

# KSR Top Mounted Level Indicators



## Operating Principle

The KSR Top Mounted Level Indicator is mounted on the top of the tank by means of a suitable process connection (flange or thread). It consists of a chamber and a float with guide rod and magnetic system attached to it. As the liquid level in the tank rises or falls, the float and the magnet will move with it.

On the 'dry side' of the chamber is the KSR Magnetic Roller Display, a column of magnetic rollers which are white on one side and red (MRA) respectively blue (MRK) on the other. The rollers are made from plastic (MRA) or ceramics (MRK) with a distance of 10 mm between their axes. As the float moves up or down the bunched field of the permanent magnet mounted in its top section 'pulls' the rollers through a rotation of 180°, thus changing their colour. As the float rises the rollers are turned from white to red (MRA) or blue (MRK), and as the float falls, they are changed back to white again. This means that at any given time the amount of liquid in the tank is constantly represented by a red or blue column without any external power supply.

## Technical Advantages

- Simple, robust, and solid design
- Pressure- and gas-proof separation of chamber and display
- Measuring and indicating of the level of aggressive, combustible, toxic, hot, agitated, and contaminated liquids
- KSR Magnetic Roller Displays without external power supply
- Available for applications in all areas of industry through use of highly corrosion-resistant materials
- Designs for a pressure range from full vacuum to 64 bar
- Designs for temperatures from -60°C to +300°C

## Options

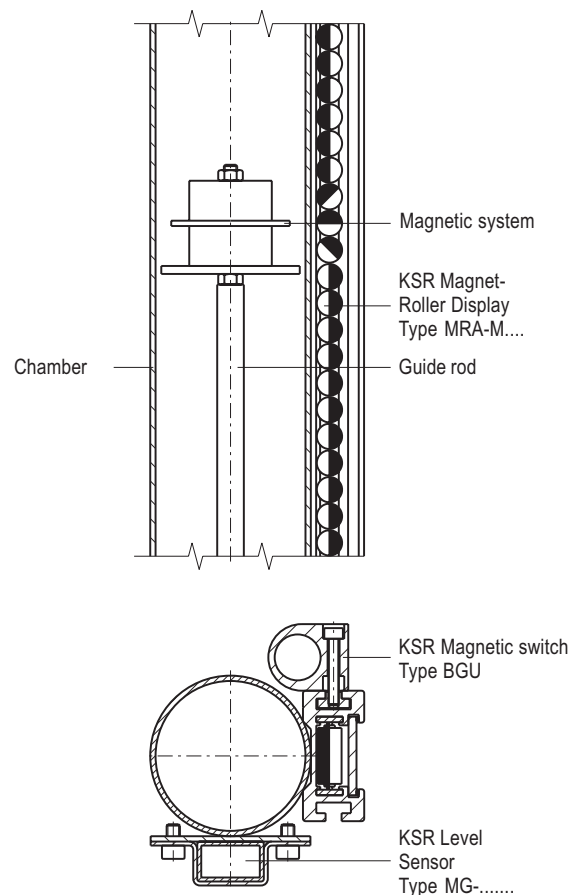
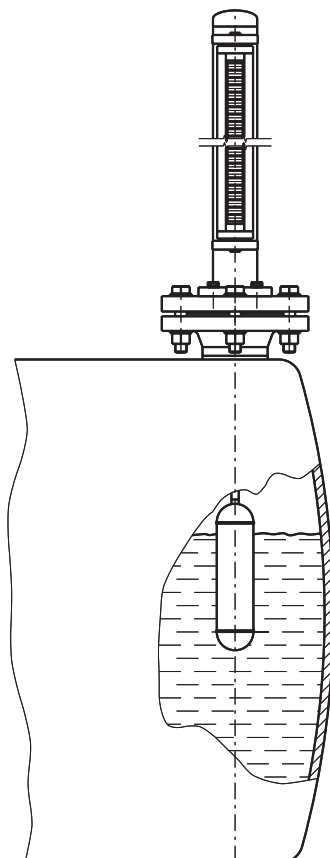
As options the following devices can be attached to a KSR Top Mounted Level Indicator to monitor and control the level of the liquid.

### KSR Level Sensors

KSR Level Sensors are used to measure and transmit the level in conjunction with a KSR control unit. This control unit converts the resistance value of the level sensor to a proportional analogue signal.

### KSR Magnetic Switches

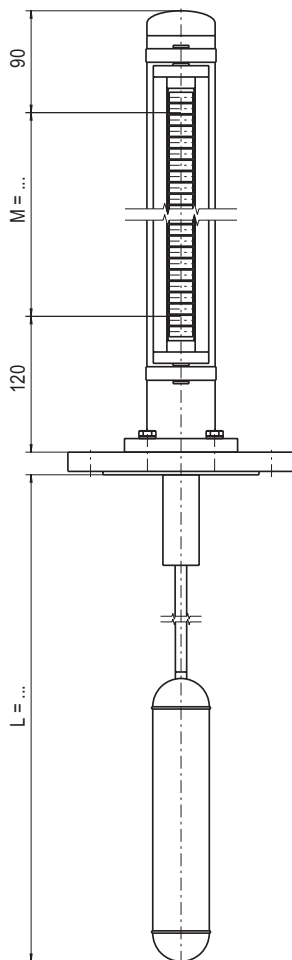
KSR Magnetic switches are used to monitor certain limits of the level. The obtained binary signal can be forwarded to trigger alarms or other controls.



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Type: UTN - ../.. - L..../M.... - V.. - MRA

Pressure Equipment Directive 97/23/EC



## Technical data

Chamber	OD 60.3 x 2 mm or OD 60.3 x 2.6 mm
Chamber end top	Welding cap or flat top or flanged Options: (see page 32) - Vent plug BSP1/2"
Process connection	Flanges: DIN 2527 DN50 - DN250, PN6 - PN64 Flanges: ANSI B 16.5 2" - 10", Class 150 - 600 Threaded: BSP 2"
Material	
Chamber	Stainless steel 316 Ti or 316 L
Process connection	Stainless steel 316 Ti or 316 L
Guide rod	Titanium
Float	Stainless steel 316 Ti or Titanium
Nominal pressure	max. 64 bar (according to design)
Temperature range	-60°C to +300°C (according to design)
Float	Bypass floats in Stainless steel 316 Ti or Titanium OD 50 - OD 100 mm Spherical float in Stainless steel 316 Ti or Titanium OD 80 - OD 120 mm Float design according to process parameters S.G., pressure and temperature and insertion length L...
Magnetic roller display	Type MRA-M.... < 200°C Type MRK-M.... > 200°C for technical data and further designs and options see page 22 and 23

## Further options:

Magnetic switches	see page 24, 25, 26 and 27
Level sensors	see page 28, 29, 30 and 31
Electrical trace heating	on request
Chamber insulation	on request
Stilling tube or cage	on request