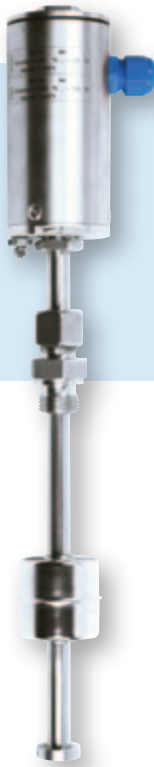


Magnetostrictive level indicator MagFox® MMG 01



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- High measuring accuracy ± 0.25 mm
- Shock- and vibration-resistant
- Freely adjustable measuring range over the entire probe length
- Very short measuring intervals
- ATEX approval for zone 0 and HART protocol (option)



Application For continuous high-precision measurement of levels in tanks and containers with liquid levels of 200 mm to 4,000 mm. Suitable for liquid, not highly viscous media which do not adhere to the probe.

Description MagFox® MMG 01 operates on the basis of the magnetostrictive principle. A wire consisting of magnetostrictive material is integrated in the probe pipe. The microprocessor-controlled sensor electronics generate pulses which pass through the wire and generate a circular magnetic field. The float of the probe contains a magnet which magnetises the wire at the float's position. A torsion wave is generated at the point of overlay of the two magnetic fields; this wave passes back to the probe head. The propagation time is detected and evaluated by the electronics.

Technical specifications

Measuring range
0/200 mm to 0/4,000 mm

Measuring accuracy
 ± 0.25 mm, resolution $< 0,1$ mm

Operating temperature range
Medium: $-40/+125$ °C
Ambient: $-40/+ 85$ °C

Process pressure
Max. 16 bar

Process connection
Stainless steel 316 Ti, compression fitting
G $\frac{1}{2}$, height-adjustable

Probe
Stainless steel 316 Ti, \varnothing 12 mm, probe length 1,000 mm (min. length 200 mm/max. length 4,000 mm)

Float
For density of medium ≥ 0.70 g/cm 3
Stainless steel 316 Ti, PN 16,
cylindrical 43 x 43 mm (\varnothing x H)

Supply voltage
DC 10–30 V

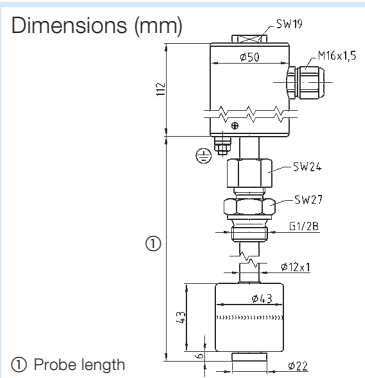
Output signal
4–20 mA, 2-wire

Housing
Robust field housing with screw cover
Stainless steel 303, \varnothing 50
Degree of protection: IP 68 (EN 60529)

Electrical connections
Cable gland M16 x 1.5

Options

- EX version
- Other process connections
- Other process pressures
- Other probe materials
- Other floats
- Higher operating temperature range
- HART protocol
- Flexible probe
- Interface layer measurement via HART protocol



DG: E	Part no.	Price €
MMG 01 200–1,000 mm please specify probe length!	53510	870.00
Extra charges		
Probe extension per 100 mm		11.50
Process connection R1 $\frac{1}{2}$, brass		no extra charge
EX version (II $\frac{1}{2}$ G Ex ia IIC)		
Operating temperature range (medium) $-40/+250$ °C		

Guided micropulse level indicators

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- The measurement is unaffected by changes in dielectric constant, pressure, temperature or density
- Foam, steam, dust or a turbulent surface of the medium do not affect the accuracy of the measurement
- No recalibration is required when a different medium is used
- A great number of materials and process connections are available and allow the application of the systems even with extremely corrosive media or in the food industry, for example

Application Guided micropulse devices are used to measure levels of liquids, granular materials and powders.

Function principle PulsFox® PMG 01 level indicators operate on the basis of the TDR principle (time domain reflectometry). This principle uses a probe as a micropulse guide. Electromagnetic pulses are emitted at the speed of light, reflected by the surface of the medium to be measured and received by the signal converter. The reflection depends on the dielectric constant (ϵ_r) of the measured medium. Media with a high dielectric constant reflect the pulses with a high intensity. The devices do not have any moving parts, thus being almost maintenance-free. Changes of the medium do not affect the measuring accuracy of the TDR principle. The pulse's propagation time is directly proportional to the distance between the probe and the surface of the medium.

Probe selection

Rigid/flexible mono probe Type F/E	Flexible dual probe Type B	Coax probe Type C
Typical application areas		
<ul style="list-style-type: none"> ▪ Cement, limestone ▪ Highly viscous liquids ▪ Plastic powder, e.g. PVC ▪ Granular plastic materials 	<ul style="list-style-type: none"> ▪ Granular plastic materials ▪ Light powders with a low dielectric constant ▪ Alcohols ▪ Water supply tanks 	<ul style="list-style-type: none"> ▪ Tank height < 6 m ▪ Solvents, NH₃, foam, alcohol, oil/water, separators
Recommended for the following applications		
In particular for fine powders <ul style="list-style-type: none"> ▪ FEP coating for crystallising products ▪ Application with conductive foams 	For high silos or tanks with liquids, granular materials <ul style="list-style-type: none"> ▪ Like rigid probes, but up to 24 m ▪ For smaller tanks with little headroom 	Only for level measurement in clean liquids <ul style="list-style-type: none"> ▪ In turbulent or flowing liquids the probe acts like a stilling well ▪ Liquid or stream jet in vicinity of probe ▪ Can have contact with metal or tank wall ▪ For very low dielectric constants
Do not use:		
<ul style="list-style-type: none"> ▪ With small socket diameters (< DN 100) ▪ High sockets 	<ul style="list-style-type: none"> ▪ Turbulent liquids where probe cannot be anchored ▪ Temperature of the medium > 240 °C 	<ul style="list-style-type: none"> ▪ Crystallising liquids ▪ Liquids containing solid matter ▪ Products tending to adhere ▪ Powders ▪ Viscous liquids (e.g. crude oil)