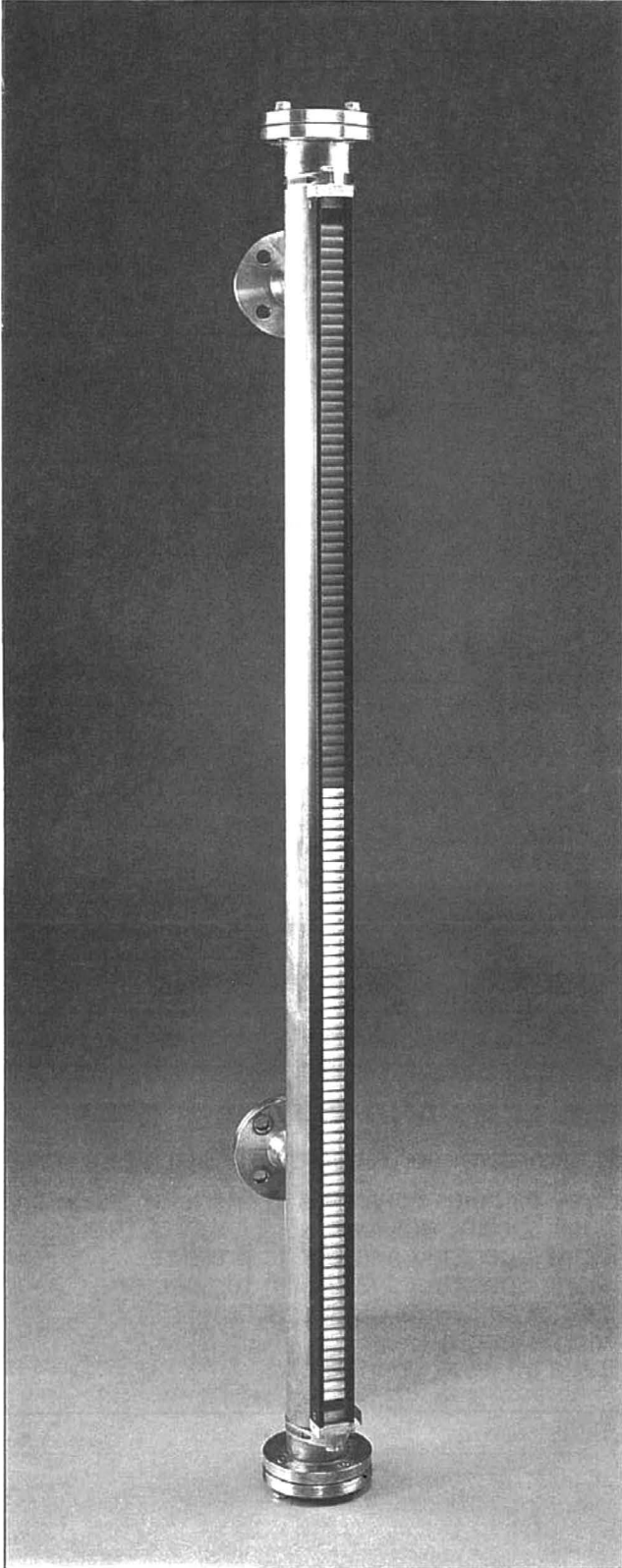


# WELLFLEX GMBH

## TYPE MG-33 MAGNETIC LEVEL GAUGES



TYPE MG-33

### OPERATING PRINCIPLE:

The operation of the MG-33 magnetic level gauge 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 buoyancy 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.

### 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 wherein 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.

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 (eg. white) over the chamber area taken up by gas, vapour or steam phase contrasting with the other colour (eg. 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.

## MAGNETIC SWITCHES:

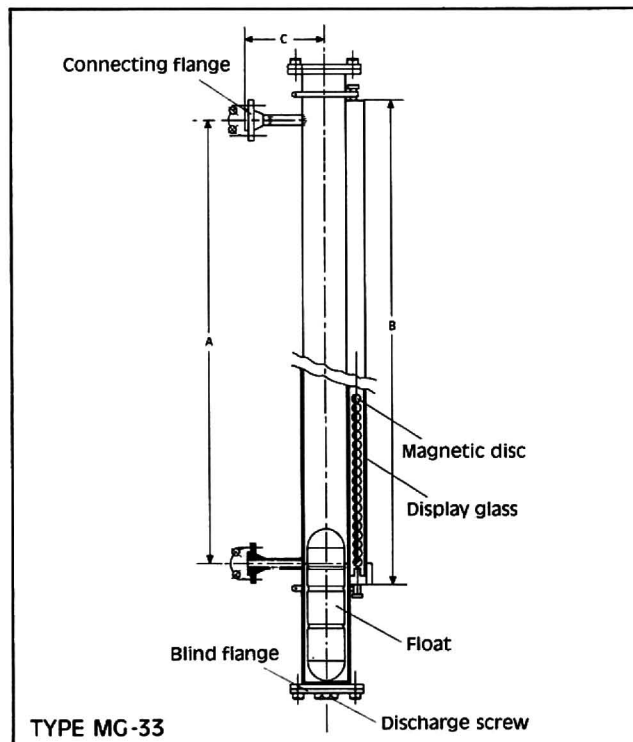
Fitting of magnetic switches should be made preferably in manufacturer's works. Each switch is fitted on vertical chamber equipped with its non magnetic stainless steel support and can be positioned continuously and with accuracy, without using special tools.

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.



Modifications reserved

## MATERIALS:

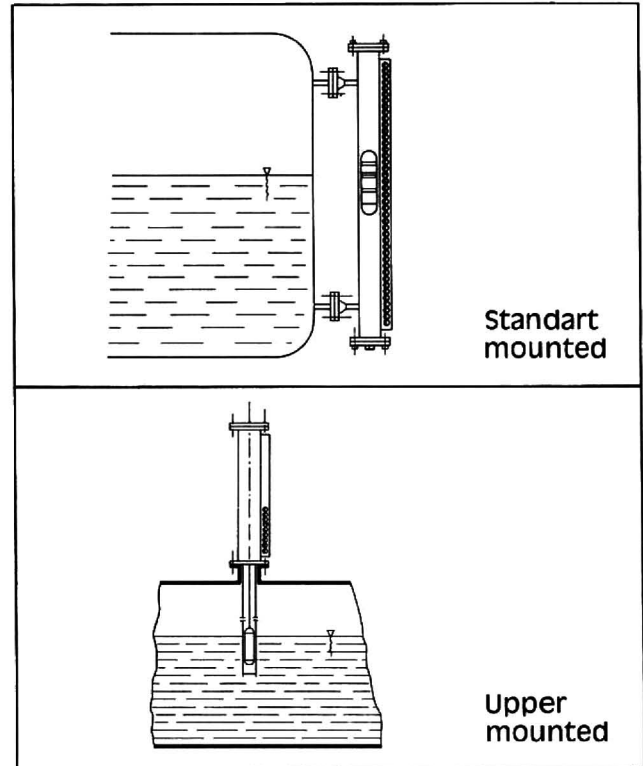
The most utilized materials are:

Vertical Chamber: TP 316 - TP 304

Float: TP 316 - TP 304

Indicating Scale: Aluminium with plastic rollers.  
(Optional with aluminium rollers)

## CONNECTIONS:



## TECHNICAL DETAILS:

<b>CONNECTING FLANGES</b>	CARBON STEEL STAINLESS STEEL DN 25 PN 16/25/40
<b>BY-PASS TUBE</b>	304/316 STAINLESS STEEL
<b>FLOAT</b>	STAINLES 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.