

S91DJ and S91EJ Types Auxiliary Switch Kits For Series M100 Motor Actuators

Application

The S91DJ and S91EJ auxiliary switch kits mount on the auxiliary end of the Series M100 motor actuators to provide switching functions. The switches are for use in heating, refrigeration, air conditioning, and industrial applications. Typical applications include:

- Capacity control on multi-stage refrigeration machines.
- Multi-speed fan controls.
- Staging of multiple nozzles on boilers.
- Operation of pilot lights.

All Series S91 controls are designed for use *only* as operating controls. An operating control is *not* authorized for use where its failure in any mode can result in personal injury and/or loss of property. It is the responsibility of the user to add those necessary devices that protect against undesirable system failure modes.

Features

- Compact, heavy duty switch kit enclosures of drawn steel.
- Long wearing cam followers give consistent switch operation. Each switch is numbered and the wire leads are color coded.
- The SPDT switches are not position sensitive.
- Switch kits are easily field mounted to Johnson Controls Series M100 motor actuators. Factory assembly and setting of switch kits to the motor actuators is available on request.

General Description

The switch kits have one or two single pole, double throw snap-acting switches. The switches are actuated by cams which are positioned by the motor actuator's output shaft to open or close the switch contacts at the desired motor actuator position.

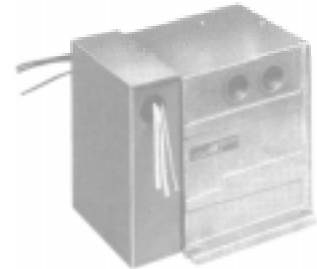


Fig. 1 -- S91 Switch Kit mounted on a Series M100 Non-Spring Return Motor Actuator.

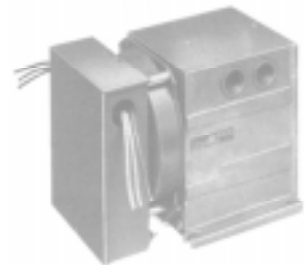


Fig. 2 -- S91 Switch Kit mounted on a Series M100 Spring Return Motor Actuator.

Specifications

Type Number	S91DJ	One Switch
	S91EJ	Two Switches
Switch Action		SPDT
Switch Differentials		Adjustable 3 to 80 Angular Degrees, Factory Set at 20 Angular Degrees
Ambient Temperature	Minimum	-40° F (-40° C)
	Maximum	140° F (60° C)
Wiring Connections		Color Coded Wire Leads
Enclosure		NEMA 1, General Purpose
Conduit Openings		Two 7/8" Diameter Holes for 1/2" Conduit on Sides of the Case
Material	Case	.062" (1.6 mm) Cold Rolled Steel
	Cover	.040" (1.0 mm) Cold Rolled Steel
Finish		Blue Bake-On Enamel
Shipping Weight	S91DJ	1.5 lb. (.68 kg)
	S91EJ	1.7 lb. (.77 kg)

Switch and Terminal Identification

Each switch on the S91EJ is identified and the wire leads are color coded. The switches are marked "1" and "2". The No. 1 switch is located at the back of the switch kit. (See Fig. 3).

The switch in the S91DJ, and the No. 1 switch in the S91EJ, have leads of solid colors. The No. 2 switch in the S91EJ has black leads with color stripes. The red (red striped) wire leads is common. The circuit between the red (red striped) and yellow (yellow striped) wire leads closes on the high rise of the cam. The circuit between the red (red striped) and blue (blue striped) wire leads closes on the low rise of the cam (zero position).

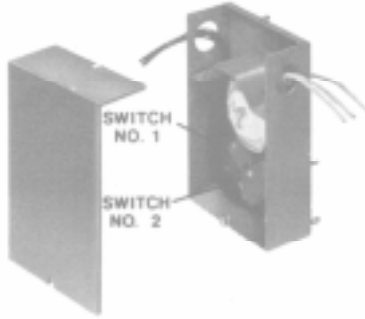


Fig. 3 – S91EJ Switch Kit with the cover removed. Note the switch identification numbers.

Electrical Rating

Volts A.C.	120 V.	250 V.	277 V.
Full Load Amps.	7.2	3.6	2.9
Locked Rotor Amps.	43.2	21.6	17.4
Non-Inductive Amps.	11.0	8.3	7.2
Pilot Duty – 50 VA., 24 V. A.C. 125 VA., 120-277 V. A.C.			

Total connected load must not exceed 2000 VA.

Accessories

Weatherproofing Kit

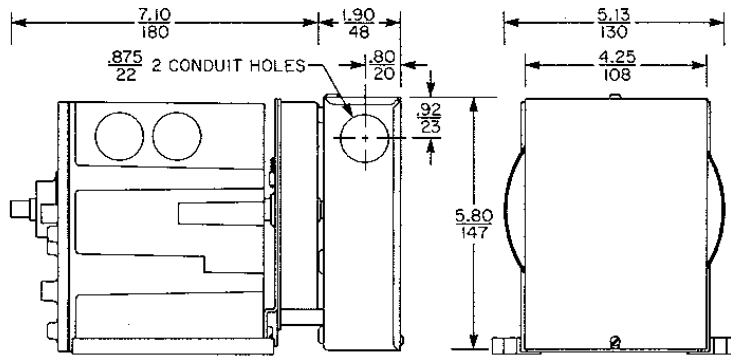
Kit No. SEL12A-600R is available for the S91DJ and S91EJ switch kits for field assembly, if required. The kit must be ordered separately.

Wiring

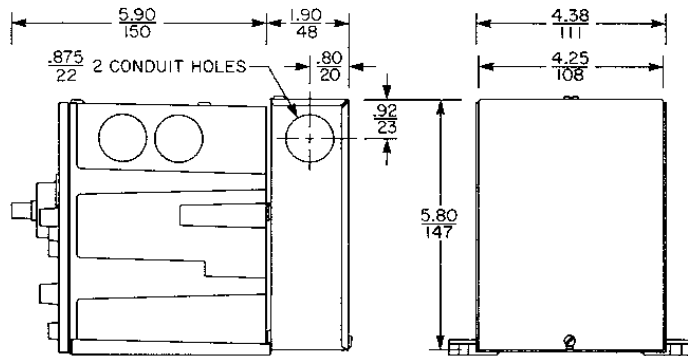
All wiring must be in accordance with local regulations and the National Electrical Codes.

Repairs and Replacement

Field repairs must not be made except for replacement of the cover. For a replacement S91 switch kit or cover, contact the nearest Johnson Controls Commercial Systems wholesaler.



S91 mounted on a Series M100 spring return motor actuator.



S91 mounted on a Series M100 non-spring return motor actuator.

Dimensions $\frac{\text{in}}{\text{mm}}$

Performance specifications appearing herein are nominal and are subject to accepted manufacturing tolerances and application variables.

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CONTROLS**

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