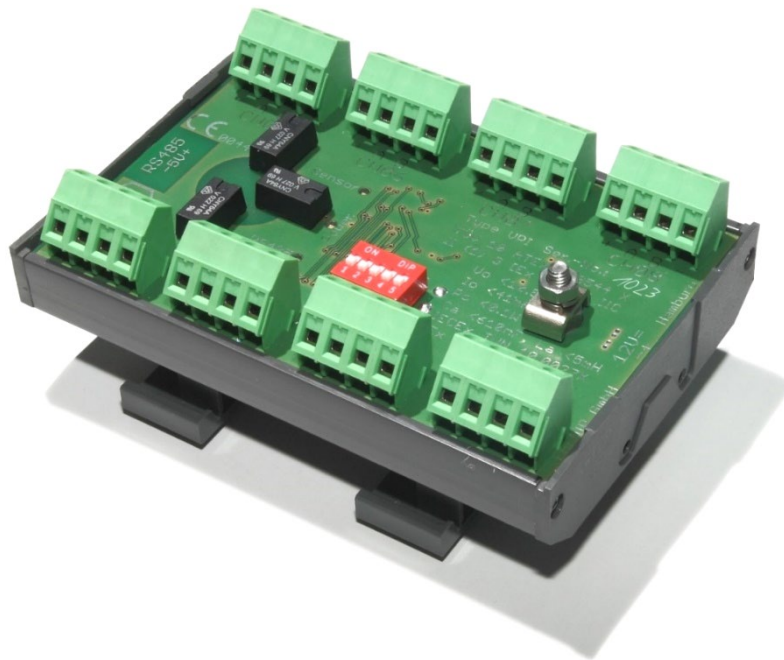


VISY-X

VPI

(en)



Art. No.	Version	Edition
350068	6	2025-05

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1 Introduction

The VISY-X system (Volume Information System) provides highly precise and continuous filling level measurement for all commercially available fuels. The VPI (VISY Power Interface) is an interface converter for signal transmission between the level sensors and a higher-level system (host). The sensors must be connected to the VPI which is mounted inside the petrol station building. With up to 32 VPI interface converters a level measurement of up to 256 tanks is possible. The product temperature and water level, and optionally the density, are measured simultaneously.

The system includes:

- the VPI as interface converter between the sensors and a host system
- the FAFNIR VPI power supply (Art. no. 908315). As an option, an independent power supply can also be used, see chapter 3.4
- the VISY-Stick and/or VISY-Reed sensors

Commands from the higher-level system to the sensors are allocated to the corresponding sensor terminals of the VPI. The feedback from the sensors is transmitted back to the higher-level system (host).

The VPI supports the following protocols:

- FAFNIR Universal Device Protocol (UDP)
- H-Protocol



In order to take advantage of all functions offered by the VISY-X system, the FAFNIR Universal Device Protocol must be used.

1.1 In this manual ...

... you will be guided through the installation and set-up of the VPI interface converter.

This manual contains a description of all steps needed to perform the installation. Please also observe the additional instructions in the following manuals:



Technical Documentation VISY-Stick VISY-Reed – Art. No. 207194



Technical Documentation FAFNIR UDP – Art. no. 350052

1.2 Requirements for service engineers

The complete VISY-X system should only be installed by trained service engineers.

1.3 Safety instructions

The VISY-X system is optimised for use in petrol stations and is compatible with all commercially available fuels. It serves to measure and evaluate the filling levels in tanks. The system must be used exclusively for this purpose. Please observe and follow all product safety notes and operating instructions. The manufacturer accepts no liability for any form of damage resulting from improper use.

The VPI interface converter has been developed, manufactured and tested in accordance with the latest good engineering practices and generally accepted safety standards. Nevertheless, hazards may arise from their use.

The following safety precautions must be observed in order to reduce the risk of injury, electric shocks, fire or damage to the equipment:

- Please do not make any changes to the device/system.
- The installation, operation and maintenance must only be carried out by expert personnel.
- Operators, installers and service technicians must observe all applicable safety regulations. This also applies to any local safety and accident prevention regulations which are not stated in this manual.
- During the installation process, valid national construction regulations must be observed.
- The VPI must not be installed in potentially explosive areas.
- The VPI must be in a clean and undamaged condition at all times.
- The VPI must only be powered by the permissible auxiliary power supply.

The safety instructions in this manual are marked as follows:



If these safety instructions are not observed, it may result in the risk of accident or damage to the device/system.



Useful tips and information in this manual, you should observe, appear in italics and are identified by this symbol.

2 Design and function

The VPI is designed for the DIN mounting rail.

It has eight intrinsically safe sensor terminals. At each individual sensor terminal of the VPI, it is possible to connect up to three different types of FAFNIR sensors (e.g. one VISY-Stick, one VISY-Stick Interstitial and one VISY-Stick Sump). These three types of sensors can be directly connected to each other at the measuring point. This means that only one cable (4-wire) is required for connection to the VPI interface converter.



Connecting multiple sensors of the same type (e.g. 3 x VISY-Stick) to one sensor terminal is not permitted.

The sensors are electrically supplied with power by the VPI. A 12 V direct current is necessary for the power supply of the VPI. The FAFNIR VPI-Supply (accessories) is safely galvanically isolated between the input and output and can supply up to two VPIs.

Alternatively, another power supply can be used. Therefore, a power consumption of 125 mA should be set for every VPI. The tolerance of the supply voltage must not exceed 5 %.

Depending on the number of sensors to be connected, up to 32 VPIs may be interconnected. Every VPI must hereby be assigned with its own address from 0 to 31 via a DIP switch.

3 Installation



For the installation and operation of the VPI interface converter, the requirements and regulations of the Ordinance on Explosion Protection, Industrial Health and Safety and Equipment Safety Legislation or equivalent local requirements must be observed. The valid and generally accepted good engineering practices as well as these instructions must also be observed.



Observe also the local safety and accident prevention regulations, which are not stated in these operating instructions.



All wiring operations must be carried out with the power disconnected.

3.1 Assembly



The VPI must be firmly connected inside a building to a mounting rail in a casing with a protection class of at least IP20.



In casing with the corresponding protection class (at least IP54), the VPI is also suitable for outdoor installation.

3.2 Sensor connections

Connect the sensors to the sensor terminal clamps of the VPI (see Figure 1).

The connection cable of the sensors must have the following properties:

- 4-core unshielded, oil-resistant cable
- Line cross section (4 x 0.5 mm² up to 250 m or 4 x 1.0 mm² over 250 m)
- Colour blue or marked blue (cable for intrinsically safe power circuits)



The maximum external inductance including the cable must not exceed 5 mH and the maximum capacitance must not exceed 610 nF (see data sheet of the cable used).

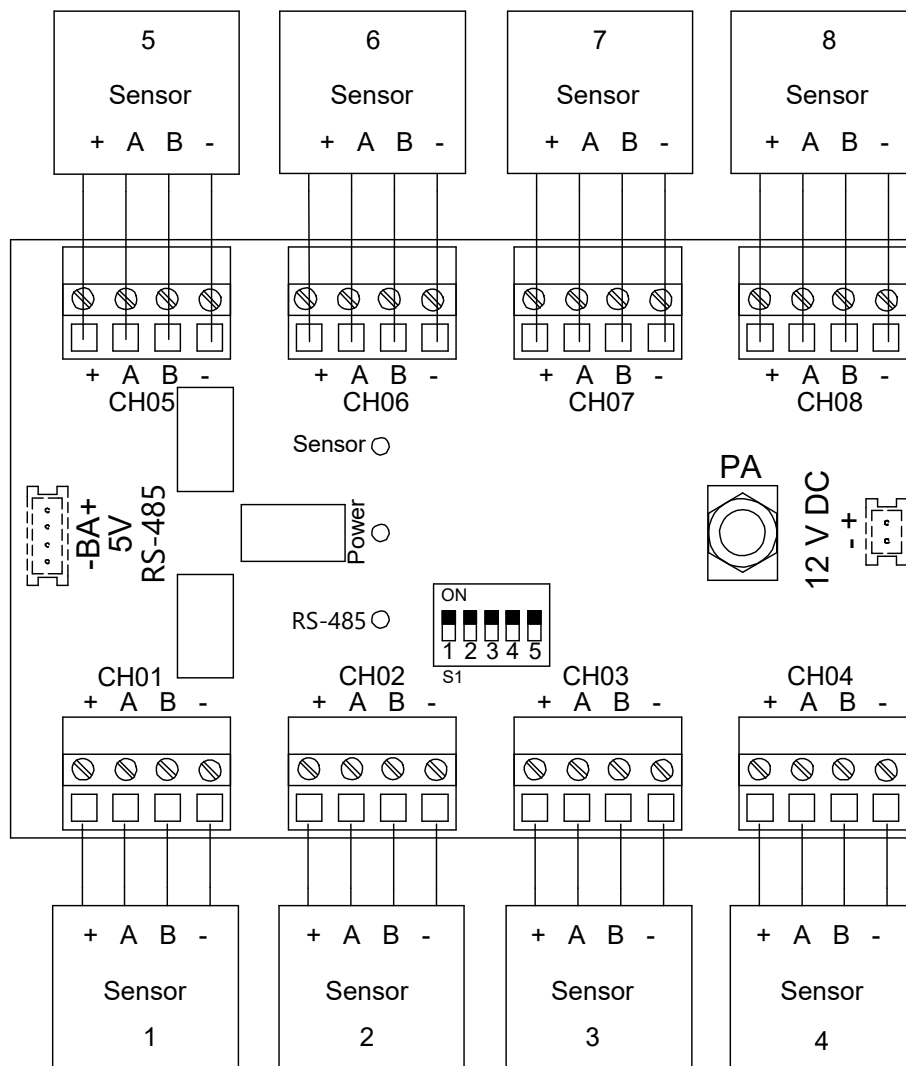


Figure 1: VPI terminals

3.3 RS-485 interface connector

In order to connect to the higher-level system (host), the VPI has a RS-485 interface with a 4-pole header plug on the underside of the board (see Figure 1). The interface does not have its own power supply and must be supplied with 5 V via the accompanying 4-pole connection cable.

See the following table for the assignments of the 4-pole connection cable:

Wire	Signal
brown	+5 V for RS-485 interface
white	RS-485 interface, communication line A (+)
black	RS-485 interface, communication line B (-)
blue	GND for RS-485 interface



On all FAFNIR devices with a 2-wire RS-485 interface the communication line marked with A is always the positive one (+) and the communication line marked with B is the negative one (-).

Two transmission speeds are supported:

Baud rate	Data bit	Stop bit	Parity
1200	8	1	none
4800	8	1	none

3.3.1 Programming interface

Concealed at the back of the printed circuit board is a programming interface through which an update of the VPI firmware can be carried out if necessary. For more information, please contact FAFNIR.

3.3.2 Configuration of the VPI address

Up to 32 VPIs can be interconnected for the connection of the sensors. Every VPI must be assigned with its own address from 0 to 31. The addresses are configured by the sum of powers of 2 with the DIP switch S1:

DIP switch S1	1	2	3	4	5
VPI address	$2^0=1$	$2^1=2$	$2^2=4$	$2^3=8$	$2^4=16$
0	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF
...					

Table 1: DIP switch S1 for VPI address

3.4 Supply voltage connection

The supply with auxiliary power (electrical connection) takes place via a 2-pole header plug on the underside of the VPI. The respective 2-pole connection cable is included within the scope of supply.

A 12 V direct current is necessary for the power supply of the VPI. The FAFNIR VPI-Supply (art. no. 908315) is provided as an accessory. The VPI-Supply can supply up to two VPIs.



A minimum distance of 50 mm (thread measure) should be ensured between the VPI and the VPI-Supply.

Alternatively, another power supply can be used. Therefore, a power consumption of 125 mA should be set for every VPI. The tolerance of the supply voltage must not exceed 5 %.



If the FAFNIR VPI-Supply is not used for the power supply of the VPI, it is imperative that the sensors and the VPI are correctly integrated into the potential equalisation (PA).

See the following table for the assignments of the 2-pole connection cable:

Wire	Signal
red	+12 V auxiliary power
blue	GND auxiliary power

3.5 Status LEDs

One green and two Red LEDs are on the VPI.

The green LED which is marked with "power", signals that the power supply is active and the VPI is ready for operation.

The red LED which is marked with "RS-485", signals incoming data from the host system.

The red LED which is marked with "sensor", signals feedback from the sensors.

4 Maintenance

4.1 Servicing

FAFNIR devices are generally maintenance-free.

4.2 Return Shipment

Before returning any FAFNIR device, the Return Material Authorization (RMA) is required. Please contact your sales consultant or the technical support team, who will inform you about the details of the return.

Telephone	+49 / 40 / 39 82 07 – 0
Open (CET)	Mon. to Thu. 07:00 a.m. to 05:00 p.m., Fri. 07:00 a.m. to 04:00 p.m.



The return of devices is only possible with authorization (RMA) by FAFNIR.

5 Technical Data

Details on the technical data you will find in the certificates and operating instructions, please see the appendix.

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EU-Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de Conformité
Dichiarazione di Conformità UE



FAFNIR GmbH, Deutschland / Germany / Allemagne / Germania

erklärt als Hersteller in alleiniger Verantwortung, dass die Produkte
declares as manufacturer under sole responsibility that the products
déclare sous sa seule responsabilité en qualité de fabricant que les produits
dichiara sotto la sola responsabilità del produttore, che i prodotti sono

Schnittstellenwandler und Spannungsversorgung / Interface Converter and Power Supply /
Convertisseur d'interface et tension d'alimentation / Convertitore di interfaccia e alimentazione
VPI / VPI-Supply

den Vorschriften der europäischen Richtlinien
comply with the regulations of the European directives
sont conformes aux réglementations des directives européennes suivantes
rispetta i regolamenti delle direttive europee

2011/65/EU	Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten	RoHS
2011/65/EU	Restriction of the use of certain hazardous substances in electrical and electronic equipment	RoHS
2011/65/UE	Limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques	RoHS
2011/65/UE	Restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche	RoHS
2014/30/EU	Elektromagnetische Verträglichkeit	EMV
2014/30/EU	Electromagnetic compatibility	EMC
2014/30/UE	Compatibilité électromagnétique	CEM
2014/30/UE	Compatibilità elettromagnetica	CEM
2014/34/EU	Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen	ATEX
2014/34/EU	Equipment and protective systems intended for use in potentially explosive atmospheres	ATEX
2014/34/UE	Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles	ATEX
2014/34/UE	Apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva	ATEX

durch die Anwendung folgender harmonisierter Normen entsprechen
by applying the harmonised standards
par l'application des normes
applicando le norme armonizzate

RoHS / RoHS / RoHS / RoHS
EMV / EMC / CEM / CEM
ATEX / ATEX / ATEX / ATEX

EN IEC 63000:2018
EN 61326-1:2013
EN IEC 60079-0:2018
EN 60079-11:2012

Die Produkte sind bestimmt als Elektro- und Elektronikgeräte der RoHS-
The products are determined as electrical and electronic equipment of RoHS
Les produits sont déterminés comme des équipements électriques et électroniques de RoHS
I prodotti sono determinati come apparecchiature elettriche ed elettroniche della RoHS

Kategorie / Category / Catégorie / Categoria

Überwachungs- und Kontrollinstrumenten in der Industrie /
Industrial Monitoring and Control Instruments /
Instruments de contrôle et de surveillance industriels /
Strumenti di monitoraggio e controllo industriali

Die Produkte entsprechen den EMV-Anforderungen
The products comply with the EMC requirements
Les produits sont conformes aux exigences CEM
I prodotti sono conformi ai requisiti CEM

Störaussendung / Emission / Émission / L'emissione
Störfestigkeit / Immunity / D'immunité / Immunità

Klasse B / Class B / Classe B / Classe B
Industrielle elektromagnetische Umgebung /
Industrial electromagnetic environment /
Environnement électromagnétique industriel /
Ambiente elettromagnetico industriale

Die notifizierte Stelle TÜV NORD CERT GmbH, 0044 hat eine EU-Baumusterprüfung durchgeführt und folgende Bescheinigung ausgestellt
The notified body TÜV NORD CERT GmbH, 0044 performed a EU-type examination and issued the certificate
L'organisme notifié TÜV NORD CERT GmbH, 0044 a effectué examen UE de type et a établi l'attestation
L'organismo notificato TÜV NORD CERT GmbH, 0044 ha effettuato esame UE del tipo e rilasciato il certificato

VPI / VPI-Supply

TÜV 10 ATEX 388544 X

Hamburg, 14.04.2021

Ort, Datum / Place, Date / Lieu, Date / Luogo, data

Geschäftsführer / Managing Director / Gérant / Direttore Generale: René Albrecht

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] 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

(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 $U = 230 \text{ V a.c. } \pm 10 \% ; 50 \text{ Hz } \dots 60 \text{ Hz ; } \sim 4 \text{ VA}$
(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 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.

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 μ F	3.8 μ 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 -



Instructions in accordance with directive 2014/34/EU

TÜV 10 ATEX 388544 X

Interface Converter type VPI with or without Power Supply type VPI-Supply

I Range of application

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 power supply type VPI-Supply is used to supply the interface converter.

II Standards

The interface converter and the power supply are designed according to the following European standards

EN IEC 60079-0:2018	Equipment – General requirements
EN 60079-11:2012	Equipment protection by intrinsic safety "i"

III Instructions for safe ...

III.a ... use

The interface converter has eight intrinsically safe sensor circuits that may be routed into zone 0 respectively zone 20 and can be used for all gas respectively dust groups.

The power supply type VPI-Supply can be used for the auxiliary power supply of the converter. Under special conditions, any other power supply can be used. For this purpose, the converter must be connected to the potential equalisation.

The non-intrinsically safe control circuit (RS-485 interface) is connected to a four-pole plug. The connection to a higher-level data processing system is made from this plug.

III.b ... assembling and dismantling

The interface converter and the power supply are manufactured with an open plastic enclosure for DIN rail mounting. Opening the enclosures is not permitted!

III.c ... installation

The wiring may only be done de-energized. Special regulations i. a. EN 60079-14 or the local installation regulations must be observed.

The interface converter must be installed outside the hazardous area in an enclosure with a degree of protection of at least IP20. Ensure that non-intrinsically safe line connections are at least 50 mm distance away from the intrinsically safe sensor terminals.

When wiring from the sensor to the interface converter (preferably blue cable), the permissible inductance and capacity under section V must not be exceeded.

Terminal designation:

Connection	Terminal	Pins
Interface converter VPI		
Auxiliary energy	12V=	-, +
Sensor circuits	CH1 ... CH8	+, A, B, -
Communication	RS-485	1+, 2A, 3B, 4-
Potential equalisation	PA	PA



Connection	Terminal	Pins
Power supply VPI-Supply		
Auxiliary energy	Power	PE, N, L
Voltage output	Output	+, -

Table III.c: Terminal designations

III.d ... adjustment

For the operation, no Ex-relevant adjustments are necessary.

III.e ... putting into service

Before putting into service, all devices must be checked for correct connection and installation. The electrical supply, including the connected devices, must be checked.



III.f ... maintenance (servicing and emergency repair)

The apparatuses are generally maintenance-free. In the case of a defect, this corresponding assembly must be returned to the manufacturer FAFNIR or one of its representatives.

There is compliance with the dielectric strength requirements of EN 60079-11, Clause 6.3.13 between the intrinsically safe sensor circuits and the communication port. When using VPI with VPI-Supply there is compliance and when using VPI without VPI-Supply there is no compliance between the intrinsically safe sensor circuits and the auxiliary power. All sensor connections are galvanically connected to each other.

IV Equipment marking

VPI

- 1 Manufacturer: FAFNIR GmbH, 22525 Hamburg
- 2 Type designation: VPI
- 3 Certificate number: TÜV 10 ATEX 388544 X
- 4 Ex marking:  II (1) G [Ex ia Ga] IIC
II (1) D [Ex ia Da] IIIC
- 5 CE marking:  0044
- 6 Technical data: See instructions for technical data

VPI-Supply

- 1 Manufacturer: FAFNIR GmbH, 22525 Hamburg
- 2 Type designation: VPI-Supply
- 3 Certificate number: TÜV 10 ATEX 388544 X
- 4 CE marking:  0044

V Technical data

The interface converter and the power supply may be used in the following ambient temperature range:

$$T_a = -20\text{ °C} \dots +60\text{ °C}$$

The interface converter and the power supply achieve a degree of protection of IP00.



VPI-Supply

The auxiliary power of the power supply VPI-Supply is connected to the PE, N and L terminals. Depending on the version of this module, the auxiliary power is as follows

$$\begin{aligned}U &= 230 \text{ V}_{AC} \pm 10 \% ; 50 \text{ Hz} \dots 60 \text{ Hz} \\P &\approx 4 \text{ VA} \\U_m &= 253 \text{ V}\end{aligned}$$

The output voltage is $12 \text{ V}_{DC} \pm 5 \%$.

Two interface converters type VPI can be connected to one power supply VPI-Supply.

VPI

The auxiliary power supply for the VPI interface converter is connected to a plug underneath the module and is:

$$\begin{aligned}U &= 12 \text{ V}_{DC} \pm 5 \% \\P &< 2 \text{ W} \\U_m &= 253 \text{ V}\end{aligned}$$

The sensor circuits CH1 ... CH8 are designed in the type of protection "intrinsic safety" (ia) with a linear output characteristic. The output values per circuit are as follows:

$$\begin{aligned}U_o &\leq 10.5 \text{ V} \\I_o &\leq 41.0 \text{ mA} \\P_o &\leq 99.8 \text{ mW} \\L_i &\text{ negligibly small} \\C_i &\text{ negligibly small}\end{aligned}$$

	IIC		IIB / IIIC	
$L_o \leq$	10 mH	5 mH	50 mH	20 mH
$C_o \leq$	550 nF	670 nF	3.1 μF	3.8 μF

The maximum values of the value pairs may be used simultaneously as concentrated capacitance and concentrated inductance.

The intrinsically safe sensor circuits are safely galvanically isolated from the auxiliary power supply circuit up to a peak crest value of 375 V of the nominal voltage, if the power supply VPI-Supply is correctly connected upstream of the interface converter VPI.

The intrinsically safe sensor circuits are safely galvanically isolated from the control circuit up to a peak crest value of 190 V of the nominal voltage.

The maximum signal and safety-related voltage of the communication interface is as follows

$$\begin{aligned}U &= \pm 5 \text{ V} \\U_m &= 100 \text{ V}\end{aligned}$$

VI Special conditions of 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).



Government of India
Ministry of Commerce & Industry
Petroleum & Explosives Safety Organisation (PESO)
5th Floor, A-Block, CGO Complex, Seminary Hills,
Nagpur - 440006

E-mail : explosives@explosives.gov.in
 Phone/Fax No : 0712 -2510248, Fax-2510577

Approval No : A/P/HQ/TN/104/5967 (P505954)

Dated : 20/05/2021

To,

M/s. Fafnir GmbH,
Schnackenburgallee 149 c,Hamburg
22525
GERMANY

Sub : Approval of Intrinsically Safe Type Electrical Equipment under Petroleum Rules 2002- Regarding.

Sir(s),

Please refer to your letter No. **OIN783099** dated **04/05/2021** on the subject.

The following Ex electrical equipment(s) manufactured by you according to **IEC 60079-0 : 2017, IEC 60079-11 : 2011**, standards and covered under **TUV NORD CERT GmbH** Test reports mentioned below is/are approved for use in of Gas **SafeArea** hazardous areas coming under the the Petroleum Rules, 2002 administered by this Organization.

Sr. No	Description	Safety Protection	Equipment reference Number	Test Agency			Drawing no
				Name	Certificate No.	Certificate Date	
1	Interface convertor VPI with or without power supply VPI-Supply	[Ex ia Ga] IIC (Approved for installation in safe area only) Refer to conditions of approval	P505954/1	TUV NORD CERT GmbH	IECEX TUN 10.0027X Issue No. 1	13/04/2021	XF 079 000 Rev A

This Approval is granted subject to observance of the following conditions:-

- 1)The design and construction of the equipment shall be strictly in accordance with description, condition and drawings as mentioned in the TUV NORD CERT GmbH Test Reports referred to above.
- 2)The equipment shall be used only with approved type of accessories and associated apparatus.
- 3)Each equipment shall be marked either by raised lettering cast integrally or by plate attached permanently to the main structure to indicate conspicuously:-
 - (a) Name of the manufacturer
 - (b) Name and number by which the equipment is identified.
 - (c) Number & date of the test report of the TUV NORD CERT GmbH applicable to the equipment.

- (d) Equipment reference number of this letter by which use of apparatus is approved.
- (e) Protection level.

4) A certificate to the effect that the equipment has been manufactured strictly in accordance with the drawing referred to in the TUV NORD CERT GmbH Test report and is identical with the one tested and certified at TUV NORD CERT GmbH shall be furnished with each equipment.

5) The customer shall be supplied with a copy of this letter, an extract of the conditions and maintenance schedule, if any, recommended by TUV NORD CERT GmbH in their test reports and copy of instructions booklet detailing operation & maintenance of the equipment so as to maintain its Flame Proof characteristics.

6) The After sales service and maintenance of subject equipment shall be looked after by your representative Gilbarco Veeder Root India Pvt Ltd, PDP Manufacturing Facility, SF No. 628/2 & 627/2 W4-Coimbatore Campus Eachanari Chettipalayam Road Malumichampatti, Coimbatore 641 021

Conditions of the Approval:-

The equipment is approved for installation in safe area (non hazardous area) only. In case the equipment is proposed to be installed in hazardous area, additional protection methods followed by testing of the same shall be applicable.

The approval for above equipment is subject to validity of IECEx Quality Assessment Report No. DE/TUN/QAR06.0013

This approval also covers the permissible variations as approved under the TUV NORD CERT GmbH test reports referred above. This approval is liable to be cancelled if any of the conditions of the approval is violated or not complied with. The approval may also be amended or withdrawn at any time, if considered necessary in the interest of safety.

The field performance report from actual users/your customers of the subject equipment may please be collected and furnished to this office for verification and record on annual basis.

The Approval is Valid upto **31/12/2025**

Yours faithfully,

(Ninad Dattaram Gawade)
Dy. Controller of Explosives
For Chief Controller of Explosives
Nagpur

Copy to :

1. Jt. Chief Controller of Explosives, South Circle Office, CHENNAI
2. Gilbarco Veeder Root India Pvt Ltd, PDP Manufacturing Facility, SF No. 628/2 & 627/2 W4-Coimbatore Campus Eachanari Chettipalayam Road Malumichampatti, Coimbatore 641 021

for Chief Controller of Explosives
Nagpur

(For more information regarding status, fees and other details please visit our website <http://peso.gov.in>)

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