

crydom[®]

Overview

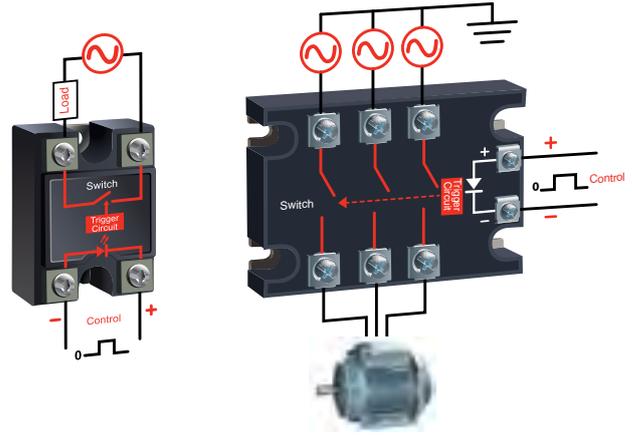


The Global Expert in **Solid State Switching** Technology

A brand of
CST
CUSTOM SENSORS & TECHNOLOGIES

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).



Ratings by Type of Package *



		Panel Mount	DIN Rail Mount	PCB Mount	Plug-In Mount	Contactors
AC Output	Voltage (Volts)	140	140	140		480
		280	280	280		530
		530	530	530	280	600
		660	660	660		
Current (Amps)	Single	150	65	25	5	
	Dual	50	6	15		
	3 Phase	50	25	15		50
DC Output	Voltage (Volts)	1000	200	200	100	250
	Current (Amps)	100	30	20	5	60

* Crydom's maximum ratings



Custom Sensors & Technologies (CST) is a specialist in designing and manufacturing sensing, control and motion products.

Through its brands, BEI Kimco, BEI Sensors, BEI PSSC, Crouzet, Crydom, Kavlico, Newall and Systron Donner Inertial, CST offers customizable, reliable and efficient components for mission-critical systems in Aerospace & Defense, Transportation, Energy & Infrastructure, Medical, Food and Beverage and Building Equipment markets.

Focused on premium value offers and committed to excellence, CST, with 4,500 employees worldwide and sales of \$600M US in 2013, is the dependable and adaptable partner for the most demanding customers.

www.cstsensors.com



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 CST.

www.crydom.com

Solid State Relay & Contactor 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
- Enabling temperature accuracy
- Suitable for heater, fan, blower and valve control

Power 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
- 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

Why Use Solid State Switching Technology?



Long Life

Solid state relays and contactors have no moving parts. Therefore, there is no mechanical wear and tear on the output contact, ideal for repetitive applications.



Quiet Operation

Solid state switching solutions make no acoustical noise when the output contacts change states. This is highly desirable in many commercial and medical applications.



Minimum Electrical Noise

Zero voltage turn-on and zero current turn-off allows for minimum electrical disturbances generated by solid state relays and contactors.



Low Power Consumption

Solid state relays and contactors require very little input power "coil current" to switch large loads.



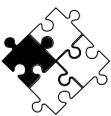
Shock & Vibration Resistant

Solid state switching solutions are not susceptible to erratic or unreliable operation when operating under tough environments.



Ideal for Harsh Environments

Solid state relays and contactors do not generate sparks or electric arcs and do not bounce either electrically or mechanically.



Compatibility with Control Systems

DC controlled SSRs can be switched by digital systems such as μC based systems. AC controlled SSRs can be driven by limit switches and sensors carrying AC control signals.



Fast Switching

Instantaneous turn-on solid state relays and contactors respond to a control signal in less than 100 μs .



Position Insensitive

Suitable for mounting in either vertical or horizontal position, "dead bug" position and adjacent mounting.



Reduced Weight

Solid state relays and contactors are much lighter than equivalent electromechanical versions; depending on the power can be up to 70%.



Magnetic Noise Immunity

Magnetic fields have little effect on solid state relays and contactors since, unlike electromechanical contactors, they don't use a magnetic coil to switch the load.



Reduced Energy Cost

Energy savings are achieved from switching the load off when it is not required; using automation to ensure maximum system efficiency.

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 in that 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.**

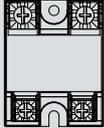
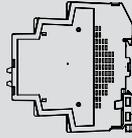
So in summary, the major technical difference between an SSR and SSC has to do with the mandatory motor ratings required to be defined as a "Contactor".



Index of Products

DIN Rail Mount

Page 8

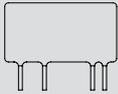
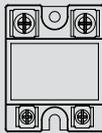


Panel Mount

Page 16

Panel Mount Control Relays

Page 21

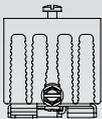
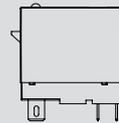


PCB Mount

Page 23

Plug-In Mount

Page 25



Accessories

Page 27

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:

- A** Part Number Nomenclature is color coded as follows:
 - Required for valid part number
 - For options only and not required for valid part number
- B** Not all part number combinations are available. Contact Crydom Sales Support for information on the availability of a specific part number.
- C** 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.
- D** Listed agency approvals may not apply to all part numbers available within a series. To consult agency approvals for a specific part number contact Crydom Technical Support.
- E** Required external heat sink for all ratings.
- F** Motion Control functions are coded as follows:



Start / Stop



Reversing



Soft Start Speed



Control

SOLICON

DRC series

Outstanding features all in one contactor!

40% lighter than a similarly rated contactor

Output terminals designed for an easy connection to multiple motor connections in parallel for a total up to 5 HP @ 480 VAC

Patented proprietary thermal management technology

Reversing control (DRC3R includes On/Off and Forward/Reverse control in a compact 45 mm package)

Industry standard DIN rail mountable package

ID marker for easy identification

Full compatibility with Schneider Electric's accessories such as overload relay LRD and thermal magnetic circuit breaker GV2

UL Listed, IEC60947-2 standard package

Very low input control current

LED input status indicator (including 2 different colors for Forward and Reverse)

Input control available in a variety of DC and AC voltage options

Embedded solid state auxiliary contacts (Normally Open and Normally Closed)

SOLICON DRC Series contactors are a unique switching solution featuring:

- 9000 starts per hour
- Embedded auxiliary contacts
- 100 kA Short Circuit Current Rating (SCCR)
- Flexible input control options
- Full compatibility with Schneider Electric accessories



For more information on the SOLICON DRC Series visit motion.crydom.com

DIN Rail Mount

AC Output

Page	Series	Description	2	2.4	3	4	4.2	5	6	7.6	8	10	12	20	25	30
8	SOLICON DRC3P	3 Phase								■						
9	SOLICON DRC3R	Reversing								■						
9	DRA-CN	6 mm	■													
9	DRA	10/54 mm	■		■	■		■			■					
10	SeriesOne DR	11 mm				■			■					■		
10	CKR	22.5 mm										■		■		■
11	SeriesOneDR Dual	18 mm							■							
11	DRA3P	3 Phase			■		■									
12	DRA3R	Reversing			■		■									
12	CTR	3 Phase														■
13	SeriesOne DR Timer	Timer							■							

DC Output

Page	Series	Description	6	10	20	30
12	CKM	45 mm			■	■
13	SeriesOne DR Timer	Timer			■	

Crydom DIN Rail Mounted Solid State Relays and Contactors are available in **single, dual and 3 phase output ratings** in the range of **2 to 65 Amps per phase at 24 to 660 VAC** or **2 to 30 Amps at 1 to 100 VDC** in housing widths varying from 6 mm for the lowest output rating versions to 45 mm for 3 phase output rating versions and 62 mm for 3 phase reversing versions. Inputs cover the range of 24 to 280 VAC or 3 to 32 VDC and feature LED input status indicator. All output ratings are free air in a 40° C ambient temperature.

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.



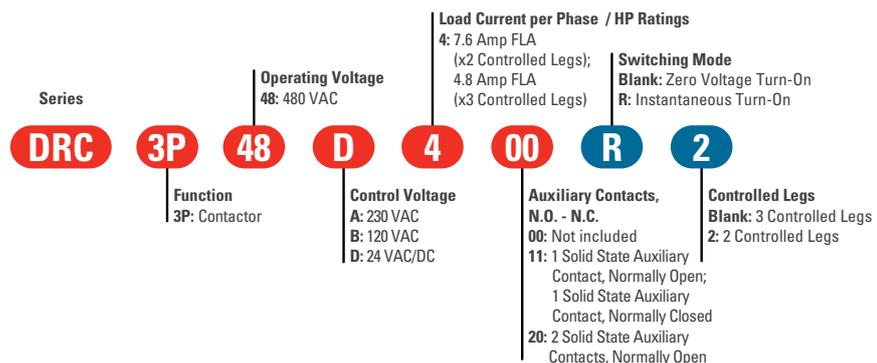
DRC3P Series • 7.6 Amps



- 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
- 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, 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 Random Turn-On (phase control or inductive loads) output
- Internal TVS eliminates the need for external Overvoltage Protection

Notes: **A B D F**

AC Output



DRC3R Series • 7.6 Amps

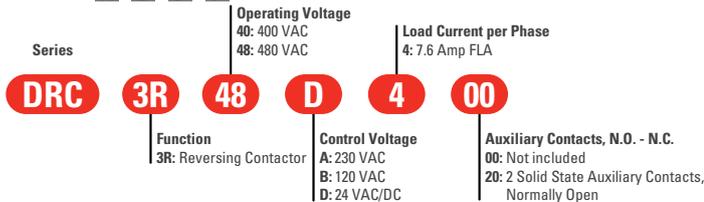


AC Output



- 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, 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 F**



DRA-CN Series • 2 Amps

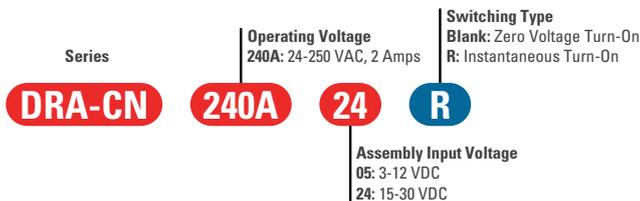


AC Output



- Thin 6.2 mm DIN Rail mount Solid State Relay
- Ratings of 2 Amps @ 240 VAC
- LED indicator for easy identification of control status
- Available with Zero Voltage Turn-On (resistive loads) or Random Turn-On (phase control or inductive loads) output

Notes: **A B D**



DRA Series • 3 - 8 Amps

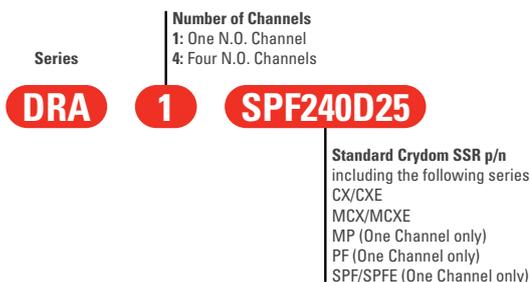


AC Output



- 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
- Ratings from 3 to 8 Amps
- Operating Voltage of 12-530 VAC with back-to-back SCR output for added reliability in commercial and heavy industrial applications
- 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
- Available with Zero Voltage Turn-On (resistive loads) or Random Turn-On (inductive loads) output
- LED indicator for easy identification of control status

Notes: **A B C D**



DIN Rail Mount

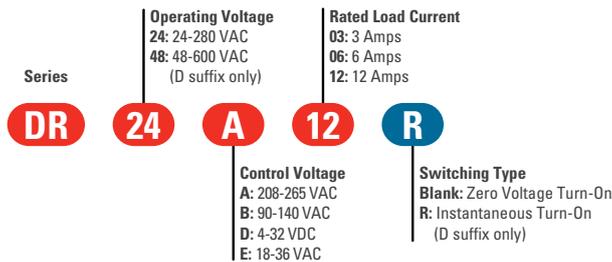
SeriesOne DR • 3 - 12 Amps



- 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, 208-265 VAC
- Available with Zero Voltage Turn-On (resistive loads) or Random Turn-On (inductive loads) output
- IP20 housing for greater safety with lug type terminals
- LED indicator for easy identification of control status
- UL 508 overload endurance rated

Notes: **A B D F**

AC Output



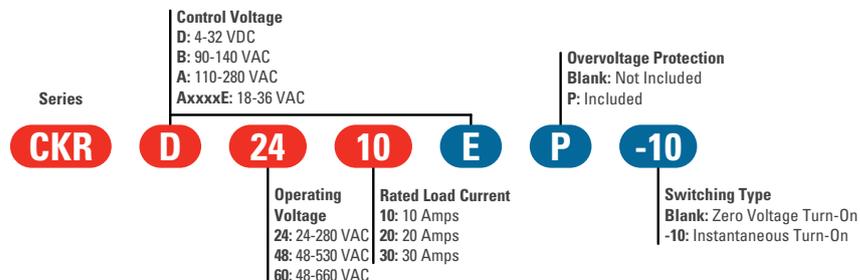
CKR Series • 10 - 30 Amps



- 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 Random 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 D**

AC Output





SeriesOne DR Dual • 6 Amps

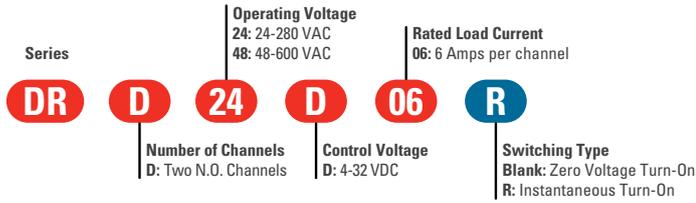


AC Output



- 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 Random Turn-On (inductive loads) output
- IP20 housing for greater safety with lug type terminals
- LED indicator for easy identification of control status
- UL 508 overload endurance rated

Notes: **A B D F**



DRA3P Series • 2.4 - 4.2 Amps

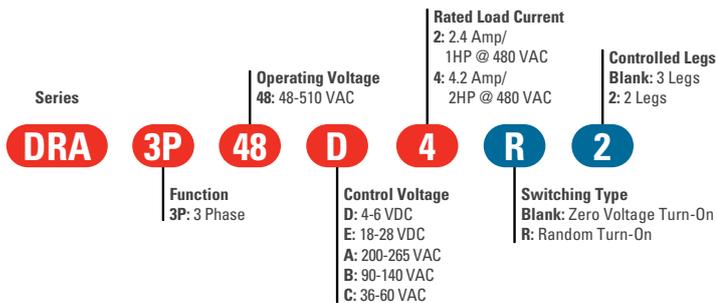


AC Output



- 2.4 & 4.2 Amp rated 3 phase Solid State Contactor
- Operating Voltage of 48-510 VAC, 3-Phase
- 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 Random 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 D F**



DIN Rail Mount

DRA3R Series • 2.4 - 4.2 Amps

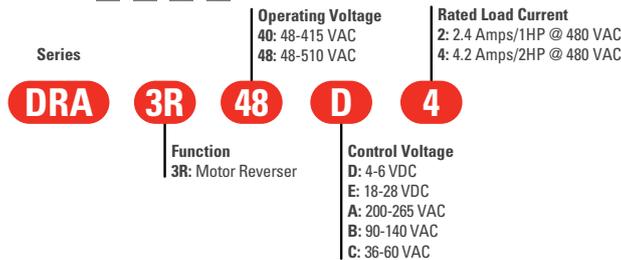


AC Output



- 2.4 & 4.2 Amps rated Motor Reversing Solid State Contactor
- Operating Voltage 48-510 VAC, 3 phase
- 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

Notes: **A B D F**



CTR Series • 25 Amps

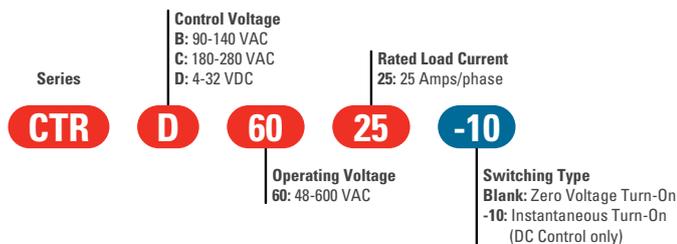


AC Output



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

Notes: **A B D**



CKM Series • 10 - 30 Amps

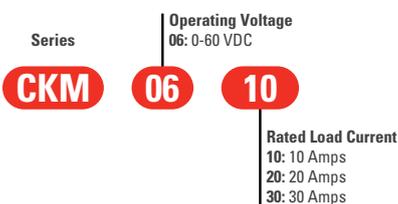


DC Output



- Solid State Relay with ratings from 10 to 30 Amps @ 60 VDC
- Fits standard 35 mm DIN Rail profiles
- 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**



The functionality of a Timer...

the control & reliability of a Solid State Relay



series
oneDR
TIMER

DIN Rail Mount

SeriesOne DR Timer • 6 Amps

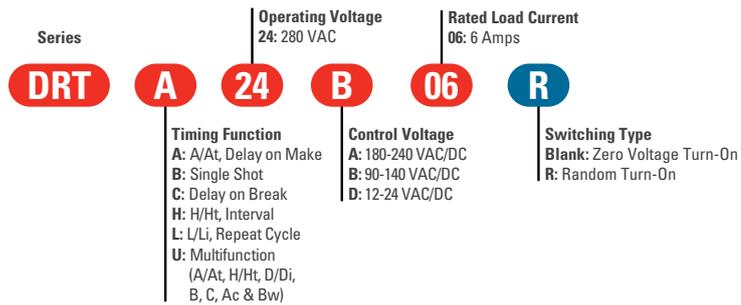


AC Output



- 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, 180-240 VAC & 90-140 VAC/DC
- Available with Zero Voltage Turn-On (resistive loads) or Instantaneous Turn-On (inductive loads) output
- IP20 housing for greater safety with lug type terminals
- LED indicator for easy identification of control status
- UL 508 overload endurance rated

Notes: **A B D F**



SeriesOne DR Timer • 6 Amps

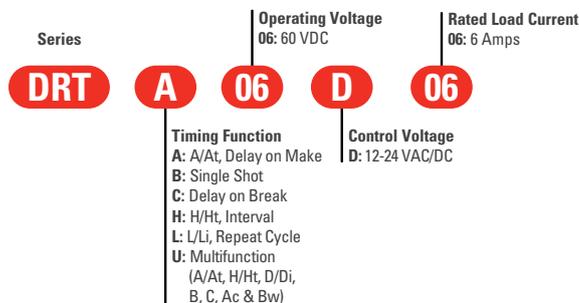


DC Output



- 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 with lug type terminals
- LED indicator for easy identification of control status
- UL 508 overload endurance rated

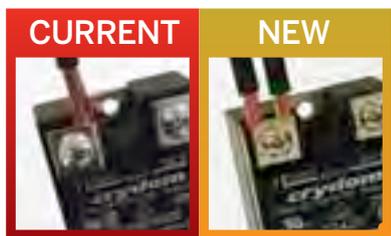
Notes: **A B D F**



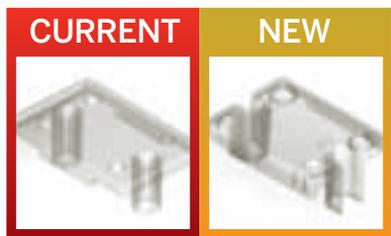
Meet **THE NEW** & improved **PANEL MOUNT** **SOLID STATE RELAY**



Improved "SEMS" screw & washer



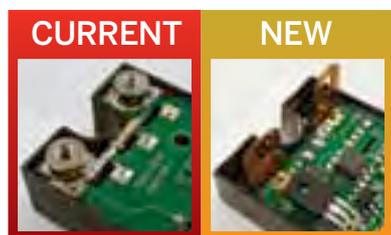
Improved touch safe cover



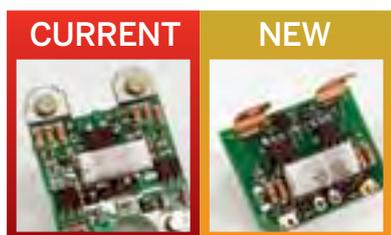
Redesigned housing with anti-rotation barriers



Direct output "lead frame" termination



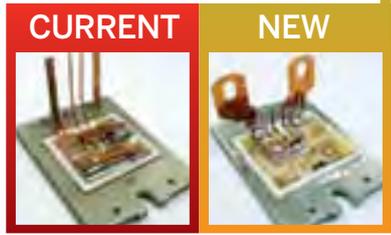
Improved circuit performance



Low input current option



Stress & epoxy free construction



Improved thermal performance with DBC technology

Regulated control inputs

Panel Mount

AC Output

Page	Series	Description	Rating Amps								
			10	25	40	50	75	90	110	125	
16	Series 1	280 V	■	■	■	■	■	■	■	■	■
17	CW	HD 660 V	■	■	■	■	■	■	■	■	■
17	53TP	3 Phase	■	■	■	■	■	■	■	■	■
18	53RV	Reversing	■	■	■	■	■	■	■	■	■
18	Evolution Duals	Screw Terminals	■	■	■	■	■	■	■	■	■

DC Output

Page	Series	Description	Rating Amps					
			10	20	40	60	80	100
19	PowerPlus DC	1 - 500 V	■	■	■	■	■	■
19	LVD	Disconnect	■	■	■	■	■	■
20	DP	Reversing	■	■	■	■	■	■

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.



Series 1 • 10 - 125 Amps

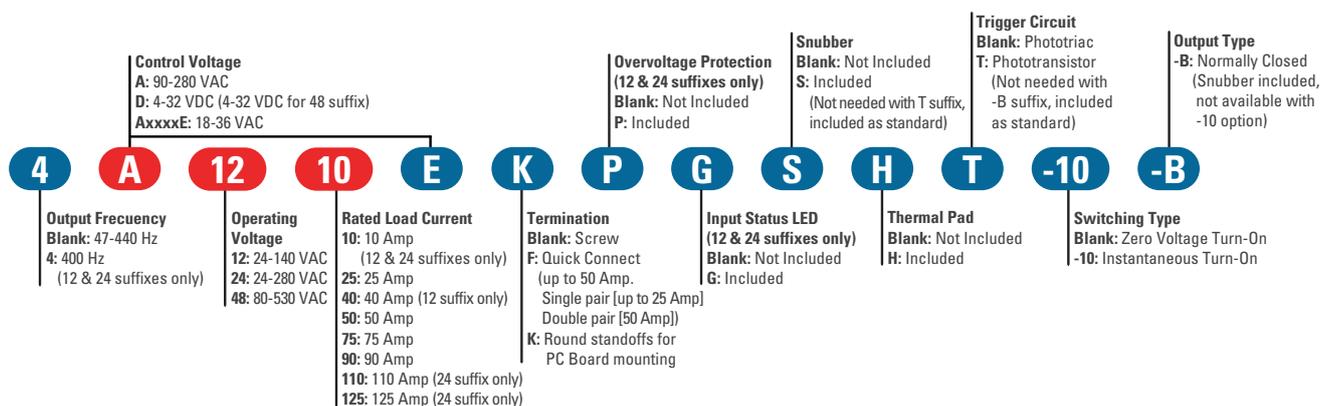


AC Output



- Crydom's Signature family of Solid State Relays
- Ratings from 10 to 125 Amps @ 24-280 VAC and from 12 to 90 Amps @ 80-530 VAC
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Flexible 3-32 VDC, 18-36 VAC or 90-280 VAC Control Voltage
- "Ultra-low" input current draw (2-4 mAmps DC typical)
- Optional output R-C Snubber
- Available with Zero Voltage Turn-On (resistive loads) or Random 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 grease using the "H" suffix
- Optional Normally Closed output ("-B" suffix option)
- UL 508 overload endurance rated

Notes: **A B D E**



CW Series • 10-125 Amps

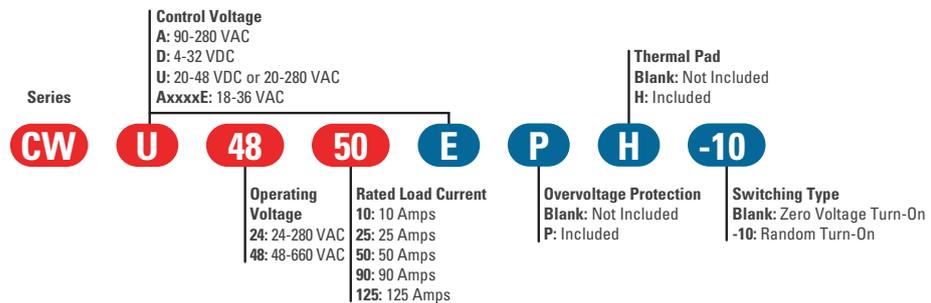


AC Output



- Heavy duty Solid State Relay with ratings from 10 to 125 Amps @ 12-280 VAC or 48-660 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, 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 Random 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 grease using the "H" suffix
- UL 508 overload endurance rated

Notes: **A B D E F**



53TP Series • 25-50 Amps

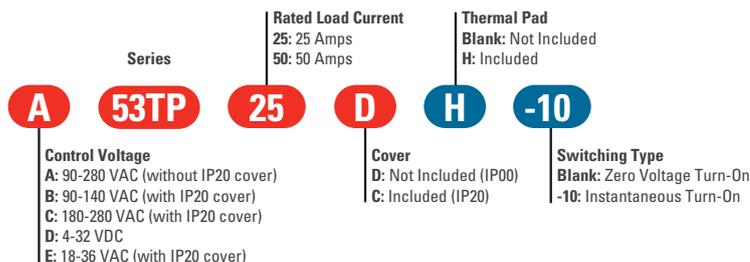


AC Output



- 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
- 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 Random 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 grease using the "H" suffix
- UL 508 overload endurance rated

Notes: **A B D E F**



Panel Mount

53RV Series • 25-50 Amps

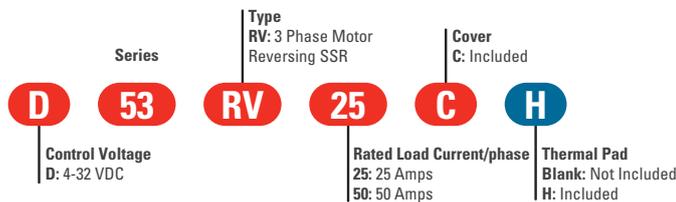


- Motor Reversing Contactor with ratings of 25 & 50 Amps per phase @ 48-530 VAC
- Up to 7.5 HP / 5.5 kW Motor Controller ratings
- Built-in interlock circuit protects the relay/load if both Forward & Reverse inputs are simultaneously actuated
- Back-to-back SCR output provides added reliability in commercial 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 grease using the "H" suffix
- UL 508 overload endurance rated

AC Output



Notes: **A B D E F**

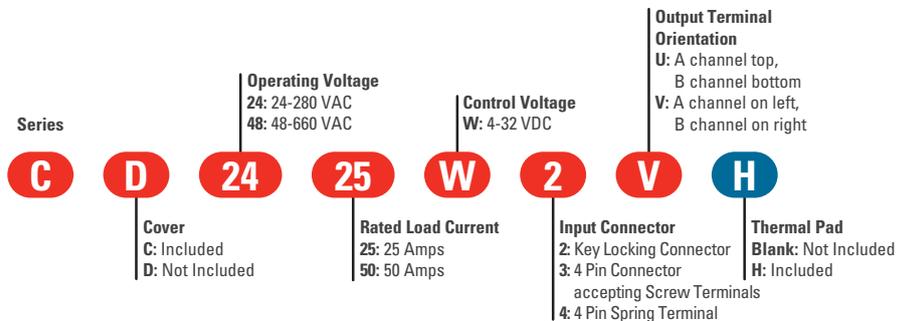


Evolution Dual Series • 25 - 50 Amps



- 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
- 4-15 VDC & 15-32 VDC or flexible 4-32 VDC Control Voltage
- Four Input Connector options for additional assembly flexibility
- LED indicator for each output channel for easy identification of control status
- Available with Zero Voltage Turn-On (resistive loads) or Random Turn-On (phase control or inductive loads) output

Notes: **A B D E**



DC Series • 10 - 100 Amps

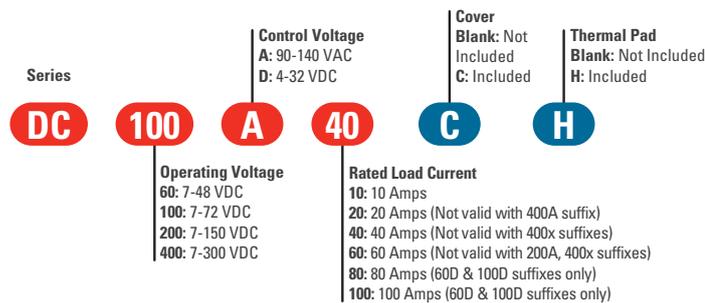


DC Output



- Solid State Relay with ratings up to 100 Amps @ 60 VDC, 100 Amps @ 100 VDC, 60 Amps @ 200 VDC and 20 Amps @ 400 VDC
- Logic compatible control options of either 4 to 32 VDC or 90 to 140 VAC
- Optional IP20 "touch safe" Cover for additional user protection & thermal interface pad
- 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

Notes: **A B D E F**



LVD Series • 40 - 100 Amps

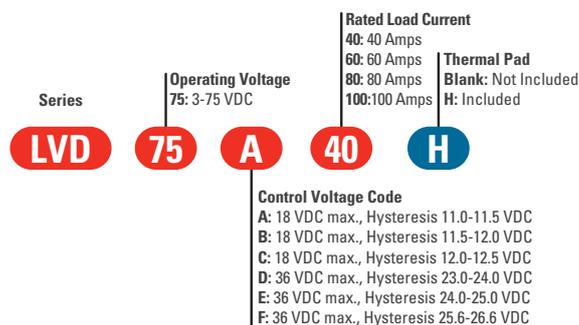


DC Output



- 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 D E**



Panel Mount

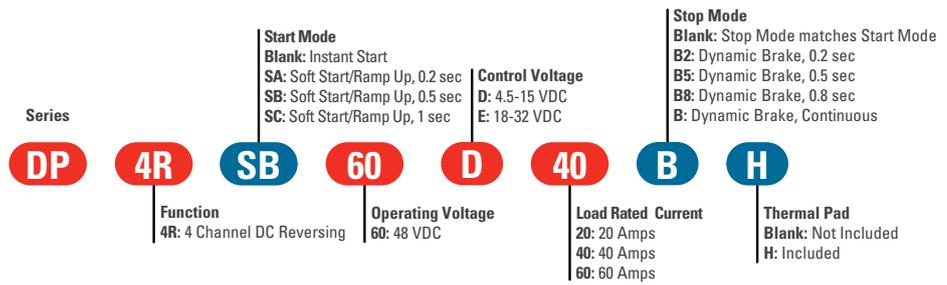
DP Series • 20 - 60 Amps



- 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 D E F**

DC Output



Panel Mount Control Relays

Crydom Solid State Control relays combine Crydom's proven solid state switching technology with **advanced microprocessor control** to create standard SSRs with advanced features such as analog input AC phase control and thermocouple input temperature control. Additional features such as AC soft start/soft stop, DC soft start/soft stop, DC electronic brake, DC PWM and AC burst fire integral cycle control are available on special order.

Available in Crydom's standard "S1" package, Crydom Solid State Control relays feature a **wide range of output ratings, UL/cUL approval and CE certification to the RoHS and Low Voltage Directives.**

Page	Series	Description	Rating Amps		
			25	50	90
21	MCPC	Phase Control	■	■	■
22	MCTC	Temperature Control	■	■	■
22	SMR-6	Monitoring	■	■	■



MCPC Series • 25-90 Amps

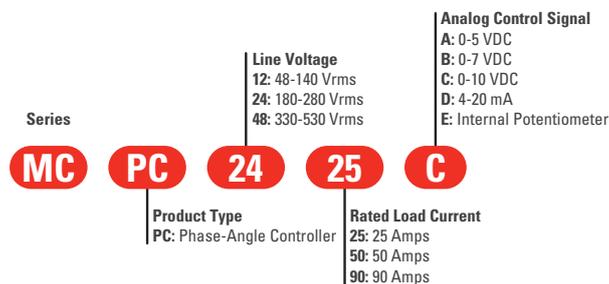


AC Output



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

Notes: **A B D E**



Panel Mount Control Relays

MCTC Series • 25-90 Amps

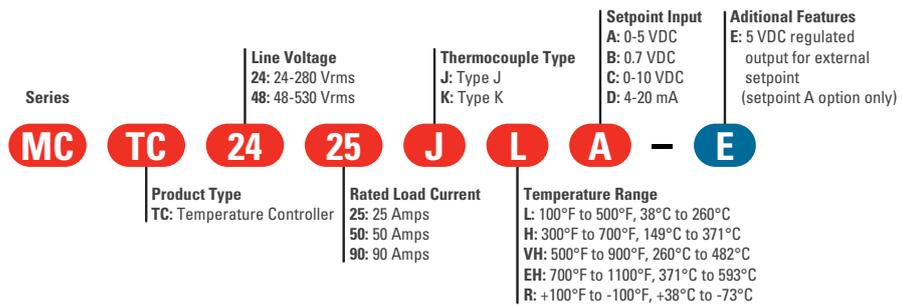


AC Output



- Microprocessor based temperature controller / SSR
- Ratings from 25 to 90 Amps @ 48-530 VAC
- Industry standard analogue input (voltage or current) for temperature setpoint
- Direct J or K Thermocouple input
- LED indicators for easy identification of output and temperature status
- Open Thermocouple protection
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Available Temperature Range option "R" for refrigeration cycle including 2 minute short cycle protection
- Option "E" provides a regulated 5 V/10mA source for use with external potentiometer control

Notes: **A B D E**



SMR -6 Series • 25-90 Amps

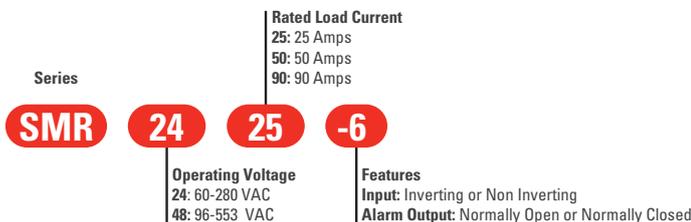


AC Output



- 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

Notes: **A B D E**



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.

AC Output			Rating Amps		
Page	Series	Description	1.5	2	5
23	ASO	Mini SIP	■	■	
24	CX	SIP			■

DC Output			Rating Amps				
Page	Series	Description	3	5	6	10	20
24	DMO	Mini SIP	■				
24	CMX	SIP	■	■	■	■	■



ASO Series • 1.5-2 Amps

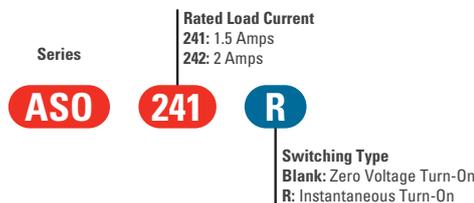


AC Output



- Compact design Solid State Relay ideally suited for high density PCB applications
- Ratings up to 2 Amps @ 12-280 VAC
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Available with Zero Voltage Turn-On (resistive loads) or Random Turn-On (phase control or inductive loads) output
- Solderable 0.015" x 0.030" pins can also plug fit SIP type IC socket

Notes: **A B D**



CX Series • 5 Amps

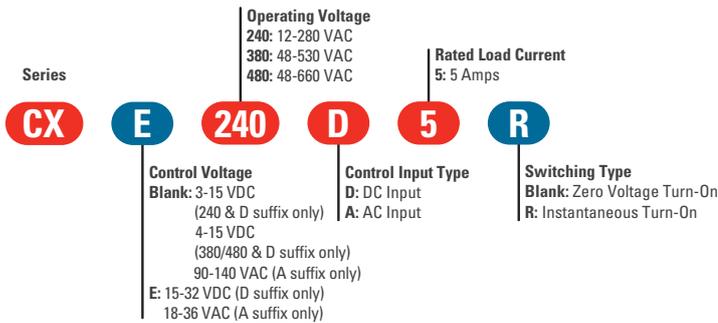


AC Output



- 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 Random Turn-On (phase control or inductive loads) output
- AC or DC Control Voltage options

Notes: **A B D F**



DMO Series • 3 Amps



DC Output



- Compact design Solid State Relay ideally suited for high density PCB applications
- Ratings up to 3 Amps @ 60 VDC
- 3-10 VDC Control Voltage
- 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" pins can also plug fit SIP type IC socket

Notes: **A B D**



CMX Series • 3 - 20 Amps

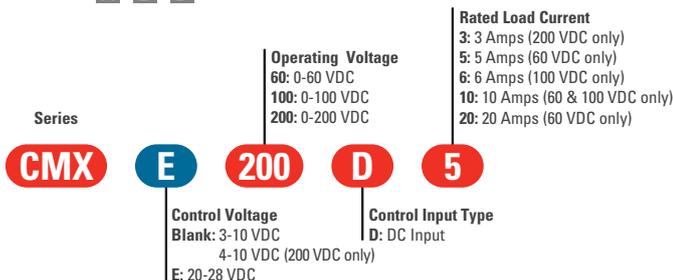


DC Output



- SIP Solid State Relay ideally suited for high density PCB applications
- Low impedance MOSFET output minimizes total power dissipation
- 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)

Notes: **A B D**



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 section of the catalog for information on compatible sockets. Visit the Crydom web site for additional information on Crydom Plug-In Mount SSRs.

AC Output			Rating Amps		
Page	Series	Description	2	3	5
25	LifePlus ED	280 V / 5 A		■	■
26	CN	280 V / 2 A	■		

DC Output			Rating Amps		
Page	Series	Description	0.1	3.5	5
26	LifePlus ED	1 - 100 V			■
26	CN	1 - 60 V	■	■	



ED Series • 3 - 5 Amps

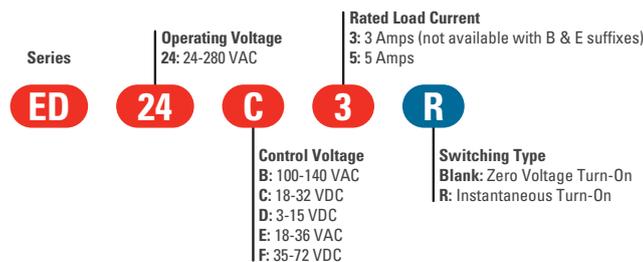


AC Output



- AC Output Solid State Relay in an industry standard EMR plug-in package
- Ratings of 3 & 5 Amps
- Operating Voltage of 24-280 VAC
- No moving parts eliminates arcing & contact bounce, significantly increasing the life expectancy over equivalent
- Back-to-back SCR output provides added reliability in commercial and heavy industrial applications
- Available with Zero Voltage Turn-On (resistive loads) or Random 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 D F**



Plug-In Mount

CN Series • 2 Amps

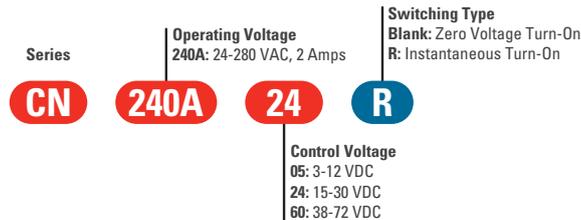


AC Output



- Thin 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 Random Turn-On (phase control or inductive loads) output
- 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 D**



ED Series • 5 Amps

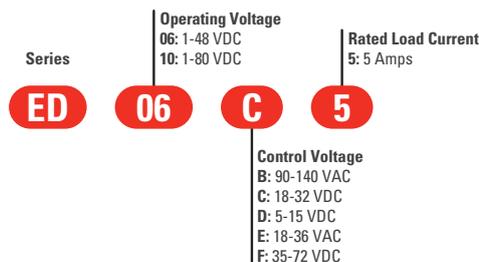


DC Output



- DC output Solid State Relay in an Industry standard EMR plug-in package
- 5 Amps rated
- Operating Voltage of 1-48 VDC and 1-80 VDC
- No moving parts eliminates arcing & contact bounce, significantly increasing the life expectancy over equivalent rated electromechanical relays and contactors
- 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)
- Ideally suited for both resistive and inductive loads (inductive loads such as motors and EMR/solenoid coils must be diode suppressed)
- UL & IEC General Use & Motor Controller Ratings available

Notes: **A B D F**



CN Series • 0.1-3.5 Amps

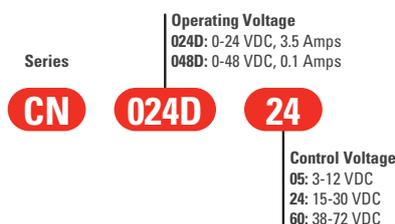


DC Output



- Thin 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

Notes: **A B D**



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.

Filters



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



Part No.: **3F20**
EMI noise suppression filters for SSR in three phase systems.



Part No.: **3F20-4**
EMI noise suppression filters with neutral for SSR in three phase systems.

Hardware Kit



Part No.: **HK1**
Bag with 2 SSR mounting screws 8-32 x 3/8 in.

Heat Sinks



Part No.: **HS501DR**
5.0°C/W thermal resistance. Suitable for 1 single or dual SSR. Din Rail mountable.



Part No.: **HS301 / HS301DR**
1.5°C/W thermal resistance. Suitable for 1 single or dual SSR. Panel or DIN Rail mountable versions available.



Part No.: **HS151 / HS151DR**
1.5°C/W thermal resistance. Suitable for 1 single or dual SSR. Panel or DIN Rail mountable versions available.



Part No.: **HS073** **NEW!**
0.7°C/W thermal resistance. Suitable for 1 or 2 single or dual SSR; one 3 phase SSR. Panel mountable.



Part No.: **HS053**
0.5°C/W thermal resistance. Suitable for 1, 2 or 3 single or dual SSRs; one 3 phase SSR. Panel mountable.



Part No.: **HS033** **NEW!**
0.25°C/W thermal resistance. Suitable for 1 or 2 single or dual SSRs; one 3 phase SSR. Panel mountable.

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.

Lug Terminals



Part No.: **TRM1**
Copper wire lug for AWG 6 (13.3 mm²) to AWG 0 (53.5 mm²) wire size. Mounts with #8, #10, M4 or M5 screws.



Part No.: **TRM6**
Copper wire lug for AWG 14 (2.1 mm²) to AWG 6 (13.3 mm²) wire size. Mounts with #8, #10, M4 or M5 screws.



Part No.: **TRM3/0**
Copper wire lug for AWG 4 (21.2 mm²) to AWG 3/0 (85 mm²) wire size. Mounts with 3/8" bolt/stud.

Protective Cover



Part No.: **KS101** **NEW!**
Clear plastic cover for 4th generation single phase SSRs.

Sockets



Part No.: **DRS1**
10 mm single channel DIN Rail mountable socket for Crydom PCB SIP SSRs.



Part No.: **DRS4**
54 mm four channel DIN Rail mountable socket for Crydom PCB SIP SSRs.



Part No.: **DRSCN**
6 mm wide DIN Rail mountable socket for CN Series relays.



Part No.: **DRSED**
Finger safe IP10 DIN Rail mountable socket for ED Series SSRs.



Part No.: **PCBSED**
54 mm four channel DIN Rail mountable socket for Crydom PCB SIP SSRs.

Thermal Pads



Part No.: **HSP-2**
Thermal pad for standard hockey puck package SSRs. Includes adhesive on one side.

crydom®

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03/2014
Rev.032814

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