IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx PTB 21.0019X**

Certificate history:

Status: **Current**

Issue No: 0

Date of Issue: 2021-07-12

Applicant: **Hans Turck GmbH & CO KG**
Witzlebenstrasse 7
DE 45472
Mulheim an der Ruhr
Germany

Equipment: **Excom 4-channel temperature input module, series TI401EX**

Optional accessory:

Type of Protection: **General Requirements, Intrinsic Safety "i"**

Marking: Ex ib [ia Ga] IIC T4 Gb

[Ex ia Da] IIIC

Approved for issue on behalf of the IECEx Certification Body: **Dr.-Ing. Martin Thedens**

Position: **Head of Departament "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 www.iecex.com or use of this QR Code.

Certificate issued by:

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

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 21.0019X** Page 2 of 3

Date of issue: 2021-07-12 Issue No: 0

Manufacturer: **Hans Turck GmbH & Co KG**
Witzlebenstr. 7
45472 Mülheim
Germany

Additional manufacturing locations:

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 equipment 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 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with 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/ExTR21.0041/00

Quality Assessment Report:

DE/PTB/QAR06.0013/06

IECEx Certificate of Conformity

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Refer to attachment to the certificate

SPECIFIC CONDITIONS OF USE: YES as shown below:
The device with its housing must be installed and operated in areas with pollution degree 2 as defined in EN 60664-1.

Annex:

COCA2119.pdf

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

Electrical Apparatus: Excom 4-channel temperature input module, type TI401Ex

Description of equipment

The excom module type TI401Ex is a 4-channel temperature input module for RTD sensors, thermocouples, measurement of mV signals and resistance measurements.

The analog input values are digitized and converted into binary signals for further processing in the fieldbus system.

The excom module is designed in type of protection intrinsic safety "i" and can be installed without further protective measures within the excom I/O fieldbus system in the approved module rack MT... (IECEx PTB 13.0040 U) in zone 1.

The intrinsically safe field circuits may be routed into gas hazardous areas of zone 0, 1 or 2, as well as into dust explosion hazardous areas of zone 20, 21 or 22.

Disconnection points for the different circuits are ensured via the module in accordance with EN 60079-11:2012. These separate the external field circuits in type of protection Ex ia IIC / Ex ia IIIC from the internal data buses and the internal supply voltage.

By plugging the TI401Ex... module into the module rack MT... the protection class IP20 according to IEC 60529 is achieved.

The permitted ambient temperature range is: -40°C to 70°C

Electrical data

AC supply circuit (Terminal J2: Pins 15, 16)	Type of protection Ex ib IIC system-internal circuit, no external connection options Maximum values: U = 40 VAC_{ss} f = 314 kHz P ≤ 1 W (Power consumption) C_i negligibly small L_i negligibly small
Signal circuit (CAN Bus) CAN-Bus A (Terminal J2: Pins 9, 10) CAN-Bus B (Terminal J2: Pins 11, 12)	Type of protection Ex ib IIC; only for connection to the module rack Type MT according to PTB 00 ATEX 2194 U

Module addressing

(Terminal J2: Pins 1-6)

Type of protection Ex ib IIC;

only for connection to the module rack Type MT according to PTB 00 ATEX 2194 U

Field circuits

Channel 1 (Terminal J3: Pins 1 -4)
Channel 2 (Terminal J3: Pins 5 -8)
Channel 3 (Terminal J3: Pins 9 -12)
Channel 4 (Terminal J3: Pins 13 -16)

Type of protection Ex ia IIC / Ex ia IIIC;

external terminals

Output values:

U_o = 4,75 V

I_o ≤ 22 mA

P_o ≤ 26 mW

C_i ≤ 1 nF

L_i negligibly small

Characteristic linear

Maximum values for occurring external reactances

(Calculation according to ISpark V. 6.2)

L_o (mH)	IIC	IIB
	C_o (µF)	C_o (µF)
0,2	6,2	37
0,5	4,9	28
1	4,2	23
2	3,6	20
5	3,0	16
10	2,6	14

Input values:

Supply by active encoders

U_i ≤ 1,2 V

I_i ≤ 50 mA

P_i ≤ 60 mW

Special conditions for safe use

The device with its housing must be installed and operated in areas with pollution degree 2 as defined in EN 60664-1.

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605