

Translation

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

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 94/9/EC**

(3) **Certificate Number** TÜV 10 ATEX 388544 X

(4) for the equipment: Measuring transmitter VPI with or without power supply VPI-Supply

(5) of the manufacturer: FAFNIR GmbH

(6) Address: Bahrenfelder Str. 19  
22765 Hamburg  
Germany

Order number: 8000388544

Date of issue: 2011-01-20

- (7) This equipment or protective system 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 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential report No. 11203388544.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0:2009**

**EN 60079-11:2007**

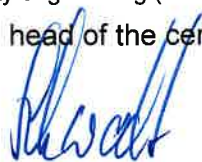
**EN 60079-26:2007**

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-type examination certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. 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 equipment or protective system must include the following:

 **II (1) G [Ex ia Ga IIC] IIC**

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited 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 certification body



Schwedt

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(13) **SCHEDULE**

(14) **EC-Type Examination Certificate No. TÜV 10 ATEX 388544 X**

(15) Description of equipment

The measuring transmitter VPI is used for the supply of intrinsically safe sensors which can be used in explosion hazardous areas. In addition, the measuring transmitter VPI is used for the transmission of electrical signals between the explosion hazardous area and non explosion hazardous area. Furthermore the measuring transmitter VPI is used as a module of a tank level measuring system. The measuring transmitter is made for a maximum of eight intrinsic safety channels.

For powering the measuring transmitter it can be used the power supply VPI-Supply. Also it can be used any other power supply under condition of safe use.

Electrical data

**VPI with VPI-Supply**

Supply circuit  
(Terminals PE, N, L)

U = 24 V a.c., ± 10 %, 40 ... 60 Hz, ~4 VA or  
U = 115 V a.c., ± 10 %, 40 ... 60 Hz, ~4 VA or  
U = 230 V a.c., ± 10 %, 40 ... 60 Hz, ~4 VA

U<sub>m</sub> = 30 V at 24 V a.c. resp.  
U<sub>m</sub> = 130 V at 115 V a.c. resp.  
U<sub>m</sub> = 253 V at 230 V a.c.

Communication interface RS485  
(Terminals 1, 2, 3, 4)

U = ± 5 V  
U<sub>m</sub> = 100 V

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

in type of protection Intrinsic Safety Ex ia IIC

Maximum values per circuit:

U<sub>o</sub> = 10.5 V  
I<sub>o</sub> = 41 mA  
P<sub>o</sub> = 99.8 mW

Characteristic line: linear

Max. permissible external inductance L<sub>o</sub> = 5 mH  
Max. permissible external capacitance C<sub>o</sub> = 610 nF

The intrinsically safety sensor circuits are safely galvanically separated from the communication terminal (RS485) 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 EC-Type Examination Certificate No. TÜV 10 ATEX 388544 X

**VPI without VPI-Supply**

Supply circuit  
(Terminals 1, 2)

$U = 12 \text{ V d.c., } \pm 10 \%, < 2 \text{ W}$   
 $U_m = 253 \text{ V}$

Communication interface RS485  
(Terminals 1, 2, 3, 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

Maximum values per circuit:

$U_o = 10.5 \text{ V}$

$I_o = 41 \text{ mA}$

$P_o = 99.8 \text{ mW}$

Characteristic line: linear

Max. permissible outer inductance  $L_o = 5 \text{ mH}$

Max. permissible outer capacitance  $C_o = 610 \text{ nF}$

The intrinsically safety sensor circuits are safely galvanically separated from the communication terminal (RS485) up to a peak crest value of the voltage of 190 V.

(16) Test documents are listed in the test report No. 11203388544.

(17) Special conditions for safe use

1. The potential equalization terminal (PA) on printed circuit board of the measuring transmitter VPI has to be connected with the potential compensation of the explosion hazardous location when the power supply VPI-Supply is not used.
2. The measuring transmitter VPI and the power supply VPI-Supply has to be installed in an enclosure with degree of protection according to EN 60529 of minimum IP20.
3. At installation of the measuring transmitter VPI with the power supply VPI-Supply the minimum clearance between these two has to be 50 mm (tight string length).
4. The permissible ambient temperature range of the measuring transmitter VPI and of the voltage supply VPI-Supply is  $-20 \text{ }^\circ\text{C}$  to  $+60 \text{ }^\circ\text{C}$ .

(18) Essential Health and Safety Requirements

no additional ones