IMSL

Submersible Level Transmitter - Silicon Sensor

- Stainless steel, Silicon piezo-resistive sensor
- Accuracy: <±0.1% FS BFSL (0.06% optional)
- Pressure ranges from 0.5mWG to 100mWG
- Selection of housing & cable materials
- Variety of outputs including mV, Volts and mA

The IMSL has been designed for use in continuous submersion in liquids such as water, oil and other non aggressive chemicals. The submersible uses the latest 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 IMSL 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
- Cable material in PUR, PVC or FEP
- O ring seal material

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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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Technical Datasheet

Input Pressure Range

Nominal pressure, Gauge	mWG	0.5	1	2.5	3.5	5	7	10	20	35	70	100
Nominal pressure, Absolute	mWG	-	-	-	-	-	-	-	20	35	70	100
Permissible Overpressure	mWG	10	10	10	10	10	21	21	60	105	210	210

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	Rmax = [(Voltage Supply – 9) / 0.02] Ω
	3-wire	Rmin = 10 k Ω
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	Viton
Diaphragm	316L Stainless Steel
Cable sheath material	PUR PVC (optional) FEP (optional)
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 10^6 cycles	

Typical Passive mV/V Outputs

Nominal pressure	mWG	0.5	1	2.5	3.5	5	7	10	20	35	70	100
Output	mV @ 10V	25	50	50	60	100	70	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	PVC Sheath	FEP Sheath
2-wire	+ve Supply	Red	Brown	Brown
	-ve Supply	Blue	White	White
	Ground	White	Pink	Pink
	Cable Screen	Green	Green	Green
3-wire	+ve Supply	Red	Brown	Brown
	-ve Supply	Blue	White	White
	+ve Output	Yellow	Yellow	Yellow
	Ground	White	Pink	Pink
	Cable Screen	Green	Green	Green
4-wire	+ve Supply	Red	Brown	Brown
	-ve Supply	Blue	White	White
	+ve Output	White	Pink	Pink
	-ve Output	Yellow	Yellow	Yellow
	Cable Screen	Green	Green	Green

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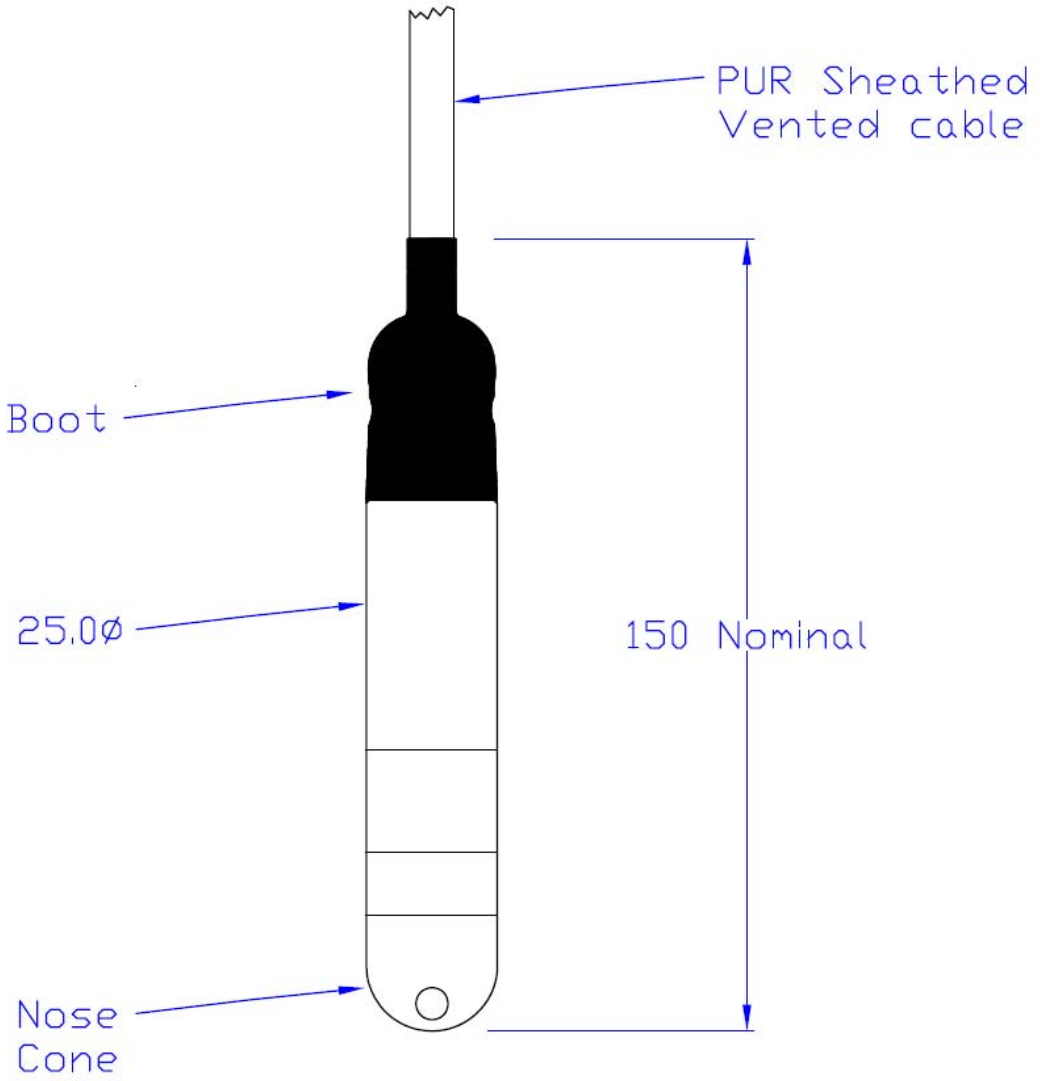
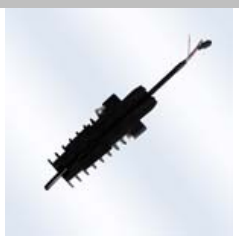
Outline Drawing



Accesories



Cable support hanger

Cable Terminal Box with Vent

Wall mounted digital indicator