



## IWSL

### Water Approved Submersible Level Transmitter - Silicon Sensor

- Stainless steel, Silicon piezo-resistive sensor
- Accuracy:  $<\pm 0.1\%$  FS BFSL (0.06% optional)
- Pressure ranges from 1mWG to 100mWG
- Variety of outputs including mV, Volts and mA

The IWSL has been designed for use in continuous submersion in water. The submersible uses a piezo-resistive media isolated silicon sensing technology and a stainless steel diaphragm it offers excellent stability, repeatability and resolution required for use in rivers and reservoir measurement. Housed within a 316L stainless steel housing, this submersible level transmitter is the ideal product for reliable and repeatable hydrostatic level measurement. Every device is temperature compensated and calibrated, supplied with a traceable serial number and calibration certificate. The electronics incorporate a microprocessor based amplifier, this means there are no adjusting pots and therefore the electronics are very stable.

**There are many options available on the IWSL level transmitter. These include the following :**

- Pressure range and engineering units
- Pressure reference (Gauge or Absolute)
- Output type
- Accuracy Level (Non-linearity & hysteresis)
- Thermal accuracy

**Suitable for the following applications:**

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

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## Input Pressure Range

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 Signal & Supply Voltage

Wire system	Output	Supply Voltage
2-wire	4 - 20mA	9 – 32V dc
3-wire	0 – 5V dc	9 – 32V dc
	0 – 10V dc	13 – 32V dc
	0 – 2.5V dc	6 – 32V dc
	0.5 to 4.5V dc (others on request)	5V dc (others on request)
4-wire	See passive mV/V output table below	3 – 12V dc

## Performance

Accuracy (Non-linearity)		<±0.1% / FS (BFSL) <±0.06% / FS (BFSL) optional
Hysteresis		<±0.05% / FS typ.
Setting Errors (offsets)	2-wire 3-wire 4-wire	Zero & Full Scale, <±0.5% / FS Zero & Full Scale, <±0.5% / FS See table
Permissible Load	2-wire 3-wire	Rmax = [(Voltage Supply – 9) / 0.02] Ω Rmin = 10 k Ω
Output Resistance	4-wire	≤200mbar: 2.7-3.3 kΩ, >200mbar: 4.0-6.0 kΩ
Influence Effects	Supply Load	mV/V & 0.5 to 4.5V – Ratiometric, other outputs - <0.005 % FS / 1V 0.05 % FSO / kΩ

## Permissible Temperatures & Thermal Effects

Media temperature	-20°C to +60°C (non freezing)
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 (TSS)	<±0.01% / °C

## Water Approved Submersible Level Transmitter

### Electrical Protection

Supply reverse polarity protection	No damage but also no function
Lightning Protection	Internally fitted
Electromagnetic compatibility	CE Compliant

### Mechanical Stability

Shock	100 g / 11 ms
Vibration	10 g RMS (20 ... 2000 Hz)

### Materials

Housing	316L Stainless Steel
'O' ring seals	EPDM (Parker Elastomer E70C438)
Diaphragm	316L Stainless Steel
Cable sheath material	PUR
Media wetted parts	Housing, 'O' ring seal, diaphragm & Cable sheath

### Miscellaneous

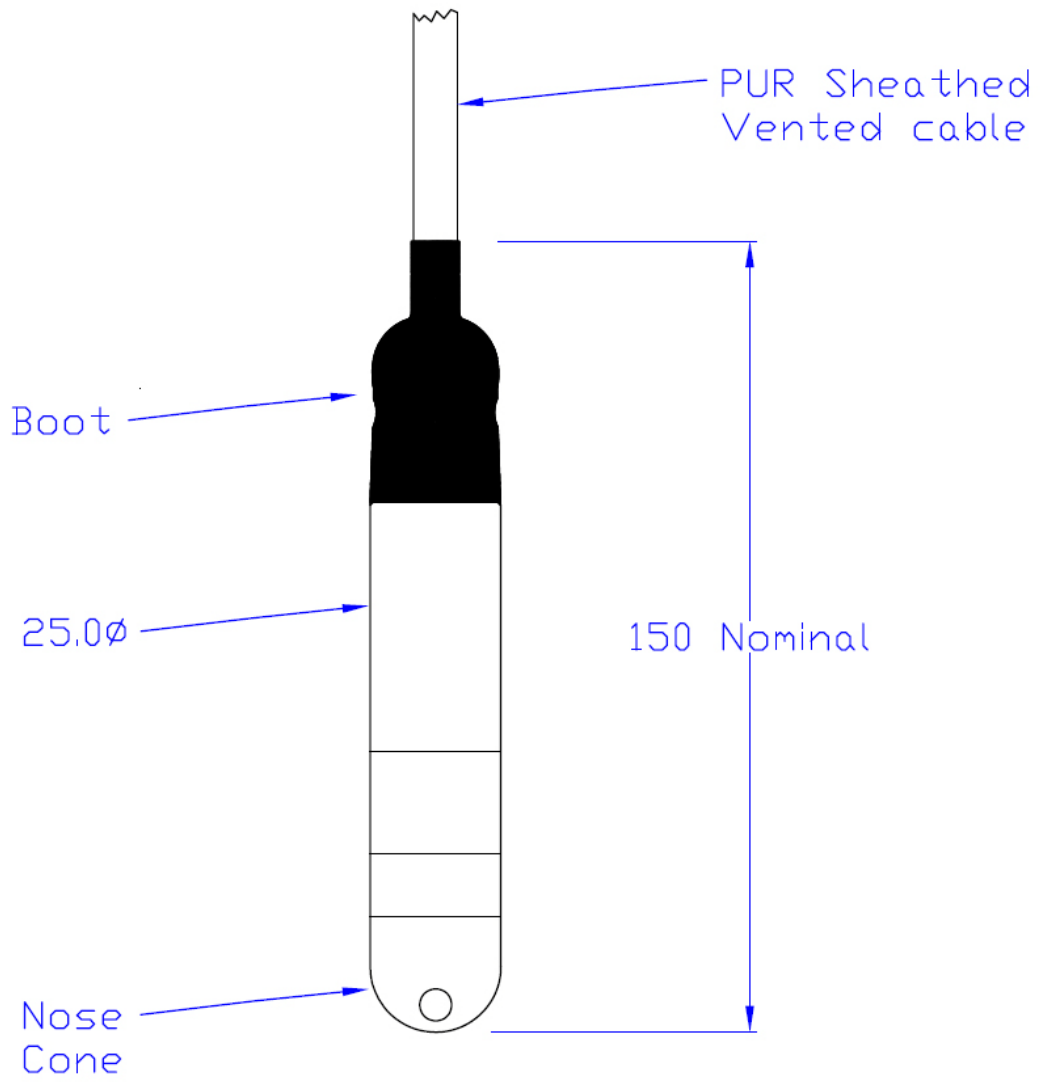
Current consumption	2-wire	Limits at 25mA
	3-wire	Typ. 6mA
	4-wire	Typ. 2 – 5mA
Weight	Transmitter: Approx. 250g including nose cone Cable: Approx. 48g per mtr	
Installation position	Any	
Operation Life	> 100 x 10 <sup>6</sup> cycles	
Approvals	TBA	

### Typical Passive mV/V Outputs

Nominal pressure	mWG	1	2.5	3.5	5	7	10	20	35	50	70	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

### Wiring Designation

		PUR Sheath
2-wire	+ve Supply	Red
	-ve Supply	Blue
	Ground	White
	Cable Screen	Green
3-wire	+ve Supply	Red
	-ve Supply	Blue
	+ve Output	Yellow
	Ground	White
	Cable Screen	Green
4-wire	+ve Supply	Red
	-ve Supply	Blue
	+ve Output	White
	-ve Output	Yellow
	Cable Screen	Green



Accessories



Cable support hanger



Cable Terminal Box with Vent



Wall mounted digital indicator