

MAGNETOSTRICTIVE



Jupiter® magnetostrictive transmitter utilizes the effect of a magnetic field on a magnetostrictive wire as the basis for operation of the instrument. The primary components are the probe assembly containing the wire and the electronics assembly.

1. A low energy pulse which is generated by the electronics travels the length of the magnetostrictive wire.
2. A return signal is generated from the precise location where the magnetic field of the float intersects the wire.
3. Interaction between the magnetic field, electrical pulse and magnetostrictive wire cause a slight mechanical disturbance in the wire that travels back up the probe at the speed of sound.
4. A timer precisely measures the elapsed time between the generation of the pulse and the return of the mechanical or acoustic signal. This is detected by the acoustic sensor located below the electronics housing. The software is set up to measure the time-of-flight data and to display and convert to level and/or liquid-liquid interface measurement.



JUPITER® JM4 Magnetostrictive level transmitter



DESCRIPTION

Jupiter® liquid level transmitter is a loop-powered 24 VDC liquid-level transmitter and is available as a direct insertion transmitter or as an external mounted transmitter onto a magnetic level indicator. The unit can be designed for liquid level and/or liquid-liquid interface measurement.

The innovative enclosure is a first in the industry, orienting dual compartments (wiring and electronics) in the same plane and angled to maximize ease of wiring, configuration, set-up and data display.

The high safety level of JUPITER is demonstrated by a Safe Failure Fraction > 90 %.

FEATURES

High precision and repeatable level measurement:

- accuracy: $\pm 0.01\%$ full scale or ± 1.27 mm (0.05"), whichever is greater
- repeatability: $\pm 0.005\%$ of full span or ± 0.36 mm (0.014"), whichever is greater

Easy bench configuration – no need for level simulation

Auto-configuration option – configuration settings contained within probe

Rotatable housing can be dismantled without depressurizing the vessel via "Quick connect/disconnect" probe coupling.

Two-wire loop-powered intrinsically safe level transmitter

Dual compartment with separate housing for wiring and electronics

Four-button user interface and graphical LCD display provide enhanced depth of data, indicating on-screen waveforms and troubleshooting tips.

Process temperature up to +425 °C (+800 °F):

External Mount: -196 °C (-320 °F) to +450 °C (+850 °F)

Direct Insertion: -196 °C (-320 °F) to +425 °C (+800 °F)

Process pressure up to 207 bar (3000 psi)

Probe lengths up to 10.7 m (35 ft)

Float failure reporting

IP 67 Enclosure Rating

Suited for SIL 2 loops (full FMEDA report available)

APPLICATIONS

MEDIA: Highly recommended for use in liquids with enhanced foam development. Interface measurement where the upper liquid layer has a higher dielectric than the lower liquid layer.

CONDITIONS: Suited for use in a turbulent liquid environment as the float remains in contact with the liquid surface while emitting its signal.

AGENCY APPROVALS

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX	•	•	•				•	
CCOE								
CSA					•	•	•	
FM					•	•	•	
EAC (GOST)	•	•						Metrology
IEC	•	•	•	•				
SIL	SIL 2 (1001)							
Other approvals are available; consult factory for more details.								