Technical Documentation

VISY-Input

Digital 8-channel input module

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Table of contents

1 Overview

VISY-Input is a digital 8-channel input module, installed in a case with protection class IP66. It connects external alarm outputs to the VISY-X tank gauging system.

With the VISY-Input, external alarm signals can be transmitted to the VISY-Command for central recording. This allows the indication of alarms at a central location. As VISY-Input has its own housing it can be installed at any position where the simplest wiring can be made. To connect to the VISY-X tank gauging system only a low-cost communication cable has to be laid. Up to eight modules VISY-Input can be operated simultaneously with the VISY-Command.

2 Installation

2.1 Safety information

When installing the VISY-Input following safety instructions should be observed:

- The VISY-Input is designed for operation within the VISY-X system only.
- Modifications to the VISY-Input are prohibited without the prior consent of the manufacturer.
- All installation and maintenance work, with the exception of function testing, must be carried out with the power disconnected.
- The installation and configuration of the VISY-Input may be carried out only by expert personnel. Specialised knowledge must be obtained by regular training.
- 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 technical documentation.

The safety instructions in this manual are marked as follows:

Failure to observe these safety instructions runs the risk of potential accidents and damage to the VISY-X system.

Useful tips and information in this manual that should be observed are written in italics and identified by this symbol.

2.2 Requirements

To connect the VISY-Input to the VISY-X system an interface card of version VI 4 or higher must be installed and connected to the communication adapter VISY-ICI 485.

2.3 Installation

The VISY-Input is designed for wall mounting inside a building.
For mounting the casing cover must be removed.

2.4 Design and construction

The following figure shows the position of the connectors, LEDs and controls on the board of the VISY-Input.

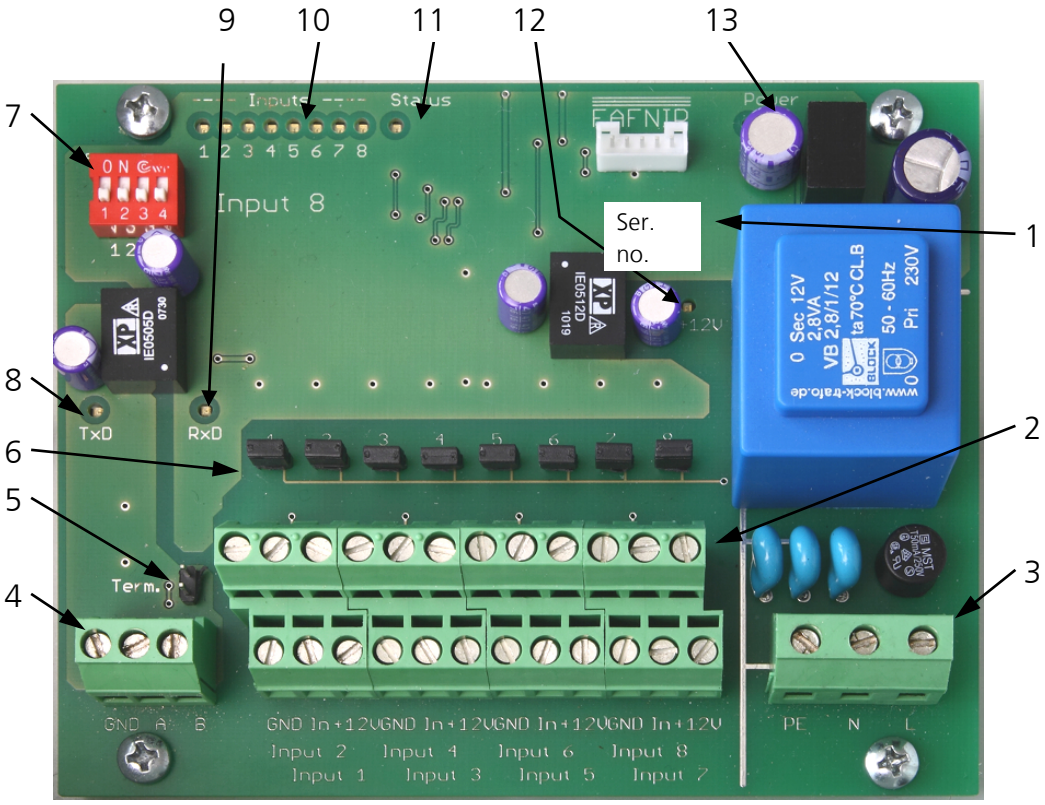

Figure 1: VISY-Input Design

2.4.1 Device information

(1) Label with the serial number which uniquely identifies the device. When doing the configuration using VISY-Setup this serial number has to be entered to address the device.

2.4.2 Connections

(2) 24-pin screw terminal for connecting the input signals

(3) 3-pin screw terminal for connecting the power supply

(4) 3-pin screw terminal for connecting the communication

2.4.3 Controls

(5) 2-pin plug connector to activate a terminating impedance for the RS-485 interface. Normally, the communication on the RS-485 network should be trouble-free without activation of the terminating impedance (jumper not plugged in), because the data rate is comparatively low.

(6) 2-pin plug connector (one per input) to select the input signal (relay contact or voltage input).
For use as a relay contact, the jumper must be plugged in (factory setting). For use as a voltage input, the jumper must not be plugged in.

(7) 4-way DIL switch, currently without function.

2.4.4 LEDs

(8) Transmit LED TxD (red)

(9) Receive LED RxD (red)

(10) Input LEDs (red) - one per input

(11) Status LED (yellow)

(12) 12 V LED (green) - power for external relay contacts

(13) Operating voltage LED (green)

2.5 Connection of the power supply

The power supply (230 VAC) has to be a permanent installation. The wires for the power supply are to be connected to the screw terminals marked with PE, N and L.

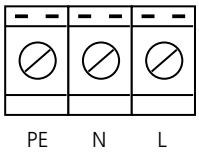

Figure 2: Power supply screw terminal

2.6 Inputs

VISY-Input has eight input terminals for recording alarms (see below) signalled by external devices. Each individual input can either act as a digital voltage input or as an input for a relay contact. To connect the input signal one 3-pin screw terminal is used for each input. The screw terminals are assigned from left to right to the inputs of the top row 2, 4, 6, 8, and the bottom row 1, 3, 5, 7. The position of the screw terminals is shown in Figure 1.

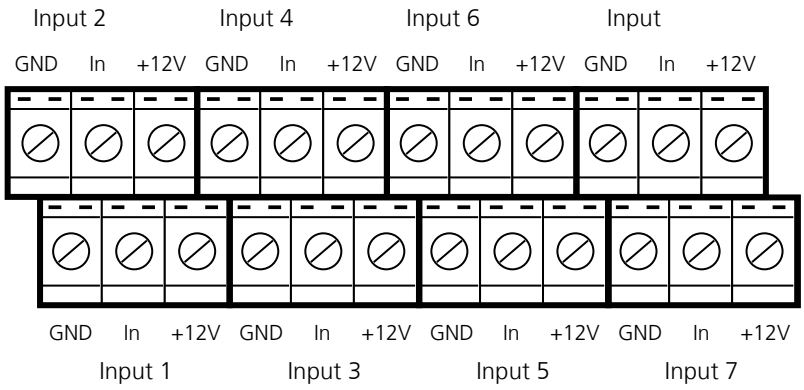

Figure 3: Screw terminal inputs

2.6.1 Input for external voltage

If an input shall act as a digital voltage input, the jumper of this input must be removed from the 2-pin plug connector. The external voltage has to be connected to the terminals "In" and "GND". This input is then galvanically isolated from the other inputs (removed jumper assumed). Within the permitted voltage range (0 ... 24 V DC) the inputs are protected against damages caused by reverse polarity.

Switching thresholds:
If $U_{In} \leq 1.5$ V DC, the input is deactivated, if $U_{In} \geq 2.5$ V DC, the input is activated.

2.6.2 Input for external relay contact

If an input shall act as input for an external relay contact, the jumper of this input must be plugged onto the 2-pin plug connector (factory setting). The external relay contact has to be connected to the terminals "In" and "+12 V" of the input.

For the supply of external relay contacts VISY-Input has an internal 12 V voltage supply. The inputs are galvanically connected by the internal 12 V voltage supply. The maximum current via the relay contact is limited to 10 mA ±10 %.

2.7 Connection to VISY-Command

Up to eight modules VISY-Input can be operated simultaneously with the VISY-X tank gauging.

For the connection of VISY-Input a communication adapter VISY-ICI 485 is required which must be installed inside VISY-Command. The communication between VISY-ICI 485 and VISY-Input is performed via a galvanically isolated RS485 interface. The communication line is to be connected to the terminals A, B and GND of the 3-pin screw terminal.

For the wiring of VISY-Input with VISY-ICI 485 it is recommended using a 3-core cable with signal ground (GND connection terminal) to increase the noise immunity.

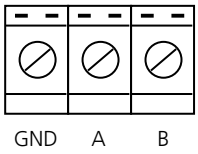

Figure 4: Communication screw terminal

Additional information about the connection of the communication line can be found in the documentation of VISY-ICI 485, see:

- Technical Documentation VISY-ICI 485, art. no. 207150

3 Configuration

For VISY-Input the function of each input must be set by inserting or removing the corresponding jumper (see section 2.6).

Further configuration of VISY-Input is done - as usual for the VISY-X system - with the configuration software VISY-Setup.

⚠ *Wired version of the VISY-X system:*
If VISY-Input is used with the wired version of the VISY-X system, the data protocol for communication with the VISY-Stick must be set to "Multi Probe" using the VISY-Setup. Due to the shorter communication times, "Multi Probe 4800 bps" should preferably be used.

⚠ *Wireless version of the VISY-X system:*
If VISY-Input is used with the wireless version of the VISY-X system, the data protocol for communication with the VISY-Stick must be set to "Standard VISY TLG".

Please follow the appropriate instructions in the VISY-Setup manual.

- Technical Documentation VISY-Setup V4, art. no. 207158

☞ *After the configuration it should be tested whether the alarm signalling works as expected.*

4 Fault diagnosis

VISY-Input has several LEDs which help in diagnosing problems. The positions of the LEDs can be found in the figure 1.

4.1 Transmit LED TxD (8) / Receive LED RxD (9)

The two red communication LEDs indicate, whether data are received or transmitted from VISY-Input.

☞ *Under normal conditions, the communication LEDs should light up regularly.*

4.2 Input LEDs (10)

The eight red input LEDs indicate, whether an input is activated or deactivated. The LEDs are assigned from left to right to the inputs 1 to 8.

☞ *If an input is used as voltage input, the related input LED is on, when the voltage at the clamps "In" and "GND" is in the range of +5 V to +24 V.*

☞ *If an input is used as relay input, the related input LED is on, when the relay contact connected to the terminals "In" and "+12 V" is closed.*

4.3 Status LED (11)

The yellow status LED indicates the status of the communication between interface card VI in the VISY-Command and VISY-Input. The following table lists the possible states of the status LED and explains their meanings.

Status LED	Error	Description
on	no error	correct data are regularly received
continuously blinking	no communication	no data were received since the last power up
1 x short flashing	interruption of the communication	no correct data were received for more than 1 minute

Table 1: Status LED

☞ *Under normal conditions, the status LED should remain illuminated.*

4.4 12 V LED (12)

The green 12 V LED indicates whether the 12 V is available for powering the external relay contacts. After switching on the power supply, the 12 V LED illuminates continuously. A flickering or extinguished LED indicates a problem with the power supply or the AC adapter.

4.5 Operating voltage LED (13)

The green operating voltage LED indicates whether VISY-Input is supplied with voltage. After switching on the power supply, the operating voltage LED illuminates continuously. If the LED flickers or is unlit, this indicates a problem with the power supply or the mains adapter.

5 Maintenance

5.1 Return shipment

Before returning any FAFNIR equipment the returned goods authorization by the FAFNIR customer care is required. Please contact your account manager or the customer care to get the instructions for the return of goods.

☞ *The return of FAFNIR equipment is possible only with authorization by the FAFNIR customer care.*

6 Technical data

Dimensions:	H 60 x W 180 x D 130 [mm] (without cable glands)
Casing protection class:	IP66
Ambient temperature:	0 °C ... +40 °C
Power supply:	230 VAC ±10 %, 50 - 60 Hz, ≤ 4 VA
Communication:	1 x RS-485, galvanically isolated, 3-pin. screw terminal with ground (GND) to connect to VISY-ICI 485
Inputs:	8 inputs, configurable either as digital voltage inputs or as inputs for relay contacts
voltage input:	5 V DC (app. 1 mA) ... 24 V DC (app. 7 mA), galvanically isolated and protected against reverse polarity
Input for relay contact	internal power supply, 12 V DC, current through the relay contact is limited to 10 mA ± 10%

Table 2: Technical data

7 List of figures

8 List of tables

CE

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EU–Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de Conformité

FAFNIR GmbH
Bahrenfelder Straße 19
22765 Hamburg / Germany

erklärt als Hersteller in alleiniger Verantwortung, dass das Produkt
declares as manufacturer under sole responsibility that the product
déclare sous sa seule responsabilité en qualité de fabricant que le produit

Eingangsmodul
Input Module
Module d'entrée

VISY-Input

den Vorschriften der europäischen Richtlinien
complies with the regulations of the European directives
est conforme aux réglementations des directives européennes suivantes

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**
2014/30/EU	**Elektromagnetische Verträglichkeit**	**EMV**
2014/30/EU	**Electromagnetic compatibility**	**EMC**
2014/30/UE	**Compatibilité électromagnétique**	**CEM**
2014/35/EU	**Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt**	**NSRL**
2014/35/EU	**Making available on the market of electrical equipment designed for use within certain voltage limits**	**LVD**
2014/35/UE	**Mise à disposition sur le marché du matériel électrique destiné à être employé dans certaines limites de tension**	**DBT**

durch die Anwendung folgender harmonisierter Normen entspricht
by applying the harmonised standards
par l'application des normes

RoHS / RoHS / RoHS	**EN 50581:2012**
EMV / EMC / CEM	**EN 61326-1:2013**
NSRL / LVD / DBT	**EN 61010-1:2010**

Das Produkt ist bestimmt als Elektro- und Elektronikgerät der RoHS-
The product is determined as electrical and electronic equipment of RoHS
Le produit est déterminés comme des équipements électriques et électroniques de RoHS

Kategorie / Category / Catégorie	**Überwachungs- und Kontrollinstrumenten in der Industrie / Industrial Monitoring and Control Instruments / Instruments de contrôle et de surveillance industriels**

Das Produkt entspricht den EMV-Anforderungen
The product complies with the EMC requirements
Le produit est conforme aux exigences CEM

Störaussendung / Emission / Émission	**Klasse B / Class B / Classe B**
Störfestigkeit / Immunity / D'immunité	**Industrielle elektromagnetische Umgebung / Industrial electromagnetic environment / Environnement électromagnétique industriel**

Hamburg, 20.04.2016
Ort, Datum / Place, Date / Lieu, Date

Geschäftsführer / Managing Director / Gérant: René Albrecht

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