

## Solid State Relays - Panel Mount: S1\_125



### Features

SCR output • 110-125 Amp • 240/480 Vrms • AC Switching • AC/DC control • Ideal for high in-rush current applications where space is a premium.

Product	INPUT SPECIFICATIONS	OUTPUT SPECIFICATIONS			
	Control Voltage Range	Load Current	Switching Voltage Type	Turn On	Load Voltage Range
<b>D24110</b>	3-32 Volts DC	0.15-110 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>D24110-10</b>	3-32 Volts DC	0.15-110 Amps RMS	AC	Random	24-280 Volts RMS
<b>D24125</b>	3-32 Volts DC	0.15-125 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>D24125-10</b>	3-32 Volts DC	0.15-125 Amps RMS	AC	Random	24-280 Volts RMS
<b>HD48110</b>	3-32 Volts DC	0.15-110 Amps RMS	AC	Zero cross	48-530 Volts RMS
<b>HD48110-10</b>	3-32 Volts DC	0.15-110 Amps RMS	AC	Random	48-530 Volts RMS
<b>HD48125</b>	3-32 Volts DC	0.15-125 Amps RMS	AC	Zero cross	48-530 Volts RMS

<b>HD48125-10</b>	3-32 Volts DC	0.15-125 Amps RMS	AC	Random	48-530 Volts RMS
<b>A24110</b>	90-280 Volts RMS	0.15-110 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>A24110-10</b>	90-280 Volts RMS	0.15-110 Amps RMS	AC	Random	24-280 Volts RMS
<b>A24110E</b>	18-36 Volts RMS	0.15-110 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>A24110E-10</b>	18-36 Volts RMS	0.15-110 Amps RMS	AC	Random	24-280 Volts RMS
<b>A24125</b>	90-280 Volts RMS	0.15-125 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>A24125-10</b>	90-280 Volts RMS	0.15-125 Amps RMS	AC	Random	24-280 Volts RMS
<b>A24125E</b>	18-36 Volts RMS	0.15-125 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>A24125E-10</b>	18-36 Volts RMS	0.15-125 Amps RMS	AC	Random	24-280 Volts RMS
<b>HA48110</b>	90-280 Volts RMS	0.15-110 Amps RMS	AC	Zero cross	48-530 Volts RMS
<b>HA48110-10</b>	90-280 Volts RMS	0.15-110 Amps RMS	AC	Random	48-530 Volts RMS
<b>HA48110E</b>	18-36 Volts RMS	0.15-110 Amps RMS	AC	Zero cross	48-530 Volts RMS
<b>HA48110E-10</b>	18-36 Volts RMS	0.15-110 Amps RMS	AC	Random	48-530 Volts RMS
<b>HA48125</b>	90-280 Volts RMS	0.15-125 Amps RMS	AC	Zero cross	48-530 Volts RMS
<b>HA48125-10</b>	90-280 Volts RMS	0.15-125 Amps RMS	AC	Random	48-530 Volts RMS
<b>HA48125E</b>	18-36 Volts RMS	0.15-125 Amps RMS	AC	Zero cross	48-530 Volts RMS
<b>HA48125E-10</b>	18-36 Volts RMS	0.15-125 Amps RMS	AC	Random	48-530 Volts RMS

- Zero Voltage and Random Turn-On Switching
- Panel Mount
- Internal Snubber
- 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 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	A24110	A24125	HA48110	HA48125
	DC CONTROL	D24110	D24125	HD48110	HD48125
<b>OUTPUT SPECIFICATIONS ①</b>					
Operating Voltage (47-63 Hz) [Vrms]		24-280	24-280	48-530	48-530
Max. Load Current ③ [Arms]		110	125	110	125
Min. Load Current, [mArms]		150	150	150	150
Transient Overvoltage [Vpk]		600	600	1200	1200
Max. Surge Current, (16.6ms) [Apk]		1500	1750	1500	1750
Max. On-State Voltage Drop @ Rated Current [Vpk]		1.7	1.7	1.7	1.7
Thermal Resistance Junction to Case (R <sub>qJC</sub> ) [°C/W]		.25	.22	.25	.22
Maximum I <sup>2</sup> t for Fusing, (8.3 msec.) [A <sup>2</sup> sec]		9,340	12,700	9,340	12,700
Max. Off-State Leakage Current @ Rated Voltage [mArms]		10	10	10	10
Min. Off-State dv/dt @ Max. Rated Voltage [V/μsec] ②		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

INPUT SPECIFICATIONS ①	DC CONTROL (D PREFIX)	AC CONTROL (A PREFIX)	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 (120/240V Models) ⑤	60K Ohms	9.0K Ohms
Typical Input Current	3.4mA @ 5 Vdc, 20mA @ 28Vdc ⑤	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 2.  
 ④ Turn-on time for random turn-on versions is 0.02 msec (DC Control Models).  
 ⑤ Input circuitry for 480V models incorporates active current limiter with 2mA typical input current.

### 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

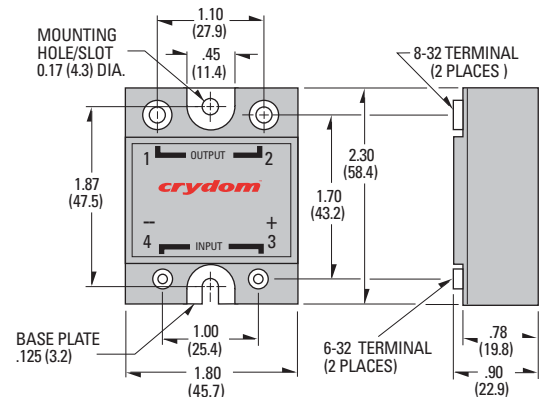
### AVAILABLE OPTIONS

- E** 24V AC/DC Input  
Example: **A24110E**
- G** Input Status LED.  
Agencies Approval Pending  
Example: **HD48125G**  
**Note:** Control Voltage Range 4.5-32Vdc for DC Control Models.
- P** Internal Overvoltage Protection.  
Relay Will Self Trigger Between 450-600 Vpk (for 240Vac Models 125A) & 900-1200Vpk (for 480Vac Models 125A).  
Not Suitable For Capacitive Loads.  
Agencies Approval Pending.  
Example: **D24125P (AC & DC Control)**  
Example: **HD48125P (AC & DC Control)**
- 10** Random Turn-On (AC & DC Control)  
Phase Controllable (DC Control)  
Example: **D24110-10**
- H** Heat Transfer Pad (Attached)  
Example: **D24110H**

**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.

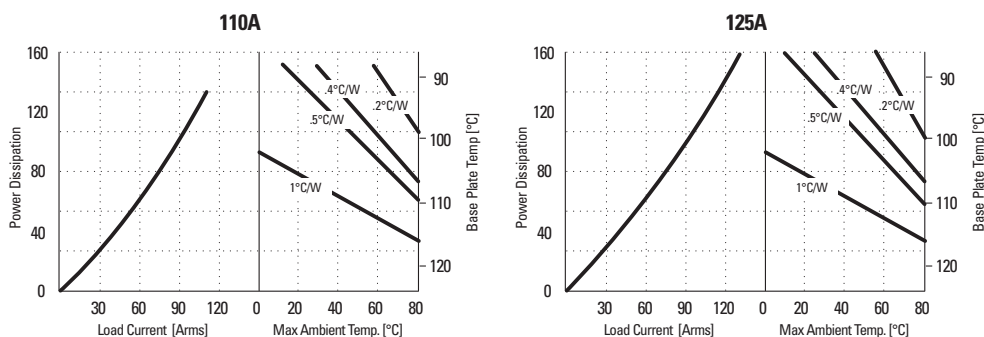
**Screw Torque Requirements:**  
6-32 Screws - 10 in./lbs.,  
8-32 and 10-32 Screws - 20in./lbs.  
(Screws dry without grease.)

**Ordering System:** Combination of the suffixes should be made in the following order:  
**EPG-10.**  
Example: **HA48125EPG-10**



All dimensions are in inches (millimeters)

### CURRENT DERATING CURVES



### APPROVALS

UL E116950



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