75 Series Electromechanical Relay Selection Guide

75 series relays are general purpose relays designed for a wide range of applications, from power to sequence controls in various factory machines and control panels. They are ideal for electrical control panels requiring stable and reliable relays.

Features
- Octal base design
- Silver Cadmium Oxide, gold flashed contacts
- High open contact dielectric strength (1,500 V rms)
- High reliability and long life
- High vibration and shock resistance
- Flag indicator shows relay status in manual or powered condition
- LED indicator on all models, so you can easily see if relay is working properly without using a voltmeter
- A pushbutton allows manual operation of the relay without the need for power to the coil
- I.D. tag/write label for identifying relays in multi-relay circuits

### 75 Series Relay Selection Guide

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Price</th>
<th>Coil Voltage</th>
<th>Configuration</th>
<th>Contact Rating</th>
<th>Dimensions</th>
<th>Relay Socket Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>750-2C-12D</td>
<td>$7.25</td>
<td>12VDC</td>
<td>DPDT</td>
<td></td>
<td>Figure 1</td>
<td>750-2C-SKT</td>
<td>$4.25</td>
</tr>
<tr>
<td>750-2C-12A</td>
<td>$8.75</td>
<td>12VAC</td>
<td></td>
<td></td>
<td>Figure 1</td>
<td>750-2C-SKT</td>
<td></td>
</tr>
<tr>
<td>750-2C-24D</td>
<td>$8.25</td>
<td>24VDC</td>
<td></td>
<td></td>
<td>Figure 2</td>
<td>750-3C-SKT</td>
<td>$4.75</td>
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<tr>
<td>750-2C-24A</td>
<td>$8.25</td>
<td>24VAC</td>
<td></td>
<td></td>
<td>Figure 2</td>
<td>750-3C-SKT</td>
<td></td>
</tr>
<tr>
<td>750-2C-120A</td>
<td>$8.25</td>
<td>120VAC</td>
<td>3PDT</td>
<td>12A</td>
<td>Figure 2</td>
<td>750-3C-SKT</td>
<td></td>
</tr>
<tr>
<td>750-2C-240A</td>
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<td>220VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>750-3C-12D</td>
<td>$8.25</td>
<td>12VDC</td>
<td></td>
<td></td>
<td>Figure 2</td>
<td>750-3C-SKT</td>
<td></td>
</tr>
<tr>
<td>750-3C-12A</td>
<td>$10.50</td>
<td>12VAC</td>
<td></td>
<td></td>
<td>Figure 2</td>
<td>750-3C-SKT</td>
<td></td>
</tr>
<tr>
<td>750-3C-24D</td>
<td>$9.25</td>
<td>24VDC</td>
<td></td>
<td></td>
<td>Figure 2</td>
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<td>750-3C-120A</td>
<td>$9.50</td>
<td>120VAC</td>
<td></td>
<td></td>
<td>Figure 2</td>
<td>750-3C-SKT</td>
<td></td>
</tr>
<tr>
<td>750-3C-240A</td>
<td>$10.00</td>
<td>240VAC</td>
<td></td>
<td></td>
<td>Figure 2</td>
<td>750-3C-SKT</td>
<td></td>
</tr>
</tbody>
</table>

Order socket separately.

### Dimensions

**Figure 1: 750-2C-xxx**

- 2.22 [56.4]
- 0.55 [14.0]
- 0.42 [10.7]
- 1.32 [33.5]

**Figure 2: 750-3C-xxx**

- 2.22 [56.4]
- 0.55 [14.0]
- 0.42 [10.7]
- 1.32 [33.5]

### Wiring

**750-2C-xxx wiring diagram**

Note: Contacts and coil shown are internal to the relay

**750-3C-xxx wiring diagram**

Note: Contacts and coil shown are internal to the relay

Prices as of April 16, 2014. Check Web site for most current prices.
75 Series Electromechanical Relay Specifications

### 75 Series Specification Table

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>750-2C-12D</th>
<th>750-2C-12A</th>
<th>750-2C-24A</th>
<th>750-2C-120A</th>
<th>750-2C-240A</th>
<th>750-3C-12D</th>
<th>750-3C-12A</th>
<th>750-3C-24A</th>
<th>750-3C-120A</th>
<th>750-3C-240A</th>
</tr>
</thead>
</table>

#### General Specifications

- **Service Life**: Mechanical: 5 million operations, Electrical: 100,000 operations @ rated resistive load
- **Operating Temperature**: -40°C to 55°C (-40°F to 131°F)
- **Response Time**: 20 ms
- **Vibration Resistance**: 3 G's @ 10 to 55 Hz (0.6mm double amplitude)
- **Shock Resistance**: 10 G's
- **Weight**: 89 g (3.1 oz)
- **Agency Approvals and Standards**: UL Recognized file E191059, CE, CSA Certified 244610

#### Environmental Protection

- **IEC IP40**

#### Coil Specifications

- **Standard**: LED Indicator
- **Coil Input Voltage**: 12VDC, 12VAC, 24VDC, 24VAC, 50/60 Hz
- **Coil Resistance**: 120Ω, 18Ω, 470Ω, 72Ω, 1.7kΩ, 7.2kΩ
- **Power Consumption**: 3VA (60Hz) AC, 1.4W DC
- **Dropout Voltage (% of rated voltage)**: 15% AC, 10% DC
- **Pull-in Voltage**: Max. 85% of nominal voltage or less
- **Max. Voltage (Max. continuous voltage)**: 110% of the rated coil voltage

#### Contact Specifications

- **Contact Type**: DPDT, 3PDT
- **Contact Material**: Silver cadmium oxide, gold flashed
- **Minimum Switching Requirement**: 100mA @ 5VDC
- **Contact Rating**: Refer to Contact Ratings chart
- **Dielectric Strength Between Contacts**: 1500V rms

*Note: UL listed when used with sockets 750-2C-SKT, 750-3C-SKT. Current limited to rating of relay or socket, whichever is less.*

### 75 Series Contact Ratings (current)

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Nominal</th>
<th>UL</th>
<th>CSA</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>28VDC</td>
<td>12A</td>
<td>12A</td>
<td>12A</td>
<td>---</td>
</tr>
<tr>
<td>120VAC</td>
<td>12A</td>
<td>12A</td>
<td>12A</td>
<td>1/3Hp</td>
</tr>
<tr>
<td>240VAC</td>
<td>12A</td>
<td>12A</td>
<td>12A</td>
<td>1/2Hp</td>
</tr>
</tbody>
</table>
75 Series Socket Dimensions

Dimensions
inches [mm]

Figure 3: 750-2C-SKT

Figure 4: 750-3C-SKT

Bus Connector

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>33-796-1</td>
<td>Coil bus connector used to connect multiple relays in parallel. Package includes 5 pairs of bus bars to connect up to 5 relays together.</td>
<td>$3.25</td>
</tr>
</tbody>
</table>
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.

Protection Device Selection Guide

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Price</th>
<th>Description</th>
<th>Nominal Input Voltage</th>
<th>Dimensions &amp; Package</th>
<th>Mating Socket</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD-ASMD-250</td>
<td>$9.75</td>
<td>Protection diode module for 784 and 75 series relays. Plug-in modules come in package of 5.</td>
<td>6-250VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AD-ASMM-24</td>
<td>$8.00</td>
<td>MOV module for 784 and 75 series relays that operate at 24VAC coil voltage. Package includes 5 modules.</td>
<td>24VAC/VDC</td>
<td></td>
<td>784-4C-SKT-1 784-6C-SKT</td>
</tr>
<tr>
<td>AD-ASMM-120</td>
<td>$8.00</td>
<td>MOV module for 784 and 75 series relays that operate at 120VAC coil voltage. Package includes 5 modules.</td>
<td>120VAC/VDC</td>
<td></td>
<td>750-2C-SKT 750-3C-SKT</td>
</tr>
<tr>
<td>AD-ASMM-240</td>
<td>$8.00</td>
<td>MOV module for 784 and 75 series relays that operate at 240VAC coil voltage. Package includes 5 modules.</td>
<td>240VAC/VDC</td>
<td></td>
<td>750-3C-SKT</td>
</tr>
<tr>
<td>AD-BSMD-250</td>
<td>$8.00</td>
<td>Protection diode module for 782 series relays. Plug-in modules come in package of 5.</td>
<td>6-250VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AD-BSMM-24</td>
<td>$8.00</td>
<td>MOV module for 782 series relays that operate at 24VAC coil voltage. Package includes 5 modules.</td>
<td>24VAC/VDC</td>
<td></td>
<td>782-2C-SKT</td>
</tr>
<tr>
<td>AD-BSMM-120</td>
<td>$8.00</td>
<td>MOV module for 782 series relays that operate at 120VAC coil voltage. Package includes 5 modules.</td>
<td>120VAC/VDC</td>
<td></td>
<td></td>
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<tr>
<td>AD-BSMM-240</td>
<td>$8.00</td>
<td>MOV module for 782 series relays that operate at 240VAC coil voltage. Package includes 5 modules.</td>
<td>240VAC/VDC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Accessory dimensions
inches [mm]

Figure 1

Figure 2

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.