

# MagneStar™

## Magnetic Liquid Level Gage



## INTRODUCTION

L.J. Star's MagneStar™ magnetic liquid level gage provides safe and accurate level indication for a wide range of process applications. Its non-intrusive design maximizes operator safety and minimizes downtime due to leaks or maintenance. Since there is no glass to replace or multiple gaskets to fail, the possibility of catastrophic failure has been nearly eliminated. The result is a safe, dependable liquid level gage with exceptionally low operational expense.

## PRINCIPLE OF OPERATION

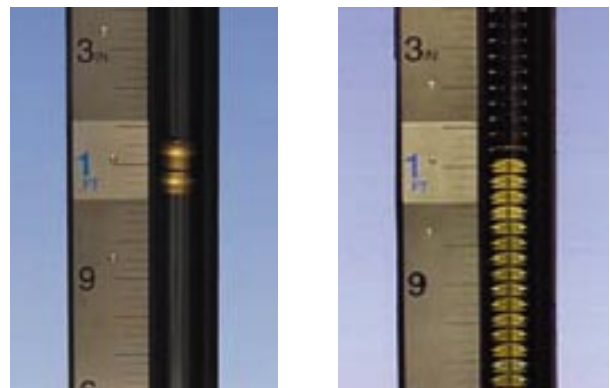
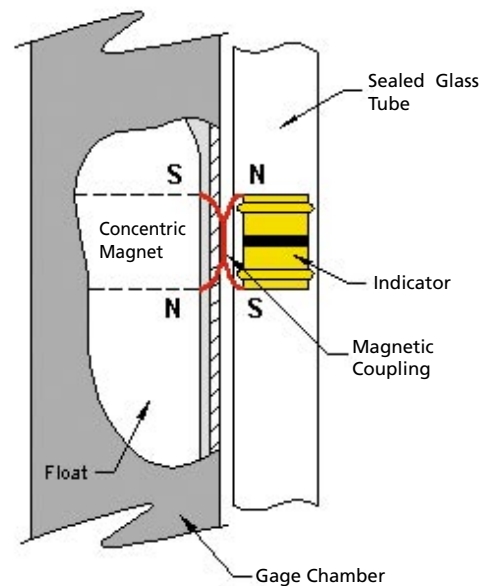
MagneStar™ is comprised of three distinct components; the gage chamber, float and indicator. Liquid level readings are conveyed to the operator via the two-tone indicator assembly that is attached to the exterior of the gage chamber. A custom weighted float insures the level identified by the indicator is directly analogous to the level in the vessel. As the level in the chamber changes, so does the vertical position of the float.

The gage chamber is constructed from nominal Schedule 40 pipe. The typical material of construction is 316L STS, but any austenitic or polymer material such as Hastelloy®, Monel®, PVC or CPVC can be utilized. The chamber is attached to your vessel vertically so that free flow of the process fluid is allowed. Consequently, the liquid level in the gage chamber always matches the level in your vessel.

An application specific float containing a concentric magnet assembly is placed inside the standpipe during installation. The float has been designed for the operational specific gravity, pressure and temperature of the process liquid. Since the float and indicator are magnetically coupled, any movement of the float is immediately noted by the indicator.

A highly visible gold on black indicator is attached to the exterior surface of the gage chamber. It can be either a follower or flag style design contained within a sealed glass tube. Both provide real-time indication of the process liquid safely contained inside the gage chamber. Magnetic stabilization insures accurate level readings regardless of vibration or shock.

Your MagneStar™ magnetic level gage can be further customized to meet specific application requirements. Various options include, but are not limited to: point level switches, continuous level transmitters, insulation jackets, frost-free extensions, calibrated scales and corrosion-resistant linings.



Follower Style

Flag Style

## OPTIONS

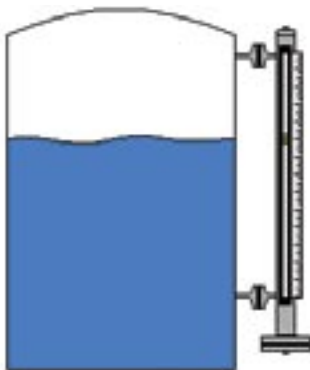
### SWITCHES

	MLS-3EX	MLS-5EX
Third Party Approvals / Certifications	UL, C-UL and CSA Listed Explosion Proof Division 1 Class I, Groups B, C & D Class II, Groups E, F & G Class III	
Enclosures:	Water Tight Explosion Proof 316 STS / Cast Aluminum	
Electrical Ratings:	Contacts: Form C SPDT Switching Voltage: 150V AC/DC Current: 1.0 Amps AC/DC Power: 25 Watts DC/VA	Contacts: Form C DPDT 5A@30VDC & 120/240VAC Resistive 1.5A@24VDC & 120/240VAC Inductive Switching Voltage: 240V/30V AC/DC Current: 5 Amps AC/DC Power: 1KVA/150W
Deadband	0.50 Inches	
Temperature Rating	-40°F [-40°C] to 350°F [177°C] Standard -40°F [-40°C] to 650°F [343°C] HT	

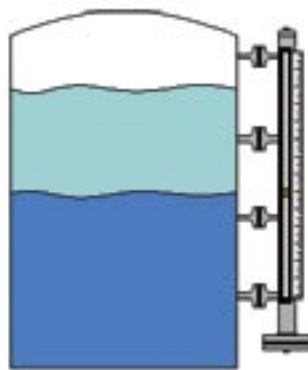
### TRANSMITTER

Third Party Approvals / Certifications	FM / CSA Explosion Proof / Intrinsically Safe Divisions 1, 2 Class I: Groups B, C, D Class II: Groups E, F, G Class III: Type 4X
Enclosure:	Watertight (Type 4X) Explosion Proof Cast Aluminum
Input Voltage	10.5 to 36.1 Vdc
Output	4 - 20 mA
Repeatability	0.01% F.S. or 0.015 in (0.381 mm) whichever is greater
Temperature Rating	Electronics: -40° to 160°F (-40° to 71°C) Sensor: -40° to 257°F (-40° to 125° C)

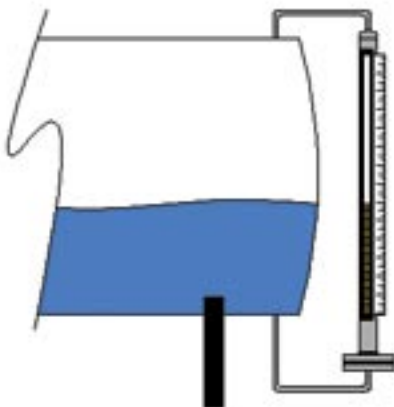
## TYPICAL CONFIGURATIONS / APPLICATIONS



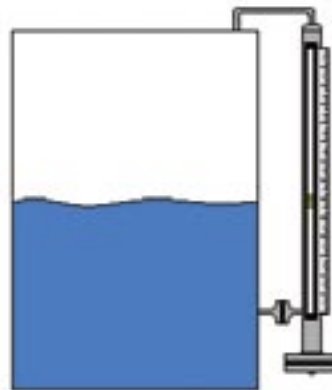
Side/Side Flange Connection



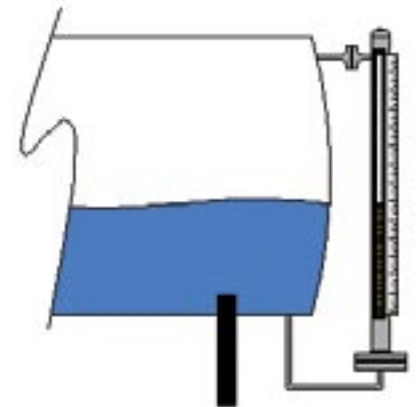
Interface Flange Connection



Top/Bottom NPT Connection



Top NPT/Side Flange Connection



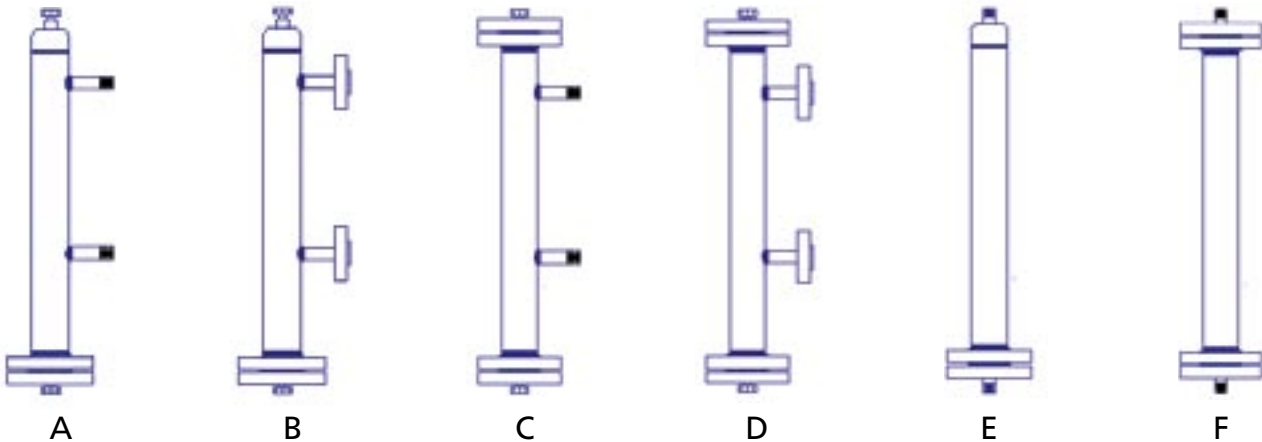
Side Flange/Bottom NPT Connection

Sodium Hypochlorite  
Boiler Feedwater Tank  
Hydrochloric Acid  
Interface  
Dowtherm®  
Sulfuric Acid  
Hydrogen Sulfide  
Oil/Water Separator  
Sodium Hydroxide  
Flare Drums  
Phosgene  
Ammonia  
Butane  
Black Liquor  
Drip Pot  
Boiler Steam Drums  
Glycol

Caustic Chemicals  
Fuel Oil  
Hydrofluoric Acid  
Jet Fuel  
Molten Sulfur  
Sour Oil  
Diesel Fuel  
Deionized Water  
Freon®  
Liquid Ethylene  
Water  
Benzene  
Acetic Acid  
Hydraulic Oil  
Propane  
Feedwater Heaters

## MAGNESTAR™ ORDERING INFORMATION

Model	Code	Standpipe / Flange Material
MG	S	316/316L STS
	F	304/304L STS
	H	Hastelloy® C-276
	M	Monel®
	P	PVC
	C	CPVC
	T	Tefzel® Lined 316/316L
	U	Halar® Lined 316/316L
	X	Special
		<b>Code</b>
	A	Side Connection - MNPT & Std. End Cap
	B	Side Connection - RF Flange & Standard End Cap
	C	Side Connection - MNPT & Flanged Ends
	D	Side Connection - RF Flange & Flanged Ends
	E	End Connection - MNPT & Std. End Cap
	F	End Connection - MNPT & Flanged Ends
	X	Special
	<b>Code</b>	<b>Connection Size</b>
	1	1/2"
	2	3/4"
	3	1"
	4	1-1/4"
	5	1-1/2"
	6	2"
	7	2-1/2"
	8	3"
	X	Special
		NPT Connections Available Up To and Including 1"
	<b>Code</b>	<b>Standpipe Rating</b>
	1	150# ANSI
	2	300# ANSI
	3	600# ANSI
	4	900# ANSI
	X	Special
	<b>Code</b>	<b>Vessel Connection Dimension (mm)</b>
		To the nearest whole number (xxxx)
	<b>Code</b>	<b>Operating Specific Gravity</b>
		x.xx
	<b>Code</b>	<b>Indicator</b>
	F	Flag
	L	Follower
	FF	Flag with Ft / In Scale
	FM	Flag with Meter / Cm Scale
	LF	Follower with Ft / In Scale
	LM	Follower with Meter / Cm Scale
	X	Special



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