



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx TUN 15.0011X

Issue No: 1

Certificate history:

Status: **Current**

Issue No. 1 (2019-07-11)

Issue No. 0 (2015-03-30)

Date of Issue: **2019-07-11**

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Applicant: **Hans Turck GmbH & Co. KG**  
Witzlebenstraße 7  
45472 Mülheim  
Germany

Equipment: **Analog Signal Isolator type IMX(K)12-AO01-\*I-\*I-H\*\*/24VDC/\*\***

Optional accessory:

Type of Protection: **Intrinsic safety and increased safety**

Marking:

[Ex ia Ga] IIC, [Ex ia Da] IIIC

Ex ec [ia Ga] IIC T4 Gc

Ex ec [ia IIIC Da] IIC T4 Gc

Approved for issue on behalf of the IECEx  
Certification Body:

Christian Roder

Position:

Head of IECEx Certification Body

Signature:  
(for printed version)

Date:

2019-07-11

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 the [Official IECEx Website](http://Official IECEx Website).

Certificate issued by:

**TÜV NORD CERT GmbH**  
Hanover Office  
Am TÜV 1, 30519 Hannover  
Germany





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Manufacturer: **Hans Turck GmbH & Co. KG**  
Witzlebenstraße 7  
45472 Mülheim  
Germany

Additional Manufacturing location(s):

**Werner Turck GmbH & Co. KG**  
Goethestraße 7  
58553 Halver  
Germany

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 apparatus 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:

|   |   |
|---|---|
| <b>IEC 60079-0 : 2011</b><br>Edition:6.0  | Explosive atmospheres - Part 0: General requirements                          |
| <b>IEC 60079-11 : 2011</b><br>Edition:6.0 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" |
| <b>IEC 60079-7 : 2015</b><br>Edition:5.0  | Explosive atmospheres – Part 7: Equipment protection by increased safety "e"  |

*This Certificate **does not** indicate compliance with electrical 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 Report:

[DE/TUN/ExTR15.0017/01](#)

Quality Assessment Report:

[DE/PTB/QAR06.0012/04](#)

[DE/PTB/QAR06.0013/05](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

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

1. According to IEC 60079-7:2015, section 4.10.1, the following is valid for this apparatus:

The apparatus has to be mounted in a housing tested according to IEC 60079-0, that meets the requirements of degree of protection IP54.

The apparatus may be installed in an area of not more than pollution degree 2.

2. The connecting and disconnecting of energized non intrinsically safe circuits is only permitted, if no explosion hazardous atmosphere is available.



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

### Issue 1

- new version with 1 channel; no changes regarding the principle of the electrical safety circuitries
- changed contact designation (electrical data)
- new name "Analog Signal Isolator"
- standard update regarding IEC 60079-7:2015
- changes of some components and the housing

### **Annex:**

[Attachment to IECEx TUN 15.0011 X Issue 1 IMX\(K\)12 AO.pdf](#)

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Attachment to IECEx TUN 15.0011 X issue no.: 1

Product:

The Analog Signal Isolator type IMX(K)12-AO01-\*I-I-H\*\*/24VDC/\*\* is used for the galvanically separated supply of apparatus in the explosion hazardous area as well as for the safe galvanic separation between the non intrinsically safe measuring circuits and the intrinsically safe output circuits.

The device is executed with 1 or 2 channels.

The permissible ambient temperature range is -25°C ... 70°C.

Electrical data

Supply circuit ..... U = 10 ... 30 V d. c., ca. 2W  
(X11-contacts 15[+], 16[-]  
or X30-contacts 4[+], 5[-]  
"K" version:  
X11-contacts 7[+], 8[-] )  
U<sub>m</sub> = 253 V a. c. / d. c.

Input circuits ..... U = 24 V (max.30 V) d. c., 4-20 mA  
(X14-contacts 9[+], 10[-]  
X13-contacts 11[+], 12[-]  
"K" version:  
X12-contacts 5[+], 6[-] )  
U<sub>m</sub> = 253 V a. c. / d. c.

Failure signal output ..... U = 30 V d. c., 100 mA; potential free contact  
(X30-contacts 1, 2)  
U<sub>m</sub> = 253 V a. c. / d. c.

Output circuits ..... in type of protection  
(X24-contacts 7[+], 8[-]  
X23-contacts 5[+], 6[-]  
"K" version:  
X22-contacts 3[+], 4[-] )  
Intrinsic Safety Ex ia IIC/IIB resp. Ex ia IIIC  
Maximum values per channel:  
U<sub>o</sub> = 21.8 V  
I<sub>o</sub> = 53.2 mA  
R<sub>i</sub> = 134.6 Ω  
P<sub>o</sub> = 671 mW  
Characteristic line: angular  
The effective internal capacitance and inductance is negligibly small.

| Ex ia                                 | IIC      |          |          | IIB     |        |         |
|---------------------------------------|----------|----------|----------|---------|--------|---------|
| max. permissible external inductance  | 1.5 mH   | 0.5 mH   | 0.1 mH   | 20 mH   | 10 mH  | 0.5 mH  |
| max. permissible external capacitance | 0.069 μF | 0.095 μF | 0.169 μF | 0.54 μF | 0.6 μF | 0.66 μF |

The maximum values of the table are also allowed to be used up to the permissible limits as concentrated capacitances and as concentrated inductances.

The values for IIB and for IIC are also permissible for explosive dust atmospheres.

The intrinsically safe output circuits are safely galvanically separated from the non intrinsically safe circuits up to the peak value of the voltage of 375 V.

Special conditions for safe use (only for zone 2 applications)

1. According to IEC 60079-7:2015, section 4.10.1, the following is valid for this apparatus:  
The apparatus has to be mounted in a housing tested according to IEC 60079-0, that meets the requirements of degree of protection IP54.  
The apparatus may be installed in an area of not more than pollution degree 2.
2. The connecting and disconnecting of energized non intrinsically safe circuits is only permitted, if no explosion hazardous atmosphere is available.

Details of Change:

- new version with 1 channel; no changes regarding the principle of the electrical safety circuitries performed
- changed contact designation (electrical data)
- new name "Analog Signal Isolator"
- standard update regarding IEC 60079-7:2015
- changes of some components and the housing