Electromechanical Relays 78 Series Selection Guide

Electromechanical Relays 78 Series				
Specification	***781 Series***	***782 Series***	***783 Series***	***784 Series***
Coil Voltages	120VAC, 240VAC, 12VAC, 12VDC, 24VAC, 24VDC	120VAC, 240VAC, 12VAC, 12VDC, 24VAC, 24VDC	120VAC, 240VAC, 12VAC, 12VDC, 24VAC, 24VDC	120VAC, 240VAC, 12VAC, 12VDC, 24VAC, 24VDC
Configuration	SPDT	DPDT	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, IEC Std 947-4-1 and 947-5-1, CSA 244610	UL Recognized (E191059), CE, IEC Std 947-4-1 and 947-5-1, CSA 244610	UL Recognized (E191059), CE, IEC Std 947-4-1 and 947-5-1, CSA 244610	UL Recognized (E191059), CE, CSA 244610

Overview

These 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 electrical control panels requiring stable and reliable relays.

Features

- Small package design
- Silver alloy gold flashed contact
- High open contact dielectric strength (up to 2500V rms)
- 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 pushbutton and contacts in the "operate" position, allowing circuits to be analyzed.
- SPDT, DPDT, 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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Part Number	***Price***	***Drawing Link***	***Coil Voltage***	***Configuration***	***Relay Socket Part Number***	***Price***	***Drawing Link***
781-1C-12D	$b#2:	PDF	12VDC	SPDT	***781-1C-SKT***	$-b?l:	PDF
781-1C-12A	$b#1:	PDF	12VAC				
781-1C-24D	$b#5:	PDF	24VDC				
781-1C-24A	$b#4:	PDF	24VAC				
781-1C-120A	$b#0:	PDF	120VAC				
781-1C-240A	$b#3:	PDF	240VAC				
782-2C-12D	$b#8:	PDF	12VDC	DPDT	***782-2C-SKT***	$b?n:	PDF
782-2C-12A	$b#7:	PDF	12VAC				
782-2C-24D	$b#b:	PDF	24VDC				
782-2C-24A	$b#a:	N/A	24VAC				
782-2C-120A	$b#6:	N/A	120VAC				
782-2C-240A	$b#9:	N/A	240VAC				
783-3C-12D	$b#e:	PDF	12VDC	3PDT	***783-3C-SKT***	$b?p:	PDF
783-3C-12A	$b#d:	PDF	12VAC				
783-3C-24D	$b#h:	N/A	24VDC				
783-3C-24A	$b#g:	N/A	24VAC				
783-3C-120A	$b#c:	N/A	120VAC				
783-3C-240A	$;b#f:	N/A	240VAC				
784-4C-12D	$b#k:	PDF	12VDC	4PDT	***784-4C-SKT-1***	$b?q:	PDF
784-4C-12A	$-0b#j:	PDF	12VAC				
784-4C-24D	$b#o:	PDF	24VDC				
784-4C-24A	$b#n:	N/A	24VAC				
784-4C-120A	$-b#i:	N/A	120VAC				
784-4C-240A	$-b#l:	N/A	240VAC				

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

Electromechanical Relays 78 Series Specifications

Electromechanical Relays 78 Series Specifications												
Part Numbers	781-1C-12D	781-1C-12A	781-1C-24D	781-1C-24A	781-1C-120A	781-1C-240A	782-2C-12D	782-2C-12A	782-2C-24D	782-2C-24A	782-2C-120A	782-2C-240A
General Specifications												
***Service Life: Mechanical / Electrical Operations**	Mechanical: 10,000,000 operations not powered											
	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 3gn [35-50Hz]											
***Shock Resistance**	15gn											
***Weight**	26g [0.92 oz]						36g [1.27 oz]					
***Environmental Protection**	IP40											
***NEMA B300 Pilot Duty Rated**	Yes											
****Agency Approvals and Standards**	UL Recognized File E191059, CE, CSA											
Coil Specifications												
***Standard**	Mechanical flag indicator, LED Indicator, lockable push to test button											
***Coil Input Voltage**	12VDC	12VAC	24VDC	24VAC	120VAC	240VAC	12VDC	12VAC	24VDC	24VAC	120VAC	240VAC
***Coil Resistance**	115Ω	44Ω	450Ω	177Ω	4.43kΩ	17.72kΩ	177Ω	44Ω	640Ω	177Ω	4.43 kΩ	17.72 kΩ
***Power Consumption**	1.4 W DC, 1.9 W AC @ 50/60 Hz						1.15 W DC, 1.4 W AC @ 50/60 Hz					
***Dropout Voltage (% of nominal voltage or more)**	10%	15%	10%	15%			10%	15%	10%	15%		
***Pull-in Voltage (% of nominal voltage or less)**	85%	85%	85%	85%			80%	85%	80%	85%		
***Max. Voltage (Max. continuous voltage)**	110% of the rated coil voltage											
Contact Specifications												
***Contact Type**	SPDT						DPDT					
***Contact Material**	Silver alloy, gold flashed											
***Minimum Switching Requirement**	10mA @ 17VDC											
***Max. Contact Rating**	Refer to Contact Ratings charts.											
***Dielectric Strength Between Contacts**	Between coil contact: 2000V rms; Between poles 2000V rms; Between contacts 1500V rms											

***Note: These devices are rated for 1,000 cycles when used in 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, 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.

Contact Ratings 781 Series (current)				
Resistive				***Motor Load**
Voltage	**Nominal**	**UL**	**CSA**	**UL**
28VDC	15A	15A	12A	---
120VAC	15A	15A	15A	1/2Hp
277VAC	15A	12A	12A	1Hp

Contact Ratings 782 Series (current)				
Resistive				***Motor Load**
Voltage	**Nominal**	**UL**	**CSA**	**UL**
28VDC	15A	15A	12A	---
120VAC	15A	15A	15A	1/2Hp
277VAC	15A	12A	12A	1Hp

Electromechanical Relays 78 Series Specifications

Electromechanical Relay 78 Series Specifications												
Part Numbers	***783-3C-12D***	***783-3C-12A***	***783-3C-24D***	***783-3C-24A***	***783-3C-120A***	***783-3C-240A***	***784-4C-12D***	***784-4C-12A***	***784-4C-24D***	***784-4C-24A***	***784-4C-120A***	***784-4C-240A***
General Specifications												
****Service Life: Mechanical / Electrical Operations***	Mechanical: 10,000,000 operations not powered											
	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 3gn [35-100 Hz]											
Shock Resistance	15gn											
Weight	60g [2.12 oz]						80g [2.82 oz]					
Environmental Protection	IP40											
NEMA B300 Pilot Duty Rated	Yes											
*****Agency Approvals and Standards***	UL Recognized File E191059, CE, CSA											
Coil Specifications												
Standard	Mechanical flag indicator, LED Indicator, lockable push to test button											
Coil Input Voltage	12VDC	12VAC	24VDC	24VAC	120VAC	240VAC	12VDC	12VAC	24VDC	24VAC	120VAC	240VAC
Coil Resistance	80Ω	30Ω	320Ω	110Ω	2.88 kΩ	11.3 kΩ	76Ω	20Ω	303Ω	80Ω	2.1 kΩ	8kΩ
Power Consumption	1.85 W DC, 2.05 W AC @ 50/60 Hz						1.5 W DC, 1.5 W AC @ 50/60 Hz					
Dropout Voltage (% of nominal voltage or more)	10%	15%	10%	15%			10%	15%	10%	15%		
Pull-in Voltage (% of nominal voltage or less)	80%	85%	80%	85%			80%	85%	80%	85%		
Max. Voltage (Max. continuous voltage)	110% of the rated coil voltage											
Contact Specifications												
Contact Type	3PDT						4PDT					
Contact Material	Silver alloy, gold flashed											
Minimum Switching Requirement	10mA @ 17VDC											
Max. Contact Rating	Refer to Contact Ratings charts.											
Dielectric Strength Between Contacts	Between coil and contacts: 2000V rms; Between poles: 2000V rms; Between contacts: 1500V rms											

***Note: These devices are rated for 1,000 cycles when used in 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, or 784-4C-SKT-1. Current limited to rating of relay or socket, whichever is less.**

Contact Ratings 783 Series (current)				
Resistive				****Motor Load***
Voltage	***Nominal***	***UL***	***CSA***	***UL***
28VDC	15A	15A	15A @ 28VDC 30A max total	–
120VAC	15A	–	15A	1/2 hp
277VAC	15A	15A	15A @ 150VAC 30A max total	1hp 2hp max total

Contact Ratings 784 Series (current)				
Resistive				****Motor Load***
Voltage	***Nominal***	***UL***	***CSA***	***UL***
28VDC	15A	15A	15A @ 28VDC 30A max total	–
120VAC	15A	–	15A	1/2Hp
277VAC	15A	15A	15A @ 150VAC 30A max total	1hp 2hp max total