A MAG-WELL Done . . .

Magnetic Level Indicator
AUTOMAG Series

HART COMMUNICATION PROTOCOL

10 YEARS WARRANTY

Rev-05.01

info@magwellus.com
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Magnetic Level Gauge - AUTOMAG

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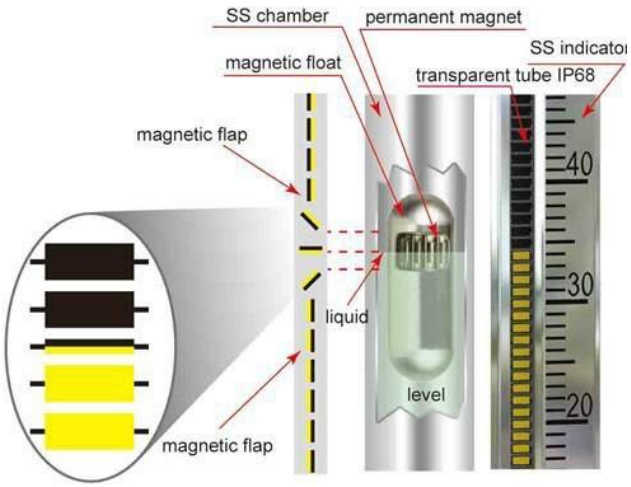
AUTOMAG series Magnetic Level Indicators are highly reliable level measuring instruments for continuous process level indication & control of levels. The design relies on the principle of buoyancy to display liquid level or interface of liquids. MLI proves to be highly reliable and long lasting when compared to conventional glass tube designs as it can withstand high pressure without leakage or breakage problems.

AUTOMAG consist of a float chamber with process connections suitable for installation to the vessel. The process connections may be side couplings, flanges or other configurations. The magnetic bar graph indicator is externally mounted to the float chamber; therefore, it is not a wetted part and is isolated from the process. Flipper-style indicators are standard with bright, contrasting colors for clear and concise level indication

.

The custom float installed in the chamber operates the bar graph indicators. Contained within the float is a 360° magnet assembly, which operates the external bar graph indicators through the chamber pipe wall. Floats are designed to meet the application process specific gravity and pressure, and are sized accordingly. As the float rises and falls with the process level, the magnet drives the external bar graph assembly, providing local indication to the operator, or providing the magnetic coupling for transmitter output. Their robust design is ideal for high temperatures, high pressures and corrosive services. **AUTOMAG** indicators are easy to install and require no additional piping in most applications.



Combined with externally mounted transmitters and switches, **AUTOMAG** Magnetic level Indicators provide the industry's most advanced and cost-effective level solutions.

Features

- Extruded outlet
- Wide Flapper Indicators as Standard - **STELLAR** Indicator
- PMI certificates shall be provided free for all orders
- CAD drawings free for all tags with order
- Industry leading 10 Years warranty on all MLI, against manufacturing defects
- Hermetically sealed indicators certified to IP-68 is standard
- Float Failure Indicator is Standard
- Ultrasonic testing on all welds
- Level indication viewable up to 150 feet away
- Ideal for high-temperature, high-pressure and corrosive applications
- Manufactured to meet ASME B31.1/B31.3
- Magnetostrictive and Radar Transmitter options for non-invasive and/or Redundant level control
- 360° magnetic coupling
- Minimum sensitivity to density variation
- Optional adjustable alarm switches
- Safe, environment friendly and trouble-free design
- NACE Conformity
- Temperature Range : Temperatures upto 842°F (450°C)
- Pressure Range : Upto 295 Bar (300 kg/cm2 Pressure)
- Minimum Specific Gravity : 0.5
- Float Materials : SS316, Titanium, Hastelloy, Monel

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Applications

- Feed Water Heaters
- Industrial Boilers
- Oil/Water Seperators
- Flash Drums
- Surge tanks
- Gas Chillers
- De-Aerators
- Blow Down Flash Tanks
- Hot Wells
- Vacuum Tower
- Alkylation Units
- Boiler Drums
- Propane Vessels
- Storage Tanks

Magwell Procedure

PMI Testing
At Magwell LLC, PMI is done on all the incoming raw materials received and out going finished **AUTOMAG** Level Indicators undergo 100% PMI. This enables us to support all Material Identification and documentation.

Pressure Testing
All the **AUTOMAG** level Indicators are hydrostatic tested to the pressure rating specified.

Ultrasonic Testing
All the weldings are Ultrasonic tested. Extruded outlet code welds are intended to eliminate any areas in the weld in which hydrogen can migrate and potentially build pressure.

How can it be verified that an extruded Outlet Code is truly free from imperfections such as stress cracks and/or voids?. Magwell recognizes that X-rays and dye penetrant testing fall short of providing a complete volumetric inspection to verify the integrity of the weld. As such, Magwell LLC provides Ultrasonic Testing as a standard inspection procedure for 100% of all Extruded Outlet Code Welds performed at its facility.

“One of the most useful characteristics of ultrasonic testing is its ability to determine the exact position of a discontinuity in a weld. This testing method can be used on ferrous and nonferrous materials, is often suited for testing thicker sections accessible from one side only, and can often detect finer lines or plainer defects which may not be as readily detected by radiographic testing.”

Extruded Outlet Benefits
Flexibility
Outlet configuration and location, material selection, and varied industrial applications are all a part of the flexibility provided by extrusions. Utilizing extrusions in the design process reduces erosion, pressure drops and stress concentration. Extrusions can be produced to meet the code requirements of pipeline and gas transmission, chemical manufacturing and power generation applications.

Reliability
Outlet tolerances can be closely produced and maintained. Extrusions eliminate the need for reinforcement pads, provide butt-welded joints and allow complete radiographic inspection.

Economy
Extruded outlets save fabrication costs by reducing fit-up, welding and inspection time and are more durable than stub-in branch construction.

Longevity
Extruded headers have a longer lifespan due to less erosion wear and a lower repair cost than conventionally constructed headers. Additionally, extrusions reduce maintenance costs due to their durability and corresponding reduction in lost production time.

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Wide Range of Accessories

- Custom Graduated Scales
- Alarm Switch
- Heat Tracing
- Insulation Blankets
- Cryogenic Insulation
- Frost Extension
- Magnetic Traps

Advantages

- Easy Installation
- Less leakage points when compared to Reflex gauges
- Little or no maintenance needed
- Very high visibility
- Custom engineered floats ensure accurate indication and reliability
- No process liquid is in contact with the indicator glass means two fold advantage;
- Clear visibility throughout its life time
- Process liquid is contained
- Designed for liquid, gas/liquid and liquid/liquid interface
- Measure both interface and top level with a single level Indicator.
- Strap on switches and transmitters – means additional switches can be added anytime, or the alarm points can be shifted to the desired length at any time without process interruption or the removal of **AUTOMAG**.
- Safe for corrosive, flammable, toxic, high temperature and high pressure applications
- Float Stop Springs Standard
- Measuring Range Typically Same As Connection Centre lines
- Float Magnets Placed At Fluid Level
- All **AUTOMAG's** are shipped Fully Assembled, Tested and calibrated with All Accessories.
- Mount It, Wire It and Use It

STELLAR Indicator

Industry's first Magnetic Flapper Indicator with the following features all rolled into one:

- Wide Flapper Indicator
- Hermatically Sealed to IP68
- Integral Float Failure Indicator
- Flapper lock to prevent flapper rolling
- Powder Coated Aluminium Flappers for longer life
- Various colour options available -
  - Red/White,
  - Red/Fluorescent Yellow,
  - Fluorescent Yellow/Black,
  - Red/Black
- Flapper Indicator housed in SS316 Housing for extra durability and breakage.

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Model Selection Guide

AUTOMAG	1	2	3	4	5	6	7	8	9
AUTOMAG									

Code	Material of Construction	1
SL	SS 316L	
PP	Polypropelene	
MN	Monel	
HY	Hastelloy	
IL	Inconel	

Code	Mounting	2
S	Side Mounted	
T	Top Mounted	

Code	Chamber Design (TOP)	3
1	Flat with Plug	
2	Top Cap (Internal Thread)	
3	Double Flange with Plug	
4	Double Flange with Angle Pipe	
5	Flat with Ball Valve	
6	Others	

Code	Chamber Design (Bottom)	4
A	Double Flange with Plug	
B	Bottom Cap (Internal Threaded) with Ball Valve	
C	Double Flange with Angle Pipe	
D	Double Flange with Ball Valve	
E	Others	

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Model Selection Guide

AUTOMAG	5	6	7	8	9				
AUTOMAG									

Process Connection	5

Code	Flange / Threaded
FA	1” 150#
FB	1 1/2” 150#
FC	2” 150 #
FD	Others
TA	1/2” BSP / NPT (M/F)
TB	3/4” BSP / NPT (M/F)
TC	1” BSP / NPT (M/F)
TO	Others

Code	Indicator	6
SI	STELLAR Indicator (Wide Flappers with Float Failure Indicator)	
NI	Narrow Flapper Indicator	
SH	Shuttle Type Indicator	

Code	Magnetic Switches	7
N	Not Applicable	
SA	100 VA (SPST) NO Contact, Weatherproof Enclosure IP-65	
SB	50 VA (SPDT) C/O Contacts, Weatherproof IP-65	
SC	100 VA (SPST) NO Contact, Ex. Proof Gr. IIA, IIB or IIC	
SD	50 VA (SPDT) C/O Contacts, Ex. Proof Gr. IIA, IIB or IIC	
SO	Others	

Code	Reed Chain Level Transmitter	8
N	N : Not Applicable	
A	A : 4 ~ 20 mA Output (Isolated), HART/Foundation Fieldbus / Profibus, Weather Proof Enclosure IP-65	
B	B : 4 ~ 20 mA Output (Isolated), HART/Foundation Fieldbus / Profibus, Flame Proof Enclosure GrIIA, IIB or IIC	
C	C : Others	

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Model Selection Guide

AUTOMAG	9								
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Code	Magnetostrictive Transmitter	9
NA	NA : Not Applicable	
A	A : 4 ~ 20 mA Output / HART / Foundation Fieldbus / Profibus, Weather Proof Enclosure IP-65, Without LCD Display	
B	B : 4 ~ 20 mA Output / HART / Foundation Fieldbus / Profibus, Weather Proof Enclosure IP-65, With LCD Display	
C	C : 4 ~ 20 mA Output / HART / Foundation Fieldbus / Profibus, Flame Proof Enclosure Gr, IIA, IIB Without LCD Display	
D	D : 4 ~ 20 mA Output / HART / Foundation Fieldbus / Profibus, Flame Proof Enclosure Gr, IIA, IIB With LCD Display	

Electrical Specifications

Magnetic Switches		
Model Type	SDN 104	SDN 204
Switching Voltage (Max.)	300 V DC 240 V AC	500 V DC 250 V AC
Switching Current (Max.)	3 A	1.5 A
Contact Rating	100 VA	50 VA
Contact Form	SPST	SPDT
Reed Chain Level Transmitter		
Type	Reed Switch / Resistance	
Resistance Range	2K to 40K Ohm	
Input	24 VDC	
Output	Isolated 4 ~ 20 mA	
Wire System	Two Wire	
Magnetostrictive Level Transmitter		
Type	Magnetostrictive	
Resistance Range	NA	
Input	24 V DC	
Output	Isolated 4 ~ 20 mA	
Wire System	Two Wire	

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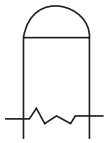
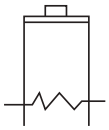
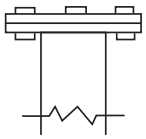
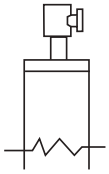
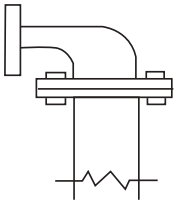
Top Connection Type


Cap

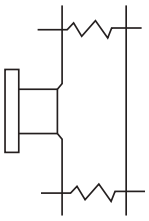

Flat With Plug

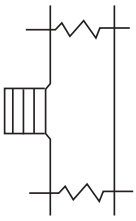

Doule Flanged

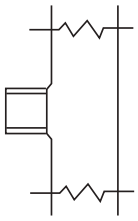

With Ball Valve

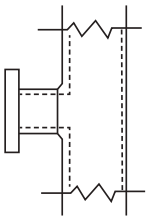

Angle Pipe

Process Connection Type

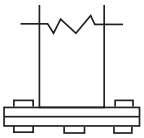

Flanged

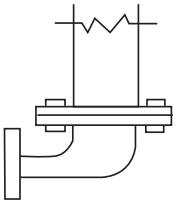

Female Thread

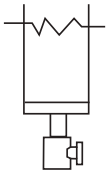

Male Thread

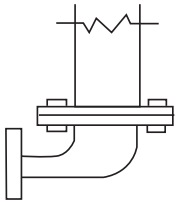

Flanged with Insulation

End Connection Type


Flanged With Drain Plug

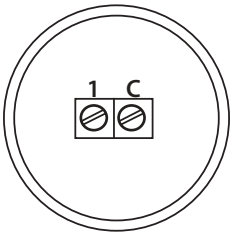

Angle Pipe With Drain


Flat With Ball Valve

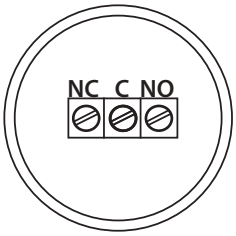

Angle Pipe

Reed Switch Terminal

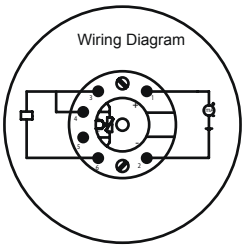
NO CONTACTS (SPST)

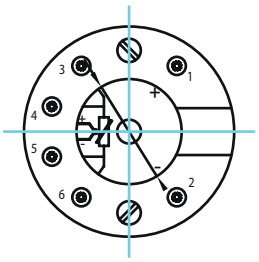


C/O CONTACTS (SPDT)



Reed Chain Level Transmitter Termination





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AUTOMAG Magnetic Level Indicator Configuration Guide - Required Information

In order to select the right model to request a quotation for **AUTOMAG** Magnetic Level Indicators, use the following Configuration Guide to select the model number. This information is absolutely necessary to design the float and Magnetic Level Indicator to meet your specific application.

Company Name :		
Contact Person :		
Address :		
Phone :	Fax :	
Email Address :	Website :	

Type - Magnetic Level Indicaotr will be used for	
Total Level	
Interface Level	
Total and Interface Level	
Quantity	
Tag Number	
Center to Centre Dimension	
Process Connection	

Process Connection	4
A : Flanged	
B : Threaded	
C : Please mention the required Process Connection Size & Rating	

Process Specification		
Medium		
Specific Gravity	Min	Max
Viscosity cst	Min	Max
Process Temperature (°C)	Min	Max
Design Temperature (°C)	Min	Max
Working Pressure (bar)	Min	Max
Design Pressure (bar)	Min	Max
Fluid Name		

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If the MLI is used for Interface level or both		
Upper Fluid		
Upper Fluid Specific Gravity at operating conditions	Min	Max
Lower Fluid	Min	Max
Upper Fluid Specific Gravity at operating conditions	Min	Max
Certificates / Test		
Material Certificates acc. EN 10204 3.1		
Test Certificate acc. NACE		
Pressure Test Certificate		
NDT Test		
WPQ Certificate		
ISO 9001 - 2015		

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