

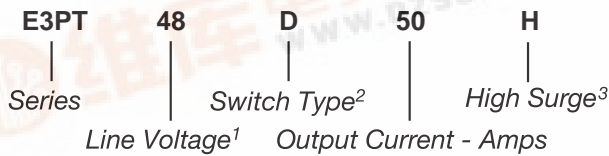
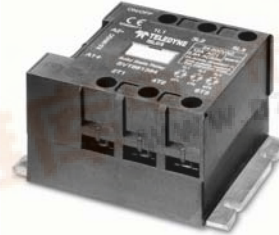


A Unit of Teledyne Electronics and Communications

## Series E3PT

Three-Phase Output to 50A 520 Vac  
Touch-Proof, AC or DC Control

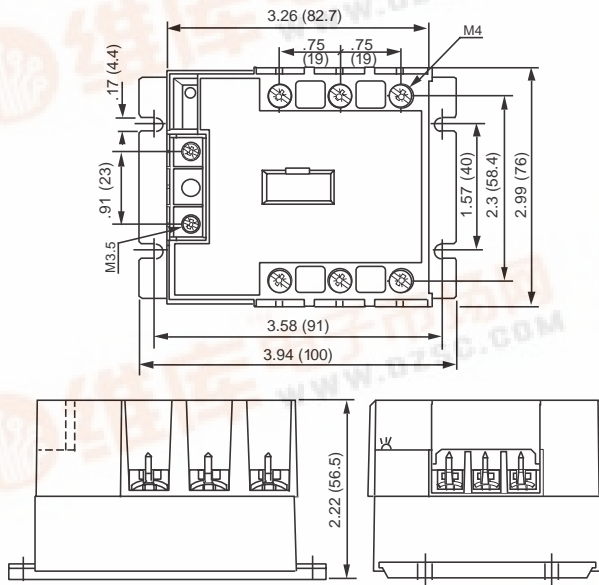
Part Number	Description
E3PT48D12	12A, 520 Vac
E3PT48A12	12A, 520 Vac
E3PT48D50	50A*, 520 Vac
E3PT48A50	50A*, 520 Vac
E3PT48D50H	50A*, 520 Vac
E3PT48A50H	50A*, 520 Vac



**NOTES**

- 1) Line Voltage (nominal): 48 = 480 Vac
  - 2) Switch Type: D = Zero-cross turn-on  
A = AC control, Zero-cross turn-on
  - 3) H = High surge capability
- \*Current limited to 50A due to terminals

**MECHANICAL SPECIFICATION**



WEIGHT: 14.46 oz. (410g)

Figure 1 — E3PT relays; dimensions in inches (mm)

**FEATURES/BENEFITS**

- Designed for all types of loads
- Tight zero-cross window
- Control LED on all models
- Internal output transient protection
- Touch-proof

**DESCRIPTION**

The Series E3PT three-phase solid-state relays are designed for all types of loads. The E3PT relays include as a standard a control LED for visual status. The E3PT series is touch-proof for user safety. An internal MOV and snubber circuit protect the output thyristor. The E3PT relays are highly immune to large current surges. The tight zero-cross window provides a low EMI level. The E3PT relays are an excellent choice for three-phase applications.

**APPLICATIONS**

- Heating control
- Motor control
- Three-phase industrial and process control

**APPROVALS**

Series E3PT relays are pending UL recognition.

**TYPICAL APPLICATION**

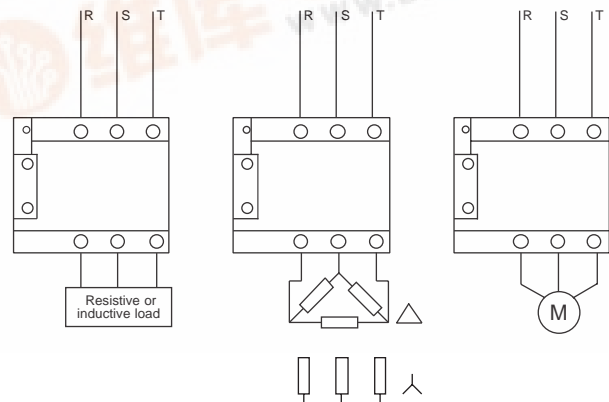


Figure 2 — E3PT typical application



**INPUT (CONTROL) SPECIFICATION**

	Input Type	Min	Max	Units
<b>Control Range</b>				
E3PT48	D	8.5	30	Vdc
E3PT48	A	90	240	Vac

	Input Type	Min	Max	Units
<b>Input Current Range</b>				
E3PT48	D	10	45	mA
E3PT48	A	4	11	mA

	Input Type	Min	Max	Units
<b>Must Turn-off Voltage</b>				
E3PT48	D		4	Vdc
E3PT48	A		15	Vac

	Input Type	Min	Max	Units
<b>Input Resistance (Typical)</b>				
E3PT48	D		620	Ohms
E3PT48	A		21	KOhms

	Input Type	Min	Max	Units
<b>Reverse Voltage Protection</b>				
E3PT48	D		30	V

**CONTROL CHARACTERISTIC**

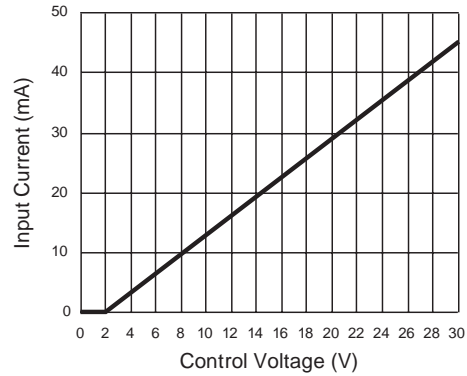


Figure 4a — E3PT48D

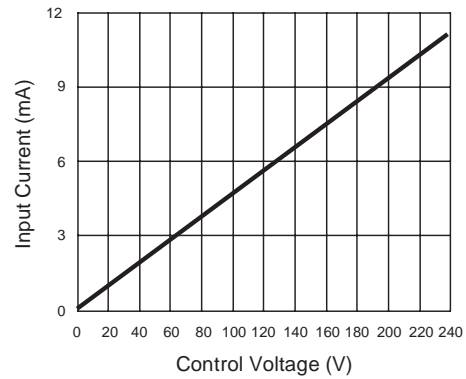


Figure 4b — E3PT48A

**EQUIVALENT CIRCUIT**

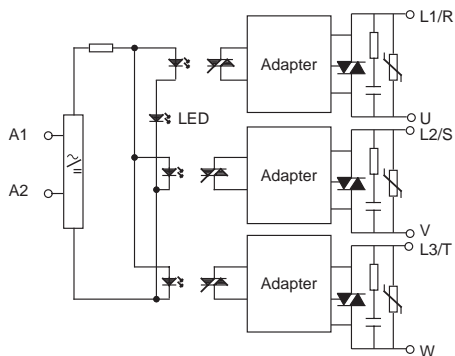


Figure 3a — E3PT48A

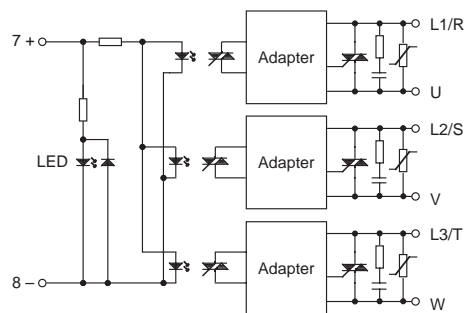


Figure 3b — E3PT48D

**OUTPUT (LOAD) SPECIFICATION**

	Min	Max	Unit
<b>Operating Range</b>			
All relays	24	520	Vrms
<b>Peak Voltage</b>			
All relays		1200	Vpeak
<b>Load Current Range (See Note 1)</b>			
E3PT48D12	.005	12	A
E3PT48A12	.005	12	A
E3PT48D50	.005	50*	A
E3PT48A50	.005	50*	A
E3PT48D50H	.005	50*	A
E3PT48A50H	.005	50*	A
<b>Maximum Surge Current Rating (Non-Repetitive)</b>			
E3PT48X12		120	A
E3PT48X50		1000	A
E3PT48X50H		2000	A
<b>On-State Voltage Drop</b>			
All relays		1.4	V
<b>Zero-Cross Window (Typical)</b>			
All relays		±12	V
<b>Off-State Leakage Current (60Hz)</b>			
All relays		5	mA
<b>Turn-On Time</b>			
E3PT48	D	8.3	ms
E3PT48	A	25	ms
<b>Turn-Off Time</b>			
E3PT48	D	8.3	ms
E3PT48	A	25	ms
<b>Off-State dv/dt</b>			
All relays		500	V/μs
<b>Maximum di/dt (Non-Repetitive)</b>			
All relays		50	A/μs

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

	Min	Max	Unit
<b>Operating Frequency</b>			
All relays	10	440	Hz
<b>I<sup>2</sup>t for Match Fusing (&lt;8.3ms)</b>			
E3PT48X12		72	A <sup>2</sup> s
E3PT48X50		5000	A <sup>2</sup> s
E3PT48X50H		20,000	A <sup>2</sup> s

**ENVIRONMENTAL SPECIFICATION**

	Min	Max	Unit
<b>Operating Temperature</b>			
All relays	-40	100	°C
<b>Storage Temperature</b>			
All relays	-40	100	°C
<b>Input-Output Isolation</b>			
All relays	4000		Vrms
<b>Output-Case Isolation</b>			
E3PT48X12	2500		Vrms
All other relays	3300		Vrms

NOTES:

- \*Current limited to 50A due to terminals.
- Electrical specifications at 25°C unless otherwise specified.

**THERMAL CHARACTERISTICS**

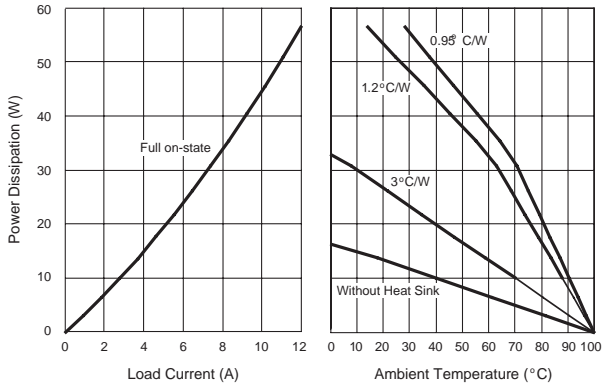


Figure 5a — E3PT48X12

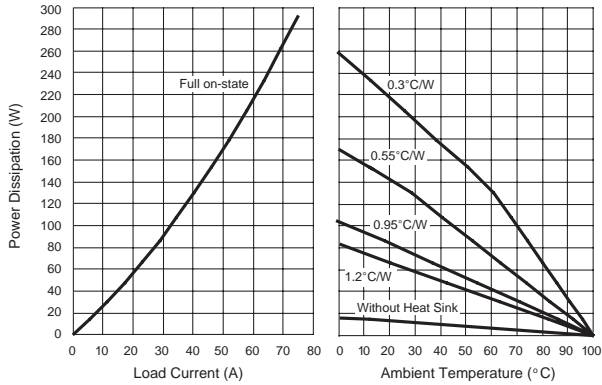


Figure 5b — E3PT48X50

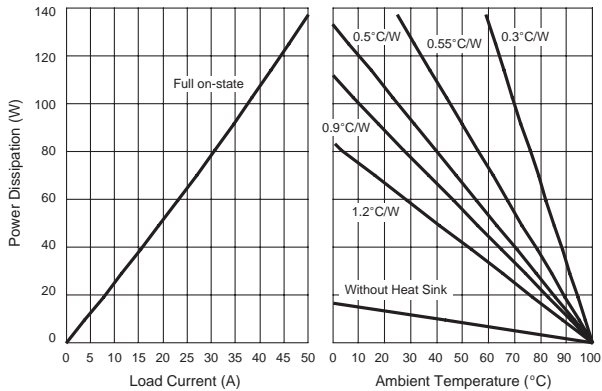


Figure 5c — E3PT48X50H

**SURGE CURRENTS**

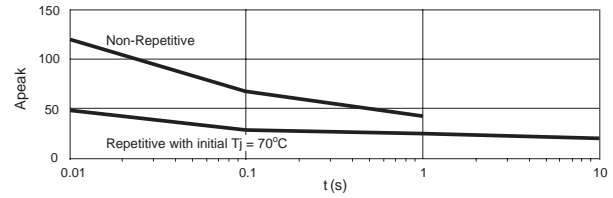


Figure 6a — E3PT48X12

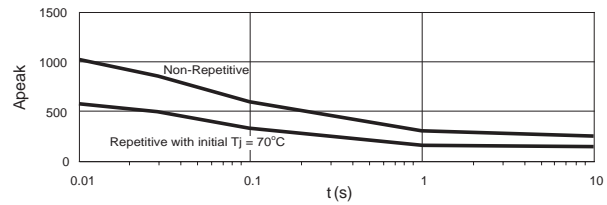


Figure 6b — E3PT48X50

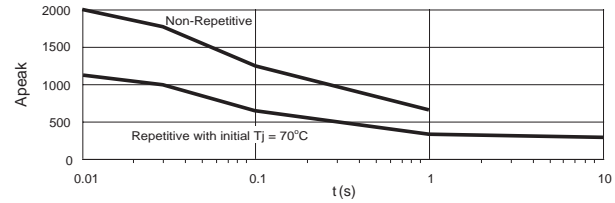


Figure 6c — E3PT48X50H