

- Zero Voltage and Random Turn-On Switching
- Panel Mount
- 600V Transient Capability
- Internal Snubber
- 110 & 125A Models Available
- Integrated Overvoltage Protection by Automatic Self Turn-On (Suffix P)

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 9001 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</b> ①  |            |  |        |        |        |        |        |        |        |
| 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    | DC CONTROL                  | AC CONTROL                     | 24V AC/DC CONTROL |
|-------------------------|-----------------------------|--------------------------------|-------------------|
|                         |                             |                                | (E SUFFIX)        |
| Control Voltage Range   | 3-32 Vdc                    | 90-280 Vrms (60Hz)             | 18-36 Vrms/Vdc    |
| Max. Reverse Voltage    | -32 Vdc                     | —                              | —                 |
| Max. Turn-On Voltage    | 3.0 Vdc                     | 90 Vrms                        | 18 Vrms/Vdc       |
| Min. Turn-Off Voltage   | 1.0 Vdc                     | 10 Vrms                        | 4.0 Vrms/Vdc      |
| 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 V        |

### 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 3.
- ④ Turn-on time for random turn-on versions is 0.02 msec (DC Control Models).

For recommended applications and more information contact:  
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**Email:** sales@crydom.com **WEB SITE:** http://www.crydom.com  
**UK:** +44 (0)1202 365070 • **FAX** +44 (0)1202 365090 Crydom International Ltd., 7 Cobham Road, Ferndown Industrial Estate, Ferndown, Dorset BH21 7PE, Email: intsales@crydom.com.  
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### GENERAL SPECIFICATIONS

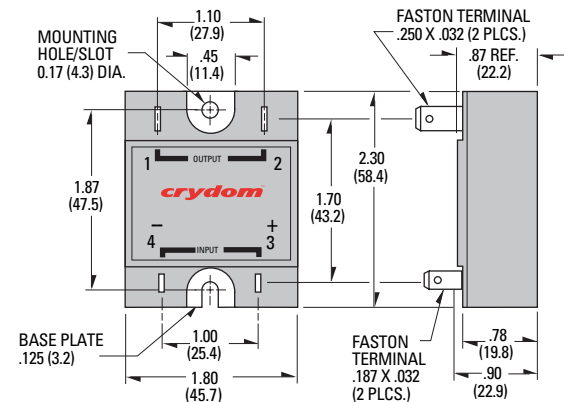
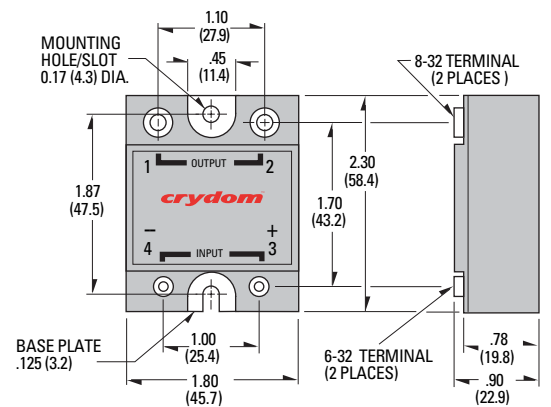
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|---|---------------------|
| Dielectric Strength 50/60Hz Input/Output/Base | 4000 Vrms           |
| Insulation Resistance (Min.) @ 500 Vdc        | 10 <sup>9</sup> Ohm |
| Max. Capacitance Input/Output                 | 8 pF                |
| Ambient 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**
- E** 24V AC/DC Input  
Example: **A2450E**
- F** Faston Terminals (Up to 50A Models)  
Example: **D1225F**
- G** Input Status LED.  
Agencies Approval Pending  
Example: **D2450G**  
**Note:** Control Voltage Range 4.5-32Vdc for DC Control Models.
- P** Internal Overvoltage Protection.  
Relay Will Self Trigger Between 450-600 Vpk. Not Suitable For Capacitive Loads.  
Not Available with -B Option  
Agencies Approval Pending.  
Example: **D2425P**
- 4D** 400 Hz Operation  
10-50 Amp Models Only  
Zero Cross Switching Only  
Example: **4D2450**
- 10** Random Turn-On (AC & DC Control)  
Phase Controllable (DC Control)  
Example: **D2450-10**
- H** Heat Transfer Pad (Attached)  
Example: **D2450H**



**Screw Torque Requirements:**  
6-32 Screws - 10 in. lbs.,  
8-32 and 10-32 Screws - 20in. lbs.  
(Screws dry without grease.)

**Fastons:**  
Single pair (up to 25A)  
Double pair\* (up to 50A).  
**\*Caution: User must connect to both pairs**

All dimensions are in inches (millimeters)

**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.

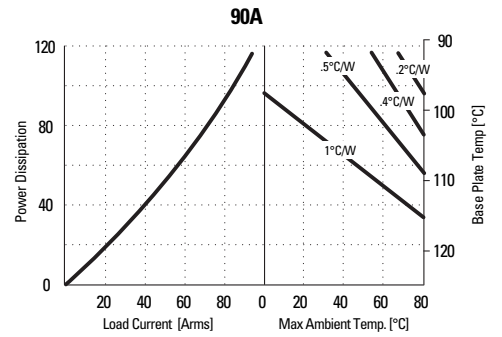
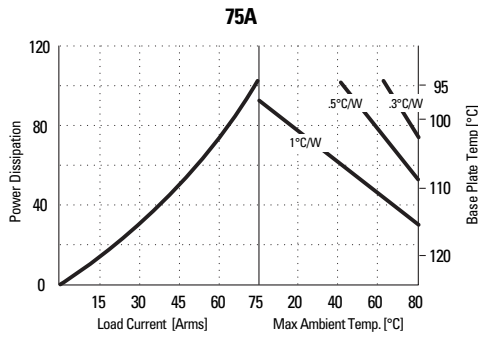
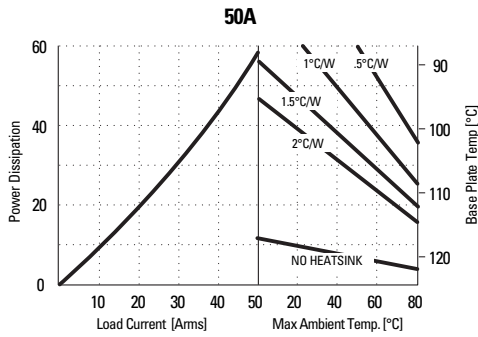
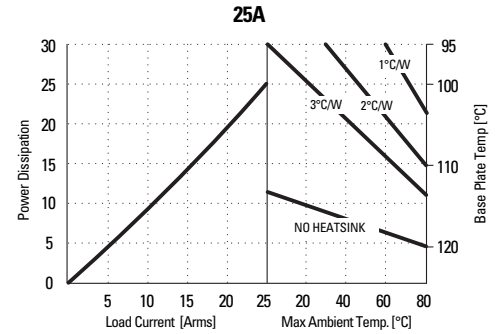
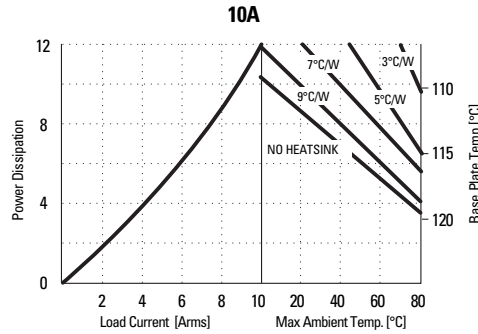
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### APPROVALS

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



## CURRENT DERATING CURVES



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