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 PTB 13.0041	Issue No: 1	Certificate history:
			Issue No. 1 (2017-02-03)
Status:	**Current**	Page 1 of 4	Issue No. 0 (2013-10-21)
Date of Issue:	**2017-02-03**		

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

Equipment: **Excom module, type DM80Ex, DF20Ex**

Optional accessory:

Type of Protection: **Intrinsic Safety "i"**

Marking:

Ex ib [ia Ga] IIC T4 Gb or Ex ib [ia Ga] IIC T4

[Ex ia Da] IIIC or [Ex ia] IIIC

Approved for issue on behalf of the IECEx Certification Body: Dr.-Ing. F. Lienesch

Position: Department Head "Explosion Protection in Sensor Technology and Instrumentation"

Signature:
(for printed version)

Date: 17.1.17

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:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

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Manufacturer:	**Werner Turck GmbH & Co. KG** Goethestr. 7 58553 Halver **Germany**	

Additional Manufacturing location(s):

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 : 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"

*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/PTB/ExTR13.0059/01

Quality Assessment Report:

DE/PTB/QAR06.0013/04

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

For further information see the attachment of this certificate.

CONDITIONS OF CERTIFICATION: NO

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

The modifications concern the adaptation to the standards. The internal structure has been adapted. The changes concern the use of alternative components in the electronic circuitry.

Annex:

IECEx PTB 13_0041_01-DS.pdf

Applicant: Hans Turck GmbH & Co.KG

Electrical Apparatus: Witzlebenstraße 7, 45472 Mülheim, Germany

Description of equipment

The excom module, type DM80EX and DF20EX serves to input and output digital intrinsically safe signals from the field bus system into intrinsically safe field circuits. It is designed in type of protection Intrinsic Safety "i" and is intended to be used within the I/O Fieldbus system, type excom® with the module subrack, type MT according to IECEx PTB 13.0040U.

The excom module, type DM80EX and DF20EX, ensure the electrical isolation for various circuits. These isolate the external field circuits from the internal data buses and the internal supply voltage.

The operation of the excom module, type DM80EX and DF20EX inside of an enclosure with a degree of protection of at least IP54 is ensured by the application within the I/O Fieldbus system type excom® in potentially explosive atmospheres.

The permissible ambient temperature range is: -20°C up to +70°C

Electrical data

I.)	**AC-supply circuit**	type of protection Intrinsic Safety Ex ib IIC; only for connection with the module subrack type MT according IECEx PTB 13.0040U P = 1 W (power consumption)

The intrinsically safe AC-supply circuit is safely electrically isolated from ground and up to a peak value of the nominal voltage of 60V from all other intrinsically safe circuits.

II.)	**Signal circuit (CAN-BUS)**	type of protection Intrinsic Safety Ex ib IIC; only for connection with the module subrack type MT according IECEx PTB 13.0040U
III.)	**Address encoding**	type of protection Intrinsic Safety Ex ib IIC; only for connection with the module subrack type MT according IECEx PTB 13.0040U

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IV.) Field circuits

Terminals at the module subrack type MT:

Channel 1: 11+ , 12-
Channel 2: 13+ , 14-
Channel 3: 21+ , 22-
Channel 4: 23+ , 24-
Channel 5: 31+ , 32-
Channel 6: 33+ , 34-
Channel 7: 41+ , 42-
Channel 8: 43+ , 44-

type of protection Intrinsic Safety
[Ex ia Ga] IIC/IIB or [Ex ia Da] IIIC
maximum values per channel:

U_o = 9.6 V

I_o = 44 mA

P_o = 106 mW

characteristic: linear

C_i negligibly low

L_i negligibly low

maximum values for common external reactances:
(the values below correspond to the ISpark program)

	IIC	IIB
L_o (mH)	C_o (µF)	C_o (µF)
2	0.9	5.1
1	1.1	6.1
0,5	1.3	7.3
0,2	1.7	9.6
0,1	2	12

The intrinsically safe field circuits are safely electrically isolated from ground and up to a peak value of the nominal voltage of 60V from all other intrinsically safe circuits. The intrinsically safe field circuits are interconnected.

Modifications

The modifications concern the adaptation to the standards. The internal structure has been adapted. The changes concern the use of alternative components in the electronic circuitry.

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