Guided micropulse level indicators PulsFox® PMG 10

- **Level measurement independent of dielectric constant or changes in pressure, temperature or density**
- **Reliable, accurate measurement even with foam, vapour, dust or turbulent surfaces of the medium**
- **Robust housing for rough ambient conditions**
- **Maintenance-free, not subject to wear and tear**

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Application

For continuous level measurement in containers, tanks or silos. Suitable for liquid, powdery, granular, electrically conductive or non-conductive media. Ideal for changing media. Also suitable for pressurised or vacuum tanks.

Description

PulsFox® PMG 10 level indicators operate on the basis of the guided micropulse principle (TDR, time domain reflectometry). A micropulse is emitted along a probe. The micropulse is surrounded by an electromagnetic field. Reflections of the pulses from objects and surfaces serve as the basis of distance measurement. The pulse's propagation time is directly proportional to the distance between the probe and the surface of the medium. The reflectance of materials depends on the dielectric constant εr. Changes of the medium (e.g. vapour, dust or a turbulent surface) do not affect the measuring accuracy of this measuring principle. No recalibration is required when a different medium is used. Even if properties such as pressure, temperature and density change, the system operates with high reliability and precision. PulsFox® PMG 10 has no moving parts and is therefore maintenance-free and not subject to wear.

Application examples

- Cement silo
- Liquid bitumen
- Containers for construction materials such as mortar, plaster, gypsum
- Silos for additional fuels such as meat and bone meal or dried sewage sludge
- Tanks for liquefied gas such as LPG, LNG
- Tanks facilities for ethanol fuel
- Tank facilities for hydrochloric acid
- Storage of intermediate products, chemical industry
- Supply tanks for hydraulic oil
- Condensation tanks for liquids
- Water separators located prior to vacuum pumps
- Small and medium size tanks for raw and finished products in refineries
- Level measurement in facilities for leachate treatment
- Supply water tanks of turbines
- Level measurement in bodies of water

Guided micropulse level indicators PulsFox® PMG 10

Probe selection

	Rigid mono probe MS	Flexible mono probe MF	Flexible dual probe DF	Coax probe KX
Low tanks ≤ 1,000 mm	o	-	-	+
Tanks > 1,000 mm / ≤ 3,000 mm	+	+	+	+
Tanks > 3,000 mm / ≤ 6,000 mm	-	+	+	o
High tanks > 6,000 mm	-	+	+	-
Liquids	+	+	+	+
Solids	+	+	+	-
High-viscosity or adhesive media	+	o	-	-
Low-viscosity media	+	+	+	+
Disturbing installations/small distances	-	-	+	+
Conductive foam on the medium	+	+	-	-

– Not suitable
O Limited suitability
\+ Suitable

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Technical specifications

Measuring range
MS: ≤ 3,000 mm
MF, DF: ≤ 24,000 mm
KX: ≤ 6,000 mm

Dielectric constant (εr) of medium
MS, MF: ≥ 2.1
DF: ≥ 1.8
KX: ≥ 1.4

Operating temperature range
Medium: -30/+200 °C
Flange: -30/+90 °C
(High temperature: -30/+200 °C)
Ambient: -30/ +60 °C
(with display: -20/+60 °C)

Process pressure
MS: PN 16 or PN 25
MF, DF, KX: PN 16

Process connection
See technical specifications of the individual versions

Supply voltage
4–20 mA, 2-wire (18–35 V)

Output signal
4–20 mA/HART, 2-wire

Housing
Aluminium die cast

Degree of protection
IP 65 (EN 60529)

Electrical connection
2 x cable gland

Option
- Local display/programming display PD 10 PMG
- Other process connections
- FEP/PFA/PP coatings

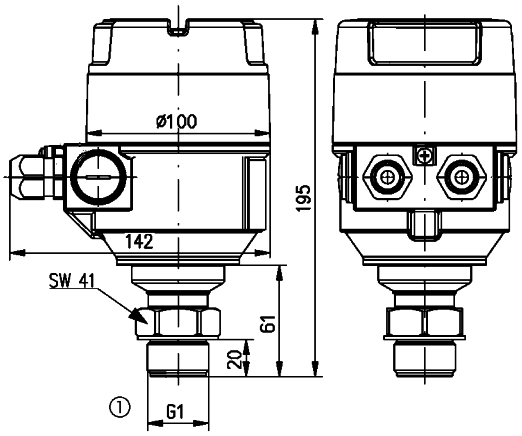
Plug-in local display/programming display
PD 10 PMG
Part no. **53529**
DG: H, PG: 4

See pages 314–317 for prices.

Guided micropulse level indicators PulsFox® PMG 10

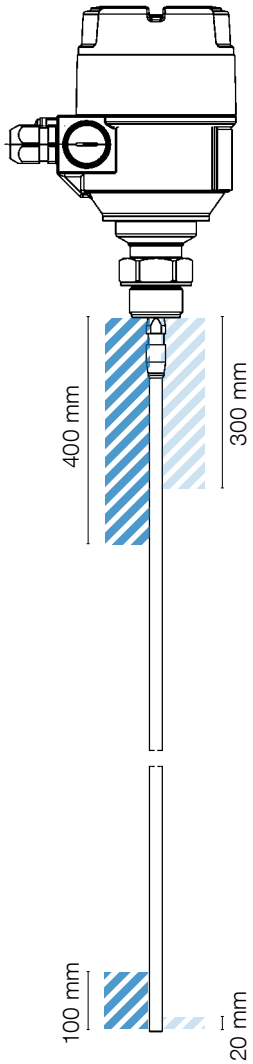
Types and dimensions (mm)

Housing PMG 10

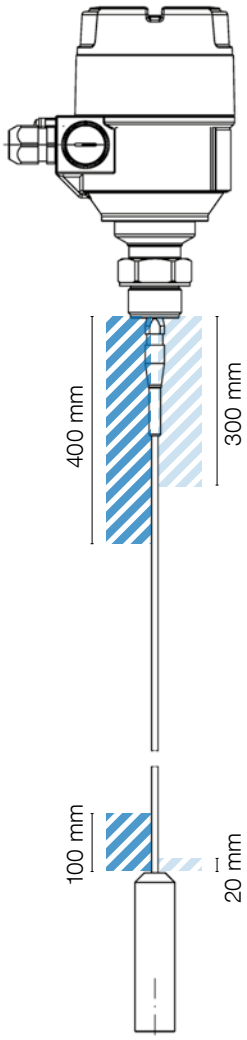


① Depending on version

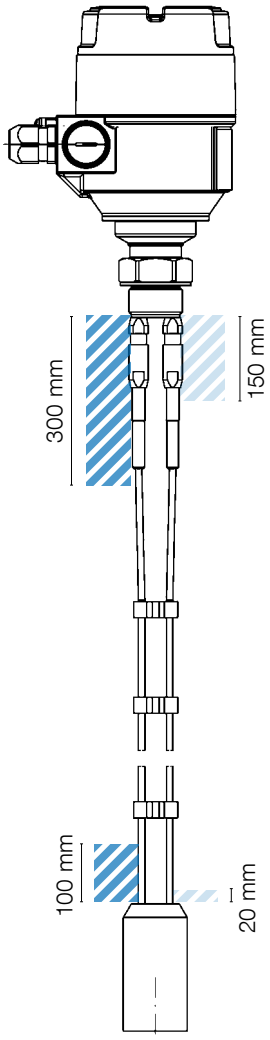
Pulsfox® PMG 10 MS
with rigid mono probe



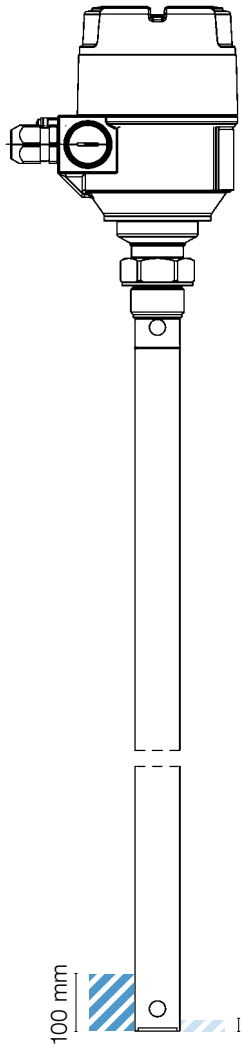
Pulsfox® PMG 10 MF
with flexible mono probe



Pulsfox® PMG 10 DF
with flexible dual probe



Pulsfox® PMG 10 KX
with coax probe



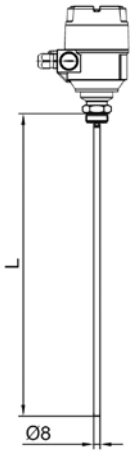
Blocking distance with a medium with ε_r value = 2.4

Blocking distance with a medium with εr value = 80

Guided micropulse level indicator with rigid mono probe PulsFox® PMG 10 MS

- **Also for high-viscosity or adhesive media**
- **Conductive foam does not influence the measurements**

Pulsfox® PMG 10 MS with rigid mono probe



Technical specifications

Measuring range
Max. 3,000 mm

Dielectric constant (εr) of medium
≥ 2.1

Measuring accuracy
Better than ±5 mm in the case of liquids, ±20 mm in the case of powder/solids

Probe material
Stainless steel 316 Ti

Wetted parts
Stainless steel 316 Ti, PTFE, FKM

Ordering data

DG: H, PG: 4 — **Price €**

1	**Probe type**	
53530	Mono probe rigid PMG 10 MS	
2	**Display and temperature range**	
O	Without local display and without window, flange temperature max. **90 °C**	
HT	Without local display and without window, flange temperature max. **200 °C**	
D	With local display and with window, flange temperature max. **90 °C**	
HTD	With local display and with window, flange temperature max. **200 °C**	
3	**Housing**	
A	Aluminium die cast IP 65 (EN 60529)	
4	**Process connection/probe material**	
10	G1B PN 16 / stainless steel 316 Ti	
11	1 NPT PN 16 / stainless steel 316 Ti	
12	G1½B PN 16 / stainless steel 316 Ti	
13	1½ NPT PN 16 / stainless steel 316 Ti	
54	DN 50 PN 25 / PFA coating	
56	DN 50 PN 25 / PP coating	
5	**Probe length (L)**	
03000	Length in mm, e.g. 3,000 mm	
6	**Output signal and EX type**	
N	4 – 20 mA + HART / non-EX	

Ordering code