



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

Certificate No.: **IECEX TUN 07.0011X** issue No.:1

Certificate history:
 Issue No. 1 (2008-12-11)
 Issue No. 0 (2007-9-5)

Status: **Current**

Date of Issue: **2008-12-11** Page 1 of 6

Applicant: **Hans Turck GmbH & Co. KG**
 Witzlebenstraße 7
 D-45472 Mülheim an der Ruhr
 Germany

Electrical Apparatus: **Isolating amplifier type IMC-DI-**Ex-*N*/24VDC/****
 Optional accessory:

Type of Protection: **Intrinsic safety "i", type of protection "n" electrical apparatus, protection by enclosures "ID"**

Marking: **[Ex ia] IIB/IIC
 Ex nA [nL] IIB/IIC T4
 Ex ID A22 IP67 T96°C**

Approved for issue on behalf of the IECEx Certification Body: **Karl-Heinz Schwedt**

Position: **Head of ExCB**

Signature: *(for printed version)*

(Signature)
2008.12.11

- Date:
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.

Certificate issued by:
TÜV NORD CERT GmbH
 Hanover Office
 Am TÜV 1
 30519 Hannover
 Germany



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Manufacturer: **Werner Turck GmbH & Co. KG**
 Goethestraße 7
 D-58553 Halver
 Germany

Manufacturing location(s):
Werner Turck GmbH & Co. KG
 Goethestraße 7
 D-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 electrical 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 : 2004** Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
Edition: 4.0
- IEC 60079-11 : 1999** Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic safety 'i'
Edition: 4
- IEC 60079-15 : 2005-03** Electrical apparatus for explosive gas atmospheres Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus
Edition: 3
- IEC 61241-0 : 2004** Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
Edition: 1
- IEC 61241-1 : 2004** Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "ID"
Edition: 1

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/ExTR07.0015/01
 Quality Assessment Report:
 DE/PTB/QAR06.0012/00



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The isolating amplifier type IMC-DI-**Ex-*/24VDC/** is an associated electrical apparatus for installation outside of the explosion hazardous area according to IEC 60 079-11 resp. an apparatus according to IEC 60 079-15 for use in zone 2 explosion hazardous areas.

It is also an apparatus according to IEC 61241-1 for use in zone 22 explosion hazardous areas. It is used for transmission of binary signals from the explosion hazardous area into the non explosion hazardous area as well as for the safe galvanic separation of the intrinsically safe resp. energy limited input circuits from the non intrinsically safe resp. non energy limited supply circuit/output circuits. The isolating amplifier is executed with two channels.

The marking as associated intrinsically safe apparatus outside the explosion hazardous area is [Ex ia] IIC/IIB;

The marking for mounting in explosion hazardous areas of zone 2 is Ex nA [nL] IIC/IIB T4.

The marking for mounting in explosion hazardous areas of zone 22 is Ex tD A22 IP67 T96°C.

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

CONDITIONS OF CERTIFICATION: YES as shown below:

1. For zone 2 and zone 22 applications: The connecting and disconnecting of energised non energy limited circuits is not permitted (see warning label).
2. Zone 2 and zone 22 applications: The protective housing has to be safely screwed to a solid basement with the provided screws resp. with screws according to the manufacturer's manual.
3. Zone 22 applications: The value for the surface temperature was measured without dust layer.
4. Zone 22 applications: The dust is only allowed to be non conductive.



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EQUIPMENT(continued):

Electrical Data

Supply circuit
 (Connections X2;
 pins 1[+], 3[-])

U = 24 V d. c. (max. 30 V d. c.), P ca. 1.5 W
 For applications of the isolating amplifier with marking [Ex ia] IIC/IIB:

U_m = 250 V a. c. resp. 125 V d. c.

Output circuits
 (Connections X2;
 type IMC-DI-**Ex-PN*/24VDC/**;
 pins 1[+], 2[-] resp. 1[+], 4[-]
 type IMC-DI-**Ex-NN*/24VDC/**;
 pins 2[+], 3[-] resp. 4[+], 3[-])

U = 24 V d. c. (max. 30 V d. c.), P ca. 3 W
 For applications of the isolating amplifier with marking [Ex ia] IIC/IIB:

U_m = 250 V a. c. resp. 125 V d. c.



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

See annexe



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Additional information:

Input circuit (Connections X1; bushings 1[+], 4[-] resp. 1[+], 2[-])
 Maximum values per circuit:
 $U_o = 9.6 \text{ V}$
 $I_o = 10 \text{ mA}$
 $P_o = 24 \text{ mW}$
 Characteristic line: linear
 The effective internal capacitances are negligibly small.
 effective internal inductance: 0.15 mH

For applications with marking [Ex ia] IIC/IIB:

Ex ia	IIC	IIB
max. permissible external inductance	0.85 mH	10 mH
max. permissible external capacitance	1100 nF	750 nF

For applications with marking Ex nA [nL] IIC/IIB T4:

Ex nL	IIC	IIB
max. permissible external inductance	5 mH	0.85 mH
max. permissible external capacitance	1400 nF	1900 nF

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

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

Annexe: 1st supplement_IMC_DI_CoC IECEx TUN 07.0011 X.pdf