

Primary element type MRK110-S and 110-W

Application and function

The primary element is used as liquid level measuring device for IGEMA magnetic level gauges. A float with integrated magnetic system is used in all IGEMA magnetic level gauges. This float transfers the liquid level without direct contact to the primary element fixed on the outside of the standpipe. The magnetic system actuates in the sensor pipe a resistance measurement chain that corresponds to a 3-wire potentiometer circuit. The produced measuring voltage is proportionally to the liquid level and it is quasi-continuously due to the sensitive resolution of the measurement chain.

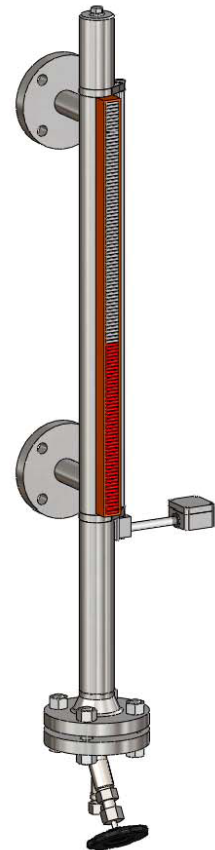
Technical advantages:

The simple working operating principle allows an enormous range of application.

- Constant registration of the liquid level independent of physical-chemical change of the medium state like frothing, conductivity, dielectric, pressure, temperature, condensate precipitation.
- Signal transmission over long distances.
- Simple assembly and commissioning, singular adjustment, no re-calibration required

Application examples:

1. Continuous liquid level control in connection with an IGEMA magnetic level gauge and a standard controller.
2. Remote liquid level indication in connection with an IGEMA magnetic level gauge and an indicating instrument (LED).
3. Switching of freely selectable limit values in connection with a limit value switch.
4. Combination from the cases of application 1 – 3.



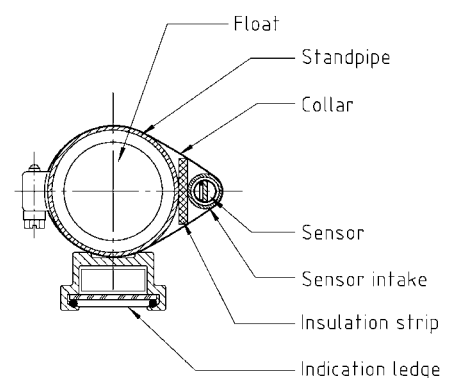
Versions

TYPE MRK110-W

For primary elements type MRK 110-W the resistance signal is made and can be converted into a level signal by a downstream control like e.g. a PLC.

TYPE MRK110-S

The primary elements type MRK 110-S have an integrated measuring transducer. This measuring transducer converts the resistance signal of the sensor into a continuous 4 – 20 mA current signal.



Primary element type MRK110-S and 110-W

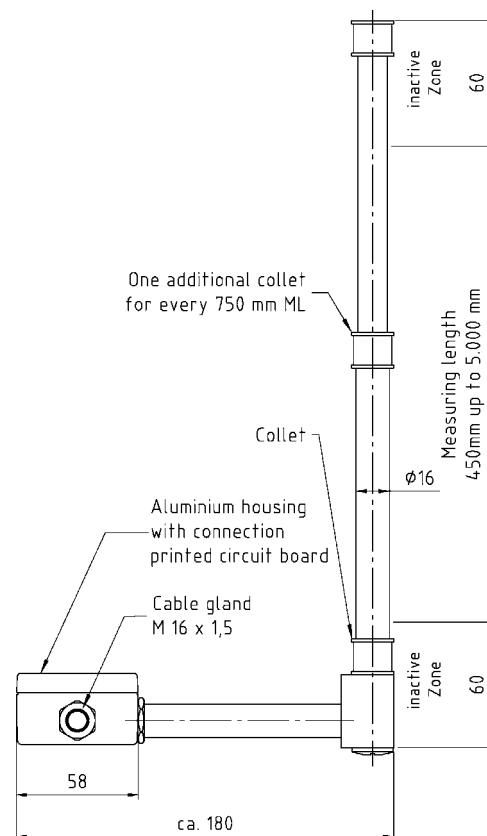
Technical data

| | |
|-----------------------|---------------------------|
| Resolution | 10 mm |
| Measuring length | 450 mm - 5.000 mm |
| Fixture | with collars |
| Connection housing | Aluminium 64 x 58 x 37 mm |
| Sensor pipe | ø 16 mm |
| Ambient temperature T | -40° C up to +75° C |
| Medium temperature | < 400° C *) |

*) Insulation between primary element and magnetic level gauge starting from + 150° C medium temperature.

| | | |
|---------------------------------|----------------------------------|--------------------|
| Cable gland | M16 x 1,5 | |
| Protection | IP66 acc. to EN 60529 | |
| Electrical data (TYPE MRK110-S) | | |
| Supply voltage | 10 up to 36V DC | |
| Supply current | 4 up to 20 mA | |
| Electrical connection | 2 x 0,5 mm ² shielded | |
| Max. load at 24V | 680 Ω | |
| Setting range | 0% | 2,0 up to 4,5 mA |
| | 100% | 15,5 up to 25,0 mA |

| Version | Characteristics | Art.No. |
|------------------------|---------------------------------------|----------|
| MRK 110-S Medium <150° | Current signal, without insulation | 15-06231 |
| MRK 110-S Medium >150° | Current signal, with insulation | 15-06233 |
| MRK 110-W Medium <150° | Resistance signal, without insulation | 15-06232 |
| MRK 110-W Medium >150° | Resistance signal, with insulation | 15-6234 |



Electrical connection

