



### Application area

- General process engineering
- Pharmaceutical industry
- Food industry
- Chemical and petrochemical industry

### Technical data

#### Constructional design / case

Design:	Field housing with screw-on cover
Material case:	Stainless steel mat.no. 1.4305 (303)
Degree of protection:	IP 69K per EN 60529
Elec. connection:	<ul style="list-style-type: none"> <li>■ Cable gland M16, PA screw terminals for wire up to 1.5 mm<sup>2</sup></li> <li>■ Circular connector M12</li> </ul>
Operating pressure:	maximum 10 bar
Weight:	approx. 0.6 kg.
Process connection:	G1/2 B, rotatable, torque 5...10 Nm Elastomer-free sealing system

#### Material wetted parts

Material:	PEEK, FDA compliant
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#### Measuring system

Sensor:	Electromagnetic wave
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### Features

- Limit switch for the fill level for liquid
- 7 base settings for several medias
- Suitable for medias with a permittivity > 2
- Hygienic installation as per EHEDG
- CIP/SIP cleaning up to 150 °C
- Various process connections via adapter
- Wetted parts in correspondence with FDA
- Insensitive to vibrations

### Options

- Readout and configuration via LIMES.soft PC-software
- M12 plug (IP69 K)

### Application

The limit switch LIMES is used to detect filling levels and for dry run protection and is suitable for liquids or paste-like and adhesive media. The measurement is effected by the media contacting the LIMES. This happens by coupling a high frequency alternating field. Because of the dielectric characteristic of the media (DK-value), the coupled alternating field changes. This leads to a change in the evaluation of the sensor, and thus to the desired registration of the media and switching an output.

### Output

Signal:	50 mA, short-circuit-proof and reversible
LED-display:	Red when probe is covered
Response time:	< 0.2 s
Delay:	Adjustable up to 0.8 s

### Supply voltage

<u>Standard design:</u>	
Functional range:	18...32 V DC Maximum 50 mA without switching load The housing is connected to negative supply voltage

### Temperature ranges

Ambient:	-10...60 °C
Media:	0...100 °C, short periods up to 150 °C (1/2 h)
Storage:	-20...70 °C

## Sensitivity adjustment , delay and visualisation

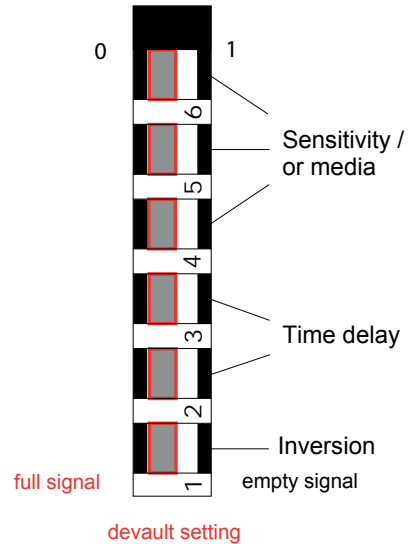
### Sensitivity adjustment of various media

switch			turn on/off values in %	
6	5	4	on	off
0	0	0	86	84
0	0	1	97	96
0	1	0	72	70
0	1	1	60	58
1	0	0	50	48
1	0	1	11	9
1	1	0	5	4
1	1	1	configurable via LIMES.soft PC-software (option)	

### Delay

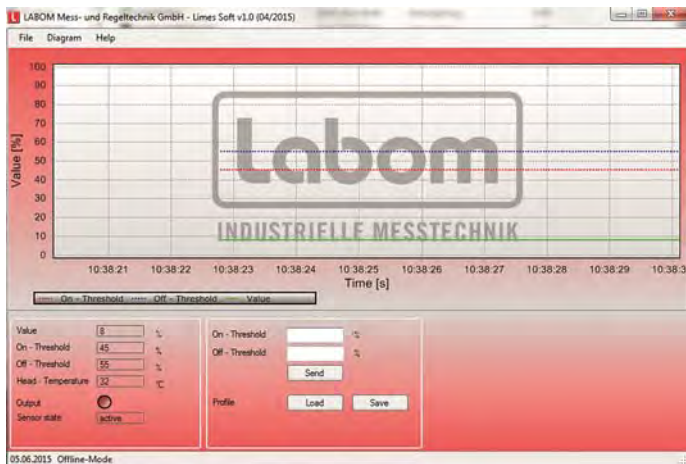
switch		delay in sec
3	2	
0	0	0
0	1	2
1	0	4
1	1	8

Configuration switches



### Visualisation via LIMES.soft PC-software

The limit switch LIMES is a micro-processor unit with an integrated interface. With this interface and in connection with the software LIMES.soft, it is possible to adjust the sensitivity of the unit to the particular device. The software visualises adherence and passing-off characteristics of media.



### Programming set consisting of:

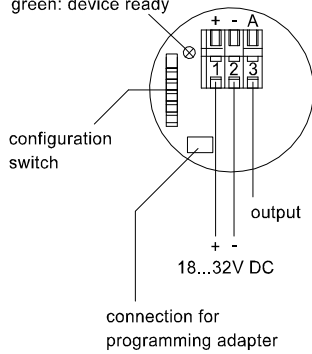
- PC-interface
- Plug adapter M12
- Software LIMES.soft for downloading, [www.labom.com/Download/Software](http://www.labom.com/Download/Software)

## Electrical connection

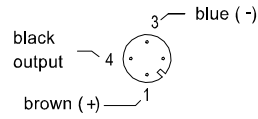
LED:

red: output ON

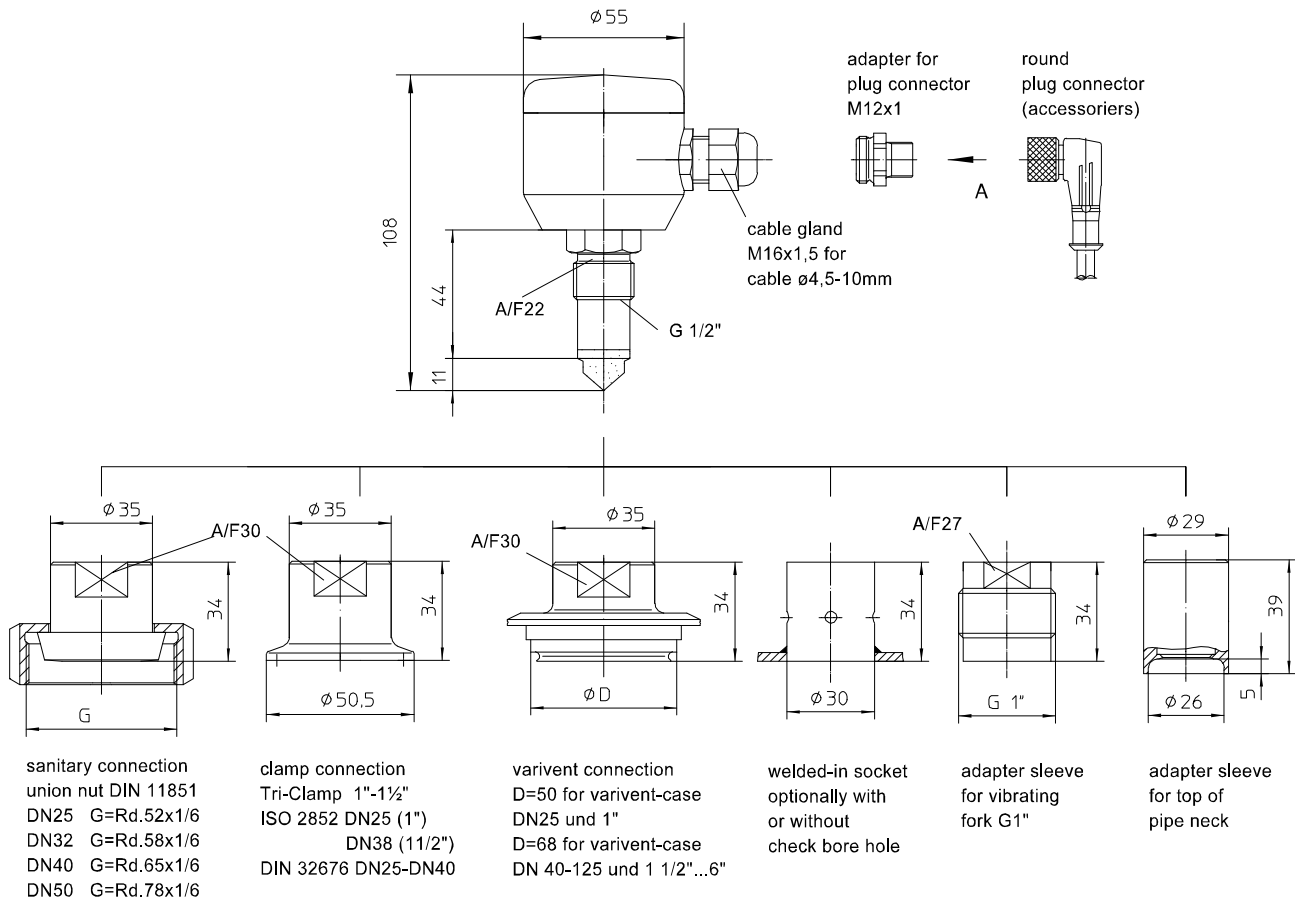
green: device ready



circular connector  
view A



## Dimensions



All dimensions are in mm

## Order details

### Limit switch LIMES for Food/Pharma/Biotechnology, Type series LV1110-MO1

Order details LV1110-MO1		
LV1110-MO1	Limit switch LIMES	
A10	process connection	G1/2 B
T15	elec. connection	cable gland M16 x 1.5, PA black, standard
T30		circular connector M12 x 1 (4pin)

Accessories					
MC1310	PC-USB-interface for readout and configuration of limit switch LIMES (software LIMES.soft for downloading, www.labom.com), including transition adapter M12 / micro plug (red)				
MT8100-A1	process connection adapter, conical seal	welding sleeve	stainless steel mat.no. 1.4404 (316L)	Ø 30 mm	
MT8100-A2			Ø 30 mm, with inspection bore		
MT8100-A5			Ø 29 mm, to fit on top of pipe neck		
MC1410-K2510-E2		adapter sleeve	stainless steel mat.no. 1.4571 (316Ti)	for vibrating fork G 1"	
MC1410-K1110-E1		union nut per DIN 11851	stainless steel mat.no. 1.4404 (316L)	DN 25	
MC1410-K1120-E1				DN 32	
MC1410-K1130-E1				DN 40	
MC1410-K1140-E1				DN 50	
MC1410-K2020-E1		Varivent	stainless steel mat.no. 1.4404 (316L)	D= 50 for Varivent housing DN 25 and 1"	
MC1410-K2030-E1				D= 68 for Varivent housing DN 40...DN 125 and 1 1/2"...6"	
MC1410-K1610-E1		clamp connection	stainless steel mat.no. 1.4404 (316L)	per ISO 2852	DN 25/38 (1"/1 1/2") Ø 50.5 mm
MC1410-K1510-E1				per DIN 32676	DN25/40, Ø 50.5 mm
MC1410-K1710-E1				Tri-Clamp	1" / 1 1/2", Ø 50.5 mm

Order code (example): LV1110-MO1 - A10 - T30 - MC1310 - ...