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 7059** Issue: **00**

4 Product: **Temperature Input Module TI41Ex**

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 7059.00 / 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, 2022-04-14

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

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13 SCHEDULE TO UK TYPE EXAMINATION CERTIFICATE

14 CERTIFICATE NUMBER TÜV 21 UKEX 7059

15 Description of Product

The excom Module, type TI41Ex. is used for the acquisition of measured values. Thermocouples, resistance thermometers or other sensors with defined quantities of resistance and direct voltage are connected alternatively as measuring sensors.

General product information

The excom Module, type TI41Ex is a part of the excom fieldbus system. It is plugged and operated in the subrack with backplane of the excom fieldbus system. The degree of protection of IP20 according to IEC 60529 is guaranteed in connection with the enclosure of the subrack.

The equipment is intended for application inside the hazardous area.

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

Technical Data

I.) AC-supply circuit

type of protection Intrinsic Safety Ex ib IIC;

(system internal circuit without external connection facilities)

only for connection to the module subrack, type MT.

Maximum values:

U = 20 V AC (amplitude)

f = 300 ... 314 kHz

P ≤ 1 W (power consumption in the module)

Ci negligibly low

Li negligibly low

The intrinsically safe AC-supply circuit is safely electrically isolated from ground and from all other intrinsically safe circuits up to a peak value of the nominal voltage of 100 V.

II.) Signal circuit (CAN-BUS)

(system-internal intrinsically safe circuit without external connection facilities)

III.) Module addressing

(system-internal intrinsically safe circuit without external connection facilities)
The intrinsically safe signal circuit (CAN-BUS) and the module addressing are safely electrically isolated from ground and electrically interconnected.

IV.) Field circuits
Terminals on the system-subrack:

channel 1: 1...4
channel 2: 5 ... 8
channel 3: 9 ... 12
channel 4: 13 ... 16

type of protection Intrinsic Safety

Ex ia IIC or Ex ia IIIC

Maximum values per channel:

Uo = 5.3 V

Io = 4.5 mA

Po = 6 mW

linear characteristic

Ci = 1 µF

Li = 2 mH

For relationship between explosion group and external reactances, reference is made to the table. Existing internal reactances are considered with the tabulated values.

	IIC	IIB
Lo (mH)	Co (µF)	Co (µF)
3	1.6	12
2	2	15
1	2.5	18
0.5	3	22
0.2	4	29
0.1	5.1	37

The intrinsically safe field circuits are safely electrically isolated from ground and - up to a peak value of the nominal voltage of 50 V - from each other and from the intrinsically safe signal circuit (CAN-BUS) and the module addressing.

16 Test report No. (associated with this certificate issue): 557 / UKEx 7059.00 / 21

17 Specific Conditions of Use

None

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:
	Approval documentation TI41Ex (173 p.)	Approval documentation TI41Ex signed.pdf	01	26.01.2022