

Translation

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

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



(3) **Certificate Number** TÜV 10 ATEX 388544 X **issue:** 00

(4) for the product: Interface Converter type VPI with or without Power Supply type VPI-Supply

(5) of the manufacturer: **FAFNIR GmbH**

(6) Address: Schnackenburgallee 149 c, 22525 Hamburg, Germany

Order number: 8003029226

Date of issue: 2021-04-13

(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. 21 203 290409.

(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 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 resp. II (1) D [Ex ia Da] III C**

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

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### (13) SCHEDULE

(14) EU-Type Examination Certificate No. TÜV 10 ATEX 388544 X issue 00

(15) Description of product

The interface converter type VPI is used to supply intrinsically safe sensors that can be used in potentially explosive atmospheres. In addition, the converter is used to convert electrical signals between the non-intrinsically safe and intrinsically safe areas. It is mainly used as part of a tank content measurement. The converter is designed as a built-in module with eight intrinsically safe channels.

The VPI-Supply can be used for the power supply of the interface converter. Any other power supply can also be used, provided that the special conditions are observed.

The interface converter type VPI and the power supply type VPI-Supply may in future also be manufactured in accordance with the test documents listed in the ATEX test report. The changes concern the internal structure and the electrical data as well as the addition of the dust explosion protection. Furthermore, the equipment has been assessed according to the latest standards.

#### Type designation:

VPI Interface converter with eight intrinsic safe sensor circuits and RS-485 communication  
 VPI-Supply Power supply for up to two interface converters

#### Technical data:

##### **VPI with VPI-Supply**

Supply circuit  $U = 230 \text{ V a.c. } \pm 10 \%; 50 \text{ Hz ... } 60 \text{ Hz; } \sim 4 \text{ VA}$   
 (Terminals PE, N, L)  $U_m = 253 \text{ V}$

Communication RS-485  $U = \pm 5 \text{ V}$   
 (Terminals 1+, 2A, 3B, 4-)  $U_m = 100 \text{ V}$

Sensor circuits CH01 ... CH08  
 (Terminals +, A, B, -)

in type of protection Intrinsic Safety Ex ia IIC/IIB resp. Ex ia IIIC  
 Maximum values per circuit:

$$U_o = 10.5 \text{ V}$$

$$I_o = 41 \text{ mA}$$

$$P_o = 99.8 \text{ mW}$$

Characteristic line: linear

Maximum permissible external capacitance and inductance are:

|       | Ex ia IIC |        | Ex ia IIB resp. Ex ia IIIC |                   |
|-------|-----------|--------|----------------------------|-------------------|
| $L_o$ | 10 mH     | 5 mH   | 50 mH                      | 20 mH             |
| $C_o$ | 550 nF    | 670 nF | 3.1 $\mu\text{F}$          | 3.8 $\mu\text{F}$ |

The intrinsically safety sensor circuits are safely galvanic separated from the communication terminal (RS-485) up to a peak crest value of the voltage of 190 V and from the supply terminal up to a peak crest value of the voltage of 375 V.

**Schedule to EU-Type Examination Certificate No. TÜV 10 ATEX 388544 X issue 00**

**VPI without VPI-Supply**

Supply circuit  
(Terminals 1, 2)

$$U = 12 \text{ V d.c., } \pm 5 \%, < 2 \text{ W}$$

$$U_m = 253 \text{ V}$$

Communication RS-485  
(Terminals 1+, 2A, 3B, 4-)

$$U = \pm 5 \text{ V}$$

$$U_m = 100 \text{ V}$$

Sensor circuits CH01 ... CH08  
(Terminals +, A, B, -)

in type of protection Intrinsic Safety Ex ia IIC/IIB resp. Ex ia IIIC  
Maximum values per circuit:

$$U_o = 10.5 \text{ V}$$

$$I_o = 41 \text{ mA}$$

$$P_o = 99.8 \text{ mW}$$

Characteristic line: linear

Maximum permissible external capacitance and inductance are:

|       | Ex ia IIC |        | Ex ia IIB resp. Ex ia IIIC |                   |
|-------|-----------|--------|----------------------------|-------------------|
| $L_o$ | 10 mH     | 5 mH   | 50 mH                      | 20 mH             |
| $C_o$ | 550 nF    | 670 nF | 3.1 $\mu\text{F}$          | 3.8 $\mu\text{F}$ |

The intrinsically safety sensor circuits are safely galvanic separated from the communication terminal (RS-485) up to a peak crest value of the voltage of 190 V.

Permissible ambient temperature range:

$$-20 \text{ }^\circ\text{C} \leq T_a \leq +60 \text{ }^\circ\text{C}$$

(16) Drawings and documents are listed in the ATEX Assessment Report No. 21 203 290409

(17) Specific Conditions for Use

1. The potential equalization terminal (PA) on printed circuited board of the interface converter VPI must be connected to the potential compensation of the explosion hazardous location when the power supply VPI-Supply is not used.
2. The interface converter VPI and the power supply VPI-Supply must be installed in an enclosure with degree of protection according to EN 60529 of at least IP20.
3. At installation of the interface converter VPI with the power supply VPI-Supply the minimum clearance between these two must be 50 mm (tight string length).

(18) Essential Health and Safety Requirements

no additional ones

- End of Certificate -