

Optoelectronic level switch

Compact design, high-pressure version

Model OLS-C20

WIKA data sheet LM 31.02

Applications

- Level detection 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 inspection of the switching status



Optoelectronic level switch, model OLS-C20

Description

The model OLS-C20 optoelectronic level switch is 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 switch consists 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 gaseous 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 light beam into the liquid is interrupted and only a small portion reaches the receptor.

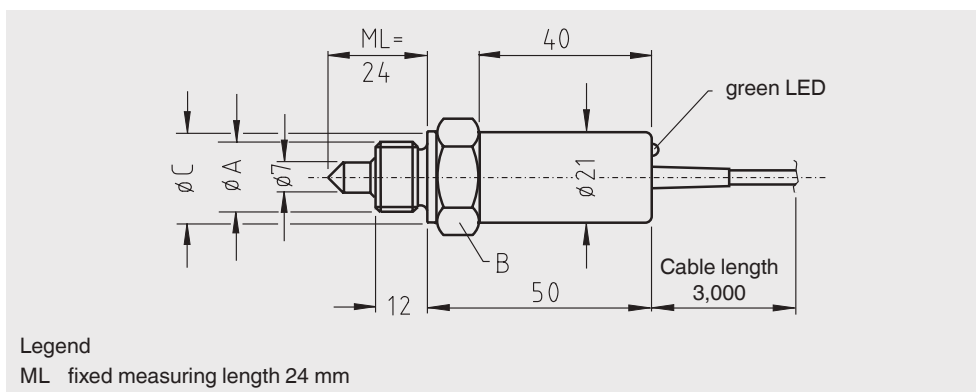
The O. C. pnp transistor output may be connected directly to the input of a control system or energise an external relay. The output is short-circuit-proof and also current, voltage and power limited.

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

Specifications

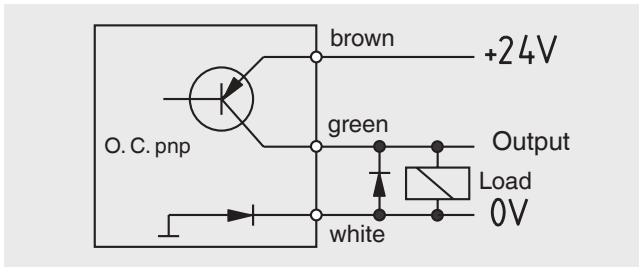
| Specifications | |
|--|--|
| Measurement accuracy | ±0.5 mm |
| Light source | IR light 930 nm |
| Ambient light | max. 10,000 Lux |
| Minimum distance from the glass tip to an opposite surface | > 10 mm > 20 mm with electropolished surface |
| Mounting position | As required |
| Visual inspection | |
| 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 | Fused quartz |
| Sealing packing | Graphite/PTFE |
| Case | Stainless steel |
| Supply voltage | 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 ($T_u = 70\text{ °C}$) | 0.5 A |
| Electrical connection | |
| PVC cable | 3 x 0.14 mm ² |
| Connector | 4-pin series 713, M12 |
| Ingress protection per EN 60529 | |
| With connector | IP65 |
| With cable | IP66 |

Dimensions in mm

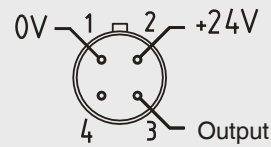


| Process connection Ø A | Spanner width B | Sealing face Ø C |
|------------------------|-----------------|------------------|
| M16 x 1.5 | SW 24 | 21 |
| G 1/2 | SW 30 | 26 |
| 1/2 NPT | SW 24 | - |

Electrical connection



Connector assignment



Model overview

| Process connection | Switching direction | Electrical connection | Cable length | Connector/cable | Material | Order number |
|--------------------|---------------------|-----------------------|--------------|-----------------|------------------------|--------------|
| 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 | 35125004 |
| | SA | Cable | 3 m | PVC | Stainless steel 1.4571 | 500222 |
| G 1/2 | SE | Connector | - | M12 | Stainless steel 1.4571 | 14281705 |
| | SA | Connector | - | M12 | Stainless steel 1.4571 | 14211284 |
| | SE | Cable | 3 m | PVC | Stainless steel 1.4571 | 500233 |
| | SA | Cable | 3 m | PVC | Stainless steel 1.4571 | 14273247 |
| 1/2 NPT | 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

© 08/2014 WIKA Alexander Wiegand SE & Co. KG, all rights reserved.
The specifications given in this document represent the state of engineering at the time of publishing.
We reserve the right to make modifications to the specifications and materials.

