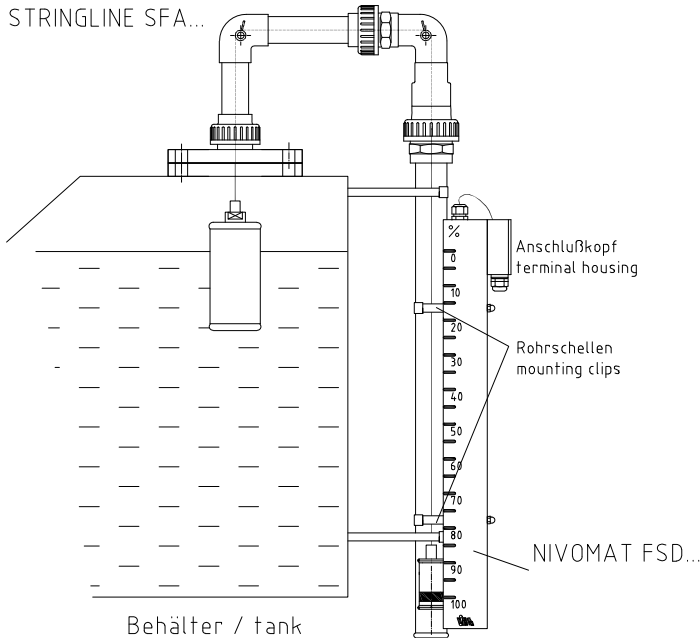


NIVOMAT FSD..... Fill-Level Probe



NIVOMAT FSD Attached to a Cable Pull Fill-Level Indicator

Safety Precautions

- Installation, initial start-up and maintenance may only be performed by trained personnel!
- The device may only be connected to power which complies with the specifications included in the technical data and on the serial plate!
- The device must be disconnected from all sources of power during installation and maintenance work!
- The device may only be operated under the conditions specified in the operating instructions!

Functions Description

- For attachment to cable pull fill-level indicators, for example from the STRINGLINE SFA.... range
- Semi-continuous measurement of fill-levels in containers and storage tanks
- Quick attachment to cable pull fill-level indicators thanks to preinstalled mounting clips
- Long probes can be easily assembled by fitting shorter sections together.
- 2-wire connection with 4 to 20 mA output signal
- Error signal in the event of internal fault, or if the measuring range is exceeded
- Failsafe: defective reed contacts are automatically suppressed.
- Available with 5% or 2% resolution

Technical Data

Measuring circuit:

Supply power: 12 to 28 V DC

Output:

4 to 20 mA, in steps of 2% or 5%

Error signal in the event of internal fault:

21 mA (approx. 106%)

Measuring range exceeded: (> 105%):

22 mA (approx. 112%)

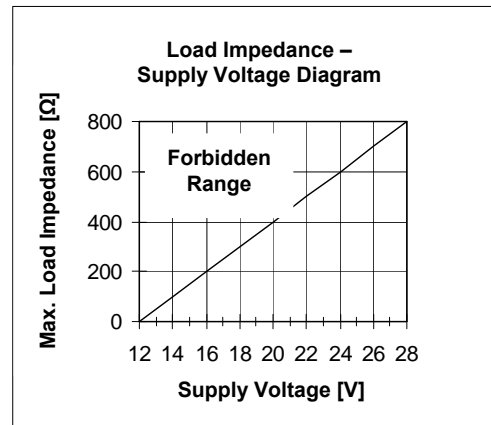
Measurement cable:

Shielded cable recommended

Max. load impedance: see diagram

Note:

Load impedance is the sum of the resistance values for the interconnected devices and utilised connector cables.



Ambient temperature:

-20 to +60° C

Min. measuring range:

2% resolution: 1100 mm

5% resolution: 500 mm

Max. measuring range:

5% resolution: 8900 mm

2% resolution: 8900 mm

Repetition accuracy *:

Approx. 5 mm per direction

* Observe system-related peculiarities of cable pull fill-level indicators!

The tank's fill-level is transferred to the FSD probe via a float-counterweight combination connected by means of a cable. This combination is balanced out in a certain manner. Due to internal friction resulting from the cable and the counterweight in the tube, the indicated fill-level is always a bit too low during the filling process and a bit too high during the emptying process. Display error amounts to roughly 3 to 5 cm.

CE Marking

In accordance with the low-voltage directive (2006/95/EC) and the EMC directive (2004/108/EC)

Installation

Attention:

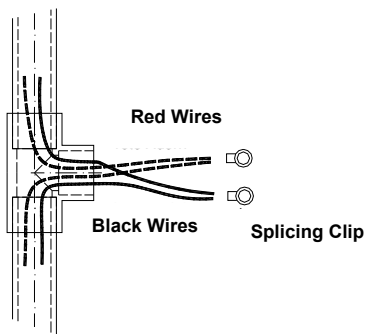
- The NIVOMAT FSD... probe is suitable for attachment to STRINGLINE SFA..... cable pull fill-level indicators with original IER counterweight.
- In the event of attachment to a non-IER cable pull fill-level indicator, the *****original IER counterweight***** must always be used!
- Do not mount any magnetisable metal parts in proximity to the probe.
- Maintain a distance of **at least 10 cm** between metal tanks and the probe.

Single Section Probes
 (max. length < 3000 mm = measuring range < 2900 mm)

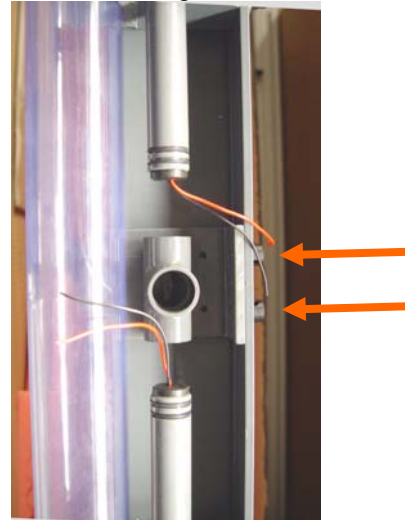
- Mount the STRINGLINE SFA.
- Mark the 0% and 100% points on the probe tube.
- Align the NIVOMAT FSD.. probe and slide it onto the probe tube with the help of the attached mounting clips.
 The terminal housing must be at the top!
- Connect the probe electrically in accordance with the wiring diagram overleaf.
- After successful initial start-up, mount the included retainers to the mounting clips in order to prevent sliding.

Multi-Section Probes
 (length > 3000 mm = measuring range > 2900 mm)

- Mount the STRINGLINE SFA.
- Mark the 0% and 100% points on the transparent pipe (switching point = position of the black ring on the counterweight in the transparent pipe).
- Align the top section of the probe to the SFA and slip it on.
 The terminal housing must be at the top!
- Remove the sealing cap from the side of the T-fitting.
- Slip the bottom section onto the SFA leaving a bit of clearance.
- Feed the connecting wires from the **top** section of the probe out through the side of the T-fitting.
- Feed the connecting wires from the **bottom** section of the probe out through the side of the T-fitting.

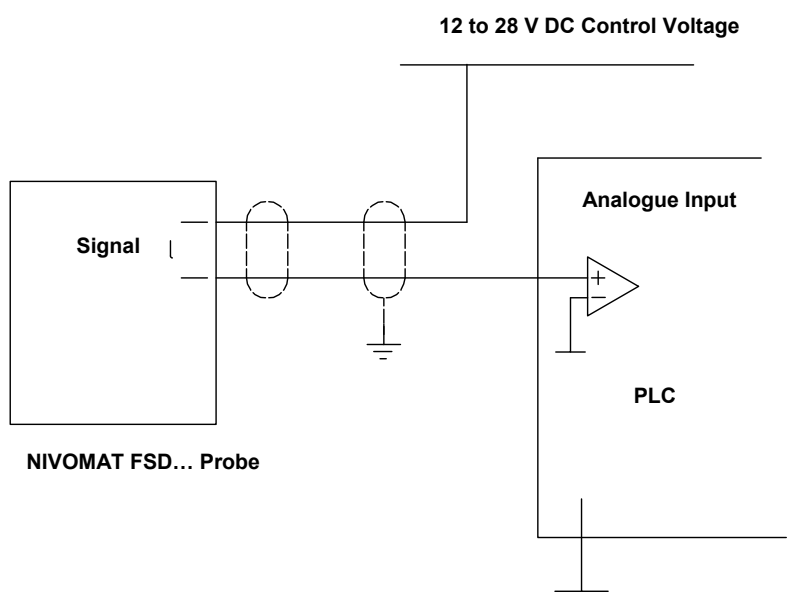
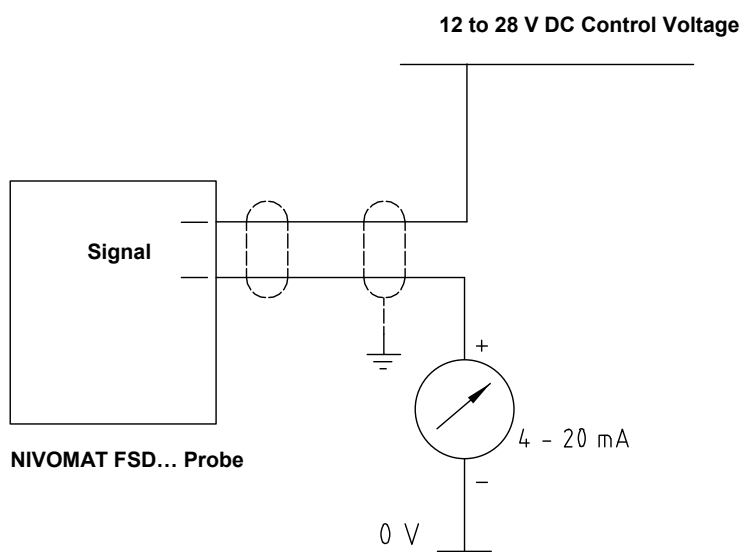


- Push the top and bottom sections together so that the scale brackets are aligned and the bottom tube is pushed into the T-fitting by a distance of about 1 cm.
 (If necessary, remove some of the mounting clips from the probe tube, push the probe together and then snap all clips back into place.)
- Screw the scales together.



- Connect the red wires to each other and the black wires to each other using the included splicing clips.
 First cut all wires to a length of approx. 5 to 8 cm and then insert **the two red wires and the two black wires into separate** slicing clips.
- Crimp the slicing clips with pliers.
Note: The splicing clips are filled with an acid and lye resistant, corrosion protection gel!
- Push the wires into the T-fitting along with the splicing clips.
- Reinsert the sealing cap.
- Connect the probe electrically in accordance with the wiring diagram overleaf.
- After successful initial start-up, mount the included retainers to the mounting clips in order to prevent sliding.
- The probe tube is secured to the mounting components by means of grub screws.
 If necessary for the purpose of **precision adjustment**, loosen the grub screws and push the probe tube into the corresponding position, and then retighten all of the grub screws

Electrical Connection



Note:
The signal line can be connected to the FS probe without any regard to correct polarity.
However, correct polarity is required when connecting the measuring instrument / PLC input.

NIVOMAT FSD..... Fill-Level Probe

Dimensional Drawing, ME0791

