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Mini Float Level Switch

FineTek

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PRODUCT INTRODUCTION

■ INTRODUCTION

The reed switch relies on two basic scientific principles namely: buoyancy and magnetism. Buoyancy causes the float (which contains a magnet) to rise with the liquid and magnetism helps open and close the switch.
Since this product's this product has been introduced to the market, it has seen significant improvement and advances with regards to convenience, safety and lowering costs.

The float switches are extremely compact, simple and are easy to install on any small locations.

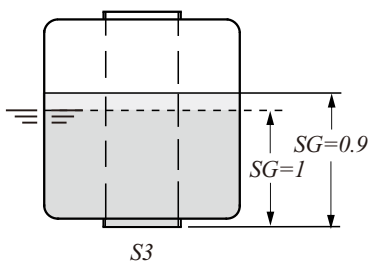
These switches are not affected by electrical interference and can withstand chemicals, high temperatures and pressures if the correct material of float switch is selected.

■ LIQUID PROPERTIES AND FLOATS

The switch's float should always have a specific gravity (SG) less than the liquid that holds the float.
(SG float < SG liquid)
When the liquid level rises the float will rise up due to its buoyancy. The float's upward movement will actuate the switch and close the circuit.

Different float materials can be used to ensure the float's SG level is less than the liquid. (Water's SG level is 1 while gasoline SG levels tend to be less than 1).

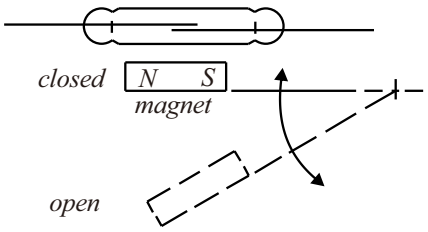
Because the float switches are activated by the magnetic field inside the float, make sure the liquid contains no iron traces or substances that can induce magnetic interference.



(Fig. 3)

■ WORKING PRINCIPLE

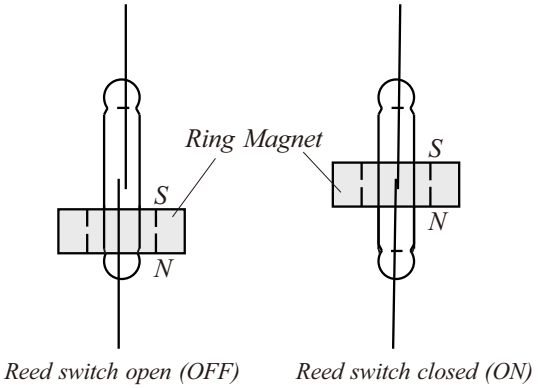
Fig. 1 illustrates the pivot activation (FCH Type reed switch). When float's magnet is moved close to the switch's stationary stem, the float magnet pushes the stem's switch circuit together and closes the electrical circuit. When the float magnet is moved away from the stem, the switch circuit separates and the circuit is opened.



(Fig. 1)

Fig. 2 illustrates perpendicular activation (FC V TYPE float reed switches). When the liquid level rises and pushes the float up, the float's ring magnet (sealed in the float) moves close to the switch's stationary stem.

The magnet pushes the circuit together and when it makes contact, it closes the electrical circuit. When the float magnet moves away from the switch, the circuit contact is released and the switch is opened.



(Fig. 2)

CHEMICAL RESISTANCE

● Excellent ○ Good △ Fair × Corroded

Chemical	Concentration %	Temp °C	Temp °F	Plastic PVC	PP	PVDF	PTFE	Rubber NBR	Stainless 304	316
Ammonia Water	10	40	104	●	●	●	●	○		
NH_4OH	10	80	176		○	●	●			
Aque Regia	10	40	104	△	△	●	●			
$3HCl+HNO_3$	10	80	176			●	●			
Benzene	Pure	40	104	×	△	○	●			
C_6H_6		80	176			△	●			
Bleaching Liquor	5	40	104	●		●	●			
$Ca(ClO)_2$	5	80	176			●	●			
	20	40	104	●		●	●			
	20	80	176			●	●			
Boric Acid	Satu	40	104	●	●	●	●	●		
H_3BO_3		80	176		●	●	●	○		
Brine		40	104	●	●	●	●	●		
		80	176		●	●	●			
Butadiene	Gas	40	104	●		●	●			
$CH_2=CH-CH=CH_2$		80	176			●	●			
Butane	Gas	40	104	●	●	●	●			
$CH_3(CH_2)_2CH_3$		80	176		●	●	●			
Nitric Acid	10	40	104	●	●	●	●	●	●	●
HNO_3	10	80	176	×	○	●	●		●	
	30	40	104	●	●	●	●		●	●
	30	80	176	×	○	●	●		●	●
	50	40	104	○	○	●	●		●	●
	50	80	176	×	×	○	●			
	70	40	104	○	×	●	●		○	●
	70	80	176	×		○	●			
	98	40	104			○	○			
	98	80	176				△			
Oxalic Acid	20	40	104	●	●	●	●	●		△
HOOCCOOH	20	80	176		●	●	●			
	50	40	104	●	●	●	●			△
	50	80	176		●	●	●			
Phosphoric Acid	10	40	104	●	●	●	●	●	●	●
H_3PO_4	10	80	176		○	●	●	△	●	●
	50	40	104	●	●	●	●	●	●	●
	50	80	176		△	●	●	×	●	●
	80	40	104	●	●	●	●	○	●	●
	80	80	176		△	●	●		●	●
Sodium	15	40	104	●	●	●	●	●	●	●
Hydroxide	15	80	176		○	△	●	△	×	×
NaOH	30	40	104	●	●	●	●	●	●	●
	30	80	176		○	△	●	●	×	×
	50	40	104	●	●	○	●	●	●	●
	50	80	176		○	×	●	●	×	×
	70	40	104	○	○	○	●			
	70	80	176		○	×	●			

Chemical	Concentration %	Temp °C	Temp °F	Plastic PVC	PP	PVDF	PTFE	Rubber NBR	Stainless 304	316
Sodium	3	40	104	●	○	●	●		△	○
Hypochlorite	3	80	176							
NaClO	5	40	104	●	○	●	●		△	○
	5	80	176							
	7	40	104	●	△	○	●		×	×
	7	80	176							
	10	40	104	●	△	●	●		×	×
	10	80	176							
	13	40	104	●	△	●	●		×	×
	13	80	176							
Sulfuric Acid	10	40	104	●	●	●	●	●	●	●
H_2SO_4	10	80	176		●	●	●	○	○	○
	30	40	104	●	●	●	●	●	×	×
	30	80	176		●	●	●	○	×	×
	50	40	104	●	●	●	●	○	×	×
	50	80	176		●	●	●	△	×	×
	60	40	104	●	●	●	●	●	×	×
	60	80	176		○	●	●	○	×	×
	70	40	104	●	●	●	●	○	×	×
	70	80	176		○	●	●	△	×	×
	80	40	104	●	●	●	●	●	×	×
	80	80	176		○	●	●	△		
	90	40	104	○	●	●	●	△	×	×
	90	80	176		○	●	●	△		
	98	40	104	△		●	○		○	○
	98	80	176			△	○			
Toluene		40	104		△	△	●			
$C_6H_5CH_3$		80	176				○			
Chlorine Gas	Wet	40	104	○		●	●			
Cl_2	Wet	80	176			△	●			
	Dry	40	104	●		●	●			
	Dry	80	176			●	●			
Chromic Acid	10	40	104	●		●	●			
H_2CrO_4	10	80	176			●	●			
	20	40	104	△		●	●			
	20	80	176			●	●			
	40	40	104	△		●	●			
	40	80	176			●	●			
	50	40	104	×		●	●			
	50	80	176			△	●			
Hydrochloric	15	40	104	●	●	●	●	○		
Acid	15	80	176		●	●	●			
HCl	25	40	104	●	●	●	●	×		
	25	80	176		●	●	●			
	35	40	104	●	●	●	●	×		
	35	80	176		○	●	●			
	38	40	104	●	●	●	●	×		
	38	80	176		○	●	○			

● Excellent ○ Good △ Fair × Corroded

Chemical	Concentration %	Temp °C	Temp °F	Plastic PVC	Plastic PP	Plastic PVDF	Plastic PTFE	Rubber NBR	Stainless 304	Stainless 316
Citric Acid	10	40	104	●	●	●	●	●	●	●
$C_6H_8O_7$	10	80	176		○	●	●	●		
Gasoline	10	40	104	●		●	●			
	10	80	176			●	●			
Diesel Fuels		40	104			●	●		●	●
		80	176			●	●		●	●
Ethyl Alchol	Pure	40	104	●	●	●	●	●	○	○
C_2H_5OH	Pure	80	176		○	●	●	○		
Formic Acid	90	40	104	○	○	●	●			
HCOOH		80	176			●	●			
Hydrofluric Acid	Dilute	40	104	●	○	●	●			
	Dilute	80	176		○	●	●			
HF	30	40	104	○	○	●	●			
	30	80	176	×	○	●	●			
	40	40	104	△	○	●	●			
	40	80	176		○	●	●			
	50	40	104	△	○	●	●			
	50	80	176		○	●	●			
Hydrogen peroxide	5	40	104	●	●	●	●		○	●
	5	80	176		○	●	●			
H_2O_2	20	40	104	●	●	●	●			
	20	80	176		○	●	●			
	30	40	104	○	○	●	●			
	30	80	176		△	●	●			
	50	40	104	△	×	●	●			
	50	80	176			●	●			
	90	40	104			●	●			
	90	80	176			●	●			
Isopropyl Alcohol	Pure	40	104	●	●	●	●	○		
$(CH_3)CHOH$	Pure	80	176			●	●			
Kerosene		40	104	●	○	●	●			
		80	176			●	●			
Methyl Alcohol		40	104	○	●	●	●	△		
CH_3OH		80	176		○	●	●			
Methyl Ethyl Ketone		40	104		△		●			
$CH_3COC_2H_5$		80	176				●			
Potassium Chromate		40	104	●	●	●	●	●		
K_2CrO_4		80	176		○	●	●	○		

REED SWITCH PROTECTION

■ INDUCTIVE LOADS

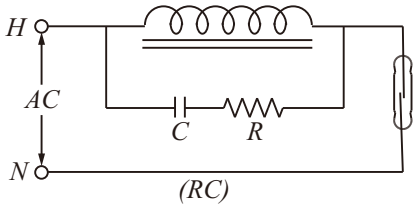
When using reed switches for inductive loads such as motors, relay coil, solenoids, etc., the contact points will sometimes be subjected to high voltages. Such high induced voltages may damage the reed switch or significantly reduce its life.

Therefore, circuit protectors such as: RC snubbers, varistors or clamping diodes are recommended. (see Fig. 4a, Fig. 4b, Fig. 4c)

■ Do not directly connect the solenoid valve,motor or magnetic switch.

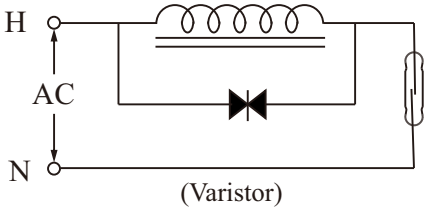
$$C=\frac{I^2}{10}\ (uF)$$

$$R=\frac{E}{10I(1+\frac{E}{50})}$$



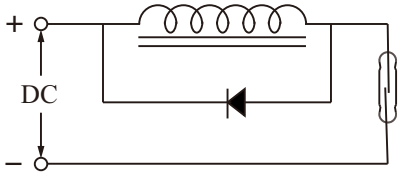
(RC)

Fig. 4 (a)



(Varistor)

Fig. 4 (b)



(Diode)

Fig. 4 (c)

■ CAPACITIVE LOADS

When using reed switches for capacitive loads such as capacitors, incandescent lamps or long cables, the contact points will be subjected to electrical surges.Therefore, protective circuits such as: surge suppressors or current limiting resistors are recommended. (Fig. 5a, Fig. 5b)

Therefore, circuit protectors such as: RC snubbers, varistors or clamping diodes are recommended (Fig. 5a, Fig. 5b)

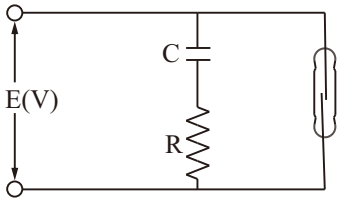


Fig. 5 (a)

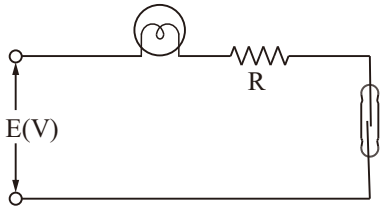
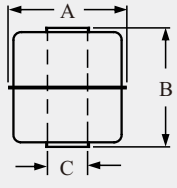
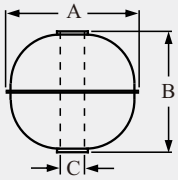
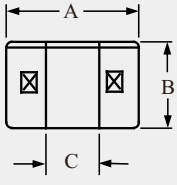
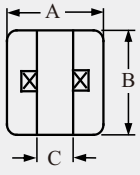
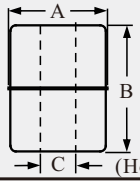


Fig. 5 (b)

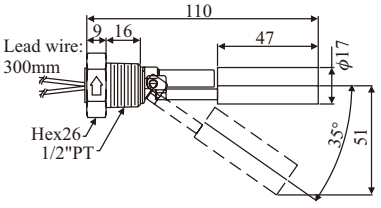
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FLOAT SPECIFICATIONS

MODEL	TYPE	ϕA xB xϕC	S.G.	Max. Pressure (kg/cm^2)	Weight (g)	Material/Color	Max. Temp. (°C)
	**S1**	28x28x9.5	E>0.7	10	8	SUS 316 / 316L	200
	S3	45x55x15	E>0.65	12	37.6	SUS 316	200
	S6	75x108x20	E>0.5	10	165	SUS 316	200
	S13	38x50x15	E>0.62	12	22.9	SUS 316L	200
	**S2**	41x38x11	E>0.7	35	19.5	SUS 316	200
	S4	52x52x15	E>0.55	30	33.4	SUS 316	200
	S5	75x73x20	E>0.70	30	102.4	SUS 316	200
	S7	30x28x9.5	E>0.75	25	8	SUS 316 / 316L	200
	S8	100x100x20	E>0.5	15	249.7	SUS 304	200
	S9	150x150x30	E>0.45	15	534	SUS 304	200
	S10	30x32x9.5	E>0.75	50	8.6	SUS 316	200
	S11	28x32x9.5	E>0.82	30	8.1	SUS 316	200
 (Hollow)	**P1**	25x15x10	E>0.65	4	3.5	PP / white / black	80
	P2	25x25x10	E>0.7	4	5	PP / white / black	80
	P3	48x45x18.5	E>0.6	5	35.5	PP / black	80
	P4	20x25x10	E>0.7	4	3.7	PP / black	80
	P5	20x20x8.1	E>0.75	4	4	PP / black	80
	P8	18.2x15.3x7.2	E>0.8	4	1.82	PP / black	80
 (Foam)	**Q6**	20x20x7.5	E>0.75	ATM	3.5	PP / white	80
	Q7	25x25x8.8	E>0.7	ATM	6.7	PP / white	80
	N1	25x15x10	E>0.5	ATM	2.7	NBR / black	100
	N2	18.5x26x10	E>0.7	ATM	3.3	NBR / black	100
	N4	17.5x25x10	E>0.65	ATM	2.5	NBR / black	100
	N5	30x45x12.8	E>0.5	ATM	11.5	NBR / black	100
 (Hollow)	**F2**	42x44x14	E>0.45	5	18.5	PP	80
	F3	45x45x20	E>0.65	5	35.7	PP	80
	F4	48x62x18	E>0.8	5	65.3	PVDF	120

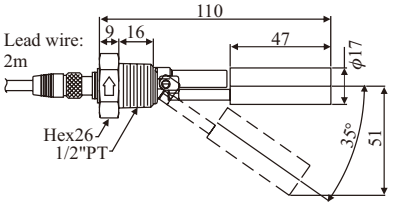
▶ FD MH50/ 56





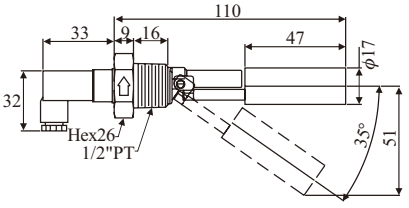
▶ FD MH50A /56A





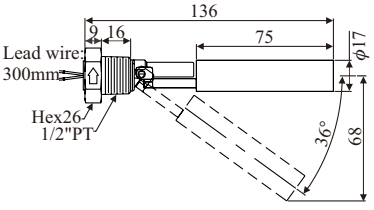
▶ FD MH50C /56C





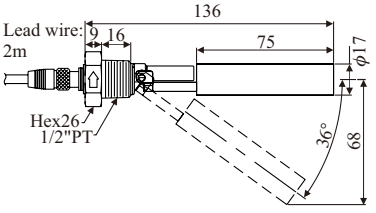
▶ FD MH60/ 66





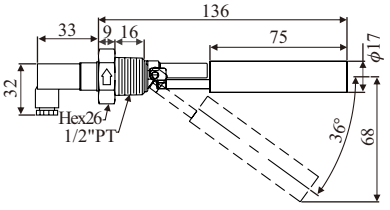
▶ FD MH60A/ 66A





▶ 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	PVC or PUR	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	NA	5 kg/cm^2	-20~120°C	FDMH5:0.92 FDMH6:0.75

MODEL / NUMBER ORDER CODE COMPARISON TABLE

Model Number	Order Code
FDMH50	FDM10000-05MA
FDMH56	FDM10000-05MC
FDMH60	FDM10000-06MA
FDMH66	FDM10000-06MC
FDMH50A	FDM10000-05MAA
FDMH56A	FDM10000-05MCA
FDMH60A	FDM10000-06MAA
FDMH66A	FDM10000-06MCA
FDMH50C	FDM10000-05MAB
FDMH56C	FDM10000-05MCB

ORDER INFORMATION (STAINLESS STEEL SWITCHES)

FDM 1 0 0 ⑦⑧-⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱⑲⑳㉑㉒㉓

⑦⑧ Certification

00：None
3A：UL

⑨⑩ Type

05：ϕ17x47L (SG: 0.92)
06：ϕ17x75L (SG: 0.75)

⑪⑫ Material

MA：SUS 304
MB：SUS 316
MC: SUS316L

⑬ Wiring

A: M12
B: DIN
C: Cable wire type 1

⑭⑮⑯⑰ Connection

A503：1/2"PF
A501：1/2"PT
A507：1/2"NPT
A505：1/2"BSP

⑱⑲⑳ Material of Lead wire

000: None
210：Teflon(200°C AWG24)
220：PUR(For M12)
250：Silicon(150°C AWG24 Cable)
291：XLPE(125°C AWG22)

※The wires are made of Teflon, and only the wires can withstand temperatures up to 200°C.
※The product must be temperature-resistant to 200°C and needs to be customized.
High-temperature type must be specified in the order notes.

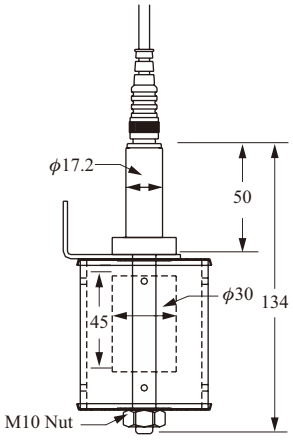
㉑㉒㉓ Lead wire Length

001：100mm
002：200mm
003：300mm
004：400mm
005：500mm
006：600mm
007：700mm
008：800mm
009：900mm
010：1000mm
020：2000mm
100：10m
000：None

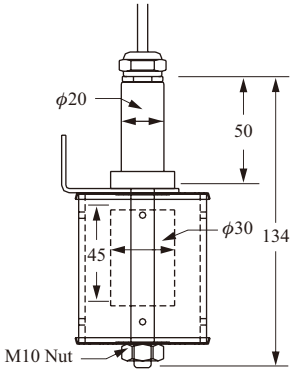
※Connector M12 whose standard wire length is 2m ,5m,10m,15m

MARINE LEVEL SWITCHES

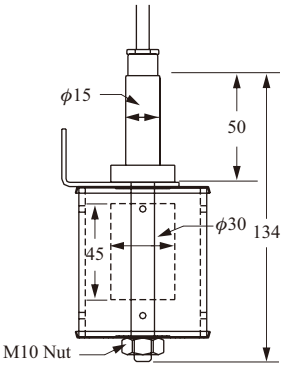
▶ FDMRN5A0B



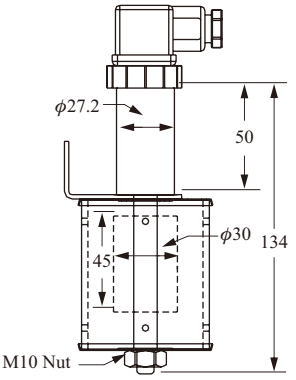
▶ FDMRN5B0B



▶ FDMRN5COB



▶ FDMRN5D0B

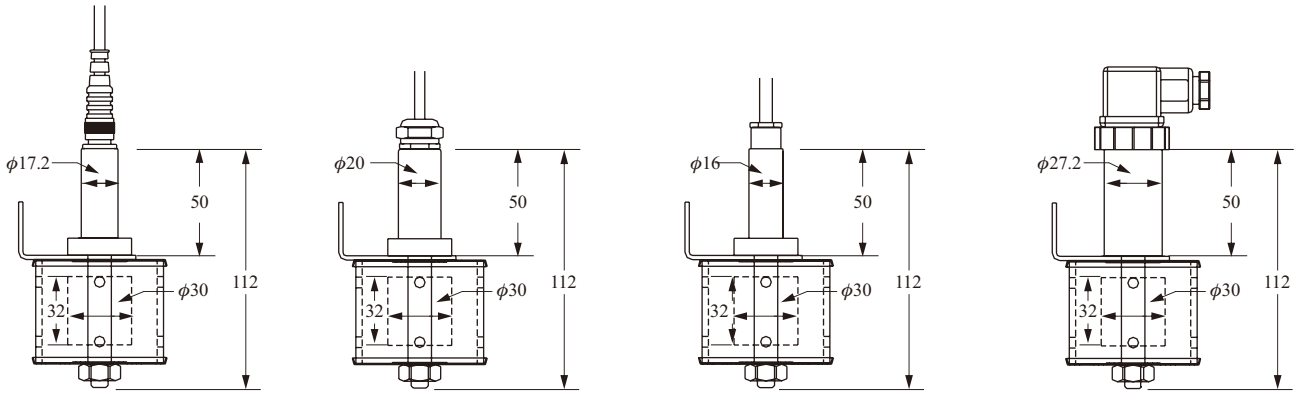


■ SPECIFICATIONS

Type	Material	Switching Capacity Max.	Switching Voltage Max.	Switching Current Max.	Carry Current Max.	Lead Wire	Max. Pressure	Operating Temp.	Suitable Sp. Gr.
FDMRN5A0B	SUS 304 (Float:NBR)	50W/SPST	240Vac 200Vdc	0.5A	1A	M12, 2 meter	ATM	Max. 80°C	0.5
FDMRN5B0B	SUS 304 (Float:NBR)	50W/SPST	240Vac 200Vdc	0.5A	1A	PVC,22 AWG	ATM	Max. 80°C	0.5
FDMRN5C0B	SUS 304 (Float:NBR)	50W/SPST	240Vac 200Vdc	0.5A	1A	Silicon	ATM	Max. 100°C	0.5
FDMRN5D0B	SUS 304 (Float:NBR)	50W/SPST	240Vac 200Vdc	0.5A	1A	DIN 43650	ATM	Max. 80°C	0.5

MARINE LEVEL SWITCHES

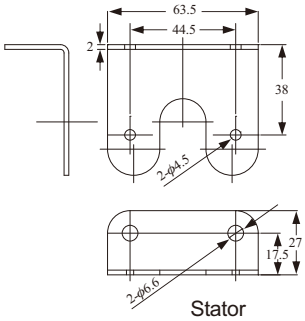
▶ FDMRN8A0B ▶ FDMRN8B0B ▶ FDMRN8C0B ▶ FDMRN8D0B



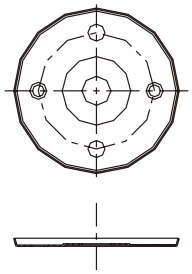
■ SPECIFICATIONS

Type	Material	Switching Capacity Max.	Switching Voltage Max.	Switching Current Max.	Carry Current Max.	Lead Wire	Max. Pressure	Operating Temp.	Suitable Sp. Gr.
FDMRN8A0B	SUS 304 (Float:NBR)	50W/SPST	240Vac 200Vdc	0.5A	1A	M12, 2 meter	ATM	Max. 80℃	0.7
FDMRN8B0B	SUS 304 (Float:NBR)	50W/SPST	240Vac 200Vdc	0.5A	1A	PVC,22 AWG	ATM	Max. 80℃	0.7
FDMRN8C0B	SUS 304 (Float:NBR)	50W/SPST	240Vac 200Vdc	0.5A	1A	Silicon	ATM	Max. 100℃	0.7
FDMRN8D0B	SUS 304 (Float:NBR)	50W/SPST	240Vac 200Vdc	0.5A	1A	DIN 43650	ATM	Max. 80℃	0.7

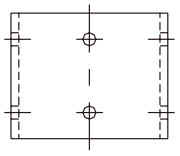
■ FDB-0450 PARTS OF SLOSH SHIELD

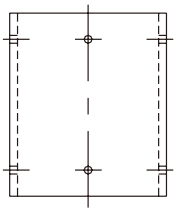


Stator



Acrylic for case Upper/Lower



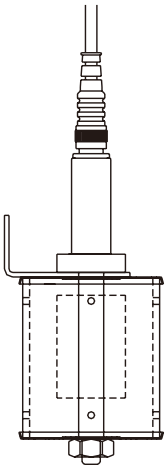


Acrylic cover

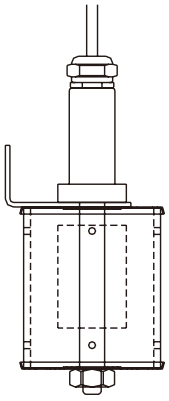
FineTek

HOW TO ORDER MARINE LEVEL SWITCHES

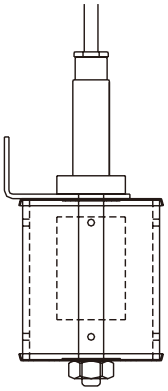
▶ **FDMRN5A** ▶ **FDMRN5B** ▶ **FDMRN5C** ▶ **FDMRN5D** ▶ **FDMRN8C**



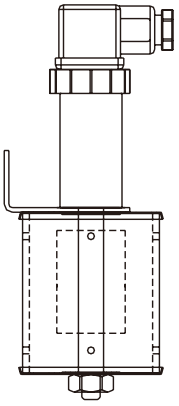
A TYPE



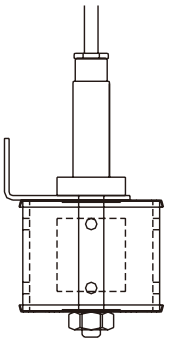
B TYPE



C TYPE



D TYPE

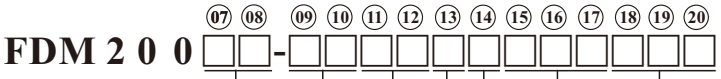


C TYPE

MODEL / NUMBER ORDER CODE COMPARISON TABLE

Model Number	Order Code
FDMRN5A0B	FDM20000-N5MAAB
FDMRN5B0B	FDM20000-N5MACB
FDMRN5C0B	FDM20000-N5MADB
FDMRN5D0B	FDM20000-N5MABB
FDMRN8A0B	FDM20000-N8MAAB220
FDMRN8B0B	FDM20000-N8MACB233
FDMRN8C0B	FDM20000-N8MADB250
FDMRN8D0B	FDM20000-N8MABB

ORDER INFORMATION (MARINE LEVEL SWITCHES)



⑦⑧ Certification

00：None

⑨⑩ The material of the float

N5：ϕ30x45L (NBR)

N8：ϕ30x32L (NBR)

⑪⑫ The material of the probe

MA：SUS 304

MC：SUS 316L

⑬ Wiring

A：M12

B：DIN

C：Cable wire type 1 (B type)

D：Cable wire type 2 (C Type)

⑭ Contact type

A: NO

B: NC

⑮⑯⑰ Material of Lead wire

000：None

220：PUR (for M12)

231：PVC (80°C AWG22 Cable)

250：Silicon (150°C AWG24 Cable)

⑱⑲⑳ Lead wire Length

001：100mm

002：200mm

003：300mm

004：400mm

005：500mm

006：600mm

007：700mm

008：800mm

009：900mm

010：1000mm

020：2000mm

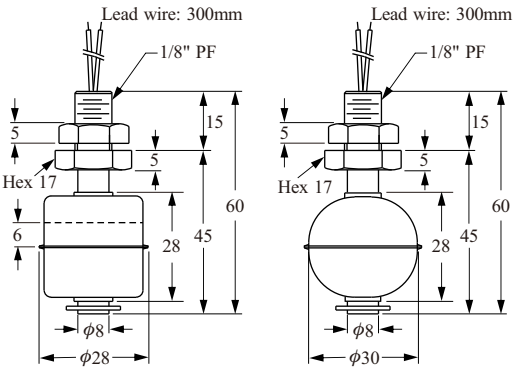
100：10m

000： None

STAINLESS STEEL MODELS

▶ FD 30□1/ FD 35□1

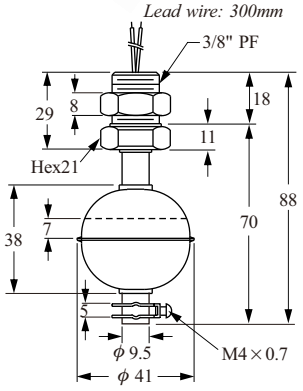




Washer: NBR
Drill hole ϕ10mm

▶ FD 40□1

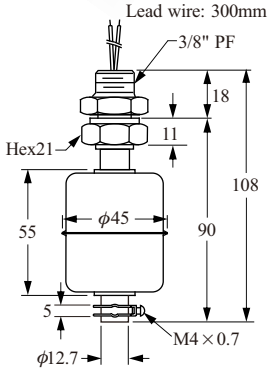




Washer: NBR
Drill hole ϕ17mm

▶ FD 45□1

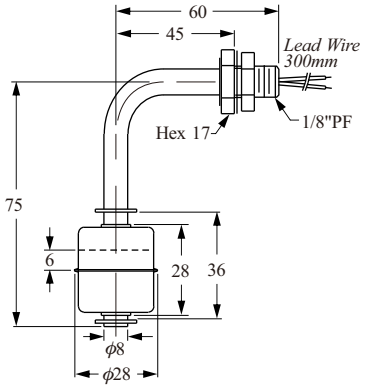




Washer: NBR
Drill hole ϕ17mm

▶ FD 30□2

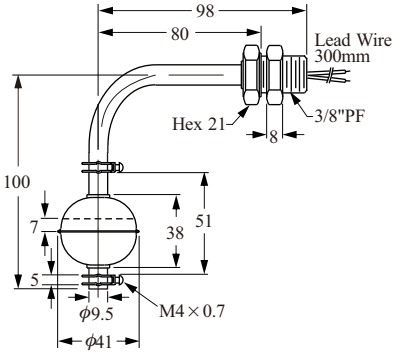




Washer: NBR
Drill hole ϕ10mm

▶ FD 40□2

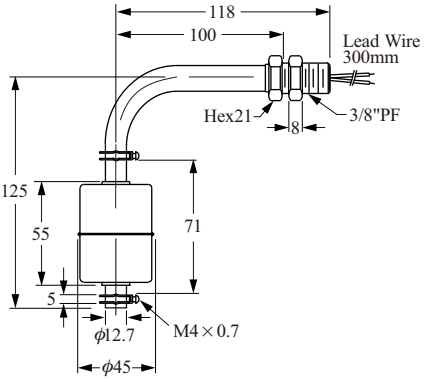




Washer: NBR
Drill hole ϕ17mm

▶ FD 45□2





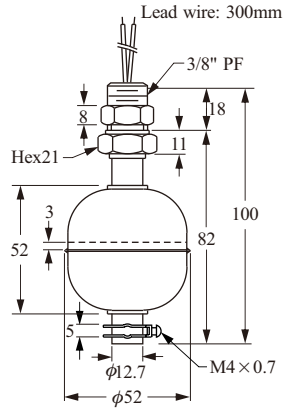
Washer: NBR
Drill hole ϕ17mm

FineTek

METAL TYPES

▶ FD 50□1

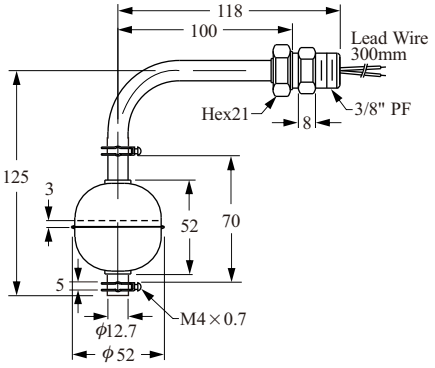




Washer: NBR
Drill hole ϕ17mm

▶ FD 50□2

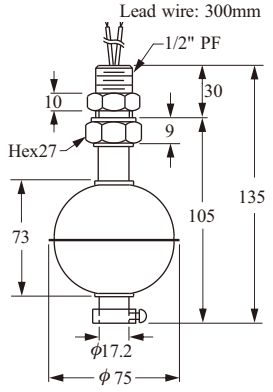




Washer: NBR
Drill hole ϕ17mm

▶ FD 75□1





Washer: NBR
Drill hole ϕ21mm

■ SPECIFICATIONS

Description \ Type	FD30□1D FD30□2D	FD40□1D FD40□2D	FD45□1D FD45□2D	FD50□1D FD50□2D	FD75□1D	FD10□1D
Material	Stainless Steel SUS304, 316					
Switching Capacity Max.	50W SPST	50W SPST	50W SPST	50W SPST	50W SPST	
Switching Voltage Max.	240Vac/200Vdc				220Vac	
Switching Current Max. (A)	0.5A	0.5A	0.5A	0.5A	1A	
Carry Current Max. (A)	1A	1A	1A	1A	2A	
Lead Wire	XLPE (UL3266, AWG22)					
Reversible Switch Action	YES / below 80°C, NO / UP 80°C				NO	NO
Max. Pressure (Kg/cm²)	10	30	12	30	30	10
Operating Temperature	-20~120°C (OPTION 200°C)					
Suitable Specific Gravity	0.7	0.7	0.65	0.55	0.65	0.5

FineTek

MODEL / NUMBER ORDER CODE COMPARISON TABLE

Model Number	Order Code
FD30□1D	FDM30000-30□□VD
FD30□2D	FDM30000-30□□HD
FD40□1D	FDM30000-40□□VD
FD40□2D	FDM30000-40□□HD
FD45□1D	FDM30000-45□□VD
FD45□2D	FDM30000-45□□HD
FD50□1D	FDM30000-50□□VD
FD50□2D	FDM30000-50□□HD
FD75□1D	FDM30000-75□□VD
FD10□1D	FDM30000-10□□VD

ORDER INFORMATION (STAINLESS STEEL SWITCHES)

FDM 3 ⑤⑥⑦⑧-⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱⑲⑳㉑

⑤⑥ Model

00：Standard
02：Hi-temperature

⑦⑧ Certification

00：None
3A：UL

⑨⑩ Type

10：ϕ75x108 ,1/2"PF
30：ϕ28x28,1/8"PF
31：ϕ28x28,1/8"NPT
35：ϕ30x28,1/8"PF
36：ϕ30x28,1/8"NPT
40：ϕ41x38,3/8"PF
45：ϕ45x55,3/8"PF
50：ϕ52x52,3/8"PF
75：ϕ75x73,1/2"PF

⑪⑫ Probe material

MA：SUS 304
MB：SUS 316

⑬ Mounting

V：Top or Bottom Mounting
H：Side Mounting

⑭ Switching Capacity Max.

D：50W 240VAC/200VDC SPST
F：10W 125VAC SPST
K：20W 150VAC/200VDC SPDT

⑮ Contact Mode

A：SPST, Normal Open
B：SPST, Normal Closed
C：SPDT
D：Normal Closed Reversible
E：Normal Open Reversible

⑯⑰⑱ Material of Lead wire

210：Teflon (200°C AWG24)
230：PVC (80°C AWG22)
231：PVC (80°C AWG22 Cable)
232：PVC (80°C AWG24 Cable)
250：Silicon (150°C AWG24 Cable)
291：XLPE (125°C AWG22)
300：XLPVC (105°C AWG24)

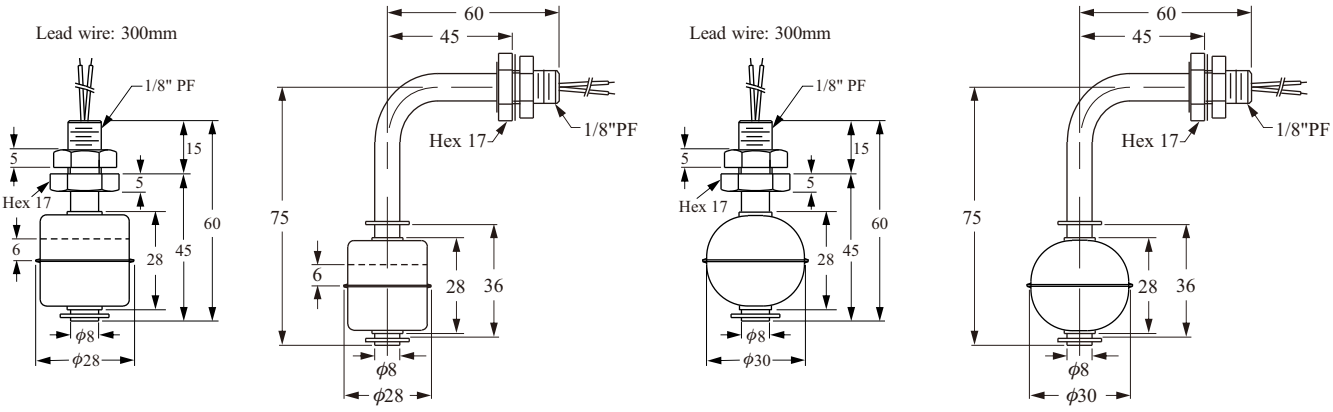
⑲⑳㉑ Lead wire Length

001：100mm
002：200mm
003：300mm
004：400mm
005：500mm
006：600mm
007：700mm
008：800mm
009：900mm
010：1000mm
020：2000mm
100：10m

STAINLESS STEEL MODELS (EX-PROOF TYPE) TS Ex mb IIB T6 Gb

▶ FDM3005C-30□□V ▶ FDM3005C-30□□H ▶ FDM3005C-35□□V ▶ FDM3005C-35□□H





Washer: NBR
Drill hole ϕ10mm

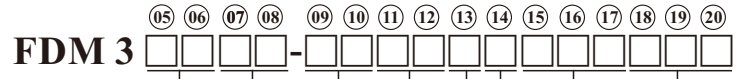
Washer: NBR
Drill hole ϕ10mm

■ SPECIFICATIONS

(Utilizing special glue which is graded for Ex-proof to seal sensing components perfectly)

Description \ Type	FDM3005C-30□□V FDM3005C-30□□H FDM3005C-31□□V FDM3005C-31□□H	FDM3005C-35□□V FDM3005C-35□□H FDM3005C-36□□V FDM3005C-36□□H
Switching Capacity Max.	45W SPST	
Switching Voltage Max.	240Vac/200Vdc	
Switching Current Max. (A)	0.5A	
Lead Wire	XLPE (UL3266, AWG22)	
Reversible Switch Action	YES	
Max. Pressure (Kg/cm^2)	10	25
Operating Temperature	-20 ~65°C	
Material	SUS304, 316, 316L	
Suitable Specific Gravity	0.7	0.75

ORDER INFORMATION (EX-PROOF TYPE)



⑤⑥ Model

00: Standard

⑦⑧ Certification

5C: TS-Ex d

⑨⑩ Type

30: ϕ28x28,1/8"PF
31: ϕ28x28,1/8"NPT
35: ϕ30x28,1/8"PF
36: ϕ30x28,1/8"NPT

⑪⑫ Probe material

MA: SUS 304
MB: SUS 316
MC: SUS 316L

⑬ Mounting

V: Top or Bottom Mounting
H: Side Mounting

⑭ Contact Mode

A: SPST, Normal Open
B: SPST, Normal Closed
D: Normal Closed Reversible
E: Normal Open Reversible

⑮⑯⑰ Material of Lead wire

210: Teflon (200°C AWG24)
231: PVC (80°C AWG22 Cable)
232: PVC (80°C AWG24 Cable)
291: XLPE (125°C AWG22)
300: XLPVC (105°C AWG24)

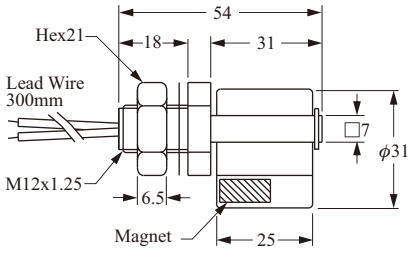
⑱⑲⑳ Lead wire Length

001: 100mm	005: 500mm	009: 900mm
002: 200mm	006: 600mm	010: 1000mm
003: 300mm	007: 700mm	020: 2000mm
004: 400mm	008: 800mm	100: 10m

PLASTIC OH MODELS

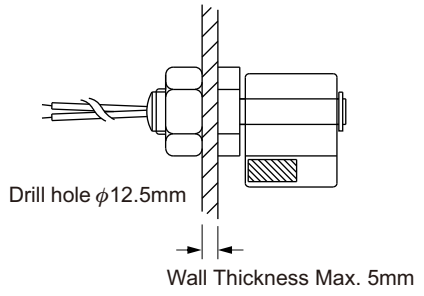
▶ F CH11QD

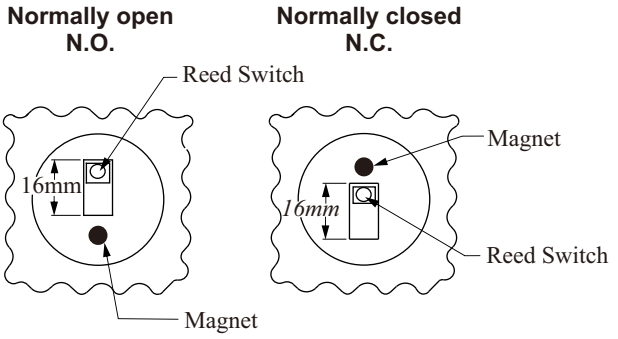




Washer: NBR

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





- All the products in this range come with UL .
- All the products in this range are designed to be side mounted.
- Water's specific gravity is used as the reference point for calculations.

■ SPECIFICATIONS

Description \ Type	F CH11QD	F CH21PD F CH31PD	F CH23FD F CH33FD	F CH25GD F CH35GD
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/cm²)	ATM	4 kg/cm²	2 kg/cm²	
Operating Temperature	-20~80°C		-20~120°C	
Material	PP		PVDF	Polysulfone
Suitable Specific Gravity	0.6	0.65	0.85	0.85
Weight	25 g	H21: 22 g H31: 21 g	25 g	25.4 g

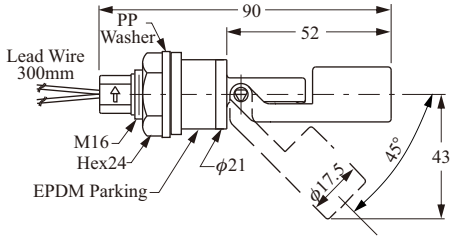
PLASTIC OH MODELS

▶ F CH21PD / F CH31PD

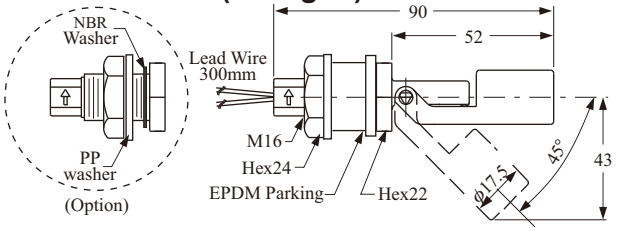


- F CH2 and F CH3 models have UL certification.
- F CH2 and F CH3 models are available in PP and PVDF.
- Special lead wire/cable are available on request.
- Different reed switches are available for selection.
- OEM designs are welcome.

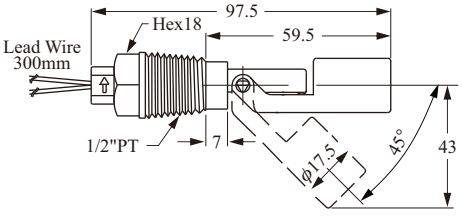
■ Optional
F CH21PDO(Round)



■ Standard
F CH21PDD (Hexagon)

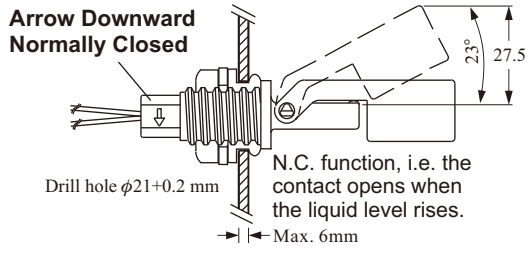


■ F CH31PD

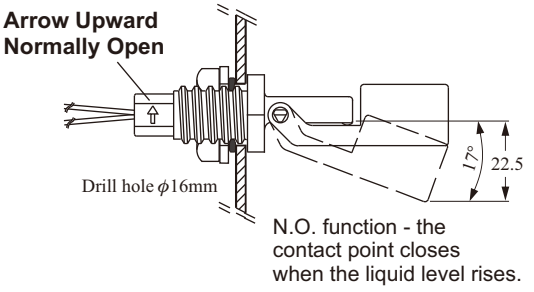


■ Installation / N.C. / N.O. Action Position

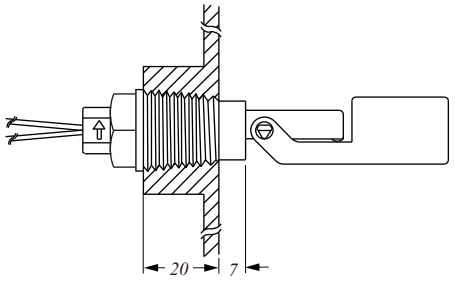
[External mounting]



[Internal mounting]



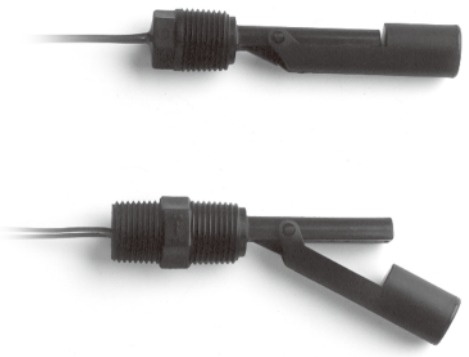
[External mounting]



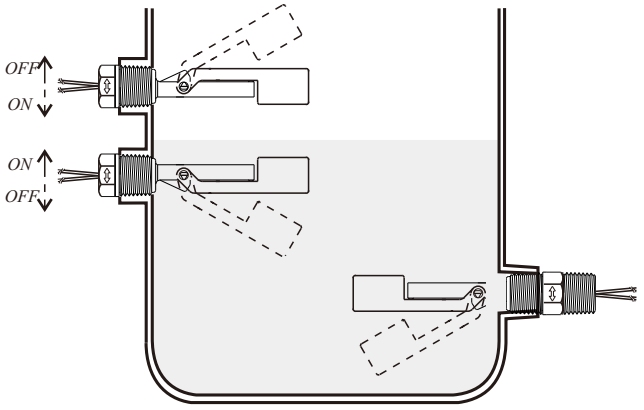
FineTek

PLASTIC OH MODELS

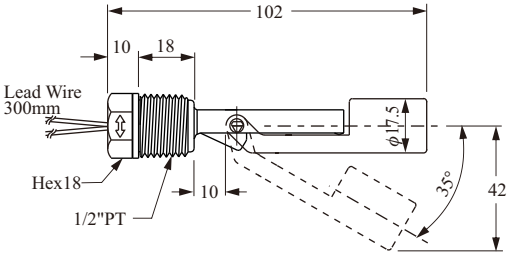
▶ F CH41PD / H51PD

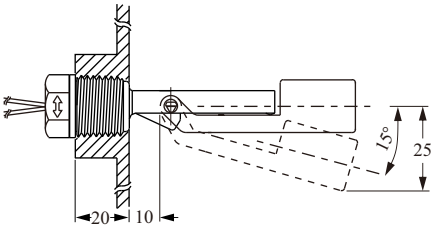


■ Installation / N.C. / N.O. Action Position



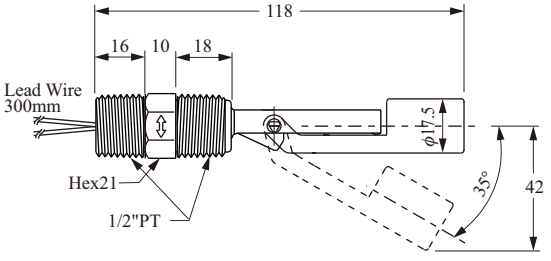
■ F CH41PD

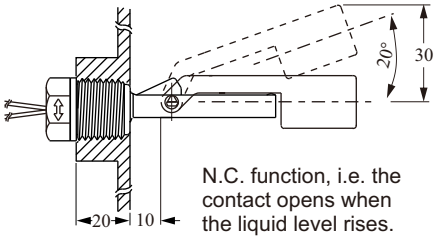




N.O. function, i.e. the contact closes when the liquid level rises.

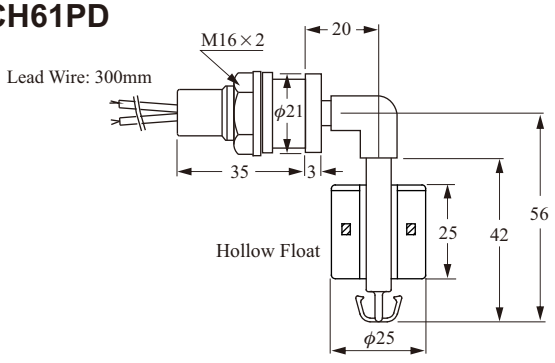
■ F CH51PD





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

■ F CH61PD



● F CH4 and F CH5 models have UL certification.

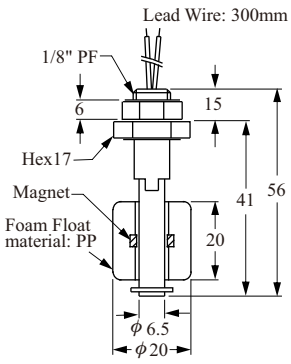
■ SPECIFICATIONS

Type	Material	Switching Capacity Max.	Switching Voltage Max.	Switching Current Max.	Carry Current Max.	Lead Wire	Max. Pressure	Operating Temp.	Suitable Sp. Gr.	Weight
F CH41PD	PP	50W/SPST	240Vac 200Vdc	0.5A	1A	XLPE	4 kg/cm^2	-20~80℃	0.55	20g
F CH51PD										25g
F CH61PD						PVC				31g

PLASTIC OV MODELS

▶ F CV11QF

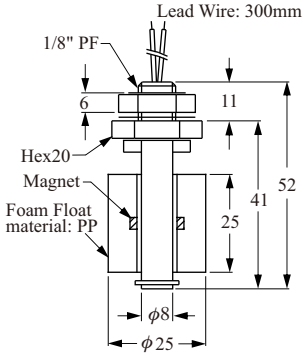




Washer: NBR
Drill hole ϕ10mm

▶ F CV21QD

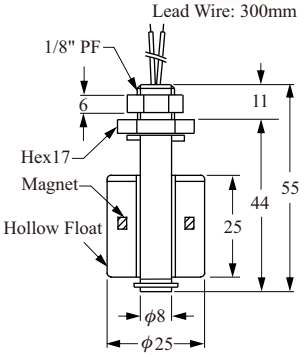




Washer: NBR
Drill hole ϕ10mm

▶ F CV31PD

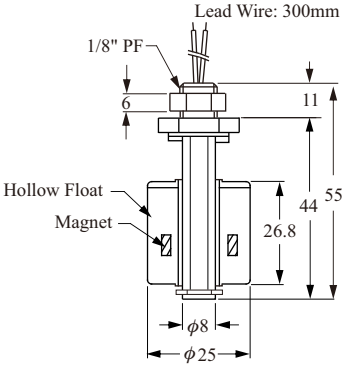




O-ring: VITON
Drill hole ϕ10mm

▶ F CV33FD, F CV35GD





O-ring: VITON
Drill hole ϕ10mm

- F CV1 /F CV2 /F CV3 models have UL certification.

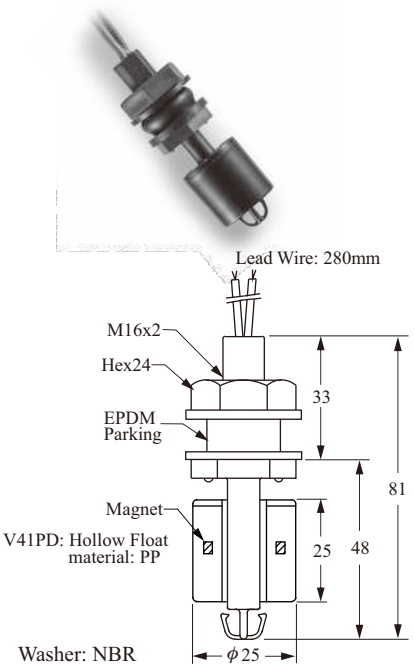
■ SPECIFICATIONS

Description \ Type	F CV11QF	F CV21QD	F CV31PD	F CV33FD	F CV35GD
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	YES	NO	YES/ 80°C down		
Max. Pressure (Kg/cm^2)	ATM		4 kg/cm^2	2 kg/cm^2	
Operating Temperature	-20~80°C		-20~80°C	-20~120°C	
Material	PP		PP	PVDF	Polysulfone
Suitable Specific Gravity	0.75	0.7	0.7	0.85	0.85
Weight (g)	12 g	18 g	12.8 g	18 g	18 g

FineTek

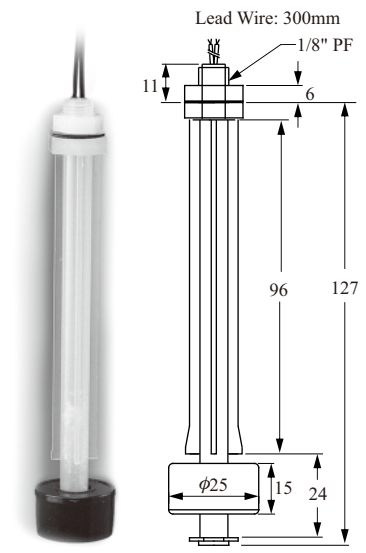
PLASTIC OV MODELS

▶ F CV41PD



Washer: NBR
Drill hole ϕ16mm

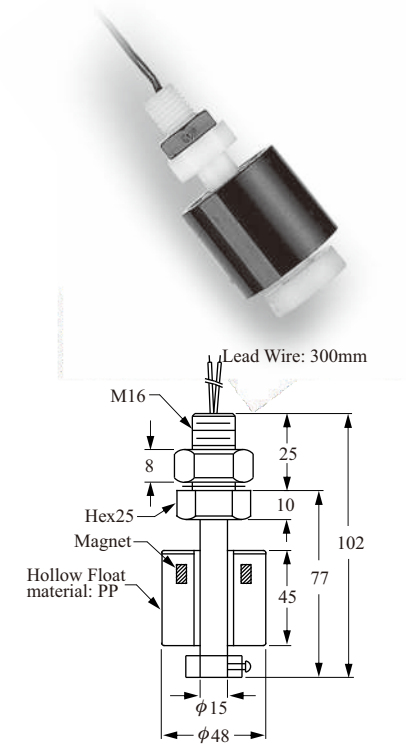
▶ F CV61PF, F CV61NF



V61PF: Hollow Float
Material: PP
V61NF: Foam Float
Material: NBR

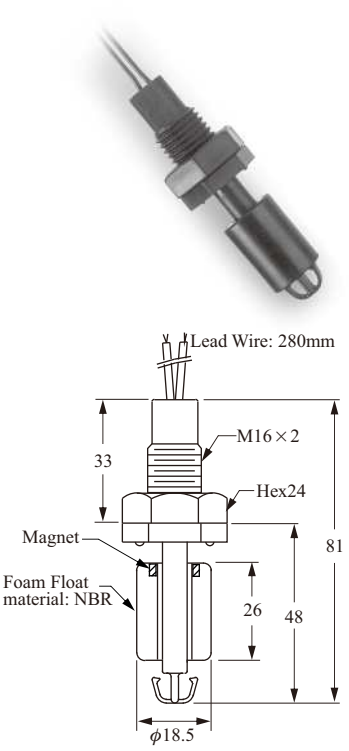
Washer: NBR
Drill hole ϕ10mm

▶ F CV81PD



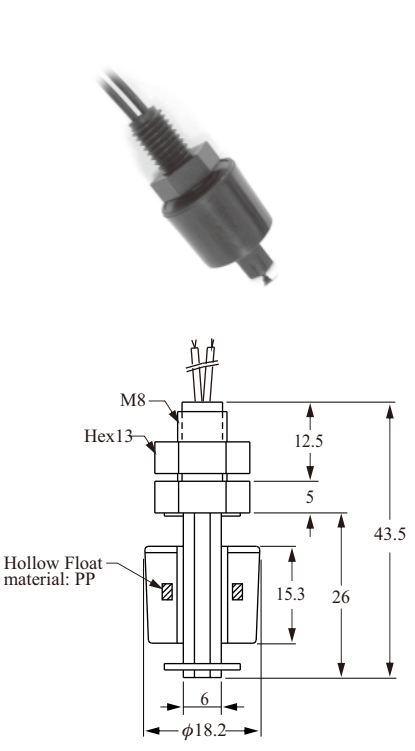
Washer: NBR
Drill hole ϕ16mm

▶ F CV41ND



Washer: NBR
Drill hole ϕ16mm

▶ F CV51PD



O-Ring: VITON
Drill hole ϕ8.5mm

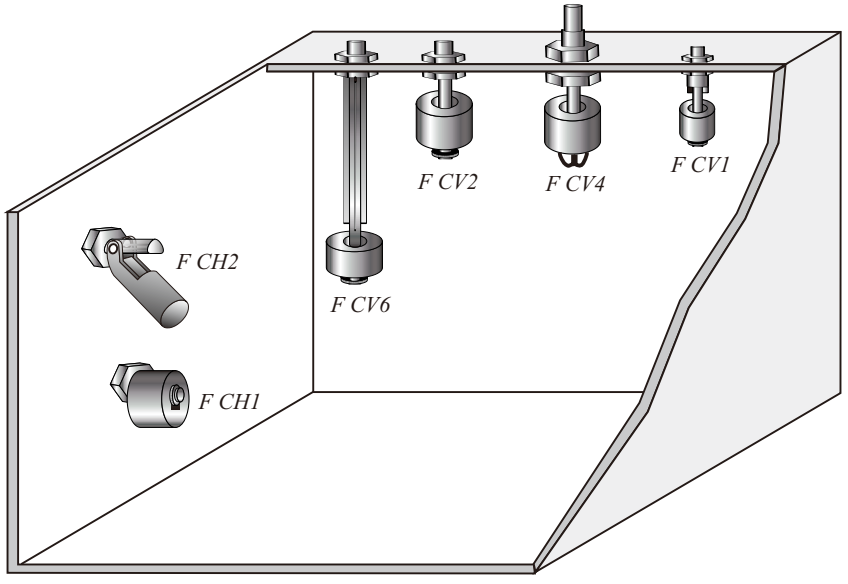
- F CV4 /F CV5 /F CV6 /F CV8 models have UL certification.

FineTek

PLASTIC OV MODELS

■ SPECIFICATIONS

Type / Description	F CV61PF F CV61NF	F CV41PD	F CV81PD	F CV41ND	F CV51PD
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	UL 1007 AWG22 PVC				
Reversible Switch Action	NO	YES	NO	NO	NO
Max. Pressure (kg/cm²)	V61P: 4kg/cm² V61N: ATM	4kg/cm²	4 kg/cm²	ATM	4 kg/cm²
Operating Temperature	-20~80℃				80℃
Material	PP (except V61N, V41N: NBR float)				
Suitable Specific Gravity	0.65 0.5	0.55	0.6	0.7	0.8
Weight (g)	16 g	23 g	180 g	17 g	8.2 g



MODEL / NUMBER ORDER CODE COMPARISON TABLE

Model Number	Order Code
F CH11QD	FCM10000-H1181DD
F CH21PD	FCM10000-H2180D
F CH31PD	FCM10000-H3180DD
F CH23FD	FCM10000-H2240D
F CH33FD	FCM10000-H3240DD
F CH25GD	FCM10000-H2
F CH35GD	FCM10000-H3
F CH41PD	FCM10000-H4180DD
F CH51PD	FCM10000-H5180DD
F CH61PD	FCM10000-H6180D

F CV11QF	FCM10000-V1181F
F CV21QD	FCM10000-V2181D
F CV31PD	FCM10000-V3180D
F CV33FD	FCM10000-V3240D
F CV35GD	FCM10000-V3
F CV61PF	FCM10000-V6180F
F CV61NF	FCM10000-V6070F
F CV41PD	FCM10000-V4180D
F CV81PD	FCM10000-V8180D
F CV41ND	FCM10000-V4070D
F CV51PD	FCM10000-V5180D

ORDER INFORMATION (PLASTIC MODELS)

FCM 1 0 0 ⑦⑧-⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱⑲⑳㉑

⑦⑧ Certification

00：None
3A：UL

⑨ Mounting

V：Top or bottom mounting
H：Side mounting

⑩ Type

1：Type 1　4：Type 4　7：Type 7
2：Type 2　5：Type 5　8：Type 8
3：Type 3　6：Type 6

⑪⑫⑬ Material of Wetted parts

070：NBR(Float), PP(Floating pole)
180：PP(Hollow float), PP(Floating pole)
181：PP(Foam float), PP(Floating pole)
240：PVDF(Float), PVDF(Floating pole)

⑭ Switching Capacity Max.

D：50W 240VAC/200VDC SPST
F：10W 125VAC SPST
K：20W 150VAC/200VDC SPDT

⑮ Contact Mode

A：SPST, Normal Open
B：SPST, Normal Closed
D：Normal Closed Reversible
E：Normal Open Reversible
C：SPDT
※Side mounted types(FCH2,3,4,5) are only available with D mode.
NO or NC depends on the installation direction.

⑯⑰⑱ Material of Lead wire

210: Teflon (200°C AWG24)
230: PVC (80°C AWG22)
231: PVC (80°C AWG22 Cable)
232: PVC (80°C AWG24)
233: PVC (80°C AWG24 Cable)
234: PVC(80°C AWG18)
250: Silicon(150°C AWG24 Cable)
290: XLPE (125°C AWG22)
300: XLPVC (105°C AWG24)

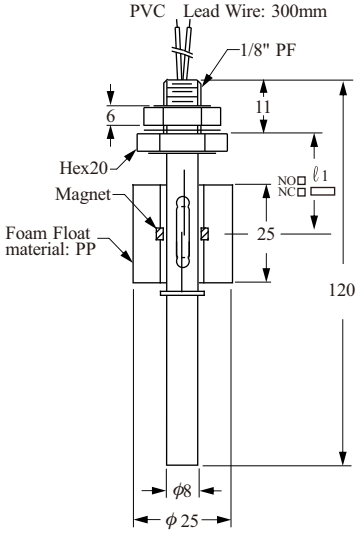
⑲⑳㉑ Lead wire Length

001：100mm　003：300mm　005：500mm　008：800mm　010：1000mm
002：200mm　004：400mm　006：600mm　009：900mm　020：2000mm

CUSTOMIZED PLASTIC MODELS

▶ FC PV1

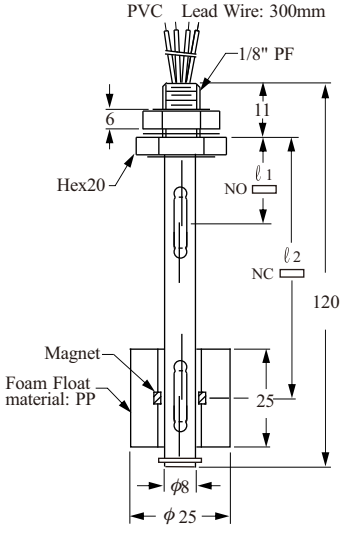




O-Ring: VITON

▶ FC PV2

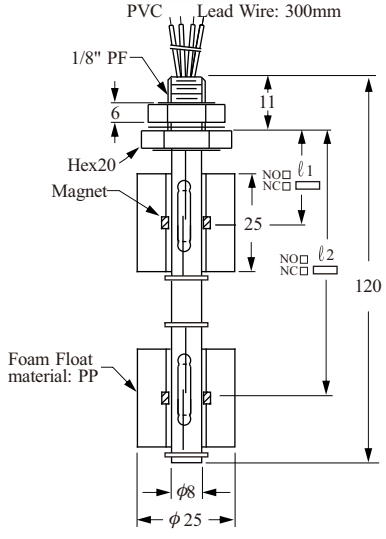




O-Ring: VITON

▶ FC PV3





O-Ring: VITON

- NOTE: Float material's are optional.

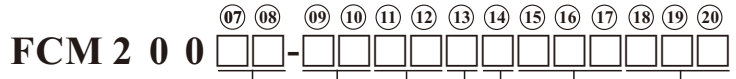
The above items are custom-built when client demands are unique. The benefits are listed below:

- FCPV1 One float for one level activation.
  FCPV2 One float with 2 reed switches.
- Applicable for conditions where 1 float can actuate switches at high and low levels.
- FCPV3 Two floats actuate two independent reed switches: Each float unit's default setting can be either N.O. or N.C. as per cus

MODEL / NUMBER ORDER CODE COMPARISON TABLE

Model Number	Order Code
FCPV1	FCM20000-V118
FCPV2	FCM20000-V2
FCPV3	FCM20000-V318

ORDER INFORMATION (PLASTIC MODELS)



⑦⑧ Certification

00：None

⑨⑩ Mounting

V1：Single float single switch
V2：Single float dual switch
V3：Dual float dual switch

⑪⑫ Probe material

07：NBR Float, PP(Floating pole)
18：PP Float
24：PVDF, PP(Floating pole)

⑬ Switching Capacity Max.

D：50W 240VAC/200VDC SPST
F：10W 125VAC SPST
K：20W 150VAC/200VDC SPDT

⑭ Contact Mode

A：SPST, Normal Open
B：SPST, Normal Closed
C：SPDT
H：Double reed switch 1-NO ,1-NC

⑮⑯⑰ Material of Lead wire

000: None
230: PVC (80°C AWG22)
231: PVC (80°C AWG22 Cable)
232:PVC(80°C AWG24 Cable) When 2 floats
291: XLPE (125°C AWG22)

⑱⑲⑳ Lead wire Length

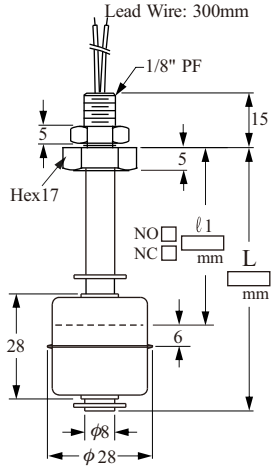
001：100mm　　006：600mm
002：200mm　　008：800mm
003：300mm　　009：900mm
004：400mm　　010：1000mm
005：500mm　　020：2000mm

CUSTOMIZED STAINLESS STEEL MODELS

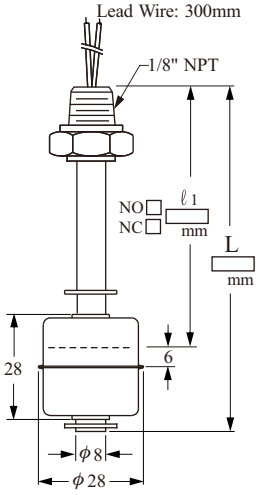
Items below are custom-built models for special applications or placement on existing facilities. Their unique characteristics are as follows:

- Any size measuring range, but ϕ8mm stem Max. 500mm.
- Customized mounting thread specifications are acceptable.
- Single or multiple contact points are workable.
- Switch activation N.O. or N.C. choices are available.

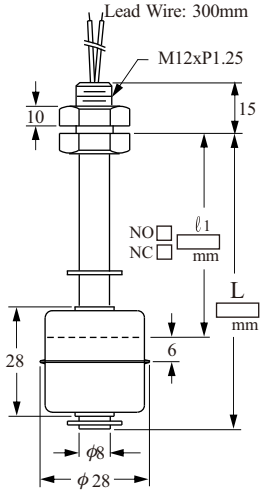
▶ FDSA□11



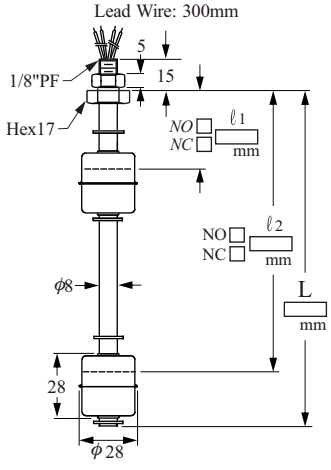
▶ FDSB□11



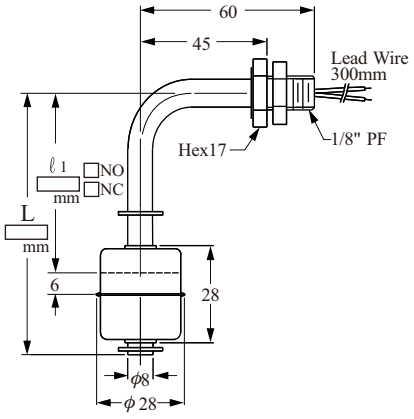
▶ FDSC□11



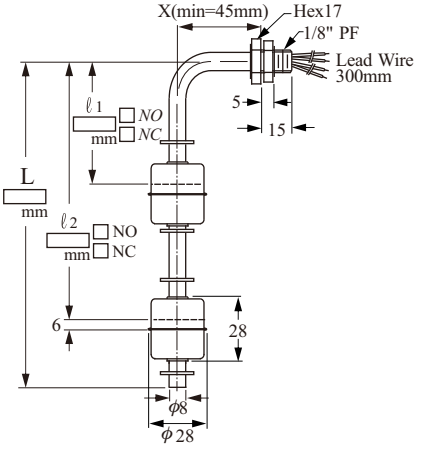
▶ FDSA□12



▶ FDSA□21



▶ FDSA□22



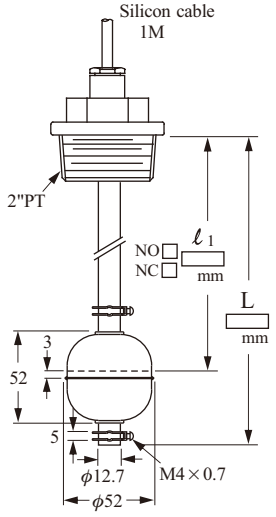
FineTek

CUSTOMIZED STAINLESS STEEL MODELS

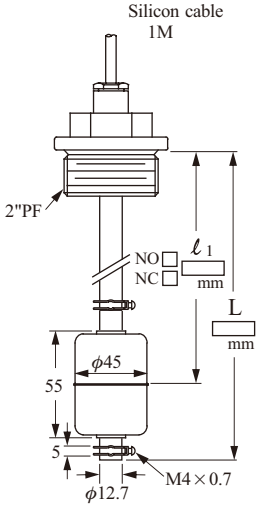
Items below are custom-built models for special application and location on existing equipment facilities. Their unique characteristics are as follows:

- Any size measurement range available.
- Customized mounting thread specification are acceptable.
- Single or multiple contact form (point) are workable.
- Switch activation N.O. or N.C. are available.

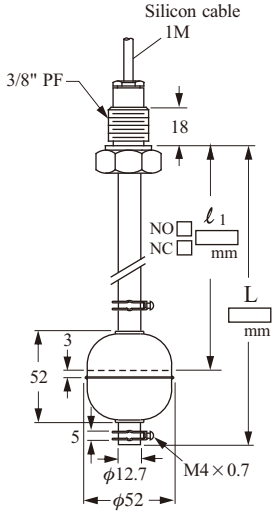
▶ FDSD□11



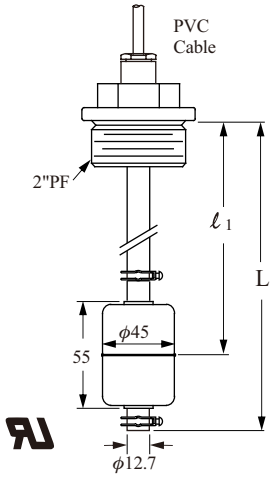
▶ FDSE□11



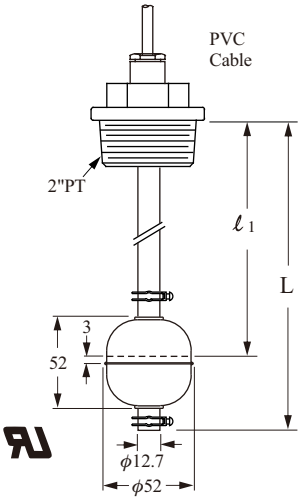
▶ FDSF□11



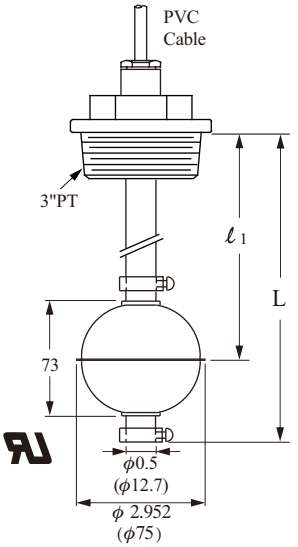
▶ FD4503D



▶ FD5003G



▶ FD7503G



MODEL / NUMBER ORDER CODE COMPARISON TABLE

Model Number	Order Code
FDSA□11	FDM40000-SA
FDSB□11	FDM40000-SB
FDSC□11	FDM40000-SC
FDSA□12	FDM40000-SA
FDSA□21	FDM40000-SA
FDSA□22	FDM40000-SA
FDSD□11	FDM40000-SD
FDSE□11	FDM40000-SE
FDSF□11	FDM40000-SF

ORDER INFORMATION
(CUSTOMIZED STAINLESS STEEL MODELS)

⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒

FDM 4 0 0 □□-□□□□□□□□□□□□□□

⑦⑧ Certification

00：None
3A：UL

⑨⑩ Type

SA：Float ϕ 28x28, 1/8"PF
SB：Float ϕ 28x28, 1/8"NPT
SC：Float ϕ 28x28, M12
SD：Float ϕ 52x52, 2"PT
SE：Float ϕ 45x45, 2"PF
SF：Float ϕ 52x52, 3/8"PF
SG：Float ϕ 75x73, 3"PT

⑪⑫ Probe material

MA：SUS304
MB：SUS316

⑬ Mounting

V：Top or Bottom Mounting
H：Side Mount

⑭ Float Number

1: 1 float
2: 2 floats

⑮ Switching Capacity Max.

D：50W 240VAC/200VDC SPST
K：20W 150VAC/200VDC SPDT

⑯ Contact Mode

A：NO
B：NC
C：SPDT
H：1 NO, 1NC

⑰⑱⑲ Material of Lead wire

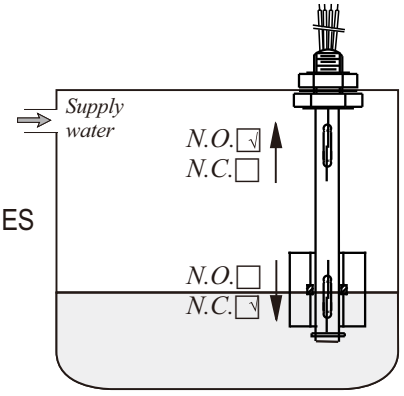
210: Teflon (200°C AWG24)
250: Silicon(150°C AWG24 Cable)
291: XLPE (125°C AWG22)
230: PVC (80°C AWG22)
231: PVC(80°C AWG22 Cable)

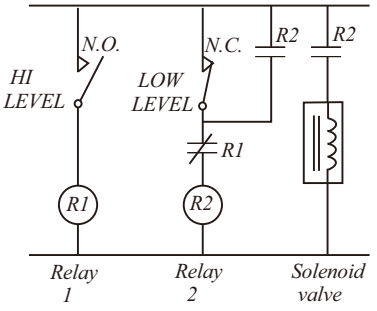
⑳㉑㉒ Lead wire Length

001：100mm　003：300mm　005：500mm　008：800mm　010：1000mm
002：200mm　004：400mm　006：600mm　009：900mm　020：2000mm

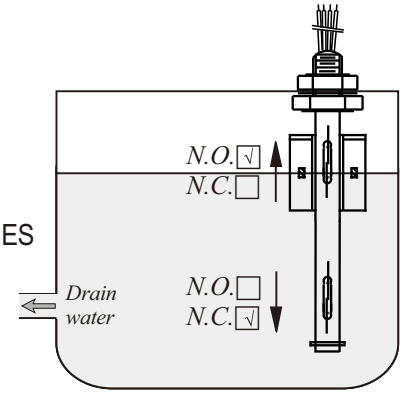
TYPICAL WIRING DIAGRAMS

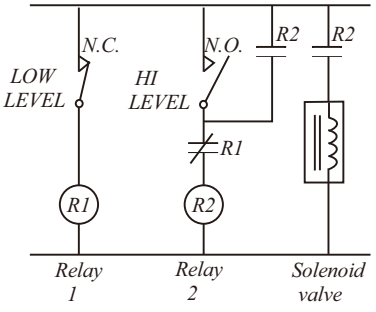
✻ AUTO SUPPLY CASE:
SINGLE FLOAT DUAL SWITCHES



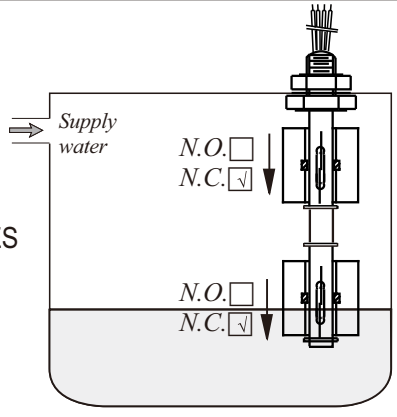


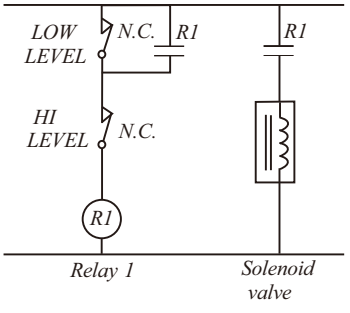
✻ AUTO DRAIN CASE:
SINGLE FLOAT DUAL SWITCHES



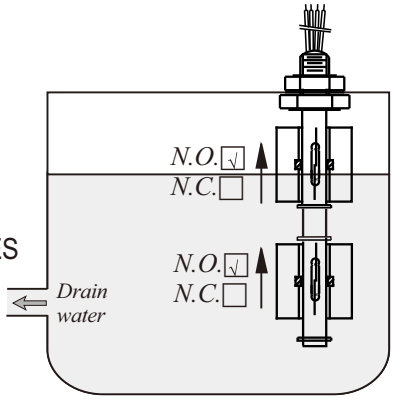


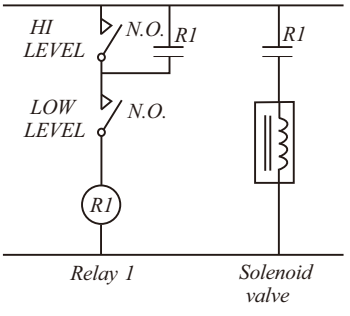
✻ AUTO SUPPLY CASE:
DUAL FLOATS DUAL SWITCHES





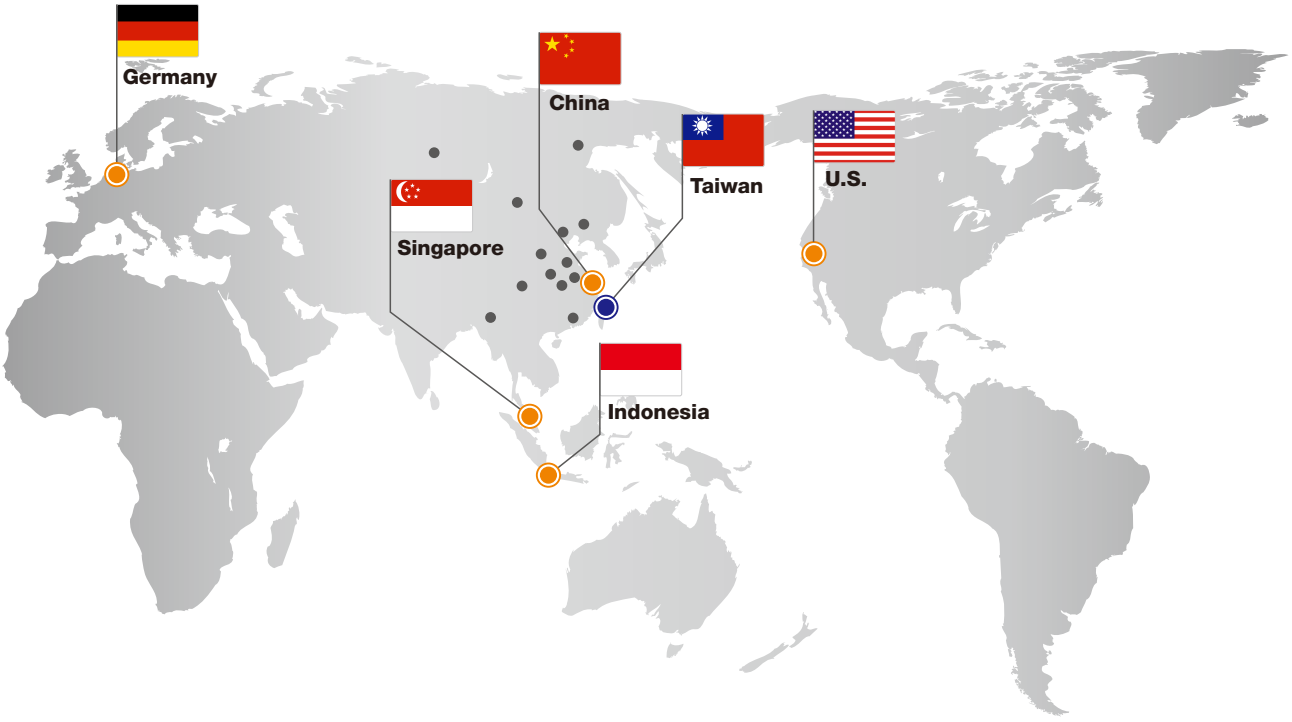
✻ AUTO DRAIN CASE:
DUAL FLOATS DUAL SWITCHES





FineTek

Global Network



Head Quarter

Taiwan
FineTek Co., Ltd. - Taipei Head Quarter
No.16, Tzuchiang St., Tucheng Industrial Park
New Taipei City 236, Taiwan
TEL: 886-2-2269-6789
FAX: 886-2-2268-6682
EMAIL: info@fine-tek.com

North America

California, U.S.
Aplus Finetek Sensor Inc. - US Office
355 S. Lemon Ave, Suite D
Walnut, CA 91789
TEL: 1 909 598 2488
FAX: 1 909 598 3188
EMAIL: info@aplusfine.com

Europe

Germany
FineTek GmbH - Germany Office
Bei den Kämpen 26
21220 Seevetal-Ramelsloh, Germany
TEL: +49-(0)4185-8083-12
FAX: +49-(0)4185-8083-80
EMAIL: info@fine-tek.de

Mütec Instruments GmbH - Germany Office
Bei den Kämpen 26
21220 Seevetal-Ramelsloh, Germany
TEL: +49-(0)4185-8083-0
FAX: +49-(0)4185-8083-80
EMAIL: muetec@muetec.de

Asia

China
Fine automation Co., Ltd. - Shanghai Factory
No.451 DuHui Rd, MinHang District, Shanghai,
China 201109
TEL: 86-21-6490-7260
EMAIL: info.sh@fine-tek.com

Singapore
FineTek Pte Ltd. - Singapore Office
37 Kaki Bukit Place, Level 4 Singapore 416215
TEL: 65-6452-6340
EMAIL: info.sg@fine-tek.com

Indonesia
PT. FineTek Automation Indonesia - Indonesia Office
PERGUDANGAN TUNAS BITUNG
JL. Raya Serang KM. 13,8, Blok C3 No. 12&15, Bitung Cikupa,
Tangerang 15710
TEL: 62 (021)-2958-1688
EMAIL: info.id@fine-tek.com

FineTek

Distributor:

08-FDMEP-110723