1 UNITED KINGDOM CONFORMITY ASSESSMENT

UK TYPE EXAMINATION CERTIFICATE

2 **Product or Protective System Intended for use in Potentially Explosive Atmospheres**

UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

3 Type Examination Certificate No.: **TÜV 21 UKEX 7073 X** Issue: **00**

4 Product: **Temperature Input Module 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 TUV Rheinland UK Ltd, Approved Body number 2571, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential report 557 / UKEx 7073.00 / 21.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-11:2012**

Except in respect of those requirements listed at section 18 of the schedule to this certificate.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:

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

II (1) D [Ex ia Da] IIIC

This certificate and its schedules may only be reproduced in its entirety and without change.

TUV Rheinland UK Ltd

Solihull, 2022-06-29

Dipl.-Ing. Klauspeter Graffi

This Type Examination Certificate without signature shall not be valid. Alterations are subject to approval by TUV Rheinland UK Ltd, 1011 Stratford Road, Shirley, Solihull, B90 4BN, Tel. +44 (0) 121 7969400
A UKAS accredited certification body, No. 8400

13 SCHEDULE TO UK TYPE EXAMINATION CERTIFICATE

14 CERTIFICATE NUMBER TÜV 21 UKEX 7073 X

15 Description of Product

The excom module type TI401 Ex is a 4-channel temperature input module for RTD sensors, thermocouples, measurement of mV signals and resistance measurements.

General product information

The excom module is designed in type of protection intrinsic safety "i" and can be installed without further protective measures within the excom 1/0 fieldbus system in the approved module rack MT. .. 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 TI401 Ex ... 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.

Technical Data

I.) AC-supply circuit
(Terminal J2: Pins 15, 16)

type of protection Intrinsic Safety Ex ib IIC;

(system internal circuit, no external connection options)

Maximum values:

U = 40 V AC_{ss}

f = 314 kHz

P ≤ 1 W (power consumption)

Ci negligibly small

Li negligibly small

II.) 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

III.) Module addressing

Module addressing
(Terminal J2: Pins 1-6)

Type of protection Ex ib IIC;
only for connection to the module rack Type MT

IV.) Field circuits

channel 1: (Pins 1 - 4)
channel 2: (Pins 5 - 8)
channel 3: (Pins 9 -12)
channel 4: (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 reactance's
(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

16 Test report No. (associated with this certificate issue): 557 / UKEx 7073.00 / 21

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 (Regulations Schedule 1)

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

19 Drawings and Documents

Reg. no.	Document title:	Document no.:	Rev.:	Date:
1.	Approval documentation TI401Ex (173 p.)	Approval documentation TI401Ex signed.pdf	01	02.05.2022