

Float switch

For industrial applications, plastic version

Model RLS-2000

WIKA data sheet LM 50.04

Applications

- Level measurement of liquids in machine building
- Control and monitoring tasks for critical media

Special features

- Media compatibility: Oil, aqueous media and corrosive liquids
- Wetted parts: PP or PVDF
- Up to 4 switching outputs freely definable as normally open, normally closed or change-over contact
- Potential-free switching reed contacts



Fig. left: Mounting thread, angular connector
Fig. right: Cable outlet

Description

The model RLS-2000 float switch has been developed for measuring the levels of aggressive and corrosive media, such as acids and bases.

Measuring principle

A permanent magnet built into the float triggers, with its magnetic field, the potential-free reed contacts built into the guide tube. The triggering of the reed contacts by the permanent magnet is contact-free and thus free from wear. Depending on customer wishes, the switching functions of normally open, normally closed or change-over can be realised for the defined liquid level.

Specifications

Float switch, model RLS-2000	
Measuring principle	Potential-free switching reed contacts are triggered by a magnet in the float.
Guide tube length L ■ PP version ■ PVDF version	100 ... 1,500 mm (4 ... 59 in) 120 ... 1,500 mm (4.7 ... 59 in) other lengths on request
Output signal	Up to 4 switch points, depending on the electrical connection: SP1, SP2, SP3, SP4
Switching function	Alternatively normally open (NO), normally closed (NC) or change-over (SPDT) contact - on rising level
Switch position ■ PP version ■ PVDF version	Specified in mm, starting from the upper sealing face (SP1 ... SP4) At the end of the guide tube ≈ 45 mm (≈ 1.8 in) cannot be used for switch positions. At the end of the guide tube ≈ 65 mm (≈ 2.6 in) cannot be used for switch positions.
Distance between switch points ¹⁾	Minimum distance SP1 to the upper sealing face: 50 mm (2.0 in) Minimum distance between the switch points: 50 mm (2.0 in) Minimum distance with 3 switch points: 80 mm (3.1 in), either between SP1 and SP2 or SP2 and SP3 Minimum distance with 4 switch points: 80 mm (3.1 in), between SP2 and SP3
Switching power	Normally open, normally closed: AC 230 V; 100 VA; 1 A DC 230 V; 50 W; 0.5 A Change-over contact: AC 230 V; 40 VA; 1 A DC 230 V; 20 W; 0.5 A
Accuracy	±3 mm switch point accuracy incl. hysteresis, non-repeatability
Mounting position	Vertical ±30°
Process connection	■ G 1 ½, installation from outside ²⁾ ■ G 2, installation from outside ■ G ¾, installation from inside ³⁾ ■ G ½, installation from inside ³⁾
Material ■ Wetted ■ Non-wetted	Process connection, guide tube: PP, PVDF (option) Float: See table on page 3 Case: PP, PVDF (option) Electrical connection: See table below
Permissible temperatures ■ Medium ■ Ambient ■ Storage	PP version PVDF version (option) -10 ... +80 °C (14 ... 176 °F) -10 ... +80 °C (14 ... 176 °F) ⁴⁾ , option: -30 ... +120 °C (-22 ... +248 °F) ⁴⁾ -10 ... +80 °C (14 ... 176 °F) -30 ... +80 °C (-22 ... +176 °F) -10 ... +80 °C (14 ... 176 °F) -30 ... +80 °C (-22 ... +176 °F)

Electrical connections ⁵⁾	Max. switch point definition	Ingress protection per IEC/EN 60529 ⁶⁾	Protection class	Material	Cable length
Angular connector DIN EN 175301-803 A	■ 2 NO/NC ■ 1 SPDT	IP65	II	PA	-
Cable outlet	■ 4 NO/NC ■ 4 SPDT	IP67	II	PVC	■ 2 m (6.5 ft) ■ 5 m (16.4 ft) other lengths on request
Cable outlet	■ 4 NO/NC ■ 2 NO/NC + 1 SPDT	IP67	II	Silicone	other lengths on request
Connection housing Dimensions: 80 x 82 x 55 mm (3.1 x 3.2 x 2.2 in) For cable diameter: 5 ... 10 mm (0.2 ... 0.4 in)	■ 4 NO/NC ■ 4 SPDT	IP66	II	Polycarbonate, glands from polyamide, brass, stainless steel	-

1) Smaller minimum distances on request

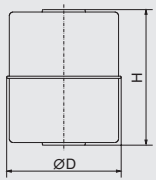
2) Only with float outer diameter Ø D = 44 mm (1.7 in) from PP

3) Only with cable outlet

4) Not with PVC cable

5) Versions with protective conductor on request

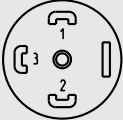
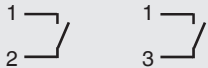
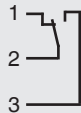
6) The stated ingress protection (per IEC/EN 60529) only applies when plugged in using mating connectors that have the appropriate ingress protection.


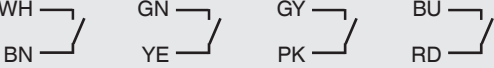
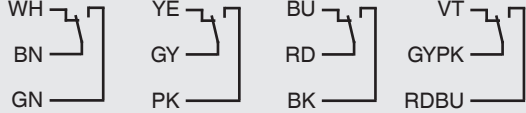
Float	Form	Outer diameter Ø D	Height H	Operating pressure	Medium temperature	Density	Material
	Cylinder ¹⁾	44 mm (1.7 in)	44 mm (1.7 in)	≤ 3 bar (≤ 43.5 psi)	≤ 80 °C (≤ 176 °F)	≥ 500 kg/m ³ (31,2 lbs/ft ³)	PP
	Cylinder ²⁾	55 mm (2.2 in)	55 mm (2.2 in)	≤ 3 bar (≤ 43.5 psi)	≤ 80 °C (≤ 176 °F)	≥ 500 kg/m ³ (31,2 lbs/ft ³)	PP
	Cylinder ²⁾	55 mm (2.2 in)	65 mm (2.6 in)	≤ 3 bar (≤ 43.5 psi)	≤ 120 °C (≤ 248 °F)	≥ 800 kg/m ³ (49,9 lbs/ft ³)	PVDF

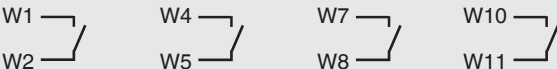

1) Permissible guide tube length L ≤ 500 mm (19.68 in), not with process connection G 2

2) Not with process connection G 1 ½

Connection diagram

Angular connector DIN EN 175301-803 A		
	Normally open/normally closed (NO/NC)	Change-over contact (SPDT)
	2 switch points SP1 SP2 	1 switch point SP1 

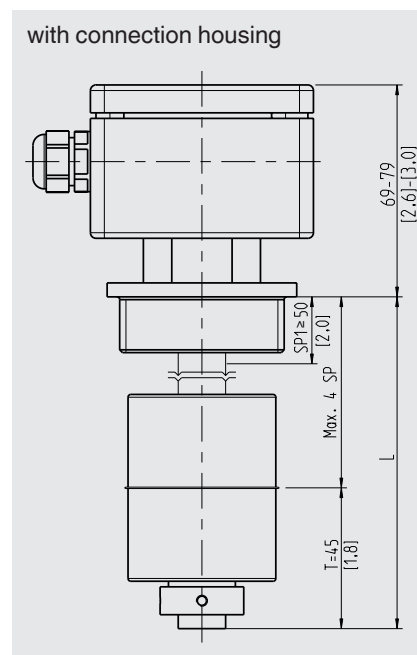
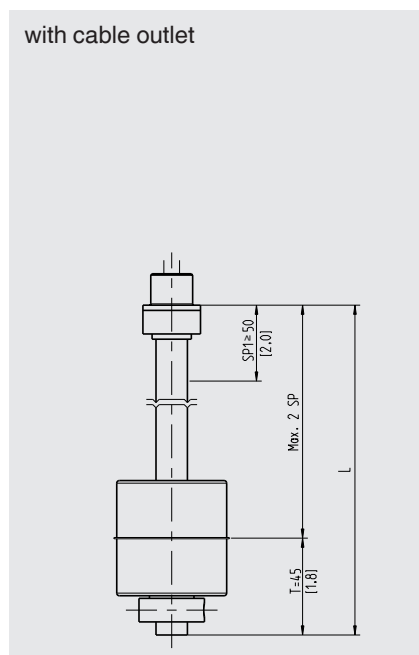
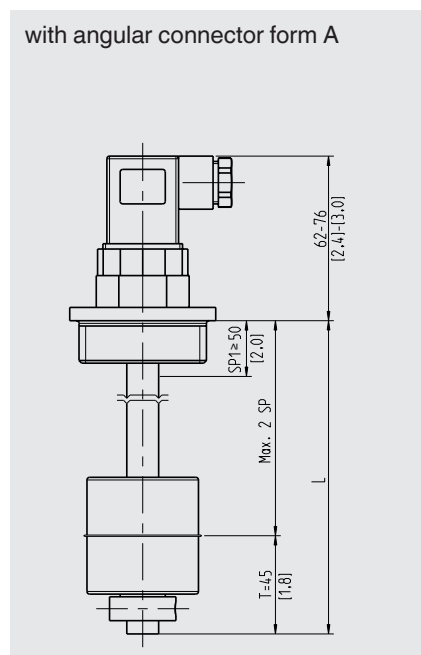
Cable outlet		
	Normally open/normally closed (NO/NC)	Change-over contact (SPDT)
	4 switch points SP1 SP2 SP3 SP4 WH GN GY BU BN YE PK RD 	4 switch points SP1 SP2 SP3 SP4 WH YE BU VT BN GY RD GYPK GN PK BK RDBU 

Connection housing		
	Normally open/normally closed (NO/NC)	Change-over contact (SPDT)
	4 switch points SP1 SP2 SP3 SP4 W1 W4 W7 W10 W2 W5 W8 W11 	4 switch points SP1 SP2 SP3 SP4 W1 W4 W7 W10 W2 W5 W8 W11 W3 W6 W9 W12 

Legend

SP1 - SP3	Switch points	GY	Grey	BK	Black
WH	White	PK	Pink	VT	Violet
BN	Brown	BU	Blue	GYPK	Grey/Pink
GN	Green	RD	Red	RDBU	Red/Blue
YE	Yellow				

Dimensions in mm (in)

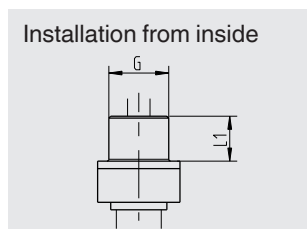
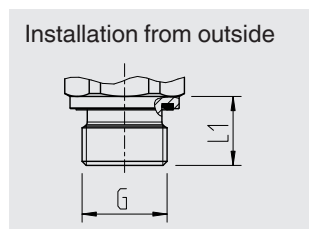


Legend

L Guide tube length

T Non-usable range for switch positions

Process connection



G	L ₁
G 1 ½	16 mm (0.63 in)
G 2	20 mm (0.79 in)

G	L ₁
G ¾ B	12 mm (0.47 in)
G ½ B	14 mm (0.55 in)

Approvals

Logo	Description	Country
	EU declaration of conformity <ul style="list-style-type: none">■ Low voltage directive■ RoHS directive	European Union

Manufacturer's information and certificates

Logo	Description
-	China RoHS directive

Approvals and certificates, see website

Ordering information

Model / Output signal / Switching function / Electrical connection / Material / Process connection / Guide tube length L / Medium temperature

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