



IMTG

Submersible Tank Gauging Level Transmitter

- stainless steel housing and diaphragm
- pressure ranges from 1mWG to 10mWG
- piezo-resistive pressure sensor
- accuracy: $<\pm 0.5\%$ FS BFS (0.25% typical)
- selection of cable materials
- WRAS versions available

The IMTG has been designed for use in continuous submersion in liquids such as water, oils and fuels in small tanks and containers where conventional mechanical level switches and sensors are not ideal and more level 'control' and measurement is required. The IMTG submersible device uses a silicon pressure sensor which has excellent performance and stability. It is ideal for applications where a small tank level is required from as low as 1m through to 10m high tanks. The housing is stainless steel and with a choice of PVC, PUR, FEP or TPE cable material enables compatibility to water, oils and fuels. Every device is temperature compensated and calibrated, supplied with a traceable serial number and calibration certificate.

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

- Pressure range and engineering units
- Pressure reference (Gauge or Sealed Gauge)
- Various output types
- Static accuracy & Thermal accuracy
- Cable material in PVC, PUR, FEP or TPE
- Cable length
- O ring seal material
- WRAS approved version

Suitable for the following applications:

- Static tank level
- Container or chamber level
- Vehicle tank level

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Input Pressure Range

Nom. pressure, Gauge	mW G	1	1.6	2.5	3.5	5	6	7.5	10
Nom. pressure, Sealed Gauge	mW SG	1	1.6	2.5	3.5	5	6	7.5	10
Permissible Overpressure	mW	20	20	20	20	50	50	50	50

Output Signal & Supply Voltage

Wire system	Output	Supply Voltage
2-wire	4 - 20mA	9 – 32V dc
3-wire ¹⁾	0.5 to 4.5V dc / ratiometric 0.5 to 4.5V dc / non-ratiometric (others on request)	5V dc 8 – 30V dc (others on request)
4-wire	Passive mV/V (dependent on range) 2mV/V (rationalised)	2 – 12V dc 2 – 12V dc

¹⁾ Care must be taken when using voltage output regarding the screening and earthing.

Performance

Accuracy (Non-linearity)	Standard: $\leq \pm 0.5\% / FS (BFSL)$ Optional: $\leq \pm 0.25\% / FS (BFSL)$	
Hysteresis	$\leq \pm 0.1\% / FS$	
Setting Errors (offsets)	2-wire 3-wire 4-wire	Zero & Full Scale, $\leq \pm 0.5\% / FS$ Zero & Full Scale, $\leq \pm 0.5\% / FS$ Zero & Full Scale, $\leq \pm 1\% / FS$
Permissible Load	2-wire 3-wire	$R_{max} = [(Voltage\ Supply - 9\ min) / 0.02] \Omega$ $R_{min} = 10\ k\ \Omega$
Output Resistance	4-wire	$R_{min} = 11\ k\ \Omega$
Influence Effects	Supply Load	mV/V & 0.5 to 4.5V – Ratiometric, other outputs: - <math>< 0.005\% FS / 1V</math> 0.05 % FSO / k Ω

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 \pm 25°C
Thermal Zero Shift (TZS)	$\leq \pm 0.02\% / FS / ^\circ C$ (option code 4) $\leq \pm 0.02\% / FS / ^\circ C$ (option code 2) $\leq \pm 0.01\% / FS / ^\circ C$ (option code 1)
Thermal Span Shift (TSS)	$\leq \pm 0.015\% / ^\circ C$

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Electrical Protection

Supply reverse polarity protection	No damage but also no function
Electromagnetic compatibility	CE Compliant

Mechanical Stability

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

Materials

Housing	303 Stainless Steel
'O' ring seals	Viton (others on request)
Diaphragm	316 Stainless Steel
Cable sheath material	PUR PVC (optional) FEP (optional) TPE (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. 75g Cable: Approx. 48g per mtr
Installation position	Any
Operation Life	> 100 x 10 ⁶ cycles

Wiring Designation

		PUR Sheath	PVC Sheath	FEP Sheath	TPE Sheath
2-wire	+ve Supply	Red	Brown	Brown	Brown
	-ve Supply	Blue	White	White	White
	Ground	White	Pink	Pink	Pink
	Cable Screen	Green	Green	Green	Green
3-wire	+ve Supply	Red	Brown	Brown	Brown
	-ve Supply	Blue	White	White	White
	+ve Output	Yellow	Yellow	Yellow	Yellow
	Ground	White	Pink	Pink	Pink
4-wire	+ve Supply	Red	Brown	Brown	Brown
	-ve Supply	Blue	White	White	White
	+ve Output	White	Pink	Pink	Pink
	-ve Output	Yellow	Yellow	Yellow	Yellow
	Cable Screen	Green	Green	Green	Green

Outline Drawing

