Technical documentation

FAFNIR™

VISY-Output 1

1-Channel Relay Output Module
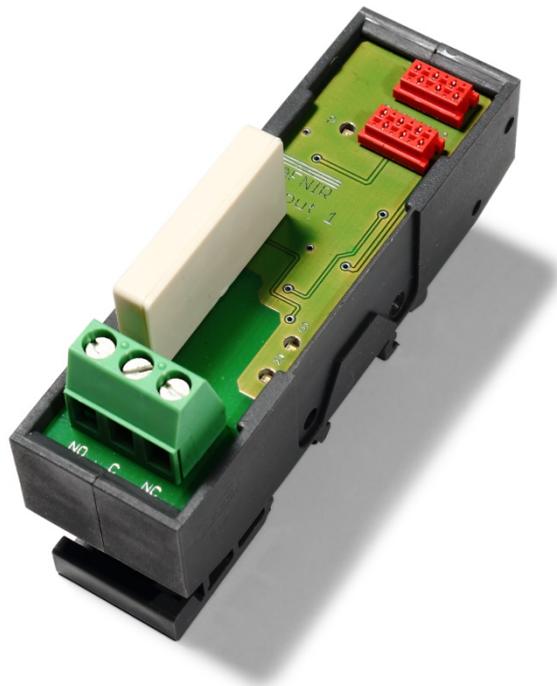
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1 Overview

The VISY-Output 1 is a 1-channel relay output module for connecting an external safety device or an alarm indicator to the VISY-Command. Alarms detected by the VISY-X tank gauging system can thus be forwarded to an external system. With the VISY-ICI 485, the VISY-Output 1 can be extended with the VISY-Output 8 and the VISY-Input 8 modules.

VISY-Output 1 is located on a module carrier for installation on DIN mounting rails and is intended for installation in the VISY-Command, from which the wiring is done.

⚠ *Only one (1) VISY-Output 1 is allowed to be connected to the VI-4 interface in the VISY-Command.*

2 Installation

2.1 Safety instructions

When installing VISY-Output 1 following safety instructions should be observed:

- VISY-Output 1 is intended for use within the VISY-X system only.

- Modifications to the VISY-Output 1 are prohibited without the prior consent of the manufacturer.

- All installation and maintenance work, except for the functional inspection must be performed when the device is not under current.

- The installation and configuration of the VISY-Output 1 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 regulation which is not stated in this technical documentation.

The safety instructions in this manual are marked as follows:

⚠ *If these safety instructions are not observed, it may result in the risk of accidents or damage to the VISY-X system.*

☞ *Useful instructions to be followed in this manual are displayed in italics and are marked with the adjacent symbol.*

2.2   Requirements

For installing the VISY-Output 1 in the VISY-Command, an interface card of version VI-4 or higher must be present.

2.3   Installation

VISY-Output 1 is designed for installation in the VISY-Command. For installation, the VISY-Output 1 is plugged onto the DIN mounting rail inside the VISY-Command. Hold the module carrier of VISY-Output 1'at an angle to the mounting rail and plug the snap-on foot onto the rail in such a way that one side of the module holder is fixed in place. Then press the other side of the module carrier onto the rail until this side snaps in and the module carrier sits firmly.

⚠️ *The VISY-Output 1 can be used only in conjunction with the VI-... interface card (version VI-4 and above).*

☞ *Mount the VISY-Output 1 leftward next to the VI-... interface card on the DIN rail.*

☞ *The module carrier can be released from the rail only by levering with a screwdriver*

2.3.1   Design and construction

The following figure shows the position of the connectors and LEDs on the circuit board of the VISY-Output 1(description in the following chapter):
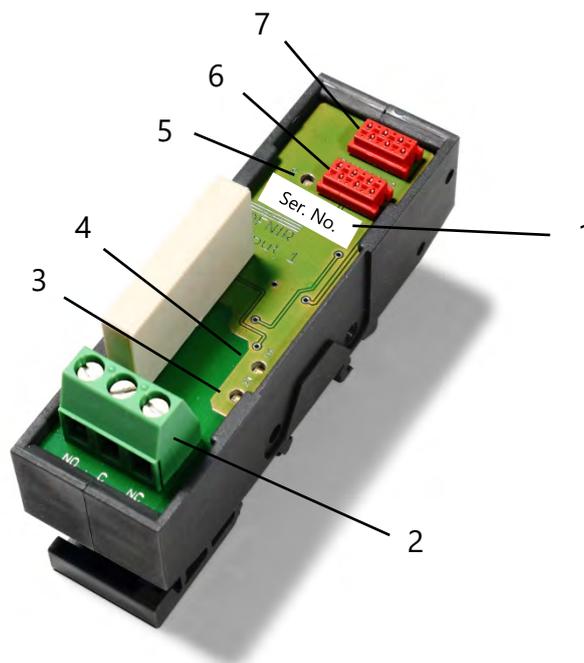

Figure 1: Structure of VISY-Output 1

2.3.2 Device information

(1)   Sticker with the device number, which uniquely identifies the device.

2.3.3 Connections

(2)   3-pin screw terminal for connection to the relay contacts

(6)   6-pin socket for connecting the VISY-ICI 485
(for extension with VISY-Output 8 and VISY-Input 8)

(7)   6-pin socket for connection to the VI-4 interface
(for power supply and communication)

2.3.4 LEDs

(3)   Relay LED (red)

(4)   Status LED (yellow)

(5)   Operating voltage LED (green)

2.3.5 Connection of the relay contacts

The VISY-Output 1 has a relay with a potential-free changeover contact. An external safety device or alarm indicator can be connected to the terminals marked NO – C – NC of the 3-pin screw terminal (see figure below). Whether the contact is to be used as a closer (NO – Normally Open) or as an opener (NC – Normally Closed) depends on the specific application and the relay's operating mode (see chapter 2.4.3).
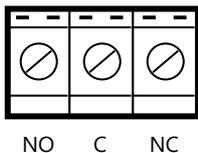

Figure 2: Relay screw terminal

2.3.6 Connection to the VISY-Command

Connect the VISY-Output 1 to the VI-… interface card using the 6-pin ribbon cable supplied (see Figure 1: Structure of VISY-Output 1). The power supply and communication are established through this ribbon cable.

2.4   Configuration

As is typical for the VISY-X system, the VISY-Output 1 is configured using the VISY-Setup configuration software.

⚠ *With VISY-Setup the data protocol for communication with VISY-Stick must be set to "Multi Probe protocol" . Due to the shorter communication times, it is preferable to use "Multi Probe 4800 bps".*

⚠ *For addressing, the serial number of VISY-Output 1 must be entered in VISY-Setup.*

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

- Technical documentation VISY-Setup, Art. No. 207158

Changing the configuration adjusts the VISY-Output 1 to the requirements of the relevant application. The following settings are possible:

(1)   Hold time after communication loss

(2)   Behaviour of the output after the hold time expires

(3)   Relay mode

(4)   Relay delay

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

2.4.1   Hold time after communication loss

The hold time (timeout) is used to determine whether and when the output should 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 output maintains its current status.

Hold time = 1 – 240 (minutes)

The hold time is set to 1 – 240 minutes. After the hold time has expired, the output behaves as described in the following chapter.

2.4.2 Behaviour of the output after the hold time has expired

This setting is used to specify how the output behaves after the hold time expires (timeout). After the hold time, the output can either be activated or deactivated.

☞ *If a hold time of "0" is configured, the output does not change its state.*

☞ *The relay behaves according to the set relay mode.*

2.4.3 Relay mode

The following relay operating modes are possible:

Standard mode
In the standard mode, a relay is normally de-energised (passive) and becomes energised (active) when the output is activated.

Fail safe mode
In the fail safe mode, a relay is normally energised (active) and becomes de-energised (passive) when the output is activated.

☞ *The fail safe mode offers the advantage that even if the auxiliary energy of VISY-Output 1 fails, an alarm signal can be sent via the relay that is then going passive.*

The following table shows the status of the relay based on the configured relay mode and the status of the output.

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

Table 1: Relay mode

2.4.4 Relay delay

If the relay delay is activated, the relay status (passive/active) changes as soon as the event for activating the output is in cue for at least 1 minute. Relay delay occurs only during output activation. If the output is deactivated, the relay status changes without delay.

☞ *If the output is activated, the relay delay is turned on.*

2.4.5 Maintenance mode

The maintenance mode is used to deactivate the output of VISY-Output 1 temporarily. For example, this function can be used during configuration to prevent an alarm from triggering through the relay contact due to a still incomplete configuration. The maintenance mode is turned on and off using the VISY-Setup configuration software, if this function is supported.

☞ *The maintenance mode automatically stops as soon as VISY-Setup quits or there is no longer a data connection between VISY-Setup and the VI-... interface card.*

⚠ *Because the maintenance mode may deactivate active safety devices, one should be aware of the possible consequences before the activation.*

3 Fault diagnosis

VISY-Output 1 has several LEDs to make diagnosis easier when there are problems. The position of the LEDs can be seen in Figure 1.

3.1 Relay LED (3)

The red LED for the relay shows whether the relay is energised or deenergised (active or passive).

3.2 Status LED (4)

The yellow status LED gives information on the status of communication between the VI-… interface card in the VISY-Command and the VISY-Output 1.

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 being received regularly
Continuous flash	No communication	No correct data received since the last switch-on
1 short flash	Communication interruption	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 2: Status LED

☞ *Under normal conditions, the status LED should be on constantly.*

3.3 Operating voltage LED (5)

The green operating voltage LED shows whether the VISY-Output 1 is being supplied with power. After the auxiliary energy is turned on, the operating voltage LED glows continuously. An LED that flickers or goes out indicates a problem with the auxiliary energy or the electrical adaptor.

4 Overhaul

4.1 Maintenance

The VISY-Output 1 is maintenance free.

4.2 Returns

Before returning FAFNIR products, approval from FAFNIR customer service is required. Please speak with your customer advisor or with customer service, who will give you all the details for return shipment.

☞ *FAFNIR products can only be returned after approval from FAFNIR customer service.*

5 Technical data

Dimensions	H 76 x W 24 x D 47 [mm]
Housing protection	None
Ambient temperature	0 °C ... +40 °C
Power supply:	5 VDC, 40 mA, supply through VI-4
Communication	With VI-4 through 6-pin ribbon cable
Outputs	1 relay with potential-free changeover contact
Load capacity of 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 3: Technical data

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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

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
Störfestigkeit / Immunity / D'immunité

Klasse B / Class B / Classe B
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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