AYVAZ
Magnetic Level Gauges
(MG - 33)

MG - 33

OPERATING PRINCIPLE :
The operation of the MG - 33 magnetic level guage is based on some elementary physical principles :
- The principle the liquid in the communicating vessels is always at the same level,
- Archimedes principle according to which a body immersed in a liquid receives a buyoancy equal to the weight of displaced liquid,
- The principle of attraction between north and south poles of two permanent magnets and that of repulsion between like poles.
 This principle has two applications in the MG - 33 magnetic level gauge :
- First between the magnet in the chamber float and every single magnet of the indicating scale,
- Second between the magnets of the indicating scale.

MATERIALS :
The most utilized materials are :
Vertical Chamber :TP 316 - TP 304
Float : TP 316 - TP 304
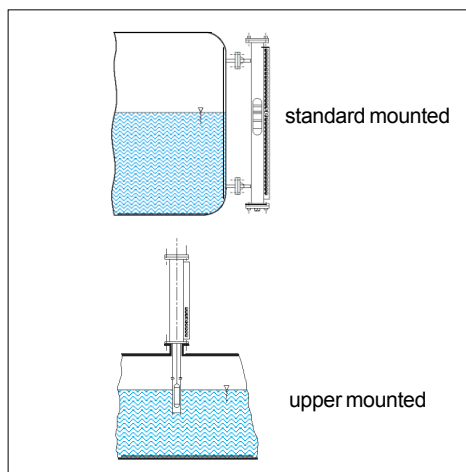Indicating Scale : Aluminium with plastic rollers.
(Optional with aluminium rollers.)

DESIGN :
MG - 33 magnetic level gauge consists of :
- Two horizontal stub pipes for connection to the vessel containing the liquid of which we wish to know the level;
- A vertical chamber consisting of a tube of suitable   diameter and thickness containing a float where in a   permanent magnet is placed exactly on the liquid level line;
- An indicating scale, outside the vertical chamber, consisting of a case of non - magnetic material with   transparent front face containing a set of small permanent magnets enclosed in small cylinders which can rotate on their horizontal axis. These cylinders show an external surface having two different colours.

CONNECTION :

standard mounted

upper mounted

MAGNETIC SWITCHES :
Fitting of magnetic switches should be made preferably in manufacturer's works. Each switch is fitted on vertical chamber equipped with its non magnetic stainless steel support and can be positioned continuously and with accuracy, without using special tools.
Each switch shall be positioned
- At the desired height, adjustable continuously along the indicating scale range.
Each magnetic switch contains one or more electric contacts for opening / closing the control circuits for : TOP alarm, BOTTOM alarm, pump starting, pump stopping, warning, etc.
Max current of contact : 1 A at 60 V. A suitable relay should be fitted for higher power supplies.

According to the orientation of each magnet (due to the action of the magnet in the float) each cylinder will show externally half of its surface of one colour or the other.
The indicating scale will be of one colour (e.g. white) over the chamber area taken up by gas, vapour or

steam phase contrasting with the other colour (e.g. red) over the chamber area taken up by liquid phase.
These level gauges are very suitable for interface reading : float needs only sink in the liquid having lower specific gravity and float on liquid having higher specific gravity.
In spite of its simple operating principle, the MG - 33 magnetic level gauge represents the result of long

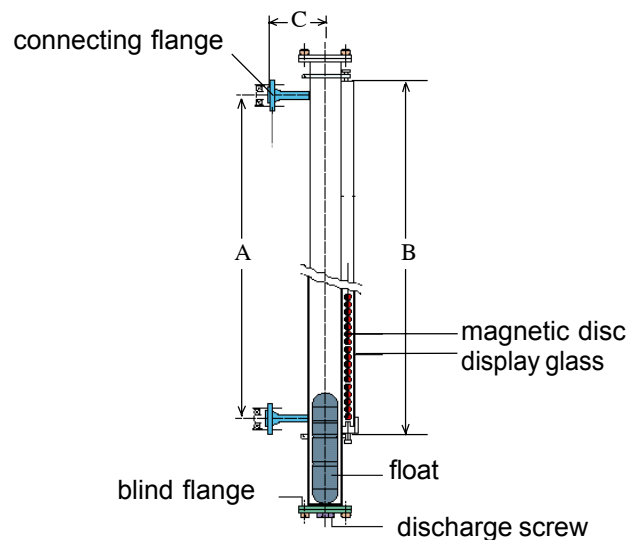research and experience in design, sizing, choice of materials and manufacturing technology.

APPLICATIONS :
The application range is very wide and includes all the situations where the fluids are :
- At high pressure,
- Chemically aggressive,
- Pollutant to environment,
- Noxious or poisonous to man,
- Inflammable or explosive,
- With identical optical characteristics of the
superimposed phases (interface).
Plant operating and design conditions must be clearly indicated for choice of suitable level gauge.
Choice of level gauge depends also on specific gravity of vessel medium.

TECHNICAL DETAILS :

Connecting Flanges	carbon steel stainless steel DN 20 PN 16/25/40
By - pass tube	304/316 stainless steel
Float	stainless steel
A and B dimensions must be given by the customer.	

ENQUIRIES AND PURCHASE ORDERS
When ordering or requesting prices, please state :
- Type of fluids contained in the level gauge and their specific gravity,
- Plant operating and design pressure,
- Plant operating and design temperature,
- Centre to centre distance (CC);
- Visible length,
- Type of vessel connections.