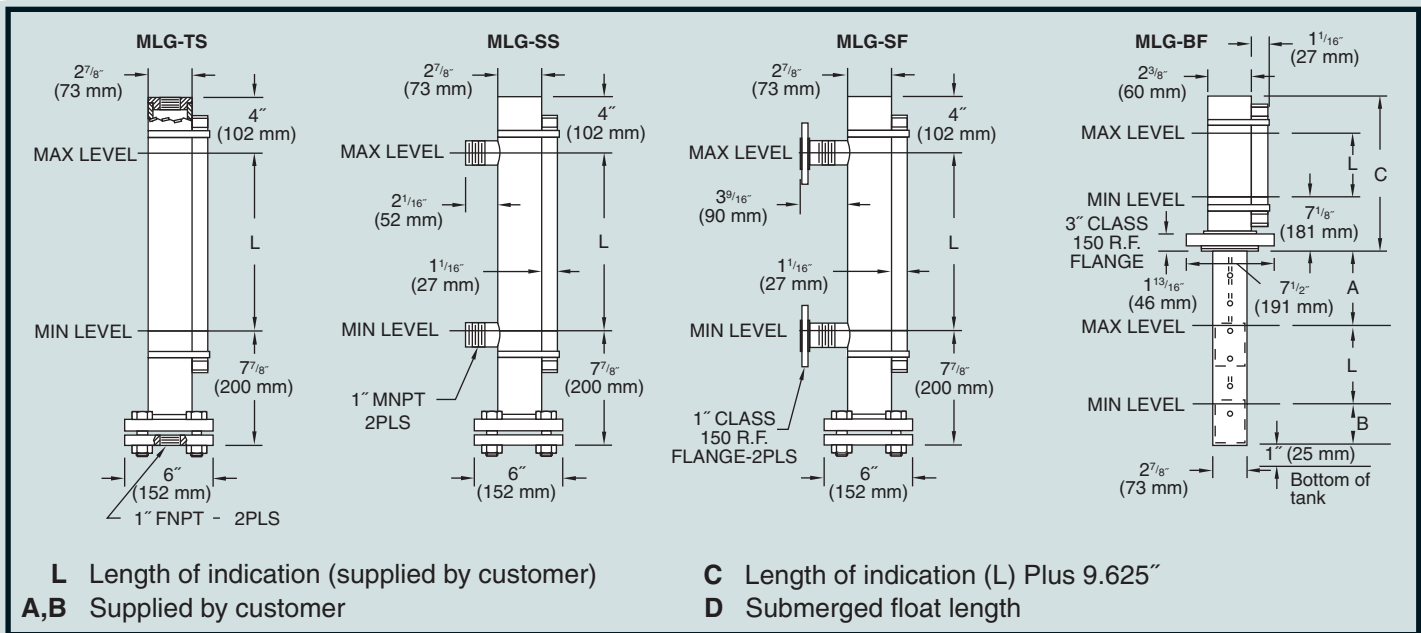


MAGNETIC LIQUID LEVEL GAUGES

Series MLG



*Flanges are mounted with bolt holes straddling vertical centerline of gauge.
 **Dimension can vary depending on specific gravity of liquid.

OPERATING PRINCIPLE

The Papailias Company Magnetic Gauge is a magnetic liquid level indicator used to determine the volume of liquid contained within a vessel. Because the Magnetic Gauge eliminates the need for glass, high pressure applications and hazardous locations are protected from the danger of a chemical spill due to glass failure.

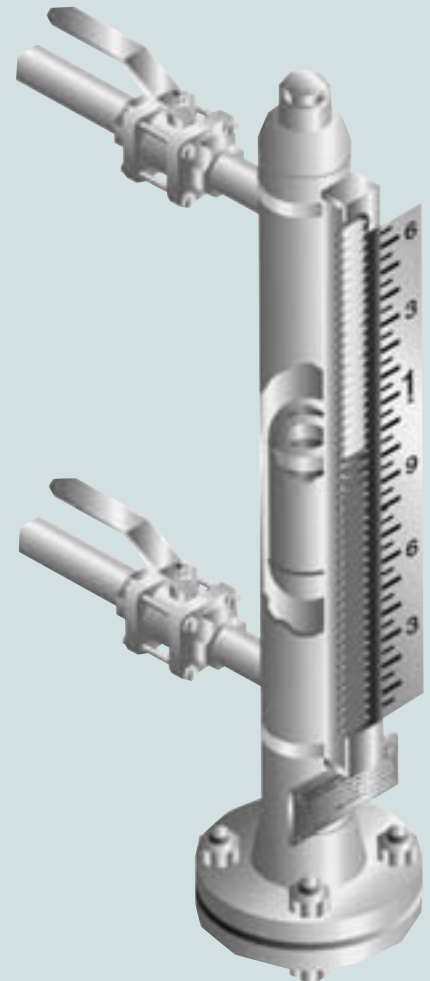
The Magnetic Gauge utilizes three major components: the gauge housing chamber, the magnetic float, and the magnetic flag assembly.

The gauge housing chamber is mounted adjacent to the side of the vessel. It is constructed to withstand the same temperatures and pressures as the tank itself. It is equipped with the appropriate tank mounting connections for easy installation and to allow equalization of liquid level in tank and gauge.

Inside the gauge housing chamber is the magnetic float, which contains radially-positioned magnets to provide a 360 degree magnetic-flux field. Each float is internally weighted based on specific gravity so that the liquid level in the gauge coincides with the location of the magnets inside the float.

Attached to the gauge housing chamber is the magnetic flag assembly. This is the visual means of liquid level indication for the Magnetic Gauge. The assembly is made up of a series of bi-colored fluorescent flags. As the magnetic float rises and falls with the liquid level in the gauge housing chamber, a magnet embedded in each flag reacts to the 360 degree magnetic flux of the float. This magnetic interaction causes each flag to rotate 180 degrees. The flags below the magnetic flux of the float will flip to fluorescent green, while those flags above the float level remain bright white.

When your application priorities are safety, visibility and accuracy, the Magnetic Gauge is the low-maintenance, cost-effective solution.



2 7/8"
(73 mm)

2 3/8"
(60 mm)

(27 mm)

MAGNETIC LIQUID LEVEL GAUGES

Series MLG Level Switch Options

HIGH OR LOW LEVEL SWITCHES

Switches are mounted to the exterior of the float chamber 180° from the flag assembly and they are actuated by the same magnetic field that causes the bi-colored flags to flip. Switches may be wired to indicate a high or low level or in any intermediate position deemed important to the process.

Two types of switches are available: the nonlatching and latching. The nonlatching only remains actuated when the float is directly in line with the switch. The latching switch actuates and remains in the actuated position as the float rises past the switch. The switch returns to its initial position as the float lowers passing the switch. See specifications below for more information.

SERIES LS Latching Switch

UL Listed for Class I
Groups C&D
Class II, Groups E, F, & G

Aluminum Housing

Switch SPDT, latching reed
normally open or normally
closed form C contacts

Maximum temperature:
221°F or 105°C. Consult
factory for higher temperatures

Maximum switching volts:
100 VDC, 140 VAC

Maximum switch current:
0.20 Amps DC, 0.14 Amps AC

Maximum switch power:
4 Watts (4 V.A.)

1/2 NPT conduit connection

SERIES NLS Nonlatching Switch

UL Listed for Class I
Groups C&D
Class II, Groups E, F, & G

Aluminum Housing

Switch SPDT, nonlatching reed
normally open form A contacts

Maximum temperature:
221°F or 105°C. Consult
factory for higher temperatures

Maximum switching volts:
100 VDC, 140 VAC

Maximum switch current:
0.25 Amps DC, 0.18 Amps AC

Maximum switch power:
7 Watts (7 V.A.)

1/2 NPT conduit connection

PAPAILIAS LEVEL TRANSMITTERS

The Papailias level transmitters offer 4-20 mA loop-powered circuitry for level measurement. Zero and span may be adjusted using a weather-resistant toggle switch. Zero may be set at any location along the length of the transmitter with 100% zero suppression. Field replaceable electronics are potted and encapsulated. Papailias transmitters are available as standard with NEMA 4X/7 type electronics housings. These housings feature an industrial epoxy coating for corrosion resistance. All Papailias level transmitters use noncontacting magnetostrictive technology. This simple design ensures no scheduled maintenance or recalibration—ever.

PARAMETER

SPECIFICATIONS

Level Output

Full Range
Nonlinearity Fullspan

0.5 to 25 ft. (152 to 7.6 m)
0.100% F.S. (Independent
BSI) or 1/32 in. (0.794 mm),
whichever is greater.

Repeatability

0.01% F.S. or 0.015 in.
(0.381 mm), whichever
is greater.

Temp. Sensitivity

Zero: <0.003%/°F
(0.005%/°C)

Sensor Operating Temp.

Op. temp. is -30 to 300°F.
Contact Papailias for
higher temperature
requirements

Transmitter Loop

Input Voltage Range
Reverse Polarity
Protection
Safety Approval

10.5 to 36.1 Vdc

Series diodes
CSA certified explosion-
proof Class 1, Division 1,
Groups B, C, and D

Calibration

Zero Adjust Range

Anywhere within the
active length

Span Adjust Range

FS ≥ 0.5 ft. (152 mm)
from zero

Environmental

Sealing
Humidity
Operating Temperature
Materials

Potted sensor cartridge
and electronics
0 to 100% R.H.
-30 to 160°F (-34 to 71°C)
304 stainless steel

Field Installation

Transmitter Length
Wiring
through a 3/4 in. (12.7 mm)

Up to 25 ft. (7.6 meters)
Two-wire connection,
shielded cable or twisted
pair to screw terminals
NPT conduit opening.

LEVEL GAUGES