

# VISY-X

## VISY-TD Display (Truck Driver Display)



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## 1 Overview

The VISY-TD Display (Truck Driver Display) is an optional part of the VISY-X system. With the VISY-X system, highly precise, continuous level measurements in up to 16 tanks are carried out directly at the petrol station.

The display is used to show information which is important for a fuel tank driver and displays the ullage of the individual tanks as well as warnings. For this reason, the display should be placed behind the glass pane of the petrol station building so that it can also be utilised outside of the petrol station business hours.

By operating a switching contact, the display of the VISY-TD Display is activated and the data of the first tank is displayed. Operating the switching contact repeatedly switches to the respective tank with the next higher tank number. The display is automatically deactivated if the switching contact is not operated for a longer period.

## 2 Safety instructions

The VISY-TD Display is used to display the ullage determined by the VISY-X system in the tank up to the maximum filling level (capacity). In addition, the current volume is also displayed. Use the display for this purpose only. The manufacturer accepts no liability for any form of damage resulting from improper use.

The display has been developed, manufactured, and tested in accordance with the latest safety engineering practices and generally accepted safety standards. Nevertheless, hazards may arise from its use. For this reason, the following safety instructions must be observed:

Do not change or modify the display or add any equipment without the prior consent of the manufacturer.

The installation of the display may only be carried out by expert personnel. Specialised knowledge must be acquired by regular training.

Installers and operators 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:



*If these safety instructions are not observed, it may result in the risk of accident or damage to the VISY-TD Display.*



*Useful information designed to ensure continued and correct operation of the VISY-TD Display or helpful advice to make your work easier.*

### 3 Design and function

#### 3.1 Normal operation

The display is in normal mode if no errors for the tank to be displayed have been determined. The VISY-TD Display is activated with the external switching contact and displays the relevant data for the first tank. Press the switching contact again to switch to the next tank (e.g. Tank 2). The following figure shows the display in normal mode:

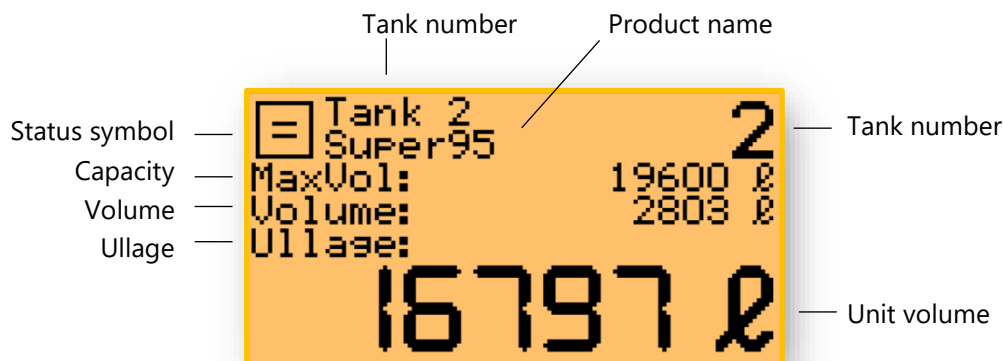


Figure 1: Example for the display of the tank data

#### Status Symbol

Provides information about the status of the currently selected tank or about the general status of the VISY-TD Display (see chapter 3.3).

#### Tank number

The number of the currently selected tank. For easy reading, the tank number is additionally displayed in the upper right corner of the display in a large font.

#### Product name

The product stored in the selected tank.

#### Capacity

The maximum permitted volume in the selected tank.

#### Volume

The real volume available in the selected tank (not temperature-compensated).

#### Ullage

The free volume still available in the selected tank up to the maximum permitted tank content. For easy reading, the ullage is displayed in a large font.

#### Unit volume

For tanks with a nominal volume of 1,000,000 litres and higher, volumes are displayed in m<sup>3</sup> instead of litres.

### 3.2 Failure mode

If the system has determined an error for a tank, this error is shown instead of the tank data, see following figure:

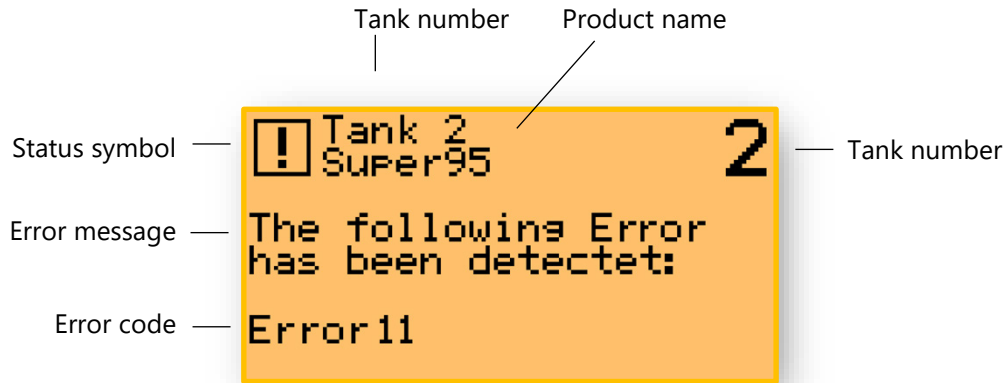


Figure 2: Example for the display of an error

The meaning of the individual error codes is described in the following operating instructions:



Technical Documentation VISY-Command ..., art. no. 207184

### 3.3 Icons

The icons described in the following are used by the VISY-TD Display to indicate the various states.



No change in level

The level (the volume) for the displayed tank is not currently changing (no dispensing and no delivery).



Dispensing

A dispensing is currently taking place out of the displayed tank, the level (volume) sinks.



Delivery

A delivery is currently taking place for the displayed tank, the level (volume) rises.



Wireless

The linking of the probe in the tank to the VISY-X system happens via radio transmission. Dispensing or delivery is not indicated in this mode.



Fault

There is a fault which is preventing the normal display of the data for a single tank or for all tanks.



Configuration Menu

Setting of language, tank selection, display time and device information.

## 4 Installation

### 4.1 Assembly

The assembly of the VISY-TD Display should be done at eye level for better readability. Assembling is recommended behind a glass pane inside the building. The VISY-TD display can be attached to the glass pane by using the included Velcro fasteners. The casing cover does not need to be removed for the assembly.

Before assembling the Velcro fasteners the glass pane must be cleaned with a suitable agent. The Velcro fastener are to be fixed at the corners of the casing cover.

### 4.2 Electrical connection

The VISY-TD Display comes equipped with a 2 metre, 7-pole connection cable which connects it to the VISY-command and the switching contact. If this cable must be extended, a junction box with 3 connecting cables must be used:

- 2-pole standard cable for connecting the switching contact (NO contact)
- 2-pole standard cable for connecting the power supply unit
- 3-pole communication cable with twisted lines for connection to the RS-485

See the following table for the assignments of the 7-pole connection cable:

Wire	Signal
white	Voltage supply, GND
brown	Voltage supply, +5 V
green	RS485 interface, B (-)
yellow	RS485 interface, A (+)
grey	RS485 interface, GND
pink	Button, connection 2
blue	Button, connection 1

Table 1: 7-pole connection cable assignment

### Voltage supply

The included 5 V power supply unit is required for voltage supply of the VISY-TD Display and must be installed in the VISY-Command. For installation this power supply unit is clicked into the available top hat rail in the VISY-Command.

For electrical connection of the power supply unit to the interface VI-4, the VISY-Command must be disconnected from the mains.

For voltage supply, connect the terminals N and L of the power supply unit to the terminals N and L of the VI-4 interface, see following figure. Use the enclosed wire ferrules for this.

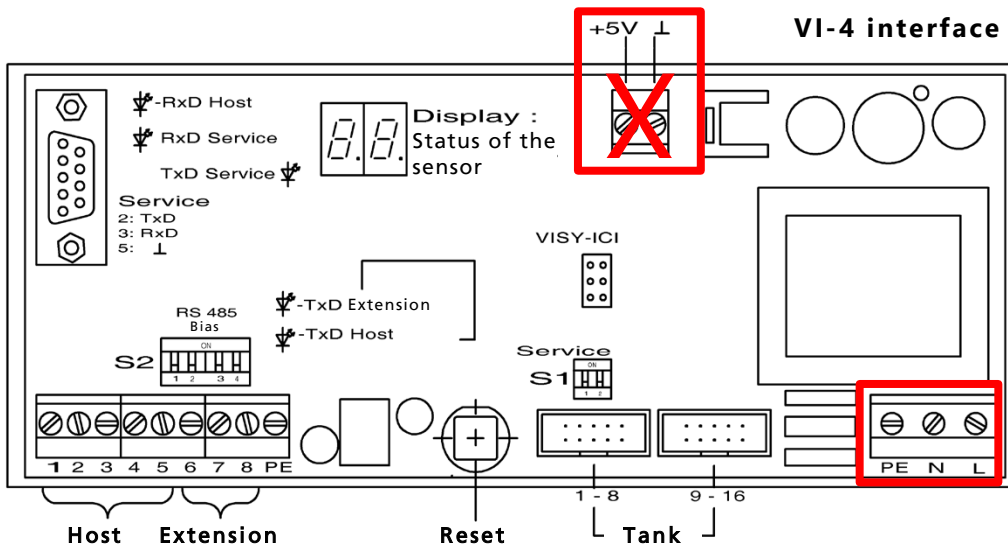


Figure 3: Terminals N and L of the power supply of the VI-4 interface

The VISY-TD Display must be supplied with the 5 V DC voltage of the included power supply unit. Do not use the 5 V connection terminal of the VI-4 interface (see fig. 3).

To provide voltage to the VISY-TD Display, connect the white and brown wires of the connection cable to the + and – terminals of the power supply unit, see following table:

VISY-TD Display		Power supply unit
Wire	Signal	Power supply 5 V
white	Voltage supply: GND	Terminal -
<b>brown</b>	Voltage supply: +5 V	Terminal +

Table 2: Voltage supply of the VISY-TD Display



### Communication

The communication between the VISY-TD Display and the VISY-Command is performed via a galvanically isolated RS485 interface. The communication lines of the VISY-TD Display are connected to the extension interface of the VISY-Command evaluation unit. 3-wire lines with interface ground are recommended to increase the interference resistance for this connection.

Activate the extension interface in the VISY-Command using the VISY-Setup configuration software. Please follow the relevant information in the VISY-Command and VISY-Setup operating instructions:



Technical Documentation VISY-Command ..., art. no. 207184



Technical documentation VISY-Setup V4, art. No. 207158

For connection of the communication lines to the VISY-Command, connect the wires grey, yellow, and green to the terminals 6, 7, and 8 of the VI-4 interface, see following table and figure:

VISY-TD Display		VISY-Command
Wire	Signal	
grey	RS485 interface, GND	Terminal 6, GND
yellow	RS485 interface, A (+)	Terminal 7, A (+)
green	RS485 interface, B (-)	Terminal 8, B (-)

Table 3: Communication lines of the VISY-TD Display

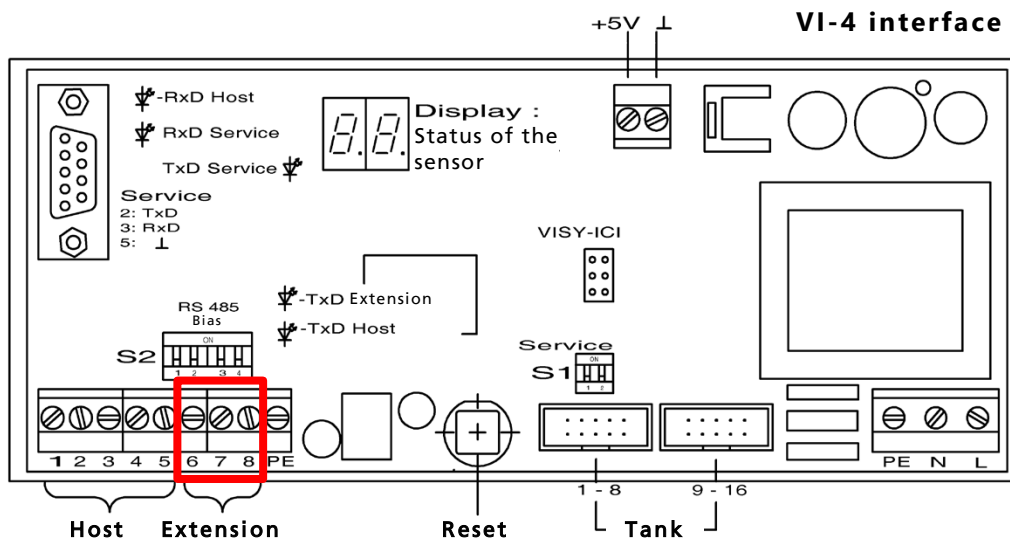


Figure 4: Extension interface of the VI-4 interface

### External switching contact

In order to be able to activate the display or switch to the next tank, an external, potential-free switching contact must be connected to the VISY-TD Display.



*The external switching contact is not included.*

See the following table for the terminal assignment of the external switching contact:

VISY-TD Display		External switching contact
Wire	Signal	
blue	Button, connection 1	Connection 1
pink	Button, connection 2	Connection 2

Table 4: Pin assignment of the VISY-TD Display

## 4.3 Configuration

For the VISY-TD Display with firmware V1.0.1.255 and higher a configuration menu is available.

### 4.3.1 Operation:

The operation within the configuration menu is triggered by an external switching contact. In order to access the configuration menu the contact must be pressed for more than 10 seconds.

Following actions can be triggered by pressing the contact:

#### Short pressing the contact (less than 2 seconds)

- The cursor moves to the next line.
- If the cursor is in the bottom line and another menu item exists, that menu item is displayed in the bottom line.
- If the cursor is on the last available menu item, it jumps back to the top line

#### Long pressing the contact (more than 2 seconds)

- If the cursor is in the top line, it returns to the next higher menu or leaves the configuration
- If the cursor is *not* in the top line, the selected menu is opened or the configuration is selected/changed

After closing the configuration menu all changes are automatically stored and remain even after turning off the system.



*Do not interrupt the power supply with active configuration menu, since the configuration is not completely stored at voltage interruption.*

### 4.3.2 Display

Display of the main menu

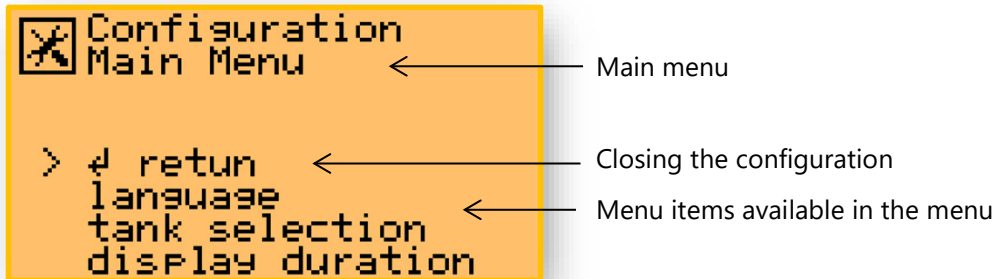


Figure 5: Display of the main menu

Display of the sub-menu (in this case: tank selection)

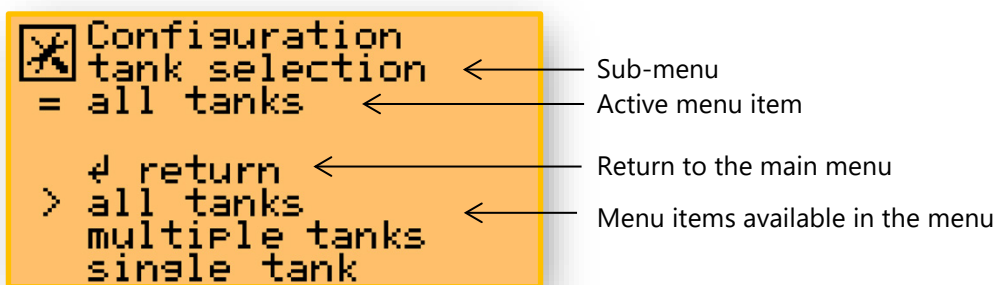


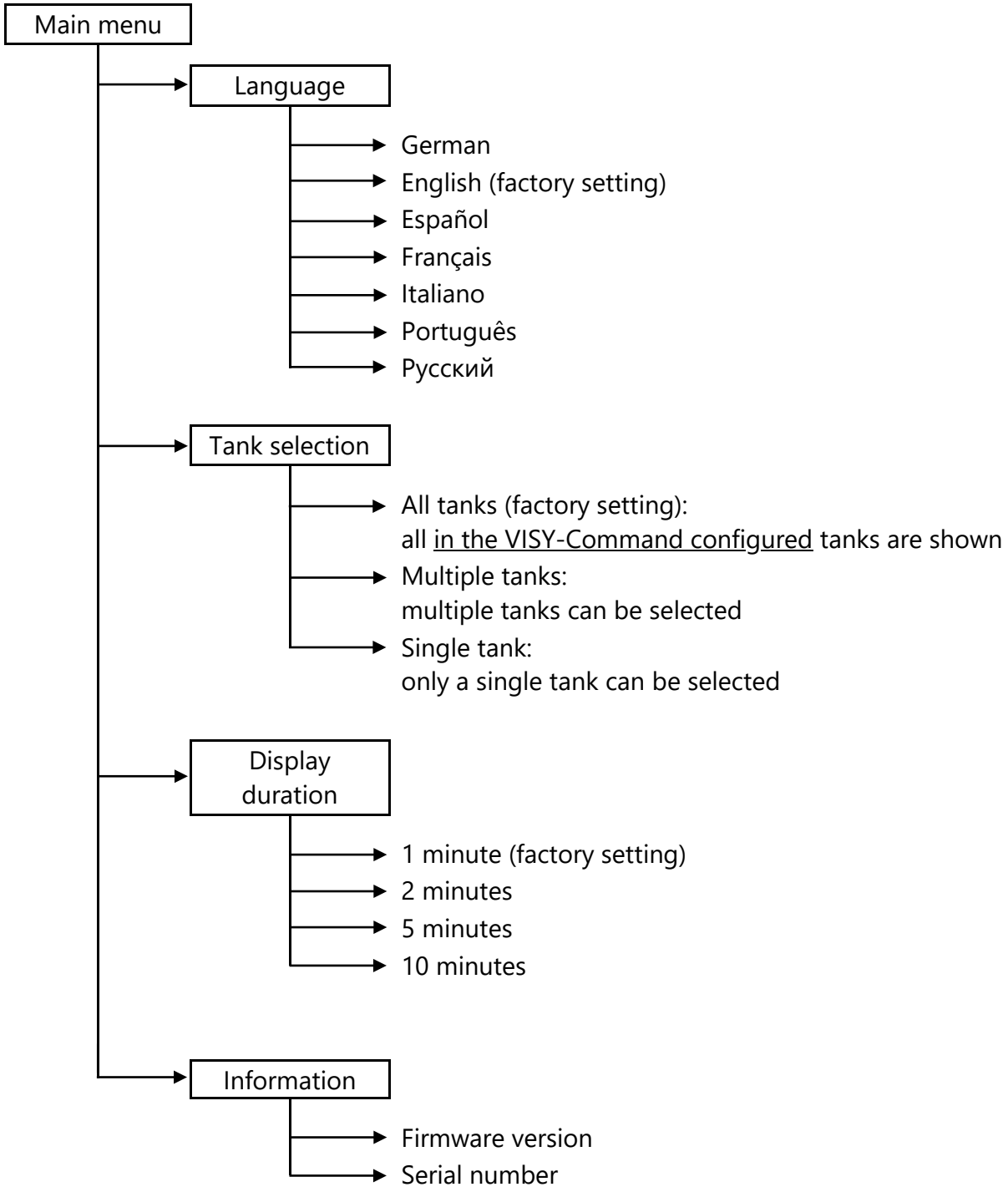
Figure 6: Display of a sub-menu



*Always only a maximum of 3 menu items can be shown in the display. If more than 3 menu items are available, these hidden menu items can be visualized by repeated short pressing of the contact.*

### 4.3.3 Menu Structure

The configuration menu of VISY-TD Display has the following structure:



## **5 Error messages**

See chapter 3.2, Failure mode.

## **6 Overhaul**

### **6.1 Return shipment**

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



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

## 7 Technical Data

Ambient temperature	0 °C ... +40 °C
Protection class	IP 67
Display	2.8" LCD graphic display with backlight
Supply voltage	5 V / 0.5 A DC, adapter included
Switch input	No-load voltage approx. 3 V, short-circuit current approx. 6 mA
Communication	RS-485 interface, 3-pole connection, galvanically isolated, for connection to VISY-Command
Connection cable	2000 mm
Connection cable (extension)	- Switching contact connection cable: 2-pole (NO contact) - Voltage supply connection cable: 2-pole - Communication connection cable: 3-pole, shielded and twisted
Dimensions [mm]:	80 x 82 x 55 (without cable gland)

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**VISY-TD Display Ex d**

**CEC 15 ATEX 030**

Hamburg, 26.09.2019

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