

DATA SHEET

Side Kick Float Switch

M3827-2 Series



The M3827-2 Series side kick switches are engineered such that the magnetically actuated reed switch will not come in contact with the fluid being monitored. The float is attached to an extended pivot arm that, when moved, triggers the switch function.

Applications

- Ideal for use in heavy-bodied liquids or in fluids containing metal particles that would otherwise be attracted to a conventional style float
- Single point detection of high/low levels through side wall of tank
- 316 stainless steel is frequently used in food processing
- Ideal for high-temperature, medical and petrochemical applications, and plating processes
- Suitable in applications where superior corrosion resistance is required

Features

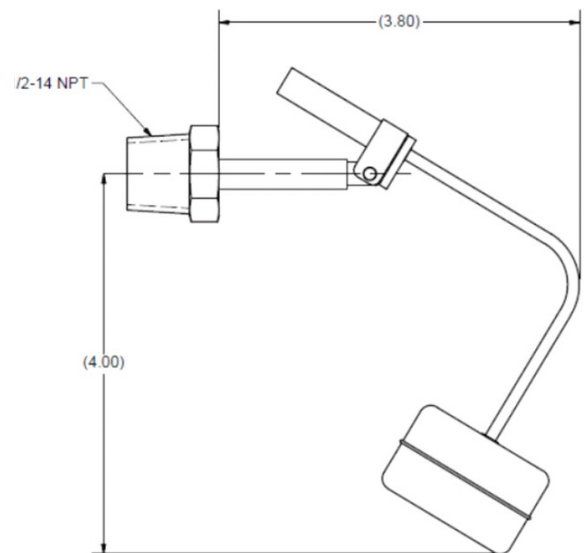
- Ideal for heavy-bodied liquids or fluids containing metal particles
- Compact installed height of 3-1/2" from switch to float
- Reed switch will not come in contact with the liquid
- All stainless steel construction
- Float is attached to an extended pivot arm

Specifications

- Float & Stem Material: 316 Stainless Steel
- Float Diameter: 1.54" OD
- Max Pressure: 50 psi
- Max. Temp: 392°F / 200°C
- Switch Rating: 30 watt, SPST

Electrical Ratings

- 240V AC, 0.14A; 120V AC, 0.28A;
120V DC, 0.07A; 24V DC, 0.28A



Part Numbers	Function	Mounting	Minimum Media SG	Lead Wires
M3827-2	Normally Closed	1/2" NPT	0.75	24", 22 AWG, Teflon Insulated (standard)
M3827-2NO	Normally Open			

NOTE: Other fittings and voltages are available. [Contact us](#) to discuss your application.

Custom Configurations

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

Electrical Considerations

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.

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 & Capacitive (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

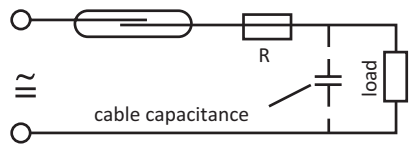


Diagram A: Current Limiting Resistor

Inductive Load

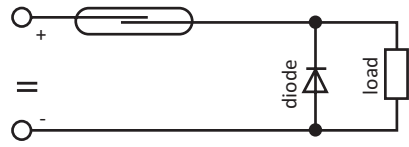


Diagram B: Reversing Diode

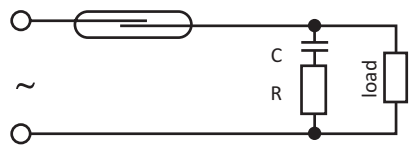


Diagram C: RC Network

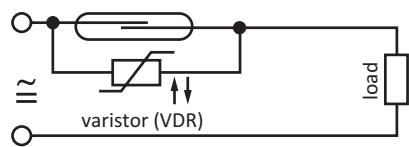


Diagram D: Varistor or MOV

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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