



IMCTL

Submersible Dual Level & Temperature Transmitter - Ceramic Sensor

- Ceramic, piezo-resistive sensor
- Level accuracy: $<\pm 0.25\%$ FS BFSI (0.1% optional)
- Pressure ranges from 10mWG to 100mWG
- Temperature range -20 to +60°C
- Dual independent 4-20mA outputs

The IMCTL has been designed for use in continuous submersion in liquids such as water, oil and fuels. This submersible device uses a ceramic sensor for the level measurement which has excellent corrosion resistance, it is ideal for applications where the media may be aggressive. The temperature sensor is based on a platinum resistance thermometer with Class 'B' accuracy. Housed within a 316L stainless steel, or high grade Duplex stainless steel housing, this submersible transmitter is the ideal product for hydrostatic level measurement where temperature is also a critical part of the measurement. Every device is temperature compensated and calibrated, supplied with a traceable serial number and calibration certificate.

There are many options available on the IMCTL transmitter. These include the following :

- Pressure range and engineering units
- Pressure reference (Gauge or Absolute)
- Level accuracy (Non-linearity & hysteresis)
- Level accuracy for thermals
- Cable material in PUR, PVC or FEP
- Housing material
- O ring seal material
- Temperature range

Suitable for the following applications:

- River level
- Tank level
- Borehole level
- Aquifer level
- Environmental monitoring

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Input Level Range

Nominal pressure, Gauge	mWG	10	15	20	25	40	50	75	100
Nominal pressure, Absolute	mWG	-	15	20	25	40	50	75	100
Permissible Overpressure	mWG	15	30	30	75	75	75	150	150

Output Signal & Supply Voltage

Wire system	Output	Supply Voltage
Level Transmitter: 2-wire	4 - 20mA	10 – 30V dc
Temperature Transmitter: 2-wire	4 - 20mA	10 – 30V dc

Level Performance

Accuracy (Non-linearity)	<±0.25% / FS (BFSL) <±0.1% / FS (BFSL) optional	
Hysteresis	<±0.1% / FS	
Setting Errors (offsets)	Zero & Full Scale, <±0.5% / FS	
Permissible Load	$R_{max} = [(Voltage\ Supply - 9\ min) / 0.02] \Omega$	
Influence Effects	Supply Load	other outputs - <0.005 % FS / 1V 0.05 % FSO / kΩ

Temperature Performance

Measurement Accuracy	(mA output / 2000) or 5 µA (whichever is the greater)
Thermal drift	1 µA / °C
Loop Voltage effect	0.2 µA / V
Maximum Output load	$[(V_{supply}-10)/21] K\ Ohms$ (Example: 700 Ohms @ 24V)
Output timing	Transmitter startup time: 4 seconds (I out <4mA during startup) Warm-up time: 1 minute to full accuracy Update time: 500ms Response time: 1 second

Permissible Temperatures & Thermal Effects

Media temperature	-20°C to +60°C (non freezing)
Storage temperature	-20°C to +70°C
Compensated temperature range (level only)	20°C ± 25°C
Thermal Zero Shift (TZS) (level only)	<±0.02% / FS / °C (option code 2) <±0.01% / FS / °C (option code 1)
Thermal Span Shift (TSS) (level only)	<-0.015% / °C
Thermal drift (temperature only)	1 µA / °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 High Grade DUPLEX Stainless Steel UNS31803 (optional)
'O' ring seals	Viton
Diaphragm	Ceramic Al ₂ O ₃ 96 %
Cable sheath material	PUR PVC (optional) FEP (optional)
Media wetted parts	Housing, 'O' ring seal, diaphragm & cable sheath

Miscellaneous

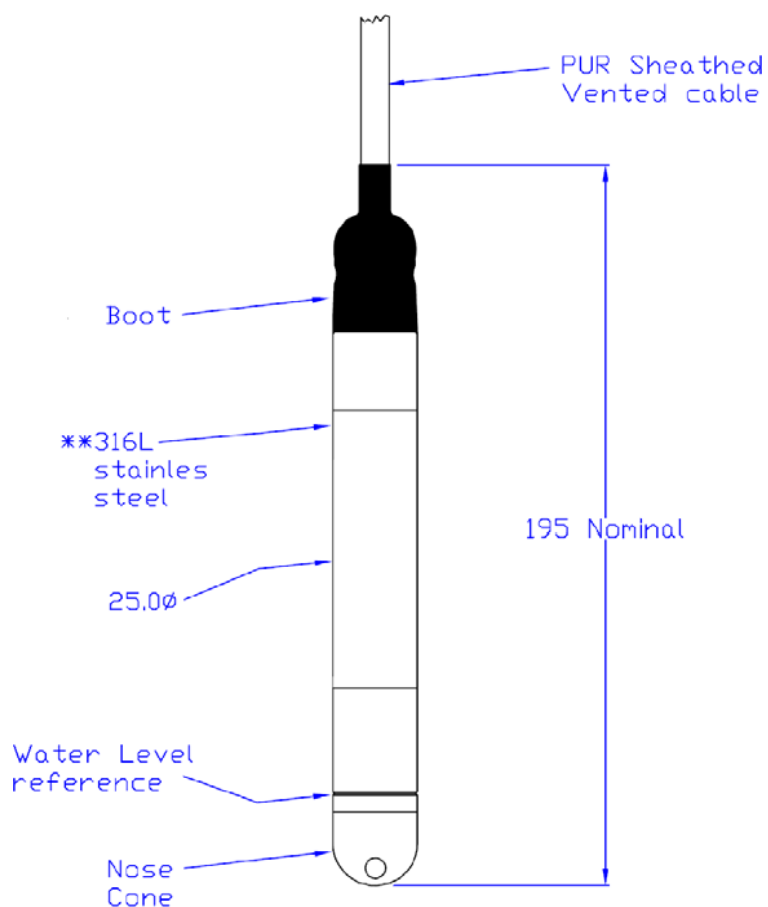
Current consumption	Level transmitter limits at 25mA Temperature transmitter limits at 21.5mA
Weight	Transmitter: Approx. 300g including nose cone Cable: Approx. 48g per mtr
Installation position	Any
Operation Life	> 100 x 10 ⁶ cycles

Wiring Designation

		PUR Sheath	PVC Sheath	FEP Sheath
Level transmitter	+ve Supply -ve Supply Ground & Cable Screen	Red Blue Green	Brown White Green	Brown White Green
Temperature transmitter	+ve Supply -ve Supply Ground & Cable Screen	White Yellow Green	Pink Yellow Green	Pink Yellow Green

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Outline Drawing



Accessories



Cable support hanger
Part No. 100084



Cable Terminal Box with Vent
Part No. KL2-ZB.601-200-000-4



Wall mounted digital indicator
Part No. SRP-N118-1821-1-2-001



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