

- > 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 ⁹ Ohm
Max. Capacitance Input/Output	10 pF
Ambient Operating Temperature Range	-20 to 85°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 _{θJC}) [°C/W]	1.02	0.63	0.28
Maximum I ² t for Fusing, (8.3 msec.) [A ² 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.

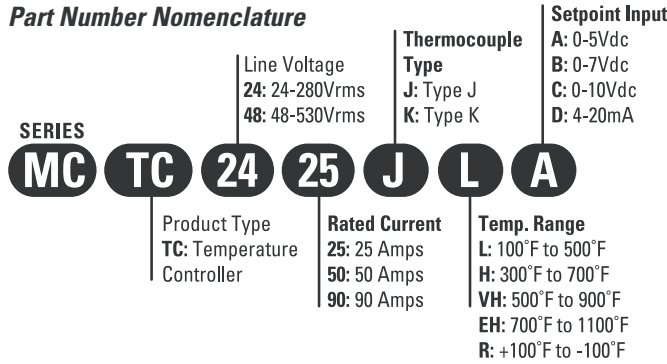
**PLVI voltage can go up to max. supply voltage without damage.

†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

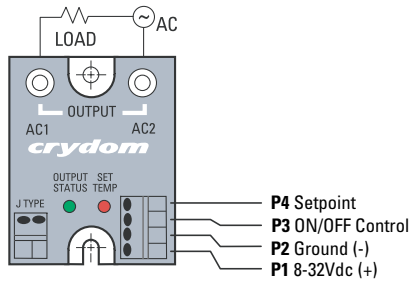


Output Status Functions

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 ($\pm 5\%$)	On	Slow Flashing
Over Setpoint ($>5\%$)†	Flashing	Off
Short-Cycle Timing ("R" suffix only)	Flash 2x Intermittently	Off
Open Thermocouple	Flash 3x Intermittently	Off

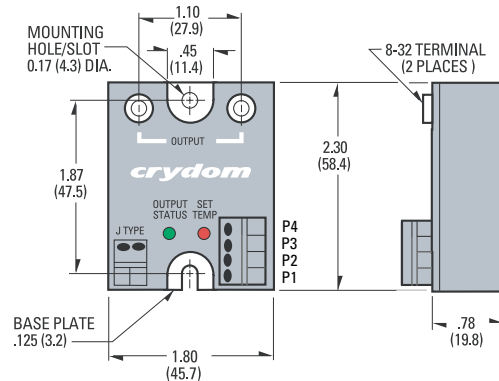
†Below Setpoint for "R" suffix

Electrical Connections



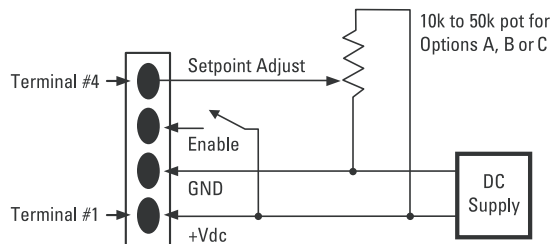
Mechanical

Dimensions are in inches (millimeters)



Wiring Example

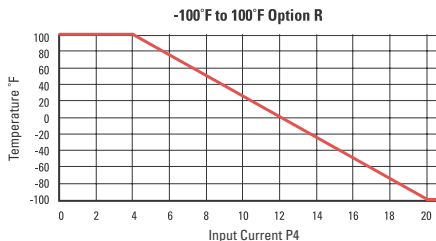
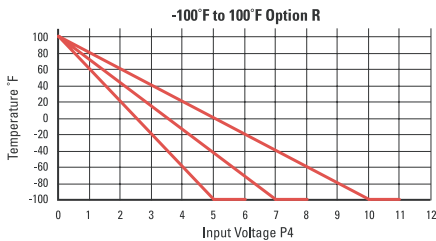
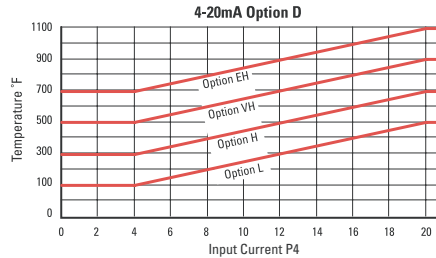
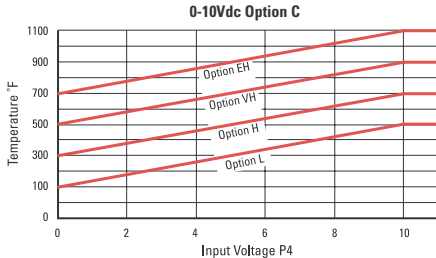
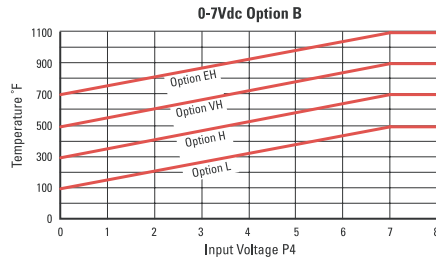
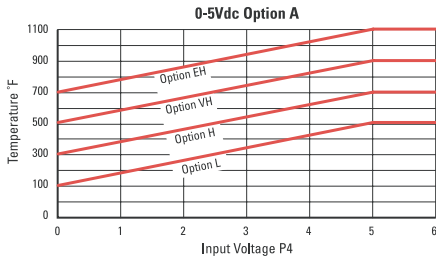
(for Options A, B or C using an external potentiometer)



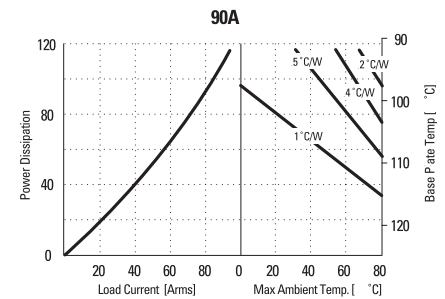
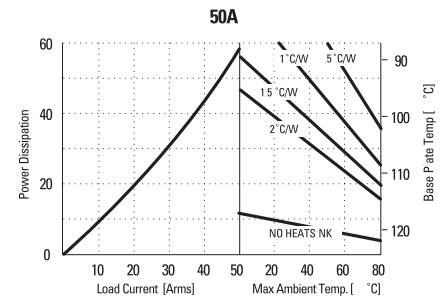
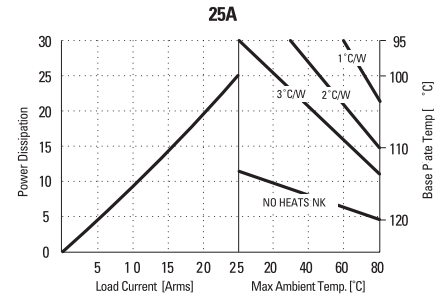
Screw Torque Requirements:

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

Temperature vs Setpoint Input P4



Current Derating Curves



ISO9001 Certified

Approvals

UL - Pending

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