



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

Input Pressure Range

Input Pressure Range	Unit	1	2.5	3.5	5	7	10	20	35	50	70	100
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	5V dc
	(others on request)	(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	Zero & Full Scale, <±0.5% / FS
	3-wire	Zero & Full Scale, <±0.5% / FS
	4-wire	See table
Permissible Load	2-wire	$R_{max} = [(Voltage\ Supply - 9) / 0.02] \Omega$
	3-wire	$R_{min} = 10\ k\Omega$
Output Resistance	4-wire	≤200mbar: 2.7-3.3 kΩ, >200mbar: 4.0-6.0 kΩ
Influence Effects	Supply	mV/V & 0.5 to 4.5V – Ratiometric, other outputs - <0.005 % FS / 1V
	Load	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

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

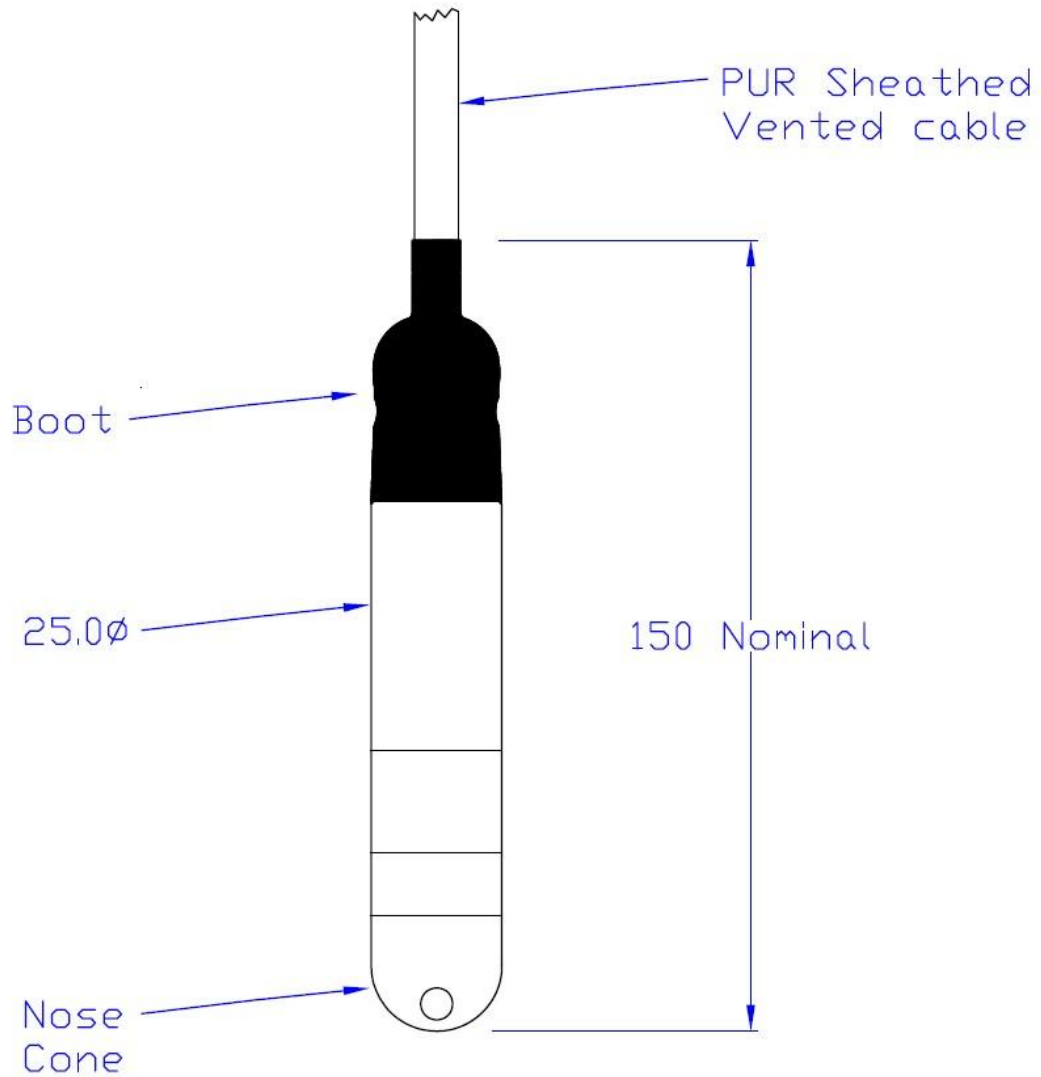
Typical Passive mV/V Outputs

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

Outline Drawing



Accessories



Cable support hanger



Cable Terminal Box with Vent



Wall mounted digital indicator



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