



**Relays: General Purpose, Monitoring,
Specialty, Counting, Timing, Solid-State
& Machine Tool**

Product Focus



Precision & Reliability in Relays

Whether you're a machine builder or end user, control panel designer or facility maintenance manager, Eaton's offering of relays includes the device you need for your application. The breadth of relay options available, from general-purpose and timing relays to advanced solid-state devices, allows Eaton to meet almost any specification. And the ability to customize those

products to meet your specific application requirements is why customers like you turn to Eaton.

Not only is the product offering expansive, but customization capabilities and DIN-rail assembly services make Eaton the logical choice for your relay needs.



Customization and Custom-Engineering

If the standard product doesn't meet your unique application needs, Eaton is committed to finding the solution that does. This is made easy as the many knowledgeable engineering and technical support engineers understand the intricacies of using these products in a wide variety of applications. They are

committed to answering questions and tailoring solutions to fit your specific needs. Your application requires specific solutions, designed to meet your exact specifications. Eaton prides itself on being able to solve your problems and keep your machinery and processes running efficiently and effectively by offering custom-engineered products that meet your specifications and project timing.

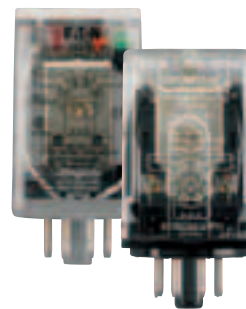
DIN-rail Assembly Services... Making Your Concept Reality

Eaton offers custom rail assembly services, with 24-hour turnaround on quotations and as little as 48-hour turnaround on shipping approved designs. We'll assemble the exact configuration you need from a broad range of Eaton products as well as products from other vendors.



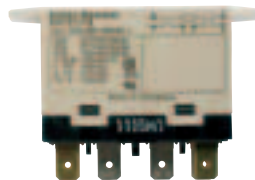


Your custom rail assembly will arrive on time exactly as you need it to keep you on schedule.



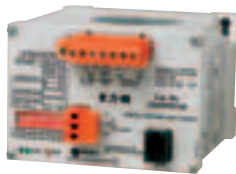
General Purpose & Terminal Block Relays








| Type | 9575 Power Relays | D2PF/D2PR General Purpose Relays | D3PF/D3PR General Purpose Relays | D4PR General Purpose Relays |
|--|---|---|--|--|
| Approvals | UL listed, CSA approved, CE approved | UL recognized, UL listed, CSA approved, CE approved | UL recognized, UL listed, CSA approved, CE approved | UL recognized, CSA approved, CE |
| Features | Optional auxiliary switch, optional blowout magnets for high DC switching, and available NEMA 1 enclosure; riveted screw construction for long life | Polycarbonate cover; available LED, test button, flag indicator, lock-down door, finger-grip cover; latching versions available | Octal plug-in relay with polycarbonate cover; available LED, test button, flag indicator, lock-down door, finger-grip cover; latching versions available | Slim style power relay, socket has built-in hold-down clip; indicator lamp available |
| Mounting | Panel | Panel, DIN and flange mounting | Panel and DIN mounting | Panel and DIN mounting |
| Contact Data | | | | |
| Configuration – | DPDT | DPDT DPDT Latching 4PDT | SPDT DPDT 3PDT | SPDT DPDT |
| Max. Allowable Load – | 40 A up to 300 Vac; 40 A at 28 Vdc; 5 A at 480/600 Vac | D2PF: 10 A at 120 Vac D2PR: 5 A at 240 Vac | 12 A at 120 Vac 12 A at 120 Vac 10 A at 240 Vac | 10 A at 250 Vac, 10 A at 30 Vdc 5 A at 240 Vac, 5 A at 30 Vdc |
| Horsepower – | 1.5 hp each pole at 120 – 600 Vac | 1/3 hp at 120 Vac; 1 hp at 277 Vac 1/3 hp at 120 Vac; 1 hp at 277 Vac 1/10 hp at 120 Vac/277 Vac | 1/3 hp at 120 Vac; 1/2 hp at 240 Vac | 1/3 hp (125 Vac), 1/2 hp (250 Vac), 1/2 hp (277 Vac) 1/6 hp (120 Vac), 1/3 hp (240 Vac), 1/2 hp (277 Vac) |
| Min. Permissible Load – | 1 A at 12 Vac/dc | 100 mA at 5 Vdc | 100 mA at 5 Vdc | 100 mA at 5 Vdc 10 mA at 5 Vdc |
| Dielectric Strength – | 1500 V | 1500 V | 1500 V | 5000 V |
| Pilot Duty – | A600 | B300 | B300 | B300 |
| Coil Data | | | | |
| Available AC Voltages – | 6 – 600 Vac | 6 – 240 Vac | 6 – 240 Vac | 6 – 240 Vac |
| Available DC Voltages – | 6 – 220 Vdc | 6 – 110 Vdc | 6 – 110 Vdc | 6 – 110 Vdc |
| Power – VA (Vac) • Watts (Vdc) • | 10 VA; 4 Watts N/A | 1.2 VA 1.1 Watts | 3 VA 1.4 Watts | 0.9 VA 0.5 Watts |
| General Data | | | | |
| Life – Mechanical Operations • Electrical Operations • | 1 million 100,000 | 10 million 200,000 | 5 million (D3PF)/10 million (D3PR) 100,000 (D3PF)/100,000 (D3PR) | 10 million 100,000 |
| Pick-up Voltage – | 80% DC coils; 85% AC coils (of nominal) | 80% DC coils; 85% AC coils (of nominal) | 80% DC coils; 85% AC coils (of nominal) | 80% DC coils; 70% AC coils (of nominal) |
| Drop-out Voltage – | 10% of nominal voltage | 10% of nominal voltage | 10% of nominal voltage | 30% AC, 15% DC |
| Operating Temperature – | -40° to 55°C | -40° to 70°C | -40° to 55°C | -40° to 70°C |

| | | | | |
|---|--|--|---|--|
|  |  |  |  |  |
| D5PF/D5PR General Purpose Relays | D7PF/D7PR General Purpose Relays | D8 Power Relays | D9 Power Relays | XR Series Terminal Block Relays |
| UL recognized, UL listed, CSA approved, CE approved | UL recognized, UL listed, CSA approved, CE approved | UL recognized, CSA approved | UL recognized, CSA approved | cULus listed, CE |
| Spade-based relay with polycarbonate cover; available LED, test button, flag indicator, lock-down door, finger-grip cover | Polycarbonate cover; available LED, test button, flag indicator, lock-down door, finger-grip cover | High-capacity, high-withstand relay compatible with momentary voltage drops (no contact chattering), UL Class B construction | Ideal for 3-phase motor control applications, no contact chattering for momentary voltage drops up to 50% of rated voltage, push-to-test button is standard, mounting bracket supplied with relay | Pluggable relay allows easy field replacement, LED indicator standard, functional plug-in bridges available; Only 6.2 mm wide for SP and 14 mm wide for DP |
| Panel and DIN mounting | Panel, DIN and flange mounting | Panel, DIN and flange mounting | Panel mounting | DIN rail mounting |
| SPDT DPDT 3PDT | SPDT DPDT 3PDT 4PDT | SPST-NO DPST-NO | NO contacts NC contacts | SPDT — 6 A or 10 A, DPDT — 6 A OptoCoupler — 2 A |
| 15 A at 120/240 Vac, 13 A at 28 Vdc | 20 A at 277 Vac | 30 A at 220 Vac | 25 A at 220 Vac /30 Vdc | Available on request |
| 15 A at 120/240 Vac, 12 A at 28 Vdc | 15 A at 120 Vac | 25 A at 220 Vac | 8 A at 220 Vac /30 Vdc | |
| 15 A at 120/240 Vac, 11 A at 28 Vdc | 15 A at 120 Vac | | | |
| 1/3 hp, 120 Vac; 1/2 hp, 240 Vac | 1/3 hp, 120 Vac; 1/2 hp, 240 Vac | 1-1/2 hp, 120 Vac and 3 hp, (240/265/277 Vac) | 1-1/2 hp, 120 Vac and 3 hp (240/265/277 Vac), 3-phase 3 hp (240/265/277 Vac) 30k cycles, 3-phase 5 hp (240/265/277 Vac) 30k cycles | N/A |
| 100 mA at 5 Vdc | 100 mA at 5 Vdc | 100 mA at 5 Vdc | 100 mA at 24 Vdc | 10 mA at 12 Vdc |
| 1500 V (D5PF)/2000 V (D5PR) | 1000 V (D7PF1, D7PF2, D7PF3)/1500 V | 4000 V | 4000 V | 4000 V |
| B300 | B300 | N/A | N/A | N/A |
| 24 – 110 Vac (D5PF) | 6 – 240 Vac | 6 – 240 Vac | 24 – 240 Vac | 24 Vac, 120 Vac |
| 24 – 110 Vdc (D5PF) | 6 – 110 Vdc | 12 – 24 Vdc | 12 – 110 Vdc | 12 Vdc, 24 Vdc, 110 Vdc |
| 6 – 110 Vdc (D5PR) | | | | |
| 3 VA 1.4 Watts | 3.0 VA (D7PF3, D7PF4)/2.55 VA 2.3 Watts (D7PF1, D7PF2, D7PF4); 3.4 Watts (D7PF3)/1.5 Watts | 2.5 VA 1.9 Watts | 2.6 VA 2.0 Watts | 1500 VA, 120 mW |
| 5 million 100,000 | 10 million 100,000 (D7PR3, D7PR4, D7PF1) 150,000 (D7PF3, D7PF4) 200,000 (D7PF2, D7PR1, D7PR2) | 5 million 100,000 | 1 million 100,000 | 20,000,000 N/A |
| 80% DC coils; 85% AC coils (of nominal) | 80% | 75% | 75% | Available on request |
| 10% of nominal voltage | 30% AC, 10% DC | 15% | 10% | Available on request |
| -40° to 55°C | -40° to 70°C | -20° to 85°C | -25° to 60°C | -20° to 60°C |

Monitoring & Specialty Relays







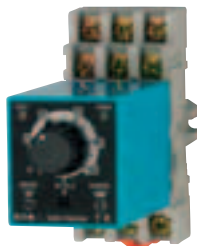
| Type | D64 Ground Fault Relays | D65 Phase Monitoring Relays | D65C Standard Current Monitoring Relays |
|-----------------------------|--|--|---|
| Features | Provide reliable detection of ground fault conditions on single and three-phase grounded systems; built-in current sensor and adjustable trip settings for ease of use; built-in Test System; Type 2 coordination on some models | Protects against combinations of phase loss, reversal, unbalance, over/undervoltage; LED indication of normal and fault conditions, universal input voltage versions available, compact size utilizing industry standard plug-in sockets | Monitors AC single-phase currents from 0.1 – 10 A, external CT can be used to extend ranges, LED indicates output relay status, choice of fixed or user-adjustable settings |
| Input Voltage | 24 – 240 Vac/dc | 120 – 480 Vac, 600 Vac for select units Transient Protection: 10,000 volts for 20 microseconds | 24 Vac; 120 Vac Tolerance: +10/-15% of nominal voltage at 50/60 Hz |
| Output Contacts | Standard Model — Form “Z” (4 terminal) NO and NC output contacts, 5 A at 250 Vac Service Protection Model also available | D65VMC, D65PLR, D65PAR: 10 A SPDT at 240 Vac; 1/3 hp at 240 Vac (NO); 1/6 hp at 240 Vac (NC); D65VMLS SPDT and SPNC: NO: 10 A Resistive at 240 Vac/30 Vdc; 1/2 hp at 240 Vac; NC: 10 A Resistive at 240 Vac/30 Vdc; 1/3 hp at 240 Vac; D65VMPL SPDT: 10 A Resistive at 240 Vac/30 Vdc; 1/2 hp at 120/240 Vac | 10 A Resistive at 240 Vac/30 Vdc 1/2 hp at 240 Vac (NO) 1/3 hp at 240 Vac (NC) |
| Load (Burden) | 0.6 VA at 24 Vac; 0.8 VA at 120 Vac; 1.1 VA at 240 Vac | 3 VA | Less than 5 VA |
| Pick-up & Drop-out Settings | Trip current ranges from 30 mA to 9000 A N/A | N/A N/A | Pick-up: Adjustable throughout current range monitored Drop-out: Fixed at 95% of pick-up setting for D65CE; adjustable from 50 – 95% of pick-up setting for D65CEK |
| Temperature | -20° to +50°C | -20° to 150°F (-28° to 65°C) | -20° to 131°F (-28° to 55°C) |
| Response Times | Adjustable 20 ms – 5s, Fixed as an option | Operate: 50 ms; Release: 50 ms; For D65VMLS and D65VMPL only: Power up & Restart After Fault — 1 – 300 seconds adjustable; Drop-out Due to Fault: 100 ms fixed on phase loss and phase reversal; 2 seconds fixed on phase unbalance; 0.1 – 20 seconds adjustable on undervoltage; fixed time based on inverse time curve for overvoltage (consult catalog for details) | Pick-up: 100 ms Drop-out: 100 ms |
| Mechanical Life | 50,000,000 operations | 10,000,000 operations | 10,000,000 operations |
| Electrical Life | 100,000 operations at rated current of output contacts | 100,000 operations | 100,000 operations |
| Indicator LED | Run and trip indicating LEDs | Red LED ON: All conditions are normal; Red LED OFF: A fault condition has occurred; D65VMLS, D65VMPL: Multi-color LED (flashing patterns): Indicates type of fault | Green: Input voltage is applied Red: Relay is energized |
| Reset | Pulsed (trip) auto reset mode | Automatic (Upon correction of fault) | Automatic |
| Mounting | Panel or 35 mm DIN Rail | DIN mount with 8-pin octal socket (requires a 600 V rated socket when used on system voltage greater than 300 V) | DIN mount with an 8- or 11-pin socket |
| Approvals | UL listed 1053 (Class 1), CSA, CE, IEC 60755, EN 50081-1 | cURus, cULus, RoHS, CE (D65VMLS, D65VMPL only) | cURus, cULus, RoHS, CE |

|  |  |  |  |  |
|---|---|--|---|---|
| D65C Overcurrent & Undercurrent Monitoring Relays | D65V Voltage Band Relays | D65V Fixed & Adjustable Time Delay Over/Undervoltage Relays | D85 Alternating Relays | Eclipse Series Panel Meters |
| <p>Monitors AC single-phase currents from 0.1 – 10 A, external CT can be used to extend ranges, LED indicates output relay status, choice of fixed or user-adjustable settings</p> <p>24 Vac; 120 Vac Tolerance: +10/-15% of nominal voltage at 50/60 Hz</p> <p>10 A Resistive at 240 Vac/30 Vdc 1/2 hp at 240 Vac (NO) 1/3 hp at 240 Vac (NC)</p> <p>Less than 5 VA</p> <p>Pick-up: Overcurrent: Adjustable throughout current range monitored /Undercurrent: Fixed at 5% above adjustable drop-out setting Drop-out: Overcurrent: Fixed at 95% of pick-up setting for D65CE; adjustable from 50 – 95% of pick-up setting for D65CEK/ Undercurrent: Adjustable throughout current range monitored</p> <p>-20° to 131°F (-28° to 55°C)</p> <p>Pick-up: Overcurrent: Adjustable 0.1 – 10 seconds/Undercurrent: Fixed at 100 ms Drop-out: Overcurrent: Fixed at 100 ms/Undercurrent: Adjustable 0.1 – 10 seconds</p> <p>10,000,000 operations 100,000 operations</p> <p>Green: Input voltage is applied Red flashing: In time delay Red steady: Relay is energized</p> <p>Automatic</p> <p>DIN mount with an 8- or 11-pin socket</p> <p>cURus, cULus, RoHS, CE</p> | <p>Monitors AC single-phase and DC voltages; provides voltage band (window) protection, wide range of overvoltage, undervoltage, and time delay settings; LED indicates output relay status</p> <p>24 Vac, 120 Vac, 12 – 110 Vdc Tolerance: +25/-50% of nominal voltage; AC voltages are 50/60 Hz; no separate supply (input) voltage is required.</p> <p>10 A Resistive at 240 Vac/30 Vdc 1/2 hp at 240 Vac (NO) 1/3 hp at 240 Vac (NC)</p> <p>Less than 3 VA</p> <p>Pick-up: 100 – 125% of nominal voltage Drop-out: 75 – 100% of nominal voltage</p> <p>-20° to 131°F (-28° to 55°C)</p> <p>Pick-up: 500 ms Drop-out: Fixed 500 ms (D65VWP Series); adjustable 0.5 – 10 seconds (D65VWKP Series)</p> <p>10,000,000 operations 100,000 operations</p> <p>Red steady: Relay is energized Green: Relay is OFF</p> <p>Automatic (Contact Eaton for information on how to order a unit with manual reset)</p> <p>DIN mount with an 8-pin socket</p> <p>cURus, cULus, RoHS, CE</p> | <p>Monitors AC single-phase and DC voltages; wide range of user-adjustable pick-up, drop-out and time delay settings; LED indicates output relay status</p> <p>24 Vac, 120 Vac, 12 – 110 Vdc Tolerance: +25/-50% of nominal voltage; AC voltages are 50/60 Hz; no separate supply (input) voltage is required.</p> <p>10 A Resistive at 240 Vac/30 Vdc 1/2 hp at 240 Vac (NO) 1/3 hp at 240 Vac (NC)</p> <p>Less than 3 VA</p> <p>Pick-up: Adjustable from 85 – 115% of nominal voltage Drop-out: Fixed at 95% of the pick-up setting for D65VMP and D65VAP; adjustable from 75 – 95% of the pick-up setting for D65VMKP and D65VAKP</p> <p>-20° to 131°F (-28° to 55°C)</p> <p>Pick-up: 500 ms Drop-out: Fixed 500 ms D65VMP and D65VMKP; adjustable 0.5 – 10 seconds D65VAP and D65VAKP</p> <p>10,000,000 operations 100,000 operations</p> <p>Red steady: Relay is energized Green: Relay is OFF</p> <p>Automatic</p> <p>DIN mount with an 8-pin socket</p> <p>cURus, cULus, RoHS, CE</p> | <p>For duplex load monitoring; works with 1 – 3 control switches (LEAD, LAG, STOP); optional low profile selector switch to lock in one sequence; 2 LEDs indicate relay status</p> <p>12 – 240 Vac Tolerance: +10/-150% of control voltage at 50/60 Hz Transient Protection: 10,000 volts for 20 microseconds</p> <p>10 A Resistive at 240 Vac/30 Vdc; 1/2 hp at 240 Vac</p> <p>Less than 3 VA</p> <p>N/A</p> <p>N/A</p> <p>-20° to 150°F (-28° to 65°C)</p> <p>N/A</p> <p>10,000,000 operations 100,000 operations</p> <p>2 LEDs: Marked LOAD A and LOAD B</p> <p>N/A</p> <p>DIN mount with an 8- or 11-pin socket</p> <p>cURus, cULus, RoHS, CE</p> | <p>Digital panel meters display voltage or current via 4-digit, 14 mm high LED characters; high and Low alarms, analog retransmission and RS-485 communications options; max./min. capture hold feature is standard</p> <p>Voltage input ranges: AC Model: Maximum +/-199.9 Vac DC Model: Maximum +/-199.9 Vdc Current input ranges: AC Model: Maximum +/-199.9 mA AC DC Model: Maximum +/-199.9 mA DC 5 A AC Model Current input range: 5 A AC, true rms</p> <p>5 A, 250 Vac or 30 Vdc</p> <p>N/A</p> <p>Pick-up: Alarms can be set at any level Drop-out: Alarms can be set at any level</p> <p>32° to 122°F (0° to 50°C) operating temperature</p> <p>Approximately 500 ms</p> <p>10,000,000 operations 100,000 operations</p> <p>Plus/minus 4-digit LED numerical display: Flashes when alarm 1 condition is active</p> <p>Automatic (Upon correction of fault)</p> <p>1/8 DIN front panel mount (92 mm x 45 mm panel cut-out)</p> <p>UL and cUL listed, CE, RoHS</p> |

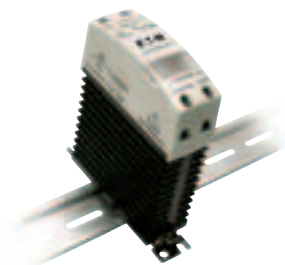
Counting & Timing Relays



| Type | E5-148-C1400 Counting Relays | E5-148-Cx42x Counting and Timing Relays | Eclipse Series Counting Relays | Ambassador Series Counting Relays |
|---------------------------|--|---|--|--|
| Features | Low-cost battery-powered count control with easy set point adjustment — 1/16 DIN panel mount | Single and dual preset count controls with scaling and backlight, 1/16 DIN panel mount; up to 10 kHz counting speed | 1/8 DIN panel mount count control with NEMA 4X protection and easy front-panel programming; up to 8250 Hz counting speed | 8-digit totalizer, rate meter, 4 user-configurable control inputs; up to 20 kHz counting speed |
| Mounting Configuration | Front/door panel | Front/door panel | Front/door panel | Front/door panel |
| Display | 2-line LCD | 2-line LCD | LED | 2-line LCD |
| Functions | Single-preset count control | 1 or 2-preset count control with scaling, timing, rate metering and batch control | 2-preset count control with scaling, rate metering and batch control | Count control with scaling, rate metering and batch control available |
| Number of Presets/Relays | 1 | Up to 2 | 2 | Up to 4 |
| Power Supply | Battery | 90 – 260 Vac/10 – 30 Vdc | 85 – 265 Vac/9 – 30 Vdc | 115 Vac/230 Vac |
| Relay Contacts | SPST, programmable as NO or NC | SPST, programmable as NO or NC | SPDT | SPDT |
| Relay Contact Ratings | 2 A | 3 A | 5 A | 250 Vac, 360 VA Pilot Rating |
| Additional Output Options | N/A | N/A | Analog (4 – 20 mA/0 – 10 V) RS-485 communications | RS-485 communications, transistor output |
| Approvals | cURus, CE , RoHS | cURus, CE , RoHS | UL, cUL listed, CE, RoHS | UL, cUL listed, CE |

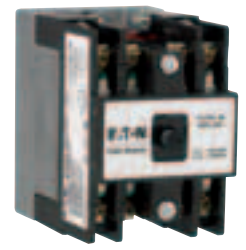
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|---|---|---|--|--|
| President Series Counting Relays | E42A24M Timing Relays | E5-248-C1420 Timing Relays | TMR5 Timing Relays | TR Timing Relays |
| <p>14 mm high LED characters, 68 x 138 mm panel cut-out, multiple functions/ models available</p> <p>Front/door panel</p> <p>LED</p> <p>Count control with scaling, rate metering and batch control available</p> <p>Up to 3</p> <p>120 Vac/240 Vac</p> <p>SPDT</p> <p>10 A</p> <p>RS-485 communications, transistor output</p> <p>UL, cUL listed, CE</p> | <p>AC/DC powered time control, analog, 7 timing modes, panel mounted, 0.02 seconds to 300 hours</p> <p>Front/door panel or DIN rail</p> <p>Analog set point</p> <p>On Delay, Off Delay, Single Shot, Timing After Pulse, Percentage Timer, Timing After Closing & Opening, Pulse Output</p> <p>2</p> <p>24 – 240 Vac/12 – 240 Vdc</p> <p>DPDT</p> <p>5 A</p> <p>N/A</p> <p>CE, CSA, cURus</p> | <p>Battery powered time control, battery included, digital, 8 timing modes, 0.2 seconds to 99.999 hours</p> <p>Front/door panel</p> <p>2-line LCD</p> <p>On Delay, Off Delay, One Shot, Single Shot, Repeat Cycle Delay, Repeat Cycle, Repeat Cycle Symmetrical Delay, Repeat Cycle Symmetrical</p> <p>1</p> <p>Battery</p> <p>SPST voltage-free, programmable as NO or NC</p> <p>8 A</p> <p>N/A</p> <p>cURus, CE, RoHS</p> | <p>Single function plug-in style OEM relays; wide variety of features and operating characteristics; programmable or fixed versions available</p> <p>Plug-in/DIN rail</p> <p>N/A</p> <p>On Delay, Off Delay, True Off Delay, Interval On, Single Shot, Watchdog, Flasher, Repeat Cycle, Off/On, Repeat Cycle On/Off, Delayed Interval, Delayed Interval (Triggered)</p> <p>1</p> <p>12 – 240 Vac/dc</p> <p>DPDT</p> <p>10 A</p> <p>N/A</p> <p>cURus, cULus, CE, RoHS</p> | <p>Programmable timing relay with 20 selectable timing ranges from 0.1 second to 600 hours and 10 timing functions</p> <p>Plug-in/DIN rail</p> <p>N/A</p> <p>Power Triggered — On Delay, Interval, Cycle</p> <p>Signal Triggered — On Delay, Off Delay, Cycle, Signal On/OFF Delay, One Shot</p> <p>1</p> <p>24 Vac/24 Vdc/100 – 240 Vac</p> <p>DPDT</p> <p>10 A</p> <p>N/A</p> <p>CSA, cURus, cULus, CE, RoHS</p> |

Solid-State Relays



| Type | D93 Hockey Puck | D96 IEC Style | D99 Integrated Heat Sink |
|-----------------------------------|--|---|---|
| Features | LED input indicator, finger-safe terminals, optically coupled circuit, available Triac and MOSFET outputs for DC-operated relays | LED input indicator, integral heat sink, isolated output terminals, screw terminals accept up to 14 AWG wire, SCR output type | LED input indicator, integral heat sink, flexible mounting, finger-safe terminals |
| Mounting | Panel mounting | DIN rail or panel | DIN rail or panel |
| Standards/ Certifications | cURus, CSA, CE, RoHS | cURus, CSA, CE, RoHS | cURus, CSA, CE, RoHS |
| Contact Ratings | 10 – 75 A | 8, 10, 15 A | 10, 25, 40 A |
| Output Voltage | 24 – 280 Vac/3 – 200 Vdc | 3 – 50 Vdc/24 – 280 Vac/48 – 480 Vac/ 48 – 600 Vac | 24 – 280 Vac/48 – 660 Vac |
| Number of Poles | SPST or DPST/Normally Open | SPST/Normally Open or Normally Closed | SPST/Normally Open |
| Available Coils/ Input Voltage | 90 – 280 Vac/3 – 32 Vdc | 90 – 280 Vac/3 – 32 Vdc/3.5 – 32 Vdc | 3 – 32 Vdc/90 – 280 Vac or 80 – 140 Vdc |
| Accessories | <ul style="list-style-type: none"> • Heat sink • Heat transfer thermal pad | N/A | N/A |

Machine Tool Relays



| Type | D15 Freedom 600 V Multipole Relays | BF/BFD Fixed Contact Industrial Control Relays | AR/ARD Convertible Contact Industrial Control Relays | D26 Type M, 600 Vac Multipole Relays with Convertible Contacts |
|------------------------------|---|--|---|---|
| Features | Indicator shows ON/OFF status; relay base has mounting holes to replace competitive product; terminals are finger-proofed | Captive clamp terminals fully front-accessible, low operating temperature, silver alloy contacts suitable for low voltage circuits | Wide spaced contacts simplify installation, testing and conversion from NO to NC | AC and DC multipole relays with field convertible contacts; many accessories available for complete flexibility in product offering |
| Mounting | Panel or 35 mm DIN rail | Panel mount | Panel mount | Panel mount |
| Standards/ Certifications | UL® listed CSA® approved, CE certified | UL recognized, CSA certified | UL recognized, CSA certified | UL listed, CSA approved |
| Contact Ratings | NEMA® A600 10 A continuous thermal rating (AC) NEMA P300 5 A continuous thermal rating (DC) | NEMA A300 10 A at 120/240 Vac 1/6 hp at 115 Vac — (single-phase) 1/2 hp at 230 Vac — (single-phase) 1 hp at 230 Vac — (3-phase) NEMA P300 5 A at 125/250 Vdc | NEMA A600 10 A at 120/240/480/600 Vac NEMA P600 5 A at 125/250/600 Vdc | NEMA A600 10 A at 120/240/480/600 Vac |
| Number of Poles | 4 – 8 (NO and NC combinations) | 2 – 12 (NO and NC combinations) | 4 – 10 (NO and NC combinations) | 4 – 12 (NO and NC combinations) |
| Available Coils | 24 – 600 Vac, 12 – 120 Vdc | 12 – 440 Vac, 6 – 240 Vdc | 12 – 600 Vac, 12 – 240 Vdc | 6 – 600 Vac, 12 – 240 Vdc |
| Accessories | <ul style="list-style-type: none"> • Pneumatic timer attachment • Finger protection shields • Adhesive dust cover • Transient suppressor kits • Interface module | <ul style="list-style-type: none"> • Solid-state timer attachment • Permanent magnet latch • FASTON push-on terminals • Overlapping contacts • NEMA 1 enclosure | <ul style="list-style-type: none"> • Mechanical latch attachment • Solid-state timer attachment • Ring-type connectors • Overlapping contacts | <ul style="list-style-type: none"> • Pneumatic timer • Mechanical latch • Overlapping contacts • Indicating light • Test accessory • Transient suppressor • Mounting channel |

Eaton's electrical business is a global leader in electrical control, power distribution, uninterruptible power supply and industrial automation products and services. Eaton's global electrical brands, including Cutler-Hammer®, Powerware®, Holec® and MEM®, provide customer-driven PowerChain Management® solutions to serve the power system needs of the industrial, institutional, government, utility, commercial, residential, IT, mission critical and OEM markets worldwide.

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