

Liquid Level Float Switches

Overview

The AMETEK Float Switch family is made up of model series F8300, 610XXX and 8TJ143XXX. These devices open or close an electrical circuit at a predetermined level of liquid. They have been developed primarily for use in aircraft fuel and lubrication tanks but are equally suited for many industrial applications in remote and non-accessible locations where liquid level control is important. Various installation modifications of the unit can be used to determine when a tank is filled to capacity, to indicate when a specific amount of liquid has been expended, or to indicate when a predetermined level has been reached.

Switches are designed for use with liquids under MIL-F-5572, MIL-F-5616, MIL-F5624, MIL-L-7808, and MIL-L-23699 throughout a temperature range of -65O to 275O F, but may be used with most other liquids.

Construction

Typical AMETEK Float Switches consist of three major parts: the body assembly, float assembly, and shell. The body assembly contains the mounting flange, mounting fitting, and a hermetically sealed, magnetically-operated reed switch, potted in a sealed tube extending through a hole in the float assembly. The float assembly, fabricated from a variety of nonmetallic materials, contains permanent magnets and is protected by an aluminum outer shell which prevents random operation caused by “sloshing” liquid. Lead wires, of a length to suit specific applications, complete the unit.

Operation

To meet varying customer requirements, AMETEK has over 200 modified forms available, some of which are illustrated on the reverse side. The Float Switch in Figure 1, is designed to close the circuit as ascending fuel reaches the actuating level, whereas, the Figure 2 switch operates to open the circuit when the ascending fuel reaches the defined level, and the Figure 3 switch opens the circuit as the fuel level descends. All versions of the AMETEK Float Switch will operate at any position up to 45° from the vertical.

Conformance

AMETEK switches are designed to conform to the applicable requirements of Military Specifications MIL-E- 5272A and MIL-F-8615, including the following tests:

- Calibration
- External Leakage
- Endurance
- High Temperature (Dry)
- Low Temperature
- High Temperature (Wet)
- Vibration
- Moist Fungus
- Humidity
- Salt Spray



Features

- *Wide Variety–available in over 200 service configurations*
- *Flexible Design–can readily transform basic design components*
- *Light Weight–typically weighs only 0.10 pounds without lead wires.*
- *Small Size–some versions less than 0.75” diameter*
- *No Mechanical Linkages–the unit contains only one moving part, the float assembly*
- *Safety–switches are available with unique hermetically sealed inner housing for applications where current loads pose a safety concern in fuel tank applications*

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Specifications

Electrical Characteristics

Rating:	0.5 ampere inductive load at 28 volts DC
Contact type:	Single pole, single throw
Life:	100,000 cycles minimum

Dimensions

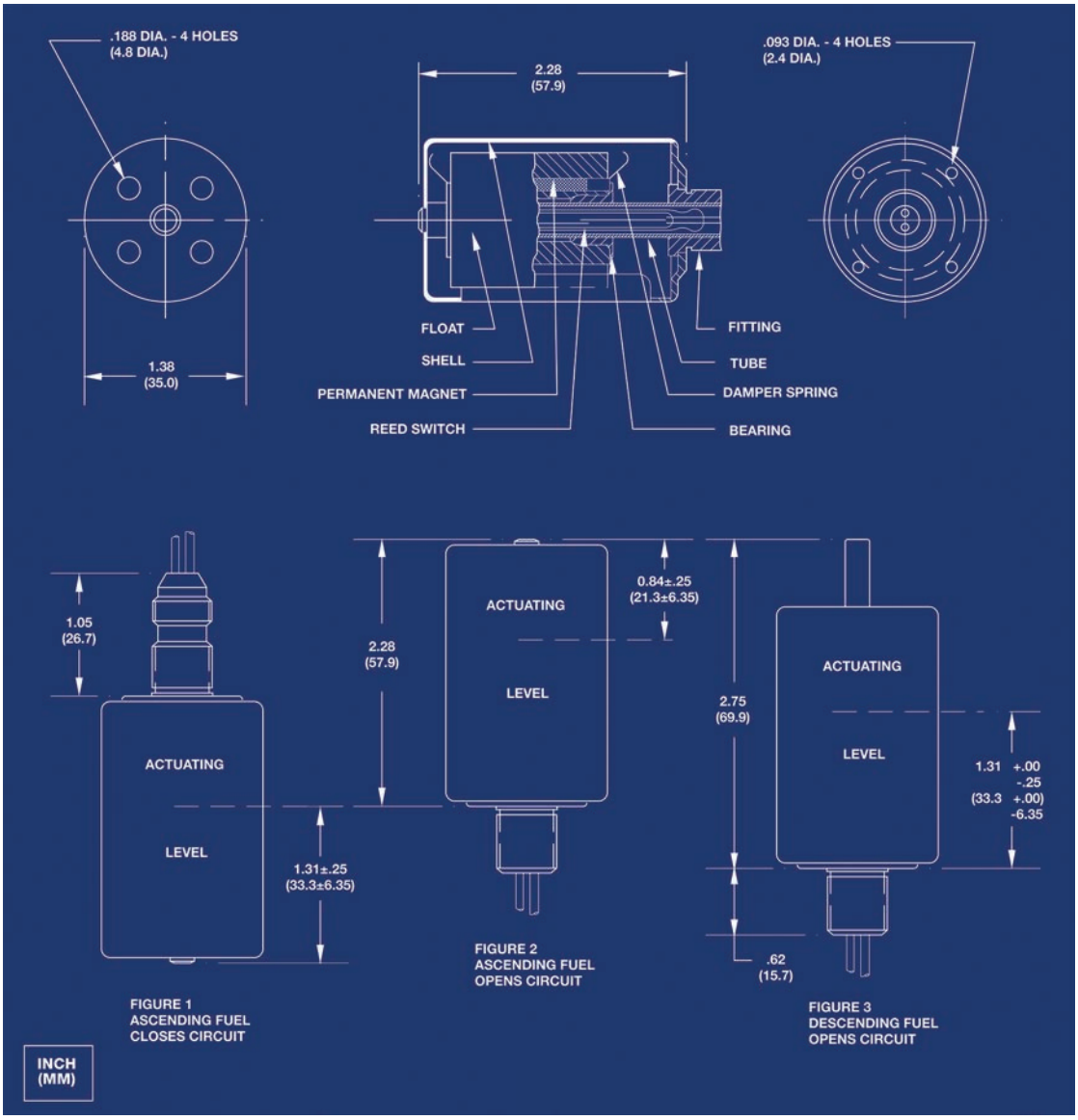


FIGURE 1
ASCENDING FUEL
CLOSES CIRCUIT

FIGURE 2
ASCENDING FUEL
OPENS CIRCUIT

FIGURE 3
DESCENDING FUEL
OPENS CIRCUIT

SFMS
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