Technical Documentation

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Technical Documentation

VISY-X

VISY-Input
Digital 8-Channel Input Module

(en)

Art. No.	Version	Edition
207166	**4**	**2025-12**

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1 Introduction

VISY-Input is a digital 8-channel input module mounted in an IP66-rated enclosure. It connects external alarm outputs to the VISY-X tank gauging system.

With VISY-Input, external alarm signals can be transmitted to the VISY-Command for central recording. This makes it possible to display the alarms at a central location. Thanks to its construction in a separate housing, VISY-Input can be installed wherever the simplest wiring can be done. Only a low-cost communication line needs to be laid to connect to the VISY-X tank gauging system. Up to eight VISY-Input modules can be operated simultaneously with VISY-Command.

2 Installation

2.1 Safety Instructions

The following safety instructions must be observed when installing the VISY-Input:

VISY-Input is intended for use only within the VISY-X system.

Do not make any changes to the VISY-Input without prior authorization from the manufacturer.

All installation and maintenance work, with the exception of functional testing, must be carried out with the power disconnected.

The installation, configuration and maintenance of VISY-Input may only be carried out by trained service technicians with an appropriate qualification as a specialist.

Operators, installers and service technicians must comply with all applicable safety regulations. This also applies to any local safety and accident prevention regulations which are not stated in this manual.

The safety instructions in this manual are marked as follows:

Not observing these safety instructions result in the risk of accident or damages to the system.

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

2.2 Prerequisites

To connect VISY-Input to the VISY-Command, the evaluation unit must be available in the version VISY-Command VI-4 with a connected communication adapter VISY-ICI 485 or in the version VISY-Command VPI, see Technical Documentation:

VISY-Command VI-4, art. no. 207184

VISY-Command VPI, art. no. 207226

2.3 Mounting

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

2.4 Design and Construction

The following figure shows the position of the connectors, LEDs and controls on the circuit board of VISY-Input, explained in chapters 2.4.1 to 2.4.4.

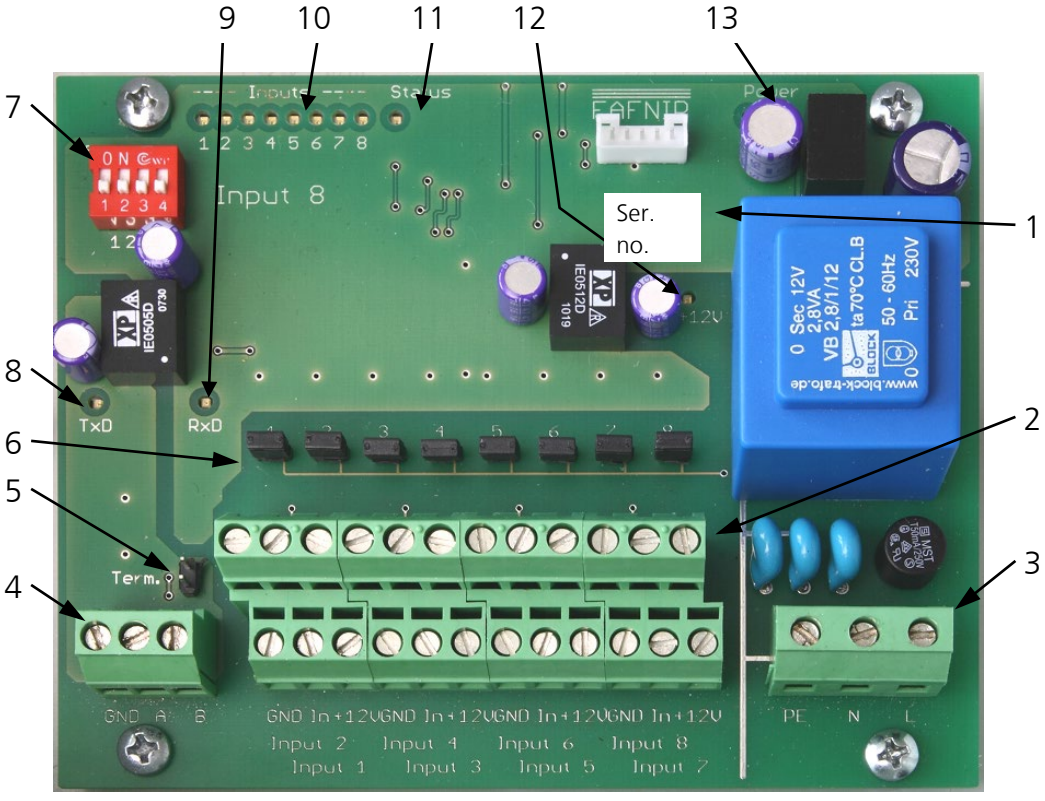

Figure 1: VISY-Input design

2.4.1 Device Information

(1) Sticker with the device number, which uniquely identifies the device. During configuration, this device number is required in order to communicate with 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 Control Elements

(5) 2-pin pin strip for activating a terminating impedance for the RS-485 interface. Normally, communication in the RS-485 network should be interference-free without activating terminating impedances (jumper not plugged in) because the data rate is comparatively low.

(6) 2-pin headers (one per input) for selecting the input signal either as a relay contact or as a 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 for selecting the protocol for communication with the respective tank gauging system and, when using the FAFNIR Universal Device protocol, also for selecting the board address.

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 Power Supply Connection

The power supply (230 VAC) must be provided as a fixed installation. The power wires are connected to the screw terminals marked with PE, N and L.

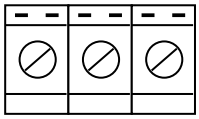

Figure 2: Screw terminal for power supply

2.6 Inputs

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

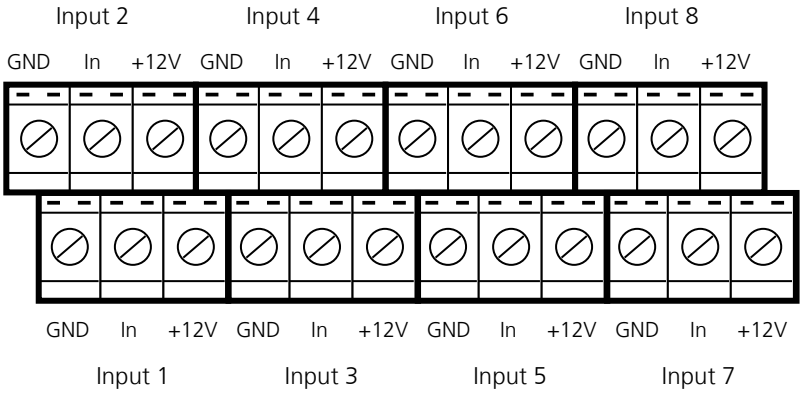

Figure 3: Screw terminals for inputs

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 header. 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 permissible voltage range (0 ... 24 V DC) the inputs are protected against damage from reverse polarity.

Switching thresholds:

at $U_{In} \leq$ 1.5 V DC, the input is deactivated, at $U_{In} \geq$ 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 in the 2-pin header (factory setting). The external relay contact must be connected to the terminals "In" and "+12 V" of the input.

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

2.7 Connection to the Evaluation Unit …

A maximum of eight VISY-Input units can be operated simultaneously on the VISY-X tank gauging system.

Communication takes place via a galvanically isolated RS-485 interface.

To increase interference immunity, a 3-core cable with interface ground (terminal GND) should be used.

The communication line is connected to the terminals A, B and GND of the 3-pin communication terminal in VISY-Input.

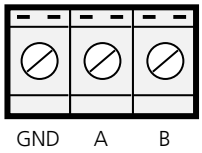

Figure 4: Screw terminal for communication

2.7.1 … VISY-Command VI-4

For connection to the VISY-Command VI-4, the communication adapter VISY-ICI 485 is required which must be installed in VISY-Command VI-4.

The communication line is connected to the terminals A, B and GND of VISY-ICI 485 in the VISY-Command VI-4.

For further information on the VISY-ICI 485 communication adapter, see:

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

2.7.2 … VISY-Command VPI

The connection to the VISY-Command VPI is done via a VISY-Terminal.

Wire-end ferrules are recommended for connecting the cable.

The communication line is connected to the terminals A, B and GND of VISY-ICI 485 in the VISY-Command VPI.

For further information on connecting to the VISY-Command VPI, see:

VISY-Command VPI, art no. 207226

3 Configuration

3.1 Configuration of Inputs

The function of each input in the VISY-Input module must be set by inserting or removing the respective jumper (see chapter 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 connected to the wired VISY-X system, the "Data protocol for VISY-Stick communication" must be set to "Multi Probe" using VISY-Setup. Due to shorter communication times, "Multi Probe 4800 bps" should preferably be used.

Wireless version of the VISY-X System:
If VISY-Input is connected to the wireless VISY-X System, the "Data protocol for VISY-Stick communication" must be set to "Standard VISY TLG" using VISY-Setup.

Please follow the according instructions mentioned in the VISY-Setup manual:

- VISY-Setup V4, art. no. 207170

After configuration, it should be checked whether the alarm signalling works as expected.

3.2 Configuration of Protocol and Board Address …

Depending on the evaluation unit used, the protocol for communication and the board address must be configured using the 4-way DIL switch.

VISY-Input supports the FAFNIR Input Box Protocol (IBP) and, starting with device number 2000, also the FAFNIR Universal Device Protocol (UDP).

3.2.1 … when connected to VISY-Command VI-4

The FAFNIR Input Box Protocol (IBP) is used for communication with VISY-Command VI-4. Addressing is done via the individual device number of the VISY-Input.
All switches must be set to the OFF position.

3.2.2 … when connected to VISY-Command VPI

The FAFNIR Universal Device Protocol (UDP) is used for communication with VISY-Command VPI.

Addressing is done via the board address, which can be set using switches in the range 18…32.

Each VISY-Input must be assigned its own board address.

Protocol Board address	DIP switch 1	 2	 3	 4
IBP	OFF	OFF	OFF	OFF
UDP 18	OFF	OFF	OFF	ON
UDP 19	OFF	OFF	ON	OFF
UDP 20	OFF	OFF	ON	ON
…				
UDP 32	ON	ON	ON	ON

Table 1: DIL switch for selecting the protocol and board address

Changed switch positions will only take effect after a new restart.

3.3 Access to Configuration …

3.3.1 … when connected to VISY-Command VI-4

VISY-Input is configured using the configuration software "VISY-Setup".

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

Wireless version of the VISY-X System:
If VISY-Input is connected to the wireless VISY-X System, the "Data protocol for VISY-Stick communication" must be set to "Standard VISY TLG" using VISY-Setup.

Please follow the relevant instructions in the configuration software manual:

VISY-Setup V4, art no. 207158

3.3.2 … when connected to VISY-Command VPI

VISY-Input is configured via browser access through the web application "SECON Configuration" of the respective VISY-Command VPI (SECON-Client).

The connection to the VISY-Command VPI (SECON-Client) can be established either with a PC in the local network or with the SECON-Server.

Please follow the relevant instructions in the following manuals:

VISY-Command VPI, art no. 207226

SECON Configuration, art no. 350406

4 Fault diagnosis

VISY-Input has several LEDs which help diagnosing in case of problems. The position of the LEDs can be seen in 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 a relay input is used, the 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 meaning.

Status LED	Fault	Description
ON	No error	Correct data is being received regularly.
Continuous flash	No communication	No data received since the last power up
1 short flash	Communication interruption	No correct data received for longer than 1 minute

Table 2: 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. An LED that flickers or goes out indicates a problem with the power supply or the supply unit.

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 lights up continuously. An LED that flickers or goes out indicates a problem with the power supply or the supply unit.

5 Servicing

5.1 Return Shipment

Before returning any FAFNIR equipment, the Return Material Authorization (RMA) from FAFNIR customer service is required. Please contact your account manager or the customer service to receive the instructions on how to return goods.

☞ *The return of FAFNIR products is only possible after approval by the FAFNIR customer service.*

6 Technical data

Dimensions:	H 60 x W 180 x D 130 [mm] (excluding cable glands)
Enclosure protection:	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 connection (GND) for connection to the tank gauging system
Inputs:	8 inputs, optionally 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
Relay contact input:	Internal power supply, 12 V DC, current through the relay contact is limited to 10 mA ±10%

Table 3: Technical data

7 List of Figures

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EU–Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de Conformité

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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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