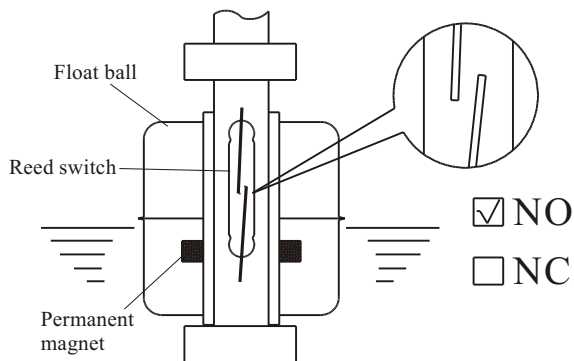


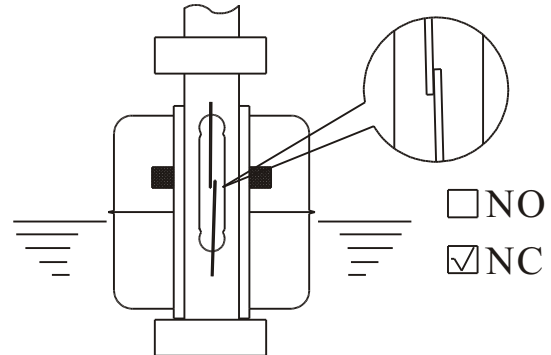
## PRINCIPLE

The single unit or multiple reed switch units are housed tightly in stainless steel or engineering plastic stem, and the permanent magnet is sealed into the middle of the specified float ball(s). You can mount the float ball to penetrating through the stem, then the liquid buoyancy will deliver the float ball up and down at the specified position by graduating rings.

When the float internal magnet approaches the reed switch, it will actuate the reed switch contact point to create an open or close circuit. We can apply such on-off output signals to reach liquid level controlling and monitoring purpose. The figures below show the float orientations on N.O. (Normal Open) and N.C. (Normal Close).



Rising float ball to actuate the reed switch



Rising float ball to switch off.

## FEATURES

- ★ Multiple points measuring, multiple level points are available for custom-built.
- ★ It is used the magnet to actuate the reed switch without any extra electric power source. Each reed switch is durable for operation life reaching 2 million times.
- ★ All output signal wiring are simplified in same junction box (housing) to economize the external wiring construction.
- ★ FC(D) type magnetic float level switches are more economical in budget than other level switches by comparison in multiple points.
- ★ The housing protection rating up to IP65.
- ★ Rugged construction and multiple options for materials from engineering plastics as PVDF, PP, PVC, and stainless steels as SUS304, SUS316, float switches can be applied to versatile applications in chemical corrosion of acidity and alkalinity liquid, solvents or oil fuels.
- ★ The reed switch and lead wire are isolated absolutely with liquids. All stainless steel switches are applicable to high pressure and high temperature performances.

# INTRODUCTION

## APPLICATIONS

Shipbuilding Industry, Generator Facilities, Petrochemical Industry, Food/Beverage Industry, Waste Water/Water Purified Facilities, Electronic Industry, Dyeing And Finishing Industry, Chemical Industry, Rubber/ Plastic Industry, Hydraulic.

## SPECIFICATION

Tube Type	Material	Switching Contact from	Switching Capacity Max.	Switching Voltage Max.	Switching Current Max.	Carry Current Max.
OD8	SUS	SPST	50W	300Vac/350Vdc	0.5A	2.5A
	PVC	SPDT	20W	150Vac/200Vdc	1A	2A
OD9.5	SUS	SPST	50W	300Vac/350Vdc	0.5A	2.5A
		SPDT	20W	150Vac/200Vdc	1A	2A
OD12.7	SUS	SPST	60W	220Vac/500Vdc	3A	4A
		SPDT	60W	400Vac/1000Vdc	1A	2A
OD16	PVDF	SPST	60W	220Vac/500Vdc	3A	4A
		SPDT	60W	400Vac/1000Vdc	1A	2A
OD17.2	PP	SPST	60W	220Vac/500Vdc	3A	4A
		SPDT	60W	400Vac/1000Vdc	1A	2A

## APPLICATION FIELDS OF FLOAT

Environments Float	Working Temp.	Pressure Rating	Acid	Alkaline	Oil	Solvent
SUS304	- 20 C~120 C (200 C Max.)	10~ 30kg/cm <sup>2</sup>	×	△	◎	◎
SUS316	- 20 C~120 C (200 C Max.)	10~ 30kg/cm <sup>2</sup>	△	○	◎	◎
Polypropylene	-20 C~80 C	4kg/cm <sup>2</sup>	○	○	○	×
PVDF	-20 C~120 C	3kg/cm <sup>2</sup>	◎	◎	○	○

Note: ◎ = Excellent    ○ = Good    △ = Acceptable    × =Not good

# CHEMICAL RESISTANCE

● Excellent ○ Good △ Fair × Corroded

Chemical	Concentration %	Temp		Plastic				Rubber Stainless		
		C	°F	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(CH <sub>3</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 HOOC <sub>2</sub> COOH	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		△	●	●		●	●
Butane CH(CH <sub>3</sub> ) <sub>2</sub> CH <sub>3</sub>	Gas	40	104	●	●	●	●			
		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		Plastic				Rubber Stainless			
		C	°F	PVC	PP	PVDF	PTFE	NBR	304	316	
Sodium Hypochlorite NaClO	3	40	104	●	○	●	●		△	○	
	3	80	176								
	5	40	104	●	○	●	●		△	○	
	5	80	176								
	7	40	104	●	△	○	●		×	×	
	7	80	176								
	10	40	104	●	△	●	●		×	×	
	10	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		○	●	●	△	×	×	
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			●	●				
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

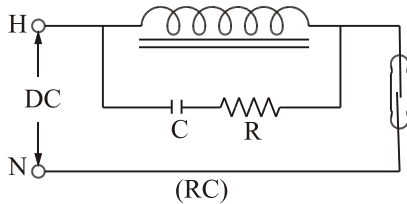
Chemical	Concentration %	Temp		Plastic				Rubber	Stainless	
		C	°F	PVC	PP	PVDF	PTFE	NBR	304	316
Citric Acid	10	40	104	●	●	●	●	●	●	●
$C_6H_8O_7$	10	80	176		○	●	●	●		
Gasoline	10	40	104	●		●	●			
		80	176			●	●			
Diesel Fuels		40	104			●	●		●	●
		80	176			●	●		●	●
Ethyl Alcohol $C_2H_5OH$	Pure	40	104	●	●	●	●	●	○	○
		80	176		○	●	●	○		
Formic Acid $HCOOH$	90	40	104	○	○	●	●			
		80	176			●	●			
Hydrofluoric Acid HF	Dilute	40	104	●	○	●	●			
		80	176		○	●	●			
	30	40	104	○	○	●	●			
		80	176	×	○	●	●			
	40	40	104	△	○	●	●			
		80	176		○	●	●			
	50	40	104	△	○	●	●			
		80	176		○	●	●			
Hydrogen peroxide $H_2O_2$	5	40	104	●	●	●	●		○	●
	5	80	176		○	●	●			
	20	40	104	●	●	●	●			
		80	176		○	●	●			
	30	40	104	○	○	●	●			
		80	176		△	●	●			
	50	40	104	△	×	●	●			
		80	176			●	●			
	90	40	104			●	●			
		80	176			●	●			
Isopropyl Alcohol $(CH_3)_2CHOH$	Pure	40	104	●	●	●	●	○		
		80	176			●	●			
Kerosene		40	104	●	○	●	●			
		80	176			●	●			
Methyl Alcohol $CH_3OH$		40	104	○	●	●	●	△		
		80	176		○	●	●			
Methyl Ethyl Ketone $CH_3COCH_2CH_3$		40	104		△		●			
		80	176				●			
Potassium Chromate $K_2CrO_4$		40	104	●	●	●	●	●		
		80	176		○	●	●	○		

# CONTACT PROTECTION CIRCUITS

## INDUCTIVE LOADS

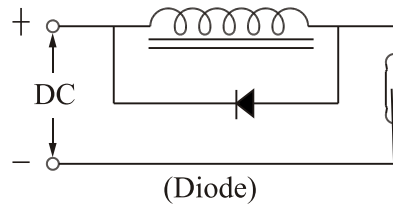
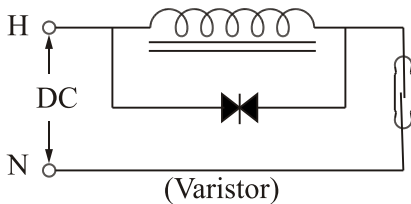
When using a reed switch with inductive loads such as motors, relays, solenoids, etc., the contact will be subjected to a high induced voltage during opening of the contact (load circuit).

Such high induced voltage (transients) may cause damages to the reed switch or significantly reduce its life. Therefore, protective circuits such as: RC (snubber), varistors or clamping diodes are recommended.



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

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

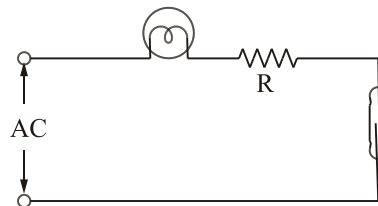
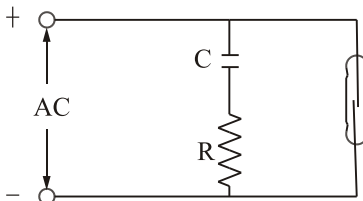


It is prohibited to connect directly with any solenoid valve, motor or magnetic switch.

## CAPACITIVE LOADS

When using a reed switch with capacitive loads such as capacitors, incandescent lamps or long cables, the contact will be subjected to a high surge (inrush) current.

Therefore, protective circuits such as: surge suppressors or current limiting resistors are recommended.



# HOUSING SPECIFICATION

**B**

Material : Aluminum  
Enclosure : IP65  
Max.Temp.: -20 C ~200 C

**C**

Material : PP+Fiber  
Enclosure : IP65  
Max.Temp.: -20 C ~80 C

**D** Explosion-proof

Material : Aluminum  
Enclosure : NEPSI Ex d IIB T3~T6  
ATEX II 2G EEx d IIB T3~T6  
ATEX II 2D IP65 T3~T6  
Max.Temp.: -20 C ~200 C

**E**

Material : Aluminum  
Enclosure : IP65  
Max.Temp.: -20 C ~200 C

**G**

Material : PC  
Enclosure : IP65  
Max.Temp.: -20 C ~80 C

**H**

Material : Aluminum  
Enclosure : IP65  
Max.Temp.: -20 C ~100 C

**K** Explosion-proof

Material : Aluminum  
Enclosure : CESI 03 ATEX 108  
 II 2G EEx d IIC T6  
Max.Temp.: -20 C ~100 C

**L** Explosion-proof

Material : Aluminum  
Enclosure : CESI 03 ATEX 108  
 II 2G EEx d IIC T6  
Max.Temp.: -20 C ~100 C

**M** Explosion-proof

Material : SUS316  
Enclosure : NEPSI Ex d IIB T3~T6  
ATEX II 2G EEx d IIB T3~T6  
ATEX II 2D IP65 T3~T6  
Max.Temp.: -20 C ~200 C

\*Recommend for flow switch used

\*Recommend for side float sw. used

**N** Explosion-proof

Material : SUS316  
Enclosure : NEPSI Ex d IIB T3~T6  
ATEX II 2G EEx d IIB T3~T6  
ATEX II 2D IP65 T3~T6  
Max.Temp.: -20 C ~200 C

**P**

Material : Plastic  
Enclosure : IP65  
Max.Temp.: -20 C ~80 C

## Cable Conduit EEx d IIC

Material: Washer ---NBR  
Body--- Aluminum (3/4" NPT)  
Nickel plated (1/2" NPT)

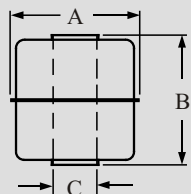
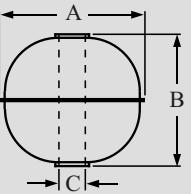
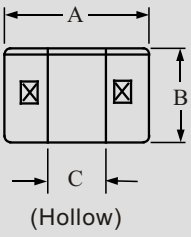
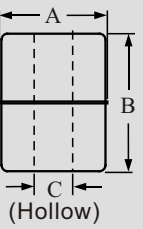
**29-1104**

Max=9  
Min=6

**29-1108**

Max=12  
Min=9

# FLOAT SPECIFICATIONS

MODEL	TYPE	AxBx C	S.G.	Max. Pressure (kg/cm <sup>2</sup> )	Weight (g)	Material/Color	Max. Temp. ( C )
	S1	28 28 9.5	E>0.8	10	8	SUS 316	200
	S3	45 55 15	E>0.65	12	37.6	SUS 316	200
	S6	75 108 19	E>0.5	10	165	SUS 304	200
	S2	41 38 311	E>0.7	35	19.5	SUS 316	200
	S4	52 52 15	E>0.55	30	33.4	SUS 316	200
	S5	75 73 19	E>0.65	30	102.4	SUS 304	200
	S7	30 28 9.5	E>0.82	30	8	SUS 316	200
 (Hollow)	P1	25 15 10	E>0.65	4	3.5	PP / white black	80
	P2	25 25 10	E>0.55	4	5	PP / white black	80
	P3	48 45 18.5	E>0.6	4	35.5	PP / black	80
	P4	20 25 10	E>0.7	4	3.7	PP / black	80
 (Hollow)	F2	42 44 14	E>0.63	5	18.5	PP	80
	F3	45 45 20	E>0.65	5	35.7	PP	80
	F4	48 60 18	E>0.75	5	65.3	PVDF	120

## THE PROPERTIES BETWEEN LIQUID AND FLOAT

Please choose the proper float subject to above independent specified terms and chemical characters.

**1. Temperature:** PVDF Max. 120 C,  
PP Max. 80 C,  
SUS304/ 316 Max. 200 C

**2. Pressure:** SUS304/ 316 Float, Max. 35kg/cm<sup>2</sup>  
Engineering plastic, Max. 5kg/cm<sup>2</sup>

**3. Viscosity:** Please choose smaller S.G. with greater diameter floats to cope with high viscosity liquid applications.

**4. Chemical:** Please use plastic float for acid/alkaline corrosion of chemical applications. PVDF float is noted for high temperature cases.

**5. Benzine:** Please choose stainless steel floats to apply in any gasoline, fuel oil, petroleum application.

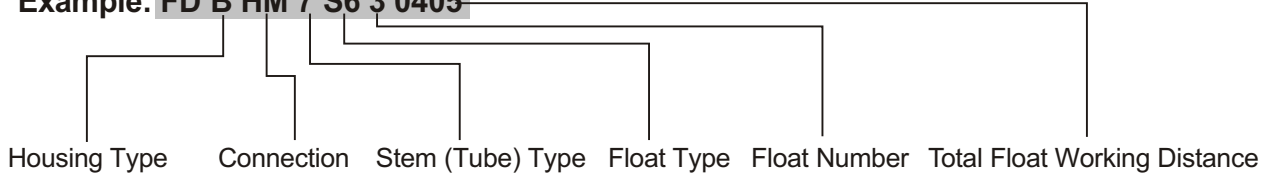
**6. S.G.:** The float S.G. Must be smaller than the liquid, otherwise, the liquid buoyancy can not deliver the float upword.

# ORDER SPECIFIED

The magnetic level switch can be done as per customer's specified technical data such as the flange, thread, housing, float ball diameter, float ball number, the float traveling up or down actuated position by N.C. or N.O. output, the total float working distance (L) or each

independent float actuating position, please refer the order information to define the application specifications. A single ball driving multiple actuated points is available to apply on the order form.

**Example: FD B HM 7 S6 3 0405**



It is requested the minimum interval for a single ball driving dual actuated positions (D) or neighboring two balls (B), or from the bottom to the lowest ball interval (C) or from the mounting position to the first ball (A), otherwise, there will be some magnetic mutually interference involved by insufficient interval. To ensure the defined distance, please see the data below:

A= Minimum distance from the mounting position to the highest actuation level.

B= Minimum distance between any two actuation levels.

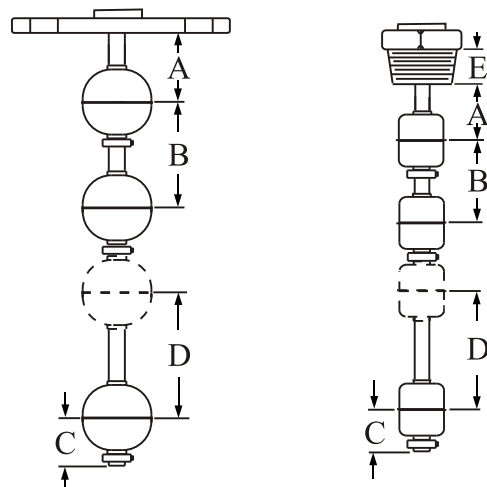
C= Minimum distance from end of the lowest level.

D= Minimum distance between two actuation levels by one float.

E= Screw length

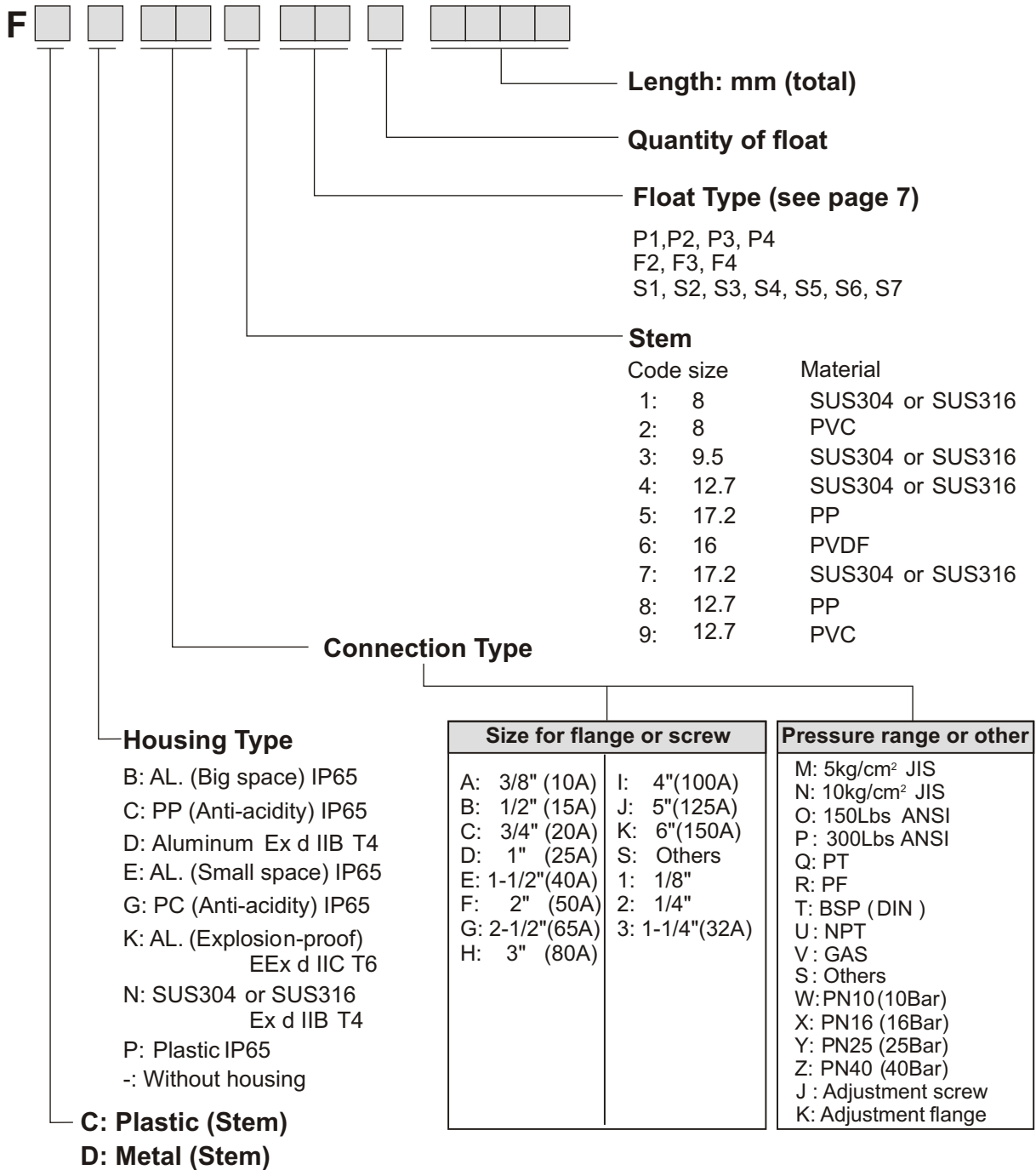
FLOAT TYPE	S1	S2	S3	S4	S5	S6	P2	P3	F1
<b>A(mm)</b>	25	32	40	39	50	70	30	50	50
<b>B(mm)</b>	50	64	82	78	99	136	63	85	99
<b>C(mm)</b>	25	32	40	39	50	70	30	43	50
<b>D(mm)</b>	30	40	55	50	65	70	30	45	65

E (mm)	SCREW
14	1/2"PT
16	3/4"PT
19	1"PT
22	1-1/4"PT
22	1-1/2"PT
25	2"PT
28	2-1/2"PT
32	3"PT





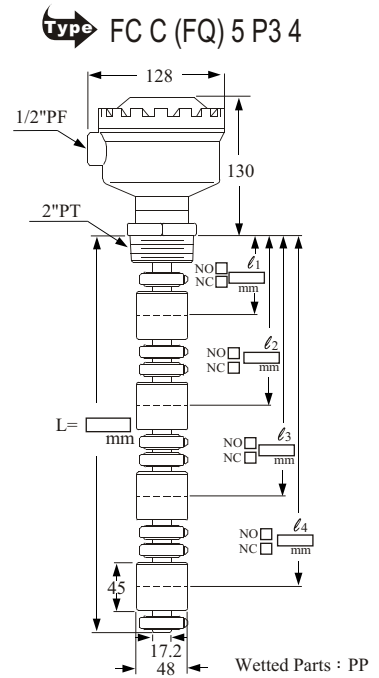
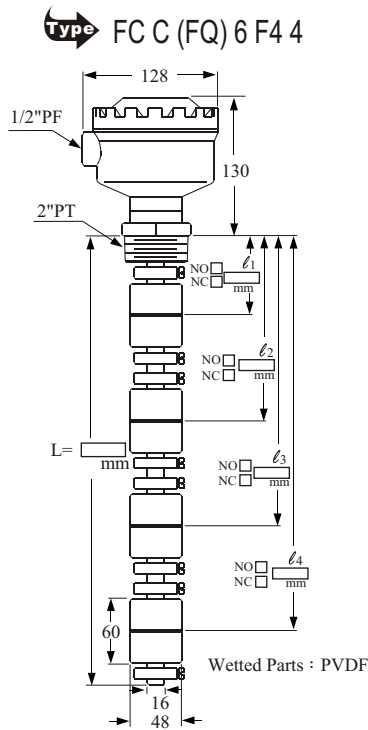
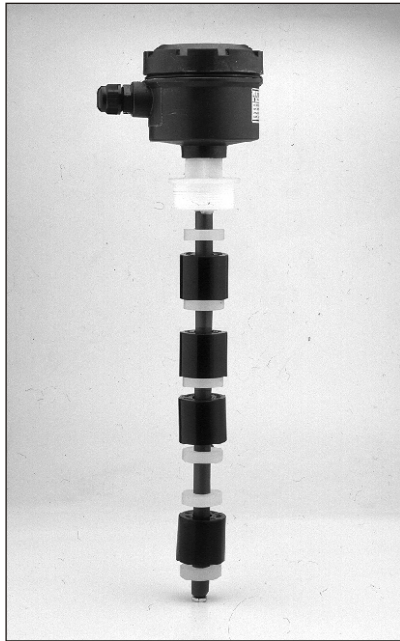
# HOW TO MAKE YOUR ORDER



※Certified by GL, ABS Marine grade are available. (Please see page 17)

# ANTI-CORROSION SCREW TYPE / FLANGE TYPE

Housing material apply by PP, wet portion material options in PP, PVDF, specially applicable for chemical applications against corrosive environments.



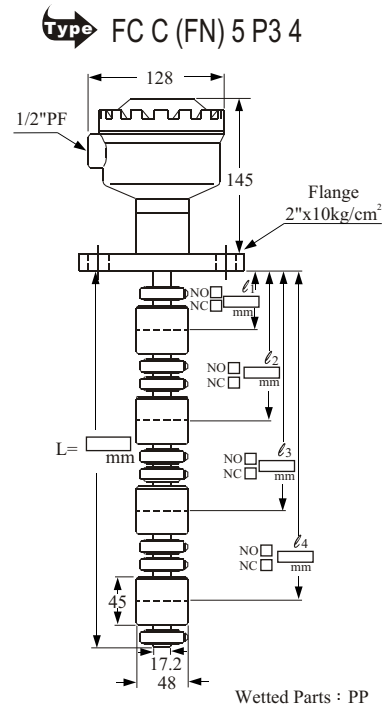
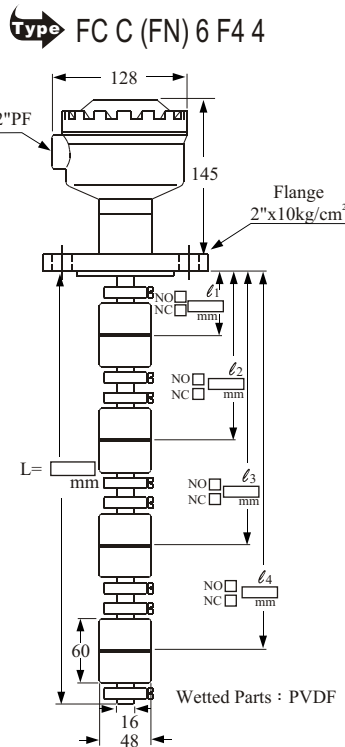
## Order information

Type: FC C (FQ) 6 F1 4

Housing Type: FC C (FQ) 6 F1 4

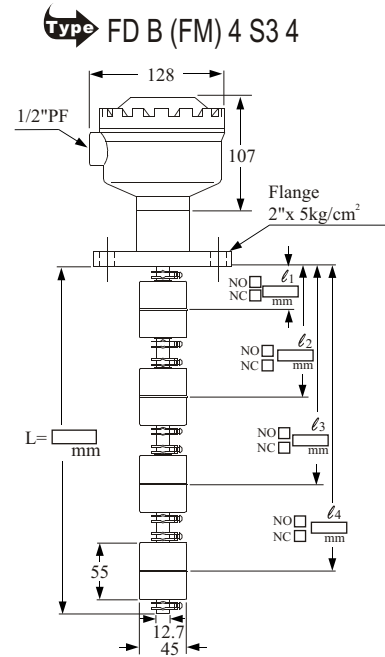
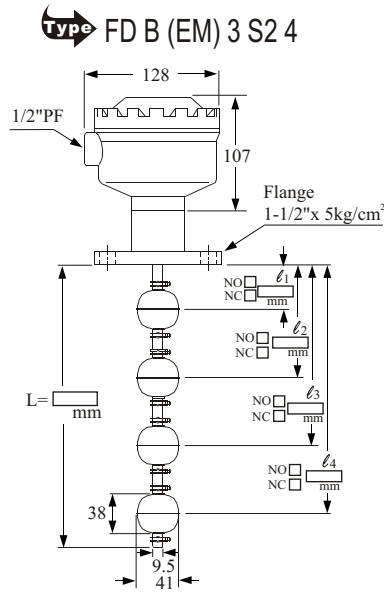
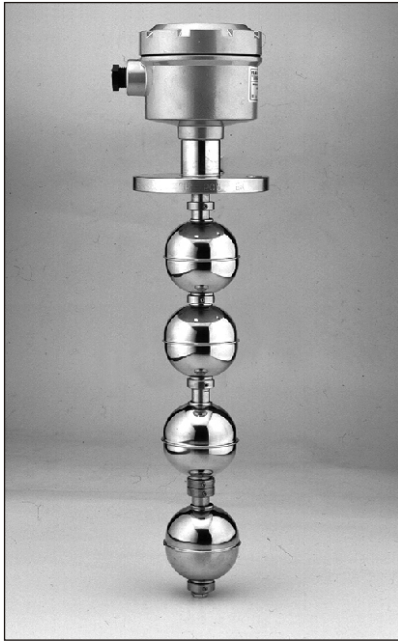
Connection Flanges	Pipe Diameter	Float Type	Float Quantity
FQ=2" PT	6= 16	F4=PVDF 48x60	1~ 4
FQ=2" PT	5= 17.2	P3=PP 48x45	1~ 4
FN=2" 10kg/cm <sup>2</sup>	6= 16	F4=PVDF 48x60	1~ 4
FN=2" 10kg/cm <sup>2</sup>	5= 17.2	P3=PP 48x45	1~ 4

※FCC(FQ) & (FN)2" flange/thread are available, too.



# STANDARD FLANGE TYPE

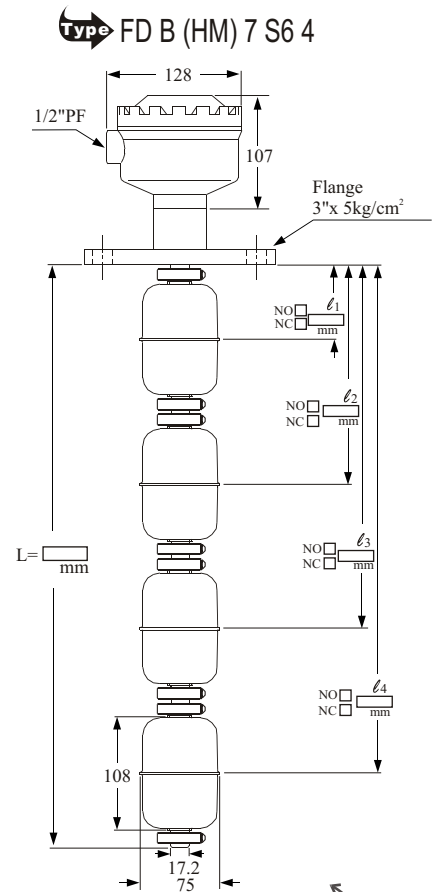
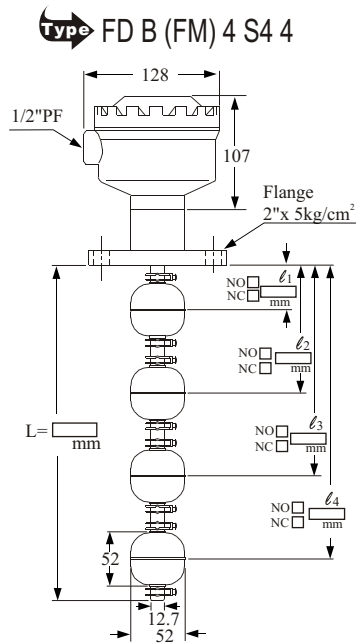
The housing complies with the IP65 rating and can therefore be used in outdoor environment.



## Order information

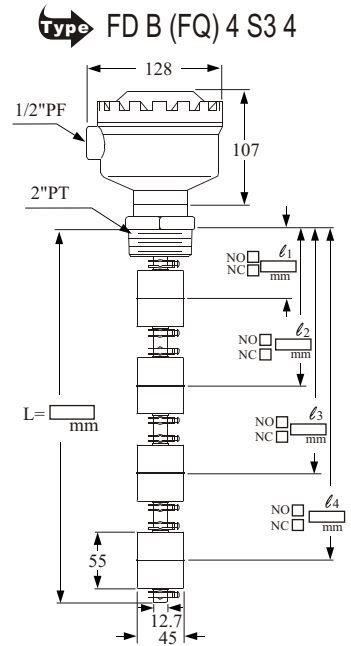
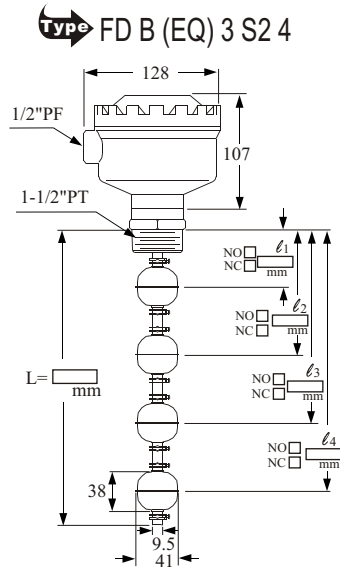
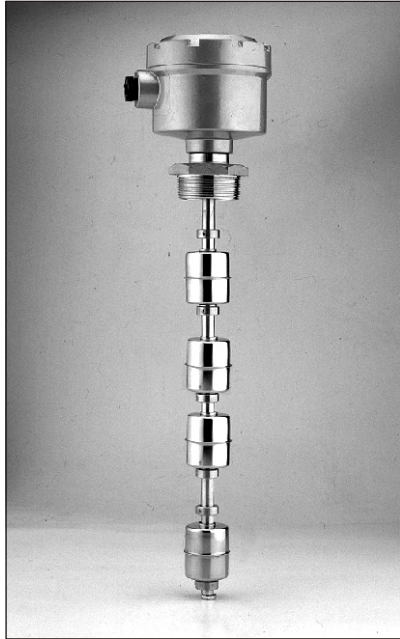
Type: **FD B (HM) 7 S6 4**  
Housing Type: **FD B (HM) 7 S6 4**

Connection Flanges	Pipe Diameter	Float Type	Float Quantity
EM=1-1/2" 5kg/cm <sup>2</sup>	3= 9.5	S2= 41x38	1~4
FM=2" 5kg/cm <sup>2</sup>	4= 12.7	S3= 45x55	1~4
FM=2" 5kg/cm <sup>2</sup>	4= 12.7	S4= 52x52	1~4
HM=3" 5kg/cm <sup>2</sup>	7= 17.2	S6= 75x108	1~4



# STANDARD SCREW TYPE

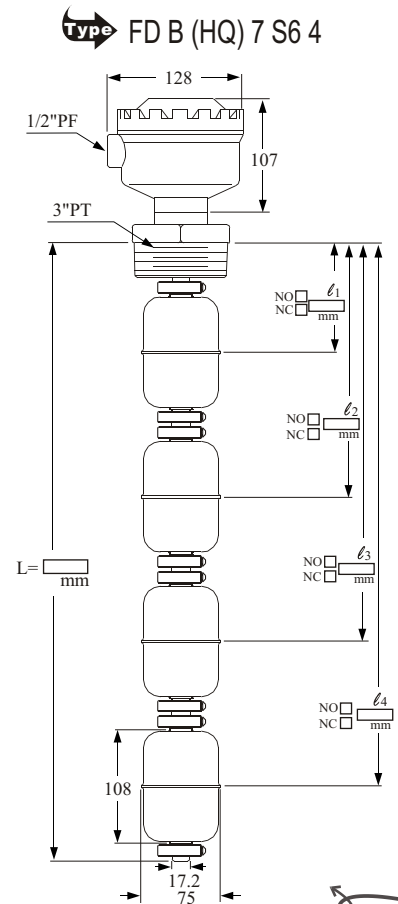
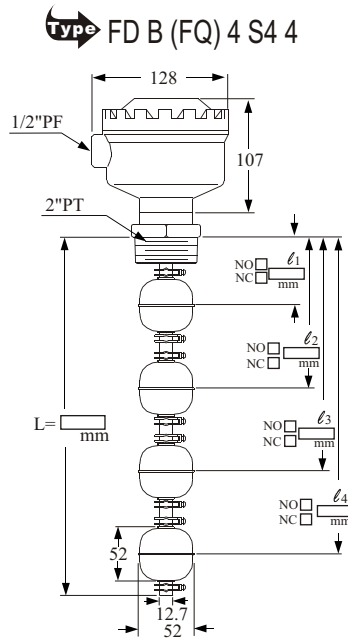
The housing complies with the IP65 rating and can therefore be used in outdoor environment.



## Order information

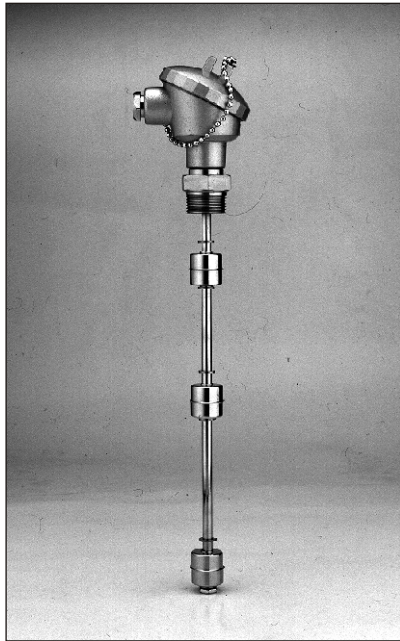
Type: **FD B (HQ) 7 S6 4**  
 Housing Type

Connection Flanges	Pipe Diameter	Float Type	Float Quantity
EQ=1-1/2" PT	3= 9.5	S2= 41x38	1~4
FQ=2" PT	4= 12.7	S3= 45x55	1~4
FQ=2" PT	4= 12.7	S4= 52x52	1~4
HQ=3" PT	7= 17.2	S6= 75x108	1~4

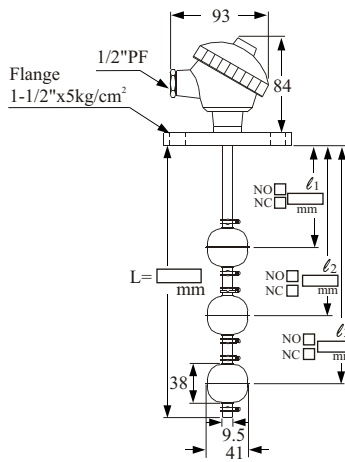


# SCREW TYPE / FLANGE TYPE

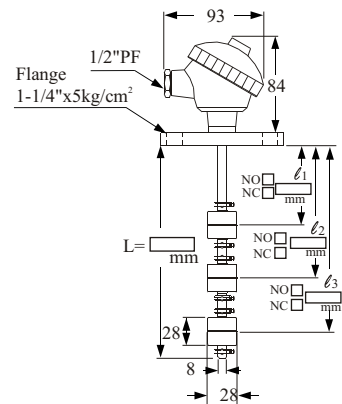
The housing complies with the IP65 rating and can therefore be used in outdoor environment.



**Type** FD E (EM) 3 S2 3



**Type** FD E (3M) 1 S1 3

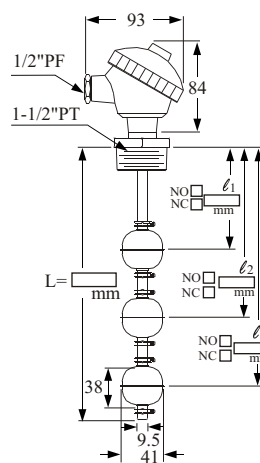


## Order information

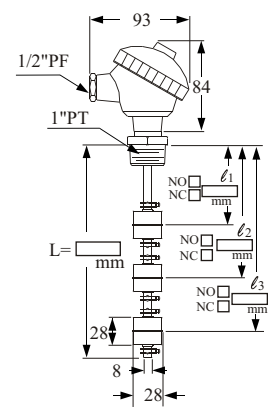
Type Housing Type  
**FD E (3Q) 1 S1 3**

Connection Flanges	Pipe Diameter	Float Type	Float Quantity
EM=1-1/2" 5kg/cm²	3= 9.5	S2= 41x38	1~3
3M=1-1/4" 5kg/cm²	1= 8	S1= 28x28	1~3
EQ=1-1/2" PT	3= 9.5	S2= 41x38	1~3
DQ=1"PT	1= 8	S1= 28x28	1~3

**Type** FD E (EQ) 3 S2 3



**Type** FD E (DQ) 1 S1 3

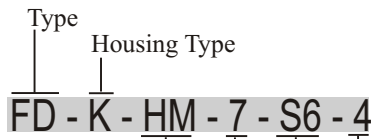


# ENCLOSURE EXPLOSION PROOF

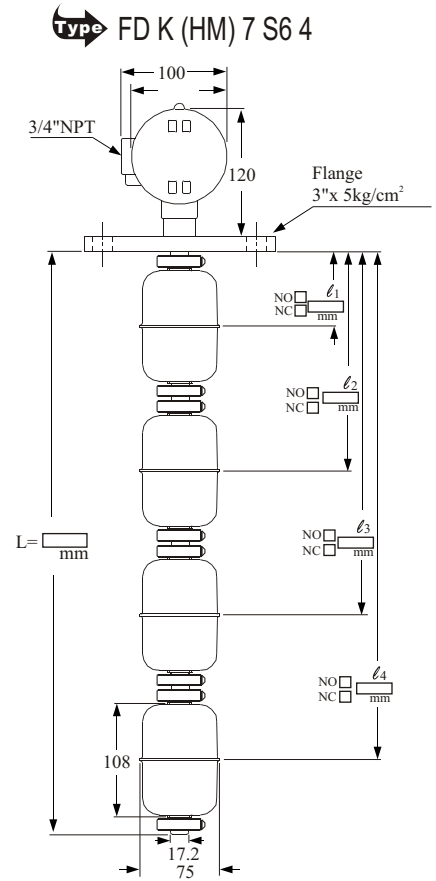
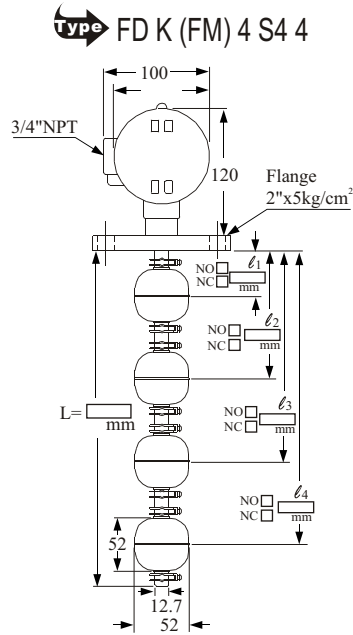
## FLANGE TYPE

ATEX108  $\text{Ex}$  CESI 03 EX d IIB T3~T6

### Order information

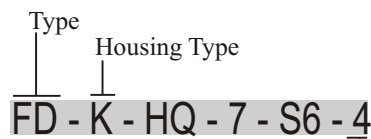


Connection Flanges	Pipe Diameter	Float Type	Float Quantity
EM=1-1/2" 5kg/cm <sup>2</sup>	3= 9.5	S2= 41x38	1~ 4
FM=2" 5kg/cm <sup>2</sup>	4= 12.7	S3= 45x55	1~ 4
FM=2" 5kg/cm <sup>2</sup>	4= 12.7	S4= 52x52	1~ 4
HM=3" 5kg/cm <sup>2</sup>	7= 17.2	S6= 75x108	1~ 4

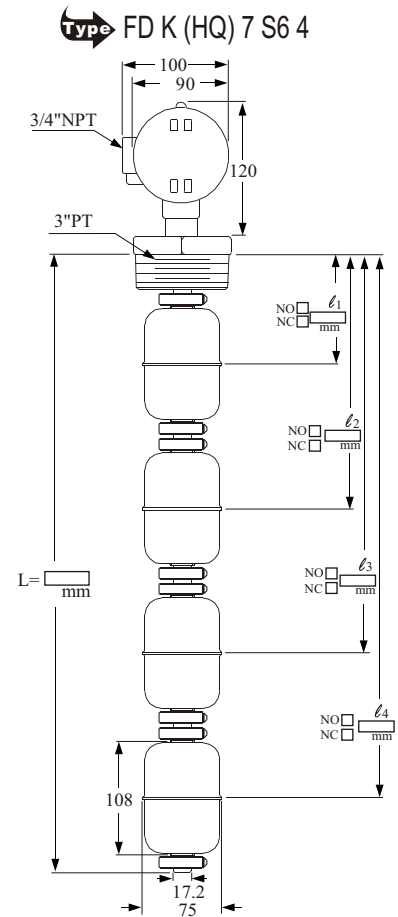
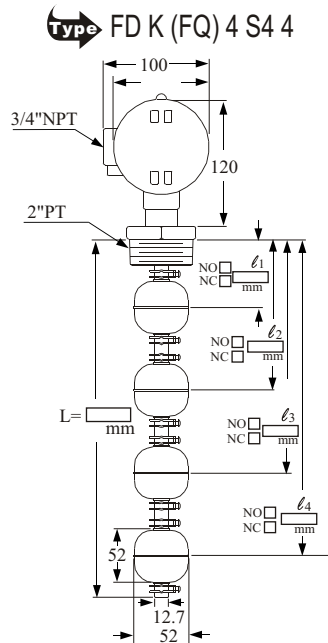


## SCREW TYPE

### Order information



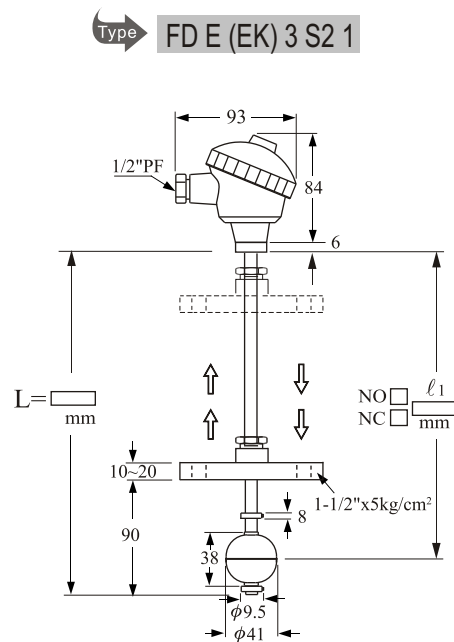
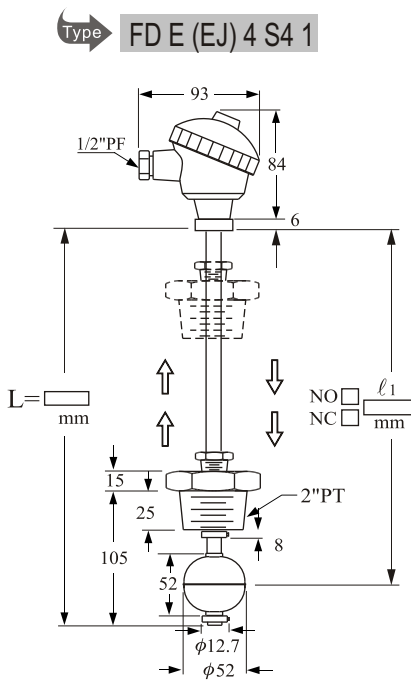
Connection Flanges	Pipe Diameter	Float Type	Float Quantity
EQ=1-1/2" PT	3= 9.5	S2= 41x38	1~ 4
FQ=2" PT	4= 12.7	S3= 45x55	1~ 4
FQ=2" PT	4= 12.7	S4= 52x52	1~ 4
HQ=3" PT	7= 17.2	S6= 75x108	1~ 4



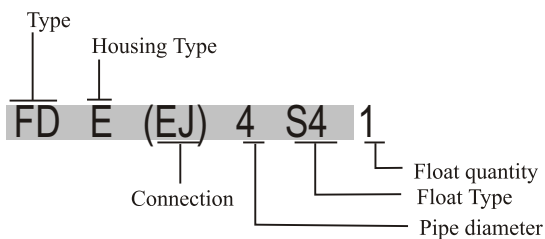
# VERTICAL ADJUSTMENT TYPE

This is a special design for some liquid applications requiring monitoring different actuation levels frequently. The user needs only to loose the hexagon nut, then remove the mounted screw/ flange up or down to achieve the actuated level position adjustment.

- \* Applicable at tank interior pressure under 5 kg/cm<sup>2</sup>.
- \* Standard specification 80 C, special order of max. 200 C available.
- \* Switch contact: 20W/150Vac/250Vdc SPDT  
50W/300Vac/350Vdc SPST  
60W/220Vac/500Vdc SPST  
60W/400Vac/1000Vdc SPDT
- \* Customer specified flange/ screw acceptable.



## Order information



Connection	Pipe Diameter	Float Type
EJ=1-1/2" PT	3= $\phi$ 9.5	S2= $\phi$ 41x38
FJ=2" PT	4= $\phi$ 12.7	S4= $\phi$ 52x52
EK=1-1/2" 5kg/cm <sup>2</sup>	3= $\phi$ 9.5	S2= $\phi$ 41x38

\* Please specify the  $l_1$  while placing an order.  
(Length from lower end of housing to center line of float ball)

# TEST ROD

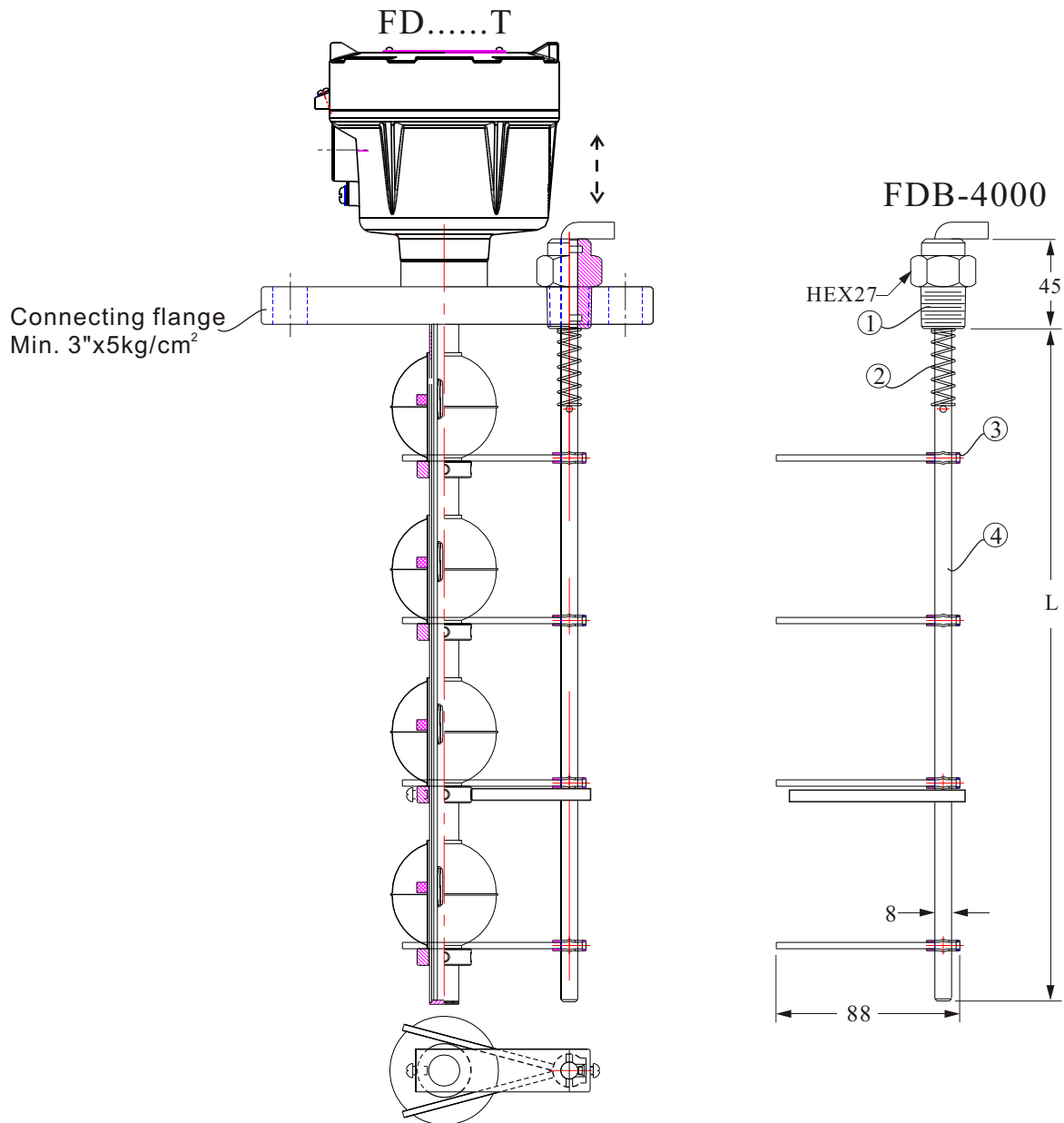
GL Marine Approval 50885-04HH

## Function:

When the Test Rod is attached to a magnetic float level switch, user could test the performance of the magnetic switch directly by pulling the handle of the test rod on the top of the switch.

## Material:

1. Rod Connection: Bronze
2. Compressed Spring: Stainless Steel
3. Positioning Clip: Stainless Steel
4. Test Rod Stem: Stainless Steel





# MARINE GRADE APPROVAL

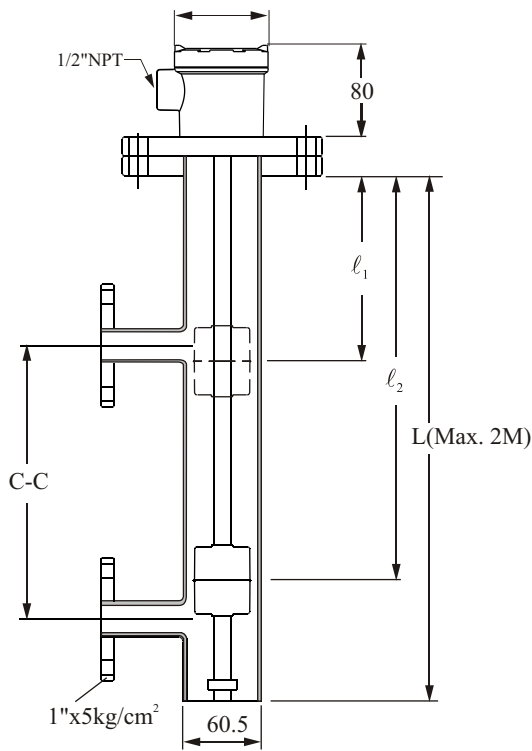


Germanischer Lloyd  
(Germany)

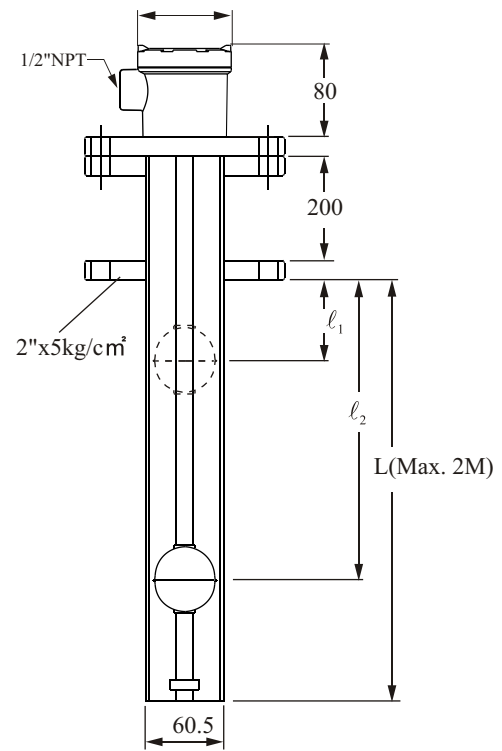


American Bureau of  
Shipping (USA)

## RHM DM 4 S3 1



## RSM FM 4 S3 1



RHM (DM) 4 S3 1  
 Connection      Float quantity  
                             Float Type  
                             Pipe diameter

RSM (FM) 4 S3 1  
 Connection      Float quantity  
                             Float Type  
                             Pipe diameter

\*Please specify the  $l_1$ ,  $l_2$ , C-C and L while placing an order.  
(Length from lower end of housing to center line of float ball)

Connection	Pipe Diameter	Float Type
DM=1"x 5kg/cm <sup>2</sup>	4= $\phi$ 12.7	S3= $\phi$ 45x55
FM=2"x 5kg/cm <sup>2</sup>	4= $\phi$ 12.7	S4= $\phi$ 52x52

# ENCLOSURE EXPLOSION PROOF TYPE

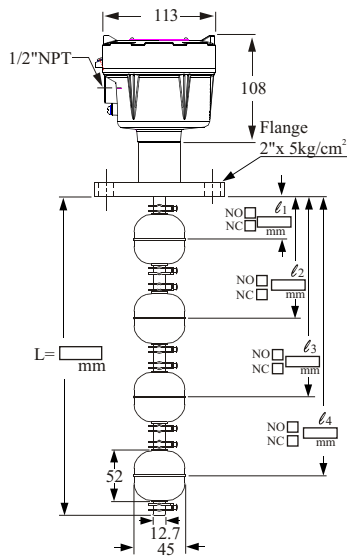
NEPSI PROOF No. GYJ03348 Ex d IIB T3~T6

PTB PROOF No. 05 ATEX 1027 Ex II 2G EEx d IIB T3~T6

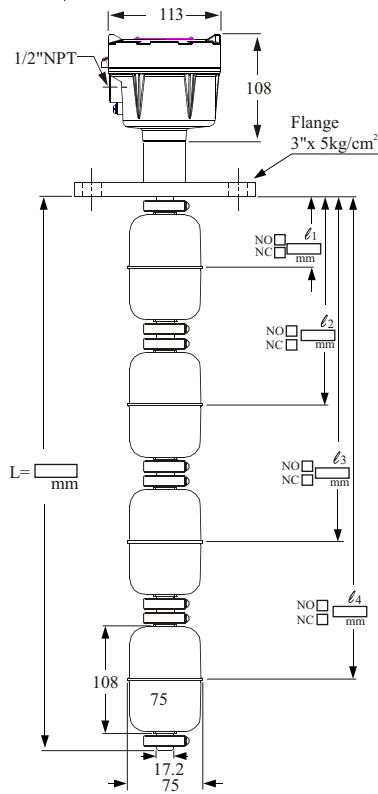
Ex II 2D IP65 T3~T6

## FLANGE TYPE

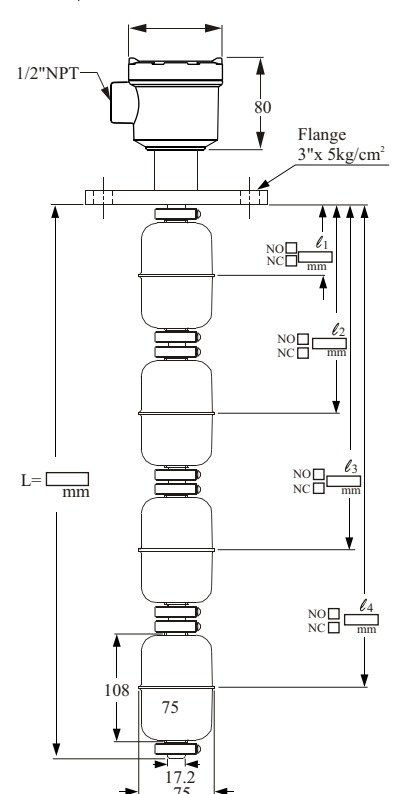
**Type** RF7 D FM 4 S4 4



**Type** RF7 D HM 7 S6 4

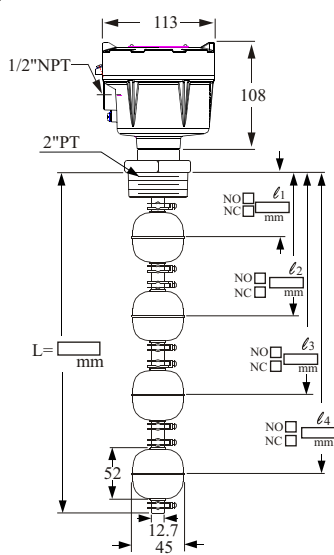


**Type** RF7 N HM 7 S6 4

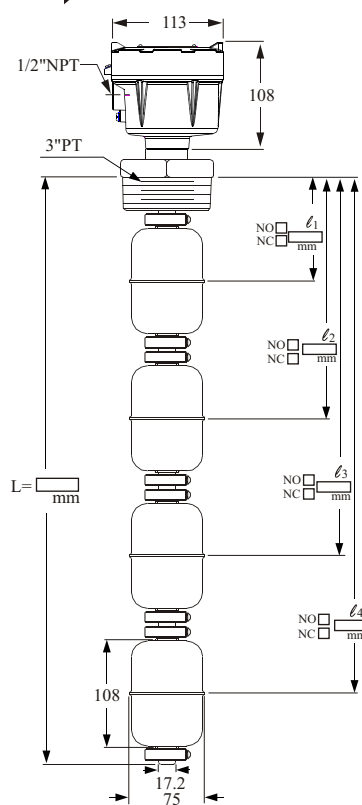


## SCREW TYPE

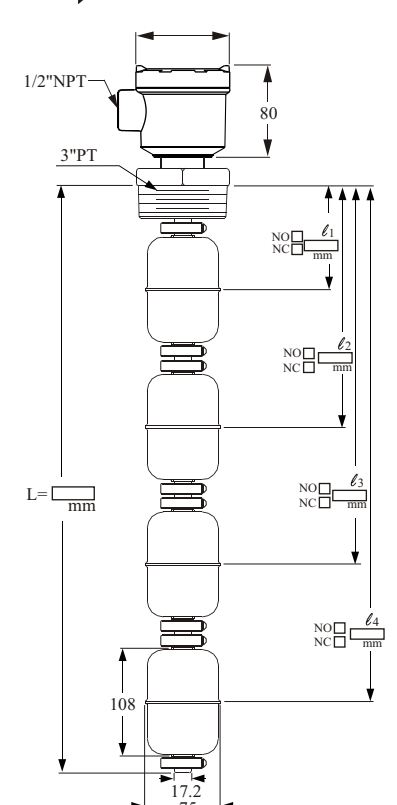
**Type** RF7 D FQ 4 S4 4



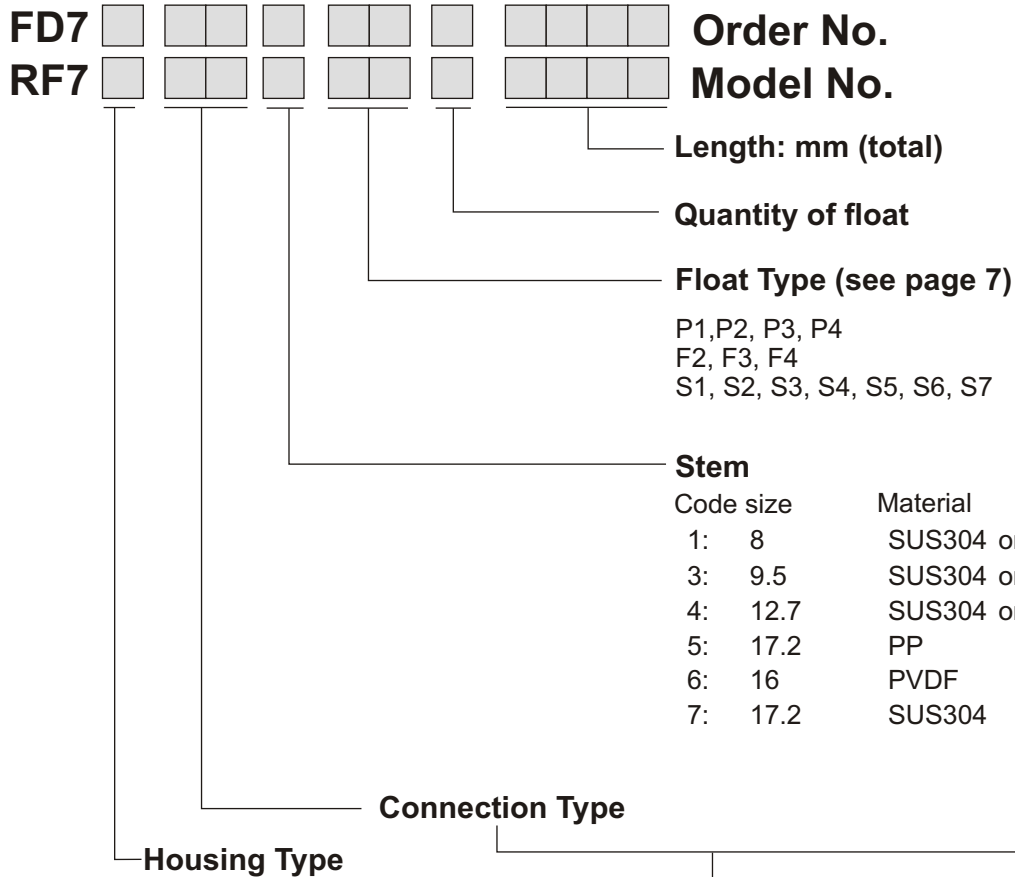
**Type** RF7 D HQ 7 S6 4



**Type** RF7 N HQ 7 S6 4



# HOW TO MAKE YOUR ORDER



P1, P2, P3, P4  
 F2, F3, F4  
 S1, S2, S3, S4, S5, S6, S7

Code size	Material
1: 8	SUS304 or SUS316
3: 9.5	SUS304 or SUS316
4: 12.7	SUS304 or SUS316
5: 17.2	PP
6: 16	PVDF
7: 17.2	SUS304

D: Aluminum (Explosion-proof)  
 EEx IIB T3~T6

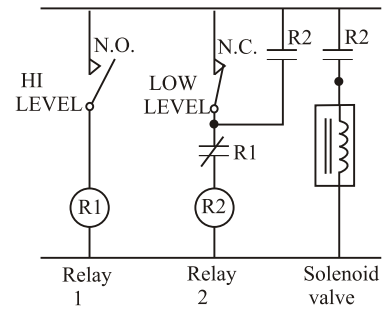
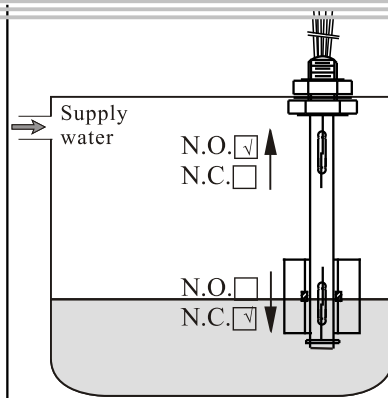
N: SUS304 or SUS316  
 (Explosion-proof)  
 EEx IIB T3~T6

Size for flange or screw		Pressure range or other
A: 3/8" (10A)	I: 4"(100A)	M: 5kg/cm <sup>2</sup> JIS
B: 1/2" (15A)	J: 5"(125A)	N: 10kg/cm <sup>2</sup> JIS
C: 3/4" (20A)	K: 6"(150A)	O: 150Lbs ANSI
D: 1" (25A)	S: Others	P: 300Lbs ANSI
E: 1-1/2"(40A)	1: 1/8"	Q: PT
F: 2" (50A)	2: 1/4"	R: PF
G: 2-1/2"(65A)	3: 1-1/4"(32A)	T: BSP (DIN )
H: 3" (80A)		U: NPT
		V: GAS
		S: Others
		W: PN10 (10Bar)
		X: PN16 (16Bar)
		Y: PN25 (25Bar)
		Z: PN40 (40Bar)
		J : Adjustment screw
		K: Adjustment flange

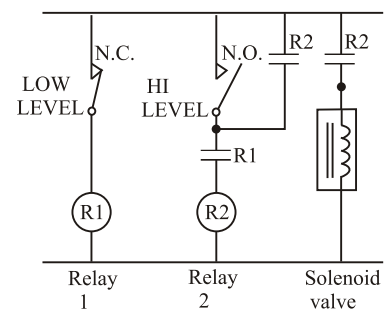
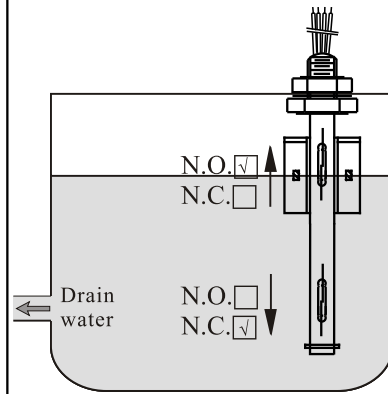
※Certified by GL, ABS Marine grade are available. (Please see page 17)

# TYPICAL WIRING DIAGRAMS

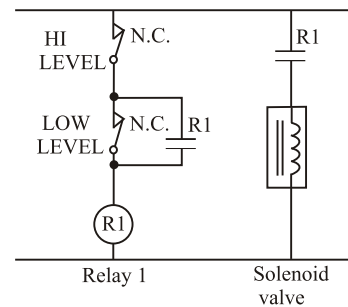
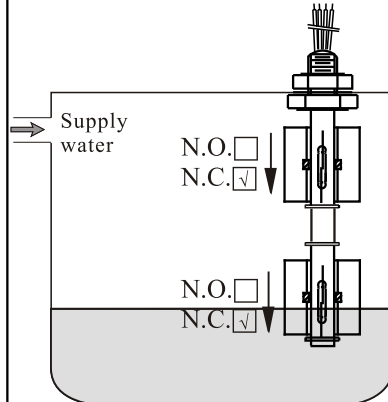
▶ AUTO SUPPLY CASE:  
SINGLE FLOAT  
DUAL SWITCHES



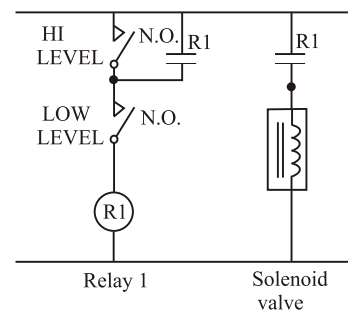
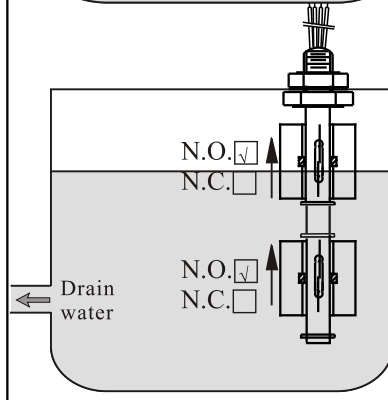
▶ AUTO DRAIN CASE:  
SINGLE FLOAT  
DUAL SWITCHES



▶ AUTO SUPPLY CASE:  
DUAL FLOATS  
DUAL SWITCHES



▶ AUTO DRAIN CASE:  
DUAL FLOATS  
DUAL SWITCHES

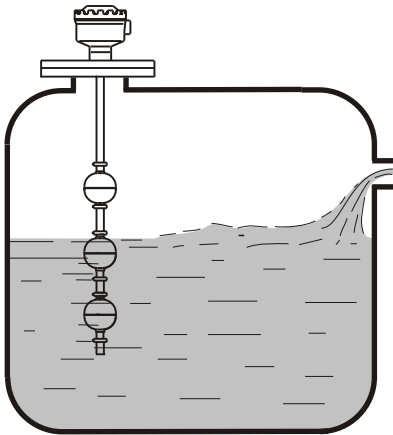


**Note:** The "N.O." Means normally opened circuit of the reed switch (off) in lower liquid level. As the float moves up to the specified higher level, the circuit closed (on).

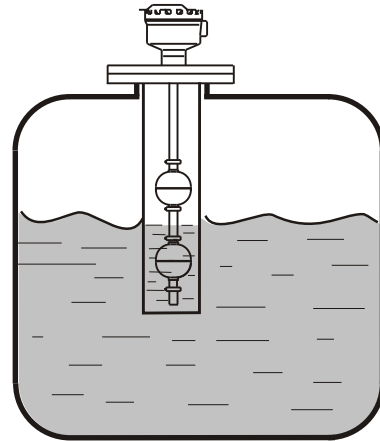
The "N.C." Means normally closed circuit of the reed switch (on) in lower liquid level. As the float moves up to the specified higher level, the circuit closed (off).

# INSTALLATION

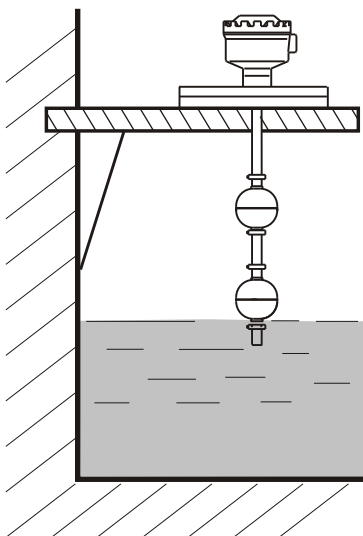
- The float level switch should be mounted far away from liquid inlet, any strong liquid fluctuation will produce error output signals.



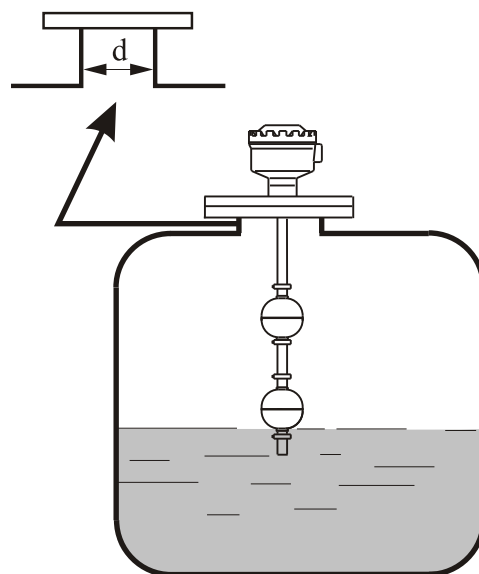
- It is requested a pipe shield or equivalent device to normalize the switch actuation if the switch is used with any agitator application.



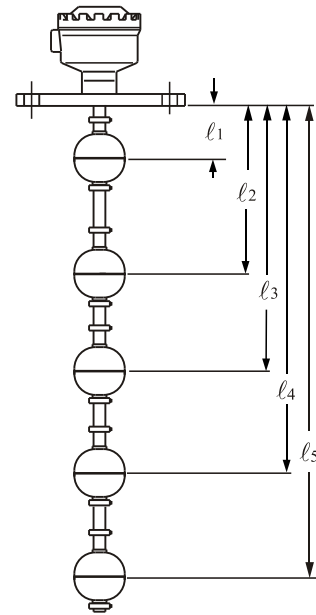
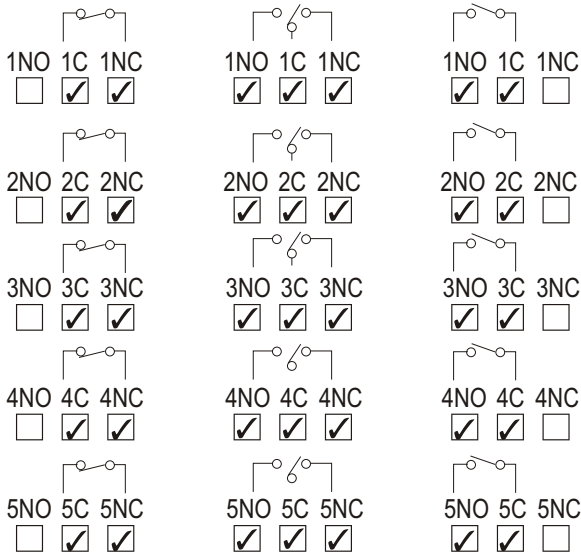
- It had better require an L type supporter, when the switch is mounted in concrete wall tank as figure below.



- It is recommended to select the standpipe with diameter larger than the float ball for installation process.



# CONNECTION DIAGRAMS



- ※ NO C NC Means that the NC-C circuit will be close while liquid level lower than the float ball, by mark of " ON".
- ※ NO C NC Means that the NO-C circuit will be close while liquid level higher than the float ball, by mark of " ON".
- ※ NO C NC Means that the NO-C circuit will be close while liquid level higher than the float ball, and NC-C circuit will be close while liquid level lower than the float ball.

※ Please screw the housing cap tightly and fix the conduit outlet, it will reinforce the housing performance against the moisture and direct water. ( 8mm multiple cord is recommended for wiring)

※ If the end user is intended to adjust the actuation level position independently, please move the float ball(s) position as well as the interior reed switches, otherwise, it will appear an error or no signal.