imall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832 Email & Skype: info@chipsmall.com Web: www.chipsmall.com Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





The Global Expert in Solid State Switching Technology

Sensata Technologies



Crydom, global expert in solid state switching technology, combines technology and innovation to provide customers a wide range of standard Solid State Relays and Solid State Contactors, and specializes in custom designed solid state switching solutions for any load control application. Crydom is a brand of Sensata Technologies.

www.crydom.com

Sensata Technologies

Sensata Technologies is one of the world's leading suppliers of sensing, electrical protection, control and power management solutions with operations and business centers in 13 countries. Sensata's products improve safety, efficiency and comfort for millions of people every day in automotive, appliance, aircraft, industrial, military, heavy vehicle, heating, air-conditioning and ventilation, data, telecommunications, recreational vehicle and marine applications. For more information please visit Sensata's website at:

www.sensata.com

About this catalog...

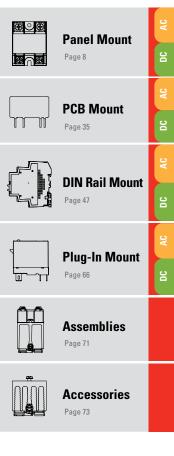
Products included in this catalog are only part of the Crydom offer of Solid State Relays and Contactors. To facilitate the use of this catalog, products have been categorized into 6 product groups mainly defined by mounting type.

The following conditions are applicable to product families where specifically noted:

- All dimensions in drawings are in inches [millimeters] and are for reference only.
- Dimensional drawings shown are for illustrative purposes only. They do not represent the complete variety of products within each series. For complete dimensional drawings for a particular Crydom product visit the CAD Drawings section in the Crydom website.
- C Part Number Nomenclature is color coded as follows:
 - Required for valid part number
 - For options only and not required for valid part number
- Not all part number combinations are available. Contact Crydom Sales Support for information on the availability of a specific part number.
- Safety agency approvals for SSR/Heat Sink Assemblies may vary depending upon selected SSR. Heat sinks do not require safety agency approval.
- The standard Crydom SSR/Heat Sink Assemblies are either DIN Rail or Panel Mounted depending upon model selected and are available with either

one, two or three single or dual SSRs, or one three-phase SSR.

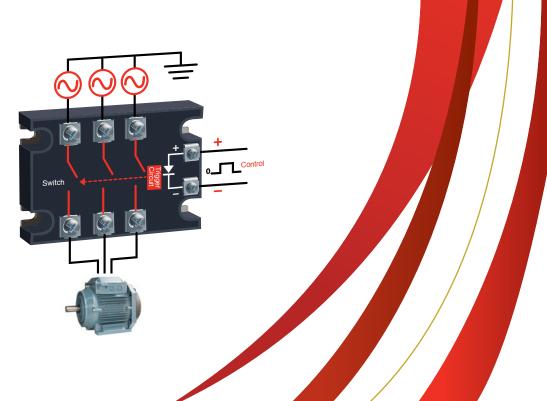
- G Installing a CN Series SSR in a socket that does not have matching input/output specifications may result in non-operation or damage to either the SSR, socket or both. See socket-relay compatibility table available in CN Series SSR datasheet.
- In addition to the possible combinations shown in the part number nomenclature, any standard Crydom PCB Mount SIP type SSR with similar pin centers can be offered as an assembly.
- Listed agency approvals may not apply to all part numbers available within a series. To determine agency approvals for a specific part number contact Crydom Technical Support.
- K Required external heat sink for all ratings.
- Heat sink includes the necessary hardware to mount the relay(s) onto the heat sink. The number of hardware kits (HK1 or HKM1) included depends upon the number and type of SSRs possible to install on each heat sink.



What is a Solid State Relay/Contactor?

A Solid State Relay or Contactor (SSR or SSC) is an electronic component that switches Power (AC or DC current) to a load circuit and provides electrical isolation between an application's control circuit and load circuit. It is a competitive technology to Electromechanical Relays (EMRs) and other switching technologies such as Mercury Displacement Relays (MDRs) and discrete component assemblies.





Why use Solid State Switching Technology?



Long life



Quiet operation



Minimum electrical noise



Low power consumption



Shock & vibration resistant



Ideal for harsh environments



Compatibility with control systems



Fast switching



Position insensitive



Reduced weight



Magnetic noise immunity



Reduced energy cost

Applications

Although there are literally thousands of individual uses for Solid State Relays and Contactors, most can be categorized into the following applications:

Motion Control

Includes elevators, lifts, hoists, exercise equipment, conveyor systems, solar trackers, fans, solenoid and valve control.

Benefits: Endurance, shock & vibration resistance, Soft Start, reversing, no arcing, fast switching, long life, no maintenance, easy to interface, reduced parts count.

Heating Control

This encompasses the largest segment of solid state relay users. Applications include, but are not limited to: professional food equipment, plastic molding/extrusion machinery, HVAC&R and soldering equipment.

Benefits: Long life, no maintenance, safe product, easy to interface, as well as enabling temperature accuracy. Suitable for heater, fan, blower and valve control.

ewer Control

Includes power supplies, transformers, regulators, inverters, converters, UPS systems, etc. as well as any load that is not specifically for heating, lighting or motion control.

Benefits: Long life, silent operation, high speed switching, endurance, mechanical shock and vibration resistance, position insensitive, logic compatibility, arc and bounce free switching, and low electromagnetic emissions.

Lighting Control

These applications are usually broken down into three categories: theatrical, warehouse and commercial. Many of the products used in this segment are custom designed.

Benefits: Dimming, silent operation, fast switching, long life, no maintenance, safe product, easy to interface, reduced parts count.

crvdom

Solid State Relays versus Solid State Contactors

Crydom has been well known for over 40 years as a supplier of Solid State Relays (SSRs). However, Crydom also designs, manufactures and markets Solid State Contactors (SSCs). What is the difference between SSRs and SSCs?

Remarkably, **there is very little actual difference**. They use similar power semiconductors and control circuits, and in some cases, even the same housings. SSRs, being considered as components, are applied in a large variety of applications and uses. SSCs, are generally applied in 3 phase AC heater and motor control applications although the SSCs themselves can be used successfully in almost any load control application. Why then are they viewed and applied differently?

There are two main reasons: Tradition and Ratings.

Tradition is that for most AC power control applications utilizing 3 phase AC power and some DC applications, traditional mechanical contactors are employed. (Note: mechanical contactors rated to switch AC loads are quite different from those rated for DC loads of similar currents due to the arcing and contact degradation associated with making and breaking a DC circuit). Therefore when the need arises to use solid state technology in these type applications rather than EMRs,

engineers immediately think of Solid State "Contactors", not Solid State "Relays". So they are disposed to consider SSCs rather than SSRs despite the fact that **SSRs can perform exactly the same switching function as a Contactor**.

Ratings of contactors, whether Solid State or Mechanical, always include allowed motor load ratings and allowed resistive load ratings. The reason for this is again tradition because for most mechanical contactors, the switching capabilities and life expectancy vary significantly for each type of load. Further, motor control requires consideration of such aspects as Locked Rotor Rating, Full Load Current Ratings and Horse Power Rating, while resistive load ratings must account for significant inrush current that also degrades mechanical contacts. SSRs and SSCs don't suffer the same type degradation due to load characteristics as mechanical contacts do and therefore the motor and resistive load ratings are not as widely different. However the one significant differentiator is that to be considered a contactor, the SSR or SSC must be evaluated to and carry ratings appropriate for motor control.

So in summary, the major technical difference between an SSR and SSC has to do with the mandatory motor ratings required to be defined as a "Contactor".

Panel Mount

Crydom Panel Mount Solid State Relays and Contactors are designed to easily mount on panels or heat sinks for applications which require **single**, **dual or 3 phase output ratings** in the range of **5 to 125 Amps at 24 to 660 VAC** or **1 to 160 Amps at 1 to 1000 VDC**. Available inputs include 24 to 280 VAC, 3 to 32 VDC or analog control depending upon model.

Offered in several configurations including three industry standard size and mounting styles, Crydom Panel Mount SSRs and Contactors provide both an easy means to mechanically secure them in equipment and provide a reliable thermal path to dissipate thermal energy. Models and options include screw termination, quick connections, optional protective covers, input indicator LEDs and thermal interface pads, as well as heat sinks and SSR/Heat Sink Assemblies.

> See the product pages for a summary of **available ratings**, **features and Safety Agency approvals**. Visit the SSR Accessories and Assemblies sections of the catalog or the Crydom website for additional information on Crydom SSRs, Contactors and available accessories for Panel Mount SSRs. Contactors and Assemblies.

AC Output			Rating Amps												
Page	Series	Description	5	10	12	15	18			40			90	110	125
				1	1		1	So	lid S	tate	Rela	ys •			
9.	Series 1	530 V													
10	HA/HD	530 V													
11	Series H1	690 V													
12	CW	HD 660 V													
13	CSW	HD 280 V													
14	CL	Econ 280 V													
15	EL	Mini 280 V													
16	EZ	Low Pro 660 V													
							Co	ontro	ol So	lid S	tate	Rela	ys =		
17	MCBC	Burst Ctrl													
18	MCPC	Phase Ctrl													
19	PCV	V in Phase Ctrl													
20	LPCV	Linear Ph Ctrl													
21	SMR-6	Monitoring													
_		-					- 5	Solid	Sta	te Di	ual R	elay	s —		
22	Evolution Duals	Screw Term													
23	Series 1 Duals	Quick Connect													_
_								Solic	l Sta	te Co	onta	ctors	5		
24	53TP	3 Phase													
25	53RV	Reversing													-
				1			1		1					1	
DC Output		Rating Amps													
Page	Series	Description	3	5	7	10	12	20					100	120	160
_								So	lid S	tate	Rela	ys '			_
26	DC60	1-60 V													
27	D06D	Econ 1 - 60 V													
28	PowerPlus DC	1-500 V													

Solid State Contacto

1001

Series 1 DC

1-400 V

1 - 1000 V

Disconnect

Reversing

High Current

Mini 1 - 100 V

29

30 EL

31 SSC

32 LVD

33 DP

34 HDC

PANEL MOUNT • AC Output • Relays

088122.61

Crydom

17510451

Series 1 • 10-125 Amps

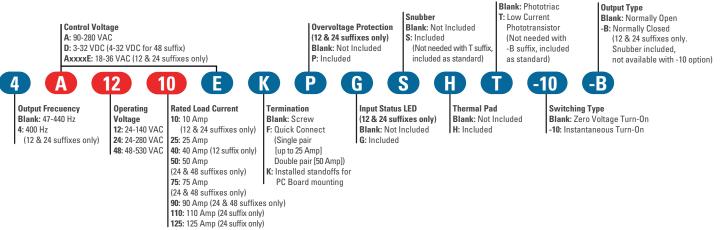


- 🕤 🔹 Crydom's Signature family of Solid State Relays
- Ratings from 10 to 125 Amps @ 24-280 VAC and from 25 to 90 Amps @ 80-530 VAC
- Back-to-back SCR output provides added reliability in commercial and
- leavy industrial applications

gen

- Flexible 3-32 VDC, 18-36 VAC or 90-280 VAC Control Voltage
- Elective "ultra-low" input current draw (2-4 mAmps DC typical, "T" suffix option)
- Optional output R-C Snubber for additional dv/dt attenuation
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
- Elective Internal TVS ("P" suffix) eliminates the need for external Overvoltage Protection
- A pre-attached Thermal Pad can be ordered to eliminate the need for thermal compound using the "H" suffix
- Optional Normally Closed output ("-B" suffix option)
- UL 508 overload endurance rated and 100 kA Short Circuit Current Rating (SCCR)

Notes: A B C D J K



Complete specifications of these & other Crydom products available at: www.crydom.com

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Panel Mount

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HA/HD Series • 12-125 Amps

Panel Mount

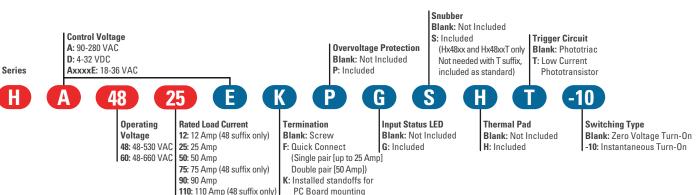




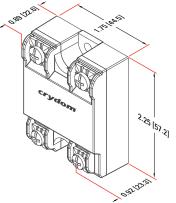
- Solid State Relay with ratings from 12 to 125 Amps @ 48-660 VAC
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Flexible 4-32 VDC, 18-36 VAC or 90-280 VAC Control Voltage
- Elective "ultra-low" input current draw (2-4 mAmps DC typical, "T" suffix option)
- R-C Snubber network for additional dv/dt attenuation (for HA48/HD48 models only)
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
- Elective Internal TVS ("P" suffix) eliminates the need for external Overvoltage Protection
- A pre-attached Thermal Pad can be ordered to eliminate the need for thermal compound using the "H" suffix
- UL 508 overload endurance rated and 100 kA Short Circuit Current Rating (SCCR)

Notes: A B C D J K

125: 125 Amp



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PANEL MOUNT • AC Output • Relays

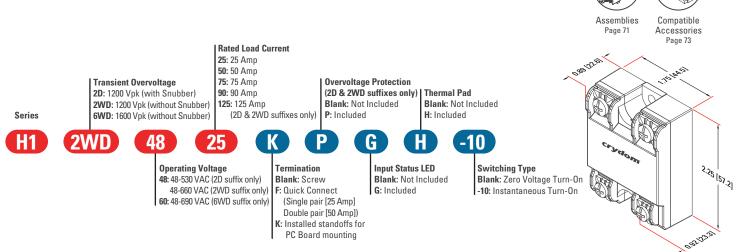
Series H1 • 25-125 Amps





- Solid State Relay with ratings from 25 to 125 Amps @ 48-690 VAC
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Flexible 4-32 VDC Control Voltage
- Low output off-state leakage current (2WD & 6WD suffixes only, snubberless)
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
- Elective Internal TVS ("P" suffix) eliminates the need for external Overvoltage Protection (2D & 2WD suffixes only)
- A pre-attached Thermal Pad can be ordered to eliminate the need for thermal compound using the "H" suffix
- UL 508 overload endurance rated and 100 kA Short Circuit Current Rating (SCCR)

Notes: A B C D J K



Panel Mount

PCB Mount

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DIN Rail Mount

Plug-In Mount •

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Assemblies

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Accessories

CW Series • 10-125 Amps





- Heavy duty Solid State Relay with ratings from 10 to 125 Amps @ 24-280 VAC or 48-660 VAC CIII
 - Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- EMC compliant (LEVEL 3) for reliable operation in harsh electrical environments SFRIES
- Flexible 3-32 VDC, 18-36 VAC or 90-280 VAC Control Voltage and universal AC/DC control of 20-280 VAC and 20-48 VDC
- · LED indicator for easy identification of control status
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
- IP20 "touch safe" Cover provides additional user protection
- Elective Internal TVS ("P" suffix) eliminates the need for external Overvoltage Protection
- A pre-attached Thermal Pad can be ordered to eliminate the need for thermal compound using the "H" suffix
- UL 508 overload endurance rated and 100 kA Short Circuit Current Rating (SCCR)

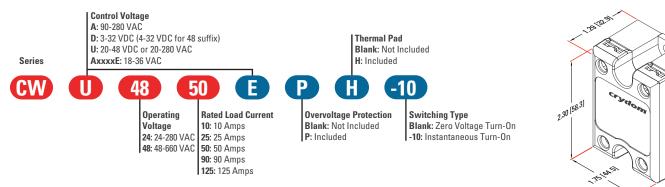
Notes: A B C D J K





Assemblies Page 71

Compatible Accessories Page 73



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PANEL MOUNT • AC Output • Relays

CSW Series • 10-90 Amps





- Heavy duty Solid State Relay with ratings from 10 to 90 Amps @ 24-280 VAC
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- EMC compliant (LEVEL 3) for reliable operation in harsh electrical environments
- Flexible 3-32 VDC Control Voltage

gen

- Low output off-state leakage current (without option "S")
- Elective R-C Snubber network for additional dv/dt attenuation (option "S")
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase-control or inductive loads) output
- Elective Internal TVS ("P" suffix) eliminates the need for external Overvoltage Protection
- A pre-attached Thermal Pad can be ordered to eliminate the need for thermal compound using the "H" suffix
- UL 508 overload endurance rated and 100 kA Short Circuit Current Rating (SCCR)







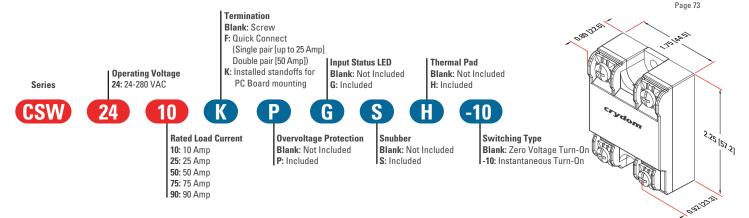
Assemblies Page 71

Compatible Accessories



Panel Mount

PCB Mount



Control Voltage

10

R

Rated Load Current

05: 5 Amps 10: 10 Amps

A: 90-250 VAC

D: 3-32 VDC

Load Voltage

240: 24-280 VAC

CL Series • 5-10 Amps



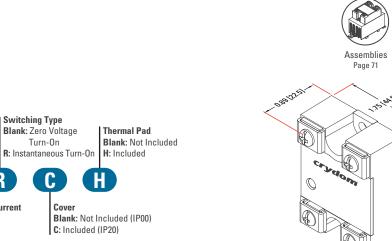
AND 25-280 VAG 2/ crydom CL240D10C 6

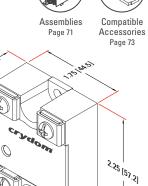
- Economical Solid State Relay with ratings of 5 or 10 Amps @ 24-280 VAC
- Optional IP20 "touch safe" Cover for additional user protection



- LED indicator for easy identification of control status
- Regulated AC or DC Control Voltage
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output

Notes: A B C D J K







Series

CL

PANEL MOUNT • AC Output • Relays

EL Series • 5-20 Amps





- Mini-puck Solid State Relay to maximize panel space
- Ratings up to 20 Amps @ 24-280 VAC
- · Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
- Quick Connect control & output termination for easy installation
- 3.75k VAC optical isolation





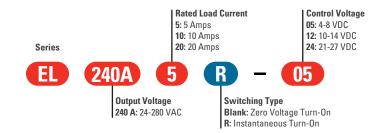


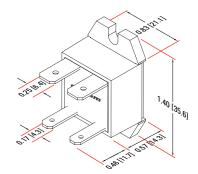
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Thermal Pad Assemblies Page 71 Page 83



Panel Mount





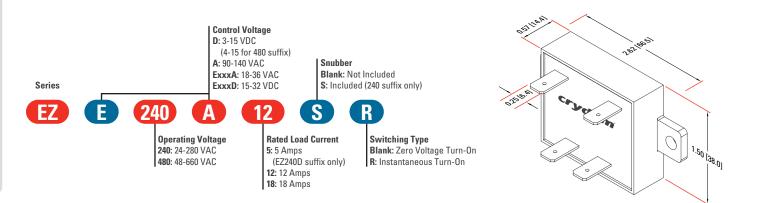
EZ Series • 5-18 Amps





- Low profile Solid State Relay
- crydom • Ratings from 5 to 18 Amps @ 24-280 VAC or 48-660 VAC
 - classics Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
 - Elective R-C Snubber network (240 VAC models) for additional dv/dt attenuation
 - Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
 - AC or DC Control Voltage options
 - Quick Connect control & output termination for easy installation





Panel Mount

MCBC Series • 25-90 Amps



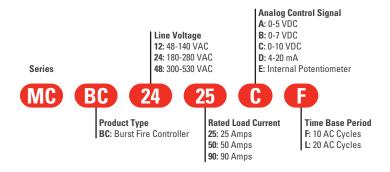
- Microprocessor based burst fire controller / SSR
- crydom Ratings from 25 to 90 Amps @ 48-530 VAC classics
 - R-C Snubber network for additional dv/dt attenuation
 - Industry standard analogue input (voltage or current) or potentiometer control
 - · LED indicator for easy identification of output status
 - Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Two time-base periods available (10 & 20 cycles)
- Designed to provide proportional AC power to a wide range of resistive loads

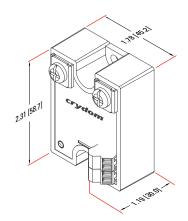
Notes: A B D J K





Assemblies **Protective Cover** Page 71 Page 74





Panel Mount

MCPC Series • 25-90 Amps







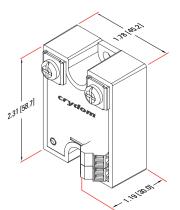
- Microprocessor based phase angle controller / SSR
- crydom • Ratings from 25 to 90 Amps @ 48-530 VAC

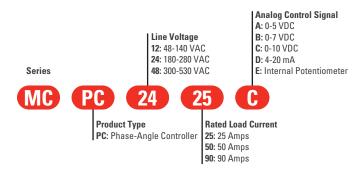
Notes: A B D J K

- elassics R-C Snubber network for additional dv/dt attenuation
 - Industry standard analogue input (voltage or current) or potentiometer control for setpoint
- LED indicator for easy identification of output status
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Designed to provide proportional AC power to a wide range of resistive loads



Assemblies Protective Cover Page 71 Page 74





18 crvdom

Assemblies

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Accessories

PCV Series • 15-90 Amps

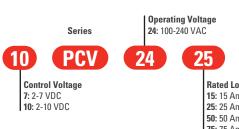
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Notes: A B D J K

- Easy to use proportional (phase angle) controller
- Ratings from 15 to 90 Amps @ 100-240 VAC
- Simple 2-7 VDC or 2-10 VDC analogue Control Voltage
- Designed to provide proportional AC power to a wide range of resistive loads



 Rated Load Current

 15: 15 Amps

 25: 25 Amps

 50: 50 Amps (10 prefix only)

 75: 75 Amps (10 prefix only)

 90: 90 Amps (10 prefix only)



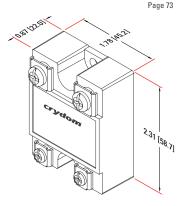


Assemblies Page 71

Compatible Accessories Panel Mount

PCB Mount

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LPCV Series • 15-110 Amps

Panel Mount

PCB Mount



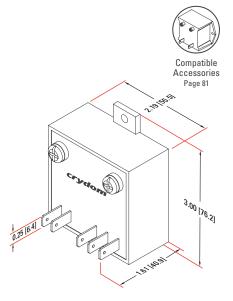
- · Easy to use linear proportional (phase angle) controller
- crydom • Ratings from 15 to 110 Amps @ 20-300 VAC
 - classics Simple 0-5 VDC, 0-10 VDC or 4-20 mAmps analogue Control Voltage
 - Included 12 VDC source for use with external potentiometer control
 - Requires accessory power supply PS120 or PS240 to provide 20 VAC for internal logic circuit
 - Designed to provide proportional AC power to a wide range of resistive loads

Operating Voltage Series 24: 20-300 VAC LPCV 25

Control Voltage 5: 0-5 VDC 10: 0-10 VDC 20: 4-20 mAmps



Notes: A B D J K



SMR-6 Series • 25-90 Amps

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- Solid State Relay with built-in current monitoring & diagnostics circuit
- Ratings from 25 to 90 Amps @ 60-280 VAC
 - Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
 - Inverting or non-inverting Control Voltage (flexible 8-32 VDC)
 - Normally Open or Normally Closed alarm output
 - · Wide range of built-in fault condition monitoring alarms
 - Zero Voltage Turn-On (resistive loads) output
 - UL 508 overload endurance rated

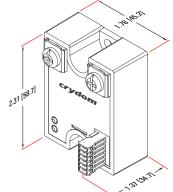






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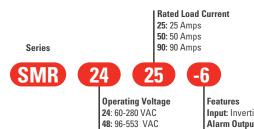
Assemblies Protective Cover Page 71 Page 74



Panel Mount

PCB Mount

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Input: Inverting or Non Inverting Alarm Output: Normally Open or Normally Closed



PANEL MOUNT • AC Output • Dual Relays

Evolution Dual Series • 25-50 Amps



Panel Mount AC

PCB Mount

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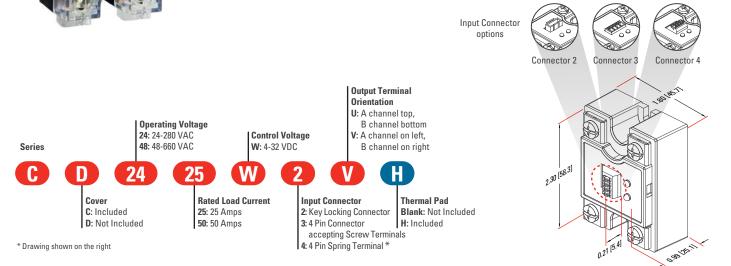


- Independently controlled dual output Solid State Relay
 - Ratings of 25 & 50 Amps @ 24-280 VAC or 48-600 VAC
 - Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
 - Optional IP20 "touch safe" Cover for additional user protection
 - Flexible 4-32 VDC Control Voltage

DUALS

- Three Input Connector options for additional assembly flexibility
- LED indicator for each output channel for easy identification of control status
- Zero Voltage Turn-On (resistive loads) output





PANEL MOUNT • AC Output • Dual Relays

Series 1 Duals • 25-40 Amps





- Independently controlled dual output Solid State Relay
- Ratings of 25 Amps & 40 Amps @ 24-280 VAC or 48-530 VAC
 - classics Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
 - 4-15 VDC or 15-32 VDC Control Voltage
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
- Quick Connect termination; 120/240 V models (D24) include pin control termination
- UL 508 overload endurance rated



120/240 V Model 480 V Model (D24) 480 V Model (H12D48)

Assemblies

Heat Sinks &

Panel Mount

PCB Mount

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DIN Rail Mount

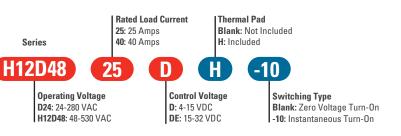
Plug-In Mount •

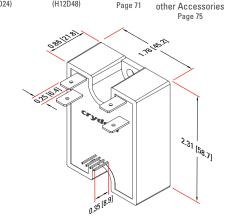
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Assemblies

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Accessories







PANEL MOUNT • AC Output • Contactors

53TP Series • 25-50 Amps



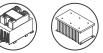


- 🚬 🔹 3 Phase Solid State Contactor with ratings of 25 & 50 Amps per phase @ 48-530 VAC
- Up to 7.5 HP / 5.5 kW Motor Controller ratings
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
 EMC compliant (LEVEL 3) for reliable operation in harsh electrical environments

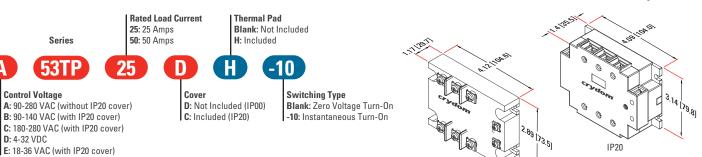
IP00

- Direct Bond Copper (DBC) substrate for superior thermal performance
- R-C Snubber network for additional dv/dt attenuation
- Flexible 4-32 VDC, 18-36 VAC or 90-140 VAC / 180-280 VAC Control Voltage
- · LED indicator for easy identification of control status
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
- Optional IP20 "touch safe" Cover (shown) provides additional user protection
- Internal TVS eliminates the need for external Overvoltage Protection
- A pre-attached Thermal Pad can be ordered to eliminate the need for thermal compound using the "H" suffix
- UL 508 overload endurance rated





Assemblies Heat Sinks & Page 71 other Accessories Page 78



PANEL MOUNT • AC Output • Contactors

53RV Series • 25-50 Amps

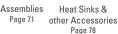


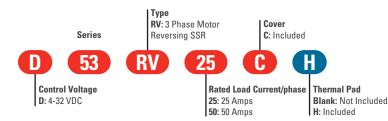


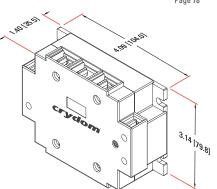
- 53 series
- Motor Reversing Contactor with ratings of 25 & 50 Amps per phase @ 48-530 VAC
 - Up to 7.5 HP / 5.5 kW Motor Controller ratings
 - Built-in interlock circuit protects the relay/load if both Forward & Reverse inputs are simultaneously actuated
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- EMC compliant (LEVEL 3) for reliable operation in harsh electrical environments
- Direct Bond Copper (DBC) substrate for superior thermal performance
- R-C Snubber network for additional dv/dt attenuation
- Flexible 4-32 VDC Control Voltage
- LED indicators for easy identification of the Forward / Reverse control status
- IP20 "touch safe" Cover provides additional user protection
- A pre-attached Thermal Pad can be ordered to eliminate the need for thermal compound using the "H" suffix
- UL 508 overload endurance rated

Notes: A B C D J K









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