



# 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 DC CONTROL	HA4812 HD4812	HA4825 HD4825	HA4850 HD4850	HA4875 HD4875	HA4890 HD4890
<b>OUTPUT SPECIFICATIONS ①</b>						
Operating Voltage (47-63 Hz) [Vrms]		48-530	48-530	48-530	48-530	48-530
Max. Load Current ③ [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 <sub>θJC</sub> ) [°C/W]		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]		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] ②		500	500	500	500	500
Max. Turn-On Time ⑤		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 ①	DC CONTROL (D PREFIX)	AC CONTROL (A PREFIX) ④	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 ⑥	60K Ohms	9.0K Ohms
Typical Input Current	2.0 mA ⑥	2mA @ 120 Vrms, 4mA @ 240 Vrms	3mA @ 24 Vrms

## GENERAL NOTES

- 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.

© 2002 CRYDOM CORP. Specifications subject to change without notice.



**National Plastic Heater Sensor & Control Co.**

phone: 416.491.8436 toll free: 1.877.674.9744 fax: 416.491.2433  
 Toronto, Ontario Canada e-mail: sales@nphheaters.com website www.nphheaters.com



# 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 <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

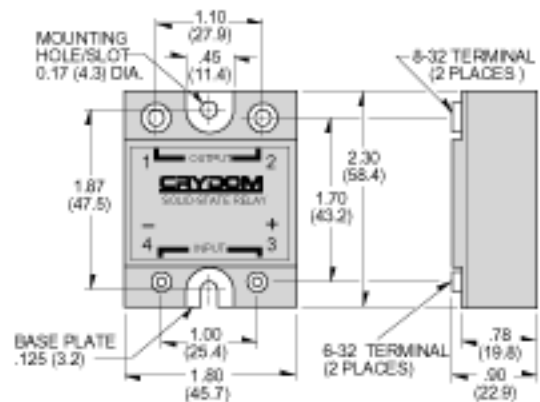
## AVAILABLE OPTIONS

- 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.**

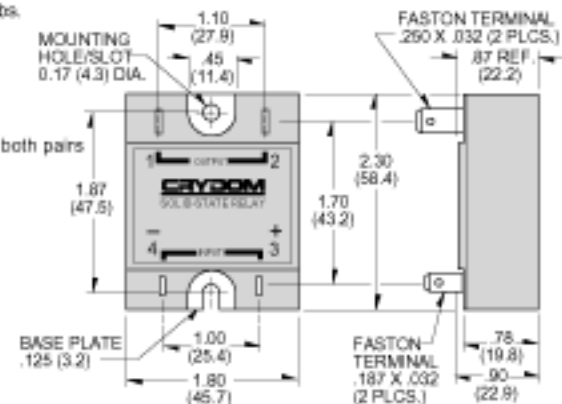
Example: **HA4850EFPG-10**

**Crydom Heat Sinks** offer excellent thermal management and are perfectly 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)

© 2002 CRYDOM CORP. Specifications subject to change without notice.



**National Plastic Heater Sensor & Control Co.**

phone: 416.491.8436 toll free: 1.877.674.9744 fax: 416.491.2433

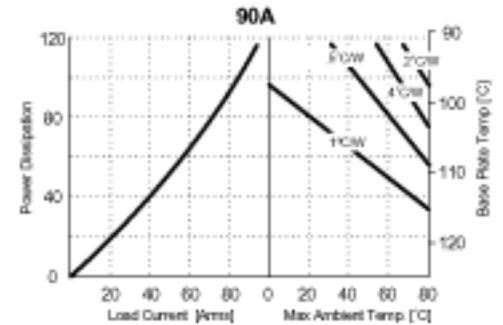
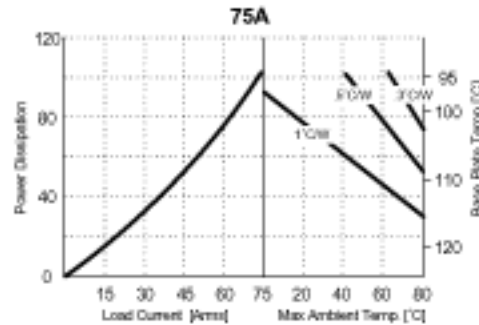
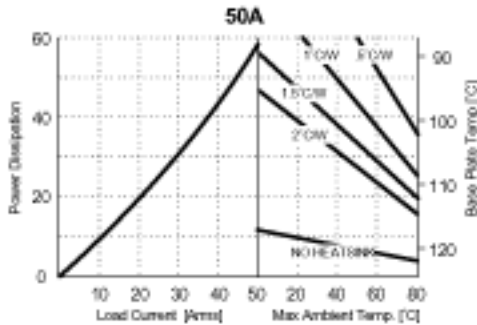
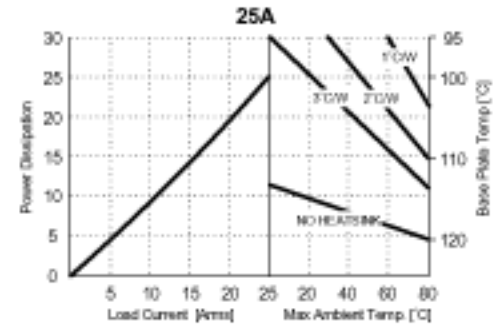
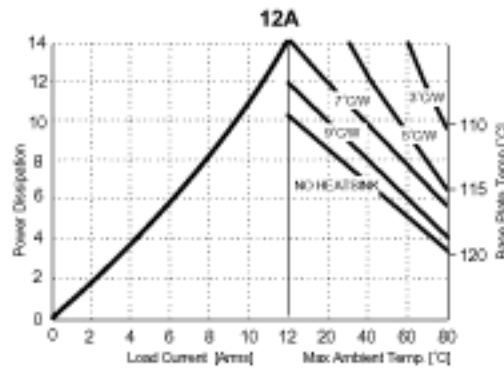
Toronto, Ontario Canada e-mail: sales@npheaters.com website www.npheaters.com

# Series HA, Series HD

12-90Amp • 480 Vac • AC Output

**CRYDOM**  
Control over power

## CURRENT DERATING CURVES



© 2002 CRYDOM CORP, Specifications subject to change without notice.



**National Plastic Heater Sensor & Control Co.**

phone: 416.491.8436 toll free: 1.877.674.9744 fax: 416.491.2433  
Toronto, Ontario Canada e-mail: sales@nphheaters.com website www.nphheaters.com