

Magnetoresistive Magnetel® R³D® & Master Dials for LP Gas Service



Applications

The Magnetoresistive Magnetel® Dial is a magnetically-driven, voltage output sender. These dials are utilized on applications where direct reading plus an electrical signal to a remote fuel level monitor are required. Models are available to fit Rochester 4" & 8" Magnetel® and Taylor 8" Master liquid-level gauges.

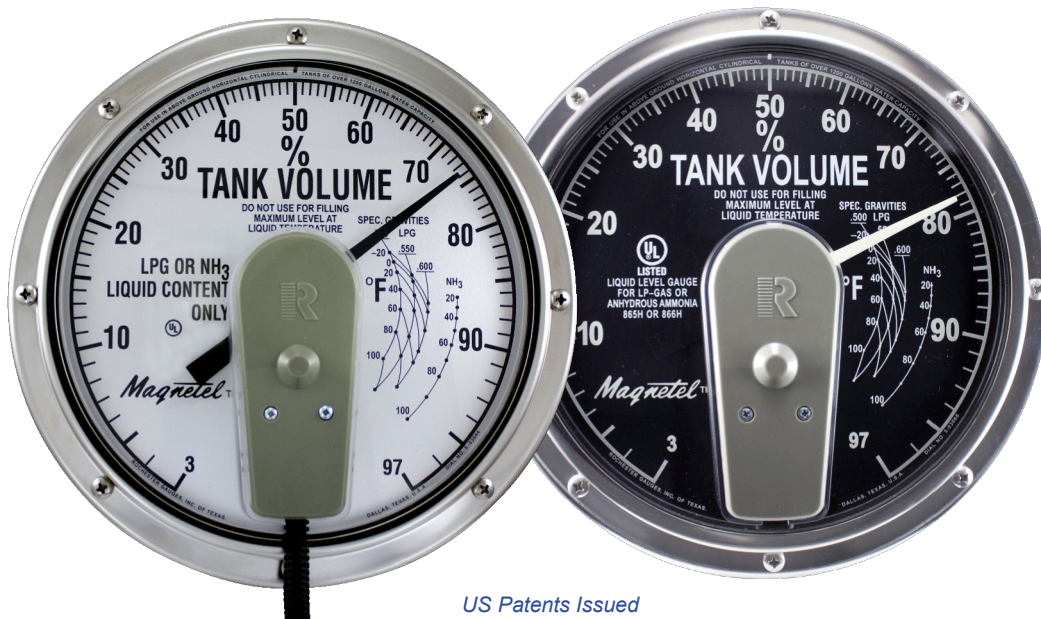
General Information & Features

In the area of LP gas measurement, a magnetic drive feature is important because the fluid is stored under pressure. A magnetic drive allows a signal from the float mechanism inside the tank to be transmitted through a solid, non-magnetic bulkhead without the necessity of dynamic seals or pressure-type conductors.

Previous designs of liquid level gauges for magnetically driven dials which produced an electrical output signal had the disadvantages inherent in using variable resistors with a wiper arm contact. There has been a need for a more reliable and simplified design for these LP gas liquid-level gauges that would provide an electrical output related to the liquid level in the vessel.

Magnetoresistance is a solid state technology with no moving contacts. Magnetoresistance is the property of a material to change the value of its electrical resistance when an external magnetic field is applied. Microchip technology converts the resistance change to a useable voltage signal.

The MR Magnetel® Dial is advantageous in that it can be used as a retrofit on existing vessels to provide an electrical output that can be utilized for remote monitoring of tank levels. With remote monitoring of tank levels, distributors of LP gas will be able to more efficiently plan deliveries to various consumers.



US Patents Issued

WARNING: Level Gauging devices and sensors sold by Rochester Sensors, LLC are components only.

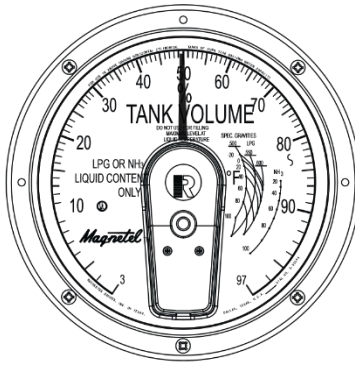
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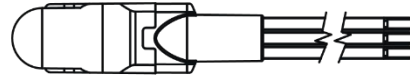
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Dial Opening
ø 7.8 [200]
Bezel Bolt Circle
ø 8.87 [225]



Magnetoresistive R³D® Module
9701-00054



General Specifications*

Operating Temperature

-40° to 80°C (-40°F to 176°F).

Accuracy

Voltage output $\pm 2\%$ (full scale) of visual dial indication. (Float gauge errors not included.) See DS-1781 for output voltages corresponding with dial graduations.

Operational Voltage Range

4.5v to 5.5v ratiometric.

Resolution

Infinite.

Operating Current

8mA (No Load).

Output Current

± 1 mA.

Materials of Construction*

Lens

Acrylic plastic.

Cover

Acetal plastic.

Bezel

Stainless steel.

Case

Aluminum.

Bezel Screws

Stainless steel.

See WD-575 for control drawing.

See DS-1781 for output voltages.

How to order.

Magnetoresistive R3D® Compatible Dial Assemblies				
Part #	Size	Range	Fits	Dial
5ANTS03047	4"	5-95% **	Rochester Magnetel (M6339)	LP & NH3
5APKS03045	4"	5-95% **	Rochester Magnetel	LP & NH3 Fluorescent
5ANGS03044	8"	3-97%	Rochester Magnetel	LP & NH3
5ARWS03066	8"	3-97%	Rochester Magnetel	LP & NH3 Fluorescent
5ANLS03044	8"	3-97%	Rochester/ Taylor Master	LP & NH3
5ANLS02784	8"	5-95% **	Taylor Master	LP & NH3

Magnetoresistive Components	
Part #	Description
9701-00054	MR module for 4" & 8" R3D® dials with 3-97% dial graduations

Magnetoresistive components only available through remote monitor OEM's.

MR R3D® modules MET approved as intrinsically safe when applied to Rochester monitor.

* Materials and specifications are subject to change without notice.

Ratings subject to change due to temperature and other environmental considerations.

** Use 3-97% module.

Warning: This sensor is not to be used as the primary means of determining high- or low-level condition. It must not be used in the absence of redundant systems in critical applications where there may be significant safety risk or financial exposure in the event of fuel overfill or fuel exhaustion condition. This sensor is not to be used for tank filling.

Warning: For LP-Gas and other flammable product service applications, connect only to circuits and power sources classified and labelled as Intrinsically Safe for Class 1, Division 1, Group C and D hazardous locations. *The connection of non-intrinsically safe power could cause fire or explosion of flammable vapor which may be present.*

U.S. Patents

10,175,088 - D832,124 (Foreign patents pending).

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