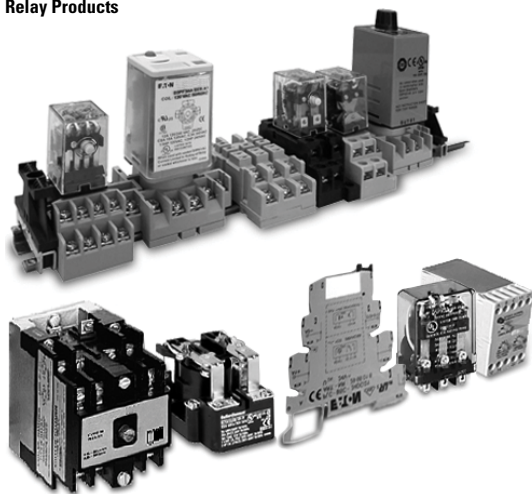


Relay Products

3



Contents

Description

Page

Terminal Block Relays	V7-T3-3
Programmable Relays	V7-T3-19
General Purpose Plug-In Relays	V7-T3-49
General Purpose Type AA Relays	V7-T3-118
Solid-State Relays	V7-T3-122
Machine Tool Relays	V7-T3-141
Timing Relays	V7-T3-167
Alternating Relays	V7-T3-188
Safety Relays	V7-T3-193

Control Relays and Timers Comparison

Selection Guide by Catalog Number Prefix

Relays	Type	Mounting	Contacts	Maximum Amperage (AC)		UL	CSA	CE	Page Number
9575H3	General purpose	Panel mount	Fixed	40 A	—	■	■	■	V7-T3-119
AR/ARD	Machine tool	Panel mount	Convertible	10 A	—	■	■	—	V7-T3-154
BF/BFD	Machine tool	Panel mount	Fixed	10 A	■	—	■	—	V7-T3-148
D2RF	Full featured plug-in	DIN rail / panel mount	Fixed	10 A	■	—	■	■	V7-T3-59
D2RR	Standard plug-in	DIN rail / panel mount / flange	Fixed	10 A	■	—	■	■	V7-T3-59
D3RF	Full featured plug-in	DIN rail / panel mount	Fixed	16 A	■	—	■	■	V7-T3-69
D3RR	Standard plug-in	DIN rail / panel mount	Fixed	16 A	■	—	■	■	V7-T3-69
D4PR	Standard plug-in	DIN rail / panel mount	Fixed	10 A	■	—	■	■	V7-T3-77
D5RF	Full featured plug-in	DIN rail / panel mount	Fixed	16 A	■	—	■	■	V7-T3-82
D5RR	Standard plug-in	DIN rail / panel mount / PC board	Fixed	16 A	■	—	■	■	V7-T3-82
D7PF	Full featured plug-in	DIN rail / panel mount	Fixed	20 A	■	—	■	■	V7-T3-91
D7PR	Standard plug-in	DIN rail / panel mount / flange	Fixed	20 A	■	—	■	■	V7-T3-91
D8PR	Standard plug-in	DIN rail / panel mount / flange	Fixed	30 A	■	—	■	■	V7-T3-104
D9PR	Standard plug-in	Panel mounting	Fixed	25 A	■	—	■	—	V7-T3-109
D15	Machine tool	DIN rail / panel mount	Fixed	10 A	—	■	■	■	V7-T3-143
D26	Machine tool	Panel or channel mount	Convertible	10 A	—	■	■	—	V7-T3-159
D85	Alternating relays	DIN rail / panel mount	Fixed	10 A	■	■	—	■	V7-T3-189
D1RF	Full featured plug-in	DIN rail / panel mount	Fixed	20 A	■	—	■	■	V7-T3-54
D1RR	Standard plug-in	DIN rail / panel mount	Fixed	20 A	■	—	■	■	V7-T3-54
easyRelay	Programmable relay	DIN rail	Fixed	8 A	—	■	■	■	V7-T3-23
TMR5	Timing relay (non-programmable)	DIN rail / panel mount	Fixed	10 A	■	■	—	■	V7-T3-180
TMR6	Timing relay (non-programmable)	DIN rail / panel mount	Fixed	10 A	■	■	—	■	V7-T3-184
TR	Timing relay (programmable)	DIN rail / panel mount	Fixed	10 A	—	■	■	—	V7-T3-177
Universal TR	Timing relay (programmable)	DIN rail	Fixed	8 A	—	■	■	■	V7-T3-173
XR	Terminal block relay	DIN rail	Fixed	6 A, 10 A	■	—	—	■	V7-T3-5

General Purpose Plug-In Relay



Contents

Description	Page
D1RR/D1RF Series	V7-T3-53
D2RR/D2RF Series	V7-T3-57
D3RR/D3RF Series	V7-T3-67
D4 Series	V7-T3-76
D5RR/D5RF Series	V7-T3-80
D7PR/D7PF Series	V7-T3-89
D8 Series	V7-T3-103
D9 Series	V7-T3-108
Accessories	V7-T3-112

Product Selection Guide

General Purpose Relay Selection Characteristics

- Current rating: 1 A–30 A
- Contact arrangement: SPDT, DPDT, 3PDT, 4PDT, etc.
- Coil voltage: 6 V–240 Vac/ 6 V–110 Vdc
- Mounting options: socket, flange, DIN rail, panel
- Specifications: CSA, CE, IEC, NEMA, UL, etc.
- Other: physical dimensions, maximum voltage, mechanical/ electrical life, etc.

General Purpose Plug-In Relays

Relay Series

D1RR/D1RF



D2RR/D2RF



D3RR/D3RF



Approvals



Note: UL when used with the appropriate socket.



Note: UL when used with the appropriate socket.



Note: UL when used with the appropriate socket.

Features

Polycarbonate cover

Indicator lamp and pushbutton available

Panel and DIN mounting

Polycarbonate cover

Indicator lamp and pushbutton available

Panel, DIN and flange mounting

Latching

Polycarbonate cover

Indicator lamp and pushbutton available

Panel and DIN mounting

Contact Data

Configuration	SPDT	DPDT	4PDT	DPDT	3PDT
Max. allowable load	15 A	12 A	6 A	10 A	10 A
Material	Silver alloy	Silver alloy		Silver alloy	
Dielectric strength between poles	1500 V	1500 V		1500 V	

Coil Data

AC	6 to 240 Vac	6 to 240 Vac		6 to 240 Vac	
DC	6 to 110 Vdc	6 to 110 Vdc		6 to 110 Vdc	
Power					
VA (Vac)	0.9 VA	1.2 VA		3 VA 1.4 W (D3RR and D3RF)	
Watts (Vdc)	0.7 W	0.9 W		—	

General Data

Ambient temperature					
Storage	−40 °F to +185 °F (−40 °C to +85 °C)	−40 °F to +185 °F (−40 °C to +85 °C)		−40 °F to +185 °F (−40 °C to +85 °C)	
Operational	−40 °F to +131 °F (−40 °C to +55 °C)	−40 °F to +131 °F (−40 °C to +55 °C)		−40 °F to +131 °F (−40 °C to +55 °C)	
Response time	20 milliseconds	20 milliseconds		20 milliseconds	
Life					
Mechanical operations	10 million	10 million		5 million (D3RR and D3RF)	
Electrical operations	100,000	200,000		100,000	
Page Numbers	V7-T3-53 to V7-T3-56	V7-T3-57 to V7-T3-66		V7-T3-67 to V7-T3-75	

D2 Series Relay



D2RR/D2RF Series

Product Description

The D2 Series is a compact line of relays with quick response time and long life. Available in DPDT and 4PDT configurations.

Features

D2RR

- Ultra-high sensitivity relay with quick response
- High reliability, long life
- Panel, DIN rail and flange mounting
- Small size

Contents

Description**Page**

D1RR/D1RF Series	V7-T3-53
D2RR/D2RF Series	
Catalog Number Selection	V7-T3-58
Product Selection	V7-T3-58
Accessories	V7-T3-60
Technical Data and Specifications	V7-T3-61
Wiring Diagrams	V7-T3-62
Dimensions	V7-T3-63
D3RR/D3RF Series	V7-T3-67
D4 Series	V7-T3-76
D5RR/D5RF Series	V7-T3-80
D7PR/D7PF Series	V7-T3-89
D8 Series	V7-T3-103
D9 Series	V7-T3-108
Accessories	V7-T3-112

Standards and Certifications



When used with accompanying Eaton screw terminal socket.

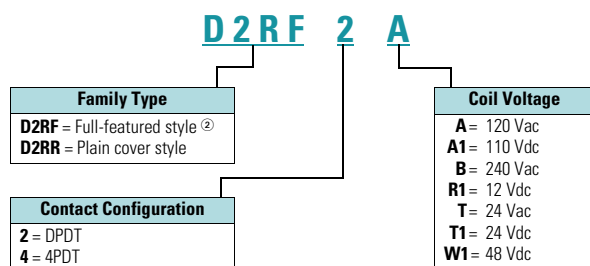
D2RF

- Flag indicator shows relay status in manual or powered condition
- Bipolar LED status lamp allows for reverse polarity applications
 - Shows coil ON or OFF status
 - Ideal in low light conditions
- Color-coded pushbutton identifies AC coils with red or DC coils with blue pushbuttons
 - Allows for manual operation of relay without the need for coil power
 - Ideal for field service personnel to test control circuits
- Lock-down door, when activated, holds pushbutton and contacts in the operate position
 - Excellent for analyzing circuit problems
- Finger-grip cover allows operator to remove relays from sockets more easily than conventional relays
- White plastic ID tag/write label used for identification of relays in multi-relay circuits

Catalog Number Selection

D2RF/D2RR ^①

3



Product Selection

D2RF/D2RR Relay/Socket Quick Reference

Relay Type	Socket	Clip	Module Type	ID Tag	Jumper
D2RR2, D2RF2	D2PAL	PWC-D24	B	PWF-D2P	D2PJ1
		PQC-1782	—	—	—
	D2PA6	PQC-1342	None	—	—
D2RR4, D2RF4	D2PAP	PWC-D24	B	PWF-D2P	D2PJ1
		PQC-1782	—	—	—
	D2PA7	PWC-D24	B	—	—
		PQC-1782	B	—	—
	D2PA6	PQC-1342	None	—	—

Notes

^① For deciphering catalog numbers. Do not use for ordering as not all combinations are readily available.

^② Full-featured, LED test button, flag indicator, lock-down door, finger-grip cover, ID tag.

Technical Data and Specifications

D2RF/D2RR Relay Specifications

Description	D2RR2/D2RR4	D2RF
Contact Characteristics		
Contact rating	12 A / 6 A	6 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	10 A at 120 Vac 50/60 Hz	10 A at 277 Vac 50/60 Hz
	8 A at 277 Vac 50/60 Hz	8 A at 120 Vac 50/60 Hz
	8 A at 28 Vdc	8 A at 28 Vdc
Switching current at voltage	1/3 hp at 120 Vac 1 hp at 277 Vac	1/3 hp at 120 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)
Coil Characteristics		
Operating range		
% of nominal (AC)	85 to 110%	85 to 110%
% of nominal (DC)	80 to 110%	80 to 110%
Average consumption	1.2 VA	1.2 VA
	0.9 W	0.9 W
Dropout voltage threshold	15% (AC)	15% (AC)
	10% (DC)	10% (DC)
Performance		
Electrical life (UL 508) operations at rated current	200,000	200,000
Mechanical life operations unpowered	10,000,000	10,000,000
Response time	20 ms	20 ms
Dielectric strength		
Between coil and contact Vac (rms)	1500 rms	1500 rms
Between poles Vac (rms)	1500 rms	1500 rms
Environment		
Ambient air temperature around the device		
Operation	–40 °F to +131 °F (–40 °C to +55 °C)	–40 °F to +131 °F (–40 °C to +55 °C)
Storage	–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
Features		
Cover options	Plain cover	Full featured
Features	Mechanical flag indicator	Locking pushbutton/ Bipolar LED/ Removable ID tag/ Mechanical flag indicator
Product certifications	RoHS/UL/CE/CSA	RoHS/UL/CE/CSA