750R Series Electromechanical Relay Selection Guide

Overview

750R 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

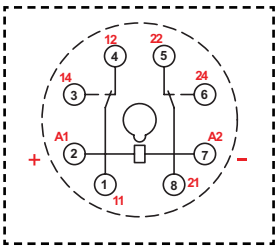
- Octal base design
- Silver alloy, gold flashed contacts
- High open contact dielectric strength (1500 Vrms)
- High reliability and long life
- High vibration and shock resistance
- Flag indicator shows relay status in manual or powered condition
- LED indicator on all models, so you can easily see 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

750R Series Relays									
Part Number	*Price*	*Drawing Link*	*Coil Voltage*	*Configuration*	*Contact Rating*	*Terminals*	*Relay Socket Part Number*	*Price*	*Drawing Link*
750R-2C-12D	$?8e:	PDF	12VDC	DPDT	10A	8-pin	***750-2C-SKT***	$-b?j:	PDF
750R-2C-12A	$;0?8f:	PDF	12VAC						
750R-2C-24D	$?8g:	PDF	24VDC						
750R-2C-24A	$?8h:	PDF	24VAC						
750R-2C-120A	$-?8i:	PDF	120VAC						
750R-2C-240A	$-0?8j:	PDF	240VAC						
750R-3C-12D	$0?8k:	PDF	12VDC	3PDT	10A	11-pin	***750-3C-SKT***	$b?k:	PDF
750R-3C-24D	$-0?8l:	PDF	24VDC						
750R-3C-24A	$0?8n:	PDF	24VAC						
750R-3C-120A	$0?8o:	PDF	120VAC						
750R-3C-240A	$0?8p:	PDF	240VAC						

Note: Order socket separately. 750-2C-SKT/750-3C-SKT socket torque 9 lb·in/ 1.0 N·m

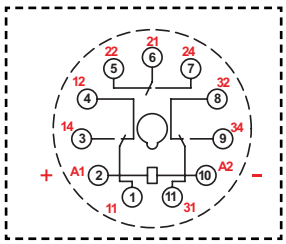
Wiring Diagrams

750R-2C-xxx wiring diagram



Note: Contacts and coil shown are internal to the relay

750R-3C-xxx wiring diagram



Note: Contacts and coil shown are internal to the relay

Note: Red numbers indicate IEC designations

750R Series Electromechanical Relay Specifications

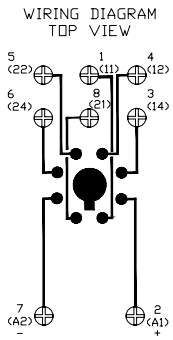
750R Series Specifications											
Part Numbers	***750R-2C-12D***	***750R-2C-12A***	***750R-2C-24D***	***750R-2C-24A***	***750R-2C-120A***	***750R-2C-240A***	***750R-3C-12D***	***750R-3C-24D***	***750R-3C-24A***	***750R-3C-120A***	***750R-3C-240A***
General Specifications											
Service Life	Mechanical: 5 million operations, Electrical: 100,000 operations @ rated resistive load										
Operating Temperature	-40 to 55°C [-40 to 131°F]										
Response Time	20ms										
Vibration Resistance	+/- 1mm [10 -35 Hz] and 3 g-n [35 -150 Hz]										
Shock Resistance	10 G's										
Weight g (oz)	83 [2.93]										
Environmental Protection	IP40										
****Agency Approvals and Standards***	UL Recognized file E191059, CE, CSA Certified 2742760										
Coil Specifications											
Standard	LED Indicator										
Coil Input Voltage	12VDC	12VAC 50/60 Hz	24VDC	24VAC 50/60 Hz	120VAC 50/60 Hz	240VAC 50/60 Hz	12VDC	24VDC	24VAC 50/60 Hz	120VAC 50/60 Hz	240VAC 50/60 Hz
Coil Resistance	120Ω	16.9 Ω	470Ω	72Ω	1.7 kΩ	6.8 kΩ	120Ω	470Ω	72Ω	1.7 kΩ	6.8 kΩ
Power Consumption	3VA (60Hz) AC, 1.4 W DC										
Dropout Voltage (% of rated voltage)	15% AC, 10% DC										
Pull-in Voltage	Max. 85% (AC), 80% (DC) 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 alloy, gold flashed										
Minimum Switching Requirement	10mA @ 17VDC										
Contact Rating	Refer to Contact Ratings chart										
Dielectric Strength Between Contacts	1500 Vrms										

***Note: UL listed when used with sockets 750-2C-SKT, 750-3C-SKT. Current limited to rating of relay or socket, whichever is less.**
To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

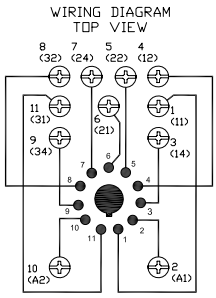
750R Series Rated Switching Current	
UL	
Resistive	10A @ 277VAC, 200k cycles / 10A @ 30VDC, 200k cycles
Motor	1/3HP @ 120VAC, 6k cycles / 1HP @ 277VAC, 6k cycles
Pilot Duty	B300, 6k cycles
IEC	
N.O.: 10A at 250VAC, N.C.: 5A at 250VAC N.O.: 10A at 28VDC, N.C.: 5A at 28VDC	

H750 Series Socket Wiring

Wiring Diagrams



750-2C-SKT



750-3C-SKT

H750 Series Socket	
Specification	***Description***
Max Screw Torque	9 lb·in (1.0 N·m)
Max Wire Size	Solid or Stranded Cu: two 12–14 AWG (2.5–4 mm²)

Bus Connector

Accessory		
Part Number	***Description***	***Price***
33-796-1	Coil bus connector used to connect multiple relays in parallel. Package includes 5 pairs of bus bars to connect up to 5 relays together.	$b_9:

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.

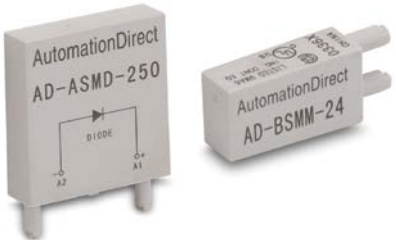
Features

- 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 Devices

Part Number	Price	QTY	Description	Nominal Input Voltage	Dimensions & Package	Mating Socket
AD-ASMD-250	$0b_a:	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	$b_c:	5	MOV module for 783, 784 and 75 series relays that operate at 24VAC coil voltage.	24VAC/VDC		
AD-ASMM-120	$b_b:	5	MOV module for 783, 784 and 75 series relays that operate at 120VAC coil voltage.	120VAC/VDC		
AD-ASMM-240	$b_d:	5	MOV module for 783, 784 and 75 series relays that operate at 240VAC coil voltage.	240VAC/VDC		
AD-BSMD-250	$b_e:	5	Protection diode module for 782 series relays.	6-250VDC	Figure 2	782-2C-SKT
AD-BSMM-24	$;b!0:	5	MOV module for 782 series relays that operate at 24VAC coil voltage.	24VAC/VDC		
AD-BSMM-120	$;b_f:	5	MOV module for 782 series relays that operate at 120VAC coil voltage.	120VAC/VDC		
AD-BSMM-240	$;b!1:	5	MOV module for 782 series relays that operate at 240VAC coil voltage.	240VAC/VDC		

Dimensions

inches [mm]

Figure 1

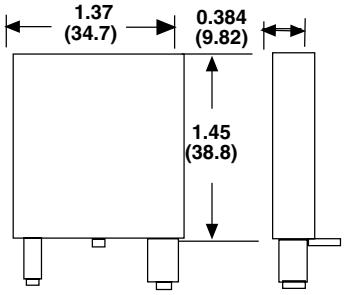


Figure 2