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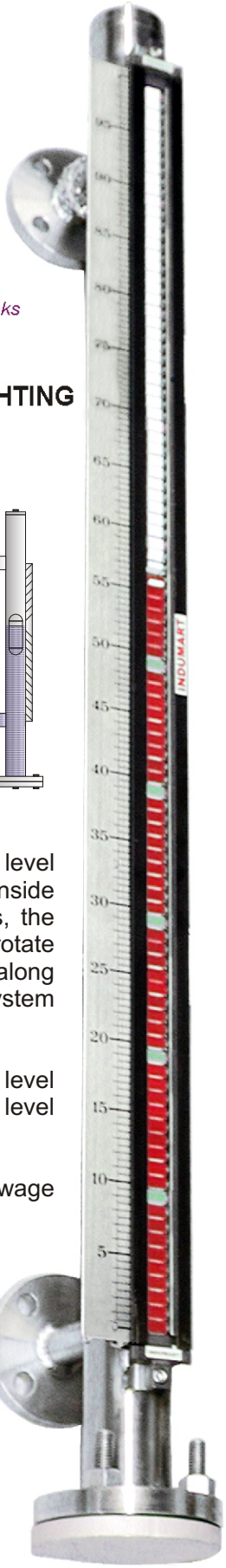
Magnetic Level Indicator (By-pass)

SERIES: BLG900

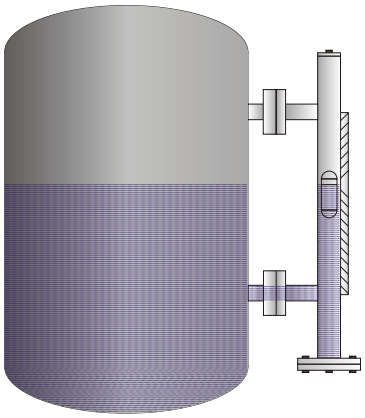
- CONTINUOUS MEASUREMENT (CONTROL) OF LIQUID LEVEL
- SUITABLE FOR WATER, TOXIC AND EXPLOSIVE LIQUIDS
- TEMPERATURE UP TO 450°C/840°F
- PRESSURE UP TO 3600 PSI (250 BAR)
- LENGTH BETWEEN 200 AND 6000 MM
- STAINLESS STEEL FLAG - RED & WHITE
- FOR LIQUIDS WITH SPECIFIC GRAVITY OF HIGHER THAN 0.38
- INDICATION CAN BE SEEN EVEN AT NIGHT - NO NEED FOR BACK LIGHTING

Applications:
Boilers
Propane Tanks
Alkylation Units
Chemical Storage
Feed Water Tanks
Petrochemical Tanks



INTRODUCTION

The BLG900 Magnetic Level Gauge (by-pass) is an improved alternative to sight gauges (glass tubes) used to visually monitor liquid levels in boilers, storage tanks, etc. By using non-contact magnetic level gauges, the problems of glass breakage, leakage, bursting at high pressure and temperature, poor visibility due to scale build up and corrosion, and unsafe operation are eliminated.



Replacing the sight gauges with magnetic level gauges would result in improved safety, increased visibility (10 times), reduced maintenance, and lower long-term operating cost.

The BLG900 level gauges use the principle of magnetic coupling to provide continuous level data without direct contact between the indicator and the fluid in the system. The float inside the hermetically sealed tube moves with the changing liquid level, and as it travels, the coloured stainless steel wafers (flag display) which are magnetically coupled to the float rotate and their colour changes. The wafers are visible at night without light. A ruler is mounted along the wafer column to indicate the quantitative value of the level in metric, British imperial system or percentage of the total height.

Optionally, the BLG900 series may be equipped with a transmitter to act as an indicating level transmitter, or magnetic switches can be installed along the tube to form an indicating level switch.

The indicator is suitable for applications in chemical and petrochemical industries, sewage water processing, power generation and boilers.

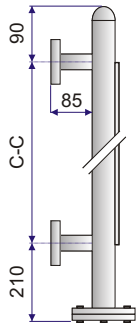
SPECIFICATIONS

Chamber & Float Material	316L stainless steel (std.); Options: 304L stainless steel, titanium, Monel, Hastelloy C, PVC, polypropylene, Teflon and rubber-lined stainless steel
Process Connection	Flange ANSI/DIN, threaded or butt-weld
Measuring Length	200 mm up to 6 meters; Multi-section for higher lengths
Operating Pressure	Vacuum up to 3600 psi (250 bar)
Operating Temperature	-200...450°C
Min. Specific Gravity	0.38
Maximum Viscosity	500 cst
Ruler	Stainless steel
Flags	Stainless steel; one side red and the other side white

METAL TYPE

The following dimensions in mm are only samples to help visualizing the final product. Final dimensions of the level gauge depend on the float type, maximum pressure and temperature and the specific gravity of the fluid.

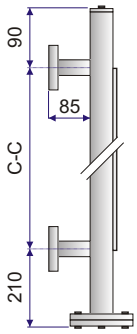
A



Top end: cap

Bottom end: Dual flange with plug

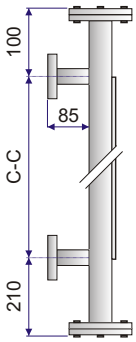
B



Top end: Flat top with plug

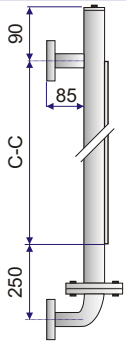
Bottom end: Dual flange with plug

C



Top & Bottom ends: Dual flange with plug

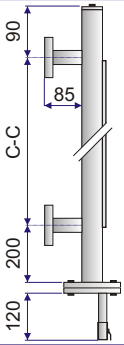
D



Top end: Flat top with plug

Bottom end: Dual flange with 90° angle and flange

E

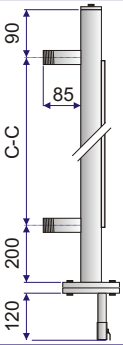


Top end: Flat top with plug

Bottom end: Dual flange with drain valve

F

Threaded Connection

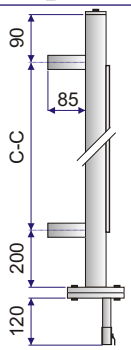


Top end: Flat top with plug

Bottom end: Dual flange with drain valve

G

Welded Connection

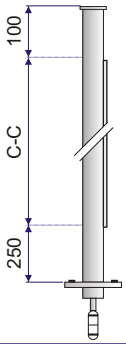


Top end: Flat top with plug

Bottom end: Dual flange with drain valve

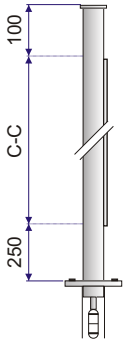
H

Top Mount



I

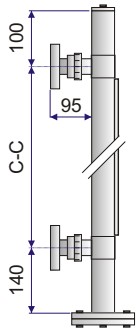
Top Mount with Retaining Well



PLASTIC TYPE

The following dimensions in mm are only samples to help visualizing the final product. Final dimensions of the level gauge depend on the float type, maximum pressure and temperature and the specific gravity of the fluid.

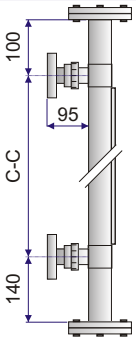
J



Top end: Flat top with plug

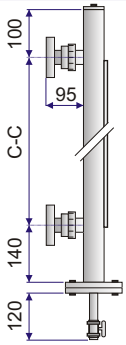
Bottom end: Dual flange with plug

K



Top & Bottom ends: Dual flange with plug

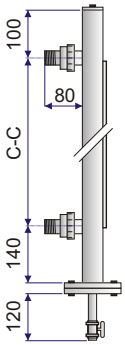
M



Top end: Flat top with plug

Bottom end: Dual flange with drain valve

N

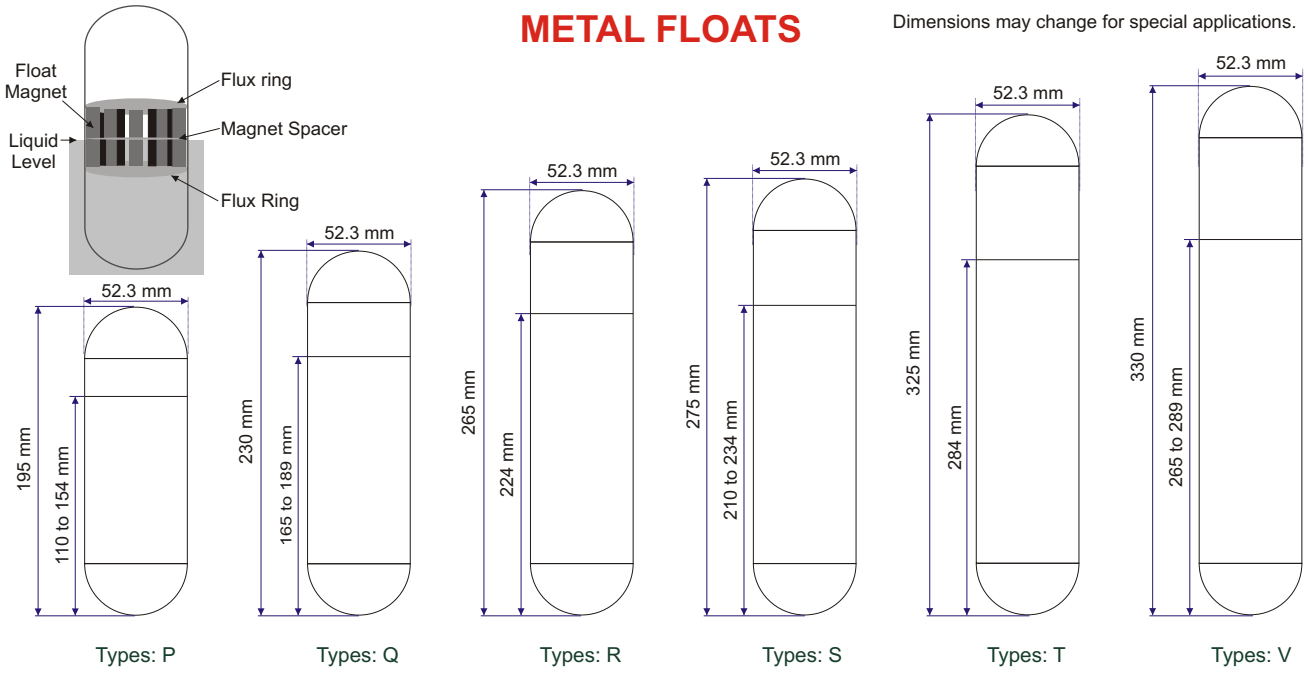


Top end: Flat top with plug

Bottom end: Dual flange with drain valve

METAL FLOATS

Dimensions may change for special applications.



Specifications may change without prior notice.

ORDER CODE

Model BLG900 -

Mounting Configuration
Select one of the A to M configurations.
(Please consult factory for special design)

Chamber & float material
316L SS (std.)
304L SS
Monel
Titanium
Hastelloy C
PVDF
PVC
Polypropylene
Rubber lined SS

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9

While ordering, the following parameters must be stated.

- Pressure range of the liquid
- Temperature of the liquid
- Gravity of the liquid
- Viscosity of the liquid
- Pressure class rating (ANSI/DIN)
- Process connection size
- C-C distance
- Ruler length and measurement unit

-Options: Insulation pad and blanket for high temperature, and electric heat tracing for cryogenic processes are available. Please specify the required switches and transmitter in accordance with the models listed in the optional accessories section .

Optional Accessories

Magnetic Level Switches: Reed switches or electrical snap (magnetic pendulum switch) may be mounted on the rail of the level gauge to be activated at high/low levels. The number of switches is only limited by the length of the indication rail and the switches can be mounted on the left and right side of the rail. Mounting the level switches is a very easy task.

Operation principle of these switches is similar to the BLG900 magnetic level indicators; the float and the switch are magnetically coupled. When the float travels with the liquid level along the chamber, the float's magnetic field causes the switch to make contacts. This system eliminates the need for process connection, seals, gaskets and block valves, and is a more reliable and easier to install and maintain than conventional level switches.

Magnetic Level Transmitter: The analogue transmitter mounts directly to the side of the level gauge chamber, providing a continuous 4-20 mA output signal proportional to the liquid level with an accuracy of ±3 mm (0.12"). Using simple and reliable reed switches surface mounted to a printed circuit board, the operation principal of these transmitters is exactly the same as the magnetic level switches. The transmitter can be equipped with a local indicator to show the level height in a length scale, or indicate the percentage of the total height or the tank volume.

Type: R1

Reed switch bi-stable

Function: N.O. or N.C.
Enclosure: IP 67
Voltage: 10-240 V
Maximum Rating: 0.5A / 20W / 30VA
Reproducibility: < 2 mm
Temperature Rating: -40...+105°C
Cable Length: 2 or 5 meter
Dimensions (mm): 36x26x13
Temperature (option): 140°C maximum

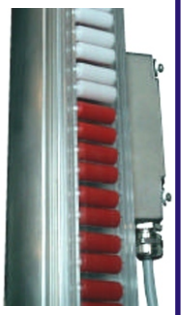
Type: R2 EEx i

Reed switch bi-stable

Function: N.O. or N.C.
Enclosure: IP 67
Voltage: 10-24 V
Max. Rating: 0.5A / 20W / 30VA
Reproducibility: < 2 mm
Temperature Rating: -40...+90°C
Cable Length: 5 or 10 meter
Dimensions (mm): 36x26x13
Temperature (option): 130°C maximum

Type: R3 EEx m II T6; EEx ia II C T6

Reed switch bi-stable



Function: SPDT
Enclosure: IP 67
Voltage: 10-230 V
Maximum Rating: 0.6A / 45W / 45VA
Switching Differential: 9-15 mm
Reproducibility: < 4 mm
Temperature Rating: -25...+85°C
Cable length: 5 or 10 meter
Dimensions (mm): 98x25x19

Type: M1

Magnetic Pendulum System
(hermetically sealed switch)

Function: SPDT
Enclosure: IP 65
Voltage: 10-240 V
Maximu Rating: 2A / 40W / 100VA
Reproducibility: < 2 mm
Temperature Rating: -50...+380°C
Cable Entry: Gland (opt M20)
Dimensions (mm): Heat shield 90x60x4

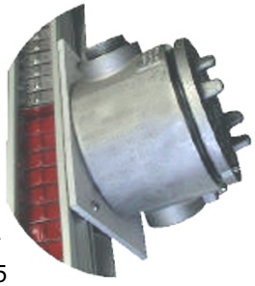
Type: M2 EEx i

Magnetic Pendulum System
(hermetically sealed switch)

Function: SPDT
Enclosure: IP 65
Voltage: 10-24 V
Maximu Rating: 0.5A / 20W / 30VA
Reproducibility: < 2 mm
Temperature Rating: -50...+380°C
Dimensions (mm): Heat shield 90x60x4
Option: Gold plated

Type: M3 EEx d IIC T6; EEx d I 150°C

Magnetic Pendulum System
(hermetically sealed switch)



Function: SPDT
Enclosure: IP 65
Voltage: 10-240 V
Maximu Rating: 2A / 40W / 100VA
Temperature Rating: -50...+300°C
Cable Entry: ¾" NPT max. 1.5 mm²
Dimensions (mm): Heat shield 195x130x4
Options: 2 x SPDT; M20x1.5

Type: T1

R/I Transmitter

Supply: 24 VDC (8-35 VDC)
Temperature: -40…+150°C
Resolution: ± 5 mm
Max. Length: 6 meter
Connection Head: ABS
Protection Class: IP 67
Cable Entry: M16 x 1.5 (cable 5.5-8mm)
Input: 0-2000 Ohm
Output: 4-20 mA / 2 wire
Accuracy: < 3 mm
Action: Reversible normal D.A.

Type: T2 EEx ia IIC T6

R/I Transmitter

Supply: 24 VDC (8-30 VDC)
Temperature: -40…+120°C
Resolution: ± 5 mm
max. Length: 6 meter
Connection Head: ABS
Protection Class: IP 67
Cable Entry: M16 x 1.5 (cable 5.5-8mm)
Input: 0-2000 Ohm
Output: 4-20 mA / 2 wire
Accuracy: < 3 mm
Action: Reversible normal D.A.

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