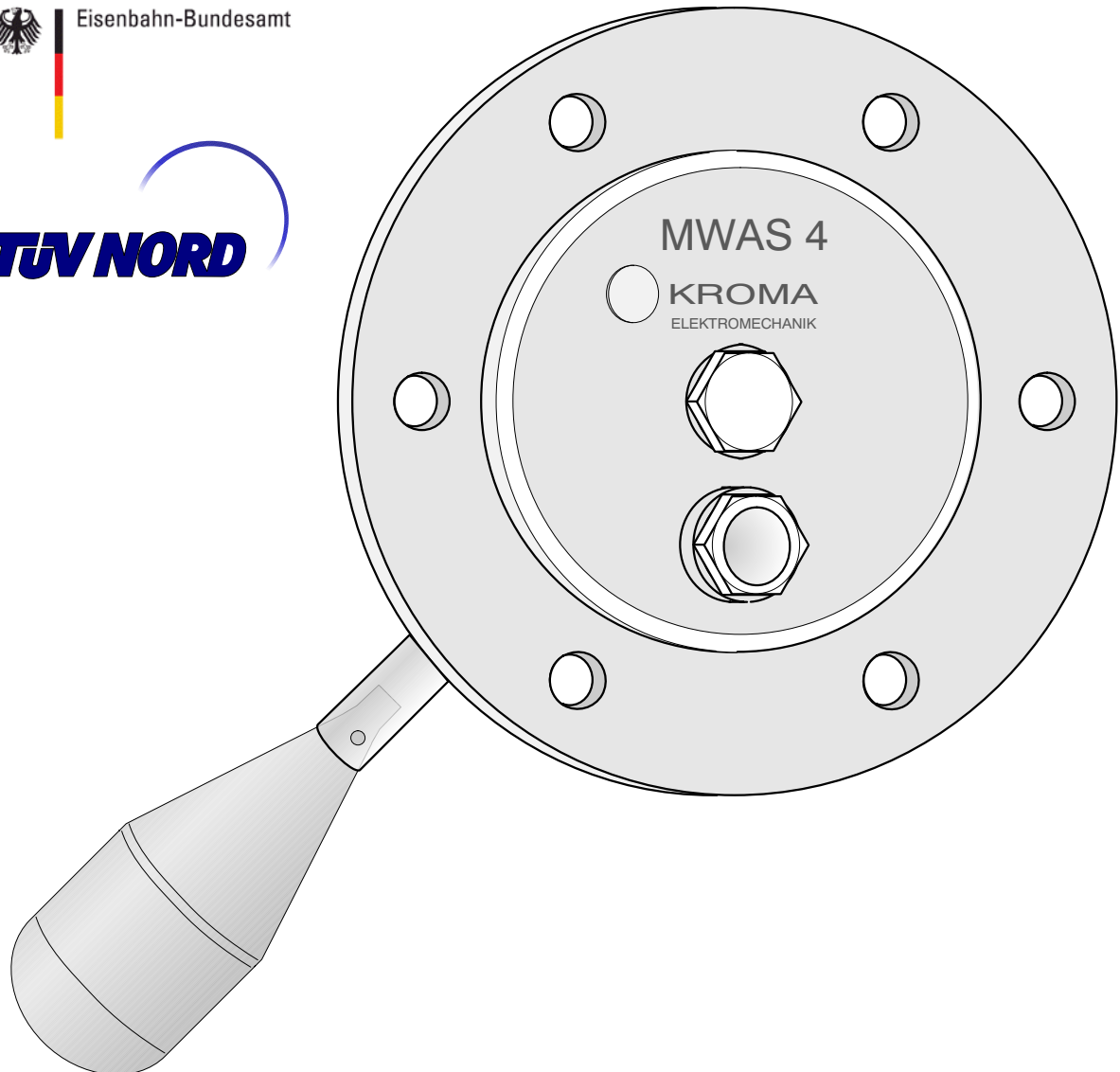


# Filling Level Sensor

with level limit switch as overflow protector  
for lateral mounting



## MWAS 4

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# MWAS 4 Filling Level Sensor

## with level limit switch as overflow protector for lateral mounting

### Description

KROMA MWAS 4 filling level sensors are designed to continuously measure liquid levels of tanks, while also having an overflow signaling feature. Level measurement is accomplished through a float fixed on a lever arm with balancing weight. Magnets provided in the balancing weight act through the flange upon a Hall sensor outside the tank. The signal available at the electrical output is an analogous voltage signal proportional to the filling level. Just before the maximum level is reached, the magnet actuates an overflow switch which breaks the overflow protector circuit of the connected fuelling facility. The MWAS 4 is equipped with a resistor which prevents the switch from being overloaded and permits connection of conventional fuelling facilities.

In addition to level measurement, the MWAS 4 is also suited to be used as overflow protector.

The analogous output of the KROMA MWAS 4 permits direct connection of several KROMA BAZ level indicators or KROMA MWU measuring transformers.

MWAS 4 level sensors can be furnished to suit different mounting positions and tank heights from 150 mm to 300 mm.

### Special Features

- Polyamide float
- Flange, rotating shaft, balancing weight and lever arm of stainless steel 1.4571
- High degree of protection (IP 65)
- Vibration- and shockproof
- Tested by the Technical Inspection Board (TÜV) (certificate no. W/FP 3310/97)
- Tested according to German railways' standard BN 411002/EN 50155 (approved for use on rail vehicles)
- Type approval as overflow protector for rail vehicles (certificate no. EBA 34AZ3/0993/7)

### Technical Data

Supply voltage :	16 to 60 V
Power consumption :	In operation 25 mA; at rest < 0.1 mA
Measuring angle :	90° (-45°, +45°); immeasurable region at top and bottom approx. 20 mm
Output signal :	0 to 5V
Limit indicator circuit:	max. 30 V; 0.020 A; R = 560 Ω
Lever arm :	Total length from centre of rotation $L[\text{mm}] = \left( \frac{\text{measuring range}}{2} + 20 \right) \cdot \sqrt{2} - 5$
Liquid temperature range :	-25°C to +70°C
Operating pressure :	unpressurized (0.8 to 1.1 bar)
Density :	>= 700 kg/m <sup>3</sup>
Storage temperature range :	-55°C to +70°C
Vibratory strength :	10 m/s <sup>2</sup> (5 to- 150 Hz)
Shock resistance :	30 m/s <sup>2</sup>
Weight :	0.80 kg
Installation :	Tank cutout Ø70 <sup>+2</sup> mm; 6 M8 screws; 90 mm hole circle

### Information required with order (typical order)

**MWAS 4 . Li - 160 - K1,0**

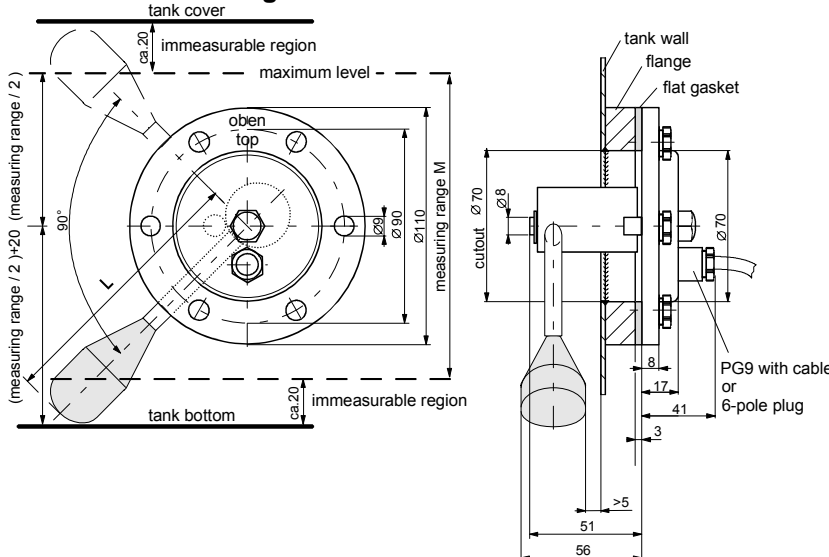
KROMA MWAS 4 filling level sensor \_\_\_\_\_

Mounting position „Li“ = L.H. lever arm, „Re“ = R.H. lever arm \_\_\_\_\_

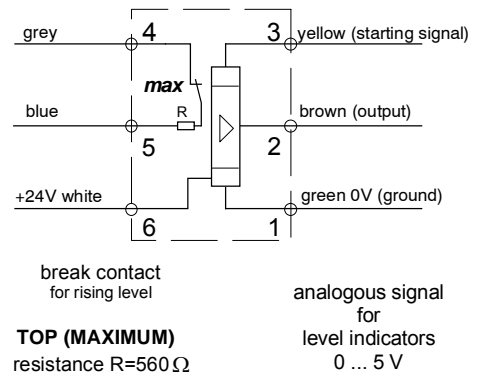
Measuring range M = **160** mm (for tank height H = 200 mm) \_\_\_\_\_

Connecting elements „K 1.0“ = integral cable 1.0m long, „S“ = plug \_\_\_\_\_

### Dimensional Drawing



### Terminal Assignment



Subject to technical modifications.