

- SCR Output
- 10A, 20A & 30A Models
- Ground Terminal Included
- Zero Voltage and Random Turn-On Switching
- Low Leakage
- Integral Heatsink (22.5 mm)
- DIN Rail & Panel Mount
- Status Indicating LED
- DC or AC Control
- Integrated Overvoltage Protection by Automatic Self Turn-On (Suffix P Option)

The Series CKR Solid State Relays utilize Crydom's proprietary thermal management technology providing a compact and efficient design. Built-in DIN Rail attachment, easy-to-use Box Clamp type terminals and integral heat sinking complete the package. This compact new design offers up to 30Arms in ambient temperatures of 25°C.

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

MODEL NUMBERS	CKRD2410 CKRA2410	CKRD2420 CKRA2420	CKRD2430 CKRA2430
OUTPUT SPECIFICATIONS ①			
Operating Voltage (47-63 Hz) [Vrms]	24-280	24-280	24-280
Max. Load Current @ 25°C Ambient Temperature [Arms]	10	20	30
Min. Load Current, [Arms]	0.15	0.15	0.15
Transient Overvoltage [Vpk]	600	600	600
Max. Surge Current, (16.6ms) [Apk]	120	250	625
Max. On-State Voltage Drop @ Rated Current [Vpk]	1.6	1.6	1.6
Maximum I ² t for Fusing, (8.3 msec.) [A ² sec]	60	260	1620
Max. Off-State Leakage Current @ Rated Voltage [mArms]	10	10	10
Min. Off-State dv/dt @ Max. Rated Voltage [V/μsec] ②	200	500	500
Max. Turn-On Time ③	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

INPUT SPECIFICATIONS ①	DC CONTROL	AC CONTROL Standard	AC CONTROL (E Suffix)
Control Voltage Range	4.5-32 Vdc	90-280 Vrms	18-36 Vrms
Max. Turn-On Voltage	4.5 Vdc	90 Vrms	18 Vrms
Min. Turn-Off Voltage	1.0 Vdc	10 Vrms	4.0 Vrms
Typical Input Current ④	15mA @ 12 Vdc, 20mA @ 24Vdc	2mA @ 120 Vrms, 4 mA @ 240Vrms	10mA @ 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 Turn-on time for DC control random turn-on versions is 0.02msec.
 ④ Input circuitry for DC control version incorporates active current limiter.

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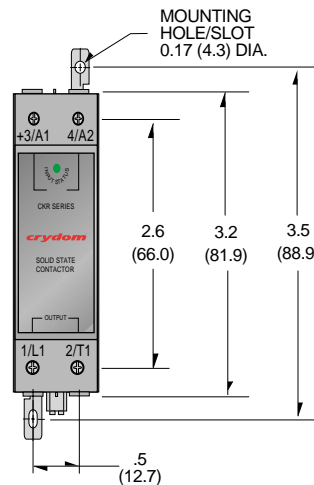
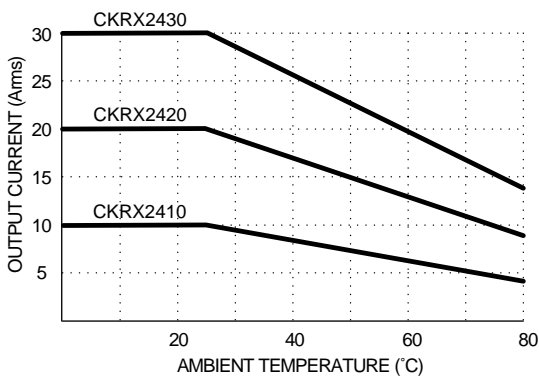
GENERAL SPECIFICATIONS

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
Status Indicating Display		Green LED

MECHANICAL SPECIFICATIONS

Weight: (typical)		10 oz. (280g)
Encapsulation:		Thermally Conductive Epoxy
Terminals:		Box Clamp Type
Maximum Wire Size:		AWG #10 (3mm)
Recommended Terminal Screw Torque Range:		5.0-6.0 in lb (0.6-0.7Nm)
Min. Side by Side Spacing		0.8 inch (20mm)

CURRENT DERATING CURVES

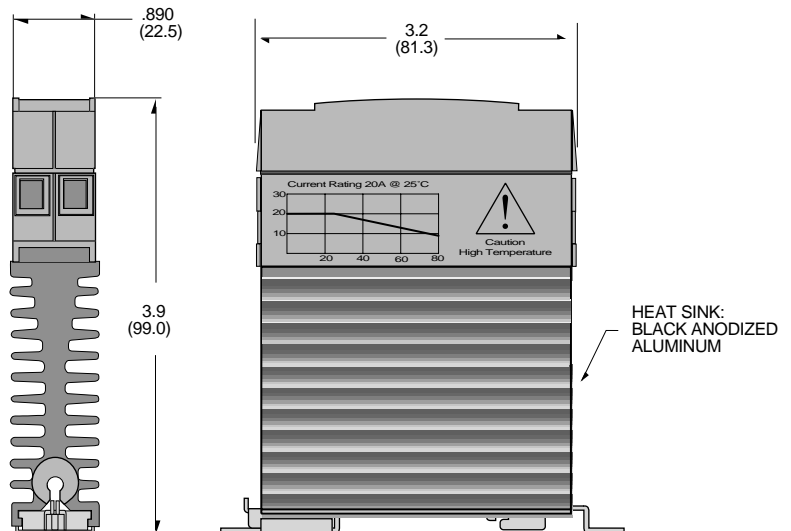


MECHANICAL SPECIFICATIONS

All dimensions are in inches (millimeters)

AVAILABLE OPTIONS

- E** 24 Vac Input (18-36 Vac)
Example: **CKRA2410E**
- P** Internal Overvoltage Protection.
Relay Will Self Trigger Between 450-600 Vpk.
Not Suitable For Capacitive Loads.
Example: **CKRD2410P** (AC & DC Control)
- 10** Random Turn-On (AC & DC Control)
Phase Controllable (DC Control)
Example: **CKRD2410-10**



APPROVALS

UL E116950
CSA LR81689
VDE 129156ÜG **CE**

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Installation Note for CKR Series

Crydoms CKR Series Solid State Relays were developed to offer the advantages of semiconductor switching technology in a standard 22.5mm industrial package. Quick and easy installation is coupled with low drive power requirements and efficient, reliable power SCR output. Box Clamp terminals and LED status indication complete the package. This compact new design offers up to 30Arms in ambient temperatures of 25C.

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

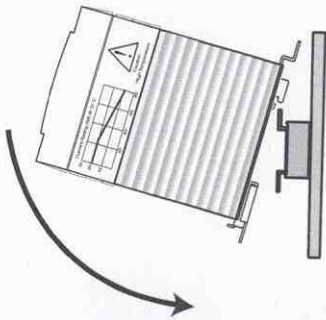
APPROVALS: UL, CSA, VDE, CE Mark.

MOUNTING OF CKR SERIES OF SOLID STATE RELAYS

CKR Series SSRs are designed to fit to an industry standard TS35 DIN Rail. Mounting clip incorporates tabs for screw mounting to panel.

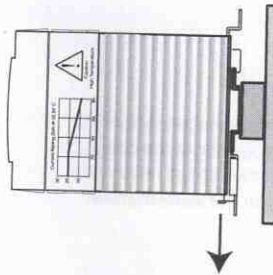
FITTING TO THE DIN RAIL

Locate rail and align with non moveable end of CKR DIN clip. Using reasonable force, push CKR in the direction of the arrow shown.



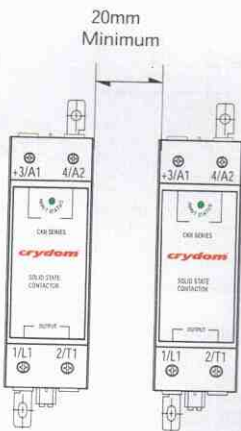
REMOVAL FROM DIN RAIL

Pull release tag in direction of arrow using blade of screwdriver.



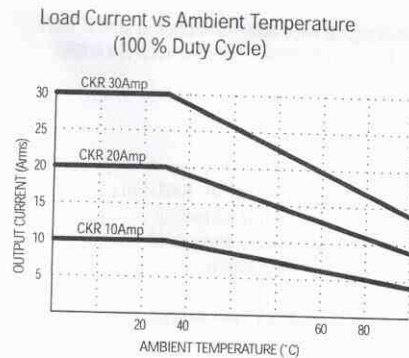
MOUNTING CONSIDERATIONS

To achieve maximum ratings, there must be a minimum spacing of 20mm between the devices in free air.



THERMAL CONSIDERATIONS

The CKR power switching range is based on semiconductor technology and therefore generates heat during operation. The following derating curves must be observed before installation. Crydom products are rated for 100% Duty Cycle.



Caution
High Temperature

Warning - Heatsink will become hot during operation.

ORDERING INFORMATION

Part Number	CKR	A	2	4	3	0	E	P	-	1	0
Package Style	CKR = CKR Series										
Input (Control) Type	D = 4.5-32 Vdc A = 90-280 Vrms = 18-36 Vrms (suffix E)										
Output Voltage	24 = 24 - 280 Vrms 48 = 48 - 530 Vrms 60 = 48 - 660 Vrms										
Output Current	10 = 10 Amp 20 = 20 Amp 30 = 30 Amp										
AC Control Range	Blank = 90-280 Vrms E = 18-36 Vrms										
Integrated Overvoltage Protection	Blank = Not Included P = Included										
Control Mode	Blank = Zero Cross 10 = Random										

Note: For detailed electrical specifications see Crydom individual data sheets.

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GENERAL NOTES

- All parameters at 25°C unless otherwise specified.
- Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- Turn-on time for DC control random turn-on versions is 0.02msec.
- Input circuitry for DC control version incorporates active current limiter.

PROTECTION

Over Current and Short Circuit

A solid state relay should be protected by a semiconductor fuse. This type of fuse provides extremely fast opening of the circuit. A fuse should be selected that has an I²t let-through rating that is less than the I²t capability of the SSR, for the same duration.

Transient Over Voltage (P OPTION)

Select "P" option for internal overvoltage protection. At the presence of high voltage transient the output of the SSR will be triggered on, and the transient will be passed on to the load circuit. This is a non-degrading method of protection that ensures that other SSR benefits are maintained.

Earth Bonding (Grounding)

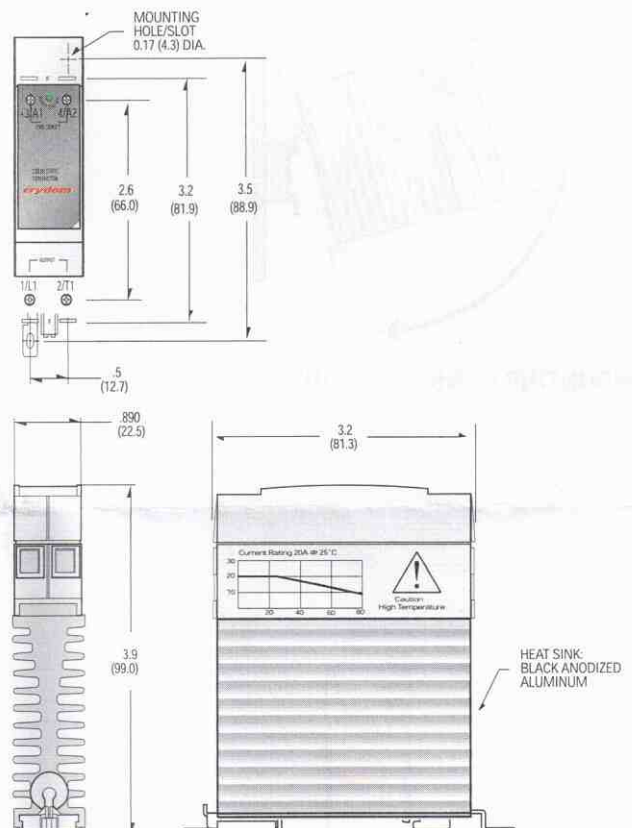
The CKR heatsink is equipped with an earth bonding screw as is required for Class 1 Protection, in accordance with EN 60950 (VDE 0804).

Terminations

- Wire Size** Maximum wire size of AWG#10 (3mm) on both input and output terminals.
- Connections** Ensure that wires ends are stripped to a minimum length of 10mm.
- Recommended Screw Torque Range**
5.0-6.0 in lb (0.6-0.7 Nm) on input and output termination.

MECHANICAL SPECIFICATIONS

All dimensions are in inches (millimeters)



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