



## Level Meter Innovation from Bopp & Reuther Messtechnik

# Media independent Level measurement: MG1 series

- Fast reaction time of 0,5 sec
- Precise continuous level measurement and reliable point level detection combined in one device
- For liquids as well as powdery solids suitable
- No influences caused by tank / vessel internals
- Unmatched price/performance ratio

Technical Perfection  
+  
Favourable price

### Description

The MG1 series uses TDR (Time Domain Reflectometry) technology: Energy optimized, high-frequency electromagnetic impulses, generated by the electronics, are propagated along the probe. When these impulses hit the surface of the media, part of the impulse energy is reflected back up the probe to the electronics. The level is calculated from the time difference between the impulse sent and the impulses reflected. The sensor can output the analysed level as a continuous measurement reading through its current output, and it can convert the one value into a freely positionable switching output signal. TDR-Sensors are also known as Guided Radars or Guided Wave Radars (GWR).

### Application Areas

The innovative TDR technology enables direct, precise and highly reliable continuous level measurement as well as point level detection in almost every liquid and solids –independent of changing process conditions (such as density, conductivity, temperature, pressure, vapour and turbulence). It is suitable for all types of process and storage tank applications and has an exceptional performance in media with low dielectric constant (i.e. low reflectivity) such as oils and hydrocarbons.

### Technical Data

<b>Accuracy</b>	± 3mm or 0.03% of measured distance*	
<b>Repeatability</b>	<2mm*	
<b>Resolution</b>	<1mm*	
<b>Ambient temperature</b>	-25°C to +80°C	
<b>Application temperature</b>	Single rod / wire rope probe:	-40°C to +150°C
	Coaxial probe EPDM o-ring:	-40°C to +130°C
	Coaxial probe FKM (viton) o-ring:	-15°C to +150°C
<b>Process connection</b>	Threads G 3/4A, 3/4" NPT (wrench size 32mm)	
<b>Power supply</b>	12 to 30 VDC (reverse polarity protected)	
<b>Outputs</b>	Analog: 4...20mA (activ) Switch: DC PNP (activ)	
<b>Materials (wet)</b>	Single rod probe: 1.4404 / 316L, Peek, Ø 6mm Wire rope probe: 1.4404 / 316L, Peek, Ø 4mm Coaxial probe: 1.4404 / 316L, Peek, Ø 17,2mm and o-ring: EPDM or FKM (viton)	
<b>Protection class</b>	IP 68, NEMA6P (housing)	
<b>Ex-Certificates</b>	<b>MG1EX-E / MG1EX-S / MG1EX-C</b> ATEX Ⓜ II 1/2G Ex ia/d IIC T6 Ga/Gb ATEX Ⓜ II 1/2D Ex ia/t IIIC T86°C Da/Db ATEX Ⓜ II 2G Ex ia d IIC T6 Gb ATEX Ⓜ II 2D Ex ia t IIIC T86°C Db	

\*Reference conditions: dielectric constant  $\epsilon_r=80$ , water surface, tank  $\varnothing 1m$ , DN200 metal flange



### Measuring Ranges

Type Standard/ Ex	Measuring range
<b>MG1-E/ MG1EX-E</b> Single rod probe	100 – 3.000mm
<b>MG1-S/ MG1EX-S</b> Wire rope probe	1.000 – 20.000mm
<b>MG1-C/ MG1EX-C</b> Coaxial probe	100 – 6.000mm

