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

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).
Specifications, dimensions in mm

<table>
<thead>
<tr>
<th>Process connection Ø A</th>
<th>Spanner width B</th>
<th>Sealing face Ø C</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16 x 1.5</td>
<td>SW 24</td>
<td>21</td>
</tr>
<tr>
<td>G 1/2</td>
<td>SW 30</td>
<td>26</td>
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<tr>
<td>1/2 NPT</td>
<td>SW 24</td>
<td>-</td>
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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, Switching direction
- 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_{a} = 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

Model overview

<table>
<thead>
<tr>
<th>Process connection</th>
<th>Switching direction</th>
<th>Electr. connection</th>
<th>Cable length</th>
<th>Connector/cable</th>
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</table>

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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