

Pressure Sensors Special for submersible measurement

Accuracy 0,25% and 0,5%

Standard signal: 4...20 mA; 2-wire or 0...20 mA; 3-wire



Description

The pressure sensor special for submersible measurement has been developed especially for use in liquids for hydrostatic level measurement.

Due to the systematic use of stainless steel for the wetted parts, this sensor is suitable for the food industry without any restrictions. For measuring tasks in aggressive media a special version with FEP cable can be obtained.

A hermetically sealed stainless steel case with a protection type IP 68 allows the pressure sensor to be immersed down to a depth of 300 m.

The inner vented connection cable makes pressure compensation of the measuring cell against the atmosphere possible and thus hydrostatic pressure measurement.

The mechanical fastening of the pressure sensor does not require any additional strain relief, as the construction of the cable is suitable to take a maximum tensile force of 1000 N. An additional weight can be screw-fitted to increase the actual weight of the sensor.

For mains-independent service in the field, the sensor can operate with a supply voltage of 5 V.

The sensor can be obtained with a lightning protection. To determine the media temperature the submersible sensor can be equipped with a Pt 100 sensor.

The pressure sensor special for submersible measurment meets the electromagnetic compatibility (EMC) requirements to EN 61326.

Features

- O Compact design
- O Protection type IP 68 (up to 300m depth)
- O Corrosion resistant stainless steel design
- O PUR shealted cable with inner ventilation
- O tensile strength of the cable up to1000 N
- O Option: lightning protection
- O Option: FEP cable
- O Option: temperature measurement (Pt 100)

Measuring ranges

Gauge pressure positive 0...0,1 bar up to 0...25 bar

Applications

Water level measurement in: Potable water wells, bore holes, waste water plants, containers, flow water.

Models: P3230, P3233

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Technical data

Model	P3233	P3230	Options
Pressure type	positive g	auge pressure	
Output signal	420 mA, 2-wire	420 mA, 2-wire	05 V, 010 V, 3-wire
		020 mA, 3-wire	0,52,5 V, 3-wire; ¹⁾
		,	Pt 100 (DIN IEC 751),
			4-wire for model P3230
2)	0,5 % of F.S.		
Accuracy		0,25 % of F.S	
Ranges acc. to EN	0 0,25 bar to	0 0,1 bar to	other ranges on request
	0 10 bar	0 25 bar	
Sensor element		oresistive	
Repeatability	$\leq \pm 0.05$ % of F.S		
Stability (annual)	$\leq \pm 0.2\%$ of F.S. in rated conditions		
Pressure connection	G ½ B with protection cap		
Wetted parts		I	
– Case	stainless steel		protection cap stainless steel
 protection cap 	PA		or Hastelloy for model P3230
– Cable	PUR	PUR, Polyolefine	for model P3230 FEP ⁴⁾
• 40.0		(shrink hose)	for model P3230 FEP
Overload limit	\leq 1 bar, 5x; \leq 4 bar, 4x; \leq 25 bar, 3,2x		
Electrical connection	connection cable (PUR-shealted with inner		
	ventilation, tensile strength 1000 N)		
Power supply	1030 VDC, (1430 VDC for output 010 V)		
Dowor concurrention	(530 VDC, for output	Jt 0,52,5 V)	
Power consumption – 420 mA	current signal		
– 420 mA – 020 mA	current signal + 4 Ma		
– 020 mA – 0,52,5 V	approx. 2 mA		
 voltage output: 	8 mA		
Load	UIIIA		
 current output 			
	$\leq \frac{UB - 10V}{0.0204} - 0.14 \frac{\Omega}{m} * \text{ cable length}$		
	0,020A <i>m</i>		
 voltage output 	≥ 100 kOhm		
Temp. comp. range	0+ 50°C		
Temperature influence	± 0,2 % /10 K, on zero and span ⁵⁾		
medium TK			
Response time	≤ 1 ms (within 10% to 90% of F.S.) acc. to EN 61326		
Emission ⁶⁾			
Interference	acc. to EN 61326		
Protection type	IP 68 acc. to EN 60 529 / IEC 529		
- depth	up to 100 m up to 300 m polarity, overload and short circuit protection		lightning protection (IEC 801-5; 1,5 kV)
Electrical protection type	polanty, ovenoau and		
Temperature ranges	-30 80 °C		Model P3230
storagemedium	-30 80 C -10 50 °C		-10 85 °C (FEP-cable)
Weight	-10 50 0		
– sensor	approx. 0,18 kg	approx. 0,2 kg	
– cable	approx. 0,08 kg/m	approx. 0,2 kg approx. 0,08 kg/m	
 additional weight 	approx. 0,5 kg	approx. 0,5 kg	

1) Special signal for mains independent operation, for ranges 0...0,25 bar.

2) Terminal point adjustment according to DIN 16 086, including linearity and hysteresis (calibrated in vertical installation position)

3) Including pressure connection and diaphragm.

4) max depth 100 m

5) 0,4 % for measuring ranges 0...0,1 and 0...0,16 bar.

6) Declaration of conformity on request.

7) Measuring ranges<0,25 bar only with accuracy 0,5%

of F.S. = of full scale value

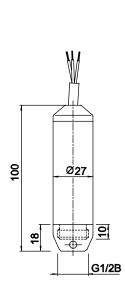
Dimensions (mm)

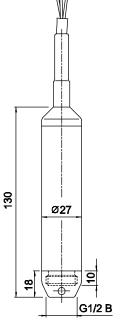
Model P3233

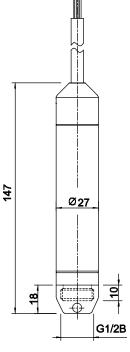
(depth up to 100 m)

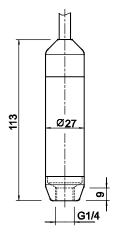
Model P3230 with PUR-cable (depth up to 300 m) Model P3230 with FEP-cable (depth up to 100 m)

Model P3230 Hastelloy with FEP-cable (depth up to 100 m)



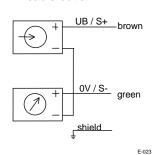




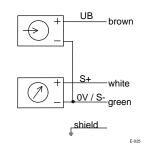


Electrical connection

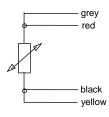
2 wire with cable outlet



3 wire with cable outlet



Pt 100, 4 wire



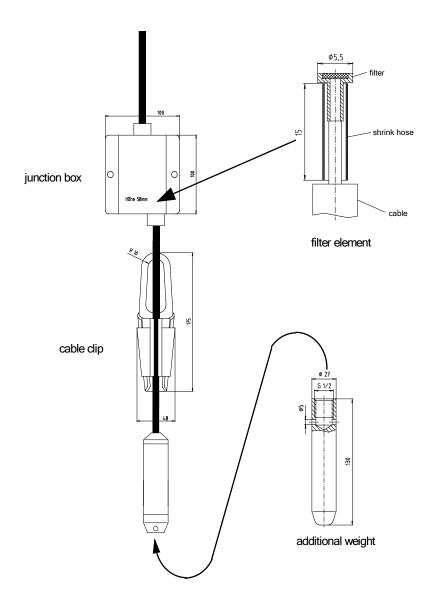


Connection table for cable outlet

	420 mA (2 - wire)	010VDC (3 - wire)
Supply: UB+	brown	brown
Supply: 0V	green	green
Signal: S+	-	white
Signal: S-	-	green
Shield	grey	grey

Accessories

Art. No.	Description	
AZM51.001.003	Filter element for capillary tube	
AZM51.001.002	Cable clip	
AZM51.001.001	Additional weight	
AZM51.001.004	Junction box (protection type IP 54)	



Ordering details

- 1. Model
- 2. Measuring range
- 3. Output signal
- 4. Options