JOGLER

PREMIER LEVEL PRODUCTS

PRODUCT OFFERING

Magnetic Level Gauges and Accessories

Magnetostrictive Level Transmitters

Laser Level Transmitters

Direct-Reading Liquid Level Indicators

Direct-Reading Liquid Flow Indicators

1-800-223-8469 | www.jogler.com

MAGNETIC LEVEL GAUGES

Single or Dual Chambers (JMG) and External Chambers (JXC)

Jogler Magnetic Level Gauges are a safe, economical way to measure and control liquid levels in vessels of any size and shape. JMG-series Magnetic Level Gauges and JXC-series External Chambers share common features in terms of design, code compliance, weld procedures, and materials. These products are custom designed for each application to provide a true level for any liquid level application.

- Designed to comply with ASME B31.3 or B31.1
- Pressures from FV to 5000 psig (345 Bar)
- Temperatures from -320°F to 1000°F (538°C)
- Fluid SG as low as 0.25
- Interface ΔSG as low as .025
- Wide range of materials
- Indicator visibility to 200 feet
- Lengths up to 50 feet
- Magnetostrictive transmitter option
- Multiple switch options
- High temp and cryogenic insulation
- ASME code U and S certified facility
- PED and CRN certified construction
- ISO 9001 quality system
- Five-year warranty on all parts

MAGNETIC LEVEL GAUGE COMPONENTS:

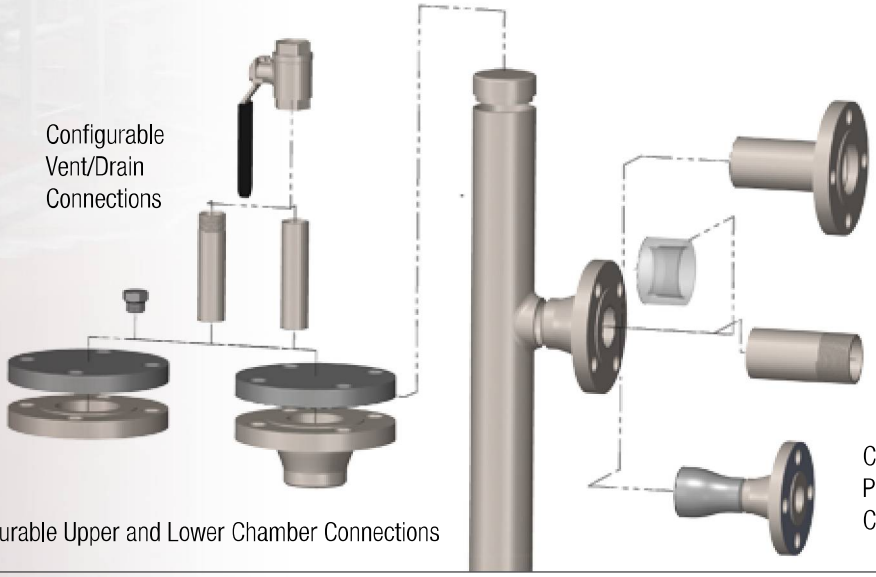
- Float chamber
- Internal magnetic float
- External magnetic indicator

CUSTOM FEATURES

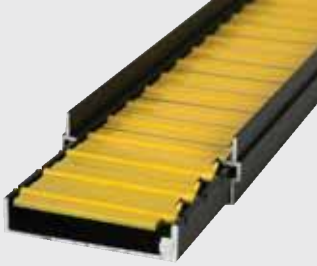
Dual Chamber with Insulation

Cryogenic Insulation with MGT-6000

ENGINEERED TO CUSTOMER SPECIFICATIONS



Indicator Flags Will Not Break



Jogler re-engineered the level gauge indicator using a unique two-piece male/female open slot flag rail design to prevent temperature related distortion and flag breakage. Wider and thicker flag tabs are made of proprietary ferritic polymer material to ensure strength while maintaining strong magnetic properties.

STANDARD BARGRAPH

- 3/4" width for maximum visibility
- Flags in various colors
- 1000°F / 538°C with insulation and temp-coat
- Standard or custom rulers 316 SS
- Hermetically sealed, field-repairable tube

WIDE BARGRAPH

- 1.40" width, maximum visibility
- One piece Polycarbonate tube
- Flags in various colors
- -320°F to 700°F / 371°C with insulation & temp-coat
- Standard or custom rulers 316 SS
- Hermetically sealed, field-repairable tube

SINGLE TRACKER

- 3/4" width for maximum visibility
- Orange shuttle indicator
- Standard or custom rulers 316 SS
- Hermetically sealed tube

Extruded Outlets Increase Reliability

Jogler uses extruded outlets to weld branch connections on its chambers to ensure a smooth, reliable float travel. Extruded outlets also allow for full-bore, size-on-size connections with a full penetration, radiographable weld. This eliminates chamber distortion and ID protrusions.

Deep-Drawn Floats Reduce Failure

Float failures almost always occur at a weld or the heat-affected zone of a weld, so Jogler uses custom "deep-drawn" float halves, allowing the float to be constructed with only one weld away from vapor space. This reduces the likelihood of stress cracking and float failure. Various coatings are available for corrosive service.

Jogler floats are also designed with 75g minimum of additional buoyancy to prevent "hanging up" or sticking in chambers with slight obstructions or heavy fouling. Float weight is matched to desired SG to provide true level indication.

Optimized Magnetic Circuit for Strong Coupling

Jogler worked with experts in the magnetics field to optimize the interactions between magnetically-coupled components. Jogler's standard float magnets can couple through thicker chambers, and indicator flags stay coupled to each other to eliminate false level indications.

POINT LEVEL SWITCHES

Jogler's point level switches are non-mercury, bi-stable latching and non-invasive. This allows the operator to install or vertically adjust any switch without disruption to process operations. JS-10 and JS-30 switches are available in either Aluminum or 316 SS housings, and utilize custom-designed latching reed switches to operate even in vibrating services. Float has to travel in opposite direction to clear the latching function of the switch. JP-450 is a non-bleed, block and bleed pneumatic switch designed to use on Magnetic Level Gauges.

	JS-10	JS-30	JP-450
TYPE	ELECTRICAL	ELECTRICAL	PNEUMATIC
VOLTS	150 VDC	150 VDC	VACUUM to 200 PSIG
CURRENT	1 AMP	3 AMPS	
CONTACTS	SPDT or DPDT SPDT or DPDT		
PROCESS TEMP.	OPTIONS FROM -320°F TO 890°F		
ENCLOSURE	NEMA 4X, EXPLOSION PROOF		
APPROVALS	CSA-C, CSA-U CLASS I, DIV. 1, GROUPS B, C, D		NONE

MAGNETOSTRICTIVE LEVEL TRANSMITTERS

MGT-6000
Level Transmitter For Magnetic Level Gauges

The MGT-6000 series liquid level transmitter is exclusively designed for magnetic level gauges. It can be widely used on JMG-series gauges and can also be retrofitted to other competitor's level gauges. MGT-6000 requires no field calibration, unlike radar level transmitter. The low-profile waveguide is mounted on the outside of the level gauge chamber. This design isolates the waveguide from excessive vibration and process pressure / temperature. Enhanced sensor technology provides an output signal based on time of flight technology that is reliable, fast, accurate, and operates on loop power.

- Accuracy 0.01% of full scale, LCD display, 4-20 mA with HART
- Easy clamp-on installation and easy to calibrate and troubleshoot
- Top- or bottom-mounted electronics
- Field-removable sensor wire assembly
- Field-replaceable electronics module
- Standard elastomeric vibration-isolating mounting brackets

MGT-6000
Magnetic Level Gauge with wide indicator and Magnetostrictive transmitter

ILT-6000
Magnetostrictive Level Transmitter

Bypass chamber with **ILT-6000**

ILT-6000
Direct Tank Insertion Level Transmitter

The ILT-6000 contains a low-profile waveguide that is inserted into a sensor well and float assembly. The sensor well isolates the internal waveguide from the process environment and protects it from excessive process conditions. This provides an additional safety barrier for the operator. The major benefit is the transmitter and waveguide can be removed from sensor well without shutting the process down for field checking / calibration.

- Direct Insertion into the process media (Sumps, Tanks, Bridles, Stilling wells, etc.)
- Accuracy 0.01% full scale, LCD display, 4-20 mA with HART
- Similar applications to guided wave radar but with no need to consider Dielectric Constant
- Field-replaceable electronics module, sensor wire assembly

LASER LEVEL TRANSMITTERS

Jogler's Laser Level Transmitter is a non-contact, laser based instrument that measures the level in silos, tanks, hoppers, chutes and bunkers. Laser design utilizes Light Detection, Ranging and Time-Of-Flight technologies to provide accurate and reliable signal. With long measuring range, high accuracy and a narrow beam, the LLT-1000 can be used to measure level on any solid material, dirty liquids and positioning applications. Laser accuracy is not affected by atmospheric temperature and humidity.

LLT-1000
Lidar Laser Level Transmitter

- Narrow beam and long range for accurate targeting
- 4-20 mA Namur compliant and 2 isolated relays
- Linear and switch point controls
- Accuracy +/-0.5 inch
- Onboard USB interface for set up
- Comprehensive, user-friendly configuration settings
- Visible aiming laser (optional)
- Numerous mounting flanges
- Dual compartment housing

TECHNOLOGY

The LLT-1000 measures distance using time-of-flight, laser technology. This fast and accurate measuring principle offers numerous advantages over other methods.

- Narrow beam makes it easy to aim directly at the most critical point in the vessel
- Long range permits unlimited stand-off distances when measuring into aggressive environments
- Laser can measure through protective windows and sight glasses
- Accuracy is not affected by atmospheric temperature or humidity
- High signal-to-noise ratio gives clean, reliable signals under any lighting conditions and when measuring to any color or granularity of surface

Electrical

Input	14...32 V DC (24 V DC nominal)
Output	4...20 mA NAMUR compliant self-powered & non-isolated 2 x Relays (N/O, N/C), 250 V at 3 A
Resistance	600 Ohms (max) @ 24 V DC
Power	2.4 watts (24 V DC x 100 mA)
Error signal	3.60 mA (low) or 22.0 mA (high)
Interface	Mini-USB
Software	Jogler Terminal software
Connection	0.5 inch NPT

Ratings

MAWP	1 bar
Ambient temp.	-4° to +140°F (-20° to +60°C)
Approvals	General purpose applications only FM, CSA, ATEX and IEC approvals pending
Enclosure	Powder Coated, Aluminum, IP 67

DIRECT-READING
LIQUID LEVEL / LIQUID FLOW INDICATORS

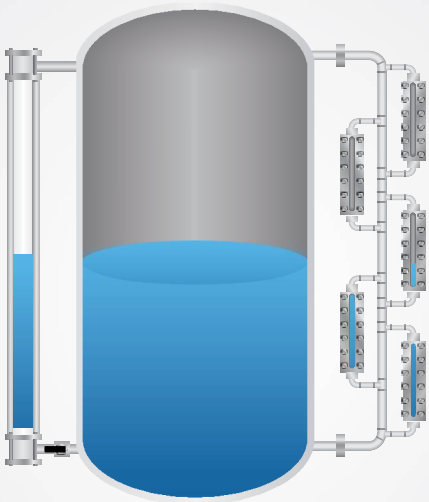
Jogler Direct-Reading Liquid Level Indicators are the simplest, most reliable way to determine the level of liquid in a tank or vessel because they provide a direct view without compromising the integrity of the process.

Liquid level indicator always shows true level since the liquid in the transparent sight tube is always the same as the liquid level inside the tank or vessel. In some applications Level Indicators may require a connector between Vessel and Indicator, Jogler offers a variety of connectors with and without valves to match customer needs.

Jogler Liquid Flow Indicators have exclusive, patented features for maximum safety and zero maintenance. All models are available in either armored styles for protection in exposed locations or lantern styles for 360-degree viewing.

LS-series Single Tube Armored Level Indicator with Connectors, Valves and Custom Rulers

ULTS-series Teflon Lined Tube-N-Tube Armored Level Indicator with Teflon-Lined Connectors



Jogler Direct-Reading Liquid Level Indicators vs Traditional Sight Glass

DIRECT-READING LIQUID LEVEL INDICATORS

- LS series Single-Tube Armored Level Indicator
- ULSS series Teflon Lined Single-Tube Armored Level Indicator
- LT series Tube-N-Tube Armored Level Indicator
- ULTS series Teflon Lined Tube-N-Tube Armored Level Indicator

SIMPLE, RELIABLE AND MAINTENANCE-FREE

Jogler Direct-Reading Indicators are simple and reliable.The only components are the support structure which consists of armored shield or lantern style for 360-degree visibility, the sight tubing, and two self-sealing Super-Seal inserts. These products are maintenance-free because only the Teflon Super-Seal inserts and the Borosilicate sight tubing are exposed to process fluid. Traditional sight glass design, by contrast, has numerous connections which are exposed to process fluid, making leakage a major concern. Standard shields are powder coated carbon steel and are also available in 316 SS.

Jogler Direct-Reading Liquid Flow Indicators allow for direct viewing to observe flow and assess liquid quality characteristics.

Armored style provides maximum sight tube protection, while Lantern style gives a 360-degree viewing angle for maximum visibility. Available models of Liquid Flow Indicators are:

- FS series Single Tube Armored Sight Flow Indicator
- FT series Tube-N-Tube Armored Sight Flow Indicator
- LAS series Single Tube Lantern Style Sight Flow Indicator
- LAT series Tube-N-Tube Lantern Style Sight Flow Indicator
- UFSS series Teflon Lined Single Tube Armored Sight Flow Indicator
- UFTS series Teflon Lined Tube-N-Tube Armored Sight Flow Indicator
- ULAS series Teflon Lined Single Tube Lantern Style Sight Flow Indicator
- ULAT series Teflon Lined Tube-N-Tube Lantern Style

SUPERSEAL INSERTS FOR PERMANENT, STRESS-FREE SEALING

All Jogler level / flow indicators incorporate patented PTFE Teflon Super-Seal inserts, which seal on the outside diameter, not the ends, of the sight tube. Since Super-Seal inserts allow sight tube movement without leaking, stresses caused by differential expansion between the sight tube and the housing are eliminated. There are no gaskets or O-rings to inspect and replace, Super-Seal inserts act as a sealing surface between the vessel and Liquid or Flow Indicator which last the life of the sight tubing. 5 (single tube) or 7 (tube-in-tube) independent sealing teeth give multiple layers of protection against leaks.

MODEL LS

MODEL LT

MODEL ULSS

MODEL ULTS

SIGHT TUBING

Sight tubing can be single or dual tubing to provide additional safety protection for the process fluid. Commonly used sight tube materials are Borosilicate glass, Polycarbonate, Acrylic and FEP Teflon.