Technical Documentation

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Technical Documentation

VISY-X

VISY-Output 8
8-Channel Relay Output Module

(en)

Art. No.	Version	Edition
350072	6	2025-12

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Table of Contents

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1 Introduction

VISY-Output 8 is an 8-channel relay output module mounted in an IP66-rated enclosure. It connects the high-precision **VISY-X** tank gauging system to external safety devices or alarm indicators.

With VISY-Output 8, different alarms detected by the tank gauging system can be transferred to external devices. Thanks to its construction in a separate housing, VISY-Output 8 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-Output 8 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-Output 8:

VISY-Output 8 is intended for use only within the VISY-X tank gauging system.

Do not make any changes to VISY-Output 8 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-Output 8 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-Output 8 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 the technical documentation:

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

VISY-Command VPI, art. no. 207226

2.3 Mounting

The VISY-Output 8 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-Output 8, explained in chapters 2.4.1 to 2.4.4.

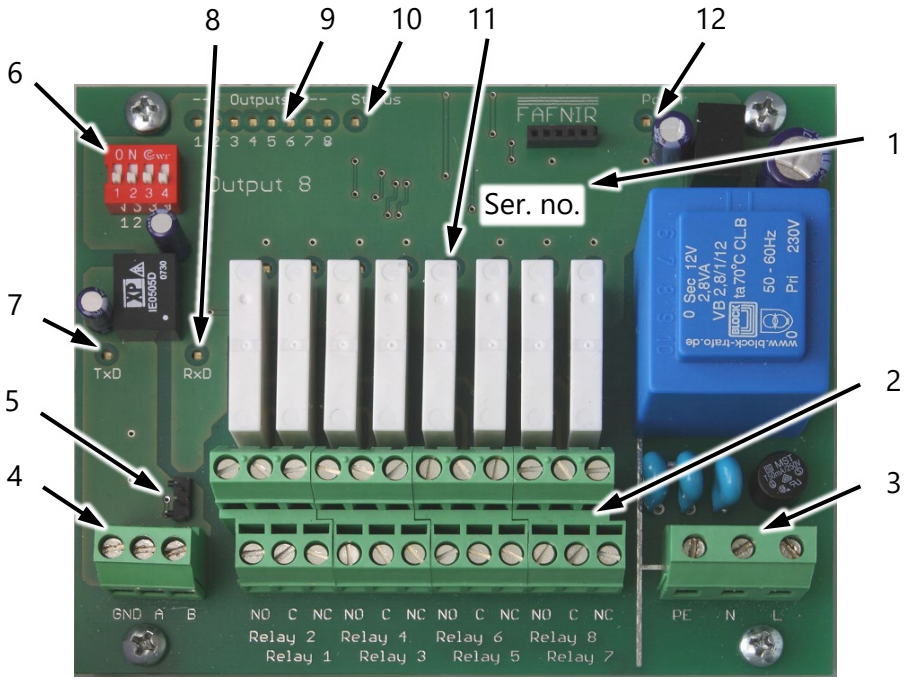

Figure 1: VISY-Output 8 Design

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 address the device.

2.4.2 Connections

(2) 24-pin screw terminal for connecting the relay contacts

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

(6) 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

(7) Transmit LED TxD (red)

(8) Receive LED RxD (red)

(9) Output LEDs (red) – one per output

(10) Status LED (yellow)

(11) Relay LEDs (red) – one per relay

(12) 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.

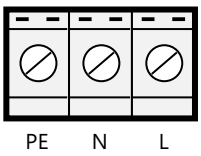

Figure 2: Screw terminal for power supply

2.6 Connection of the Relay Contacts

The VISY-Output 8 has eight relays, each with a potential-free changeover contact. External safety devices or alarm indicators can be connected to the terminals of the 24-pole terminal block marked with Relay 1 to 8 (see following figure). The alarms of the tank gauging system can freely be assigned to the relays. Whether the contact should be used as a normally open contact (NO) or normally closed contact (NC) depends on the respective application and the relay operating mode (see chapter 4.3).

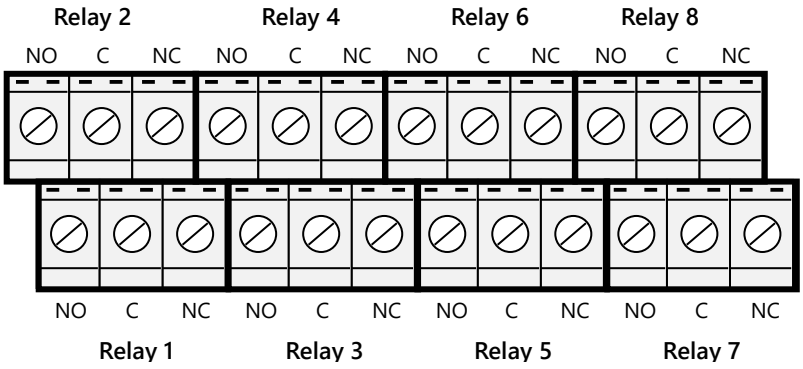

Figure 3: Screw terminals for relay contacts

2.7 Connection to the Evaluation Unit ...

A maximum of eight VISY-Output 8 modules 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-Output 8.

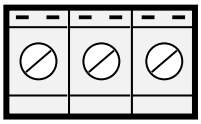

Figure 4: Screw terminal for communication

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 clamps A, B and GND of the VISY-Terminal in 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 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-Output 8 supports the FAFNIR Output Box Protocol (OBP) and, starting with device number 7500, also the FAFNIR Universal Device Protocol (UDP).

3.1.1 ... when connected to VISY-Command VI-4

The FAFNIR Output Box Protocol (OBP) is used for communication with VISY-Command VI-4. Addressing is done via the individual device number of the VISY-Output 8. All switches must be set to the **OFF** position.

3.1.2 ... 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-Output 8 must be assigned its own board address.

Protocol Board address	DIP switch			
	1	2	3	4
OBP	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.

3.2 Access to Configuration ...

3.2.1 ... when connected to VISY-Command VI-4

VISY-Output 8 is configured using the VISY-Setup configuration software.

Wired version of the VISY-X system:
If VISY-Output 8 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-Output 8 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

3.2.2 ... when connected to VISY-Command VPI

VISY-Output 8 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 Settings

By changing the configuration, VISY-Output 8 can be adapted to the requirements of the respective application. The following settings are possible:

- Hold time after communication loss
- Output Action After Hold Time
- Relay mode
- Relay Delay

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

4.1 Hold Time after Communication Loss

With the hold time it is configured if and when the outputs react after a communication loss. The hold time can be configured from 0 to 240 minutes.

Hold time = 0 (minutes)

The hold time is deactivated.

The outputs keep their current states.

Hold time = 1 – 240 (minutes)

The hold time is set to 1 – 240 minutes.

After the hold time is exceeded, the outputs react as described in the following chapter.

4.2 Output Action after Hold Time

This configuration defines how the outputs react after the hold time is exceeded. After the hold time the outputs can either be activated or deactivated.

☞ *If a hold time of "0" is configured, the outputs do not change their state.*

☞ *The behaviour of the relays depends on the relay-mode configuration.*

4.3 Relay Modes

The following relay operating modes are possible:

- Standard mode

In the Standard work mode, a relay is generally de-energised (passive), and will be energised (active) when the corresponding output is activated.

- Fail safe mode

In fail-safe mode, a relay is generally energised (actively) and is de-energised (passively) when the relevant output is activated.

☞ *The fail-safe mode offers the advantage that even in the event of a power failure, an alarm can be signalled from VISY-Output 8 via the relay that becomes passive.*

The following table shows the relay state depending on the configured relay mode and the state of the relevant output.

Relay mode	Output	Relay state
Standard	deactivated	de-energised (passive)
Standard	activated	energised (active)
Fail safe	deactivated	energised (active)
Fail safe	activated	de-energised (passive)

Table 2: Relay mode

4.4 Relay Delay

If the relay delay is activated, the relay status (passive/active) changes as soon as the event for activating the output is pending for at least 1 minute. The relay delay occurs only upon activation of an output. If the output is deactivated, the relay status changes without delay.

☞ *If an output is activated and the relay delay is on, the corresponding output LED blinks slowly to show the delayed reaction of the relay.*

5 Fault diagnosis

VISY-Output 8 has several LEDs which help diagnosing in case of problems. The position of the LEDs can be seen in Figure 1.

5.1 Transmit LED TxD (7) / Receive LED RxD (8)

The two red communication LEDs indicate whether data are received or transmitted from VISY-Output 8.

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

5.2 Output LEDs (9)

The 8 red LEDs for the outputs indicate whether an output is activated or deactivated. In addition, these LEDs indicate relay switch-on delays. The following table lists the possible states of the output LEDs and explains their meaning.

Output LED	Meaning
ON	Output activated
Off	Output deactivated
Blinking slowly	Switch-on delay

Table 3: Output LEDs

5.3 Status LED (10)

The yellow status LED indicates the status of the communication between the VI-... interface card in the VISY-Command and the VISY-Output 8.

The following table lists the possible states of the status LED and explains their meaning.

Status LED	Fault	Meaning
ON	No error	Correct data is received regularly.
Continuous flash	No communication	No correct data received since the last switch-on.
1 short flashes	Communication inter-ruption	No correct data received for longer than 1 minute
2 short flashes	Hold time exceeded	No correct data received for longer than the configured hold time.

Table 4: Status LED

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

5.4 Relay LEDs (11)

The 8 red LEDs for the relays indicate whether a relay is energised or deenergised.

☞ *In the relay mode "standard", the output LEDs and the relay LEDs show the same status. In the relay mode "fail-safe", the output LEDs and the relay LEDs show the opposite status.*

5.5 Operating Voltage LED (12)

The green operating voltage LED shows whether the VISY-Output 8 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.

6 Servicing

6.1 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.*

7 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 measuring system
Outputs:	8 relays each with a potential-free changeover contact
Load capacity of contacts:	AC: U ≤ 250 VAC, I ≤ 3 A, P ≤ 300 VA, cos φ ≥ 0.7 DC: U ≤ 24 VDC, I ≤ 2 A, P ≤ 50 VA

Table 5: Technical data

8 List of Figures

9 List of Tables

CE

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EU–Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de Conformité

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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

Ausgangsmodul
Output Module
Module de sortie

VISY-Output ...

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

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