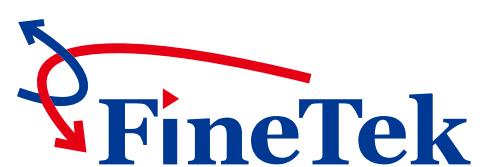




## Mini Float Level Switch



[www.fine-tek.com](http://www.fine-tek.com)

 FineTek

# 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

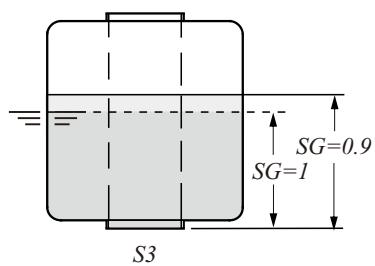
The switch's float should always have a specific gravity (SG) less than the liquid that holds the float.

(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).

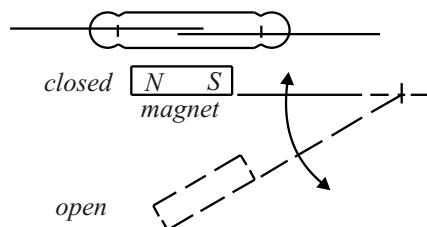
Because the float switches are activated by the magnetic field inside the float, make sure the liquid contains no iron traces or substances that can induce magnetic interference.



(Fig. 3)

## ■ WORKING PRINCIPLE

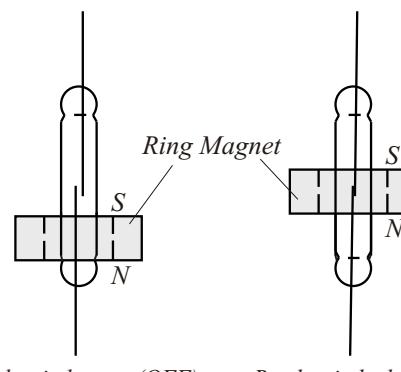
Fig. 1 illustrates the pivot activation (FCH Type reed switch). When float's magnet is moved close to the switch's stationary stem, the float magnet pushes the stem's switch circuit together and closes the electrical circuit. When the float magnet is moved away from the stem, the switch circuit separates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

| Chemical   | Concentration % | Temp °C °F | Plastic |    | Rubber |      | Stainless |     |     |
|--|-----------------|------------|---------|----|--------|------|-----------|-----|-----|
|  |                 |            | PVC     | PP | PVDF   | PTFE | NBR       | 304 | 316 |
| Ammonia Water NH <sub>4</sub> OH                                       | 10              | 40 104     | ●       | ●  | ●      | ●    | ●         | ○   |     |
|  | 10              | 80 176     |         | ○  | ●      | ●    |           |     |     |
| Aque Regia 3HCl+HNO <sub>3</sub>                                       | 10              | 40 104     | △       | △  | ●      | ●    |           |     |     |
|  | 10              | 80 176     |         | ●  | ●      |      |           |     |     |
| Benzene C <sub>6</sub> H <sub>6</sub>                                  | Pure            | 40 104     | ×       | △  | ○      | ●    |           |     |     |
|  |                 | 80 176     |         | △  |        | ●    |           |     |     |
| Bleaching Liquor Ca(ClO) <sub>2</sub>                                  | 5               | 40 104     | ●       |    | ●      | ●    |           |     |     |
|  | 5               | 80 176     |         |    | ●      | ●    |           |     |     |
|  | 20              | 40 104     | ●       |    | ●      | ●    |           |     |     |
|  | 20              | 80 176     |         |    | ●      | ●    |           |     |     |
| Boric Acid H <sub>3</sub> BO <sub>3</sub>                              | Satu            | 40 104     | ●       | ●  | ●      | ●    | ●         |     |     |
|  |                 | 80 176     |         | ●  | ●      | ●    | ●         | ○   |     |
| Brine  |                 | 40 104     | ●       | ●  | ●      | ●    | ●         |     |     |
|  |                 | 80 176     |         | ●  | ●      | ●    |           |     |     |
| Butadiene CH <sub>2</sub> =CH=CH=CH <sub>2</sub>                       | Gas             | 40 104     | ●       |    | ●      | ●    |           |     |     |
|  |                 | 80 176     |         |    | ●      | ●    |           |     |     |
| Butane CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> CH <sub>3</sub> | Gas             | 40 104     | ●       | ●  | ●      | ●    |           |     |     |
|  |                 | 80 176     |         | ●  | ●      | ●    |           |     |     |
| Nitric Acid HNO <sub>3</sub>   | 10              | 40 104     | ●       | ●  | ●      | ●    | ●         | ●   | ●   |
|  | 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 HOOCOOH  | 20              | 40 104     | ●       | ●  | ●      | ●    | ●         | △   |     |
|  | 20              | 80 176     |         | ●  | ●      | ●    |           |     |     |
|  | 50              | 40 104     | ●       | ●  | ●      | ●    |           |     | △   |
|  | 50              | 80 176     |         | ●  | ●      | ●    |           |     |     |
| Phosphoric Acid H <sub>3</sub> PO <sub>4</sub>                         | 10              | 40 104     | ●       | ●  | ●      | ●    | ●         | ●   | ●   |
|  | 10              | 80 176     |         | ○  | ●      | ●    | △         | ●   | ●   |
|  | 50              | 40 104     | ●       | ●  | ●      | ●    | ●         |     |     |
|  | 50              | 80 176     |         | △  | ●      | ●    | ×         | ●   | ●   |
|  | 80              | 40 104     | ●       | ●  | ●      | ●    | ○         | ●   | ●   |
|  | 80              | 80 176     |         | △  | ●      | ●    |           | ●   | ●   |
| Sodium Hydroxide NaOH  | 15              | 40 104     | ●       | ●  | ●      | ●    | ●         | ●   | ●   |
|  | 15              | 80 176     |         | ○  | △      | ●    | △         | ×   | ×   |
|  | 30              | 40 104     | ●       | ●  | ●      | ●    | ●         | ●   | ●   |
|  | 30              | 80 176     |         | ○  | △      | ●    | ●         | ×   | ×   |
|  | 50              | 40 104     | ●       | ●  | ○      | ●    | ●         | ●   | ●   |
|  | 50              | 80 176     |         | ○  | ×      | ●    | ●         | ×   | ×   |
|  | 70              | 40 104     | ○       | ○  | ○      | ●    |           |     |     |
|  | 70              | 80 176     |         | ○  | ×      | ●    |           |     |     |

| Chemical  | Concentration % | Temp °C °F | Plastic |    | Rubber |      | Stainless |     |     |
|---|-----------------|------------|---------|----|--------|------|-----------|-----|-----|
|   |                 |            | PVC     | PP | PVDF   | PTFE | NBR       | 304 | 316 |
| Sodium Hypochlorite                                   | 3               | 40 104     | ●       | ○  | ●      | ●    | ●         | △   | ○   |
|   | 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 H <sub>2</sub> SO <sub>4</sub>          | 10              | 40 104     | ●       | ●  | ●      | ●    | ●         | ●   | ●   |
|   | 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 C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> |                 | 40 104     |         | △  | △      | ●    |           |     |     |
|   |                 | 80 176     |         | ○  |        |      |           |     |     |
| Chlorine Gas Cl <sub>2</sub>                          | Wet             | 40 104     | ○       |    | ●      | ●    |           |     |     |
|   | Wet             | 80 176     |         |    | △      | ●    |           |     |     |
|   | Dry             | 40 104     | ●       |    | ●      | ●    |           |     |     |
|   | Dry             | 80 176     |         |    | ●      | ●    |           |     |     |
| Chromic Acid H <sub>2</sub> CrO <sub>4</sub>          | 10              | 40 104     | ●       |    | ●      | ●    | ●         |     |     |
|   | 10              | 80 176     |         |    | ●      | ●    | ●         |     |     |
|   | 20              | 40 104     | △       |    | ●      | ●    | ●         |     |     |
|   | 20              | 80 176     |         |    | ●      | ●    | ●         |     |     |
|   | 40              | 40 104     | △       |    | ●      | ●    | ●         |     |     |
|   | 40              | 80 176     |         |    | ●      | ●    | ●         |     |     |
|   | 50              | 40 104     | ×       |    | ●      | ●    | ●         |     |     |
|   | 50              | 80 176     |         |    | △      | ●    | ●         |     |     |
| Hydrochloric Acid HCl                                 | 15              | 40 104     | ●       | ●  | ●      | ●    | ●         | ○   |     |
|   | 15              | 80 176     |         | ●  | ●      | ●    | ●         |     |     |
|   | 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 °F | Plastic |    | Rubber |      | Stainless |     |
|---|-----------------|------------|---------|----|--------|------|-----------|-----|
|   |                 |            | PVC     | PP | PVDF   | PTFE | NBR       | 304 |
| Citric Acid<br><chem>C6H8O7</chem>              | 10              | 40 104     | ●       | ●  | ●      | ●    | ●         | ● ● |
|   | 10              | 80 176     | ○       | ●  | ●      | ●    | ●         |     |
| Gasoline  | 10              | 40 104     | ●       |    | ●      | ●    |           |     |
|   | 10              | 80 176     |         | ●  | ●      |      |           |     |
| Diesel Fuels                                    |                 | 40 104     |         | ●  | ●      |      | ●         | ●   |
|   |                 | 80 176     |         | ●  | ●      |      | ●         | ●   |
| Ethyl Alcohol<br><chem>C2H5OH</chem>            | Pure            | 40 104     | ●       | ●  | ●      | ●    | ●         | ○ ○ |
|   |                 | 80 176     | ○       | ●  | ●      | ●    | ○         |     |
| Formic Acid<br><chem>HCOOH</chem>               | 90              | 40 104     | ○       | ○  | ●      | ●    |           |     |
|   |                 | 80 176     |         | ●  | ●      |      |           |     |
| Hydrofluoric Acid                               | Dilute          | 40 104     | ●       | ○  | ●      | ●    |           |     |
|   |                 | 80 176     | ○       | ●  | ●      | ●    |           |     |
| HF  | 30              | 40 104     | ○       | ○  | ●      | ●    |           |     |
|   | 30              | 80 176     | ×       | ○  | ●      | ●    |           |     |
|   | 40              | 40 104     | △       | ○  | ●      | ●    |           |     |
|   | 40              | 80 176     | ○       | ●  | ●      | ●    |           |     |
|   | 50              | 40 104     | △       | ○  | ●      | ●    |           |     |
|   | 50              | 80 176     | ○       | ●  | ●      | ●    |           |     |
| Hydrogen peroxide<br><chem>H2O2</chem>          | 5               | 40 104     | ●       | ●  | ●      | ●    | ○         | ●   |
|   | 5               | 80 176     | ○       | ●  | ●      | ●    |           |     |
|   | 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<br><chem>(CH3)COH</chem>      | Pure            | 40 104     | ●       | ●  | ●      | ●    | ○         |     |
|   |                 | 80 176     |         | ●  | ●      | ●    |           |     |
| Kerosene  |                 | 40 104     | ●       | ○  | ●      | ●    |           |     |
|   |                 | 80 176     |         | ●  | ●      | ●    |           |     |
| Methyl Alcohol<br><chem>CH3OH</chem>            |                 | 40 104     | ○       | ●  | ●      | ●    | △         |     |
|   |                 | 80 176     | ○       | ●  | ●      | ●    |           |     |
| Methyl/Ethyl Ketone<br><chem>CH3COCH2CH3</chem> |                 | 40 104     | △       |    | ●      |      |           |     |
|   |                 | 80 176     |         |    | ●      |      |           |     |
| Potassium Chromate<br><chem>K2CrO4</chem>       |                 | 40 104     | ●       | ●  | ●      | ●    | ●         |     |
|   |                 | 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.

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

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

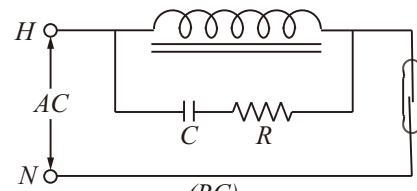


Fig. 4 (a)

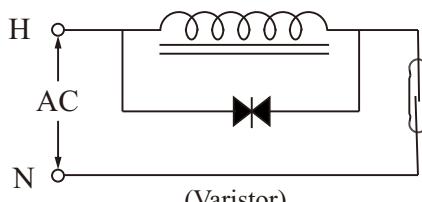


Fig. 4 (b)

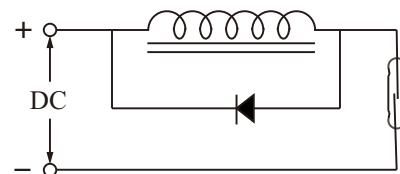


Fig. 4 (c)

## ■ 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)

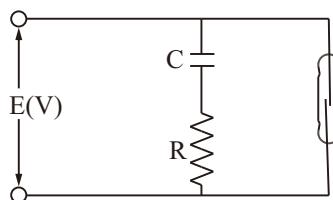


Fig. 5 (a)

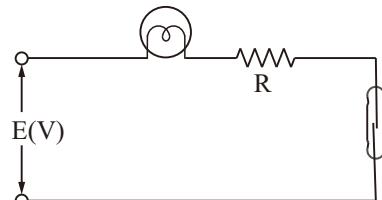


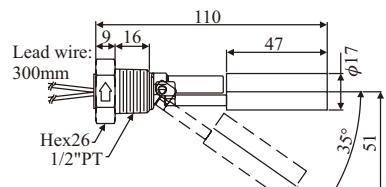
Fig. 5 (b)

## FLOAT SPECIFICATIONS

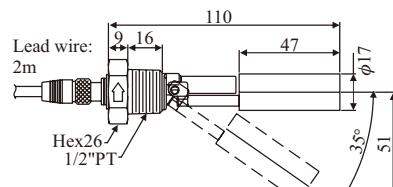
| MODEL | TYPE | $\phi A \times B \times \phi C$ | S.G.   | Max. Pressure<br>(kg/cm <sup>2</sup> ) | Weight<br>(g) | Material/Color   | Max. Temp.<br>(°C) |
|-------|------|---------------------------------|--------|--|---------------|------------------|--------------------|
|       | S1   | 28x28x9.5                       | 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>0.65 | 30                                     | 102.4         | SUS 316          | 200                |
|       | S7   | 30x28x9.5                       | E>0.82 | 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                |
|       | S11  | 28x32x9.5                       | E>0.82 | 30                                     | 8.1           | SUS 316          | 200                |
|       | 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 / white black | 80                 |
|       | P5   | 20x20x8.1                       | E>0.75 | 4                                      | 4             | PP / white       | 80                 |
|       | P8   | 18.2x15.3x7.2                   | E>0.8  | 4                                      | 1.82          | PP / black       | 80                 |
|       | 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                |
|       | N3   | 19x20x10                        | E>0.55 | ATM                                    | 2.4           | 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                |
|       | F2   | 42x44x14                        | E>0.63 | 5                                      | 18.5          | PP               | 80                 |
|       | F3   | 45x45x20                        | E>0.65 | 5                                      | 35.7          | PP               | 80                 |
|       | F4   | 48x62x18                        | E>0.85 | 5                                      | 65.3          | PVDF             | 120                |

# STAINLESS STEEL SWITCHES

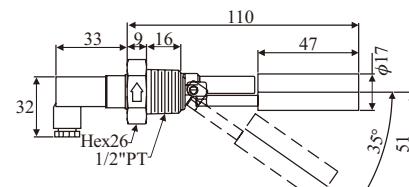
► FD MH50/ 56



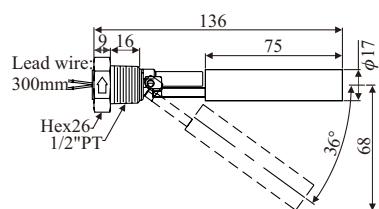
► FD MH50A /56A



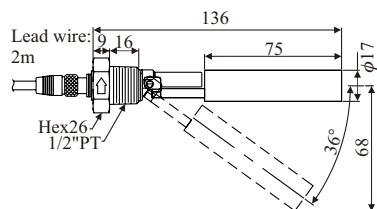
► FD MH50C /56C



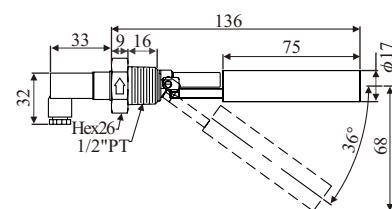
► FD MH60/ 66



► 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   | SUS 304  | 50W/SPST                | 240Vac<br>200Vdc       | 0.5A                   | 1A                 | XLPE or TEFILON | 5 kg/cm <sup>2</sup> | -20~120°C<br>(Max.200°C) | FDMH5:0.92<br>FDMH6:0.75 |
| FDMH60/66   | SUS 316L |                         |                        |                        |                    |                 |                      |                          |                          |
| FDMH50A/56A | SUS 304  | 50W/SPST                | 240Vac<br>200Vdc       | 0.5A                   | 1A                 | PVC or PUR      | 5 kg/cm <sup>2</sup> | 80°C                     | FDMH5:0.92<br>FDMH6:0.75 |
| FDMH60A/66A | SUS 316L |                         |                        |                        |                    |                 |                      |                          |                          |
| FDMH50C/56C | SUS 304  | 50W/SPST                | 240Vac<br>200Vdc       | 0.5A                   | 1A                 | NA              | 5 kg/cm <sup>2</sup> | -20~120°C                | FDMH5:0.92<br>FDMH6:0.75 |
| FDMH60C/66C | SUS 316L |                         |                        |                        |                    |                 |                      |                          |                          |

## HOW TO ORDER SINGLE SWITCHES

FDMH **5|0|A|B|R|(05|F)**

Type \_\_\_\_\_

5:  $\phi 17 \times 47L$  (SG: 0.92) 6:  $\phi 17 \times 75L$  (SG: 0.75)

Material \_\_\_\_\_

0: SUS304 6: SUS316L

Connection \_\_\_\_\_

- : without A: M12 C: DIN

※ Connector M12 whose standard wire length is 2M

※ Connector M12 whose wire is endurable with oil and  
made of PVC / PUR, Max.Temp: 80°C

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 (150°C) AWG24 X  $\phi 4$

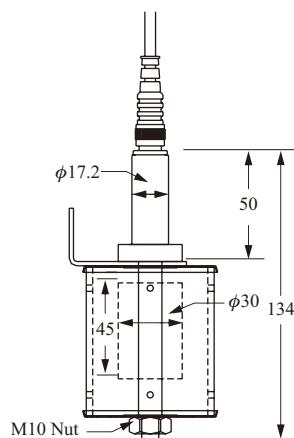
T: TEFLON (200°C) AWG24

X: XLPE (125°C) AWG22 (Standard)

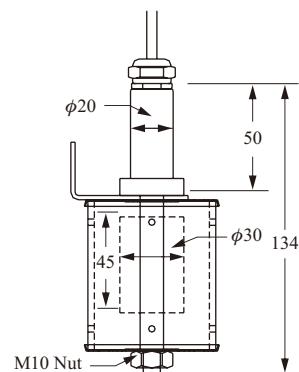
※ Material of Wetted parts "SUS304" .

# MARINE LEVEL SWITCHES

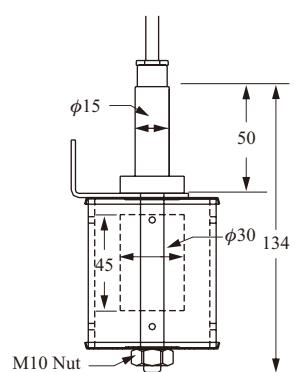
► FDMRN5A0B



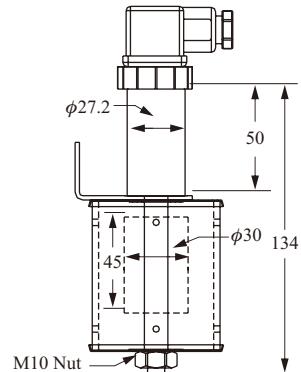
► FDMRN5B0B



► FDMRN5C0B



► FDMRN5D0B

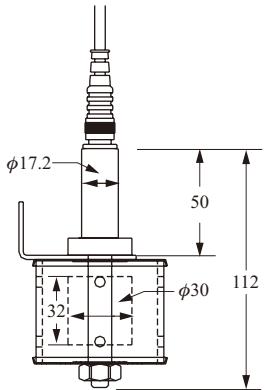


## ■ SPECIFICATIONS

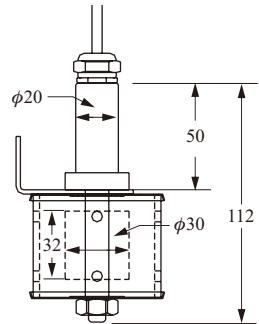
| Type      | Material               | Switching Capacity Max. | Switching Voltage Max. | Switching Current Max. | Carry Current Max. | Lead Wire    | Max. Pressure | Operating Temp. | Suitable Sp. Gr. |
|-----------|------------------------|-------------------------|------------------------|------------------------|--------------------|--------------|----------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

# MARINE LEVEL SWITCHES

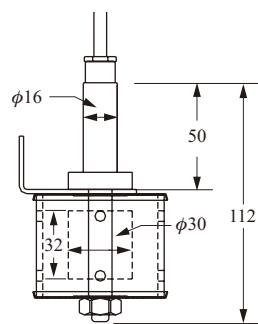
► FDMRN8A0B



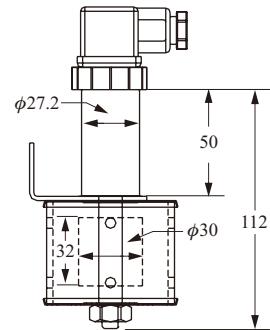
► FDMRN8B0B



► FDMRN8C0B



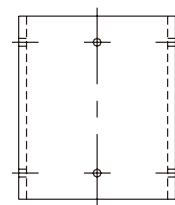
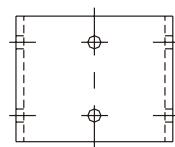
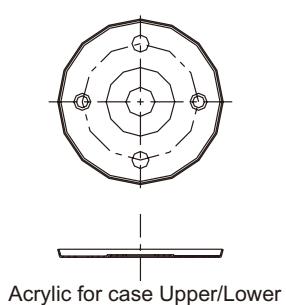
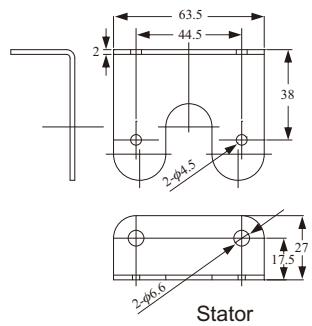
► FDMRN8D0B



## ■ 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<br>(Float:NBR) | 50W/SPST                | 240Vac<br>200Vdc       | 0.5A                   | 1A                 | M12, 2 meter | ATM           | Max. 80°C       | 0.7              |
| FDMRN8B0B | SUS 304<br>(Float:NBR) | 50W/SPST                | 240Vac<br>200Vdc       | 0.5A                   | 1A                 | PVC,22 AWG   | ATM           | Max. 80°C       | 0.7              |
| FDMRN8C0B | SUS 304<br>(Float:NBR) | 50W/SPST                | 240Vac<br>200Vdc       | 0.5A                   | 1A                 | Silicon      | ATM           | Max. 100°C      | 0.7              |
| FDMRN8D0B | SUS 304<br>(Float:NBR) | 50W/SPST                | 240Vac<br>200Vdc       | 0.5A                   | 1A                 | DIN 43650    | ATM           | Max. 80°C       | 0.7              |

## ■ FDB-0450 PARTS OF SLOSH SHIELD



Acrylic cover

# HOW TO ORDER MARINE LEVEL SWITCHES

FDMR **N****5** **A** **0** **B** (**0****5**)

**Float Type**

N5:  $\phi 30 \times 45L$  (NBR)    N8:  $\phi 30 \times 32L$  (NBR)

**Connection Type**

A: M12    B,C: Cable    D:DIN Connection

※ Connector M12 whose standard wire length is 2M

※ Connector M12 whose wire is endurable with oil and  
made of PVC / PUR, Max.Temp: 80°C

**Tube Material**

0: SUS304,    6:SUS316L

**Contact Form**

A: Normal open(N.O.)    B: Normally closed(N.C.)

**Lead wire Length (L)**

05: 500mm (01~500mm)    ※ 500mm per Unit

10: 1m (501mm~1m)    ※ 300mm (Standard length)

15: 1.5m (1.01~1.5)    ※ 2M is standard length of lead wire for ASI connection

⋮

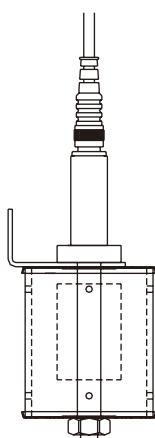
FDMRN5A

FDMRN5B

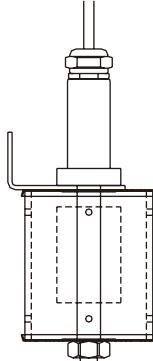
FDMRN5C

FDMRN5D

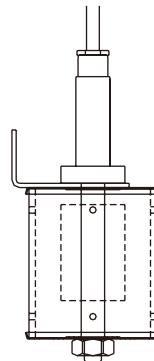
FDMRN8C



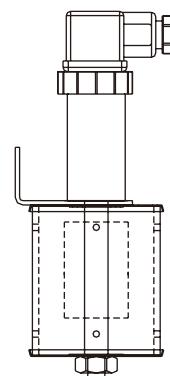
A TYPE



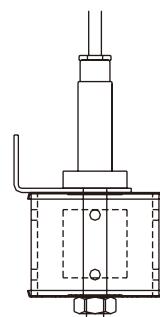
B TYPE



C TYPE



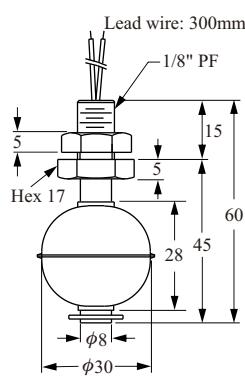
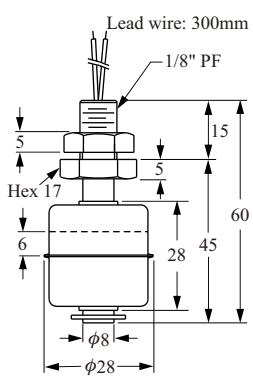
D TYPE



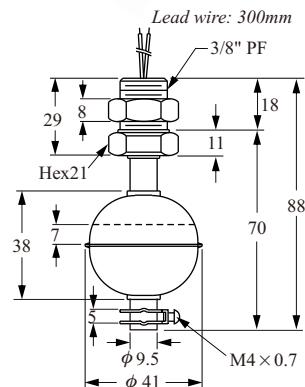
C TYPE

## STAINLESS STEEL MODELS

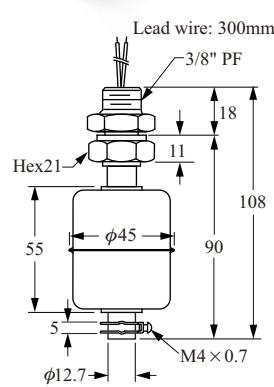
► FD 30□1/ FD 35□1



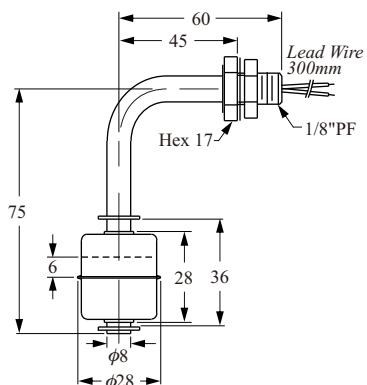
► FD 40□1



► FD 45□1

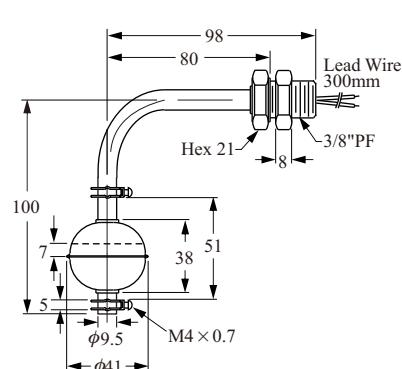


► FD 30□2



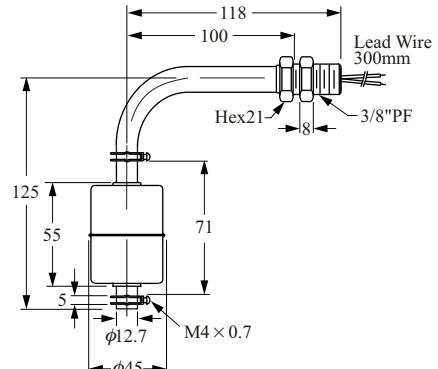
Washer: NBR  
Drill hole  $\phi 10$ mm

► FD 40□2



Washer: NBR  
Drill hole  $\phi 17$ mm

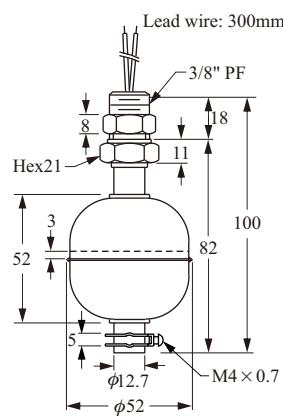
► FD 45□2



Washer: NBR  
Drill hole  $\phi 17$ mm

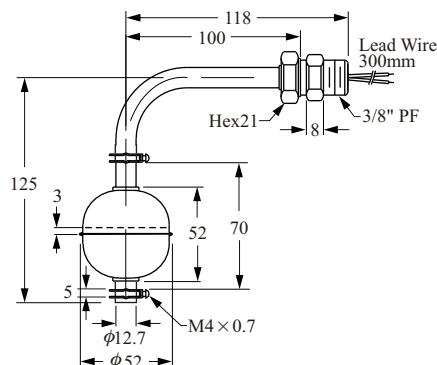
## METAL TYPES

► FD 50□1



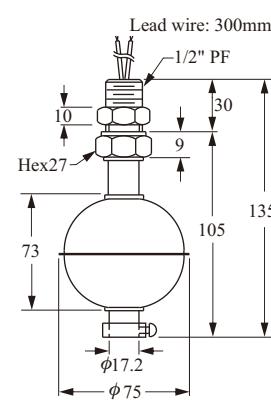
Washer: NBR  
Drill hole  $\phi$ 17mm

► FD 50□2



Washer: NBR  
Drill hole  $\phi$ 17mm

► FD 75□1



Washer: NBR  
Drill hole  $\phi$ 21mm

### ■ SPECIFICATIONS

| Description \ Type                       | FD30□1D<br>FD30□2D             | FD40□1D<br>FD40□2D | FD45□1D<br>FD45□2D | FD50□1D<br>FD50□2D | FD75□1G  | FD10□1G |
|--|--------------------------------|--------------------|--------------------|--------------------|----------|---------|
| <b>Material</b>                          | Stainless Steel SUS304, 316    |                    |                    |                    |          |         |
| <b>Switching Capacity Max.</b>           | 50W SPST                       | 50W SPST           | 50W SPST           | 50W SPST           | 60W SPDT |         |
| <b>Switching Voltage Max.</b>            | 240Vac/200Vdc                  |                    |                    |                    |          |         |
| <b>Switching Current Max. (A)</b>        | 0.5A                           | 0.5A               | 0.5A               | 0.5A               | 1A       |         |
| <b>Carry Current Max. (A)</b>            | 1A                             | 1A                 | 1A                 | 1A                 | 2A       |         |
| <b>Lead Wire</b>                         | XLPE (UL3266, AWG22)           |                    |                    |                    |          |         |
| <b>Reversible Switch Action</b>          | YES / below 80°C, NO / UP 80°C |                    |                    |                    | NO       | NO      |
| <b>Max. Pressure (Kg/cm<sup>2</sup>)</b> | 10                             | 30                 | 12                 | 30                 | 30       | 10      |
| <b>Operating Temperature</b>             | -20~120°C (OPTION 200°C)       |                    |                    |                    |          |         |
| <b>Suitable Specific Gravity</b>         | 0.7                            | 0.7                | 0.65               | 0.55               | 0.65     | 0.5     |

# ORDERING METAL SWITCHES

FD **30** **6** **2** **D** **A** **(10)**  **H**)

**Order No./ Model** \_\_\_\_\_

- 10** Float :  $\phi 75 \times 108$ , Screw : 1/2"PF
- 30** Float :  $\phi 28 \times 28$ , Screw : 1/8"PF
- 31** Float :  $\phi 28 \times 28$ , Screw : 1/8"NPT
- 35** Float :  $\phi 30 \times 28$ , Screw : 1/8"PF
- 36** Float :  $\phi 30 \times 28$ , Screw : 1/8"NPT
- 40** Float :  $\phi 41 \times 38$ , Screw : 3/8"PF
- 45** Float :  $\phi 45 \times 55$ , Screw : 3/8"PF
- 50** Float :  $\phi 52 \times 52$ , Screw : 3/8"PF
- 75** Float :  $\phi 75 \times 70$ , Screw : 1/2"PF

**Material of Wetted parts** \_\_\_\_\_

- 0** : SUS304
- 6** : SUS316

**Mounting** \_\_\_\_\_

- 1** : Top or Bottom Mounting
- 2** : Side Mounting

**Switching Capacity Max.** \_\_\_\_\_

- D**: 50W 240Vac /200Vdc SPST 
- F**: 10W 125Vac SPST
- G**: 60W 220Vac SPDT (only use for tube  $\phi 12.7$ )
- S**: Others

**Contact Mode** \_\_\_\_\_

- A**: Normally Open (N.O.) SPST      ※ High Temperature only available for A or B Type
- B**: Normally Closed (N.C.) SPST
- C**: 1C SPDT
- D**: N.C. Reversible
- E**: N.O. Reversible

**Lead wire Length (Unit=100mm)** \_\_\_\_\_

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

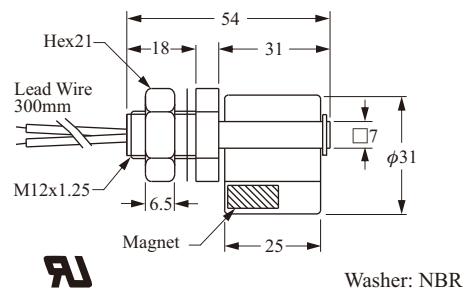
**Material of Lead wire** \_\_\_\_\_

- B**: PVC cable (80°C)      ---- AWG24
- C**: PVC cable (80°C)      ---- AWG22 X  $\phi 4$       ※  $\phi 8$  Stem is not suitable.
- D**: XLPVC (105°C)      ---- AWG22
- F**: SILICON cable (150°C)      ---- AWG24 X  $\phi 4$
- P**: PVC (80°C)      ---- AWG22
- T**: TEFLON (200°C)      ---- AWG24
- X**: XLPE (125°C)      ---- AWG22 (Standard)

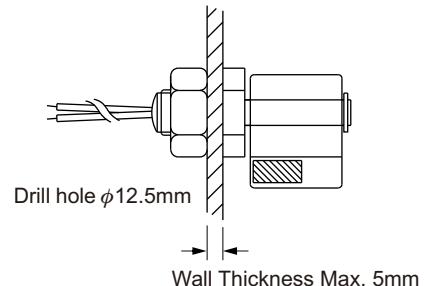
**High Temp. (200°C)** \_\_\_\_\_

# PLASTIC OH MODELS

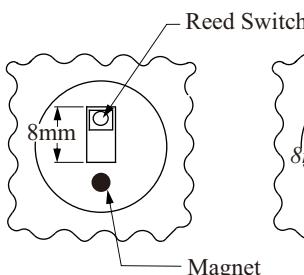
## ► FCH11QD



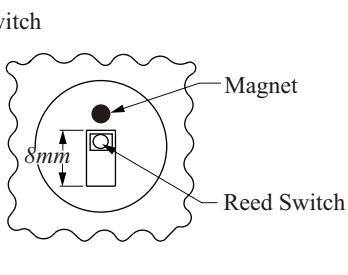
## ■ Installation / N.C./ N.O. Action Position



**Normally open  
N.O.**



**Normally closed  
N.C.**



- All the products in this range come with UL E161587 approval.
- 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

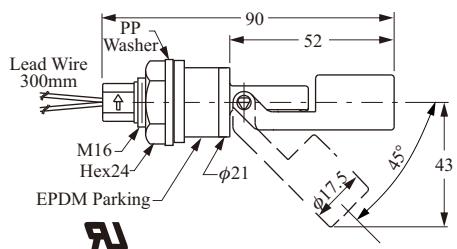
| Description \ Type                       | FCH11QD         | FCH21PD<br>FCH31PD     | FCH23FD<br>FCH33FD   | FCH25GD<br>FCH35GD |
|--|-----------------|------------------------|----------------------|--------------------|
| <b>Switching Capacity Max.</b>           | 50W SPST        |                        |                      |                    |
| <b>Switching Voltage Max.</b>            | 240VAC / 200Vdc |                        |                      |                    |
| <b>Switching Current Max. (A)</b>        | 0.5A            |                        |                      |                    |
| <b>Carry Current Max. (A)</b>            | 1A              |                        |                      |                    |
| <b>Lead Wire</b>                         | PVC AWG22       | XLPE AWG22             |                      |                    |
| <b>Max. Pressure (Kg/cm<sup>2</sup>)</b> | ATM             | 4 kg/cm <sup>2</sup>   | 2 kg/cm <sup>2</sup> |                    |
| <b>Operating Temperature</b>             | -20~80°C        |                        | -20~120°C            |                    |
| <b>Material</b>                          | PP              |                        | PVDF                 | Polysulfone        |
| <b>Suitable Specific Gravity</b>         | 0.6             | 0.65                   | 0.85                 | 0.85               |
| <b>Weight</b>                            | 25 g            | H21: 22 g<br>H31: 21 g | 25 g                 | 25.4 g             |

# PLASTIC OH MODELS

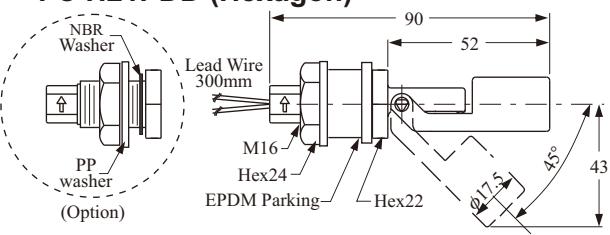
## ► FC H21PD / H31PD



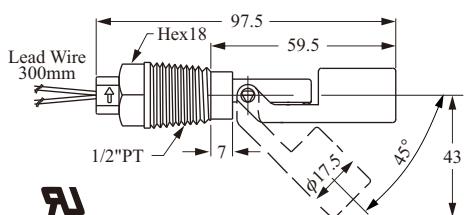
### ■ Optional FC H21PDO(Round)



### ■ Standard FC H21PDD (Hexagon)



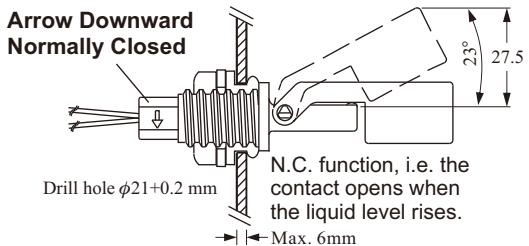
### ■ FC H31PD



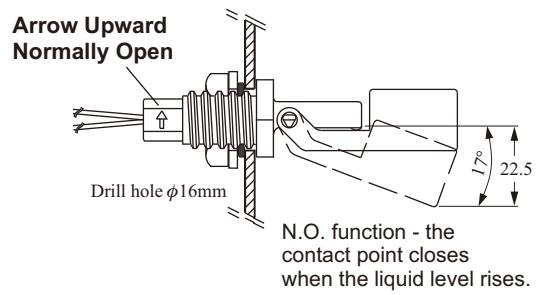
- FCH2 and FCH3 models are available in PP and PVDF.
- Special lead wire/cable are available on request.
- Different reed switches are available for selection.
- For standard design specifications see catalog (p14).
- OEM designs are welcome.

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

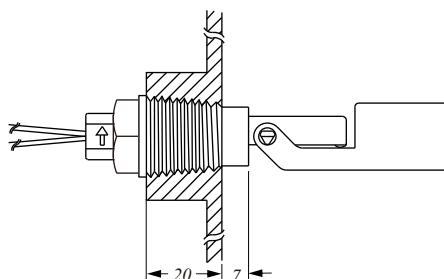
#### [ External mounting ]



#### [ Internal mounting ]



#### [ External mounting ]

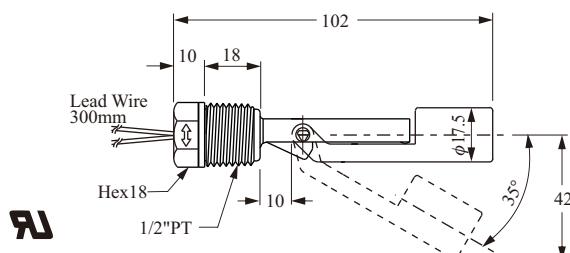


# PLASTIC OH MODELS

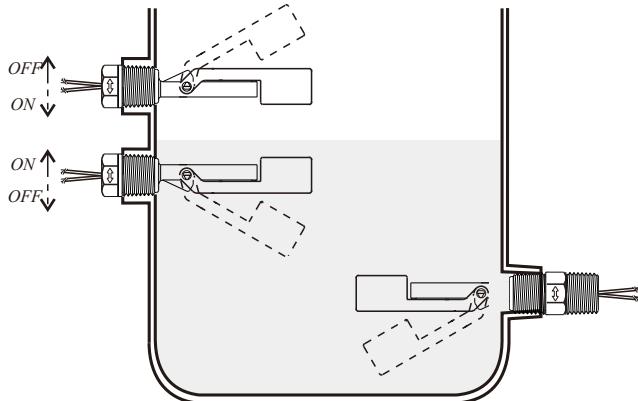
## ► FC H41PD / H51PD



## ■ FC H41PD

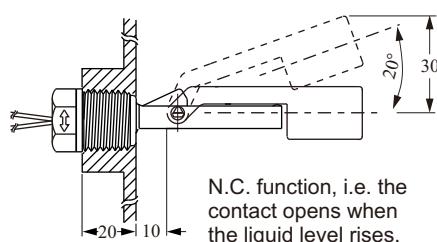
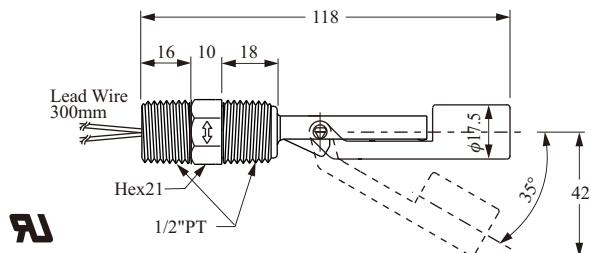


## ■ Installation / N.C. / N.O. Action Position



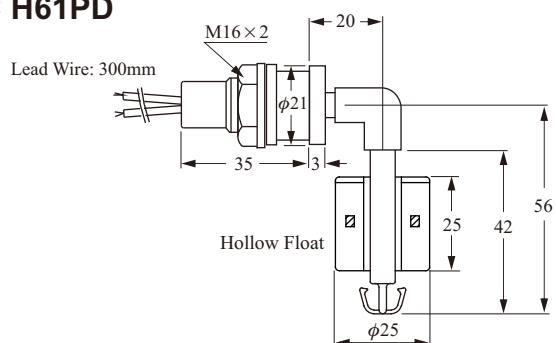
N.O. function, i.e. the contact closes when the liquid level rises.

## ■ FC H51PD



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

## ■ FC H61PD

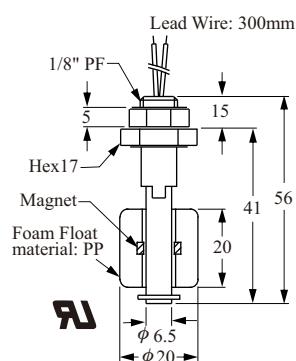


## ■ SPECIFICATIONS

| 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 | PP       | 50W/SPST                | 240Vac<br>200Vdc       | 0.5A                   | 1A                 | XLPE      | 4 kg/cm <sup>2</sup> | -20~80°C        | 0.55             | 20g    |
| FCH51PD |          |                         |                        |                        |                    |           |                      |                 |                  | 25g    |
| FCH61PD |          |                         |                        |                        |                    | PVC       |                      |                 |                  | 31g    |

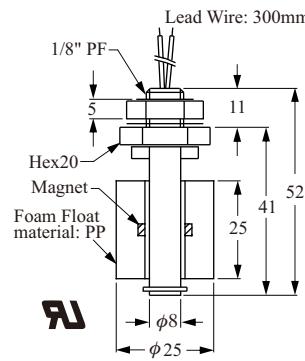
# PLASTIC OV MODELS

► FC V11QF



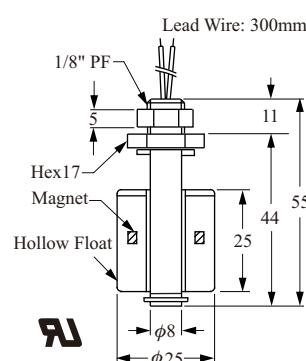
Washer: NBR  
Drill hole  $\phi$ 10mm

► FC V21QD



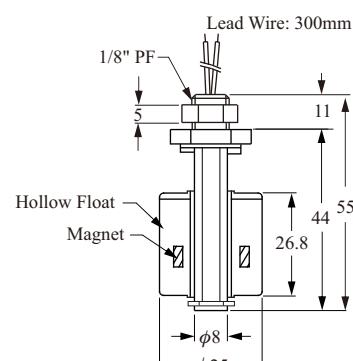
Washer: NBR  
Drill hole  $\phi$ 10mm

► FC V31PD



O-ring: VITON  
Drill hole  $\phi$ 10mm

► FC V33FD, 35GD



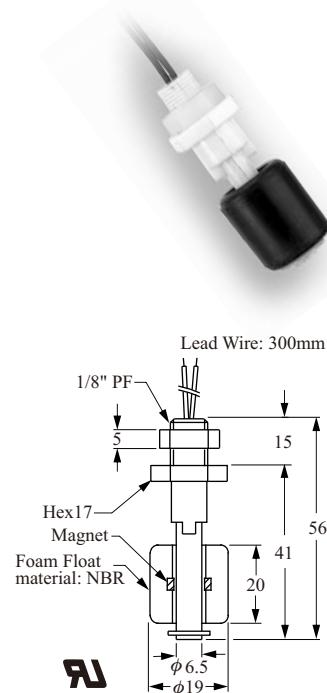
O-ring: VITON  
Drill hole  $\phi$ 10mm

## ■ SPECIFICATIONS

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

# PLASTIC OV MODELS

► FC V11NF



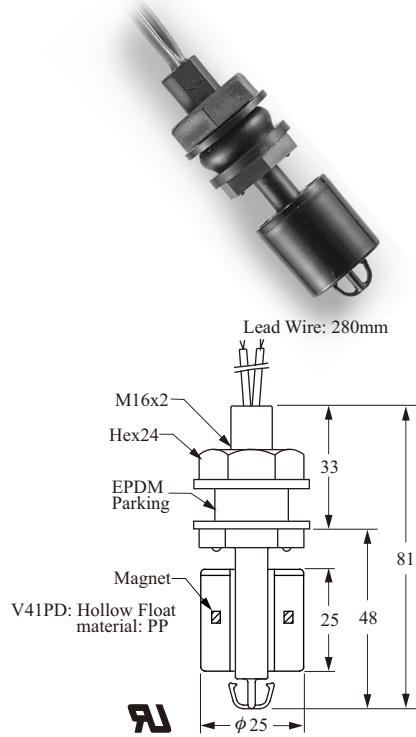
Washer: NBR  
Drill hole  $\phi 10$ mm

► FC V81PD



Washer: NBR  
Drill hole  $\phi 16$ mm

► FC V41PD



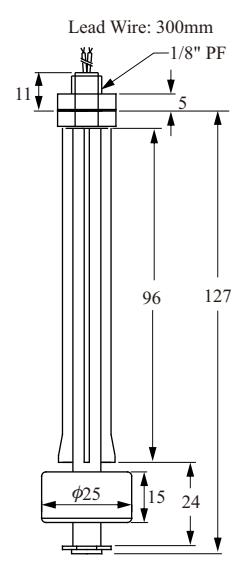
Washer: NBR  
Drill hole  $\phi 16$ mm

► FC V41ND



Washer: NBR  
Drill hole  $\phi 16$ mm

► FC V61PF, V61NF

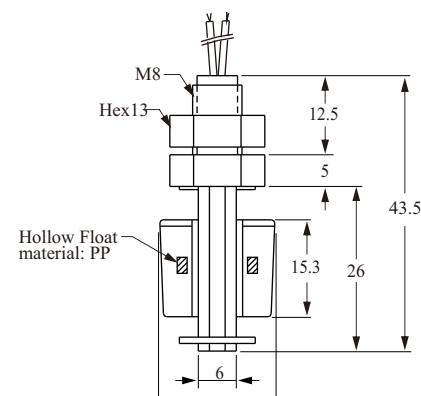


V61PF: Hollow Float  
Material: PP  
V61NF: Foam Float  
Material: NBR



Washer: NBR  
Drill hole  $\phi 10$ mm

► FC V51PD



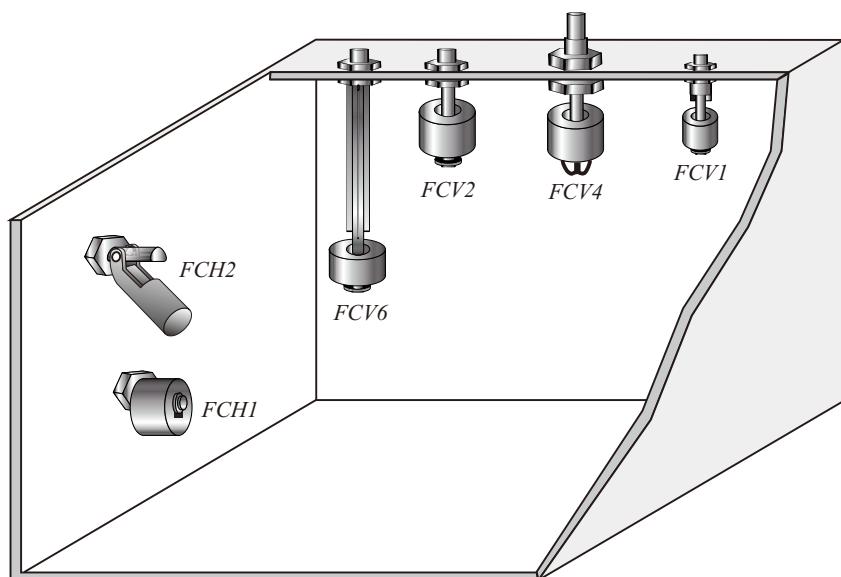
O-Ring: VITON  
Drill hole  $\phi 8.5$ mm



# PLASTIC OV MODELS

## ■ SPECIFICATIONS

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



# HOW TO ORDER PLASTIC OH/OV MODELS

FC **V2** **3** **F** **D** **A** (**05**) **P**)

**Order No./ Model** \_\_\_\_\_

**FC H1~H6** Side Mounting

**FC V1~V9** Top or bottom Mounting

**Material of Wetted parts** \_\_\_\_\_

**1 : PP**      **5 : Polysulfone**

**3 : PVDF**      **6 : PPS**

**Material of Float** \_\_\_\_\_

**F :PVDF**      **P:PP (hollow)**      **K :PPS**

**N:NBR**      **Q:PP (foam)**

**G:Polysulfone**

**Switching Capacity Max.** \_\_\_\_\_

**D:50W 240Vac /200Vdc SPST** 

**F :10W 125Vac SPST**

**K: 20W 150Vac/200Vdc SPDT**

**Contact mode** \_\_\_\_\_

**A: Normally Open (N.O.) SPST**

**B: Normally Closed (N.C.) SPST**

**D: NC Reversible**

**E: NO Reversible**

※ FCV11/21□DD & FCV11/21□DE are unavailable for reversible option.

※ Side mounted types are only available with D mode.

**Lead wire Length (Unit=100mm)** \_\_\_\_\_

**05:** 500mm (below 500mm)      ※ 500mm per Unit

**10:** 1000mm (501~1000)      ※ 300mm (Standard length)

**15:** 1500mm (1001~1500)

⋮

⋮

**Material of Lead wire** \_\_\_\_\_

**B: PVC (80°C)**      ---- AWG24

**C: PVC cable (80°C)**      ---- AWG22 X φ4

**D: XLPVC (105°C)**      ---- AWG24

**F : SILICON cable (150°C)** ---- AWG24 X φ4

**P : PVC (80°C)**      ---- AWG22

**T : TEFLON (200°C)**      ---- AWG24

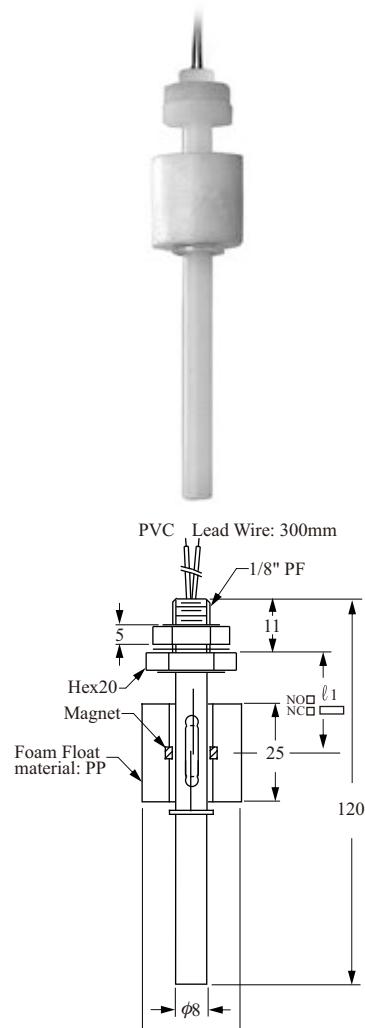
**X: XLPE (125°C)**      ---- AWG22

**S: Others**      ※ For FCH61, cable length could be selected, but material can't.

※ "A" (Normally Open, SPST) is our standard specified switch. For further details about the lead wire please refer pages 6, 7, 9, 10and 12.

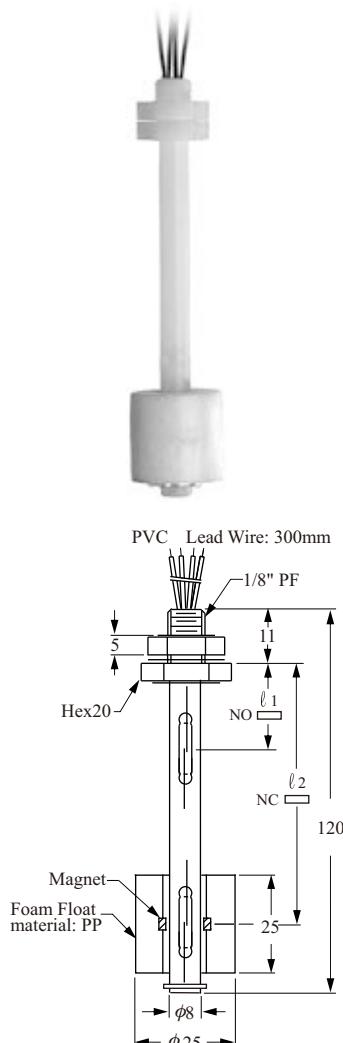
# CUSTOMIZED PLASTIC MODELS

► FC PV1



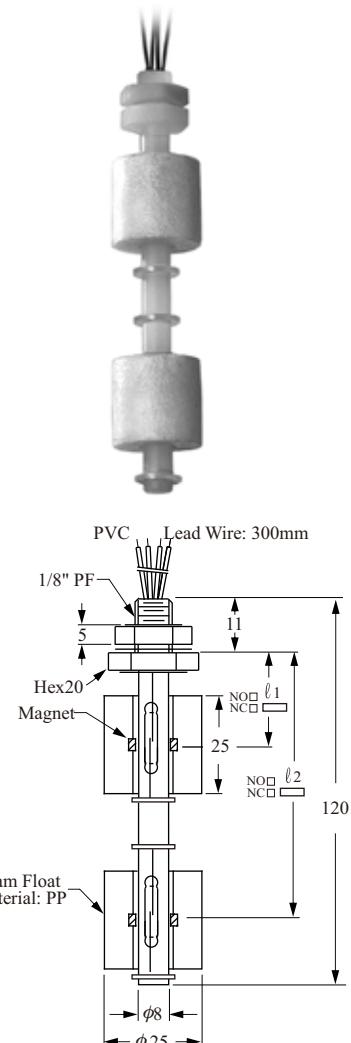
O-Ring: VITON

► 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

# HOW TO ORDER PLASTIC SWITCHES

FC **P V 1** **2** **D** **A** (**0 5**) **P**)

**Order No./ Model** \_\_\_\_\_

**PV1:** Vertical Mounting, Single Float Single Switch

**PV2:** Vertical Mounting, Single Float Dual Switch

**PV3:** Vertical Mounting, Dual Float Dual Switch

**Material of Wetted parts** \_\_\_\_\_

**1:** PP; Lead wire---PVC---Temp. 80°C

**2:** NBR (only float); Lead wire---PVC---Temp. 60°C  
Lead wire---XLPE---Temp. 100°C

**3:** PVDF; Lead wire---XLPE---Temp. 125°C

**Switching Capacity Max.** \_\_\_\_\_

**D:** 50W 240Vac /200Vdc SPST 

**F:** 10W 125Vac SPST

**K:** 20W 150Vac/200Vdc SPDT

**Contact Mode** \_\_\_\_\_

**A:** Normally Open (N.O.) SPST

**B:** Normally Closed (N.C.) SPST

**C:** SPDT

**F:** 1 float 2 points.

**H:** 1-N.O.,1-N.C.(2 floats)

**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** \_\_\_\_\_

**C:** PVC cable (80°C)      ---- AWG22 X φ4

**P:** PVC (80°C)      ---- AWG22 (Standard)

**X:** XLPE (125°C)      ---- AWG22

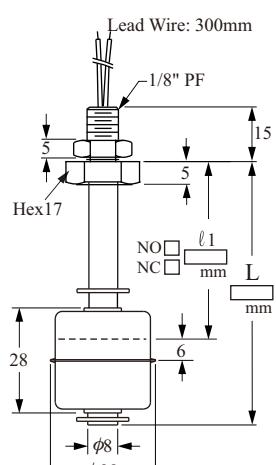
# CUSTOMIZED PLASTIC MODELS

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  $\phi 8\text{mm}$  stem Max. 500mm.

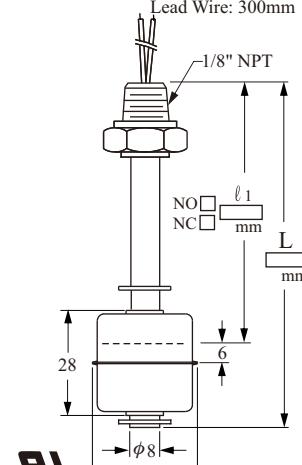
- Customized mounting thread specifications are acceptable.
- Single or multiple contact points are workable.
- Switch activation N.O. or N.C. choices are available.

► FDSA□11



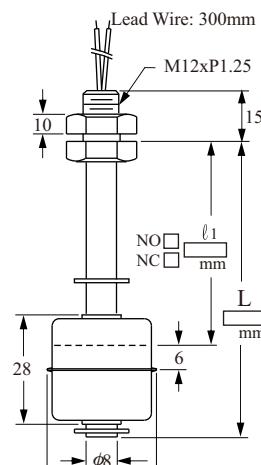
Washer: NBR

► FDSB□11



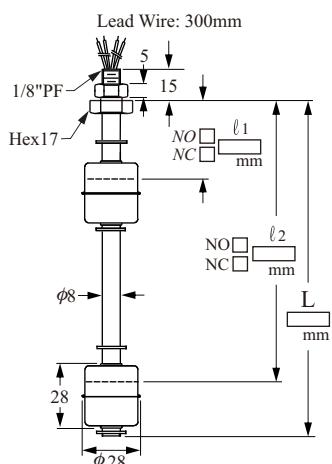
Washer: NBR

► FDSC□11



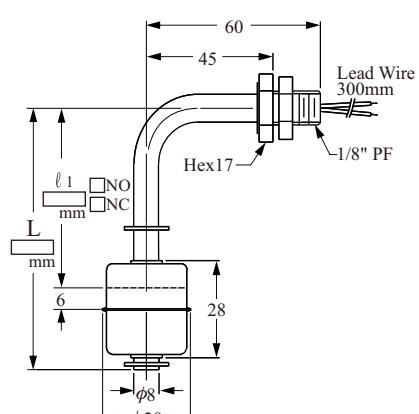
Washer: NBR

► FDSA□12



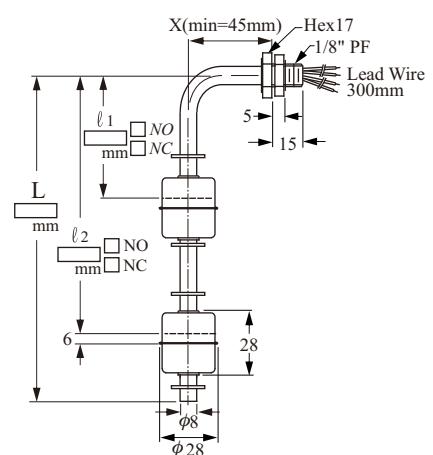
Washer: NBR

► FDSA□21



Washer: NBR

► FDSA□22



Washer: NBR

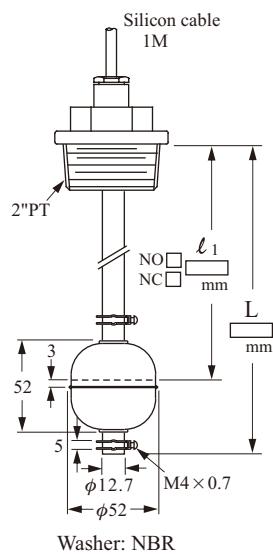
# CUSTOMIZED STAINLESS STEEL MODELS

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

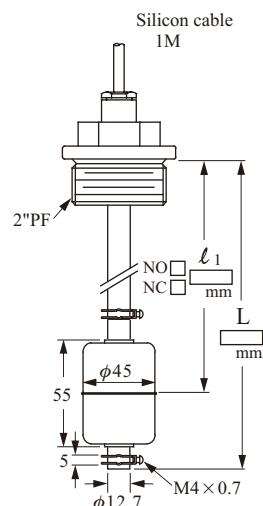
- Any size measurement range available.

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

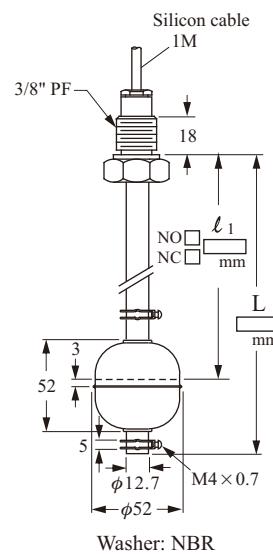
► FDSD□11



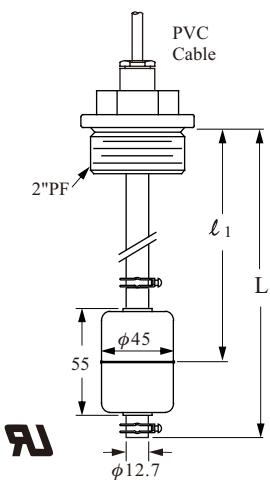
► FDSE□11



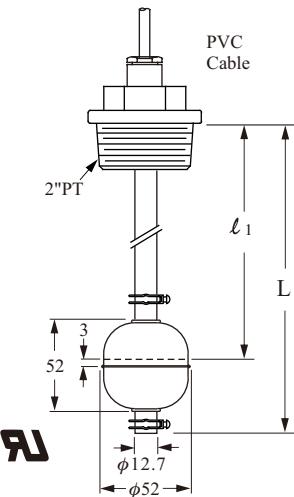
► FDSF□11



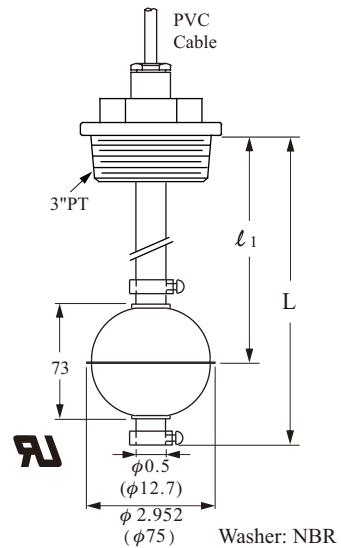
► FD4503D



► FD5003G



► FD7503G



Washer: NBR

# HOW TO ORDER CUSTOMIZED STAINLESS STEEL MODELS

FD **S A** **6** **1** **2** **D** **A** **0 5**

**Type** \_\_\_\_\_

**FDSA** Float : **RF-SA**  $\phi$ 28x28, Screw : 1/8"PF

**FDSB** Float : **RF-SB**  $\phi$ 28x28, Screw : 1/8"NPT

**FDSC** Float : **RF-SC**  $\phi$ 28x28, Screw : M12

**FDSD** Float : **RF-SD**  $\phi$ 52x52, Screw : 2"PT

**FDSE** Float : **RF-SE**  $\phi$ 45x55, Screw : 2"PF

**FDSF** Float : **RF-SF**  $\phi$ 52x52, Screw : 3/8"PF

**Material of Wetted parts** \_\_\_\_\_

0 : SUS304

6 : SUS316

**Mounting** \_\_\_\_\_

1 : Top or Bottom Mounting

2 : Side Mounting

**Float Number** \_\_\_\_\_

1~4 floats

**Switching Capacity Max.** \_\_\_\_\_

**D**: 50W 240Vac /200Vdc, SPST 

**G**: 60W 220Vac, SPDT (only use for tube  $\phi$ 12.7)

**K**: 20W 150Vac /200Vdc, SPDT

**Contact Form** \_\_\_\_\_

**A**: Normal Open (N.O.) SPST    **F**: 1 float 2 points

**B**: Normal Close (N.C.) SPST    **H**: 1-N.O.,1-N.C.(2 floats)

**C**: 1AB SPDT

**Lead wire Length (Unit=100mm)** \_\_\_\_\_

**03**: 300mm (SA, SB, SC, Standard length)                       $\ast$  500mm per Unit

**05**: 500mm (below 500mm)

**10**: 1000mm (SD, SE, SF, Standard length)

**15**: 1500mm (1001~1500mm)

**Material of Lead wire** \_\_\_\_\_

**C**: PVC cable (80°C)    ---- AWG22 X 2C X  $\phi$ 4

**F**: SILICON cable (150°C) ---- AWG24 X 2C X  $\phi$ 4

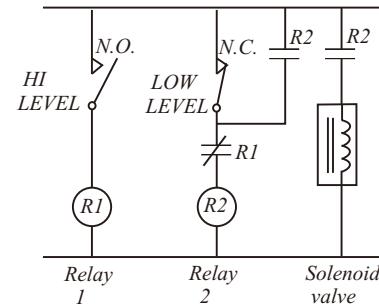
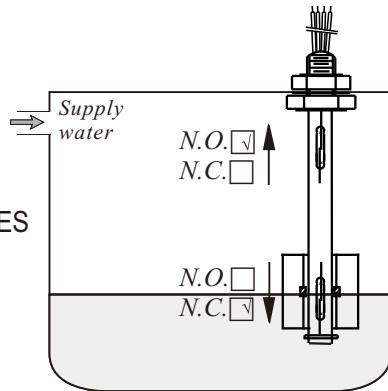
**P**: PVC (80°C)    ---- AWG22

**T**: TEFLON (200°C)    ---- AWG24     For SA, SB, SC Type

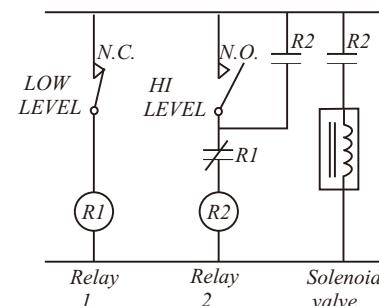
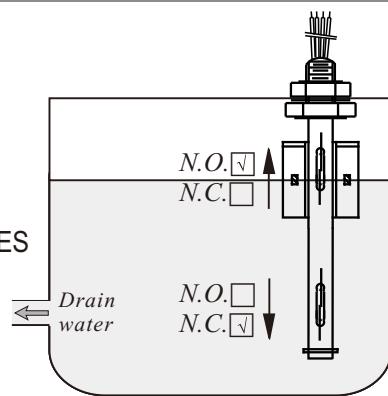
**X**: XLPE (125°C)    ---- AWG22 (Standard)

## TYPICAL WIRING DIAGRAMS

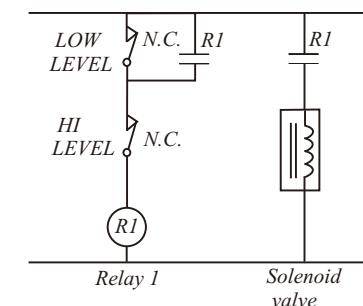
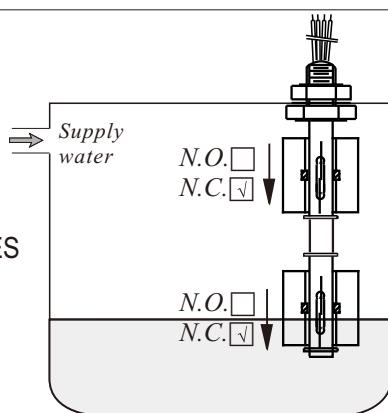
\* AUTO SUPPLY CASE:  
SINGLE FLOAT DUAL SWITCHES



\* AUTO DRAIN CASE:  
SINGLE FLOAT DUAL SWITCHES



\* AUTO SUPPLY CASE:  
DUAL FLOATS DUAL SWITCHES



\* AUTO DRAIN CASE:  
DUAL FLOATS DUAL SWITCHES

