

LC-200 Peltier-Thermoelectric Liquid Cooler



- A high-density bonded-fin heat sink and an eight-pass liquid exchanger give high cooling capacity in a relatively small size.
- Useful in medical products, recirculation chillers, laser diode coolers, temperature baths, laboratory instruments, etc.
- The cooler can easily be customized for production-sized orders to meet your exact requirements.
- For production sized orders, the cooler may be customized with swirl inserts in the liquid loops to improve heat transfer at low flow rates.
- Threaded hole located in liquid exchanger provides for easy attachment of a temperature sensor.
- CE marked, RoHS compliant.

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LC-200 Specifications

Thermoelectric (TE) Power (typical)¹ : 24 VDC at 14.1 A
 Thermoelectric (TE) Power (maximum)²: 24 VDC at 17.3 A
 External (ambient) Fan Power: 24 VDC at 1.0 A
 External (ambient) Fan Noise: 55 dBA

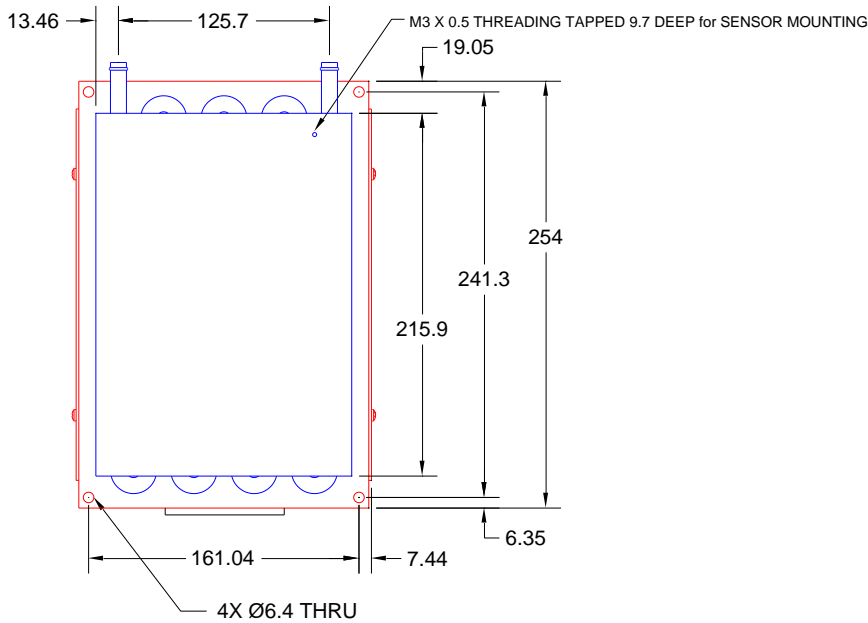
NEMA Rating: NA
 Weight (kg): 5.8

⚠ Please review the [Thermoelectric Cooling Assembly \(TCA\) Instruction Manual](#) (or [manual in other languages](#)), [ordering information](#), and [FAQ's](#) for related technical information before purchasing or using this product.

Performance is based on unrestricted air flow to fan and from air-flow outlets and 1.6 L/min water flow rate through the liquid heat exchanger. Do not operate if the ambient, liquid, heat sink, or liquid heat exchanger temperatures exceed 70 °C. Do not operate at air temperatures below -20 °C. Do not freeze the liquid. Do not exceed 205 kPa water pressure.

¹Current, at steady state, is rated at +25 °C ambient, +25 °C inlet water, maximum heat removal. At 5 °C inlet, the typical steady-state current is 13.9 A.

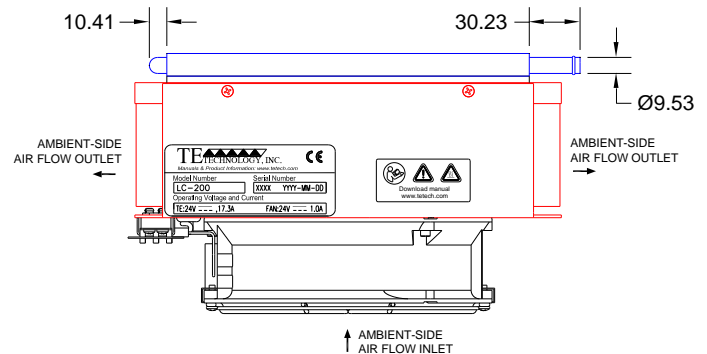
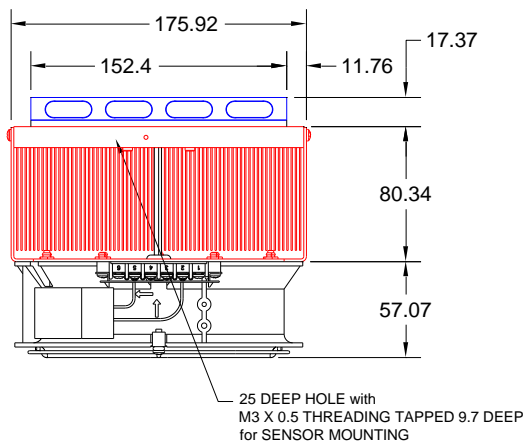
²Current, at steady-state operation under-worst case conditions, is rated at -10 °C ambient, +70 °C inlet, maximum heat removal.



RoHS Compliant
 Directive 2011/65/EU

A 3D PDF, .stp, and .x_t solid models are also available from the website.

All dimensions in millimeters.
 Liquid heat exchanger side shown in blue;
 External (ambient) side shown in red.

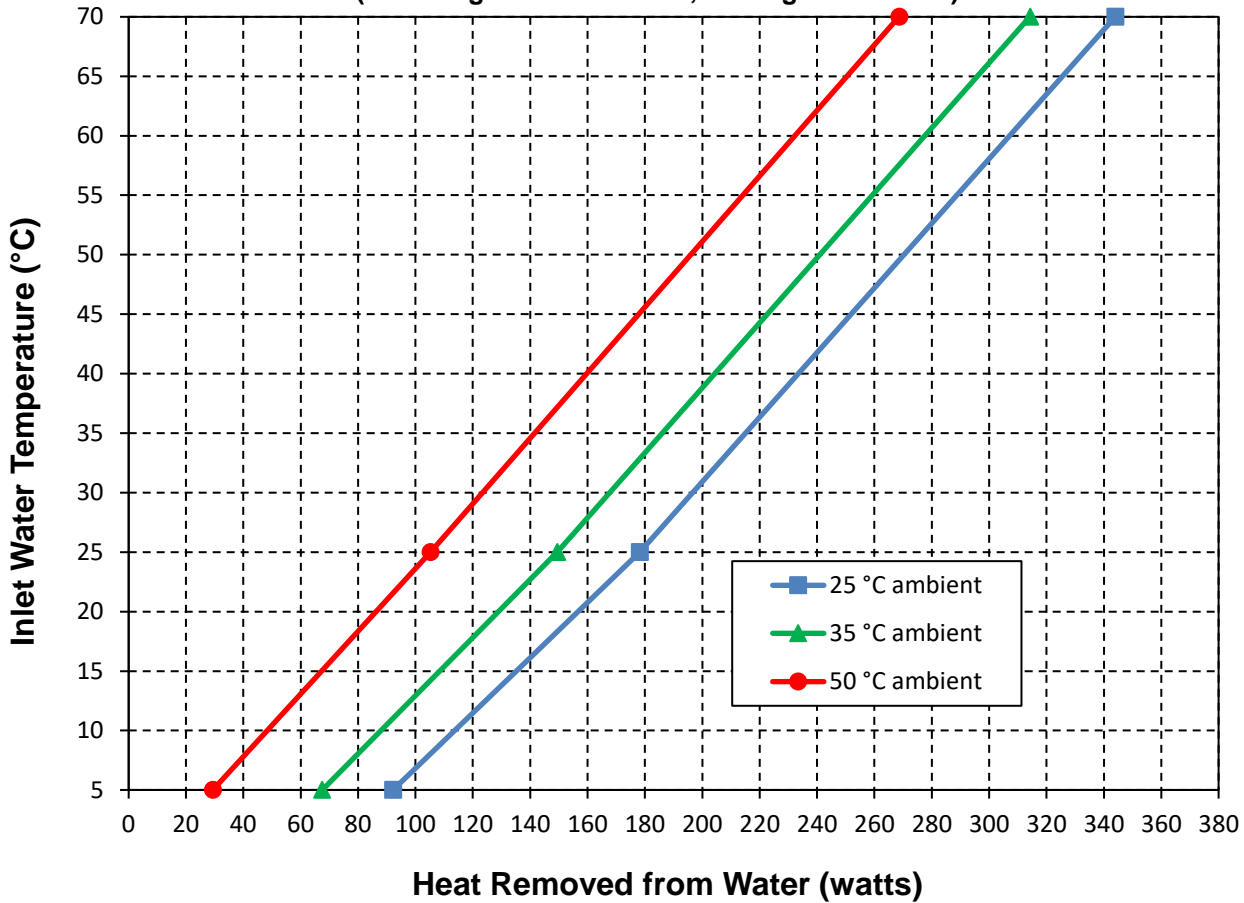


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LC-200 Cooling Performance Graph

(removing heat from water, flowing at 1.6 L/min)



How to use the Performance Graph:

1. Select Performance Line

The diagonal lines represent cooling performance at the indicated ambient air temperature (inlet temperature on the ambient-side fan). If the cooler is to operate at a different ambient, then you must sketch in a new performance line. This can be drawn parallel to one of the existing lines, using the distance between the existing lines as a scale to properly locate the new line.

2. Select Enclosure Temperature

Draw a horizontal line on the graph corresponding to the desired inlet water temperature until it intersects with the performance line corresponding to the ambient temperature at which the cooler is to operate.

3. Determine Cooling Capacity

The maximum amount of heat that the cooler can remove from the water is determined by the intersection point (determined in the previous step). *The cooler will be able to maintain the desired water temperature if the cooling capacity exceeds the heat load. If the heat load exceeds the cooling capacity then a higher capacity cooler will be needed.*

Example: You need to maintain the water at 25 °C while in a 25 °C ambient. The cooler can remove a maximum of approximately 178 W of heat from the water. If the heat load (internally generated heat plus the heat gain through insulation, solar, vapor condensation, etc.) in the enclosure exceeds this, you would need more coolers and/or a larger cooler.

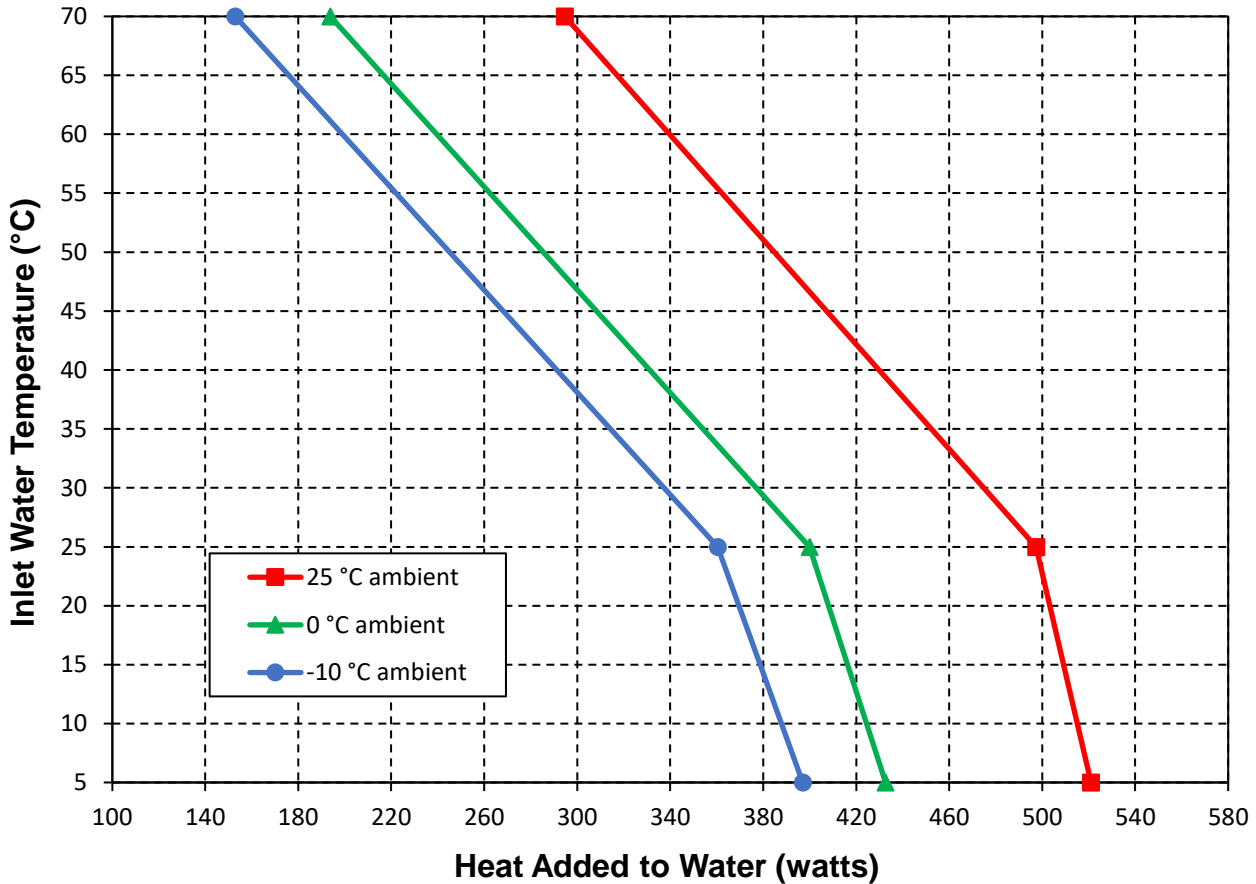


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LC-200 Heating Performance Graph

(adding heat to water, flowing at 1.6 L/min)



How to use the Performance Graph:

1. Select Performance Line

The diagonal lines represent heating performance at the indicated ambient air temperature (inlet temperature on the ambient-side fan). If the cooler is to operate at a different ambient, then you must sketch in a new performance line. This can be drawn parallel to one of the existing lines, using the distance between the existing lines as a scale to properly locate the new line.

2. Select Enclosure Temperature

Draw a horizontal line on the graph corresponding to the desired inlet water temperature of the enclosure. Make the line intersect with the performance line corresponding to the ambient temperature at which the cooler is to operate.

3. Determine Heating Capacity

The maximum amount of heat that the cooler can add to the water is determined by the intersection point (determined in previous step). *If the heat added to the water (including heat generated by equipment inside) is greater than the enclosure's heat loss, then the cooler will be able to heat to the desired temperature. A higher capacity cooler will be needed if the total heat added is less than the enclosure's heat loss.*

Example: You need to maintain the water at 30 °C while in a -10 °C ambient. The cooler can add a maximum of approximately 337 W of heat to the water. If the heat dissipation from the enclosure exceeds this (plus anything else generating heat), you would need more coolers and/or a larger cooler.

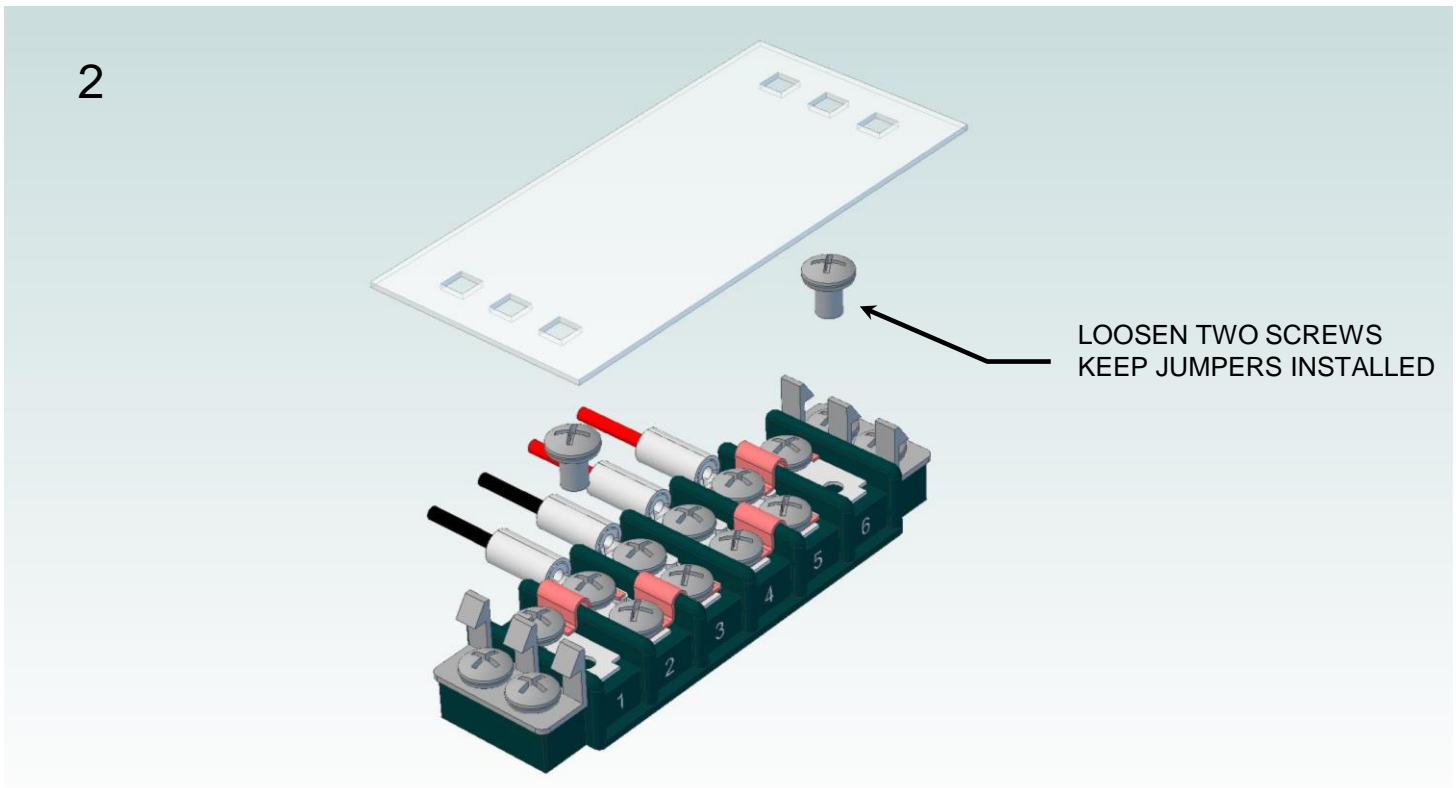
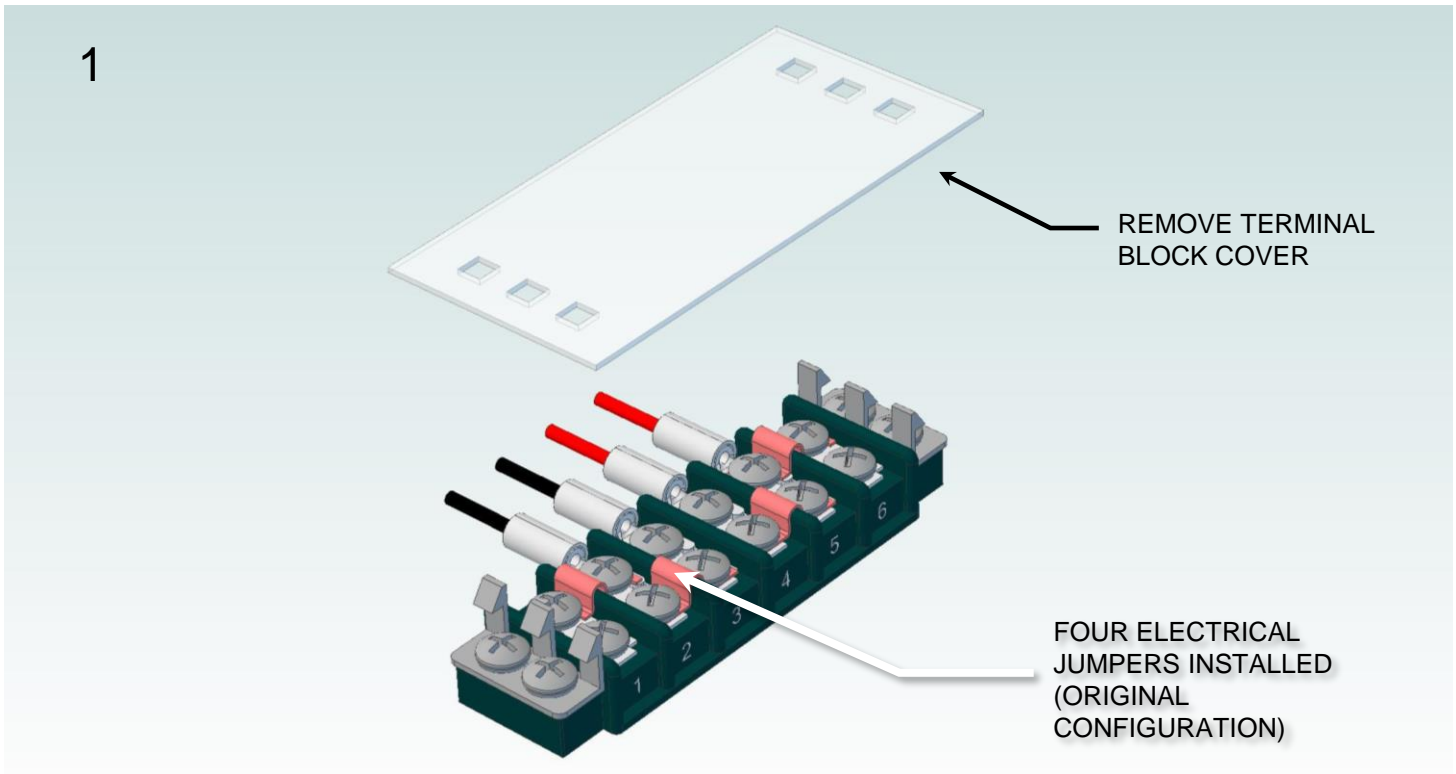
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Terminal Block Configuration for Continuous Operation at Full Power

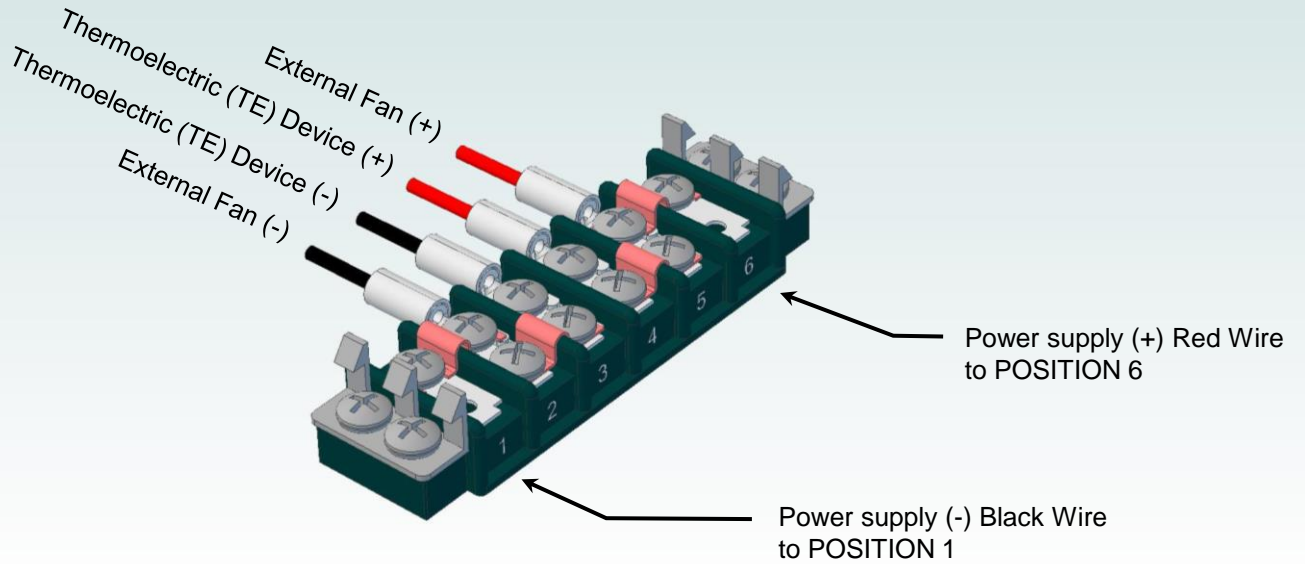
As-Shipped Configuration 1 of 2



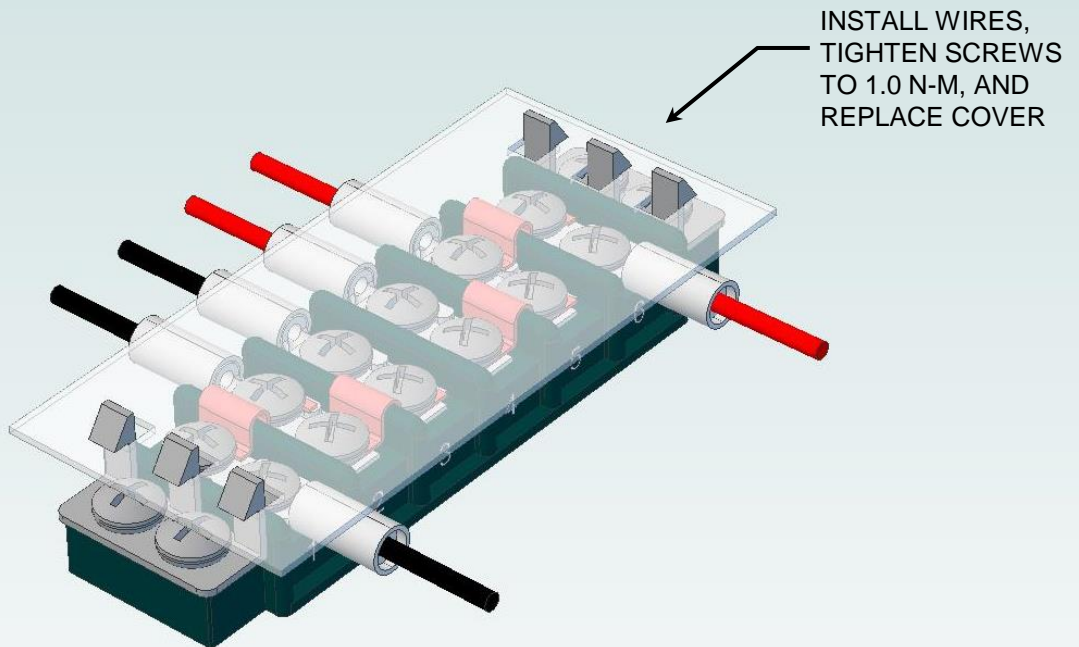
Terminal Block Configuration for Continuous Operation at Full Power

2 of 2

3



4



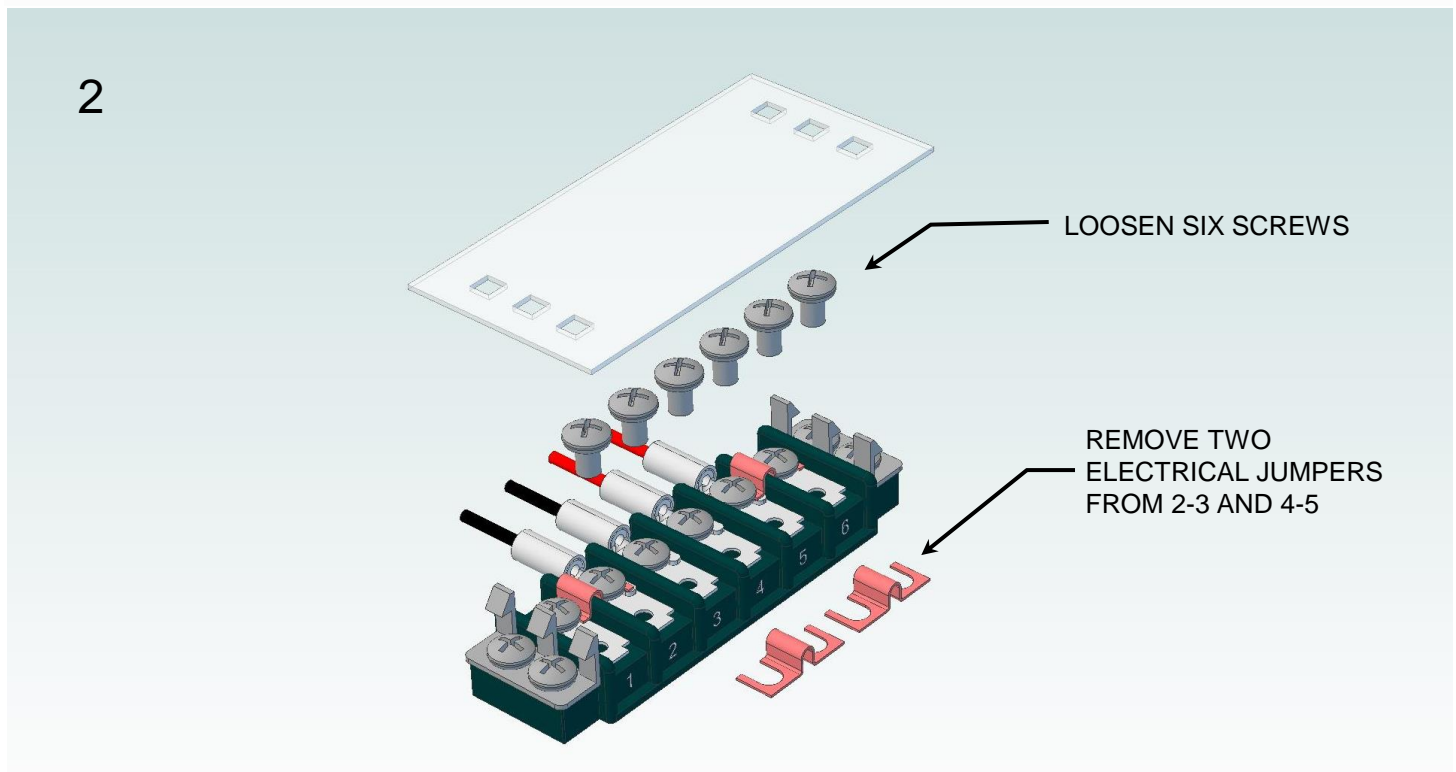
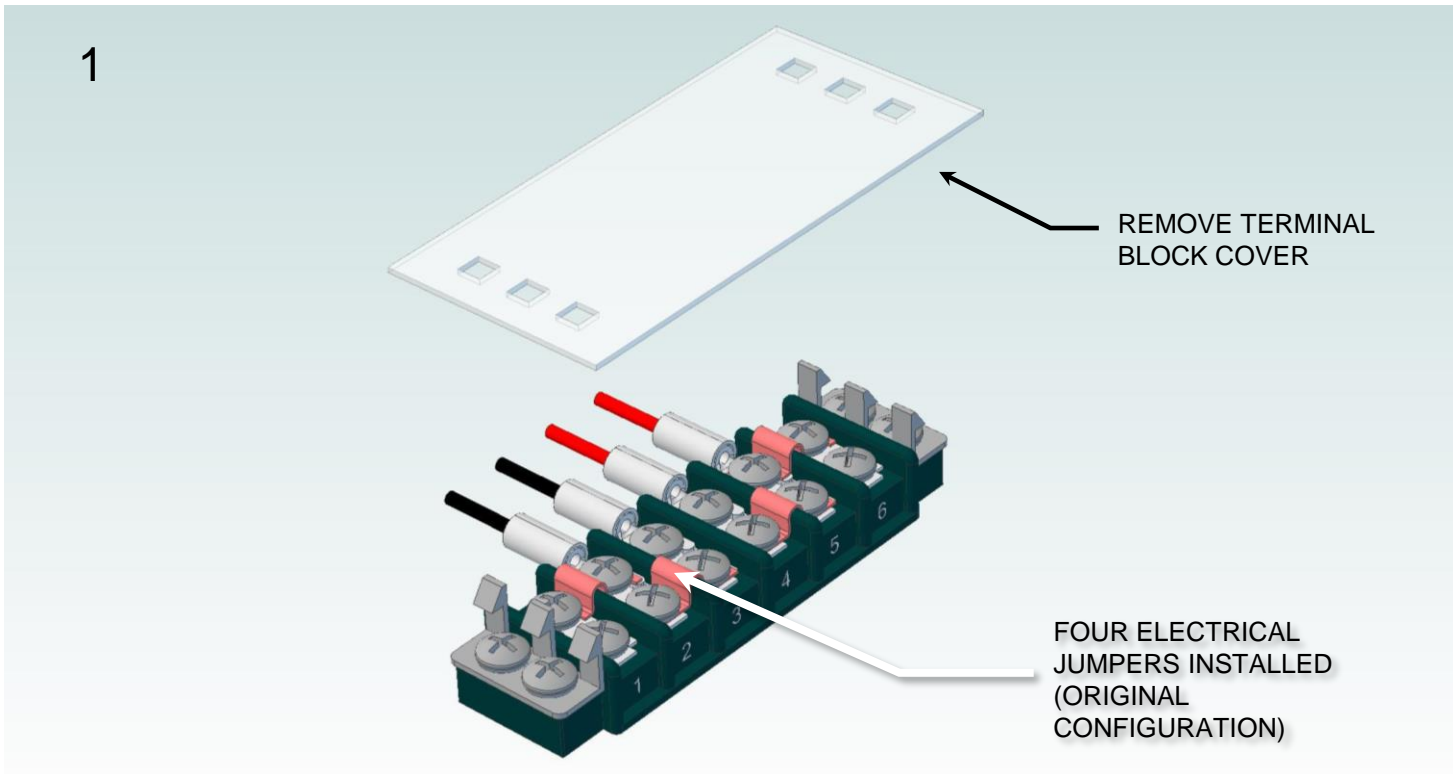
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Terminal Block Configuration for Operation with Temperature Controller

1 of 2



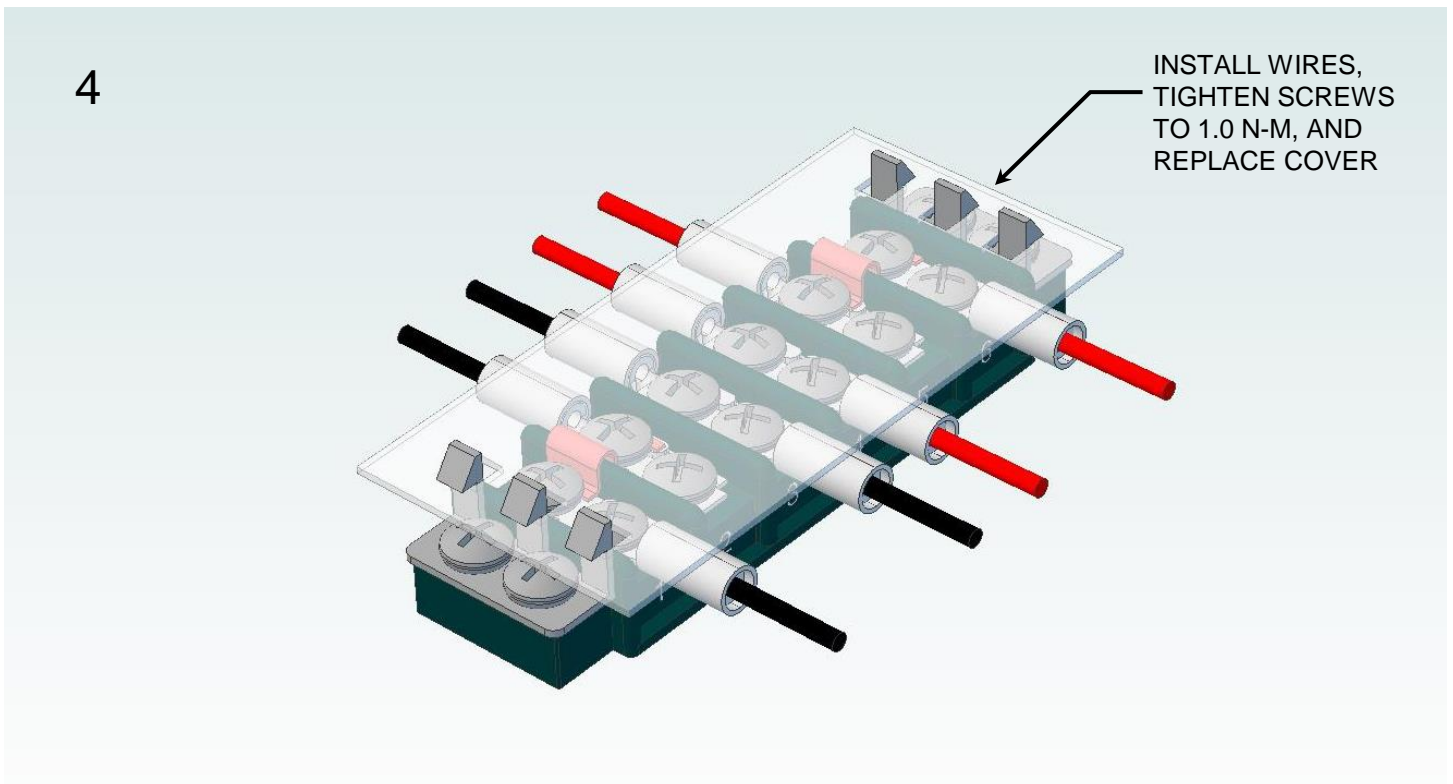
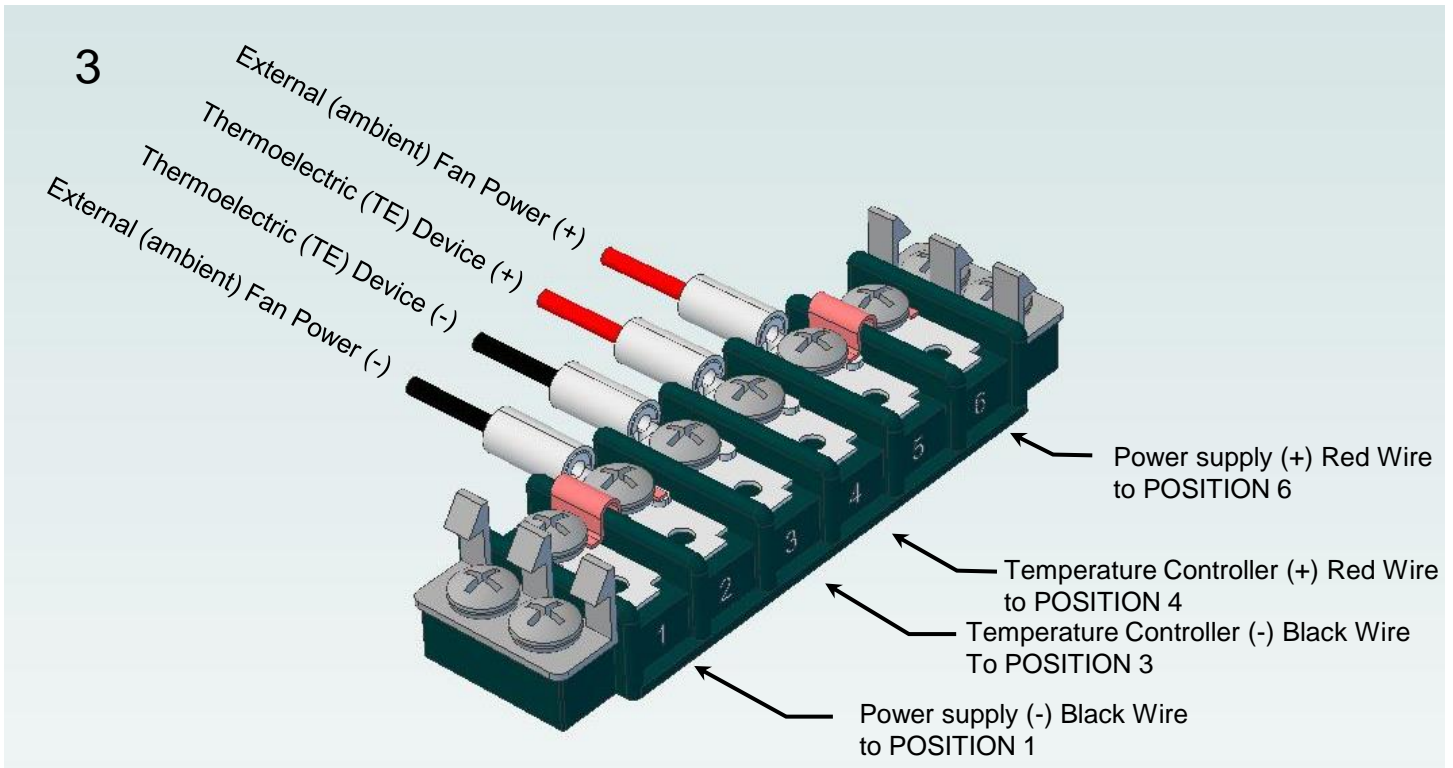
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Terminal Block Configuration for Operation with Temperature Controller

2 of 2



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