



## Microwave Level Switch



measuring  
•  
monitoring  
•  
analysing

LNM



(When using  
LZE-hygienic  
installation system)



- $p_{\max}$ : 10 bar;  $t_{\max}$ : 100 °C (150 °C for CIP process)
- Process connections: G ½, M12x1.5 installation meets hygiene standards through EHEDG-certified installation system LZE
- Materials approved for handling of foodstuffs
- Independent of the conductivity of the medium
- Measurement is possible despite foam and deposits
- Optimum flow geometry



Weld-in sleeve LZE



Level

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**Description**

The KOBOLD LNM microwave level switch is used for detecting levels of fill. The microwave field penetrates several millimetres into the medium. Foam, condensate or remains of the transported medium that have stuck on to the tank are not detected.

By using this principle of measurement it is also possible to detect non-conductive media. The level switch is particularly suitable for use with foaming media because the foam itself is not detected. The output of the level switch only switches when the coupling section is completely covered by the medium. This means it is possible to install it into tanks regardless of position.

In combination with the KOBOLD LZE or LZE-R weld-in sleeves, the probe provides a measuring point that has no dead space and meets hygiene standards and (EHEDG approval certificate). This level switch is therefore very well suited for CIP/SIP cleaning. Adapter sleeves are also available for different process connections so that the device can also be used in existing systems.

Because the electronics are already integrated no other evaluating instrument is necessary. The output signal (24 V<sub>DC</sub>) can therefore be transmitted direct to an SPS for further processing.

**Applications**

- Level monitoring, for conductive and non-conductive media
- Safe level monitoring, even with foam and deposits
- Phase separation oil/water
- With option  $\epsilon_r$  2-20 it is also possible to detect oil and alcohol

**Technical Details**

Measuring principle: microwave technology  
 Process temperature: 0...100°C  
 150°C max. 30 min for CIP process  
 Ambient temperature: 0...70°C

**Order Details** (Example: LNM-12 G4 A 3PK)

Design	Material	Process connection	Sensitivity	Model	Electr. connection
foodstuffs*	st. steel/PEEK	G 1/2	$\epsilon_R$ : >20	LNM-12 G4 A...	...3PK = M16x1.5 threaded cable connection ...3PS = M12x1 plug
industry	st. steel/PEEK	G 1/2	$\epsilon_R$ : >20	LNM-22 G4 A...	
foodstuffs*	st. steel/PEEK	M12	$\epsilon_R$ : >20	LNM-12 M3 A...	
foodstuffs*	st. steel/PEEK	M12	$\epsilon_R$ : 2-20	LNM-12 M3 B...	

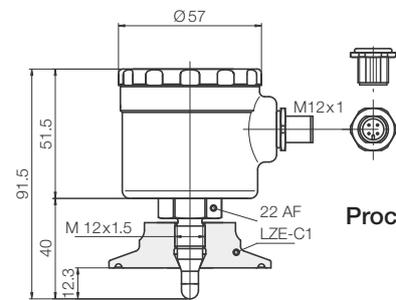
\*Installation only possible with hygienic installation system (see page 191)

**Technical Details** (continued)

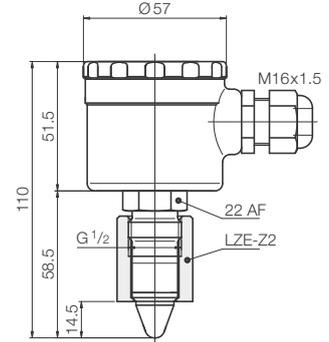
Working pressure: max. 10 bar  
 Material  
 • Head, thread supports: stainless steel 1.4404  
 • Coupler section: PEEK  
 Process connection: G 1/2, M12x1.5, hygienic weld-in sleeves LZE (see page 191-198)  
 Connection: threaded cable connection M16x1.5 terminal: 3-pole, (optional plug M12x1)  
 Function: full/empty report (determined via the polarity of the supply voltage)  
 Output: open collector, PNP, 50 mA  
 Switch delay: 0.2 s (0.3-1.0 s on request)  
 Power supply: 18...36 V<sub>DC</sub>, < 50 mA without load  
 Protection: IP 67  
 Weight: approx. 0.5 kg  
 Dielectric constant of the medium:  $\epsilon_r$  >20; option:  $\epsilon_r$  2-20

**Dimensions**

**Process connection M12x1.5**



**Process connection G 1/2**



EHEDG certification of the connection system in combination with weld-in sleeve LZE (see page 191-198)