

Optoelectronic Liquid Level Limit Switches Transducers Model KSR-OPTO.06XX

KSR Kuebler AG Data Sheet KSR-OPTO.06XX



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

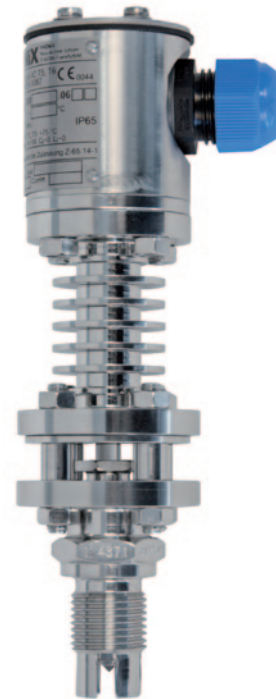
Description

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 KSR-OPTO.06XX is also available as an explosion-protected version (Zone 0 and Zone 1).

Can be used as overflow control together with switching amplifier model KSR-OPTO.250X. 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 KSR-OPTO.06XX

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 Ex ib op is 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 ²
Ingress protection	IP 65 per EN 60 529

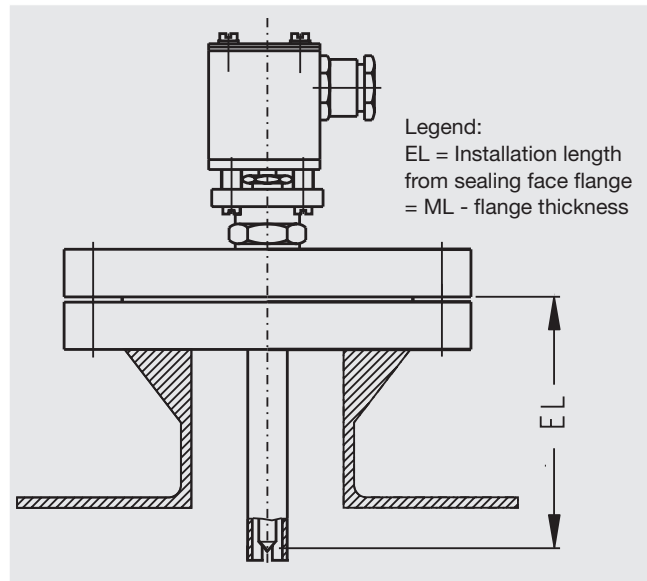
Options

Approvals

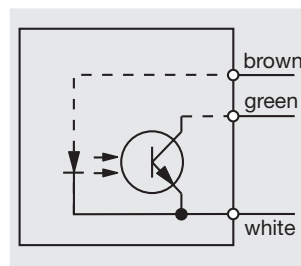
EC-type examination certificate	ZELM 06 ATEX 0299 Zone 0 + 1 (includes ASEV)
SIL level per IEC 61 508	SIL1, in connection with controller Model KSR-OPTO.250X
Overflow control	per German Water Resources Act (WHG) § 19

Example for installation

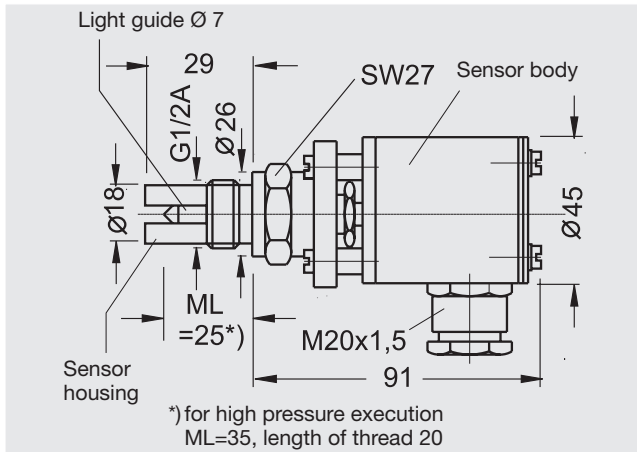
Transducer Model KSR-OPTO.0660, flange version vertically mounted on nozzle flange e.g. as overflow control per WHG §19



Electrical connection diagram



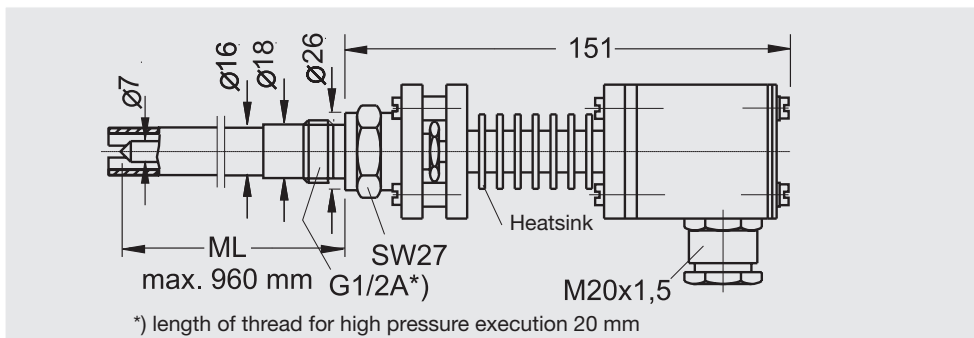
Standard version



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

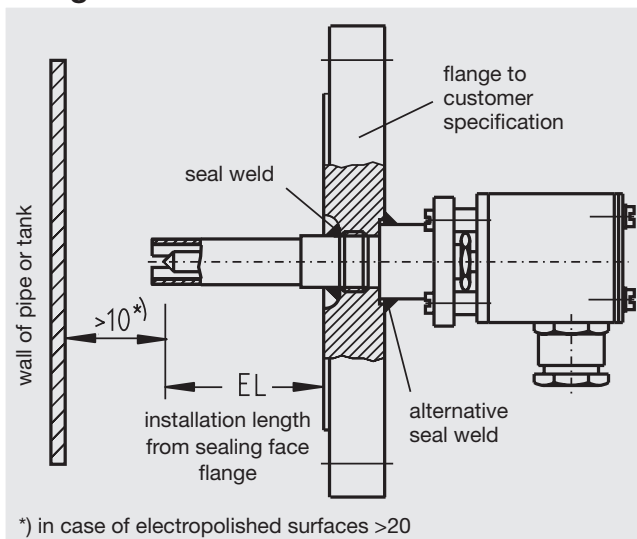
Sealings

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

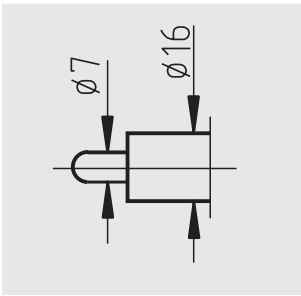
Materials 1.4571, Hastelloy, Inconel, Incoloy, Monel,
titanium, tantalum

Mounting Transducer screwed into flange
or seal welded with flange

Options

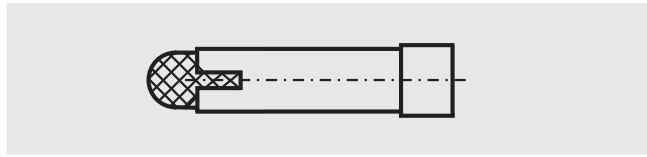
Version for separation layer

Open glass tip



Version with sieve

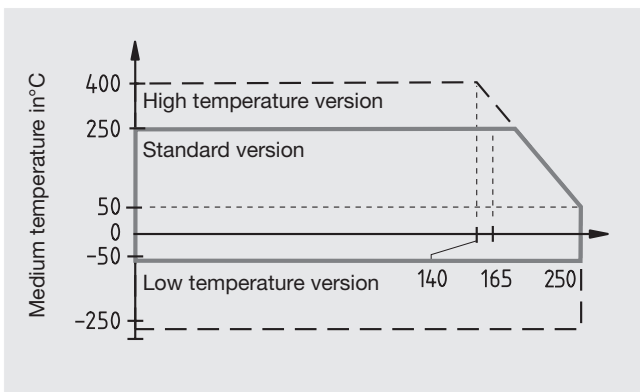
Protection from gas bubbling on glass tip



P-T Diagram

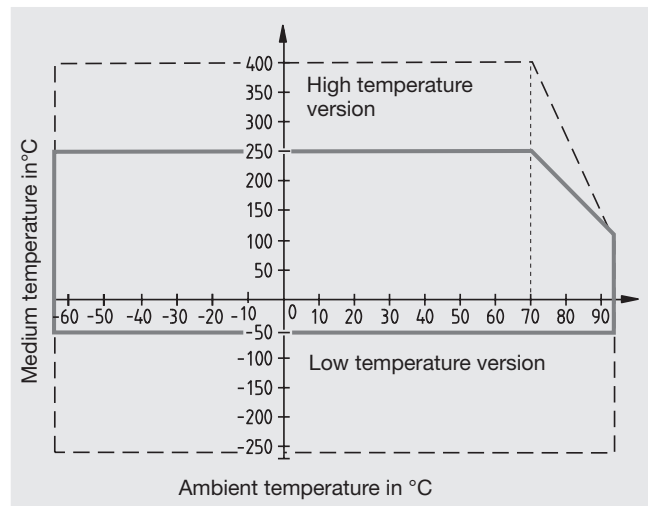
(Pressure / temperature limitation of application)

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.