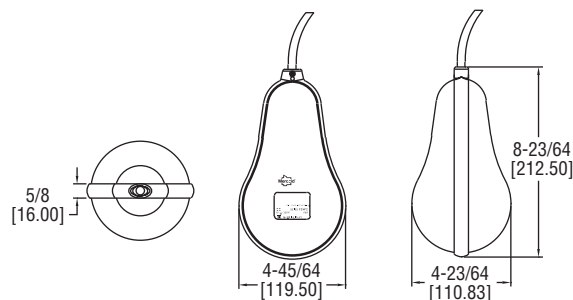




Series FSW2 Free-Floating Cable Float Switch

Specifications - Installation and Operating Instructions



The Series FSW2 Free-Floating Level Switch is a mercury-free self counterweighted floating switch designed for the automation of pumps, specifically filling and draining of tanks, wells, and reservoirs. The FSW2 body is free of any irregularities making it ideal for use in sewage water applications. The polypropylene body consists of a double airtight chamber with high-pressure melted polypropylene re-injection sealing to ensure a perfect seal against infiltration. Cable hangers are available to suit a variety of mounting applications. Featuring CE approval and optional cables available that include higher chemical compatibility, high temperature durability, oil resistance, and drinking water suitability. Contact factory for piggyback plug option, and cable length options ranging from 10 to 70 ft (3.04 to 21.34 m).

INSTALLATION

The basic operating principle of the FSW2 is very simple. As fluid level rises the micro-switch located inside the FSW2 is counter-balanced in such a way that it generates a flipping action in the position of the switch. When fluid level decreases the float starts in an inverted state then positions correctly. This change in position generates a signal that can be used to actuate a motor or signal an indicator alarm. To ensure the proper function of the FSW2, it is necessary to secure the electric cable inside the tank or well as illustrated in Figure 1. The length of the cable measured between the fixture point and the body of the FSW2 should be a minimum of 6 in (15 cm). It is essential to ensure that there are no obstructions in the FSW2 operational area before operation. During operation, **adjustments to the FSW2 cable must not be made under any circumstances**, due to the fact that any unwanted cable connections made while the FSW2 is immersed in water can lead to electric shock.

There is a hanging bracket accessory option available (A-459), for wire arrangement. The bracket allows the cable of the FSW2 to be held in place at the top of the tank.

Note: The Series FSW2 is self counterweighted and can be used without the need of additional counterweight, clamp, or bracket. The previous are means to simplify installation and aid in organizing the use of multiple float switches.

ELECTRICAL CONNECTIONS

The Series FSW2 features a variety of different cable options. One of these options includes the selection between SPST and SPDT. SPST, single pole single throw, allows a single operating function with the choice of operation on increasing level (NC/filling) or operation on decreasing level (NO/ emptying), depending on the model selection. SPDT, single pole double throw allows for operation of both increasing and decreasing level, depending on the connections made between the terminals of the micro-switch and the cable. SPDT, which is a four-conductor cable (ground option) or a three-conductor cable (without ground option), has one lead that is common, one that is normally open (NO), and the other that is normally closed (NC), for the proper connections of these conductors please refer to the wiring diagrams in Figures 2 to 9.

SPECIFICATIONS

Service: Compatible liquids, slurries.

Wetted Materials:

Housing: Polypropylene;

Cable: FSW2-XXNX-XX: Neoprene;

FSW2-XXPX-XX: PVC;

FSW2-XXTX-XX: Rubber compound EM7 quality;

FSW2-XXWX-XX: EPDM ethylene propylene;

Operating Temperature: 32 to 122°F (0 to 50°C).

Pressure Limits: 29 psi (2 bar).

Enclosure Rating: IP68.

Switch Type:

FSW2-0XXX-XX: SPST;

FSW2-CXXX-XX: SPST;

FSW2-DXXX-XX: SPDT.

Electrical Rating: 10 (3) A @ 250 VAC.

Mounting Orientation: Vertical.

Shipping Weight:

Housing: 2.4 lb (1100 g);

Cable: 0.77 oz (21.27 g) per foot.

Agency Approval: CE.

NOTICE

When making the connections described above, ensure that the maximum motor power does not exceed the values indicated on the level switch. The power supply cable is an important part of the FSW2. Should the cable appear to be damaged, discontinue use immediately and proceed to replace the unit. The yellow/green wire found on some units is the ground wire and must be connected to a suitable ground terminal with the dimension greater than 1mm². The terminal used must also be protected against accidental break.

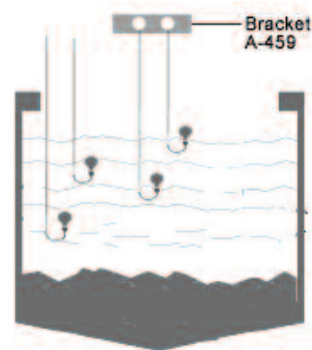


Figure 1: Installation



WIRING DIAGRAMS

2 x 1 CABLE

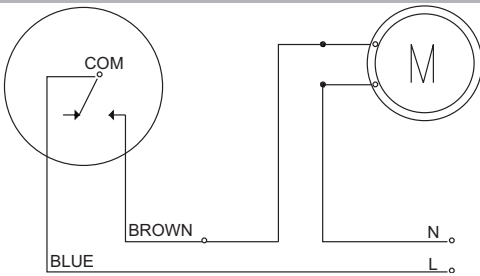


Figure 2-Emptying (NO) Function
FSW2-ONXX-XX

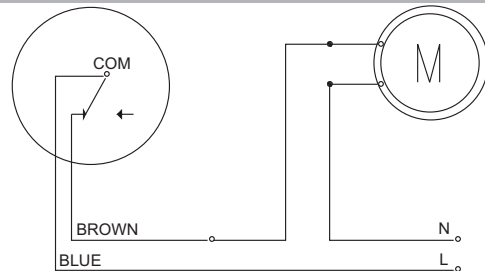


Figure 3-Filling (NC) Function
FSW2-CNXX-XX

3 x 1 CABLE

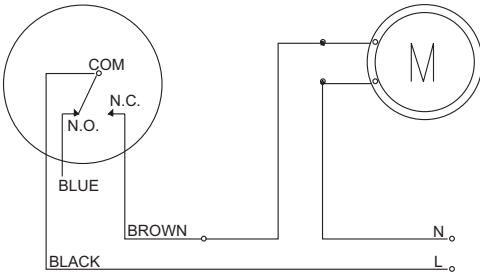


Figure 4-Double Function (Emptying (NO))
FSW2-DNXX-XX

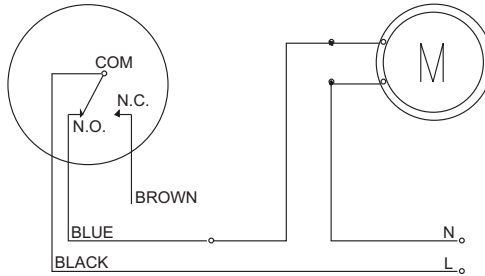


Figure 5-Double Function (Filling (NC))
FSW2-DNXX-XX

3G1 CABLE

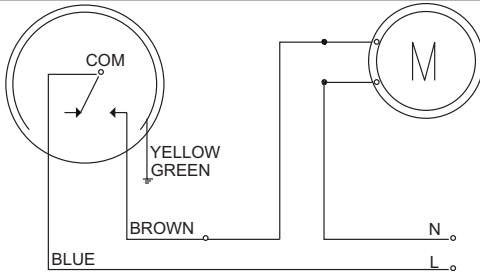


Figure 6-Emptying (NO) Function
FSW2-OGXX-XX

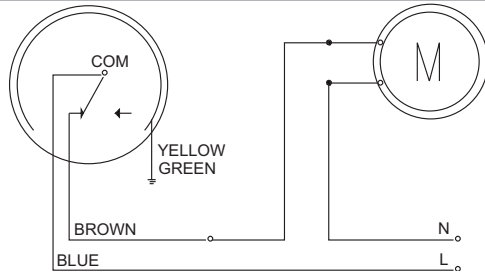


Figure 7-Filling (NC) Function
FSW2-CGXX-XX

4G1 CABLE

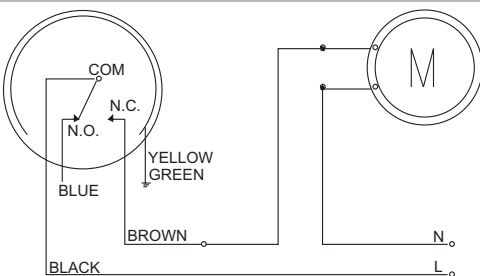


Figure 8-Double Function (Emptying (NO))
FSW2-DGXX-XX

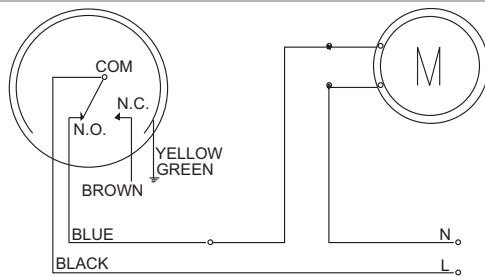


Figure 9-Double Function (Filling (NC))
FSW2-DGXX-XX

Correctly insulate any wire not in use!

MAINTENANCE & REPAIR

Inspect and clean wetted parts with water or damp cloth at regular intervals. Disassembly or modifications made by the user will void the warranty and could impair the continued safety of the product. If repair is required obtain a Return Goods Authorization (RGA) number and send the unit, freight prepaid, to the address below. Please include a detailed description of the problem and conditions under which the problem was encountered.

Dwyer Instruments, Inc.
Attn: Repair Department
102 Indiana Hwy 212
Michigan City, IN 46361