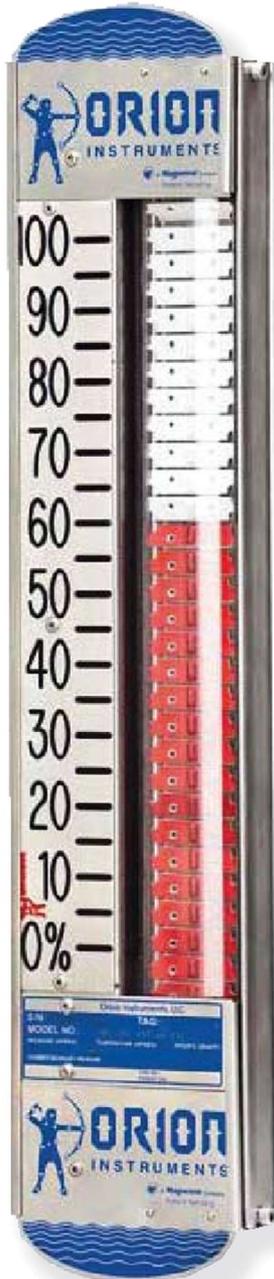
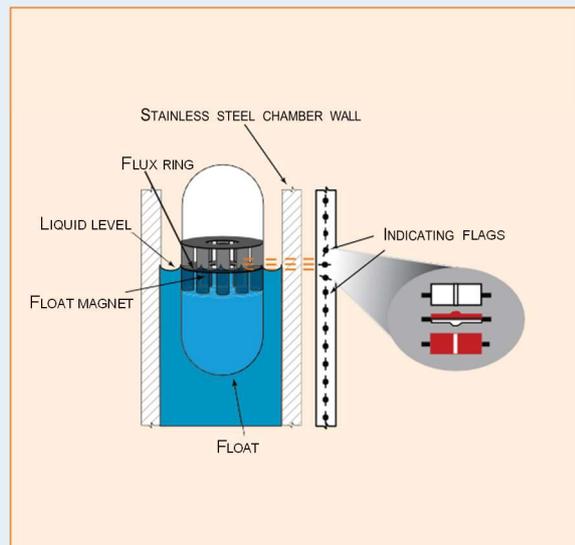


## MAGNETIC LEVEL INDICATORS



The Magnetic Level Indicator (MLI) consists of a sealed bypass cage, a float containing a magnet and a visual indicator rail with bi-coloured flags that individually contain a magnet. The indicator rail is external mount on the cage and its flags are magnetically coupled/aligned with the magnet of the float. As the level changes, the float will follow and its magnet will attract the magnets in the flags. This will cause the flags to rotate showing their opposite coloured side. The same electro-magnetic coupling will activate/deactivate switches or change the output of an externally clamped-on magnetostrictive transmitter.



## AURORA®

*Guided wave radar  
level transmitter and  
magnetic level indicator*



### DESCRIPTION

Aurora® combines the operation of a conventional float operated magnetic level indicator with the leading edge technology of Guided Wave Radar. The result is a true level measurement redundancy in a single 3" or 4" chamber design. Eclipse® Guided Wave Radar is a 2-wire loop powered 24 V DC liquid level transmitter utilising Time Domain Reflectometry technology (TDR) to perform level measurement independent from media characteristics and process conditions. AURORA is a completely self-contained unit for side mounting to a tank or vessel with threaded or flanged pipe connections.

### FEATURE

Complete redundant system whereby the measuring results of ECLIPSE can be continuously checked against the level indication of the Magnetic Level Indicator.

Pro-active maintenance can be planned ahead of time based upon the comparison of the measuring results of the two systems.

No calibration required on either measuring system.

2-wire loop powered intrinsically safe level transmitter.

HART®, AMS®, Foundation Fieldbus™ and PACTware™ communication protocol.

Up to 5,7 m (224") measuring range.

Up to 103 bar (1500 psi) – optional up to 310 bar (4500 psi).

Up to +450 °C (+850 °F) process temperature for non-condensing applications (depending rail material).

Up to 155 bar @ +345 °C (2250 psi @ +650 °F) for saturated steam applications.

Suited for SIL 1 and SIL 2 loops (full FMEDA report available for ECLIPSE transmitter) – optional SIL 2/3.

ECLIPSE 705 transmitter SIL 3 certified (EXIDA certificate available).

Several cage designs are available, consult factory for more details.

### APPLICATION

MEDIA: Clean liquids hydrocarbons to water-based media (dielectric 1.4-100).

INTERFACE: Consult factory.

VESSELS: Most process or storage vessels up to rated probe temperature and pressure.

CONDITIONS: All level measurement and control applications including process conditions exhibiting visible vapours, foam, surface agitation, bubbling or boiling, high fill/empty rates, low level and varying dielectric media.

### AGENCY APPROVALS (for ECLIPSE 705 GWR)

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX	•	•	•	•				
CCOE	•	•						
CSA					•	•	•	
FM					•	•	•	
EAC (GOST)	•	•						Metrology
IEC	•	•						
Inmetro	•	•						
Korea	•	•						
NEPSI								CPA
Marine	Lloyd's Register of Shipping (LRS)							
SIL	SIL 1/2 (1001)							
Steam Drum	Lloyds EN 12952-11 (water tube boilers) Lloyds EN 12953-9 (shell boilers)							
TÜV	WHG § 63, overflow prevention							
Other approvals are available, consult factory for more details								



## ATLAS™

### Magnetic Level Indicator



#### DESCRIPTION

Atlas™ is our standard high-performance magnetic level indicator. ATLAS is a single chamber design with either a 2", 2 1/2", or 3" chamber diameter, as required by the application. There are twelve basic configuration styles including top mount models.

ATLAS MLIs are produced in a wide range of materials, including exotic alloys and plastics. We also offer the most complete selection of process connection types and sizes in the industry.

ATLAS can be equipped with a variety of level transmitters and switches as well as flag and shuttle indicators with or without stainless steel scales. This enables ATLAS to be a complete level and monitoring control.

ATLAS may be equipped with the external mount Jupiter®, magnetostrictive transmitter, or with an Eclipse® Guided Wave radar in an enlarged cage.

#### FEATURE

Precision manufactured float with multiple magnets and flux ring for an optimum Gauss rating.

Viewing window made of shatter-resistant polycarbonate.

Viewing window filled with dry nitrogen gas to eliminate condensation and allow for maintained visibility.

Double O-ring seal prevents contaminants from entering the viewing window.

Flags are designed with mechanical stop for stable indication of fast varying level changes.

Shuttle followers for level and interface indication.

Stainless steel flags in aluminium or stainless steel (optional) indication rail.

1/2" NPT vent and drain (other options available).

Max hydrotest pressure of the float: 62 bar (900 psi) - higher pressure (up to 310 bar (4500 psi)) on request.

Min operating process temperature: -50 °C (-60 °F) standard, down to -196 °C (-320 °F) on request.

Max operating process temperature up to + 540 °C (up to +1000 °F) with factory supplied insulation.

S.G. range as low as 0,49 kg/dm<sup>3</sup> (lower S.G. on request).

Bottom and top spring protection of the float avoids float damage during transport, maintenance and surging/ flashing conditions.

Options:

- high and low temperature options
- stainless steel scale for level or volume
- JUPITER magnetostrictive transmitter.

Several cage designs are available, consult factory for more details.

#### APPLICATION

**MEDIA:** Clean liquids with a S.G. ≥ 0,49 kg/dm<sup>3</sup> incl. aggressive, toxic and flammable liquids / liquified gases.

**VESSELS:** Most process and storage tanks up to rated operating pressure and process temperature.

**FUNCTION:** Continuous liquid level or liquid-liquid interface indication.

#### AGENCY APPROVALS (for ECLIPSE 705 GWR)

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX								Ex c
EAC (GOST)								Ex c
Marine	Lloyd's Register of Shipping (LRS)							



## OPTIX™

### LED visual Indicator

**ORION**<sup>®</sup>  
INSTRUMENTS  
A Magnetrol Company



### DESCRIPTION

The new Optix™ LED indicator is engineered to provide local illuminated visual indication. This two-wire device can be installed on any Magnetic Level Indicator, greatly enhancing low-light performance. OPTIX can be powered using a separate, dedicated 24 V DC power source, or as part of an existing two-wire 4-20 mA loop without interfering with the analog output of an existing device. A DC-powered solution eliminates the need for costly copper wiring normally required with competing AC-powered LED-based products.

### FEATURES

Scales available: meter/cm, feet/inches, percent, and custom volumetric.

Construction: anodized aluminum enclosure.

Est. LED Lifespan: 100,000 hours.