FISCHER MESS- UND REGELTECHNIK

Data Sheet

NB10 | Well Probe

Application

Measuring probes for hydrostatic measurement of fluid fill-levels. Some examples of typical applications are water or fluid fill-level measurements in

- Wells
- Drill holes
- Wastewater systems and
- Containers

Most Important Features

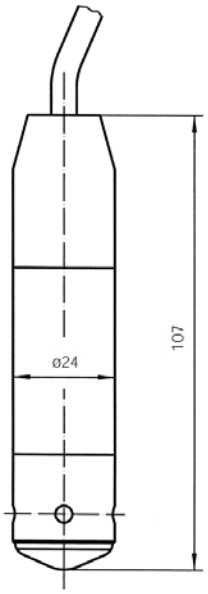
- High measuring accuracy
- Low hystersis
- Corrosion-resistant materials
- Integrated measurement converter
- Measured values stable over time

Design and Principle of Operation

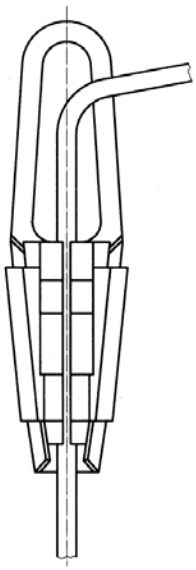
This measuring probe is designed around a highly sensitive pressure sensor with a silicon membrane-measuring element.

A DMS resistance bridge is attached to the rear of this membrane using a thin-film method. The well probe is equipped with an indirect hydraulic pressure sensor in order to guarantee the system-inherent dead space latitude. The pressure sensor is isolated by an elastic membrane from the medium to be measured. The volume between the membrane and the pressure sensor is filled completely with a transfer fluid. When pressure is applied this silicon membrane deforms in the elastic region, altering the resistance of the resistance bridge in a response linear to the measuring pressure. These changes in resistance are converted by electronics built into the device into standardized electrical signals.

Dimensioned drawings



Well Probe



Cable Holder MZ81

09005256-A DB_EN_NB10 02/11

Technical Data

	General	
Measuring ranges	0 ... 1 m to 0 ... 250 m cable length	
Overpressure safety	Threefold	
Linearity	± 0.5 % of measuring range	
Hysteresis	± 0.1 % of measuring range	
Permissible ambient temperature	0 ... 70 °C	
Permissible medium temperature	0 ... 70 °C	
Electrical connection	PUR – insulated, screened connecting cable with internal vent hose	
Protection class	IP68 as per DIN 40 050	
Material in contact with media	CrNi steel 1.4435	
	Electrical Data	
Type of electrical connection	Three-wire	Two-wire
Operating voltage	24 V DC ±10 %	24 V DC ±10 %
Output signal	0 ... 20 mA	4 ... 20 mA
Impedance at nominal voltage	Max. 700 Ω	Max. 700 Ω
Current consumption	Approx. 30 mA	Approx. 30 mA
Temperature drift zero point	0.6 % FS/10K	0.6 % FS/10K
Temperature drift measuring range	0.2 % FS/10K	0.2 % FS/10K

Order Code

Well Probe **Model NB10** [ ][ ][ ] **0 0** [ ] **9 9**

Measuring Range

0 ... 1 m	**1**	**5**	**9**
0 ... 1.6 m	**1**	**6**	**6**
0 ... 2.5 m	**1**	**8**	**2**
0 ... 4 m	**1**	**8**	**3**
0 ... 6 m	**1**	**0**	**1**
0 ... 10 m	**1**	**0**	**2**
0 ... 16 m	**1**	**0**	**3**
0 ... 25 m	**1**	**0**	**4**
0 ... 40 m	**1**	**0**	**5**
0 ... 60 m	**1**	**0**	**6**
0 ... 100 m	**1**	**0**	**7**
0 ... 160 m	**1**	**0**	**8**
0 ... 250 m	**1**	**0**	**9**

Other measuring ranges on request

Output

Three-wire	0 ... 20 mA	**A**
Two-wire	4 ... 20 mA	**B**

Electrical Connection
State connecting cable (length) in order text

Operating Voltage
24 V DC

Installation Instructions
The connecting cable can be used up to a depth of 100 m without requiring pull relief.
Smallest cable bend radius: 120 mm; Accessory: Cable holder Model: MZ81

Electrical Connection
The well probe is connected electrically using the attached permanent cable. This cable has an internal tube to compensate for variations in air pressure that could influence the measuring result. The cable must be inserted into the connection compartment with no interruptions or extensions. A casing with protection class IP 65 that allows for pressure compensation through the internal tube should be used to cover the connection.

Special models with overload protection (lightening arrester) or explosion hazard models are available on request.

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