



The underlying principle of all porewater pressure transducers and piezometers is that a porous element (filter disk) is inserted in the ground (Fig. 1) or a borehole (Fig. 2). The porewater or rock water pressure acts on the water-saturated filter disk or water-filled chamber behind the filter. With the Glötzl valve transducer, the chamber pressure is measured pneumatically (up to 20 bar) or hydraulically (up to 50 bar).

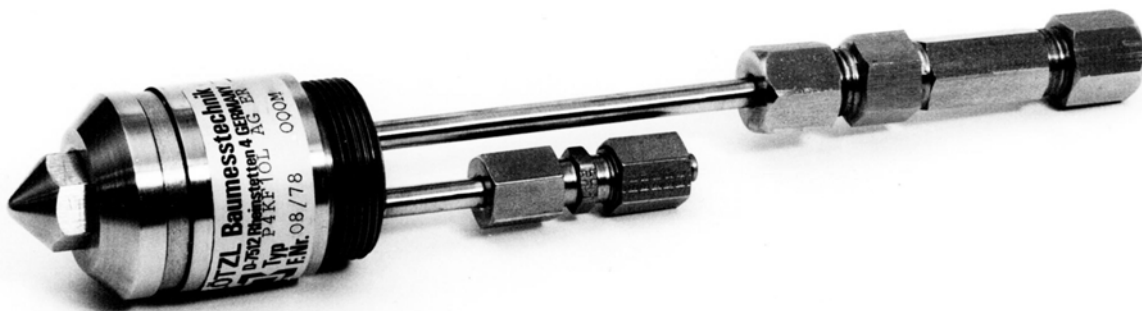


Fig. 1 Porewater pressure transducer Type P 4, SF, 20 L, AG ER with push-in tip for pneumatic measurements up to 20 bar

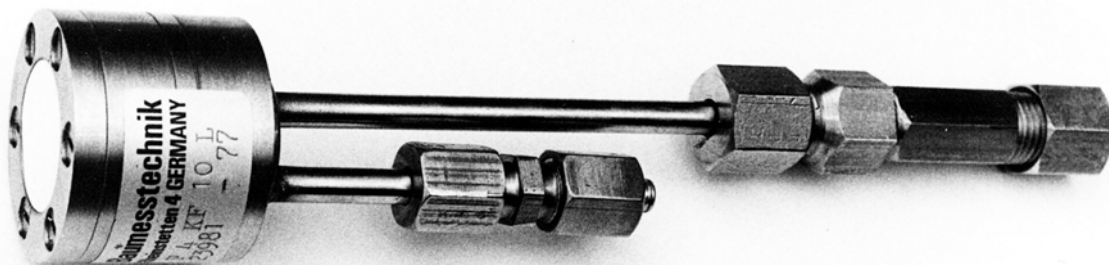


Fig. 2 Porewater pressure transducer Type P 4, KF, 10 L, for installation in a borehole and pneumatic measurements up to a maximum of 10 bar

Porewater pressure transducers are made of rust-proof and acid-resistant steel and have an outer diameter of 40 mm. Prior to installation, the filter must be wet with low-surface-tension water and the filter chamber filled with low-surface-tension water. Normally, sintered metal filters (SF) are used, but the use of ceramic filters (KF) is also possible in special cases.



To measure negative porewater pressures we can supply type P 4, SF, - 0.6/3 L AG, ER, load capacity from - 0.6 to + 3 bar, for air operation with sintered metal filter, control accuracy ± 0.005 bar.

Please quote the following data when ordering porewater pressure transducers P 4:

1. Sintered metal filter (SF) or ceramic filter (KF)
2. Load capacity:
 - 0.6/3 L = up to 3 bar for air operation, control accuracy ± 0.005 bar
 - 5 L = up to 5 bar for air operation, control accuracy ± 0.005 bar
 - 10 L = up to 10 bar for air operation, control accuracy ± 0.005 bar
 - 20 L = up to 20 bar for air operation, control accuracy ± 0.01 bar
 - 10 = up to 10 bar for oil operation, control accuracy ± 0.01 bar
 - 20 = up to 20 bar for oil operation, control accuracy ± 0.02 bar
 - 50 = up to 50 bar for oil operation, control accuracy ± 0.05 bar
3. Without push-in tip or with push-in tip (ER) and connection thread (AG) for the push-in sleeve.
4. Length of connection line (including length of line up to the connection and distribution box).

At the measuring point, the lines leading to the various transducers are joined together in a connection and distribution box (Fig. 3). Usually a concrete base is provided for mounting the box. Dimensions of the box: 200 mm high, 80 mm deep, 240 mm long for two measuring points, plus 80 mm for each additional measuring point.

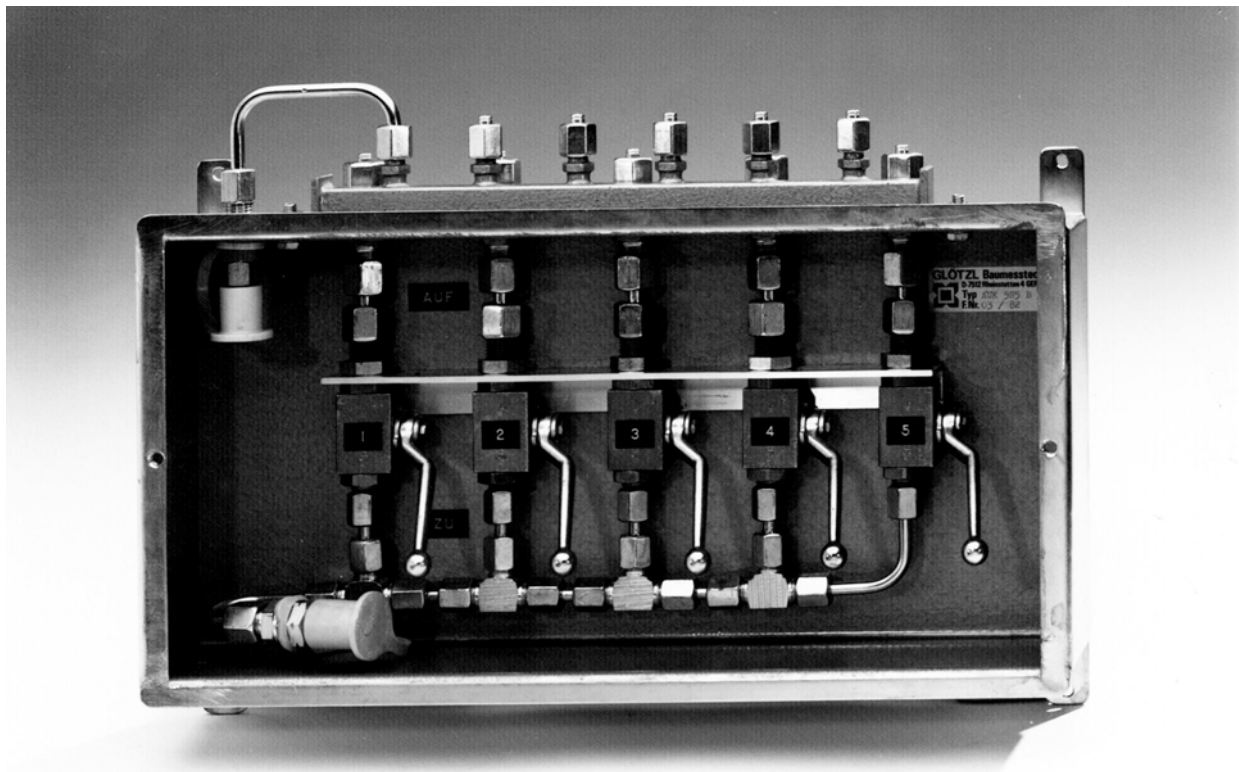


Fig. 3 Connection and distribution box Type AUK 5 R 5 B 50 SK for five pressure and return lines and oil operation up to 50 bar

When ordering connection and distribution boxes for pneumatic or hydraulic transducers, please quote the following data:

1. Number of pressure line connections (2 to 12 are possible),
number of return line connections
2. Oil or air operation of the transducers
3. With or without quick-action coupling for connection to the instrument

Customized versions can be supplied for more than 12 measuring points.

We have an extensive range of instruments for taking water measurements in the filter chamber; portable, stationary and automatic instruments are all available.



Fig. 4 shows a portable hand-operated air quantity regulator Type T 1, ALR in a splash-proof case.



Fig. 4 Hand-operated air quantity regulator Type T 1, ALR with integrated compressed air cylinder

When ordering instruments for piezometers, please quote the following data:

1. Oil or air operation
2. Measuring range of the precision manometer
3. Version with one or two manometers
4. Stationary operation or portable design

**Sales Information**

- 5.2.1.1 Pore water pressure transducer with ceramic or sintered metal filter, load capacity up to 3, 5, 10, 20 or 50 bar, d = 40 mm
- 5.2.1.2 Pore water pressure transducer with ceramic or sintered metal filter, load capacity up to 3, 5, 10, 20 or 50 bar, equipped with push-in tip and connection thread for push-in sleeve, d = 40 mm
- 5.2.1.3 Pore water pressure transducer with ceramic or sintered metal filter, load capacity up to 3, 5, 10, 20 or 50 bar, d = 30 mm
- 5.2.1.4 Pore water pressure transducer with sintered metal filter, load capacity up to 3, 5, 10, 20 or 50 bar, equipped with push-in tip and connection thread for push-in sleeve, d = 30 mm
- 5.2.1.5 Connection thread for push-in sleeve, d = 30 or 40 mm, l = 240 mm
- 5.2.1.6 Pre-mounted pressure and return line (polyamide), d = 6/3, for pore water pressure transducer
- 5.2.1.7 Connection box for up to 12 pressure and return lines
- 5.2.1.8 Instrument for pore water pressure transducer and precision manometer class 0.6