

# Series CMRD24/CMRA24

35-65Amp • 240 Vac • AC Output

## CRYDOM

Control over power

- Zero Voltage and Random Turn-On Switching
- DIN Rail & Panel Mount
- Status Indicating LED
- DC or AC Control
- Integrated Overvoltage Protection by Automatic Self Turn-On (Suffix P)

Featuring state-of-the-art Surface Mount Technology, these SPST-NO relays deliver proven reliability in the most demanding applications. Output consists of an SCR AC switch and is available in zero-cross or random turn-on versions. Manufactured in Crydom's ISO 9001 Certified facility for optimum product performance and reliability.

MODEL NUMBERS	CMRD2435 CMRA2435	CMRD2445 CMRA2445	CMRD2455 CMRA2455	CMRD2465 CMRA2465
<b>OUTPUT SPECIFICATIONS</b> ①				
Operating Voltage (47-63 Hz) [Vrms]	24-280	24-280	24-280	24-280
Max. Load Current @ 25°C Ambient Temperature [Arms]	35	45	55	65
Min. Load Current, [Arms]	0.15	0.15	0.25	0.25
Transient Overvoltage [Vpk]	600	600	600	600
Max. Surge Current, (16.6ms) [Apk]	250	625	1000	1200
Max. On-State Voltage Drop @ Rated Current [Vpk]	1.6	1.6	1.6	1.6
Thermal Resistance Junction to Case ( $R_{\theta JC}$ ) [°C/W]	1.02	0.63	0.31	0.28
Maximum $I^2 t$ for Fusing, (8.3 msec.) [A <sup>2</sup> sec]	260	1620	4150	6000
Max. Off-State Leakage Current @ Rated Voltage [mArms]	10	10	10	10
Min. Off-State dv/dt @ Max. Rated Voltage [V/μsec] ②	500	500	500	500
Max. Turn-On Time ③	1/2 Cycle (DC Control), 10.0 msec (AC Control)			
Max. Turn-Off Time	1/2 Cycle (DC Control), 40.0 msec (AC Control)			
Power Factor (Min.) with Max. Load	0.5	0.5	0.5	0.5

INPUT SPECIFICATIONS	DC CONTROL	AC CONTROL
Control Voltage Range	3-32 Vdc	90-140 Vrms
Max. Reverse Voltage	32 Vdc	—
Max. Turn-On Voltage	3.0 Vdc	90 Vrms
Min. Turn-Off Voltage	1.0 Vdc	10 Vrms
Max. Input Current	30.0mA ④	—
Typical Input Current	17mA @ 5 Vdc	15mA @ 120 Vrms

### GENERAL SPECIFICATIONS

Dielectric Strength 50/60Hz Input/Output/Base	4000 Vrms
Insulation Resistance (Min.) @ 500 Vdc	10 <sup>9</sup> Ohm
Max. Capacitance Input/Output	8 pF
Ambient Operating Temperature Range	-40 to 80°C
Ambient Storage Temperature Range	-40 to 125°C
Status Indicating Display	Green LED

### MECHANICAL SPECIFICATIONS

Weight: (typical)	16.8 oz. (476g)
Encapsulation:	Thermally Conductive Epoxy
Terminals:	Cage Type
Maximum Wire Size- Output: AWG 8 (3.8mm) Input: AWG12 (2.5mm)	
Max. Terminal Screw Torque: Output: 8.9 in lb (1.0 Nm) Input: 5.3 in lb (0.6 Nm)	

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### GENERAL NOTES

- ① All parameters at 25°C unless otherwise specified.
- ② Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- ③ Turn-on time for DC control random turn-on versions is 0.02msec.
- ④ Input circuitry incorporates active current limiter.

For recommended applications and more information contact:

**USA: Sales Support** (877) 502-5500 **Tech Support** (877) 702-7700 **FAX** (619) 710-8540  
Crydom Corp, 2320 Paseo de las Americas, Ste. 201, San Diego, CA 92154

**Email:** sales@crydom.com **WEB SITE:** http://www.crydom.com

**UK:** +44 (0)1202 365070 • **FAX** +44 (0)1202 365090 Crydom International Ltd., 7 Cobham Road, Ferndown Industrial Estate, Ferndown, Dorset BH21 7PE, **Email:** intsales@crydom.com.

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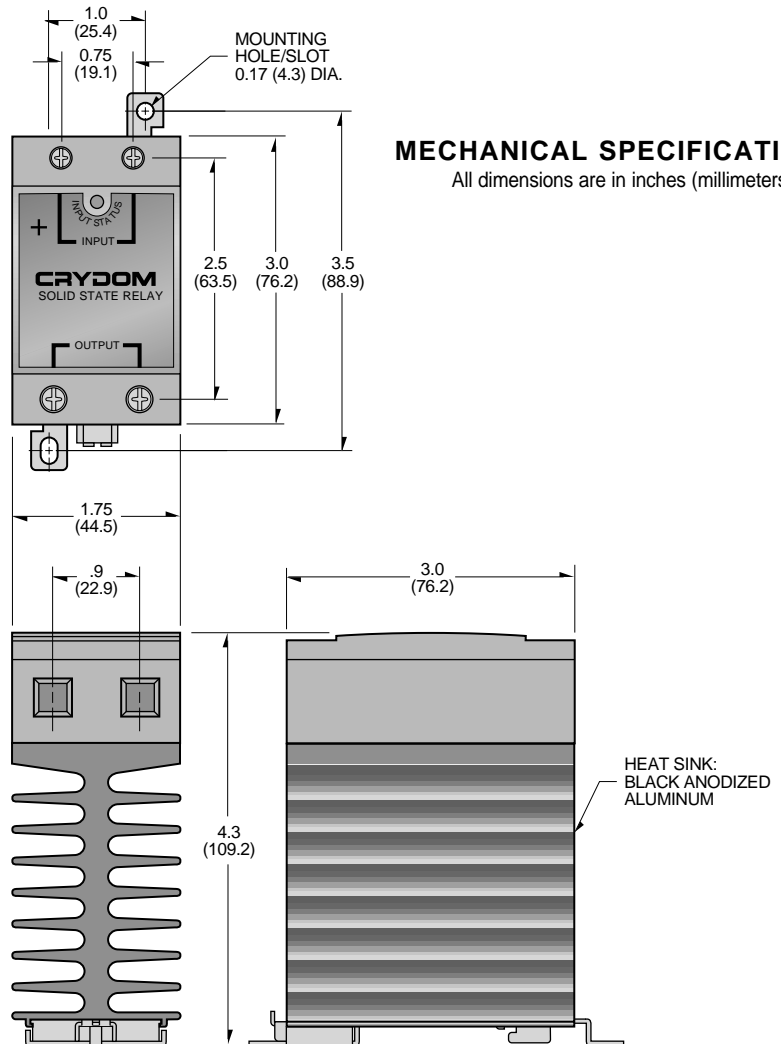


# Series CMRD24/CMRA24

35-65Amp • 240 Vac • AC Output

## MECHANICAL SPECIFICATIONS

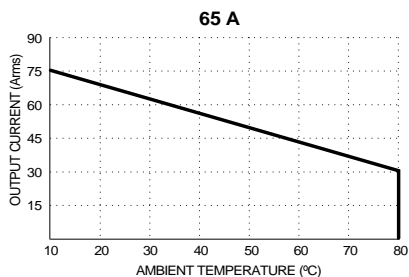
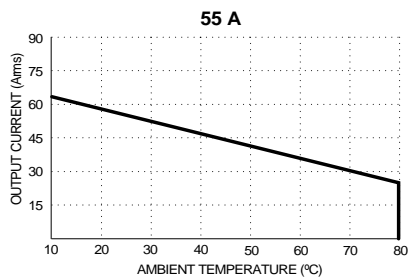
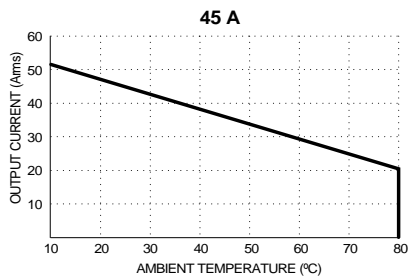
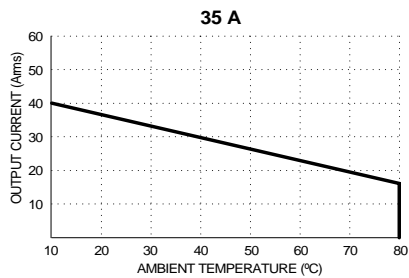
All dimensions are in inches (millimeters)



# CRYDOM

Control over power

## CURRENT DERATING CURVES



## AVAILABLE OPTIONS

- 10 Random Turn-On, Phase Controllable  
Example: **CMRD2435-10**
- E 24 Vac Input (18-36 Vac)  
Example: **CMRA2435E**
- P Internal Overvoltage Protection  
Relay Will Self Trigger Between  
450-600 Vpk. Not Suitable For Capacitive Loads.  
Example: **CMRD2435P**

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## APPROVALS

UL E116950  
CSA LR81689  
VDE 126921 UG



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Rev. 012102  
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# Series CMRD48/CMRA48

35-65Amp • 480 Vac • AC Output

**CRYDOM**

*Control over power*

- **Zero Voltage and Random Turn-On Switching**
- **DIN Rail & Panel Mount**
- **Status Indicating LED**
- **DC or AC Control**
- **Integrated Overvoltage Protection by Automatic Self Turn-On (Suffix P)**

Featuring state-of-the-art Surface Mount Technology, these SPST-NO relays deliver proven reliability in the most demanding applications. Output consists of an SCR AC switch and is available in zero-cross or random turn-on versions.

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

MODEL NUMBERS	CMRD4835 CMRA4835	CMRD4845 CMRA4845	CMRD4855 CMRA4855	CMRD4865 CMRA4865
<b>OUTPUT SPECIFICATIONS</b> ①				
Operating Voltage (47-63 Hz) [Vrms]	48-530	48-530	48-530	48-530
Max. Load Current @ 25°C Ambient Temperature [Arms]	35	45	55	65
Min. Load Current, [Arms]	0.15	0.15	0.25	0.25
Transient Overvoltage [Vpk]	1200	1200	1200	1200
Max. Surge Current, (16.6ms) [Apk]	250	625	1000	1200
Max. On-State Voltage Drop @ Rated Current [Vpk]	1.7	1.7	1.7	1.7
Thermal Resistance Junction to Case (R <sub>θJC</sub> ) [°C/W]	1.02	0.63	0.31	0.28
Maximum I <sup>2</sup> t for Fusing, (8.3 msec.) [A <sup>2</sup> sec]	260	1620	4150	6000
Max. Off-State Leakage Current @ Rated Voltage [mArms]	10	10	10	10
Min. Off-State dv/dt @ Max. Rated Voltage [V/μsec] ②	500	500	500	500
Max. Turn-On Time ③	1/2 Cycle (DC Control), 10.0 msec (AC Control)			
Max. Turn-Off Time	1/2 Cycle (DC Control), 40.0 msec (AC Control)			
Power Factor (Min.) with Max. Load	0.5	0.5	0.5	0.5

INPUT SPECIFICATIONS	DC CONTROL	AC CONTROL
Control Voltage Range	4-32 Vdc	90-140 Vrms
Max. Reverse Voltage	32 Vdc	—
Max. Turn-On Voltage	4.0 Vdc	90 Vrms
Min. Turn-Off Voltage	1.0 Vdc	10 Vrms
Max. Input Current	30.0mA ④	—
Typical Input Current	14mA @ 5 Vdc 15mA @ 120 Vrms	

## GENERAL NOTES

- ① All parameters at 25° C unless otherwise specified.
- ② Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- ③ Turn-on time for DC control random turn-on versions is 0.02msec.
- ④ Input circuitry incorporates active current limiter.

## GENERAL SPECIFICATIONS

Dielectric Strength 50/60Hz Input/Output/Base	4000 Vrms
Insulation Resistance (Min.) @ 500 Vdc	10 <sup>9</sup> Ohm
Max. Capacitance Input/Output	8 pF
Ambient Operating Temperature Range	-40 to 80°C
Ambient Storage Temperature Range	-40 to 125°C
Status Indicating Display	Green LED

## MECHANICAL SPECIFICATIONS

Weight: (typical)	16.8 oz. (476g)
Encapsulation:	Thermally Conductive Epoxy
Terminals:	Cage Type
Maximum Wire Size- Output: AWG 8 (3.8mm) Input: AWG12 (2.5mm)	
Max. Terminal Screw Torque: Output : 8.9 in lb (1.0 Nm) Input: 5.3 in lb (0.6 Nm)	

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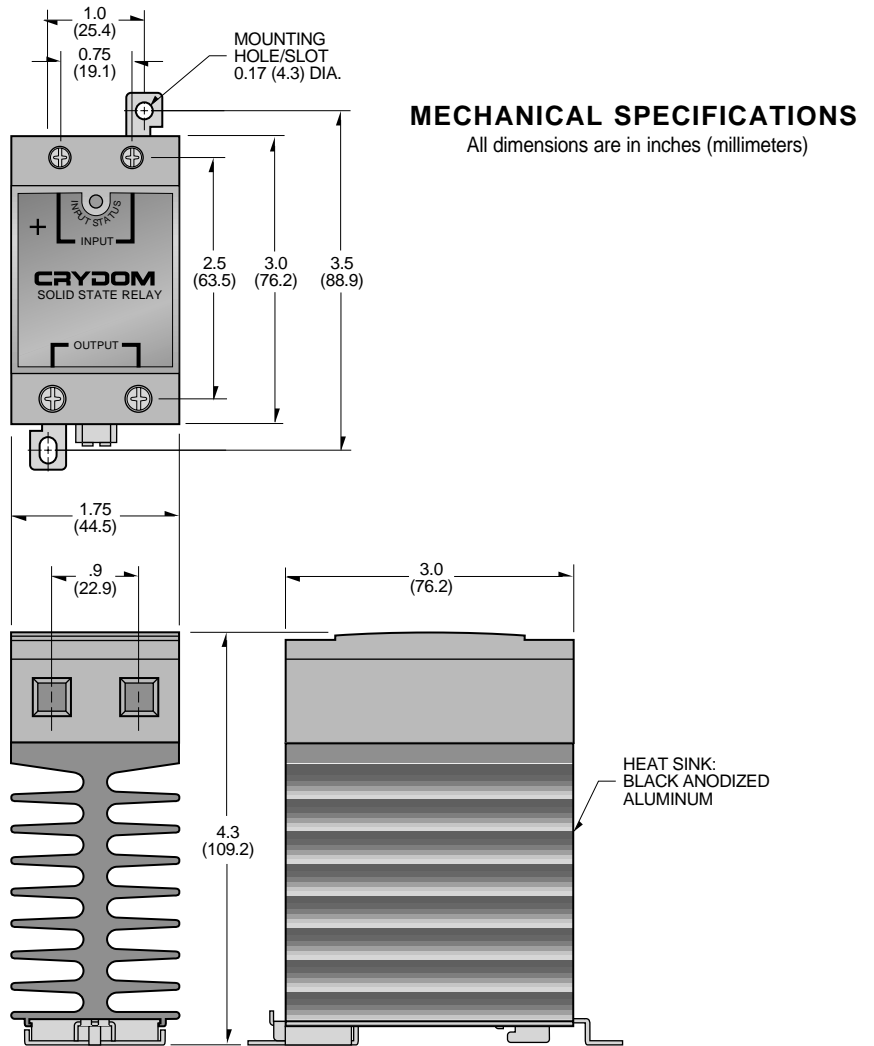
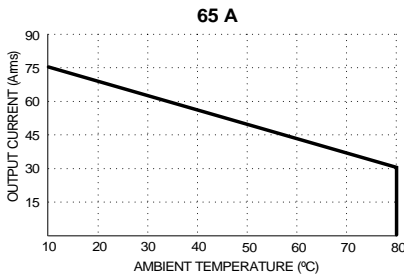
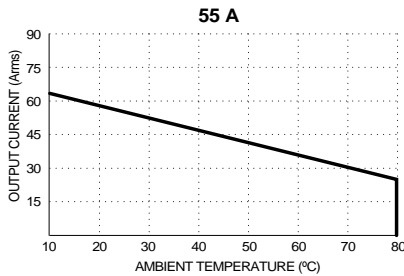
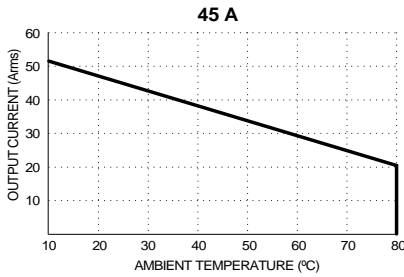
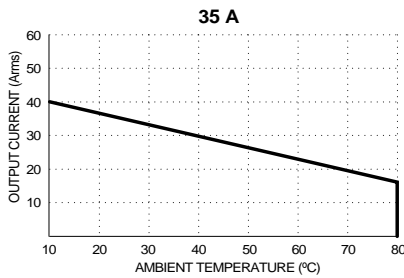


# Series CMRD48/CMRA48

35-65Amp • 480 Vac • AC Output

**CRYDOM**  
Control over power

## CURRENT DERATING CURVES



## AVAILABLE OPTIONS

- 10 Random Turn-On, Phase Controllable  
Example: **CMRD4835-10**
- E 24 Vac Input (18-36 Vac)  
Example: **CMRA4835E**
- P Internal Overvoltage Protection.  
Relay Will Self Trigger Between 900-1200Vpk. Not suitable For Capacitive Loads.  
Example: **CMRD4835P**

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## APPROVALS

UL E116950  
CSA LR81689  
VDE 126921 UG



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# Series CMRD60/CMRA60

35-65Amp • 600 Vac • AC Output



- Zero Voltage and Random Turn-On Switching
- DIN Rail & Panel Mount
- Status Indicating LED
- DC or AC Control
- Integrated Overvoltage Protection by Automatic Self Turn-On (Suffix P)

Featuring state-of-the-art Surface Mount Technology, these SPST-NO relays deliver proven reliability in the most demanding applications. Output consists of an SCR AC switch and is available in zero-cross or random turn-on versions.

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

MODEL NUMBERS	CMRD6035 CMRA6035	CMRD6045 CMRA6045	CMRD6055 CMRA6055	CMRD6065 CMRA6065
<b>OUTPUT SPECIFICATIONS</b> ①				
Nominal Line Voltage ( $\pm 10\%$ ) [Vrms]	600	600	600	600
Operating Voltage (47-63 Hz) [Vrms]	48-660	48-660	48-660	48-660
Max. Load Current @ 25°C Ambient Temperature [Arms]	35	45	55	65
Min. Load Current, [Arms]	0.15	0.15	0.25	0.25
Transient Overvoltage [Vpk]	1200	1200	1200	1200
Max. Surge Current, (16.6ms) [Apk]	250	625	1000	1200
Max. On-State Voltage Drop @ Rated Current [Vpk]	1.7	1.7	1.7	1.7
Thermal Resistance Junction to Case ( $R_{\theta JC}$ ) [°C/W]	1.02	0.63	0.31	0.28
Maximum $I^2 t$ for Fusing, (8.3 msec.) [ $A^2 \text{sec}$ ]	260	1620	4150	6000
Max. Off-State Leakage Current @ Rated Voltage [mArms]	1.0	1.0	1.0	1.0
Min. Off-State dv/dt @ Max. Rated Voltage [V/ $\mu\text{sec}$ ] ②	500	500	500	500
Max. Turn-On Time ③	1/2 Cycle (DC Control), 10.0 msec (AC Control)			
Max. Turn-Off Time	1/2 Cycle (DC Control), 40.0 msec (AC Control)			
Power Factor (Min.) with Max. Load	0.5	0.5	0.5	0.5

INPUT SPECIFICATIONS	DC CONTROL	AC CONTROL
Control Voltage Range	4-32 Vdc	90-140 Vrms
Max. Reverse Voltage	32 Vdc	—
Max. Turn-On Voltage	4.0 Vdc	90 Vrms
Min. Turn-Off Voltage	1.0 Vdc	10 Vrms
Max. Input Current	30.0mA ④	—
Typical Input Current	14mA @ 5 Vdc	15mA @ 120 Vrms

## GENERAL SPECIFICATIONS

Dielectric Strength 50/60Hz Input/Output/Base	4000 Vrms
Insulation Resistance (Min.) @ 500 Vdc	$10^9$ Ohm
Max. Capacitance Input/Output	8 pF
Ambient Operating Temperature Range	-40 to 80°C
Ambient Storage Temperature Range	-40 to 125°C
Status Indicating Display	Green LED

## MECHANICAL SPECIFICATIONS

Weight: (typical)	16.8 oz. (476g)
Encapsulation:	Thermally Conductive Epoxy
Terminals:	Cage Type
Maximum Wire Size- Output: AWG 8 (3.8mm) Input: AWG12 (2.5mm)	
Max. terminal Screw Torque: Output: 8.9 in lb (1.0 Nm) Input: 5.3 in lb (0.6 Nm)	

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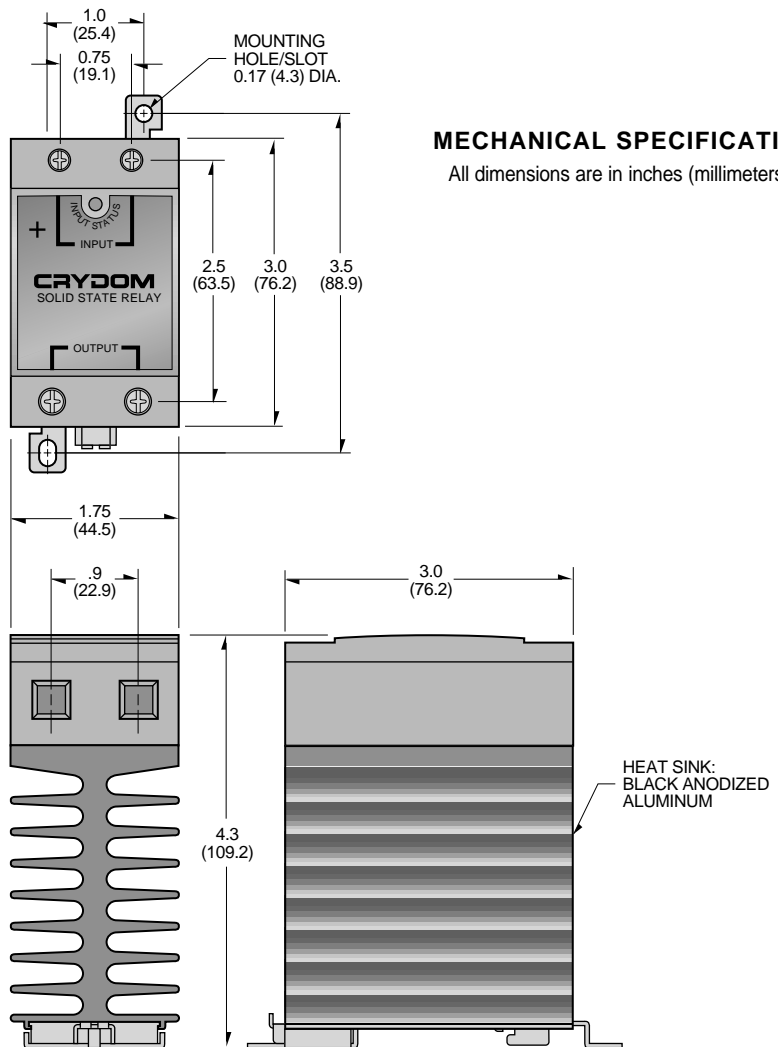
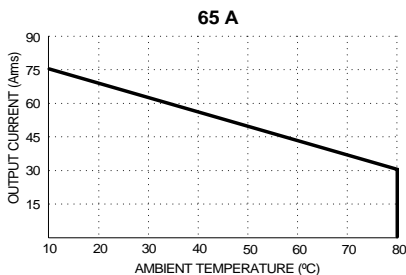
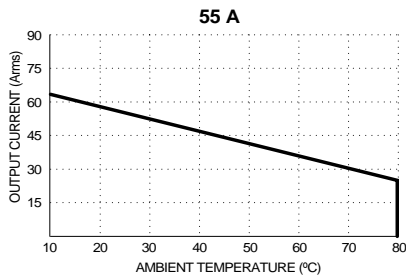
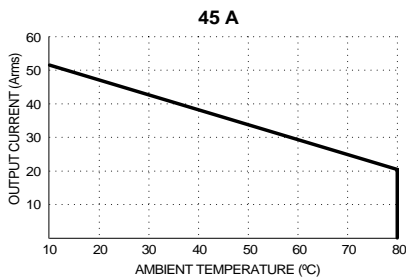
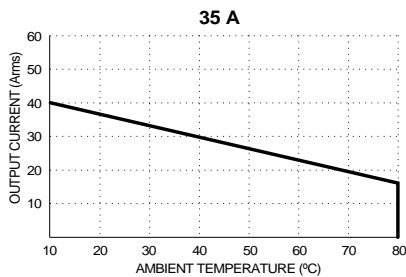


# Series CMRD60/CMRA60

35-65Amp • 600 Vac • AC Output



## CURRENT DERATING CURVES



## MECHANICAL SPECIFICATIONS

All dimensions are in inches (millimeters)

## AVAILABLE OPTIONS

- 10 Random Turn-On, Phase Controllable  
Example: **CMRD6035-10**
- E 24 Vac Input (18-36 Vac)  
Example: **CMRA6035E**
- P Internal Overvoltage Protection.  
Relay Will Self Trigger Between  
900-1200Vpk. Not Suitable For Capacitive Loads.  
Example: **CMRD6035P**

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