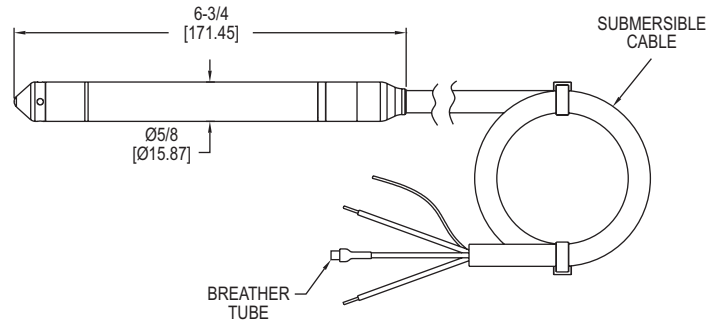




Series MBLT Miniature Submersible Level Transmitter

Specifications - Installation and Operating Instructions



The **MBLT Miniature Submersible Level Transmitter** is only 0.63" in diameter making it ideal for level monitoring in well and borehole applications with 4 to 20 mA or 0 to 5 V output. Designed for years of trouble free service, the MBLT has a welded 316 SS body and 316 SS nose cap. Body top is also 316 SS and tapered to prevent damage or snares when pulling the unit out of the installation. Featured in the MBLT is a precision $\pm 0.10\%$ or 0.25% of full scale accuracy output, better than BFSL or BSL rated outputs used by most competitors. Lightning and surge protection (not guaranteed or covered by standard warranty) is included standard to stand up in harsh applications. MBLT comes with a choice of polyether polyurethane or ETFE cable materials and all are vented for barometric pressure compensation. Vent is covered with a maintenance-free filter preventing particulate or water droplets from entering the transmitter. Voltage output models work down to 8 VDC for power requirements making them ideal for battery powered telemetry systems.

APPLICATIONS

- Ballast tanks; Ground water monitoring; Surface water monitoring; Dewatering; Down hole; Remediation; Telemetry and other environmental monitoring applications.

SPECIFICATIONS

Service: Compatible liquids.
Wetted Materials: Body and nose: 316 SS; Cable: Polyether polyurethane or ETFE; Seals: Fluoroelastomer; Label: Polyolefin.
Accuracy: $\pm 0.25\%$ or $\pm 0.10\%$ of FS.
Temperature Limits: -4 to 176°F (-20 to 80°C).
Compensated Temperature Limits: 0.25%: (0 to 70°C); 0.10%: (0 to 60°C).
Thermal Effect: 0.25%: $\pm 0.45\%$ FS TEB; 0.10%: $\pm 0.30\%$ FS TEB.
Pressure Limit: 2x FS.
Power Requirements: Current Output: 10 to 33 VDC; Voltage Output: 8 to 33 VDC; 5 mA max (no load).
Output Signal: 4 to 20 mA DC 2-wire or 0 to 5 V*.
Response Time: < 50 ms.
Max Loop Resistance: 1000Ω @ 30 VDC (current output);
Voltage Output Impedance: 10Ω + 4.4Ω / 100' cable (voltage output).
Electrical Connections: Wire pigtail.
Mounting Connection: Suspended below point being monitored.
Electrical Protection: Surge/lightning protected per EN61000-4-5, Class 5.
Weight: Body: 0.235 lb (0.107 kg); Cable: 0.037 lb (0.017 kg) per foot.
Agency Approvals: CE.

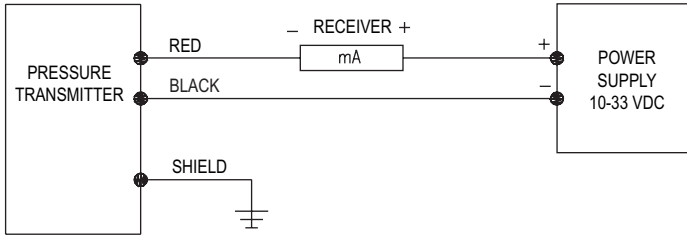
*Consult factory for additional outputs.

MODEL CHART												
Example	MBLT	-2	S	C	-I	V	P	F	-30	-50	-NIST	MBLT-2SC-IVPF-30-50-NIST
Construction	MBLT											Miniature submersible level transmitter
Circuit Options		2										Lightning surge protected
Body Material			S									316 SS
Accuracy				B C								0.10% 0.25%
Output					I V							4 to 20 mA 0 to 5 V
Reference						V						Vented
Cable Material							P E					Polyether polyurethane ETFE
Range Units							F M P					Feet of water column Meter of water column PSI
Range Value								X				Dependent on range unit
Cable Length									X			In feet for feet and psi range, in meters for meter range
Options											NIST	NIST traceable certificate

ELECTRICAL INSTALLATION

An external power supply delivering 10 to 33 VDC for a current output unit, with minimum current capability of 40 mA DC (per transmitter) and 8 to 33 VDC with minimum current capability of 10 mA DC (per transmitter) for a voltage output unit is required to power the control loop. See figure below for connection of the power supply, transmitter and receiver.

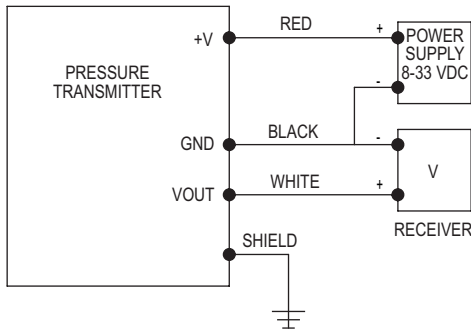
Current Output:



The maximum loop resistance (RLmax) for the DC power supply voltage (Vsup) is expressed by the formula:

$$\text{Current Output: } RL_{\text{max}} = \frac{V_{\text{sup}} - 10V}{0.02A}$$

Voltage Output:



Note: Observe polarities.
Shielded cable is recommended for control loop wiring.

WARNING

A voltage potential between the ground wire of the unit and the ground of other equipment can lead to electrolytic corrosion. Ensure the grounding system provides an equipotential between the transmitter and the earthing ground connection. Avoid using the power system protective ground since this will often have a significant potential difference to the transmitter ground. Also note that dissimilar metals in the ground system may cause electrolysis corrosion of the transmitter or other components in the ground system.

During installation, connect a voltmeter or ammeter between the shield ground wire and the grounding connection. If there is a measurable voltage or current electrolytic corrosion may be a serious possibility. If there is a potential difference then some isolation system will be required. Improper grounding may lead to damage or poor signal integrity.

Note: "Lightning Protected" means that the product incorporates protection circuitry that will reduce the likelihood of damage to the product by lightning induced transients on interconnection wiring. The product may not operate within specification during the transient but will recover afterwards to full specified operation. "Lightning Protected" products are not intended for direct exposure to conducted lightning discharges nor are they intended to be protective devices for other equipment connected to them.

MAINTENANCE/REPAIR

Upon final installation of the Series MBLT, no routine maintenance is required. The Series MBLT is not field serviceable and should be returned if repair is needed (field repair should not be attempted and will void warranty).

WARRANTY/RETURN

Refer to "Terms and Conditions of Sales" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.