



LEVEL CONTROL WITH ULTRASONIC LUC-M



For measurements in liquids, ultrasonic waves are the well-tried and tested and cost-effective solution. The measurement is based on a propagation time method: Ultrasonic waves are emitted by an emitter, reflected at the bulk surface and finally received by a receiver. Since the propagation speed of the signal is known, its propagation time can be used to determine the distance between emitter and surface. In conjunction with the height of the container, the level can be calculated in a simple way. An integrated sensor compensates for the temperature-related differences in the sound propagation times.

The measuring system is contactless, i.e. no maintenance-intensive moveable parts must be installed in the tank.

LEVEL CONTROL OF LIQUIDS AND BULK SOLIDS WITH UL



LUC-M10

The LUC-M10 is mainly used in small containers, open bowls and pump shafts. Due to the resolution of measured values of ± 1 mm, this version with a $1\frac{1}{2}$ " process connection is also suitable for flow measurement in open channels.

LUC-M20

The LUC-M20 is suitable for medium applications with both liquids and bulk solids. With a measuring range of 8 m (liquids) and 3.5 m (bulk solids) and a 20 process connection, it covers a wide field of possible applications.



LUC4T

- Cost-effective safe area version
- Measuring range of 0.3 m ... 4 m
- Active fixed target suppression
- Electronic output: 4 mA ... 20 mA
0 V DC ... 10 V DC
- Compact design



With the LUC-M series, Pepperl+Fuchs offers you a compact, intelligent and at the same time cost-effective system for level control in solids and liquids. Areas of application are storage tanks and stirrer containers as well as dumps and conveyor belts.

- Measurement regardless of density, conductivity and relative dielectric constant of the material
- Optional linearisation of the measured value across 32 supporting points
- Network-independent supply via batteries or solar cells possible
- System integration for HART, PROFIBUS PA and FOUNDATION Fieldbus available
- LUC-M is approved for operation in hazardous areas according to ATEX, FM and CSA
- Protection class IP68 allows flooding of the measuring instrument

TRASONIC

LUC-M30

With a measuring range of up to 15 m in liquids, the LUC-M30 is especially suited for measurements in high liquid containers. Due to the measuring range of 7 m in bulk solids (grain size > 4 mm), the LUC-M is the ideal solution, e.g. for dump monitoring.








LUC-M40

Due to the hermetically welded ultrasonic transmitter made of PVDF, the new compact ultrasonic sensor LUC-M40 with flange mounting (DN80/DN100) is specifically designed for contactless level control of chemically aggressive media. The maximum measuring range is 10 m at process temperatures of -40 °C ... +80 °C.



TECHNICAL INFORMATION



Device type	LUC-M10	LUC-M20	LUC-M30	LUC-M40	LUC 4T
Industry	Water/waste water, chemicals, solids				
Application	Level control in storage tanks, stirrer containers, on conveyor belts, dumps and silos				
Approvals	<div></div>				
Housing protection class	IP68/NEMA6P	IP68/NEMA6P	IP68/NEMA6P	IP68/NEMA6P	IP65
Process connection	G1-1/2 NPT-1-1/2	G2 NPT2	DN100	DN80, 3", JIS DN100, 4", JIS	PP or high grade steel
Process material	PVDF	PVDF	UP/316Ti	PVDF	PP (1.4571), PTFE
Seal	EPDM	EPDM	EPDM	EPDM, Viton	
Operating pressure (abs)	3 bars	3 bars	2.5 bars	2.5 bars	./.
Process temperature	-40 °C ... +80 °C				-25 °C ... +70 °C
Voltage supply	2-wire 14 V DC ... 36 V DC, 4-wire 90 V AC ... 253 V AC/10,5 V DC ... 35 V DC				10 V DC ... 30 V DC
Blocking distance	0.25 m	0.35 m	0.6 m	0.4 m	
Max. measuring range liquids	5 m	8 m	15 m	10 m	4 m
Max. measuring range bulk solids	2 m	3.5 m	7 m	5 m	./.
Accuracy	± 2 mm or 0.2 % of max. measuring range		± 4 mm or 0.2 % of max. measurement range		
Output	4 mA ... 20 mA HART/FF/PROFIBUS PA				
					
Other functions	Menu operation; Envelope analysis on site, Pactware parameterisation software				

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