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Solid State Relays - Panel Mount: HA/HD48



Features

SCR output • 12-90Amp • 48-530 Vrms • AC Switching • AC/DC control • 1200 Vpk blocking voltage capability.

Product	INPUT SPECIFICATIONS	OUTPUT SPECIFICATIONS			
	Control Voltage Range	Load Current	Switching Voltage Type	Turn On	Load Voltage Range
HD4812	3-32 Volts DC	0.04-12 Amps RMS	AC	Zero cross	48-530 Volts RMS
HD4812-10	3-32 Volts DC	0.04-12 Amps RMS	AC	Random	48-530 Volts RMS
HD4825	3-32 Volts DC	0.04-25 Amps RMS	AC	Zero cross	48-530 Volts RMS
HD4825-10	3-32 Volts DC	0.04-25 Amps RMS	AC	Random	48-530 Volts RMS
HD4850	3-32 Volts DC	0.04-50 Amps RMS	AC	Zero cross	48-530 Volts RMS
HD4850-10	3-32 Volts DC	0.04-50 Amps RMS	AC	Random	48-530 Volts RMS
HD4875	3-32 Volts DC	0.04-75 Amps RMS	AC	Zero cross	48-530 Volts RMS

HD4875-10	3-32 Volts DC	0.04-75 Amps RMS	AC	Random	48-530 Volts RMS
HD4890	3-32 Volts DC	0.04-90 Amps RMS	AC	Zero cross	48-530 Volts RMS
HD4890-10	3-32 Volts DC	0.04-90 Amps RMS	AC	Random	48-530 Volts RMS
HA4812	90-280 Volts RMS	0.04-12 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4812-10	90-280 Volts RMS	0.04-12 Amps RMS	AC	Random	48-530 Volts RMS
HA4812E	18-36 Volts RMS	0.04-12 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4812E-10	18-36 Volts RMS	0.04-12 Amps RMS	AC	Random	48-530 Volts RMS
HA4825	90-280 Volts RMS	0.04-25 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4825-10	90-280 Volts RMS	0.04-25 Amps RMS	AC	Random	48-530 Volts RMS
HA4825E	18-36 Volts RMS	0.04-25 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4825E-10	18-36 Volts RMS	0.04-25 Amps RMS	AC	Random	48-530 Volts RMS
HA4850	90-280 Volts RMS	0.04-50 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4850-10	90-280 Volts RMS	0.04-50 Amps RMS	AC	Random	48-530 Volts RMS
HA4850E	18-36 Volts RMS	0.04-50 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4850E-10	18-36 Volts RMS	0.04-50 Amps RMS	AC	Random	48-530 Volts RMS
HA4875	90-280 Volts RMS	0.04-75 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4875-10	90-280 Volts RMS	0.04-75 Amps RMS	AC	Random	48-530 Volts RMS
HA4875E	18-36 Volts RMS	0.04-75 Amps RMS	AC	Zero cross	48-530 Volts RMS

HA4875E-10	18-36 Volts RMS	0.04-75 Amps RMS	AC	Random	48-530 Volts RMS
HA4890	90-280 Volts RMS	0.04-90 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4890-10	90-280 Volts RMS	0.04-90 Amps RMS	AC	Random	48-530 Volts RMS
HA4890E	18-36 Volts RMS	0.04-90 Amps RMS	AC	Zero cross	48-530 Volts RMS
HA4890E-10	18-36 Volts RMS	0.04-90 Amps RMS	AC	Random	48-530 Volts RMS

- 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 ①

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 _{θJC}) [°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] 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.

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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

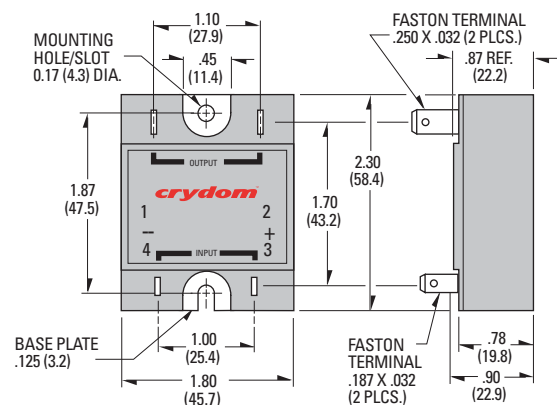
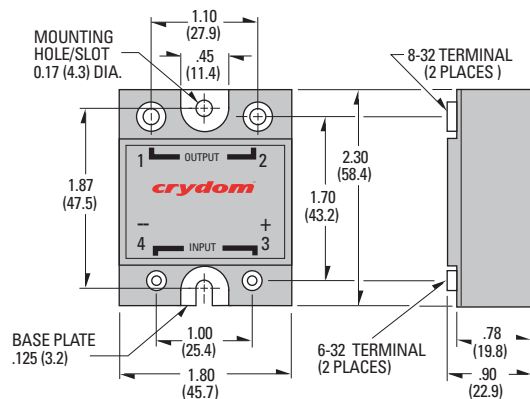
- E** 24 VAC Input (18-36 Vac)
Example: **HA4825E**
- F** Faston Terminals (Up to 50 Amp Models)
Example: **HD4850F**
- G** Input Status LED.
Agencies Approval Pending
Example: **HD4850G**
Note: Control Voltage Range 4.5-32 Vdc for DC Control Models.
- P** Internal Overvoltage Protection.
Relay Will 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**
- H** Heat Transfer Pad (Attached)
Example: **HD4890H**

Ordering System: Combination of the suffixes should be made in the following order:
EPPG-10.
Example: **HA4850EPPG-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. (1.1 Nm),
8-32 and 10-32 Screws - 20in. lbs. (2.2 Nm)
(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

