

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

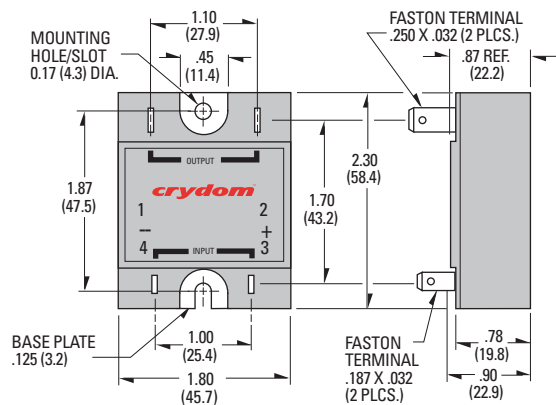
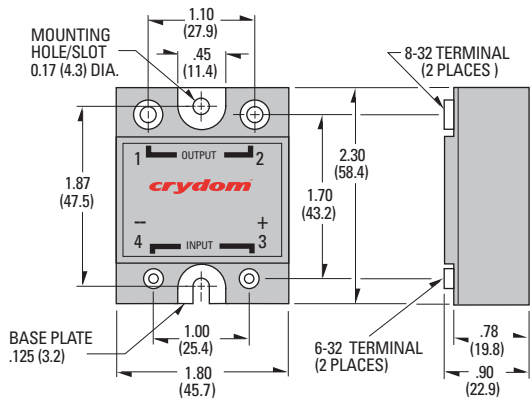
- E** 24 VAC Input (18-36 Vac)
Example: **HA4825E**
- F** Faston Terminals (Up to 50 Amp Models)
Example: **HD4850F**
- G** Input Status LED.
Agencies Approval Pending
Example: **HD4850G**
Note: Control Voltage Range 4.5-32 Vdc for DC Control Models.
- P** Internal Overvoltage Protection.
Relay Will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

