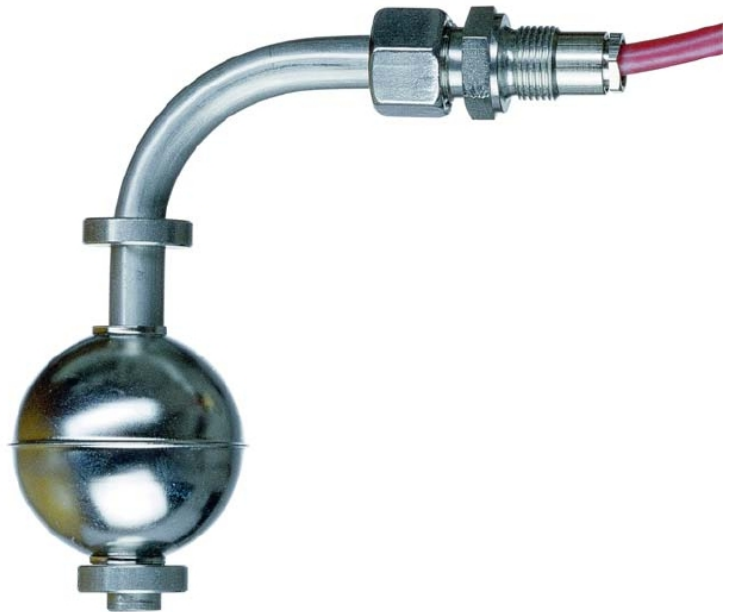


FS11

Magnetic Float Switch Angled, for Lateral Installation

- side installation into vessel wall
- reliable and robust technique
- screw in thread, tank screw
- design in stainless steel
(plastic on request)
- contact as N/C, N/O, or SPDT
- P_{\max} : 40 bar, T_{\max} : 180 °C
- max. guide tube length: 3000 mm



Description:

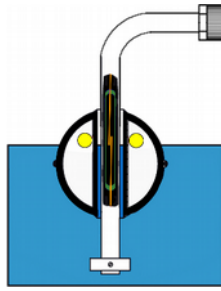
The level switch of the model type series FS11 operates according to float principle with magnetic transmission. The sensor consists of a guide tube with embedded Reed contacts, one or more floats with fitted ring magnets and a process connection module. The float is raised by the rising liquid in the tank and operates a Reed contact through the guide tube wall by means of the magnetic field produced by permanent magnets located in the float. The Reed contact can be designed as a NO, NC or SMDT function.

Typical applications:

The FS11 magnetic float level sensors are suitable for monitoring the level practically all liquids, e.g. as a full or empty tank sensor, for controlling valves and pumps and for alarm function. The potential free Reed contacts fitted in the level sensor make it an ideal control element when coupled with PLC controllers.

Function:

A ring magnet installed in the float operates Reed contacts, which are embedded at defined positions in the guide tube, via its magnetic field through the walls of the guide tube. Float stops mounted on the guide tube prevent the float from passing the contact – this assures bistable switching. Consequently, a maximum of 2 contacts per float can be operated. If more contacts are fitted, more floats must be used.



Structure of the measuring instrument:

Each magnetic float level sensor consists of the three key modules below, which, depending on requirements, are available in different models:

- Guide tube
- Float
- Process connection

Secondary instrumentation like contact protection relays complete the measuring system.

Guide tube:

The guide tube is the key component in the level sensor: it houses the reed contacts and it is made of st. steel 1.4571 with 12 mm diameter.

Guide tube length:

max. length of vertical branch: 3000 mm
length of horizontal branch: Standard = 70 mm
(special lengths on request)

Number of contacts inside guide tube:

Electrical connection	Max. number of contacts	
	N/O or N/C	SPDT
PVC/PUR cable	6	4
Silicone cable	5	3
Housing	6	4

Recommended accessories: contact protection relay type MSR01, also suitable for direct pump control

isolating amplifier type P+F

Floats:

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

Float models and dimensions (Table 1):

Type	Material	Min. DN G / flange	Ø ID/AD [mm]	Min. density [kg/m ³]	Max. press. [bar]	Max. temp [°C]
Cylinder float						
E1544	st. steel	1 ½" / DN 50	15 / 44	820	16	300
Ball float						
E1552	st. steel	2" / DN 65	15 / 52	770	40	300
E1562		- / DN 65	15 / 62	600	32	300
E1583		- / DN 80	15 / 83	410	25	300

Process connection:

Typically, the magnetic float level sensors are screwed from inside the vessel with a 3/8" female thread. When installed in this fashion, the devices are supplied with a PVC or silicone-jacket connection cable.

To mount the float level sensor from outside through the wall of the vessel the device must be fitted with a tank fitting or with flanges. In this case it is recommended, that the diameter of the tank fitting or flange is large enough to allow the float to pass through the opening in the top of vessel. In the standard version, an adjustable stop ring is fixed to the end of the guide tube, therefore the float can be removed and afterwards mounted from inside the vessel, if the diameter of the process connection is too small.

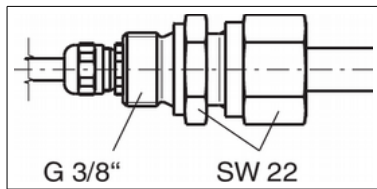
Contact rating of Reed switches:

Contact function	Maximum contact rating	
	AC	DC
N/O	230 V, 1 A, 100 VA	230 V, 0,5 A, 50 VA
N/C	230 V, 1 A, 100 VA	230 V, 0,5 A, 50 VA
SPDT	230 V, 1 A, 40 VA	230 V, 0,5 A, 20 VA

Please take contact protection measures into account. For exact details, see type plate.

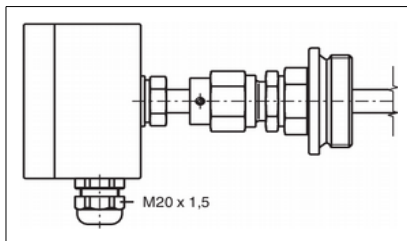
Process Connections:

Male thread with cable connection:



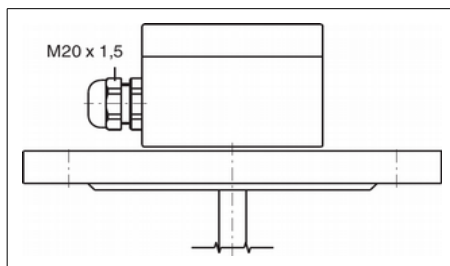
Process connection: G 3/8
Material: stainless steel 1.4571 or 1.4404
Cable material: PVC
temperature range -10...+80°C
Silicone
temperature range -30...+150°C
Connection code: **G10**

With tank fitting and terminal housing:



Process connection: Tank fitting G 1 1/2 or G 2
Material: stainless steel 1.4571 or 1.4404
Temperature range: -30...+180°C
Connection codes: G 1 1/2: **TG40**
G 2: **TG50**

With connection flange and terminal housing:



Process connection: flange acc. to DIN EN 1092
DN50...DN200, PN6...PN40
flange acc. to ANSI
1 1/2"...8", #150 RF, #300 RF
Material: stainless steel 1.4571
Temperature range: -30...+180°C
Connection codes: DN 50...DN 200: FD50 to FD200...
.../6 to 100 (PN 6... PN 40)
example: **FD50/6**
ANSI, 2"...8": FA2...FA8...
.../150 bis 300 (Class 150...300)
example: **FA2/150**

Technical Data:

Guide tube material: stainless steel 1.4571 or 1.4404

Guide tube diameter: 12 mm

Guide tube length: maximal 3000 mm

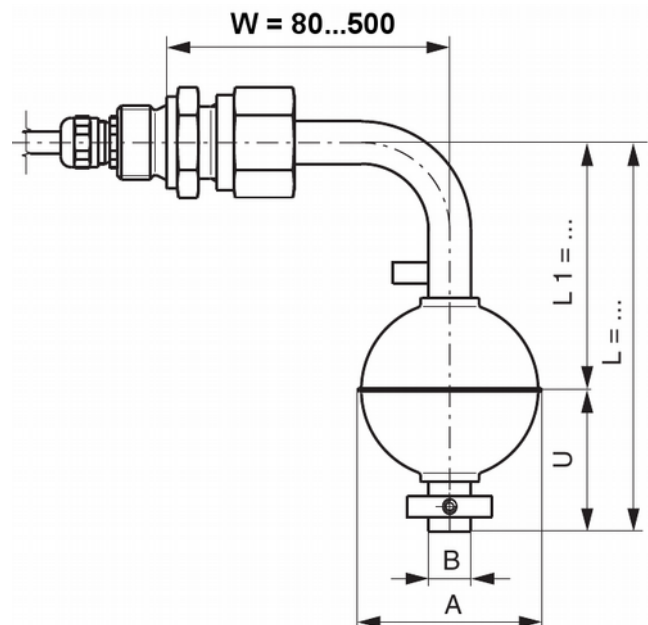
Process connections: male thread
tank fitting
flange connection

Max. pressure: depends on selected float and
PN of process connection

Temperature range: depends on selected float, and
PN of process connection

further data of order: position and function of contacts,
measured from sealing edge of thread,
total length of guide tube L,
length of horizontal part W.

Dimensions:



Order Code:

Order Number: FS11. 2. 2. 3. G10. 1. 1. E1544. 0

**Magnetic Float Switch
angled, for lateral installation**

Guide tube material:

2 = stainless steel 1.4571
3 = stainless steel 1.4404
(plastic on request)

Guide tube diameter:

2 = 12 mm

Material process connection:

3 = stainless steel as guide tube material
(plastic on request)

Connection code:

G10...FD200/40
(see chapter "process connections")

Electrical connection:

1 = aluminium terminal housing
2 = stainless steel terminal housing
3 = PP terminal housing
6PVC1 = 1 m connection cable PVC
6SIL1 = 1 m connection cable Silicone
(other length please specify)
9 = special

Contacts (from top to bottom)*:

Distance of contacts from centre line of horizontal part,
please indicate for each contact individually.

1 = N/O at rising level
2 = N/C at rising level
3 = SPDT

Float models (see table 1):

E1544...E1583
9 = special

Options:

0 = without
9 = please specify in plain text

Special designs are available on request.