



CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2022312307000279

Applicant Topworx Incorporated
Address 3300 Fern Valley Road, Louisville, Kentucky 40213, United States of America
Manufacturer Topworx Incorporated
Address 3300 Fern Valley Road, Louisville, Kentucky 40213, United States of America
Production Factory Topworx Incorporated
Production Address 3300 Fern Valley Road, Louisville, Kentucky 40213, United States of America
Product Switchbox
Model/Type TV*-*0***M*****
Ex marking Ex ia IIC T3/T4/T5/T6 Gb, Ex tb IIIC T75°C/T104°C Db
Reference Standards GB/T 3836.1-2021, GB/T 3836.4-2021, GB/T 3836.31-2021

Certification mode Type Test + Initial Factory Inspection + Post-Certification Surveillance

The product(s) is verified and certified according to CNCA-C23-01: 2019 *China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product* and CNEX-C2301-2019 *Guideline of China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product*.

See Annex for the detailed product information (7 pages).

Initial issue date: 2022-04-13

Issued date: 2023-03-25

Valid to: 2027-04-12

The validity of this certificate is maintained through the regular supervision of the issuing authority during the validity period.

Where any discrepancy arises between the English translation and the original Chinese version, the Chinese version shall prevail.

Director:



Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.



<http://www.ccc-cnex.com>
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CN 0001667



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Product information:

1. This certificate covers the following models:

- TV*-0***M*****

Nomenclature:

TV	*	-	*	0	*	*	*	M	*	*	*	*	*	*
1)	2)		3)	4)	5)	6)	7)	8)	9)	10)	11)	12)	13)	14)

1) Enclosure

2) Enclosure Material:

H = 316SS

L = Aluminum

3) Bus/Sensor

D2, D4 = 36SD SERIES GO SWITCH

DS = (2) 36SD GO SWITCH w/LED INDICATION

E1, E2, E3, E4 = P+F NJ2-V3-N

EX = (2) P+F NJ2-V3-N w/4-20mA Transmitter

K1, K2, K3, K4 = MECH SWITCH SPDT w/GOLD CONTACTS

KS = MECH SWITCH SPDT w/LED INDICATION

KX = (2) MECH SWITCH SPDT w/4-20mA Transmitter

L1, L2 = GO SWITCH SPDT

M1, M2, M3, M4 = MECH SWITCH SPDT

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MS = MECH SWITCH SPDT w/LED INDICATION
 MX = (2) MECH SWITCH SPDT w/4-20mA Transmitter
 N1, N2, N3, N4 = ANY NAMUR SWITCH
 NX = (2) ANY NAMUR SWITCH w/4-20mA Transmitter
 P1, P2, P3, P4 = 3 AMP REED SWITCH
 PS = 3 AMP REED SWITCH w/LED INDICATION
 Q2, Q4 = 36 SERIES GO SWITCH
 R1, R2, R3, R4 = 1 AMP REED SWITCH
 RS = 1 AMP REED SWITCH w/LED INDICATION
 T1, T2 = MECH SWITCH DPDT
 TX = MECH SWITCH DPDT w/4-20mA Transmitter
 OX = NO SWITCHES w/4-20mA Transmitter

4) Area Class

0 = Intrinsic Safety

5) Visual Display:

ANY NUMBER OR LETTER

6) Shaft

ANY NUMBER OR LETTER

7) Conduit Entries

ANY NUMBER OR LETTER

8) O-Rings

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M = SILICONE

9) Pilot

0 or BLANK = No Pilot

1 = 24VDC FAIL Open/Closed

2 = 24VDC FAIL Last Position

10) Spool

ANY NUMBER OR LETTER OR BLANK

11) Valve Cv

ANY NUMBER OR LETTER OR BLANK

12) Override

ANY NUMBER OR LETTER OR BLANK

13) Regional Certs

0 or BLANK = UL (North America), IECEx, ATEX

B = InMetro (Brazil)

K = KCs (Korea)

N = CCCEX (China)

P = PESO (India)

R = EAC (Eurasian Economic Union)

T = ITRI (China Taiwan)

14) Custom Build Indents

6 digits (without relevance for explosion protection)

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The Switchbox shall only be fitted with devices that that are listed in the table below. Where applicable; these devices shall also conform to the certificates, supplements and amendments that are also listed therein. Because the exact composition of the Switchbox is variable, Topworx Inc. shall:

- Supply the installer/end user with a full set of appropriate certificates and instructions that are relevant to the contents of the enclosure.
- Indicate which certificates apply to the contents of the enclosure.

Internal Components Table:

ID	Device	Sensing Option	Type	Description
1	Mechanical switch	K	V7	Simple switch
2	Go switch	L	35 Series	Simple switch
3	Micro/Limit switch	M	VS10N001C2	Simple switch
4	Reed switch	P	HSR-V933	Simple switch
5	Reed switch	R	LV-ELE145	Simple switch
6	DPDT Micro switch	T	Cherry Burrell E19 or ITW DPDT-ZZ #26-804	Simple switch
7	ASCO Electro-valve Module	1 or 2	3021....IA	FR/INE/ExTR10.00 01/02
8	Pepperl + Fuchs Slot Type Initiators	N	SJ... & SC... (supply types 1, 2 + 3)	CCC: 2020322315002306
9	Pepperl + Fuchs Cuboidal Inductive Proximity sensor	E	Type NJ2-V3-N... (supply types 1, 2 + 3)	CCC: 2020322315002302
10	Pepperl + Fuchs Cuboidal Inductive Proximity sensor	E	All other types (supply types 1, 2 + 3)	CCC: 2020322315002255
11	Pepperl + Fuchs Cylindrical	N	Types NC... and NJ... (supply types 1, 2 + 3)	CCC: 2020322315002255

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	Inductive Proximity sensor			
12	Pepperl + Fuchs SN sensor	N	Types NC... and NJ... (supply types 1, 2 + 3)	CCC: 2020322315002308
13	TopWorx 4-20 mA transmitter module & associated potentiometer	X	N/A	GB/SIR/ExTR13.02 51/00
14	Go switch	Q	36 Series	GB/BAS/ExTR15.0 225/00
15	LED board	S	ES-05116-1	---
16	GO Switch	D	36 SD Series (D2, D4 or DS)	US/UL/ExTR19.000 2/00
17	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)	CCC: 2020322315002255 2020322315002302 2020322315002306 2020322315002308

The temperature class, ambient temperature range and surface temperature depend on the devices used in the construction of these Valve Position Indicators, the manufacturer shall therefore mark their products in accordance with the table below:

ID (see table above)	Gas or Dust	Ambient temperature range	Temperature class or T*°C
1, 2, 3, 4, 5, 6	Gas	-65~+55°C	T6
		-65~+70°C	T5
		-65~+85°C	T4
		-65~+100°C	T3
	Dust	-50~+55°C	T75°C
-50~+85°C		T104°C	
7	Gas	-40~+56°C	T4

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	Dust	-40~+56°C	T75°C
8	Gas	-60~+47°C	T4
	Dust	-50~+47°C	T75°C
9	Gas	-60~+56°C	T4
	Dust	-50~+56°C	T75°C
10	Gas	-60~+35°C	T4
	Dust	-50~+35°C	T75°C
11	Gas	-60~+39°C	T4
	Dust	-50~+39°C	T75°C
12	Gas	-60~+40°C	T4
	Dust	-50~+40°C	T75°C
13	Gas	-40~+52°C	T4
	Dust	-40~+52°C	T75°C
14	Gas	-55~+55°C	T6
		-55~+85°C	T4
		-55~+100°C	T3
	Dust	-55~+55°C	T75°C
		-55~+85°C	T104°C
15	Gas	-65~+60°C	T4
	Dust	-50~+55°C	T75°C
		-50~+85°C	T104°C
16	Gas	-50~+55°C	T6
		-50~+85°C	T4
	Dust	-50~+55°C	T75°C
		-50~+85°C	T104°C
17	Gas	Tamb and Tcode will depend on number of switches inside, as marked on internal labels (reference drawing CERT-ES-08677-1)	
	Dust	-50~+85°C	T104°C

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Ex marking: Ex ia IIC T3/T4/T5/T6 Gb, Ex tb IIIC T75°C/T104°C Db

Ingress protection: IP64/IP66/IP68

Note: The TVL and TVH enclosures shall only be marked IP66/68 (1m/24h) when fitted with a Spec Seals S50440A silicone lid O-ring. When fitted with a Parker S7395-60 silicone lid O-ring, the TVL and TVH enclosures shall be marked IP64.

- Producers should organize production in accordance with the technical documents approved by the certification body.
- 2. Specific conditions of safety use:
 - The 4-20 mA loop circuit and the various additional sub-assemblies (switches, sensors, valves, etc.) shall be treated as separate intrinsically safe circuits.
 - 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 (T5/T6). The entity parameters of certified devices fitted must be obtained from the applicable certificate.
 - See instruction for other information.
- 3. Certificate related report(s):
 - Type test report: CQST2112C093, CQST2112C093/01
 - Factory inspection report: CN2022Q010019
- 4. Certificate change information:
 - 1st change on March 25, 2023: Updated the standards for certification.

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