



# Series 1

10-90Amp • 120, 240 Vac • AC Output

- Zero Voltage and Random Turn-On Switching
- Panel Mount
- 600V Blocking Capability
- Internal Snubber
- 110 & 125A Models Available

Featuring state-of-the-art Surface Mount Technology, these SPST-NO relays deliver proven reliability in the most demanding applications. Output consists of an SCR AC switch and is available in zero-cross, random turn-on (phase controllable) and normally closed (Form B) versions with either AC or DC input (coil) control.

Manufactured in Crydom's ISO 9002 Certified facility for optimum product performance and reliability.

| MODEL NUMBERS                                                         | AC CONTROL | A1210                                          | A1225  | A1240  | A2410  | A2425  | A2450  | A2475  | A2490  |
|-----------------------------------------------------------------------|------------|------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|
|                                                                       | DC CONTROL | D1210                                          | D1225  | D1240  | D2410  | D2425  | D2450  | D2475  | D2490  |
| <b>OUTPUT SPECIFICATIONS ①</b>                                        |            |                                                |        |        |        |        |        |        |        |
| Operating Voltage (47-63 Hz) [Vrms]                                   |            | 24-140                                         | 24-140 | 24-140 | 24-280 | 24-280 | 24-280 | 24-280 | 24-280 |
| Max. Load Current ③ [Arms]                                            |            | 10                                             | 25     | 40     | 10     | 25     | 50     | 75     | 90     |
| Min. Load Current, [mArms]                                            |            | 40                                             | 40     | 40     | 40     | 40     | 40     | 40     | 40     |
| Transient Overvoltage [Vpk]                                           |            | 400                                            | 400    | 400    | 600    | 600    | 600    | 600    | 600    |
| Max. Surge Current, (16.6ms) [Apk]                                    |            | 120                                            | 250    | 625    | 120    | 250    | 625    | 1000   | 1200   |
| Max. On-State Voltage Drop @ Rated Current [Vpk]                      |            | 1.6                                            | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    | 1.6    |
| Thermal Resistance Junction to Case (R <sub>θJC</sub> ) [°C/W]        |            | 1.48                                           | 1.02   | 0.63   | 1.48   | 1.02   | 0.63   | 0.31   | 0.28   |
| Maximum I <sup>2</sup> t for Fusing, (8.3 msec.) [A <sup>2</sup> sec] |            | 60                                             | 260    | 1620   | 60     | 260    | 1620   | 4150   | 6000   |
| Max. Off-State Leakage Current @ Rated Voltage [mArms]                |            | 8                                              | 8      | 8      | 10     | 10     | 10     | 10     | 10     |
| Min. Off-State dv/dt @ Max. Rated Voltage [V/μsec]②                   |            | 500                                            | 500    | 500    | 500    | 500    | 500    | 500    | 500    |
| Max. Turn-On Time ④                                                   |            | 1/2 Cycle (DC Control), 10.0 msec (AC Control) |        |        |        |        |        |        |        |
| Max. Turn-Off Time                                                    |            | 1/2 Cycle (DC Control), 40.0 msec (AC Control) |        |        |        |        |        |        |        |
| Power Factor (Min.) with Max. Load                                    |            | 0.5                                            | 0.5    | 0.5    | 0.5    | 0.5    | 0.5    | 0.5    | 0.5    |

| INPUT SPECIFICATIONS ①  | DC CONTROL                  | AC CONTROL                     | AC CONTROL<br>(E SUFFIX) |
|-------------------------|-----------------------------|--------------------------------|--------------------------|
| Control Voltage Range   | 3-32 Vdc                    | 90-280 Vrms (60Hz)             | 18-36 Vrms               |
| Max. Reverse Voltage    | -32 Vdc                     | —                              | —                        |
| Max. Turn-On Voltage    | 3.0 Vdc                     | 90 Vrms                        | 18 Vrms                  |
| Min. Turn-Off Voltage   | 1.0 Vdc                     | 10 Vrms                        | 4.0 Vrms                 |
| Nominal Input Impedance | 1500 Ohms                   | 60K Ohms                       | 9.0K Ohms                |
| Typical Input Current   | 3.4mA @ 5 Vdc, 20mA @ 28Vdc | 2mA @ 120 Vrms, 4mA @ 240 Vrms | 3mA @ 24 Vrms            |

## GENERAL NOTES

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① All parameters at 25°C unless otherwise specified.

② Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1

③ Heat sinking required, for derating curves see page 2.

④ Turn-on time for random turn-on versions is 0.02 msec (DC Control Models).

For recommended applications and more information contact:

USA: (800) 8 CRYDOM • (800) 827-9366 • (619) 715-7200 • fax (619) 715-7280

Crydom Corp, 9525 Chesapeake Drive, San Diego, CA 92123 • e-mail: sales@crydom.com

WEB SITE: <http://www.crydom.com> FASTFAX Product Information: (888) 267-9191

UK: (44)1202 812300 • fax (44)1202 812340 Crydom International Ltd., 85, Condor Close, Woolsbridge Industrial Estate, Three-Legged Cross, Wimborne, Dorset, England BH21 6SU

GERMANY: (49) (0)6874 182580 • fax (49)(0)6874 182585 Crydom GmbH,

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# CRYDOM

Control over power

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### GENERAL SPECIFICATIONS

Dielectric Strength 50/60Hz Input/Output/Base 4000 Vrms

Insulation Resistance (Min.) @ 500 Vdc 10<sup>9</sup> Ohm

Max. Capacitance Input/Output 8 pF

Ambient Operating Temperature Range -40 to 80°C

Ambient Storage Temperature Range -40 to 125°C

### MECHANICAL SPECIFICATIONS

Weight: (typical) 3.0 oz. (86.5g)

Encapsulation: Thermally Conductive Epoxy

Terminals: Screws and Saddle Clamps Furnished, Unmounted

### AVAILABLE OPTIONS

- B** Normally Closed (Form B)  
Example: **D2450-B, A2450-B**
- 4D** 400 Hz Operation  
10-50 Amp Models Only  
Zero Cross Switching Only  
Example: **4D2450**
- E** 24 Vac Input (18-36 Vac)  
Example: **A2450E**
- 10** Random Turn-On (AC & DC Control)  
Phase Controllable (DC Control)  
Example: **D2450-10**
- F** Faston Terminals (Up to 50A Models)  
.250 x .032 Faston Terminals  
Example: **D1225F**

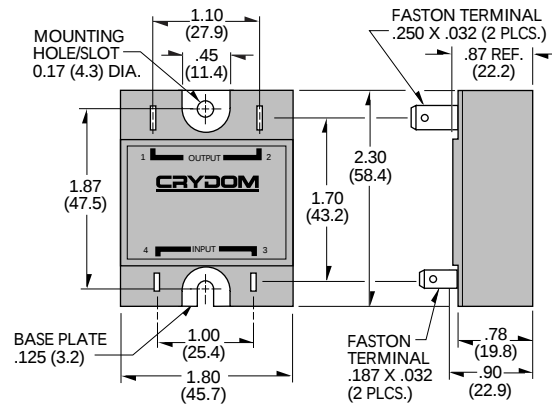
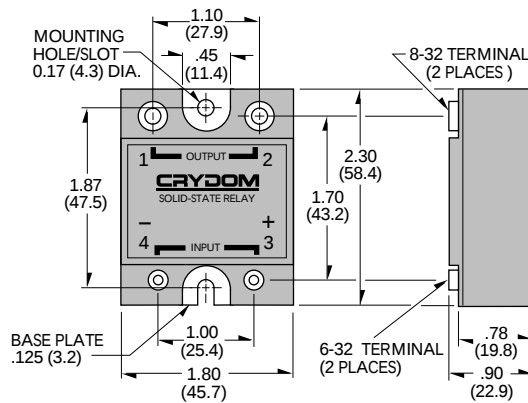
#### Screw Torque Requirements:

6-32 Screws - 10 in./lbs.,  
8-32 and 10-32 Screws - 20 in./lbs.  
(Screws dry without grease.)

#### Fastons:

Single pair (up to 25A)  
Double pair\* (up to 50A).

\*Caution: User must connect to both pairs



**Crydom Heat Sinks** offer excellent thermal management and are perfectly matched to the load current ratings of Crydom panel mount relays. Request Crydom's Heat Sink specification sheet for all the details.

All dimensions are in inches (millimeters)

### APPROVALS

UL E116949  
CSA LR81689  
VDE 10143 UG (Not Applicable: -B and 4D)



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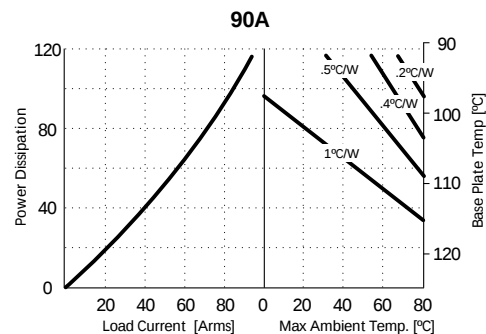
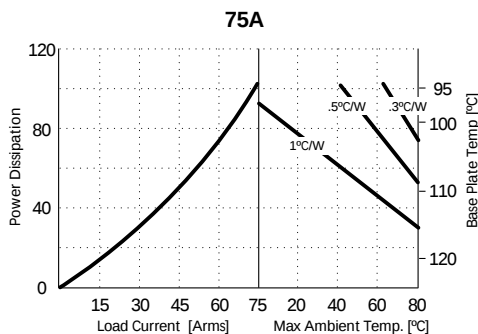
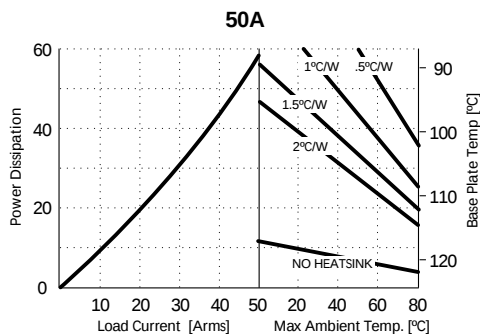
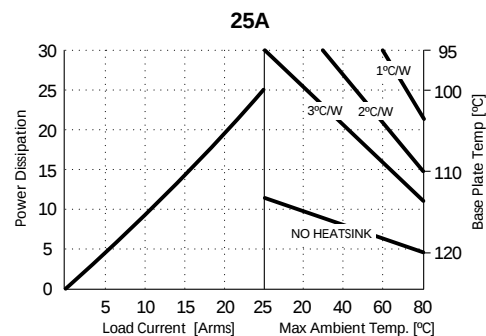
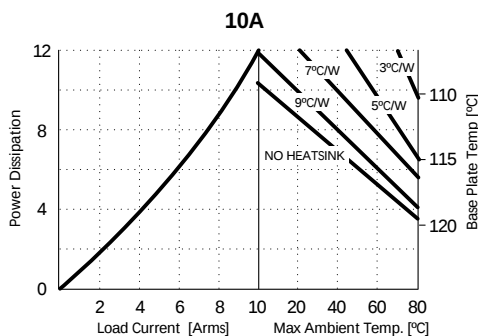
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## CURRENT DERATING CURVES



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