

VISY-Output 8

8-Channel relay output module



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1. Overview

VISY-Output 8 is an 8-channel relay output module, installed in a case with the protection IP66. It connects the VISY-X high-precision tank gauging system to external safety devices or alarm indicators.

With VISY-Output 8, different alarm conditions detected by the VISY-X system will be transferred to external devices. As VISY-Input 8 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-Output 8 can be operated simultaneously with the VISY-Command.

2. Installation

2.1. Safety information

When installing VISY-Output 8 following safety instructions should be observed:

- VISY-Output 8 is designed for operation within the VISY-X system only.
- Modifications to the VISY-Output 8 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-Output 8 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-Output 8 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-Output 8 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-Output 8.

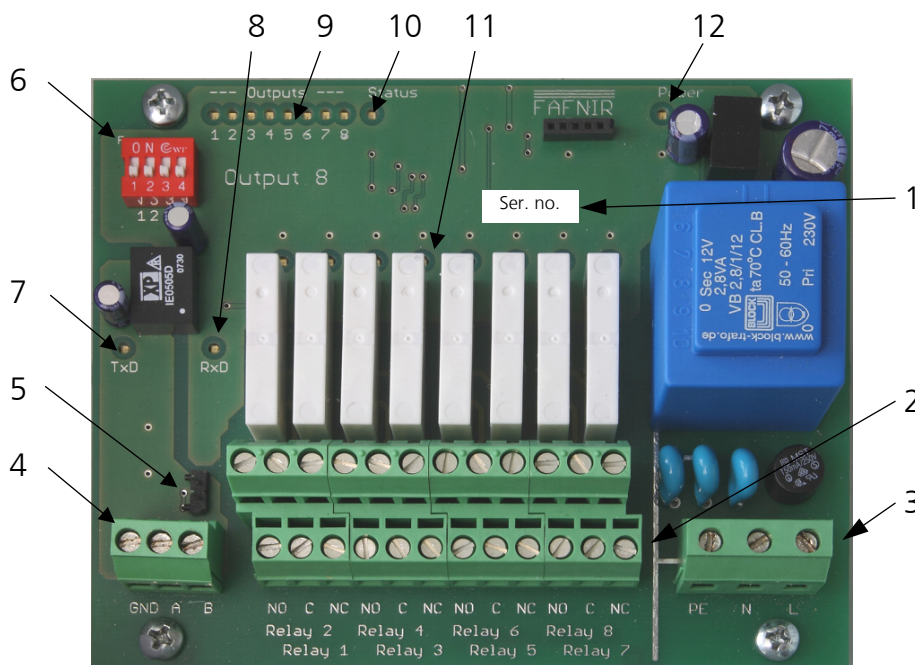


Figure 1: VISY-Output 8 Design

2.4.1. Device information

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

2.4.2. Connections

- (2) 24-pin screw terminal for connection to 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. 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) 4-way DIL switch, currently without function.

2.4.4. LEDs

- (7) Transmit LED (red)
- (8) Receive LED (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. 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.

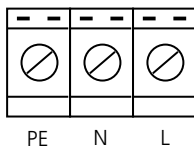


Figure 2: Power supply screw terminal

2.6. Connection of the relay contacts

The VISY-Output 8 has eight output relays, each with a potential-free changeover contact.

External safety devices or alarm indicators can be connected to the clamps marked with relay 1 to 8 of the 24-pin screw terminal (see following figure). The VISY-Command alarm signals can freely be assigned to the relays. Whether the contact shall be used as normally open (NO) or normally closed (NC) depends on the particular application and the relay mode (see chapter 3.3).

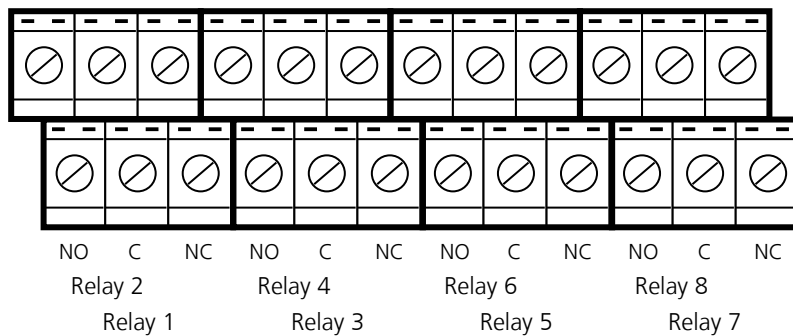


Figure 3: Relay screw terminal

2.7. Connection to VISY-Command

Up to eight VISY-Output 8 can be operated simultaneously with the VISY-X tank gauging system. For the connection of VISY-Input 8 a communication adapter VISY-ICI 485 is required which must be installed inside VISY-Command. The communication between VISY-ICI 485 and VISY-Output 8 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-Output 8 with VISY-ICI 485 it is recommended using a 3-core cable with signal ground (GND connection terminal) to increase the noise immunity.

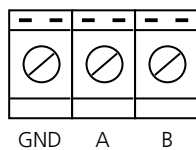


Figure 4: Communication screw terminal

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

Further configuration of VISY-Output 8 is done - as usual for the VISY-X system - with the VISY-Setup configuration software.



If a VISY-Output 8 will be connected to the VISY-X system, the data protocol for communication with the VISY-Stick must always be set to "Multi Probe" using the VISY-Setup. Due to the shorter communication times, "Multi Probe 4800 bps" should preferably be used.

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

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

Changing the configuration means to adopt VISY-Output 8 to the requirements of the special application. The following settings are possible:

- (1) Hold time after communication loss
- (2) Output action after hold time
- (3) Relay mode
- (4) Relay delay



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

3.1. 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 in the range of 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.

3.2. 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 keep their current states.*

 *The relays act according to the configured relay mode.*

3.3. Relay mode


The following relay modes are possible:

Standard mode

In the standard mode, the relay is normally de-energized (passive) and it will be energized (active) when the corresponding output is activated.

Fail-safe mode

In the fail-safe mode, the relay is normally energized (active) and will be de-energized (passive), when the corresponding output is activated.

 *The fail-safe mode provides the advantage that even in case of a failure in the power supply of the VISY-Output 8 an alarm can be signalled via de-energized (passive) relays.*

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

Relay mode	Output	Relay status
standard	deactivated	de-energized
standard	activated	energized
fail-safe	deactivated	energized
fail-safe	activated	de-energized

Table 1: Relay mode

3.4. Relay delay

If the relay delay is on, the relay state (de-energized/energized) changes when the event for the output activation is present for at least 1 minute. The relay delay occurs only upon activation of an output. Upon deactivation of an output the relay state 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.

3.5. Maintenance Mode

The maintenance mode is used to deactivate the outputs of the VISY-Output 8 temporarily. This function can for example be used during the configuration to prevent alarms via the relay contacts caused by incomplete configuration. The maintenance mode is turned on or off using the VISY-Setup configuration software, as far this function is supported by the used version. During the maintenance mode, the output LEDs flash rapidly.



The maintenance mode is terminated automatically when VISY-Setup is closed or the connection between VISY-Setup and the VI interface card is interrupted.



Before activating the maintenance mode you should be sure about possible consequences, as active safety devices might be turned off.

4. Fault diagnosis

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

4.1. Transmit LED (7) / Receive LED (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.

4.2. Output LEDs (9)

The eight red output LEDs indicate, whether an output is activated or deactivated. Additionally these LEDs indicate the active relay delays and the maintenance mode. The following table lists possible states of the output LEDs and explains their meanings.

Output LED	Description
on	output is activated
off	output is deactivated
slow blinking	relay delay
fast flashing	Maintenance Mode

Table 2: Output LEDs

4.3. Status LED (10)

The yellow status LED indicates the state 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 meanings.

Status LED	Error	Description
on	no error	correct data are regularly received
continuous blinking	no communication	no correct 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
2 x short flashing	hold time exceeded	no correct data were received for more than the configured hold time

Table 3: Status LED



Under normal conditions, the status LED should remain illuminated.

4.4. Relay LEDs (11)

The eight red relay LEDs indicate, whether a relay is energized or de-energized.



In the standard mode the output LEDs and the relay LEDs have the same state. In the fail-safe mode the output LEDs and the relay LEDs have the opposite state.

4.5. Operating voltage LED (12)

The green operating voltage LED indicates whether VISY-Output 8 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. 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 \pm 10 %, 50 - 60 Hz, \leq 4 VA
Communication:	1 x RS-485, galvanically isolated, 3-pin. screw terminal with ground (GND) to connect to VISY-ICI 485
Outputs:	Eight relays each with potential-free changeover contact
load rating of the contacts:	AC: $U \leq 250$ VAC, $I \leq 3$ A, $P \leq 300$ VA, $\cos \varphi \geq 0,7$ DC: $U \leq 24$ VDC, $I \leq 2$ A, $P \leq 50$ VA

Table 4: Technical data

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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
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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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