

## Relays



**EASY Intelligent Relay**



**Programmable Logic Controllers**



**Preset Counters**



**Hour Meters**



**Totalizers**



**Encoders**



## 3.1 Relays

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## Product Overview

## Relays Selection Guide



| Description                       | XR Series Terminal Block Relays                                                                                                                                                   |      |             | D1 Series                                                                                | D2 Series                                                                                                    |               |      |
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| Approvals                         |                                                                                                  |      |             |        |                           |               |      |
| Features                          | Pluggable relay allows easy field replacement, LED indicator standard, functional plug-in bridges available<br>Only 6.2 mm wide for SP and 14 mm wide for DP<br>DIN rail mounting |      |             | Polycarbonate cover<br>Indicator lamp and pushbutton available<br>Panel and DIN mounting | Polycarbonate cover<br>Indicator lamp and pushbutton available<br>Panel, DIN and flange mounting<br>Latching |               |      |
| <b>Contact Data</b>               |                                                                                                                                                                                   |      |             |                                                                                          |                                                                                                              |               |      |
| Configuration                     | SPDT                                                                                                                                                                              | DPDT | OctoCoupler | SPDT                                                                                     | DPDT                                                                                                         | DPDT Latching | 4PDT |
| Maximum allowable load            | 6A or 10A                                                                                                                                                                         | 6A   | 2A          | 20A                                                                                      | 10A                                                                                                          | 10A           | 10A  |
| Material                          | —                                                                                                                                                                                 |      |             | Silver alloy                                                                             | Silver alloy                                                                                                 |               |      |
| Dielectric strength between poles | —                                                                                                                                                                                 |      |             | 1500V                                                                                    | 1500V                                                                                                        |               |      |
| <b>Coil Data</b>                  |                                                                                                                                                                                   |      |             |                                                                                          |                                                                                                              |               |      |
| AC                                | 24 Vac or 120 Vac                                                                                                                                                                 |      |             | 6–240 Vac                                                                                | 6–240 Vac                                                                                                    |               |      |
| DC                                | 12, 24, 110 Vdc                                                                                                                                                                   |      |             | 6–110 Vdc                                                                                | 6–110 Vdc                                                                                                    |               |      |
| Power                             |                                                                                                                                                                                   |      |             |                                                                                          |                                                                                                              |               |      |
| VA (Vac)                          | 1.5                                                                                                                                                                               |      |             | 0.9 VA                                                                                   | 1.2 VA                                                                                                       |               |      |
| Watts (Vdc)                       | 0.12                                                                                                                                                                              |      |             | 0.7 Watts                                                                                | 0.9 Watts                                                                                                    |               |      |
| <b>General Data</b>               |                                                                                                                                                                                   |      |             |                                                                                          |                                                                                                              |               |      |
| Ambient temperature               |                                                                                                                                                                                   |      |             |                                                                                          |                                                                                                              |               |      |
| Storage                           | —                                                                                                                                                                                 |      |             | –40° to 185°F (–40° to 85°C)                                                             | –40° to 185°F (–40° to 85°C)                                                                                 |               |      |
| Operational                       | –4° to 140°F (–20° to 60°C)                                                                                                                                                       |      |             | –40° to 131°F (–40° to 55°C)                                                             | –40° to 131°F (–40° to 55°C)                                                                                 |               |      |
| Response time                     | Available upon request                                                                                                                                                            |      |             | 20 milliseconds                                                                          | 20 milliseconds                                                                                              |               |      |
| Life                              |                                                                                                                                                                                   |      |             |                                                                                          |                                                                                                              |               |      |
| Mechanical operations             | 20 million                                                                                                                                                                        |      |             | 10 million                                                                               | 10 million                                                                                                   |               |      |
| Electrical operations             | —                                                                                                                                                                                 |      |             | 100,000                                                                                  | 200,000                                                                                                      |               |      |

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## Relays Selection Guide, continued



| Description                       | D3 Series                                                                                                                                                                                                                                                                                                                               |      |      | D4 Series                                                                                                                                                                                                                                                                                                                                  |               | D5 Series                                                                                                                                                                                                                                                                                                                                       |      |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
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| Approvals                         |     |      |      |     |               |     |      |
| Features                          | Polycarbonate cover<br>Indicator lamp and pushbutton available<br>Panel and DIN mounting<br>8- or 11-pin octal plug-in<br>Latching (D3PR version)                                                                                                                                                                                       |      |      | Polycarbonate cover<br>Indicator lamp available<br>Panel and DIN mounting<br>Socket has built-in hold-down spring                                                                                                                                                                                                                          |               | Polycarbonate cover<br>Indicator lamp and pushbutton available<br>Panel, DIN and PC board mounting                                                                                                                                                                                                                                              |      |
| <b>Contact Data</b>               |                                                                                                                                                                                                                                                                                                                                         |      |      |                                                                                                                                                                                                                                                                                                                                            |               |                                                                                                                                                                                                                                                                                                                                                 |      |
| Configuration                     |                                                                                                                                                                                                                                                                                                                                         | DPDT | 3PDT | SPDT                                                                                                                                                                                                                                                                                                                                       | DPDT          | DPDT                                                                                                                                                                                                                                                                                                                                            | 3PDT |
| Maximum allowable load            | 16A                                                                                                                                                                                                                                                                                                                                     | 16A  | 16A  | 10A at 250 Vac                                                                                                                                                                                                                                                                                                                             | 5A at 240 Vac | 16A                                                                                                                                                                                                                                                                                                                                             | 16A  |
| Material                          | Silver alloy                                                                                                                                                                                                                                                                                                                            |      |      | AgCdO                                                                                                                                                                                                                                                                                                                                      |               | Silver alloy                                                                                                                                                                                                                                                                                                                                    |      |
| Dielectric strength between poles | 1500V                                                                                                                                                                                                                                                                                                                                   |      |      | 5000V                                                                                                                                                                                                                                                                                                                                      |               | 1500V                                                                                                                                                                                                                                                                                                                                           |      |
| <b>Coil Data</b>                  |                                                                                                                                                                                                                                                                                                                                         |      |      |                                                                                                                                                                                                                                                                                                                                            |               |                                                                                                                                                                                                                                                                                                                                                 |      |
| AC                                | 6–240 Vac                                                                                                                                                                                                                                                                                                                               |      |      | 6–240 Vac                                                                                                                                                                                                                                                                                                                                  |               | 6–240 Vac                                                                                                                                                                                                                                                                                                                                       |      |
| DC                                | 6–110 Vdc                                                                                                                                                                                                                                                                                                                               |      |      | 6–110 Vdc                                                                                                                                                                                                                                                                                                                                  |               | 6–110 Vdc                                                                                                                                                                                                                                                                                                                                       |      |
| Power                             |                                                                                                                                                                                                                                                                                                                                         |      |      |                                                                                                                                                                                                                                                                                                                                            |               |                                                                                                                                                                                                                                                                                                                                                 |      |
| VA (Vac)                          | 3 VA, 1.4 Watts (D3PR and DPF)                                                                                                                                                                                                                                                                                                          |      |      | 0.9 VA                                                                                                                                                                                                                                                                                                                                     |               | 3 VA                                                                                                                                                                                                                                                                                                                                            |      |
| Watts (Vdc)                       | 2 VA 1.64 Watts (D3PR5 latching)                                                                                                                                                                                                                                                                                                        |      |      | 0.5 Watts                                                                                                                                                                                                                                                                                                                                  |               | 1.4 Watts                                                                                                                                                                                                                                                                                                                                       |      |
| <b>General Data</b>               |                                                                                                                                                                                                                                                                                                                                         |      |      |                                                                                                                                                                                                                                                                                                                                            |               |                                                                                                                                                                                                                                                                                                                                                 |      |
| Ambient temperature               |                                                                                                                                                                                                                                                                                                                                         |      |      |                                                                                                                                                                                                                                                                                                                                            |               |                                                                                                                                                                                                                                                                                                                                                 |      |
| Storage                           | –40° to 185°F (–40° to 85°C)                                                                                                                                                                                                                                                                                                            |      |      | –40° to 158°F (–40° to 70°C)                                                                                                                                                                                                                                                                                                               |               | –40° to 185°F (–40° to 85°C)                                                                                                                                                                                                                                                                                                                    |      |
| Operational                       | –40° to 131°F (–40° to 55°C)                                                                                                                                                                                                                                                                                                            |      |      | –40° to 158°F (–40° to 70°C)                                                                                                                                                                                                                                                                                                               |               | –40° to 131°F (–40° to 55°C)                                                                                                                                                                                                                                                                                                                    |      |
| Response time                     | 20 milliseconds                                                                                                                                                                                                                                                                                                                         |      |      | 15 milliseconds                                                                                                                                                                                                                                                                                                                            |               | 206 milliseconds                                                                                                                                                                                                                                                                                                                                |      |
| Life                              |                                                                                                                                                                                                                                                                                                                                         |      |      |                                                                                                                                                                                                                                                                                                                                            |               |                                                                                                                                                                                                                                                                                                                                                 |      |
| Mechanical operations             | 5 million (D3PR and D3PF)<br>10 million (D3PR5 latching)                                                                                                                                                                                                                                                                                |      |      | 10 million                                                                                                                                                                                                                                                                                                                                 |               | 5 million                                                                                                                                                                                                                                                                                                                                       |      |
| Electrical operations             | 100,000                                                                                                                                                                                                                                                                                                                                 |      |      | 100,000                                                                                                                                                                                                                                                                                                                                    |               | 100,000                                                                                                                                                                                                                                                                                                                                         |      |

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## Relays Selection Guide, continued

**D7 Series**

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**D8 Series**

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**D9 Series**

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| Description                       | D7 Series                                                                                                                                                                                                                                                                                                                               |           |           |           | D8 Series                                                                                                                                                                                                                                             |                | D9 Series                                                                                                                                                               |               |
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| Approvals                         |     |           |           |           |    |                |   |               |
| Features                          | Polycarbonate cover<br>Indicator lamp and pushbutton available<br>Panel, DIN and flange mounting                                                                                                                                                                                                                                        |           |           |           | Dust cover<br>Panel, DIN and flange mounting<br>Quick-connect and screw terminals                                                                                                                                                                     |                | Dust cover<br>Pushbutton available<br>Panel mounting<br>Screw terminals                                                                                                 |               |
| <b>Contact Data</b>               |                                                                                                                                                                                                                                                                                                                                         |           |           |           |                                                                                                                                                                                                                                                       |                |                                                                                                                                                                         |               |
| Configuration                     |                                                                                                                                                                                                                                                                                                                                         |           |           |           |                                                                                                                                                                                                                                                       |                | 4PST                                                                                                                                                                    |               |
|                                   | SPDT                                                                                                                                                                                                                                                                                                                                    | DPDP      | 3PDT      | 4PDT      | SPST-NO                                                                                                                                                                                                                                               | DPST-NO        | NO                                                                                                                                                                      | NC            |
| Maximum allowable load            | 20A                                                                                                                                                                                                                                                                                                                                     | 15A       | 15A       | 15A       | 30A at 220 Vac                                                                                                                                                                                                                                        | 25A at 220 Vac | 25A at 220 Vac                                                                                                                                                          | 8A at 220 Vac |
| Material                          | Silver alloy                                                                                                                                                                                                                                                                                                                            |           |           |           | AgCdO                                                                                                                                                                                                                                                 |                | AgCdO                                                                                                                                                                   |               |
| Dielectric strength between poles | 1500V                                                                                                                                                                                                                                                                                                                                   | 1500V     | 2500V     | 2500V     | 4000V                                                                                                                                                                                                                                                 |                | 4000V                                                                                                                                                                   |               |
| <b>Coil Data</b>                  |                                                                                                                                                                                                                                                                                                                                         |           |           |           |                                                                                                                                                                                                                                                       |                |                                                                                                                                                                         |               |
| AC                                | 6–240 Vac                                                                                                                                                                                                                                                                                                                               |           |           |           | 6–240 Vac                                                                                                                                                                                                                                             |                | 24–240 Vac                                                                                                                                                              |               |
| DC                                | 6–110 Vdc                                                                                                                                                                                                                                                                                                                               |           |           |           | 12–24 Vdc                                                                                                                                                                                                                                             |                | 12–110 Vdc                                                                                                                                                              |               |
| Power                             |                                                                                                                                                                                                                                                                                                                                         |           |           |           |                                                                                                                                                                                                                                                       |                |                                                                                                                                                                         |               |
| VA (Vac)                          | 1.2 VA                                                                                                                                                                                                                                                                                                                                  | 1.2 VA    | 1.5 VA    | 1.5 VA    | 2.5 VA                                                                                                                                                                                                                                                |                | 2.6 VA                                                                                                                                                                  |               |
| Watts (Vdc)                       | 0.9 Watts                                                                                                                                                                                                                                                                                                                               | 0.9 Watts | 1.4 Watts | 1.5 Watts | 1.9 Watts                                                                                                                                                                                                                                             |                | 2.0 Watts                                                                                                                                                               |               |
| <b>General Data</b>               |                                                                                                                                                                                                                                                                                                                                         |           |           |           |                                                                                                                                                                                                                                                       |                |                                                                                                                                                                         |               |
| Ambient temperature               |                                                                                                                                                                                                                                                                                                                                         |           |           |           |                                                                                                                                                                                                                                                       |                |                                                                                                                                                                         |               |
| Storage                           | –40° to 185°F (–40° to 85°C)                                                                                                                                                                                                                                                                                                            |           |           |           | –4° to 185°F (–20° to 85°C)                                                                                                                                                                                                                           |                | –13° to 140°F (–25° to 60°C)                                                                                                                                            |               |
| Operational                       | –40° to 131°F (–40° to 55°C)                                                                                                                                                                                                                                                                                                            |           |           |           | –4° to 131°F (–20° to 55°C)                                                                                                                                                                                                                           |                | –13° to 140°F (–25° to 60°C)                                                                                                                                            |               |
| Response time                     | 20 milliseconds (30 milliseconds for latching)                                                                                                                                                                                                                                                                                          |           |           |           | 30 milliseconds                                                                                                                                                                                                                                       |                | 50 milliseconds                                                                                                                                                         |               |
| Life                              |                                                                                                                                                                                                                                                                                                                                         |           |           |           |                                                                                                                                                                                                                                                       |                |                                                                                                                                                                         |               |
| Mechanical operations             | 10 million                                                                                                                                                                                                                                                                                                                              |           |           |           | 5 million                                                                                                                                                                                                                                             |                | 1 million                                                                                                                                                               |               |
| Electrical operations             | 100,000                                                                                                                                                                                                                                                                                                                                 | 100,000   | 200,000   | 200,000   | 100,000                                                                                                                                                                                                                                               |                | 100,000                                                                                                                                                                 |               |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

## Relays Selection Guide, continued



| Description                      | Type AA Series                                                                                                                                                        | XTRE Series                                                                                                                                                                                  | D93 Series                                                                                                                                                                                                                                                      |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| Approvals                        |                                                                                                                                                                       |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                 |
| Features                         | Available blowout magnets for high DC switching<br>Available auxiliary switches<br>Combo head screws for simple hook-up<br>Riveted construction for long service life | Four-pole configurations<br>IP20 finger and back-of-hand proof<br>Positively driven contacts between the relay and auxiliary contact modules as well as within the auxiliary contact modules | All solid-state circuitry with no moving parts to wear<br>Compact, panel mounting for flexible installation<br>Isolated input and output terminals to protect the system from electrical noise<br>Internal snubber circuitry to protect the SSR from transients |
| <b>Contact Data</b>              |                                                                                                                                                                       |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                 |
| Configuration                    | DPDT                                                                                                                                                                  | NO-NC variations in a four-pole relay plus four-pole auxiliary module                                                                                                                        | SPST-NO (Triac, Zero-cross or MOSFET)                                                                                                                                                                                                                           |
| Maximum allowable load           | 40A                                                                                                                                                                   | 16A                                                                                                                                                                                          | 10–75A                                                                                                                                                                                                                                                          |
| Material                         | Silver cadmium oxide, gold flashed                                                                                                                                    | —                                                                                                                                                                                            | —                                                                                                                                                                                                                                                               |
| Dielectric strength between pole | 1500V                                                                                                                                                                 | 6000 Vac                                                                                                                                                                                     | 4000 Vac                                                                                                                                                                                                                                                        |
| <b>Coil Data</b>                 |                                                                                                                                                                       |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                 |
| AC                               | 6–600 Vac                                                                                                                                                             | 12–600 Vac                                                                                                                                                                                   | 90–280 Vac                                                                                                                                                                                                                                                      |
| DC                               | 6–220 Vdc                                                                                                                                                             | 24–240 Vdc                                                                                                                                                                                   | 3–32 Vdc                                                                                                                                                                                                                                                        |
| Power                            |                                                                                                                                                                       |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                 |
| VA (Vac)                         | 10 VA                                                                                                                                                                 | 3.3 VA                                                                                                                                                                                       | Available upon request                                                                                                                                                                                                                                          |
| Watts (Vdc)                      | 4 Watts                                                                                                                                                               | 3 Watts                                                                                                                                                                                      | Available upon request                                                                                                                                                                                                                                          |
| <b>General Data</b>              |                                                                                                                                                                       |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                 |
| Ambient temperature              |                                                                                                                                                                       |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                 |
| Storage                          | –40° to 185°F (–40° to 85°C)                                                                                                                                          | –40° to 176° (–40° to 80°C)                                                                                                                                                                  | –40° to 100°C                                                                                                                                                                                                                                                   |
| Operational                      | –40° to 131°F (–40° to 55°C)                                                                                                                                          | –13° to 140°F (–25° to 60°C)                                                                                                                                                                 | –40° to 80°C                                                                                                                                                                                                                                                    |
| Response time                    | 35/50 milliseconds                                                                                                                                                    | 12/31 milliseconds                                                                                                                                                                           | Available upon request                                                                                                                                                                                                                                          |
| Life                             |                                                                                                                                                                       |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                 |
| Mechanical operations            | —                                                                                                                                                                     | 20 million                                                                                                                                                                                   | —                                                                                                                                                                                                                                                               |
| Electrical operations            | 6000                                                                                                                                                                  | 100,000                                                                                                                                                                                      | —                                                                                                                                                                                                                                                               |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

## Relays Selection Guide, continued



| Description                      | D96 Series                                                                                                                                                                                                                                                                                                                                                                                               | D99 Series                                                                                                                                                                                                                                                                                                                                                                                               | Universal TR Series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| Approvals                        |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Features                         | <p>All solid-state circuitry has no moving parts to wear</p> <p>Integral heat sink eliminates the need for added accessories and installation</p> <p>Flexible mounting allows DIN rail or panel mounting without additional hardware or tools</p> <p>Isolated input and output terminals protect the system from electrical noise</p> <p>Internal snubber circuitry protects the SSR from transients</p> | <p>All solid-state circuitry has no moving parts to wear</p> <p>Integral heat sink eliminates the need for added accessories and installation</p> <p>Flexible mounting allows DIN rail or panel mounting without additional hardware or tools</p> <p>Isolated input and output terminals protect the system from electrical noise</p> <p>Internal snubber circuitry protects the SSR from transients</p> | <p>Multiple user-selectable timing functions and timing ranges in a single unit reduce product variations and stock keeping units (SKUs)</p> <p>Universal input voltages from 12 or 24–240 Vac or Vdc eliminate the need to order and stock separate coil voltages</p> <p>Compact, DIN rail mountable case reduces panel size</p> <p>Advanced LED indication makes troubleshooting easy</p> <p>Staggered terminal locations allow access to lower-level terminals after wiring</p> <p>SPDT or DPDT contacts with 8A ratings</p> |
| <b>Contact Data</b>              |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Configuration                    | SPST-NO (DC switch, zero-cross or random)                                                                                                                                                                                                                                                                                                                                                                | SPST-NO (zero cross)                                                                                                                                                                                                                                                                                                                                                                                     | SPDT and DPDT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Maximum allowable load           | 8–15A                                                                                                                                                                                                                                                                                                                                                                                                    | 10–40A                                                                                                                                                                                                                                                                                                                                                                                                   | 8A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Material                         | —                                                                                                                                                                                                                                                                                                                                                                                                        | —                                                                                                                                                                                                                                                                                                                                                                                                        | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Dielectric strength between pole | 2500 (4000 on random) Vac                                                                                                                                                                                                                                                                                                                                                                                | 4000 Vac                                                                                                                                                                                                                                                                                                                                                                                                 | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Coil Data</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| AC                               | 90–280 Vac                                                                                                                                                                                                                                                                                                                                                                                               | 90–280 Vac                                                                                                                                                                                                                                                                                                                                                                                               | 24–240 Vac SPDT, 12–240 Vac DPDT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| DC                               | 3–32 Vdc (3.5–32 Vdc on DC switch)                                                                                                                                                                                                                                                                                                                                                                       | 3–32 Vdc                                                                                                                                                                                                                                                                                                                                                                                                 | 24–240 Vdc SPDT, 12–240 Vdc DPDT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Power                            |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| VA (Vac)                         | Available upon request                                                                                                                                                                                                                                                                                                                                                                                   | Available upon request                                                                                                                                                                                                                                                                                                                                                                                   | 4 VA SPDT, 6 VA DPDT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Watts (Vdc)                      | Available upon request                                                                                                                                                                                                                                                                                                                                                                                   | Available upon request                                                                                                                                                                                                                                                                                                                                                                                   | 1.5 Watts SPDT, 2W DPDT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>General Data</b>              |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Ambient temperature              |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Storage                          | –40° to 100°C                                                                                                                                                                                                                                                                                                                                                                                            | –40° to 100°C                                                                                                                                                                                                                                                                                                                                                                                            | –25° to 70°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Operational                      | –30° to 80°C                                                                                                                                                                                                                                                                                                                                                                                             | –30° to 80°C                                                                                                                                                                                                                                                                                                                                                                                             | –25° to 55°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Response time                    | Available upon request                                                                                                                                                                                                                                                                                                                                                                                   | Available upon request                                                                                                                                                                                                                                                                                                                                                                                   | 100 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Life                             |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Mechanical operations            | —                                                                                                                                                                                                                                                                                                                                                                                                        | —                                                                                                                                                                                                                                                                                                                                                                                                        | 20,000,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Electrical operations            | —                                                                                                                                                                                                                                                                                                                                                                                                        | —                                                                                                                                                                                                                                                                                                                                                                                                        | 200,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

## Relays Selection Guide, continued

**TMR5 Series****Page V9-T3-30****TMR6 Series****Page V9-T3-31****TMRP Series****Page V9-T3-32**

## Approvals



## Features

Various configurations available with fixed or adjustable time delays  
Single operating voltage for simple set-up  
Plugs in standard 8- or 11-pin octal sockets

Provides OFF delay function without requiring input voltage during OFF time delay  
Duplicates operation of pneumatic OFF delay timers  
Each unit has eight timing ranges built in, covering 0.05 seconds to 30 minutes  
Selecting a range is easy using a rotary switch (no math is required or DIP switches to set)  
Uses industry-standard 8-pin octal socket  
10A DPDT output contacts

Multiple user-selectable timing functions and timing ranges in a single unit reduce product variations and stock keeping units (SKUs)  
Universal input voltages from 12–240 Vac/Vdc eliminate the need to order and stock separate coil voltages  
Timing ranges up to 9990 hours  
Dual LED indication makes troubleshooting easy  
Flexible design for backpanel, through-panel (45 mm x 45 mm cutout), or DIN rail mounting  
SPDT or DPDT contacts with 12A ratings  
Plastic dust cover keeps out contaminants and eliminates accidental set point changes  
Use with standard Eaton D3 sockets

**Contact Data**

|                                  |       |       |               |
|----------------------------------|-------|-------|---------------|
| Configuration                    | DPDT  | DPDT  | SPDT and DPDT |
| Maximum allowable load           | 10A   | 10A   | 12A           |
| Material                         | —     | —     | —             |
| Dielectric strength between pole | 2000V | 2000V | —             |

**Coil Data**

|             |            |                    |            |
|-------------|------------|--------------------|------------|
| AC          | 12–240 Vac | 24, 120 or 240 Vac | 12–240 Vac |
| DC          | 12–240 Vdc | 24, 120 or 240 Vdc | 12–240 Vdc |
| Power       |            |                    |            |
| VA (Vac)    | 2 VA       | 2 VA               | 2.5 VA     |
| Watts (Vdc) | —          | —                  | 2 Watts    |

**General Data**

|                       |                             |                              |                 |
|-----------------------|-----------------------------|------------------------------|-----------------|
| Ambient temperature   |                             |                              |                 |
| Storage               | —                           | —                            | –40° to 85°C    |
| Operational           | –4° to 149°F (–20° to 65°C) | –18° to 150°F (–28° to 65°C) | –10° to 55°C    |
| Response time         | 100 milliseconds            | —                            | 25 milliseconds |
| Life                  |                             |                              |                 |
| Mechanical operations | 10 million                  | 2,000,000                    | 10 million      |
| Electrical operations | 100,000                     | 100,000                      | 100,000         |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

## Terminal Block Relays



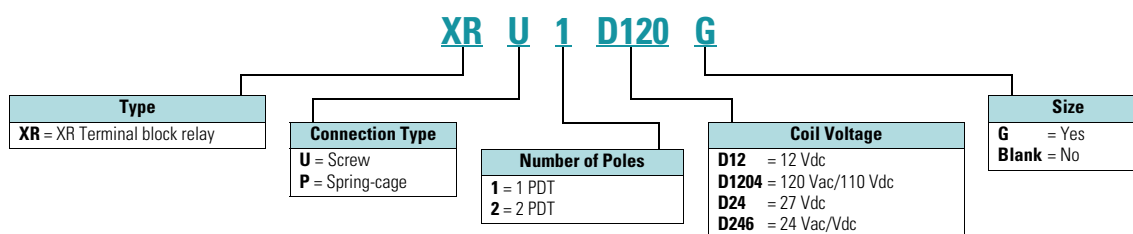
## Features

- Pluggable relay allows for field replacement
- Functional plug-in bridges
- LED status indication
- Only 6.2 mm wide for single pole versions, 14 mm wide for double pole

## Catalog Number Selection

## Terminal Block Relays

## Terminal Block Relays



## Product Selection

## Standard Terminal Block Relays

| Contacts                           | Rated Current | Supply Voltage  | Standard Pack | Catalog Number    |
|------------------------------------|---------------|-----------------|---------------|-------------------|
| <b>1PDT Screw Connection</b>       |               |                 |               |                   |
| No                                 | 6A            | 12 Vdc          | 10            | <b>XRU1D12</b>    |
| No                                 | 6A            | 120 Vac/110 Vdc | 10            | <b>XRU1D120U</b>  |
| Yes                                | 6A            | 120 Vac/110 Vdc | 10            | <b>XRU1D120UG</b> |
| No                                 | 6A            | 24 Vdc          | 10            | <b>XRU1D24</b>    |
| No                                 | 6A            | 24 Vac/Vdc      | 10            | <b>XRU1D24U</b>   |
| Yes                                | 6A            | 24 Vac/Vdc      | 10            | <b>XRU1D24UG</b>  |
| <b>1PDT Spring-Cage Connection</b> |               |                 |               |                   |
| No                                 | 6A            | 12 Vdc          | 10            | <b>XRP1D12</b>    |
| No                                 | 6A            | 120 Vac/110 Vdc | 10            | <b>XRP1D120U</b>  |
| No                                 | 6A            | 24 Vdc          | 10            | <b>XRP1D24</b>    |
| No                                 | 6A            | 24 Vac/Vdc      | 10            | <b>XRP1D24U</b>   |
| <b>DPDT Screw Connection</b>       |               |                 |               |                   |
| No                                 | 6A            | 12 Vdc          | 10            | <b>XRU2D12</b>    |
| No                                 | 6A            | 120 Vac/110 Vdc | 10            | <b>XRU2D120U</b>  |
| No                                 | 6A            | 24 Vdc          | 10            | <b>XRU2D24</b>    |
| No                                 | 6A            | 24 Vac/Vdc      | 10            | <b>XRU2D24U</b>   |

General Purpose Plug-In Relays—D1 Series



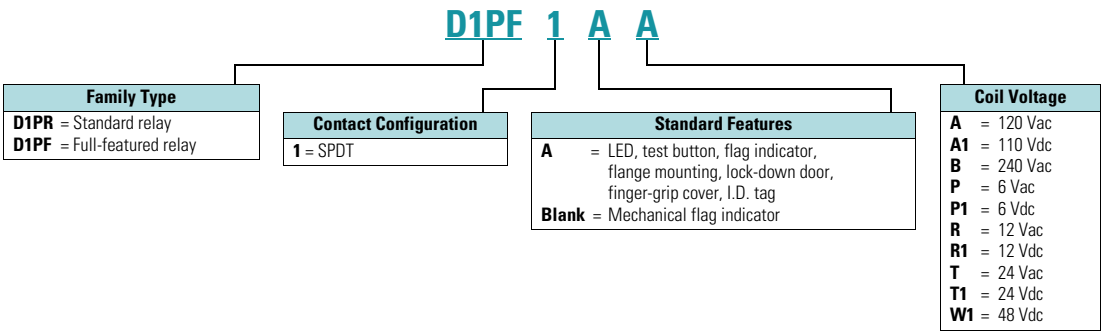
Features

- Compact relay capable of breaking relatively large load currents
- The contact operation can be easily checked by push-to-test button
- Panel and DIN rail mounting
- Flag indicator shows relay status in manual or powered condition
- LED status lamp shows coil “ON” or “OFF” status—ideal for use in low light applications
- Push-to-test button allows for manual operation of relay without the need for coil power
- Lock-down door holds pushbutton and contacts in the operate position when activated
- Finger-grip cover allows operator to remove relays from sockets easily
- ID tag/write label to identify relays in multiple-relay circuits
- Bi-polar LED allows for reverse polarity applications

Catalog Number Selection

General Purpose Plug-In Relays

D1 Series ①



**Note**

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

## Product Selection

### General Purpose Plug-In Relays—D1PR/D1PF

| Coil Voltage         | Contact Configuration | Coil Resistance (Ohms) | Catalog Number  |
|----------------------|-----------------------|------------------------|-----------------|
| <b>Full Featured</b> |                       |                        |                 |
| 6 Vac                | SPDT                  | 12.2                   | <b>D1PF1AP</b>  |
| 6 Vdc                | SPDT                  | 47                     | <b>D1PF1AP1</b> |
| 12 Vac               | SPDT                  | 46                     | <b>D1PF1AR</b>  |
| 12 Vdc               | SPDT                  | 188                    | <b>D1PF1AR1</b> |
| 24 Vac 50/60 Hz      | SPDT                  | 180                    | <b>D1PF1AT</b>  |
| 24 Vdc               | SPDT                  | 750                    | <b>D1PF1AT1</b> |
| 48 Vac               | SPDT                  | 720                    | <b>D1PF1AW</b>  |
| 48 Vdc               | SPDT                  | 2,600                  | <b>D1PF1AW1</b> |
| 110 Vdc              | SPDT                  | 13,800                 | <b>D1PF1AA1</b> |
| 120 Vac 50/60 Hz     | SPDT                  | 4,430                  | <b>D1PF1AA</b>  |
| 240 Vac 50/60 Hz     | SPDT                  | 15,720                 | <b>D1PF1AB</b>  |

| Coil Voltage       | Contact Configuration | Coil Resistance (Ohms) | Catalog Number |
|--------------------|-----------------------|------------------------|----------------|
| <b>Plain Cover</b> |                       |                        |                |
| 6 Vac              | SPDT                  | 12.2                   | <b>D1PR1P</b>  |
| 6 Vac              | SPDT                  | 47                     | <b>D1PR1P1</b> |
| 12 Vac             | SPDT                  | 46                     | <b>D1PR1R</b>  |
| 12 Vac             | SPDT                  | 188                    | <b>D1PR1R1</b> |
| 24 Vac             | SPDT                  | 750                    | <b>D1PR1T1</b> |
| 48 Vac             | SPDT                  | 720                    | <b>D1PR1W</b>  |
| 48 Vac             | SPDT                  | 2,600                  | <b>D1PR1W1</b> |
| 110 Vdc            | SPDT                  | 13,800                 | <b>D1PR1A1</b> |
| 120 Vac 50/60 Hz   | SPDT                  | 4,430                  | <b>D1PR1A</b>  |
| 240 Vac            | SPDT                  | 15,270                 | <b>D1PR1B</b>  |

## Accessories

### D1PR/D1PF Socket and Accessories

| Type                 | Standard Pack | Catalog Number  |
|----------------------|---------------|-----------------|
| Socket               | 10            | <b>D1PAA</b>    |
| Flange mount adapter | 25            | <b>PFC-D11</b>  |
| Metal spring clip    | 25            | <b>PMC-1781</b> |

General Purpose Plug-In Relays—D2 Series



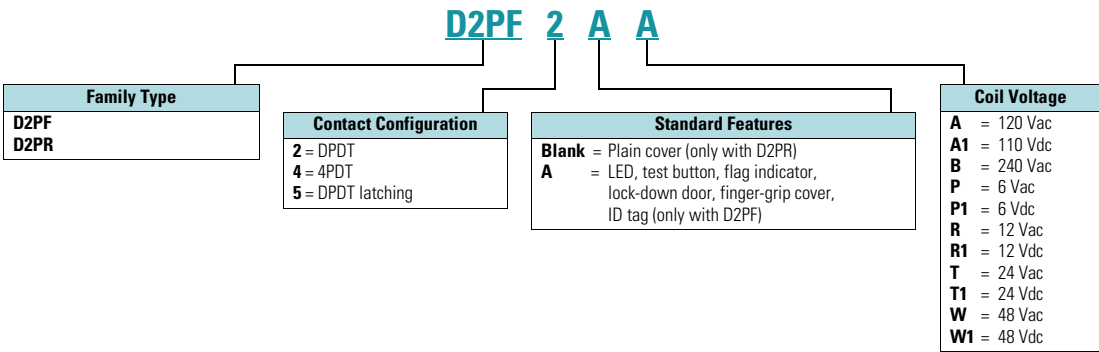
Features

- Ultra-high sensitivity relay with quick response
- Designed small, two-pole type break 5A load and four-pole type, 3A load
- High reliability, long life
- Panel, DIN rail and flange mounting
- Small size

Catalog Number Selection

General Purpose Plug-In Relays

D2 Series ①



Product Selection

D2PF/D2PR Relay/Socket Quick Reference

| Relay Type | Socket | Clip     |
|------------|--------|----------|
| D2PR2      | D2PAL  | PWC-D24  |
| D2PF2      |        | PQC-1782 |
|            | D2PA6  | PQC-1342 |
| D2PR4      | D2PAP  | PWC-D24  |
| D2PF4      |        | PQC-1782 |
|            | D2PA7  | PWC-D24  |
|            |        | PQC-1782 |
|            | D2PA6  | PQC-1342 |
| D2PR5      | D2PA4  | PYC-A1   |

Note

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

## General Purpose Plug-In Relays—D2PR/D2PF

| Coil Voltage               | Contact Configuration | Coil Resistance (Ohms) | Catalog Number  |
|----------------------------|-----------------------|------------------------|-----------------|
| <b>Full Featured Style</b> |                       |                        |                 |
| 6 Vac                      | DPDT                  | 9.6                    | <b>D2PF2AP</b>  |
| 6 Vdc                      | DPDT                  | 40                     | <b>D2PF2AP1</b> |
| 12 Vac                     | DPDT                  | 46                     | <b>D2PF2AR</b>  |
| 12 Vdc                     | DPDT                  | 160                    | <b>D2PF2AR1</b> |
| 24 Vac                     | DPDT                  | 180                    | <b>D2PF2AT</b>  |
| 24 Vdc                     | DPDT                  | 650                    | <b>D2PF2AT1</b> |
| 48 Vdc                     | DPDT                  | 2,600                  | <b>D2PF2AW1</b> |
| 110/125 Vdc                | DPDT                  | 11,000                 | <b>D2PF2AA1</b> |
| 120 Vac                    | DPDT                  | 4,430                  | <b>D2PF2AA</b>  |
| 220/240 Vac                | DPDT                  | 15,720                 | <b>D2PF2AB</b>  |
| 12 Vac                     | 4PDT                  | 46                     | <b>D2PF4AR</b>  |
| 12 Vdc                     | 4PDT                  | 160                    | <b>D2PF4AR1</b> |
| 24 Vac                     | 4PDT                  | 180                    | <b>D2PF4AT</b>  |
| 24 Vdc                     | 4PDT                  | 650                    | <b>D2PF4AT1</b> |
| 48 Vdc                     | 4PDT                  | 2,600                  | <b>D2PF4AW1</b> |
| 110/125 Vdc                | 4PDT                  | 11,000                 | <b>D2PF4AA1</b> |
| 120 Vac                    | 4PDT                  | 4,430                  | <b>D2PF4AA</b>  |
| 220/240 Vac                | 4PDT                  | 15,720                 | <b>D2PF4AB</b>  |

| Coil Voltage             | Contact Configuration | Coil Resistance (Ohms) | Catalog Number |
|--------------------------|-----------------------|------------------------|----------------|
| <b>Plain Cover Style</b> |                       |                        |                |
| 6 Vdc                    | DPDT                  | 40                     | <b>D2PR2P1</b> |
| 12 Vdc                   | DPDT                  | 160                    | <b>D2PR2R1</b> |
| 24 Vac                   | DPDT                  | 180                    | <b>D2PR2T</b>  |
| 24 Vdc                   | DPDT                  | 650                    | <b>D2PR2T1</b> |
| 48 Vdc                   | DPDT                  | 2,600                  | <b>D2PR2W1</b> |
| 110/125 Vdc              | DPDT                  | 11,000                 | <b>D2PR2A1</b> |
| 120 Vac                  | DPDT                  | 4,430                  | <b>D2PR2A</b>  |
| 220/240 Vac              | DPDT                  | 15,720                 | <b>D2PR2B</b>  |
| 6 Vac                    | 4PDT                  | 9.6                    | <b>D2PR4P</b>  |
| 6 Vdc                    | 4PDT                  | 40                     | <b>D2PR4P1</b> |
| 12 Vac                   | 4PDT                  | 46                     | <b>D2PR4R</b>  |
| 12 Vdc                   | 4PDT                  | 160                    | <b>D2PR4R1</b> |
| 24 Vac                   | 4PDT                  | 180                    | <b>D2PR4T</b>  |
| 24 Vdc                   | 4PDT                  | 650                    | <b>D2PR4T1</b> |
| 110/125 Vdc              | 4PDT                  | 11,000                 | <b>D2PR4A1</b> |
| 120 Vac                  | 4PDT                  | 4,430                  | <b>D2PR4A</b>  |
| 220/240 Vac              | 4PDT                  | 15,720                 | <b>D2PR4B</b>  |

## Accessories

## D2PF/D2PR Sockets and Accessories

| Type                 | Standard Pack | Catalog Number   |
|----------------------|---------------|------------------|
| Socket               | 1             | <b>D2PAL</b> ①   |
| Socket               | 10            | <b>D2PA6</b>     |
| Socket               | 1             | <b>D2PAP</b> ①   |
| Socket               | 10            | <b>D2PA7</b> ①   |
| Socket               | 5             | <b>D2PA4</b>     |
| Flange mount adapter | 25            | <b>PFC-D2D72</b> |
| Plastic ejector clip | 10            | <b>PWC-D24</b>   |
| Metal spring clip    | 25            | <b>PQC-1782</b>  |
| Metal spring clip    | 25            | <b>PQC-1342</b>  |
| Hold-down spring     | 100           | <b>PYC-A1</b>    |

**Note**

① Protection category (finger safe), EN 60529 IP20.

General Purpose Plug-In Relays—D3 Series



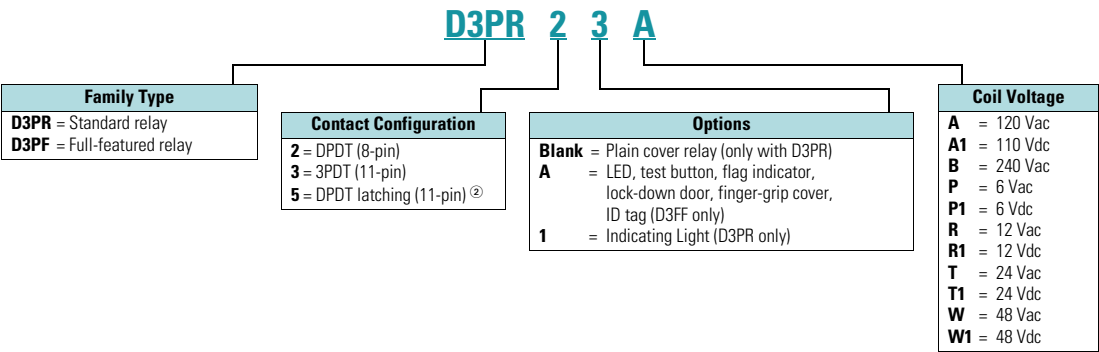
Features

- Compact relay capable of breaking relatively large load currents
- The contact operation can be easily checked by push-to-test button
- Panel and DIN rail mounting
- 8- or 11-pin octal plug-in

Catalog Number Selection

General Purpose Plug-In Relays

D3 Series ①



Product Selection

D3 Relay/Socket Quick Reference

| Relay Type     | Socket  | Clip     |
|----------------|---------|----------|
| D3PR2<br>D3PF2 | D3PA6   | PQC-1332 |
|                | D3PAL8  | PQC-1351 |
|                | D3PA2   | PQC-1351 |
| D3PR3<br>D3PF3 | D3PA7   | PQC-1332 |
|                | D3PAL11 | PQC-1351 |
|                | D3PA3   | PQC-1351 |
| D3PR5          | D3PA7   | PQC-1351 |
|                | D3PAL11 | PQC-1351 |
|                | D3PA3   | PQC-1351 |

Notes

- ① For deciphering catalog numbers.  
Do not use for ordering as not all combinations are readily available.
- ② D3PR only.

## General Purpose Plug-In Relays—D3PR/D2PF

| Coil Voltage               | Contact Configuration | Coil Resistance (Ohms) | Catalog Number  |
|----------------------------|-----------------------|------------------------|-----------------|
| <b>Full Featured Style</b> |                       |                        |                 |
| 120 Vac                    | DPDT                  | 1,700                  | <b>D3PF2AA</b>  |
| 240 Vac                    | DPDT                  | 7,200                  | <b>D3PF2AB</b>  |
| 12 Vdc                     | DPDT                  | 120                    | <b>D3PF2AR1</b> |
| 24 Vdc                     | DPDT                  | 470                    | <b>D3PF2AT1</b> |
| 48 Vdc                     | DPDT                  | 1,800                  | <b>D3PF2AW1</b> |
| 120 Vac                    | 3PDT                  | 1,700                  | <b>D3PF3AA</b>  |
| 220/240 Vac                | 3PDT                  | 7,200                  | <b>D3PF3AB</b>  |
| 6 Vdc                      | 3PDT                  | 32                     | <b>D3PF3AP1</b> |
| 24 Vac                     | 3PDT                  | 72                     | <b>D3PF3AT</b>  |
| 24 Vdc                     | 3PDT                  | 470                    | <b>D3PF3AT1</b> |
| 48 Vdc                     | 3PDT                  | 1,800                  | <b>D3PF3AW1</b> |
| <b>Plain Cover Style</b>   |                       |                        |                 |
| 120 Vac                    | DPDT                  | 1,700                  | <b>D3PR2A</b>   |
| 110/125 Vdc                | DPDT                  | 10,000                 | <b>D3PR2A1</b>  |
| 220/240 Vac                | DPDT                  | 7,200                  | <b>D3PR2B</b>   |
| 6 Vac                      | DPDT                  | 4.2                    | <b>D3PR2P</b>   |

| Coil Voltage                        | Contact Configuration | Coil Resistance (Ohms) | Catalog Number |
|-------------------------------------|-----------------------|------------------------|----------------|
| <b>Plain Cover Style, continued</b> |                       |                        |                |
| 6 Vdc                               | DPDT                  | 32                     | <b>D3PR2P1</b> |
| 12 Vac                              | DPDT                  | 18                     | <b>D3PR2R</b>  |
| 12 Vdc                              | DPDT                  | 120                    | <b>D3PR2R1</b> |
| 24 Vac                              | DPDT                  | 72                     | <b>D3PR2T</b>  |
| 24 Vdc                              | DPDT                  | 470                    | <b>D3PR2T1</b> |
| 48 Vac                              | DPDT                  | 290                    | <b>D3PR2W</b>  |
| 48 Vdc                              | DPDT                  | 1,800                  | <b>D3PR2W1</b> |
| 120 Vac                             | 3PDT                  | 1,700                  | <b>D3PR3A</b>  |
| 110/125 Vdc                         | 3PDT                  | 10,000                 | <b>D3PR3A1</b> |
| 220/240 Vac                         | 3PDT                  | 7,200                  | <b>D3PR3B</b>  |
| 12 Vac                              | 3PDT                  | 18                     | <b>D3PR3R</b>  |
| 12 Vdc                              | 3PDT                  | 120                    | <b>D3PR3R1</b> |
| 24 Vac                              | 3PDT                  | 72                     | <b>D3PR3T</b>  |
| 24 Vdc                              | 3PDT                  | 470                    | <b>D3PR3T1</b> |
| 48 Vdc                              | 3PDT                  | 1,800                  | <b>D3PR3W1</b> |

## Accessories

## D2PF/D2PR Sockets and Accessories

| Type              | Standard Pack | Catalog Number   |
|-------------------|---------------|------------------|
| Socket            | 1             | <b>D3PA6</b> ①   |
| Socket            | 10            | <b>D3PAL8</b> ①  |
| Socket            | 10            | <b>D3PA2</b>     |
| Socket            | 1             | <b>D3PA7</b> ①   |
| Socket            | 10            | <b>D3PAL11</b> ① |
| Socket            | 10            | <b>D3PA3</b>     |
| Metal spring clip | 25            | <b>PQC-1332</b>  |
| Metal spring clip | 10            | <b>PQC-1351</b>  |

**Note**

① Protection category (finger safe) EN 60529 IP20.

General Purpose Plug-In Relays—D4 Series



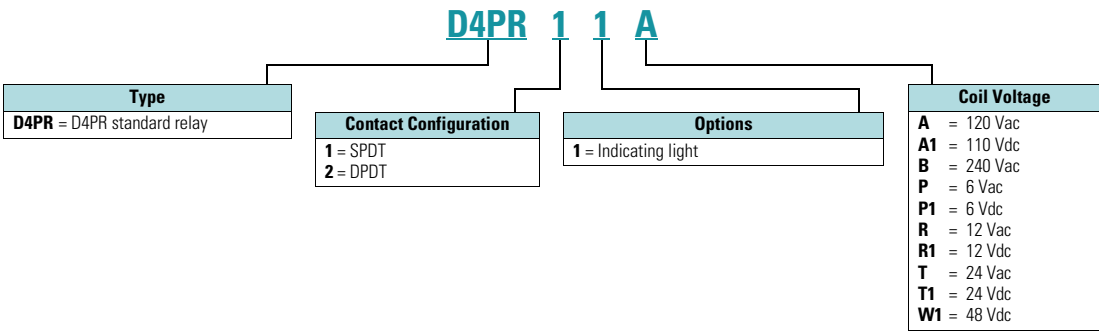
Features

- Slim-styled power relay
- Socket has built-in hold-down clip
- Panel or DIN rail mounting

Catalog Number Selection

General Purpose Plug-In Relays—D4 Series

D4 Series ①



Product Selection

D4 Relay/Socket Quick Reference

| Relay Type | Socket | Hold Down Clip |
|------------|--------|----------------|
| D4PR1      | D4PA1  | ②              |
| D4PR2      | D4PA2  | ②              |

D4 Series

| Coil Voltage ③             | Catalog Number | Coil Voltage ③             | Catalog Number | Coil Voltage ③    | Catalog Number |
|----------------------------|----------------|----------------------------|----------------|-------------------|----------------|
| Standard SPDT              |                | Standard DPDT              |                | DIN Rail Sockets  |                |
| 24 Vac                     | D4PR1T         | 24 Vac                     | D4PR2T         | Single-Pole       | D4PA1          |
| 120 Vac                    | D4PR1A         | 120 Vac                    | D4PR2A         | Two-Pole          | D4PA2          |
| 24 Vdc                     | D4PR1T1        | 12 Vdc                     | D4PR2R1        | Accessories       |                |
| SPDT with Indicating Light |                | 24 Vdc                     | D4PR2T1        | DIN rail end stop | PFP-M          |
| 24 Vac                     | D4PR11T        | DPDT with Indicating Light |                |                   |                |
| 120 Vac                    | D4PR11A        | 120 Vac                    | D4PR21A        |                   |                |
| 24 Vdc                     | D4PR11T1       | 24 Vdc                     | D4PR21T1       |                   |                |

Notes

- ① For deciphering catalog numbers. Do not use for ordering as not all combinations are readily available.
- ② Socket has built-in hold down spring.
- ③ Additional coil voltages available—consult sales office or customer support center.

General Purpose Plug-In Relays—D5 Series



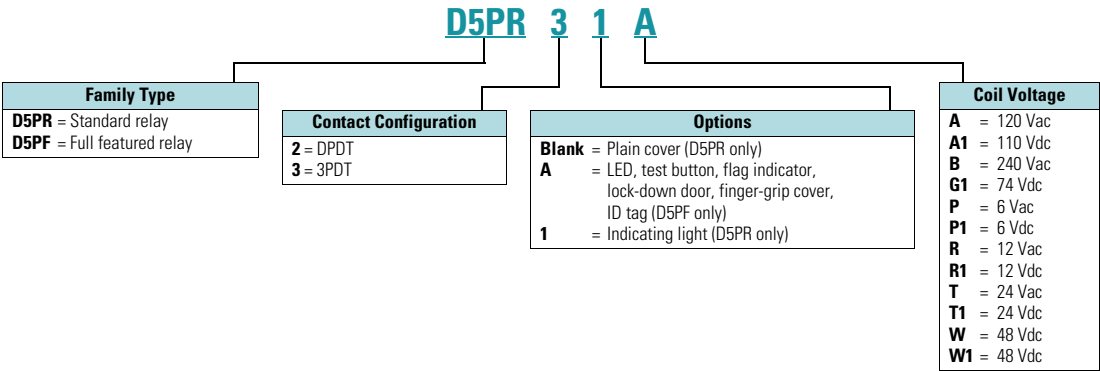
Features

- Industrial rated 300V, 15A relay in two-pole and three-pole configurations
- Compact design can be panel or DIN rail mounted

Catalog Number Selection

General Purpose Plug-In Relays—D5 Series

D5 Series ①



Product Selection

D5 Relay/Socket Quick Reference

| Relay Type | Socket | Clip     |
|------------|--------|----------|
| D5PR2      | D5PAL  | PQC-1351 |
| D5PF2      | D5PA2  | PQC-1351 |
| D5PR3      | D5PA3L | PQC-1351 |
| D5PF3      | D5PA3S | PQC-1351 |

Note

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

## General Purpose Plug-In Relays—D5

| Coil Voltage         | Contact Configuration | Coil Resistance (Ohms) | Catalog Number  |
|----------------------|-----------------------|------------------------|-----------------|
| <b>Full Featured</b> |                       |                        |                 |
| 120 Vac              | DPDT                  | 1,700                  | <b>D5PF2AA</b>  |
| 110/125 Vdc          | DPDT                  | 10,000                 | <b>D5PF2AA1</b> |
| 220/240 Vac          | DPDT                  | 7,200                  | <b>D5PF2AB</b>  |
| 12 Vdc               | DPDT                  | 120                    | <b>D5PF2AR1</b> |
| 24 Vac               | DPDT                  | 72                     | <b>D5PF2AT</b>  |
| 24 Vdc               | DPDT                  | 470                    | <b>D5PF2AT1</b> |
| 48 Vdc               | DPDT                  | 1,800                  | <b>D5PF2AW1</b> |
| 120 Vac              | 3PDT                  | 1,700                  | <b>D5PF3AA</b>  |
| 110/125 Vdc          | 3PDT                  | 10,000                 | <b>D5PF3AA1</b> |
| 220/240 Vac          | 3PDT                  | 7,200                  | <b>D5PF3AB</b>  |
| 12 Vdc               | 3PDT                  | 120                    | <b>D5PF3AR1</b> |
| 24 Vac               | 3PDT                  | 72                     | <b>D5PF3AT</b>  |
| <b>Plain Cover</b>   |                       |                        |                 |
| 120 Vac              | DPDT                  | 1,700                  | <b>D5PR2A</b>   |
| 110/125 Vdc          | DPDT                  | 10,000                 | <b>D5PR2A1</b>  |
| 220/240 Vac          | DPDT                  | 7,200                  | <b>D5PR2B</b>   |
| 74 Vdc               | DPDT                  | 4,800                  | <b>D5PR2G1</b>  |
| 6 Vac                | DPDT                  | 4.2                    | <b>D5PR2P</b>   |

| Coil Voltage                  | Contact Configuration | Coil Resistance (Ohms) | Catalog Number |
|-------------------------------|-----------------------|------------------------|----------------|
| <b>Plain Cover, continued</b> |                       |                        |                |
| 6 Vdc                         | DPDT                  | 32                     | <b>D5PR2P1</b> |
| 12 Vac                        | DPDT                  | 18                     | <b>D5PR2R</b>  |
| 12 Vdc                        | DPDT                  | 120                    | <b>D5PR2R1</b> |
| 24 Vac                        | DPDT                  | 72                     | <b>D5PR2T</b>  |
| 24 Vdc                        | DPDT                  | 470                    | <b>D5PR2T1</b> |
| 48 Vac                        | DPDT                  | 290                    | <b>D5PR2W</b>  |
| 48 Vdc                        | DPDT                  | 1,800                  | <b>D5PR2W1</b> |
| 120 Vac                       | 3PDT                  | 1,700                  | <b>D5PR3A</b>  |
| 110/125 Vdc                   | 3PDT                  | 10,000                 | <b>D5PR3A1</b> |
| 220/240 Vac                   | 3PDT                  | 7200                   | <b>D5PR3B</b>  |
| 74 Vdc                        | 3PDT                  | 4,800                  | <b>D5PR3G1</b> |
| 6 Vac                         | 3PDT                  | 4.2                    | <b>D5PR3P</b>  |
| 6 Vdc                         | 3PDT                  | 32                     | <b>D5PR3P1</b> |
| 12 Vac                        | 3PDT                  | 18                     | <b>D5PR3R</b>  |
| 12 Vdc                        | 3PDT                  | 120                    | <b>D5PR3R1</b> |
| 24 Vac                        | 3PDT                  | 72                     | <b>D5PR3T</b>  |
| 24 Vdc                        | 3PDT                  | 470                    | <b>D5PR3T1</b> |
| 48 Vdc                        | 3PDT                  | 1,800                  | <b>D5PR3W</b>  |

## Accessories

## D5 Sockets and Accessories

| Description       | Standard Pack | Catalog Number  |
|-------------------|---------------|-----------------|
| Socket            | 10            | <b>D5PAL</b> ①  |
| Socket            | 10            | <b>D5PA2</b>    |
| Socket            | 10            | <b>D5PA3L</b>   |
| Socket            | 10            | <b>D5PA3S</b>   |
| Metal spring clip | 10            | <b>PQC-1351</b> |

**Note**

① Protection category (finger safe), EN 60529 IP20.

## General Purpose Plug-In Relays—D7 Series

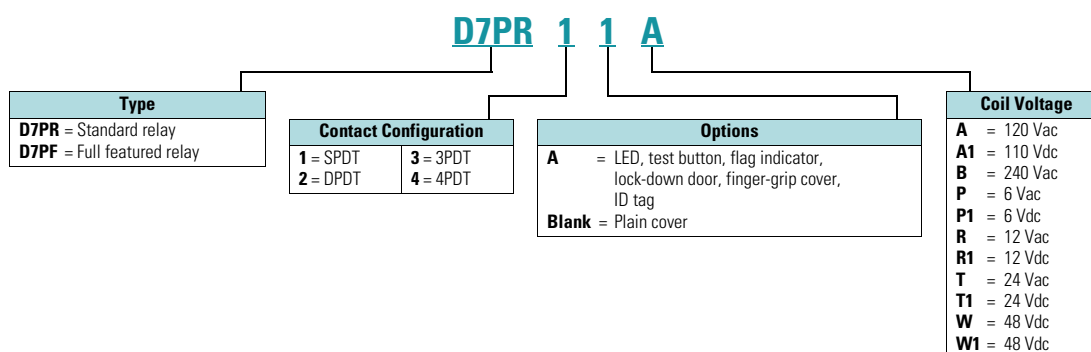


## Features

- Arc barrier equipped relay with high dielectric strength
- Panel, DIN rail and flange mounting

## Catalog Number Selection

## General Purpose Plug-In Relays—D7 Series

D7 Series <sup>①</sup>

## Product Selection

## D7 Relay/Socket Quick Reference

| Relay Type | Socket/Adapter | Clip     |
|------------|----------------|----------|
| D7PR1      | D7PAA          | PQC-1342 |
| D7PR2      |                | PQC-1349 |
| D7PF1      | D7PA9          | PQC-1342 |
| D7PF2      | PFC-D2D72      | —        |
| D7PR3      | D7PAB          | PQC-1783 |
|            |                | PMC-1783 |
| D7PF3      | PFC-D73        | —        |
| D7PR4      | D7PAD          | PQC-1784 |
|            |                | PMC-1784 |
| D7PF4      | PFC-D74        | —        |

**Note**

- <sup>①</sup> For deciphering catalog numbers.  
Do not use for ordering as not all combinations are readily available.

## General Purpose Plug-In Relays—D7

| Coil Voltage         | Contact Configuration | Coil Resistance (Ohms) | Catalog Number  |
|----------------------|-----------------------|------------------------|-----------------|
| <b>Full Featured</b> |                       |                        |                 |
| 120 Vac              | SPDT                  | 4,430                  | <b>D7PF1AA</b>  |
| 6 Vac                | SPDT                  | 9.6                    | <b>D7PF1AP</b>  |
| 6 Vdc                | SPDT                  | 40                     | <b>D7PF1AP1</b> |
| 12 Vac               | SPDT                  | 46                     | <b>D7PF1AR</b>  |
| 24 Vdc               | SPDT                  | 650                    | <b>D7PF1AT1</b> |
| 48 Vac               | SPDT                  | 788                    | <b>D7PF1AW</b>  |
| 48 Vdc               | SPDT                  | 2,600                  | <b>D7PF1AW1</b> |
| 120 Vac              | DPDT                  | 4,430                  | <b>D7PF2AA</b>  |
| 110/125 Vdc          | DPDT                  | 11,000                 | <b>D7PF2AA1</b> |
| 220/240 Vac          | DPDT                  | 15,720                 | <b>D7PF2AB</b>  |
| 6 Vac                | DPDT                  | 9.6                    | <b>D7PF2AP</b>  |
| 6 Vdc                | DPDT                  | 40                     | <b>D7PF2AP1</b> |
| 12 Vac               | DPDT                  | 46                     | <b>D7PF2AR</b>  |
| 12 Vdc               | DPDT                  | 160                    | <b>D7PF2AR1</b> |
| 24 Vac               | DPDT                  | 180                    | <b>D7PF2AT</b>  |
| 24 Vdc               | DPDT                  | 650                    | <b>D7PF2AT1</b> |
| 48 Vac               | DPDT                  | 788                    | <b>D7PF2AW</b>  |
| 48 Vdc               | DPDT                  | 2,600                  | <b>D7PF2AW1</b> |
| 120 Vac              | 3PDT                  | 2,770                  | <b>D7PF3AA</b>  |
| 6 Vac                | 3PDT                  | 6                      | <b>D7PF3AP</b>  |
| 6 Vdc                | 3PDT                  | 25                     | <b>D7PF3AP1</b> |
| 12 Vac               | 3PDT                  | 25.3                   | <b>D7PF3AR</b>  |
| 24 Vac               | 3PDT                  | 103                    | <b>D7PF3AT</b>  |
| 24 Vdc               | 3PDT                  | 400                    | <b>D7PF3AT1</b> |
| 48 Vac               | 3PDT                  | 412                    | <b>D7PF3AW</b>  |
| 48 Vdc               | 3PDT                  | 1,600                  | <b>D7PF3AW1</b> |
| 120 Vac              | 4PDT                  | 2,220                  | <b>D7PF4AA</b>  |
| 110/125 Vdc          | 4PDT                  | 7,340                  | <b>D7PF4AA1</b> |
| 240 Vac              | 4PDT                  | 9,120                  | <b>D7PF4AB</b>  |
| 6 Vac                | 4PDT                  | 5.4                    | <b>D7PF4AP</b>  |
| 6 Vdc                | 4PDT                  | 24                     | <b>D7PF4AP1</b> |
| 12 Vac               | 4PDT                  | 21.2                   | <b>D7PF4AR</b>  |
| 12 Vdc               | 4PDT                  | 96                     | <b>D7PF4AR1</b> |
| 24 Vac               | 4PDT                  | 84.5                   | <b>D7PF4AT</b>  |
| 24 Vdc               | 4PDT                  | 388                    | <b>D7PF4AT1</b> |
| 48 Vdc               | 4PDT                  | 1,550                  | <b>D7PF4AW</b>  |
| 48 Vac               | 4PDT                  | 410                    | <b>D7PF4AW1</b> |

| Coil Voltage       | Contact Configuration | Coil Resistance (Ohms) | Catalog Number |
|--------------------|-----------------------|------------------------|----------------|
| <b>Plain Cover</b> |                       |                        |                |
| 120 Vac            | SPDT                  | 4,430                  | <b>D7PR1A</b>  |
| 110/125 Vdc        | SPDT                  | 11,000                 | <b>D7PR1A1</b> |
| 220/240 Vac        | SPDT                  | 15,720                 | <b>D7PR1B</b>  |
| 6 Vac              | SPDT                  | 9.6                    | <b>D7PR1P</b>  |
| 12 dc              | SPDT                  | 160                    | <b>D7PR1R1</b> |
| 24 Vac             | SPDT                  | 180                    | <b>D7PR1T</b>  |
| 24 Vdc             | SPDT                  | 650                    | <b>D7PR1T1</b> |
| 48 Vdc             | SPDT                  | 2600                   | <b>D7PR1W1</b> |
| 120 Vac            | DPDT                  | 4,430                  | <b>D7PR2A</b>  |
| 110/125 Vdc        | DPDT                  | 11,000                 | <b>D7PR2A1</b> |
| 220/240 Vac        | DPDT                  | 15,720                 | <b>D7PR2B</b>  |
| 6 Vac              | DPDT                  | 9.6                    | <b>D7PR2P</b>  |
| 6 Vdc              | DPDT                  | 40                     | <b>D7PR2P1</b> |
| 12 Vac             | DPDT                  | 46                     | <b>D7PR2R</b>  |
| 12 Vdc             | DPDT                  | 160                    | <b>D7PR2R1</b> |
| 24 Vac             | DPDT                  | 180                    | <b>D7PR2T</b>  |
| 24 Vdc             | DPDT                  | 650                    | <b>D7PR2T1</b> |
| 120 Vac            | 3PDT                  | 2,770                  | <b>D7PR3A</b>  |
| 240 Vac            | 3PDT                  | 12,100                 | <b>D7PR3B</b>  |
| 6 Vac              | 3PDT                  | 6                      | <b>D7PR3P</b>  |
| 12 Vac             | 3PDT                  | 25.3                   | <b>D7PR3R</b>  |
| 12 Vdc             | 3PDT                  | 100                    | <b>D7PR3R1</b> |
| 24 Vac             | 3PDT                  | 103                    | <b>D7PR3T</b>  |
| 24 Vdc             | 3PDT                  | 400                    | <b>D7PR3T1</b> |
| 48 Vdc             | 3PDT                  | 1,600                  | <b>D7PR3W1</b> |
| 120 Vac            | 4PDT                  | 2,220                  | <b>D7PR4A</b>  |
| 110/125 Vdc        | 4PDT                  | 7,340                  | <b>D7PR4A1</b> |
| 240 Vac            | 4PDT                  | 9,120                  | <b>D7PR4B</b>  |
| 6 Vac              | 4PDT                  | 5.4                    | <b>D7PR4P</b>  |
| 24 Vac             | 4PDT                  | 84.5                   | <b>D7PR4T</b>  |
| 24 Vdc             | 4PDT                  | 388                    | <b>D7PR4T1</b> |
| 48 Vdc             | 4PDT                  | 1,550                  | <b>D7PR4W1</b> |

## Accessories

## D7 Sockets and Accessories

| Type                 | Standard Pack | Catalog Number |
|----------------------|---------------|----------------|
| Socket               | —             | D7PAA ①        |
| Socket               | 1             | D7PA9          |
| Socket               | —             | D7PAD ①        |
| Socket               | —             | D7PAB ①        |
| Flange mount adapter | 25            | PFC-D2D72      |
| Flange mount adapter | 25            | PFC-D73        |
| Flange mount adapter | 25            | PFC-D74        |

## Note

① Protection category (finger safe) EN 60529 IP20.

| Type              | Standard Pack | Catalog Number |
|-------------------|---------------|----------------|
| Metal spring clip | 25            | PQC-1342       |
| Plastic ID clip   | 10            | PQC-1349       |
| Metal spring clip | 25            | PQC-1784       |
| Plastic ID clip   | 10            | PMC-1784       |
| Hold-down spring  | 25            | PYC-B2         |
| Metal spring clip | 10            | PQC-1783       |
| Plastic ID clip   | 10            | PMC-1783       |

## General Purpose Plug-In Relays—D8 Series

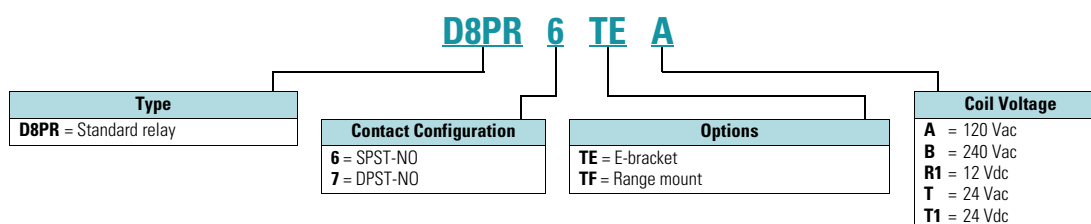


## Features

- Allows switching of 25A and 30A loads
- A high-capacity, high-withstand voltage relay compatible with momentary voltage drops
- No contact chattering for momentary voltage drops up to 50% of rated voltage

## Catalog Number Selection

## General Purpose Plug-In Relays—D8 Series

D8 Series <sup>①</sup>

## Product Selection

## D8 Relay/Socket Quick Reference

| Relay Type | Mounting Bracket | Adapter Track/<br>Panel Mount | Front Connecting<br>Sockets Track/<br>Panel Mount |
|------------|------------------|-------------------------------|---------------------------------------------------|
| D8PR6TE    | D8PA5            | D8PA1                         | D8PA2                                             |
| D8PR7TE    | D8PA5            | D8PA1                         | D8PA2                                             |

**Note**

- <sup>①</sup> For deciphering catalog numbers.  
Do not use for ordering as not all combinations are readily available.

**D8 Series**

| Coil Voltage             | Catalog Number |
|--------------------------|----------------|
| <b>SPST E-Bracket</b>    |                |
| 24 Vac                   | D8PR6TET       |
| 24 Vdc                   | D8PR6TET1      |
| <b>SPST Flange Mount</b> |                |
| 120 Vac                  | D8PR6TFA       |
| 24 Vdc                   | D8PR6TFT1      |
| <b>DPST E-Bracket</b>    |                |
| 120 Vac                  | D8PR7TEA       |
| <b>DPST Flange Mount</b> |                |
| 120 Vac                  | D8PR7TFA       |
| 24 Vdc                   | D8PR7TFT1      |

**Accessories****D8 Series Sockets and Accessories**

| Description            | Standard Pack | Catalog Number |
|------------------------|---------------|----------------|
| <b>Sockets</b>         |               |                |
| DIN rail adapter       | 10            | D8PA1          |
| Screw terminal adapter | 10            | D8PA2          |
| Bracket adapter        | 10            | D8PA5          |
| <b>Accessory</b>       |               |                |
| DIN rail end stop      | 100           | PFP-M          |

General Purpose Plug-In Relays—D9 Series



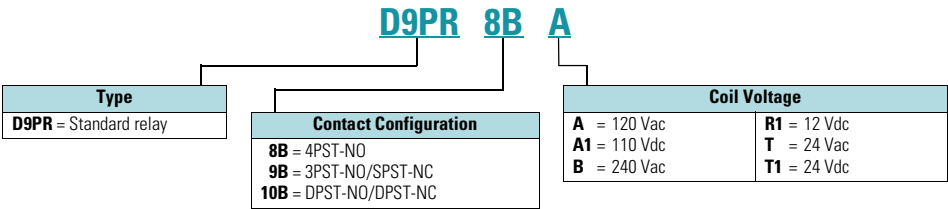
Features

- Ideal for three-phase motor control applications
- No contact chattering for momentary voltage drops up to 50% of rated voltage
- Push-to-test button is a standard feature to check contact operation

Catalog Number Selection

General Purpose Plug-In Relays—D9 Series

D9 Series ①



Product Selection

D9 Series

| Coil Voltage                       | Catalog Number |
|------------------------------------|----------------|
| <b>4PST-NO Power Relay</b>         |                |
| 24 Vac                             | D9PR8BT        |
| 120 Vac                            | D9PR8BA        |
| 240 Vac                            | D9PR8BB        |
| 24 Vdc                             | D9PR8BT1       |
| <b>3PST-NO/SPST-NC Power Relay</b> |                |
| 120 Vac                            | D9PR9BA        |
| <b>DPST-NO/DPST-NC Power Relay</b> |                |
| 24 Vac                             | D9PR10BT       |
| 120 Vac                            | D9PR10BA       |
| 24 Vdc                             | D9PR10BT1      |

Note

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

General Purpose Type AA Relays



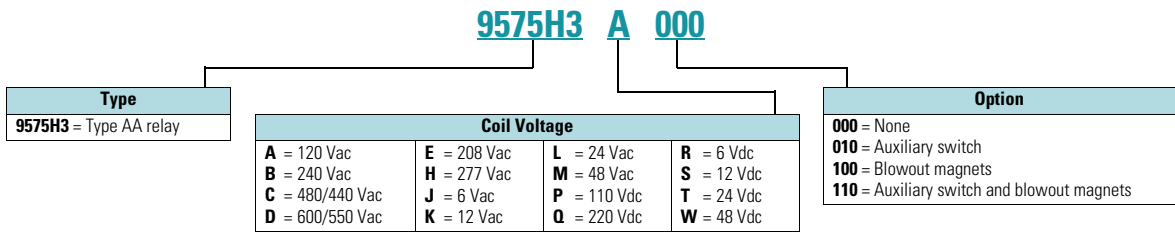
Features

- Type AA panel mounted relays are rated (each pole) 40A up to 300 Vac, 50/60 Hz; 5A at 480/600 Vac, 50/60 Hz and 40A at 28 Vdc
- 9575H Series 3000 relays are ideal for applications when controlling smaller loads such as single-phase motors

Catalog Number Selection

General Purpose Type AA Relays

Type AA



Product Selection

Type AA Relays

| Relay Style                                     | Catalog Number <sup>①</sup> |
|-------------------------------------------------|-----------------------------|
| Relay (DPDT)                                    | 9575H3_000                  |
| Relay with auxiliary switch                     | 9575H3_010                  |
| Relay with blowout magnets                      | 9575H3_100                  |
| Relay with auxiliary switch and blowout magnets | 9575H3_110                  |

Coil Voltage Selection Table

| Coil Voltage | Hz    | Suffix Code |
|--------------|-------|-------------|
| Volts AC     |       |             |
| 120          | 50/60 | A           |
| 240          | 50/60 | B           |
| 480/440      | 60/50 | C           |
| 600/550      | 60/50 | D           |
| 208          | 50/60 | E           |
| 277          | 50/60 | H           |
| 6            | 50/60 | J           |
| 12           | 50/60 | K           |
| 24           | 50/60 | L           |
| 48           | 50/60 | M           |

Note

<sup>①</sup> Underscore ( \_ ) indicates missing coil voltage suffix code. See table above.

| Coil Voltage | Hz | Suffix Code |
|--------------|----|-------------|
| Volts DC     |    |             |
| 110          | —  | P           |
| 220          | —  | Q           |
| 6            | —  | R           |
| 12           | —  | S           |
| 24           | —  | T           |
| 48           | —  | W           |

## XTRE Control Relays



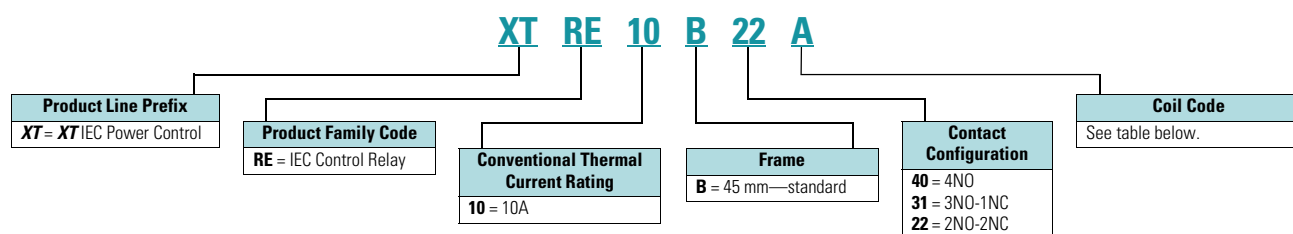
## Features

- 16A conventional thermal current (open at 60°C  $I_{th}$ )
- Four-pole configurations
  - 4NO
  - 3NO-1NC
  - 2NO-2NC
- Expandable to eight-pole with add-on front-mount auxiliary contacts
- Built-in surge suppression on DC coils

## Catalog Number Selection

## XTRE Control Relays

## XTRE Relays



## Product Selection

## XTRE Control Relays

| Conventional Thermal Current $I_{th}$ (A), Open at 60°C | Contact Configuration | Rated Operational Current AC-15 $I_o$ (A) |          |      | Circuit Symbol | Catalog Number—Screw Terminals <sup>①</sup> |
|---------------------------------------------------------|-----------------------|-------------------------------------------|----------|------|----------------|---------------------------------------------|
|                                                         |                       | 220–240V                                  | 380–414V | 500V |                |                                             |
| 16                                                      | 4NO                   | 6                                         | 4        | 1.5  |                | XTRE10B40_                                  |
| 16                                                      | 3NO-1NC               | 6                                         | 4        | 1.5  |                | XTRE10B31_                                  |
| 16                                                      | 2NO-2NC               | 6                                         | 4        | 1.5  |                | XTRE10B22_ <sup>②</sup>                     |

## Coil Voltage Suffix

| Coil Voltage           | Suffix Code | Coil Voltage           | Suffix Code | Coil Voltage           | Suffix Code |
|------------------------|-------------|------------------------|-------------|------------------------|-------------|
| 110V 50 Hz, 120V 60 Hz | A           | 24 Vdc                 | TD          | 550V 50 Hz, 600V 60 Hz | D           |
| 220V 50 Hz, 240V 60 Hz | B           | 415V 50 Hz, 480V 60 Hz | C           | 208V 60 Hz             | E           |
| 24V 50/60 Hz           | T           |                        |             |                        |             |

## Notes

<sup>①</sup> Underscore ( \_ ) indicates magnet coil suffix required. See table above.

<sup>②</sup> DC operated control relays XTRE(C)10B22\_ can only be combined with two-pole auxiliary contacts.

Front Mount Auxiliary Contacts for Use with XTRE Control Relays ①

| Conventional<br>Thermal Current<br>I <sub>th</sub> (A), Open at 60°C | Poles | Rated Operational Current AC-15 I <sub>e</sub> (A) |                      |      | Contact<br>Configuration | Circuit<br>Symbol                                                                   | Package<br>Quantity | Catalog Number—<br>Screw Terminals |
|----------------------------------------------------------------------|-------|----------------------------------------------------|----------------------|------|--------------------------|-------------------------------------------------------------------------------------|---------------------|------------------------------------|
|                                                                      |       | 220V<br>230V<br>240V                               | 380V<br>400V<br>415V | 500V |                          |                                                                                     |                     |                                    |
| 16                                                                   | 2     | 6                                                  | 3                    | 1.5  | 2NO                      |  | 5                   | XTCEXFAC20v                        |
| 16                                                                   | 2     | 6                                                  | 3                    | 1.5  | 1NC-1NC                  |  | 5                   | XTCEXFAC11                         |
| 16                                                                   | 4     | 6                                                  | 3                    | 1.5  | 4NO                      |  | 5                   | XTCEXFAC40                         |
| 16                                                                   | 4     | 6                                                  | 3                    | 1.5  | 2NO-2NC                  |  | 5                   | XTCEXFAC22                         |

Note

① Interlocked opposing contacts, to IEC/EN 60947-5-1 Annex L (positively driven), within the auxiliary contact modules (not NOE and NCL contacts) and between the auxiliary contacts and built-in contacts of the XTRE control relays.

## Solid-State Relays—D93 Series



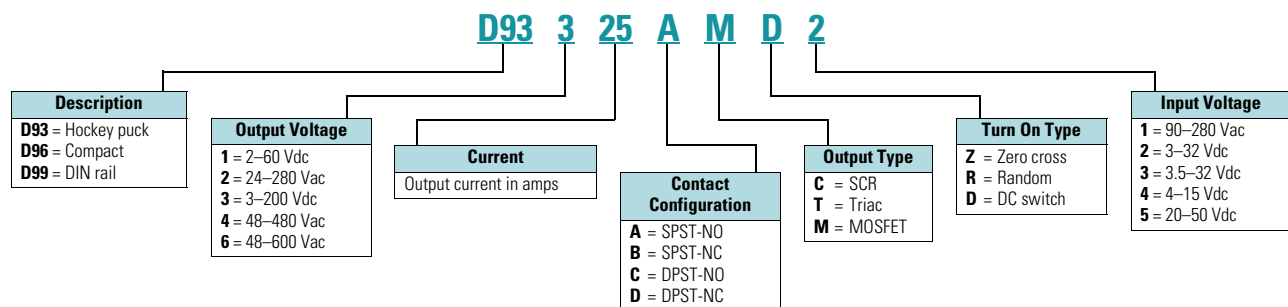
## Features

- All solid-state circuitry with no moving parts to wear
- Compact, panel mounting for flexible installation
- Isolated input and output terminals to protect the system from electrical noise
- Internal snubber circuitry to protect the SSR from transients
- UL®/cUL® listed—UL 508
- CSA® certified
- CE marked
- RoHS compliant

## Catalog Number Selection

## Solid-State Relays—D93 Series

## D93 Series



## Product Selection

## D93 Series

| Input Voltage | Output Voltage | Contact Configuration | Switching Type | Rated Current Load (A) | Catalog Number |
|---------------|----------------|-----------------------|----------------|------------------------|----------------|
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 10                     | D93210ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 10                     | D93210ACZ2     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Triac          | 10                     | D93210ATZ2     |
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 25                     | D93225ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 25                     | D93225ACZ2     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Triac          | 25                     | D93225ATZ2     |
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 40                     | D93240ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 40                     | D93240ACZ2     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Triac          | 40                     | D93240ATZ2     |
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 50                     | D93250ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 50                     | D93250ACZ2     |
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 75                     | D93275ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 75                     | D93275ACZ2     |
| 3–32 Vdc      | 3–200 Vdc      | SPST-NO               | MOSFET         | 12                     | D93312AMD2     |
| 3–32 Vdc      | 3–200 Vdc      | SPST-NO               | MOSFET         | 25                     | D93325AMD2     |
| 3–32 Vdc      | 3–200 Vdc      | SPST-NO               | MOSFET         | 40                     | D93340AMD2     |

## Accessory

## Heat Sink Accessory

| Description | Catalog Number |
|-------------|----------------|
| Heat sink   | D93HS1         |

Solid-State Relays—D96 Series



Features

- All solid-state circuitry has no moving parts to wear
- Integral heat sink eliminates the need for added accessories and installation
- Flexible mounting allows DIN rail or panel mounting without additional hardware or tools
- Isolated input and output terminals protect the system from electrical noise
- Internal snubber circuitry protects the SSR from transients
- UL/cUL listed—UL 508
- CSA certified
- CE marked
- RoHS compliant

Product Selection

Solid-State Relays—D96 Series

D96 Series

| Input Voltage | Output Voltage | Contact Configuration | Switching Type | Rated Current Load (A) | Catalog Number |
|---------------|----------------|-----------------------|----------------|------------------------|----------------|
| 3.5–32 Vdc    | 3–50 Vdc       | SPST-NO               | DC switch      | 15                     | D96115ACZ3     |
| 3.5–32 Vdc    | 3–150 Vac      | SPST-NO               | DC switch      | 8                      | D96208ACZ3     |
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Random         | 10                     | D96210ACR1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Random         | 10                     | D96210ACR2     |
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 10                     | D96210ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 10                     | D96210ACZ2     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NC               | Random         | 10                     | D96210BCR2     |
| 90–280 Vac    | 48–480 Vac     | SPST-NO               | Random         | 10                     | D96410ACR1     |
| 3–32 Vdc      | 48–480 Vac     | SPST-NO               | Random         | 10                     | D96410ACR2     |
| 90–280 Vac    | 48–480 Vac     | SPST-NO               | Zero cross     | 10                     | D96410ACZ1     |
| 3–32 Vdc      | 48–480 Vac     | SPST-NO               | Zero cross     | 10                     | D96410ACZ2     |
| 90–280 Vac    | 48–600 Vac     | SPST-NO               | Random         | 10                     | D96610ACR1     |
| 90–280 Vac    | 48–600 Vac     | SPST-NO               | Zero cross     | 10                     | D96610ACZ1     |
| 3–32 Vdc      | 48–600 Vac     | SPST-NO               | Zero cross     | 10                     | D96610ACZ2     |

## Solid-State Relays—D99 Series



## Features

- All solid-state circuitry has no moving parts to wear
- Integral heat sink eliminates the need for added accessories and installation
- Flexible mounting allows DIN rail or panel mounting without additional hardware or tools
- Isolated input and output terminals protect the system from electrical noise
- Internal snubber circuitry protects the SSR from transients
- UL/cUL listed—UL 508
- CSA certified
- CE marked
- RoHS compliant

## Product Selection

## Solid-State Relays—D99 Series

## D99 Series

| Input Voltage | Output Voltage | Contact Configuration | Switching Type | Rated Current Load (A) | Catalog Number |
|---------------|----------------|-----------------------|----------------|------------------------|----------------|
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 10                     | D99210ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 10                     | D99210ACZ2     |
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 25                     | D99225ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 25                     | D99225ACZ2     |
| 90–280 Vac    | 24–280 Vac     | SPST-NO               | Zero cross     | 40                     | D99240ACZ1     |
| 3–32 Vdc      | 24–280 Vac     | SPST-NO               | Zero cross     | 40                     | D99240ACZ2     |
| 90–280 Vac    | 48–600 Vac     | SPST-NO               | Zero cross     | 10                     | D99610ACZ1     |
| 3–32 Vdc      | 48–600 Vac     | SPST-NO               | Zero cross     | 10                     | D99610ACZ2     |
| 90–280 Vac    | 48–600 Vac     | SPST-NO               | Zero cross     | 25                     | D99625ACZ1     |
| 3–32 Vdc      | 48–600 Vac     | SPST-NO               | Zero cross     | 25                     | D99625ACZ2     |
| 90–280 Vac    | 48–600 Vac     | SPST-NO               | Zero cross     | 40                     | D99640ACZ1     |
| 3–32 Vdc      | 48–600 Vac     | SPST-NO               | Zero cross     | 40                     | D99640ACZ2     |

Universal TR Series Timing Relays



Features

- Multiple user-selectable timing functions and timing ranges in a single unit reduce product variations and stock keeping units (SKUs)
- Universal input voltages from 12 or 24–240 Vac/Vdc eliminate the need to order and stock separate coil voltages
- Compact, DIN rail mountable case reduces panel size
- Advanced LED indication makes troubleshooting easy
- Staggered terminal locations allow access to lower-level terminals after wiring
- SPDT or DPDT contacts with 8A ratings
- cULus listed
- CE marked
- RoHS compliant
- IEC/EN 61812

3

Product Selection

Universal TR Series Timing Relays

Universal TR Series

| Supply Voltage    | Description                        | Catalog Number |
|-------------------|------------------------------------|----------------|
| <b>4-Function</b> |                                    |                |
| 24–240 Vac/Vdc    | Compact DIN rail mount, SPDT       | <b>TRL04</b>   |
| <b>7-Function</b> |                                    |                |
| 24–240 Vac/Vdc    | Compact DIN rail mount, SPDT       | <b>TRL07</b>   |
| 12–240 Vac/Vdc    | Compact DIN rail mount, DPDT       | <b>TRL27</b>   |
|                   | Asymmetrical pulse generator, DPDT | <b>TRW27</b>   |

## TMR5 Series Timing Relays



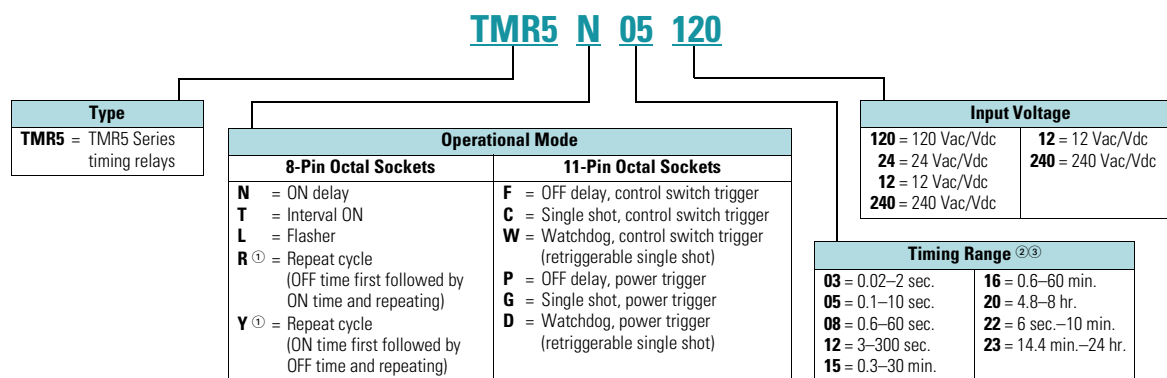
## Features

- Single timing range for each unit
- Ranges available from 0.02 sec. to 24 hours
- Wide variety of functions available
- 10A DPDT output contacts

## Catalog Number Selection

## TMR5 Series Timing Relays

## TMR5 Series



## Product Selection

## TMR5 Time Delay Relays

| Input Voltage                     | Socket | Timing Range | Catalog Number |
|-----------------------------------|--------|--------------|----------------|
| ON Delay                          |        |              |                |
| 120 Vac/Vdc                       | 8-pin  | 0.1–10 sec.  | TMR5N05120     |
| 120 Vac/Vdc                       |        | 0.6–60 sec.  | TMR5N08120     |
| 24 Vac/Vdc                        |        | 0.1–10 sec.  | TMR5N0524      |
| 24 Vac/Vdc                        |        | 0.6–60 sec.  | TMR5N0824      |
| OFF Delay, Control Switch Trigger |        |              |                |
| 120 Vac/Vdc                       | 11-pin | 0.1–10 sec.  | TMR5F05120     |
| 120 Vac/Vdc                       |        | 0.6–60 sec.  | TMR5F08120     |
| 24 Vac/Vdc                        |        | 0.1–10 sec.  | TMR5F0524      |
| 24 Vac/Vdc                        |        | 0.6–60 sec.  | TMR5F0824      |
| Interval ON                       |        |              |                |
| 120 Vac/Vdc                       | 8-pin  | 0.1–10 sec.  | TMR5T05120     |
| 120 Vac/Vdc                       |        | 0.6–60 sec.  | TMR5T08120     |
| 24 Vac/Vdc                        |        | 0.1–10 sec.  | TMR5T0524      |
| 24 Vac/Vdc                        |        | 0.6–60 sec.  | TMR5T0824      |

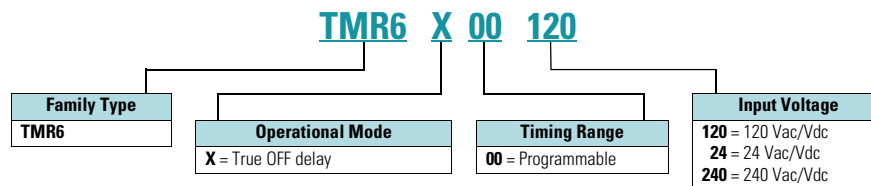
| Input Voltage                                                   | Socket | Timing Range | Catalog Number |
|-----------------------------------------------------------------|--------|--------------|----------------|
| Single Shot, Control Switch Trigger                             |        |              |                |
| 120 Vac/Vdc                                                     | 11-pin | 0.1–10 sec.  | TMR5C05120     |
| 120 Vac/Vdc                                                     |        | 0.6–60 sec.  | TMR5C08120     |
| 24 Vac/Vdc                                                      |        | 0.1–10 sec.  | TMR5C0524      |
| 24 Vac/Vdc                                                      |        | 0.6–60 sec.  | TMR5C0824      |
| Repeat Cycle (OFF Time First Followed by ON Time and Repeating) |        |              |                |
| 120 Vac/Vdc                                                     | 8-pin  | 0.1–10 sec.  | TMR5R05120     |
| 120 Vac/Vdc                                                     |        | 0.6–60 sec.  | TMR5R08120     |
| 24 Vac/Vdc                                                      |        | 0.1–10 sec.  | TMR5R0524      |
| 24 Vac/Vdc                                                      |        | 0.6–60 sec.  | TMR5R0824      |
| Repeat Cycle (ON Time First Followed by OFF Time and Repeating) |        |              |                |
| 120 Vac/Vdc                                                     | 8-pin  | 0.1–10 sec.  | TMR5Y05120     |
| 120 Vac/Vdc                                                     |        | 0.6–60 sec.  | TMR5Y08120     |
| 24 Vac/Vdc                                                      |        | 0.1–10 sec.  | TMR5Y0524      |
| 24 Vac/Vdc                                                      |        | 0.6–60 sec.  | TMR5Y0824      |

## Notes

- ① Indicates DUAL knob unit. All dual knob units can have independently selectable and adjustable ON and OFF times. If different ON and OFF times are desired, add two codes for time ranges in the part number. The first code listed indicates the first timing range of the unit (OFF time for R, ON time for Y) and the second code indicates the second timing range (ON time for R, OFF Time for Y).
- ② Any time range can be created as a custom unit. Contact Eaton for details.
- ③ Fixed time delay settings are available for orders of 50 pieces or more.

**TMR6 Series Timing Relays****Features**

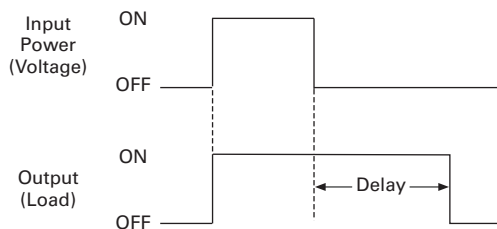
- Provides OFF delay function without requiring input voltage during OFF time delay
- Duplicates operation of pneumatic OFF delay timers
- Each unit has eight timing ranges built in, covering 0.05 seconds to 30 minutes
- Selecting a range is easy using a rotary switch (no math is required or DIP switches to set)
- Uses industry-standard
- 8-pin octal socket
- 10A DPDT output contacts
- cRUus
- UL listed (with Eaton socket)
- RoHS compliant
- CE marked

**Catalog Number Selection****TMR6 Series Timing Relays****TMR6 Series****Product Selection****TMR6 True OFF Delay Relays**

| Input Voltage | Timing Range                                         | Catalog Number |
|---------------|------------------------------------------------------|----------------|
| 120 Vac/Vdc   | 0.05 sec.–30 min.<br>(user selectable, eight ranges) | TMR6X00120     |
| 24 Vac/Vdc    |                                                      | TMR6X0024      |
| 240 Vac/Vdc   |                                                      | TMR6X00240     |

**Accessories****Accessories for Use with TMR6 Time Delay Relays**

| Description      | Standard Pack | Catalog Number |
|------------------|---------------|----------------|
| 8-pin socket     | 10            | D3PA2          |
| Hold-down spring | 10            | D65CHDS        |

**True OFF Delay**

TMRP Series Timing Relays



Features

- Multiple user-selectable timing functions and timing ranges in a single unit reduce product variations and stock keeping units (SKUs)
- Universal input voltages from 12–240 Vac/Vdc eliminate the need to order and stock separate coil voltages
- Timing ranges up to 9990 hours
- Dual LED indication makes troubleshooting easy
- Flexible design for back-panel, through-panel (45 mm x 45 mm cutout), or DIN rail mounting
- SPDT or DPDT contacts with 12A ratings
- Plastic dust cover keeps out contaminants and eliminates accidental set point changes
- Use with standard Eaton D3 sockets
- UL recognized
- CE marked
- RoHS compliant

Product Selection

TMRP Series Timing Relays

TMRP Timing Relays

| Supply Voltage     | Description                  | Catalog Number  |
|--------------------|------------------------------|-----------------|
| <b>10-Function</b> |                              |                 |
| 12–240 Vac/Vdc     | Control switch trigger, DPDT | <b>TMRP5100</b> |
|                    | Control switch trigger, SPDT | <b>TMRP5101</b> |
|                    | Power trigger, DPDT          | <b>TMRP5102</b> |

## Product Overview

### Programmable Logic Controllers Selection Guide



**Fusion Integrated  
Machine Controllers**



**EASY  
Intelligent Relays**



**MFD  
Intelligent Relays**



**ELC  
Eaton Logic Controllers**

| Description                                      | <b>Fusion Integrated<br/>Machine Controllers</b>                    | <b>EASY<br/>Intelligent Relays</b>                                                                                             | <b>MFD<br/>Intelligent Relays</b>                                               | <b>ELC<br/>Eaton Logic Controllers</b>                                    |
|--------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------|
|                                                  | <b>Page V9-T3-36</b>                                                | <b>Page V9-T3-37</b>                                                                                                           | <b>Page V9-T3-39</b>                                                            | <b>Page V9-T3-41</b>                                                      |
| <b>User Interface</b>                            |                                                                     |                                                                                                                                |                                                                                 |                                                                           |
| LCD display (text/graphics)                      | 3-, 4- or 5-line text (embedded)                                    | 4-line text (embedded)                                                                                                         | 4-line text and graphics (embedded)                                             | Text and graphics thru HMI or ELC-GP (external)                           |
| Seven-segment display                            | —                                                                   | —                                                                                                                              | 4 characters (simulated)                                                        | PA only = 2 digital                                                       |
| Keypad for programming                           | Yes                                                                 | Optional                                                                                                                       | Optional                                                                        | —                                                                         |
| Hand-held programmer                             | —                                                                   | —                                                                                                                              | —                                                                               | Available for all                                                         |
| Potentiometers                                   | Simulated using display                                             | Simulated using optional display                                                                                               | Simulated using optional display                                                | PC/PH = two embedded                                                      |
| <b>I/O Digital</b>                               |                                                                     |                                                                                                                                |                                                                                 |                                                                           |
| Embedded digital input types                     | 3.5–30 Vdc                                                          | 12 Vdc/24 Vdc<br>24 Vac or 110/240 Vac                                                                                         | 24 Vac or 110/240 Vac (using MFD I/O)                                           | 24 Vdc or 110/240 Vac                                                     |
| Embedded digital output types                    | 24 Vdc transistor or high current relay (5A resistive)              | 24 Vdc transistor or high current relay (8A resistive)                                                                         | 24 Vdc transistor or high current relay (8A resistive) (using MFD I/O)          | 24 Vdc transistor or relay                                                |
| Embedded digital inputs/outputs per unit         | 10 control inputs<br>3 counter inputs/<br>2 transistors<br>5 relays | EASY500 = 8/4<br>EASY700/800 = 12 (6 or 8)                                                                                     | 12/4 (using MFD I/O)                                                            | PA = 4/2<br>PB = 8/6<br>PC/PH = 8/4<br>PV = 16/12                         |
| Expansion digital input types                    | —                                                                   | 24 Vdc or 110/240 Vac                                                                                                          | 24 Vdc or 110/240 Vac                                                           | 24 Vdc or 110/240 Vac                                                     |
| Expansion digital output types                   | —                                                                   | 24 Vdc transistor or high current relay (8A resistive)                                                                         | 24 Vdc transistor or high current relay (8A resistive)                          | 24 Vdc transistor, relay or high current relay (6A resistive)             |
| Max. digital I/O includes embedded and expansion | 20                                                                  | EASY500 = 12<br>EASY700/800 = 40<br>EASY800 (link up to 8 expanded units using EASY-NET) = 320                                 | (link up to 8 expanded units with EASY-NET) = 320                               | PA/PB/PC/PH = 112 in/112 out and embedded<br>PV = 240 in/240 out embedded |
| <b>I/O Analog</b>                                |                                                                     |                                                                                                                                |                                                                                 |                                                                           |
| Embedded analog input quantity and types         | 2 at 4–20 mA<br>2 at 0–10 Vdc                                       | Optional on 24 Vac or DC input units<br>EASY500 = 2<br>EASY700 = 4<br>EASY819/821 = N/A<br>EASY820/822 = 1<br>All 0 to +10 Vdc | Optional on 24 Vac or Vdc input units = 4<br>All 0 to +10 Vdc                   | PA = 2 at either –10 to +10 Vdc or –20 to +20 mA                          |
| Embedded analog input resolution                 | 6.5 bit                                                             | 10 bit                                                                                                                         | 10 bit                                                                          | 12 bit                                                                    |
| Embedded analog outputs quantity and types       | 1 at 4–20 mA<br>1 at 0–10 Vdc                                       | Optional EASY820/822 = 1<br>All 0 to +10 Vdc                                                                                   | Available using MFD-RA17 or MFD-TA17<br>MFD I/O Modules = 1<br>All 0 to +10 Vdc | PA = 2 at either –10 to +10 Vdc or –20 to +20 mA                          |
| Embedded analog output resolution                | 6.5 bit                                                             | 10 bit                                                                                                                         | 10 bit                                                                          | 12 bit                                                                    |
| Expansion analog input types                     | —                                                                   | 0                                                                                                                              | 0                                                                               | –10 to +10 Vdc or –20 to +20 mA                                           |
| Expansion analog input resolution                | —                                                                   | —                                                                                                                              | —                                                                               | V = 12 bits, I = 11 or 13 bits ①                                          |
| Expansion analog outputs types                   | —                                                                   | 0                                                                                                                              | 0                                                                               | 0 to 20 mA, 4 to 20 mA<br>0 to 10 Vdc, 2 to 10 Vdc ①                      |

#### Note

① Combo modules have 11 bit resolution; analog input-only modules support 13 bit.

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

## Programmable Logic Controllers Selection Guide, continued



**Fusion Integrated  
Machine Controls**



**EASY  
Intelligent Relays**



**MFD  
Intelligent Relays**



**ELC  
Eaton Logic Controllers**

**Description****I/O Analog**

|                                      |   |     |     |                                                                        |
|--------------------------------------|---|-----|-----|------------------------------------------------------------------------|
| Expansion analog output resolution   | — | —   | —   | Voltage = 14 bit<br>Current = 11 or 12 bit ①                           |
| Max. expansion analog inputs/outputs | — | 0/0 | 0/0 | Up to 32/up to 32<br>(max. using eight combo modules = 32 in + 16 out) |

**I/O Specialty Inputs**

|              |   |   |   |                             |
|--------------|---|---|---|-----------------------------|
| RTD PT100    | — | — | — | Four point expansion module |
| Thermocouple | — | — | — | Four point expansion module |

**Programming**

|                                                                                                                     |                                                     |                                                         |                                                         |                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Programming tools                                                                                                   | Software or front panel                             | Software;<br>on-board keypad;<br>memory module transfer | Software;<br>on-board keypad;<br>memory module transfer | Software;<br>memory module transfer;<br>hand-held programmer                                                                                                                                |
| Program size                                                                                                        | 100 rungs with up to 6 contacts and 1 coil per rung | EASY500/700 = 128 rungs<br>EASY800 = 256 rungs          | MFD = 256 rungs                                         | PB = 4k steps<br>PA/PC/PH = 8k steps<br>PV = 16k steps                                                                                                                                      |
| Programming languages                                                                                               | Ladder                                              | Ladder;<br>function block                               | Ladder;<br>function block                               | Instructions, ladder,<br>sequential function chart                                                                                                                                          |
| Timers                                                                                                              | 8                                                   | EASY500/700 = 16<br>EASY800 = 32                        | 32                                                      | PB = 128<br>PA/PC/PH/PV =<br>244 standard with additional timers for<br>subroutine and retentive applications                                                                               |
| General counters                                                                                                    | 8                                                   | EASY500/700 = 16<br>EASY800 = 32                        | 32                                                      | PB = 128<br>PA/PC/PH = 235<br>PV = 253                                                                                                                                                      |
| High speed counters<br>Quantity at max. speed<br>(pulse train output use<br>may limit maximum<br>counter frequency) | Up to 14 kHz with five presets and prewarn          | 1 kHz                                                   | 3 kHz                                                   | PB = up to 4, 2 at 20 kHz<br>PA/PC = up to 6, 1 at 30 kHz<br>and 1 at 10 kHz<br>PH = up to 8, 1 at 100 kHz<br>and 1 at 30 kHz<br>PV = up to 8, 2 at 200 kHz<br>2 at 20 kHz; and 2 at 10 kHz |
| Pulse train outputs<br>Quantity at max. speed<br>(high speed input use<br>may limit maximum<br>speed for outputs)   | —                                                   | —                                                       | —                                                       | PB = 2 at 10 kHz<br>PA/PC = 1 at 30 kHz;<br>and 1 at 10 kHz<br>PH = 1 at 100 kHz;<br>and 1 at 30 kHz<br>PV = up to 2 at 200 kHz;<br>and 1 at 40 kHz                                         |
| Real time clock                                                                                                     | Yes                                                 | EASY500 = Optional<br>EASY700/800 = Yes                 | Yes                                                     | PA/PC/PH/PV = Yes<br>Not available on PB                                                                                                                                                    |

**Note**

① Combo modules have 11 bit resolution; analog input-only modules support 13 bit.

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

## Programmable Logic Controllers Selection Guide, continued



**Fusion Integrated  
Machine Controls**



**EASY  
Intelligent Relays**



**MFD  
Intelligent Relays**



**ELC  
Eaton Logic Controllers**

| Description                               | Fusion Integrated Machine Controls | EASY Intelligent Relays         | MFD Intelligent Relays                                 | ELC Eaton Logic Controllers                               |
|-------------------------------------------|------------------------------------|---------------------------------|--------------------------------------------------------|-----------------------------------------------------------|
| <b>Communications</b>                     |                                    |                                 |                                                        |                                                           |
| Ports                                     | 1 RS-232/RS-485                    | Programming only                | Programming only                                       | 1 RS-232 slave or programming<br>1 RS-485 master or slave |
| DeviceNet                                 | —                                  | EASY700/800 = slave only        | Slave only                                             | PA/PB/PC/PH = slave only<br>PV = master and slave         |
| Ethernet OPC                              | —                                  | EASY700/800 = slave only        | Slave only                                             | PA/PB/PC/PH = slave only<br>PV = limited master and slave |
| ASi                                       | —                                  | EASY700/800 = slave only        | Slave only                                             | —                                                         |
| Profibus                                  | —                                  | EASY700/800 = slave only        | Slave only                                             | —                                                         |
| CanOpen                                   | —                                  | EASY700/800 = slave only        | Slave only                                             | —                                                         |
| Modbus Serial                             | Slave only                         | —                               | —                                                      | ASCII/RTU<br>master and slave                             |
| <b>General Specifications</b>             |                                    |                                 |                                                        |                                                           |
| Hazardous location<br>Class I, Division 2 | —                                  | Yes                             | —                                                      | Yes                                                       |
| Agency certifications                     | UL/CUL/CE                          | UL/CSA/CE/C-Tick                | UL/CSA/CE/C-Tick                                       | UL/CUL/CE/C-Tick                                          |
| Operating temperature range               | 0° to 50°C<br>(32° to 122°F)       | –25° to 55°C<br>(–13° to 131°F) | –25° to 55°C<br>(–13° to 131°F)<br>Display –5° to 50°C | 0° to 55°C<br>(32° to 131°F)                              |
| Storage/transport temperature<br>range    | –20° to 70°C<br>(–4° to 158°F)     | –40° to 70°C<br>(–40° to 158°F) | –40° to 70°C<br>(–40° to 158°F)                        | –25° to 70°C<br>(–13° to 158°F)                           |
| Nominal operating power                   | 100/240 Vac<br>24 Vdc<br>12 Vdc    | 100/240 Vac<br>24 Vdc<br>12 Vdc | 100/240 Vac<br>24 Vdc                                  | 24 Vdc<br>110/240 Vac using<br>ELC power supply           |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

Fusion® Integrated Machine Controller



Features

- User-configurable operator interface with back-lit LCD display and 18-button tactile feedback keypad
- High-speed counter with five presets and prewarn, totalizer, batch counter and ratemeter
- 10 parameter sets
- 13 digital inputs
- (2) 4–20 mA inputs
- (2) 0–10V input
- (3) Form C, 2 Form A, 2 NPN transistor, (1) 4–20 mA, and (1) 0–10V output
- RS-232 and RS-485 serial communications
- 100-line ladder logic processor for ultimate flexibility
- Configuration software included
- Type 4X enclosure

Product Selection

Fusion Integrated Machine Controller

Fusion Integrated Machine Controller

| Description                                           | Catalog Number |
|-------------------------------------------------------|----------------|
| Fusion integrated machine controller—10–30 Vdc power  | 57550400       |
| Fusion integrated machine controller—85–265 Vac power | 57551400       |

EASY Intelligent Relays



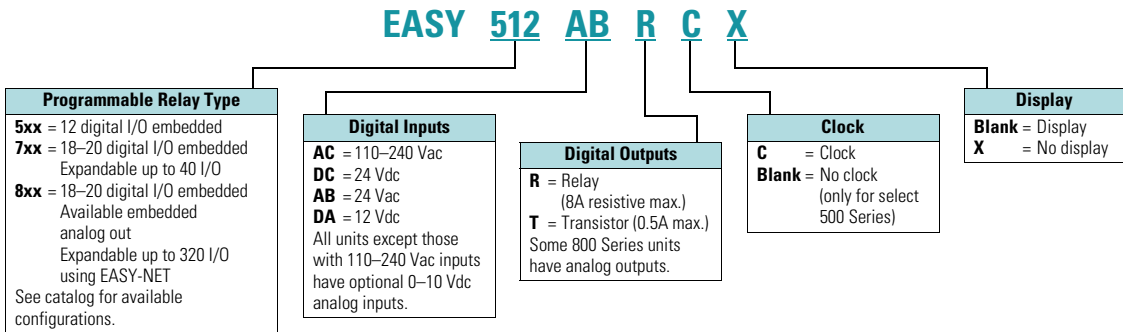
Features

- EASY500 Series—for controlling small applications with up to 12 input/output signals
- EASY700 Series—for controlling medium-sized applications with up to 40 input/output signals
- EASY800 Series—for controlling large-scale applications with up to 320 input/output signals; use EASY-NET for applications beyond 40 I/O
- MFD Series—for controlling applications with visualization. The MFD display can be linked to the EASY500/700/800 models for text only; graphics capabilities are available when using the CP8 modules

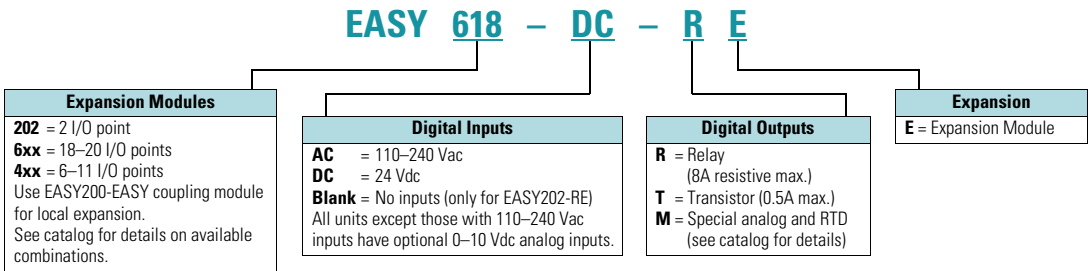
Catalog Number Selection

EASY Intelligent Relays

EASY Intelligent Relays



EASY Expansion



## MFD Intelligent Relay Displays and Controllers

## MFD AC-CP8 – ME

3

| MFD Display                                                                  | MFD Display                                                  |
|------------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>80</b>                                                                    | <b>B</b> = With buttons<br><b>Blank</b> = No buttons         |
| Processor                                                                    | Processor                                                    |
| <b>AC-CP8</b> = Processor with clock; requires user-supplied 100–240 Vac     | <b>ME</b> = Select when only local expansion is required     |
| <b>CP8</b> = Processor with clock; requires user-supplied 24 Vdc             | <b>NT</b> = Expansion locally and through EASY-NET           |
| I/O Modules                                                                  | MFD Display to Remote EZ Processor Interface                 |
| <b>AC-R16</b> = 12 110–240 Vac inputs<br>4 relay outputs                     | <b>500</b> = Connects to 500 or 700                          |
| <b>R16</b> = 12 24 Vdc + 4 analog inputs<br>4 relay out                      | <b>800</b> = Connects to 800 to remote MFD-CP8 or MFD-AC-CP8 |
| <b>RA17</b> = 12 24 Vdc + 4 analog inputs<br>4 relay + 1 analog outputs      |                                                              |
| <b>T16</b> = 12 24 Vdc + 4 analog inputs<br>4 transistor outputs             |                                                              |
| <b>TA17</b> = 12 24 Vdc + 4 analog inputs<br>4 transistor + 1 analog outputs |                                                              |
| MFD Display to Remote EASY Processor Interface                               |                                                              |
| <b>AC-CP4</b> = MFD interface adapter; requires user-supplied 100–240 Vac    |                                                              |
| <b>CP4</b> = MFD interface adapter; requires user-supplied 24 Vdc            |                                                              |

## Product Selection

## EASY500 Intelligent Relays

| Description               | Inputs |             |        |        | Analog <sup>①</sup> | Outputs |            | Catalog Number |
|---------------------------|--------|-------------|--------|--------|---------------------|---------|------------|----------------|
|                           | 24 Vac | 110–240 Vac | 12 Vdc | 24 Vdc |                     | Relay   | Transistor |                |
| 12 I/O, clock, display    | 8      | —           | —      | —      | 2                   | 4       | —          | EASY512-AB-RC  |
| 12 I/O, clock, no display | 8      | —           | —      | —      | 2                   | 4       | —          | EASY512-AB-RCX |
| 12 I/O, no clock, display | —      | 8           | —      | —      | —                   | 4       | —          | EASY512-AC-R   |
| 12 I/O, clock, display    | —      | 8           | —      | —      | —                   | 4       | —          | EASY512-AC-RC  |
| 12 I/O, clock, no display | —      | 8           | —      | —      | —                   | 4       | —          | EASY512-AC-RCX |
| 12 I/O, clock, display    | —      | —           | 8      | —      | 2                   | 4       | —          | EASY512-DA-RC  |
| 12 I/O, clock, no display | —      | —           | 8      | —      | 2                   | 4       | —          | EASY512-DA-RCX |
| 12 I/O, no clock, display | —      | —           | —      | 8      | 2                   | 4       | —          | EASY512-DC-R   |
| 12 I/O, clock, display    | —      | —           | —      | 8      | 2                   | 4       | —          | EASY512-DC-RC  |
| 12 I/O, clock, no display | —      | —           | —      | 8      | 2                   | 4       | —          | EASY512-DC-RCX |
| 12 I/O, clock, display    | —      | —           | —      | 8      | 2                   | —       | 4          | EASY512-DC-TC  |
| 12 I/O, clock, no display | —      | —           | —      | 8      | 2                   | —       | 4          | EASY512-DC-TCX |

**Note**

<sup>①</sup> Analog inputs optional; use of analog inputs will result in a decrease in the same number of available digital inputs.

**EASY700 Intelligent Relays**

| Description               | Inputs<br>24 Vac | 110–240 Vac | 12 Vdc | 24 Vdc | Analog <sup>①</sup> | Outputs<br>Relay | Transistor | Catalog Number |
|---------------------------|------------------|-------------|--------|--------|---------------------|------------------|------------|----------------|
| 18 I/O, clock, display    | 12               | —           | —      | —      | 4                   | 6                | —          | EASY719-AB-RC  |
| 18 I/O, clock, no display | 12               | —           | —      | —      | 4                   | 6                | —          | EASY719-AB-RCX |
| 18 I/O, clock, display    | —                | 12          | —      | —      | —                   | 6                | —          | EASY719-AC-RC  |
| 18 I/O, clock, no display | —                | 12          | —      | —      | —                   | 6                | —          | EASY719-AC-RCX |
| 18 I/O, clock, display    | —                | —           | 12     | —      | 4                   | 6                | —          | EASY719-DA-RC  |
| 18 I/O, clock, no display | —                | —           | 12     | —      | 4                   | 6                | —          | EASY719-DA-RCX |
| 18 I/O, clock, display    | —                | —           | —      | 12     | 4                   | 6                | —          | EASY719-DC-RC  |
| 18 I/O, clock, no display | —                | —           | —      | 12     | 4                   | 6                | —          | EASY719-DC-RCX |
| 20 I/O, clock, display    | —                | —           | —      | 12     | 4                   | —                | 8          | EASY721-DC-TC  |
| 20 I/O, clock, no display | —                | —           | —      | 12     | 4                   | —                | 8          | EASY721-DC-TCX |

**EASY800 Intelligent Relays**

| Description               | Inputs<br>110–240 Vac | 24 Vdc | Analog <sup>②</sup> | Outputs<br>Relay | Transistor | Analog <sup>②</sup> | Catalog Number |
|---------------------------|-----------------------|--------|---------------------|------------------|------------|---------------------|----------------|
| 18 I/O, clock, display    | 12                    | —      | —                   | 6                | —          | —                   | EASY819-AC-RC  |
| 18 I/O, clock, no display | 12                    | —      | —                   | 6                | —          | —                   | EASY819-AC-RCX |
| 18 I/O, clock, display    | —                     | 12     | 4                   | 6                | —          | —                   | EASY819-DC-RC  |
| 18 I/O, clock, no display | —                     | 12     | 4                   | 6                | —          | —                   | EASY819-DC-RCX |
| 19 I/O, clock, display    | —                     | 12     | 4                   | 6                | —          | 1                   | EASY820-DC-RC  |
| 19 I/O, clock, no display | —                     | 12     | 4                   | 6                | —          | 1                   | EASY820-DC-RCX |
| 20 I/O, clock, display    | —                     | 12     | 4                   | —                | 8          | —                   | EASY821-DC-TC  |
| 20 I/O, clock, no display | —                     | 12     | 4                   | —                | 8          | —                   | EASY821-DC-TCX |
| 21 I/O, clock, display    | —                     | 12     | 4                   | —                | 8          | 1                   | EASY822-DC-TC  |
| 21 I/O, clock, no display | —                     | 12     | 4                   | —                | 8          | 1                   | EASY822-DC-TCX |

**MFD Intelligent Relays****MFD Displays (MFD-80) and MFD Controllers (MFD-CP8)**

| Description                                             | Catalog Number       |
|---------------------------------------------------------|----------------------|
| MFD, no buttons                                         | <b>MFD-80</b>        |
| MFD, buttons                                            | <b>MFD-80-B</b>      |
| MFD CPU with 24 Vdc, power supply, clock                | <b>MFD-CP8-ME</b>    |
| MFD CPU with 24 Vdc, power supply, clock, EASY-NET      | <b>MFD-CP8-NT</b>    |
| MFD CPU with 100–240 Vac, power supply, clock           | <b>MFD-AC-CP8-ME</b> |
| MFD CPU with 100–240 Vac, power supply, clock, EASY-NET | <b>MFD-AC-CP8-NT</b> |

**MFD Display to EASY Communication Modules (MFD-CP4)**

| Description                                                                                                               | Catalog Number        |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------|
| MFD display to EASY500/700 DC communication module.<br>Use with EASY800 communication cable (MFD-CP4-800-CAB5)            | <b>MFD-CP4-500</b>    |
| MFD display to EASY800 or MFD DC powered communication module.<br>Use with EASY800 communication cable (MFD-CP4-800-CAB5) | <b>MFD-CP4-800</b>    |
| MFD display to EASY500/700 AC communication module with<br>EASY500/700 communication cable (MFD-CP4-500-CAB5)             | <b>MFD-AC-CP4-500</b> |
| MFD display to EASY800 or MFD AC powered communication module.<br>Use with EASY800 communication cable (MFD-CP4-800-CAB5) | <b>MFD-AC-CP4-800</b> |

**Notes**

- ① Analog inputs optional; use of analog inputs will result in a decrease in the same number of available digital inputs.
- ② Analog inputs optional; analog outputs optional; use of analog inputs will result in a decrease in the same number of available digital inputs.

**MFD Controller I/O Modules**

| Description | Inputs      |        |                     | Outputs |            |        | Catalog Number    |
|-------------|-------------|--------|---------------------|---------|------------|--------|-------------------|
|             | 110–240 Vac | 24 Vdc | Analog <sup>①</sup> | Relay   | Transistor | Analog |                   |
| 16 I/O      | 12          | —      | —                   | 4       | —          | —      | <b>MFD-AC-R16</b> |
| 16 I/O      | —           | 12     | 4                   | 4       | —          | —      | <b>MFD-R16</b>    |
| 17 I/O      | —           | 12     | 4                   | 4       | —          | 1      | <b>MFD-RA17</b>   |
| 16 I/O      | —           | 12     | 4                   | —       | 4          | —      | <b>MFD-T16</b>    |
| 17 I/O      | —           | 12     | 4                   | —       | 4          | 1      | <b>MFD-TA17</b>   |

**EASY/MFD I/O Expansion Modules <sup>②</sup>**

| Description                                              | Inputs      |        | Outputs |            | Catalog Number       |
|----------------------------------------------------------|-------------|--------|---------|------------|----------------------|
|                                                          | 110–240 Vac | 24 Vdc | Relay   | Transistor |                      |
| 2 I/O expansion                                          | —           | —      | 2       | —          | <b>EASY202-RE</b>    |
| 18 I/O expansion                                         | 12          | —      | 6       | —          | <b>EASY618-AC-RE</b> |
| 18 I/O expansion                                         | —           | 12     | 6       | —          | <b>EASY618-DC-RE</b> |
| 20 I/O expansion                                         | —           | 12     | —       | 8          | <b>EASY620-DC-TE</b> |
| Coupling module for remote mounting of expansion modules |             |        |         |            | <b>EASY200-EASY</b>  |

**EASY/MFD Communication Interface Modules**

| Description                                             | Catalog Number     |
|---------------------------------------------------------|--------------------|
| PROFIBUS-DP slave interface module                      | <b>EASY204-DP</b>  |
| AS-interface slave with 4 in and 4 out interface module | <b>EASY205-ASI</b> |
| CANopen interface module                                | <b>EASY221-CO</b>  |
| DeviceNet slave interface module                        | <b>EASY222-DN</b>  |
| Ethernet OPC Gateway                                    | <b>EASY209-SE</b>  |

**EASY/MFD-CP8 Power Supplies and Software**

| Description                                           | Catalog Number     |
|-------------------------------------------------------|--------------------|
| Programming software for EASY500/700/800 and MFD      | <b>EASYSOFT</b>    |
| 100–240 Vac input to 12 Vdc at 20 mA/24 Vdc at 250 mA | <b>EASY200-POW</b> |
| 100–240 Vac input to 24 Vdc at 1.25A                  | <b>EASY400-POW</b> |

**EASY/MFD Cables and Connectors**

|                                                                                |                         |
|--------------------------------------------------------------------------------|-------------------------|
| EASY500/700 to MFD-CP4 communication cable, 5m                                 | <b>MFD-CP4-500-CAB5</b> |
| EASY800 to MFD-CP8 communication cable, 2m                                     | <b>MFD-800-CAB</b>      |
| EASY800 to MFD-CP8 communication cable, 5m                                     | <b>MFD-800-CAB5</b>     |
| EASY800 to MFD-CP4 communication cable, 5m                                     | <b>MFD-CP4-800-CAB5</b> |
| EASY800/MFD EASY-NET cable, 0.3m                                               | <b>EASY-NT-30</b>       |
| EASY800/MFD EASY-NET cable, 0.8m                                               | <b>EASY-NT-80</b>       |
| EASY800/MFD EASY-NET cable, 1.5m                                               | <b>EASY-NT-150</b>      |
| EASY800/MFD network termination resistor, 2/pack                               | <b>EASY-NT-R</b>        |
| EASY800/MFD EASY-NET cable (cable only, no connectors, see EASY-NT-RJ45), 100m | <b>EASY-NT-CAB</b>      |
| RJ45 network connectors for EASY-NET cable (EASY-NT-CAB), 10/pack              | <b>EASY-NT-RJ45</b>     |

**Notes**

<sup>①</sup> Analog inputs optional; use of analog inputs will result in a decrease in the same number of available digital inputs.

<sup>②</sup> All expansion modules include one EASY-LINK-DS.

ELC Programmable Logic Controllers



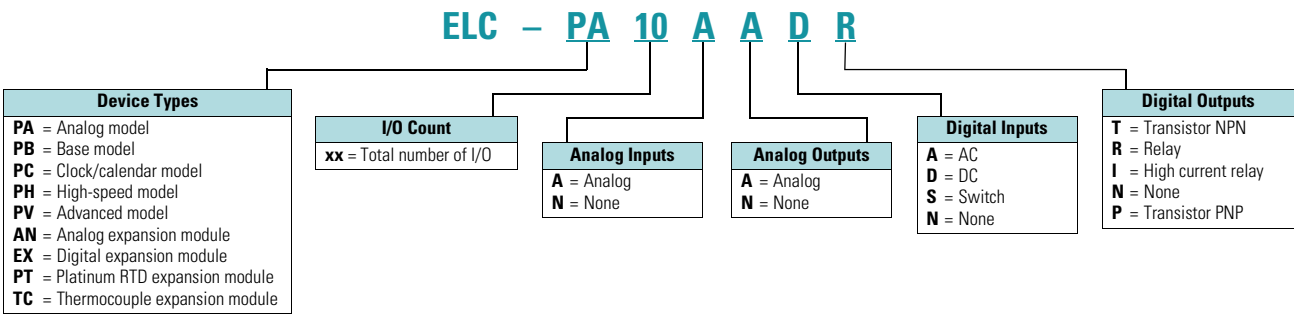
Features

- Modular PLC logic platform with a range of basic to sophisticated CPUs
- Ethernet and DeviceNet master communications
- Distributed I/O for EtherNet/IP, Modbus TCP, PROFIBUS-DP, DeviceNet and Modbus serial networks

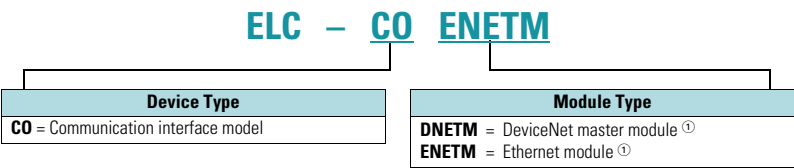
Catalog Number Selection

ELC Programmable Logic Controllers

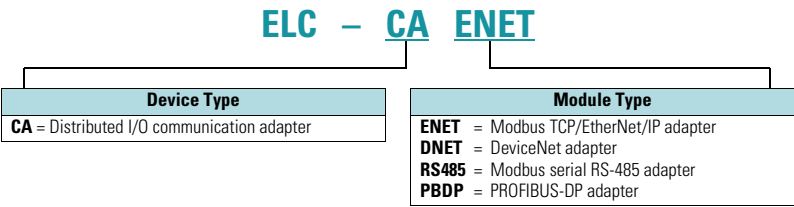
Controllers and Expansion Modules



Master Communication Modules



Distributed I/O Adapter Modules



Note

① Left side communications module.

## Product Selection

### Controllers

3

| Description                      | Inputs      | Outputs                 | Analog             | High Speed I/O     | Maximum Current Consumption (at 24 Vdc) | Catalog Number      |
|----------------------------------|-------------|-------------------------|--------------------|--------------------|-----------------------------------------|---------------------|
| ELC-PB Model and 14 I/O built-in | (8) 24 Vdc  | (6) Relay, 1.5A         | —                  | (2) 20 kHz inputs  | 150 mA                                  | <b>ELC-PB14NNDR</b> |
|                                  | (8) 24 Vdc  | (6) Transistor, 100 mA  | —                  | (2) 20 kHz inputs  | 150 mA                                  | <b>ELC-PB14NNDT</b> |
| ELC-PC Model and 12 I/O built-in | (8) 24 Vdc  | (4) Relay, 1.5A         | —                  | (1) 30 kHz inputs  | 150 mA                                  | <b>ELC-PC12NNDR</b> |
|                                  | (8) 24 Vdc  | (4) Transistor, 100 mA  | —                  | (1) 30 kHz inputs  | 150 mA                                  | <b>ELC-PC12NNDT</b> |
|                                  | (8) 110 Vac | (4) Relay, 1.5A         | —                  | (1) 30 kHz inputs  | 150 mA                                  | <b>ELC-PC12NNAR</b> |
| ELC-PH Model and 12 I/O built-in | (8) 24 Vdc  | (4) Transistor, 100 mA  | —                  | (1) 100 kHz inputs | 170 mA                                  | <b>ELC-PH12NNDT</b> |
| ELC-PA Model and 10 I/O built-in | (4) 24 Vdc  | (2) Relay, 1.5A         | (2) In and (2) Out | (1) 30 kHz inputs  | 210 mA                                  | <b>ELC-PA10AADR</b> |
|                                  | (4) 24 Vdc  | (2) Relay, 1.5A         | (2) In and (2) Out | (1) 30 kHz inputs  | 210 mA                                  | <b>ELC-PA10AADT</b> |
| ELC-PV Model and 28 I/O built-in | (16) 24 Vdc | (12) Relay, 1.5A        | —                  | (2) 200 kHz inputs | 220 mA                                  | <b>ELC-PV28NNDR</b> |
|                                  | (16) 24 Vdc | (12) Transistor, 100 mA | —                  | (2) 200 kHz inputs | 220 mA                                  | <b>ELC-PV28NNDT</b> |

### Distributed I/O Adapter Modules

| Description                        | Catalog Number     |
|------------------------------------|--------------------|
| Modbus TCP/EtherNet/IP I/O adapter | <b>ELC-CAENET</b>  |
| Modbus serial RS-485 I/O adapter   | <b>ELC-CARS485</b> |
| DeviceNet I/O adapter              | <b>ELC-CADNET</b>  |
| PROFIBUS-DP I/O adapter            | <b>ELC-CAPBDP</b>  |

### Network Communication Master Modules (Left Side Bus)

| Description                       | Catalog Number     |
|-----------------------------------|--------------------|
| Ethernet Modbus TCP (master/node) | <b>ELC-COENETM</b> |
| DeviceNet scanner (master/node)   | <b>ELC-CODNETM</b> |

**Digital Expansion Modules (Right Side Bus)**

| Description                        | Inputs       | Outputs                       | Maximum Current Consumption (at 24 Vdc) | Catalog Number |
|------------------------------------|--------------|-------------------------------|-----------------------------------------|----------------|
| 8 DC input module                  | (8) 24 Vdc   | —                             | 50 mA                                   | ELC-EX08NNDN   |
| 16 DC input module                 | (16) 24 Vdc  | —                             | 100 mA                                  | ELC-EX16NNDN   |
| 8 DC input/output module           | (4) 24 Vdc   | (4) Transistor (sink), 0.3A   | 70 mA                                   | ELC-EX08NNDT   |
| 16 DC input/output module          | (8) 24 Vdc   | (8) Transistor (sink), 0.3A   | 90 mA                                   | ELC-EX16NNDT   |
| 16 DC input/output module          | (8) 24 Vdc   | (8) Transistor (source), 0.3A | 100 mA                                  | ELC-EX16NNDP   |
| 8 DC input/relay output module     | (4) 24 Vdc   | (4) Relay, 1.5A               | 70 mA                                   | ELC-EX08NNDR   |
| 16 DC input/relay output module    | (8) 24 Vdc   | (8) Relay, 1.5A               | 90 mA                                   | ELC-EX16NNDR   |
| 8 AC input module                  | (8) 110 Vac  | —                             | 50 mA                                   | ELC-EX08NNAN   |
| 8 Transistor output module         | —            | (8) Transistor (sink), 0.3A   | 70 mA                                   | ELC-EX08NNNT   |
| 8 Relay output module              | —            | (8) Relay, 1.5A               | 70 mA                                   | ELC-EX08NNNR   |
| 6 High current relay output module | —            | (6) Relay, 6A                 | 70 mA                                   | ELC-EX06NNNI   |
| 8 Toggle switch input module       | (8) Switches | —                             | 20 mA                                   | ELC-EX08NNSN   |

**Analog and Temperature Expansion Modules (Right Side Bus)**

| Description                                    | Analog Inputs | Analog Outputs | Maximum Current Consumption (at 24 Vdc) | Catalog Number |
|------------------------------------------------|---------------|----------------|-----------------------------------------|----------------|
| 4 Analog input module                          | 4             | —              | 90 mA                                   | ELC-AN04ANNN   |
| 2 Analog output module                         | —             | 2              | 125 mA                                  | ELC-AN02NANN   |
| 4 Analog output module                         | —             | 4              | 170 mA                                  | ELC-AN04NANN   |
| 6 Analog input/output module                   | 4             | 2              | 90 mA                                   | ELC-AN06AANN   |
| 4 Thermocouple input module (J, K, R, S and T) | 4             | —              | 90 mA                                   | ELC-TC04ANNN   |
| 4 Platinum RTD input module (PT100)            | 4             | —              | 90 mA                                   | ELC-PT04ANNN   |

**Specialty Expansion Modules (Right Side Bus)**

| Description                                                            | Catalog Number |
|------------------------------------------------------------------------|----------------|
| Single axis motion control module (Add up to 8 modules per controller) | ELC-MC01       |
| RS-485 Easy Connect adapter (DB9, RJ12, 2-pin connections to RS-485)   | ELC-485APTR    |

**Accessories and Software**

| Description                                                                                                  | Catalog Number |
|--------------------------------------------------------------------------------------------------------------|----------------|
| ELC programming software                                                                                     | ELCSOFT        |
| 24 Vdc, 1A power supply                                                                                      | ELC-PS01       |
| 24 Vdc, 2A power supply                                                                                      | ELC-PS02       |
| Cable to connect a PC or a GP unit to ELC, 1 meter (DB9 pin female to 8-pin DIN)                             | ELC-CBPCELC1   |
| Cable to connect a PC or a GP unit to ELC, 3 meters (DB9 pin female to 8-pin DIN)                            | ELC-CBPCELC3   |
| Cable to connect a PC to a GP unit, 3 meters (DB9 pin female to DB9 pin female)                              | ELC-CBPCEGP3   |
| Program transfer module for ELC controllers                                                                  | ELC-ACPGMXFR   |
| Plate mount for specialty modules, qty. 10                                                                   | ELC-ACCOVER    |
| ELC starter kit (includes ELC-PA10AADT, ELC-PS01, ELC-GP04, ELC-CBPCELC3, ELC-CBPCEGP3, ELCSOFT, ELCSOFT GP) | ELCSTARTKIT1   |

## ELCB Programmable Logic Controller



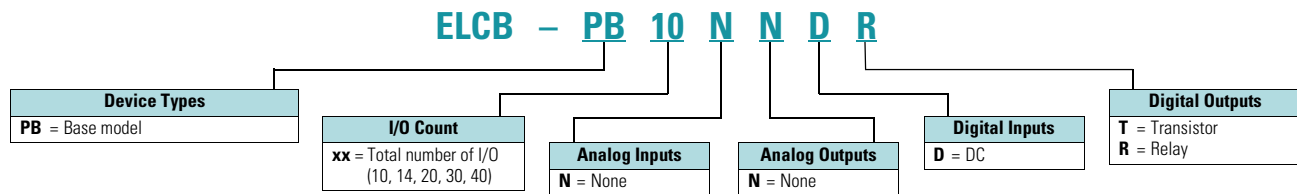
## Features

- Basic PLC logic with just enough I/O for simple DC in/relay or transistor out applications
- This non-expandable PLC has a built-in AC power supply and provides up to 400 mA of DC sensor power
- Each controller supports one RS-232 programming port and one RS-485 Modbus serial (master/node) port

## Catalog Number Selection

## ELCB Programmable Logic Controllers

## Controllers



## Product Selection

## Controllers

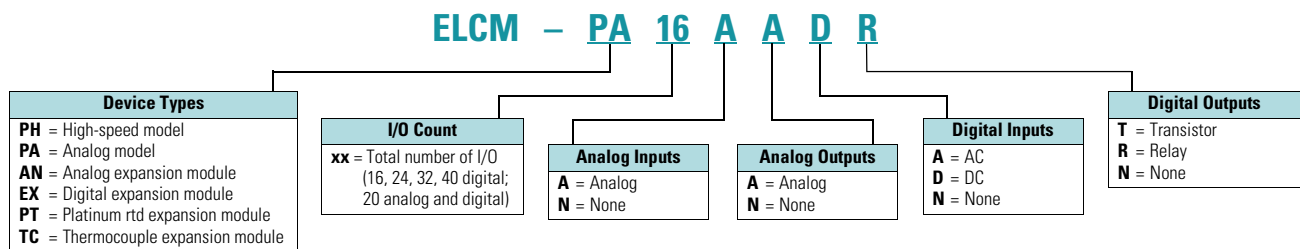
| Description | Inputs |    |        | Outputs |                        |        | Catalog Number |
|-------------|--------|----|--------|---------|------------------------|--------|----------------|
|             | AC     | DC | Analog | Relay   | NPN Sinking Transistor | Analog |                |
| 10 I/O      | —      | 6  | —      | 4       | —                      | —      | ELCB-PB10NNDR  |
|             | —      | 6  | —      | —       | 4                      | —      | ELCB-PB10NNDT  |
| 14 I/O      | —      | 8  | —      | 6       | —                      | —      | ELCB-PB14NNDR  |
|             | —      | 8  | —      | —       | 6                      | —      | ELCB-PB14NNDT  |
| 20 I/O      | —      | 12 | —      | 8       | —                      | —      | ELCB-PB20NNDR  |
|             | —      | 12 | —      | —       | 8                      | —      | ELCB-PB20NNDT  |
| 30 I/O      | —      | 18 | —      | 12      | —                      | —      | ELCB-PB30NNDR  |
|             | —      | 18 | —      | —       | 12                     | —      | ELCB-PB30NNDT  |
| 40 I/O      | —      | 24 | —      | 16      | —                      | —      | ELCB-PB40NNDR  |
|             | —      | 24 | —      | —       | 16                     | —      | ELCB-PB40NNDT  |

## Accessories and Software

| Description                                                                       | Catalog Number |
|-----------------------------------------------------------------------------------|----------------|
| ELC programming software requires version 2.02 or later                           | ELCSOFT        |
| Cable to connect a PC or a GP unit to ELC, 1 meter (DB9 pin female to 8-pin DIN)  | ELC-CBPCELC1   |
| Cable to connect a PC or a GP unit to ELC, 3 meters (DB9 pin female to 8-pin DIN) | ELC-CBPCELC3   |
| Cable to connect a PC to a GP unit, 3 meters (DB9 pin female to DB9 pin female)   | ELC-CBPCEGP3   |
| Program transfer module for ELC controllers                                       | ELC-ACPGMXFR   |

**ELCM Programmable Logic Controller****Features**

- Midrange brick style controller with digital, analog, thermocouple and RTD expansion capability
- Expansion modules can optionally be used to increase the total number of I/O, to provide a mix of different types of I/O, or both
- These controllers include an embedded AC power supply and provide up to 400 mA of DC sensor power
- Each controller supports two RS-485 Modbus serial (master/node) and one RS-232 programming port

**Catalog Number Selection****ELCM Programmable Logic Controllers****Controllers and Expansion Modules****Product Selection****Controllers**

| Description     | Inputs |    | Analog | Outputs |            | Analog | Catalog Number |
|-----------------|--------|----|--------|---------|------------|--------|----------------|
|                 | AC     | DC |        | Relay   | Transistor |        |                |
| 16 I/O PH model | —      | 8  | —      | 8       | —          | —      | ELCM-PH16NNDR  |
|                 | —      | 8  | —      | —       | 8          | —      | ELCM-PH16NNDT  |
| 24 I/O PH model | —      | 16 | —      | 8       | —          | —      | ELCM-PH24NNDR  |
|                 | —      | 16 | —      | —       | 8          | —      | ELCM-PH24NNDT  |
| 32 I/O PH model | —      | 16 | —      | 16      | —          | —      | ELCM-PH32NNDR  |
|                 | —      | 16 | —      | —       | 16         | —      | ELCM-PH32NNDT  |
| 40 I/O PH model | —      | 24 | —      | 16      | —          | —      | ELCM-PH40NNDR  |
|                 | —      | 24 | —      | —       | 16         | —      | ELCM-PH40NNDT  |
| 20 I/O PA model | —      | 8  | 4      | 6       | —          | 2      | ELCM-PA20AADR  |
|                 | —      | 8  | 4      | —       | 6          | 2      | ELCM-PA20AADT  |

## Right Side Digital Expansion Modules

| Description                     | Inputs |                | Outputs |                        | Catalog Number |
|---------------------------------|--------|----------------|---------|------------------------|----------------|
|                                 | AC     | DC Sink/Source | Relay   | NPN Sinking Transistor |                |
| DC input module                 | —      | 8              | —       | —                      | ELCM-EX08NNDN  |
|                                 | —      | 16             | —       | —                      | ELCM-EX16NNDN  |
| Relay output module             | —      | —              | 8       | —                      | ELCM-EX08NNNR  |
|                                 | —      | —              | 16      | —                      | ELCM-EX16NNNR  |
| Transistor output module        | —      | —              | 8       | —                      | ELCM-EX08NNNT  |
|                                 | —      | —              | 16      | —                      | ELCM-EX16NNNT  |
| 8 DC input/relay output module  | —      | 4              | 4       | —                      | ELCM-EX08NNDR  |
| 16 DC input/relay output module | —      | 8              | 8       | —                      | ELCM-EX16NNDR  |
| 8 DC input/output module        | —      | 4              | —       | 4                      | ELCM-EX08NNDT  |
| 16 DC input/output module       | —      | 8              | —       | 8                      | ELCM-EX16NNDT  |

## Right Side Analog and Specialty Modules

| Description                                    | Analog Inputs | Analog Outputs | Catalog Number |
|------------------------------------------------|---------------|----------------|----------------|
| 4 Analog input module                          | 4             | —              | ELCM-AN04ANNN  |
| 2 Analog output module                         | —             | 2              | ELCM-AN02NANN  |
| 4 Analog output module                         | —             | 4              | ELCM-AN04NANN  |
| 6 Analog input/output module                   | 4             | 2              | ELCM-AN06AANN  |
| 4 Thermocouple input module (J, K, R, S and T) | 4             | —              | ELCM-TC04ANNN  |
| 4 Platinum RTD input module (PT100)            | 4             | —              | ELCM-PT04ANNN  |

## Accessories and Software

| Description                                                                       | Catalog Number |
|-----------------------------------------------------------------------------------|----------------|
| ELC programming software requires version 2.02 or later                           | ELCSOFT        |
| Cable to connect a PC or a GP unit to ELC, 1 meter (DB9 pin female to 8-pin DIN)  | ELC-CBPCELC1   |
| Cable to connect a PC or a GP unit to ELC, 3 meters (DB9 pin female to 8-pin DIN) | ELC-CBPCELC3   |
| Cable to connect a PC to a GP unit, 3 meters (DB9 pin female to DB9 pin female)   | ELC-CBP CGP3   |
| Program transfer module for ELC controllers                                       | ELC-ACPGMXFR   |

Product Overview

Preset Counters Selection Guide



| Description              | E5-148-C1400                  | E5-648-C Series         | Eclipse Series                              |
|--------------------------|-------------------------------|-------------------------|---------------------------------------------|
|                          | Page V9-T3-48                 | Page V9-T3-48           | Page V9-T3-49                               |
| Display                  | Two-line LCD                  | Two-line LCD            | LED                                         |
| Power supply             | Replaceable lithium batteries | 10–30 Vdc or 90–260 Vac | 9–30 Vdc or 85–265 Vac                      |
| Number of digits         | 6                             | 6                       | 6                                           |
| Panel cut-out size       | 45 x 45 mm (1/16 DIN)         | 45 x 45 mm (1/16 DIN)   | 92 x 45 mm (1/8 DIN)                        |
| Scaling capability       | —                             | Yes                     | Yes                                         |
| Number of presets        | 1                             | 2 or 4                  | 2                                           |
| Max. counting speed      | 25 Hz                         | 10 kHz                  | Up to 8,250 Hz                              |
| Front panel protection   | IP65                          | IP65                    | Type 4X                                     |
| Other features/functions | —                             | Timer/rate indicator    | Analog retransmission/RS-485 communications |
| Relay rating(s)          | 2A                            | 3A                      | 5A                                          |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

1/16 DIN LCD Preset Counter



## Features

Battery powered

- Two-line LC displays count, preset and level of the output
- Replacement for electromechanical preset counters
- No power supply necessary (battery operated)
- Count and reset input electrically separated from counter through optocoupler input range 12–250 Vac/Vdc

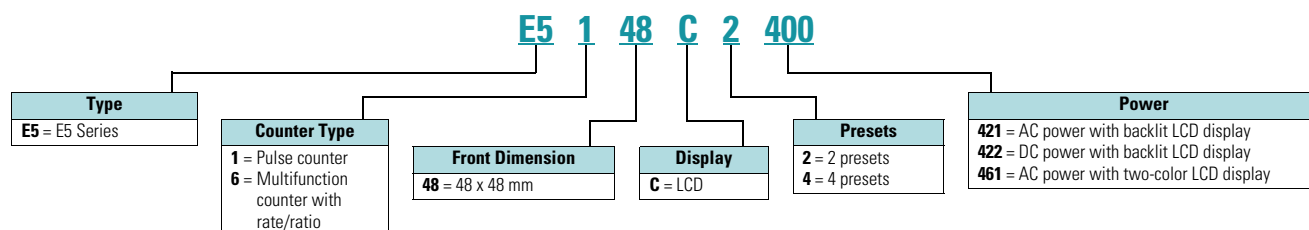
AC/DC powered

- Two-line LCD with optional two-color display
- Programmable as impulse counter, frequency meter or time meter with sign and zero blanking
- Batch mode
- Add/subtract/ratio functions

## Catalog Number Selection

### 1/16 DIN LCD Preset Counter

#### LCD Preset Counter



## Product Selection

### 1/16 DIN LCD

| Description                                  | Catalog Number      |
|----------------------------------------------|---------------------|
| <b>Battery Powered 1 Preset LCD</b>          |                     |
| Battery power 1.89 x 1.89 in (48 x 48 mm)    | <b>E5-148-C1400</b> |
| <b>AC/DC Powered 2 Preset LCD</b>            |                     |
| 90–260 Vac power 1.89 x 1.89 in (48 x 48 mm) | <b>E5-648-C2421</b> |
| 10–30 Vdc power 1.89 x 1.89 in (48 x 48 mm)  | <b>E5-648-C2422</b> |
| <b>AC Powered 4 Preset Two-Color LCD</b>     |                     |
| 90–260 Vac power 1.89 x 1.89 in (48 x 48 mm) | <b>E5-648-C4461</b> |

1/18 DIN Eclipse Series Preset Counter



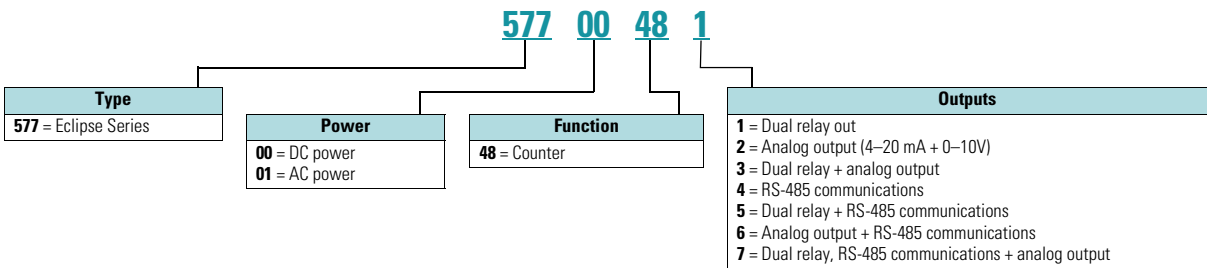
Features

- 1/8 DIN cutout
- Type 4X front panel protection
- Seven-segment LED display

Catalog Number Selection

1/18 DIN Eclipse Series Preset Counter

Eclipse Series Preset Counter



Product Selection

LED Count Control, 6-Digit

| Description                                    | Catalog Number |
|------------------------------------------------|----------------|
| Relay out, 9–30 Vdc power                      | 57700481       |
| Relay out, 85–265 Vac power                    | 57701481       |
| Relay and analog out, 9–30 Vdc power           | 57700483       |
| Relay and analog out, 85–265 Vac power         | 57701483       |
| Relay and RS-485 out, 9–30 Vdc power           | 57700485       |
| Relay and RS-485 out, 85–265 Vac power         | 57701485       |
| Relay, analog and RS-485 out, 9–30 Vdc power   | 57700487       |
| Relay, analog and RS-485 out, 85–265 Vac power | 57701487       |

Product Overview

Ratemeters Selection Guide

3



| Description              | Courier Series                                          | Eclipse Series                              |
|--------------------------|---------------------------------------------------------|---------------------------------------------|
|                          | Page V9-T3-51                                           | Page V9-T3-52                               |
| Display                  | LCD                                                     | LED                                         |
| Power supply             | Replaceable lithium battery                             | 9–30 Vdc or 85–265 Vac                      |
| Number of digits         | 5                                                       | 6                                           |
| Panel cut-out size       | 68 x 33 mm                                              | 92 x 45 mm (1/8 DIN)                        |
| Scaling capability       | Yes                                                     | Yes                                         |
| Number of presets        | —                                                       | 2 (with optional relay out model)           |
| Update time              | 700 ms                                                  | 500 ms                                      |
| Front panel protection   | Type 4X                                                 | Type 4X                                     |
| Other features/functions | Optional backlight, optional extended temperature range | Analog retransmission/RS-485 communications |
| Relay rating(s)          | —                                                       | 5A                                          |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

Courier Series Battery Powered Ratemeter



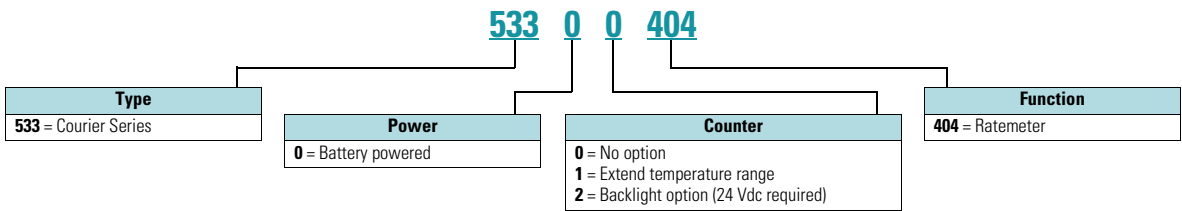
Features

- 1/Tau ratemeter
- Scaling capabilities
- Type 4X protection
- Internal battery: 3V, lithium

Catalog Number Selection

Courier Series Battery Powered Ratemeter

Courier Series



Product Selection

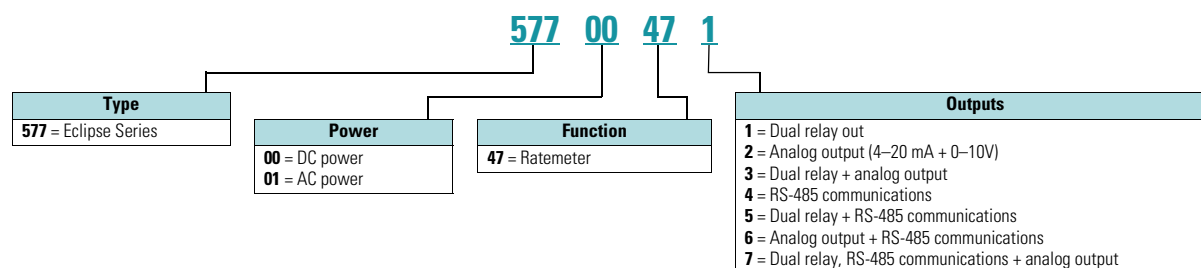
1/Tau LCD Ratemeter

| Description     | Catalog Number |
|-----------------|----------------|
| Battery powered | 53300404       |

Eclipse Series 1/8 DIN LED Ratemeter

**Features**

- 1/8 DIN cutout
- Type 4X front panel protection
- Front panel programming

**Catalog Number Selection****Eclipse Series 1/8 DIN LED Ratemeter****Eclipse Series****Product Selection****Eclipse Series 5-Digit LED Ratemeter**

| Description                            | Catalog Number |
|----------------------------------------|----------------|
| 9–30 Vdc                               | 57700470       |
| 9–30 Vdc, alarms                       | 57700471       |
| 9–30 Vdc, analog out                   | 57700472       |
| 9–30 Vdc, alarms, analog out           | 57700473       |
| 9–30 Vdc, RS-485                       | 57700474       |
| 9–30 Vdc, alarms, RS-485               | 57700475       |
| 9–30 Vdc, analog out, RS-485           | 57700476       |
| 9–30 Vdc, alarms, analog out, RS-485   | 57700477       |
| 85–265 Vac                             | 57701470       |
| 85–265 Vac, alarms                     | 57701471       |
| 85–265 Vac, analog out                 | 57701472       |
| 85–265 Vac, alarms, analog out         | 57701473       |
| 85–265 Vac, RS-485                     | 57701474       |
| 85–265 Vac, alarms, RS-485             | 57701475       |
| 85–265 Vac, analog out, RS-485         | 57701476       |
| 85–265 Vac, alarms, analog out, RS-485 | 57701477       |

Product Overview

Hour Meters Selection Guide



| Description            | T48 Series                              | 6-T-3H Series        | E5-224 Series         | E42 Series                                 |
|------------------------|-----------------------------------------|----------------------|-----------------------|--------------------------------------------|
|                        | Page V9-T3-54                           | Page V9-T3-54        | Page V9-T3-55         | Page V9-T3-55                              |
| Panel cut-out size     | 45 x 45 mm (1/16 DIN)                   | 50.8 mm (2 in) round | 22 x 45 mm (1/32 DIN) | 52.3 mm (2.06 in) round OR<br>24 x 36.8 mm |
| Display type           | Mechanical                              | Mechanical           | LCD                   | LCD                                        |
| Number of digits       | 7 for AC versions,<br>8 for DC versions | 6                    | 8                     | 6                                          |
| Power supply           | 10–30 Vdc or<br>100–130 Vac             | 115 Vac              | Internal battery      | 12–60 Vdc or<br>48–230 Vac                 |
| Timing method          | Synchronous motor                       | Quartz               | Solid-state           | Solid-state                                |
| Front panel protection | IP65                                    | Type 4X              | IP65                  | No protection ratings                      |
| Resolution             | 0.1 hour                                | 0.1 hour             | 0.1 second            | 0.1 hour                                   |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

## Electromechanical Hour Meters



## Features

1/16 DIN

- High shock-resistance
- Without reset
- Data retention if power is lost

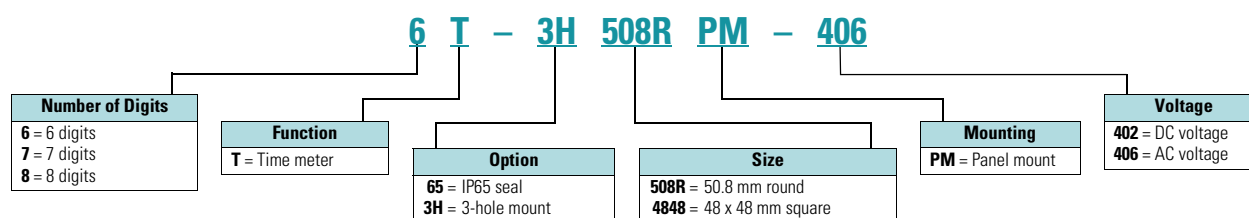
71.1 mm round

- 6-digit hour meter for round panel cut-out
- Low cost
- Waterproof
- Type 4X protection

## Catalog Number Selection

## Electromechanical Hour Meters

## Hour Meters



## Product Selection

## Electromechanical Hour Meters

| Description                              | Catalog Number           |
|------------------------------------------|--------------------------|
| <b>1/16 DIN</b>                          |                          |
| 10–30 Vdc, 1.89 x 1.89 in (48 x 48 mm)   | <b>8-T-65-4848PM-402</b> |
| 100–130 Vac, 1.89 x 1.89 in (48 x 48 mm) | <b>7-T-65-4848PM-406</b> |
| <b>71.1 mm Round</b>                     |                          |
| 115 Vac, 2.80 in (71.1 mm) round         | <b>6-T-3H-508RPM-406</b> |
| 10–80 Vdc, 2.80 in (71.1 mm) round       | <b>6-T-3H-508RPM-402</b> |

## Accessories

## DIN Rail Adapter



## DIN Rail Adapter

| Description                                           | Catalog Number       |
|-------------------------------------------------------|----------------------|
| DIN rail adapter for DIN electromechanical hour meter | <b>T4848DINADAPT</b> |

Electronic LCD Hour Meters



Features

Battery powered

- Low price and high efficiency
- Large 8-digit LCD display, height of the figures 0.31 in (8 mm)
- Different time ranges from 0.1 second to 100,000 hours
- Lifetime of the battery is approximately eight years

AC/DC powered

- Solid-state hour meters
- Record and display up to 99,999.9 hours, rollover and continue timing
- EEPROM memory can retain data for 25+ years
- Time accumulation indicated by flashing hourglass icon

Product Selection

Electronic LCD Hour Meters

LCD Hour Meters

| Description                                                | Catalog Number |
|------------------------------------------------------------|----------------|
| <b>Battery Powered 1/32 DIN 8-Digit LCD</b>                |                |
| Hours/minutes, 0.94 x 1.89 in (24 x 48 mm)                 | E5-224-C0440   |
| Hours/minutes, 10–260V input, 0.94 x 1.89 in (24 x 48 mm)  | E5-224-C0448   |
| Minutes/seconds, 0.94 x 1.89 in (24 x 48 mm)               | E5-224-C0450   |
| Minutes/seconds, 10–260V input 0.94 x 1.89 in (24 x 48 mm) | E5-224-C0458   |
| <b>AC/DC Powered Round LCD</b>                             |                |
| Elapsed hour meter, 48–150 Vdc/100–230 Vac                 | E42DIR48230    |
| Elapsed hour meter w/reset, 48–150 Vdc/100–230 Vac         | E42DIR48230R   |
| Elapsed hour meter, 12–48 Vdc/20–60 Vac                    | E42DIR1260     |
| <b>AC/DC Powered Compact Rectangular LCD</b>               |                |
| Elapsed hour meter, 48–150 Vdc/100–230 Vac                 | E42DI2448230   |
| Elapsed hour meter, w/reset, 48–150 Vdc/100–230 Vac        | E42DI2448230R  |
| Elapsed hour meter, 12–48 Vdc/20–60 Vac                    | E42DI241260    |

## Product Overview

### Totalizers Selection Guide

3



| Description               | Electromechanical Micro             | SE Series                                                    | E5-024-C Series                                 | E5-x24-E Series                                 |
|---------------------------|-------------------------------------|--------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|                           | <b>Page V9-T3-57</b>                | <b>Page V9-T3-57</b>                                         | <b>Page V9-T3-58</b>                            | <b>Page V9-T3-58</b>                            |
| Display type              | Mechanical                          | Mechanical                                                   | LCD                                             | LED                                             |
| Number of digits          | 7                                   | 6                                                            | 8                                               | 6                                               |
| Power supply              | 12 Vdc                              | 12 or 24 Vdc, 120 or 240 Vac                                 | Internal battery                                | 10–30 Vdc                                       |
| Mounting configuration(s) | Front panel<br>(13 x 30 mm cut-out) | Base mount, bottom mount,<br>top mount, or front panel mount | Front panel<br>22 x 45 mm (1/32 DIN)            | Front panel<br>22 x 45 mm (1/32 DIN)            |
| Maximum counting speed    | 25 Hz                               | 10 Hz                                                        | 12 kHz                                          | 20 kHz                                          |
| Count reset method(s)     | —                                   | —                                                            | Front panel or electronic,<br>can be locked out | Front panel or electronic,<br>can be locked out |
| Front panel protection    | IP65                                | —                                                            | IP65                                            | IP65                                            |

### Totalizers Selection Guide, continued



| Description               | Courier Series                                  | E5-496 Series                                   | Eclipse Series                                  |
|---------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|                           | <b>Page V9-T3-59</b>                            | <b>Page V9-T3-60</b>                            | <b>Page V9-T3-60</b>                            |
| Display type              | LCD                                             | LED                                             | LED                                             |
| Number of digits          | 8                                               | 6                                               | 6                                               |
| Power supply              | Replaceable battery                             | 10–30 Vdc or 90–260 Vac                         | 9–30 Vdc or 85–265 Vac                          |
| Mounting configuration(s) | Front panel<br>68 x 33 mm                       | Front panel<br>92 x 45 mm (1/8 DIN)             | Front panel<br>92 x 45 mm (1/8 DIN)             |
| Maximum counting speed    | 10 kHz                                          | 60 kHz                                          | 8.2 kHz                                         |
| Count reset method(s)     | Front panel or electronic,<br>can be locked out | Front panel or electronic,<br>can be locked out | Front panel or electronic,<br>can be locked out |
| Front panel protection    | Type 4X                                         | IP65                                            | Type 4X                                         |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

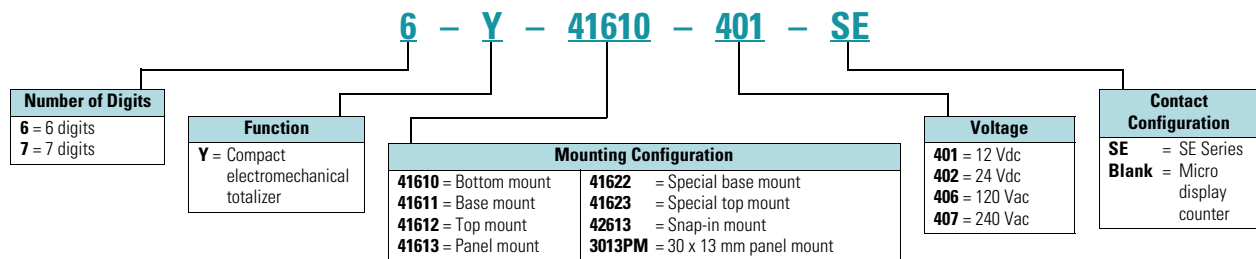
**Electromechanical Totalizers****Features**

Micro display

- Low power consumption; suitable for battery consumption
- Small dimensions
- Long service life

SE Series

- Low-cost electromechanical counter
- Multiple voltage ranges for almost any application
- Compact with various mounting options

**Catalog Number Selection****Electromechanical Totalizers****Totalizers****Product Selection****Micro Display Counter**

| Description                  | Catalog Number |
|------------------------------|----------------|
| Micro display counter—12 Vdc | 7-Y-3013PM-401 |

**SE Series Electromechanical Totalizers**

| Description                        | Catalog Number   | Order Number |
|------------------------------------|------------------|--------------|
| <b>6-Digit Counter</b>             |                  |              |
| Bottom mount sub-miniature 12 Vdc  | 6-Y-41610-401-SE | 41610401     |
| Bottom mount sub-miniature 24 Vdc  | 6-Y-41610-402-SE | 41610402     |
| Bottom mount sub-miniature 120 Vac | 6-Y-41610-406-SE | 41610406     |
| Bottom mount sub-miniature 240 Vac | 6-Y-41610-407-SE | 41610407     |
| Base mount sub-miniature 12 Vdc    | 6-Y-41611-401-SE | 41611401     |
| Base mount sub-miniature 24 Vdc    | 6-Y-41611-402-SE | 41611402     |
| Base mount sub-miniature 120 Vac   | 6-Y-41611-406-SE | 41611406     |
| Base mount sub-miniature 240 Vac   | 6-Y-41611-407-SE | 41611407     |
| Top mount sub-miniature 12 Vdc     | 6-Y-41612-401-SE | 41612401     |
| Top mount sub-miniature 24 Vdc     | 6-Y-41612-402-SE | 41612402     |
| Top mount sub-miniature 120 Vac    | 6-Y-41612-406-SE | 41612406     |
| Top mount sub-miniature 240 Vac    | 6-Y-41612-407-SE | 41612407     |
| Panel mount sub-miniature 12 Vdc   | 6-Y-41613-401-SE | 41613401     |
| Panel mount sub-miniature 24 Vdc   | 6-Y-41613-402-SE | 41613402     |

| Description                              | Catalog Number   | Order Number |
|------------------------------------------|------------------|--------------|
| <b>6-Digit Counter, continued</b>        |                  |              |
| Panel mount sub-miniature 120 Vac        | 6-Y-41613-406-SE | 41613406     |
| Panel mount sub-miniature 240 Vac        | 6-Y-41613-407-SE | 41613407     |
| Special base mount sub-miniature 12 Vdc  | 6-Y-41622-401-SE | 41622401     |
| Special base mount sub-miniature 24 Vdc  | 6-Y-41622-402-SE | 41622402     |
| Special base mount sub-miniature 120 Vac | 6-Y-41622-406-SE | 41622406     |
| Special base mount sub-miniature 240 Vac | 6-Y-41622-407-SE | 41622407     |
| Special top mount sub-miniature 12 Vdc   | 6-Y-41623-401-SE | 41623401     |
| Special top mount sub-miniature 24 Vdc   | 6-Y-41623-402-SE | 41623402     |
| Special top mount sub-miniature 120 Vac  | 6-Y-41623-406-SE | 41623406     |
| Special top mount sub-miniature 240 Vac  | 6-Y-41623-407-SE | 41623407     |
| Snap-in mount sub-miniature 12 Vdc       | 6-Y-42613-401-SE | 42613401     |
| Snap-in mount sub-miniature 24 Vdc       | 6-Y-42613-402-SE | 42613402     |
| Snap-in mount sub-miniature 120 Vac      | 6-Y-42613-406-SE | 42613406     |
| Snap-in mount sub-miniature 240 Vac      | 6-Y-42613-407-SE | 42613407     |

## Electronic 1/32 DIN Totalizers



## Features

Battery powered LCD

- Low price and high efficiency
- Large 8-digit LCD display, height of the figures 0.31 in (8 mm)
- Lifetime of the battery is approximately 8 years

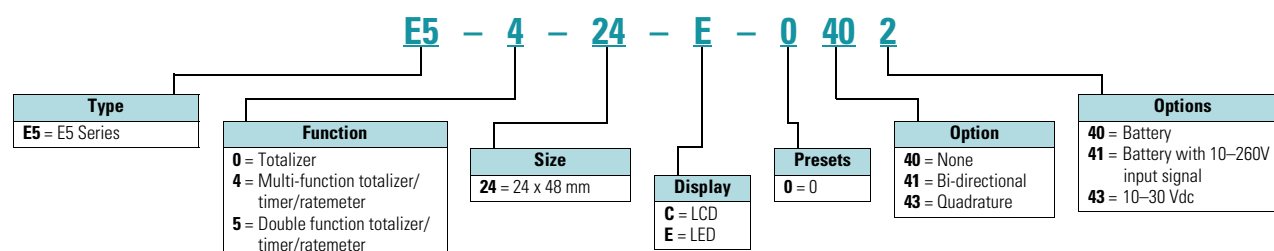
DC Powered LED

- Display counter adding and subtracting
- Position display
- Frequency counter/ratemeter
- Timer
- Supply voltage: 10–30 Vdc with reverse polarity protection
- Polarity of inputs: programmable, NPN or PNP

## Catalog Number Selection

## Electronic 1/32 DIN Totalizers

## Electronic Totalizers



## Product Selection

## 1/32 DIN LCD Totalizers

| Description                                                                                | Catalog Number      |
|--------------------------------------------------------------------------------------------|---------------------|
| <b>Battery Powered 8-Digit LCD Totalizer</b>                                               |                     |
| 0.94 x 1.89 in (24 x 48 mm) LCD totalizer                                                  | <b>E5-024-C0400</b> |
| 10–260V input 0.94 x 1.89 in (24 x 48 mm) LCD totalizer                                    | <b>E5-024-C0408</b> |
| Count up/down 0.94 x 1.89 in (24 x 48 mm) LCD totalizer                                    | <b>E5-024-C0410</b> |
| <b>DC Powered 6-Digit LED Totalizer</b>                                                    |                     |
| LED single channel totalizer, 10–30 Vdc power 0.94 x 1.89 in (24 x 48 mm)                  | <b>E5-024-E0402</b> |
| LED multifunction totalizer/timer/ratemeter, 10–30 Vdc power 0.94 x 1.89 in (24 x 48 mm)   | <b>E5-424-E0402</b> |
| LED double-function totalizer/timer/ratemeter, 10–30 Vdc power 0.94 x 1.89 in (24 x 48 mm) | <b>E5-524-E0402</b> |
| LED totalizer with quadrature, 10–30 Vdc power 0.94 x 1.89 in (24 x 48 mm)                 | <b>E5-024-E0432</b> |

Electronic Courier Series Battery Powered LCD Totalizers



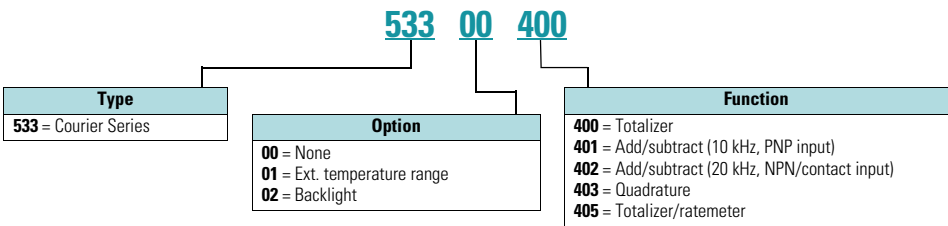
Features

- 8-digit totalizer
- 1/Tau ratemeter is an additional capability on the 53300405 only
- Scaling capabilities
- Remote reset terminal
- Type 4X protection
- Internal battery: 3V, lithium, replaceable battery

Catalog Number Selection

Electronic Courier Series Battery Powered LCD Totalizers

Courier Series



Product Selection

Courier Series, 8-Digit LCD Totalizers

| Description                                                | Catalog Number |
|------------------------------------------------------------|----------------|
| Totalizer, battery                                         | 53300400       |
| Add/subtract (10k Hz, PNP input) totalizer, battery        | 53300401       |
| Add/subtract (20 Hz, NPN/contact input) totalizer, battery | 53300402       |
| Quadrature (10k Hz, PNP input) totalizer, battery          | 53300403       |
| Totalizer/ratemeter, battery                               | 53300405       |

Electronic 1/8 DIN LED Totalizers



Features

LED Multifunction

- Display counter adding and subtracting
- Position display
- Frequency counter/ratemeter
- Display: 6-digit red, 7-segment LED display; 0.55 in (14 mm) high
- Polarity of inputs: programmable, NPN or PNP for all inputs

Eclipse Series

- 1/8 DIN cutout
- Type 4X front panel protection
- Front panel programming

Product Selection

Electronic 1/8 DIN LED Totalizers

1/8 DIN LED Totalizers

| Description                                      | Catalog Number      |
|--------------------------------------------------|---------------------|
| <b>LED Multifunction Counter/Timer/Ratemeter</b> |                     |
| 90–260 Vac power 3.78 x 1.89 in (96 x 48 mm)     | <b>E5-496-E0401</b> |
| 10–30 Vdc power 3.78 x 1.89 in (96 x 48 mm)      | <b>E5-496-E0402</b> |
| <b>Eclipse Series LED Totalizer</b>              |                     |
| 9–30 Vdc power                                   | <b>57700480</b>     |
| 85–265 Vac power                                 | <b>57701480</b>     |
| Analog out, 9–30 Vdc power                       | <b>57700482</b>     |
| Analog out, 85–265 Vac power                     | <b>57701482</b>     |
| RS-485 out, 9–30 Vdc power                       | <b>57700484</b>     |
| RS-485 out, 85–265 Vac power                     | <b>57701484</b>     |
| RS-485 out and analog out, 9–30 Vdc power        | <b>57700486</b>     |
| RS-485 out and analog out, 85–265 Vac power      | <b>57701486</b>     |

Product Overview

Encoders Selection Guide



| Description                 | Cube                 | Right-Angled   |
|-----------------------------|----------------------|----------------|
|                             | Page V9-T3-62        | Page V9-T3-62  |
| Power supply                | 5–28 Vdc             | 5–28 Vdc       |
| Output signal               | NPN transistor       | NPN transistor |
| Pulses per revolution       | Up to 600            | Up to 1,800    |
| Maximum shaft speed         | 6000 RPM             | 8000 RPM       |
| Mounting configuration(s)   | Face or base mounted | Flange mounted |
| Shaft size                  | 3/8 in               | 3/8 in         |
| Maximum axial loading       | 10 lbs               | 80 lbs         |
| Quadrature output available | Yes                  | Yes            |

For our complete product offering, see Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E and PG05400001E.

Shaft Encoders



Features

- Cube style
- 5–28 Vdc input power
  - Single channel and quadrature models
  - 3/8 in (9.5 mm) double-ended shaft
- Right-angled
- 5–28 Vdc input power
  - Quadrature output, two square waves
  - Flange mounting
  - 3/8 in (9.5 mm) shaft diameter

Product Selection

Shaft Encoders

Cube Shaft Encoders

| Description               | Catalog Number |
|---------------------------|----------------|
| <b>Single Channel</b>     |                |
| 60 pulses per revolution  | 38150060       |
| 100 pulses per revolution | 38150100       |
| 120 pulses per revolution | 38150120       |
| 600 pulses per revolution | 38150600       |
| <b>Quadrature</b>         |                |
| 60 pulses per revolution  | 38151060       |
| 100 pulses per revolution | 38151100       |
| 120 pulses per revolution | 38151120       |
| 600 pulses per revolution | 38151600       |

Right-Angled Shaft Encoders, Size 20

| Description                | Catalog Number |
|----------------------------|----------------|
| 100 pulses per revolution  | 38159100       |
| 120 pulses per revolution  | 38159120       |
| 600 pulses per revolution  | 38159600       |
| 1000 pulses per revolution | 381591000      |
| 1800 pulses per revolution | 381591800      |