PENBERTHY®

PENBERTHY MAGNETIC LIQUID LEVEL GAUGES MODELS PMG / PMGV

Penberthy Magnetic Level Gauges products offer a superior solution to liquid level monitoring and a viable alternative to glass level gauges, float switches, displacers and other mechanical and electronic level technologies



FEATURES

- Wide Indicator with 1.5" (38.10mm)
- Unique dual ring magnet float design custom weighted per application
- Chamber designed to ASME B31.3 with B31.1 designs available
- Easy installation and virtually maintenance free
- · Optional switches and transmitters
- Model MGVB (vapor-bypass) provides superior solution for flashing applications

GENERAL APPLICATION

The Penberthy Magnetic Level Gauge product line offers an extensive range of models and accessories to meet the needs of both simple and stringent level measurement applications in petrochemical processing, refining, compressors, water treatment, storage tanks and oil water separators.

TECHNICAL DATA

Materials:	304/304L, 316/316L, Alloy20, Hastelloy C276, Monel 400, Titanium, and More! (See Model Code for details)
Pressures:	Up to 3500 psi (241 BarG)
Floats:	Down to .36 S.G
Temperature Range:	-325 F to 1000 F
Lengths:	Up to 225"

PENBERTHY MAGNETIC LIQUID LEVEL GAUGES INDICATOR DESIGN



PENBERTHY FLAG INDICATORS

Experience precision and durability with the Penberthy Magnetic Level Gauge Indicator construction. Built with a sturdy aluminum extrusion and a 316SS flag track, it combines strength and corrosion resistance for longlasting performance. Each flag contains an integral magnet and offers dual rotation points for smooth, reliable operation. Featuring high-temperature Yellow/Black or Red/White finishes, the indicator ensures excellent visibility in challenging conditions. With options for hermetically sealed polycarbonate or glass enclosures and customizable scales (Ft/In, M/ mm), it's designed to meet diverse industrial needs. Upgrade to unmatched reliability and versatility with our premium level gauge indicator.



Say goodbye to missed flags! Reliable level readings without the risk of decoupling between the float and indicator.



WIDE FLAG

- Industry leading 1.5" (38.10 mm) width
- Stainles Steel precision stamped
- Integral Magnet in each flat
- Dual rotation points

HERMETICALLY SEALED OPTIONS AVAILABLE

Ideal for Offshore, Corrosive Vapors, Cryogenic and other severe environments

- Polycarbonate tubing with epoxy sealed end plugs to 500F (260C) process temperature
- Glass tubing with 100% fused glass end seals to 1000F (538C) process temperatures



FOLLOWER-TYPE INDICATION

The standard magnetic level gauge model features a 2.5" Schedule 40 pipe, incorporating a unique dual magnet ring float design. These floats are individually rated to suit specific applications, with their lengths adjustable based on process conditions and specific gravity. To accommodate diverse operational needs, a variety of float materials are available. For light-duty applications, the PMG-15B model offers a streamlined solution, utilizing a 1.5" Schedule 10 chamber for efficient performance. These magnetic level gauges are designed to handle interface applications effectively. With dual floats, one monitors the total level while the other monitors the interface. For optimal performance, a minimum specific gravity difference of 0.1 is required between the monitored substances. Ideal for use in storage and pressure vessel applications, these gauges perform reliably even in extreme-duty conditions. Models are also available in Kynar and CPVC, offering corrosion resistance for low-pressure applications.

Engineered for versatility and durability, these magnetic level gauges provide an excellent solution for a wide range of industrial environments. Contact us to explore how they can meet your specific needs.

FEATURES AND BENEFITS

- **Connection versatility** A wide variety of connections are available: weld neck flanges, lapjoint flanges, weldolets, threadolets, sockolets, NPT threads and other plumbing options. Butt weld tee's allow for full penetration welding on the side process connections.
- Process compatibility A wide variety of material or lining options to meet most process applications.
- Code design Construction in accordance with B31.3 with optional models available for B31.1 and PED compliance.
- Remote control and indication Switch and transmitter options are available to be externally mounted on the standpipe.

Construction materials

304 / 304L SS 316 / 316L SS Alloy-20 Cb3 Hastelloy® C 276 Monel® PVC CPVC PVDF PFA Teflon lined Halar® lined

Illustration key 1 Standpipe 2 Vessel connection

3 Clamp 4 Indicator scale 5 Follower or flag indicator 6 Magnetic float



PENBERTHY MAGNETIC LIQUID LEVEL GAUGES MODEL PMGV

PMGV (VAPOR BYPASS) MODEL

The Penberthy Vapor Bypass is an innovation in magnetic level gauge design and addresses processes where flashing may occur, which can cause many other magnetic gauges to fail. When flashing occurs, the vapor build-up beneath the float cannot escape quickly enough due to the limited clearance between the float and the chamber wall. This causes the float to rocket to the top of the chamber where it is crushed or damaged. The Penberthy Vapor Bypass features a larger 3" Schedule 40 pipe with two internal guide rods which allows entrained gases beneath the float to escape harmlessly, preventing potential interference. The float is positioned to one side of the chamber to maintain an optimized magnetic field, ensuring precise interaction with the indicator, transmitter, or switches. This design guarantees accurate float positioning and reliable indicator reading.

FEATURES

- Larger chamber and unique internal float cage
- Magnetically interlocked flag-type indication
- · Custom-weighted magnetic float
- Designed in accordance with ASME B31.3
- · Easy installation
- · Virtually maintenance-free
- · Optional transmitter or switches

TYPICAL APPLICATIONS

- Light hydrocarbons
- Liquid nitrogen
- Propane
- Methane
- Carbon dioxide
- Anhydrous ammonia (or any pressure-liquified gas)



TECHNICAL DATA

Standpipe material:	NPS 3" Schedule 40 pipe
Minimum specific gravity:	0.36
Pressure rating:	Up to ASME Class 900
Temperature range:	-325°F to 1000°F (-198°C to 537°C)



NON-FROST EXTENSION

- 2-1/2" acrylic (standard)
- Available on Wide Indicator
- Custom sizes available

COMBINATION SIGHT GLASS / MAGNETIC LEVEL INDICATOR

- Use glass level gage for calibration and level verification only
- Maintenance is virtually eliminated
- Available as an upgrade for sight glass installations
- Not for use in ASME Section I Installations



HOT OR COLD INSULATION

Hot Insulation To 500°F (260°C)

Jacket covers entire gage and includes drawcords at each end for closure. Provided with openings for gage process connections, indicator and switches or transmitters.

- PTFE coated & impregnated fiberglass
- 1" thickness to 500°F (260°C)
- Stainless steel grommets
- Polypropylene / fiberglass drawcord at ends
- Contact factory for higher temperatures

ELECTRIC HEAT TRACE

- Class II Standard
- Optional Class I, Div. 1
- Thermostat available
- Two (2) passes standard installation



STEAM HEAT TRACE

- 3/8" compression fitting both ends
- Four (4) passes standard installation





CRYOGENIC INSULATION 32°F (0°C) TO -250°F (-156°C)

- Polyisocyanurate foam insulation 2"
 thick
- .016" aluminum jacketing with moisture barrier
- · All joints sealed
- · Optional non-frost extension required

MAGNETIC PARTICLE TRAP

- Prevent build-up of ferritic material around float magnets
- SW Tee (std.) in lower process connection with 1/2" NPT plug and magnet
- Plug/Magnet removable when isolated for cleaning, replacement



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PENBERTHY MAGNETIC LIQUID LEVEL GAUGES DEFINE CHAMBER & MATERIALS



PENBERTHY MAGNETIC LIQUID LEVEL GAUGES DEFINE VENT/DRAIN & PROCESS CONNECTIONS



PENBERTHY MAGNETIC LIQUID LEVEL GAUGES DEFINE CHAMBER & MATERIALS



PENBERTHY MAGNETIC LIQUID LEVEL GAUGES DEFINE OPTIONS



PENBERTHY MAGNETIC LIQUID LEVEL GAUGES CHAMBER STYLE ILLUSTRATIONS



PENBERTHY MAGNETIC LIQUID LEVEL GAUGES VENT & DRAIN STYLES



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