



(1) **EU-TYPE EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment or Protective Systems Intended for Use in
 Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 21 ATEX 2001 X

Issue: 0

(4) Product: Excom 4-channel temperature input module, type TI401Ex

(5) Manufacturer: Hans Turck GmbH & Co. KG

(6) Address: Witzlebenstraße 7, 45472 Mülheim an der Ruhr, Germany

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 21-21071.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018 **EN 60079-11:2012**

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:



II 2 (1) G Ex ib [ia Ga] IIC T4 Gb

II (1) D [Ex ia Da] IIIC

Konformitätsbewertungsstelle, Sektor Explosionsschutz

On behalf of PTB:


 Dr.-Ing. M. Thedens
 Regierungsdirektor



Braunschweig, July 19, 2021

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EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

SCHEDULE

(13)

(14) **EU-Type Examination Certificate Number PTB 21 ATEX 2001 X, Issue: 0**

(15) Description of Product

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... (PTB 00 ATEX 2194 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:

$U = 40 \text{ VAC}_{ss}$

$f = 314 \text{ kHz}$

$P \leq 1 \text{ W}$ (Power consumption)

C_i negligibly small

L_i negligibly small

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 21 ATEX 2001 X, Issue: 0

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:

$$U_o = 4,75 \text{ V}$$

$$I_o \leq 22 \text{ mA}$$

$$P_o \leq 26 \text{ mW}$$

$$C_i \leq 1 \text{ nF}$$

$$L_i \text{ negligibly small}$$

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

$$U_i \leq 1,2 \text{ V}$$

$$I_i \leq 50 \text{ mA}$$

$$P_i \leq 60 \text{ mW}$$

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 21 ATEX 2001 X, Issue: 0

(16) Test Report PTB Ex 21-21071

(17) Specific conditions of use

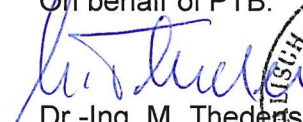
The device with its housing must be installed and operated in areas with pollution degree 2 as defined in EN 60664-1.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz

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