

Pore-Water Pressure Sensor - Piezometer

Type PP3 SS



This kind of piezometer has a filter made of sintered metal at front face. The piezoresistive piezometer is used to monitor pore-water pressures.

The pressure sensor of the standard piezometer is encapsulated in a waterproof housing with a diameter of 30 mm and a length of 160 mm. The piezometer converts pore-water pressure to an output signal proportional to the measured value via a filter and via the diaphragm of the pressure sensor.

TECHNICAL DATA

Filter:

- Sinter metal filter (PP3 SS) for installation in sand fills resp. groundwater measuring points

Accessories

- Push-in sleeve for Type PP4 RS E
- Cable type PUD (blue)
type PEHD standard (black) and
type PEHD with ventilation tube (black)
- Overvoltage protection

General Specifications

Dimensions, Ø / length:	30x160 mm
Material:	V4A 1.4571
Weight:	450 g
Protection class:	IP 68

General Specifications

Filter type:	Sintered metal
Filter area:	5.5 cm ²
Density:	4.9-5.3 g/cm ³
Porosity:	33-38 %
Specific flow coefficient:	3 [m ²]x 10 ⁻¹² (laminar) 8 [m ²]x 10 ⁻⁷ (turbulent)
Porometer, Ø pore size:	6 µm



Art.No.: 69.xx.01

AU PIEZORESISTIVE PRESSURE SENSOR, 4-CONDUCTOR SYSTEM

Supply	Constant current 1 mA
Optional supply	4 mA or 10 VDC
Output signal	0 – 250 mV
Overload protection (1 – 50 bar)	50% f.s.
Linearity incl. hysteresis	< 0.5% f.s.
Linearity incl. hysteresis (opt.)	< 0.1% f.s.
Thermal zero drift	0.025 mV/K
Operating temperature range	+5 to +80 °C
Storage temperature range (dry)	-40 to +100 °C
Long-term temperature-dependent drift (at 0°C to 50°C), typ.	0.25 mV
Overvoltage protection	on application
	Precision protection USS



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PRESSURE SENSOR WITH LVW VIBRATING WIRE TECHNOLOGY

Overload protection of measuring range	50 %
Linearity incl. hysteresis	± 0.5 % f.s.
Linearity incl. hyst. (opt.)	± 0.1 % f.s.
Resolution (f.s.)	± 0.02 %
Thermal zero drift	< 0.03 %/°C

SENSOR-SPECIFIC SPECIFICATIONS

Temperature range	0 to +70°C
Current consumption	Pulse excitation
Operating frequency	0.7 kHz – 1 kHz
Supply, pulse triggering	60 V
Coil resistance at 20°C	480 Ω
Thermistor resistance at 25°C	
3 kΩ inductance	42 mH
Capacitance	135 nF
Line resistance at 5 V	150 Ω
Overvoltage protection	on application
	coarse protection USS 0;
	Lightning protection element gas arrester

Add-ons and finishes

Resistance to seawater and brackish water 1.4439 or similar

Environmental protection: Gel pad to protect the membrane against aggressive chemicals and extreme pH values

Climate tested: If required, we can prepare a temperature test for your batch or individual sensor to provide a precise temperature quotient for your evaluation.

* PW4 RF only: With additional M36x1.5 union for press-in sleeve

All of our sensors are calibrated in defined environmental parameters. This calibration result is included with the actual device in the form of a comprehensive calibration sheet. More extensive calibrations can be arranged at any time.



Art.No.: 69.xx.02

AI PIEZORESISTIVE PRESSURE SENSOR AS ABOVE WITH BUILT-IN AMPLIFIER AND OPTIONAL TEMPERATURE SENSOR

Supply	15 to 30 V
Output signal	4 – 20 mA
Overload protection (1 – 50 bar)	50 % f.s.
Linearity incl. hysteresis	< 0.5 % f.s.
Linearity incl. hysteresis (opt.)	< 0.1 % f.s.
Operating temperature range	+5 to +60 °C
Storage temperature range	-15 to +100 °C
Temperature coefficient	< 0.01 %/°C f.s.
Burden (Us-9V):	20 mA
Initialisation time after witching on	6 seconds
Overvoltage protection	integrated
	precision protection

With optional AD 590 temperature sensor, output signal 1 µA/K



Art.No.: 69.xx.03

PRESSURE SENSOR WITH VW VIBRATING WIRE TECHNOLOGY

Overload protection of measuring range	50 %
Linearity incl. hysteresis	± 0,5 % f.s.
Linearity incl. hyst. (opt.)	± 0,1 % f.s.
Resolution (f.s.)	± 0,02 %*1
Thermal zero drift	< 0,02 %/°C*1

SENSOR-SPECIFIC SPECIFICATIONS

Temperature range	-20 to +80 °C
Current consumption	Pulse excitation
Operating frequency	2 kHz – 3,3 kHz
Supply, pulse triggering	60 V
Ex protection option*2	Ex ib IIB T4 EEx ib IIB BT
Overvoltage protection	on application
	coarse protection USS 0;
	Lightning protection element Lightning protection element gas arrester

*1 Deviation during operation at high temperatures on request
*2 The cable data needs to be taken into account for Ex versions

AU And AI

PRESSURE AND MEASURING RANGES

0 - 0.1, 0 - 0.2, 0 - 0.5, 0 - 0.5, 0 - 1, 0 - 2, 0 - 5, 0 - 10, 0 - 20, 0 - 50, 0 - 100, 0 - 200 and 0 - 400 bar

VW And LVW

PRESSURE AND MEASURING RANGES

-0.5 bis +0.4, +0.7, +1.7, +3.5, +5.0, +7.0, +10, +20, +35, +70, +100, +200, +350, +500 and 750 bar, negative pressures standard up to -0.5 bar

Quality labels



HIGH QUALITY SENSORS

Standard product line. High quality and attractively priced



INTELLIGENCE SENSORS

With controller technology, self-compensation and direct display



QUALITY QUANTITY QUOTE

Range of sensors for major customers with communicated quality/quantity quote



VOLTAGE OUTPUT

Standard 0-250 mV / extended 0-1 V



CURRENT OUTPUT

Standard 4-20 mA / extended 0-20 mA



VIBRATING WIRE

Operating frequency 2.0 -3.3 kHz



LONG VIBRATING WIRE

Operating frequency 0.7 -1 kHz



FIBRE OPTIC

Glass fibre measurement system



WIRELESS

Wireless data transmission



CONTROLLER

Digital chain instrumentation



PRODUCT INNOVATION