

Translation

(1) **Certificate of Conformity**

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



(3) **Certificate Number** TÜV 06 ATEX 553388 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: 2018-03-29

- (7) The design of this product and any acceptable variation thereto are specified in the schedule to this 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. 18 214 225644.
- (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 EN 60079-15:2010
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 Certificate of Conformity 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 3 G Ex nA [ic] IIC/IIB T4 Gc**

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 deputy head of the notified body

Hiller 

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(13) **SCHEDULE**

(14) **Certificate of Conformity No. TÜV 06 ATEX 553388 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 energy limited circuits and the non energy limited circuits.

The device is executed with 1 or 2 channels

The energy limited output circuits of channel 1 are safely galvanically separated from the energy limited output circuits of channel 2.

The energy limited output circuits of the same channel are galvanically connected with each other.

The energy limited output circuits are safely galvanically separated from the non energy limited 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:

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

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

Output circuits

(Connections channel 1:

1[+], 3[-]

Connections channel 2:

4[+], 6[-])

In type of protection intrinsic safety Ex ic IIC/IIB 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 ic IIC	L_o	3.9 mH	2 mH	1 mH	0.5 mH	0.2 mH	0.1 mH
	C_o	74 nF	84 nF	100 nF	130 nF	170 nF	210 nF
Ex ic IIB	L_o	26 mH	20 mH	10 mH	1 mH	0.5 mH	0.1mH
	C_o	430 nF	490 nF	620 nF	690 nF	810 nF	1.3 μF

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 Certificate of Conformity No. TÜV 06 ATEX 553388 X

issue 00

Output circuits
 (Connections channel 1:
 2[+], 3[-]
 Connections channel 2:
 5[+], 6[-])

In type of protection intrinsic safety Ex ic IIC/IIB
 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 ic IIC	L_o	4.1 mH	2 mH	1 mH	0.5 mH	0.1 mH	0.05 mH
	C_o	210 nF	300 nF	400 nF	420 nF	480 nF	560 nF
Ex ic IIB	L_o	26 mH	20 mH	10 mH	5mH	2 mH	1 mH
	C_o	660 nF	810 nF	1.2 μF	1.6 μF	2.1 μF	2.5 μF

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 225644

(17) Specific Conditions for Use

1. Only one intrinsically safe circuit is allowed to be connected to the connections of the same channel.
2. The solenoid driver type IM72-**Ex/L has to be installed in a suitable housing according to EN 60079-15:2010 in such a way, that a degree of protection of at least IP 54 according to EN 60529 is reached. The installation into the enclosure shall be carried out in such a way that the ambient temperature during the use is not exceeded.
 When the housing is made from metallic a dielectric test (1500 V a.c; 1 min) according to clause 6.5 of EN 60079-15:2010 shall be performed.
3. The solenoid driver type IM72-**Ex/L has to be erected in such a way that a pollution degree 2 or less according to EN 60664-1 is achieved.
4. The connecting and disconnecting of energised non energy limited circuits is only permitted if no explosion hazardous atmosphere exists.
5. For the supply circuit arrangements have to be taken externally, that the rated voltage is exceeded not more than 40% by transient disturbances.

(18) Essential Health and Safety Requirements

No additional ones

- End of Certificate -