

Authorized Distributor



Magnetic Float Level Transmitter

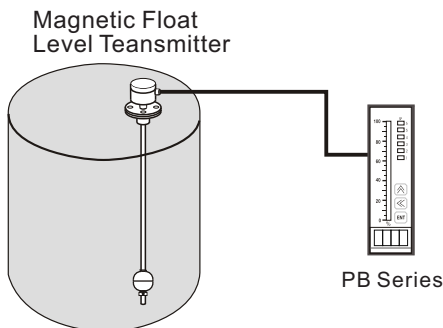


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INTRODUCTION

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 to most industries.



FEATURES

- Optional TAB-2100 (see p4) 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)
- Explosion Proof certificate available
- Marine certificate: ABS, BV, LR, DNV.GL, CR available

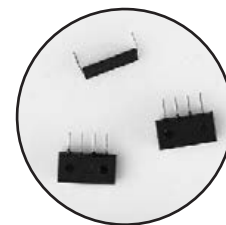


Fig.1
Sensing Element

APPLICATIONS

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

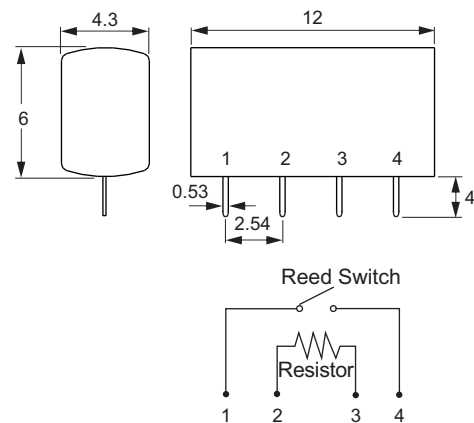
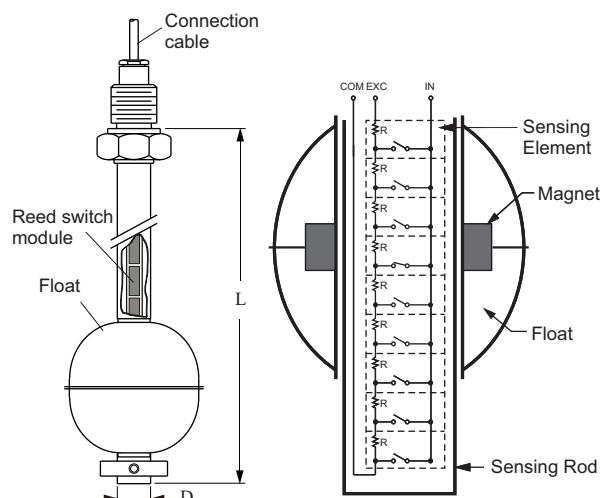


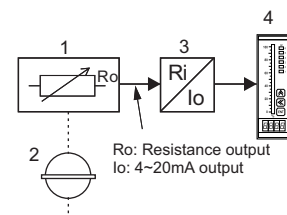
Fig.2
Sensing Element Size

CONSTRUCTION

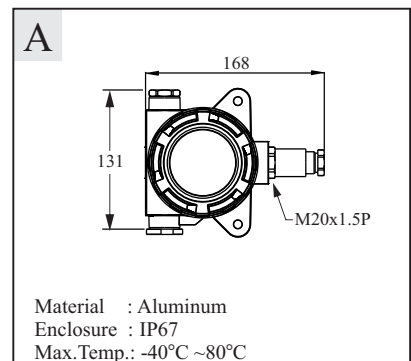
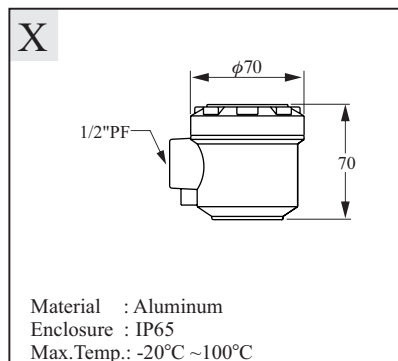
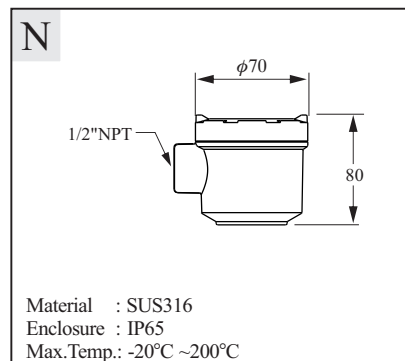
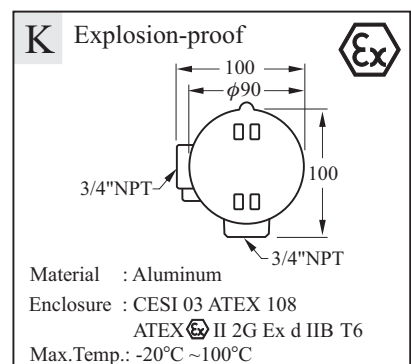
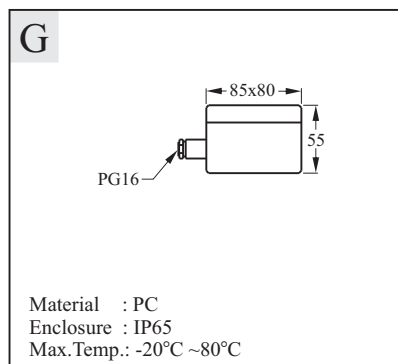
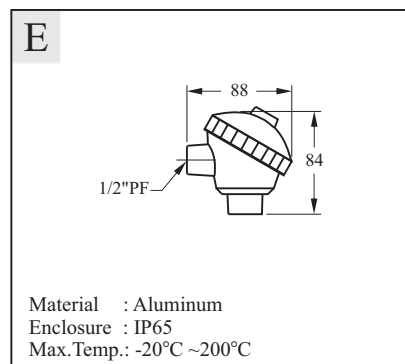
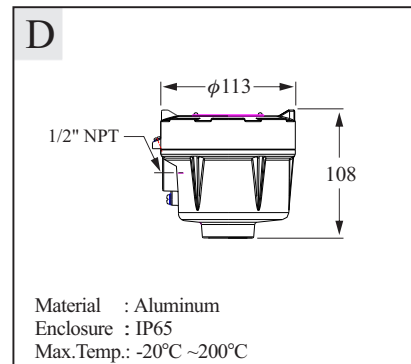
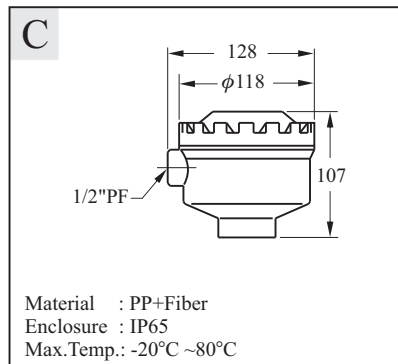
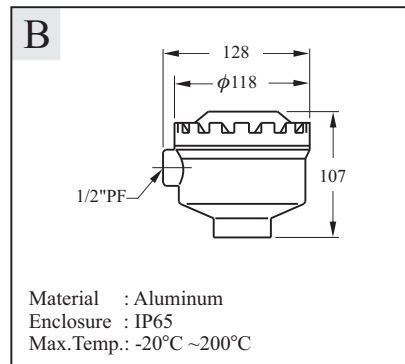


SCHEMATIC DIAGRAMS

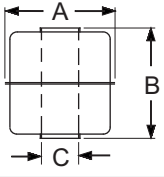
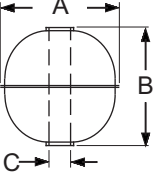
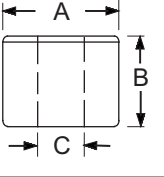
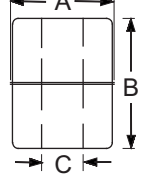
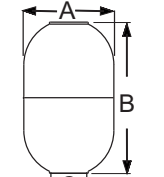
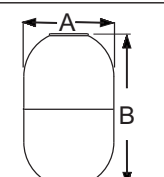
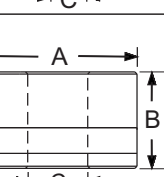
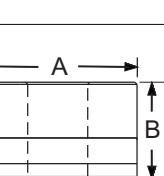
1. Sensing Rod
2. Float
3. Transducer
4. Display Unit



HOUSING DIMENSIONS



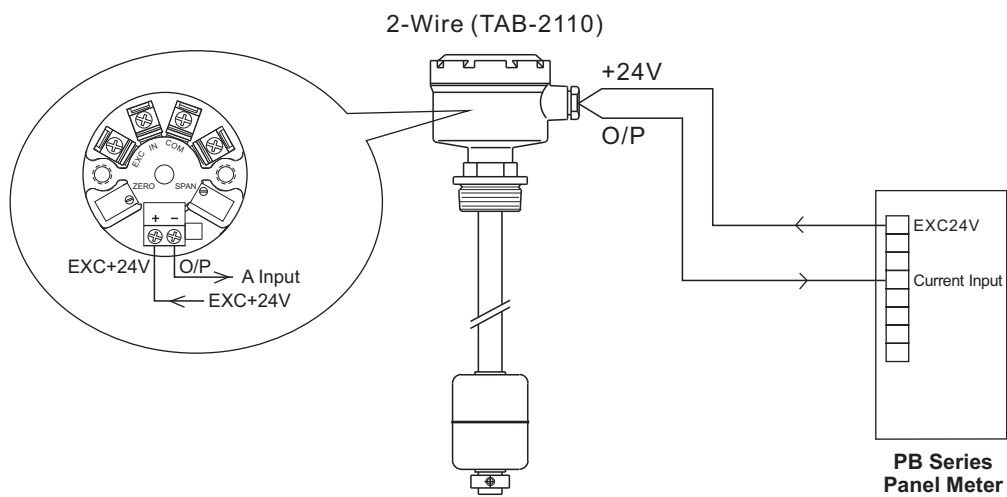
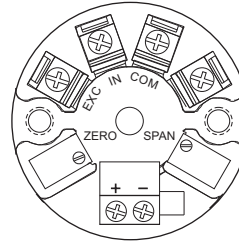
FLOAT SPECIFICATIONS

Dimension	Type	AxBxC(mm)	S.G.	Max. Pressure (kg/cm ²)	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 SUS 316	200°C	165
	S4	52x52x15	0.55	30	SUS 316	200°C	33.4
	S5	75x73x19	0.61	30	SUS 304 SUS 316	200°C	105
	S8	100x100x20	0.5	15	SUS 304 SUS 316	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
	R6	72x118x28	0.62	22.5	SUS316	200°C	193
	RF	72x118x28	0.95	22.5	SUS316	200°C	296
	P9	74x45x28	0.64	5	PP	80°C	111
	PI	74x45x28	0.96	5	PP	80°C	165

TRANSDUCER

MODEL: TAB-2110 (TAXAA1X) Transducer

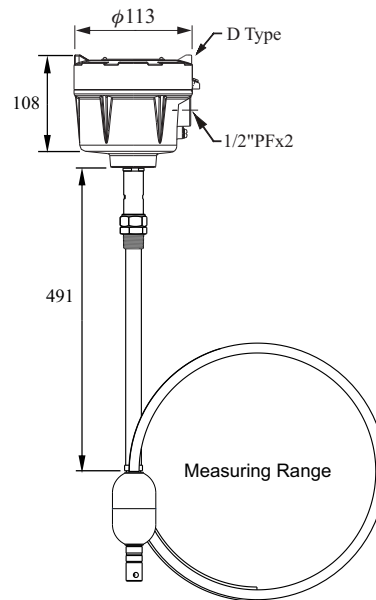
Power Supply	: 12~36Vdc
Output Current	: Loop power 4~20mA
Load Resistance	: $RL(\text{Max})=50(\text{Vs}-12)$
Ambient Temperature	: -40~80°C
Ambient Humidity	: 0~80% RH
Accuracy	: $\pm 0.1\%(25^\circ\text{C})$
Temperature Effect	: 0.01%F.S./°C
Adjustment Range	: Span Adjustment 20% FS Zero Adjustment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



FLEXIBLE MODEL DIGITALE DISPLAY TYPE / ECONOMICAL TYPE

MODEL: Flexible Magnetic Float Level Transmitter (Economical type)

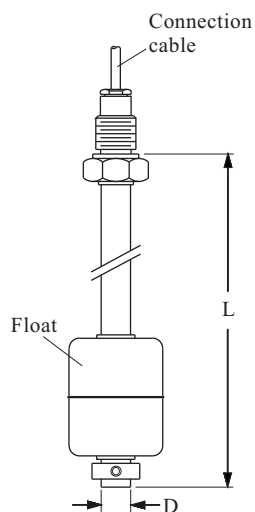
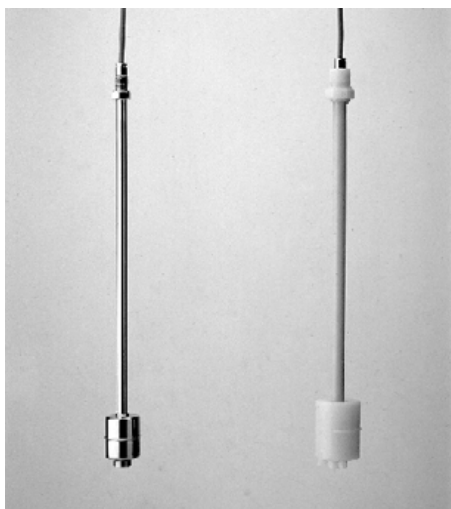
Power Supply	: 12~36Vdc
Measuring range	: 3000mm~30000mm
Analog output	: 4~20mA loop power
Resolution	: 12.7mm
Load impedance	: RL (Max.) = 50 (Vs-12)
Accuracy	: $\pm 0.1\%$ (25°C)
Ambient temp.	: -40~80°C
Operating temp.	: -40~80°C
IP rating	: IP65



FEATURE

- Cover protection for reed module, to prevent any damage during transportation.
- Not effect by temperature and pressure variaion.
- Easy to record and set up with digital display.
- Easy to install, need not to do periodic calibration and maintenance .

ECONOMICAL



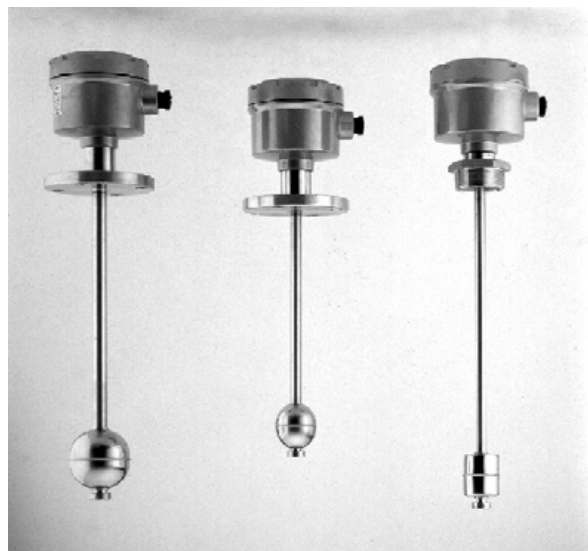
● SPECIFICATIONS

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

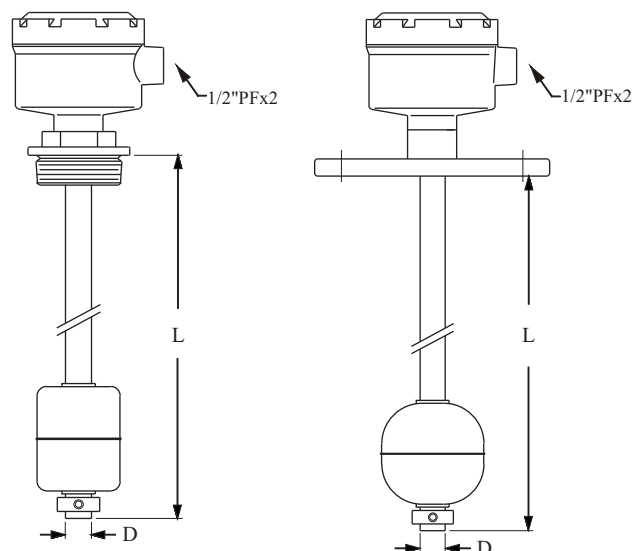
Operating Temp.: PP tube -10 °C ~ 80 °C
 PVDF tube -20 °C ~ 120 °C
 SUS tube -20 °C ~ 120 °C

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 SUS 316	>0.61 >0.5	FGA...Max.6M FGB...Max.6M
			S6: φ75x108 SUS 304 SUS 316		
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

STANDARD



★ B type housing, dimension see page 2.



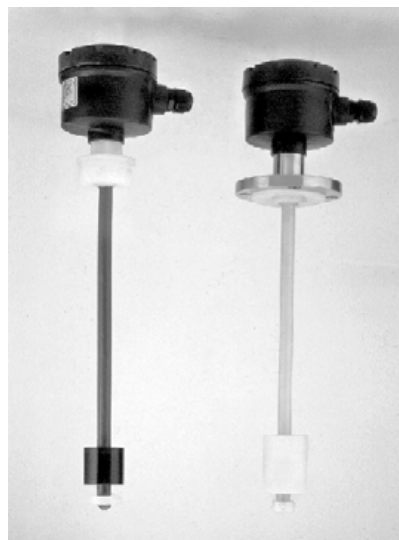
● SPECIFICATION

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

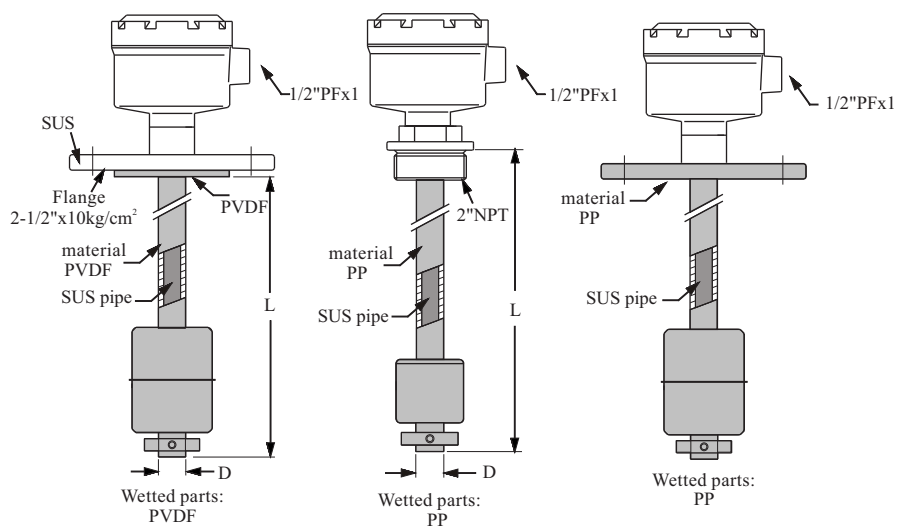
Operating Temperature: -20 ~ 120 °C
Ambient Temperature: 0 ~ 70 °C

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 ²	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 ²	φ17.2 SUS 304	S5: φ75x73 SUS 304 SUS 316	>0.61 >0.5	FGD...Max.6M
			S6: φ75x108 SUS 304 SUS 316		
FGDBIQ7	4"PT	φ17.2 SUS 304	S8: φ100x100 SUS 304 SUS 316	>0.5	FGD...Max.6M
FGDBKN8 FGDBKN9	6"x10kg/cm ²	φ21.7 φ27.2 SUS 304	S9: φ150x150 SUS 304	>0.45	FGD...Max.12M

ANTI-CORROSIVE



★ C type housing, dimension see page 2.



● SPECIFICATIONS

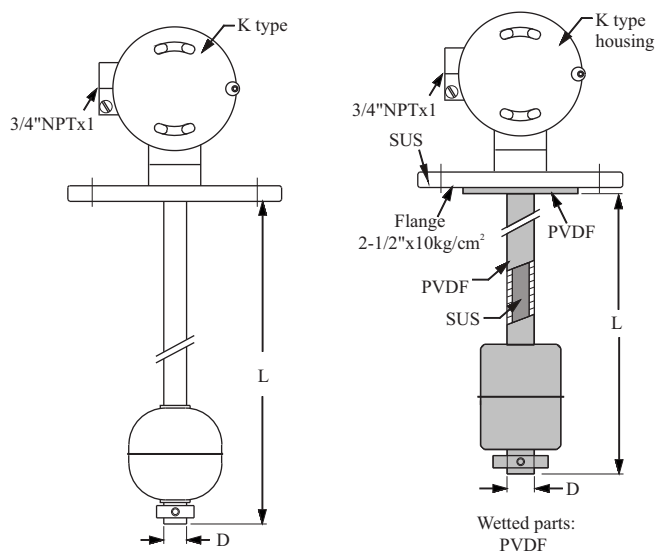
Terminal Housing: PP +Fiber, IP65
Output: 4 ~ 20mA, 2-wire
Ambient Temperature: 0~70 °C

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 ²	φ17.2 PP	P3: φ48x45 PP	>0.6	FGD...Max.6M
FGDCGN6F4	2-1/2"x10kg/cm ²	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.

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



● SPECIFICATION

Terminal Housing: K type --- Aluminum, ATEX Ex d IIB T6

Output: 4 ~ 20mA, 2-wire

Ambient Temperature: 0 ~ 70 °C

Total resistance: 1MΩ (Max.)

Operating Temperature: PP tube -10 ~ 80°C

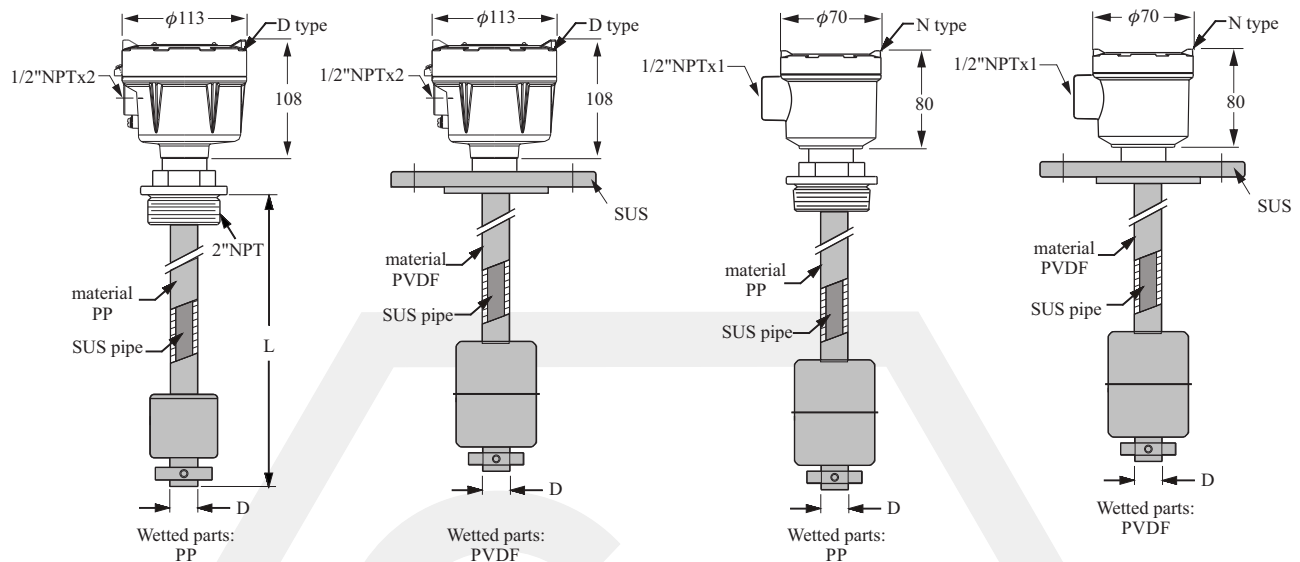
PVDF tube -20 ~ 120°C

SUS tube -20 ~ 120°C

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 ²	φ14	SUS 304	S4: φ52x52	SUS 316	>0.55	FGA/B...Max.6M FGC/D...Max.6M
FGDKHN7	3"x10kg/cm ²	φ17.2	SUS 304	S6: φ75x108	SUS 304 SUS 316	>0.5	FGD...Max.6M
FGDKIQ4	4"PT	φ17.2	SUS 304	S8: φ100x100	SUS 304 SUS 316	>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 ²	φ17.2	PP	P3: φ48x45	PP	>0.6	FGD...Max.6M
FGDKGN6F4	2-1/2"x10kg/cm ²	φ16	PVDF	F4: φ48x62	PVDF	>0.75	FGD...Max.6M

ENCLOSURE EXPLOSION PROOF

★ D or N type housing can be selected.



● SPECIFICATIONS

Terminal Housing: D type --- Aluminum
N type --- SUS

Output: 4 ~ 20mA, 2-wire

Ambientt: 0~70 °C

Total Resistance: 1MΩ (Max.)

Operation Temperature: PP tube -10 ~ 80 °C
PVDF tube -20 ~ 120 °C

MODEL NO. FG7	Connecting	Tube size (D) & Material	Float type & Material	Suitable S.G.	Measuring Range
FG7□DFQ4	2"PT	φ14 SUS 316	S3: φ45x55 SUS 316	>0.65	FG7...Max.3M
FG7□DGN4	2-1/2"x10kg/cm ²	φ14 SUS 316	S3: φ45x55 SUS 316	>0.65	FG7...Max.3M
FG7DDHN7	3"x10kg/cm ²	φ17.2 SUS 304	S5: φ75x73 SUS 304 SUS 316	>0.61	FG7...Max.6M
FG7DDIQ4	4"PT	φ17.2 SUS 304	S8: φ100x100 SUS 304 SUS 316	>0.5	FG7...Max.6M
FG7DDKN8 FG7DDKN9 FG7DDKN8 FG7DDKN9	6"x10kg/cm ²	φ21.7 φ27.2 SUS 304	S9: φ150x150 SUS 304	>0.45	FG7...Max.6M
FG7DDFQ5P3	2"PT	φ17.2 PP	P3: φ48x45 PP	>0.6	FG7...Max.6M
FG7DDFQ6F4	2"PT	φ16 PVDF	F4: φ48x62 PVDF	>0.75	FG7...Max.6M
FG7DDGN5P3	2-1/2"x10kg/cm ²	φ17.2 PP	P3: φ48x45 PP	>0.6	FG7...Max.6M
FG7DDGN6F4	2-1/2"x10kg/cm ²	φ16 PVDF	F4: φ48x62 PVDF	>0.75	FG7...Max.6M

MODEL NUMBER / ORDER CODE COMPARISON TABLE

Model Number	Order Code
FG□-AR4	FGX10100-A10AAA403CMA2B
FG□-AR7	FGX10100-A10AAA403CMA2D
FGB-CR5P3	FGX10100-B10AAA703E182D
FGB-CR6F4	FGX10100-AAA703E242C
FG□BFQ4	FGX10000-A1BAAB201CMA2B
FG□BGN4	FGX10000-A1BAKB442
FGBBHN7	FGX10000-A1BAKB542EMA2D
FGBBIQ7	FGX10000-A1BAKB701EMA2D
FGBBKN8	FGX10000-A1BAKB942EMA3A
FGBBKN9	FGX10000-A1BAKB942EMA3B
FGDCFQ5P3	FGX10000-B1CAAB201E182DP3
FGDCFQ6F4	FGX10000-B1CAAB201E242CF4
FGDCGN5P3	FGX10000-B1CAKB442E182DP3
FGDCGN6F4	FGX10000-B1CAKB442E242CF4
FG□KFQ4	FGX10000-A1KAAB201CMA2B
FG□KGN4	FGX10000-A1KAKB442CMA2B
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FGDKIQ4	FGX10000-A1KAAB701EMA2D
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FGDKFQ6F4	FGX10000-A1KAAB201E242CF4
FGDKGN5P3	FGX10000-A1KAKB442E182DP3
FGDKGN6F4	FGX10000-A1KAKB442E242CF4
FG7□DFQ4	FGX100□□-A1DAAB201CMB2BS3
FG7□DGN4	FGX100□□-A1DAKB442CMB2BS3
FG7DDHN7	FGX100□□-A1DAKB542EMA2DS5
FG7DDIQ4	FGX100□□-A1DAAB707EMA2DS8
FG7DDKN8	FGX100□□-A1DAKB942EMA3AS9
FG7DDKN9	FGX100□□-A1DAKB942EMA3BS9
FG7DDFQ5P3	FGX100□□-A1DAAB207E182DP3
FG7DDFQ6F4	FGX100□□-A1DAAB207E242CF4
FG7DDGN5P3	FGX100□□-A1DAKB442E182DP3
FG7DDGN6F4	FGX100□□-A1DAKB442E242CF4

ORDER INFORMATION

FGX1 ⁰⁵ ⁰⁶ ⁰⁷ ⁰⁸ - ⁰⁹ ¹⁰ ¹¹ ¹² ¹³ ¹⁴ ¹⁵ ¹⁶ ¹⁷ ¹⁸ ¹⁹ ²⁰ ²¹ ²² ²³ ²⁴ 00 ²⁷ 0 ²⁹ ³⁰ ³¹ ³² ³³

⁰⁵ ⁰⁶ Model

00: Standard
01: Economy type

⁰⁷ ⁰⁸ Certification

00: None B0: DNV-GL
1C: ATEX-Ex d C0: ABS
2C: IECEx-db E0: BV
5C: TS-Ex d F0: LR
7C: NEPSI-Ex d G0: CR
1D: ATEX-Ex tb

⁰⁹ ¹⁰ Probe type

A1: Rod type
A2: Flexible model
B1: Corrosion-proof rod type

¹¹ Housing type

0: Without housing
B: B type housing (Aluminum)
C: C type housing (PP)
D: D type housing (Aluminum)
E: Terminal head (Aluminum)
K: K type (Aluminum)
N: N type (stainless steel)

Connection

¹² ¹³

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

¹⁴ ¹⁵

A4: 3/8" D7: DN20
A5: 1/2" D8: DN25
A7: 3/4" D9: DN32
A8: 1" E1: DN40
B1: 1-1/2" E2: DN50
B2: 2" E3: DN65
B4: 2-1/2"
B5: 3"
B7: 4"
B8: 5"
B9: 6"

¹⁶ ¹⁷

01: PT male
03: PF male
07: NPT male
40: 5 kg/cm²
42: 10 kg/cm²
48: 150 Lbs
49: 300 Lbs
57: PN10
58: PN16

¹⁸ Resolution

C: 6.35mm
E: 12.7mm

(Next page)

FGX1 ⁰⁵ ⁰⁶ ⁰⁷ ⁰⁸ - ⁰⁹ ¹⁰ ¹¹ ¹² ¹³ ¹⁴ ¹⁵ ¹⁶ ¹⁷ ¹⁸ ¹⁹ ²⁰ ²¹ ²² ²³ ²⁴ 00 ²⁷ 0 ²⁹ ³⁰ ³¹ ³² ³³

¹⁹ ²⁰ **Probe material**

MA: SUS 304

MB: SUS 316

18: PP

24: PVDF

²¹ ²² **Probe diameter**

2A: ϕ 12.7mm

2D: ϕ 17.2mm

2B: ϕ 14.0mm

3A: ϕ 21.7mm

2C: ϕ 16.0mm

3B: ϕ 27.2mm

Note1: 2A only 12.7mm resolution is available.

Note2: 2D pp material & 2C PVDF material when measuring range>500mm only 12.7mm resolution is available.

²³ ²⁴ **Float**

00: None

S3: 45*55*15 E>0.65

S9: 150*150*30 E>0.45

P3: 48*45*18.5 E>0.6

S4: 52*52*15 E>0.55

F4: 48*62*18 E>0.75

P9: 74*45*28 E>0.64

S5: 75*73*20.5 E>0.65

R6: 72*118*28 E>0.62

PI : 74*45*28 E>0.96

S6: 75*108*20 E>0.5

RF: 72*118*28 E>0.95

S8: 100*100*20 E>0.5

²⁷ **Analog output**

B: 4~20mA

E: 3-wire resistance output

²⁹ **Material and surface roughness**

0: None

A: Ra < 0.3

B: Ra < 0.5

C: Ra < 0.8

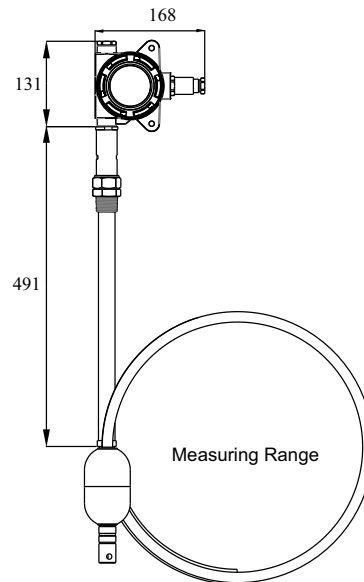
³⁰ ³¹ ³² ³³ **Length**

Code	Probe Length
0150~A300	150~30000mm

DISPLAY MODEL

MODEL: Flexible Magnetic Float Level Transmitter (Digital display type)

Power Supply: 12~36Vdc
Measuring range: 3000mm~30000mm
Analog output: Loop power 4~20mA
Resolution: 12.7mm
Digital communication: HART \ RS485
Load impedance: RL(Max)=50(Vs-12)
Accuracy: $\pm 0.1\%$ (25°C)
Ambient temp.: -40~80°C
Operating temp.: -40~80°C
IP rating: IP67



FEATURE

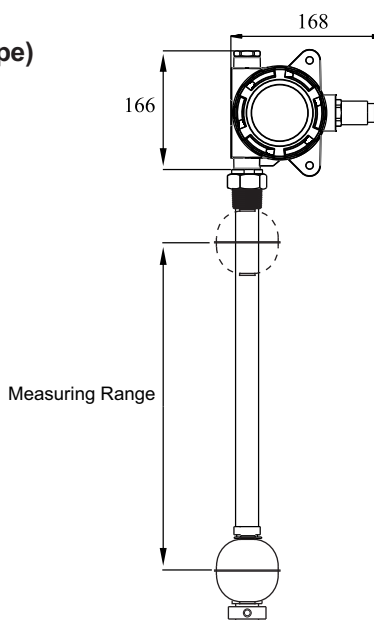
- Cover protection for reed module, to prevent any damage during transportation.
- Not effect by temperature and pressure variaion.
- Easy to record and set up with digital display.
- Easy to install, need not to do periodic calibration and maintenance.

EXPLOSION PROOF DISPLAY MODEL

MODEL: Explosion proof Magnetic Float Level Transmitter (Digital display type)

Power Supply: 12~36 Vdc
Measuring range: 150mm~3000mm
Analog output: 4~20mA, 2Wire(Loop power)
Resolution: 6.35mm / 12.7mm
Digital communication: HART/RS-485
Ambient temp.: -40~85°C
Operating temp.: -40~125°C
IP rating: IP67

NEPSI PROOF No.GYB16.1444X
Ex d IIC T3~T6 Gb



ORDER INFORMATION

	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	27	28	29	30	31	32	33	
FGX2																					0	0						
Model																												
00: Standar																												
Certification																												
00: None																												
7C: NEPSI-Exd																												
Probe type																												
A1: Rod type																												
A2: Flexible model																												
B1: Corrosion-proof rod type																												
Housing type																												
A: A type housing (Aluminum)																												
Connection																												
Flange																												
AK: JIS-FF																												
AN: ANSI-RF																												
AS: DIN-FF																												
Thread																												
AA: JIS																												
AC: ANSI																												
Resolution																												
C: 6.35mm																												
E: 12.7mm																												
Probe material																												
MA: SUS 304																												
MB: SUS 316																												
21: PTFE																												

(Next page)

FGX2

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Probe diameter

2A: ϕ 12.7mm

2B: ϕ 14.0mm

2C: ϕ 16.0mm

2D: ϕ 17.2mm

2B: ϕ 27.2mm

23

24

Float

S3: 45*55*15 E>0.65

S8: 100*100*20 E>0.5

P3: 48*45*18.5 E>0.6

S4: 52*52*15 E>0.55

S9: 150*150*30 E>0.45

P9: 74*45*28 E>0.64

S5: 75*73*20.5 E>0.65

F4: 48*62*18 E>0.75

S6: 75*108*20 E>0.5

R6: 72*118*28 E>0.62

27

Analog output

B: 4~20mA

C: 20~4mA

28

Digital output

0: None

B: RS-485

C: RS485 +PT100

E: HART

F: HART 7.3 +PT100

29

Material and surface roughness

0: None

A: Ra < 0.3

B: Ra < 0.5

C: Ra < 0.8

30

31

32

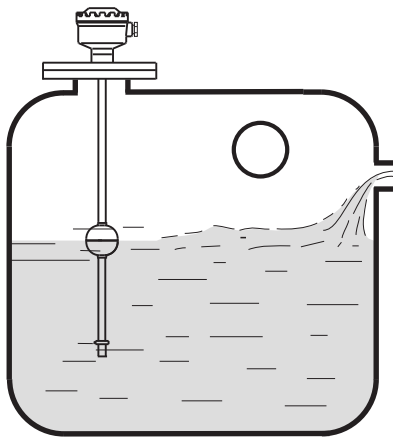
33

Length

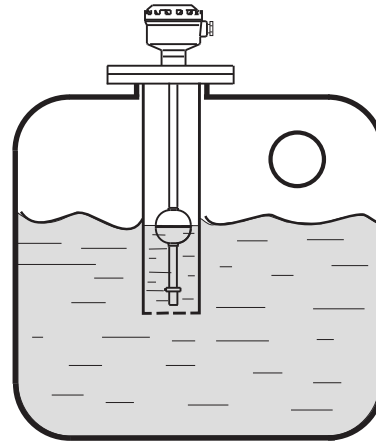
Code	Probe Length
0150~A300	150~30000mm

INSTALLATION

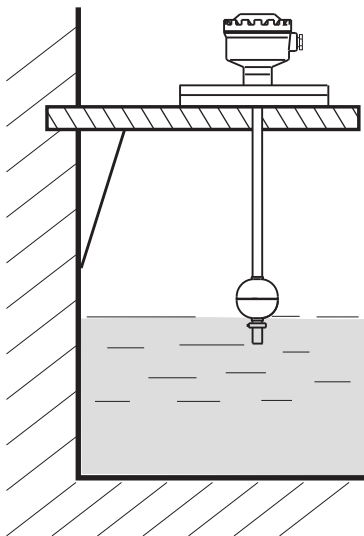
- The float level transmitter should be mounted far away from the inlet. Any rigorous liquid turbulence will produce error output signals.



- 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.

