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## Solid State Relays - Panel Mount: CS



### Features

SCR output • 10-90Amp • 120/240 Vrms • AC Switching • DC controlled with 3.5 - 15 VDC and 15 - 32 VDC control options • Snubberless.

Product	INPUT SPECIFICATIONS	OUTPUT SPECIFICATIONS			
	Control Voltage Range	Load Current	Switching Voltage Type	Turn On	Load Voltage Range
<b>CSD2410</b>	3.5-15 Volts DC	0.15-10 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSD2410-10</b>	3.5-15 Volts DC	0.15-10 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSD2425</b>	3.5-15 Volts DC	0.15-25 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSD2425-10</b>	3.5-15 Volts DC	0.15-25 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSD2450</b>	3.5-15 Volts DC	0.15-50 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSD2450-10</b>	3.5-15 Volts DC	0.15-50 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSD2475</b>	3.5-15 Volts DC	0.25-75 Amps RMS	AC	Zero cross	24-280 Volts RMS

<b>CSD2475-10</b>	3.5-15 Volts DC	0.25-75 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSD2490</b>	3.5-15 Volts DC	0.25-90 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSD2490-10</b>	3.5-15 Volts DC	0.25-90 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSE2410</b>	15-32 Volts DC	0.15-10 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSE2410-10</b>	15-32 Volts DC	0.15-10 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSE2425</b>	15-32 Volts DC	0.15-25 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSE2425-10</b>	15-32 Volts DC	0.15-25 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSE2450</b>	15-32 Volts DC	0.15-50 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSE2450-10</b>	15-32 Volts DC	0.15-50 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSE2475</b>	15-32 Volts DC	0.25-75 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSE2475-10</b>	15-32 Volts DC	0.25-75 Amps RMS	AC	Random	24-280 Volts RMS
<b>CSE2490</b>	15-32 Volts DC	0.25-90 Amps RMS	AC	Zero cross	24-280 Volts RMS
<b>CSE2490-10</b>	15-32 Volts DC	0.25-90 Amps RMS	AC	Random	24-280 Volts RMS

- Low Leakage
- SCR Output
- Panel Mount
- Zero and Random Voltage Switching
- Internal Overvoltage Protection Available

The Series CS has an SCR AC switch output featuring low off-state leakage (1mA, snubberless), zero and random voltage switching and a broadened operating range (24-280Vac). This wide range permits optimum performance at both 120Vac and 240Vac line voltages.

Manufactured in Crydom's ISO 9001 Certified facility for optimum product performance and reliability.

MODEL NUMBERS	CSD2410 CSE2410	CSD2425 CSE2425	CSD2450 CSE2450	CSD2475 CSE2475	CSD2490 CSE2490
<b>OUTPUT SPECIFICATIONS<sup>①</sup></b>					
Operating Voltage (47-63 Hz) [Vrms]	24-280	24-280	24-280	24-280	24-280
Load Current Range <sup>③</sup> [Arms]	0.15-10	0.15-25	0.15-50	0.25-75	0.25-90
Transient Overvoltage [Vpk]	600	600	600	600	600
Max. Surge Current, (16.6ms) [Apk]	120	250	625	1000	1200
Max. On-State Voltage Drop @ Rated Current [Vpk]	1.6	1.6	1.6	1.6	1.6
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]	60	260	1620	4150	6000
Max. Off-State Leakage Current @ Rated Voltage [mA]	1.0	1.0	1.0	1.0	1.0
Min. Off-State dv/dt @ Max. Rated Voltage [V/μsec] <sup>②</sup>	500	500	500	500	500
Max. Turn-On Time <sup>④</sup>	1/2 Cycle	1/2 Cycle	1/2 Cycle	1/2 Cycle	1/2 Cycle
Max. Turn-Off Time	1/2 Cycle	1/2 Cycle	1/2 Cycle	1/2 Cycle	1/2 Cycle
Power Factor (Min.) with Max. Load	0.5	0.5	0.5	0.5	0.5

## INPUT SPECIFICATIONS<sup>①</sup>

	DC CONTROL (CSD PREFIX)	DC CONTROL (CSE PREFIX)
Control Voltage Range	3.5-15 Vdc	15-32 Vdc
Max. Turn-On Voltage	3.5 Vdc	15.0 Vdc
Min. Turn-Off Voltage	1.0 Vdc	1.0 Vdc
Nominal Input Impedence	300 Ohm	2k Ohm
Typical Input Current	15 mA @ 5 Vdc	7mA @ 15 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 version (-10 suffix) is 0.1ms

### GENERAL SPECIFICATIONS

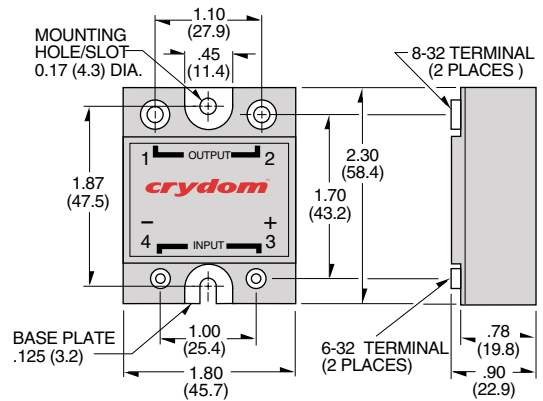
Dielectric Strength 50/60Hz , Input/Output/Base	4000 Vrms
Insulation Resistance (Min.) @ 500 Vdc	10 <sup>9</sup> Ohm
Max. Capacitance Input/Output	10 pF
Ambient Operating Temperature Range	-40 to 80°C
Ambient Storage Temperature Range	-40 to 125°C

### MECHANICAL SPECIFICATIONS

Weight: (typical)	3.0 oz. (86.5g)
Encapsulation:	Thermally Conductive Epoxy
Terminals:	Screws and Saddle Clamps Furnished, Unmounted

### AVAILABLE OPTIONS

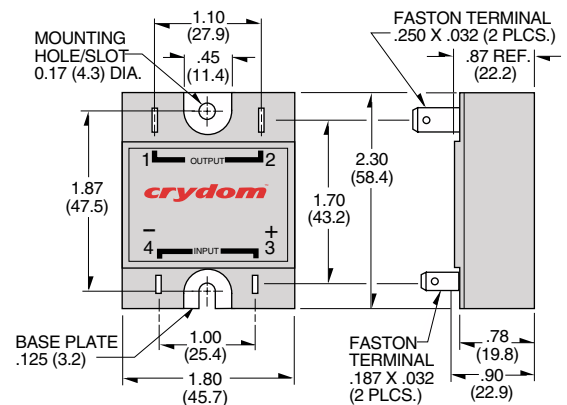
- F** Faston Terminals (Up to 50A Models)  
Example: **CSD2425F**
- G** Input Status LED.  
Example: **CSD2425G**  
**Note:** Control Voltage Range 5-15Vdc for CSD Models.
- P** Internal Overvoltage Protection.  
Relay Will Self Trigger Between 450-600 Vpk. Not Suitable For Capacitive Loads.  
Example: **CSD2425P**
- 10** Phase Controllable  
Example: **CSD2425-10**



**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

**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.



All dimensions are in inches (millimeters)

### APPROVALS

UL E116949  
CSA LR81689  
VDE 10143 UG



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