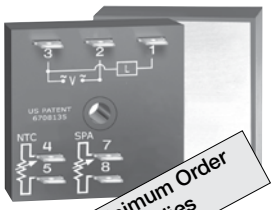
TCR Series
Thermistor Temperature Control



100 Piece Minimum Order Requirement Applies

10 YEAR WARRANTY

- NTC Thermistor Sensing for Low Cost Set Point Control
- Solid State Output to Control Resistive Heaters
- 6, 10, or 20 A Solid State Output
- External Adjustment of the Set Point
- Small Package, Encapsulated, Single Screw Mounting
- Metal Back Surface, Utilizes Equipment as Heat Sink

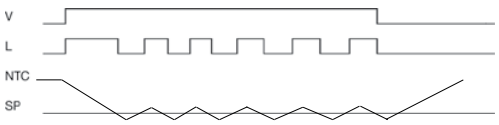
Approvals:

Description
The TCR Series of solid state temperature control is a low cost modular approach to accurate control of temperature. The high power output is available in 6, 10, and 20 amperes and provides set point temperature control. The efficient metalized mounting surface allows for utilization of equipment as the heat sink. Heat Sink compound is provided with all units. Designed for use with resistive loads.

Operation
Set Point Control: TCR Series is a single set point temperature controller. When the thermistor resistance is high (above the set point), the solid state output is ON. When the thermistor resistance decreases (temperature increases) to set point or below, the output turns OFF.

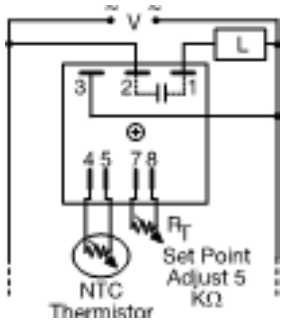
It must be recognized that temperature differential (under and over shoot) is largely due to the system as a whole. The mass of the system, size of the heaters, location of heaters and sensor all play an important part. Single set point control is best when there is little or no lag time between heater and sensor, and when the heater is not oversized.

Function



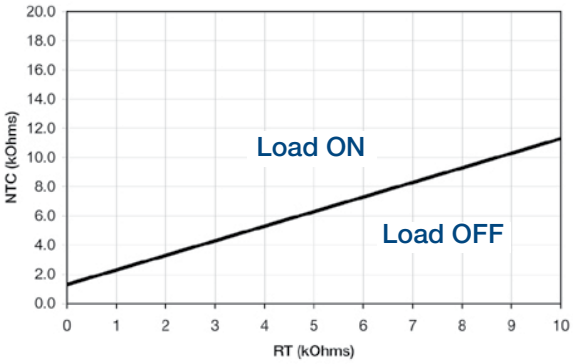
V = Voltage L = Load SP = Set Point
NTC = Negative Temperature Coefficient Thermistor
RT = External Set Point Adjustment

Connection



Caution: NTC Thermistor must be electrically insulated, 1500 volts RMS minimum.
Dashed lines are internal connections.

Adjustment vs Thermistor Resistance



Note: If R_T value exceeds 13 k ohms, the output will not energize.

Available Models-
TCR9C

Don't see what you need? Call us for a minimum quantity and price quote!

Ordering Table

TCR	X	X
Series	**Input Voltage** **4** - 120 V AC **6** - 230 V AC **9** - 120 ... 240 V AC	**Output Rating** **A** - 6 A **B** - 10 A **C** - 20 A

Example P/N: **TCR4B = 120VAC; 10A**

Accessories

Female Quick Connect P/Ns:
P1015-13 (AWG 10/12)
P1015-64 (AWG 14/16)
P1015-14 (AWG 18/22)

See accessory pages for specifications.

TCRPrelim 10.10

Low Voltage Products & Systems

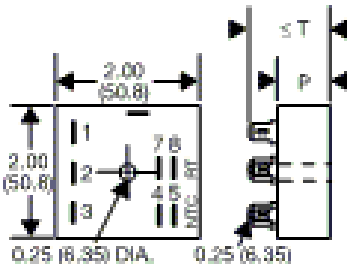
TCR Series
Thermistor Temperature Control

Technical Data

Control		
Type	Single Set Point, negative temperature coefficient resistance sensing	
Sensor Type	Thermistor, negative temperature coefficient (customer supplied) Electrically insulated for 1500 volts RMS minimum	
Adjustment	Temperature set point selected by means of an external resistance (see graph)	
Accuracy	≤ +/- 5% of the set point resistance	
Accuracy	Add the tolerance of the NTC thermistor and the drift of the adjustment pot over temperature range	
Set Point vs Ambient Temperature and Operating Voltage	± 5% of set point resistance	
Reset Time	≤ **150 ms**	
Input		
Voltage	120 or 230 V AC or 120 to 240 V AC	
Tolerance	± 15%	
Frequency	50 ... 60 Hz	
Output		
Type	Solid State	
Form	Single pole, non-isolated, zero voltage switching	
Rating	Model / Steady State / Inrush** A / 6 A / 60 A** B / 10 A / 100 A** C / 20 A / 200 A**	**Must be bolted to a metal surface using the included heat sink compound. The maximum mounting surface temperature is 90°C. Inrush: Non-repetitive for 16 ms.
Minimum Load Current	100mA	
Voltage Drop	≅ 2 Volts at rated current	
Off State Leakage Current	≅ 5 mA at 230 V AC	
Protection		
Dielectric Breakdown	≥ 2000 volts terminals to mounting surface	
Insulation Resistance	≥ 100 MΩ	
Circuitry	Encapsulated	
Mechanical		
Mounting	Surface mounts with one #10 (M5 x 0.8) screw	
Termination	0.25 in (6.35 mm) male quick connect terminals	
Environmental		
Operating Temperature	-40°C to +60°C	
Storage Temperature	-40°C to +85°C	
Humidity	95% relative, non-condensing	

CAUTION: SSAC Temperature Controls are not designed to serve as primary temperature safety devices. An independent high temperature limit switch should be incorporated into all designs to prevent property damage or personal injury due to potential system malfunctions.

Mechanical View



Inches (Millimeters)

Output	P	T
6 ... 20 A	1.08 (27.4)	1.51 (38.4)