

## MCS Series

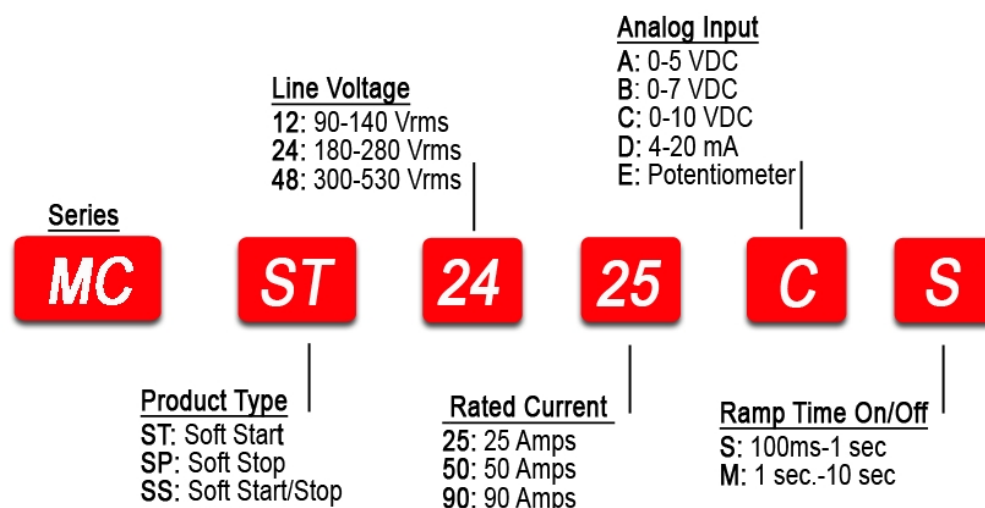


- Microprocessor based soft-start / soft-stop controller
- Ratings from 25A to 90A @ 48-530 VAC
- Low-voltage, current, or potentiometer control
- Output status indicator
- Adjustable ramp rates

### PRODUCT SELECTION

| Line Voltage | 25 A     | 50 A     | 90 A     |
|--------------|----------|----------|----------|
| 120 Vrms     | MCST1225 | MCST1250 | MCST1290 |
| 240 Vrms     | MCST2425 | MCST2450 | MCST2490 |
| 480 Vrms     | MCST4825 | MCST4850 | MCST4890 |

### AVAILABLE OPTIONS



### OUTPUT SPECIFICATIONS (voltage)

| Description                                                            | 120 VAC | 240 VAC | 480 VAC |
|------------------------------------------------------------------------|---------|---------|---------|
| Operating Voltage (47-63Hz) [Vrms]                                     | 48-140  | 180-280 | 300-530 |
| Transient Overvoltage [Vpk]                                            | 400     | 600     | 1200    |
| Maximum Off-State Leakage Current @ Rated Voltage [mA <sub>rms</sub> ] | 5       | 7       | 12      |
| Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec]               | 200     | 200     | 200     |

### OUTPUT SPECIFICATIONS (current)

| Description                                                         | 25 A | 50 A | 90 A |
|---------------------------------------------------------------------|------|------|------|
| Maximum Load Current [A <sub>rms</sub> ]                            | 25   | 50   | 90   |
| Minimum Load Current [mA <sub>rms</sub> ]                           | 150  | 150  | 150  |
| Maximum Surge Current (16.6ms) [A <sub>pk</sub> ]                   | 250  | 625  | 1200 |
| Maximum On-State Voltage Drop @ Rated Current [V <sub>pk</sub> ]    | 1.6  | 1.6  | 1.6  |
| Thermal Resistance Junction to Case (R <sub>jc</sub> ) [°C/W]       | 1.02 | 0.63 | 0.28 |
| Maximum I <sup>2</sup> t for Fusing (8.3 msec) [A <sup>2</sup> sec] | 260  | 1620 | 6000 |

## INPUT SPECIFICATIONS (1)

| Description                                      | DC Control |
|--------------------------------------------------|------------|
| Control Voltage Range (VDC)                      | 8-32       |
| Input Current Range [mA] [P1]                    | 28-30      |
| Nominal Input Impedance [Ohms] [P3]              | 30K        |
| Control Must Operate Voltage "On" [VDC] [P3]     | 5-32       |
| Control Must Release Voltage "Off" [VDC] [P3]    | 0-4        |
| Input Current [mA] [P3]                          | 0-2.6      |
| Analog Range Option A [VDC] [P4]                 | 0.5-5      |
| Analog Range Option B [VDC] [P4]                 | 1.25-7     |
| Analog Range Option C [VDC] [P4]                 | 2-10       |
| Analog Range Option D [VDC] [P4]                 | 4-20       |
| Nominal Input Impedance Option A,B,C [ohms] [P4] | 20K        |
| Nominal Input Impedance Option D [ohms] [P4]     | 220        |

## GENERAL SPECIFICATIONS

| Description                                      | Parameters                                                                                            |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Minimum Power Factor (with Maximum Load)         | 0.5                                                                                                   |
| Dielectric Strength, Input/Output/Base (50/60Hz) | 4000 Vrms                                                                                             |
| Minimum Insulation Resistance (@ 500 V DC)       | 10 <sup>9</sup> Ohm                                                                                   |
| Maximum Capacitance, Input/Output                | 10 pF                                                                                                 |
| Ambient Operating Temperature Range              | -20 to 80°C                                                                                           |
| Ambient Storage Temperature Range                | -40 to 125 °C                                                                                         |
| Weight (typical)                                 | 3.0 oz (86.5g)                                                                                        |
| Encapsulation                                    | Thermally conductive Epoxy                                                                            |
| Terminals-Power                                  | Screws and Saddle Clamps Furnished, Unmounted                                                         |
| Terminals-Control                                | Barrier Strip Screw Terminals                                                                         |
| Recommended Terminal Screw Torque Range:         | 8-32 Screws -20 in. lbs.(Screws dry without grease)<br>Input Connections via Screw Type Barrier Strip |

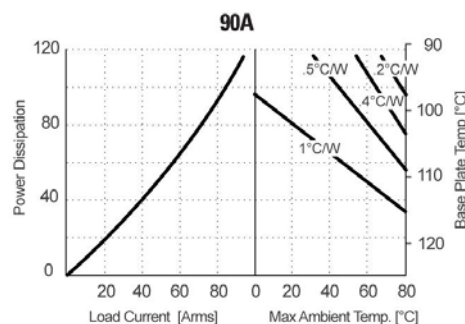
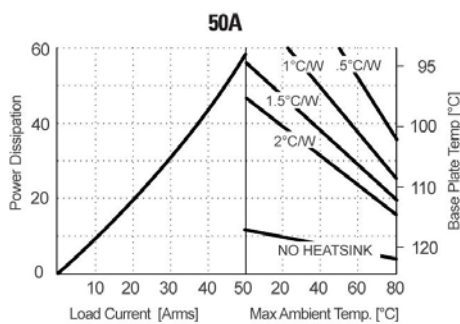
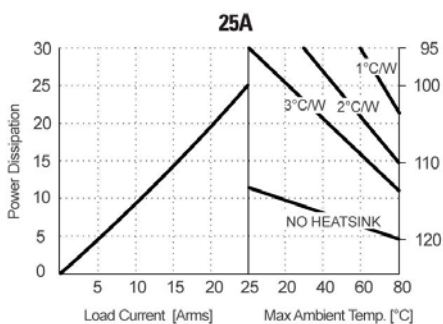
## GENERAL NOTES

1) Voltages are reference to GND (Ground = 0 VDC) P2

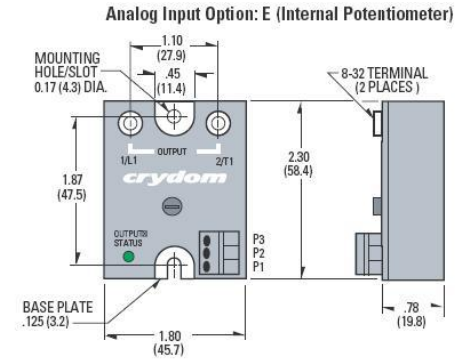
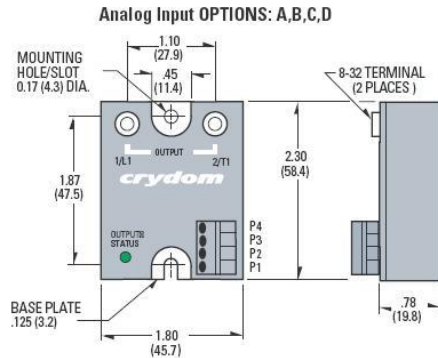
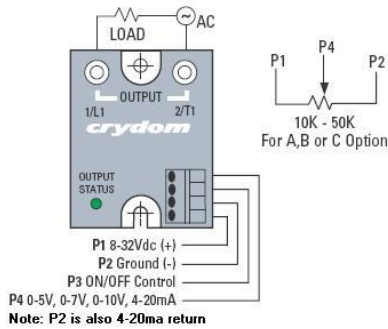
## OUTPUT STATUS FUNCTIONS

| Conditions                                               | LED Status                |
|----------------------------------------------------------|---------------------------|
| Initial Logic Supply On                                  | Flash Once                |
| Load Voltage Missing / Load Open (w/control P3 disabled) | Flash Once Intermittently |
| Load Voltage Missing / Load Open (w/control P3 enabled)  | Off                       |
| Ramp Time (Soft Start upon P3 Enabled)                   | Off to Bright             |
| Ramp Time (Soft Start upon P3 Disabled)                  | Bright to Off             |
| Output ON (Normally Steady Operation)                    | On                        |

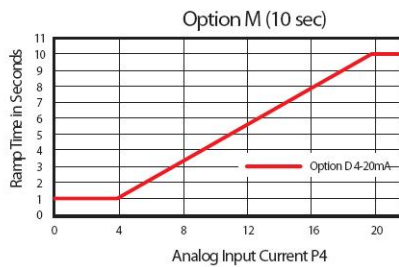
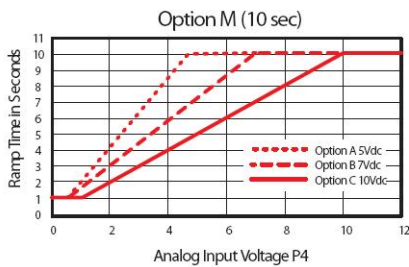
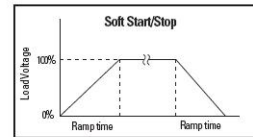
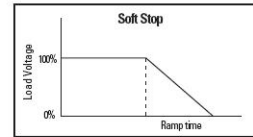
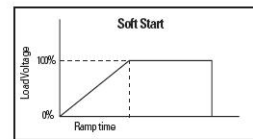
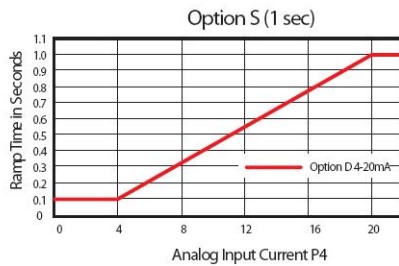
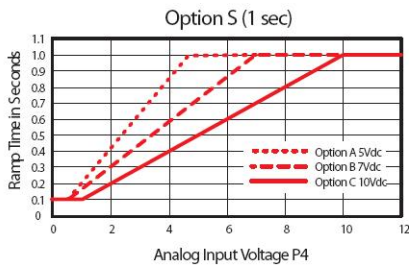
## THERMAL DERATE INFORMATION



## MECHANICAL SPECIFICATIONS



## RAMP TIME IN SECONDS



## AGENCY APPROVALS

UL E116949



Rev. 050311

|  <b>WARNING / AVERTISSEMENT / WARNUNG / ADVERTENCIA / AVVERTENZA / AVISO</b>                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE</b> <ul style="list-style-type: none"> <li>The product's side panels may be hot, allow the product to cool before touching.</li> <li>Follow proper mounting instructions including torque values.</li> <li>Do not allow liquids or foreign objects to enter this product.</li> </ul> <p>Failure to follow these instructions can result in serious injury, or equipment damage.</p>                                                                           | <b>RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER</b> <ul style="list-style-type: none"> <li>Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher.</li> <li>Respecter les consignes de montage, et notamment les couples de serrage.</li> <li>Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit.</li> </ul> <p>Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.</p> | <b>GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG</b> <ul style="list-style-type: none"> <li>Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren.</li> <li>Beachten Sie die Montageanweisungen, Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein.</li> </ul> <p>Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.</p>                             |
| <b>RIESGO DE DAÑOS MATERIALES Y DE SOBRECALENTAMIENTO DE LA UNIDAD</b> <ul style="list-style-type: none"> <li>Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfrie antes de tocarlo.</li> <li>Respetar las instrucciones de montaje, y en particular los pares de apretado.</li> <li>No dejar que penetren líquidos o cuerpos extraños en el producto.</li> </ul> <p>Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.</p> | <b>RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO</b> <ul style="list-style-type: none"> <li>I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo.</li> <li>Seguire le istruzioni di montaggio corrette.</li> <li>Non far entrare liquidi o oggetti estranei in questo apparecchio.</li> </ul> <p>La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.</p>                           | <b>RISCO DE DANO MATERIAL E DE AQUECIMENTO</b> <ul style="list-style-type: none"> <li>Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar.</li> <li>Siga devidamente as instruções de montagem.</li> <li>Não permita a entrada de líquidos e de objectos estranhos no produto.</li> </ul> <p>A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.</p> |

|  <b>DANGER / PELIGRO / DANGER / GEFAHR / PERICOLO / PERIGO</b>                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH.</b> <ul style="list-style-type: none"> <li>Disconnect all power before installing or working with this equipment.</li> <li>Verify all connections and replace all covers before turning on power.</li> </ul> <p>Failure to follow these instructions will result in death or serious injury.</p> | <b>RIESGO DE DESCARGA ELECTRICA O EXPLOSION.</b> <ul style="list-style-type: none"> <li>Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo.</li> <li>Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo.</li> </ul> <p>El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.</p> | <b>RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION</b> <ul style="list-style-type: none"> <li>Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil</li> <li>Vérifier tous connections, et remettre tous couverts en place avant de mettre sous</li> </ul> <p>De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses.</p> | <b>GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION.</b> <ul style="list-style-type: none"> <li>Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen</li> <li>Vor der Inbetriebnahme alle Anschlüsse überprüfen und alle Gehäuseteile montieren.</li> </ul> <p>Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.</p> | <b>RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE.</b> <ul style="list-style-type: none"> <li>Spenga tutta l'alimentazione e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura</li> <li>Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione</li> </ul> <p>L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie</p> | <b>RISCO DE DESCARGA ELÉCTRICA OU EXPLOÇÃO</b> <ul style="list-style-type: none"> <li>Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento</li> <li>Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento</li> </ul> <p>O não cumprimento destas instruções pode levar a morte ou lesões sérias.</p> |

**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            |