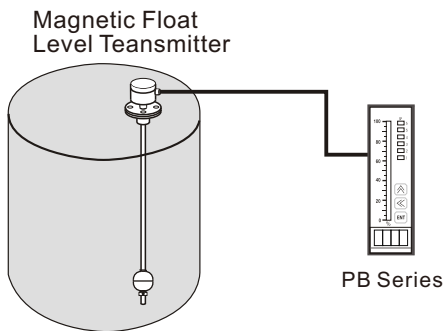


# INTRODUCTION

## WORKING PRINCIPLE

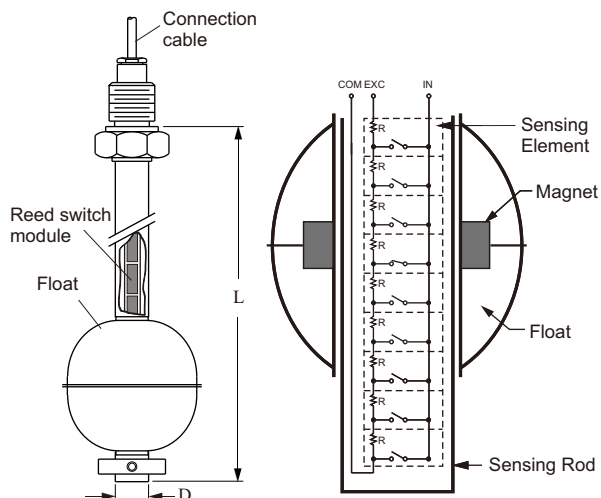
The "Magnet Float Level Transmitter" is composed of a float and sensing rod (shown below). As the float is raised or lowered by the liquid level, the sensing rod will induce a resistance output, which is directly proportional to the liquid level. The Magnet Float Level Transmitter is a sturdy, reliable and durable device that is applicable across most industries.



## APPLICATIONS

Waste water treatment + Turn-key facilities  
 Electric power plants + Shipping vessels  
 Hydraulic facilities + Chemical industrial equipments  
 Petrochemical industries  
 Hot coal boiler. e.g. diesel engine generators, motor oil meters, oil material storage tanks.

## CONSTRUCTION



## FEATURES

- Optional TAB-2100 (see p3) to produce a 0/4~20mA signal
- Optional PB series bargraphic display scaling panel meter for level control and display
- Sensing elements are protected with a plastic package for safety in use and transport.
- High performance and reliable electric circuit modular design (fig.2)
- Lower installation costs, maintenance, personnel training reduced and decreased plant shock downtime
- Explosion Proof series available
- Marine Standards: ABS, DNV, BV, LR, GL series available

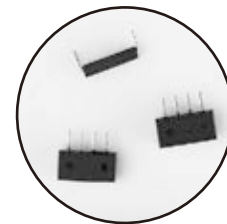


Fig.1 Sensing Element

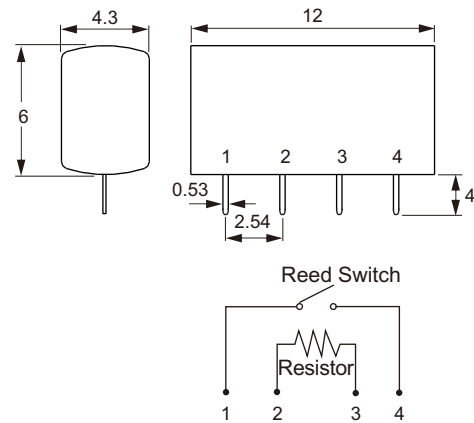
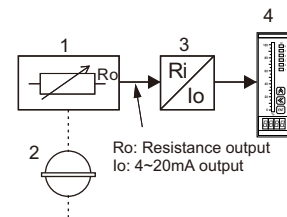


Fig.2 Sensing Element Size

## SCHEMATIC DIAGRAMS

1. Sensing Rod
2. Float
3. Transmitter
4. Display Unit



Ro: Resistance output  
 Io: 4~20mA output

# HOUSING DIMENSIONS

**B**

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

**C**

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

**D**

Material : Aluminum  
 Enclosure : IP65  
 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

**K** Explosion-proof

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

**N**

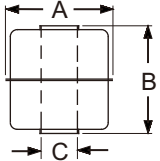
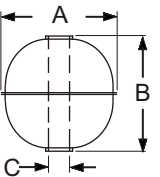
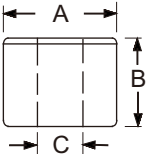
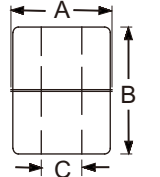
Material : SUS316  
 Enclosure : IP65  
 Max.Temp.: -20°C ~200°C

**X**

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

# FLOAT SPECIFICATIONS

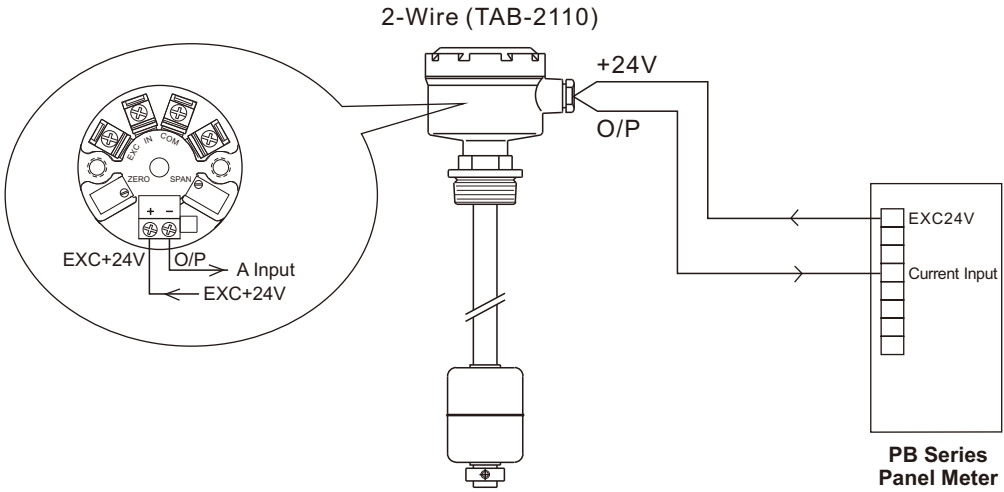
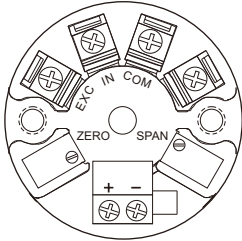
## ● FLOAT SPECIFICATION

Dimension	Type	AxBxC(mm)	S.G.	Max. Pressure (kg/cm <sup>2</sup> )	Material	Max. Temp. (°C)	Approx. Weight (g)
	S3	45x55x15	0.65	12	SUS 316	200°C	37.6
	S6	75x108x19	0.5	10	SUS 304	200°C	165
	S4	52x52x15	0.55	30	SUS 316	200°C	33.4
	S5	75x73x19	0.61	30	SUS 304	200°C	105
	S8	100x100x20	0.5	15	SUS 304	200°C	249.7
	S9	150x150x30	0.45	15	SUS 304	200°C	534
	P3	48x45x18.5	0.6	5	PP	80°C	35.5
	F4	48x62x18	0.75	5	PVDF	120°C	65.3

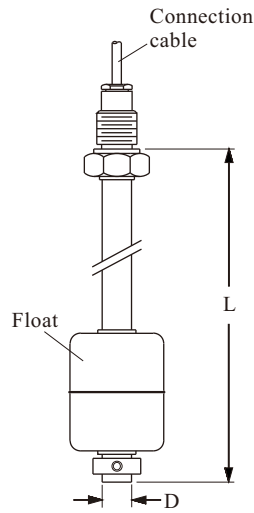
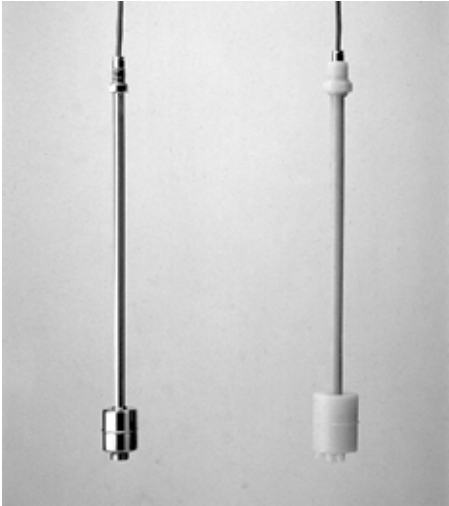
# TRANSDUCER

## MODEL: TAB-2110 Transducer

- Power Supply : 12~36Vdc
- Output Current : Loop power 4~20mA
- Load Resistance :  $R_L(\text{Max})=50(\text{Vs}-8)$
- Ambient Temperature : -40~80°C
- Ambient Humidity : 0~80% RH
- Accuracy :  $\pm 0.1\%(25^\circ\text{C})$
- Temperature Effect : 0.01%F.S./°C
- Adjustment Range : Span Adjustment 20% FS  
Zero Adjustment 5% FS



# ECONOMICAL



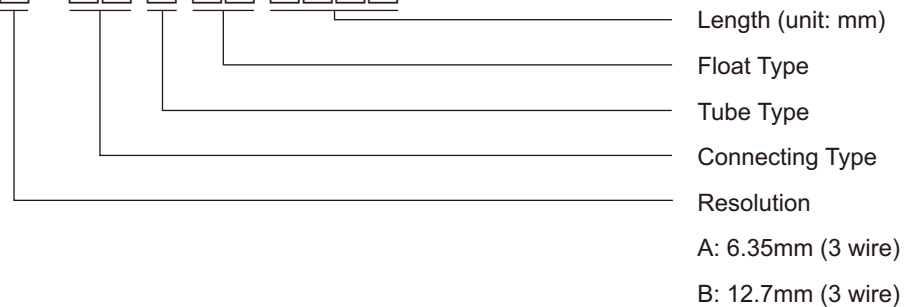
## ● SPECIFICATIONS

**Connection Cable:** Silicon cable 3C x 1M  
**Output:** 3-wire resistance output  
**Total Resistance:** 1MΩ (Max.)

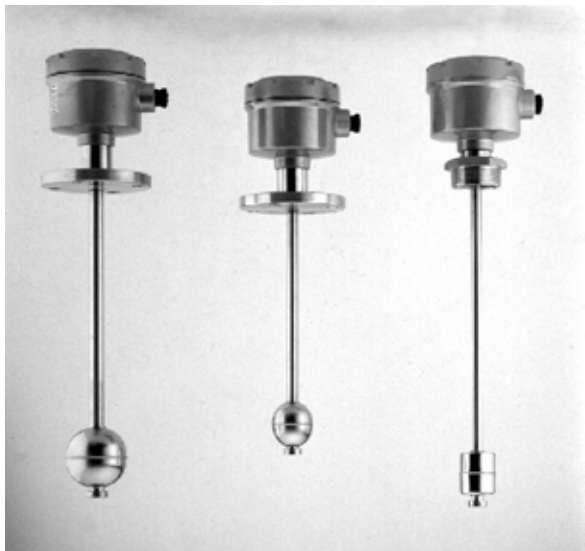
**Operating Temp.:** PP tube    -10 °C ~ 80 °C  
 PVDF tube    -20 °C ~ 120 °C  
 SUS tube    -20 °C ~ 120 °C

Order No.	Connection	Tube size & Material (D)	Float type & Material	Suitable S.G.	Measuring Range
FG□-AR4	3/8"PF	φ14    SUS 304 SUS 316	S3: φ45x55    SUS 316 S4: φ52x52    SUS 316	>0.65 >0.55	FGA...Max.6M FGB...Max.6M
FG□-AR7	3/8"PF	φ17.2    SUS 304	S5: φ75x73    SUS 304 S6: φ75x108	>0.61 >0.5	FGA...Max.6M FGB...Max.6M
FGB-CR5P3	3/4"PF	φ17.2    PP	P3: φ48x45    PP	>0.6	FGB...Max.6M
FGB-CR6F4	3/4"PF	φ16    PVDF	F4: φ48x62    PVDF	>0.75	FGB...Max.6M

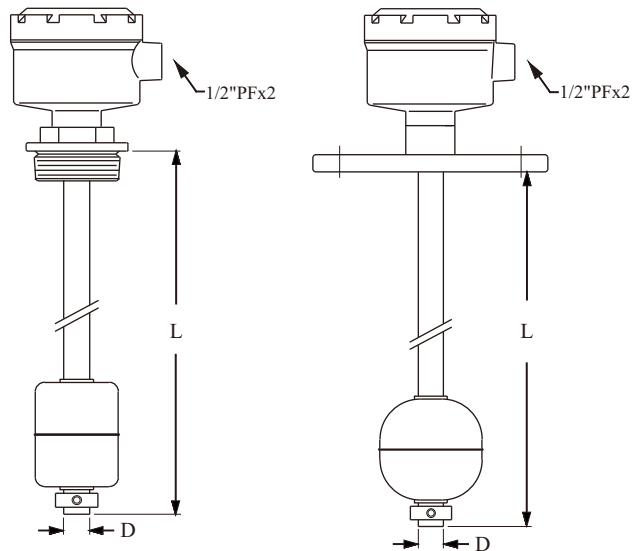
MODEL : FG □ - □ □ □ □ □ □ □ □



# STANDARD



\* B type housing, dimension see page 2.



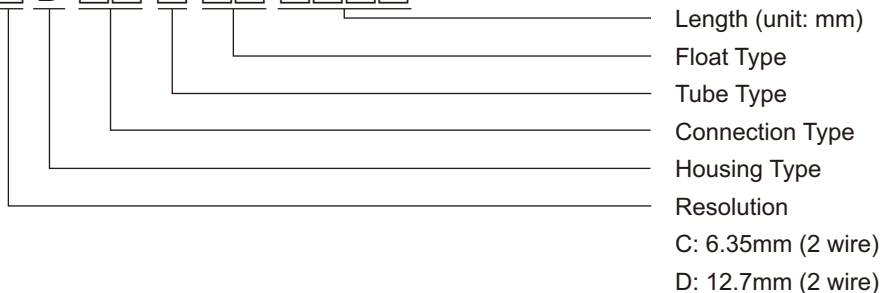
## ● SPECIFICATION

**Terminal Housing:** Aluminum, IP65  
**Output:** 4~20mA, 2-wire  
**Total resistance :** 1MΩ (Max.)

**Operating Temperature:** -20 ~ 120 °C  
**Ambient Temperature:** 0~70 °C

Order No.	Connection	Tube size & Material (D)	Float type & Material	Suitable S.G.	Measuring Range
FG□BFQ4	2"PT	φ14 SUS 316 SUS 304	S3: φ45x55 SUS 316 S4: φ52x52 SUS 316	>0.65 >0.55	FGC/D...Max.6M
FG□BGN4	2-1/2"x10kg/cm <sup>2</sup>	φ14 SUS 316 SUS 304	S3: φ45x55 SUS 316 S4: φ52x52 SUS 316	>0.65 >0.55	FGC/D...Max.6M
FGDBHN7	3"x10kg/cm <sup>2</sup>	φ17.2 SUS 304	S5: φ75x73 SUS 304 S6: φ75x108 SUS 304	>0.61 >0.5	FGD...Max.6M
FGDBIQ7	4"PT	φ17.2 SUS 304	S8: φ100x100 SUS 304	>0.5	FGD...Max.6M
FGDBKN8 FGDBKN9	6"x10kg/cm <sup>2</sup>	φ21.7 φ27.2 SUS 304	S9: φ150x150 SUS 304	>0.45	FGD...Max.12M

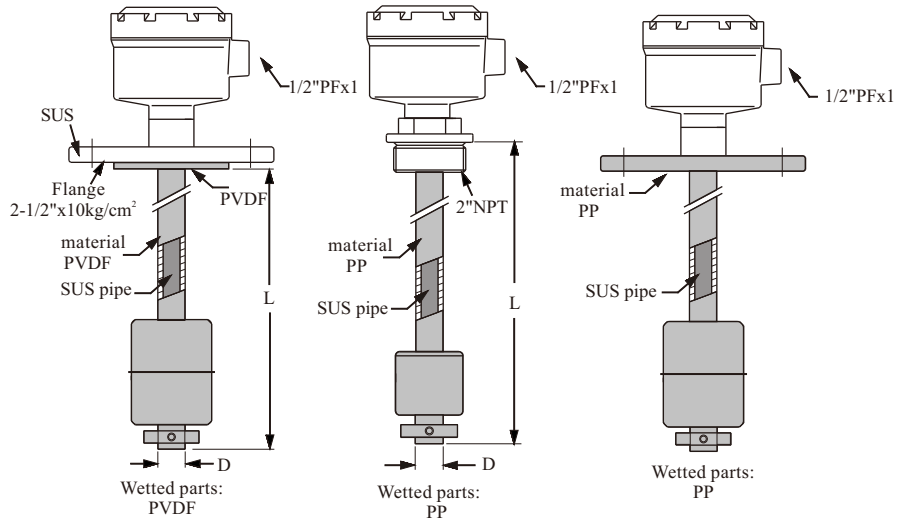
MODEL : FG□ B □ □ □ □ □ □ □ □



# ANTI-CORROSIVE



★ C type housing, dimension see page 2.



## ● SPECIFICATIONS

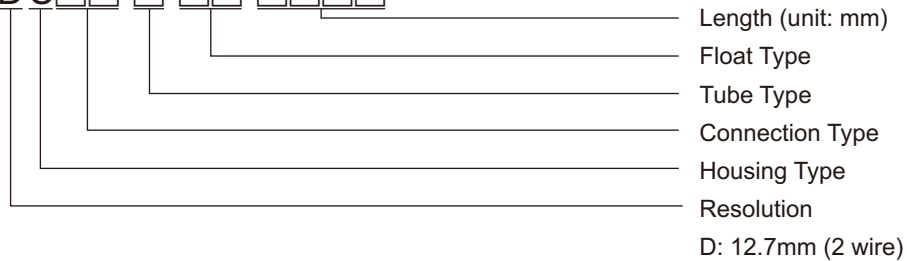
**Terminal Housing:** PP +Fiber, IP65  
**Output:** 4~20mA, 2-wire  
**Ambient Temperature:** 0~70 °C

**Operating Temperature:** PP jacket tube-10 ~ 80 °C  
 PVDF jacket tube -20 ~ 120 °C  
**Total resistance:** 1MΩ (Max.)

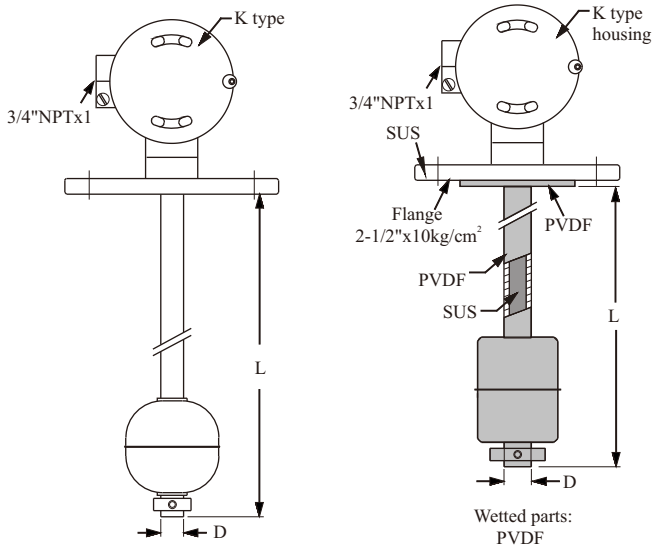
Order No.	Connecting	Tube size & Material (D)	Float type & Material	Suitable S.G.	Measuring Range
FGDCFQ5P3	2"PT	φ17.2 PP	P3: φ48x45 PP	>0.55	FGD...Max.6M
FGDCFQ6F4	2"PT	φ16 PVDF	F4: φ48x62 PVDF	>0.75	FGD...Max.6M
FGDCGN5P3	2-1/2"x10kg/cm <sup>2</sup>	φ17.2 PP	P3: φ48x45 PP	>0.6	FGD...Max.6M
FGDCGN6F4	2-1/2"x10kg/cm <sup>2</sup>	φ16 PVDF	F4: φ48x62 PVDF	>0.75	FGD...Max.6M

Every unit is protected by a PP or PVDF flange to prevent the sensing rod from corrosion.

MODEL : FG DC



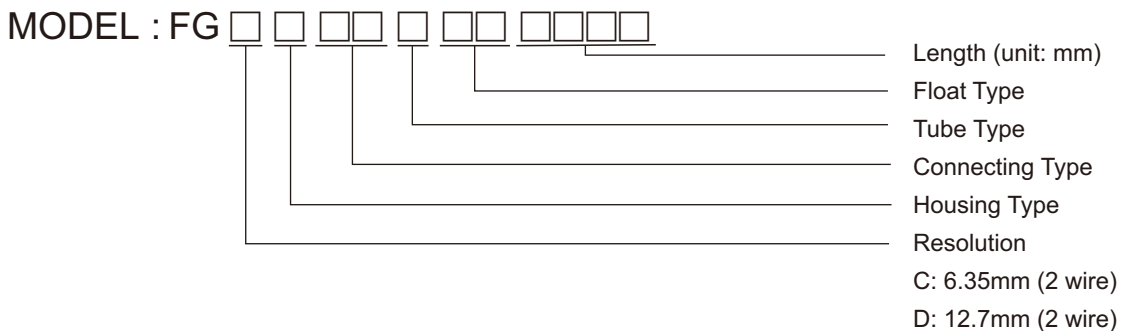
\*K type ATEX Explosion proof enclosure can be selected (see p2).



● SPECIFICATION

**Terminal Housing:** K type — Aluminum, ATEX Ex d IIB T6      **Operating Temperature:** PP tube -10 ~ 80°C  
**Output:** 4~20mA, 2-wire      PVDF tube -20 ~ 120°C  
**Ambient Temperature:** 0~70 °C      SUS tube -20 ~ 120°C  
**Total resistance:** 1MΩ (Max.)

Order No.	Connection	Tube size & Material (D)	Float type & Material	Suitable S.G.	Measuring Range
FG□KFQ4	2"PT	φ14 SUS 304	S4: φ52x52 SUS 316	>0.55	FGA/B...Max.6M FGC/D...Max.6M
FG□KGN4	2-1/2"x10kg/cm <sup>2</sup>	φ14 SUS 304	S4: φ52x52 SUS 316	>0.55	FGA/B...Max.6M FGC/D...Max.6M
FGDKHN7	3"x10kg/cm <sup>2</sup>	φ17.2 SUS 304	S6: φ75x108 SUS 304	>0.5	FGD...Max.6M
FGDKIQ4	4"PT	φ17.2 SUS 304	S8: φ100x100 SUS 304	>0.5	FGD...Max.6M
FGDKFQ5P3	2"PT	φ17.2 PP	P3: φ48x45 PP	>0.6	FGD...Max.6M
FGDKFQ6F4	2"PT	φ16 PVDF	F4: φ48x62 PVDF	>0.75	FGD...Max.6M
FGDKGN5P3	2-1/2"x10kg/cm <sup>2</sup>	φ17.2 PP	P3: φ48x45 PP	>0.6	FGD...Max.6M
FGDKGN6F4	2-1/2"x10kg/cm <sup>2</sup>	φ16 PVDF	F4: φ48x62 PVDF	>0.75	FGD...Max.6M





# HOW TO ORDER

**FG D C FQ 6 F1 1 5 0 0 (P)**

**RESOLUTION**

- A : 6.35mm (3-wire)
- B : 12.7mm (3-wire)
- C : 6.35mm (2-wire)
- D : 12.7mm (2-wire)

**TERMINAL HOUSING (see page 2)**

- B : Aluminum - : None
- C : P.P S : Others
- D : Aluminum X : Aluminum
- E : AL.
- G : PC
- K : Aluminum
- N : SUS
- F : Aluminum

**CONNECTION**

Dimension		Specification	
A: 3/8" (10A)	H: 3" (80A)	M: 5 Kg/cm <sup>2</sup>	Z :PN40
B: 1/2" (15A)	I : 4" (100A)	N:10 Kg/cm <sup>2</sup>	Q: PT
C: 3/4" (20A)	J : 5" (125A)	O: 150 Lbs	R : PF(G)
D: 1" (25A)	K: 6" (150A)	P: 300 Lbs	T : BSP
E: 1 1/2" (40A)	4 : 7" (175A)	W:PN10	U : NPT
F: 2" (50A)	5 : 8" (200A)	X :PN16	V : GAS
G: 2 1/2" (65A)		Y :PN25	S : Others

※ Tri-Clamp 1-1/2"=ES; 2"=FS

**TUBE TYPE & MATERIAL**

- 0:  $\phi$ 12.7 (SUS304) C:  $\phi$ 12.7 (SUS316)
- Only available for resolution 12.7mm. Only available for resolution 12.7mm.
- 4:  $\phi$ 14 (SUS304) B:  $\phi$ 14 (SUS316)
- 5:  $\phi$ 17.2 (P.P.) D:  $\phi$ 17.2 (SUS316)
- 6:  $\phi$ 16 (PVDF) E:  $\phi$ 21.7 (SUS316)
- 7:  $\phi$ 17.2 (SUS304) F:  $\phi$ 27.2 (SUS316)
- 8:  $\phi$ 21.7 (SUS304)
- 9:  $\phi$ 27.2 (SUS304)

※ For 5&6,measuring range>500mm,only  $\pm$  12.7mm resolution is available.

**FLOAT TYPE (see page 2)**

Material	Type					
	Plastic	P3	F4			
SUS	S3	S4	S5	S6	S8	S9

- : None

**LENGTH (UNIT : mm)**

- 0500: 500mm up ※ 500mm per Unit
- 1000: 501~1000mm
- 1500: 1001~1500mm

**PIPE SHIELD**

- ★ Total product length's margin of error  $\pm$  5mm.
- ★ Characteristics, specifications and dimensions are subject to change .



# HOW TO ORDER

**Order No. FG7 D D FQ 6 F1 1 5 0 0 (L)**

**EXPLOSION PROOF** \_\_\_\_\_

**RESOLUTION** \_\_\_\_\_

- A : 6.35mm (3-wire)
- B : 12.7mm (3-wire)
- C : 6.35mm (2-wire)
- D : 12.7mm (2-wire)

**TERMINAL HOUSING (see page 2)** \_\_\_\_\_

- D: AL
- N: SUS

**CONNECTION** \_\_\_\_\_

Dimension	Specification
A : 3/8" (10A)    H: 3" (80A)	M: 5 Kg/cm <sup>2</sup> Z :PN40
B : 1/2" (15A)    I: 4" (100A)	N:10 Kg/cm <sup>2</sup> Q: PT
C : 3/4" (20A)    J: 5" (125A)	O:150 Lbs        R: PF(G)
D : 1" (25A)        K: 6" (150A)	P: 300 Lbs        T : BSP
E : 1 1/2" (40A)    4: 7" (175A)	W:PN10            U: NPT
F : 2" (50A)        5: 8" (200A)	X :PN16           V: GAS
G : 2 1/2" (65A)	Y :PN25            S: Others

**TUBE TYPE & MATERIAL** \_\_\_\_\_

- |                                                                                                                                                                                                                                               |                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 0: φ12.7 (SUS)<br>Only available for resolution 12.7mm.<br>4: φ14 (SUS)<br>5: φ17.2 (P.P.)<br>6: φ16 (PVDF)<br>7: φ17.2 (SUS)<br>8: φ21.7 (SUS)<br>9: φ27.2 (SUS)<br>※ For 5&6, measuring range>500mm, only ± 12.7mm resolution is available. | C: φ12.7 (SUS316)<br>Only available for resolution 12.7mm.<br>B: φ14 (SUS316)<br>D: φ17.2 (SUS316)<br>E: φ21.7 (SUS316)<br>F: φ27.2 (SUS316) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|

**FLOAT TYPE (see page 2)** \_\_\_\_\_

Material	Type					
<b>Plastic</b>	P3	F4				
<b>SUS</b>	S3	S4	S5	S6	S8	S9

**LENGTH (UNIT : mm)** \_\_\_\_\_

- 0500:** 500mm up
- 1000:** 501~1000mm
- 1500:** 1001~1500mm        ※ 500mm per Unit
- ⋮

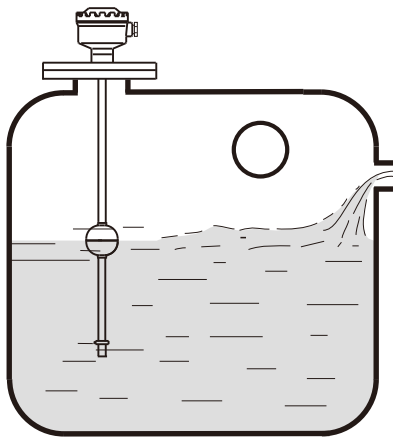
**TAG** \_\_\_\_\_

- ★ Total product length's margin of error ± 5mm.
- ★ Characteristics, specifications and dimensions are subject to change.

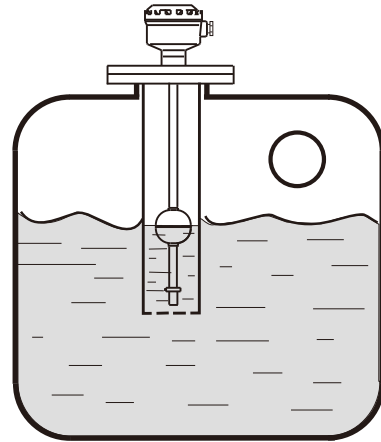
# INSTALLATION

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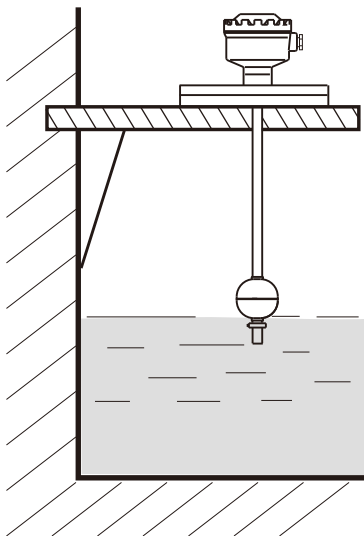
- ▶ The float level transmitter should be mounted far away from the inlet. Any rigorous liquid turbulence will produce error output signals.



- ▶ A pipe shield or an equivalent device can help normalize the indicator actuation especially when an agitator is present.



- ▶ Another useful alternative is an L type support frame when the level indicator is mounted in concrete wall tank as figure below.



- ▶ It is recommended to select the standpipe with diameter (d) larger than the float for the installation process.

