GLÖTZL Baumeßtechnik

PRESS-IN PRESSURE CELL for EARTH PRESSURE, combined with POREWATER PRESSURE

Type EPE, EPE/P
Art. No.: 68.60/68.70

With the earth pressure cell to press in, also in combination with a water or porewater pressure cell for effective stress, it is possible to carry out subsequent measurements at or in constructions or in possibly undisturbed underground. The robust model enables an application of pressing powers of up to 2 tons. The cells are available in two pressure pad dimensions, material stainless steel and with load ranges of up to 50 bars.
When loading the pressure pad, the arising hydraulic pressure is transferred to the diaphragm of the electric transducer, and converted into a stress proportional to the loading.

Some application fields:
- Subsequent installation in or at constructions
- Investigation and control of landfills
- Installation behind supporting walls, e.g. port installations
- Earth pressure and porewater pressure in dams
- Pressing into soft, binding soils for control of consolidation at backfills

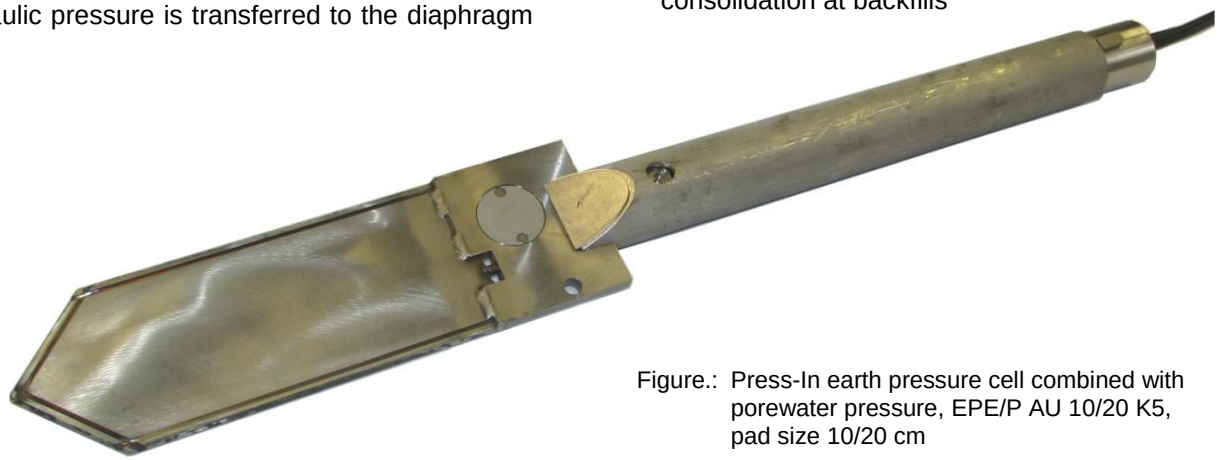


Figure.: Press-In earth pressure cell combined with porewater pressure, EPE/P AU 10/20 K5, pad size 10/20 cm

Models:
EPE Press-In Earth pressure cell
EPE/P Press-In Earth pressure cell combined with porewater pressure

Types:

AU Pressure sensor piezoelectric, 4-conductor system
Technical data:

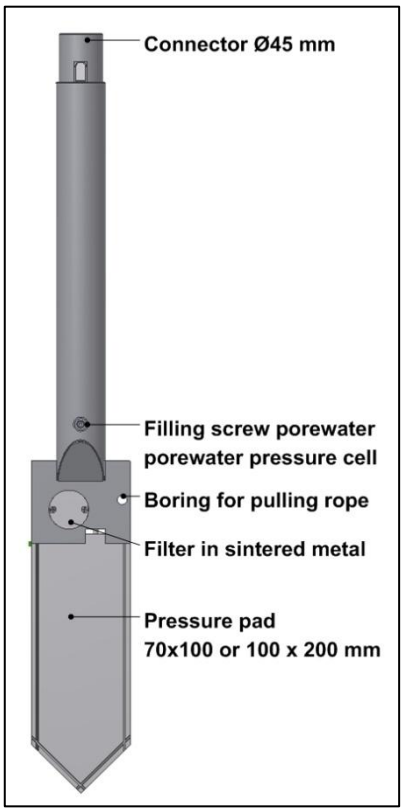
Supply	constant current 1 mA
Supply optional	4 mA or 10V_{DC}
Output signal	0 – 250 mV
Overload protection (1–50 bars)	50% f.s.
Linearity incl. hysteresis	< 0.5% f.s.
Linearity incl. hysteresis optional	< 0.1% f.s.
Thermal zero drift	0.025 mV/K
Operating temperature range	+5 up to +80 °C
Storage temperature range (dry)	-40 up to +100 °C
Long-term drift temperature dependent (at 0 °C up to 50 °C), typ.	0.25 mV
Resonance	> 30 KHz
Meas. frequency	1 KHz

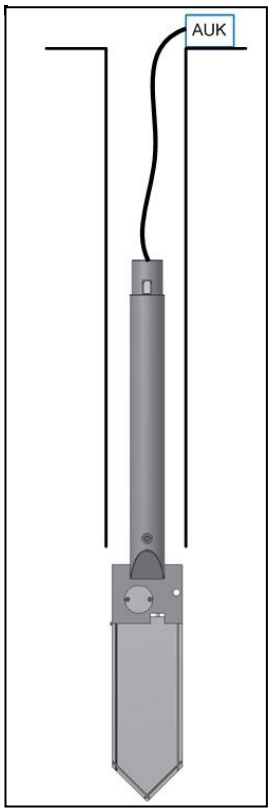
AI Pressure sensor piezoelectric as above, but with installed amplifier and optional temperature sensor
Technical data:

Supply	15 up to 30 V
Output signal	4 – 20 mA, 2-conductor system
Overload protection	1 – 50 bars, 50% f.s.
Linearity incl. hysteresis	< 0.5% f.s. (optional 0.1% f.s.)
Temperature coefficient	< 0.01%/ °C f.s.
Burden	(U_S-9V) : 20 mA
Operating temperature range	-15 up to +70 °C
Storage temperature range	-15 up to +125 °C
Initialization time after switch-on	6 seconds

Optional with temperature sensor AD 590, output signal 1µA/K

VW Vibrating wire sensor, operating frequency from 2000 cps up to 3300 cps
Thermistor type BR55, T_{25} = 3000 Ohm





Installation in borings

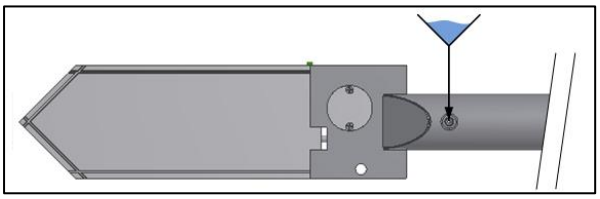
Normally, a boring is done till approx. 0.5 m before the installation point of the cell. From this position, the cell is injected into the surrounding material by means of rods. In soft soils, also an injection is possible without rough-boring.

Injection procedure is done with rods. For this, a thread G 1 ½“ or optionally a connection pivot with diameter 45 mm is fitted at the cell.

After installation, the borehole is backfilled and sealed according to the respective requirements.

Filling of pressure filter of porewater cell

Remove filling screw, screw in water bottle and press the water in. After pressing-in procedure, close again the filling connection with the screw.



Pressure pad size:

70 x 140 mm, 100 x 200 mm, other sizes available on request

720 mm 780 mm total length

Filling:

K Pressure pad with oil filling for the material surrounding the cell, E-modulus ≤ 10.000 bars

Measuring ranges:

1 bars = 100 kPa

Pressure sensor piezoelectric (AU/AI): 0 – 2, 0 – 5, 0 – 10, 0 – 50 bars

Vibrating wire sensor (VW): 1.7, 3.5, 7, 10, 20, 50 bars

Connection

R = rods connection G 1 ½“ Z = thread connection Ø 45 mm

Type key (example for ordering):

EPE/P VW 10/20 K5 Z

- Thread connection G 1 ½” (Z)
- Oil filling, pressure range 0 – 5 bars
- Pressure pad size, **10/20** (100 x 200 mm) or **7/14** (70 x 140 mm)
- Types: Vibrating wire sensor (VW)
- Model (EPE/P)

Registration:

- Battery-operated readout units
- Intermediate amplifier for remote control
- Manually operated change-over manifolds
- Automatic measuring and recording devices with data carrier resp. memory

Subject to technical alterations

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