



FineTek SIDE MOUNTING FLOAT SWITCH

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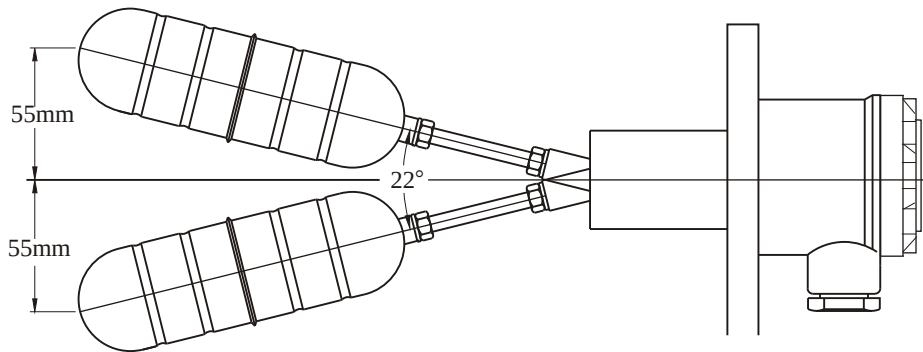
PRINCIPLE

Simple theory as liquid buoyancy is utilized for the main principle of this "FF" series. A change of liquid level correspondingly travels the float to extreme levels up and down. The reed switch is thus "NC" and "NO" exchanged as well as the permanent magnet on pivot will have mutual repulsion to the other one inside on the housing for like poles, which the Microswitch is button-pushed by magnet to states "NO" and "NC" exchanging likewise.

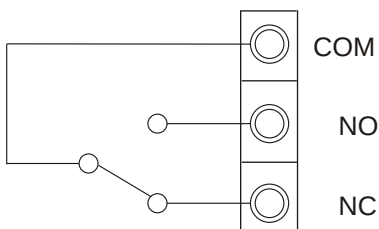
FEATURES

The side mounted float level sensor (FF series) are manufactured specifically for horizontal mounting in a tank or vessel. They work well as high or low level control.

1. Both MicroSwitch type and Reed Switch are available. The MicroSwitch type is usable even at ambient temp. of 100°C max.
2. Mounting flanges are custom-specifiable. (JIS, DIN, ANSI).
3. A rich variety of floats can be suited different specific gravity (S.G.) of liquid.(Custom-made)
4. Liquid-wetted party material can be selected for SUS304 or SUS316 as well as enclosure explosion proof model.



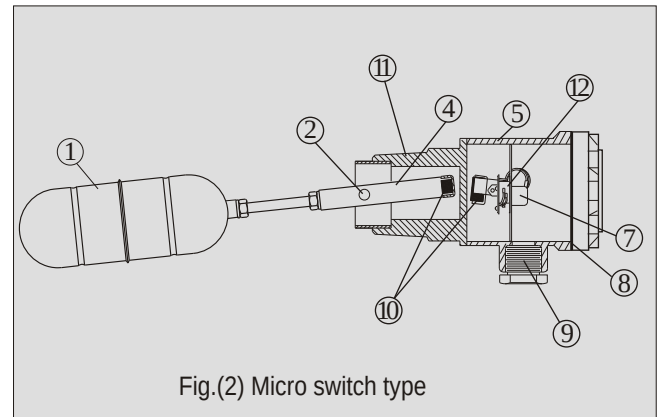
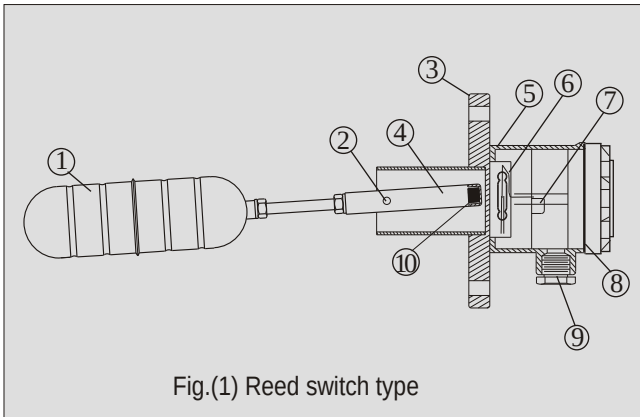
WIRING



REED SWITCH ---- 1A, 30W 220Vac/200Vdc (FF20, 45, 55, 8□)

MICRO SWITCH ---- 5A/250Vac

CONFIGURATION CUTTING DRAWINGS

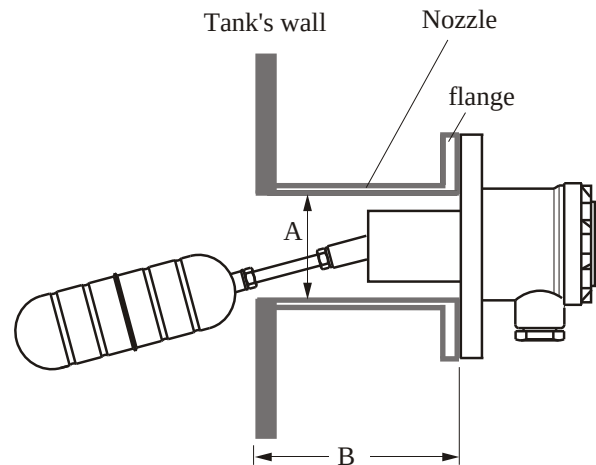


- | | | | |
|-----------|----------------|-------------|-----------------|
| 1. Float | 4. Pivot | 7. Terminal | 10. Magnet |
| 2. Shaft | 5. Housing | 8. O-ring | 11. Screw |
| 3. Flange | 6. Reed Switch | 9. Conduit | 12. Microswitch |

- The diameter and length of the connecting pipe (of a tank) are in a direct ratio.

UNIT: mm

Pipe dia. (A)	45-50	50-55	55-60	60-65	65-70
Length (B) (Max.)	130	140	150	160	170



SPECIFICATION

SPEC. MODEL	Operating Temp.	Electrical Contact	Contact Capacity	Contact Element	Housing Spec.	Applicable S.G.
FF10BHM	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.25
FF10CEM	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.65
FF10CEM....SA	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.65
FF10CEQ	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.65
FF10CEQ....SA	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.65
FF10CLO	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.65
FF10CLO....SA	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.65
FF10DFM	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.55
FF10DFM....SA	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.55
FF10DFQ	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.55
FF10DFQ....SA	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.55
FF10HEQ	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	SUS304 IP65	0.8
FF12CEM	-10°C~100°C	SPDT(1C)X2	5A/250Vac	Microswitch	SUS304 IP65	0.65
FF20BHM	-40°C~200°C	SPDT(1C)	1A, 60W 220Vac/200Vdc	Reed Switch	Aluminum Alloy IP65	0.25
FF20CEM	-40°C~200°C	SPDT(1C)	1A, 30W 220Vac/200Vdc	Reed Switch	Aluminum Alloy IP65	0.65
FF20CEQ	-40°C~200°C	SPDT(1C)	1A, 30W 220Vac/200Vdc	Reed Switch	Aluminum Alloy IP65	0.65
FF20DFM	-40°C~200°C	SPDT(1C)	1A, 30W 220Vac/200Vdc	Reed Switch	Aluminum Alloy IP65	0.55
FF20DFQ	-40°C~200°C	SPDT(1C)	1A, 30W 220Vac/200Vdc	Reed Switch	Aluminum Alloy IP65	0.55
FF20DLO	-40°C~200°C	SPDT(1C)	1A, 30W 220Vac/200Vdc	Reed Switch	Aluminum Alloy IP65	0.55
FF30A3Q	-10°C~120°C	SPST(1A)	1A, 50W 240Vac/200Vdc	Reed Switch	SUS304 IP65	0.7

※ Model no. with "....SA"certified by Germany GL, USAABS marine grade, the prices are subject to be different.
Please notify when placing an order if necessary.

SPECIFICATION

SPEC. MODEL	Operating Temp.	Electrical Contact	Contact Capacity	Contact Element	Housing Spec.	Applicable S.G.
FF40DFM	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.55
FF45DFM	-40°C~200°C	SPDT(1C)	1A, 60W 220Vac/200Vdc	Reed switch	Aluminum Alloy IP65	0.55
FF50DFM	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.55
FF50DFM....SA	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.55
FF55DFM	-40°C~200°C	SPDT(1C)	1A, 60W 220Vac/200Vdc	Reed switch	Aluminum Alloy IP65	0.55
FF62DFM	-10°C~350°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.55
FF70/71BHM	-10°C~100°C	SPDT(1C)	3A/250Vac	Microswitch	SUS316 Ex d IIB T3~T6	0.25
FF70/71CFM	-10°C~100°C	SPDT(1C)	3A/250Vac	Microswitch	SUS316 Ex d IIB T3~T6	0.65
FF70/71DFM	-10°C~100°C	SPDT(1C)	3A/250Vac	Microswitch	SUS316 Ex d IIB T3~T6	0.55
FF73GLO	-10°C~100°C	SPDT(1C)	3A/250Vac	Microswitch	SUS316 Ex d IIB T3~T6	0.7
FF75DFM	-10°C~100°C	SPDT(1C)	3A/250Vac	Microswitch	SUS316 Ex d IIB T3~T6	0.55
FF80EFM	-10°C~80°C	SPDT(1C)	1A, 30W 220Vac/200Vdc	Reed switch	PC IP65	0.60
FF81EFM	-10°C~80°C	SPDT(1C)	1A, 30W 220Vac/200Vdc	Reed switch	—	0.60
FF90GLO	-10°C~100°C	SPDT(1C)	5A/250Vac	Microswitch	Aluminum Alloy IP65	0.7

※ Model no. with "....SA"certified by Germany GL, USAABS marine grade, the prices are subject to be different.
Please notify when placing an order if necessary.

STANDARD

Order No. FF

Connecting Type (Refer to page 13)

Float Type

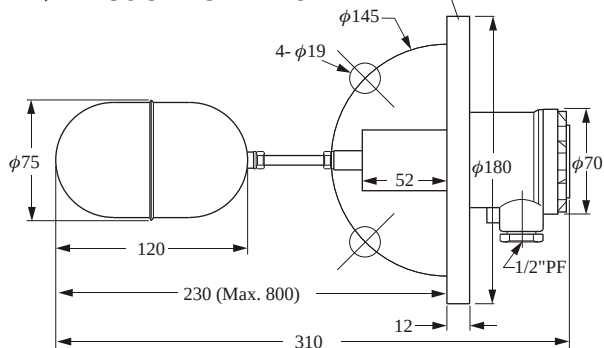
10: Single Switch

12: Dual Switch

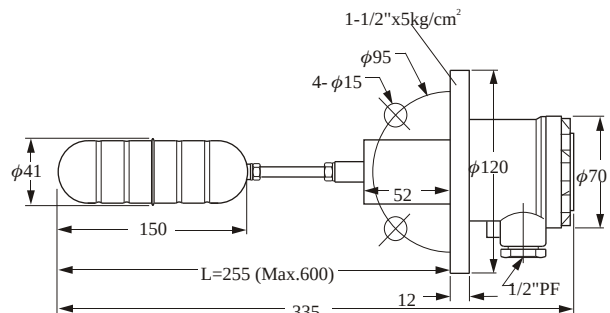


Order No. FF10BHM
Model No. LF10BHM

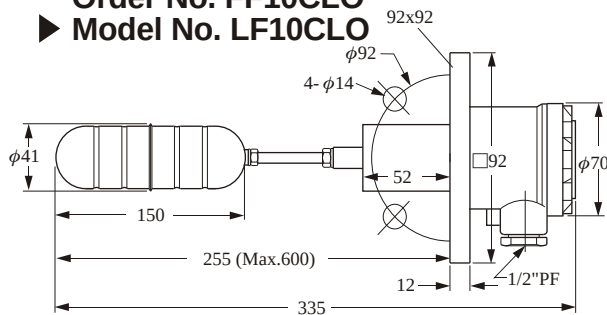
Flange
3"x5kg/cm²



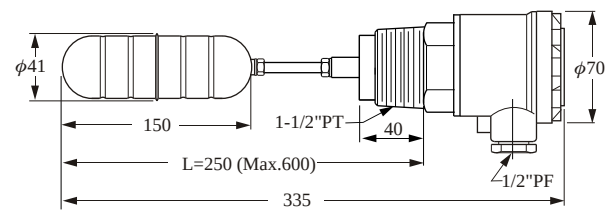
Order No. FF10CEM
Model No. LF10CEM



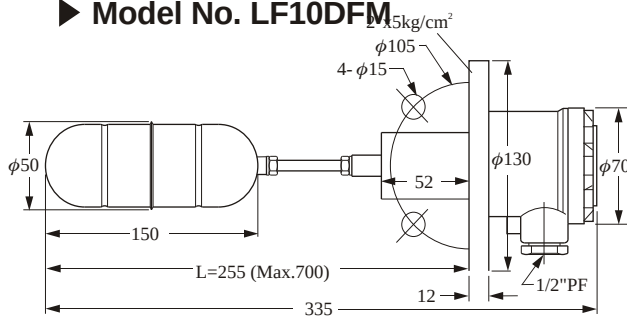
Order No. FF10CLO
Model No. LF10CLO



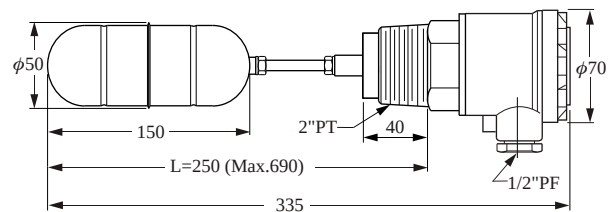
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Model No. LF10CEQ



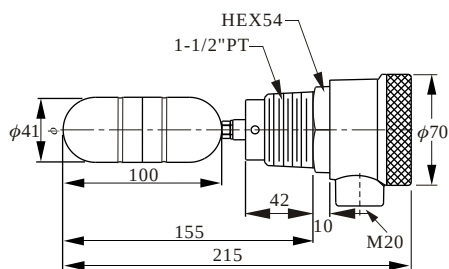
Order No. FF10DFM
Model No. LF10DFM



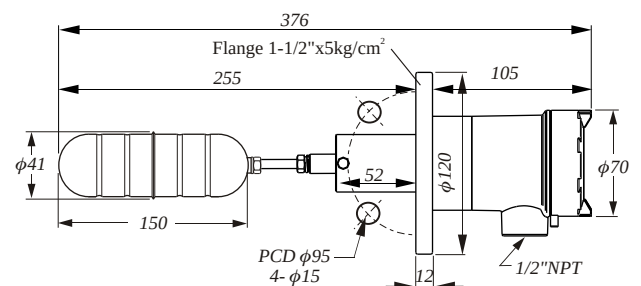
Order No. FF10DFQ
Model No. LF10DFQ



Order No. FF10HEQ
Model No. LF10HEQ



Order No. FF12CEM
Model No. LF12CEM



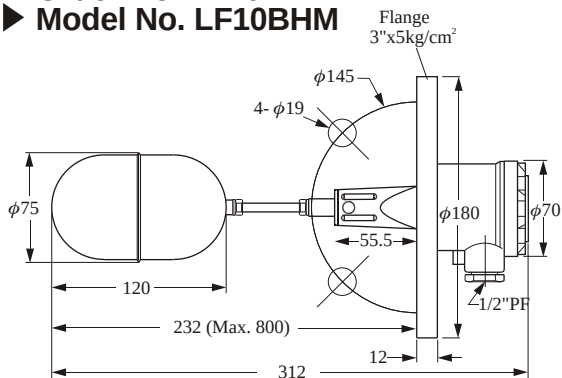
STANDARD FLANGE

Order No. F F13

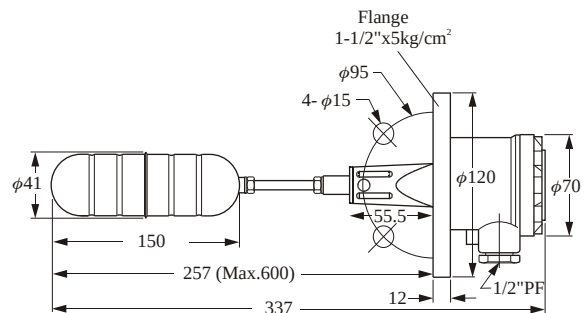


Connecting Type (Refer to page 13)
Float Type

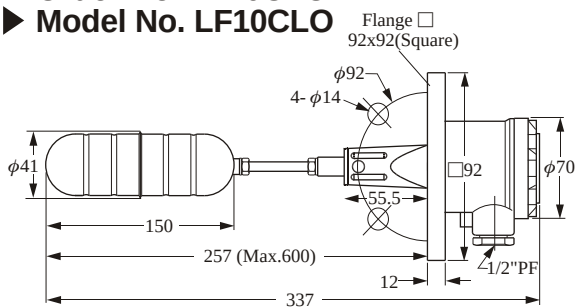
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Model No. LF10BHM



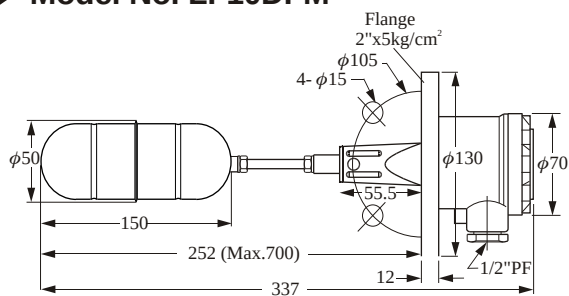
Order No. FF10CEM
Model No. LF10CEM



Order No. FF10CLO
Model No. LF10CLO



Order No. FF10DFM
Model No. LF10DFM



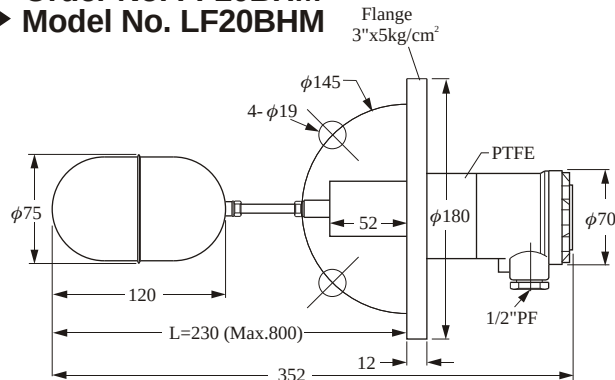
HIGH TEMP.

Order No. FF20 ☐ ☐

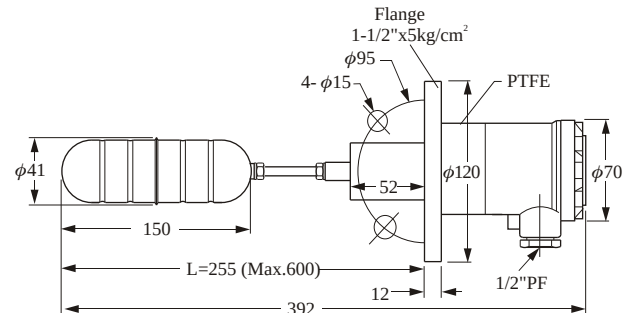
Connecting Type
(Refer to page 13)
Float Type



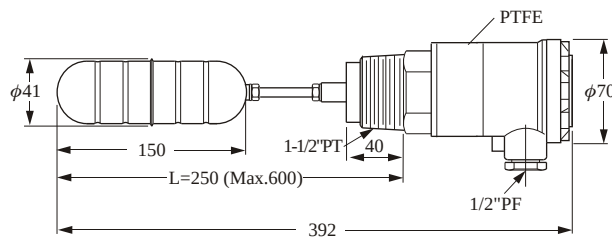
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Model No. LF20BHM



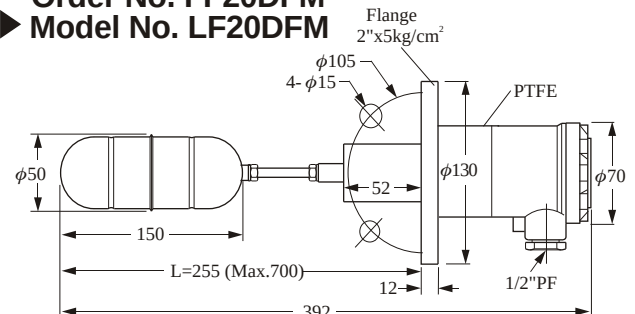
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Model No. LF20CEM



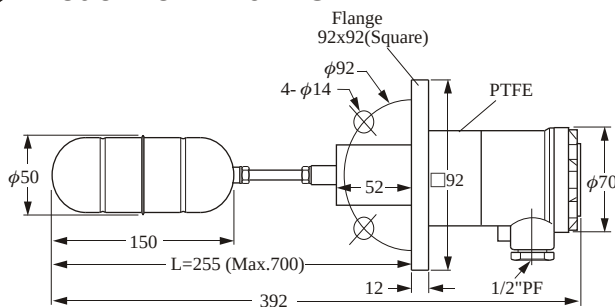
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Model No. LF20CEQ



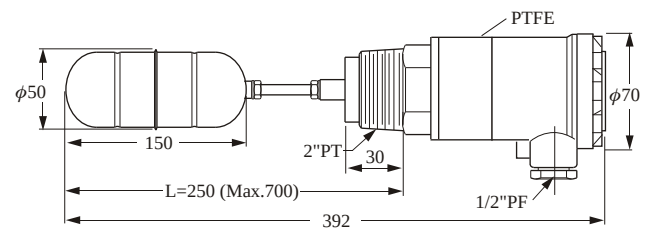
Order No. FF20DFM
Model No. LF20DFM



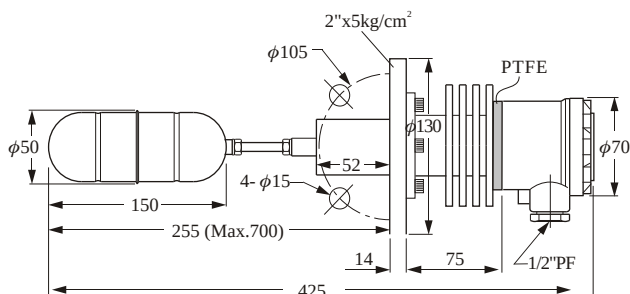
Order No. FF20DLO
Model No. LF20DLO



Order No. FF20DFQ
Model No. LF20DFQ



Order No. FF62DFM
Model No. LF62DFM



Order No. FF

Connecting Type (Refer to page 13)

Float Type

30: Mini Type

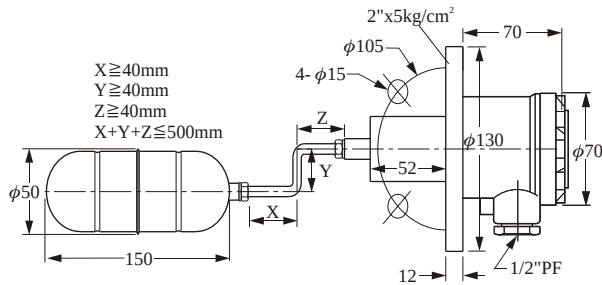
40: Double Angle Standard

45: Double Angle High Temp.

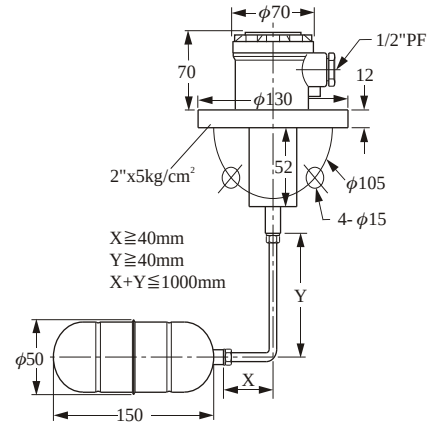
50: Vertical Standard

55: Vertical High Temp.

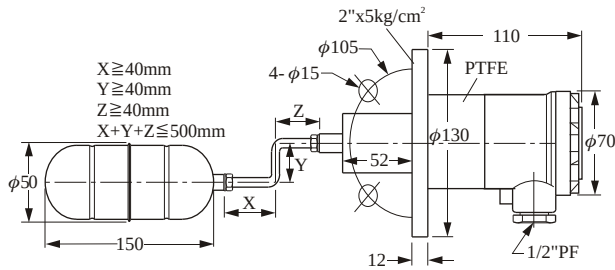
► Order No. FF40DFM
Model No. LF40DFM



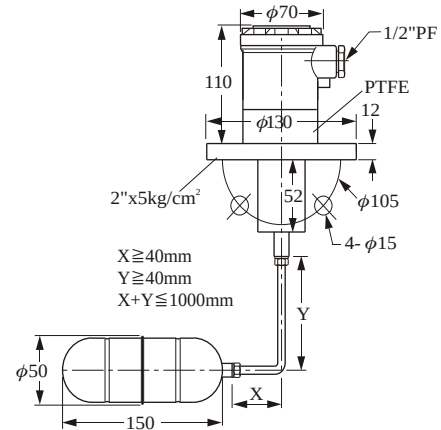
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Model No. LF50DFM



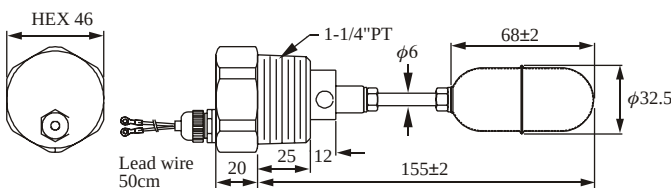
► Order No. FF45DFM
Model No. LF45DFM



► Order No. FF55DFM
Model No. LF55DFM



► Order No. FF30A3Q
Model No. LF30A3Q



ANTI-ACID / ALKALINE

PRINCIPLE

When the solid polypropylene float is flooded by a liquid, its weight is reduced by the buoyancy of the liquid and the float moves upward. Thus, a permanent magnet that built in the float actuates the reed switch in the sensor body to work the "NO" and "NC" exchanges.

FF80EFM --- PC Housing

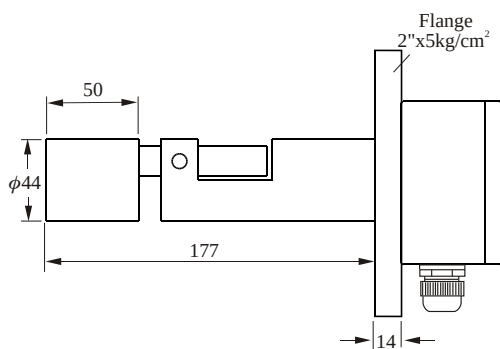
FF81E --- Without Housing

Wetted parts : P.P.

Cable spec. : PVC 3x0.75 mm²

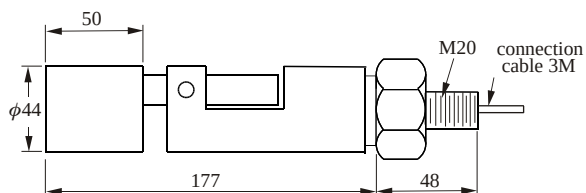
Order No. FF80EFM

► **Model No. LF80EFM**



Order No. FF81E

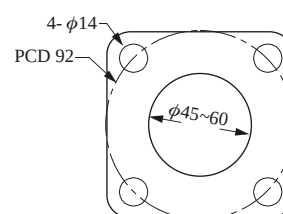
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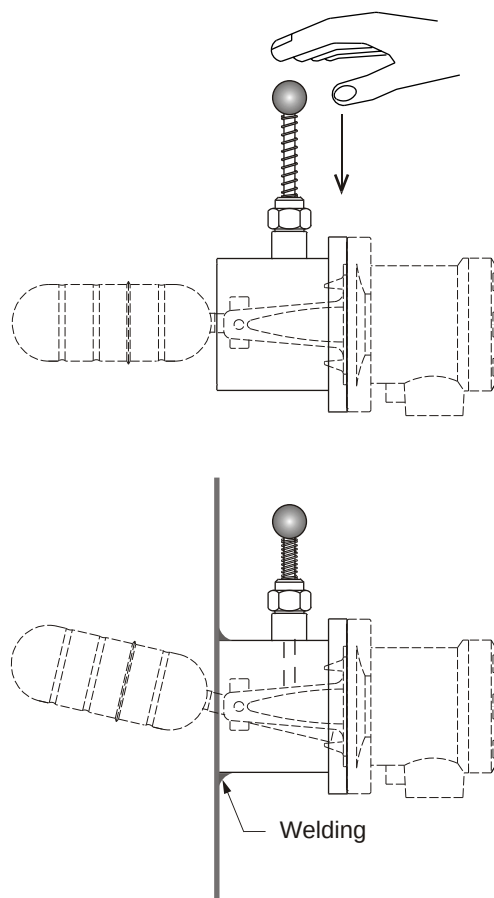
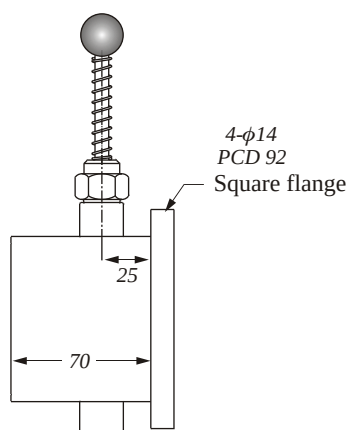
Order No. FF90CLO
▶ Model No. LF90CLO



- ### Drill Hole



Test Accesory (Optional)
Order No. FFB-0300
Material: SS41



MARINE ASSOCIATION APPROVALS

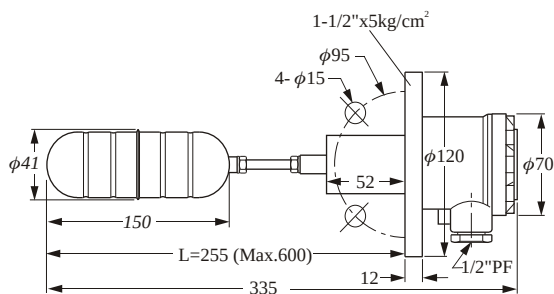


Germanischer Lloyd
(Germany)

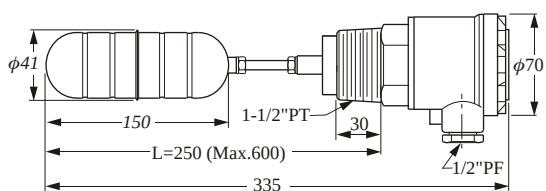


American Bureau of
Shipping (USA)

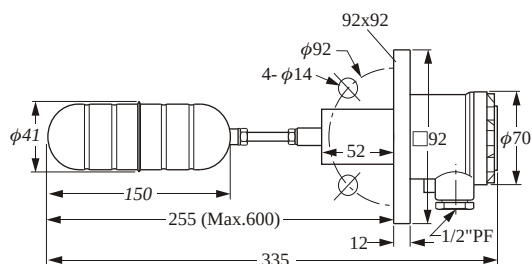
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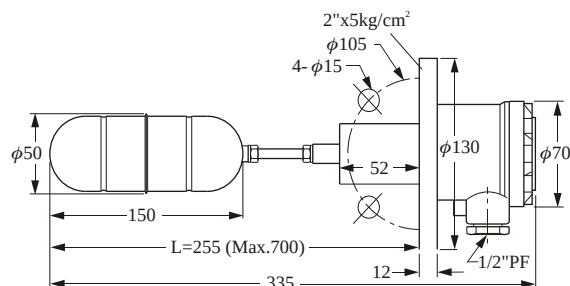
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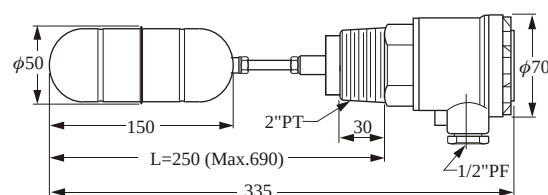
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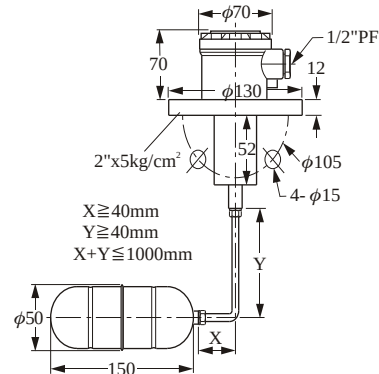
Order No. FF10DFM...SA Model No. LF10DFM...SA



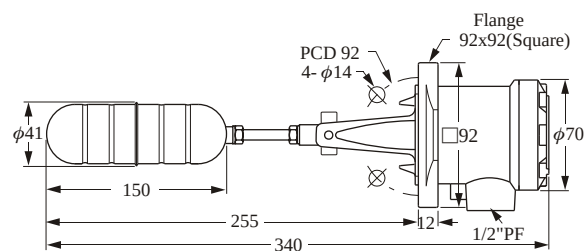
Order No. FF10DFQ...SA Model No. LF10DFQ...SA



Order No. FF50DFM...SA Model No. LF50DFM...SA



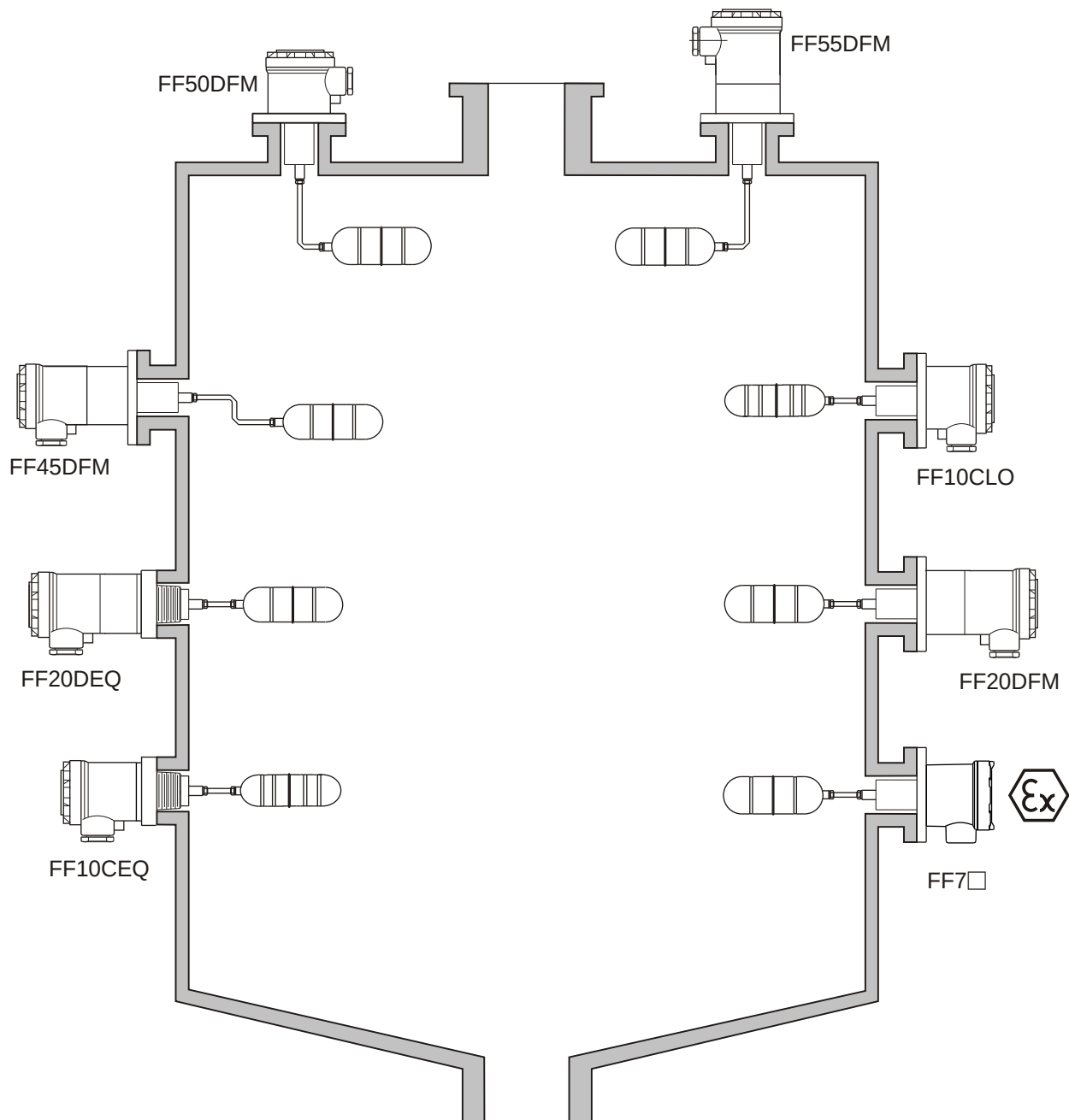
Order No. FF90CLO...SA Model No. LF90CLO...SA



IMPORTANCE FOR INSTALLATION

1. SUS304/SUS316 materials is not available for corrosive application.
2. The cable duct(s) must face downward to prevent moisture sipping in.
3. The float and extension rod must be inserted into a bin completely.
4. Be sure the liquid object's S.G. before installation.
5. The mounting hole must be larger than the external diameter of float.
6. Don't mount the devices near the bin's inlet or outlet.

Typical Positioning



HOW TO MAKE YOUR ORDER

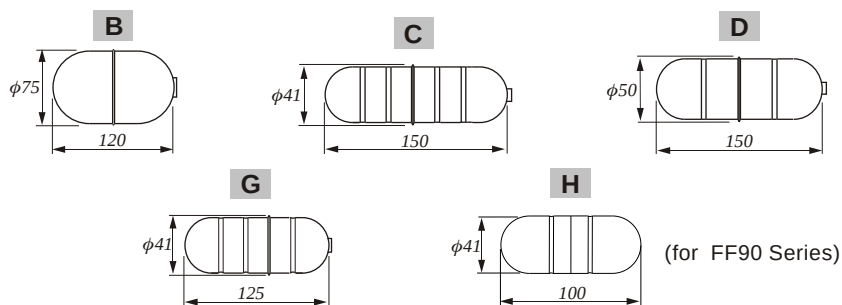
Order No. FF **10** **C** **EM** **(S)** **(T)**
 Model No. LF **10** **C** **EM** **(S)** **(T)**

ORDER NO.

10/16: STANDARD
 13: STANDARD FLANGE
 20/26: HIGH TEMP.
 40: DOUBLE ANGLE STANDARD
 45: DOUBLE ANGLE HIGH TEMP.
 50: VERTICAL STANDARD
 55: VERTICAL HIGH TEMP.
 62/66: HIGH TEMP RADIATOR
 70: LF70 Screw Type (Ex d II C T3~T6)
 71: LF71 Flange Type (Ex d II C T3~T6)
 73: LF73 Square Flange Type (Ex d II C T3~T6)
 75: LF75 Top Mounting Type (Ex d II C T3~T6)
 80: ANTI-ACID/ALKALINE
 81: ANTI-ACID/ALKALINE
 90/96: SQUARE FLANGE

FLOAT TYPE

B: $\phi 75 \times 120$ (OPERATION PRESSURE 10 kg/cm^2 S.G. 0.25)
 C: $\phi 41 \times 150$ (OPERATION PRESSURE 15 kg/cm^2 S.G. 0.65)
 D: $\phi 50 \times 150$ (OPERATION PRESSURE 30 kg/cm^2 S.G. 0.55)
 G: $\phi 41 \times 125$ (OPERATION PRESSURE 15 kg/cm^2 S.G. 0.7)
 H: $\phi 41 \times 100$ (OPERATION PRESSURE 15 kg/cm^2 S.G. 0.8)



CONNECTING TYPE

E: 1-1/2" (40A)	M: 5 kg/cm^2	W: PN 10 (10Bar)
F: 2" (50A)	N: 10 kg/cm^2	X: PN 16 (16Bar)
G: 2-1/2" (65A)	O: 150 Lbs	Y: PN 25 (25Bar)
H: 3" (80A)	P: 300 Lbs	Z: PN 40 (40Bar)
I: 4" (100A)	Q: PT	S: Others
J: 5" (125A)	R: PF(G)	
K: 6" (150A)	T: BSP	
L: 92x92	U: NPT	

CUSTOM LENGTH(L) (UNIT: mm)

TEST ACCESSORY

- ※ Tolerance of the total product length is $\pm 5 \text{ mm}$
- ※ Characteristics, specifications and dimensions are subject to change without notice.
- ※ Please contact your nearest distributor office for further information.

ENCLOSURE EXPLOSION PROOF

Order No. FF ☐ ☐ ☐ ☐

Connecting Type
(Refer to page 14)

Float Type

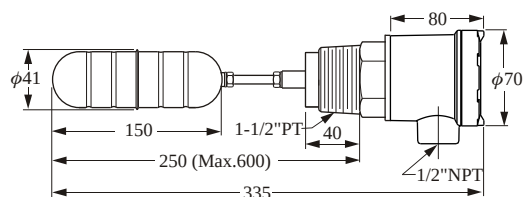
7 ☐ : Explosion Proof (EX d IIB T4)

NEPSI PROOF No. GYJ06235 Ex d IIC T3~T6

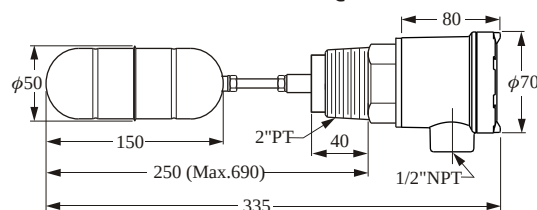
PTB PROOF No. 05 ATEX 1025  II 2G EEx d IIB T3~T6

 II 2D IP65 T3~T6

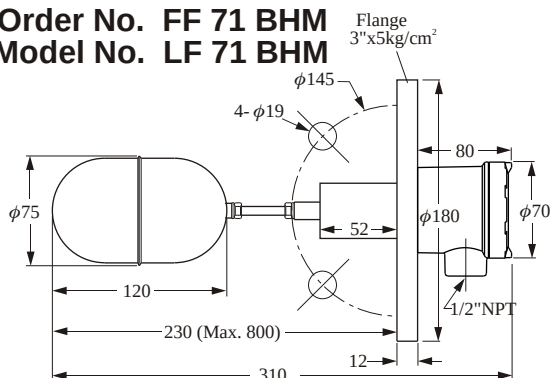
Order No. FF 70 CEQ
Model No. LF 70 CEQ



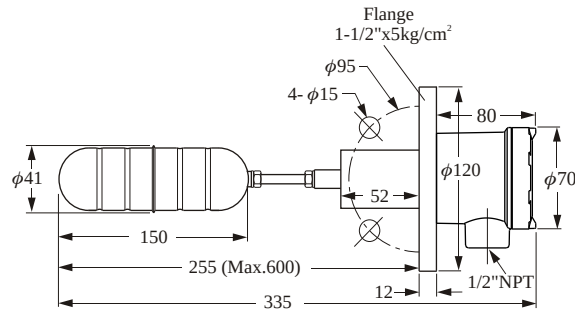
Order No. FF 70 DFQ
Model No. LF 70 DFQ



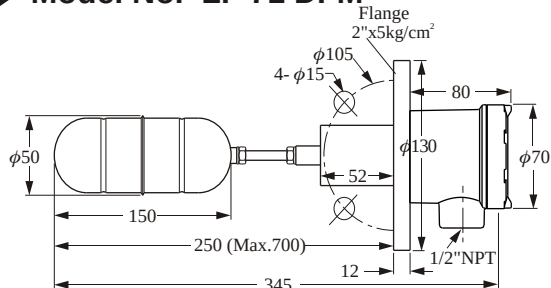
Order No. FF 71 BHM
Model No. LF 71 BHM



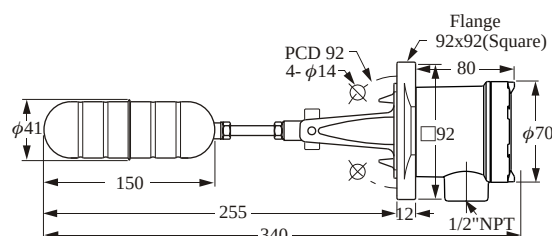
Order No. FF 71 CEM
Model No. LF 71 CEM



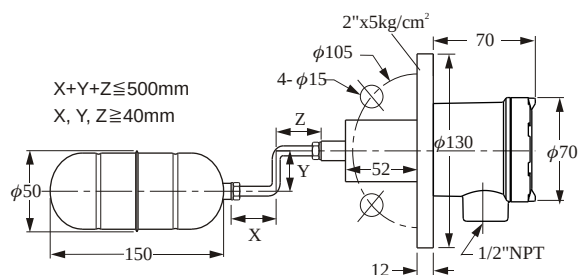
Order No. FF 71 DFM
Model No. LF 71 DFM



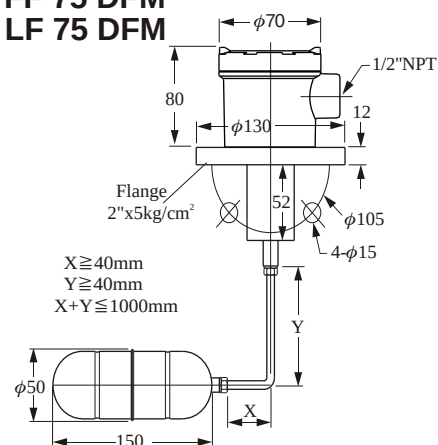
Order No. FF 73 CLO
Model No. LF 73 CLO



Order No. FF 74 DFM
Model No. LF 74 DFM



Order No. FF 75 DFM
Model No. LF 75 DFM



HOW TO MAKE YOUR ORDER

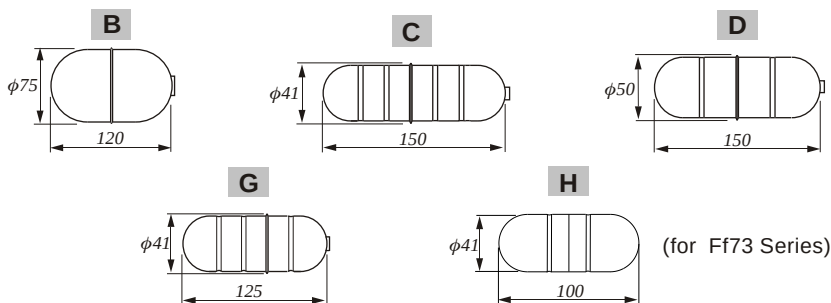
Order No. FF **70** **C** **E** **M** **S** **T**
 Model No. LF **70** **C** **E** **M** **S** **T**

ORDER NO.

70: LF70 ENCLOSURE EXPLOSION PROOF (Ex d IIC T3~T6)
 71: LF71 ENCLOSURE EXPLOSION PROOF (Ex d IIC T3~T6)
 73: LF73 ENCLOSURE EXPLOSION PROOF (Ex d IIC T3~T6)
 75: LF75 ENCLOSURE EXPLOSION PROOF (Ex d IIC T3~T6)

FLOAT TYPE

B: $\phi 75 \times 120$ (OPERATION PRESSURE 10 kg/cm^2 S.G. 0.25)
 C: $\phi 41 \times 150$ (OPERATION PRESSURE 15 kg/cm^2 S.G. 0.65)
 D: $\phi 50 \times 150$ (OPERATION PRESSURE 30 kg/cm^2 S.G. 0.55)
 G: $\phi 41 \times 125$ (OPERATION PRESSURE 15 kg/cm^2 S.G. 0.7)
 H: $\phi 41 \times 100$ (OPERATION PRESSURE 15 kg/cm^2 S.G. 0.8)



CONNECTING TYPE

E: 1-1/2" (40A)	M: 5 kg/cm^2	W: PN10 (10Bar)
F: 2" (50A)	N: 10 kg/cm^2	X: PN16 (16Bar)
G: 2-1/2" (65A)	O: 150 Lbs	Y: PN25 (25Bar)
H: 3" (80A)	P: 300 Lbs	Z: PN40 (40Bar)
I: 4" (100A)	Q: PT	S: Others
J: 5" (125A)	R: PF(G)	
K: 6" (150A)	T: BSP	
L: 92x92	U: NPT	

※ Flanges are in thickness of factory standard 12mm.

CUSTOM LENGTH(L) (UNIT: mm)

TEST ACCESSORY

- ※ Characteristics, specifications and dimensions are subject to change without notice.
- ※ Tolerance of the total product length is $\pm 5 \text{ mm}$
- ※ Please contact your nearest distributor office for further information.