

Relays



EASY Intelligent Relay



Programmable Logic Controllers



Preset Counters



Hour Meters



Totalizers



Encoders



3.1 Relays

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

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 Only 6.2 mm wide for SP and 14 mm wide for DP DIN rail mounting			Polycarbonate cover Indicator lamp and pushbutton available Panel and DIN mounting		Polycarbonate cover Indicator lamp and pushbutton available Panel, DIN and flange mounting Latching	
Contact Data							
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		
Coil Data							
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		
General Data							
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		

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

Relays Selection Guide, continued

**D3 Series****Page V9-T3-13****D4 Series****Page V9-T3-15****D5 Series****Page V9-T3-16**

Description	D3 Series		D4 Series		D5 Series		
	Page V9-T3-13		Page V9-T3-15		Page V9-T3-16		
Approvals	   		   		   		
Features	Polycarbonate cover Indicator lamp and pushbutton available Panel and DIN mounting 8- or 11-pin octal plug-in Latching (D3PR version)		Polycarbonate cover Indicator lamp available Panel and DIN mounting Socket has built-in hold-down spring		Polycarbonate cover Indicator lamp and pushbutton available Panel, DIN and PC board mounting		
Contact Data							
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	
Coil Data							
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	
General Data							
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) 10 million (D3PR5 latching)			10 million		5 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.

Relays Selection Guide, continued



Description	D7 Series				D8 Series		D9 Series	
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Approvals	   				  		 	
Features	Polycarbonate cover Indicator lamp and pushbutton available Panel, DIN and flange mounting				Dust cover Panel, DIN and flange mounting Quick-connect and screw terminals		Dust cover Pushbutton available Panel mounting Screw terminals	
Contact Data								
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	
Coil Data								
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	
General Data								
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
	Page V9-T3-23	Page V9-T3-24	Page V9-T3-26
Approvals			
Features	Available blowout magnets for high DC switching Available auxiliary switches Combo head screws for simple hook-up Riveted construction for long service life	Four-pole configurations IP20 finger and back-of-hand proof 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 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
Contact Data			
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
Coil Data			
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
General Data			
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	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	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	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 or 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
Contact Data			
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	—
Coil Data			
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
General Data			
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**

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**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



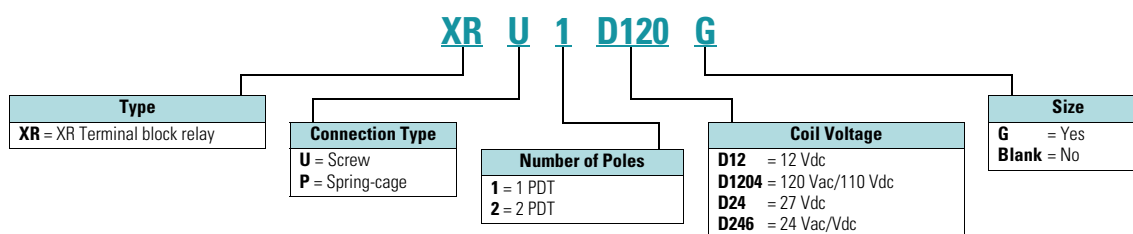
Features

- 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
1PDT Screw Connection				
No	6A	12 Vdc	10	XRU1D12
No	6A	120 Vac/110 Vdc	10	XRU1D120U
Yes	6A	120 Vac/110 Vdc	10	XRU1D120UG
No	6A	24 Vdc	10	XRU1D24
No	6A	24 Vac/Vdc	10	XRU1D24U
Yes	6A	24 Vac/Vdc	10	XRU1D24UG
1PDT Spring-Cage Connection				
No	6A	12 Vdc	10	XRP1D12
No	6A	120 Vac/110 Vdc	10	XRP1D120U
No	6A	24 Vdc	10	XRP1D24
No	6A	24 Vac/Vdc	10	XRP1D24U
DPDT Screw Connection				
No	6A	12 Vdc	10	XRU2D12
No	6A	120 Vac/110 Vdc	10	XRU2D120U
No	6A	24 Vdc	10	XRU2D24
No	6A	24 Vac/Vdc	10	XRU2D24U

General Purpose Plug-In Relays—D1 Series



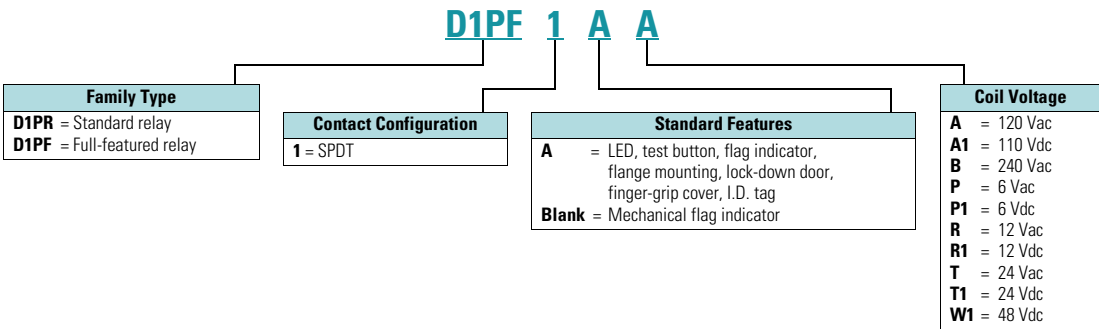
Features

- 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
Full Featured			
6 Vac	SPDT	12.2	D1PF1AP
6 Vdc	SPDT	47	D1PF1AP1
12 Vac	SPDT	46	D1PF1AR
12 Vdc	SPDT	188	D1PF1AR1
24 Vac 50/60 Hz	SPDT	180	D1PF1AT
24 Vdc	SPDT	750	D1PF1AT1
48 Vac	SPDT	720	D1PF1AW
48 Vdc	SPDT	2,600	D1PF1AW1
110 Vdc	SPDT	13,800	D1PF1AA1
120 Vac 50/60 Hz	SPDT	4,430	D1PF1AA
240 Vac 50/60 Hz	SPDT	15,720	D1PF1AB

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

Accessories

D1PR/D1PF Socket and Accessories

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

General Purpose Plug-In Relays—D2 Series



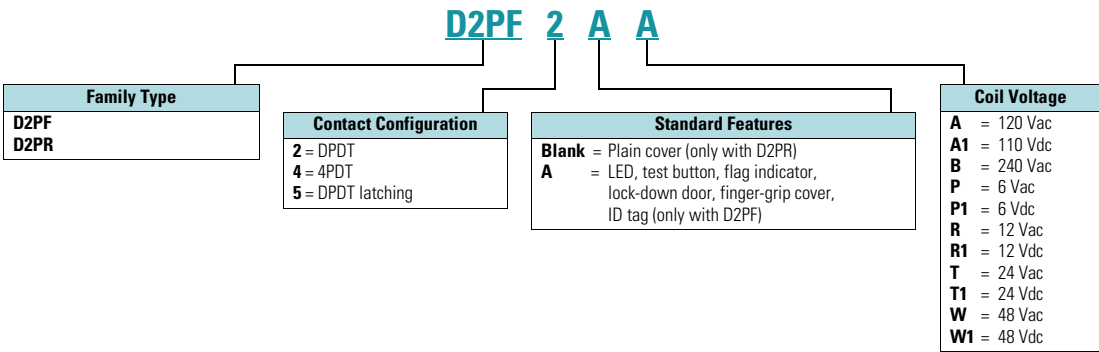
Features

- 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
Full Featured Style			
6 Vac	DPDT	9.6	D2PF2AP
6 Vdc	DPDT	40	D2PF2AP1
12 Vac	DPDT	46	D2PF2AR
12 Vdc	DPDT	160	D2PF2AR1
24 Vac	DPDT	180	D2PF2AT
24 Vdc	DPDT	650	D2PF2AT1
48 Vdc	DPDT	2,600	D2PF2AW1
110/125 Vdc	DPDT	11,000	D2PF2AA1
120 Vac	DPDT	4,430	D2PF2AA
220/240 Vac	DPDT	15,720	D2PF2AB
12 Vac	4PDT	46	D2PF4AR
12 Vdc	4PDT	160	D2PF4AR1
24 Vac	4PDT	180	D2PF4AT
24 Vdc	4PDT	650	D2PF4AT1
48 Vdc	4PDT	2,600	D2PF4AW1
110/125 Vdc	4PDT	11,000	D2PF4AA1
120 Vac	4PDT	4,430	D2PF4AA
220/240 Vac	4PDT	15,720	D2PF4AB

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

Accessories

D2PF/D2PR Sockets and Accessories

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

Note

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

General Purpose Plug-In Relays—D3 Series



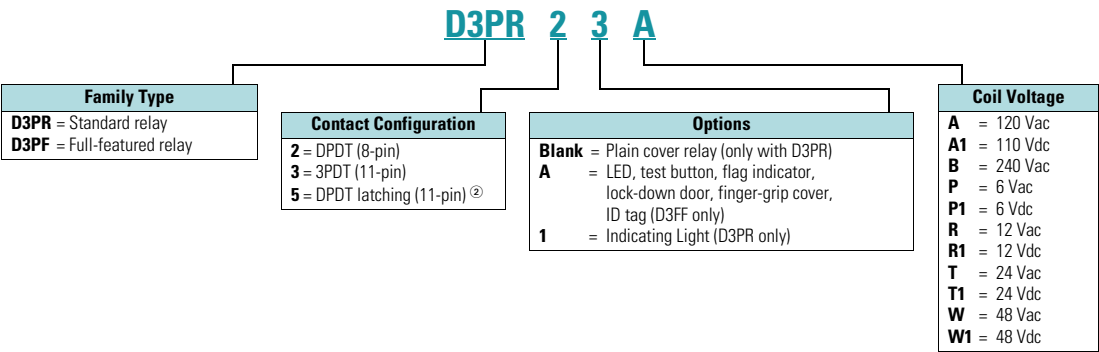
Features

- 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 D3PF2	D3PA6	PQC-1332
	D3PAL8	PQC-1351
	D3PA2	PQC-1351
D3PR3 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
Full Featured Style			
120 Vac	DPDT	1,700	D3PF2AA
240 Vac	DPDT	7,200	D3PF2AB
12 Vdc	DPDT	120	D3PF2AR1
24 Vdc	DPDT	470	D3PF2AT1
48 Vdc	DPDT	1,800	D3PF2AW1
120 Vac	3PDT	1,700	D3PF3AA
220/240 Vac	3PDT	7,200	D3PF3AB
6 Vdc	3PDT	32	D3PF3AP1
24 Vac	3PDT	72	D3PF3AT
24 Vdc	3PDT	470	D3PF3AT1
48 Vdc	3PDT	1,800	D3PF3AW1
Plain Cover Style			
120 Vac	DPDT	1,700	D3PR2A
110/125 Vdc	DPDT	10,000	D3PR2A1
220/240 Vac	DPDT	7,200	D3PR2B
6 Vac	DPDT	4.2	D3PR2P

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

Accessories

D2PF/D2PR Sockets and Accessories

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

Note

① Protection category (finger safe) EN 60529 IP20.

General Purpose Plug-In Relays—D4 Series



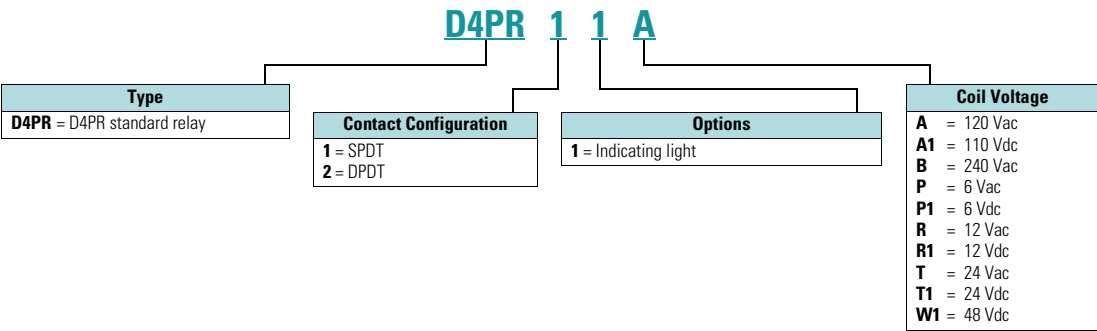
Features

- 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



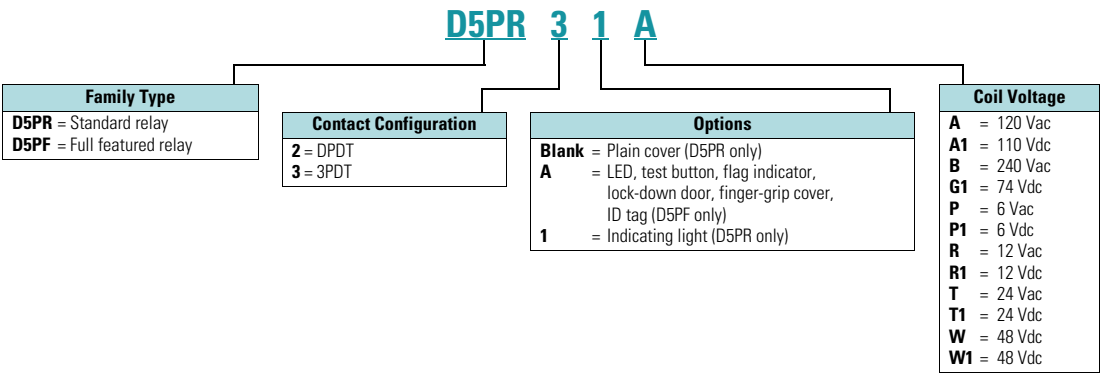
Features

- 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
Full Featured			
120 Vac	DPDT	1,700	D5PF2AA
110/125 Vdc	DPDT	10,000	D5PF2AA1
220/240 Vac	DPDT	7,200	D5PF2AB
12 Vdc	DPDT	120	D5PF2AR1
24 Vac	DPDT	72	D5PF2AT
24 Vdc	DPDT	470	D5PF2AT1
48 Vdc	DPDT	1,800	D5PF2AW1
120 Vac	3PDT	1,700	D5PF3AA
110/125 Vdc	3PDT	10,000	D5PF3AA1
220/240 Vac	3PDT	7,200	D5PF3AB
12 Vdc	3PDT	120	D5PF3AR1
24 Vac	3PDT	72	D5PF3AT
Plain Cover			
120 Vac	DPDT	1,700	D5PR2A
110/125 Vdc	DPDT	10,000	D5PR2A1
220/240 Vac	DPDT	7,200	D5PR2B
74 Vdc	DPDT	4,800	D5PR2G1
6 Vac	DPDT	4.2	D5PR2P

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

Accessories

D5 Sockets and Accessories

Description	Standard Pack	Catalog Number
Socket	10	D5PAL ①
Socket	10	D5PA2
Socket	10	D5PA3L
Socket	10	D5PA3S
Metal spring clip	10	PQC-1351

Note

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

General Purpose Plug-In Relays—D7 Series

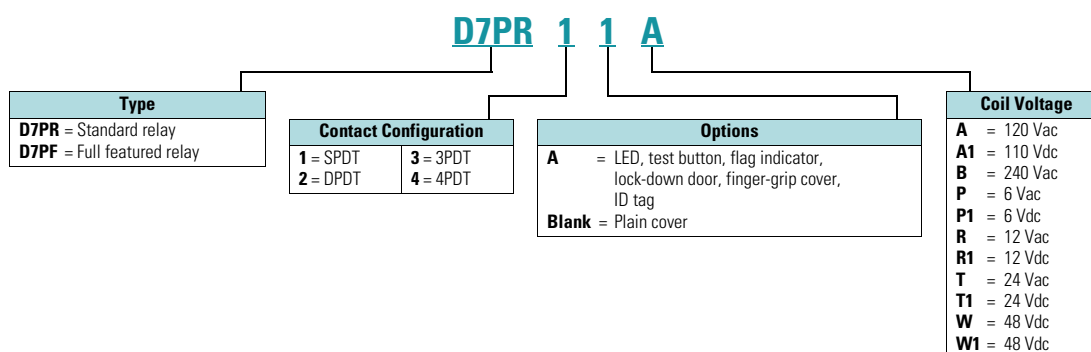


Features

- 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 ^①

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

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

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

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

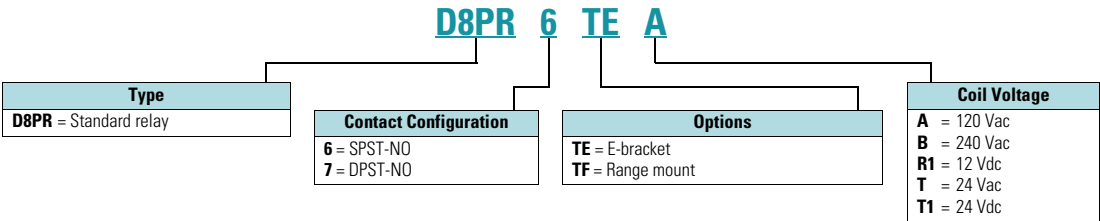


- Features**
- Allows switching of 25A and 30A loads
 - A high-capacity, high-withstand voltage relay compatible with momentary voltage drops
 - No contact chattering for momentary voltage drops up to 50% of rated voltage

Catalog Number Selection

General Purpose Plug-In Relays—D8 Series

D8 Series ①



Product Selection

D8 Relay/Socket Quick Reference

Relay Type	Mounting Bracket	Adapter Track/ Panel Mount	Front Connecting Sockets Track/ Panel Mount
D8PR6TE	D8PA5	D8PA1	D8PA2
D8PR7TE	D8PA5	D8PA1	D8PA2

Note

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

D8 Series

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

Accessories**D8 Series Sockets and Accessories**

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

General Purpose Plug-In Relays—D9 Series



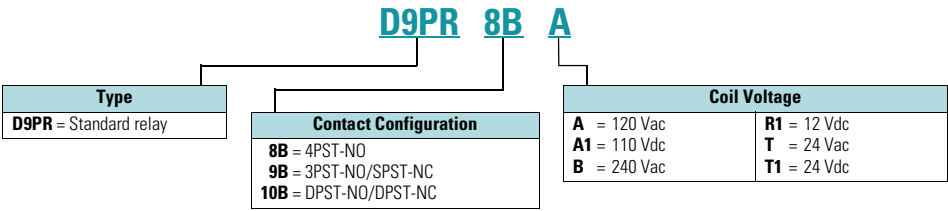
Features

- 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
4PST-NO Power Relay	
24 Vac	D9PR8BT
120 Vac	D9PR8BA
240 Vac	D9PR8BB
24 Vdc	D9PR8BT1
3PST-NO/SPST-NC Power Relay	
120 Vac	D9PR9BA
DPST-NO/DPST-NC Power Relay	
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



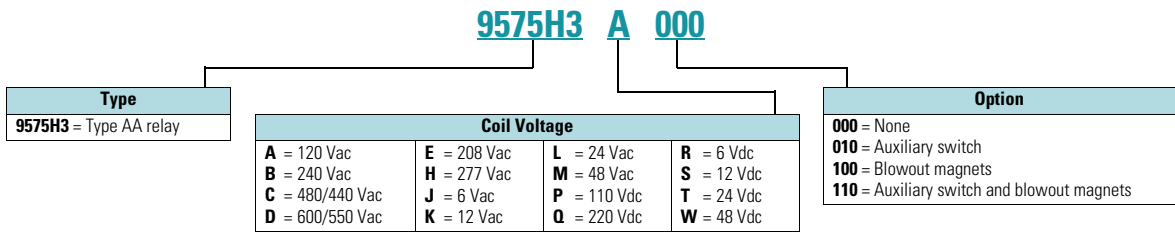
Features

- 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 ①
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

① 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



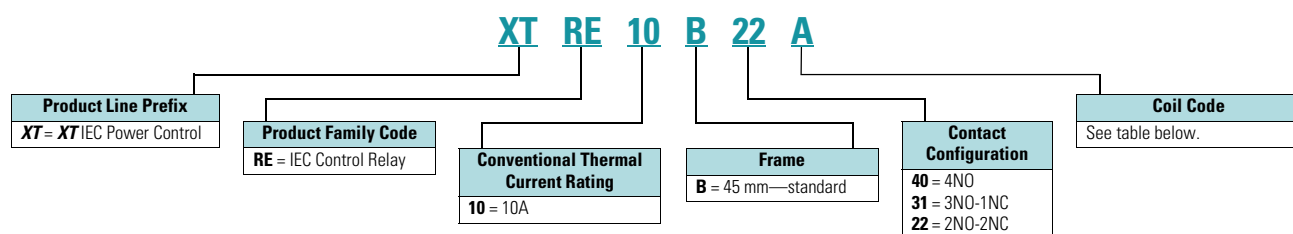
Features

- 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 ^①
		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_ ^②

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

^① Underscore (_) indicates magnet coil suffix required. See table above.

^② 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 Thermal Current I _{th} (A), Open at 60°C	Poles	Rated Operational Current AC-15 I _e (A)			Contact Configuration	Circuit Symbol	Package Quantity	Catalog Number— Screw Terminals
		220V 230V 240V	380V 400V 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



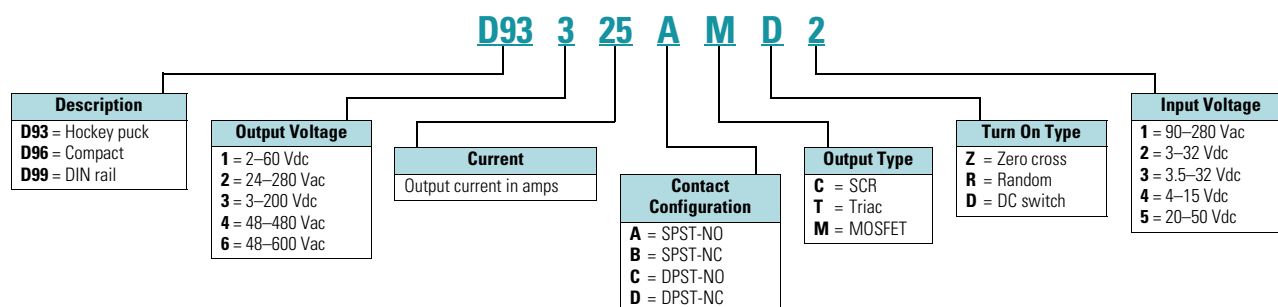
Features

- 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
4-Function		
24–240 Vac/Vdc	Compact DIN rail mount, SPDT	TRL04
7-Function		
24–240 Vac/Vdc	Compact DIN rail mount, SPDT	TRL07
12–240 Vac/Vdc	Compact DIN rail mount, DPDT	TRL27
	Asymmetrical pulse generator, DPDT	TRW27

TMR5 Series Timing Relays



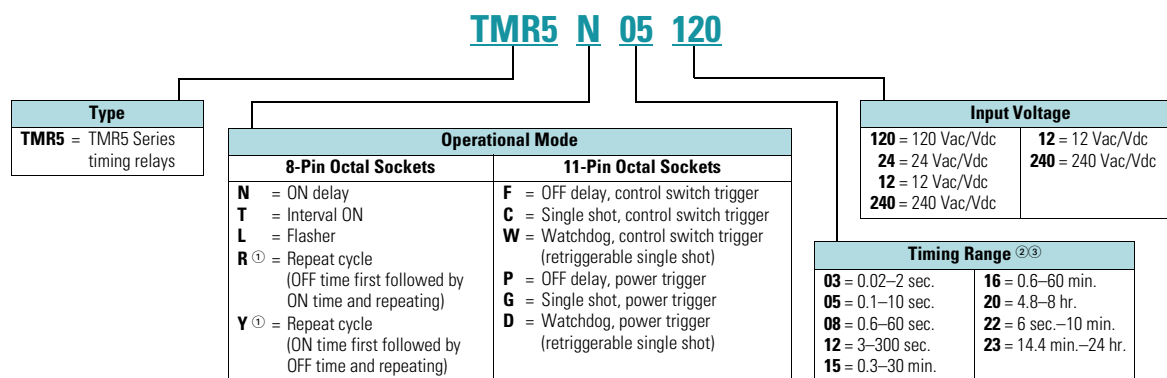
Features

- 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

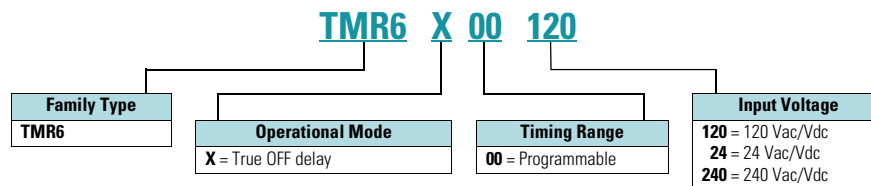
Input Voltage	Socket	Timing Range	Catalog Number
Single Shot, Control Switch Trigger			
120 Vac/Vdc	11-pin	0.1–10 sec.	TMR5C05120
120 Vac/Vdc		0.6–60 sec.	TMR5C08120
24 Vac/Vdc		0.1–10 sec.	TMR5C0524
24 Vac/Vdc		0.6–60 sec.	TMR5C0824
Repeat Cycle (OFF Time First Followed by ON Time and Repeating)			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

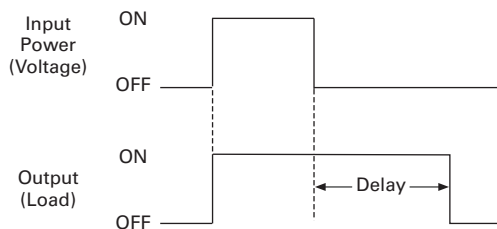
- Provides OFF delay function without requiring input voltage during OFF time delay
- Duplicates operation of pneumatic OFF delay timers
- Each unit has eight timing ranges built in, covering 0.05 seconds to 30 minutes
- Selecting a range is easy using a rotary switch (no math is required or DIP switches 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. (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
10-Function		
12–240 Vac/Vdc	Control switch trigger, DPDT	TMRP5100
	Control switch trigger, SPDT	TMRP5101
	Power trigger, DPDT	TMRP5102

Product Overview

Programmable Logic Controllers Selection Guide



**Fusion Integrated
Machine Controllers**



**EASY
Intelligent Relays**



**MFD
Intelligent Relays**



**ELC
Eaton Logic Controllers**

Description	Fusion Integrated Machine Controllers	EASY Intelligent Relays	MFD Intelligent Relays	ELC Eaton Logic Controllers
	Page V9-T3-36	Page V9-T3-37	Page V9-T3-39	Page V9-T3-41
User Interface				
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
I/O Digital				
Embedded digital input types	3.5–30 Vdc	12 Vdc/24 Vdc 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 3 counter inputs/ 2 transistors 5 relays	EASY500 = 8/4 EASY700/800 = 12 (6 or 8)	12/4 (using MFD I/O)	PA = 4/2 PB = 8/6 PC/PH = 8/4 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 EASY700/800 = 40 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 PV = 240 in/240 out embedded
I/O Analog				
Embedded analog input quantity and types	2 at 4–20 mA 2 at 0–10 Vdc	Optional on 24 Vac or DC input units EASY500 = 2 EASY700 = 4 EASY819/821 = N/A EASY820/822 = 1 All 0 to +10 Vdc	Optional on 24 Vac or Vdc input units = 4 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 1 at 0–10 Vdc	Optional EASY820/822 = 1 All 0 to +10 Vdc	Available using MFD-RA17 or MFD-TA17 MFD I/O Modules = 1 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 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 Current = 11 or 12 bit ①
Max. expansion analog inputs/outputs	—	0/0	0/0	Up to 32/up to 32 (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; on-board keypad; memory module transfer	Software; on-board keypad; memory module transfer	Software; memory module transfer; hand-held programmer
Program size	100 rungs with up to 6 contacts and 1 coil per rung	EASY500/700 = 128 rungs EASY800 = 256 rungs	MFD = 256 rungs	PB = 4k steps PA/PC/PH = 8k steps PV = 16k steps
Programming languages	Ladder	Ladder; function block	Ladder; function block	Instructions, ladder, sequential function chart
Timers	8	EASY500/700 = 16 EASY800 = 32	32	PB = 128 PA/PC/PH/PV = 244 standard with additional timers for subroutine and retentive applications
General counters	8	EASY500/700 = 16 EASY800 = 32	32	PB = 128 PA/PC/PH = 235 PV = 253
High speed counters Quantity at max. speed (pulse train output use may limit maximum counter frequency)	Up to 14 kHz with five presets and prewarn	1 kHz	3 kHz	PB = up to 4, 2 at 20 kHz PA/PC = up to 6, 1 at 30 kHz and 1 at 10 kHz PH = up to 8, 1 at 100 kHz and 1 at 30 kHz PV = up to 8, 2 at 200 kHz 2 at 20 kHz; and 2 at 10 kHz
Pulse train outputs Quantity at max. speed (high speed input use may limit maximum speed for outputs)	—	—	—	PB = 2 at 10 kHz PA/PC = 1 at 30 kHz; and 1 at 10 kHz PH = 1 at 100 kHz; and 1 at 30 kHz PV = up to 2 at 200 kHz; and 1 at 40 kHz
Real time clock	Yes	EASY500 = Optional EASY700/800 = Yes	Yes	PA/PC/PH/PV = Yes 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
Communications				
Ports	1 RS-232/RS-485	Programming only	Programming only	1 RS-232 slave or programming 1 RS-485 master or slave
DeviceNet	—	EASY700/800 = slave only	Slave only	PA/PB/PC/PH = slave only PV = master and slave
Ethernet OPC	—	EASY700/800 = slave only	Slave only	PA/PB/PC/PH = slave only 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 master and slave
General Specifications				
Hazardous location 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 (32° to 122°F)	–25° to 55°C (–13° to 131°F)	–25° to 55°C (–13° to 131°F) Display –5° to 50°C	0° to 55°C (32° to 131°F)
Storage/transport temperature range	–20° to 70°C (–4° to 158°F)	–40° to 70°C (–40° to 158°F)	–40° to 70°C (–40° to 158°F)	–25° to 70°C (–13° to 158°F)
Nominal operating power	100/240 Vac 24 Vdc 12 Vdc	100/240 Vac 24 Vdc 12 Vdc	100/240 Vac 24 Vdc	24 Vdc 110/240 Vac using 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



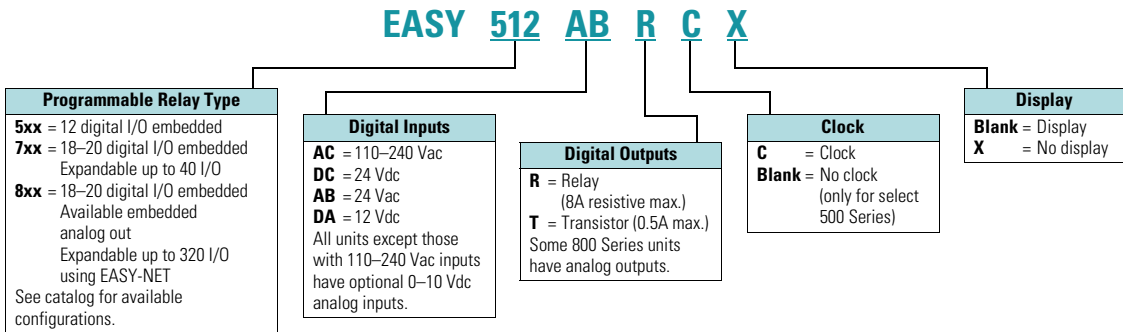
Features

- 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

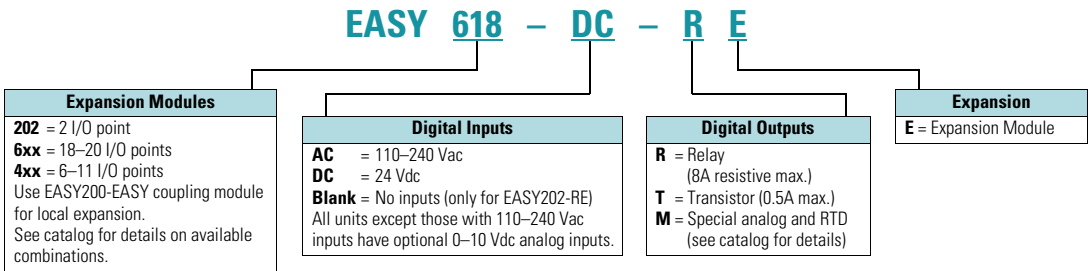
Catalog Number Selection

EASY Intelligent Relays

EASY Intelligent Relays



EASY Expansion



MFD Intelligent Relay Displays and Controllers

MFD AC-CP8 – ME

3

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

Product Selection

EASY500 Intelligent Relays

Description	Inputs				Analog ^①	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

^① 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 24 Vac	110–240 Vac	12 Vdc	24 Vdc	Analog ^①	Outputs 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 110–240 Vac	24 Vdc	Analog ^②	Outputs Relay	Transistor	Analog ^②	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	MFD-80
MFD, buttons	MFD-80-B
MFD CPU with 24 Vdc, power supply, clock	MFD-CP8-ME
MFD CPU with 24 Vdc, power supply, clock, EASY-NET	MFD-CP8-NT
MFD CPU with 100–240 Vac, power supply, clock	MFD-AC-CP8-ME
MFD CPU with 100–240 Vac, power supply, clock, EASY-NET	MFD-AC-CP8-NT

MFD Display to EASY Communication Modules (MFD-CP4)

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

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 ^①	Relay	Transistor	Analog	
16 I/O	12	—	—	4	—	—	MFD-AC-R16
16 I/O	—	12	4	4	—	—	MFD-R16
17 I/O	—	12	4	4	—	1	MFD-RA17
16 I/O	—	12	4	—	4	—	MFD-T16
17 I/O	—	12	4	—	4	1	MFD-TA17

EASY/MFD I/O Expansion Modules ^②

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

EASY/MFD Communication Interface Modules

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

EASY/MFD-CP8 Power Supplies and Software

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

EASY/MFD Cables and Connectors

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

Notes

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

^② All expansion modules include one EASY-LINK-DS.

ELC Programmable Logic Controllers



Features

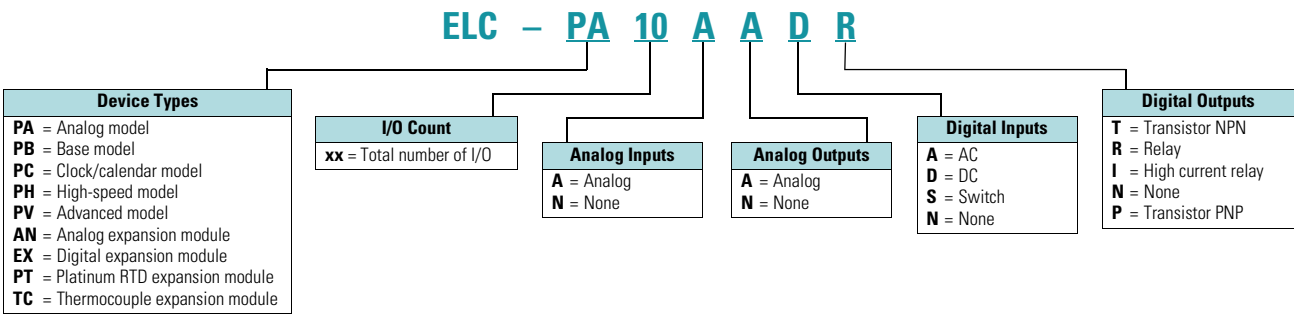
- Modular PLC logic platform with a range of basic to sophisticated CPUs
- Ethernet and DeviceNet master communications
- Distributed I/O for EtherNet/IP, Modbus TCP, PROFIBUS-DP, DeviceNet and Modbus serial networks

3

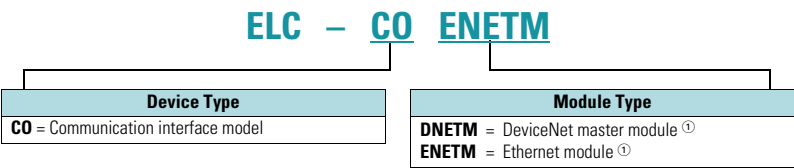
Catalog Number Selection

ELC Programmable Logic Controllers

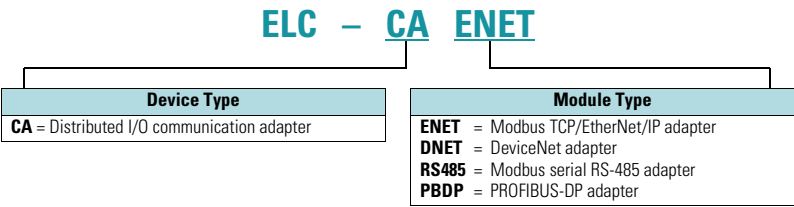
Controllers and Expansion Modules



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	ELC-PB14NNDR
	(8) 24 Vdc	(6) Transistor, 100 mA	—	(2) 20 kHz inputs	150 mA	ELC-PB14NNDT
ELC-PC Model and 12 I/O built-in	(8) 24 Vdc	(4) Relay, 1.5A	—	(1) 30 kHz inputs	150 mA	ELC-PC12NNDR
	(8) 24 Vdc	(4) Transistor, 100 mA	—	(1) 30 kHz inputs	150 mA	ELC-PC12NNDT
	(8) 110 Vac	(4) Relay, 1.5A	—	(1) 30 kHz inputs	150 mA	ELC-PC12NNAR
ELC-PH Model and 12 I/O built-in	(8) 24 Vdc	(4) Transistor, 100 mA	—	(1) 100 kHz inputs	170 mA	ELC-PH12NNDT
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	ELC-PA10AADR
	(4) 24 Vdc	(2) Relay, 1.5A	(2) In and (2) Out	(1) 30 kHz inputs	210 mA	ELC-PA10AADT
ELC-PV Model and 28 I/O built-in	(16) 24 Vdc	(12) Relay, 1.5A	—	(2) 200 kHz inputs	220 mA	ELC-PV28NNDR
	(16) 24 Vdc	(12) Transistor, 100 mA	—	(2) 200 kHz inputs	220 mA	ELC-PV28NNDT

Distributed I/O Adapter Modules

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

Network Communication Master Modules (Left Side Bus)

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

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



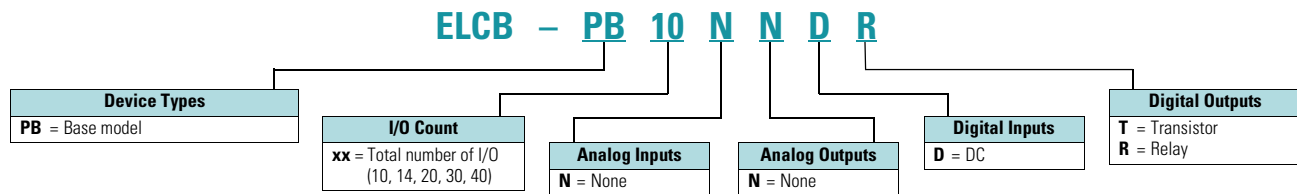
Features

- 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

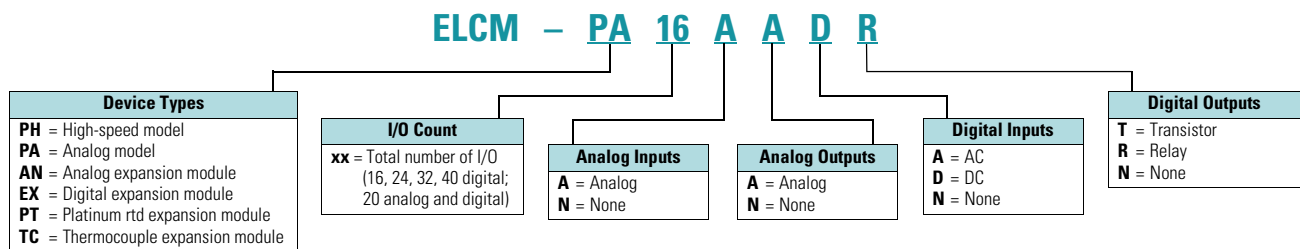
Description	Inputs			Outputs			Catalog Number
	AC	DC	Analog	Relay	NPN Sinking Transistor	Analog	
10 I/O	—	6	—	4	—	—	ELCB-PB10NNDR
	—	6	—	—	4	—	ELCB-PB10NNDT
14 I/O	—	8	—	6	—	—	ELCB-PB14NNDR
	—	8	—	—	6	—	ELCB-PB14NNDT
20 I/O	—	12	—	8	—	—	ELCB-PB20NNDR
	—	12	—	—	8	—	ELCB-PB20NNDT
30 I/O	—	18	—	12	—	—	ELCB-PB30NNDR
	—	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-CBPCEGP3
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

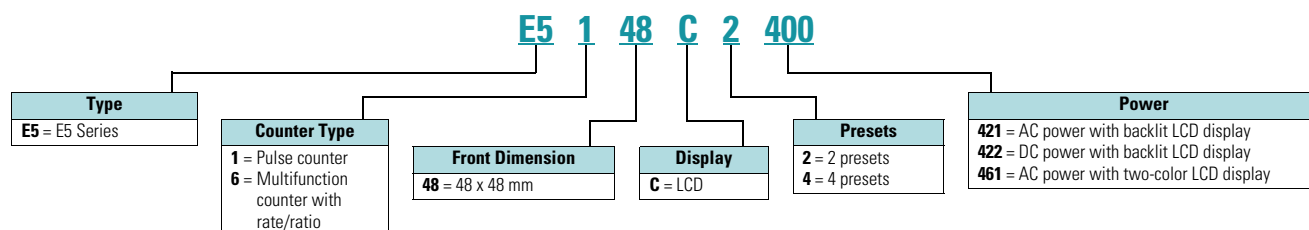
AC/DC powered

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

1/18 DIN Eclipse Series Preset Counter



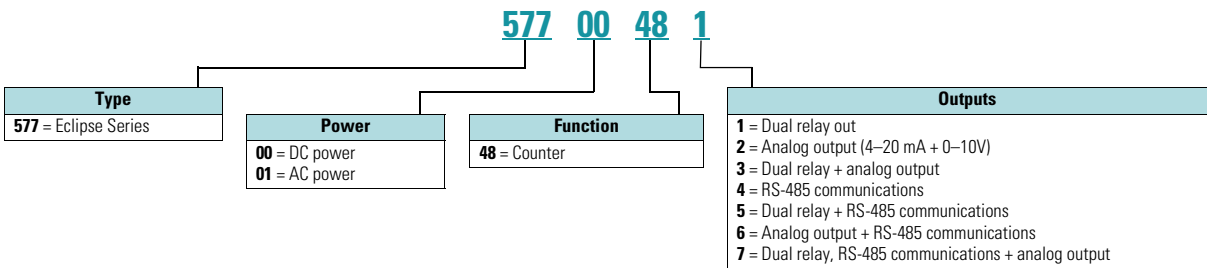
Features

- 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



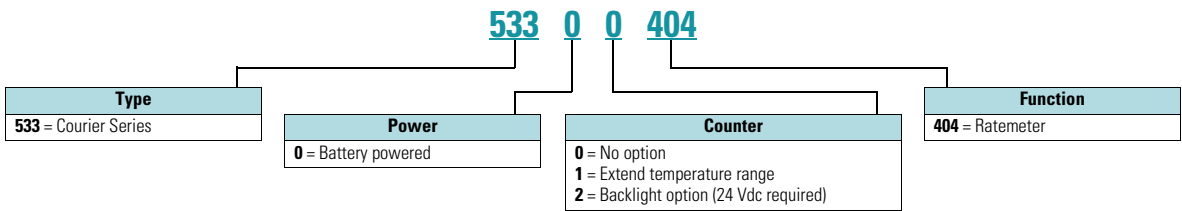
Features

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

Catalog Number Selection

Courier Series Battery Powered Ratemeter

Courier Series



Product Selection

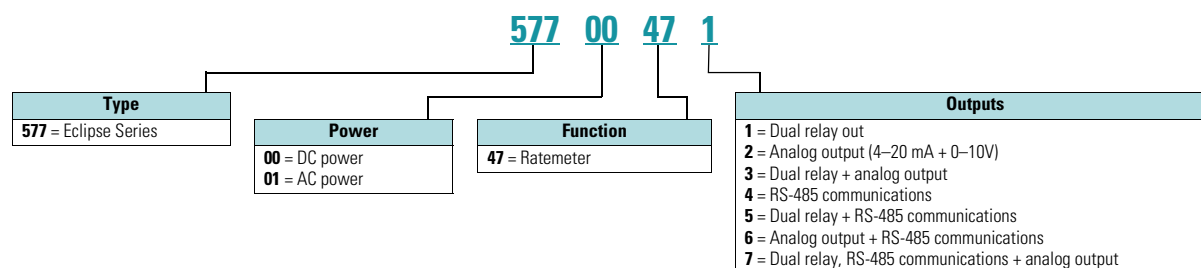
1/Tau LCD Ratemeter

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 24 x 36.8 mm
Display type	Mechanical	Mechanical	LCD	LCD
Number of digits	7 for AC versions, 8 for DC versions	6	8	6
Power supply	10–30 Vdc or 100–130 Vac	115 Vac	Internal battery	12–60 Vdc or 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

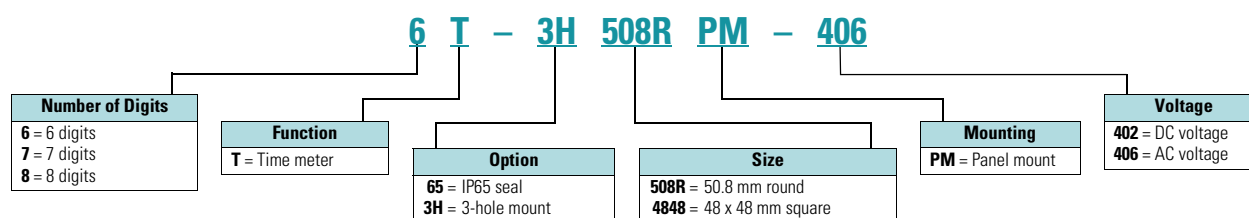
71.1 mm round

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

Accessories

DIN Rail Adapter



DIN Rail Adapter

Description	Catalog Number
DIN rail adapter for DIN electromechanical hour meter	T4848DINADAPT

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
Battery Powered 1/32 DIN 8-Digit LCD	
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
AC/DC Powered Round LCD	
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
AC/DC Powered Compact Rectangular LCD	
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
	Page V9-T3-57	Page V9-T3-57	Page V9-T3-58	Page V9-T3-58
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 (13 x 30 mm cut-out)	Base mount, bottom mount, top mount, or front panel mount	Front panel 22 x 45 mm (1/32 DIN)	Front panel 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, can be locked out	Front panel or electronic, can be locked out
Front panel protection	IP65	—	IP65	IP65

Totalizers Selection Guide, continued



Description	Courier Series	E5-496 Series	Eclipse Series
	Page V9-T3-59	Page V9-T3-60	Page V9-T3-60
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 68 x 33 mm	Front panel 92 x 45 mm (1/8 DIN)	Front panel 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, can be locked out	Front panel or electronic, can be locked out	Front panel or electronic, 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.

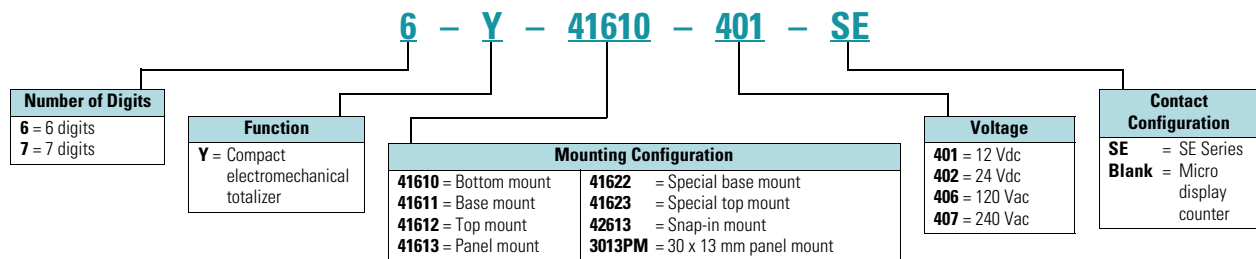
Electromechanical Totalizers**Features**

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
6-Digit Counter		
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
6-Digit Counter, continued		
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

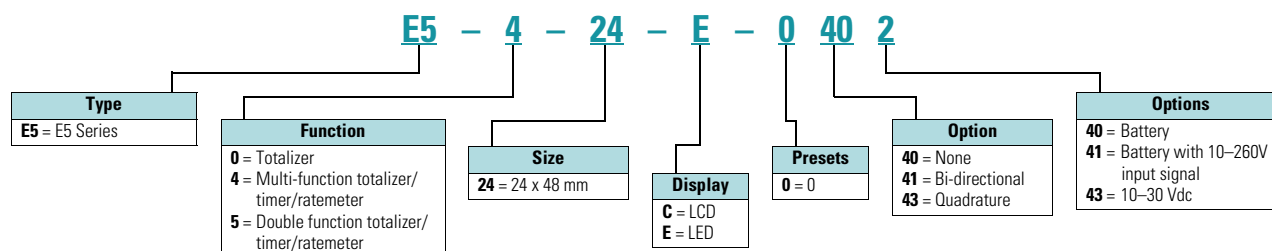
DC Powered LED

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

Electronic Courier Series Battery Powered LCD Totalizers



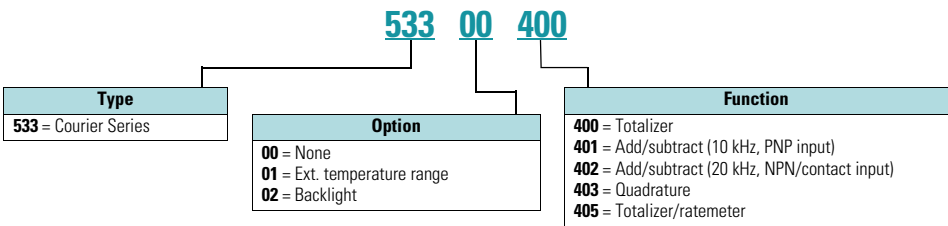
Features

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

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
Single Channel	
60 pulses per revolution	38150060
100 pulses per revolution	38150100
120 pulses per revolution	38150120
600 pulses per revolution	38150600
Quadrature	
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