

CKM Series



- Ratings from 10A to 30A @ 60 VDC
- Slim 22.5mm (width) package
- Low Leakage
- LED input status indicator
- DC control
- DIN Rail and Panel Mount

PRODUCT SELECTION

Description	10 A	20 A	30 A
4.5-32 VDC Control	CKM6010	CKM6020	CKM6030

OUTPUT SPECIFICATIONS (1)

Description	CKM0610	CKM0620	CKM0630
Operating Voltage [VDC]	0-60	0-60	0-60
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	0.1	0.1	0.1
Maximum Load Current [Arms]	10	20	30
Maximum Surge Current (10msec) [ADC]	30	60	90
Maximum On-State Voltage Drop @ Rated Current [VDC]	0.2	0.4	0.5
Maximum On-state Resistance @ Rated current (RDS-ON) [ohms]	0.02	0.018	0.016

INPUT SPECIFICATIONS (1)

Description	
Control Voltage Range	4.0-32 VDC
Maximum Turn-On Voltage	4.0 VDC
Minimum Turn-Off Voltage	1.0 VDC
Maximum Input Current (4)	9 mA @ 5 VDC, 11 mA @ 32 VDC (3)
Maximum Turn-On Time [msec]	1.0
Maximum Turn-Off Time [msec]	1.0

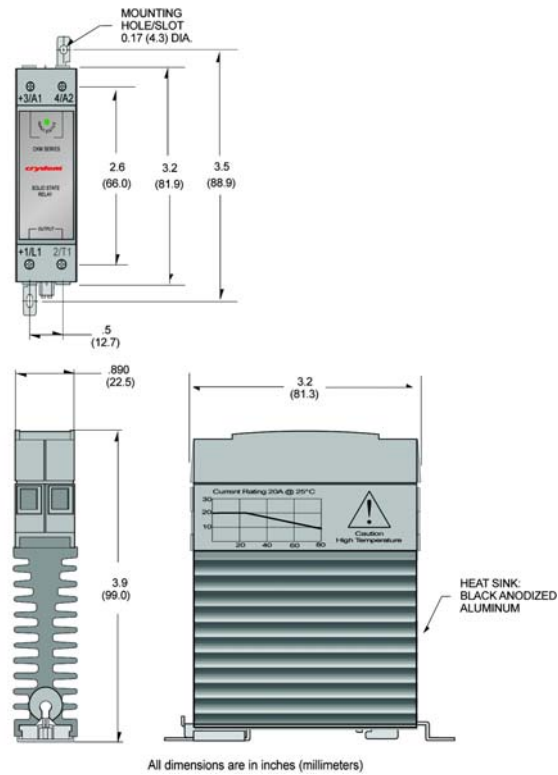
GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	2500Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 ⁹ Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40°C to 80°C
Ambient Storage Temperature Range	-40°C to 125°C
Status Indicator Display	Green LED
Weight (typical)	10 oz. (280g)
Encapsulation	Thermally Conductive Epoxy
Terminals	Box Clamp Type
Maximum Wire Size:	AWG # 10 (3mm)
Recommended Terminal Screw Torque Range:	5.0-6.0 in lb (0.6-0.7 Nm)
Min. Side by Side Spacing	0.8 inch (20mm)

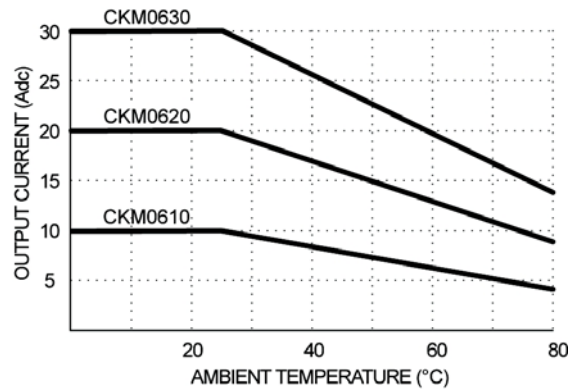
GENERAL NOTES

- 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 0.02 msec
- 4) Input circuitry for DC control version incorporates active current limiter.

MECHANICAL SPECIFICATIONS



THERMAL DERATE INFORMATION



AGENCY APPROVALS



Rev. 011209

 DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO					
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH. - Disconnect all power before installing or working with this equipment. - Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.	RIESGO DE DESCARGA ELECTRICA O EXPLOSION. - Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo. - Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo. El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.	RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION - Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil - Vérifier tous connections, et remettre tous couverts en olace avant de mettre sous De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.	GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION. - Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen - Vor der Inbetriebnahme alle Anschlüsse überprüfen und alle Gehäuseteile montieren. Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.	RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE. - Spenda tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura - Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie	RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO - Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento - Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento O não cumprimento destas instruções pode levar a morte ou lesões sérias.

 WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / AVISO		
RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE - The product's side panels may be hot, allow time for product to cool before touching. - Follow proper mounting instructions including torque values. - Do not allow liquids or foreign objects to enter this product. Failure to follow this instruction can result in serious injury, or equipment damage.	RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER - Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher. - Respecter les consignes de montage, et notamment les couples de serrage. - Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit. Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.	GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG - Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren. - Beachten Sie die Montageanweisungen, - Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein. Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.
RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD - Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo. - Respetar las instrucciones de montaje, y en particular los pares de apretado. - No dejar que penetren líquidos o cuerpos extraños en el producto. Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.	RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO - I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo. - Seguire le istruzioni di montaggio corrette. - Non far entrare liquidi o oggetti estranei in questo apparecchio. La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.	RISCO DE DANO MATERIAL E DE AQUECIMENTO - Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar. - Siga devidamente as instruções de montagem. - Não permita a entrada de líquidos e de objectos estranhos no produto. A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.

ANNEX - ENVIROMENTAL INFORMATION

The environmental information disclosed in this annex including the EIP Pollution logo are in compliance with People's Republic of China Electronic Industry Standard SJ/T11364 – 2006, Marking for Control of Pollution Caused by Electronic Information Products.

Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

此附件所标示的包括电子信息产品污染图标的环境信息
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,
电子信息产品污染控制标识要求



部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O

CKR24 Series

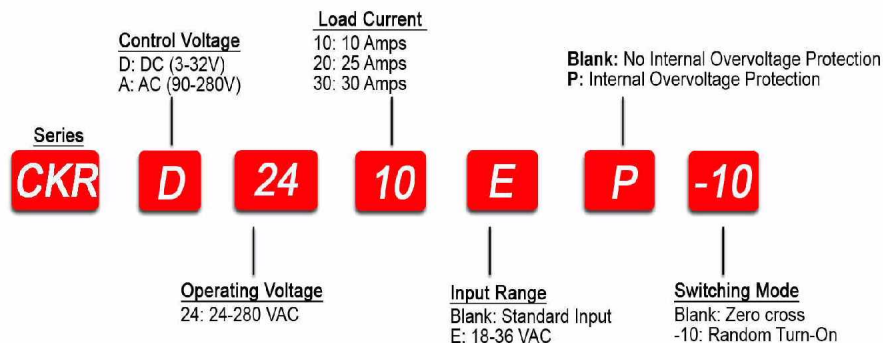


- Ratings from 10A to 30A @ 280 VAC
- Slim 22.5mm (width) package
- SCR output for heavy industrial loads
- LED input status indicator
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

PRODUCT SELECTION

Description	10 A	20 A	30 A
4.5-32 VDC Control	CKRD2410	CKRD2420	CKRD2430
90-280 VAC Control	CKRA2410	CKRA2420	CKRA2430
18-36 VAC Control	CKRA2410E	CKRA2420E	CKRA2430E

AVAILABLE OPTIONS



OUTPUT SPECIFICATIONS (1)

Description	10 A	20 A	30 A
Operating Voltage (47-63Hz) [Vrms]	24-280	24-280	24-280
Transient Overvoltage [Vpk]	600	600	600
Maximum Off-State Leakage Current @ Rated Voltage [mA]	10	10	10
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] (2)	500	500	500
Maximum Load Current [A]	10	20	30
Minimum Load Current [A]	0.15	0.15	0.15
Maximum Surge Current (16.6ms) [A]	120	250	625
Maximum On-State Voltage Drop @ Rated Current [V]	1.6	1.6	1.6
Maximum I ² t for Fusing (8.3 msec) [A ² sec]	60	260	1620
Minimum Power Factor (with Maximum Load)	0.5	0.5	0.5

INPUT SPECIFICATIONS (1)

Description			
Control Voltage Range	4.0-32 VDC	90-280 Vrms	18-36 Vrms
Maximum Turn-On Voltage	4.0 VDC	90 Vrms	18 Vrms
Minimum Turn-Off Voltage	1.0 VDC	10 Vrms	4.0 Vrms
Typical Input Current (4)	8-12 mA	2 mA @ 120 Vrms, 4 mA @ 240 Vrms	10 mA @ 240 Vrms
Maximum Turn-On Time [msec] (3)	1/2 Cycle	10	10
Maximum Turn-Off Time [msec]	1/2 Cycle	40	40

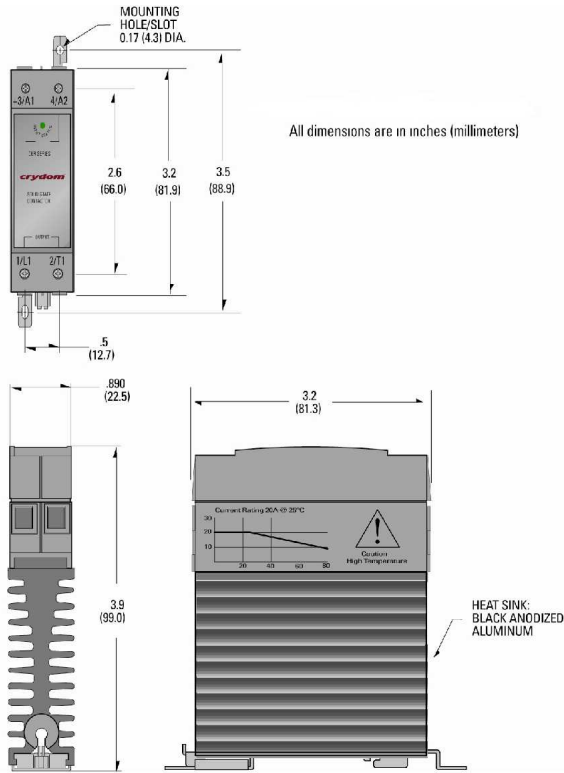
GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 ⁹ Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40°C to 80°C
Ambient Storage Temperature Range	-40°C to 125°C
Status Indicator Display	Green LED
Weight (typical)	10 oz. (280g)
Encapsulation	Thermally Conductive Epoxy
Terminals	Box Clamp Type
Maximum Wire Size:	AWG # 10 (3mm)
Recommended Terminal Screw Torque Range:	5.0-6.0 in lb (0.6-0.7 Nm)
Min. Side by Side Spacing	0.8 inch (20mm)

GENERAL NOTES

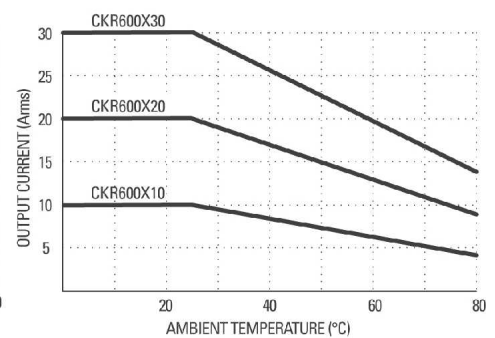
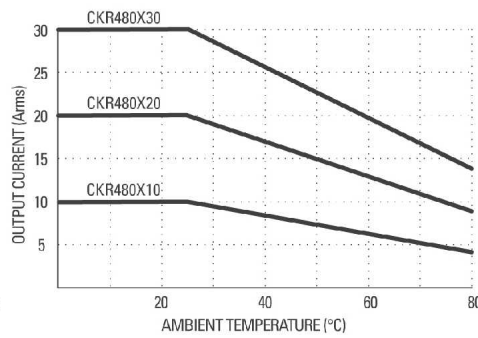
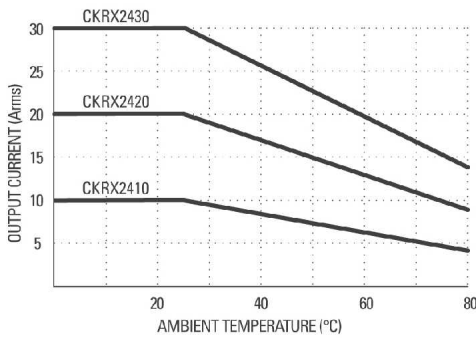
- 1) All parameters at 25°C unless otherwise specified.
- 2) Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- 3) Turn-on time for DC control random turn-on versions is 0.02 msec
- 4) Input circuitry for DC control version incorporates active current limiter.

MECHANICAL SPECIFICATIONS



THERMAL DERATE INFORMATION

CURRENT DERATING CURVES



AGENCY APPROVALS

UL E116950
CSA LR81689
VDE 129156ÜG
CE

Rev. 072208

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 DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO					
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH. - Disconnect all power before installing or working with this equipment. - Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.	RIESGO DE DESCARGA ELECTRICA O EXPLOSION. - Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo. - Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo. El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.	RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION - Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil - Vérifier tous connections, et remettre tous couverts en place avant de mettre sous De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.	GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION. - Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen - Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen. Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.	RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE. - Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura - Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie	RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO - Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento - Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento O não cumprimento destas instruções pode levar a morte ou lesões sérias.

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	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

此附件所标示的包括电子信息产品污染图标的环境信息
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,
电子信息产品污染控制标识要求



部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O

CKR48Series

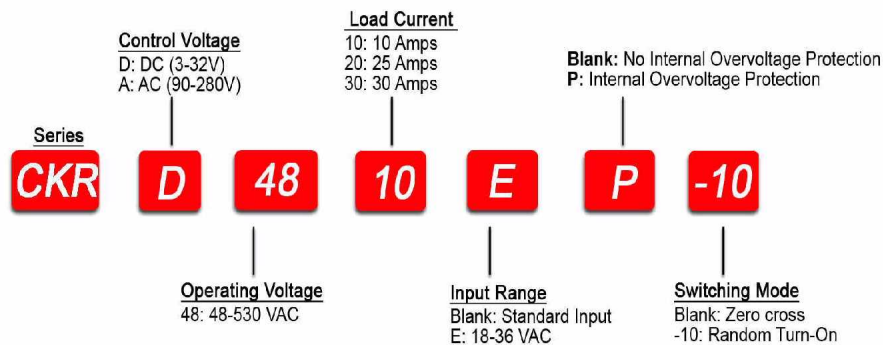


- Ratings from 10A to 30A @ 530 VAC
- Slim 22.5mm (width) package
- SCR output for heavy industrial loads
- LED input status indicator
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

PRODUCT SELECTION

Description	10 A	20 A	30 A
4.5-32 VDC Control	CKRD4810	CKRD4820	CKRD4830
90-280 VAC Control	CKRA4810	CKRA4820	CKRA4830
18-36 VAC Control	CKRA4810E	CKRA4820E	CKRA4830E

AVAILABLE OPTIONS



OUTPUT SPECIFICATIONS (1)

Description	10 A	20 A	30 A
Operating Voltage (47-63Hz) [Vrms]	48-530	48-530	48-530
Transient Overvoltage [Vpk]	1200	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mA]	10	10	10
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] (2)	500	500	500
Maximum Load Current [A]	10	20	30
Minimum Load Current [A]	0.15	0.15	0.15
Maximum Surge Current (16.6ms) [A]	120	250	625
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.6	1.6	1.6
Maximum I ² t for Fusing (8.3 msec) [A ² sec]	60	260	1620
Minimum Power Factor (with Maximum Load)	0.5	0.5	0.5

INPUT SPECIFICATIONS (1)

Description			
Control Voltage Range	4.0-32 VDC	90-280 Vrms	18-36 Vrms
Maximum Turn-On Voltage	4.0 VDC	90 Vrms	18 Vrms
Minimum Turn-Off Voltage	1.0 VDC	10 Vrms	4.0 Vrms
Typical Input Current (4)	8-12 mA	2 mA @ 120 Vrms, 4 mA @ 240 Vrms	10 mA @ 24 Vrms
Maximum Turn-On Time [msec] (3)	1/2 Cycle	10	10
Maximum Turn-Off Time [msec]	1/2 Cycle	40	40

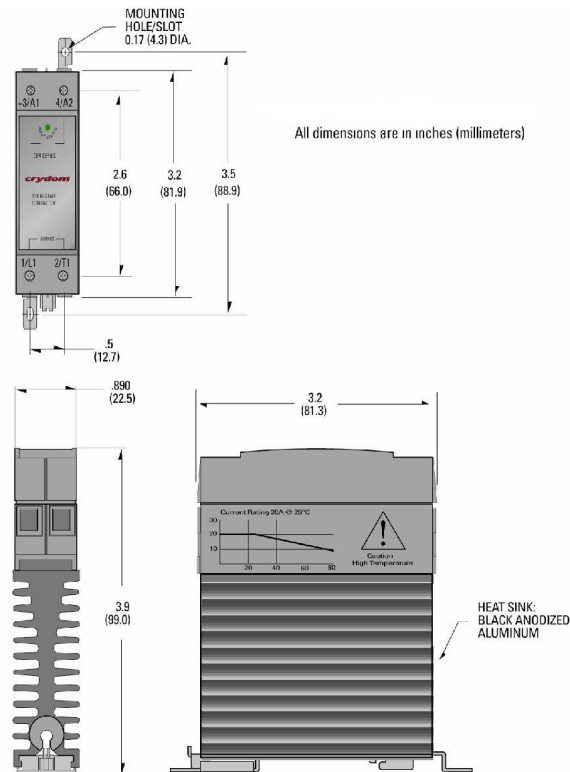
GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 ⁹ Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40°C to 80°C
Ambient Storage Temperature Range	-40°C to 125°C
Status Indicator Display	Green LED
Weight (typical)	10 oz. (280g)
Encapsulation	Thermally Conductive Epoxy
Terminals	Box Clamp Type
Maximum Wire Size:	AWG # 10 (3mm)
Recommended Terminal Screw Torque Range:	5.0-6.0 in lb (0.6-0.7 Nm)
Min. Side by Side Spacing	0.8 inch (20mm)

GENERAL NOTES

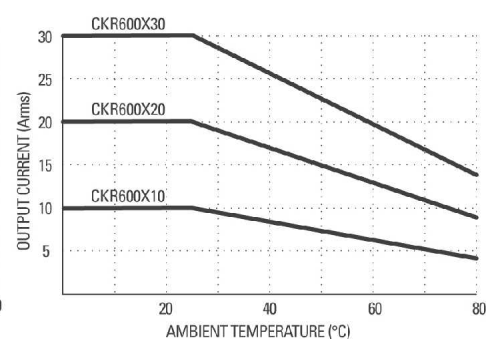
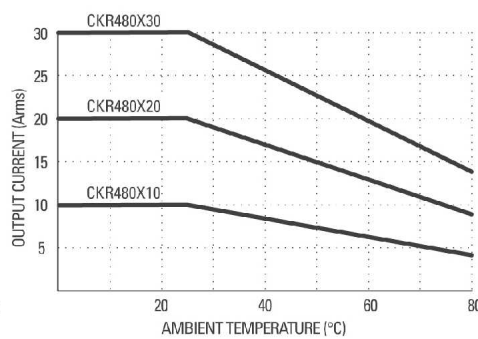
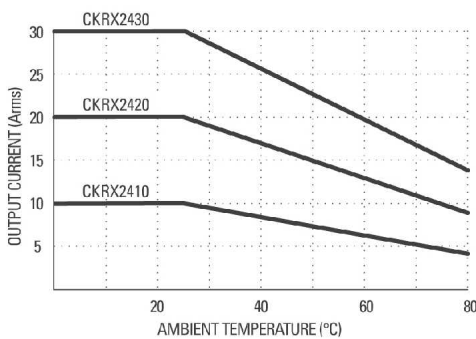
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- 4) Input circuitry for DC control version incorporates active current limiter.

MECHANICAL SPECIFICATIONS



THERMAL DERATE INFORMATION

CURRENT DERATING CURVES



AGENCY APPROVALS

UL E116950
CSA LR81689
VDE 129156ÜG
CE

Rev. 072308

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HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH. - Disconnect all power before installing or working with this equipment. - Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.	RIESGO DE DESCARGA ELECTRICA O EXPLOSION. - Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo. - Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo. El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.	RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION - Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil - Vérifier tous connections, et remettre tous couverts en place avant de mettre sous De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.	GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION. - Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen - Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen. Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.	RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE. - Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura - Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie	RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO - Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento - Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento O não cumprimento destas instruções pode levar a morte ou lesões sérias.

 WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / AVISO		
RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE - The product's side panels may be hot, allow time for product to cool before touching. - Follow proper mounting instructions including torque values. - Do not allow liquids or foreign objects to enter this product. Failure to follow this instruction can result in serious injury, or equipment damage.	RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER - Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher. - Respecter les consignes de montage, et notamment les couples de serrage. - Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit. Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.	GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG - Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren. - Beachten Sie die Montageanweisungen, - Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein. Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.
RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD - Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo. - Respetar las instrucciones de montaje, y en particular los pares de apretado. - No dejar que penetren líquidos o cuerpos extraños en el producto. Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.	RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO - I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo. - Seguire le istruzioni di montaggio corrette. - Non far entrare liquidi o oggetti estranei in questo apparecchio. La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.	RISCO DE DANO MATERIAL E DE AQUECIMENTO - Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar. - Siga devidamente as instruções de montagem. - Não permita a entrada de líquidos e de objectos estranhos no produto. A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.

ANNEX - ENVIROMENTAL INFORMATION

The environmental information disclosed in this annex including the EIP Pollution logo are in compliance with People's Republic of China Electronic Industry Standard SJ/T11364 – 2006, Marking for Control of Pollution Caused by Electronic Information Products.

Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

此附件所标示的包括电子信息产品污染图标的环境信息
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,
电子信息产品污染控制标识要求



部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O

CKR60 Series

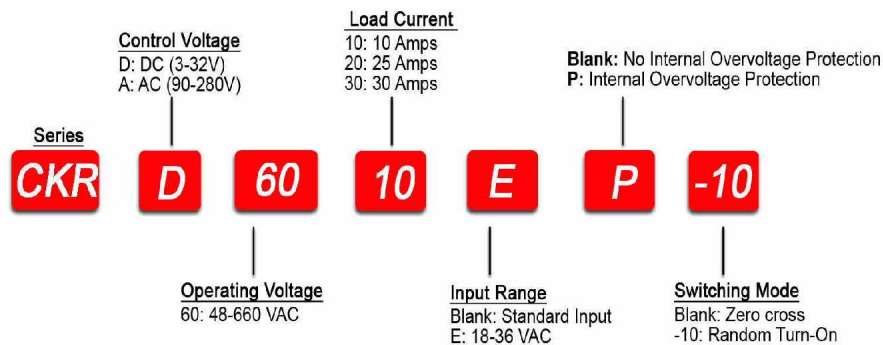


- Ratings from 10A to 30A @ 660 VAC
- Slim 22.5mm (width) package
- SCR output for heavy industrial loads
- LED input status indicator
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

PRODUCT SELECTION

Description	10 A	20 A	30 A
4.5-32 VDC Control	CKRD6010	CKRD6020	CKRD6030
90-280 VAC Control	CKRA6010	CKRA6020	CKRA6030
18-36 VAC Control	CKRA6010E	CKRA6020E	CKRA6030E

AVAILABLE OPTIONS



OUTPUT SPECIFICATIONS (1)

Description	10 A	20 A	30 A
Operating Voltage (47-63Hz) [VRMS]	48-660	48-660	48-660
Transient Overvoltage [Vpk]	1200	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mA]	1.0	1.0	1.0
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] (2)	500	500	500
Maximum Load Current (3) [Arms]	10	20	30
Minimum Load Current [Arms]	0.15	0.15	0.15
Maximum Surge Current (16.6ms) [A _{pk}]	120	250	625
Maximum On-State Voltage Drop @ Rated Current [V _{pk}]	1.6	1.6	1.6
Maximum I ² t for Fusing (8.3 msec) [A ² sec]	60	260	1620
Minimum Power Factor (with Maximum Load)	0.5	0.5	0.5

INPUT SPECIFICATIONS (1)

Description			
Control Voltage Range	4.0-32 VDC	90-280 Vrms	18-36 Vrms
Maximum Turn-On Voltage	4.0 VDC	90 Vrms	18 Vrms
Minimum Turn-Off Voltage	1.0 VDC	10 Vrms	4.0 Vrms
Typical Input Current (4)	8-12 mA	2 mA @ 120 Vrms, 4 mA @ 240 Vrms	10 mA @ 24 Vrms
Maximum Turn-On Time [msec] (3)	1/2 Cycle	10	10
Maximum Turn-Off Time [msec]	1/2 Cycle	40	40

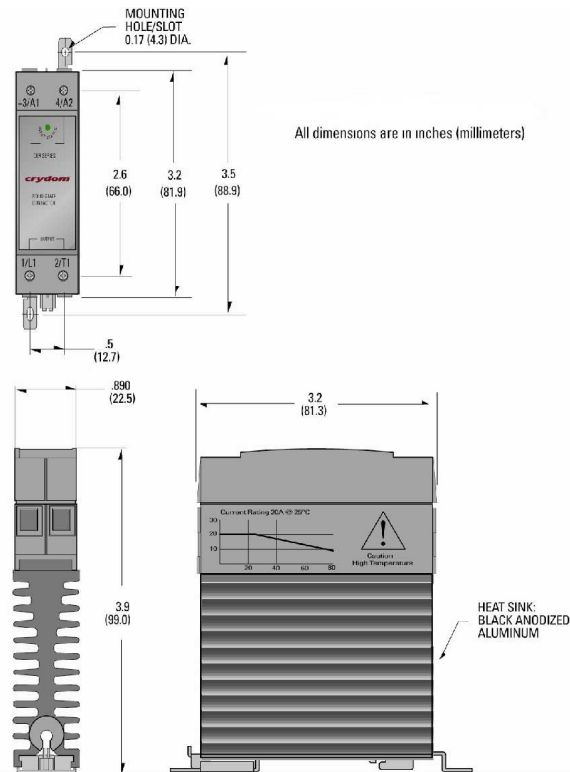
GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 9 Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40°C to 80°C
Ambient Storage Temperature Range	-40°C to 125°C
Status Indicator Display	Green LED
Weight (typical)	10 oz. (280g)
Encapsulation	Thermally Conductive Epoxy
Terminals	Box Clamp Type
Maximum Wire Size:	AWG # 10 (3mm)
Recommended Terminal Screw Torque Range:	5.0-6.0 in lb (0.6-0.7 Nm)
Min. Side by Side Spacing	0.8 inch (20mm)

GENERAL NOTES

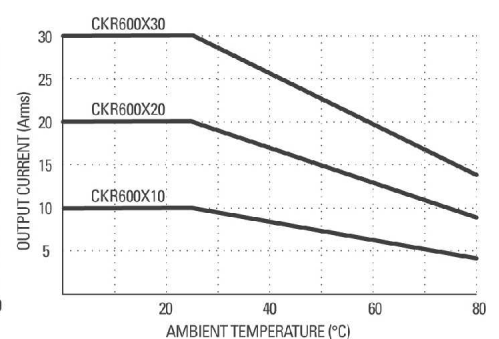
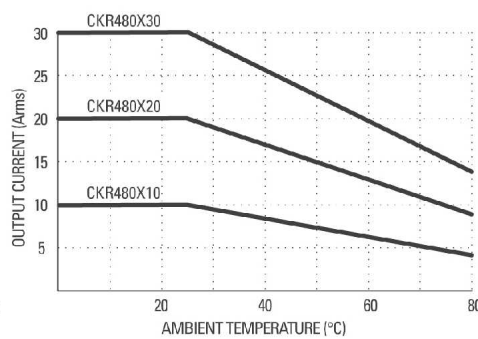
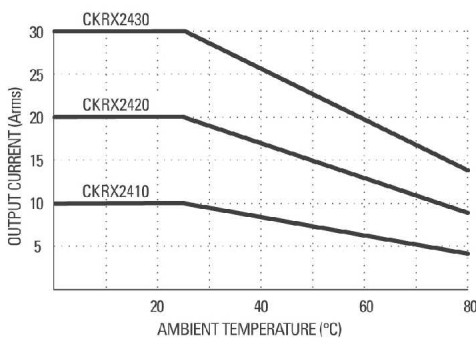
- 1) All parameters at 25°C unless otherwise specified.
- 2) Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- 3) Turn-on time for DC control random turn-on versions is 0.02 msec
- 4) Input circuitry for DC control version incorporates active current limiter.

MECHANICAL SPECIFICATIONS



THERMAL DERATE INFORMATION

CURRENT DERATING CURVES



AGENCY APPROVALS

UL E116950
CSA LR81689
VDE 129156ÜG
CE

Rev. 072308

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 DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO					
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH. - Disconnect all power before installing or working with this equipment. - Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.	RIESGO DE DESCARGA ELECTRICA O EXPLOSION. - Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo. - Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo. El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.	RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION - Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil - Vérifier tous connections, et remettre tous couverts en place avant de mettre sous De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.	GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION. - Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen - Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen. Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.	RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE. - Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura - Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie	RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO - Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento - Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento O não cumprimento destas instruções pode levar a morte ou lesões sérias.

 WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / AVISO		
RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE - The product's side panels may be hot, allow time for product to cool before touching. - Follow proper mounting instructions including torque values. - Do not allow liquids or foreign objects to enter this product. Failure to follow this instruction can result in serious injury, or equipment damage.	RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER - Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher. - Respecter les consignes de montage, et notamment les couples de serrage. - Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit. Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.	GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG - Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren. - Beachten Sie die Montageanweisungen, - Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein. Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.
RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD - Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo. - Respetar las instrucciones de montaje, y en particular los pares de apretado. - No dejar que penetren líquidos o cuerpos extraños en el producto. Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.	RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO - I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo. - Seguire le istruzioni di montaggio corrette. - Non far entrare liquidi o oggetti estranei in questo apparecchio. La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.	RISCO DE DANO MATERIAL E DE AQUECIMENTO - Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar. - Siga devidamente as instruções de montagem. - Não permita a entrada de líquidos e de objectos estranhos no produto. A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.

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Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

此附件所标示的包括电子信息产品污染图标的环境信息
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,
电子信息产品污染控制标识要求



部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O

CMR24 Series

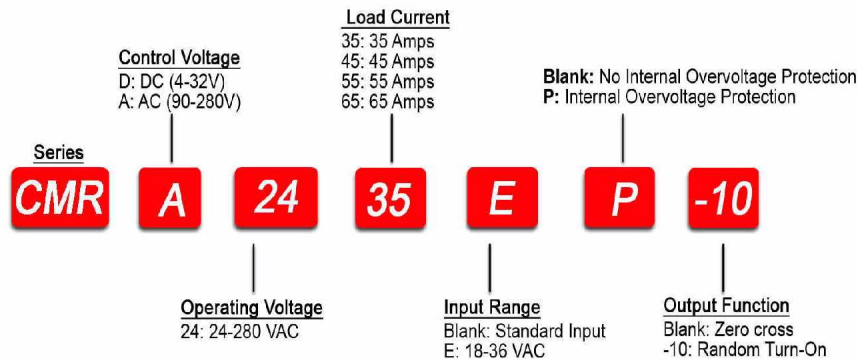


- Ratings from 35A to 65A @ 280 VAC
- 45mm (width) package
- SCR output for heavy industrial loads
- LED input status indicator
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

PRODUCT SELECTION

Description	35 A	45 A	55 A	65 A
3-32 VDC Control	CMRD2435	CMRD2445	CMRD2455	CMRD2465
90-140 VAC Control	CMRA2435	CMRA2445	CMRA2455	CMRA2465
18-36 VAC Control	CMRA2435E	CMRA2445E	CMRA2455E	CMRA2465E

AVAILABLE OPTIONS



OUTPUT SPECIFICATIONS (1)

Description	35 A	45 A	55 A	65 A
Operating Voltage (47-63Hz) [Vrms]	24-280	24-280	24-280	24-280
Transient Overvoltage [Vpk]	600	600	600	600
Maximum Off-State Leakage Current @ Rated Voltage [mA]	10	10	10	10
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] (2)	500	500	500	500
Maximum Load Current [Arms]	35	45	55	65
Minimum Load Current [Arms]	0.15	0.15	0.25	0.25
Maximum Surge Current (16.6ms) [Apk]	250	625	1000	1200
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.6	1.6	1.6	1.6
Thermal Resistance Junction to Case (Rjc) [°C/W]	1.02	0.63	0.31	0.28
Maximum I ² t for Fusing (8.3 msec) [A ² sec]	260	1620	4150	6000
Minimum Power Factor (with Maximum Load)	0.5	0.5	0.5	0.5

INPUT SPECIFICATIONS (1)

Description		
Control Voltage Range (DC or RMS)	3-32 VDC	90-140 Vrms
Maximum Turn-On Voltage	4.0 VDC	90 Vrms
Minimum Turn-Off Voltage	1.0 VDC	10 Vrms
Maximum Reverse Voltage	32 VDC	-
Maximum Off-State Voltage	1.0 VDC	10 VAC
Maximum Input Current	30 mA (4)	-
Typical Input Current (4)	17 mA @ 5 Vdc	15 mA @ 120 Vrms
Maximum Turn-On Time [msec] (3)	1/2 Cycle	10
Maximum Turn-Off Time [msec]	1/2 Cycle	40

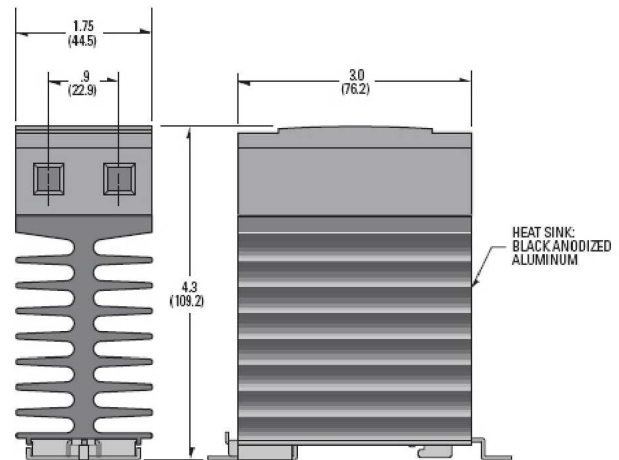
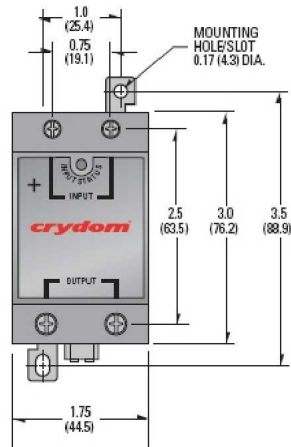
GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 9 Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40 to 80°C
Ambient Storage Temperature Range	-40 to 125°C
Status Indicator Display	Green LED
Weight (typical)	16.8 oz. (476g)
Encapsulation	Themally Conductive Epoxy
Terminals	Cage Type
Maximum Wire Size:	Output: AWG 8 (3.8mm) Input: AWG12(2.5mm)
Recommended Terminal Screw Torque Range:	Output:10-15 in lb (1.1-1.7 Nm) Input: 5-6in lb (0.6-0.7 Nm)

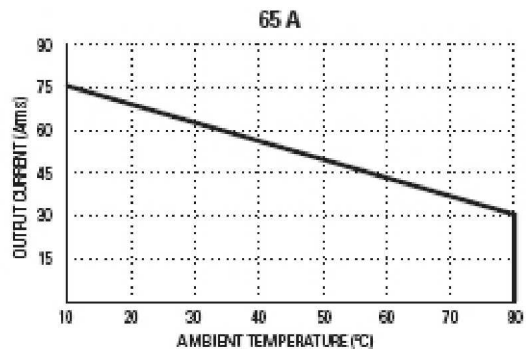
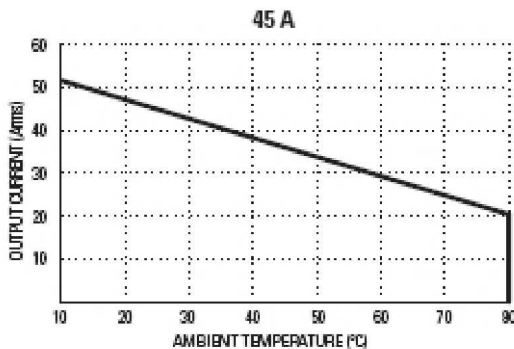
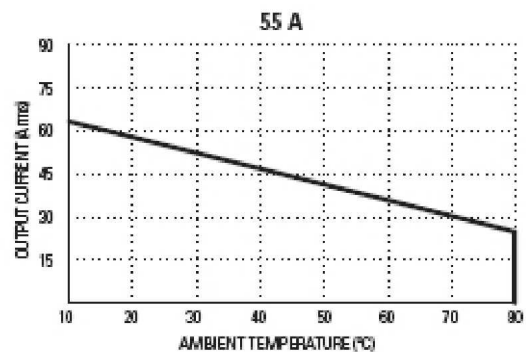
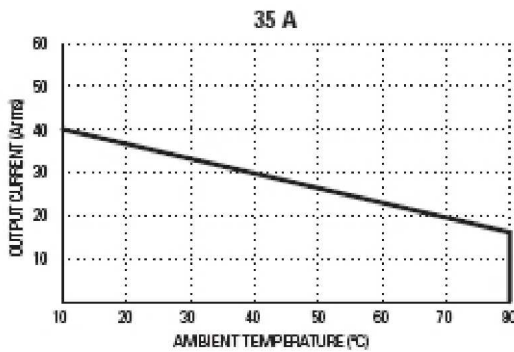
GENERAL NOTES

- 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 0.02 msec
- 4) Input circuitry version incorporates active current limiter.

MECHANICAL SPECIFICATIONS



THERMAL DERATE INFORMATION



AGENCY APPROVALS

UL E116950
CSA LR81689
VDE 126921 UG
CE

Rev. 072308

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 DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO					
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH. - Disconnect all power before installing or working with this equipment. - Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.	RIESGO DE DESCARGA ELECTRICA O EXPLOSION. - Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo. - Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo. El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.	RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION - Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil - Vérifier tous connections, et remettre tous couverts en place avant de mettre sous De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.	GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION. - Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen - Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen. Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.	RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE. - Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura - Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie	RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO - Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento - Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento O não cumprimento destas instruções pode levar a morte ou lesões sérias.

 WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / AVISO		
RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE - The product's side panels may be hot, allow time for product to cool before touching. - Follow proper mounting instructions including torque values. - Do not allow liquids or foreign objects to enter this product. Failure to follow this instruction can result in serious injury, or equipment damage.	RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER - Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher. - Respecter les consignes de montage, et notamment les couples de serrage. - Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit. Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.	GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG - Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren. - Beachten Sie die Montageanweisungen, - Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein. Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.
RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD - Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo. - Respetar las instrucciones de montaje, y en particular los pares de apretado. - No dejar que penetren líquidos o cuerpos extraños en el producto. Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.	RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO - I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo. - Seguire le istruzioni di montaggio corrette. - Non far entrare liquidi o oggetti estranei in questo apparecchio. La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.	RISCO DE DANO MATERIAL E DE AQUECIMENTO - Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar. - Siga devidamente as instruções de montagem. - Não permita a entrada de líquidos e de objectos estranhos no produto. A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.

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Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

此附件所标示的包括电子信息产品污染图标的环境信息
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,
电子信息产品污染控制标识要求



部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O

CMR48 Series

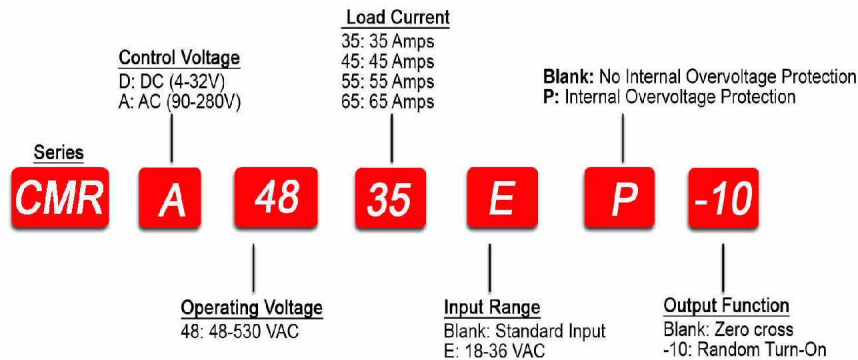


- Ratings from 35A to 65A @ 530 VAC
- 45mm (width) package
- SCR output for heavy industrial loads
- LED input status indicator
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

PRODUCT SELECTION

Description	35 A	45 A	55 A	65 A
3-32 VDC Control	CMRD4835	CMRD4845	CMRD4855	CMRD4865
90-140 VAC Control	CMRA4835	CMRA4845	CMRA4855	CMRA4865
18-36 VAC Control	CMRA4835E	CMRA4845E	CMRA4855E	CMRA4865E

AVAILABLE OPTIONS



OUTPUT SPECIFICATIONS (1)

Description	35 A	45 A	55 A	65 A
Operating Voltage (47-63Hz) [Vrms]	48-530	48-530	48-530	48-530
Transient Overvoltage [Vpk]	1200	1200	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mA _{rms}]	10	10	10	10
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] (2)	500	500	500	500
Maximum Load Current [A _{rms}]	35	45	55	65
Minimum Load Current [A _{rms}]	0.15	0.15	0.25	0.25
Maximum Surge Current (16.6ms) [A _{pk}]	250	625	1000	1200
Maximum On-State Voltage Drop @ Rated Current [V _{pk}]	1.7	1.7	1.7	1.7
Thermal Resistance Junction to Case (R _{jc}) [°C/W]	1.02	0.63	0.31	0.28
Maximum I ² t for Fusing (8.3 msec) [A ² sec]	260	1620	4150	6000
Minimum Power Factor (with Maximum Load)	0.5	0.5	0.5	0.5

INPUT SPECIFICATIONS (1)

Description		
Control Voltage Range	4-32 VDC	90-140 Vrms
Maximum Turn-On Voltage	4.0 VDC	90 Vrms
Minimum Turn-Off Voltage	1.0 VDC	10 Vrms
Maximum Reverse Voltage	32 VDC	-
Maximum Input Current	30 mA (4)	-
Typical Input Current (4)	14 mA @ 5 VDC	15 mA @ 120 Vrms
Maximum Turn-On Time [msec] (3)	1/2 Cycle	10
Maximum Turn-Off Time [msec]	1/2 Cycle	40

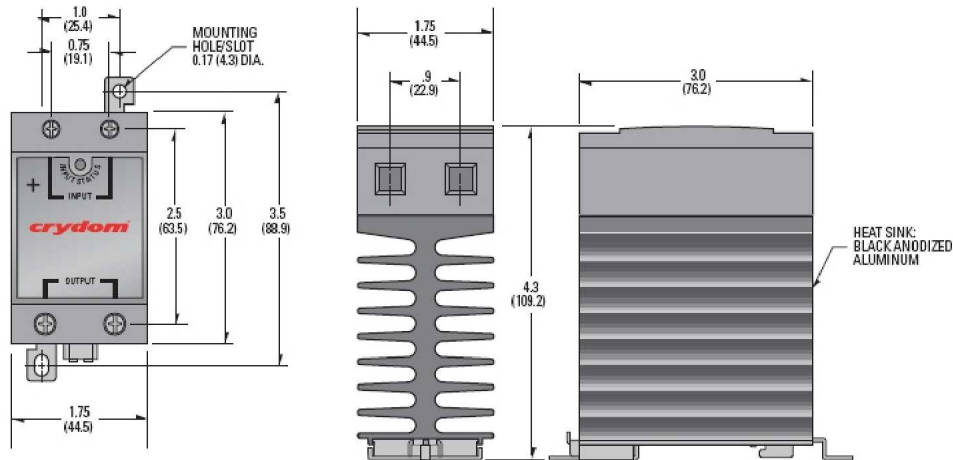
GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 9 Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40 to 80°C
Ambient Storage Temperature Range	-40 to 125°C
Status Indicator Display	Green LED
Weight (typical)	16.8 oz. (476g)
Encapsulation	Themally Conductive Epoxy
Terminals	Cage Type
Maximum Wire Size:	Output: AWG 8 (3.8mm) Input: AWG12(2.5mm)
Recommended Terminal Screw Torque Range:	Output:10-15 in lb (1.1-1.7 Nm) Input: 5-6 in lb (0.6-0.7 Nm)

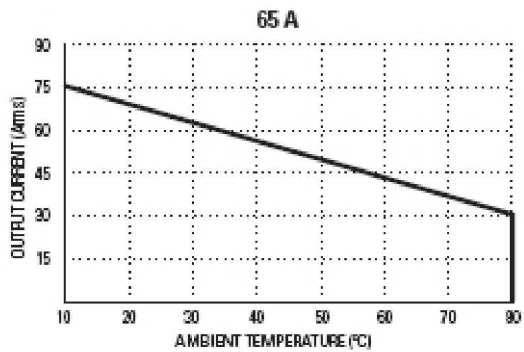
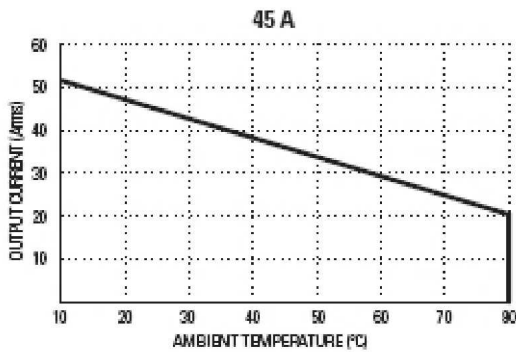
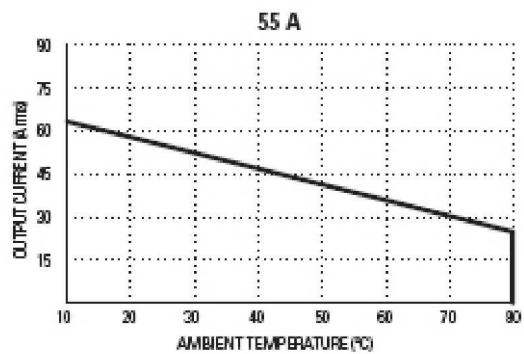
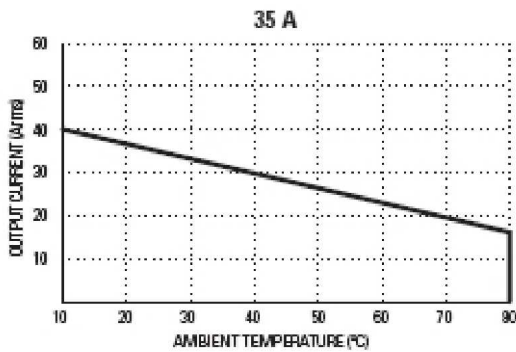
GENERAL NOTES

- 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 0.02 msec
- 4) Input circuitry version incorporates active current limiter.

MECHANICAL SPECIFICATIONS



THERMAL DERATE INFORMATION



AGENCY APPROVALS

UL E116950
CSA LR81689
VDE 126921 UG
CE

Rev. 072308

For Contact information visit our web site.

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Specifications subject to change without notice.

 DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO					
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH. - Disconnect all power before installing or working with this equipment. - Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.	RIESGO DE DESCARGA ELECTRICA O EXPLOSION. - Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo. - Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo. El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.	RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION - Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil - Vérifier tous connections, et remettre tous couverts en place avant de mettre sous De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.	GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION. - Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen - Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen. Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.	RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE. - Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura - Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie	RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO - Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento - Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento O não cumprimento destas instruções pode levar a morte ou lesões sérias.

 WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / AVISO		
RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE - The product's side panels may be hot, allow time for product to cool before touching. - Follow proper mounting instructions including torque values. - Do not allow liquids or foreign objects to enter this product. Failure to follow this instruction can result in serious injury, or equipment damage.	RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER - Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher. - Respecter les consignes de montage, et notamment les couples de serrage. - Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit. Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.	GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG - Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren. - Beachten Sie die Montageanweisungen, - Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein. Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.
RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD - Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo. - Respetar las instrucciones de montaje, y en particular los pares de apretado. - No dejar que penetren líquidos o cuerpos extraños en el producto. Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.	RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO - I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo. - Seguire le istruzioni di montaggio corrette. - Non far entrare liquidi o oggetti estranei in questo apparecchio. La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.	RISCO DE DANO MATERIAL E DE AQUECIMENTO - Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar. - Siga devidamente as instruções de montagem. - Não permita a entrada de líquidos e de objectos estranhos no produto. A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.

ANNEX - ENVIROMENTAL INFORMATION

The environmental information disclosed in this annex including the EIP Pollution logo are in compliance with People's Republic of China Electronic Industry Standard SJ/T11364 – 2006, Marking for Control of Pollution Caused by Electronic Information Products.

Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

此附件所标示的包括电子信息产品污染图标的环境信息
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,
电子信息产品污染控制标识要求



部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O

CMR60 Series

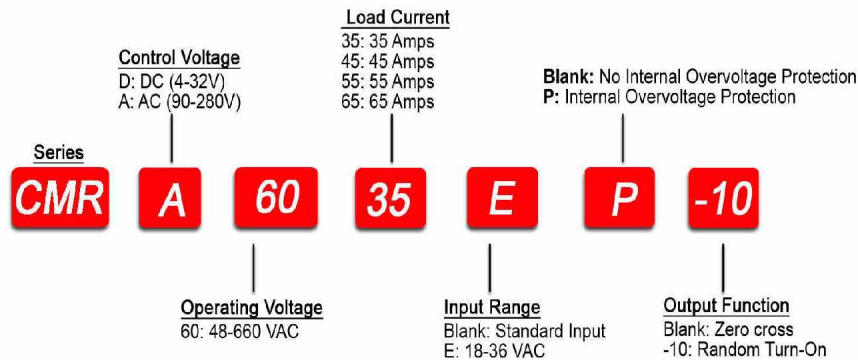


- Ratings from 35A to 65A @ 660 VAC
- 45mm (width) package
- SCR output for heavy industrial loads
- LED input status indicator
- AC or DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) output

PRODUCT SELECTION

Description	35 A	45 A	55 A	65 A
3-32 VDC Control	CMRD6035	CMRD6045	CMRD6055	CMRD6065
90-140 VAC Control	CMRA6035	CMRA6045	CMRA6055	CMRA6065
18-36 VAC Control	CMRA6035E	CMRA6045E	CMRA6055E	CMRA6065E

AVAILABLE OPTIONS



OUTPUT SPECIFICATIONS (1)

Description	35 A	45 A	55 A	65 A
Operating Voltage (47-63Hz) [Vrms]	48-660	48-660	48-660	48-660
Transient Overvoltage [Vpk]	1200	1200	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mA]	1.0	1.0	1.0	1.0
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] (2)	500	500	500	500
Maximum Load Current [Arms]	35	45	55	65
Minimum Load Current [Arms]	0.15	0.15	0.25	0.25
Maximum Surge Current (16.6ms) [Apk]	250	625	1000	1200
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.7	1.7	1.7	1.7
Thermal Resistance Junction to Case (Rjc) [°C/W]	1.02	0.63	0.31	0.28
Maximum I ² t for Fusing (8.3 msec) [A ² sec]	260	1620	4150	6000
Minimum Power Factor (with Maximum Load)	0.5	0.5	0.5	0.5

INPUT SPECIFICATIONS (1)

Description		
Control Voltage Range	4-32 VDC	90-140 Vrms
Maximum Turn-On Voltage	4.0 VDC	90 Vrms
Minimum Turn-Off Voltage	1.0 VDC	10 Vrms
Maximum Reverse Voltage	32 VDC	-
Maximum Input Current	30 mA (4)	
Typical Input Current (4)	14 mA @ 5 VDC	15 mA @ 120 Vrms
Maximum Turn-On Time [msec] (3)	1/2 Cycle	10
Maximum Turn-Off Time [msec]	1/2 Cycle	40

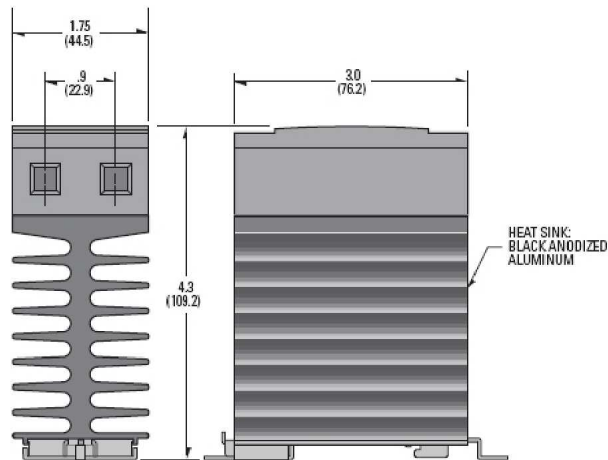
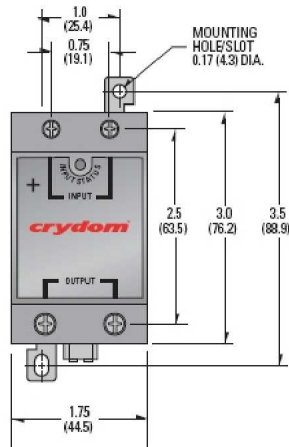
GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 V DC)	10 9 Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40 to 80°C
Ambient Storage Temperature Range	-40 to 125°C
Status Indicator Display	Green LED
Weight (typical)	16.8 oz. (476g)
Encapsulation	Themally Conductive Epoxy
Terminals	Cage Type
Maximum Wire Size:	Output: AWG 8 (3.8mm) Input: AWG12(2.5mm)
Recommended Terminal Screw Torque Range:	Output:10-15 in lb(1.1-1.7 Nm) Input: 5-6 in lb (0.6-0.7 Nm)

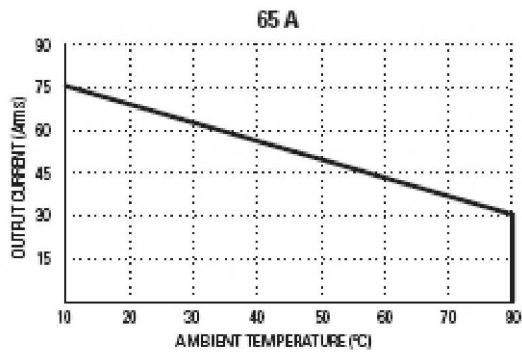
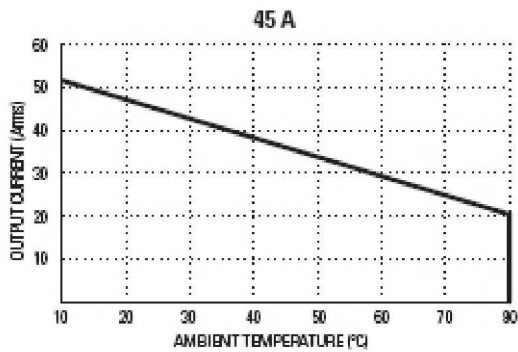
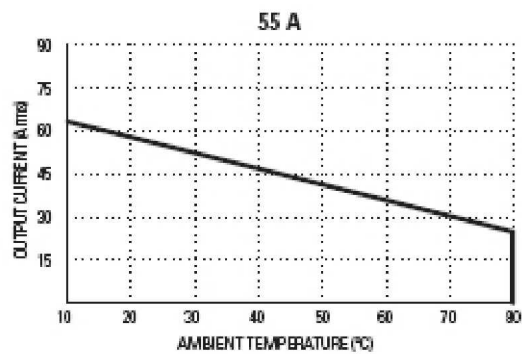
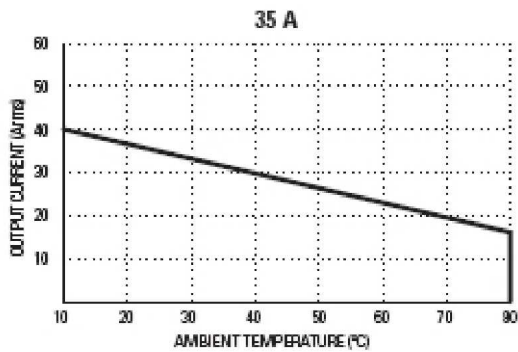
GENERAL NOTES

- 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 0.02 msec
- 4) Input circuitry version incorporates active current limiter.

MECHANICAL SPECIFICATIONS



THERMAL DERATE INFORMATION



AGENCY APPROVALS

UL E116950
CSA LR81689
VDE 126921 UG
CE

Rev. 072308

For Contact information visit our web site.

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Specifications subject to change without notice.

 DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO					
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH. - Disconnect all power before installing or working with this equipment. - Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.	RIESGO DE DESCARGA ELECTRICA O EXPLOSION. - Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo. - Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo. El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.	RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION - Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil - Vérifier tous connections, et remettre tous couverts en place avant de mettre sous De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.	GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION. - Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen - Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen. Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.	RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE. - Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura - Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie	RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO - Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento - Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento O não cumprimento destas instruções pode levar a morte ou lesões sérias.

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RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD - Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo. - Respetar las instrucciones de montaje, y en particular los pares de apretado. - No dejar que penetren líquidos o cuerpos extraños en el producto. Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.	RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO - I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo. - Seguire le istruzioni di montaggio corrette. - Non far entrare liquidi o oggetti estranei in questo apparecchio. La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.	RISCO DE DANO MATERIAL E DE AQUECIMENTO - Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar. - Siga devidamente as instruções de montagem. - Não permita a entrada de líquidos e de objectos estranhos no produto. A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.

ANNEX - ENVIROMENTAL INFORMATION

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Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

此附件所标示的包括电子信息产品污染图标的环境信息
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,
电子信息产品污染控制标识要求



部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O

- DIN Rail Mount (TS 35)
- MOSFET Output
- Extra Low On State Resistance
- Input Status LED

DC output SPST-NO solid state relays use MOSFET output for high switching capabilities in a DIN Rail (TS-35) mount air-cooled package.

MODEL NO.	MS11-CMX60D5	MS11-CMX60D10	MS11-CMX100D6	MS11-CMX200D3
INPUT SPECIFICATIONS ①				
Control Voltage Range	5-10 Vdc	5-10 Vdc	5-10 Vdc	6-10 Vdc
Nominal Input Impedance	300 Ohm	300 Ohm	300 Ohm	300 Ohm
Typical Input Current @ 5 Vdc	12 mA	12 mA	12 mA	12 mA
Must Turn On Voltage	5 Vdc	5 Vdc	5 Vdc	6 Vdc
Must Turn Off Voltage	1.0 Vdc	1.0 Vdc	1.0 Vdc	1.0 Vdc
OUTPUT SPECIFICATIONS ① ③				
Operating Voltage Range	0-60 Vdc	0-60 Vdc	0-100 Vdc	0-200 Vdc
Load Current Range	0-5 Adc	0-10 Adc	0-6 Adc	0-3 Adc
Max. Surge Current, (10 msec)	60 Apk	100 Apk	100 Apk	30 Apk
Max. Off-State Leakage @ Rated Voltage	100 µAdc	100 µAdc ④	100 µAdc	100 µAdc
Max. On-State Resistance @ Rated Current (R _{DS-ON})	.10 Ohm	.018 Ohm	.040 Ohm	.20 Ohm
Max. On-State Voltage Drop @ Rated Current	0.5V	0.18V	0.24V	0.6V
Max. Turn-On Time @ 10Vdc Control	1.0 msec	1.0 msec	1.0 msec	1.0 msec
Max. Turn-Off Time @ 10Vdc Control	300 µsec	300 µsec	300 µsec	300 µsec

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GENERAL NOTES

- ① All parameters at 25°C unless otherwise specified.
- ② Dielectric and insulation resistance are measured between input and output.
- ③ Inductive loads should be diode suppressed.
- ④ At 55 Vdc.

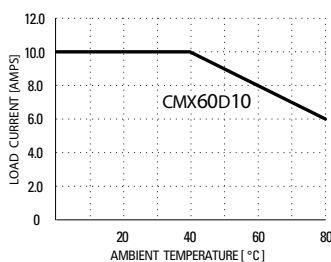
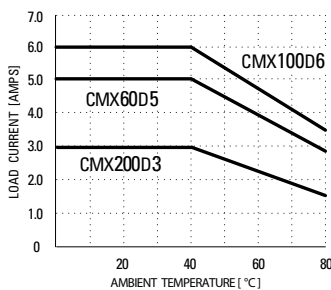
GENERAL SPECIFICATIONS

Dielectric Strength ②	2500 Vrms
Insulation Resistance (Min.) @ 500 Vdc ②	10 ⁹ Ohm
Max. Capacitance (Input/Output)	15 pF
Ambient Operating Temperature Range	-30 to 80°C
Ambient Storage Temperature Range	-30 to 125°C

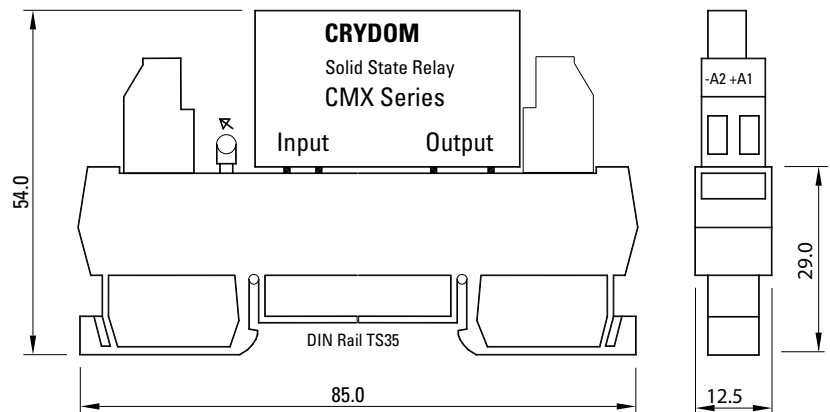
MECHANICAL SPECIFICATIONS

Weight: (typical)	30 g
Encapsulation(SSR):	Thermally Conductive Epoxy

CURRENT DERATING CURVES



Max. Load Current vs. Temp.



All dimensions are in millimeters (not to scale)
Colour of carrier including terminations - orange

APPROVALS (SSR ONLY)

UL E116950 (3A, 6A & 10A Models)

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- DIN Rail Mount (TS-35)
- SCR Output Rating
- Ultra High Surge
- Crydom's Patented Design
- Input Status LED

Crydom's family of SPST-NO relays achieves the highest power switching capability in a DIN mounted air-cooled package. Advanced features include exceptional steady state current, plus ultra-high surge ratings. Models are available to switch up to 280 Vrms with AC or DC control, and either zero-cross or random turn-on ("R") switching versions.

MODEL NUMBERS	AC CONTROL (120Vac) (24Vac)	MS11-CX2405A MS11-CXE240A5
	DC CONTROL (5Vdc) (24Vdc)	MS11-CX240D5 MS11-CXE240D5
OUTPUT SPECIFICATIONS ①		
Operating Voltage (47-63 Hz) [Vrms]		12-280
Load Current Range [Arms]		.06-5
Transient Overvoltage [Vpk]		600
Max. Surge Current, (16.6ms) [Apk]		250
Max. On-State Voltage Drop @ Rated Current [Vpk]		1.4
Maximum I ² t for Fusing, (8.3 msec.) [A ² sec]		260
Max. Off-State Leakage Current @ Rated Voltage [mArms]		0.1
Min. Off-State dv/dt @ Max. Rated Voltage [V/μsec] ②		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	

MODEL NUMBERS	DC CONTROL		AC CONTROL ④	
	5Vdc	24Vdc	120Vac	24Vac
Nominal Voltage				
Control Voltage Range	4-5 Vdc	15-32 Vdc	90-140 Vrms	18-36 Vrms
Max. Turn-On Voltage	3.0 Vdc	15.0 Vdc	90.0 Vrms	18.0 Vrms
Min. Turn-Off Voltage	1.0 Vdc	1.0 Vdc	10.0 Vrms	2.0 Vrms
Nominal Input Impedance	300 Ohm	1.0k Ohm	14.1k Ohm	4.2k Ohm
Typical Input Current @ Nominal Voltage	12 mA	8 mA	10 mArms	5 mArms

GENERAL NOTES

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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 Random Turn-On versions 0.1msec (DC Control Models).

④ No input status LED on AC control modules.

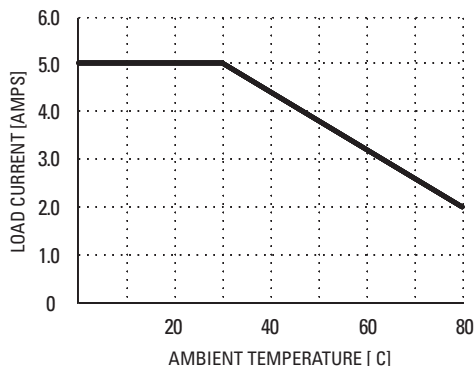
GENERAL SPECIFICATIONS

Dielectric Strength 50/60Hz Input/Output/Base	2500 Vrms
Insulation Resistance (Min.) @ 500 Vdc	10 ⁹ Ohm
Max. Capacitance Input/Output	10 pF
Ambient Operating Temperature Range	-30 to 80°C
Ambient Storage Temperature Range	-30 to 80°C

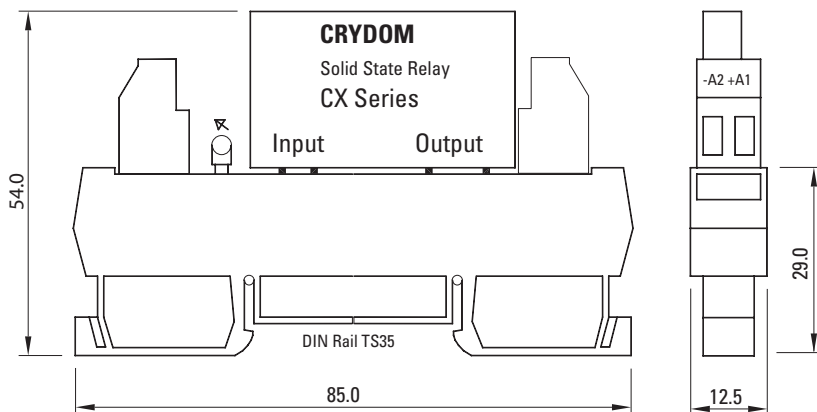
MECHANICAL SPECIFICATION

Weight: (typical)	30 grms
Encapsulation (SSR):	Thermally Conductive Epoxy

CURRENT DERATING CURVE



Max. Load Current vs. Temp.



- All dimensions are in millimeters (not to scale)
- Colour of carrier and termination housing - orange
- Input status LED is on DC control module only

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AVAILABLE OPTIONS

- R Random Turn-On Switching
Example: MS11-CX240D5R, MS11-CX240A5R

APPROVALS (SSR ONLY)

UL E 116949
CSA LR 81689
VDE 70938
UG (240V, DC Control Only)



! DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH. - Disconnect all power before installing or working with this equipment. - Verify all connections and replace all covers before turning on power. Failure to follow these instructions will result in death or serious injury.	RIESGO DE DESCARGA ELECTRICA O EXPLOSION. - Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo. - Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo. El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.	RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION - Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil - Vérifier tous connections, et remettre tous couverts en place avant de mettre sous De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses.	GEFAHR EINES ELEKTRISCHEN SCHLAGES ODER EINER EXPLOSION. - Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen - Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen. Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.	RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE. - Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura - Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie	RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO - Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento - Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento O não cumprimento destas instruções pode levar à morte ou lesões sérias.
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! WARNING / AVERTISSEMENT / WARNUNG / ADVERTENCIA / AVVERTENZA / AVISO

RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE - The product's side panels may be hot, allow time for product to cool before touching. - Follow proper mounting instructions including torque values. - Do not allow liquids or foreign objects to enter this product. Failure to follow this instruction can result in serious injury, or equipment damage.	RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER - Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher. - Respecter les consignes de montage, et notamment les couples de serrage. - Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit. Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.	GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG - Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren. - Beachten Sie die Montageanweisungen, - Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein. Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.
RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD - Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo. - Respetar las instrucciones de montaje, y en particular los pares de apretado. - No dejar que penetren líquidos o cuerpos extraños en el producto. Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.	RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO - I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo. - Seguire le istruzioni di montaggio corrette. - Non far entrare liquidi o oggetti estranei in questo apparecchio. La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.	RISCO DE DANO MATERIAL E DE AQUECIMENTO - Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar. - Siga devidamente as instruções de montagem. - Não permita a entrada de líquidos e de objectos estranhos no produto. A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.

ANNEX – ENVIRONMENTAL INFORMATION:

The environmental information disclosed in this annex including the EIP Pollution logo are in compliance with People's Republic of China Electronic Industry Standard SJ/T11364 – 2006, Marking for Control of Pollution Caused by Electronic Information Products.

Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

附件 - 环保信息:

此附件所标示的包括电子信息产品污染图标的环境信息
符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**,
电子信息产品污染控制标识要求

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O

