

Packaged M.O.V.s and Diodes

Overview

Metal Oxide Varistors (MOV) and Diode circuits are offered as convenient plug-in modules. Plugging a module into the relay socket connects the circuit in parallel with the relay coil. No additional wiring is required.

Modules fit within the maximum dimensions of the relay and socket.

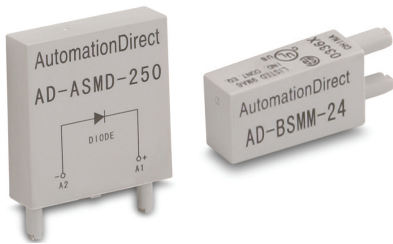
Features

- MOVs protect by shunting potentially damaging electrical spikes away from the relay coil. Ideal for AC and DC applications.
- Diodes protect external drive circuitry from inductive voltages generated when removing coil voltage. Ideal for DC applications. Polarity sensitive.

Application

Many PLC systems control one or more inductive load devices. These inductive loads (devices with a coil) generate transient voltages when they are de-energized with a relay contact. When a relay contact is closed it “bounces”, which causes the coil to energize and de-energize until the “bouncing” stops. The transient voltage which is generated is much larger in amplitude than the supply voltage, especially with a DC supply voltage.

When switching a DC-supplied inductive load the full supply voltage is always present when the relay contact opens (or “bounces”). When switching an AC-supplied inductive load, if the voltage is not zero when the relay contact opens, there is energy stored in the inductor that is released when the voltage to the inductor is suddenly removed. This release of energy is what produces transient voltages.



When inductive load devices (motors, motor starters, interposing relays, solenoids, valves, etc.) are controlled with relay contacts, it is recommended that a surge suppression device be connected directly across the coil of the field device. If the inductive device has plug-type connectors, the suppression device can be installed on the terminal block of the relay output.

Metal oxide varistors (MOV) and diodes are devices which provide good surge and transient suppression of AC and DC powered coils.

| Protection Device Selection Guide | | | | | | |
|-----------------------------------|-------|-----|---|-----------------------|----------------------|--|
| Part Number | Price | QTY | Description | Nominal Input Voltage | Dimensions & Package | Mating Socket |
| AD-ASMD-250 | | 5 | Protection diode module for 783, 784 and 75 series relays. | 6-250VDC | Figure 1 | 783-3C-SKT 784-4C-SKT-1 750-2C-SKT 750-3C-SKT |
| AD-ASMM-24 | | 5 | MOV module for 783, 784 and 75 series relays that operate at 24VAC coil voltage. | 24VAC/VDC | | |
| AD-ASMM-120 | | 5 | MOV module for 783, 784 and 75 series relays that operate at 120VAC coil voltage. | 120VAC/VDC | | |
| AD-ASMM-240 | | 5 | MOV module for 783, 784 and 75 series relays that operate at 240VAC coil voltage. | 240VAC/VDC | | |
| AD-BSMD-250 | | 5 | Protection diode module for 782 series relays. | 6-250VDC | Figure 2 | 782-2C-SKT |
| AD-BSMM-24 | | 5 | MOV module for 782 series relays that operate at 24VAC coil voltage. | 24VAC/VDC | | |
| AD-BSMM-120 | | 5 | MOV module for 782 series relays that operate at 120VAC coil voltage. | 120VAC/VDC | | |
| AD-BSMM-240 | | 5 | MOV module for 782 series relays that operate at 240VAC coil voltage. | 240VAC/VDC | | |

Dimensions

inches [mm]

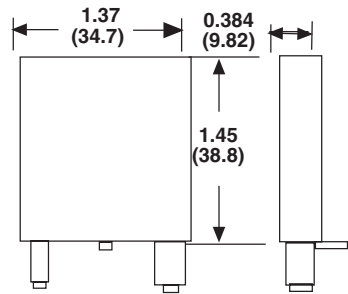


Figure 1

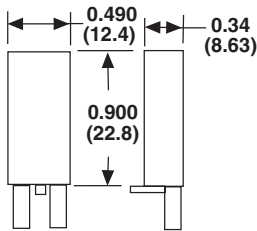
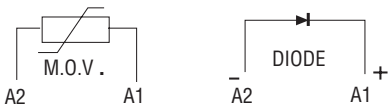


Figure 2



78 Series Relay Sockets

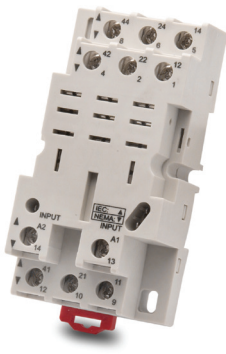
| 78 Series Relay Sockets | | | | |
|------------------------------|-------|---|---------------------|--|
| Part Number | Price | Description | Drawing Link | Agency Approval |
| 781-1C-SKT | | AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with 781 series cube relays. | PDF | UL Recognized file number: E225080 |
| 782-2C-SKT | | AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with 782 and AD-70S2 series cube relays. | PDF | |
| 783-3C-SKT | | AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with 783 series cube relays. | PDF | |
| 784-4C-SKT-1 | | AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with 784 series cube relays. | PDF | |



781-1C-SKT



782-2C-SKT



783-3C-SKT



784-4C-SKT-1

| 78 Series Relay Sockets Screw Torques and Wire Sizes | | |
|--|---|---|
| Part Number | Maximum Screw Torques | Maximum Wire Sizes |
| 781-1C-SKT | Terminals 13, 14: 7 in·lbs/0.8 N·m Terminals 1, 5, 9: 9 in·lbs/1.0 N·m | Terminals 13, 14: 18 to 20 AWG, solid or stranded, one or two identical wires Terminals 1, 5, 9: 12 to 20 AWG, solid or stranded, one or two identical wires |
| 782-2C-SKT | All terminals: 9 in·lbs/1.0 N·m | All terminals: 12 to 20 AWG, solid or stranded, one or two identical wires |
| 783-3C-SKT | | |
| 784-4C-SKT-1 | | |

Note: Order sockets separately; holding clips are included with sockets.