

# 3.4

## Control Relays and Timers

### General Purpose Plug-In Relays

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#### Product Selection

##### D1RR/D1RF Relay/Socket Quick Reference

Relay Type	Socket	Clip	Module Type	ID Tag	Jumper
D1RR1	D1PAA	PMC-1781	B	—	—
D1RF1	D1PAA	PMC-1781	B	—	—

#### D1RF Series Relay



##### D1RR/D1RF Series

Coil Voltage	Contact Configuration	Coil Resistance (Ohms)	Catalog Number
<b>Full Featured</b>			
12 Vdc	SPDT	188	<b>D1RF1R1</b>
24 Vac 50/60 Hz	SPDT	180	<b>D1RF1T</b>
24 Vdc	SPDT	750	<b>D1RF1T1</b>
110 Vdc	SPDT	13,800	<b>D1RF1A1</b>
120 Vac 50/60 Hz	SPDT	4430	<b>D1RF1A</b>
240 Vac 50/60 Hz	SPDT	15,720	<b>D1RF1B</b>
<b>Plain Cover</b>			
12 Vdc	SPDT	188	<b>D1RR1R1</b>
24 Vdc	SPDT	750	<b>D1RR1T1</b>
48 Vdc	SPDT	2600	<b>D1RR1W1</b>
110 Vdc	SPDT	13,800	<b>D1RR1A1</b>
120 Vac 50/60 Hz	SPDT	4430	<b>D1RR1A</b>
240 Vac	SPDT	15,270	<b>D1RR1B</b>

#### Accessories

##### D1RR/D1RF Sockets and Accessories

Type	Module Size	Nominal Voltage (Max. for Sockets)	Nominal Current	Mounting Style	Wire Size	Wire Connection	Standard Pack	Catalog Number
Socket	B	300	20	Panel/DIN rail	12 /14 (2) AWG, 4 /2.5 (2) mm <sup>2</sup>	Screw clamping	10	<b>D1RAA</b> ①
Flange mount adapter	—	—	—	Flange	—	—	25	<b>PFC-D11</b>
Metal spring clip	—	—	—	—	—	—	25	<b>PMC-1781</b>
Protection diode	B	6 to 250 Vdc	—	—	—	—	20	<b>MOD-BD250</b>
LED indicator	B	24 Vac/Vdc	—	—	—	—	20	<b>MOD-BLG24</b>
	B	120/240 Vac/Vdc	—	—	—	—	20	<b>MOD-BLG240</b>
MOV suppressor	B	120 Vac/Vdc	—	—	—	—	20	<b>MOD-BMV120</b>
	B	24 Vac/Vdc	—	—	—	—	20	<b>MOD-BMV24</b>
	B	240 Vac/Vdc	—	—	—	—	20	<b>MOD-BMV240</b>
Plastic DIN rail end stop	—	—	—	—	—	—	25	<b>PPF-P</b>

#### Note

① Protection Category (Finger Safe), EN 60529: IP20.

**Technical Data and Specifications****D1RF/D1RR Relay Specifications**

Description	D1RR	D1RF
<b>Contact Characteristics</b>		
Contact rating	15 A	15 A
Terminal style	Plug-in	Plug-in
Contact materials	Silver alloy	Silver alloy
Maximum switching voltage	300 V	300 V
Switching current at voltage—resistive	20 A at 120 Vac 50/60 Hz	20 A at 120 Vac 50/60 Hz
	20 A at 277 Vac 50/60 Hz	20 A at 277 Vac 50/60 Hz
	20 A at 28 Vdc	20 A at 28 Vdc
Switching current at voltage	1/2 hp at 120 Vac	1/2 hp at 120 Vac
	1 hp at 277 Vac	1 hp at 277 Vac
Pilot duty	B300	B300
Minimum switching requirement	100 mA at 5 Vdc (0.5 W)	100 mA at 5 Vdc (0.5 W)
<b>Coil Characteristics</b>		
Operating range		
% of nominal (AC)	85 to 110%	85 to 110%
% of nominal (DC)	80 to 110%	80 to 110%
Average consumption	0.9 VA	0.9 VA
	0.7 W	0.7 W
Dropout voltage threshold	15% (AC)	15% (AC)
	10% (DC)	10% (DC)
<b>Performance</b>		
Electrical life (UL 508) operations at rated current	100,000 operations	100,000 operations
Mechanical life operations unpowered	10,000,000 operations	10,000,000 operations
Response time	20 ms	20 ms
Dielectric strength		
Between coil and contact Vac (rms)	2500 V (rms)	2500 V (rms)
Between poles Vac (rms)	1500 V (rms)	1500 V (rms)
<b>Environment</b>		
Ambient air temperature around the device		
Storage	−40 °F to +131 °F (−40 °C to +55°C)	−40 °F to +131 °F (−40 °C to +55 °C)
Operation	−40 °F to +185 °F (−40 °C to +85°C)	−40 °F to +185 °F (−40 °C to +85 °C)
Vibration resistance—operational	3 g-n at 10–55 Hz	3 g-n at 10–55 Hz
Shock resistance	10 g-n	10 g-n
Degree of protection	IP40	IP40
<b>Features</b>		
Cover options	Plain cover	Full featured
Features	Mechanical flag indicator (optional LED)	Locking pushbutton/ Bipolar LED/ Removable ID tag/ Mechanical flag indicator
Product certifications	RoHS/UL/CE/CSA	RoHS/UL/CE/CSA

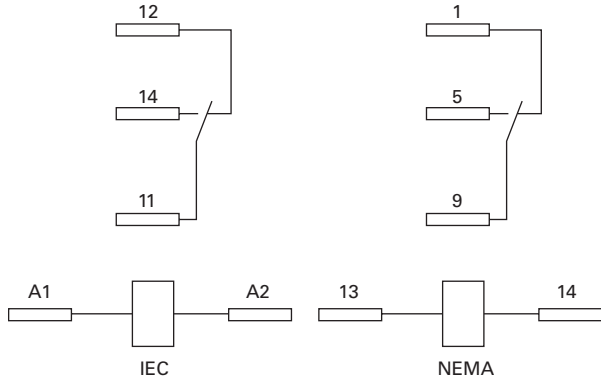
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#### Wiring Diagram

##### D1RF/D1RR

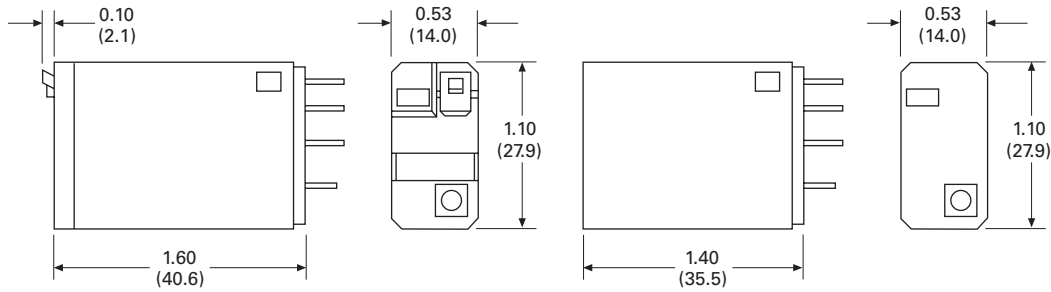


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#### Dimensions

Approximate Dimensions in Inches (mm)

##### D1RF/D1RR



##### D1RAA

