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Brief Operating Instructions
Nivotester FailSafe FTL825

Vibronic

These Brief Operating Instructions are not a substitute for the Operating Instructions pertaining to the device. Detailed information can be found in the Operating Instructions and the additional documentation.

Available for all device versions via:
- Internet: www.endress.com/deviceviewer
- Smartphone/tablet: Endress+Hauser Operations app

Basic safety instructions

Manufacturer's address

Manufacturer: Endress+Hauser SE+Co. KG, Hauptstraße 1, D-79689 Maulburg or www.endress.com.

Place of manufacture: See nameplate.

Requirements for the personnel

The operating personnel must fulfill the following requirements:
- Trained, qualified specialists: must have a relevant qualification for this specific function and task
- Are authorized by the plant operator
- Are familiar with national regulations
- They must have read and understood the instructions in the manual, supplementary documentation and certificates (depending on the application) prior to starting work
- They must follow instructions and comply with basic conditions

Designated use

The device is a transmitter power supply unit and may only be used for measuring limit levels in conjunction with the Liquiphant FailSafe FTL8x from Endress+Hauser.

- Use for overfill protection (Z-65.11-507) or dry-running protection/leakage (Z-65.40-508), also for tanks with combustible, explosive, toxic (water-endangering) liquids.
- Also use in safety systems requiring functional safety to SIL3 as per IEC 61508 Ed.2.0/IEC 61511-1/ISA 84-1.

Workplace safety

For work on and with the device:
- Wear the required personal protective equipment according to federal/national regulations.

Operational safety

- Operate the device only if it is in proper technical condition, free from errors and faults.
- The operator is responsible for ensuring that the device is in good working order.

- For applications requiring functional safety in accordance with IEC 61508 (SIL), refer to the Functional Safety Manual.
- For WHG applications, see the associated WHG documents

Product safety

This product is designed in accordance with good engineering practice to meet state-of-the-art safety requirements and has been tested and left the factory in a condition in which it is safe to operate.

Installation

Mounting requirements

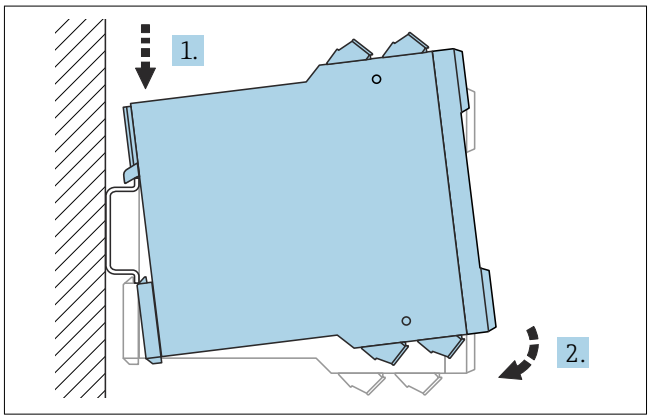
- If you are using the device outside the hazardous area, mount it in a control cabinet
- Mount the device so that it is protected against weather and impact
  If you are operating the device outdoors and in warmer climates, avoid direct sunlight.

Ambient temperature range
- Mounted individually: −20 to +60 °C (−4 to 140 °F)
- Mounted in a row without lateral spacing: −20 to +50 °C (−4 to +122 °F)
- Mounted in protective housing: −20 to +60 °C (−4 to +140 °F)
  A maximum of two Nivotester units may be installed in a protective housing.

Mounting the device

The device can be mounted vertically on a DIN rail.

Endress+Hauser
People for Process Automation



1 Mounting; DIN rail as per EN 60715 TH35-7.5/EN 60715 TH35-15

Electrical connection

WARNING

If the device is not connected properly, personal injury and explosion may occur due to limited electrical safety.

- Comply with applicable national standards.
- Comply with the specifications in the Safety Instructions (XA).
- Check to ensure that the power supply matches the information on the nameplate.
- Switch off the supply voltage before connecting.
- When connecting to the public mains, install a mains switch for the device such that it is within easy reach of the device. Mark the switch as a disconnector for the device (IEC 61010).

Observe the specifications on the nameplate of the device.

Connecting the device

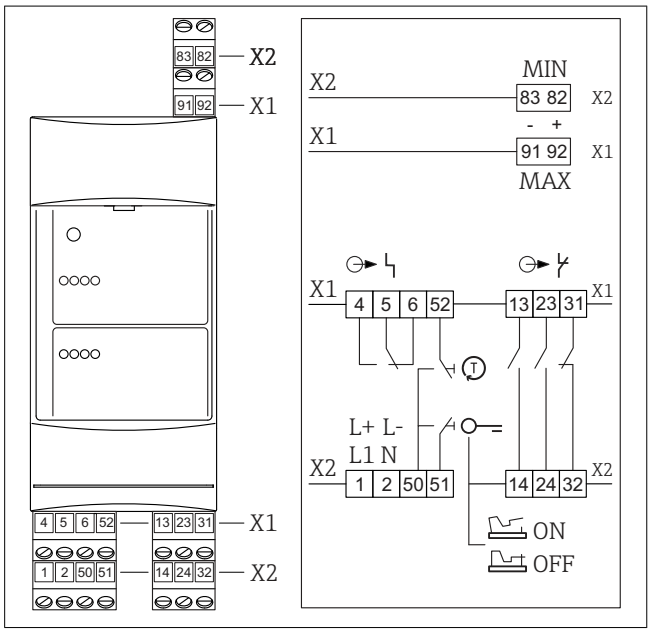
Cable diameter and wire cross-section

Maximum permitted wire cross-section 1 x 2.5 mm² (14 AWG) or maximum 2 x 1.5 mm² (16 AWG).

Terminal blocks

The removable terminal blocks (intrinsically safe version) are separated into intrinsically safe circuits (at the top of the device) and non-intrinsically safe circuits (at the bottom of the device). These differences help to ensure that the connecting lead is safely wired.

Connections on the Nivotester FailSafe FTL825

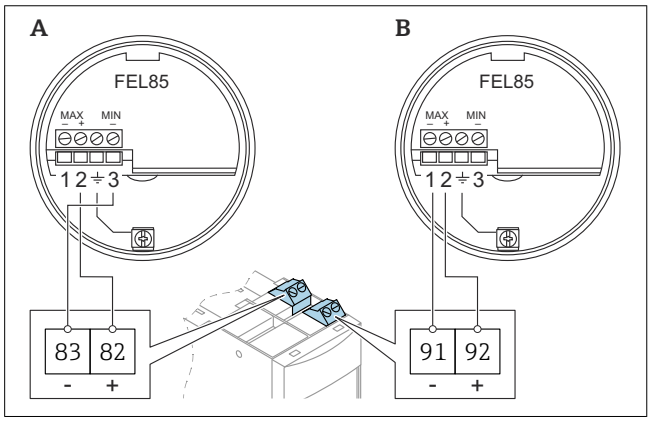


2 Front panel open, connection to the terminal blocks

X1 Gray (top), 2 screw terminals, MAX detection sensor connection (91, 92)
X2 Gray (top), 2 screw terminals, MIN detection sensor connection (83, 82)
X1 Gray (bottom), 4 screw terminals, fault-signaling contact (4, 5, 6) and remote control (52)
X2 Green (bottom), 4 screw terminals, supply voltage (1, 2) and unlocking (50, 51)
X1 Gray (bottom), 3 screw terminals, safety contacts (13, 23) and signaling contact (31)
X2 Gray (bottom), 3 screw terminals, safety contacts (14, 24) and signaling contact (32)

Connecting the sensor

Only one Liquiphant FailSafe FTL8x level switch may be connected. The MIN/MAX mode of operation can be selected through the connection wiring.



3 Connection to terminal blocks at the top, example of the FEL85 sensor

A Minimum detection (dry-run protection)
B Maximum detection (overfill protection system)

Top, gray X1 and X2 terminal blocks for sensor connection:

- Two-wire connection cable between the Nivotester and sensor, e.g. commercially available installation cable or wires in a multi-core cable for measurement purposes
- Use a shielded cable in the event of strong electromagnetic interference, e.g. from machines or radio equipment. Only connect the shield to the grounding terminal in the sensor. Do not connect it to the Nivotester

Connecting the signal and control systems

Lower, grey terminal blocks for non-hazardous areas

- Observe relay function depending on the level and safety mode.
- If a high-inductance device is connected (e.g. contactor, solenoid valve etc.), a spark arrester must be provided to protect the relay contact

Connection data

A fuse is integrated into the power supply circuit. An additional fine-wire fuse is not necessary. The device is equipped with reverse polarity protection.

Mains voltage version:
- Nominal supply voltage: AC/DC 230 V/115 V
- Supply voltage range:
  AC 85 to 253 V, 50 Hz/60 Hz
  DC 85 to 253 V
- Power consumption: ≤ 3.8 VA, ≤ 2.0 W

Ultra-low voltage version:
- Nominal supply voltage: AC/DC 24 V
- Supply voltage range:
  AC 20 to 30 V, 50 Hz/60 Hz
  DC 20 to 60 V
- Direct current supply: ≤ 95 mA
- Permissible residual ripple within tolerance: U_{ss} = maximum 2 V
- Power consumption: ≤ 3.6 VA, ≤ 2.5 W

Ensuring the degree of protection

IP20 (as per IEC/EN 60529)