

- > Temperature Controller/SSR in One Package
- > Direct J or K Internally Compensated Thermocouple Input
- > Four Heating Ranges Available with Burst Fire Control
- > Setpoint is Adjustable by Voltage or 4-20mA Control
- > Separate Output Enable/Disable Control
- > SCR Based Output Load Switching
- > Open Thermocouple Protection Feature
- > One Refrigeration Range Available with Built-In 2 Minute Short-Cycle Protection



### 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	10 pF
Ambient Operating Temperature Range	-20 to 80°C
Ambient Storage Temperature Range	-40 to 125°C

### MECHANICAL SPECIFICATIONS

Weight: (typical)	3.0 oz. (86.5g)
Encapsulation	Thermally Conductive Epoxy
Terminals - Power	Screws and Saddle Clamps Furnished, Unmounted
Control/Thermocouple	Barrier Strip Screw Terminals

### OUTPUT SPECIFICATIONS

	Voltage Suffix	
	24	48
Operating Voltage (47-63 Hz) [Vrms]	24-280	48-530
Transient Overvoltage [Vpk]	600	1200
Max. Off-State Leakage Current @ Rated Voltage [mA]	7	12
Power Factor (Min.) with Max. Load	0.5	0.5
Maximum Voltage Drop (100% On) [Vpk]	1.6	1.6
Minimum Off-State dv/dt [V/μsec]	200	200

	Current Suffix		
	25 Amp	50 Amp	90 Amp
Max. Load Current [Arms]	25	50	90
Min. Load Current (mArms)	150	150	150
Max. Surge Current (16.6ms) [Apk]	250	625	1200
Thermal Resistance Junction to Case (R <sub>θJC</sub> ) [°C/W]	1.02	0.63	0.28
Maximum I <sup>2</sup> t for Fusing, (8.3 msec.) [A <sup>2</sup> s]	260	1620	6000

### INPUT SPECIFICATIONS\*

	Minimum	Typical	Maximum
DC Voltage Supply Range [Vdc] [P1]	8	12 or 24	32
Input Current [mA]	28		30
Control Must Operate Voltage "On" [Vdc][P3]	5		32
Control Must Release Voltage "Off" [Vdc][P3]	0		4
Control Input Current [mA] [P3]	0		1.25
Control Nominal Input Impedance		30K	
PLVI Range Option A [Vdc][P4]**	0.8		5
PLVI Range Option B [Vdc][P4]**	1		7
PLVI Range Option C [Vdc][P4]**	2		10
PLVI Range Option D [mA][P4]	4		20
Nominal Input Impedance Option A,B,C [Ohms][P4]		20K	
Nominal Input Impedance Option D [Ohms][P4]		220	

\*Voltages are reference to GND (Ground = 0Vdc) P2.

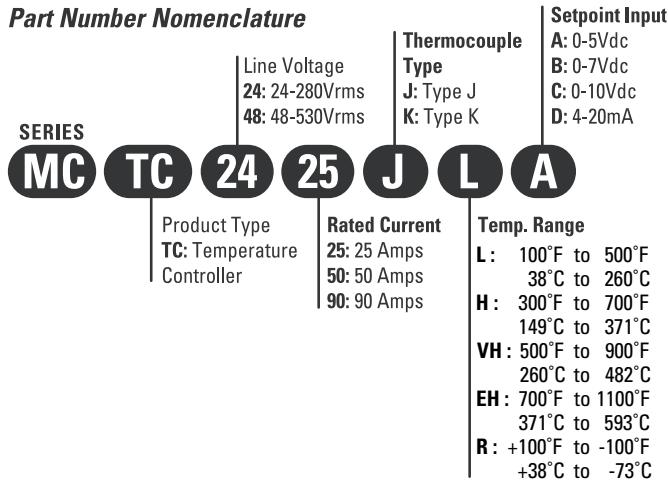
\*\*PLVI voltage can go up to max. supply voltage without damage.

†Heating Option Only.

The Crydom MCTC is a unique self-contained state of the art basic Temperature Controller that combines all the necessary functions into one easy to set up and use standard size package. The MCTC is ideal for temperature control users that do not need multiple built-in options, displays, and functions that they will never use.

The MCTC requires only a single, non-regulated low current DC source, (10-32Vdc at 32mA max.), and a type J or K thermocouple, to be able to accurately control heater and cooling compressor loads up to 530Vac at 90A. The unit incorporates an internally compensated thermocouple input, 5 available temperature ranges including an inverse function refrigeration version, with adjustable setpoint using analog low voltage or 4-20mA inputs, separate output enable/disable control, and built in Crydom Solid State Relay technology for load control. With integrated zerocross burst firing, and proportional derivative control to avoid set-point overshoot†, the unit also includes 2 LED status indicators for visual reference of operation and setpoint conditions.

### Part Number Nomenclature

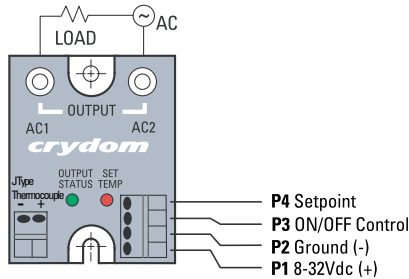


### Output Status Functions

CONDITION	GREEN SET POINT LED	RED OUTPUT LED
Initial Logic Supply On	Flash Once	Flash Once
Operating (to 85% of setpoint)	Off	On
Approaching Setpoint	Off	Variable Flashing
At Setpoint (± 5%)	On	Slow Flashing
Over Setpoint (>5%)†	Flashing	Off
Short-Cycle Timing ("R" suffix only)	Flash 2x Intermittently	Off
Open Thermocouple	Flash 3x Intermittently	Off

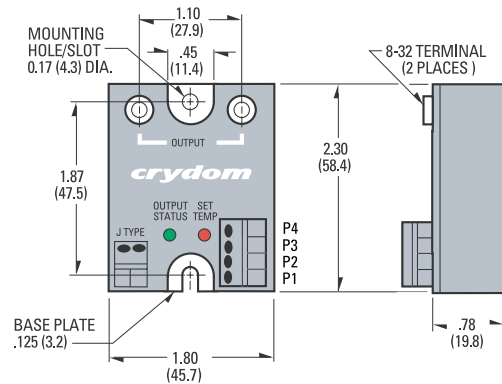
†Below Setpoint for "R" suffix

### Electrical Connections



### Mechanical

Dimensions are in inches (millimeters)

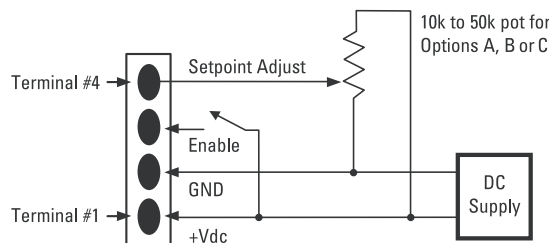


### Screw Torque Requirements:

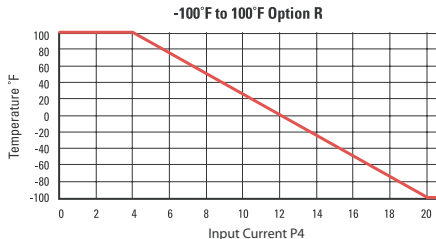
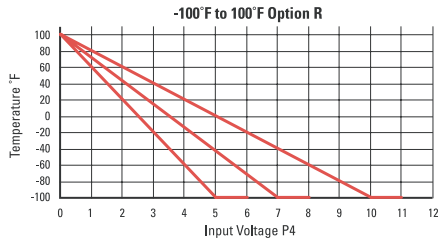
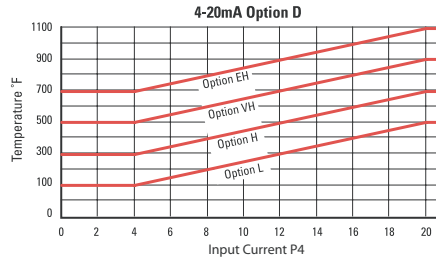
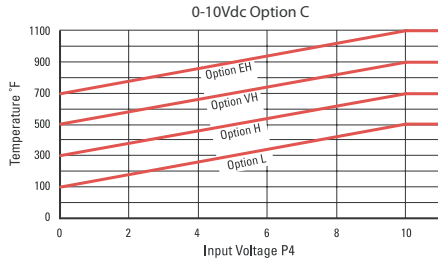
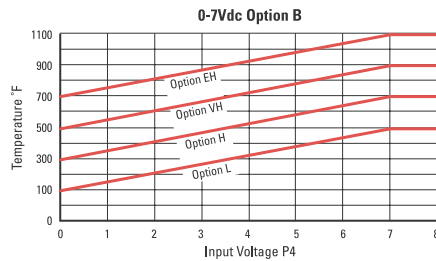
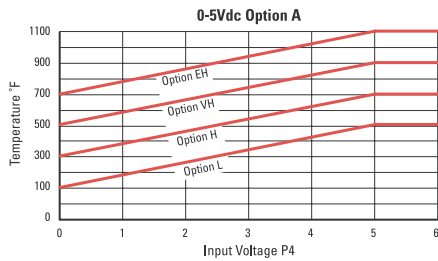
8-32 Screws - 20in. lbs. (Screws dry without grease.)  
Input Connections via Screw Type Barrier Strip

### Wiring Example

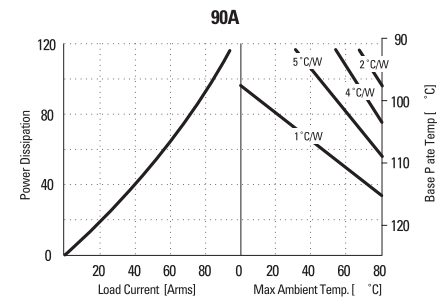
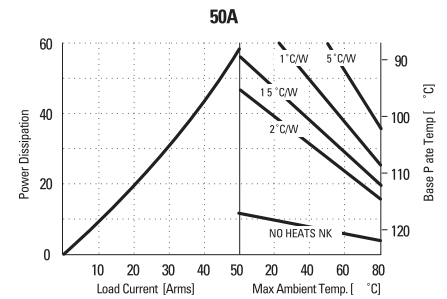
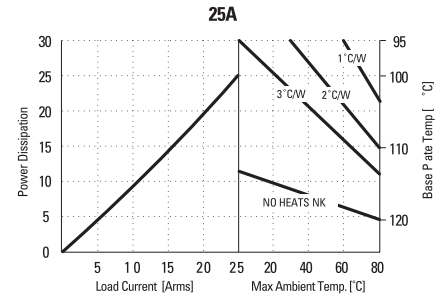
(for Options A, B or C using an external potentiometer)



### Temperature vs Setpoint Input P4



### Current Derating Curves



ISO9001 Certified

### Approvals

UL - E116949



For recommended applications and more information contact:  
**USA:** Sales Support (877) 502-5500 **Tech Support** (877) 702-7700 FAX (619) 710-8540  
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**Email:** sales@crydom.com **WEB SITE:** http://www.crydom.com  
**UK:** +44 (0)1202 606030 • **FAX** +44 (0)1202 606035 Crydom SSR Ltd., Arena Business Centre,  
 Holyrood Close, Poole, Dorset BH17 7FJ, Email: intsales@crydom.com.  
**GERMANY:** +49 (0)180 3000 506

**DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO**

<p><b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH.</b></p> <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><b>Failure to follow these instructions will result in death or serious injury.</b></p>	<p><b>RIESGO DE DESCARGA ELECTRICA O EXPLOSION.</b></p> <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><b>El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.</b></p>	<p><b>RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION</b></p> <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><b>De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses.</b></p>	<p><b>GEFAHR EINES ELEKTRISCHEN SCHLAGES ODER EINER EXPLOSION.</b></p> <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 dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen.</li> </ul> <p><b>Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.</b></p>	<p><b>RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE.</b></p> <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><b>L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie</b></p>	<p><b>RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO</b></p> <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><b>O não cumprimento destas instruções pode levar à morte ou lesões sérias.</b></p>
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**WARNING / AVERTISSEMENT / WARNUNG / ADVERTENCIA / AVVERTENZA / AVISO**

<p><b>RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE</b></p> <ul style="list-style-type: none"> <li>• The product's side panels may be hot, allow time for 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><b>Failure to follow this instruction can result in serious injury, or equipment damage.</b></p>	<p><b>RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER</b></p> <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><b>Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.</b></p>	<p><b>GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG</b></p> <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><b>Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.</b></p>
<p><b>RIESGO DE DAÑOS MATERIALES Y DE SOBRECIENTAMIENTO DE LA UNIDAD</b></p> <ul style="list-style-type: none"> <li>• Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe 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><b>Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.</b></p>	<p><b>RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO</b></p> <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><b>La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.</b></p>	<p><b>RISCO DE DANO MATERIAL E DE AQUECIMENTO</b></p> <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><b>A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.</b></p>

## 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保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

