

MTLT-5000 MAGNETOSTRICTIVE

QUEST-TEC SOLUTIONS MAGNETOSTRICTIVE TRANSMITTERS FOR MAGNE-TRAC GAGES

The MTLT-5000 is based upon the magnetostrictive principle. The sensing tube contains two wires which are pulsed with the magnetic field created by the magnetic float causes a torsion stress wave to be induced in the wire. The torsion propagates along the wire at a known velocity from the position of the magnetic float and toward both ends of the wire. The microprocessor-based electronics measure the elapsed time between the start and return pulses and convert it into 4-20mA DC output which is proportional to the level being measured.

Features

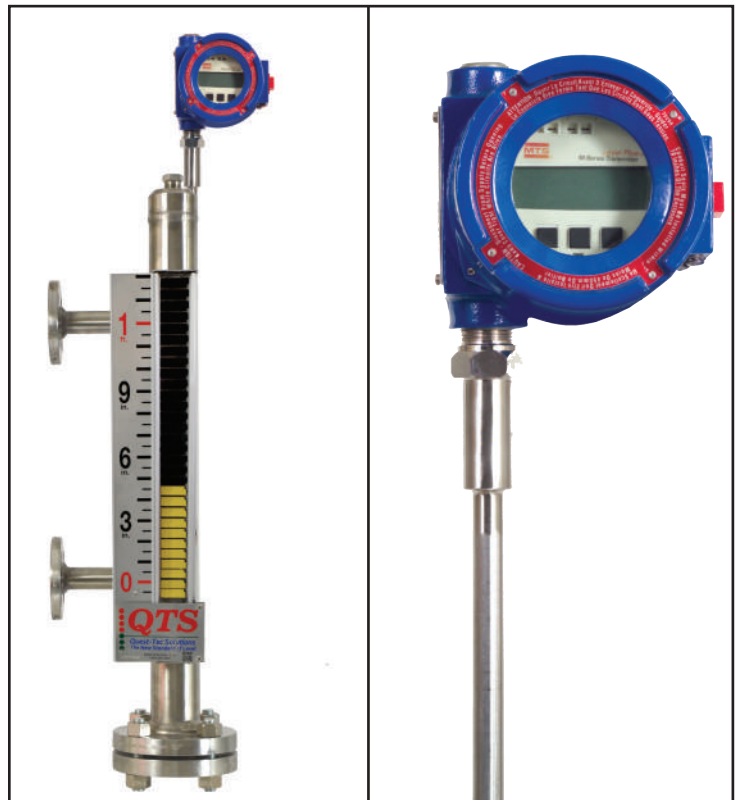
- Modular design
- High accuracy and repeatability
- Two channel output available
- Multi-drop HART communication
- Explosion-proof and / or intrinsically safe (model dependent)
- No maintenance required
- ± 2.7°F (±1.5°C) accuracy on temperature output

Applications

- Process level measurement
- Bulk storage
- Interface measurement
- Temperature measurement
- Magnetic Level Gauge Transmitter

Markets

- Pharmaceutical
- Biotech
- Semiconductor
- Specialty Chemical
- Process Chemical
- LPG



[Right Image] MTLT-5000 Transmitter with display on Style A Magne-Trac Gage [Left Image] Close up image of MTLT-5000 Transmitter with display

LEVEL OUTPUT	
Measured Variable	Product Level/Interface Level
Output	4-20mA, 2 loops with HART
Full Range	Flexible Sensors: 3050 mm (120 in.) to 12192 mm (480 in.)*** Rigid Sensors: 508 mm (20 in.) to 7620 mm (300 in.)
Non-linearity	Flexible Sensor Element: 0.35% F.S. (Independent BSL) or 0.794 mm (1/32 in.)* Rigid Sensors Element: 0.20% F.S. (Independent BSL) or 0.794 mm (1/32 in.)*
Repeatability	Flexible Sensor Element: 0.01% F.S. or 0.381 mm (0.015in.)* Rigid Sensors Element: 0.005% F.S. or 0.127 mm (0.005 in.)*
Sensor Operating Temperature	-40°C (-40°F) to 125°C (257°F)**

*Whichever is greater **Length dependent. Contact Quest-Tec for higher temperatures ***Contact Quest-Tec for longer lengths & higher pressures

MTLT-5000 MAGNETOSTRICTIVE TRANSMITTER

GAGE LOOP			
Input Voltage Range	10.5 to 36.1 Vdc, 28 Vdc maximum for I.S. ATEX approval		
Reverse Polarity Protection	Series diode		
Lighting/Transient Protection	Stage 1: line-to-ground surge suppressors; 2500 Amps peak (8/20 µsec.) Stage 2: line-to-ground and line-to-ground transient suppressors; 1500 Watts peak (10/1000 µsec.)		
CALIBRATION			
Zero Adjust Range	Anywhere within the active length		
Span Adjust Range	Full Scale ≥ 152 mm (6 in.) from zero		
TEMPERATURE OUTPUT			
Type	4-20 mA from 1,000Ω platinum RTD at 0°C		
Repeatability	±0.18 °F (0.1°C)		
Accuracy	±2.7 °F (1.5 °C)		
Drift	±0.9 °F (0.5°C) per year		
Zero Adjust	-40 to 255 °F (-40 to 124 °C)		
Span Adjust	45°F (7.2°C) minimum, full scale (maximum) = 300°F (149 °C)		
ENVIRONMENTAL			
Humidity	0 to 100% R.H., non-condensing		
Electronics Operating Temperature	-34°C (-30°F) to 71°C (160°F)		
Vessel Pressure	Rigid pipe rated at 69 bar (1000 psi), dependent n float pressure rating (19 bar /275 psi) max-flexible outer pipe*		
Materials (wetted parts)	316L stainless steel **		
FIELD INSTALLATION			
Mounting	NPT fitting (3/4 in. rigid, 1 in. flex) or flange mounting		
Wiring	2- wire connection, shielded cable or twisted pair to screw terminals through a 1/2 in. NPT conduit opening NEMA Type 4X: 15ft (457 cm) pigtail integral cable or Daniel Woodhead (Part No. 70807SS) 6 - pin Male 1/4 in. -18MNPT key-way receptacle, 3/4 in. NPT conduit opening of Ex housing		
DISPLAY (OPTIONAL)	HART COMMUNICATIONS		
Measured Variables	Level 1, Level 2, temperature		
Update Rate	3 Seconds		
Size	12.7mm (0.5 in)		
Number of Digits	16		
Method of Communication Frequency Shift Keying (FSK) conforms with Bell 202 Modem Standard with respect to baud rate and digital "1" and "0" frequencies			
Data Byte Structure 1 Start bit, 8 Data bits, 1 Odd Parity bit, 1 Stop bit			
Digital Process Variable Rate Poll/Response Model 2.0 per second			
AGENCY APPROVALS			
Canadian Standards (CSA)	Intrinsically Safe: Class I, Groups A, B, C, D Class II, Groups E, F, G Division 1, NEMA Type 4X Models: All	Explosion-proof: Class I, Groups B, C, D Class II, Groups E, F, G Division 1, NEMA Type 4X Models: Explosion-proof housing req.	Intrinsically safe: EEx ia IIB + T4 EEx ia IIA + T4 (Consult Factory for PTB/ATEX model numbers)



Quest-Tec Solutions
The New Standard of Level

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