

# 防爆合格证

## Electrical Apparatus for Explosive Atmospheres

# CERTIFICATE OF CONFORMITY



国家防爆

**Manufacturer** Topworx Incorporated  
3300 Fern Valley Road, Louisville, Kentucky, 40213, United States of America

**Product** Proximity Switches

**Type** 7\*\*5\*\*\*\*, 7\*1\*5\*FN\*\*\*\*, 7\*1\*56\*\*\*\*, \*4355\*\*\*\*, 7\*1\*56F\*\*\*\*

**Marking** Ex ia IIC T6/T4/T3 Ga, Ex iaD 20 T85°C/T135°C/T200°C

**Standard(s)** --

**Drawing No.** CERT-ES-01464-1

The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:

- GB 3836.1-2010 Explosive atmospheres - Part 1: Equipment - General requirements
- GB 3836.4-2010 Explosive atmospheres - Part 4: Equipment protection by intrinsic safety "i"
- GB12476.1-2013 Electrical apparatus for use in the presence of combustible dust - Part 1:General requirements
- GB12476.4-2010 Electrical apparatus for use in the presence of combustible dust - Part4: Protection by intrinsic safety "iD"

**Note:**

See Annex (9 pages in total).

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**Director**

**Date:**

2022-03-07

**Valid until:**

2027-03-06



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1. This product has been IECEx certified, certificate No. IECEx BAS 09.0080X, issue 9, dated 2020-08-28.

2. Nomenclature of 7\*\*\*5\*\*\*\*\*

7	*	*	*	5	*	*	*	*	*	*****
1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)

- 1) Series: 7
- 2) Body Style
  - 1=1.5" lg Ext Thread, 3.9"O/A
  - 3=1.9" lg Ext Thread, 3.75"O/A
  - 5=2.7" lg Ext Thread, 4.3"O/A
  - 7=4.7" Ext Thread, (1.9"blank), 5.8"O/A
  - G=1.75" lg Ext Thread, 4/4.5"O/A
  - I=4.9" Ext Thread, (1.8"blank), 5.6"O/A
  - \* Suffix M=Metric Ext Thread
- 3) Contacts
  - 1=Single Pole, Double Throw
  - 2=Double Pole, Double Throw (7G & 7I options only)
- 4) Sensing Distance
  - 3=2.5mm
  - 4=1.8mm
  - 5=1.5mm
  - 6=1.0mm
- 5) Rear Entry: 5
- 6) Material
  - 2=303 S/Steel
  - 3=303 S/Steel
  - 4=303 S/Steel
  - 6=316 S/Steel
- 7) Certified
  - F, G, H

Director

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## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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- 8) Cable Type  
A=PVC Leads  
B=PVC Jacket cable  
F=Teflon Leads  
H=PEEK Leads  
S=Silicone Cable
- 9) Cable length  
2=36"  
3=72"  
4=144"  
5=25'  
6=50'  
7=100'  
8=250'
- 10) Regional Cert  
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)
- 11) Custom Build Indents  
6 digits (without relevance for explosion protection)

The seventh character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

Seventh character of Model Number	Certification Marking
F	Ex ia IIC T6 Ga, Ex iaD 20 T85°C (-65°C ≤ Ta ≤ +50°C)
G	Ex ia IIC T4 Ga, Ex iaD 20 T135°C (-65°C ≤ Ta ≤ +100°C)
H	Ex ia IIC T3 Ga, Ex iaD 20 T200°C (-65°C ≤ Ta ≤ +150°C)

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

The product is powered by Ex ia IIC intrinsically safe power supply that meets the GB3836.4 standard.

Input Parameters:  $U_i=30V$ ,  $I_i=0.25A$ ,  $C_i=33nF$ ,  $L_i=200 \mu H$

3. Nomenclature of 7\*1\*5\*FN\*\*\*\*\*:

7	*	1	*	5	*	F	N	*	*	*****
1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)

- 1) Series: 7
- 2) Body Style  
4=5/8-18 UNF-2A Ext. Thread  
4M=M18x1 Metric Ext Thread
- 3) Contacts  
1=Single Pole, Double Throw
- 4) Sensing distance  
3=2.5mm  
4=1.8mm  
5=1.5mm
- 5) Rear Entry: 5
- 6) Material  
2=303 S/Steel  
3=303 S/Steel  
4=303 S/Steel  
6=316 S/Steel
- 7) Certified: F
- 8) Cable Type: N
- 9) Cable length  
2=36"  
3=72"  
4=144"  
5=25'  
6=50'  
7=100'  
8=250'

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## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

- 10) Regional Cert  
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)
- 11) Custom Build Indents  
6 digits (without relevance for explosion protection)

The product is powered by Ex ia IIC intrinsically safe power supply that meets the GB3836.4 standard.

Input Parameters:  $U_i=30V$ ,  $I_i=0.25A$ ,  $C_i=33nF$ ,  $L_i=200 \mu H$

4. Nomenclature of 7\*1\*56\*\*\*\*\*:

7	*	1	*	5	6	*	*	*	*	*****
										*
1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)

- 1) Series: 7
- 2) Body Style  
4=5/8-18 UNF-2A Ext. Thread  
4M=M18x1 Metric Ext Thread
- 3) Contacts  
1=Single Pole, Double Throw
- 4) Sensing distance  
3=2.5mm  
4=1.8mm  
5=1.5mm
- 5) Rear Entry: 5
- 6) Material  
6=316 S/Steel
- 7) Certified: F, G or H

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## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

- 8) Cable Type:
  - A=PVC Insulated Leads
  - B=PVC Jacketd Cable
  - F=Teflon Insulated Leads
  - H=PEEK Insulated Leads
  - S=Silicone Cable
- 9) Cable length
  - 2=36"
  - 3=72"
  - 4=144"
  - 5=25'
  - 6=50'
  - 7=100'
  - 8=250'
- 10) Regional Cert
  - 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)
- 11) Custom Build Indents
  - 6 digits (without relevance for explosion protection)

The seventh character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

Seventh character of Model Number	Certification Marking
F	Ex ia IIC T6 Ga, Ex iaD 20 T85°C (-65°C≤Ta≤+50°C)
G	Ex ia IIC T4 Ga, Ex iaD 20 T135°C (-65°C≤Ta≤+100°C)
H	Ex ia IIC T3 Ga, Ex iaD 20 T200°C (-65°C≤Ta≤+150°C)

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## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

The product is powered by Ex ia IIC intrinsically safe power supply that meets the GB3836.4 standard.

Input Parameters:  $U_i=30V$ ,  $I_i=0.25A$ ,  $C_i=33nF$ ,  $L_i=200\mu H$

5. Nomenclature of \*4355\*\*\*\*\*:

*	4	3	5	5	*	*	*	*	*****
1)	2)	3)	4)	5)	6)	7)	8)	9)	10)

- 1) Model  
7CX=1.025" Probe length  
7DX=1.250" Probe length
- 2) Contacts: 4
- 3) Sensing distance: 3
- 4) Rear Entry: 5
- 5) Material: 5
- 6) Certified: F, G or H
- 7) Cable Type:  
A=PVC Insulated Leads (F certified models only)  
B=PVC Jacketd Cable (F certified models only)  
F=Teflon Insulated Leads  
H=PEEK Insulated Leads
- 8) Cable length  
2=36"  
3=72"  
4=144"  
5=25'  
6=50'  
7=100'  
8=250'
- 9) Regional Cert  
Blank: UL (North America), IECEx, ATEX  
B: InMetro (Brazil)  
K: KCs (Korea)  
N: CCCEX (China)

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## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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P: PESO (India)  
R: EAC (Eurasian Economic Union)  
T: ITRI (China Taiwan)

- 10) Custom Build Indents  
6 digits (without relevance for explosion protection)

The sixth character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

Sixth character of Model Number	Certification Marking
F	Ex ia IIC T6 Ga, Ex iaD 20 T85°C (-65°C≤Ta≤+50°C)
G	Ex ia IIC T4 Ga, Ex iaD 20 T135°C (-65°C≤Ta≤+100°C)
H	Ex ia IIC T3 Ga, Ex iaD 20 T200°C (-65°C≤Ta≤+150°C)

The product is powered by Ex ia IIC intrinsically safe power supply that meets the GB3836.4 standard.

Input Parameters:  $U_i=30V$ ,  $I_i=0.25A$ ,  $C_i=33nF$ ,  $L_i=200\mu H$

### 6. Nomenclature of 7\*1\*56F\*\*\*\*\*:

7	*	1	*	5	6	F	*	*	*	*****
1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)

- 1) Series: 7  
2) Body Style  
2=3/8"-24 UNF Ext. Thread  
2M=M12×1 Metric Ext Thread  
6=5/8"-18 UNF Ext. Thread  
6M=M18×1 Metric Ext Thread  
3) Contacts  
1=Single Pole, Double Throw

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- 4) Sensing distance
  - 3=2.5mm
  - 4=1.8mm
  - 5=1.5mm
- 5) Rear Entry: 5
- 6) Material
  - 6=316 S/Steel
- 7) Certified: F, G or H
- 8) Cable Type:
  - A=PVC Insulated Leads
  - B=PVC Jacketd Cable
  - F=Teflon Insulated Leads
  - H=PEEK Insulated Leads
  - S=Silicone Cable
- 9) Cable length
  - 2=36"
  - 3=72"
  - 4=144"
  - 5=25'
  - 6=50'
  - 7=100'
  - 8=250'
- 10) Regional Cert
  - 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)
- 11) Custom Build Indents
  - 6 digits (without relevance for explosion protection)

The seventh character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

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Seventh character of Model Number	Certification Marking
F	Ex ia IIC T6 Ga, Ex iaD 20 T85 °C (-65 °C ≤ Ta ≤ +50 °C)
G	Ex ia IIC T4 Ga, Ex iaD 20 T135 °C (-65 °C ≤ Ta ≤ +100 °C)
H	Ex ia IIC T3 Ga, Ex iaD 20 T200 °C (-65 °C ≤ Ta ≤ +150 °C)

The product is powered by Ex ia IIC intrinsically safe power supply that meets the GB3836.4 standard.

Input Parameters:  $U_i=30V$ ,  $I_i=0.25A$ ,  $C_i=33nF$ ,  $L_i=200\mu H$

### 7. Specific conditions of safety use:

- 1) Both contacts of the Double Throw and the separate poles of the Double Pole switch, within one proximity switch must form part of the same intrinsically safe circuit.
- 2) The proximity switches do not require a connection to earth for safety purposes, but an earth connection is provided which is directly connected to the metallic enclosure. Normally an intrinsically safe circuit may be earthed at one point only. If the earth connection is used, the implications of this must be fully considered in any installation. i.e. by the use of a galvanically isolated interface.
- 3) When using this product, it must be powered by an Ex ia IIC intrinsically safe power supply that meets the GB3836.4 standard and has obtained certification.
- 4) The flying leads must be terminated in a manner suitable for the zone of installation.

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