

Hydrostatic Level Transmitter **MEMPRO® A...**

4-20 mA output, 2-wire connection, with integrated aerator connection



MEMPRO with measuring pipe



MEMPRO with measuring tube

Safety Precautions

- The device may only be connected to the supply voltage specified in the technical data!
- Installation, initial start-up and maintenance may only be performed by trained personnel!

Functional Description

The MEMPRO® hydrostatic level transmitter functions in accordance with the head-pressure principle, i.e. the current fill level is derived from hydrostatic pressure within a measuring tube which has been submersed into a liquid.

Applications Limitations

Because it functions in accordance with the head-pressure principle, the MEMPRO® hydrostatic level transmitter is not fully suited for the following applications:

- Media with greatly fluctuating densities (fill level can only be derived based upon mean density in such cases)
- Media with highly viscous or sticky consistencies

The MEMPRO® hydrostatic level transmitter should be connected to **MEMPRO® BL Automatic Aerator Controls** for media with large temperature fluctuations or for media which liberate gases (e.g. muriatic acid).

The aerator control could be connected to the hose connection with is under the silver label. The hose connection is suitable for a PVC-hose Ø 4x1 mm.

More information you find in the operating manual SU0171



connection for PVC-hose Ø4x1 mm

Technical Data

Power Supply

12 to 28 V DC, max 5% residual ripple

Ambient Temperature

-15 to +60° C

Liquid temperature

PVC: 0 ... +60°C

PP: 0 ... +90°C

Pressure measuring cell

Ceramic, with EPDM-sealing

Output Signal

4 to 20 mA

Connector Cable

Min. conductor cross-section: 0.5 mm², shielded

Observe max. allowable load! See diagram.

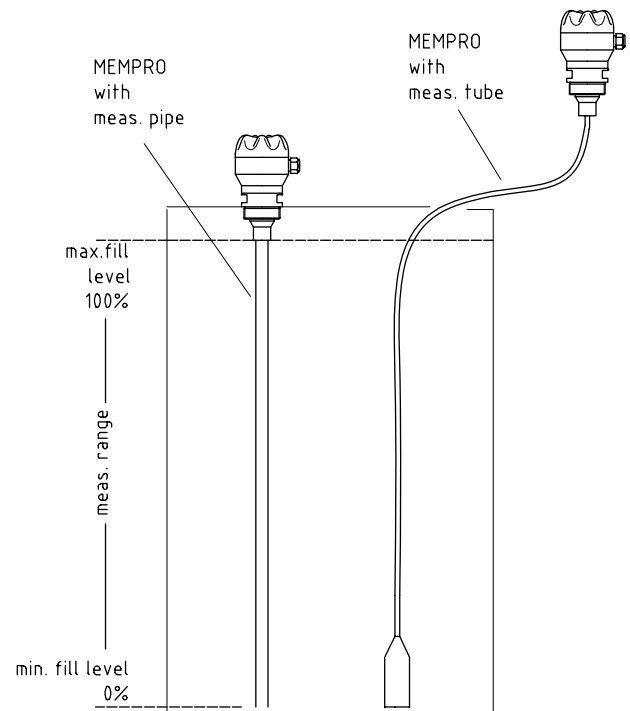
Terminal housing:

PBT, fiber glass reinforced, IP65 acc. EN 60 529

Mechanical Installation

Various methods can be used to install the MEMPRO® hydrostatic level transmitter to containers and tanks:

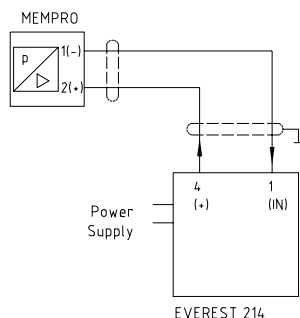
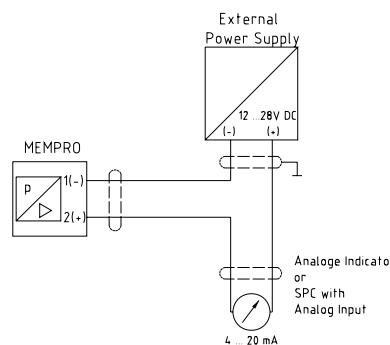
- Measuring pipe or tube submersed into the tank from above



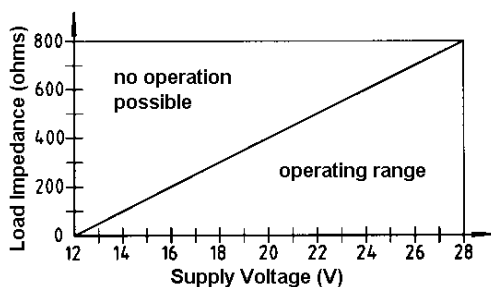
Maintenance

If used for its intended purpose, the MEMPRO® hydrostatic level transmitter is maintenance-free. If used with highly adhesive liquids (e.g. lime slurry), the measuring pipe or tube must be inspected at regular intervals and cleaned if necessary.

Electrical Connection



Load as Related to Supply Voltage



Note:
Load is the sum of **all** resistors within the measuring circuit.

Initial Start-Up

All MEMPRO® hydrostatic level transmitters are preset at the factory to values acc. customer applications or respectively to the measuring cell nominal value.

(DIP switch S1=ON)

- Zero point (0% fill level = 4 mA)
 - Max. value (100% fill level = 20 mA)
- The zero point and the max. value must always be examined during initial start-up and readjusted to the desired measuring range if necessary.

It is advantageous to adjust the MEMPRO with the original liquid.

Procedure

1. Electrical connection of MEMPRO acc. connection diagram

2. Preset of the measuring range:

100 % - fill level range (m WG) :		
measuring cell Type 1 (1000 mm WG)	measuring cell Type 2 (2500 mm WG)	DIP switch setting
0,20 – 0,30	0,4 – 0,7 m	DIP 6 = ON
0,20 – 0,45	0,5 – 1,1 m	DIP 5 = ON
0,25 – 0,55	0,7 – 1,4 m	DIP 4 = ON
0,35 – 0,80	0,8 – 2,0 m	DIP 3 = ON
0,55 – 1,0	1,4 – 2,5 m	DIP 2 = ON
0,65 – 1,0	1,6 – 2,5 m	DIP 1 = ON
measuring cell Type 4 (4000 mm WG)	measuring cell Type 10 (10000 mm WG)	DIP switch setting
0,7 – 1,2	2,0 – 3,0	DIP 6 = ON
0,8 – 1,8	2,0 – 4,5	DIP 5 = ON
1,2 – 2,2	2,5 – 5,5	DIP 4 = ON
1,5 – 3,2	3,5 – 8,0	DIP 3 = ON
2,0 – 4,0	5,5 – 10	DIP 2 = ON
2,4 – 4,0	6,5 – 10	DIP 1 = ON

Note:

- always switch only one of the DIP switches to ON-position
- 3. Zero Point**
 - Empty the container or remove the MEMPRO
 - Adjust measuring current to 4 mA with the "4 mA" trimming potentiometer
 - 4. 100%-Point**
 - Fill container with the original liquid to desired max. level
 - Adjust measuring current to 20 mA with the "20 mA" trimming potentiometer

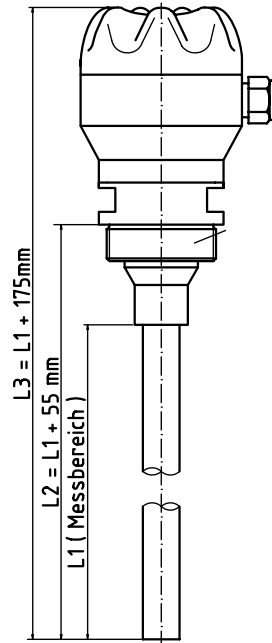
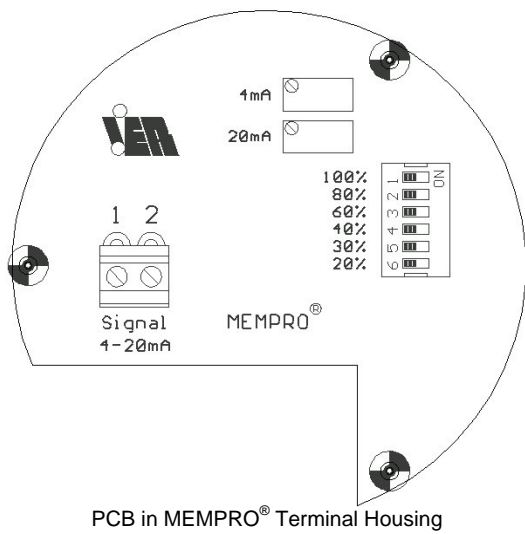
Sensor type (1,2, 4 or 10)

see Label
for example:

MEMPRO	AS	R	1	2	X	L = 1800 m
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Note:

If the container is refilled with liquids which have another density the MEMPRO must be readjusted!



MEMPRO with measuring pipe

Note:

Liquids with a density greater than water will reduce the nominal measuring range.

Reduction factor:
$$f = \left(\frac{\text{density}_{\text{water}}}{\text{density}_{\rho > 1}} \right)$$

Result: the 20mA measuring signal is reached already at a lower filling level

Fill Level Measuring Signal versus Density

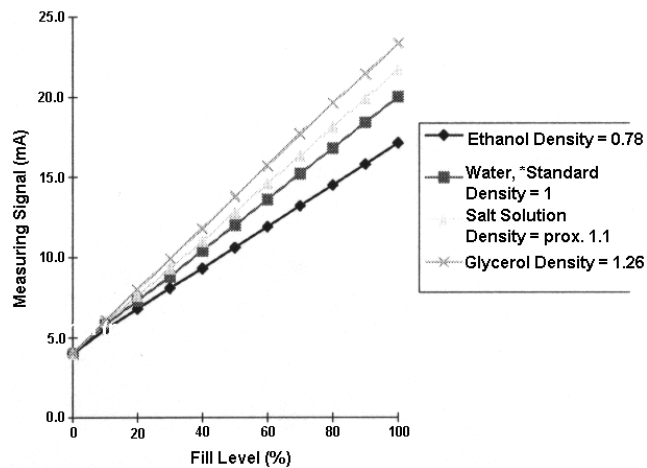
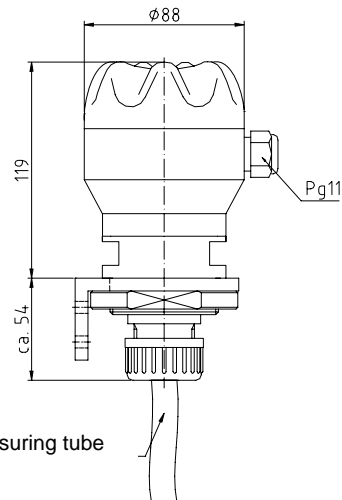


Diagram 1: Fill Level Measuring Signal versus Density



MEMPRO with measuring tube

CE Mark

Acc. Low Voltage Guideline (73/23/EWG) and EMC Guideline (89/336/EWG)



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