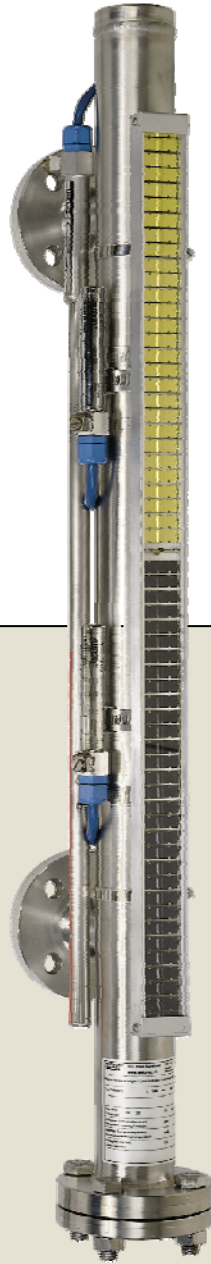


Operation- and Maintenance Instruction
WEKA Visual Level Indicators



1. Operating Principle

The vessel 1) is connected by two pipes 1A) and 1B) with the standpipe 2) of the Magnetic-Level Indicator.

The liquid in the Magnetic- Level Indicator, following the principle of communicating tubes, always seeks the same level as in the vessel being monitored.

Compelled by changes in fluid level, the float 3) transfers the current level to the Indication Rail to the outside by means of a magnetic coupling.

The bar magnet's 3B) north pole inside the float 3) is, similar to a compass needle always pointing to the integrated magnetic guide tape 8). This self-aligning feature of the patented magnetic guide tape allows the user to position the indication rail according to his particular installation requirements.

The indication flaps 4A) themselves are interlocked by individual magnets in each of the indication flaps which ensures a stable position of the flaps even under the most severe operation conditions, i.e. vibrations or fast changes in the liquid level.

While being attracted by the guide tape, the magnet field of the the bar magnet overrides the "magnetic chain" of the magnets in the indicator flaps 4A, thus turning the flaps by 180° and thereby indicating the actual liquid level inside the vessel.

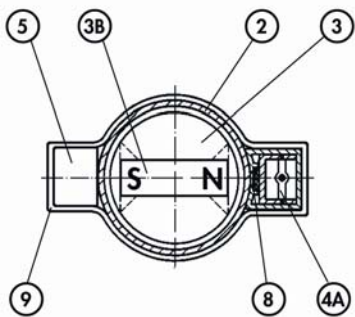
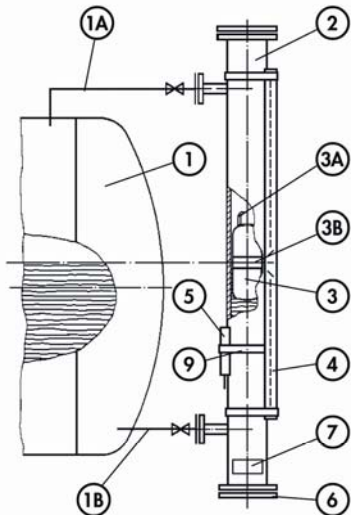
The floats being used in WEKA Magnetic Level Indicators are always "tuned" to the operating conditions, density, operating pressure and -temperature of a specific application.

It is for this reason that floats shouldn't be changed over into other WEKA indicators without prior consulting the local WEKA representative.

On the opposite, within +/- 45° of the indication rail, the south pole of the magnet is being used to activate accessories such as Reed-switches or -transmitters for high-, low alarm functions or quasi analog signal output.

For spare part orders please always note the manufacturing number, type of indicator as well as the operating conditions as shown on the nameplate of the indicator.

With this information at hand your local WEKA representative will be able to serve you with your specific spare part requirements.



- 1. Vessel
- 1A, 1B Connecting pipes
- 2 Standpipe
- 3 Float
- 3A Filling tube
- 3B Bar magnet
- 4 Indication rail
- 4A Indication flaps
- 5 Magnet Switch
- 6 Service Flange
- 7 Nameplate
- 8 Magnetic Tape
- 9 Clip

2. Installation

A) Preparation

For transport purposes the float 3) of your WEKA Level Indicator has been secured with a string which is attached to the lower side connection flange. Prior to the installation this string has to be removed. Place the level indicator in a horizontal position on a flat surface and remove the bottom service flange. Cut the securing string and pull the float out. Remove the string completely and re-insert the float with the filling pipe 3a) showing upwards.

Handle the float carefully, do not drop!

With the float installed, reassemble the bottom service flange.

B. Installation, mechanical

Make sure that the mating flanges of the vessel onto which the level indicator will be installed are completely flush. Excessive misalignment will cause the standpipe to bend or twist which can prevent the float from moving freely up and down.

The level indicator's must be installed with the nameplate 7) at the bottom of the indicator.

If, for any reason the float has to be removed from the standpipe, i.e. for cleaning do not remove the float unless:

- you have satisfied yourself that the system is no longer under pressure.
- the level indicator has cooled down to an ambient temperature.

The float has to re-installed with the filling pipe 3a) showing upwards.

C. Installation, electrical

The maximum switch rating of WEKA magnetic switches is indicated on the switch label. This rating may, under no circumstances not be exceeded.

The switches are preferably installed opposite the indication rail. In cases of very short switching distances between two switches, the switches can be installed next to each other. In such a case both switches have to be within an angle of +/- 45° opposite the indication rail.

In case you decide to change the indication rails position, do not forget to reposition the switches too.

The operating principle of the WEKA switches is based on the magnetic field of the bar magnet. In no circumstances should iron parts such as screws, mounting brackets, bolts etc. be anywhere near or attached to the magnetic level indicator.

A deviation of the magnet field because of iron parts being too close to the level indicator will influence the proper function of the level indication as well as accessories.

IMPORTANT: Test- and operating pressure as well as operating temperature as shown on the nameplate 7) of the level indicator may not be exceeded.

3. Troubleshooting

| Problem | Possible reason | Remedy |
|---|---|---|
| No visual indication in spite of a sufficiently high liquid level in the vessel | <ul style="list-style-type: none">- Process valves are shut off- Sticking of the float in the standpipe- Float leakage. Float has been filled up and drowned- Float is attracted by iron parts close to the level indicator. | <ul style="list-style-type: none">- Open the process valves- Open service flanges and thoroughly clean standpipe and the float.- Float has to be replaced.- Remove all iron parts |
| Failure of magnet switches in spite of visual indication | <ul style="list-style-type: none">- Switch wired incorrectly- Switch in wrong position- Switch failure due to excessive temperature or electrical load | <ul style="list-style-type: none">- Compare wiring diagram with switch contact arrangement- Correct switch position cable up or down and opposite indication rail- Replace switch. Check actual operating temperature and/or reduce switch load i.e. with an auxiliary relay. |
| Magnet switch does close but not open again | <ul style="list-style-type: none">- Hysteresis between on and off position. The bar magnet cannot reach the 2nd switching point. | <ul style="list-style-type: none">- Raise or Lower the switch in axial direction by 5 to 10 mm so that the floats magnet can reach the 2nd switching point. |

