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 12.0016	Issue No: 1	
Status:	**Current**	Page 1 of 4	

Date of Issue: **2017-05-08**

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

Equipment: **Excom module, type DO401Ex**
Optional accessory:

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

Marking:

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

[Ex ia Da] III C or [Ex ia] IIIC

*Approved for issue on behalf of the IECEx
Certification Body:*

Dr.-Ing. F. Lienesch

Position:

Head of Department "Explosion Protection in Sensor Technology and Instrumentation"

Signature:
(for printed version)

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:

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

PTB
Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

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Manufacturer: **Hans Turck GmbH & Co. KG**
Witzlebenstr. 7
45472 Mühlheim an der Ruhr
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/ExTR12.0016/01

Quality Assessment Report:

DE/PTB/QAR06.0013/04

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

See the attachement of this certificate.

SPECIFIC CONDITIONS OF USE: NO

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

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

Annex:

CoCA120016-01.pdf

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

Electrical Apparatus: Excom module, type DO401Ex

Description of equipment

The Excom module, type DO401EX is used to output digital intrinsically safe signals from the fieldbus system to 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 PTB 00 ATEX 2194 U.

The excom module, type DO401EX ensure the electrical isolation for the 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 DO401EX inside of an enclosure with a degree 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 bis +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 PTB 00 ATEX 2194 U

$P = 4,5$ 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 PTB 00 ATEX 2194 U

III.) **Address encoding** type of protection Intrinsic Safety Ex ib IIC;

only for connection with the module subrack type MT according PTB 00 ATEX 2194 U

IV.) **Field circuits** type of protection Intrinsic Safety
[Ex ia Ga] IIC/IIB or [Ex ia Da] IIIC

24V-output maximum values per channel:

Channel 1: 11+ , 12-
Channel 2: 21+ , 22-
Channel 3: 31+ , 32-
Channel 4: 41+ , 42-

$U_o = 25$ V

$I_o = 80$ mA

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 Postfach 33 45, 38023 Braunschweig, Germany
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P_o = 750 mW

C_i negligibly low

L_i negligibly low

maximum values for common external reactances:

(the values below correspond to the ISpark program)

L_o (mH)	IIC C_o (µF)	IIB C_o (µF)
2	--	0,35
1	--	0,41
0,5	--	0,5
0,2	--	0,66
0,1	0,11	0,82

18V-output

Channel 1: 13+ , 14-
Channel 2: 23+ , 24-
Channel 3: 33+ , 34-
Channel 4: 43+ , 44-

maximum values per channel:

U_o = 19 V

I_o = 100 mA

P_o = 710 mW

C_i negligibly low

L_i negligibly low

maximum values for common external reactances:

(the values below correspond to the ISpark program)

L_o (mH)	IIC C_o (µF)	IIB C_o (µF)
2	--	1
1	--	1
0,5	0,14	1
0,2	0,17	1,1
0,1	0,23	1,3

Only passive intrinsically safe circuits may be connected to all 4 channels - to the 24V outputs and the 18V outputs. Only one 24V output or the 18V output can be used for each channel.

The intrinsically safe channels of the field circuits are safely galvanically isolated from ground and among themselves and up to a peak value of the nominal voltage of 60V from all other intrinsically safe circuits. In each channel the 24V output and the 18V output are galvanically connected.

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