

Part Number	Description
E3P48R50-16	50A, 520 Vac
E3P48D50-16	50A, 520 Vac
E3P48D75-16	75A, 520 Vac
E3P48D12	12A, 600 Vac
E3P48D25	25A, 600 Vac
E3P48D50	50A, 600 Vac
E3P48A50	50A, 600 Vac
E3P48D75	75A, 600 Vac

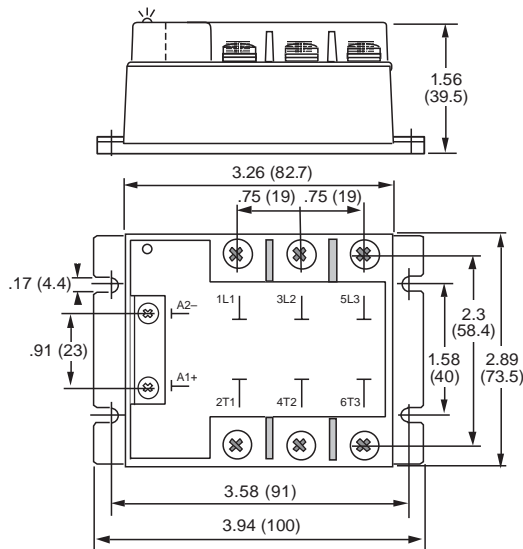
**Part Number Explanation**



**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) Feature: -16 = MOV

**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.

**TYPICAL APPLICATION**

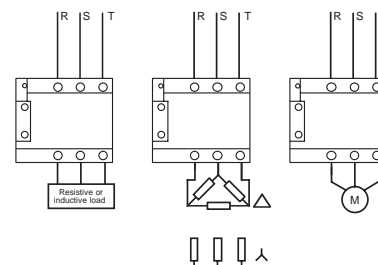


Figure 2 — E3P relays

**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
<b>Input Current Range</b>				
E3P	R/D	10	45	mA
E3P	A	4	11	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
<b>Reverse Voltage Protection</b>				
E3P	R/D		30	V
E3P	A		NA	

**BLOCK DIAGRAM**



Figure 4a — E3P48R50-16

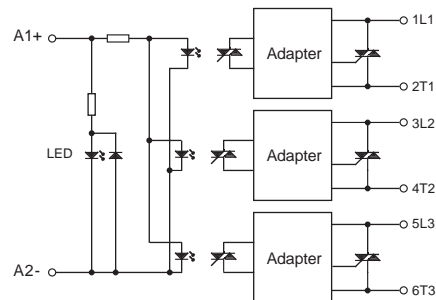


Figure 4b — E3P48D relays

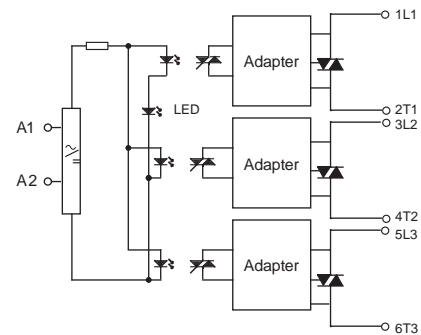


Figure 4c — E3P48A50

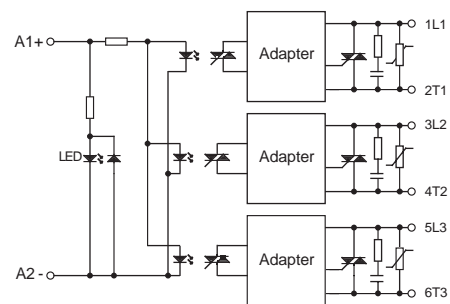


Figure 4d — E3P48DXX-16

**CONTROL CHARACTERISTIC**

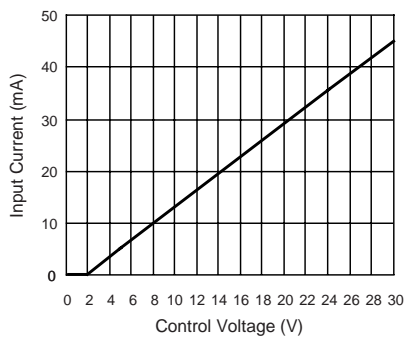


Figure 3a — All E3P relays except E3P48A50

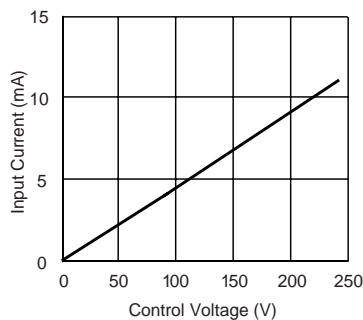


Figure 3b — E3P48A50

**OUTPUT (LOAD) SPECIFICATION**

	Min	Max	Units
<b>Operating Range</b>			
E3P48XXX-16	24	520	Vrms
E3P48	24	600	Vrms
<b>Peak Voltage</b>			
All relays		1200	Vpeak
<b>Load Current Range</b>			
12A output current	.005	12	A
25A output current	.005	25	A
50A output current	.005	50	A
75A output current	.005	75	A
<b>Inductive Load Current</b>			
E3P with -16 option 50A output		12	Arms
E3P with -16 option 75A output		16	Arms
<b>Maximum Surge Current Rating (Non-Repetitive)</b>			
12A output		120	A
25A output		230	A
50A output		550	A
75A output		1000	A
<b>On-State Voltage Drop</b>			
All relays output current		1.4	V
<b>Zero Cross Window (Typical)</b>			
E3P48DXX-16		12	V
E3P48		24	V
E3P48R		NA	
<b>Off-State Leakage Current (60Hz)</b>			
E3P48DXX-16		5	mA
All other relays		1	mA
<b>Turn-On Time (60 Hz)</b>			
E3P48R		0.1	ms
All other relays		8.3	ms
<b>Turn-Off Time (60 Hz)</b>			
All relays		8.3	ms

**OUTPUT (LOAD) SPECIFICATION (Continued)**

	Min	Max	Units
<b>Off-State dv/dt</b>			
All relays		500	V/μs
<b>Maximum di/dt (Non-Repetitive)</b>			
All relays		50	A/μs
<b>Operating Frequency Range</b>			
All relays	10	440	Hz
<b>I<sup>2</sup>t for Match Fusing (&lt;8.3ms)</b>			
12A output		72	A <sup>2</sup> S
25A output		265	A <sup>2</sup> S
50A output		1500	A <sup>2</sup> S
75A output		5000	A <sup>2</sup> S

**ENVIRONMENTAL SPECIFICATION**

	Min	Max	Units
Operating Temperature	-40	100	°C
Storage Temperature	-40	100	°C
Input-Output Isolation	4000		Vrms
<b>Output-Case Isolation</b>			
E3P48D12	2500		Vrms
E3P48D25	2500		Vrms
All other relays	3300		Vrms

**THERMAL CHARACTERISTICS**



Figure 5a — 12A output

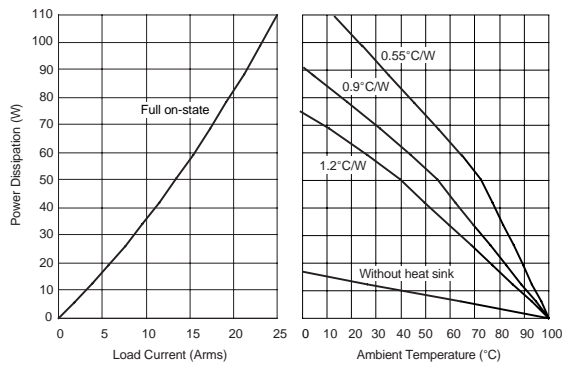


Figure 5b — 25A output



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 options, contact factory.