

78 Series Electromechanical Relay Selection Guide



Specification	781 Series	782 Series	783 Series	784 Series
Coil Voltages	110/120VAC, 220VAC, 24VAC, 24VDC	110/120VAC, 220VAC, 24VAC, 24VDC	110/120VAC, 220VAC, 24VAC, 24VDC	110/120VAC, 220VAC, 24VAC, 24VDC
Configuration	1PDT	2PDT	3PDT	4PDT
Contact Rating	15A	15A	15A	15A
Base Socket	5 pin spade terminal	8 pin spade terminal	11 pin spade terminal	14 pin spade terminal
Agency Approvals	UL Recognized (E191059), CE Approval pending, CSA 244610	UL Recognized (E191059), CE Approval pending, CSA 244610	UL Recognized (E191059), CE Approval IEC Std 947-4-1 and 947-5-1, CSA 244610	UL Recognized (E191059), CE Approval pending, CSA 244610
Prices starting at	<--->	<--->	<--->	<--->



The ice cube style relays are power relays designed for applications demanding high power control in various factory machines and control panels. They are ideal for electric control panels requiring stable and reliable relays.

Features

- Small package design
- Silver Cadmium Oxide gold flashed contact
- High open contact dielectric strength (1,000 VAC)
- High reliability and long life
- High vibration and shock resistance
- LED indicator on all models, so you can easily see if the relay is working properly without using a voltmeter
- Flag indicator shows relay status in manual or powered condition
- A pushbutton allows manual operation of the relay without the need for power to the coil
- Lock-Down door, when activated, holds push button and contacts in the operate position allowing circuits to be analyzed. **This feature is not available on 781 series.**
- SPDT, 2PDT, 3PDT and 4PDT models
- Finger grip cover allows easier removal of relays from sockets than conventional relays
- I.D. tag/write labels for identifying relays in multi-relay circuits

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NOTE: Not recommended for low current switching. Find contacts' Minimum Switching Requirement on page 24-20. For low current switching, please see the QM4N1 and QM4X1 series on page 24-8.

Part Number	Price	Coil Voltage	Configuration	Contact Rating	Dimensions	Relay Socket Part Number	Price	Dimensions
781-1C-24D	<--->	24VDC	SPDT	15A	Figure 1	781-1C-SKT	<--->	Figure 5
781-1C-24A	<--->	24VAC						
781-1C-120A	<--->	120VAC						
781-1C-240A	<--->	240VAC						
782-2C-24D	<--->	24VDC	DPDT	15A	Figure 2	782-2C-SKT	<--->	Figure 6
782-2C-24A	<--->	24VAC						
782-2C-120A	<--->	120VAC						
782-2C-240A	<--->	240VAC						
783-3C-24D	<--->	24VDC	3PDT	15A	Figure 3	783-3C-SKT	<--->	Figure 7
783-3C-24A	<--->	24VAC						
783-3C-120A	<--->	120VAC						
783-3C-240A	<--->	240VAC						
784-4C-24D	<--->	24VDC	4PDT	15A	Figure 4	784-4C-SKT-1	<--->	Figure 8
784-4C-24A	<--->	24VAC						
784-4C-120A	<--->	120VAC						
784-4C-240A	<--->	240VAC						

78 Series Electromechanical Relay Specifications

78 Series Relay Specification Table																
Part Numbers	781-1C-24D	781-1C-24A	781-1C-120A	781-1C-240A	782-2C-24D	782-2C-24A	782-2C-120A	782-2C-240A	783-3C-24D	783-3C-24A	783-3C-120A	783-3C-240A	784-4C-24D	784-4C-24A	784-4C-120A	784-4C-240A
General Specifications																
*Service Life: Electrical Operations at Rated Resistive Load	Mechanical: 10,000,000 operations @ rated resistive load															
	100,000				200,000				150,000							
Operating Temperature	-40°C to 70°C (-40°F to 158°F)															
Ambient Humidity	45% RH to 85% RH															
Vibration Resistance	6 G's, 10 to 55Hz (0.6mm double amplitude)															
Shock Resistance	10 G's															
Weight	29g (1.02 oz.)			36g (1.27 oz.)				62g (2.19 oz.)			80g (2.82 oz.)					
Agency Approvals and Standards	UL Rec.**; CE Certified, CSA											UL Listed**, CE Certified.CSA.				
NEMA B300 Pilot Duty Rated	No	Yes		No	Yes		No	Yes		No	Yes		No	Yes		
Coil Specifications																
Standard	LED Indicator															
Coil Input Voltage	24VDC	24VAC	120VAC	240VAC	24VDC	24VAC	120VAC	240VAC	24VDC	24VAC	120VAC	240VAC	24VDC	24VAC	120VAC	240VAC
Coil Resistance	750Ω	180Ω	4.43kΩ	15.72kΩ	650Ω	180Ω	4.43kΩ	15.7kΩ	400Ω	103Ω	2.77kΩ	12.1kΩ	388Ω	84.5Ω	2.22kΩ	9.12kΩ
Power Consumption	0.7W DC, 0.9VA @ 60Hz AC @ 25°C				0.9W DC, 1.2VA @ 60Hz AC @ 25°C				1.7W DC, 1.2VA @ 60Hz AC @ 25°C				2.0W DC, 1.5VA @ 60Hz AC @ 25°C			
Dropout Voltage (% of nominal voltage or more)	Min. 10%	Min. 30%		Min. 10%	Min. 30%		10%	10%		Min. 10%	Min. 30%					
Pull-in Voltage (% of nominal voltage or less)	75%	80%		75%	80%		80%	85%		75%	80%					
Max. Voltage (Max. continuous voltage)	110% of the rated coil voltage															
Contact Specifications																
Contact Type	SPDT			DPDT				3PDT			4PDT					
Contact Material	Silver cadmium oxide, gold flashed															
Contact Resistance	N/A											0.050Ω max. initial resistance				
Minimum Switching Requirement	100mA @ 5VDC															
Max. Contact Rating	Refer to Contact Ratings charts on following page															

*Note: These devices are rated for 1,000 cycles when applied to a motor application. (Per Table 45.1, UL 508).

**Note: UL listed when used with sockets 781-1C-SKT, 782-2C-SKT, 783-3C-SKT, 784-4C-SKT, or 784-4C-SKT-1. Current limited to rating of relay or socket, whichever is less.

NEMA Mechanical Switching Ratings and Test Values for AC Control Circuit Contacts											
Contact Rating Designation	Thermal Continuous Test Current (A)	Maximum AC Current, 50/60Hz (A)								Voltamperes	
		120 Volts		240 Volts		480 Volts		600 Volts			
		Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
B300	5	30	3.00	15	1.50	---	---	---	---	3600	360

This chart is provided as a guideline only, and the ratings and values are not guaranteed to be accurate. It is the users' responsibility to properly size their control circuit devices. The chart values are from NEMA Standard ICS 5-2000, Table 1-4-1.

78 Series Electromechanical Relay Specifications

781 Series Contact Ratings (current)				
Resistive				*Motor Load
Voltage	Nominal	UL	CSA	UL
28VDC	15A	15A	15A	---
110VAC	15A	15A	15A	1/2Hp
120VAC	15A	15A	15A	1/2Hp
220VAC	12A	12A	10A	1/2Hp
250VAC	12A	12A	10A	1Hp

782 Series Contact Ratings (current)				
Resistive				*Motor Load
Voltage	Nominal	UL	CSA	UL
28VDC	12A	12A	12A	---
110VAC	15A	15A	15A	1/2Hp
120VAC	15A	15A	15A	1/2Hp
220VAC	12A	12A	10A	1Hp
250VAC	12A	12A	10A	1Hp

783 Series Contact Ratings (current)				
Resistive				*Motor Load
Voltage	Nominal	UL	CSA	UL
28VDC	12A	12A	12A	---
110VAC	15A	15A	15A	1/2Hp
120VAC	15A	15A	15A	1/2Hp
220VAC	12A	12A	10A	3/4Hp
250VAC	12A	12A	10A	3/4Hp

784 Series Contact Ratings (current)				
Resistive				*Motor Load
Voltage	Nominal	UL	CSA	UL
28VDC	12A	12A	12A	---
110VAC	15A	15A	15A	1/2Hp
120VAC	15A	15A	15A	1/2Hp
220VAC	12A	12A	12A	1/2Hp
250VAC	12A	12A	12A	3/4Hp

Note: These devices are rated for 1,000 cycles when applied to a motor application. (Per Table 46.1` UL 508)