
13	Gas	-25~+42	T4
	Dust		T75 °C
14	Gas	-55~+55	T6
		-55~+85	T4
		-55~+100	T3
	Dust	-50~+55	T75 °C
-50~+85		T104 °C	
15	Gas	-55~+55	T6
		-55~+85	T4
	Dust	-50~+55	T75 °C
		-50~+85	T104 °C
16	Gas	The ambient temperature and the temperature class will depend on number of switches inside, as marked on internal labels (reference drawing CERT-ES-08677-1)	
	Dust	-50~+85	T104 °C

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