DATA SHEET

Full Size Polypropylene Float Switches

M8800 Series, M8801

The M8800 Series float switches have a polypropylene stem and float. They are designed for liquid level sensing for a wide variety of fluids and conditions. These hermetically sealed float switches provide years of dependable sensing at an economical cost. Used with standard 1/4" NPT threaded stem, these plastic switches provide control signals for many different liquid level sensor applications. Any of our vertical float switches can easily be mounted in the top or bottom of a tank as a High or Low level float switch. All wetted materials are NSF grade material and widely used in the food equipment industry.

Industries

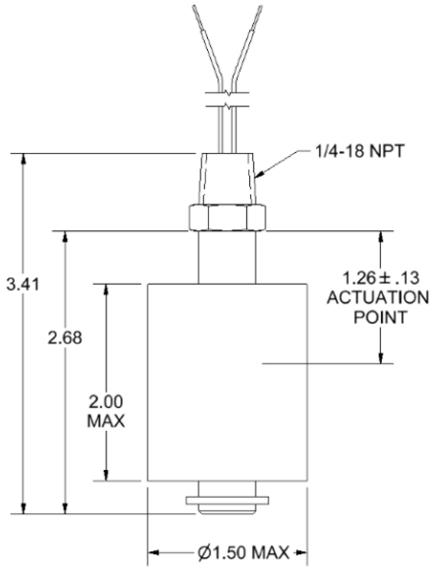
- Marine
- Food equipment

Materials

- Stem and Float: Polypropylene

Specifications

- Mounting: 1/4" NPT
- Max. temperature: 221°F / 105°C
- Max. pressure: 100 psi
- Float diameter: 1.5"



Custom Configurations

Contact us directly
for custom solutions.
Email: info@madisonco.com

Part Numbers	Minimum Media SG	Electrical Ratings	Lead Wires	Switch Rating	Approvals
M8800	0.96	240V AC, 0.40A; 120V AC, 0.50A 120V DC, 0.20A; 24V DC, 0.50A	24", 22 AWG, MTW insulated	60 watt, SPST	CE, UL, CSA, NSF
M8800-PR	0.94			100 watt, SPST	CE, NSF
M8801	0.96			100 watt, SPST	CE, UL, CSA, NSF
M8800-SPDT	0.96	120V AC, 0.28A; 24V DC, 0.28A	24", 22 AWG, Teflon insulated	25 watt, SPDT	CE, UL, CSA, NSF

NOTE: Other fittings and voltages are available. Contact us to discuss your application.

Level Switch Electrical Considerations and Reed Switch Protection

When using Madison level switches, it is important to consider the application's electrical parameters. Our level switches utilize reed switch technology, which are glass encapsulated, magnetically actuated switches. Madison generally provides electrical ratings for resistive loads; however, where the maximum current of the load permits, the switches are capable of controlling devices such as motors, solenoids or coils that produce capacitive or inductive electrical loads. Where possible, Madison recommends the use of general-purpose/isolation relays or controllers to protect the switch.

Protect your level switch: Protection Techniques and Common Failure Modes

Reed Switch protection is the most successful method of increasing the performance and life of your level sensor. Since every application varies, it is important to understand your protection options. The life of the reed switch is typically 1 million cycles, within rated load conditions. The table below is a guide to suggested protection techniques and common failure modes associated with each load type.

Load	Load Example	Protection	Diagram	Common Failure Modes	Failure Mode Description
Resistive (DC)	Indicator Lamp, Heaters	Current Limiting Resistor	A	In-rush Current (Switching)	In-rush current exceeds rating and welds switch closed
				Over-Current (Carry)	Carry-current exceeds rating and switch welds or burns open like a fuse
Inductive & Capacitative (DC)	Relay Coil, Solenoids, Motor	Reversing Diode	B	Over-Voltage (Arcing)	Voltage arcing during switching welds contacts closed
Inductive & Capacitive (AC or DC)		Resistor & Capacitor Network	C		
Resistive, Inductive & Capacitive (AC or DC)	Indicator Lamp, Heaters, Relay Coil, Solenoids, Motor	Varistor or MOV	D	Over-Voltage (Arcing)	Transients voltage spikes exceed breakdown voltage and weld switch closed

Capacitive Load

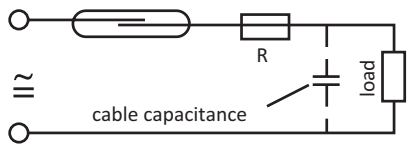


Diagram A: Current Limiting Resistor

Inductive Load

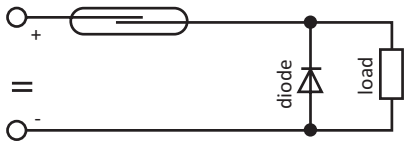


Diagram B: Reversing Diode

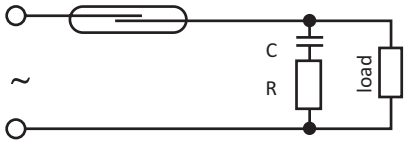


Diagram C: RC Network

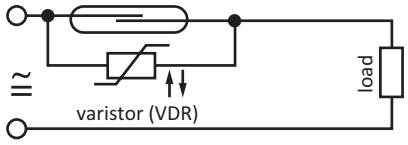


Diagram D: Varistor or MOV

For DC circuits: Insert a 1N4004 diode across the load (i.e.: relay coil) with the cathode end (marked with circular line) connected toward the positive side. This way the diode conducts only when the field collapses. General rule is to use a diode with a voltage rating at least three times the circuit voltage. A 1N4004 has a rating of 1 amp continuous, 30 amp surge, 400V max. Refer to diagram B.

For typical 120V AC circuits: Insert a 50 to 100 ohm, 1/2 watt Resistor in series with a .1 micro farad 400 to 600 volt capacitor across the switch. The capacitor is a high impedance to 60 hertz, but is essentially a short circuit to high frequencies of generated voltages. Alternately, a varistor V130LA10A by itself across the switch will also work for 120V AC. Refer to diagram D.

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