

Translation

(1) **EU-Type Examination Certificate**

TÜV NORD

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**



(3) **Certificate Number** TÜV 05 ATEX 2846 X **issue:** 00

(4) for the product: Solenoid Driver type IM72-**Ex/L

(5) of the manufacturer: **Hans Turck GmbH & Co. KG**

(6) Address: Witzlebenstraße 7
45472 Mülheim
Germany

Order number: 8000477173

Date of issue: 2018-02-05

- (7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

- (8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 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 ATEX Assessment Report No. 18 203 209380.

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

EN 60079-0:2012 + A11:2013

EN 60079-11:2012

except in respect of those requirements listed at item 18 of the schedule.

- (10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for 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. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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



II (1) G [Ex ia Ga] IIC

II (1) D [Ex ia Da] IIIC

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the notified body

Roder

Hanover office, Am TÜV 1, 30519 Hannover, Tel. +49 511 998-61455, Fax +49 511 998-61590

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(13) SCHEDULE

(14) EU-Type Examination Certificate No. TÜV 05 ATEX 2846 X issue 00

(15) Description of product

The solenoid Driver type IM72-**Ex/L is used for the supply of passive two-poles (e.g. solenoid valves, signal lamps and four wire transmitters) as well as for the safe galvanic separation of intrinsically safe circuits and the non-intrinsically safe circuits.

The device is executed with 1 or 2 channels

The intrinsically safe output circuits of channel 1 are safely galvanically separated from the intrinsically safe output circuits of channel 2.

The intrinsically safe output circuits of the same channel are galvanically connected with each other.

The intrinsically safe output circuits are safely galvanically separated from the non-intrinsically safe circuits up to the peak crest value of the voltage of 375 V

Type code:

IM72-**Ex/L

Electrical data:

Input circuits

(Connections channel 1:

11[+], 12[-]

Connections channel 2:

8[+], 9[-])

Only for the connection to an non-intrinsically safe circuit with following values:

$U_N = 24 \text{ V DC (max } 30 \text{ V DC)}$, $P \text{ ca } 3 \text{ W}$

$U_m = 253 \text{ V a.c resp. } 125 \text{ V d.c}$

Output circuits

(Connections channel 1:

1[+], 3[-]

Connections channel 2:

4[+], 6[-])

In type of protection intrinsic safety Ex ia IIC/IIB/IIIC/IIIB
With following maximum values per channel:

$U_o = 27 \text{ V}$

$I_o = 96 \text{ mA}$

$P_o = 678 \text{ mW}$

$R = 295 \Omega$

Characteristic line: trapezoidal

The effective internal capacitances C_i are negligibly small.

The effective internal inductances L_i are negligibly small.

The maximum permissible values for the external inductance L_o and the external capacitance C_o have to be taken from the following table:

Ex ia IIC	$L_o \text{ [mH]}$	0.680	0.500	0.200	-	-	-
	$C_o \text{ [uF]}$	0.062	0.070	0.090	-	-	-
Exia IIB/IIIB/IIIC	$L_o \text{ [mH]}$	13.000	10.000	5.000	2.000	1.000	0.100
	$C_o \text{ [uF]}$	0.260	0.260	0.260	0.300	0.370	0.705

The maximum values of the table are also allowed to be used up to the permissible limits as concentrated capacitances and as concentrated inductances.

Schedule to EU-Type Examination Certificate No. TÜV 05 ATEX 2846 X issue 00

Output circuits

(Connections channel 1:

2[+], 3[-]

Connections channel 2:

5[+], 6[-])

In type of protection intrinsic safety Ex ia IIC/IIB/IIIC/IIIB

With following maximum values per channel:

$U_o = 17.6 \text{ V}$

$I_o = 96 \text{ mA}$

$P_o = 678 \text{ mW}$

$R = 295 \Omega$

Characteristic line: trapezoidal

The effective internal capacitances C_i are negligibly small.

The effective internal inductances L_i are negligibly small.

The maximum permissible values for the external inductance L_o and the external capacitance C_o have to be taken from the following table:

Ex ia IIC	L_o [mH]	1.200	1.000	0.500	0.200	0.100	-
	C_o [uF]	0.130	0.130	0.150	0.200	0.250	-
Exia IIB/IIIB/IIIC	L_o [mH]	13.000	10.000	5.000	2.000	1.000	0.100
	C_o [uF]	0.470	0.570	0.810	1.100	1.400	1.600

The maximum values of the table are also allowed to be used up to the permissible limits as concentrated capacitances and as concentrated inductances.

Thermal data:

The permissible ambient temperature range is $-25 \text{ }^{\circ}\text{C} \dots +70 \text{ }^{\circ}\text{C}$

- (16) Drawings and documents are listed in the ATEX Assessment Report No. 18 203 209380
- (17) Specific Conditions for Use
Only one intrinsically safe circuit is allowed to be connected to the connections of the same channel.
- (18) Essential Health and Safety Requirements
No additional ones

- End of Certificate -