

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** 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.

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# 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.

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Page	Series	Description	5	10	12	15	18			40			90	110	125
0	0 1 1				1	1	1	S0	lid S	tate		iys -	1		
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													
	Control Solid State Relays														
17	MCBC	Burst Ctrl													
18	MCPC	Phase Ctrl													
19	PCV	V in Phase Ctrl													
20	LPCV	Linear Ph Ctrl													
21	SMR-6	Monitoring													
_	Solid State Dual Relays												_		
22	Evolution Duals	Screw Term													
23	Series 1 Duals	Quick Connect													
							_ :	Solid State Contactors							
24	53TP	3 Phase													
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DC Output										ng A					
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26	DC60	1-60 V													
27	D06D	Econ 1 - 60 V													

Solid State Contactor

1001

28 PowerPlus DC

Series 1 DC

31 SSC

32 LVD

33 DP

34 HDC

29

30 EL

1-500 V

1-400 V

1 - 1000 V

Disconnect

Reversing

High Current

Mini 1 - 100 V

#### PANEL MOUNT • AC Output • Relays

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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
- heavy industrial applications

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- 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

<sup>2.25</sup> [57.2]

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Panel Mount

#### 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

#### 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 SFRIFS
- 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





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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
- 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)



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Compatible Accessories Panel Mount



**Control Voltage** 

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R

**Rated Load Current** 

05: 5 Amps 10: 10 Amps

A: 90-250 VAC

D: 3-32 VDC

#### CL Series • 5-10 Amps



AMP 28-280 VAC 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









Panel Mount

PCB Mount

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## 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







Thermal Pad Assemblies Page 71 Page 83



Panel Mount





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crvdom

#### 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

PCB 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



PCB Mount

**DIN Rail Mount** 

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Plug-In Mount

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Assemblies

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

  - 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











#### PCV Series • 15-90 Amps

# **FL** 🚯 C E 📢





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

# Operating Voltage 24: 100-240 VAC 10 PCV 24 25 Control Voltage 7: 2-7 VDC 10: 2-10 VDC Rate 15: 11 25: 25

 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)





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Compatible Accessories Panel Mount

PCB Mount



#### LPCV Series • 15-110 Amps

Panel Mount AC

PCB Mount

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**DIN Rail Mount** 

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Plug-In Mount

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Assemblies

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Accessories



- 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

# 0-10/0C 12/0C Notes:







#### SMR-6 Series • 25-90 Amps

**FL** 🚯 ( E Modes



- Solid State Relay with built-in current monitoring & diagnostics circuit
- crydom • Ratings from 25 to 90 Amps @ 60-280 VAC classics
  - · 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

#### Notes: A B D J K





Protective Cover Assemblies 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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**DIN Rail 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 Mod (D24) (H12D48)

Assemblies Heat Sinks & Page 71 other Accessories Page 75





Panel Mount

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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

#### **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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Panel Mount

## PANEL MOUNT • DC Output • Relays

#### DC60 Series • 3-7 Amps



Panel Mount



- Economical bipolar transistor output Solid State Relay
- Ratings up to 7 Amps @ 60 VDC
  - classics Available with either a Normally Open (standard) or Normally Closed ("-B" option) output
    - Flexible 3.5-32 VDC or 90-280 VAC/DC Control Voltage
  - Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)

Notes: A B C D J K





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#### PANEL MOUNT • DC Output • Relays

#### D06D Series • 60-100 Amps





- Solid State Relay with low impedance MOSFET output to minimize total power dissipation
- crydom • Ratings from 60 to 100 Amps @ 60 VDC classics
  - Easily paralleled for high current applications
  - Flexible 3.5-32 VDC Control Voltage
- Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)

Notes: A B D J K





Assemblies Page 71

Compatible Accessories





**Panel Mount** 

#### PowerPlus DC Series • 10-100 Amps



Panel Mount

PCB Mount



- Solid State Relay with ratings up to 100 Amps @ 60 VDC, 100 Amps @ 100 VDC, 60 Amps @ 200 VDC and 20 Amps @ 400 VDC
  - Flexible 4-32 VDC or 90-140 VAC Control Voltage
  - Optional IP20 "touch safe" Cover for additional user protection (option "C") & thermal interface pad (option "H")
  - Optically isolated high speed trigger circuit for enhanced switching
  - Easily paralleled for high current applications
  - Low impedance MOSFET output minimizes total power dissipation
  - · LED indicator for easy identification of control status
  - Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)
  - UL General Use (resistive) ratings

series

#### Notes: A B C D J K





Assemblies Page 71 Compatible Accessories Page 73





#### PANEL MOUNT • DC Output • Relays

#### Series 1 DC • 7-100 Amps





- Solid State Relay with low impedance MOSFET output to minimize total power dissipation
- Ratings up to 100 Amps @ 100 VDC, 40 Amps @ 200 VDC, 12 Amps @ 400 VDC,and 10 Amps @ 500 VDC
  - classics Easily paralleled for high current applications
    - Flexible 3.5-32 VDC Control Voltage
- Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)

#### Notes: A B D J K





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Compatible Accessories



Accessories • Assemblies • Plug-In Mount • DIN Rail Mount •

**Panel Mount** 

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PCB Mount



**Operating Voltage** 

07: 7 Amps 10: 10 Amps (500 VDC only) 12: 12 Amps (not for 500 VDC) 20: 20 Amps (100 VDC only) 40: 40 Amps (100 & 200 VDC only) 60: 60 Amps (100 VDC only) 80: 80 Amps (100 VDC only) 100: 100 Amps (100 VDC only)

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

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#### EL Series • 5-10 Amps





- Mini-puck Solid State Relay to maximize panel space
- Ratings of 5 & 10 Amps @ 3-100 VDC
- Easily paralleled for high current applications
  - Low impedance MOSFET output minimizes total power dissipation
- Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)
- Quick Connect control & output termination for easy installation







Thermal Pad Assemblies Page 71 Page 83



Panel Mount

PCB Mount





#### PANEL MOUNT • DC Output • Relays

#### SSC Series • 25 Amps





· Solid State Relay with ratings of 25 Amps @ up to 1k VDC

crydom • High voltage IGBT output classics

• Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)







Assemblies Compatible Accessories Page 71

**Panel Mount** 

8

PCB Mount





## PANEL MOUNT • DC Output • Relays

#### LVD Series • 40-100 Amps





- Low Voltage Disconnect with ratings up to 100 Amps @ 3-75 VDC
- Monitors and automatically disconnects battery systems from loads at low voltage conditions to prevent deep discharge of the batteries
- Low impedance MOSFET output minimizes total power dissipation
- Six DC control ranges available for a variety of 12 VDC and 24 VDC battery systems

#### Notes: A B C D J K





Assemblies Page 71 Compatible Accessories Page 73





#### **PANEL MOUNT** • DC Output • Contactors

#### DP Series • 20-60 Amps





- Motor Reversing Contactor with ratings up to 60 Amps @ 48 VDC
- Low impedance MOSFET switches in an H-Bridge configuration for motor reversing
- Control features to combine Soft Start/Ramp Up, Soft Stop/Ramp Down & Braking functions on each polarity
- Built-in interlock circuit protects the relay/load if both Forward & Reverse inputs are simultaneously actuated
- UL & IEC General Use & Motor Controller ratings
- LED indicators for easy identification of the Forward / Reverse control status

#### Notes: A B C D J K



**Panel Mount** 

#### PANEL MOUNT • DC Output • Contactors

#### HDC Series • 120-160 Amps





- High current solid state contactor with rating up to 160 Amps @ 150 VDC
- Single Pole Single Throw Normally Open Operation (SPST/N.O.)
- Flexible 4.5-32 VDC or 90-140 VAC Control Voltage
- Low impedance MOSFET output minimizes total power dissipation
- LED Input Status indicator standard
- 5/16 inch diameter output terminal studs for large diameter wires and lugs
- Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)
- 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





Assemblies H Page 71 othe

Heat Sinks & other Accessories Page 78



Panel Mount

PCB Mount





# **PCB Mount**

Crydom offers an extensive line of PCB Mount Solid State Relays including the **popular industry standard footprint SIP, Mini SIP and DIP configurations** and most Crydom SIP type SSRs are also offered as DIN Rail mountable Assemblies.

Models are available for applications requiring ratings from **1 to 25 Amps at 24 to 660 VAC** or **1 to 20 Amps at 1 to 200 VDC**. Inputs are available covering 24 to 140 VAC or 3 to 32 VDC depending upon model. Excepting some AC output models rated greater than 10 Amps where forced air is used for improved output ratings (forced air is not required for DC output), all Crydom PCB Mount Relay output ratings are based upon free air and 40 °C ambient.

See the product pages for a summary of **available package size and pin out, ratings, features and Safety Agency approvals**. Visit the SSR Assemblies section of the catalog or the Crydom website for additional information on Crydom PCB Mount SSRs and Assemblies.

vdom

240D25

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	<mark>utput</mark> Series	Description	1	1.5	2		Ra 4 Solid	ating 5   Sta	8	12	25	
36	ASO	Mini SIP										
37	MP	SIP										
38	СХ	SIP										
39	MCX	SIP										
40	LS	SIP										
41	PF	SIP										
42	DPA	DIP										
43	SDV	DIP										
DC O	utput		Rating Amps									
Page	Series	Description					3	5	6	10	20	
4.4	DIVO						Solid	i sta		lays	_	
44	DMO	Mini SIP									<u> </u>	
45	СМХ	SIP										
46	MP	SIP										

#### PCB MOUNT • AC Output • Relays

#### ASO Series • 1.5-2 Amps









- Compact design Solid State Relay ideally suited for high density PCB applications
- crydom • Ratings up to 2 Amps @ 12-280 VAC
  - elassics 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
  - Solderable 0.015" x 0.030" [0.4 mm x 0.8 mm] pins can also plug fit SIP type IC socket






#### PCB MOUNT • AC Output • Relays

#### MP Series • 3-4 Amps











Panel Mount

PCB Mount

crvdon

#### CX Series • 5 Amps





**DIN Rail Mount** 

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Plug-In Mount

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Assemblies

Accessories



- SIP Solid State Relay ideally suited for high density PCB applications
- Ratings up to 5 Amps @ 48-660 VAC
  - classics Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
    - High surge current rating
  - Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
  - AC or DC Control Voltage options
  - UL 508 overload endurance rated







#### **PCB MOUNT** • AC Output • Relays

#### MCX Series • 5 Amps





- SIP Solid State Relay ideally suited for high density PCB applications
- Ratings up to 5 Amps @ 48-660 VAC
  - Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
    - High surge current rating
  - Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output
  - AC or DC Control Voltage options
  - 10 mm plastic housing allows for operation at -40°C

Notes: A B C D J



Panel Mount

PCB Mount

Crvdo

#### LS Series • 8-12 Amps





- SIP Solid State Relay ideally suited for high density PCB applications
- Ratings up to 12 Amps @ 24-280 VAC with external heat sink
  - elassics 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







#### **PCB MOUNT** • AC Output • Relays

#### **PF Series** • 25 Amps





- SIP Solid State Relay ideally suited for high density PCB applications
- crydom • Ratings up to 10 Amps (convection) or 25 Amps (forced air flow) @ 48-660 VAC classics
  - 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

• AC or DC Control Voltage options







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

18-36 VAC (A suffix only)

Panel Mount

PCB Mount

#### **DPA Series** • 1 Amp







crydom • Ratings to 1 Amp @ 280 VAC

- classics Control options include 3.5-10 VDC or 10-35 mAmps DC
  - · Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Solderable Pin layout fits IC grid pattern and pluggable IC DIP type sockets





42 crydom

#### PCB MOUNT • AC Output • Relays

#### SDV Series • 1.5 Amps





- DIP Solid State Relay ideally suited for high density PCB applications
- Ratings to 1.5 Amps @ 280 VAC
  - classics Control Voltage of 3.5-10 VDC
    - 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
  - Solderable Pin layout fits IC grid pattern and pluggable IC DIP type sockets

Notes: A B C D J





PCB Mount

#### DMO Series • 3 Amps



**DIN Rail Mount** 

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Plug-In Mount

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Assemblies

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Accessories



- Compact design Solid State Relay ideally suited for high density PCB applications
- Ratings up to 3 Amps @ 60 VDC



- Low impedance MOSFET output minimizes total power dissipation
- Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)
- Solderable 0.015" x 0.030" [0.4 mm x 0.8 mm] pins can also plug fit SIP type IC socket
- Easily paralleled for high current applications







#### **PCB MOUNT** • DC Output • Relays

#### CMX Series • 3-20 Amps





- SIP Solid State Relay ideally suited for high density PCB applications
- Low impedance MOSFET output minimizes total power dissipation
  - classics Ratings up to 20 Amps @ 60 VDC, 10 Amps @ 100 VDC or 3 Amps @ 200 VDC
    - Easily paralleled for high current applications
- Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)







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#### **MP Series** • 3 Amps



**DIN Rail Mount** 

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Plug-In Mount

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Assemblies

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Accessories



- SIP Solid State Relay ideally suited for high density PCB applications
- crydom • Ratings up to 3 Amps @ 60 VDC
  - classics 10 mm plastic housing allows for operation at -40°C
    - Normally Closed version available ("-B" suffix option)
  - Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)







# **DIN Rail Mount**

Crydom DIN Rail Mounted Solid State Relays and Contactors are available with single, dual and 3 phase outputs. Industry standard 22.5 mm and 45 mm single phase packages are available from **10 to 65 Amps**. Slim 6 to 18 mm high power density packages are available from **0.1 to 12 Amps** for space restricted panels. Inputs cover the range of **24 to 280 VAC or 3 to 32 VDC** and feature LED input status indicator.

**Crydom DIN Rail mounted SSRs and Contactors are "ready-to-use"** and carry Safety Agency approvals as noted on each catalog sheet. Visit the DIN Rail SSR and Contactors section of the catalog or Crydom website for additional information on Crydom DIN Rail Mount SSRs and Contactors.





#### **DRA-CN Series** • 2 Amps



**DIN Rail Mount** 

Plug-In Mount

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Assemblies

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Accessories



- · Thin 6.2 mm DIN Rail mount Solid State Relay
- Replaceable CN Series SSR with ratings of 2 Amps @ 240 VAC
- LED indicator for easy identification of control status

series • Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (phase control or inductive loads) output

#### Notes: A B C D J



Plug-In Mount ID Marker Strips Relays Page 80 Page 67





#### DRA Series • 3-10 Amps





- Ready-to-use DIN Rail mountable Solid State Relays assemblies using standard Crydom SIP SSRs
- Slim 10 mm (single channel) & 54 mm (four channels) packages

Operating Voltage of 12-380 VAC with back-to-back SCR output for added reliability in commercial

- Fits standard 35 mm DIN Rail profiles
- Cage style screw termination for easy and reliable wire connection
- AC & DC Control Voltage versions available depending upon selected SSR
- · Available with Normally Closed output

Notes: A B D H J

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







PCB Mount •

**DIN Rail Mount** 

Panel Mount

Plug-In Mount . Assemblies Accessories •

#### SeriesOne DR • 3-12 Amps





- DIN Rail mount 11 mm (3 & 6 Amps) or 18 mm (12 Amps) wide Solid State Relay
- Operating Voltage of 24-280 VAC and 48-600 VAC
- Fits standard 35 mm DIN Rail profiles
- · Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Flexible Control Voltage of 4-32 VDC, 18-36 VAC, 90-140 VAC, 200-265 VAC
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (inductive loads) output
- IP20 housing for greater safety
- · LED indicator for easy identification of control status
- UI & cUI listed
- UL 508 overload endurance rated

#### Notes: A B C D J







Switching Type Blank: Zero Voltage Turn-On R: Instantaneous Turn-On (D suffix only)



#### CKR Series • 10-30 Amps





- Solid State Relay with ratings from 10 to 30 Amps
- Operating Voltage of 24-660 VAC
  - Fits standard 35 mm DIN Rail profiles
  - Slim 22.5 mm (width) package
- · Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Flexible Control Voltage of 4-32 VDC, 18-36 VAC, 90-140 VAC, 110-280 VAC
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (inductive loads) output
- LED indicator for easy identification of control status
- · Elective Internal TVS ("P" suffix) eliminates the need for external Overvoltage Protection
- Enhanced surge current ratings for the 30 Amps (facilitates the use of circuit breakers instead of fuse protection)

#### Notes: A B C D J



Panel Mount

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PCB Mount

**DIN Rail Mount** 

#### CMR Series • 35-65 Amps





- Solid State Relay with ratings from 35 to 65 Amps
- Operating Voltage of 24-660 VAC
  - classics Fits standard 35 mm DIN Rail profiles
    - Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Flexible Control Voltage of 4-32 VDC, 18-36 VAC, 90-140 VAC
- Available with Zero Voltege Turn-On (resistive loads) or Instantaneous Turn-On (inductive loads) output
- LED indicator for easy identification of control status

Notes: A B C D J

• Elective Internal TVS ("P" suffix) eliminates the need for external Overvoltage Protection





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# Plug-In Mount • Assemblies

**DIN Rail Mount** 

#### SeriesOne DR Dual • 6 Amps



- DIN Rail mount 18 mm wide Solid State Dual Relay
- Two independent channels (6 Amps)
- Operating Voltage of 24-280 VAC and 48-600 VAC
- Fits standard 35 mm DIN Rail profiles
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Flexible Control Voltage of 4-32 VDC
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (inductive loads) output
- IP20 housing for greater safety
- LED indicator for easy identification of control status
- UL & cUL listed
- UL 508 overload endurance rated

#### Notes: A B C D J





Panel Mount

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PCB Mount

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#### SeriesOne DR Timer • 6 Amps



**DIN Rail Mount** 

Plug-In Mount

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Assemblies

Accessories



- 🌇 🔹 DIN Rail mount 11 mm (6 Amps) Solid State Relay Timer
  - Operating Voltage of 24-280 VAC
- Fits standard 35 mm DIN Rail
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Universal Control Voltage of 12-24, 90-140 & 180-240 VAC/DC
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (inductive loads) output
- IP20 housing for greater safety
- LED indicator for easy identification of control status
- UL listed & cUL recognized
- UL 508 overload endurance rated

#### Notes: A B C D J



B. C. Ac & Bw)



#### DRA3P Series • 2.4-4.2 Amps





- 2.4 & 4.2 Amp rated 3 phase Solid State Contactor
- **DRA** Operating Voltage of 48-510 VAC, 3-Phase
  - Contactors Fits standard 35 mm DIN Rail profiles
    - No heat sink required & cage style screw terminals for easy installation & reliable wire connection
- · Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Wide range of Control Voltage of 5 VDC, 24 VDC, 48 VAC, 115 VAC, 230 VAC
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (inductive loads) output
- LED indicator for easy identification of control status
- Overvoltage Protection included
- HP & kW (IEC) rated
- UL 508 overload endurance rated

#### Notes: A B C D J





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#### DRA3R Series • 2.4-4.2 Amps



- crydon OV 42A RESISTIV
- 2.4 & 4.2 Amps rated Motor Reversing Solid State Contactor
- Operating Voltage 48-510 VAC, 3 phase DRA
- Contactors Protective Forward/Reverse interlock built-in function
  - Fits standard 35 mm DIN Rail profiles
- No heat sink required & cage style screw terminals for easy installation & reliable wire connection
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Wide range of Control Voltage of 5 VDC, 24 VDC, 48 VAC, 115 VAC, 230 VAC
- Input status LED, Forward (green), Reverse (yellow)
- Overvoltage Protection included
- HP & kW (IEC) rated
- UL 508 overload endurance rated







**DIN Rail Mount** 

#### CTR Series • 25 Amps





- 3 Phase Solid State Contactor with ratings 25 Amps per phase @ 600 VAC
- Fits standard 35 mm DIN Rail profiles
- 90 mm width package

series

- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Flexible Control Voltage of 4-32 VDC, 90-140 VAC, 180-280 VAC
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (inductive loads) output
- LED indicator for easy identification of control status
- Internal TVS eliminates the need for external Overvoltage Protection
- UL 508 overload endurance rated







#### SOLICON DRC3P Series • 7.6 Amps







- 3 Phase Solid State Contactor with ratings of 4.8 & 7.6 Amps per phase @ 480 VAC
- Up to 5 HP / 3.7 kW Motor Controller ratings SOLICON
  - · 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
- Ultra-efficient thermal management design (Patented)
- Flexible 18-30 VAC/DC, 36-55 VAC/DC, 90-140 VAC or 208-265 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
- Internal TVS eliminates the need for external Overvoltage Protection





**ID Marker Strips** Page 80

3.41 [86.7]



**DIN Rail Mount** 



Contacts, Normally Open

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#### SOLICON DRC3R Series • 7.6 Amps





- Motor Reversing Contactor with rating of 7.6 Amps per phase @ 400-480 VAC
- Up to 5 HP / 3.7 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
- Ultra-efficient thermal management design (Patented)
- Flexible 18-30 VAC/DC, 36-55 VAC/DC, 90-140 VAC or 208-265 VAC Control Voltage
- LED indicator for easy identification of control status and direction (2 colors)

Notes: A B D J

SOLICON









Panel Mount

PCB Mount •

**DIN Rail Mount** 

#### DRA-CN Series • 0.1-3.5 Amps





- · Thin 6.2 mm DIN Rail mount Solid State Relay
- Replaceable CN Series SSR with ratings of 3.5 Amps @ 24 VDC or 100 mAmps @ 48 VDC available
- LED indicator for easy identification of control status

series · Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)





Accessories



**Assembly Input Voltage** 05: 3-12 VDC 24: 15-30 VDC



Plug-In Mount ID Marker Strips Page 80 Relays Page 69



#### DRA Series • 3-10 Amps





- Ready-to-use DIN Rail mountable Solid State Relay assemblies using standard Crydom SIP SSRs
- Slim 10 mm (single channel) & 54 mm (four channels) packages
- Ratings from 3 to 10 Amps per channel
- Operating Voltage of 1-200 VDC with high efficiency FETs
- Fits standard 35 mm DIN Rail profiles
- Cage style screw termination for easy and reliable wire connection
- Available with Normally Closed output
- · LED indicator for easy identification of control status







Plug-In Mount

Assemblies •

Accessories •

**DIN Rail Mount** 

#### SeriesOne DR • 3-12 Amps



- Panel Mount PCB Mount
- DIN Rail Mount



- 🐚 🔹 DIN Rail mount 11 mm (3 & 6 Amps) or 18 mm (12 Amps) wide Solid State Relay
- 🔰 🔹 3, 6 & 12 Amps Rated Load Current
- Operating Voltage of 1-60 VDC and 1-100 VDC
- Fits standard 35 mm DIN Rail profiles
- · MOSFET output provides added reliability in commercial and heavy industrial applications
- Flexible Control Voltage 4-32 VDC
- IP20 housing for greater safety
- LED indicator for easy identification of control status
- Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)
- UL & cUL listed including General Purpose & Motor Controller ratings
- UL 508 overload endurance rated





\* Drawing shown on the right



#### CKM Series • 10-30 Amps





- Solid State Relay with ratings from 10 to 30 Amps @ 60 VDC
- Fits standard 35 mm DIN Rail profiles
  - classics Slim 22.5 mm (width) package
    - Low leakage MOSFET output provides added reliability in commercial and heavy industrial applications
  - Flexible Control Voltage 4-32 VDC
  - · LED indicator for easy identification of control status
  - Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)

#### Notes: A B D J





#### SeriesOne DR Timer • 6 Amps



**DIN Rail Mount** 

Plug-In Mount

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Assemblies

Accessories



- 🌇 🔹 DIN Rail mount 11 mm (6 Amps) Solid State Relay Timer
- Operating Voltage of 1-60 VDC
- Fits standard 35 mm DIN Rail
- Power FET output provides added reliability in commercial and heavy industrial applications
- Universal Control Voltage of 12-24 VAC/DC
- IP20 housing for greater safety
- · LED indicator for easy identification of control status
- UL listed & cUL recognized
- UL 508 overload endurance rated







#### DRA4D Series • 6-12 Amps





#### DC Motor/Polarity Reversing Solid State Contactor

- **DRA** 6 & 12 Amps ratings
  - Contactors Operating Voltage of 1-100 VDC & 1-250 VDC
    - Protective Forward/Reverse interlock built-in function
- Fits standard 35 mm DIN Rail profiles
- · No heat sink required & cage style screw terminals for easy installation & reliable wire connection
- Convenient FET switches in H-Bridge configuration
- DC Control Voltage options
- Input Status LED, Forward (green), Reverse (yellow)
- HP & kW (IEC) rated

Notes: A B D J







# **Plug-In Mount**

Crydom Plug-In Relays are designed to install in industry standard relay sockets. They can also be soldered directly on PCB assemblies if so desired. Available for applications requiring from **2 to 5 Amps at 24 to 280 VAC** or **0.1 to 5 Amps at 1 to 100 VDC** with inputs covering the range of 24 to 140 VAC or 2 to 32 VDC, these Single Pole Single Throw Normally Open (SPST) relays offer the **speed and dependability of Solid State switching in a traditional mechanical relay format**. Visit the Accessories and Assemblies sections of the catalog for information on compatible sockets and "ready-to-use" Assemblies. Visit the Plug-In SSR section of the catalog or Crydom web site for additional information on Crydom Plug-In Mount SSRs.



## PLUG-IN MOUNT • AC Output • Relays

#### **CN Series** • 2 Amps





- Thin (5 mm) Solid State Relay ideally suited for high density PCB applications
- Ratings up to 2 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

series

- R-C Snubber network for additional dv/dt attenuation
- Pluggable into industry standard relay sockets or solderable
- DIN Rail mountable using DRSCN series sockets
- UL 508 overload endurance rated
- UL pilot duty rated

#### Notes: A B C D G J





crvdom



Panel Mount

PCB Mount •

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Blank: Zero Voltage Turn-On R: Instantaneous Turn-On

#### Page 48 Page 80 Page 82 <sup>0.0</sup>2 [0.5] <sup>0,1</sup>5/3,8/ 07015 0.65/16.41 0.3015.01 'dom 0.04 [1.0] <sup>0.14</sup>[3.6] 1.6121.91 | 0.59 [1<sub>5.0]</sub>

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

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# PLUG-IN MOUNT • AC Output • Relays

#### ED Series • 3-5 Amps





- AC Output Solid State Relay in an industry standard EMR plug-in package LIFERMS
  - Ratings of 3 & 5 Amps
  - Operating Voltage of 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
- LED indicator for easy identification of control status
- Wide range of AC or DC Control Voltage options
- Quick Connect termination for easy installation in sockets or on boards
- DIN Rail & PCB mountable sockets available
- Silent operation (no acoustical switching noise)
- UL & IEC General Use & Motor Controller Ratings available

#### Notes: A B C D J









#### **PLUG-IN MOUNT** • DC Output • Relays

#### CN Series • 0.1-3.5 Amps





- . Thin (5 mm) Solid State Relay ideally suited for high density PCB applications
  - Ratings of 0.1 Amps @ 48 VDC or 3.5 Amps @ 48 VDC
  - Pluggable into industry standard relay sockets or solderable
  - DIN Rail mountable using DRSCN series sockets

• UL 508 overload endurance rated



series

ID Marker Strips **DIN Rail Model** Sockets Page 60 Page 80 Page 82 <sup>0.</sup>02 [0.5] <sup>9, 15</sup>13,81 0.2015.01 0.65 [16,4] 0.2015.0J Jaom. 0.04 [1.0] <sup>0.14</sup>[3.6] 1.6171.91 0.59 [15.0]



Plug-In Mount ä

Panel Mount

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PCB Mount

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**DIN Rail Mount** 

024D: 0-24 VDC, 3.5 Amps Series 048D: 0-48 VDC, 0.1 Amps 24 CN **Control Voltage** 05: 3-12 VDC 24: 15-30 VDC 60: 38-72 VDC

**Operating Voltage** 

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



# PLUG-IN MOUNT • DC Output • Relays

#### **ED Series** • 5 Amps





Notes: A B D J









# Assemblies

Crydom offers a **variety of "ready-to-use" assemblies** featuring proven Crydom Solid State Relays and Contactors installed in DIN Rail Sockets or on Panel or DIN Rail mounted Heat Sinks. Assemblies are **available for applications ranging from 1 to more than 80 Amps in both AC or DC output versions**. Any standard Crydom Panel Mount or SIP type PCB Mount SSR or Contactor can be offered as a "ready-to-use" Assembly. Contact the nearest Crydom Distributor, Representative or local Crydom Sales Office if you don't locate your exact needed Assembly in the catalog or in the Crydom website.







# ASSEMBLIES

#### Heat Sink / SSR Assemblies

Assemblies

Accessories



- Standard single, dual and 3 phase SSRs mounted on high efficiency HS Series heat sinks
- Ready-to-use assemblies with optimum SSR / thermal pad / heat sink combination simplifying selection, ordering and installation
- Thermal efficiency ratings from 5.0°C/W to 0.25°C/W @ 40°C ambient
- Full SSR assembly ratings up to 82.5 Amps (single phase) or 27.5 Amps per phase (three phase) in a 40°C ambient
- DIN Rail and Panel mountable versions available for both stand-alone heat sinks and SSR assemblies
- Customized solutions available using single, dual and 3 phase SSRs




# Accessories

Crydom supports its extensive SSR and Contactor product lines with a comprehensive offer of accessories including **Heat Sinks, Thermal Pads, Protective Covers, Sockets, Terminal Lugs, Hardware Kits, Marker Strips and DIN Rail Kits** to make it easy to employ Crydom SSRs and Contactors in any application. Crydom can also create **special configuration SSRs or Contactors** that include installed accessories if so desired. Visit the catalog or Crydom website for additional information on Crydom SSR accessories.

#### Heat Sink/Accessories Compatibility

Page	Part number	HK1	HK2	HKM1	HSP-1 HSP-2	HSP-3 HSP-5	KS100	KS101	KS300	DRK1
75	HS501DR			ð	$\diamond$		\$	8		
76	HS301	Ð	ð		$\diamondsuit$		$\mathbf{S}$	8		۲
76	HS251	ð			$\Diamond$		\$	8		
76	HS202	Ð	ð		$\Diamond$		\$	-		<i>i</i>
77	HS201	2	ð		$\Diamond$		\$	8		<b>A</b>
77	HS172	ð	ð		$\Diamond$		\$	8		
77	HS151	ð	ð		$\diamondsuit$		\$	8		3
78	HS122	Ð	ð		$\Diamond$	$\Diamond$	\$	8		<i>i</i>
78	HS103	2			$\Diamond$	$\Diamond$	\$	5	$\varphi$	
78	HS101			ð	$\Diamond$	$\Diamond$	\$	8	$\boldsymbol{\varphi}$	
79	HS073	2			$\Diamond$	$\Diamond$	\$	8	$ \mathbf{P} $	
79	HS072	ð			$\Diamond$		\$	8		
79	HS053	ð			$\Diamond$	$\Diamond$	\$	8	$\varphi$	
80	HS033	ð			$\Diamond$	$\Diamond$	\$	8	$\varphi$	
80	HS023	2			$\Diamond$	$\Diamond$	\$	83	$ \mathbf{P} $	

Crydom DRSED 91 CE

## **Covers** • Hockey Puck



## Part no.: KS100, KS100-SMR

Clear plastic cover for Generation 3 standard hockey puck package SSRs (2.25 x 1.75 in). Clear plastic cover with cut out window for SMR-6 and MC Series.

#### Part no.: KS101

Clear plastic cover for Generation 4 standard hockey puck package SSRs (2.25 x 1.75 in). Safety covers provide added protection from electric shock when installing or checking equipment.



## **Covers** • Large Puck



#### Part no.: KS300

Dolls

Clear plastic cover large puck panel mount SSRs (4 x 2.9 in). Safety covers provide added protection from electric shock when installing or checking equipment.

## Notes: A B J



## **DIN Rail Bracket**





#### **DIN Rail Kit 1** Part no.: DRK1

RoHS

Spring, retaining clip, 45 mm DIN Rail bracket and 2 screws 6-32 x 1/4 in.

#### Notes: A B J



Panel Mount

## Filters • AC Filters



Part no.: 1F25 EMI noise suppression filter for SSR in AC single phase systems

Part no.: 3F20 (shown above) EMI noise suppression filters for SSR in three phase systems

Part no.: 3F20-4 (shown below) EMI noise suppression filters with neutral for SSR in three phase systems



# **Hardware Kits**



Bag with 2 SSR mounting screws 8-32 x 3/8 in.

#### Part no.: HK2

Part no.: HK1

Bag with 1 ground screw 10-32 x 3/8 in and 2 bracket screws 6-32 x 1/4 in.

Part no.: HKM1 Bag with 2 SSR mounting screws M4 x 9mm.

## Notes: A B J



# Heat Sinks • HS501DR





RoHS

- 5.0°C/W Thermal resistance
- Suitable for 1 single or dual SSR
- DIN Rail mountable • Heat sink material is steel with clear zinc plating surface finish

Notes: A B J L





DIN Rail Mounting Bracket M4 Mounting Screws Latch Release

## Heat Sinks • HS301



#### RoHS

- 3.0°C/W Thermal resistance
- Suitable for 1 single or dual SSR
- Panel mountable or DIN Rail mountable version available as HS301DR
- Heat sink material is aluminum with black anodized finish

#### Notes: A B J L



## Heat Sinks • HS251





- 2.5°C/W Thermal resistance
- Suitable for 1 single or dual SSR

Panel mountable
 Heat sink material is aluminum with

natural finish

## Notes: A B J L



## Heat Sinks • HS202







RoHS

- 2.0°C/W Thermal resistance
- Suitable for 1 or 2 single or dual SSR
- Panel mountable or DIN Rail mountable version available as HS202DR
- Heat sink material is aluminum with black anodized finish

#### Notes: A B J L



#### HS202DR includes

Ground Screw (10-32 x 3/8 in) DIN Rail Kit 1 (DRK1) Heat Sink (HS202) One Hardware Kit 1 (HK1)

## Heat Sinks • HS201



#### RoHS



- 2.0°C/W Thermal resistance Suitable for 1 single or dual SSR
- Panel mountable or DIN Rail mountable version available as HS201DR
- Heat sink material is aluminum with black anodized finish

#### Notes: A B J П



Ground Screw (10-32 x 3/8 in) DIN Rail Kit 1 (DRK1) Heat Sink (HS201) One Hardware Kit 1 (HK1)

## Heat Sinks • HS172





1.7°C/W Thermal resistance Suitable for 1 or 2 single or dual SSRs

RoHS

Panel mountable

· Heat sink material is aluminum with

natural finish

Notes: A B J L



## Heat Sinks • HS151





- 1.5°C/W Thermal resistance
- Suitable for 1 single or dual SSR
- Panel mountable or DIN Rail mountable version available as HS151DR

Heat Sink (HS151)

One Hardware Kit 1 (HK1)

 Heat sink material is aluminum with black anodized finish

#### Notes: A B J L



Panel Mount

.

PCB Mount

.

**DIN Rail Mount** 

.

Plug-In Mount

.

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## Heat Sinks • HS122



## RoHS

- 1.2°C/W Thermal resistance
- Suitable for 1 or 2 single or dual SSRs
   Panel mountable or DIN Rail mountable version available as HS122DR
- Heat sink material is aluminum with black anodized finish

#### Notes: A B J L



## Heat Sinks • HS103





1.0°C/W Thermal resistance
 Suitable for 1, 2 or 3 single or dual



Panel mountable or DIN Rail
mountable version available as HS103DR

• Heat sink material is aluminum with black anodized finish

#### Notes: A B J L



#### HS103DR includes

Heat Sink (HS103) Extruded DIN Rail Bracket Fasteners Three Hardware Kits 1 (HK1)

## Heat Sinks • HS101





# HErice

- 1.0°C/W Thermal resistance
  Suitable for 1 single or dual SSRs;
- one 3 phase SSR
- Panel mountable
- Heat sink material is aluminum with black anodized finish

## Notes: A B J L



## Heat Sinks • HS073





- 0.7°C/W Thermal resistance Suitable for 1, 2 or 3 single or dual SSRs; one 3 phase SSR
- Panel mountable
- Heat sink material is aluminum with black anodized finish

#### Notes: A B J L



## Heat Sinks • HS072





- 0.7°C/W Thermal resistance
- Suitable for 1 or 2 single or dual SSRs Panel mountable

· Heat sink material is aluminum with natural finish

#### Notes: A B J L



## Heat Sinks • HS053







RoHS

- 0.5°C/W Thermal resistance Suitable for 1, 2 or 3 single or dual SSRs; one 3 phase SSR
- Panel mountable
- Heat sink material is aluminum with black anodized finish

## Notes: A B J L



## Heat Sinks • HS033



## RoHS

- - 0.36°C/W Thermal resistance
    - Suitable for 1, 2 or 3 single or dual SSRs; one 3 phase SSR Panel mountable
  - Heat sink material is aluminum with black anodized finish

## Notes: A B J L



## Heat Sinks • HS023





0.25°C/W Thermal resistance

RoHS

- Suitable for 1, 2 or 3 single or dual SSRs; one 3 phase SSR Panel mountable
- Heat sink material is aluminum with black anodized finish

## Notes: A B J L



## **ID Marker Strips**



Part no.: CNLB A package of 10 plastic strips comprising 10 individual unprinted markers.

#### Part no.: CNLN

A package of 10 plastic strips comprising 10 markers printed individually from 1 to 10.

#### Part no.: CNL2

A package of 10 plastic strips comprising 10 markers printed individually from 11 to 20.

Notes: A B J



Lug Terminals

TRM6 TRM1 TRM3/0 PoHS

#### Part no.: TRM3/0

Copper wire lug for AWG 4 (21.2 mm<sup>2</sup>) to AWG 3/0 (85 mm<sup>2</sup>) wire size. Mounts with 3/8" bolt/stud.

#### Part no.: TRM1

Copper wire lug for AWG 6 (13.3 mm<sup>2</sup>) to AWG 0 (53.5 mm<sup>2</sup>) wire size. Mounts with #8, #10, M4 or M5 screws. (Not compatible with IP20 covers)

#### Part no.: TRM6

Copper wire lug for AWG 14 (2.1 mm<sup>2</sup>) to AWG 6 (13.3 mm<sup>2</sup>) wire size. Mounts with #8, #10, M4 or M5 screws.



## Power Supply • 20 VAC



#### Part no.: PS120, PS240

The PS120 and PS240 power supplies are specifically designed to supply the 20 VAC supply voltage used by the Crydom LPCV series linear proportional controls, from a 120 or 240 VAC 50/60 Hz nominal AC voltage main supply.





## Sockets • DRS Socket



DRS1



# Part no.: DRS1

**DRS Series DIN Rail Mountable Sockets** 

10 mm single channel DIN Rail mountable socket to mount 1 Crydom PCB mount

relay onto standard 35 mm DIN Rail profiles.

#### Part no.: DRS4

54 mm four channel DIN Rail mountable socket to mount up to 4 Crydom PCB mount relays onto standard 35 mm DIN Rail profiles.

Notes: A B J



## Sockets • DRS-CN Sockets



# **FL** ( E 🖌



CN Series DIN Rail Mountable Sockets Part no.: DRSCN05, DRSCN24 DIN Rail mountable socket to mount CN Series relays onto standard 35 mm DIN

Rail profiles. Maximum output rating for DRSCN sockets is 250 V, 6 Amps regardless of selected SSR. DRS-CN sockets are 6 mm wide and include input status LED.

Notes: A B G J



## Sockets • DRSED Socket





#### ED Series DIN Rail Mountable Socket Part no.: DRSED

Finger safe IP10 DIN Rail mountable socket to mount ED Series relays onto

standard 35 mm DIN Rail profiles. Rated at 250 V AC/DC, 12 Amps. The DRSED includes M3 Combo screws.

## Notes: A B J



## Sockets • PCBSED Socket



## SLI CE Skohs



#### ED Series PCB Mountable Socket

Part no.: PCBSED

PC Board mountable socket for ED series relays. Rated at 250 V AC/DC, 12

Amps. Suggested Pin-out hole diameter: 1.0 mm

Notes: A B J



Accessories

Panel Mount

## Thermal Pads • Mini-Puck



## **Thermal Pads** • Hockey Puck



#### Part no.: HSP-6

Thermal pad for mini-puck panel mount SSRs. Includes adhesive on one side.

Notes: A B J



Part no.: HSP-1

RoHS



25 pack of non-adhesive thermal pads for standard hockey puck package SSRs (2.25 x 1.75 in).

Part no.: HSP-2 (shown above)

Thermal pad for standard hockey puck package SSRs (2.25 x 1.75 in). Includes adhesive on one side.

## Notes: A B J



## **Thermal Pads** • Large Puck



Part no.: HSP-3 Thermal pad for large puck panel mount SSRs (4 x 2.9 in).

Part no.: HSP-5 (shown above)

Thermal pad for large puck panel mount SSRs (4 x 2.9 in). Includes adhesive on one side.

Notes: A B J









#### SENSATA TECHNOLOGIES INC.

529 Pleasant Street, Attleboro, MA 02703 USA

+1 (877) 502 5500 - Option 2 - Option 3 sales.crydom@sensata.com



#### SENSATA TECHNOLOGIES HOLLAND B.V. Jan Tinbergenstraat 80 7559 SP Hengelo The Netherlands

+44 (1202) 416170 ssr-info.eu@sensata.com

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#### ASIA



#### SENSATA TECHNOLOGIES CHINA CO., LTD.

30th Floor, InterContinental Center,

100 Yu Tong Rd, Jing An District, 200070 Shanghai, China

#### China

+86 (21) 2306 1500 sales.isasia@list.sensata.com Japan +81 (45) 277 7117 sales.isasia@list.sensata.com

Korea

**Rest of Asia** +82 (31) 601 2004

+886 (2) 27602006 ext 2808 sales.isasia@list.sensata.com sales.isasia@list.sensata.com

India

+91 (80) 67920890

sales.isasia@list.sensata.com

06/2014 Rev. 040317