

1 **UNITED KINGDOM CONFORMITY ASSESSMENT**
2 **UK TYPE EXAMINATION CERTIFICATE**

3 **Product Intended for use in Potentially Explosive Atmospheres**

4 **UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1**

5 Type Examination Certificate Number: **ExVeritas 21UKEX1024** Issue: **0**

6 Product: excom module, type DO401Ex

7 Manufacturer: Hans Turck GmbH & Co. KG

8 Address: Witzlebenstraße 7, 45472 Mülheim an der Ruhr, Germany

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

10 ExVeritas Limited Approved Body number 2585, 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 by UKSI 2019:696), 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.

11 Compliance with the applicable 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 16 of the schedule to this certificate.

12 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

13 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.

14 The marking of the equipment shall include the following:



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

II (1) D [Ex ia Da] IIIC



No. 8613

On behalf of ExVeritas



S Clarke CEng MSc FIET
Managing Director

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Schedule

13 Description of Product

The excom module type DO401 is used to provide up to 4 digital output signals from the excom fieldbus system to the intrinsic safety 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.

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.

Electrical data (AC-supply circuit)

Type of protection intrinsic safety Ex ib IIC; only for connection with the module subrack.

Signal circuit (CAN-BUS)

Type of protection intrinsic safety Ex ib IIC; only for connection with the module subrack type MT.

Address encoding

Type of protection intrinsic safety Ex ib IIC; only for connection with the module subrack type MT.

Field circuits

Type of protection intrinsic safety [Ex ia Ga] IIC/IIB or [Ex ia Da] IIIC maximum values per channel:

Maximum values for common external reactances in Table 1 and 2 below correspond to the iSpark program.

24V Outputs

Channel 1: 11+, 12-
 Channel 2: 21+, 22-
 Channel 3: 31+, 32-
 Channel 4: 41+, 42-
 U_o = 25 V,
 I_o = 80 mA,
 P_o = 750 mW,
 C_i = Negligibly low,
 L_i = Negligibly low

Lo (mH)	IIC	IIB
	Co (µF)	Co (µF)
2	-	0.35
1	-	0.41
0.5	-	0.5
0.2	-	0.66
0.1	0.11	0.82

Table 1

18V Outputs

Channel 1: 13+, 14-
 Channel 2: 23+, 24-
 Channel 3: 33+, 34-
 Channel 4: 43+, 44-
 U_o = 19 V,
 I_o = 100 mA,
 P_o = 710 mW,
 C_i = Negligibly low,
 L_i = Negligibly low

Lo (mH)	IIC	IIB
	Co (µF)	Co (µF)
2	-	1
1	-	1
0.5	0.14	1
0.2	0.17	1.1
0.1	0.23	1.3

Table 2

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 voltages of 60V from all other intrinsically safe circuits. In each channel the 24V output and the 18V output are galvanically connected.

14 Descriptive Documents

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14.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R3499/A/1	10/09/2021	0	Initial issue of the Prime Certificate

14.2 Compliance Drawings:

Title:	Drawing No.:	Rev. Level:	Date:
Compliance drawings pack (579 pages total)	Multiple drawings	0	11/11/2021

15 Specific Conditions of Use

15.1 Special Conditions for Safe Use

- None

15.2 Routine tests

High potential (voltage) test as a routine test of any printed circuit board / module

16 Essential Health and Safety Requirements (Regulations Schedule 1)

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1

The manufacturer shall inform ExVeritas of any modifications to the design of the product described by this schedule.

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