

MOLOS
wave

Level measurement

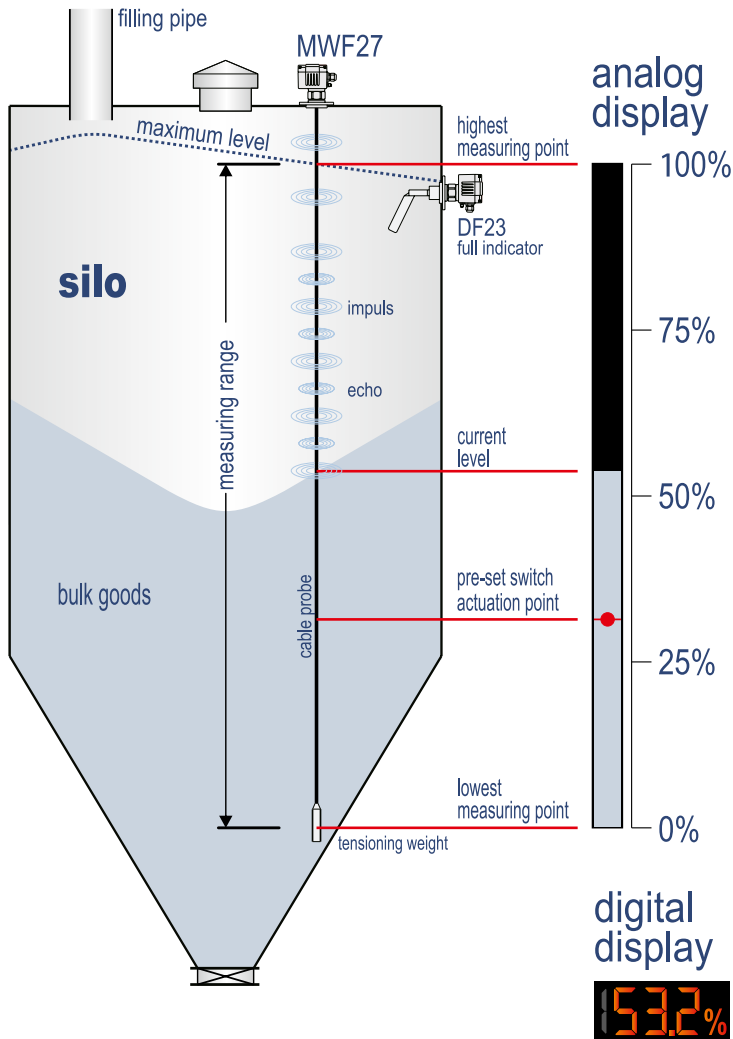


MWFF

Microwave level measurement

..... Functional principle

MOLOSwave



TDR* level transmitter (guided microwave) for the continuous level measurement and limit level detection of bulk goods.

During the measurement process high frequency microwave pulses with low energy are coupled onto the probe and guided along this probe to the bulk goods. The product surface partly reflects these pulses. The electronic detects the reflected pulses and calculates the actual filling level from the time difference of the transmitted and received signals. These filling levels are made available as a 4...20 mA signal for further signal processing.

This principle allows an accurate and reliable continuous level measurement.

*) TDR is the abbreviation for Time Domain Reflectometry

..... Application

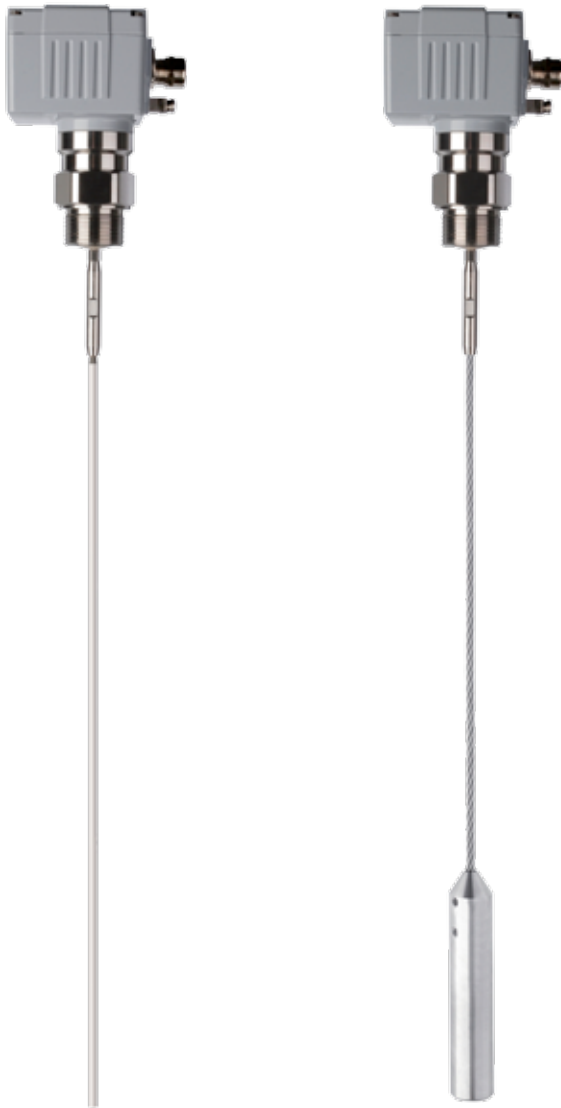
Suitable for all bulk goods such as coffee, cacao, grain, flour, sugar, cereal, salt, feed, plastics granulate, sand, gravel, lime, cement, gypsum, filler, carbon black and coal dust.

The MWF can be used in small bins as well as in large silos.

..... Performance

- ▶ continuous level measurement with high accuracy
- ▶ additional level limit switch included
- ▶ high reliability due to 4-wire-technology
- ▶ independent of product features
- ▶ very good price-performance-ratio
- ▶ no wear and maintenance-free operation
- ▶ innovative signal analysis and interference signal suppression
- ▶ electronic of the device is completely electrically isolated
- ▶ adjustment of the device to the requested probe length

MWF21 MWF27 Technical data.....




Housing	Aluminium or stainless steel
Process connection	Stainless steel
Cable or rod	Stainless steel
Feed through	PEEK
Cable	Ø 6 mm; length 1,0 ... 20,0 m
Rod	Ø 6 mm; length 1,0 ... 3,0 m
Supply voltage	12 ... 30 V DC (input non-polar)
Current consumption	< 70 mA at 24 V DC (without load)
Analog output (active)	4 ... 20 mA (0 ... 100 %)
Reaction delay	0.5 sec. or 2.0 sec. or 5.0 sec. (selectable)
Switch point output	DC PNP / NC or NO (selectable)
Loading capacity	< 200 mA
Switch point	freely positionable within the measurement range
Measurement accuracy	± 3 mm or maximum 0.03 % of measured value
Repeat accuracy	< 2 mm
Resolution	< 1 mm
Temperature drift	< 0.2 mm/K
Dielectric constant	DK-value > 1.6 (<1.6 on request)
Process temperature	-40 °C ... +150 °C
Ambient temperature	-20 °C ... +70 °C
Process pressure	-1 bar ... 40 bar
Cable entry	M20 x 1.5
Protection class	IP66 and intrinsically safe „ia“

Reliability.....ATEX-option.....

The MWF measures precisely and reproducibly the filling level independent of the angle of repose. The measurement is not affected by varying characteristics of the bulk solids like density, moisture, temperature, grain size, flow behavior, conductivity and permittivity. Although pressure fluctuations and dust in the silo, electrostatic discharges, condensate formation or caking at the probe or at the silo wall don't influence the measurement results.

Type of ignition protection

 II 1/2D Ex ta[ia]/tb IIIC T86 °C

Devices for use in explosive gas atmospheres on request



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