

# Pressure sensors

for gas and liquid pressure



HQ

**PW3 RF** Art.No.: 69.25.xx\*

Water pressure sensor for level measurement with mechanical solid body and geomembrane filter to protect against suspended particles



Diameter Ø/Dimension: 30x225 mm  
Weight: 670 g  
Filter type: Geomembrane  
Filter area: 28 cm<sup>2</sup>  
Material: V4A 1.4571  
Protection class: IP 68



HQ

**PF3 S** Art.No.: 69.28.xx\*

Gas and liquid pressure sensor connected to bulkhead plates with hydraulic union



Diameter Ø/Dimension: 30x230 mm  
Weight: 640 g  
External connection: EO SV6S  
Internal connection bore: 3 mm  
Material: V4A 1.4571  
Protection class: IP 68



HQ

**PF3 P** Art.Nr.: 69.27.xx\*

Gas and liquid pressure sensor with pressure gauge union and vent screw for sensor pre-chamber



Diameter Ø/Dimension: 30x200 mm  
Weight: 650 g  
External connection: 1/2 Zoll  
Internal connection bore: 3 mm  
Material: V4A 1.4571  
Protection class: IP 68

# Pressure sensors

for pore water



HQ

**PP4 RS E** Art.No.: 69.10.xx\*

Pore water pressure sensor with ring filter made of sintered metal with threaded connection for press-in sleeve



Diameter Ø/Dimension\*: 40x330 mm  
Weight\*: 1745 g  
Filter type: Sintered metal  
Material: V4A 1.4571  
Filter area: 57 cm<sup>2</sup>  
Protection class: IP 68

\* (with press-in sleeve)



HQ

**PP4 RS** Art.No.: 69.12.xx\*

Pore water pressure sensor with ring filter made of sintered metal and maximum external diameter of 40 mm



Diameter Ø/Dimension: 40x230 mm  
Weight: 920 g  
Filter type: Sintered metal  
Material: V4A 1.4571  
Filter area: 57 cm<sup>2</sup>  
Protection class: IP 68



HQ

**PP3 RS** Art.No.: 69.20.xx\*

Pore water pressure sensor with small ring filter and maximum external diameter of 30 mm



Diameter Ø/Dimension: 30x225 mm  
Weight: 680 g  
Filter type: Sintered metal  
Material: V4A 1.4571  
Filter area: 28 cm<sup>2</sup>  
Protection class: IP 68



HQ

**PW4 RF** Art.No.: 69.15.xx\*

Water pressure sensor for level measurement with mechanical solid body and geomembrane filter with maximum filter area



Diameter Ø/Dimension: 40x230 mm  
Weight: 880 g  
Filter type: Geomembrane  
Material: V4A 1.4571  
Filter area: 57 cm<sup>2</sup>  
Protection class: IP 68



HQ

**PW3 SF** Art.No.: 69.26.xx\*

Water pressure sensor for level measurement with mechanical pre-filter and replaceable geomembrane filter for suspended particles



Diameter Ø/Dimension: 30x160 mm  
Weight: 450 g  
Filter type: Geomembrane  
Material: V4A 1.4571  
Filter area: 5,5 cm<sup>2</sup>  
Protection class: IP 68



3Q

**PW22 SW** Art.No.: 69.51.xx\*

Water level sensor for well and level loggers with mechanical pre-filter made of plastic with limited service life



Diameter Ø/Dimension: 22x1170 mm  
Weight: 240 g  
Filter type: Plastic  
Material: V4A 1.4571  
Filter area: 2 cm<sup>2</sup>  
Protection class: IP 68  
Particle size protection: Up to 1.0 mm



HQ

**PP3 SS** Art.No.: 69.22.xx\*

Pore water pressure sensor with end face filter made of sintered metal



Diameter Ø/Dimension: 30x160 mm  
Weight: 450 g  
Filter type: Sintered metal  
Material: V4A 1.4571  
Filter area: 5,5 cm<sup>2</sup>  
Protection class: IP 68



HQ

**PP3 SK** Art.No.: 69.23.xx\*

Pore water pressure sensor with ceramic end face filter for cohesive soils



Diameter Ø/Dimension: 30x160 mm  
Weight: 450 g  
Filter type: Ceramic  
Material: V4A 1.4571  
Filter area: 5,5 cm<sup>2</sup>  
Protection class: IP 68



3Q

**PP22 SS** Art.No.: 69.50.xx\*

Lightweight pore water pressure sensor with diameter of 22 mm and fully encapsulated



Diameter Ø/Dimension: 22x160 mm  
Weight: 250 g  
Filter type: Sintered metal  
Material: V4A 1.4571  
Filter area: 2 cm<sup>2</sup>  
Protection class: IP 68

\*Available in various designs

# Technical data / variants

Pore water, gas and liquid pressure sensors

mV

AU

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

LVW

LVW

Art.No.: 69.xx.04

PRESSURE SENSOR WITH LVW  
VIBRATING WIRE TECHNOLOGY

Overload protection of measuring range	50 %
Linearity incl. hysteresis	± 0.5 % f.s.
Linearity incl. hysteresis (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 M3x1.5 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.



Overview of cable types

1. PE
2. PUR
3. PE without intersheath
4. PVC
5. High-temperature cable
6. NYY-J power cable

Further designs on request.

mA

AI

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 switching on	6 seconds
Overvoltage protection	integrated
	precision protection

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

VW

VW

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. hysteresis (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 BT1
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

- HQ** HIGH QUALITY SENSORS  
Standard product line. High quality and attractively priced
- IQ** INTELLIGENCE SENSORS  
With controller technology, self-compensation and direct display
- 3Q** QUALITY QUANTITY QUOTE  
Range of sensors for major customers with communicated quality/quantity quote
- mV** VOLTAGE OUTPUT  
Standard 0-250 mV / extended 0-1 V
- mA** CURRENT OUTPUT  
Standard 4-20 mA / extended 0-20 mA
- VW** VIBRATING WIRE  
Operating frequency 2.0 -3.3 kHz
- LVW** LONG VIBRATING WIRE  
Operating frequency 0.7 -1 kHz
- FO** FIBRE OPTIC  
Glass fibre measurement system
- W** WIRELESS  
Wireless data transmission
- C** CONTROLLER  
Digital chain instrumentation
- !** PRODUCT INNOVATION