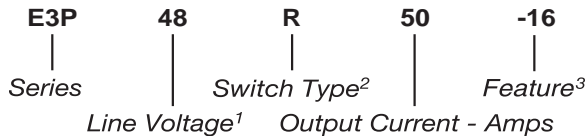


Part Number	Description
E3P48A50	50A, 600 Vac
E3P48A75	75A, 600 Vac
E3P48A75-22	75A, 600 Vac
E3P48D25	25A, 600 Vac
E3P48D50	50A, 600 Vac
E3P48D75	75A, 600 Vac
E3P48D75-16	75A, 520 VaC



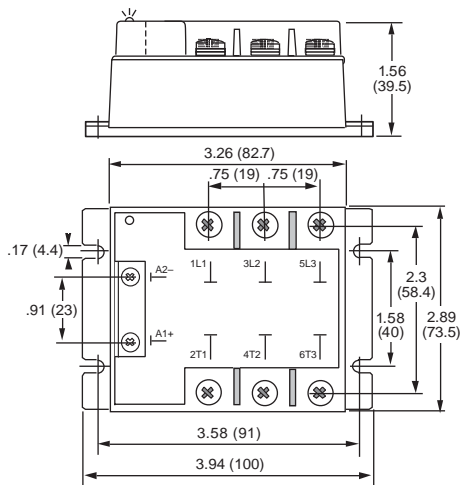
### Part Number Explanation



### NOTES

- 1) Line Voltage (nominal): 48 = 480 Vac
- 2) Switch Type: R = Random turn-on; D = Zero-cross turn-on  
A = AC control, Zero-cross turn-on
- 3) Features: -16 = MOV, -22 = 10-30Vac

### MECHANICAL SPECIFICATION



WEIGHT: 13.05 oz. (370g)

Figure 1 — E3P relays; dimensions in inches (mm)

### FEATURES/BENEFITS

- Three-phase output
- AC or DC control
- Internal output protection
- Control LED on all models
- Designed for all types of loads
- Excellent thermal performance
- Tight zero-cross window for low EMI
- High immunity to surges

### DESCRIPTION

The Series E3P three-phase relays are designed for all types of loads. The design incorporates a thyristor output. Control status LED is a standard on all models. Output protection is provided internally on certain models. The Series E3P utilizes optical isolation to protect the control from load transients. High-current models are excellent for motor control.

### APPLICATIONS

- Heating control
- Motor control
- Uninterruptible power supplies
- Light dimmers
- Three-phase industrial and process control
- On/Off controls of AC equipment

### APPROVALS

All models are UL recognized.  
UL File Number: E128555.

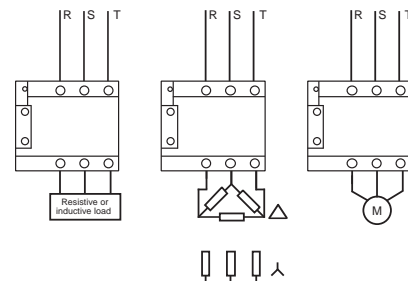


Figure 2 — E3P relays

**INPUT (CONTROL) SPECIFICATION**

	Input Type	Min	Max	Units
<b>Control Range</b>				
E3P	R/D	8.5	30	Vdc
E3P	A	90	240	Vac/Vdc
E3P	AXX-22	10	30	Vac
<b>Input Current Range</b>				
E3P	R/D	10	45	mA
E3P	A	4	11	mA
E3P	AXX-22	11	55	mA
<b>Must Turn-Off Voltage</b>				
All Relays			4	Vdc
<b>Input Resistance (Typical)</b>				
E3P	R/D		620	Ohms
E3P	A		21	KOhms
ESP	AXX-22		400	Ohms
<b>Reverse Voltage Protection</b>				
E3P	R/D		30	V
E3P	A		N/A	

**BLOCK DIAGRAM**

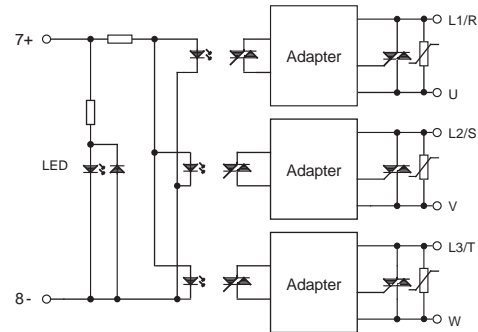


Figure 4a — E3P48R50-16

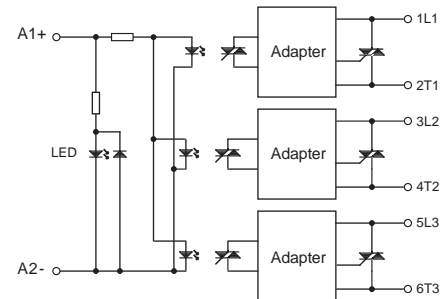


Figure 4b — E3P48D relays

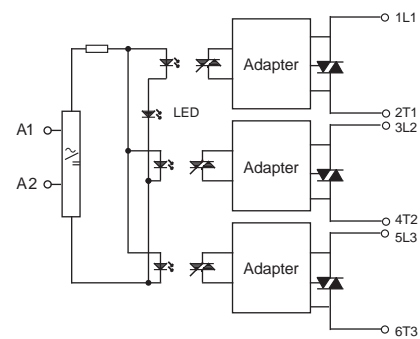


Figure 4c — E3P48A50 and E3P48A75

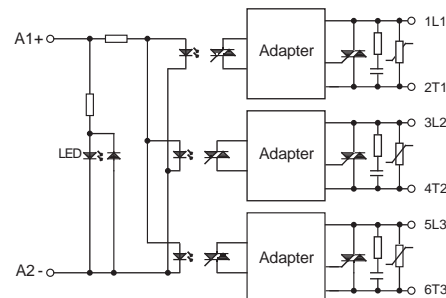


Figure 4d — E3P48DXX-16

**CONTROL CHARACTERISTIC**

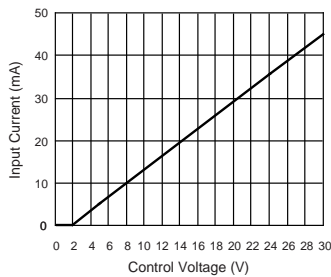


Figure 3a — All E3P relays except E3P48A50 and E3P48A75

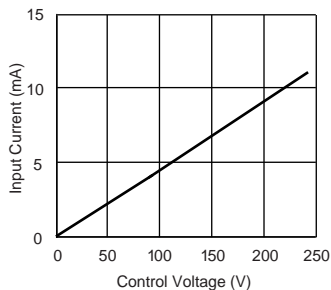


Figure 3b — E3P48A50 and E3P48A75

OUTPUT (LOAD) SPECIFICATION				OUTPUT (LOAD) SPECIFICATION (Continued)			
	Min	Max	Units		Min	Max	Units
<b>Operating Range</b>				<b>Turn-Off Time (60 Hz)</b>			
E3P48XX-16	24	520	Vrms	All relays		8.3	ms
E3P48	24	600	Vrms				
<b>Peak Voltage</b>				<b>Off-State dv/dt</b>			
All Relays		1200	Vpeak	All relays		500	V/μs
<b>Load Current Range</b>				<b>Maximum di/dt (Non-Repetitive)</b>			
12A output current	.005	12	Arms	All relays		50	A/μs
25A output current	.005	25	Arms				
50A output current	.005	50	Arms	<b>Operating Frequency Range</b>			
75A output current	.005	75	Arms	E3P48D50	10	680	Hz
				All other relays	10	440	Hz
<b>Inductive Load Current</b>				<b>I<sup>2</sup>t for Match Fusing (&lt;8.3 ms)</b>			
E3P with -16 option 50A output		12	Arms	12A output		72	A <sup>2</sup> S
E3P with -16 option 75A output		16	Arms	25A output		265	A <sup>2</sup> S
				50A output		1500	A <sup>2</sup> S
				75A output		5000	A <sup>2</sup> S
<b>Maximum Surge Current Rating (Non-Repetitive)</b>				<b>ENVIRONMENTAL SPECIFICATION</b>			
12A output		120	A		Min	Max	Units
25A output		230	A	<b>Operating Temperature</b>			
50A output		550	A	E3P48D50	-55	100	°C
75A output		1000	A	All other relays	-40	100	°C
<b>On-State Voltage Drop</b>				<b>Storage Temperature</b>			
All relays output current		1.4	V	E3P48D50	-55	100	°C
				All other relays	-40	100	°C
<b>Zero-Cross Window (Typical)</b>				<b>Input-Output Isolation</b>			
E3P48DXX-16		12	V	4000			
E3P48		24	V	<b>Output-Case Isolation</b>			
E3P48R		N/A		E3P48D50	2500		Vrms
				E3P48D50	2500		Vrms
<b>Off-State Leakage Current (60 Hz)</b>				All other relays			
E3P48DXX-16		5	mA	3300			Vrms
All other relays		1	mA				
<b>Turn-On Time (60 Hz)</b>							
E3P48R		0.1	ms				
All relays		8.3	ms				

**THERMAL CHARACTERISTICS**

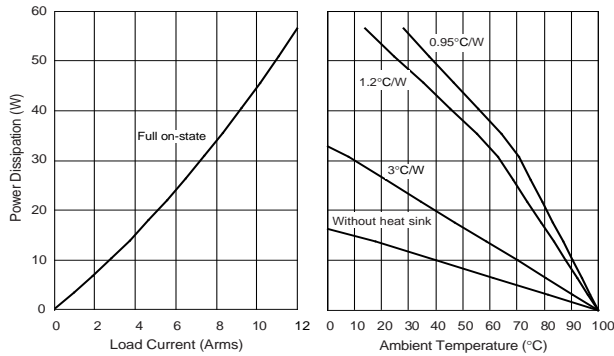


Figure 5a — 12A output

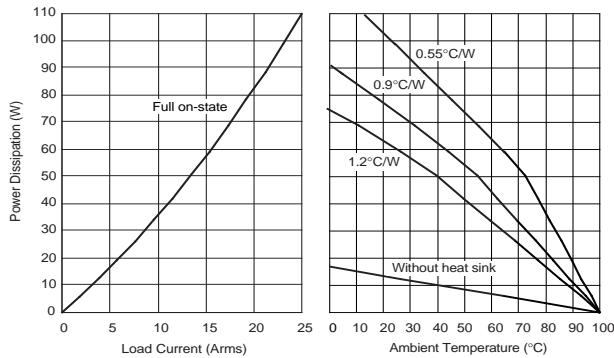


Figure 5b — 25A output

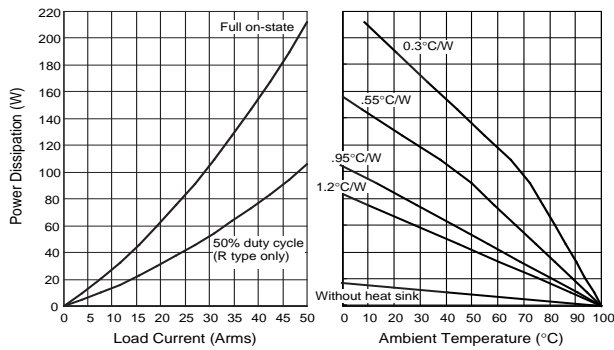


Figure 5c — 50A output

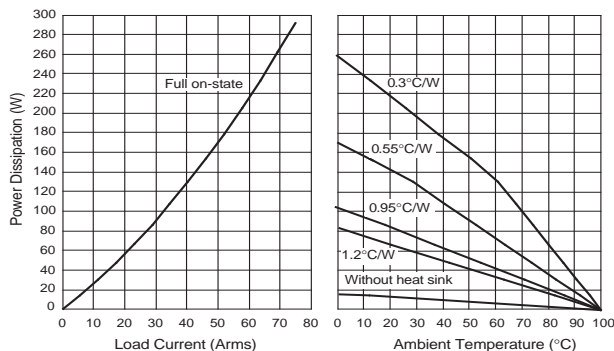


Figure 5d — 75A output

**SURGE CURRENT**

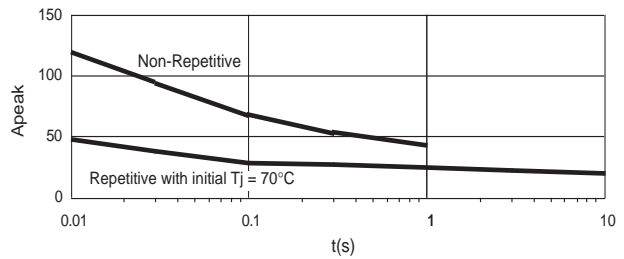


Figure 6a— 12A output

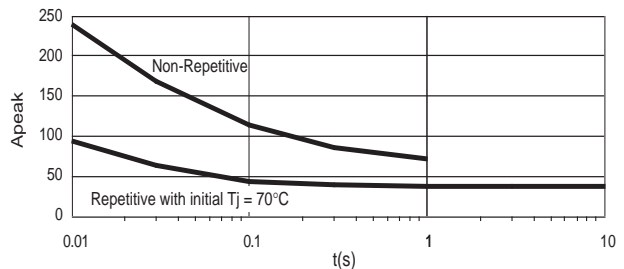


Figure 6b— 25A output

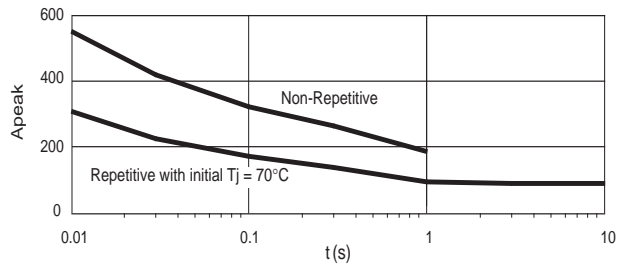


Figure 6c— 50A output

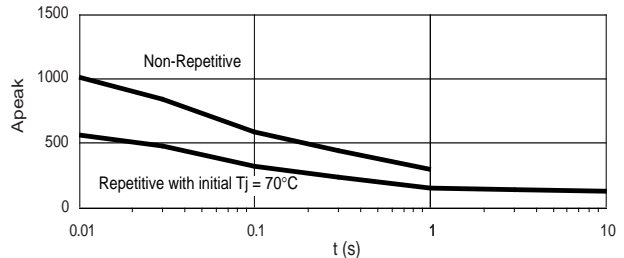


Figure 6d— 75A output

**NOTES:**

1. Electrical specifications at 25°C unless otherwise specified.
2. For 800Hz applications, contact factory.
3. For additional/custom applications, contact factory.

# Mouser Electronics

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## Teledyne Relays:

[E3P48A50](#) [E3P48D25](#) [E3P48D50](#) [E3P48D50-16](#) [E3P48D75](#) [E3P48D75-16](#) [E3P48A75](#) [E3P48R50-16](#)  
[E3P48A75-22](#)