



IWSL series

Water approved Submersible Level Transmitter - Silicon Sensor



- Piezo-resistive sensor
- Stainless steel body and diaphragm
- Accuracy <math><0.1\% \text{ FS BFSL}</math> (0.06% option)
- Various outputs including mV, Volts and mA. Others are available.
- Pressure ranges from 1mWG to 100mWG
- WRAS Approval pending

Options available on the IWSL transmitter.

- Pressure range and engineering units
- Pressure reference (Gauge or Absolute)
- Output type
- Accuracy level (non-linearity and hysteresis)

Suitable applications

- River level
- Reservoir level
- Tank level
- Borehole level
- Aquifer level
- Environmental monitoring
- V-notch weir flow measurement

The IWSL is designed for use in continuous submersion in water. The probe uses a piezo-resistive silicon sensing technology, isolated from the media by a stainless steel diaphragm within a 316L stainless steel housing

It offers excellent stability, repeatability and resolution, as required for use in rivers and reservoirs.

The electronics incorporate a microprocessor based amplifier, requiring no adjusting and giving stable electronics.

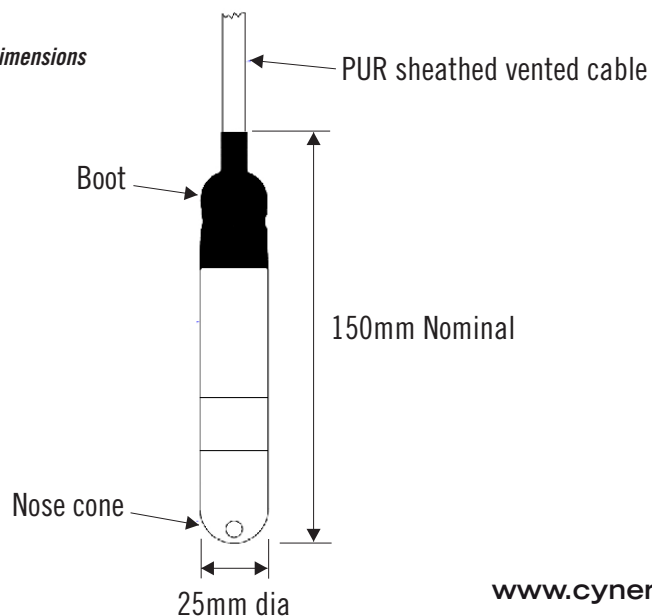
Each device is temperature compensated, calibrated and supplied with a traceable serial number and calibration certificate.

Custom versions can be made for particular applications.

Performance

Accuracy (Non-Linearity)	<math><\pm 0.1\% \text{ / FS (BFSL)}</math> <math><\pm 0.06\% \text{ / FS (BFSL)}</math>	
Hysteresis	<math><\pm 0.05\% \text{ / FS typ.}</math>	
Setting Errors (offsets)	2-wire	Zero & Full Scale, <math><\pm 0.5\% \text{ / FS}</math>
	3-wire	Zero & Full Scale, <math><\pm 0.5\% \text{ / FS}</math>
	4-wire	see passive output table
Permissible Load	2-wire	$R_{\text{max}} = [(\text{Supply}-9)/0.02]0\text{hms}$
	3-wire	$R_{\text{min}} = 10\text{kOhm}$
Output Resistance	4-wire	<math><200\text{mbar}</math>: 2.7-3.3kR, $>200\text{mbar}$: 4.0-6.0kR
Influence Effects	Supply	mV/V & 0.5 to 4.5V- ratiometric, other outputs - <math><0.005\% \text{ FS / 1V}</math>
	Load	0.05% FSO / kOhm

Mechanical Dimensions



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ISO9001 CERTIFIED

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Electrical Protection

Supply reverse polarity	No damage/no function
Lightning protection	Internally fitted
Electromagnetic compatibility	CE Compliant

Mechanical Stability

Shock	100g / 11s
Vibration	10g RMS (20 - 2000Hz)
Temperatures & Thermal Effects	
Media Temperature	-20°C (Non-freezing) to +60°C
Storage temperature	-20°C to +70°C
Compensated temperature range	20°C±25°C
Thermal Zero Shift (TZS)	<±0.02% /FS/°C (option code 2) <±0.01% /FS/°C (option code 1)
Thermal Span Shift	<±0.01% /°C

Material Specifications

Housing	316L Stainless Steel
"O" ring seals	EPDM (Parker Elastomer E70C438)
Diaphragm	316L Stainless Steel
Cable sheath material	Polyurethane
Media wetted parts	Housing, "O" ring seal, diaphragm, cable sheath
Weight	Transmitter: approx 250g Cable: 48g per metre
Installation position	Any
Operational Life	> 100x 10 ⁶ cycles
Approvals	WRAS Approval pending

Pressure Ranges and Passive mV/V Outputs

Nominal Pressure, Gauge	mWG	1	2.5	3.5	5	7	10	20	35	50	70	100
Nominal Pressure, Absolute	mWG							20	35	50	70	100
Permissible Overpressure	mWG	20	20	20	50	50	50	100	100	100	100	100
Output	mv @ 10V	50	50	60	100	70	100	100	100	100	100	100
Zero Setting Error	mV/V	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Output Signals and Supply Voltages

Wire system	Output	Supply Voltage	Connection	Wire Colour
2-wire	4-20mA	9-32Vdc	+ve Supply	Red
			-ve Supply	Blue
			Ground	White
			Cable Screen	Green
3-wire	0-5Vdc 0-10Vdc 0-2.5Vdc 0.5-4.5Vdc	9-32Vdc 13-32Vdc 6-32Vdc 5Vdc	+ve Supply -ve Supply +ve Output Ground Cable Screen	Red Blue Yellow White Green
4-wire	see Passive mV/V Output above		+ve Supply -ve Supply +ve Output -ve Output Cable Screen	Red Blue White Yellow Green