Mini Float Level Switch

FineTek
Your Made-To-Order Solutions

PRODUCT INTRODUCTION

■ INTRODUCTION

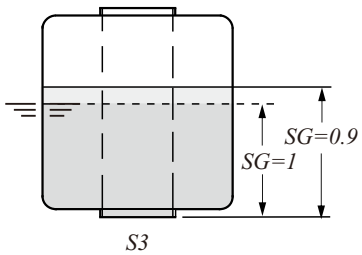
Since technologies of the product have more and more advance, the products need comply with a requirement for more convenient, safe and low cost.
The float switches are extremely compact, simple and are easy to install on any small space.
These switches are not effected by electrical interference. They can withstand to chemicals, high temperatures and pressures if the correct material of float switch is selected by the customers.

■ LIQUID PROPERTIES AND FLOATS

When the liquid specific gravity is less or more than the water, the float on the switch will either increase or decrease the immersion depth. The switch actuation level will also change.

All actuation levels are assumed with the water (SG=1). If your liquid has a different specific gravity, you should not specify the float specific gravity more than liquid, that will not cause the float rise with the liquid level. The reed switch inside the stationary stem will not be activated by the magnet inside the float.

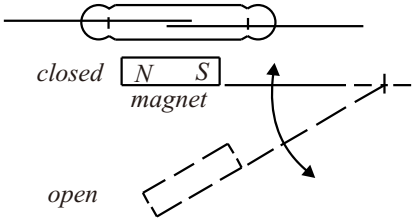
If your liquid has a high viscosity, you should specify largest size float that will provide a greatest buoyant force to ensure the units operate normally.
Because the float switches are activated by the magnetic field of permanent magnet inside the float, make sure the liquid is no iron powder or magnetic material to avoid magnetic interference.



(Fig. 3)

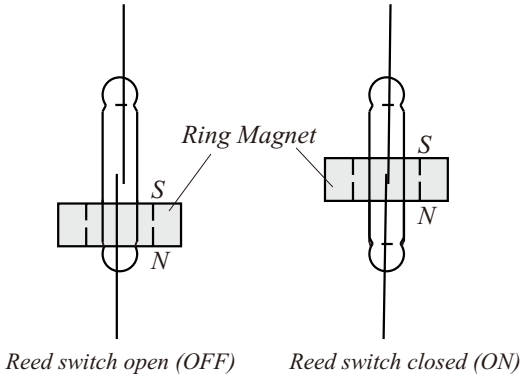
■ PRINCIPLE

Fig. 1 illustrates the method of pivot actuation (such as the FCH TYPE float switches). When the magnetic field of permanent magnet inside the float is moved into to the proximity of the reed switch inside the stationary stem, the reed switch "snaps" the contact together and closes the electrical circuit. When the magnetic field is moved away from the reed switch, the reed switch does not touch. The circuit is open.



(Fig. 1)

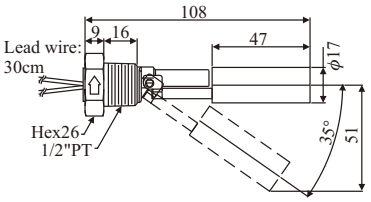
Fig. 2 illustrates the method of perpendicular actuation (such as the FC V TYPE float switches). When the magnetic field of ring magnet inside the float is moved into the proximity of reed switch inside the stationary stem, the reed switch "snaps" the contact together and closes the electrical circuit. When the magnetic field is moved away from the reed switch, the reed switch does not touch.
The circuit is open.



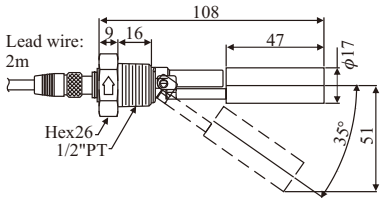
(Fig. 2)

METAL SINGLE SWITCH TYPES

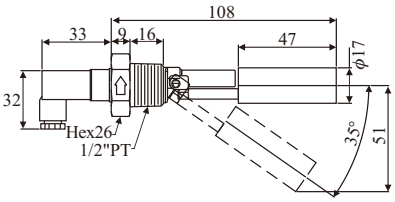
▶ FD MH50/ 56



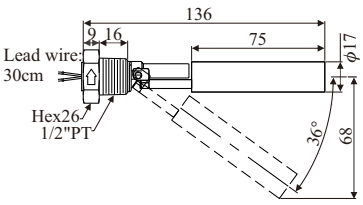
▶ FD MH50A /56A



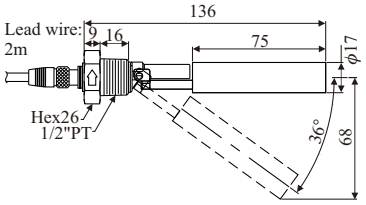
▶ FD MH50C /56C



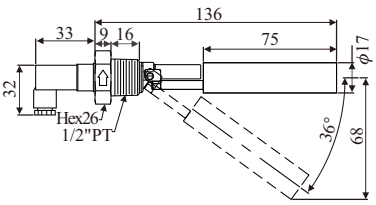
▶ FD MH60/ 66



▶ FD MH60A/ 66A



▶ FD MH60C/ 66C



■ SPECIFICATIONS

Type	Material	Switching Capacity Max.	Switching Voltage Max.	Switching Current Max.	Carry Current Max.	Lead Wire	Max. Pressure	Operating Temp.	Suitable Sp. Gr.
FDMH50/56 **FDMH60/66**	SUS 304 SUS 316L	50W/SPST	240Vac 200Vdc	0.5A	1A	XLPE or TEFLON	5 kg/cm^2	-20~120°C (Max.200°C)	FDMH5:0.92 FDMH6:0.75
FDMH50A/56A **FDMH60A/66A**	SUS 304 SUS 316L	50W/SPST	240Vac 200Vdc	0.5A	1A	XLPE or TEFLON	5 kg/cm^2	80°C	FDMH5:0.92 FDMH6:0.75
FDMH50C/56C **FDMH60C/66C**	SUS 304 SUS 316L	50W/SPST	240Vac 200Vdc	0.5A	1A	XLPE or TEFLON	5 kg/cm^2	-20~120°C	FDMH5:0.92 FDMH6:0.75

ORDER INFORMATION FOR METAL SINGLE SWITCH TYPES

FDMH **5** **0** **A** **B** **R** **(** **0** **5** **F** **)**

Type

5: ϕ17x47L (SG: 0.92) **6:** ϕ17x75L (SG: 0.75)

Material

0: SUS304 **6:** SUS316L

Connection

– : without, **A:** ASI, **C:** DIN

Connecting Type

BR:1/2"PF, **BQ:** 1/2"PT, **BU:** 1/2"NPT, **BT:** 1/2"BSP

Lead wire Length (Unit=100mm)

05: 500mm (below 500mm) ※ 500mm per Unit
10: 1000mm (501~1000mm) ※ 300mm (Standard length)
15: 1500mm (1001~1500mm)
⋮

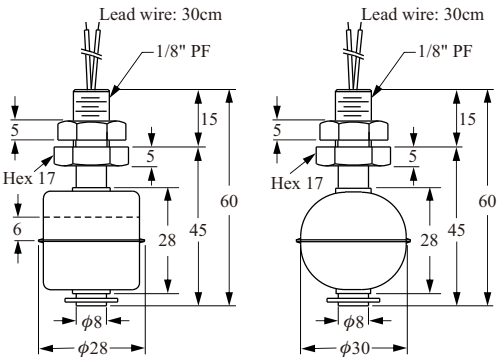
Material of Lead wire

F: SILICON (200℃) AWG24 X ϕ4
T: TEFLON (200℃) AWG24
X: XLPE (125℃) AWG22 (Standard)

※ Material of Wetted parts"SUS304"。

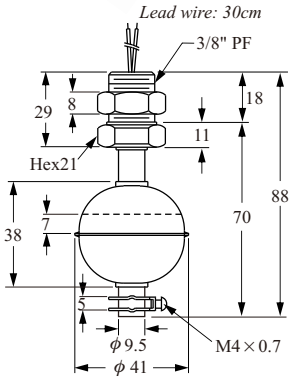
METAL TYPES

▶ FD 30□1/ FD 35□1



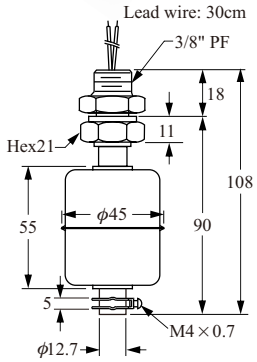
Washer: NBR
Drill hole ϕ10mm

▶ FD 40□1



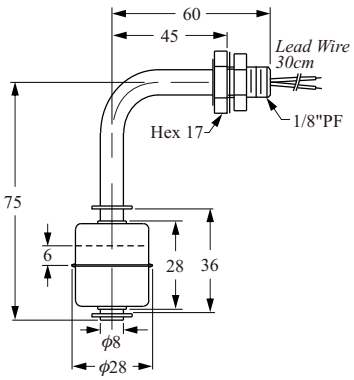
Washer: NBR
Drill hole ϕ17mm

▶ FD 45□1



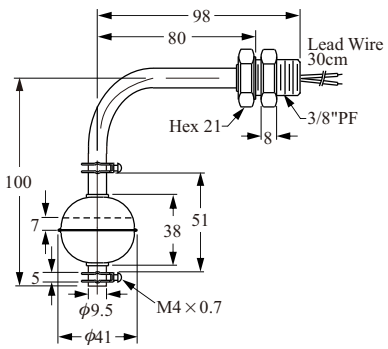
Washer: NBR
Drill hole ϕ17mm

▶ FD 30□2



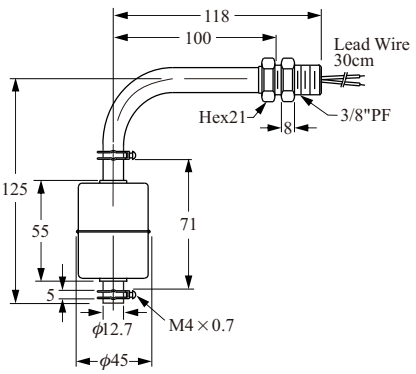
Washer: NBR
Drill hole ϕ10mm

▶ FD 40□2



Washer: NBR
Drill hole ϕ17mm

▶ FD 45□2

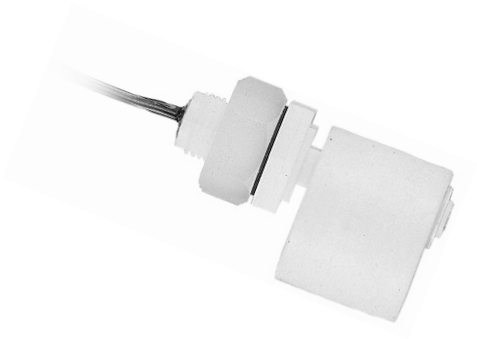


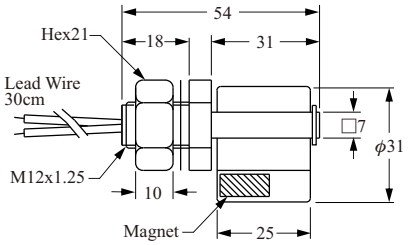
Washer: NBR
Drill hole ϕ17mm

FineTek

PLASTIC OH TYPES

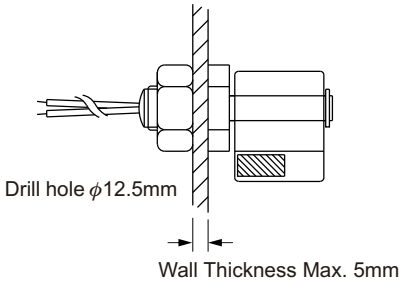
▶ FCH11QD

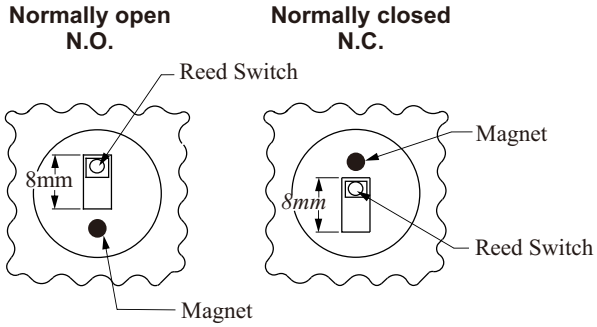




Washer: NBR

■ Installation / N.C./ N.O. Action Position





- All the products in this range come with the UL E161587 approval.
- All the products in this range are designed to be mounted on the side.
- For the specific gravity of water is used as a reference point in calculating specific gravity.

■ SPECIFICATIONS

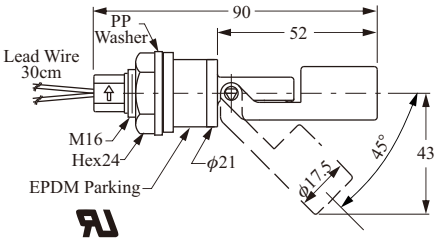
Description \ Type	FCH11QD	FCH21PD FCH31PD	FCH23FD FCH33FD	FCH24YD FCH34YD	FCH25GD FCH35GD
Switching Capacity Max.	50W SPST				
Switching Voltage Max.	240VAC / 200Vdc				
Switching Current Max. (A)	0.5A				
Carry Current Max. (A)	1A				
Lead Wire	PVC AWG22	XLPE AWG22			
Max. Pressure (Kg/cm^2)	ATM	4 kg/cm^2	2 kg/cm^2		
Operating Temperature	-20~80°C		-20~120°C		
Material	PP		PVDF	Nylon	Polysuphone
Suitable Specific Gravity	0.78	0.75	0.85	0.8	0.85
Weight	25 g	H21: 22 g H31: 21 g	25 g	23 g	25.4 g

PLASTIC OH TYPES

▶ FC H21PD / H31PD

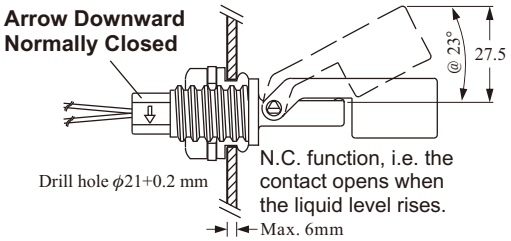
- For models FCH2 and FCH3, three different types of material are available PP, Nylon, and PVDF.
- The special lead wire or cable can be supplied according to the requirement of the customer.
- The customer can select the type of reed switch which their requires.
- For specifications of the standard design see catalog (page 10).
- OEM customers are welcome.

■ Optional
FC H21PDO(Round)

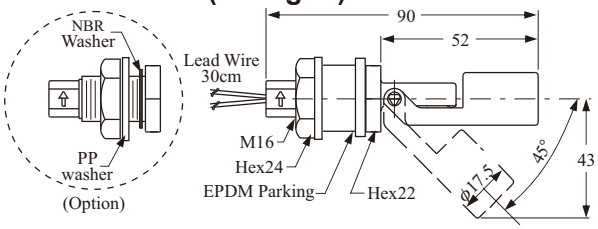


■ Installation / N.C. / N.O. Action Position

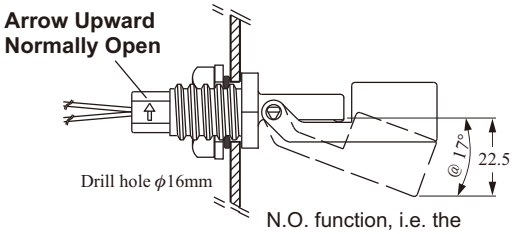
[External mounting]



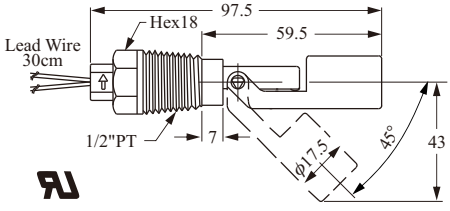
■ Standard
FC H21PDD (Hexagon)



[Internal mounting]



■ FC H31PD



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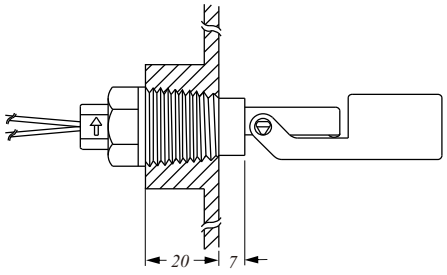
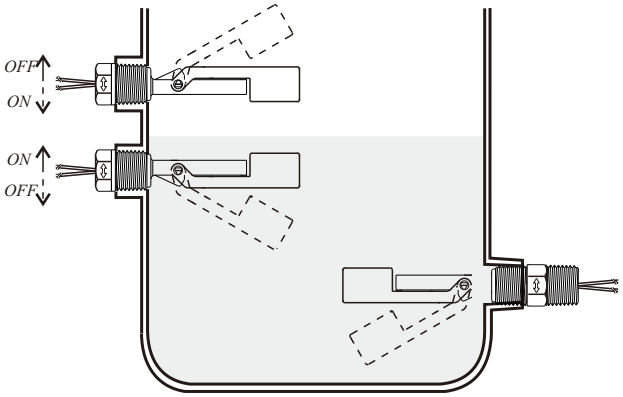


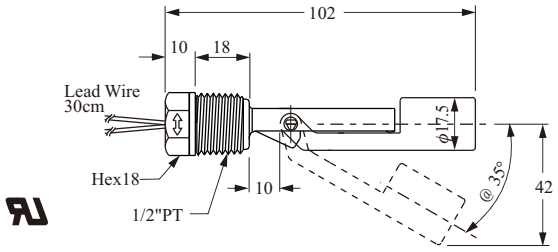
PLASTIC OH TYPES

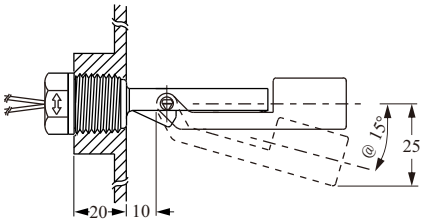
▶ FC H41PD / H51PD

■ Installation / N.C. / N.O. Action Position



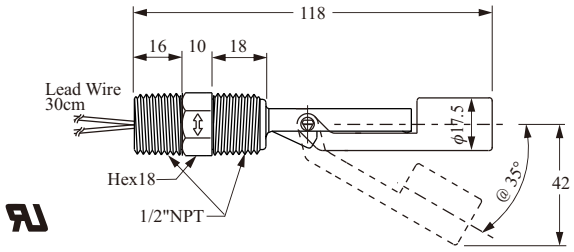
■ FC H41PD

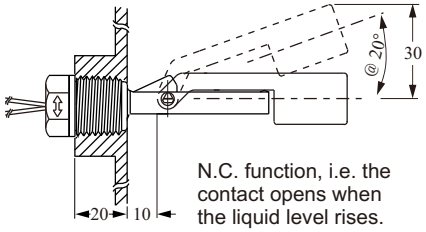




N.O. function, i.e. the contact closes when the liquid level rises.

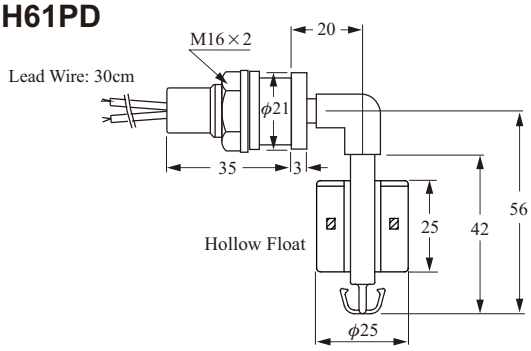
■ FC H51PD





N.C. function, i.e. the contact opens when the liquid level rises.

■ FC H61PD

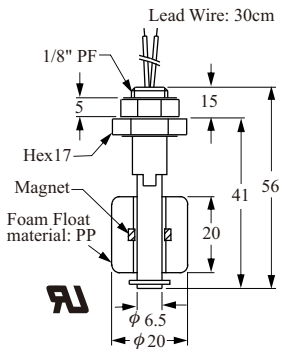


■ SPECIFICATIONS

Type	Material	Switching Capacity Max.	Switching Voltage Max.	Switching Current Max.	Carry Current Max.	Lead Wire	Max. Pressure	Operating Temp.	Suitable Sp. Gr.	Weight
FCH41PD FCH51PD FCH61PD	PP	50W/SPST	240Vac 200Vdc	0.5A	1A	XLPE	4 kg/cm^2	-20~80°C	0.65 0.65 0.7	20g 25g 31g

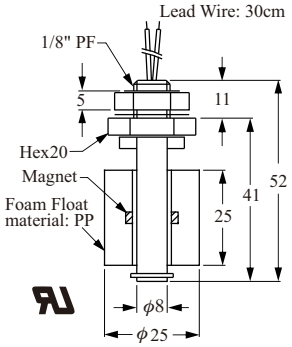
PLASTIC OV TYPES

▶ FC V11QF



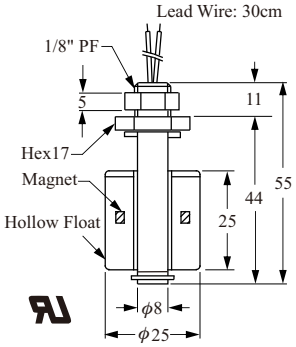
Washer: NBR
Drill hole ϕ10mm

▶ FC V21QD



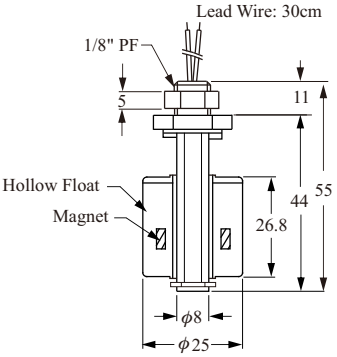
Washer: NBR
Drill hole ϕ10mm

▶ FC V31PD



O-ring: VITON
Drill hole ϕ10mm

▶ FC V33FD, 34YD, 35GD



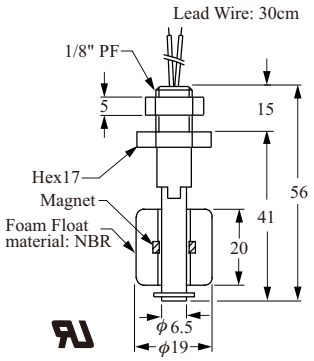
O-ring: VITON
Drill hole ϕ10mm

■ SPECIFICATIONS

Description \ Type	FC V11QF	FC V21QD	FC V31PD	FC V33FD	FC V34YD	FC V35GD
Switching Capacity Max.	10W SPST	50W SPST	50W SPST			
Switching Voltage Max.	125Vac	240Vac / 200Vdc	240Vac / 200Vdc			
Switching Current Max. (A)	0.5A		0.5A			
Carry Current Max. (A)	1A		1A			
Lead Wire	UL 1007 AWG22 PVC		UL 1007 AWG22 PVC	XLPE AWG22		
Reversible Switch Action	NO	YES/ 80℃ down	YES/ 80℃ down			
Max. Pressure (Kg/cm^2)	ATM		4 kg/cm^2	2 kg/cm^2		
Operating Temperature	-20~80℃		-20~80℃	-20~120℃		
Material	PP		PP	PVDF	Nylon	Polysuphone
Suitable Specific Gravity	0.7		0.7	0.85	0.8	0.75
Weight (g)	12 g	18 g	12.8 g	18 g	15 g	18 g

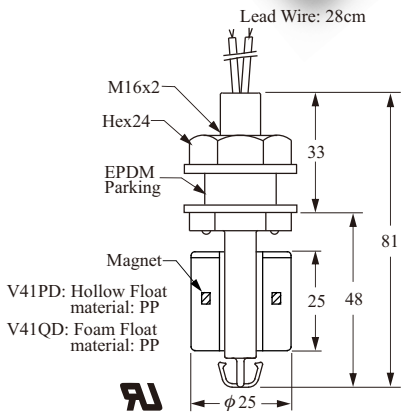
PLASTIC OV TYPES

▶ FC V11NF



Washer: NBR
Drill hole ϕ10mm

▶ FC V41PD, V41QD

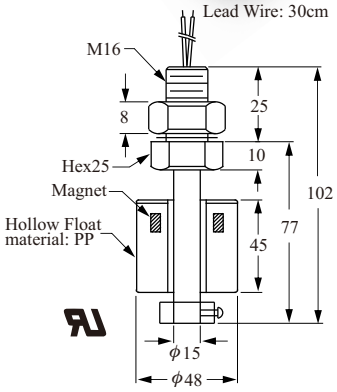


Washer: NBR
Drill hole ϕ16mm

▶ FC V61PF, V61NF

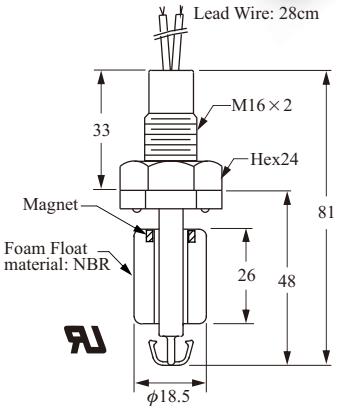
Washer: NBR
Drill hole ϕ10mm

▶ FC V81PD



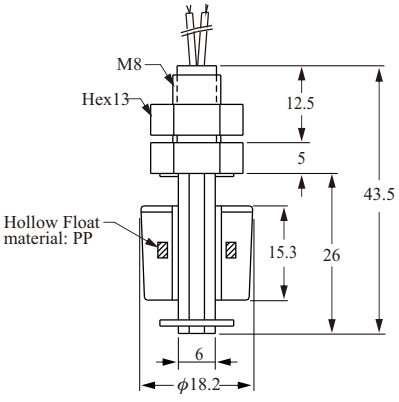
Washer: NBR
Drill hole ϕ16mm

▶ FC V41ND



Washer: NBR
Drill hole ϕ16mm

▶ FC V51PD

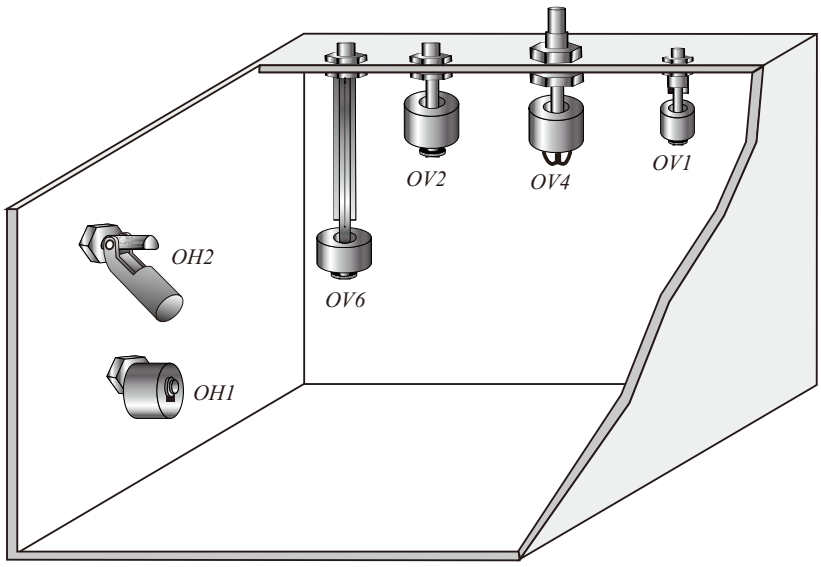


O-Ring: VITON
Drill hole ϕ8.5mm

PLASTIC OV TYPES

■ SPECIFICATIONS

Type / Description	FC V11NF	FC V61PF FC V61NF	FC V41PD FC V41QD	FC V81PD	FC V41ND	FC V51PD
Switching Capacity Max.	10W SPST		50W SPST			
Switching Voltage Max.	125Vac (Break Down 250Vac)		240Vac / 200Vdc			
Switching Current Max. (A)	0.5A					
Carry Current Max. (A)	1A					
Lead Wire	XLPE AWG22	UL 1007 AWG22 PVC				
Reversible Switch Action	NO	NO	YES	NO	NO	NO
Max. Pressure (kg/cm^2)	ATM	V61P: 4kg/cm^2 V61N: ATM	V41P: 4kg/cm^2 V41Q: ATM	4 kg/cm^2	ATM	4 kg/cm^2
Operating Temperature	-20~80°C					-20 ~100°C
Material	PP (except V11N, V61N, V41N: NBR float)					
Suitable Specific Gravity	0.8	0.65 0.5	0.55 0.7	0.6	0.8	0.8
Weight (g)	11 g	16 g	23 g	180 g	17 g	8.2 g



ORDER INFORMATION FOR PLASTIC OH/OV TYPES

FC [V2] [3] [F] [D] [A] ([05] [P])

Order No./ Model

FC H1~H6: RF-OH Side Mounting
FC V1~V9 : RF-OV Top or bottom Mounting

Material of Wetted parts

1 : PP
3 : PVDF
4 : Nylon
5 : Polysuphone
6 : PPS

Material of Float

F : PVDF
N : NBR
G: Polysuphone
P : PP (hollow)
Q : PP (foam)
Y : Nylon
(Unsuitable for use in water application for long term)
K : PPS

Switching Capacity Max.

D : 50W 240Vac /200Vdc SPST
F : 10W 125Vac SPST
K : 20W 150Vac/200Vdc SPDT

Contact Form

A : Normally Open (N.O.) SPST
B : Normally Close (N.C.) SPST
C : 1AB SPDT
D : NC Reversible
E : NO Reversible

Lead wire Length (Unit=100mm)

05: 500mm (below 500mm)
10: 1000mm (501~1000)
15: 1500mm (1001~1500)
:
:

※ 500mm per Unit
※ 300mm (Standard length)

Material of Lead wire

B : PVC (80℃) ---- AWG24
C : PVC cable (80℃) ---- AWG22 X ϕ4
D : XLPVC (105℃) ---- AWG24
F : SILICON cable (200℃) ---- AWG24 X ϕ4
P : PVC (80℃) ---- AWG22
T : TEFLON (200℃) ---- AWG24
X : XLPE (125℃) ---- AWG22
S : Others

※"A" (Normal Open) contact form is our standard specified switch activation, others contact form and target lead wire length subject to above data, except of above, please refer pages 6, 7, 9, 10and 12.