



APPLIED MEASUREMENTS LTD.

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Pi99EX Intrinsically Safe Depth / Level Sensor



II 1G EEx ia IIC T4...T6

Features

- Compact and robust stainless steel assembly 1.4435 (316L) or titanium (optional)
- Piezoresistive measuring element
- Gauge or absolute
- Standard DIN pressure ranges from 0...100 mbar to 0...25 bar
- Calibration available for all common pressure units mH₂O, mWS, mWC etc.
- Complies with the EMC directive 89/336/EEC
- High reliability
- Short delivery time
- Customized versions due to modular assembly
- Available with PUR or Teflon cable
- Reverse polarity and short circuit protected
- Surge (lightning) protection according to EN 61000-4-5 as an option

Typical applications

Depth and level measurement in hazardous areas

- Wells
- Bore holes
- Waste water
- Reservoirs
- Lakes, rivers
- Sewage treatment plant
- Fuel, diesel oil

Specifications

Pressure range	[bar]	0.1 ... 0.5	> 0.5 ... 2	> 2 ... 25
Overpressure		3 bar	3 x FS (min. 3 bar)	3 x FS
Burst pressure	[bar]	> 200	> 200	> 200
Accuracy ¹⁾	[± % FS]	≤ 0.5 (optional ≤ 0.25)	≤ 0.5 (optional ≤ 0.25, ≤ 0.1)	≤ 0.5 (optional ≤ 0.25, ≤ 0.1)
Thermal shift	[± % FS/°C]			
Zero	0...70°C	0.06	0.03	0.015
	-25...85°C	0.08	0.04	0.02
Span	0...70°C	0.015	0.015	0.015
	-25...85°C	0.02	0.02	0.02
Long term stability (1 year)		< 4 mbar	< 4 mbar	< 0.2% FS

¹⁾ Zero based non-conformity according to DIN 16086, including hysteresis and repeatability

Electrical connection

Type	4...20 mA Two wire current transmitter	Load resistance		
Supply voltage	10...30 V DC	Load resistance influence		< 0.1% FS
Supply voltage influence	< 0.1% FS			
Circuit diagram				

Ex-Approval

Type of protection Standards	intrinsic safety II 1G EEx ia IIC T4...T6 EN 50 014: 1992 EN 50 020: 1994 EN 50 284: 1997	SEE Certificate SEE 99 ATEX 2640 general requirements intrinsic safety "i" special requirements zone 0 zener barrier
Max. values for supply/output circuit	30V / 100mA / 1W	
Temperature class	T6	T4
Ambient temperature Ta	[°C] -25...55	-25...85
Process temperature	[°C] -25...55	-25...85

Without any information about temperature class the transmitter will be labelled T4.
Ex-Approval for dust on request.

Materials

Process connection, diaphragm, housing	Stainless steel 1.4435 (316L) or titanium (optional)
Seals (standard)	Viton (other materials see ordering information)

Electromagnetic compatibility

Standard	Level	Typical interferences	
Emission:			
EN 50081-1:1992	Generic emission standard		
EN 55022:1994	Emission, class B		
Immunity:			
EN 50082-2:1995	Generic immunity		
EN 61000-4-2:1995	Electrostatic discharge	4kV contact, 8kV air	
ENV 50140:1993	Radiated electro-magnetic field	10V/m, 80-1000 MHz, 80% AM 1kHz	Cellular phones, radio sets
ENV 50204:1995	Radiated electro-magnetic field (GSM)	10V/m, 950 MHz, 200Hz on/off	Digital portable phones
EN 61000-4-4:1995	Fast transients (burst)	2 kV	Motors, valves
ENV 50141:1993	Conducted radio-frequency	10V, 0.15-80 MHz, 80% AM 1kHz	Cellular phones, radio sets
EN 61000-4-5:1995 ²⁾	Surge	10 kA (8/20 μs)	Lightning strikes

²⁾ Only with optional surge (lightning) protection



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Dimensions

Fig. 1: Closed version

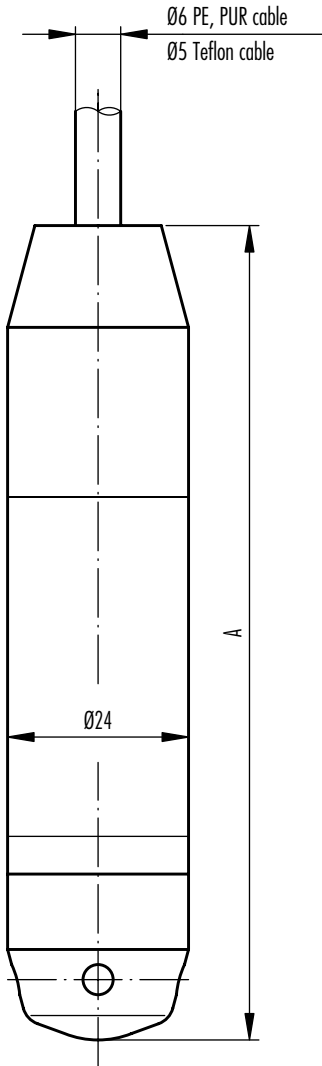


Fig. 2: Open version

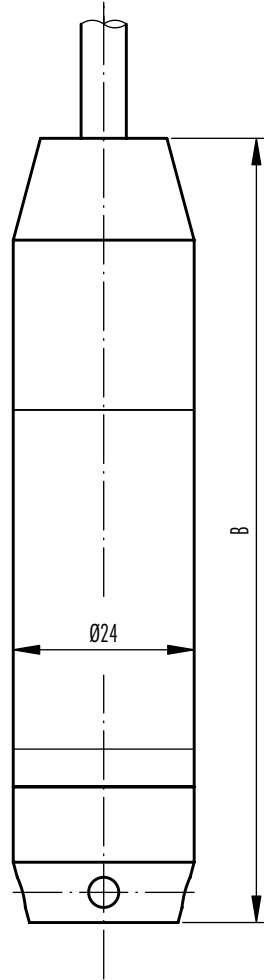


Fig. 3: with process connection

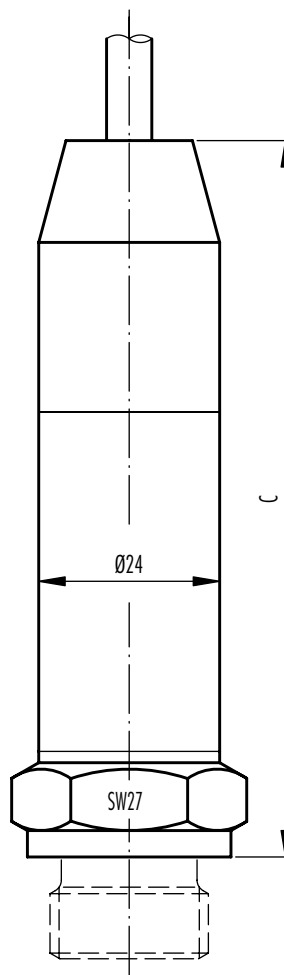
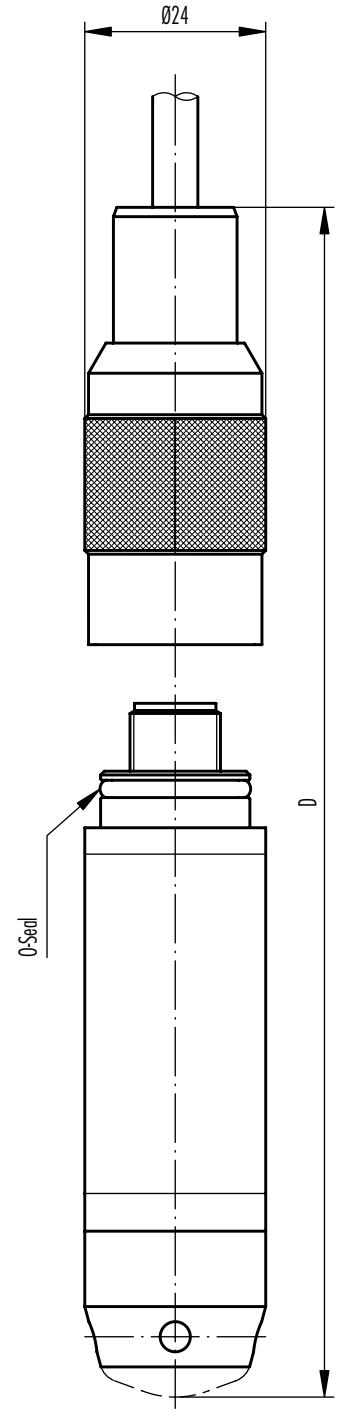


Fig. 4: Electrical connection, connectable



Standard

	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	113	109	on request	on request	approx. 160
with ballast weight	200	196	on request	on request	approx. 420

Version with surge (lightning) protection

	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	157	153	on request	on request	approx. 200
with ballast weight	244	240	on request	on request	approx. 460

Colour	2-Wire
white	+Vin
yellow	Pout
grey	EP

Specifications may change without notice. Release 06/01



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