



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX TUN 10.0027X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 1 Issue 0 (2011-04-06)
Date of Issue: 2021-04-13
Applicant: **FAFNIR GmbH**
Schnackenburgallee 149 c
22525 Hamburg
Germany
Equipment: **Interface converter VPI with or without power supply VPI-Supply**
Optional accessory:
Type of Protection: **Intrinsic Safety**
Marking: [Ex ia Ga] IIC resp. [Ex ia Da] IIIC

Approved for issue on behalf of the IECEx
Certification Body:

Christian Roder

Position:

Head of IECEx Certification Body

Signature:
(for printed version)

Date:

2021-04-13

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

TÜV NORD CERT GmbH
Hanover Office
Am TÜV 1, 30519 Hannover
Germany





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Issue No: 1

Manufacturer: **FAFNIR GmbH**
Schnackenburgallee 149 c
22525 Hamburg
Germany

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[DE/TUN/ExTR10.0033/01](#)

Quality Assessment Report:

[DE/TUN/QAR06.0013/07](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

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

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

SPECIFIC CONDITIONS OF USE: YES as shown below:

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).



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

The changes affect the internal structure and the electrical data as well as adding the dust explosion protection. Furthermore, the equipment was assessed according to the latest Standards.

Annex:

[Attachment to IECEx TUN 10.0027X Issue 1.pdf](#)

Electrical data

VPI with VPI-Supply

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

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 μF	3.8 μF

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.

VPI without VPI-Supply

Supply circuit (Terminals 1, 2) $U = 12 \text{ V d.c., } \pm 5 \%$, < 2 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 μF	3.8 μF

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.

Temperatures

The permissible ambient temperature range is:

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