TELEDYNE RELAYS
Everywhereyoulook™

Series E3P

Three-Phase Output to 75A 600 Vac
DC and AC Control Solid-State Relay

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

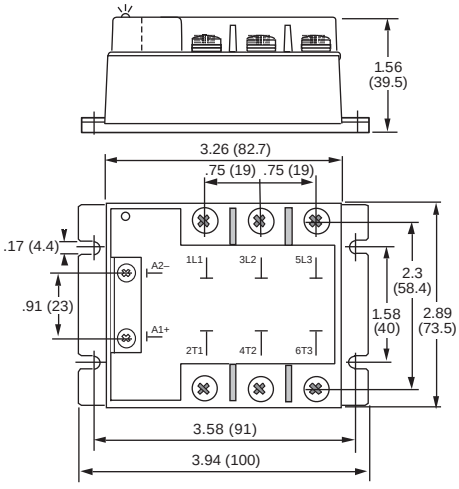
Part Number Explanation

E3P | **48** | **R** | **50** | **-16**

Series | *Line Voltage[1]* | *Switch Type[2]* | *Output Current - Amps* | *Feature[3]*

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.

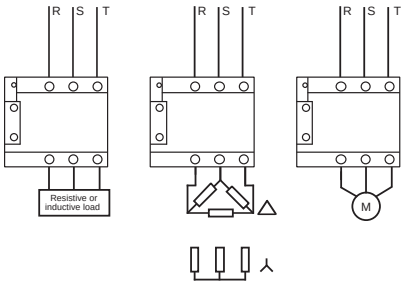


Figure 2 — E3P relays

INPUT (CONTROL) SPECIFICATION

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

CONTROL CHARACTERISTIC

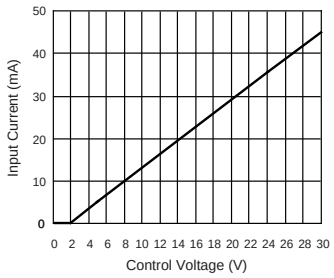


Figure 3a — All E3P relays except E3P48A50 and E3P48A75

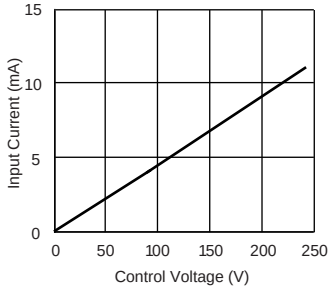


Figure 3b — E3P48A50 and E3P48A75

BLOCK DIAGRAM

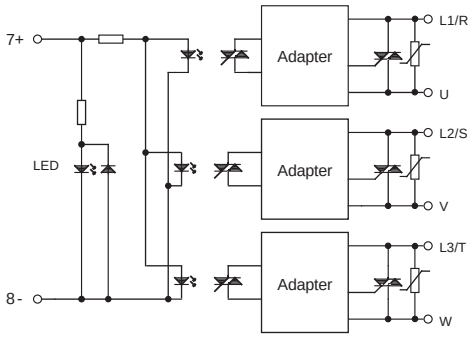


Figure 4a — E3P48R50-16

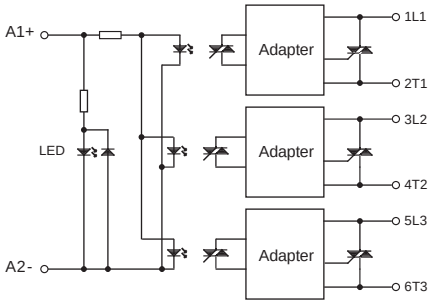


Figure 4b — E3P48D relays

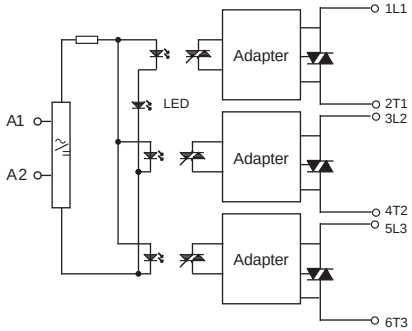


Figure 4c — E3P48A50 and E3P48A75

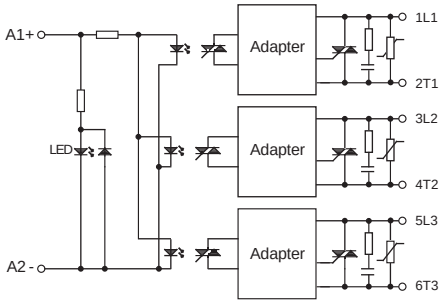


Figure 4d — E3P48DXX-16

OUTPUT (LOAD) SPECIFICATION

	Min	Max	Units
Operating Range			
E3P48XX-16	24	520	Vrms
E3P48	24	600	Vrms
Peak Voltage			
All Relays		1200	Vpeak
Load Current Range			
12A output current	.005	12	Arms
25A output current	.005	25	Arms
50A output current	.005	50	Arms
75A output current	.005	75	Arms
Inductive Load Current			
E3P with -16 option 50A output		12	Arms
E3P with -16 option 75A output		16	Arms
Maximum Surge Current Rating (Non-Repetitive)			
12A output		120	A
25A output		230	A
50A output		550	A
75A output		1000	A
On-State Voltage Drop			
All relays output current		1.4	V
Zero-Cross Window (Typical)			
E3P48DXX-16		12	V
E3P48		24	V
E3P48R		N/A	
Off-State Leakage Current (60 Hz)			
E3P48DXX-16		5	mA
All other relays		1	mA
Turn-On Time (60 Hz)			
E3P48R		0.1	ms
All relays		8.3	ms

OUTPUT (LOAD) SPECIFICATION (Continued)

	Min	Max	Units
Turn-Off Time (60 Hz)			
All relays		8.3	ms
Off-State dv/dt			
All relays		500	V/µs
Maximum di/dt (Non-Repetitive)			
All relays		50	A/µs
Operating Frequency Range			
E3P48D50	10	680	Hz
All other relays	10	440	Hz
I^2t for Match Fusing (<8.3 ms)			
12A output		72	A^2S
25A output		265	A^2S
50A output		1500	A^2S
75A output		5000	A^2S

ENVIRONMENTAL SPECIFICATION

	Min	Max	Units
Operating Temperature			
E3P48D50	-55	100	ºC
All other relays	-40	100	ºC
Storage Temperature			
E3P48D50	-55	100	ºC
All other relays	-40	100	ºC
Input-Ouput Isolation	4000		Vrms
Output-Case Isolation			
E3P48D50	2500		Vrms
E3P48D50	2500		Vrms
All other relays	3300		Vrms

THERMAL CHARACTERISTICS

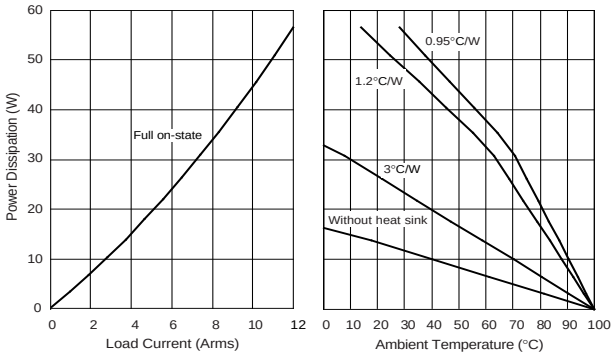


Figure 5a — 12A output

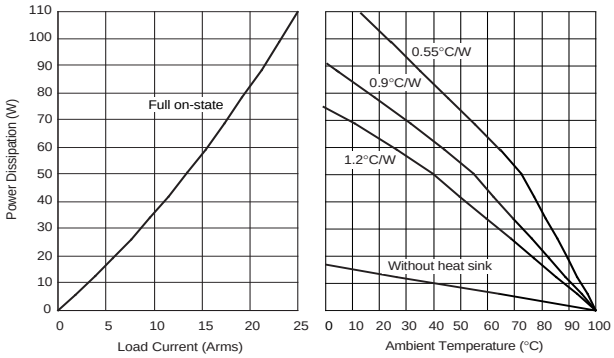


Figure 5b — 25A output

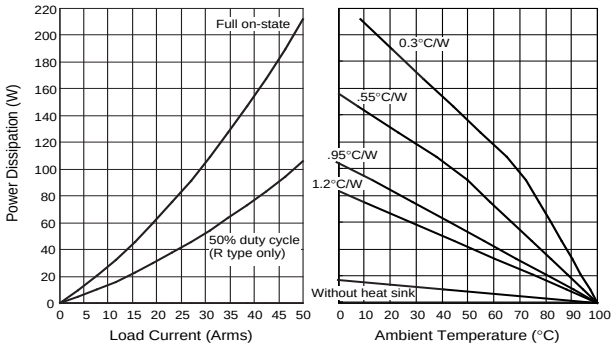


Figure 5c — 50A output

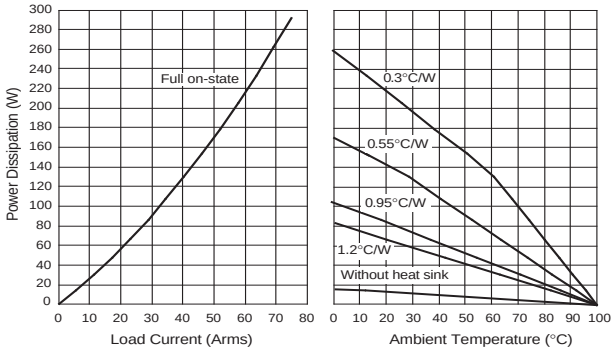


Figure 5d — 75A output

SURGE CURRENT

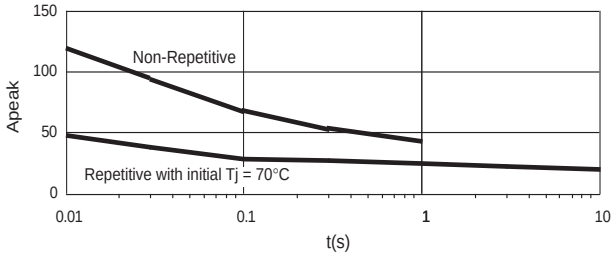


Figure 6a— 12A output

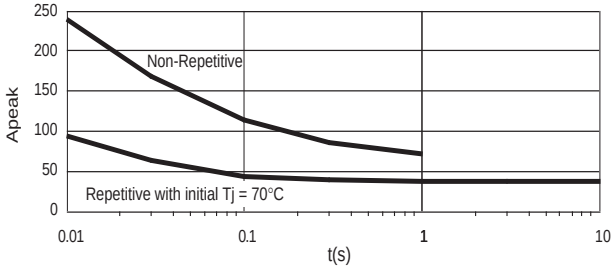


Figure 6b— 25A output

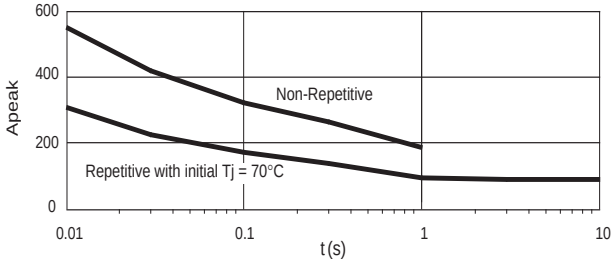


Figure 6c— 50A output

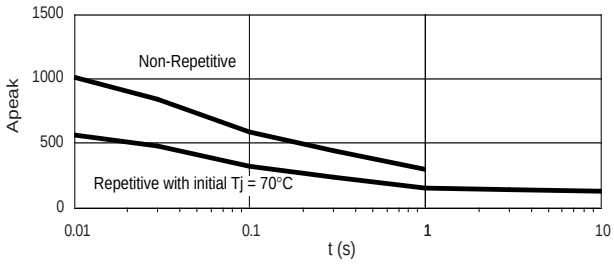


Figure 6d— 75A output

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

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