



IECEX Certificate of Conformity

Certificate No: IECEx TUN 06.0012X

Issue No: 2

Date of Issue: 2019-06-04

Page 2 of 4

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:

IEC 60079-0 : 2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - 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/ExTR06.0056/02](#)

Quality Assessment Report:

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

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



IECEx Certificate of Conformity

Certificate No: IECEx TUN 06.0012X

Issue No: 2

Date of Issue: 2019-06-04

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The isolating amplifier type IM35-**Ex-*i*****/-*u******* is used for the safe galvanic separation of the intrinsically safe current-/voltage outputs and the non intrinsically safe circuits.

The isolating amplifier is an associated electrical apparatus for installation outside of the explosion hazardous area (according to IEC 60079-11) resp. an apparatus for use in Zone 2 explosion hazardous areas (according to IEC 60079-7).

The isolating amplifier is executed with one or two channels.

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

See attachment for details.

SPECIFIC CONDITIONS OF USE: YES as shown below:

If the isolating amplifier type IM35-**Ex-*i***** / -*u******* 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.



IECEX Certificate of Conformity

Certificate No: IECEX TUN 06.0012X

Issue No: 2

Date of Issue: 2019-06-04

Page 4 of 4

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

Details of Change:

The following changes were performed:

- Standard updates performed
- New marking
- Partly new layout
- Type of switchmode regulator IC 13 and some other components changed
- Type of thyristors T12 and T13 changed
- Alternative manufacturer of terminals
- Minor change of electrical data (U_m)

Annex:

[_Attachment IECEX TUN 06.0012 X issue 2 IM35.pdf](#)

Product:

The isolating amplifier type IM35-**Ex-i** is used for the safe galvanic separation of the intrinsically safe current-/voltage outputs and the non intrinsically safe circuits.

The isolating amplifier is an associated electrical apparatus for installation outside of the explosion hazardous area (according to IEC 60079-11) resp. an apparatus for use in Zone 2 explosion hazardous areas (according to IEC 60079-7).

The isolating amplifier is executed with one or two channels.

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

Electrical data

Supply circuit U_n = 24 V d.c. (max. 35 V d.c.)
(Terminals 11 [+], 12 [-]) U_m = 253 V a.c. resp. 125 V d.c.

Input circuits U ≤ 15 V, 50 mA
(Terminals 8 [+], 9 [-]) U_m = 253 V a.c. resp. 125 V d.c.
resp. 7 [+], 10 [-])

Output circuits in type of protection "Intrinsic Safety" Ex ia IIC/IIB/IIIC
(Terminals 1 [+], 2 [-]
resp. 4 [+], 5 [-])

IM35-Ex-i

Maximum values per circuit:

U_o = 15.9 V
 I_o = 60 mA
 R = 528 Ω
 P_o = 470 mW

Characteristic line: trapezoidal

Effective internal inductance: negligibly small

Effective internal capacitance: 5 nF

	Ex ia		IIC		IIB	
max. permissible external inductance	5.0 mH	0.5 mH	10 mH	0.5 mH	10 mH	0.5 mH
max. permissible external capacitance	135 nF	330 nF	860 nF	2.2 μF	860 nF	2.2 μF

IM35-Ex**u******

Maximum values per circuit:

$U_o = 15.9 \text{ V}$
 $I_o = 54 \text{ mA}$
 $R = 584 \text{ } \Omega$
 $P_o = 420 \text{ mW}$

Characteristic line: trapezoidal

Effective internal inductance: negligibly small

Effective internal capacitance: 5 nF

Ex ia	IIC		IIB	
max. permissible external inductance	5.0 mH	0.5 mH	10 mH	0.5 mH
max. permissible external capacitance	145 nF	340 nF	900 nF	2.2 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 of the table for IIB and for IIC are also permissible for explosive dust atmospheres.

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.

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 marking
- Partly new layout
- Type of switchmode regulator IC 13 and some other components changed
- Type of thyristors T12 and T13 changed
- Alternative manufacturer of terminals
- Minor change of electrical data (U_m)