LS-11N

Angular Float Switch for Side Mounting

- **Small dimensions for mounting**
- **Reliable and robust technology**
- **Sideways mounting into vessel wall**
- **Stainless steel versions**
- **Contacts available as NO-contact, NC-contact or change-over contact**

Description:
The LS-11N series of level switches operates according to the principle of a float with magnetic transmission. The switch consists of a sliding tube with embedded reed contacts, a float in which ring magnets are mounted, and a connecting module. The float is lifted inside the vessel due to the rising fluid level; subsequently, it actuates a reed contact as a result of the magnetic field of the permanent magnet situated in the float through the sliding tube wall. The reed contact can be designed to function as a NO-contact, NC-contact or change-over contact.

Range of application:
The LS-11N level switches are suited for monitoring the level of nearly all types of fluid media as an alarm for full or empty levels, for controlling valves and pumps or for alert signals. By deploying potential-free reed contacts, the floating magnetic switches provide an ideal switching element in combination with PLC controls.

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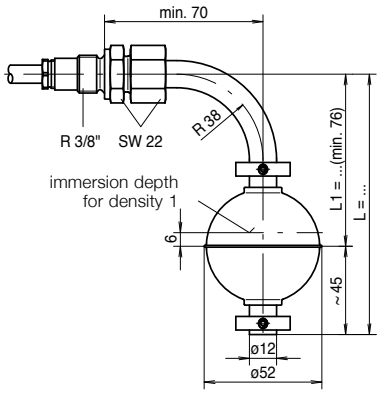
www.profimess.com
Schleusenstraße 3 · 27568 Bremerhaven · ☎ +49 471 98 24 -151 · 🖷 +49 471 98 24 -152 · E-Mail: info@profimess.de

Versions:

Material: Stainless steel (other materials on request)

Every magnetic float level sensor consits of the following 3 main component groups which are available in different versions depending on the technical requirements:

- Sliding tube
- Float
- Process connection



Sliding tube: Standard are diameters of 8 mm with a max. length of 500 mm respectively 12 mm with a max. length of 3000 mm.

Float: The choice of float is based on the liquid being monitored (corrosion, density), the process parameters (pressure, temperature) and the slide tube materials and diameters. The available float models are listed in the following table:

Table 1: Float types:

Float No.	Form	Material	Ø (mm)	min. Density	max. Pressure	max. Temp.
1	cylinder	buna	25	0.787 kg/l	3 bar	80°C
2	cylinder	stainless steel	27	0.787 kg/l	16 bar	100°C
3	cylinder	buna	40	0.581 kg/l	3 bar	80°C
4	sphere	stainless steel	52	0.769 kg/l	40 bar	300°C
4a	cylinder	stainless steel	44	0.818 kg/l	16 bar	300°C

Process connection: Typically, the magnetic float level sensors are screwed in the wall of the vessel (G or NPT 1/8" to 3/8") from inside with a male-threaded fitting. When installed in this fashion, the devices are supplied with a PVC or silicone-jacket connection cable. To mount the float sensor from outside through the wall of the vessel the device must be fitted with a tank fitting or flange. The diameter of the tank fitting must be large enough to allow the float to pass through the opening in the wall of vessel.

Special versions:

The LS-11N is in special configurations beside the ordering code available. Next to different materials for the cable there are synthetics for the wetted parts such as PVDF, PVC, PP et cetera. Other dimensions for sliding tubes and floats are also available on request.

Technical specifications LS-11N sliding tube diameter 8 mm:

Process connection: Standard: male thread G 1/8“
Option: male thread installation downwards G 3/4“ or G 1“

Slide tube material: stainless steel 1.4571

Slide tube length: max. 500 mm

Orientation: vertical ±30°

max. Pressure: see table 1: „Float types“

Electr. connection: 2m cable PVC, silicone, Ölflex, junction box or with plug

max. Temperature(1): PVC and Ölflex cable -10°C to +80°C, silicone cable -30°C to +150°C junction box aluminum +150°C

Contact function: NO-contact (S), NC-contact (O) or change-over-contact (U)

max. Contacts: 3 x **S** or **O** or 1 x **U**

Contact rating (2)

NO-contact: 250V AC; 10VA; 0.5A
250V DC; 5W; 0.25A

NC-contact: 250V AC; 10VA; 0.5A
250V DC; 5W; 0.25A

Change-over-cont.: 28V AC; 6VA; 0.6A
28V DC; 3W; 0.3A

Protection class: IP54 (Option: junction box IP65)

Technical specifications LS-11N sliding tube diameter 12 mm:

Process connection: Standard: male thread G 3/8“
Option: male thread G 1 1/2“ or G 2“, Mounting flange acc. to DIN or ANSI

Slide tube material: stainless steel 1.4571

Slide tube length: max. 3000 mm

Orientation: vertical ±30°

max. Pressure: see table 1: „Float types“

Electr. connection: 2m cable PVC, silicone, Ölflex, junction box or with plug

max. Temperature(1): PVC and Ölflex cable -10°C to +80°C, silicone cable -30°C to +150°C junction box aluminum +150°C

Contact function: NO-contact (S), NC-contact (O) or change-over-contact (U)

max. Contacts: PVC cable 6 x **S** or **O** or 4 x **U**
silicone cable 3 x **S** or **O** or 2 x **U**

Contact rating (2)

NO-contact: 230V AC; 100VA; 1A
230V DC; 50W; 0.5A

NC-contact: 230V AC; 100VA; 1A
230V DC; 50W; 0.5A

Change-over-cont.: 230V AC; 40VA; 1A
230V DC; 20W; 0.5A

Protection class: IP65

(1) **Info:** Taking into consideration the maximum operation temperature of the float (see table 1: „Float types“)

(2) **Attention:** Designs without earthing connection - use low voltage only e.g. contact protection relays or external protective earth

Ordering codes (general):

Ordering number: **LS-11N. | 1. | 1. | 1. | 1. | 1001. | 1. | [x][x]. | 0.**

Angular Float Switch for Side Mounting

Sliding tube material:

1 = stainless steel 1.4571

9 = others

Sliding tube diameter:

1 = 08 mm

2 = 12 mm

9 = others

Material process connection:

1 = stainless steel

9 = others

Float type:

1...4a = as per table 1, „Float type“

Process connection:

1001...3999 = as per table „Process connection“

Electrical connection:

1 = 2 m PVC cable

2 = 2 m silicon cable

3 = plug connector as per DIN 43650

4 = polyester junction box

5 = aluminium junction box

9 = others

Contact function for increasing level:

S = NO-contact

O = NC-contact

U = change-over-contact

Example: 2 contacts for increasing level, for instance > [O][S]

Special versions:

0 = none

9 = please specify in detailed text

Other specifications:

- Sliding tube length: L = xxxx mm
- Position of 1st switching point: L1 = xxxx mm
- Position of n switching point: Ln = xxxx mm

(all length specifications are measured from the sealing edge of relevant connection joint)

- medium
- medium density
- max. pressure
- max. temperature
- special issues

Ordering codes (Process connection):

Ordering number: **x | y | y | y**

Process connection

1 = male thread (Installation upwards)

2 = tank joint (Installation downwards)

3 = flange connection

x = 1: Male thread **1 | 0 | 0 | 1**

001 = G 1/8 (only for sliding tube Ø 8mm)

002 = G 1/4 (only for sliding tube Ø 8mm)

003 = G 3/8

004 = G 1/2

005 = G 3/4

006 = G 1

007 = G 1 1/2

008 = G 2

999 = other

x = 2: Tank joint **2 | 0 | 0 | 1**

001 = G 1/2

002 = G 3/4

003 = G 1

004 = G 1 1/2

005 = G 2

999 = other

x = 3: Flange connection **3 | 1 | 1 | 1**

Material:

1 = stainless steel 1.4571

2 = PVC

3 = PP

4 = PVDF

9 = other

Nominal diameter:

1 = DN50

2 = DN65

3 = DN80

4 = DN100

5 = DN125

6 = DN150

7 = DN200

9 = other

Pressure level:

1 = PN16

2 = PN25

3 = PN40

9 = other

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Schleusenstraße 3 · 27568 Bremerhaven · ☎ +49 471 98 24 -151 · 🖷 +49 471 98 24 -152 · E-Mail: info@profimess.de