

# Optoelectronic level switch

## Intrinsic safety Ex i

### Model OLS-C51

WIKA data sheet LM 31.04



for further approvals  
see page 4

#### Applications

- Machine tools
- Hydraulics
- Plant construction and machine building
- Water technology
- For liquids such as oils, water, distilled water, aqueous media

#### Special features

- Application at medium temperatures up to +135 °C
- Mounting position as required
- Accuracy  $\pm 2$  mm
- Explosion-protected version Ex i



Optoelectronic level switch, model OLS-C51

#### Description

The model OLS-C51 optoelectronic level switch is used for monitoring the level of liquids. The optoelectronic sensor consists of an infrared LED and a light receptor.

The light from the LED is directed at a prism which forms the tip of the sensor. So long as the tip is not immersed in liquid, the light is reflected within the prism to the receiver.

When the liquid rises within the vessel and surrounds the tip, the light beam is refracted by the liquid, so that the receiver is no longer or only weakly reached by the light and reacts to this change by triggering a switching operation.

As an explosion-protected version, the model OLS-C51 level switch is designed for medium temperatures up to +135 °C in zone 0 and 1.

## Specifications

| General data   |   |
|--|---|
| Measurement accuracy                                       | ±2 mm                                       |
| Minimum distance from the glass tip to an opposite surface | ≥ 10 mm<br>(≥ 20 mm with polished surfaces) |
| Mounting position  | as required                                 |
| Process connection   | G 1/2" male                                 |

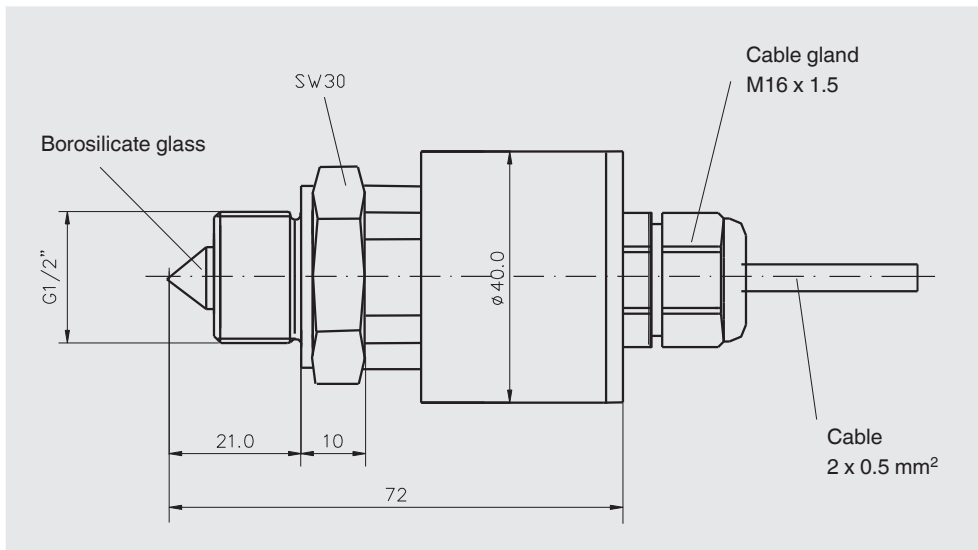
| Design data          |  |
|----------------------|--|
| Responsiveness       | Preset for the detection of aqueous media and oils |
| Medium temperature   | -30 ... +135 °C                                    |
| Ambient temperature  | -30 ... +80 °C                                     |
| Operating pressure   | 40 bar (4.0 MPa)                                   |
| Materials            |  |
| ■ Light guide        | Borosilicate glass, fixed with epoxy resin         |
| ■ Case               | Stainless steel 1.4305 (non-wetted parts)          |
| ■ Process connection | Stainless steel 1.4571                             |

| Electrical data               |  |
|-------------------------------|--|
| Power supply                  | DC 7.5 ... 30 V  |
| Safety-related maximum values | $I_o = 100 \text{ mA}$<br>$U_o = 30 \text{ V}$<br>$P = 1 \text{ W}$  |
| Output                        | 4 ... 20 mA, protected against reverse polarity<br>"Open": ≥ 4 mA to < 10 mA<br>"Closed": ≥ 12 mA to 18 mA<br>Fault: < 4 mA, > 20 mA |
| Electrical connection         | ■ PUR cable halogen-free<br>■ Cable length freely definable<br>■ Diameter: 2 x 0.5 mm <sup>2</sup>                                   |
| Output function               | "Normally open" (closed in medium) or "normally closed" (open in medium)   |
| Ingress protection            | IP65   |
| Number of switch points       | 1  |

## Options

- Other versions on request


## Dimensions in mm






## Electrical connection diagram

| Cable assignment |   |
|------------------|---|
| U <sub>+</sub>   | 1 |
| U <sub>-</sub>   | 2 |

## Accessories

| Description  | Order number |
|--|--------------|
|  <p><b>Intrinsically safe repeater power supply, model IS Barrier</b><br/>           Input 0/4 ... 20 mA, supplying and non-supplying<br/>           Bidirectional HART® signal transmission</p> <p>For details see data sheet AC 80.14</p> | 14117118     |

## Approvals

| Logo   | Description   | Country        |
|--|---|----------------|
| <br> | <b>EU declaration of conformity</b> <ul style="list-style-type: none"> <li>■ EMC directive<br/>EN 61326 emission (group 1, class B) and interference immunity (industrial application)</li> <li>■ RoHS directive</li> <li>■ ATEX directive<br/>Hazardous areas (approved model designation OPG 051)<br/>- Ex i Zone 0/1 gas II 1/2G Ex ia IIC T4 Ga/Gb</li> </ul> | European Union |
|    | <b>IECEX</b><br>Hazardous areas (approved model designation OPG 051)<br>- Ex i Zone 0/1 gas Ex ia IIC T4 Ga/Gb  | International  |

## Manufacturer's information and certificates

| Logo | Description          |
|------|----------------------|
| -    | China RoHS directive |

Approvals and certificates, see website

## Ordering information

Model / Process connection / Switching function / Cable length

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