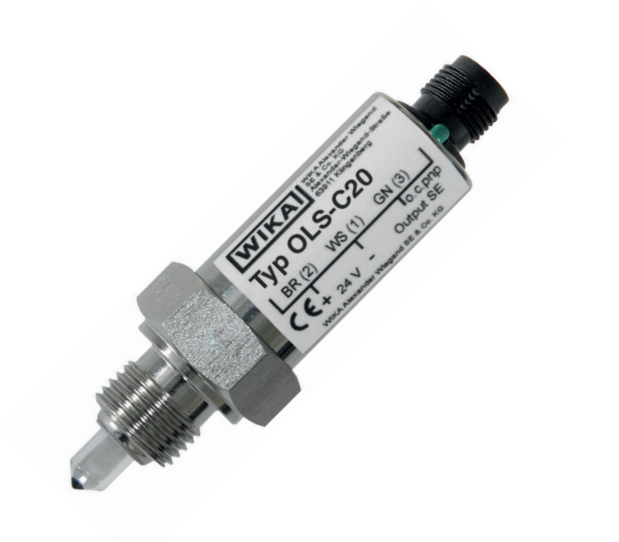
Optoelectronic level switch
Compact design
Model OLS-C20, high-pressure version

Applications

- Level measurement for liquid media
- Level control and monitoring of distinct filling levels
- Machine building
- Wastewater and environmental engineering

Special features

- Compact design, no moving components
- Temperature ranges from -30 … +135 °C
- Versions for pressure ranges from vacuum to 50 bar
- Mounting position as required
- Visual indication of the switching status



Optoelectronic level switch, model OLS-C20

Description

The model OLS-C20 optoelectronic level switches are used for the detection of limit levels in liquids. This is widely independent of physical characteristics such as refractive index, colour, density, dielectric constant and conductivity. Measurement is also done in small volumes.

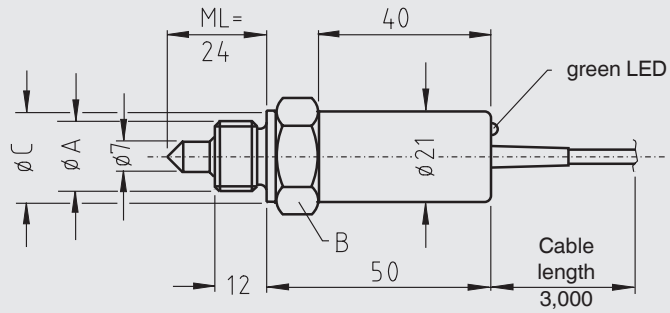
The switches consist of an infrared LED and a phototransistor. The light of the LED is directed into a prism. So long as the sensor tip of the prism is in the gas phase, the light is reflected within the prism to the receiver. When the liquid in the vessel rises and wets approximately 2/3 of the glass tip, the infrared lightbeam into the liquid is interrupted and only a small portion reaches the receiver.

The O. C. pnp transistor output may be connected directly to the input of a control system or energise an external relay. The output is short-circuit proof and also current, voltage and power limited.

The switching status can be read directly on the sensor (green LED).

Data sheets showing similar products:
Optoelectronic level switch, standard and high-pressure version; models OLS-S, OLS-H; see data sheet LM 31.01
Optoelectronic level switch, refrigerant version with relay output; model OLS-C29; see data sheet LM 31.03
Optoelectronic level switch, explosion-protected version; model OLS-C51; see data sheet LM 31.04

Specifications, dimensions in mm

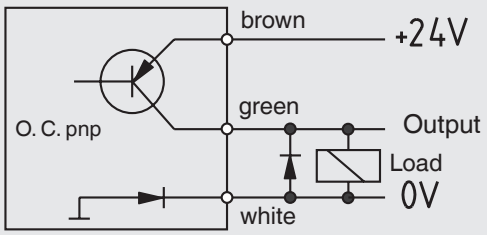


Legend
ML fixed measuring length 24 mm

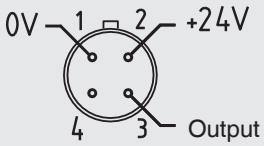
Process connection Ø A	Spanner width B	Sealing face Ø C
M16 x 1.5	SW 24	21
G 1/2	SW 30	26
1/2 NPT	SW 24	-

Specifications	
Measuring accuracy	±0.5 mm
Light source	IR light 930 nm
Ambient light	max. 10,000 Lux
Minimum distance from the glass tip to an opposite surface	> 10 mm > 20 mm with electropolished surface
Mounting position	as required
Visual inspection	
■ Switching status	green LED
■ Switching direction	is factory-set
Medium temperature	-30 ... +135 °C
Ambient temperature	-25 ... +70 °C
Pressure range	0 ... 50 bar
Materials	
■ Sensor housing	Stainless steel
■ Light guide	Quartz glass
■ Packing	Graphite/PTFE
■ Case	Stainless steel
Power supply	DC 24 V, -25 ... +30 %
Max. current supply	40 mA
Output	O. C. pnp transistor, short-circuit proof, current, voltage and power limitation
Switching current (T_u = 70 °C)	0.5 A
Electrical connection	
■ PVC cable	3 x 0.14 mm²
■ Connector	4-pin series 712, M12
Ingress protection	
■ With connector	IP 65 per EN 60529
■ With cable	IP 66 per EN 60529

Electrical connection diagram



Connector assignment



Model overview

Process connection	Switching direction	Electr. connection	Cable length	Connector/ cable	Material	Order no.
M16 x 1.5	SE	Connector	-	M12	Stainless steel 1.4571	100256
	SA	Connector	-	M12	Stainless steel 1.4571	100255
	SE	Cable	3 m	PVC	Stainless steel 1.4571	500224
	SA	Cable	3 m	PVC	Stainless steel 1.4571	500222
G 1/2"	SE	Connector	-	M12	Stainless steel 1.4571	100259
	SA	Connector	-	M12	Stainless steel 1.4571	100258
	SE	Cable	3 m	PVC	Stainless steel 1.4571	500233
	SA	Cable	3 m	PVC	Stainless steel 1.4571	500231
NPT 1/2"	SE	Connector	-	M12	Stainless steel 1.4571	on request
	SA	Connector	-	M12	Stainless steel 1.4571	100257
	SE	Cable	3 m	PVC	Stainless steel 1.4571	500229
	SA	Cable	3 m	PVC	Stainless steel 1.4571	500227

SE = immersing when switching (normally open on rising level)
SA = emerging when switching (normally closed on rising level)

Ordering information

To order the described product the order number (if available) is sufficient.

Alternatively:
OLS-C20 / Process connection / Switching direction / Electrical connection

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