



# 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 06.0009X Issue No: 2 Certificate history:  
Status: Current Issue No. 2 (2018-12-12)  
Date of Issue: 2018-12-12 Page 1 of 4 Issue No. 1 (2014-03-06)  
Applicant: Hans Turck GmbH & Co. KG  
Witzlebenstraße 7  
45472 Mülheim an der Ruhr  
Germany  
Equipment: Transmitter Supply type IM33-\*\*\*Ex-\*\*\*/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

Approved for issue on behalf of the IECEx  
Certification Body:

Christian Roder

Position:

Head of IECEx Certification Body

Signature:  
(for printed version)

Date:

2018-12-12

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://www.iecex.com).

Certificate issued by:

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





# IECEX Certificate of Conformity

Certificate No: IECEX TUN 06.0009X  
Date of Issue: 2018-12-12  
Manufacturer: Hans Turck GmbH & Co. KG  
Witzlebenstraße 7  
45472 Mülheim an der Ruhr  
Germany

Issue No: 2  
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**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:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-7 : 2015 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/ExTR13.0028/01](#)

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:*

The Transmitter Supply type IM33-\*\*\*Ex-\*\*\*/24VDC is an associated electrical apparatus for installation outside of the explosion hazardous area (according IEC 60079-11) resp. an apparatus for use in Zone 2 explosion hazardous areas (according IEC 60079-7).

The Transmitter Supply type IM33-\*\*\*Ex-\*\*\*/24VDC is used as power supply for intrinsically safe 2 wire (and optional 3 wire) transmitters operated in explosive gas atmospheres and also for the galvanically separated transmission of standardised analogue signals into areas with non-explosive atmospheres.

The device is executed with 1 or 2 channels.

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

See attachment for further details.

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

If the transmitter supply type IM33-\*\*\*Ex-\*\* \*/ 24VDC is mounted in explosion hazardous areas of zone 2, the following special conditions are to be followed:

1. According to IEC 60079-7, 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 2

The following changes were performed:

- Standard updates performed
- several changes of the internal assembly

### **Annex:**

[Attachment IECEx TUN 06.0009 X issue 2 IM33.pdf](#)

Product:

The Transmitter Supply type IM33-\*\*\*Ex-\*\*\*/24VDC is an associated electrical apparatus for installation outside of the explosion hazardous area (according IEC 60079-11) resp. an apparatus for use in Zone 2 explosion hazardous areas (according IEC 60079-7).

The Transmitter Supply type IM33-\*\*\*Ex-\*\*\*/24VDC is used as power supply for intrinsically safe 2 wire (and optional 3 wire) transmitters operated in explosive gas atmospheres and also for the galvanically separated transmission of standardised analogue signals into areas with non-explosive atmospheres.

The device is executed with 1 or 2 channels.

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

Electrical data

Supply circuits  $U \leq 35 \text{ V d.c.}, P \leq 3.2 \text{ W}$   
(Terminals 11 and 12)  $U_m = 253 \text{ V a.c. resp. } 125 \text{ V d.c.}$

Output circuits  $U \leq 15 \text{ V d.c.}, I \leq 25 \text{ mA}$   
(Terminals 7, 10 and 8, 9  $U_m = 253 \text{ V a.c. resp. } 125 \text{ V d.c.}$   
resp. 7, 10 with one channel)

Control circuits in type of protection Intrinsic Safety Ex ia IIC/IIB resp. Ex ia IIC

(Terminals 1, 2, 3 and 4, 5, 6 The maximum values have to be taken from the  
resp. 1, 2, 3 with one channel) following table:

Version xxx	11, 12, 22 221 221...K39 221...K40	222 222...K39	223
$U_o$	21.9 V	19.8 V	19.8 V
$I_o$	95 mA	75 mA	90 mA
R	331 $\Omega$	419 $\Omega$	316 $\Omega$
Characteristic line:		trapezoidal	
$C_o$	Ex ia IIC 57 nF	70 nF	76 nF
$L_o$	Ex ia IIC 2.8 mH	1.7 mH	1.2 mH
$C_o$	Ex ia IIB 370 nF	350 nF	400 nF
$L_o$	Ex ia IIB 11 mH	21 mH	15 mH

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 of the table for IIB and for IIC are also permissible for explosive dust atmospheres.

The connection of the control circuits to certified intrinsically safe circuits with the following maximum values is possible:

(Terminals 2, 3	$U_i = 40$ V d.c. (device with one channel) resp.
resp. 5, 6)	$U_i = 30$ V d.c. (device with 2 channels)
	$P_i = 650$ mW

The rules for the interconnection of intrinsically safe circuits have to be observed.

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

The intrinsically safe control circuits are safely galvanically separated up to a sum of the voltages of 60 V.

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

1. According to IEC 60079-7, 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:

The following changes were performed:

- Standard updates performed
- New layout
- new voltage regulator
- type of thyristors (Primary) changed