



# Series HA, Series HD

12-90Amp • 480 Vac • AC Output

- **Zero Voltage and Random Turn-On Switching**
- **Panel Mount**
- **1200V Transient Capability**
- **Integrated Overvoltage Protection by Automatic Self Turn-On (Suffix P)**
- **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 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	HA4812	HA4825	HA4850	HA4875	HA4890
	DC CONTROL	HD4812	HD4825	HD4850	HD4875	HD4890

## OUTPUT SPECIFICATIONS<sup>①</sup>

Operating Voltage (47-63 Hz) [Vrms]	48-530	48-530	48-530	48-530	48-530
Max. Load Current <sup>③</sup> [Arms]	12	25	50	75	90
Min. Load Current, [mArms]	40	40	40	40	40
Transient Overvoltage [Vpk]	1200	1200	1200	1200	1200
Max. Surge Current, (16.6ms) [Apk]	140	250	625	1000	1200
Max. On-State Voltage Drop @ Rated Current [Vpk]	1.7	1.7	1.7	1.7	1.7
Thermal Resistance Junction to Case ( $R_{\theta JC}$ ) [°C/W]	1.48	1.02	0.63	0.31	0.28
Maximum $I^2 t$ for Fusing, (8.3 msec.) [ $A^2 sec$ ]	81	260	1620	4150	6000
Max. Off-State Leakage Current @ Rated Voltage [mArms]	10	10	10	10	10
Min. Off-State dv/dt @ Max. Rated Voltage [V/μsec] <sup>②</sup>	500	500	500	500	500
Max. Turn-On Time <sup>⑤</sup>	1/2 Cycle (DC Input), 10.0 msec (AC Input)				
Max. Turn-Off Time	1/2 Cycle (DC Input), 40.0 msec (AC Input)				
Power Factor (Min.) with Max. Load	0.5	0.5	0.5	0.5	0.5

## INPUT SPECIFICATIONS<sup>①</sup>

	DC CONTROL (D PREFIX)	AC CONTROL (A PREFIX) <sup>④</sup>	AC CONTROL (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	See Note <sup>⑥</sup>	60K Ohms	9.0K Ohms
Typical Input Current	2.0 mA <sup>⑥</sup>	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 24 Vac Input option, E suffix.
- ⑤ Turn-on time for random turn-on versions is 0.02 msec (DC Control Models).
- ⑥ Input circuitry incorporates active current limiter.



# CRYDOM

Control over power

## Series HA, Series HD

12-90Amp • 480 V ac • AC Output

### GENERAL SPECIFICATIONS

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

Insulation Resistance (Min.) @ 500 Vdc  $10^9$  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

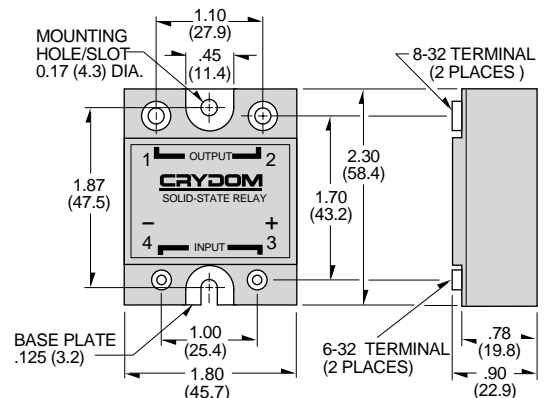
### AVAILABLE OPTIONS

- E** 24 VAC Input (18-36 Vac)  
Example: **HA4825E**
- F** Faston Terminals (Up to 50 Amp Models)  
Example: **HD4850F**
- G** Input Status LED.  
Agencies Approval Pending  
Example: **HD4850G**  
**Note:** Control Voltage Range 4.5-32 Vdc  
for DC Control Models.
- P** Internal Overvoltage Protection.  
Relay Will Self Trigger Between  
900-1200 Vpk. Not Suitable For  
Capacitive Loads.  
Agencies Approval Pending.  
Example: **HD4825P**
- 10** Random Turn-On (AC & DC Control)  
Phase Controllable (DC Control)  
Example: **HD4890-10**

**Ordering System:** Combination of the  
suffixes should be made in the following order:  
**EFPG-10.**

Example: **HA4850EFPG-10**

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



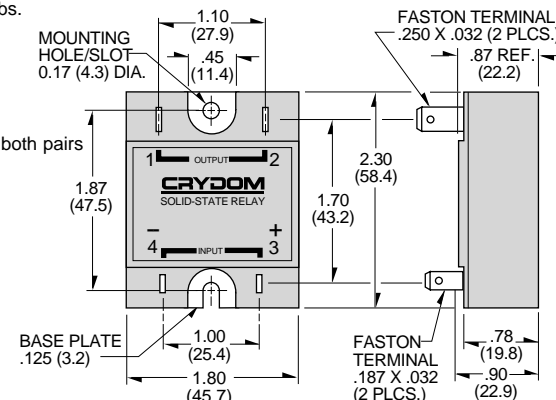
### Screw Torque Requirements:

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)

### APPROVALS

UL E116949  
CSA LR81689  
VDE 10143 UG



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For recommended applications and more information contact:

**USA:** Sales Support (877) 502-5500 Tech Support (877) 702-7700 FAX (619) 710-8540

Crydom Corp, 2320 Paseo de las Americas, Ste. 201, San Diego, CA 92154

**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.

**GERMANY:** +49 (0)180 3000 506



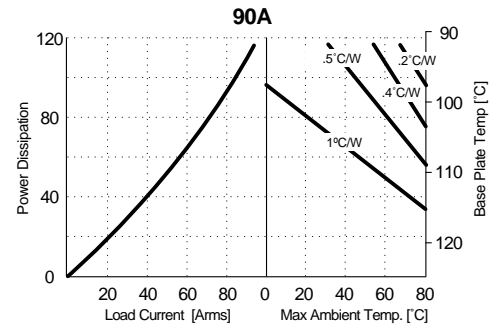
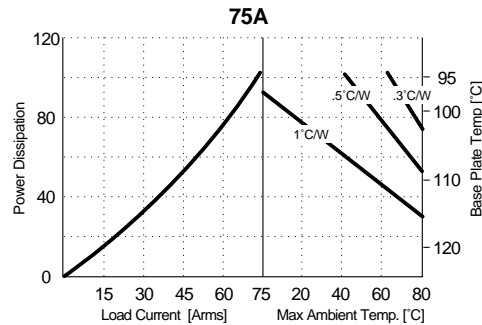
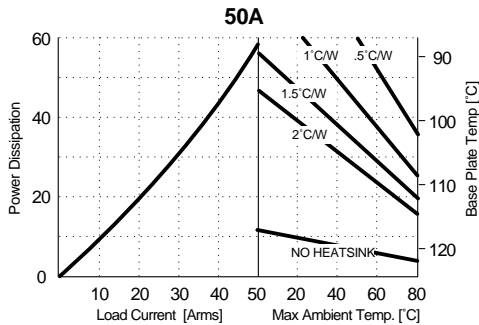
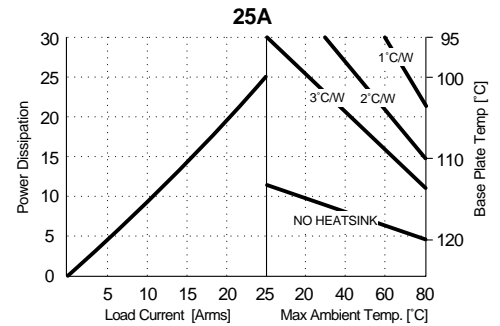
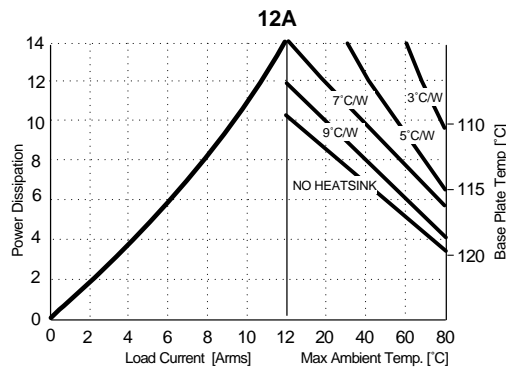
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## CURRENT DERATING CURVES



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