



## Cable Float Level Switch



# PRODUCT INTRODUCTION

## DESCRIPTION

The Float Level Switch is made from chemical resistant polypropylene. It is durable, low-cost, and specially designed to assist with long range and multiple point level detection in liquids. It is also suitable for tanks containing pumps and granular solutions.

## APPLICATION

FAC: Suitable for pump controlled systems

FAR/ P / D/ E: Suitable for pump controlled waste water with a low Specific Gravity (SG level).

FAS: High temperature solutions

FAL/ J: Cleaner water, and installation with smaller process connections.

It is suggested to apply Reed Switch contact models in PLC or DCS control.

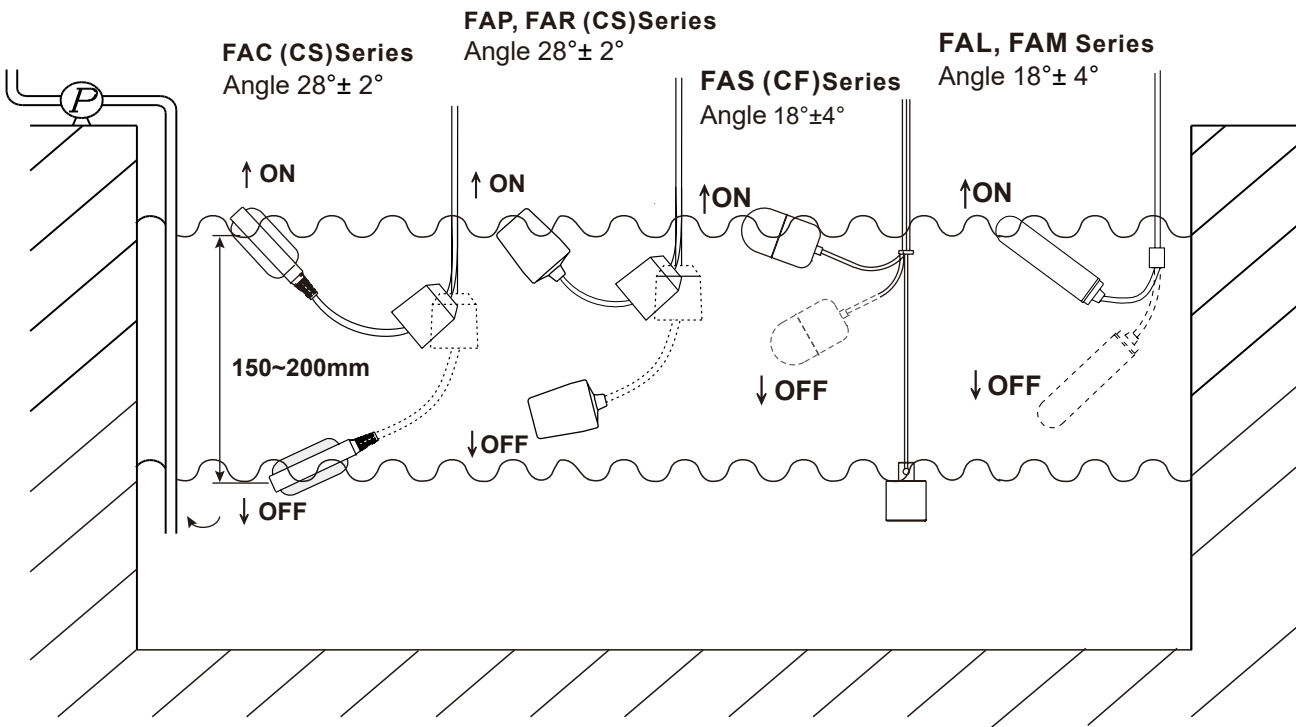
## WORKING PRINCIPLE

The Cable Float Level Switch is structured by using either micro switches proximity switches or reed switches to control the contact. Its user-friendly design is ideal for level measurement. The switches will transmit an ON or OFF contact signal output when the float rises and turns upwards. The switch contains a metal ball that can slide as the float position changes.

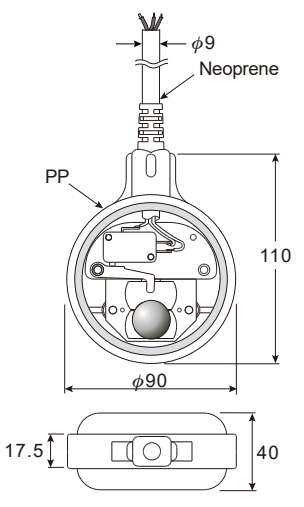
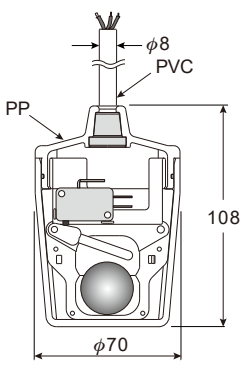
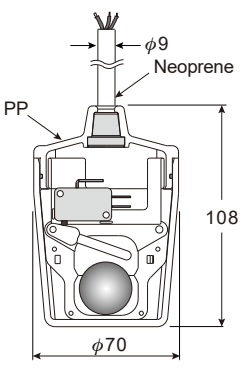
For different water or solution temperatures, different float materials are available for selection. Plastic and stainless steel switches are the most common.

The cable float level switch can not only be used in clear liquids but also can be used in granular liquids. Long distance detection points and multi-point contacts are also available.

Cable float level switches can be applied in all water management, petrochemical, chemical industries. Other uses include: air-conditioner systems, drainage systems, most tanks or containers with level switch requirements.

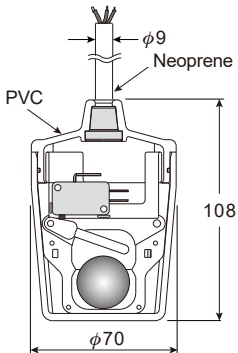
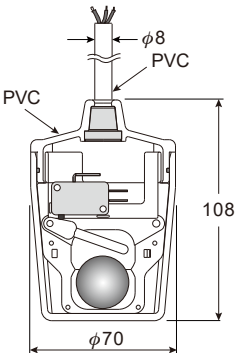
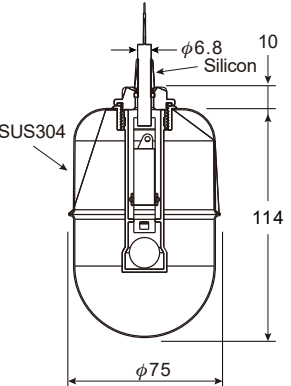


# SPECIFICATIONS

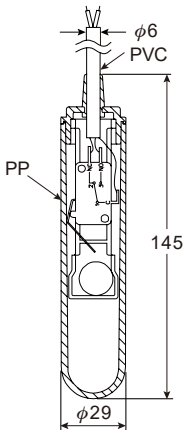
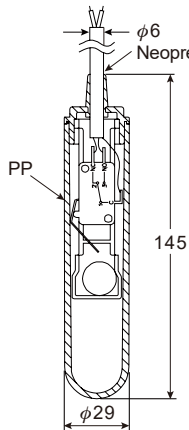
|                                 |                                                                                   |                                                                                    |                                                                                     |
|---------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Dimensions<br/>(Unit:mm)</b> |  |  |  |
| <b>Model</b>                    | <b>FAC A/B/C Round type</b>                                                       | <b>FAP A/B/C Cup type</b>                                                          | <b>FAR A/B/C Cup type</b>                                                           |
| <b>Switch</b>                   | Micro switch                                                                      | Micro switch                                                                       | Micro switch                                                                        |
| <b>Float material</b>           | P.P.                                                                              |                                                                                    |                                                                                     |
| <b>Cable spec</b>               | Neoprene Cable<br>1mm <sup>2</sup> x3C or 2C                                      | PVC Cable<br>1.25mm <sup>2</sup> x3C or 2C                                         | Neoprene Cable<br>1mm <sup>2</sup> x3C or 2C                                        |
| <b>Contact rating</b>           | 10A/ 250Vac (std.) or 15A/ 250Vac                                                 |                                                                                    |                                                                                     |
| <b>Contact form</b>             | N.O or N.C or SPDT                                                                |                                                                                    |                                                                                     |
| <b>Operating temp.</b>          | -10°C~80°C                                                                        | 0°C~60°C                                                                           | -10°C~80°C                                                                          |
| <b>Specific gravity</b>         | 0.6                                                                               | 0.6                                                                                | 0.6                                                                                 |
| <b>Weight approx.</b>           | 770g/5M                                                                           | 290g/1M                                                                            | 290g/1M                                                                             |
| <b>Pressure</b>                 | 2 kg/cm <sup>2</sup>                                                              | 2 kg/cm <sup>2</sup>                                                               | 2 kg/cm <sup>2</sup>                                                                |
| <b>Wire voltage</b>             | 600 Vac                                                                           | 600 Vac                                                                            | 600 Vac                                                                             |
| <b>Isolation resistance</b>     | Min 100 MΩ                                                                        |                                                                                    |                                                                                     |
| <b>Contact resistance</b>       | Max. 100mΩ+(70mΩ/m)                                                               |                                                                                    |                                                                                     |
| <b>Actuation angle</b>          | 28°± 2°                                                                           | 28°± 2°                                                                            | 28°± 2°                                                                             |
| <b>Protection</b>               | IP68                                                                              | IP68                                                                               | IP68                                                                                |

Note: Max. probe length for FAC round type is 10000mm.

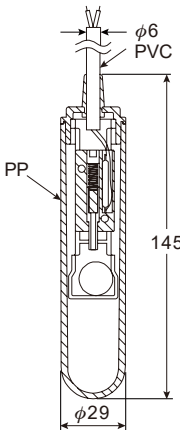
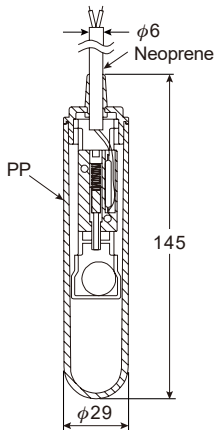
# SPECIFICATIONS

|                                 |                                                                                   |                                                                                    |                                                                                     |
|---------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Dimensions<br/>(Unit:mm)</b> |  |  |  |
| <b>Model</b>                    | <b>FAD A/B/C Cup type</b>                                                         | <b>FAE A/B/C Cup type</b>                                                          | <b>FAS A/B/C Metal type</b>                                                         |
| <b>Switch</b>                   | Micro switch                                                                      | Micro switch                                                                       | Micro switch                                                                        |
| <b>Float material</b>           | PVC                                                                               |                                                                                    | SUS304                                                                              |
| <b>Cable spec</b>               | Neoprene Cable<br>1mm <sup>2</sup> ×3C or 2C                                      | PVC Cable<br>1.25mm <sup>2</sup> ×3C or 2C                                         | Silicon Cable<br>0.75mm <sup>2</sup> ×3C or 2C                                      |
| <b>Contact rating</b>           | 10A/ 250Vac (std.) or 15A/ 250Vac                                                 |                                                                                    | 3A/125/250 Vac                                                                      |
| <b>Contact form</b>             | N.O or N.C or SPDT                                                                |                                                                                    | N.O or N.C or SPDT                                                                  |
| <b>Operating temp.</b>          | 0°C~60°C                                                                          | 0°C~60°C                                                                           | 0°C~125°C                                                                           |
| <b>Specific gravity</b>         | 0.6                                                                               | 0.6                                                                                | 0.5                                                                                 |
| <b>Weight approx.</b>           | 290g/1M                                                                           | 290g/1M                                                                            | 660g/5M                                                                             |
| <b>Pressure</b>                 | 2 kg/cm <sup>2</sup>                                                              | 2 kg/cm <sup>2</sup>                                                               | 2 kg/cm <sup>2</sup>                                                                |
| <b>Wire voltage</b>             | 600 Vac                                                                           | 600 Vac                                                                            | 300 Vac                                                                             |
| <b>Isolation resistance</b>     | Min 100 MΩ                                                                        |                                                                                    | —————                                                                               |
| <b>Contact resistance</b>       | Max. 100mΩ+(70mΩ/m)                                                               |                                                                                    | Max.100mΩ+(70mΩ/m)                                                                  |
| <b>Actuation angle</b>          | 28°± 2°                                                                           | 28°± 2°                                                                            | UP 18± 4°/Down 3± 3°                                                                |
| <b>Protection</b>               | IP68                                                                              | IP68                                                                               | IP68                                                                                |

# SPECIFICATIONS

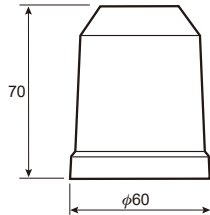
|                                 |                                                                                    |                                           |
|---------------------------------|------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Dimensions<br/>(Unit:mm)</b> |   |                                           |
|                                 |  |                                           |
| <b>Model</b>                    | <b>FAL A/B/C Bar type</b>                                                          | <b>FAM A/B/C Bar type</b>                 |
| <b>Switch</b>                   | Micro switch                                                                       |                                           |
| <b>Float material</b>           | P.P.                                                                               |                                           |
| <b>Cable spec</b>               | PVC Cable<br>0.75mm <sup>2</sup> ×3C                                               | Neoprene Cable<br>0.75mm <sup>2</sup> ×3C |
| <b>Contact rating</b>           | 3A/ 125/250Vac                                                                     |                                           |
| <b>Contact mode</b>             | N.O or N.C or SPDT                                                                 |                                           |
| <b>Operating temp.</b>          | -0°C~60°C                                                                          | -10°C~80°C                                |
| <b>Specific gravity</b>         | 0.8                                                                                |                                           |
| <b>Weight approx.</b>           | 113A2g/1M Cable                                                                    |                                           |
| <b>Pressure</b>                 | 4.5 kg/cm <sup>2</sup>                                                             |                                           |
| <b>Wire voltage</b>             | 600 Vac                                                                            |                                           |
| <b>Isolation resistance</b>     | Min 100 MΩ                                                                         |                                           |
| <b>Contact resistance</b>       | Max. 100mΩ+(70mΩ/m)                                                                |                                           |
| <b>Actuation angle</b>          | Up 18°± 4°/ Down 3°± 3°                                                            |                                           |
| <b>Protection</b>               | IP68                                                                               |                                           |

# SPECIFICATIONS

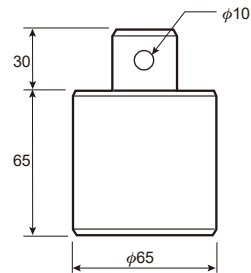
|                                 |                                                                                     |                                           |
|---------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Dimensions<br/>(Unit:mm)</b> |    |                                           |
|                                 |  |                                           |
| <b>Model</b>                    | <b>FAJ A/B/C Bar type</b>                                                           | <b>FAK A/B/C Bar type</b>                 |
| <b>Switch</b>                   | Reed Switch                                                                         |                                           |
| <b>Float material</b>           | P.P.                                                                                |                                           |
| <b>Cable spec</b>               | PVC Cable<br>0.75mm <sup>2</sup> x3C                                                | Neoprene Cable<br>0.75mm <sup>2</sup> x3C |
| <b>Contact rating</b>           | AC70 VA / DC50 W(N.O), 20W(N.C, SPDT)                                               |                                           |
| <b>Contact mode</b>             | N.O or N.C or SPDT                                                                  |                                           |
| <b>Operating temp.</b>          | -0°C~60°C                                                                           | -10°C~80°C                                |
| <b>Specific gravity</b>         | 0.8                                                                                 |                                           |
| <b>Weight approx.</b>           | 115A2g/1M Cable                                                                     |                                           |
| <b>Pressure</b>                 | 4.5 kg/cm <sup>2</sup>                                                              |                                           |
| <b>Wire voltage</b>             | 300 Vac/ 350Vdc(N.O), 150 Vac/ 200Vdc(N.C, SPDT)                                    |                                           |
| <b>Isolation resistance</b>     | Min 100MΩ                                                                           |                                           |
| <b>Contact resistance</b>       | (N.O) Max.100mΩ+(70mΩ/m),(N.C,SPDT) Max.150mΩ+(70mΩ/m)                              |                                           |
| <b>Actuation angle</b>          | Up 18°± 4°/ Down 3°± 3°                                                             |                                           |
| <b>Protection</b>               | IP68                                                                                |                                           |

## WEIGHTS DIMENSIONS

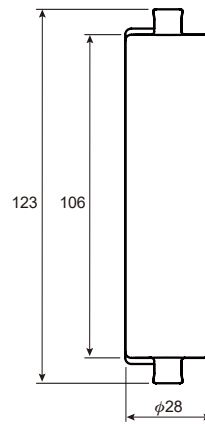
**FAPW-03  
FAPW-05**



**FASW**



**FAB-0010**



| Model                      | Material | Weight         |
|----------------------------|----------|----------------|
| <b>FAPW-03<br/>FAPW-05</b> | PP       | 0.3kg<br>0.5kg |
| <b>FASW</b>                | SUS304   | 1.8kg          |
| <b>FAB-0010</b>            | PP       | 0.15kg         |

## CONTACT MODE

### 1. SPST (N.O)

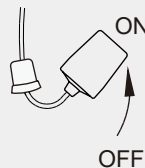
**FACA**

(N.O.) Brown  
(COM) Blue



**FAPA/FAEA**

(N.O.) White  
(COM) Black

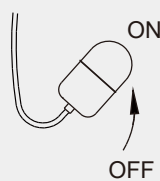


**FARA/FADA**

(N.O.) Brown  
(COM) Blue

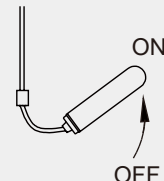
**FASA**

(N.O.) Blue  
(COM) Yellow



**FALA/FAJA**

(N.O.) White  
(COM) Black



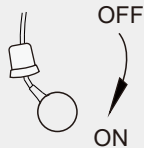
**FAMA/FAKA**

(N.O.) Brown  
(COM) Black

### 2. SPST (N.C)

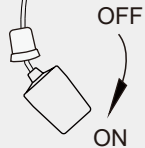
**FACB**

(N.C.) Yellow  
(COM) Blue



**FAPB/FAEB**

(N.C.) Red  
(COM) Black

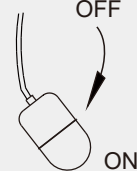


**FARB/FADB**

(N.C.) Yellow  
(COM) Blue

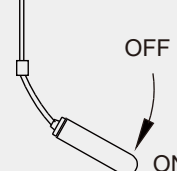
**FASB**

(N.C.) Brown  
(COM) Yellow



**FALB/ FAJB**

(N.C.) Red  
(COM) Black



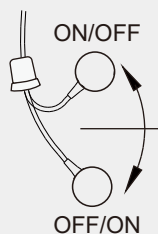
**FAMB/ FAKB**

(N.C.) Blue  
(COM) Black

### 3. SPDT (1C)

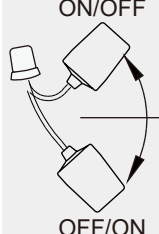
**FACC**

(N.O.) Brown  
(N.C.) Yellow  
(COM) Blue



**FAPC/FAEC**

(N.O.) White  
(N.C.) Red  
(COM) Black

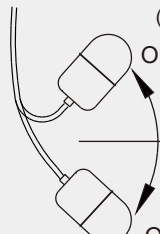


**FARC/FADC**

(N.O.) Brown  
(N.C.) Yellow  
(COM) Blue

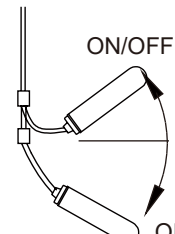
**FASC**

(N.O.) Blue  
(N.C.) Brown  
(COM) Yellow



**FALC/ FAJC**

(N.O.) White  
(N.C.) Red  
(COM) Black



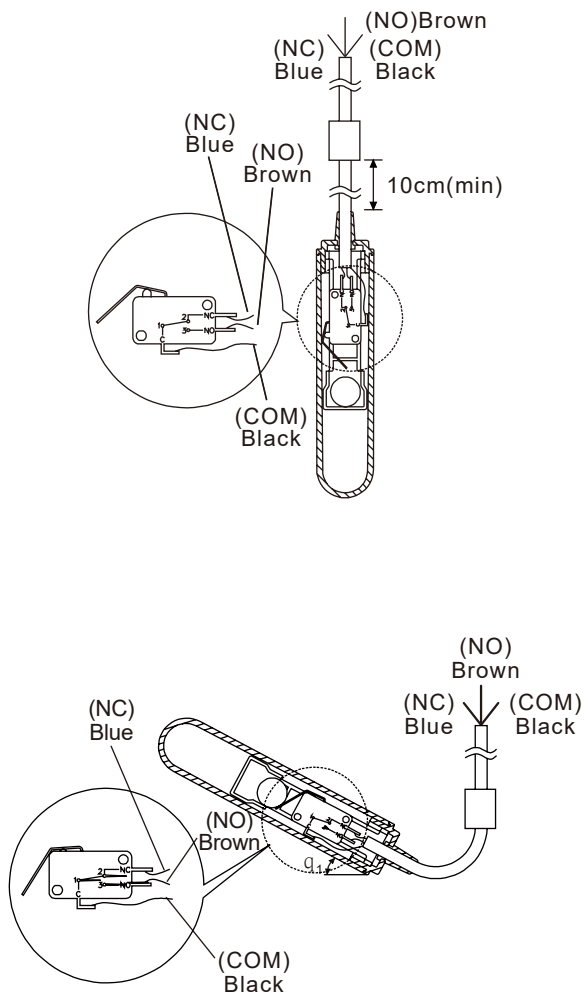
**FAMC/ FAKC**

(N.O.) Brown  
(N.C.) Blue  
(COM) Black

# WIRING

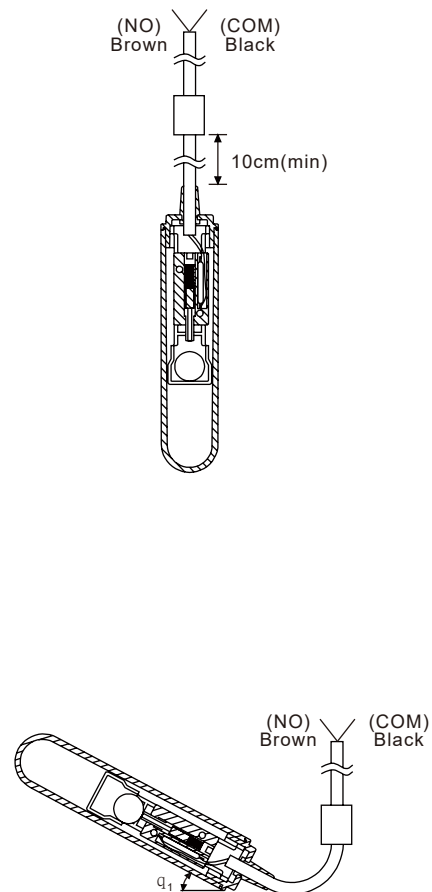
## Micro Switch

When the float hasn't contacted the liquid, the blue and black wires are in an open state and the contact mode will be NC. When the liquid level rises and lifts the float until it reaches the actuation angle, the brown and black wires will be in an open state and the contact mode will be NO.



## Reed Switch

When the liquid level is low, the metal ball remains away from the sensing range and the brown and black wires are in an open state (NC mode). When the liquid level rises and lifts the float until it reaches the actuation angle, the brown and black wires will be in an open state (NO mode).

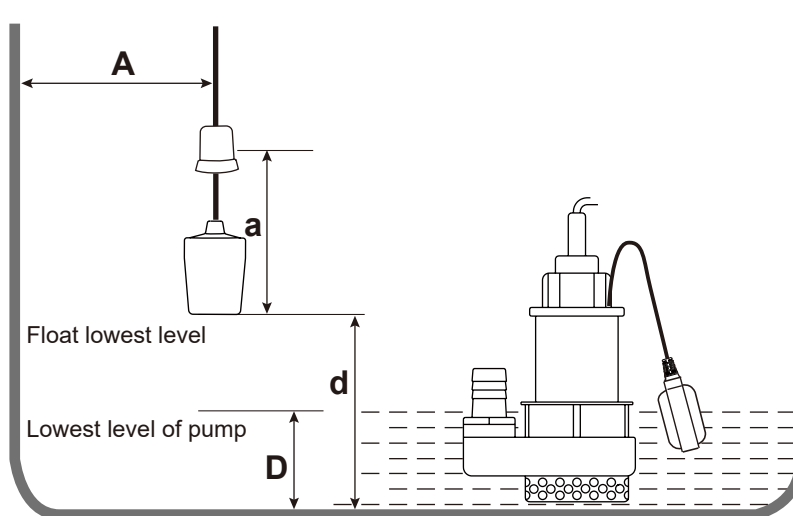


# INSTALLATION GUIDE

## DIMENSIONS

The float's action length (a) must be shorter than the distance between the wall and the cable (A) ; if not, it will not function accurately.

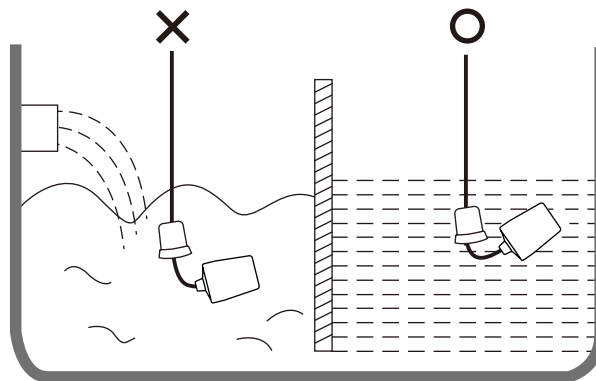
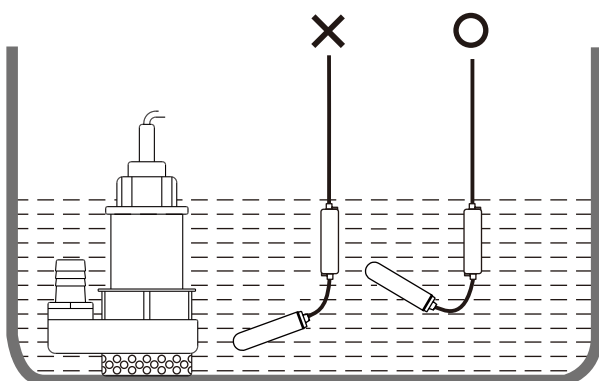
The lowest float level (d) must be higher than the lowest water level of the pump (D).



## PRECAUTIONS

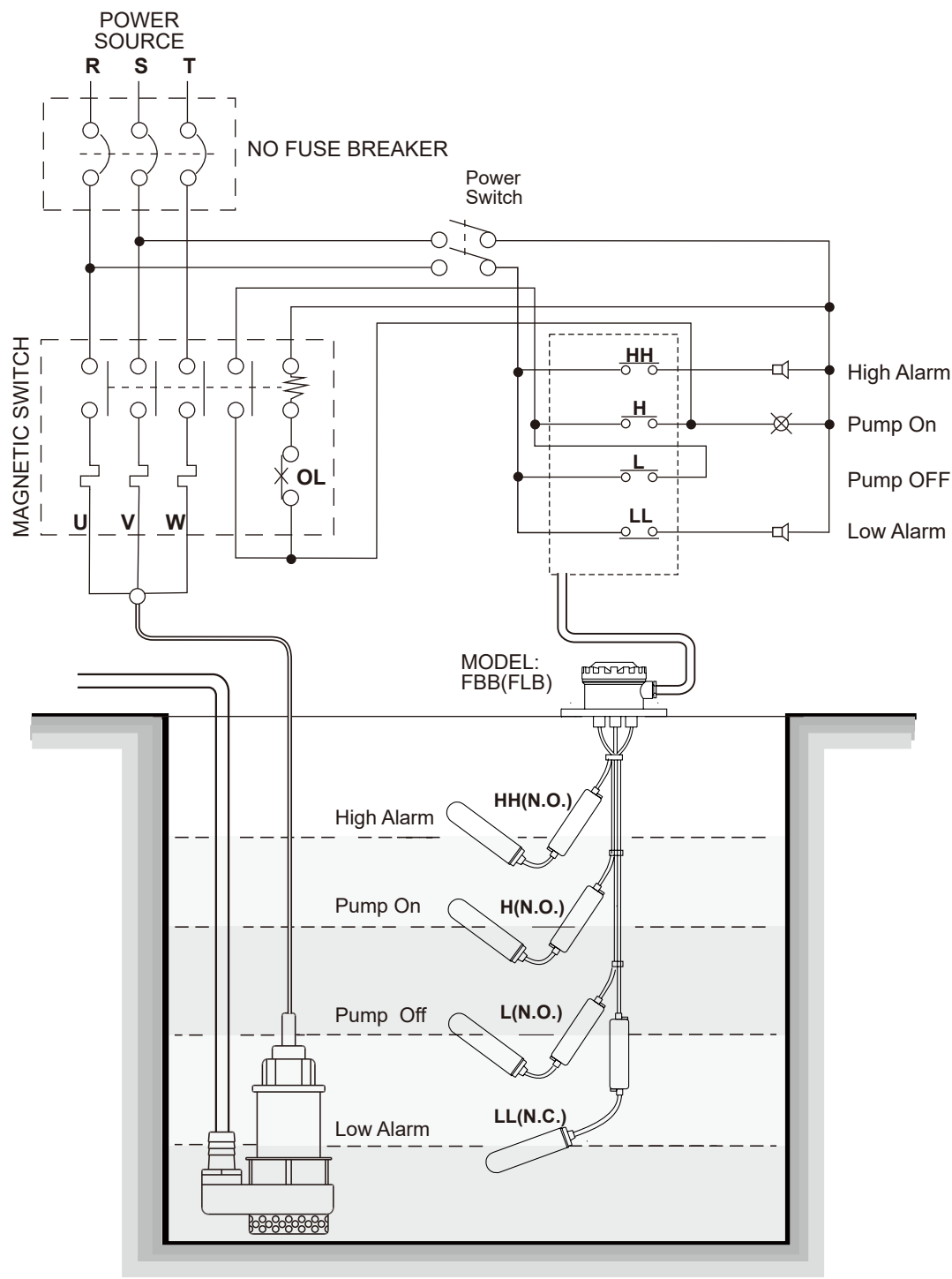
Keep a proper distance between the installation position and the water pump inlet to prevent the float switch from being sucked in towards the pump.

There should be a proper distance between the installation position and water inlet to prevent any direct water impact. If it can't be avoided, please install a pipe-shield or plate that lowers the turbulence.



# APPLICATION

The FBX type is suitable for installation from the tank's roof/top for level control and monitoring.



# MODEL NUMBER / ORDER CODE COMPARISON TABLE

| Model Number | Order Code     |
|--------------|----------------|
| FAC          | FAX10100-AD□P1 |
| FACA         | FAX10100-ADAP1 |
| FACB         | FAX10100-ADBP1 |
| FACC         | FAX10100-ADCP1 |

|      |                |
|------|----------------|
| FAP  | FAX10100-BD□P2 |
| FAPA | FAX10100-BDAP2 |
| FAPB | FAX10100-BDBP2 |
| FAPC | FAX10100-BDCP2 |
| FAR  | FAX10100-BD□P1 |
| FARA | FAX10100-BDAP1 |
| FARB | FAX10100-BDBP1 |
| FARC | FAX10100-BDCP1 |
| FAD  | FAX10100-BD□C1 |
| FADA | FAX10100-BDAC1 |
| FADB | FAX10100-BDBC1 |
| FADC | FAX10100-BDCC1 |
| FAE  | FAX10100-BD□C2 |
| FAEA | FAX10100-BDAC2 |
| FAEB | FAX10100-BDBC2 |
| FAEC | FAX10100-BDCC2 |

|      |                |
|------|----------------|
| FAS  | FAX10100-DC□M3 |
| FASA | FAX10100-DCAM3 |
| FASB | FAX10100-DCBM3 |
| FASC | FAX10100-DCCM3 |

|     |                |
|-----|----------------|
| FAL | FAX10100-CB□P2 |
| FAM | FAX10100-CB□P1 |
| FAJ | FAX10100-CF□P2 |
| FAK | FAX10100-CF□P1 |

|          |                    |
|----------|--------------------|
| FAPW-03  | FAX□M1P-1806007002 |
| FAPW-05  | FAX□M1P-1806007003 |
| FASW     | FAX□M1P-MA06509501 |
| FAB-0010 | FAX□M1P-1802810601 |

# ORDER INFORMATION

FAX 1 0 1 0 0 - 09 10 11 12 13 14 15 16 17

## ⑨⑩ Float type and switch

AD:  $\phi 90 \times 110$  Micro switch(10A)  
 AE:  $\phi 90 \times 110$  Micro switch(15A)  
 BD:  $\phi 70 \times 108$  Micro switch(10A)  
 BE:  $\phi 70 \times 108$  Micro switch(15A)  
 CB:  $\phi 29 \times 145$  Micro switch(3A)  
 CC:  $\phi 29 \times 145$  Micro switch(3A)+Ground  
 CF:  $\phi 29 \times 145$  Reed Switch  
 CG:  $\phi 29 \times 145$  Reed Switch+Ground  
 DC:  $\phi 75 \times 120$  Micro switch(3A)

※ It is suggested to apply Reed Switch contact models in PLC or DCS control.

## ⑪ Contact note

A: N.O.  
 B: N.C.  
 C: SPDT

## ⑫⑬ Float and cable material

P1: Float PP Neoprene cable  
 P2: Float PP PVC cable  
 C1: Float PVC Neoprene cable  
 C2: Float PVC PVC cable  
 M3: Float SUS304 Silicon cable

## ⑭⑮⑯⑰ Length

| Code | Length                                           |
|------|--------------------------------------------------|
| 0600 | 600mm (Min imum order length)                    |
| 3000 | 3000mm                                           |
| 5000 | 5000mm                                           |
| A100 | 10000mm ("A" Multiply 100 times) <sup>Note</sup> |
| A150 | 15000mm ("A" Multiply 100 times)                 |
| A450 | 45000mm (Maximam order length)                   |

Note: Max. probe length for  $\phi 90 \times 110$  type is 10000mm.

# HOW TO ORDER CABLE FLOATS (FB TYPE)

Various types of multi-point products can be selected to meet the user's needs.

For example:

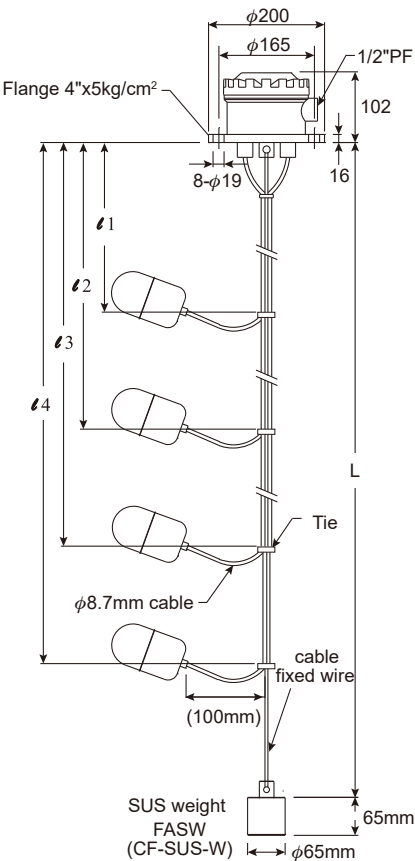
FBX10000-□□□□□C type is suitable for corrosive solutions.

FBX10000-□□□□□B type is suitable for high-temperature waste water

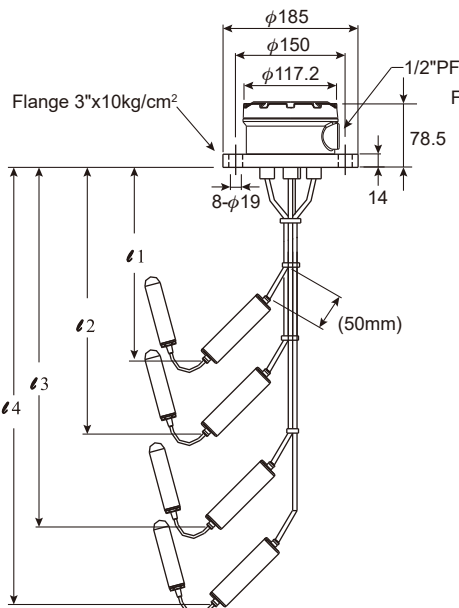
## DISTANCE OF CONTROL POINTS

|                | NO                       | NC                       |
|----------------|--------------------------|--------------------------|
| ℓ 1 : _____ mm | <input type="checkbox"/> | <input type="checkbox"/> |
| ℓ 2 : _____ mm | <input type="checkbox"/> | <input type="checkbox"/> |
| ℓ 3 : _____ mm | <input type="checkbox"/> | <input type="checkbox"/> |
| ℓ 4 : _____ mm | <input type="checkbox"/> | <input type="checkbox"/> |
| L : _____ mm   |                          |                          |

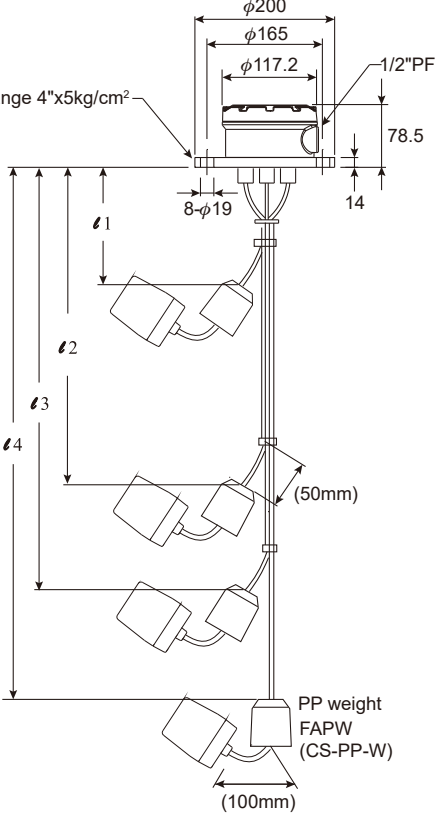
MODEL: FBX10000-□□□□□B



MODEL: FBX10000-□□□□□C



MODEL: FBX10000-□□□□□C



# ORDER INFORMATION

FBX 1 0 0 0 0 - 091011121314151617181920212223242526272829

## 0910 Float type and switch

AD:  $\phi 90 \times 110$  Micro switch(10A)  
 AE:  $\phi 90 \times 110$  Micro switch(15A)  
 BD:  $\phi 70 \times 108$  Micro switch(10A)  
 BE:  $\phi 70 \times 108$  Micro switch(15A)  
 CB:  $\phi 29 \times 145$  Micro switch(3A)  
 CC:  $\phi 29 \times 145$  Micro switch(3A)+Ground  
 CF:  $\phi 29 \times 145$  Reed Switch  
 CG:  $\phi 29 \times 145$  Reed Switch+Ground  
 DC:  $\phi 75 \times 120$  Micro switch(3A)  
 ※ It is suggested to apply Reed Switch contact models in PLC or DCS control.

## 11 Contact mote

A: N.O.  
 B: N.C.  
 C: SPDT

## 1213 Float and cable material

P1: PP Float Neoprene Neoprene cable  
 P2: PP Float PVC cable  
 C1: PVC Float Neoprene Neoprene cable  
 C2: PVC Float PVC cable  
 M3: SUS304 Float Silicon cable

## 14 Housing

B: B type Housing aluminum  
 C: C type Housing plastic (PP)  
 double into the line mouth 1/2"PF  $\phi 117.2 \times 64.5$

## Connection

1516

AK: JIS-FF  
 AN: ANSI-RF  
 AS: DIN-FF

1718

B5: 3"  
 B6: 3-1/2"  
 B7: 4"  
 E4: DN80  
 E5: DN100

1920

40: 5 kg/cm<sup>2</sup>  
 42: 10 kg/cm<sup>2</sup>  
 48: 150 Lbs  
 49: 300 Lbs  
 57: PN10  
 58: PN16

(Next page)

09
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**FBX 1 0 0 0 0 -**

**21 22 Flange material** \_\_\_\_\_

MA: SUS304

MB: SUS316

18 : PP

**23 24 Float with weight quantity** \_\_\_\_\_

| Code | Float with weight quantity × Quantity  | Code | Float with weight quantity × Quantity |
|------|----------------------------------------|------|---------------------------------------|
| P1   | Float plastic with weight PP(0.3kg)×1  | Q1   | Float plastic with weight PP(0.5kg)×1 |
| P2   | Float plastic with weight PP(0.3kg)×2  | Q2   | Float plastic with weight PP(0.5kg)×2 |
| P3   | Float plastic with weight PP(0.3kg)×3  | Q3   | Float plastic with weight PP(0.5kg)×3 |
| P4   | Float plastic with weight PP(0.3kg)×4  | Q4   | Float plastic with weight PP(0.5kg)×4 |
| P5   | Float plastic with weight PP(0.3kg)×5  | Q5   | Float plastic with weight PP(0.5kg)×5 |
| P6   | Float plastic with weight PP(0.3kg)×6  | Q6   | Float plastic with weight PP(0.5kg)×6 |
| R1   | Float plastic with weight PP(0.15kg)×1 | S1   | SUS304 Float(without weight)×1        |
| R2   | Float plastic with weight PP(0.15kg)×2 | S2   | SUS304 Float(without weight)×2        |
| R3   | Float plastic with weight PP(0.15kg)×3 | S3   | SUS304 Float(without weight)×3        |
| R4   | Float plastic with weight PP(0.15kg)×4 | S4   | SUS304 Float(without weight)×4        |
| R5   | Float plastic with weight PP(0.15kg)×5 | S5   | SUS304 Float(without weight)×5        |
| R6   | Float plastic with weight PP(0.15kg)×6 | S6   | SUS304 Float(without weight)×6        |

**25 Weight (bottom)** \_\_\_\_\_

0 ☆ None

S ☆ Weight SUS304 (1.8kg) with cable

N: Weight PP (0.3kg) with nylon cable

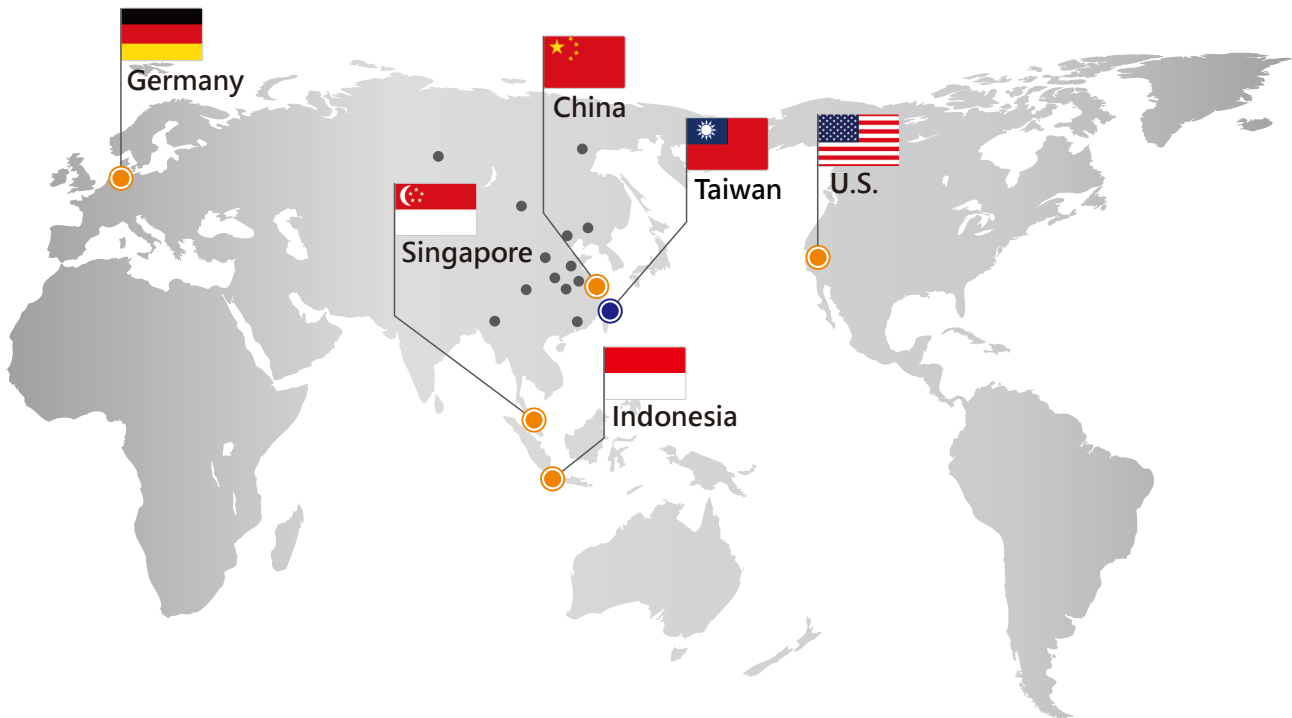
M: Weight PP (0.5kg) with nylon cable

**26 27 28 29 Length** \_\_\_\_\_

| Code | Length                                           |
|------|--------------------------------------------------|
| 0600 | 600mm (Min imum order length)                    |
| 3000 | 3000mm                                           |
| 5000 | 5000mm                                           |
| A100 | 10000mm ("A" Multiply 100 times) <sup>Note</sup> |
| A150 | 15000mm ("A" Multiply 100 times)                 |
| A450 | 45000mm (Maximam order length)                   |

Note: Max. probe length for  $\phi 90 \times 110$  type is 10000mm.

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