

# Optoelectronic Liquid Level Limit Switches Transducers Model LSO.06

WIKA Data Sheet LM 31.10



## Applications

- Level measurement for liquid media
- Chemical industry, petrochemical industry, natural gas, offshore
- Shipbuilding, machine building
- Power generating equipment, power stations
- Process and drinking water treatment

## Special Features

- Temperature ranges from -269 ... +400 °C
- Designs for pressure ranges of vacuum to 500 bar
- Special versions: high pressure, separation layer measurement
- Explosion-protected versions

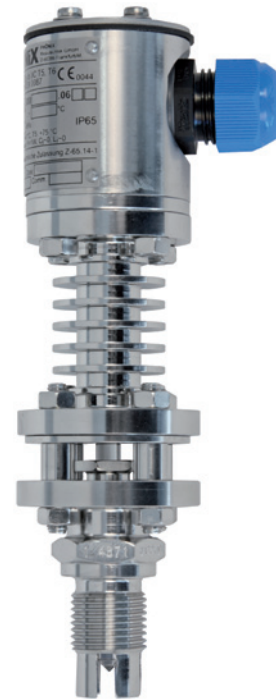
## Description

The optoelectronic liquid level limit switch is used for measuring liquid level limits. This is widely independent of physical characteristics such as refractive index, colour, specific gravity, dielectric constant and conductivity. Measurement of small volumes is also possible.

The optoelectronic transducer Model LSO.06 is also available as an explosion-protected version (Zone 0 and Zone 1).

Can be used as overflow control together with switching amplifier model LSO.25. Versions for low and high temperatures and pressures up to 500 bar are also available.

The instruments are very robust and designed for rough operating conditions. The cable to the switching amplifier does not need any screen so that cabling can be realised uncritically and economically.



Transducer Model LSO.06

## General Data

Measuring accuracy	±0.5 mm
Reproducibility	±0.1 mm
Measurable difference of the refractive index with separation layer measurement	0.02 R.I.
Light source	IR light 930 nm
Ambient light	max. 100 Lux
Mounting position	any
Process connection	G ½ A, DIN 910, flange DIN and ANSI
Measuring length ML	preferential measuring lengths: 25, 50, 60, 80, 90, 100, 120, 150, 200, 300, 600, 800 mm other measuring lengths on request
Conical nipple	DIN 7603
Weight	
■ Standard version	0.77 kg +9.3 g/cm ML
■ High and low temperature version	1.07 kg +9.3 g/cm ML

## Design Data

Medium temperature	
■ Standard version	-65 ... +250 °C
■ High and low temperature version	-269 ... +400 °C
Ambient temperature	-65 ... +95 °C
Working pressure	0 ... 25 MPa (0 ... 250 bar)
High pressure version	0 ... 50 MPa (0 ... 500 bar)
Materials	
■ Sensor case	1.4571 (option: hastelloy, other materials on request)
■ Light guide	clad core glass (option: quartz, sapphire (only max. ML = 60 mm))
■ Packing	graphite
■ Case	stainless steel
Ex certification	II 1/2 G EEx ib IIC T5, T6 T6: to 60 °C, T5: to 75 °C

## Electrical Data

Cable gland	M20 x 1.5, Ex: blue
Terminal connection	3 x 2.5 mm <sup>2</sup>
Ingress protection	IP 65 per EN 60 529

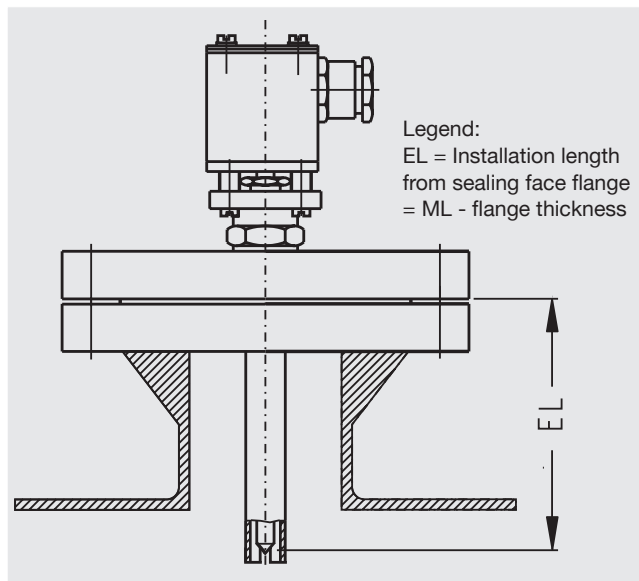
## Options

### Approvals

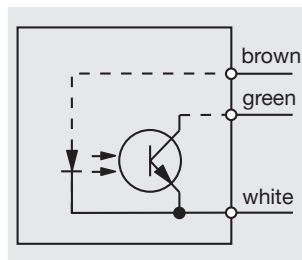
EC-type examination certificate	ZELM 02 ATEX 0087 Zone 0 + 1 (includes ASEV)
SIL level per IEC 61 508	SIL1, in connection with controller Model LSO.25
Overflow control	per German Water Resources Act (WHG) § 19

## Example for installation

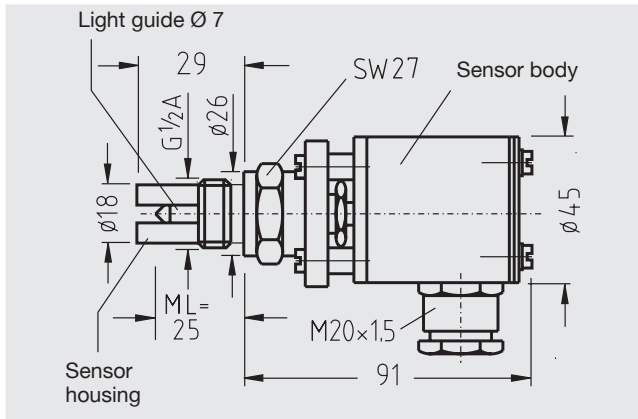
Transducer Model LSO.06, flange version vertical-ly mounted on nozzle flange  
e.g. as overflow control per WHG §19



## Electrical connection diagram



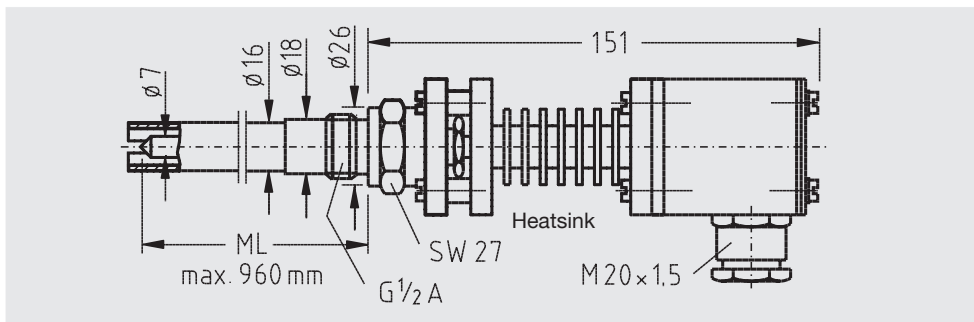
## Standard version



### Application details

- Fixed measuring length 25 mm
- Level measurement
- Guard finger as glass protection
- -65 ... +250 °C
- 0 ... 250 bar

## High and low temperature version



### Application details

- Variable measuring length
- Level measurement
- Guard finger as glass protection
- -269 ... +400 °C
- 0 ... 250 bar

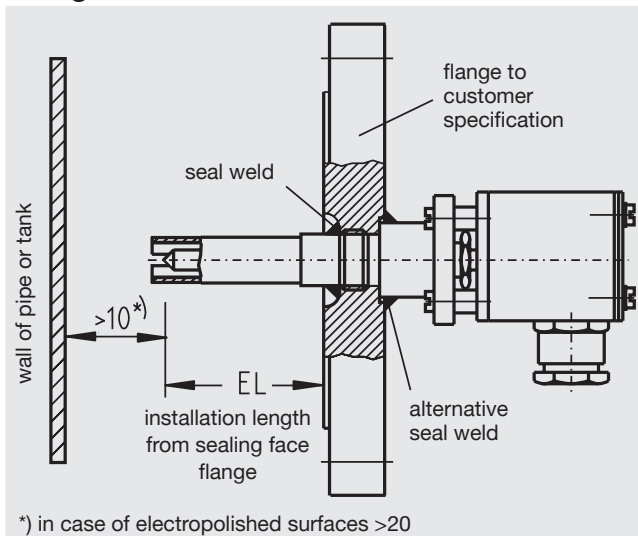
### Sealings

D21 x 26 DIN 7603 for mounting connection G 1/2 A

-10 ... 400 °C 1.1003 (soft iron)

-196 ... 30 °C 2.0090 (copper)

## Flange version



### Application details

- Variable measuring length
- Level measurement
- Welded into flange
- Guard finger as glass protection
- -65 ... +250 °C
- 0 ... 250 bar
- Material and version of flange to customer specification

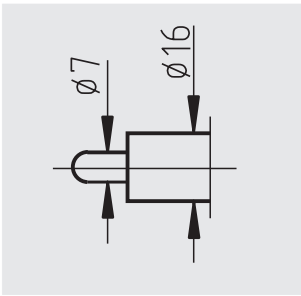
### Flange

DIN	from DN 25 PN 6, DL A/B/C/D/E, F/FA/N/NA V13/R13/V14/R14, M/L
ANSI	from 1" ANSI 150, FF/RF/RJ (RTJ), LT/LG/ST/SG/LM/LF/SM/SF
Materials	1.4571, Hastelloy, Inconel, Incoloy, Monel, titanium, tantalum
Mounting	Transducer screwed into flange or seal welded with flange

## Options

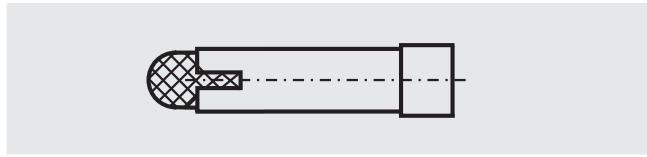
### Version for separation layer

Open glass tip



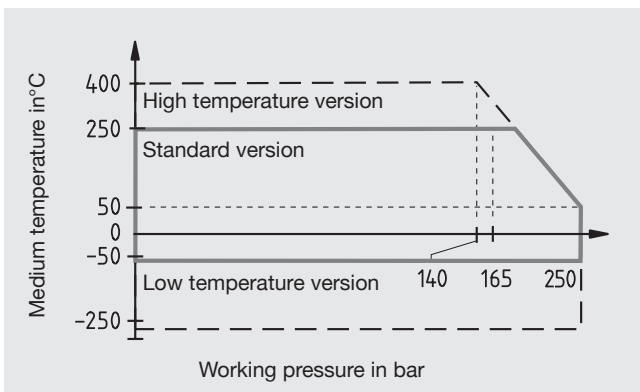
### Version with sieve

Protection from gas bubbling on glass tip



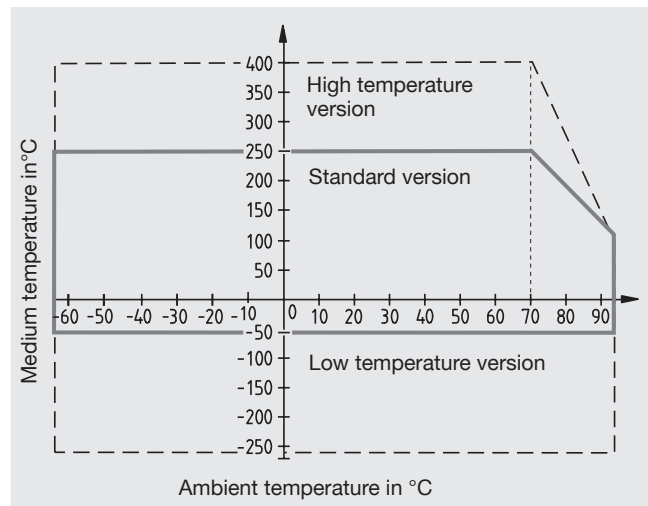
## P-T Diagram

(Pressure / temperature limitation of application)  
for mounting connection G 1/2 A per DIN 910



## Derating Diagram

(Temperature limitation of application)



## Ordering information

Model / Version / Measuring length ML / Mounting connection / Material of wetted parts / Options

Modifications may take place and materials specified may be replaced by others without prior notice.  
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.

