

FD7 SERIES EXPLOSION TYPE MAGNETIC FLOAT LEVEL SWITCH OPERATION MANUAL



NEPSI PROOF NO.GYJ111215 Ex d IIC T3~T6
 PTB PROOF NO.05 ATEX 1027 Ex II 2G Ex d IIB T6~T3 Gb
 Ex II 2D Ex tb IIIC T85°C~T200°C
 Db IP65

APPLICABLE MODEL:FD7 Series PRINCIPLE

The single unit or multiple reed switch units are housed tightly in stainless steel or engineering plastic stem and tount the float ball to penetrate through the stem, then the liquid buoyancy will deliver the float up and down at the specified position by graduating rings. When the reed switch is induction the float internal magnet, then it will actuate the reed switch contact point to create an open or close circuit. We can apply such on-off output signal to reach liquid level controlling and monitoring purpose. The permanent magnet is interlined into the middle of the specified float balls. You Can mhe figures below show the float orientations on N.O. (Normal Open) and N.C. (Normal Close).

SPECIFICATION

- 1.Pressure Rating : 5kg/cm(PP. PVDF), 30kg/cm(SUS)
- 2.Lead Wire : XLPE (UL3266, AWG22)

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 |

INDUCTIVE / CAPACITIVE LOADS

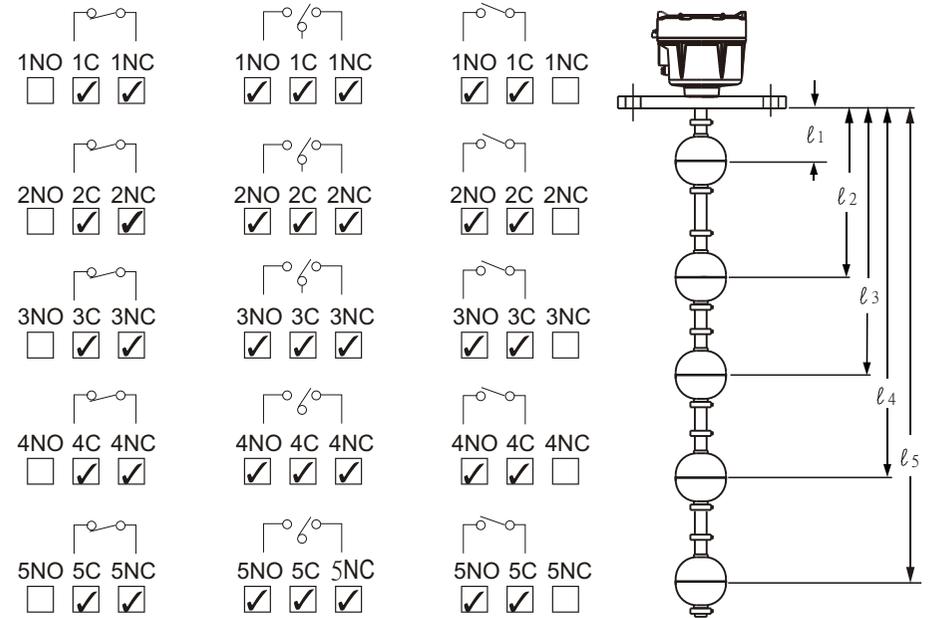
1.Inductive : When using a reed switch with inductive loads such as motors, relays,solenoids..etc, the contact will be subjected to a high induced voltage during opening of the contact(load circuit). Such high induced voltage(transients) may cause damages to the reed switch or significantly reduce it life. Therefore,protective circuits such as : RC(snubber), varistors or clamping diodes are recommended.

2.Capacitive : 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: surgesuppressors or current limiting resistors are recommended.

CONNECTION INFORMATION

- 1) Open the cap of housing, connect the wire onto terminal through the conduit.
- 2) Check the terminal wire connection is correct for each float.
- 3) Connection Type : Please refer to Fig.1 below.
 - A) 1NO : Meaning that the NO-C circuit will be close while liquid level higher than the float ball by mark of " ↑ ON".
 - B) 1NC : Meaning that the B-C circuit will be close while liquid level lower than the float ball by mark of " ↓ ON".
 - C) 1C : Meaning 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.
- 4) Please screw up the housing cap and fix the conduit outlet to prevent the moisture to soak in.

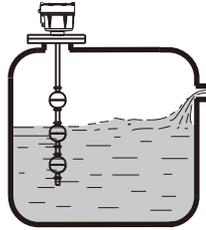
WIRING



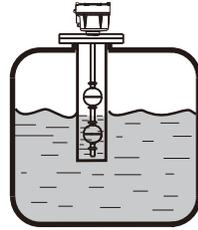
(Fig.1)

INSTALLATION

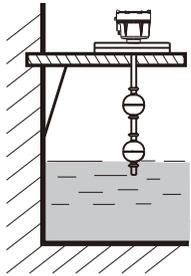
The float level switch should be mounted far away from liquid inlet, any strong liquid fluctuation will produce error output signals.



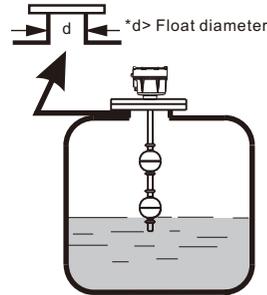
There better be an L type supporter, when the switch is mounted in concrete wall tank as figure below.



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



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



INSTALLATION INSTRUCTION FOR EX-PROOF PRODUCTS:

1. There is an internal/external ground terminal in the housing. Please be sure to ground terminals when you use.
2. When install or maintain in the field, to comply with the caution "Open after power off"
3. Cable conduit should equip with explosion approval device (AD105DS). It can't be revised arbitrarily and have to lock well.
4. Be sure to obey the safe regulation of electric appliance for dangerous field when install and maintain.
5. Corrosive gas or liquid application isn't available for Aluminum & Stainless (SUS) material.
6. The level of temperature class for explosion sign and its maximum allowed temperature relating to the medium.

| Temp. categories | T1 | T2 | T3 | T4 | T5 | T6 |
|--------------------|---------|---------|---------|---------|---------|--------|
| Max. surface temp. | ≤ 450°C | ≤ 300°C | ≤ 200°C | ≤ 135°C | ≤ 100°C | ≤ 85°C |
| Medium temp. | ≤ 440°C | ≤ 295°C | ≤ 195°C | ≤ 130°C | ≤ 95°C | ≤ 80°C |

7. Customers can't change the internal components and have to check the outer.

TROUBLE SHOOTING

| Trouble | Possible cause | Solution |
|--------------------|--|---------------------------------|
| Float Doesn't Work | The float's S.G. is bigger than liquid | Confirm the S.G. Again. |
| | The float leaks. | Contact us to change the float. |
| | The granule blocks float | Clean the granule. |
| No Signal | The float is out of position | Adjust float position. |
| | The reed switch is malfunction. | To change reed. |
| Un-Normal Signal | Interfered by magnetic field. | Solve Magnetic field problem. |

★ Please contact us if there are any queries. ★

MAINTENANCE

- 1) Please clean the impurity from pivot & float regularly.
- 2) Please check if the stopper's screws are loose.

BEFORE USE

- 1) Please check the packing situation.
- 2) Please contact us while find the damage.
- 3) Please check carton content :
 - a) One set of Complete Product.
 - b) One set Operation Manual.
 - c) One set Quality Approval.



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