

Optoelectronic level switch High-temperature version Model OLS-C05

WIKA data sheet LM 31.33

Applications

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

Special features

- Use at temperatures of up to +170 °C [+338 °F]
- Mounting position as required
- Accuracy ± 2 mm
- Choice of electrical connections: PUR, PVC cable, circular connector M12 x 1 or angular connector EN 175301-803 A

Description

The model OLS-C05 optoelectronic level switch is used for monitoring the level of liquids. The optoelectronic sensor consists of an infrared LED and a light receiver.

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.

Optoelectronic level switch, model OLS-C05, with angular connector



Configurator



Standard article



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.

With variants fitted with a trimmer, the switching status can be read directly on the sensor (internal red LED).

The model OLS-C05 level switch is designed for use with liquids at high temperatures of up to 170 °C [338 °F].

Basic information	
Minimum distance from the glass tip to an opposite surface	≥ 10 mm ≥ 20 mm with electropolished surface
Material	
Light guide	Borosilicate glass, fixed with epoxy resin
Case	Stainless steel 303 (non-wetted part)
Process connection	Stainless steel 316Ti

Accuracy specifications	
Accuracy	≤ ±2 mm

Process connection	
Thread size / Size	<ul style="list-style-type: none"> ■ G ½ ■ M16 x 1.5

Voltage supply and performance data	
Current supply	40 mA
Auxiliary power	
Supply voltage	DC 12 ... 32 V

Operating conditions	
Responsiveness	<ul style="list-style-type: none"> ■ Preset for the detection of aqueous media and oils ■ Adjustable responsiveness (trimmer) for other liquids and foaming media
Storage temperature range	-40 ... +70 °C [-40 ... +158 °F]
Medium temperature range	-40 ... +170 °C [-40 ... +338 °F]
Ambient temperature range	-30 ... +80 °C [-22 ... +176 °F]
Max. operating pressure	0 ... 50 bar [0 ... 5 MPa / 0 ... 725 psi]
Ingress protection of the complete instrument	IP65

Electrical connection		
Connection type		
PUR, PVC cable	Cable length	Freely definable
	Diameter	3 x 0.25 mm ²
	Cable end	Open
Circular connector	M12 x 1 (4-pin)	
Angular connector	per EN 175301-803 A	
Pin assignment	(if needed, drawing for illustration of the principle)	
Ingress protection	IP65	

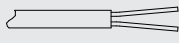
Output signal	
Number of switches	1
Switch(ing) technology	PNP transistor, protected against reverse polarity, 200 mA switching current
Switching function	Normally open (closed in medium) or normally closed (open in medium)
Response time ¹⁾	0.5 s

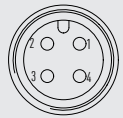
1) Switching delay of up to 7 s on request


Pin assignment

Legend

- SP Switch point
- U+ Positive power supply
- U- Negative power supply

Cable outlet, unshielded		
		Level
	Brown	U+
	White	U-
	Green	SP

Circular connector M12 x 1		
4-pin		Level
	1	U+
	2	-
	3	U-
	4	SP

Assignment, angular connector per EN 175301-803 A		
		Level
	1	
	2	
	3	

Approvals

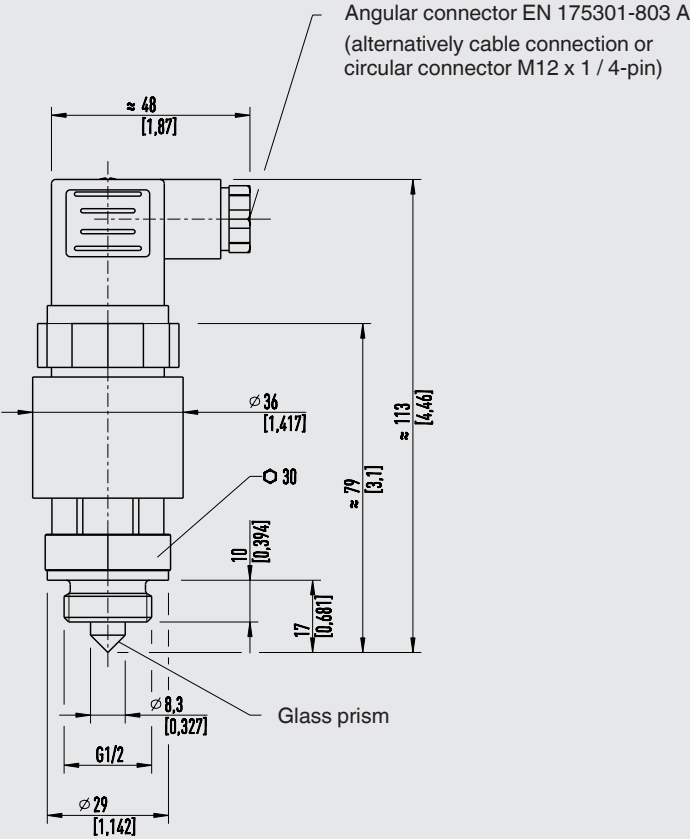
Logo	Description	Region
	EU declaration of conformity	European Union
	EMC Directive EN 61326 emission (group 1, class B) and immunity (industrial environments)	
	RoHS directive	

Manufacturer's declaration

Logo	Description
-	China RoHS directive




→ For approvals and certificates, see website

Dimensions in mm [in]



Weight: 170 g [0.37 lb] + 25 g/m [0.02 lb/ft] cable length

Accessories and spare parts

Description	Temperature range	Cable diameter	Cable length	Order number	
Circular connector M12 x 1 with moulded cable					
	Straight version, cut to length, 4-pin, PUR cable, UL Listed, IP67	-20 ... +80 °C [-4 ... +176 °F]	4.5 mm [0.18 in]	2 m [6.6 ft]	14086880
				5 m [16.4 ft]	14086883
				10 m [32.8 ft]	14086884
	Angled version, cut to length, 4-pin, PUR cable, UL Listed, IP67	-20 ... +80 °C [-4 ... +176 °F]	4.5 mm [0.18 in]	2 m [6.6 ft]	14086889
				5 m [16.4 ft]	14086891
				10 m [32.8 ft]	14086892
Connection cable M12 x 1 with integrated LED display					
	Connection cable, 4-pin, PUR cable, UL Listed, IP67 1 x LED green, 2 x LED yellow	-20 ... +80 °C [-4 ... +176 °F]	4.5 mm [0.18 in]	2 m [6.6 ft]	14252834
	Connection cable, 4-pin, PUR cable, UL Listed, IP67 1 x LED green, 2 x LED yellow	-20 ... +80 °C [-4 ... +176 °F]	4.5 mm [0.18 in]	5 m [16.4 ft]	14252835

Ordering information

Model / Process connection / Electrical connection / Switching function / Cable length / Options



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