

PIEZORESISTIVE LOW-COST LEVEL TRANSMITTER

ABSOLUTE AND RELATIVE PRESSURE / ACCURACY 0,25 %FS

The pressure transmitters Series 26 Y are used in water level measurements that are price-sensitive but still require considerable accuracy.

Technology

Y-series transmitters have an extremely small temperature error. This is achieved by means of digital compensation of an all-analogue signal path. The gain and the zero point of the gain circuit can be influenced by digital/analogue converters. These receive their numerical values from an EEPROM that is addressed depending on the temperature. A mathematical model for TC zero and TC gain with any order can therefore be determined in the calibration process and stored in the transmitter with a resolution of 1,5 K. The accuracy of the end product therefore essentially depends on the amount of testing and the linearity of the measuring cell.

With the Series 26 Y, the monocrystalline silicon measuring cell is reliably protected from the measuring medium by a stainless steel diaphragm. The steel diaphragm itself is protected from mechanical influence by a plastic cap, and has outstanding performance features with regard to accuracy and stability due to its large diameter of 17 mm.

Performance Features

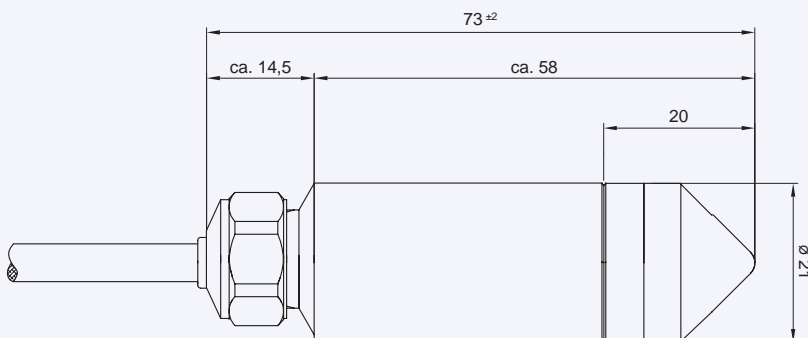
- Extremely accurate, excellent long-term stability, no pressure hysteresis
- Integrated overvoltage and polarity reversal protection
- Protection class: IP68
- Compact, robust housing made from stainless steel
- Pressure ranges of 100 mbar to 10 bar (corresponds to water column of 1 m to 100 m)
- Low-Cost

Analogue Interfaces

Because of the all-analogue signal path, a large bandwidth of 2 kHz can be achieved without a time lag. With a start-up time of just 5 ms, the Y-series is excellent for data logging applications.

- Current output: 4...20 mA (2-wire technology)
- Voltage output: 0...10 V, 0,5...4,5 V, etc. (non-ratiometric)

SERIES 26 Y



Electrical Connections

Output	Function	Cable Colour
4...20 mA 2-Wire	OUT/GND	Red
	+Vcc	Black
0...10 V 3-Wire	GND	White
	OUT	Red
	+Vcc	Black



For pricing or any further information, please contact Omni Instruments Ltd.

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Specifications

Pressure Ranges (FS) in bar	(all intermediate ranges possible)						
PR-26 Y	0,1	0,2	0,5	1	2	5	10
PAA-26 Y			0,8...1,8	0,8...2,3	0,8...3	0,8...6	0,8...11
Water column in meter, ca.	1	2	5	10	20	50	100
Overpressure	4	4	4	4	12	40	40

PR: Vented Gauge. Zero at atmospheric pressure PAA: Absolute. Zero at vacuum

Pressure range	Accuracy ¹⁾	Total Error Band @ 0...50 °C ²⁾	
		Typ.	Max.
> 2...10 bar	±0,25 %FS	±0,3 %FS	±0,5 %FS
> 0,3...2 bar	±0,25 %FS	±0,6 %FS	±1,0 %FS
0,1...0,3 bar ³⁾	±0,50 %FS	±2 mbar	±3 mbar

¹⁾ Linearity (best fitted straight line) + hysteresis + repeatability ²⁾ Accuracy + Temperature Coefficient + Zero + Span Tolerance
³⁾ Pressure range 0,1 bar: Linearity ±1% FS Max; Signal output limited to 4...20 mA / 0...5 V / 0...10 V

Storage-/Operating Temperature	-20...70 °C		
Stability	Range > 2 bar	0,1 %FS typ.	0,2 %FS max.
	Range ≤ 2 bar	2 mbar typ.	4 mbar max.

Type	2-wire	3-wire	3-wire	3-wire
Signal Output	4...20 mA	0...10 V	0...5 V	0,5...4,5 V
Signal Output Limitation	3,2...22,3 mA	-1,2...11,2 V	-0,6...5,6 V	0,1...4,9 V
Supply	8...32 VDC	13...32 VDC	8...32 VDC	8...32 VDC
Load Resistance	< (U-8 V) / 0,025 A	> 5 kΩ	> 5 kΩ	> 5 kΩ
Limit Frequency	2 kHz	2 kHz	2 kHz	2 kHz
Power Consumption		max. 5 mA	max. 5 mA	max. 4 mA
Electrical Connection	- Water: Reference cable PE sheath ø 5,8 - Fuel: Reference cable TPE-E ø 6,1 - Cable length: 5 m Standard		Absolute cable Polyolefin (PE-based) ø 5,8 Absolute cable TPE-E ø 4,7	
Response Time (Supply ON)	(0...99%) < 5 ms			
Isolation	> 10 MΩ@300 V			
EMC	EN 61000-6-2 / EN 61000-6-3 / EN 61326-2-3			
Current Surge Rating	50 A @ 8/20 μs (wire to wire) / 200 A @ 8/20 μs (OUT/GND to housing)			
Dead Volume Change	< 0,1 mm ³			
Material in Media Contact	- Stainless Steel AISI 316L (DIN 1.4404/1.4435) - Viton® seals - Protection Cap of POM (polyoxymethylene) - Cable sheath			
Protection Class	IP68			

Options

Temperature Range	Other compensated temperature ranges on request. Maximum range: -40...100 °C
Pressure Ranges	Intermediate ranges on request
Pressure Connection	Others on request (e.g. G1/4" or NPT thread)
Electrical Connection	Others on request (e.g. cable PTFE)
Extended lightning protection (2-wire)	10'000 A @ 8/20 μs (wire to wire / wire to housing) / Isolation > 10 MΩ @ 200 V
Intrinsic Safety (ATEX)	See also data sheet 23 SY Ei / 25 Y Ei / 26 Y Ei

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