



Installation and Operating Instructions for Float Switches SV





Mounting and Operating Instructions for Float Switches SV

Functional description

The float switch types SV10 to SV71 operate according to the float principle with magnetic transmission. The reed switches built into the pipe are activated at predetermined set switch points by a permanent magnet mounted in the float. The switching state of the reed switch can be evaluated and processed by a series-connected control unit.

Application area

Mainly used for level controlling and monitoring of liquid media. The liquids should not be too heavily contaminated or contain large particles and should not have the tendency to crystallize. The materials of the switch (pipe, float) which come into contact with the medium must be sufficiently resistant to the monitored medium.

Assembly

When installing the switches according to their connection please make sure that they are installed in the correct vertical position (max. deviation from the vertical $\pm 30^\circ$)

Use a suitable sealing gasket to seal the process connection. For flange connections the corresponding bolts and nuts must be used.

The float must be removed before installation in openings with a diameter smaller than the diameter of the float. Mark the position of the clamps before removing. Replace the float inside the tank after installing the float switch and fix the clamps at the marked position.

Note!

When installed inside ferromagnetic connection pieces the function of the reed switches can be affected. This may cause malfunction and material damage. The switch must be installed outside ferromagnetic surroundings.

Electrical connection:

Note!

All electrical connections must be carried out in accordance with the regulations that apply to the country where the equipment is to be installed and should be performed only by qualified personnel. The electrical connection must be carried out according to the wiring diagram printed on the switch. (Types with only one normally closed or normally open contact contain no wiring diagram.)

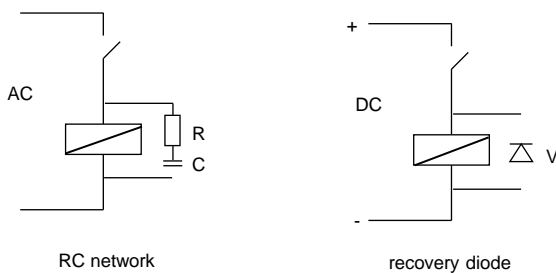
The cable bushing into the connection enclosure must be sealed.

Warning!

Use of float switches with inductive or capacitive load may lead to the destruction of the reed switch. This may cause a malfunction of the control circuitry and harm persons or damage property. With an inductive load, float switches have to be connected to a RC network resp. a recovery diode.

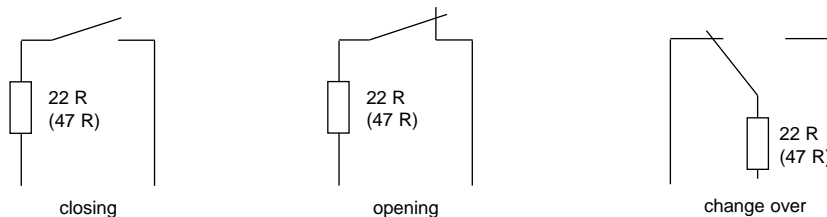


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Reed-Switch 10-40 VA			Reed-Switch 40-100 VA		
C	R	U(AC)	C	R	U(AC)
0,33 μ F	100 Ω	24 V	0,33 μ F	47 Ω	24 V
0,33 μ F	220 Ω	48 V	0,33 μ F	100 Ω	48 V
0,33 μ F	470 Ω	115 V	0,33 μ F	470 Ω	115 V
0,33 μ F	1500 Ω	230 V	0,33 μ F	1000 Ω	230 V

With capacitive load, connecting cable lengths over 50 m or the connection to a PLC with capacitive input circuit, a 22 Ω resp. 47 Ω (10 VA contacts) resistor is required to be connected in series to limit current spikes.



Warning!

Overloading the float switches can lead to the destruction of the built-in reed switch, which may cause a malfunction of the control circuitry and harm persons or damage property.

Danger!

Float switches with connecting cable without protective earth connection may be electrically live under faulty conditions. Touching the switch may cause harm to persons or even be lethal. These switches must only be used with protective low voltage accordingly to VDE0100 or are to be mounted in such way, that the switch is earthed.



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Commissioning / Function test:

Switch on the power supply of the connected control unit. Fill the vessel and check the switch point function. The function test can also be conducted manually on the removed switch.

Note!

Make sure that the function test does not accidentally set any processes in motion.

Maintenance:

The float switches operate free of maintenance and wear when used properly.

Note:

The reed switches must be operated on intrinsically safe circuits when operating in hazardous areas of zone 1 or 2.

Float switches made of plastic may not be used in the hazardous areas of zone 1 or 2.

Do not operate float switches in the immediate vicinity of strong electromagnetic fields.

The float switches may not be exposed to any severe mechanical stresses (shock, bending).

Technical Data:

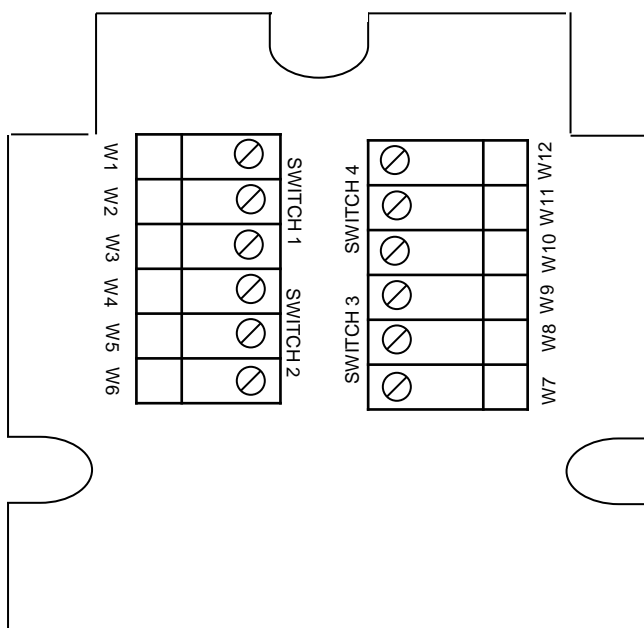
Max. switching power SR10, SR11, SR12, SR15, SR20, SR30, SR31, SR32, SR40, SR6	Opening / Closing 230 V AC; 100 VA; 1 A AC 230 V DC; 50 W; 0,5 A DC	Change over 230 V AC; 40 VA; 1 A AC 230 V DC; 20 W; 0,5 A DC
Max. switching power SR13, SR14, SR50, SR71	Opening / Closing 100 V AC/DC; 0,5 A; 10 W/VA	Change over 100 V AC/DC; 0,25 A ; 5 W/VA
Installation position	vertical ($\pm 30^\circ$)	

Of course we also provide special designs according to your detailed specifications.
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Electrical connection: box



Connection Closer / Opener	Connection Change-over switch
SWITCH 1 W1 W2	SWITCH 1 W1 W2 W3
SWITCH 2 W4 W5	SWITCH 2 W4 W5 W6
SWITCH 3 W7 W8	SWITCH 3 W7 W8 W9
SWITCH 4 W10 W11	SWITCH 4 W10 W11 W12

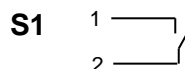
Electrical connection: cable outlet

Connection Closer / Opener	Connection Change-over switch
S1 WH BN	S1 WH BN GN
S2 GN YE	S2 YE GY PK
S3 GY PK	S3 BU RD PK
S4 BU RD	S4 VT0 GYPK RDBU

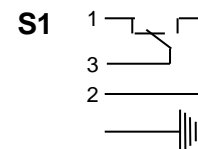
Electrical connection: plug connector

Right-angle plug according to DIN 43650

connection
closer / opener



connection
change-over switch



Note: The operative connection is given on the device.

Note

In order to safeguard the secure functioning of the reed contacts and to provide a maximal durability, a protective circuit is required.