

Level Maintainer

LM300 Series

The LM300 Series Level Maintainer automatically adds oil to the crankcase as needed to keep the lube level normal. Most models have built-in switches that will alarm and/or shut down the equipment if the makeup supply is depleted and engine oil level falls or if overfill conditions exist. The LM300 can be used in engines, compressors, pumps and coolers.

The LM300 Series EX models (explosion-proof) are CSA certified for Class I, Division 1 Hazardous areas.

Specifications

Case/Cover: Die cast aluminum

Switch Housing: Aluminum

Approval Rating: All CSA Certified with switch contacts rated at 10 A at 250 VAC (standard)

LM301 through LM305:

CSA certified for non-hazardous locations. Enclosure Type 4 certified.

LM301-EX through LM303-EX:

CSA certified for Class I, Groups C and D; Class II, Groups F and G hazardous locations. Enclosure Type 4 certified.

Float: Rigid polyurethane foam; Polyurethane coated

Max. Ambient Temperature: 250° F (121° C)

Oil Inlet Connection: Top entry 1/2-14 NPT with built-in filter screen (removable for cleaning)

Inlet Orifices: 1/4 in. (6 mm) standard; 1/8 in. (3 mm) available

Wire (switch models): 18 AWG x 13 in. (1.0 mm² x 330 mm)

Max. Inlet Pressure (MIP):

30 psi (207 kPa) [2.07 bar] with 1/8 in. (3 mm) orifice

15 ft oil (4.6 m oil) with 1/4 in. (6 mm) orifice

Max. Differential: 2 in. (51 mm) between running and stationary oil level

Max. Case Pressure (MCP): 15 psi (103 kPa) [1.03 bar]

Orifice Seal: Buna-N Thumb-Valve

Switch Contact: Silver, SPDT snap-acting, rated at 10 A @ 125, 250 VAC; 10 A @ 30 VDC (1 only for low level; 2 only for high and low; or 2 only for low level with alarm before shutdown)

Outlet Connection: 3/4-14 NPT left side, right side and bottom

Crankcase Balance Vent Fitting: 1/2-14 NPT

Mounting: Accepts FW Murphy pipe or universal mounting brackets

Lens: Clear Frog Eye non-staining, high-impact, high-temperature nylon; UV and heat stabilized

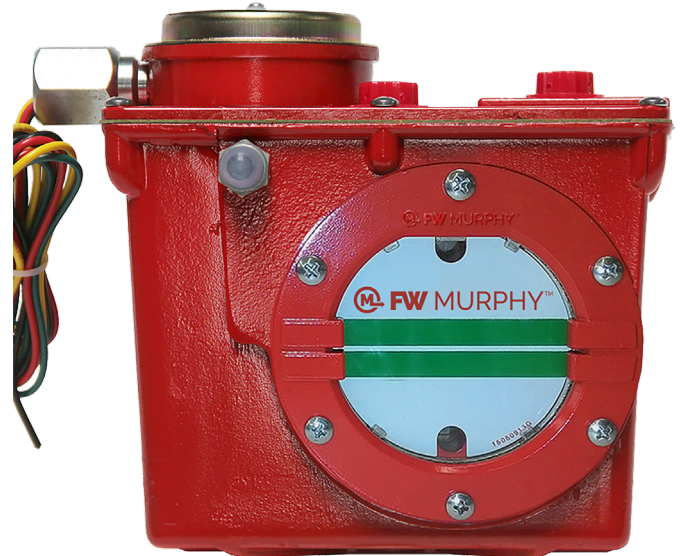
Glass Lens: Available on LM301 and LM301-EX models. Specify GL as part of model number when ordering

Dial: High visibility white background with green and white index lines for normal level indication

Test Knob: Rotate to test switch operation. Turn clockwise for low level test and turn counterclockwise for high level test.

Flow Rate Test Using SAE 30 @ 32° F (0° C)		
Orifice Diameter	Pressure	Flow Rates
1/4 in. (6 mm) (Standard)	4 ft. oil – 15 ft. oil (1.2 m oil – 4.6 m oil)	4.7 GPH - 31.0 GPH (17.8 LPH - 117.3 LPH)
1/8 in. (3 mm)	10 psig – 30 psig (68.9 kPa – 207 kPa) [.69 – 2.07 bar]	16.9 GPH - 32.1 GPH (63.7 LPH - 121.5 LPH)

NOTE: Friction losses due to piping not considered

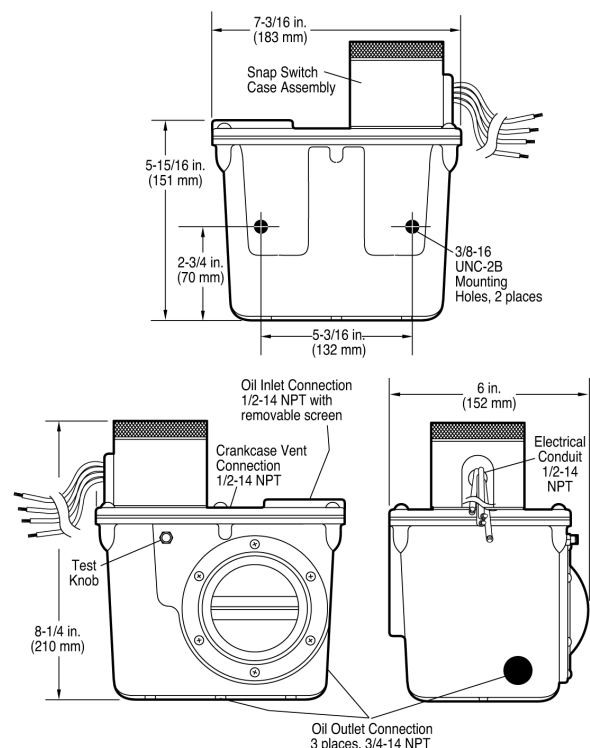


*Products covered by this bulletin comply with Directive: 2004/108/EC (European Electromagnetic Compatibility). European Harmonised standard: EN 61000-6-3:2007 (Emissions). EN 61000-6-1:2005 (Immunity)

Dimensions

Explosion-proof model shown.

Non-explosion proof models are smaller in height and width 7 in. (178 mm) H, 7-7/8 in. (200 mm) W.

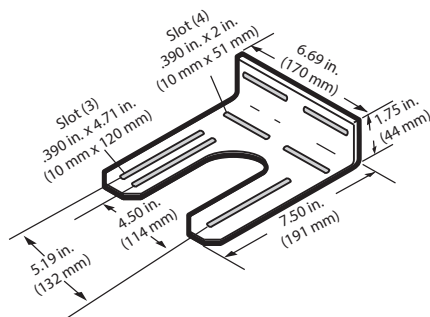


Mounting Brackets with Hardware

Universal Bracket

Universal Bracket 15000370

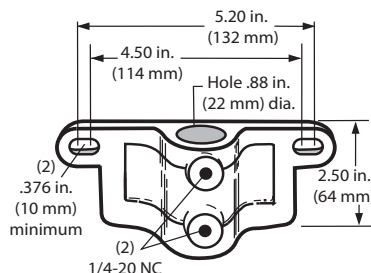
QTY	Description
2	Bolt, 3/8-16 UNC x 1 in.
2	Nut, 3/8-16
2	Lock Washer, 3/8 I.D.
4	Flat Washer, 3/8 I.D.



Pipe Bracket

Pipe Bracket 15000371

QTY	Description
2	Bolt, 3/8-16 UNC x 1 in.
2	Hex Nut, 3/8-16
2	Lock Washer, 3/8 I.D.
2	Flat Washer, 3/8 I.D.
2	Screw 1/4-20 x 1 in.
2	Lock Washer 1/4 in. I.D.
2	Hex Nut 1/4-20 x 7/16 in.



Base Model Descriptions

LM300: Level Maintainer only (no switches).

NOTE: LM301, LM302 and LM303 are available in explosion-proof enclosure.

LM301: Low switch contacts for low-level shutdown or alarm. Four wires, SPDT.

LM302: Two switches for low-and high-level shutdown or alarm. Four wires, DPST, wired N.O. in normal operating ranges.

LM303: Two switches for low-and high-level shutdown or alarm. Four wires, DPST, wired N.C. in normal operating ranges.

LM304: Two switches. Alarm before shutdown on low level and shutdown on low-low level. Four wires, DPST, wired N.O. in normal operating ranges.

LM305: Two switches. Alarm before shutdown on low level and shutdown on low-low level. Four wires, DPST, wired N.C. in normal operating ranges.

Recommended Use

This device is a passive mechanical switch for use in non-hazardous areas. It may be used in hazardous areas with an FW Murphy Controller approved for hazardous areas equipped with a non-incendive or intrinsically safe digital input circuits, when Installation Diagrams are followed for that Controller. The device will meet the intent of a general-purpose passive mechanical switch associated with the Controller's hazardous area approvals. When used in an intrinsically safe circuit, the end device and associated wiring must meet the entity parameters for the circuit.

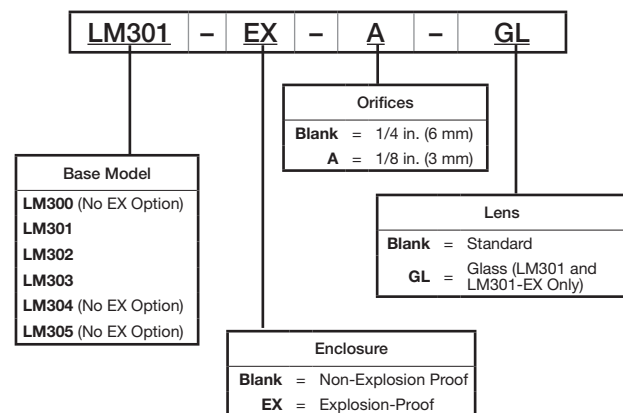
How to Order

Use the Model Number Chart to build a model number for your application. Call your sales representative or FW Murphy for more information, parts availability and ordering.

Model Number Chart

When ordering a new complete unit, the Glass Lens option is available on the LM301 and LM301-EX models.

The Glass Lens Kit can be used on any LM300 Series body. See Additional Order Items.



Additional Order Items

Part Number	Description
15000370	Universal Bracket Kit
15000371	Pipe Bracket Kit
15000354	Bubble Lens Assembly
15000355	Hose Kit
15000539	Glass Lens Kit (All LM300 Series)
15000357	Regulator Float Repair Kit

15000355 Hose Kit Parts

Quantity	Description
1	1/2 in. (13 mm) I.D. x 3 ft. (914 mm) long hose
1	1 in. (25 mm) I.D. x 3 ft. (914 mm) long hose
2	1/2 in. (13 mm) worm gear clamp
2	1 in. (25 mm) worm gear clamp
2	1/2 NPT x 1/2 in. (13 mm) barbed fitting
2	3/4 NPT x 1 in. (25 mm) barbed fitting

Approximate Shipping Weight and Dimensions

Model	Weight	Dimension
LM300 Series non-EX	6 lbs. 6 oz. (2.89 kg)	10-5/8 x 8-7/8 x 6-3/4 in. (270 x 225 x 171 mm)
LM300 Series EX	6 lbs. 12 oz. (3.06 kg)	