



A Unit of Teledyne Electronics and Communications

Series C3P

Three-Phase Output 25A 280 Vac
DC control

Part Number	Description
C3P24D25	25A, 280 Vac
C3P24D25C	25A, 280 Vac

Part Number Explanation

C3P **24** **D** **25**
 Series Line Voltage¹ Switch Type² Output Current - Amps

NOTES

- 1) Line Voltage (nominal): 24 = 240 Vac
- 2) Switch Type: D = Zero-cross turn-on
- 3) Thermal pad available, contact factory

MECHANICAL SPECIFICATION

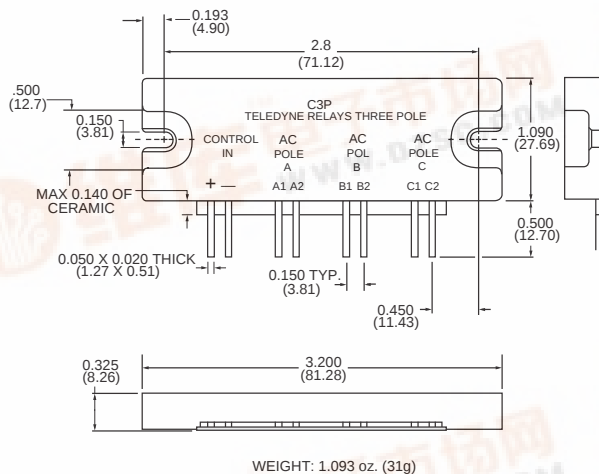


Figure 1 — C3P relay; dimensions in inches (mm)

INPUT (CONTROL) SPECIFICATION

	Min	Max	Units
Control Range			
C3P24D25	10	30	Vdc
C3P24D25C	3.5	10	Vdc
Input Current Range	9	30	mA
Must Turn-off Voltage		1	Vdc
Input Resistance	(See Figure 2)		
Reverse Voltage			
C3P24D25		30	V
C3P24D25C		10	V



FEATURES/BENEFITS

- Three-phase solid-state relay in a compact SIP package
- High-temperature plastic housing for mechanical ruggedness
- Tight zero-cross window for low EMI
- Exposed ceramic baseplate for reduced thermal resistance

DESCRIPTION

The Series C3P three-phase AC solid-state relays are designed to control medium amounts of power in three-phase applications. Optical isolation ensures complete protection of the C3P's control circuit from load transients. The C3P's compact plastic housing provides a low-cost alternative to large metallic three-phase contactors. The C3P is designed with heatsinking in mind. The ceramic baseplate provides excellent thermal performance. The relay's tight zero-cross window greatly reduces EMI.

APPLICATIONS

- Heating control
- HVAC controls
- Light/Lamp control
- Three-phase AC loads

CONTROL CHARACTERISTIC

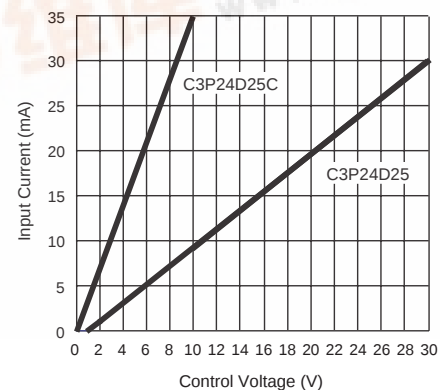


Figure 2 — Control Characteristics

OUTPUT (LOAD) SPECIFICATION

	Min	Max	Unit
Operating Range	24	280	Vrms
Peak Voltage		600	V
Load Current Range	.05	25	Arms
(See Figure 5)			
Maximum Surge Current Rating (Non-Repetitive, see Figure 4)		250	A
On-State Voltage Drop	$1.08 + (0.016 \times I)$		V
Zero-Cross Window		± 12	V
Off-State Leakage Current (60Hz)		1	mA
Turn-On Time		8.3	ms
Turn-Off Time		8.3	ms
Off-State dv/dt		500	V/ μ s
Operating Frequency Range	47	440	Hz
I ² t for match fusing (<8.3ms)		260	A ² S

ENVIRONMENTAL SPECIFICATION

	Min	Max	Unit
Operating Temperature	-40	100	°C
Storage Temperature	-40	100	°C
Input-Output Isolation	2500		Vi
Output-Case Isolation	2500		Vi
Rated Impulse Voltage	2500		V

BLOCK DIAGRAM

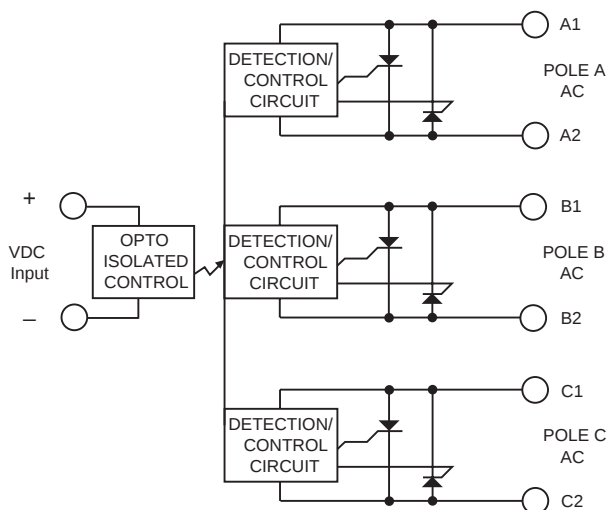


Figure 3 — Block Diagram

SURGE CURRENT

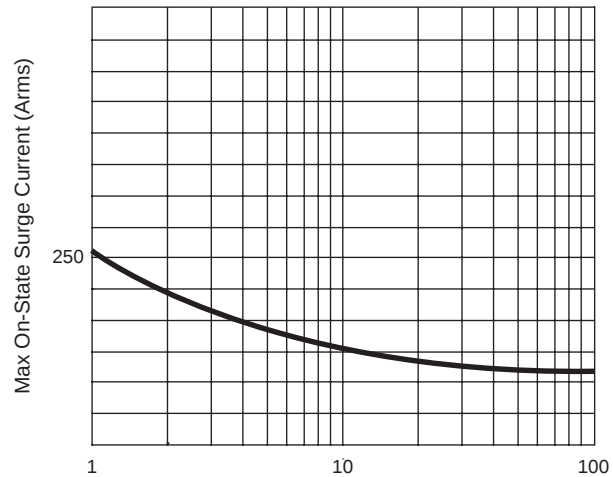


Figure 4 — Surge Current Curves

THERMAL CHARACTERISTICS

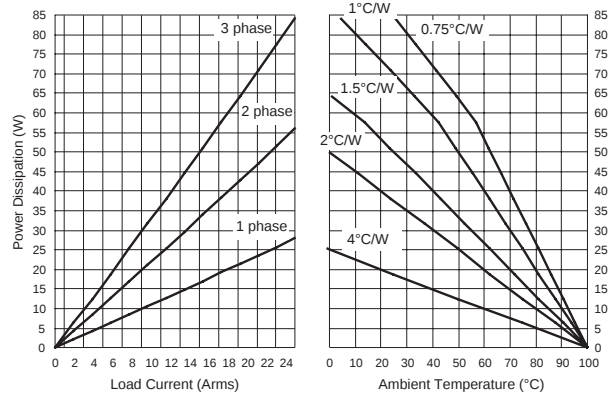


Figure 5 — Current Derating Curves

NOTES:

1. Electrical specifications at 25°C unless otherwise noted.
2. External MOV or snubber is recommended for transient suppression.
3. For 800Hz applications, contact factory.
4. For additional/custom options, contact factory.