

**THERMOELECTRIC COOLERS INDOOR/OUTDOOR**


Unshrouded  
60, 100 and 200 Watts



Shrouded  
60, 100 and 200 Watts

**INDUSTRY STANDARDS**

UR, cUR Recognized; Type 12, 3R, 4, 4X; File No. SA6453

CE  
IP 65

**APPLICATION**

Thermoelectric Coolers minimize downtime and component loss by removing heat around critical components within an enclosure. These compact, low-profile coolers using the Peltier effect allow for cooling of small indoor and outdoor enclosures. No condensers, compressors or filters are required making it a reliable solution for demanding low-maintenance environments.

**FEATURES**

- DC Powered operation for 24V and 48V applications
- Low profile design allows for mounting vertically and horizontally on any enclosure to avoid interference with internal components
- Filterless design reduces maintenance requirements
- Contains no refrigerant, making it earth friendly
- Prewired with simple terminal block for easy wiring connections
- Operates on the Peltier effect for cooling or heating
- Compressor-free air conditioning for demanding indoor and outdoor applications
- Shrouded and unshrouded models included in standard packages
- Operating temperature range -40 C (-40 F) to 55 C (131 F)
- Partial recess mount

**SPECIFICATIONS**

- Models  
60 Watt, 24 Volt  
100 Watt, 24/48 Volt  
200 Watt, 24/48 Volt

**FINISH**

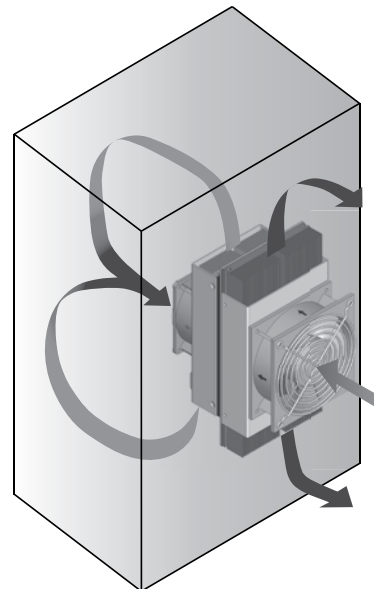
- Shrouded finish includes both powder coat paint RAL 7035 light gray standard and stainless steel 304

**ACCESSORIES**

- Optional thermoelectric temperature controller regulates cooling and heating automatically
- Optional thermoelectric condenser manager helps direct condensation to the bottom of the enclosure

**NOTES**

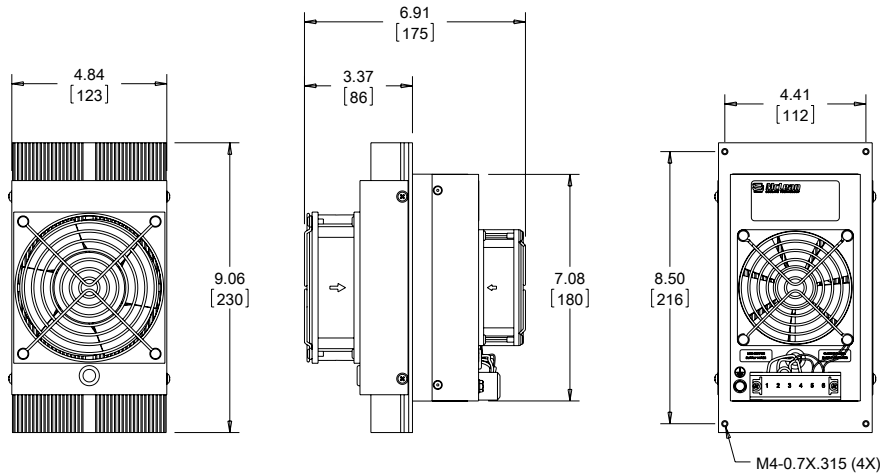
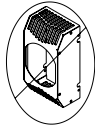
Visit [www.PentairProtect.com](http://www.PentairProtect.com) to download 2D and 3D CAD drawings into the overall design of your electronic system.



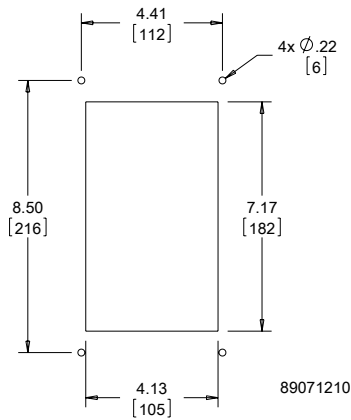
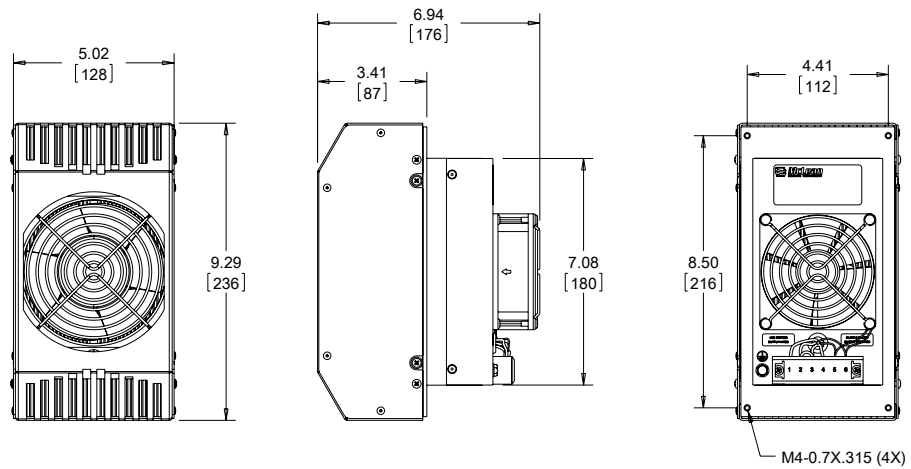
Performance Data **TE09 60W 204 BTU/Hr. (24 V)**

| <b>CATALOG NUMBERS</b>                      |                          |  |                          |
|---|--------------------------|--|--------------------------|
| Description                                 | 24V w/o shroud           | 24V w/ painted shroud  | 24V w/ SS shroud         |
| Catalog Number                              | TE090624020              | TE090624010  | TE090624011              |
| <b>COOLING PERFORMANCE</b>                  |                          |  |                          |
| <b>BTU/Hr.</b>                              | <b>178</b>               | <b>178</b>   | <b>178</b>               |
| <b>Watts</b>                                | <b>52</b>                | <b>52</b>  | <b>52</b>                |
| Operating Temperature Range:                |                          |  |                          |
| Maximum (°C / °F)                           | 55 / 131                 | 55 / 131   | 55 / 131                 |
| Minimum (°C / °F)                           | -40 / -40                | -40 / -40  | -40 / -40                |
| Air Flow at 0 Static Pressure:              |                          |  |                          |
| Internal loop (CFM / M <sup>3</sup> /Hr.)   | 24 / 41                  | 24 / 41  | 24 / 41                  |
| External loop (CFM / M <sup>3</sup> /Hr.)   | 80 / 136                 | 80 / 136   | 80 / 136                 |
| Nominal Heating Watts                       | 64                       | 64   | 64                       |
| <b>ELECTRICAL DATA</b>                      |                          |  |                          |
| <b>Input DC Voltage</b>                     |                          |  |                          |
| Nominal (VDC)                               | <b>24</b>                | <b>24</b>  | <b>24</b>                |
| Minimum (VDC)                               | 18                       | 18   | 18                       |
| Maximum (VDC)                               | 27.6                     | 27.6   | 27.6                     |
| Power Consumption 95 F / 95 F (35 C / 35 C) | 89                       | 89   | 89                       |
| Max Current (Amps)                          | 4.4                      | 4.4  | 4.4                      |
| Agency Approvals                            | UR, cUR Recognized<br>CE | UR, cUR Recognized<br>CE   | UR, cUR Recognized<br>CE |
| Power Input Description                     | Terminal Block           | Terminal Block   | Terminal Block           |
| <b>ENCLOSURE PROTECTION</b>                 |                          |  |                          |
| UL Type / IP Rating                         | Type 12,3R,4,4X / IP 65  | Type 12,3R,4 / IP 65   | Type 12,3R,4,4X / IP 65  |
| <b>SOUND LEVEL</b>                          |                          |  |                          |
| At 1.5 Meters                               | 65 dBA                   | 65 dBA   | 65 dBA                   |
| <b>UNIT CONSTRUCTION</b>                    |                          |  |                          |
| Heat Sink Material                          | Anodized Aluminum        | Anodized Aluminum  | Anodized Aluminum        |
| Shroud Material                             | N/A                      | Galvanized Steel   | Stainless Steel          |
| Shroud Finish                               | N/A                      | RAL 7035 light-gray,<br>semi-textured<br>powder-coat<br>paint standard | No. 4 Brushed Finish     |
| <b>UNIT DIMENSIONS</b>                      |                          |  |                          |
| Height (in. / mm)                           | 9.06/230                 | 9.29/236   | 9.29/236                 |
| Width (in. / mm)                            | 4.84/123                 | 5.02/128   | 5.02/128                 |
| Depth (in. / mm)                            | 6.91/176                 | 6.94/176   | 6.94/176                 |
| Weight (lb. / kg)                           | 6.00/2.70                | 7.80/3.60  | 7.80/3.60                |

60 W 24 V



60 W 24 V

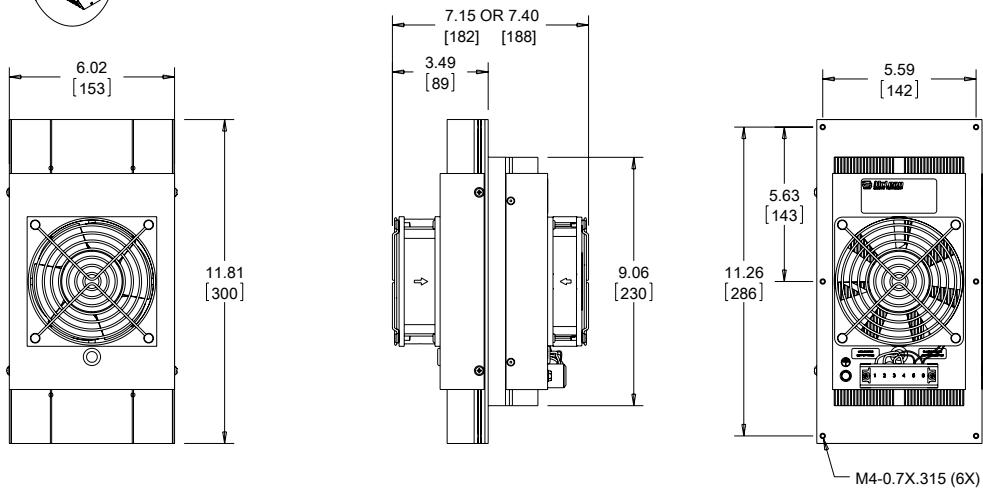
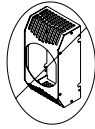


Cutout Dimensions

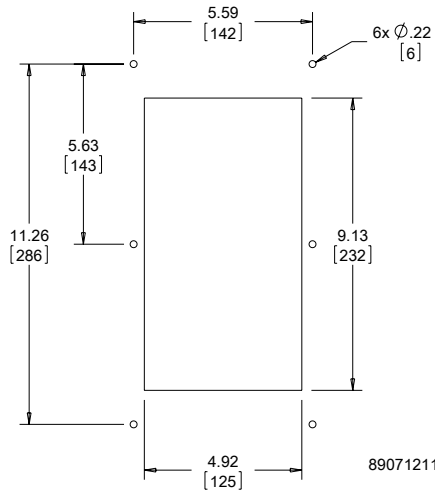
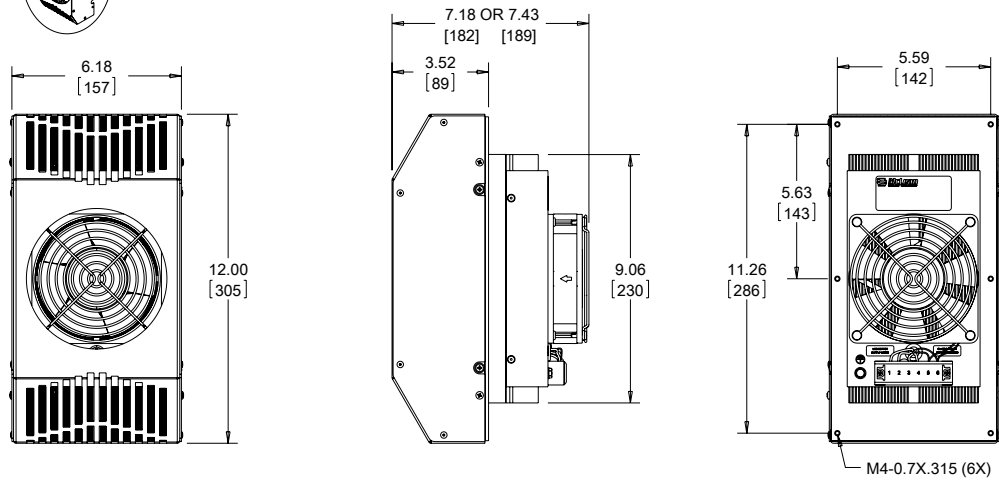
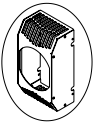
Performance Data **TE12 100W 341 BTU/Hr. (24/48 V)**

| <b>CATALOG NUMBERS</b>                         |                                  |  |                                  |                                  |  |
|--|----------------------------------|--|----------------------------------|----------------------------------|--|
| Description                                    | 24V w/o shroud                   | 24V w/ painted shroud  | 24V w/ SS shroud                 | 48V w/o shroud                   | 48V w/ painted shroud  |
| Catalog Number                                 | TE121024020                      | TE121024010  | TE121024011                      | TE121048020                      | TE121048010  |
| <b>COOLING PERFORMANCE</b>                     |                                  |  |                                  |                                  |  |
| <b>BTU/Hr.</b>                                 | <b>321</b>                       | <b>321</b>   | <b>321</b>                       | <b>321</b>                       | <b>321</b>   |
| <b>Watts</b>                                   | <b>94</b>                        | <b>94</b>  | <b>94</b>                        | <b>94</b>                        | <b>94</b>  |
| Operating Temperature Range:                   |                                  |  |                                  |                                  |  |
| Maximum (°C / °F)                              | 55 / 131                         | 55 / 131   | 55 / 131                         | 55 / 131                         | 55 / 131   |
| Minimum (°C / °F)                              | -40 / -40                        | -40 / -40  | -40 / -40                        | -40 / -40                        | -40 / -40  |
| Air Flow at 0 Static Pressure:                 |                                  |  |                                  |                                  |  |
| Internal loop (CFM / M <sup>3</sup> /Hr.)      | 62 / 105                         | 62 / 105   | 62 / 105                         | 62 / 105                         | 62 / 105   |
| External loop (CFM / M <sup>3</sup> /Hr.)      | 86 / 146                         | 86 / 146   | 86 / 146                         | 86 / 146                         | 86 / 146   |
| Nominal Heating Watts                          | 94                               | 94   | 94                               | 94                               | 94   |
| <b>ELECTRICAL DATA</b>                         |                                  |  |                                  |                                  |  |
| <b>Input DC Voltage</b>                        |                                  |  |                                  |                                  |  |
| Nominal (VDC)                                  | <b>24</b>                        | <b>24</b>  | <b>24</b>                        | <b>48</b>                        | <b>48</b>  |
| Minimum (VDC)                                  | 18                               | 18   | 18                               | 40                               | 40   |
| Maximum (VDC)                                  | 27.6                             | 27.6   | 27.6                             | 56.7                             | 56.7   |
| Power Consumption<br>95 F / 95 F (35 C / 35 C) | 162                              | 162  | 162                              | 162                              | 162  |
| Max Current (Amps)                             | 8.5                              | 8.5  | 8.5                              | 4.4                              | 4.4  |
| Agency Approvals                               | UR, cUR Recognized<br>CE<br>GOST | UR, cUR Recognized<br>CE<br>GOST                                       | UR, cUR Recognized<br>CE<br>GOST | UR, cUR Recognized<br>CE<br>GOST | UR, cUR Recognized<br>CE<br>GOST                                       |
| Power Input Description                        | Terminal Block                   | Terminal Block   | Terminal Block                   | Terminal Block                   | Terminal Block   |
| <b>ENCLOSURE PROTECTION</b>                    |                                  |  |                                  |                                  |  |
| UL Type / IP Rating                            | Type 12,3R,4,4X / IP 65          | Type 12,3R,4 / IP 65   | Type 12,3R,4,4X / IP 65          | Type 12,3R,4,4X / IP 65          | Type 12,3R,4 / IP 65   |
| <b>SOUND LEVEL</b>                             |                                  |  |                                  |                                  |  |
| At 1.5 Meters                                  | 68 dBA                           | 68 dBA   | 68 dBA                           | 68 dBA                           | 68 dBA   |
| <b>UNIT CONSTRUCTION</b>                       |                                  |  |                                  |                                  |  |
| Heat Sink Material                             | Anodized Aluminum                | Anodized Aluminum  | Anodized Aluminum                | Anodized Aluminum                | Anodized Aluminum  |
| Shroud Material                                | N/A                              | Galvanized Steel   | Stainless Steel                  | N/A                              | Galvanized Steel   |
| Shroud Finish                                  | N/A                              | RAL 7035 light-gray,<br>semi-textured<br>powder-coat<br>paint standard | No. 4 Brushed Finish             | N/A                              | RAL 7035 light-gray,<br>semi-textured<br>powder-coat<br>paint standard |
| <b>UNIT DIMENSIONS</b>                         |                                  |  |                                  |                                  |  |
| Height (in. / mm)                              | 11.81/300                        | 12.00/305  | 12.00/305                        | 11.81/300                        | 12.00/305  |
| Width (in. / mm)                               | 6.02/153                         | 6.18/157   | 6.18/157                         | 6.02/153                         | 6.18/157   |
| Depth (in. / mm)                               | 7.40/188                         | 7.43/189   | 7.43/189                         | 7.40/188                         | 7.43/189   |
| Weight (lb. / kg)                              | 8.50/3.90                        | 11.00/5.00   | 11.00/5.00                       | 8.50/3.90                        | 11.00/5.00   |

100 W 24/48 V



100 W 24/48 V



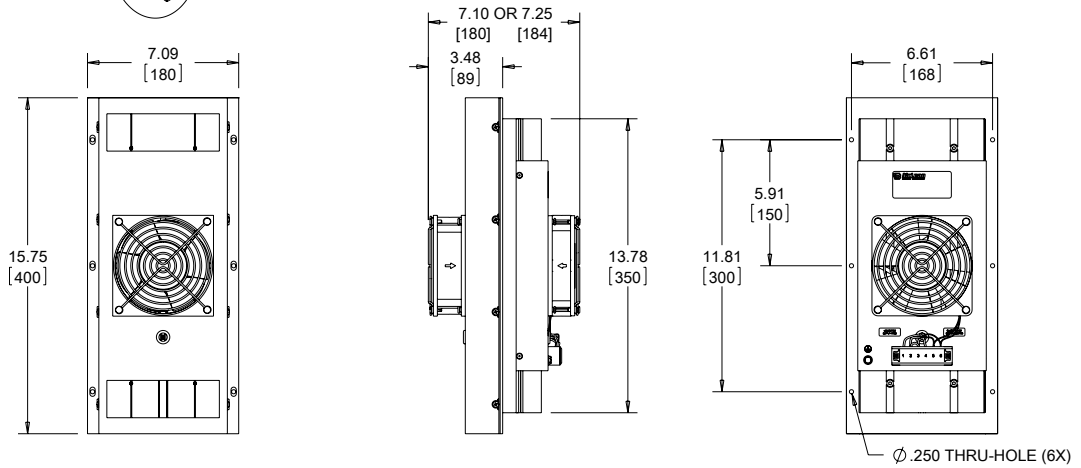
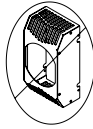
Cutout Dimensions

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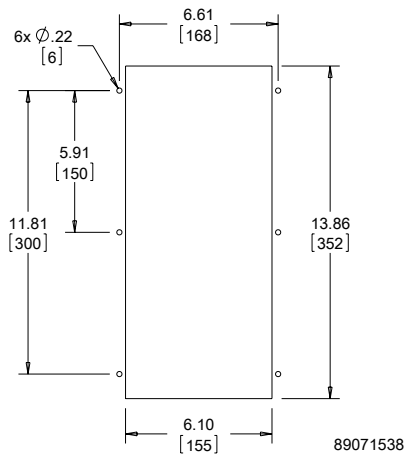
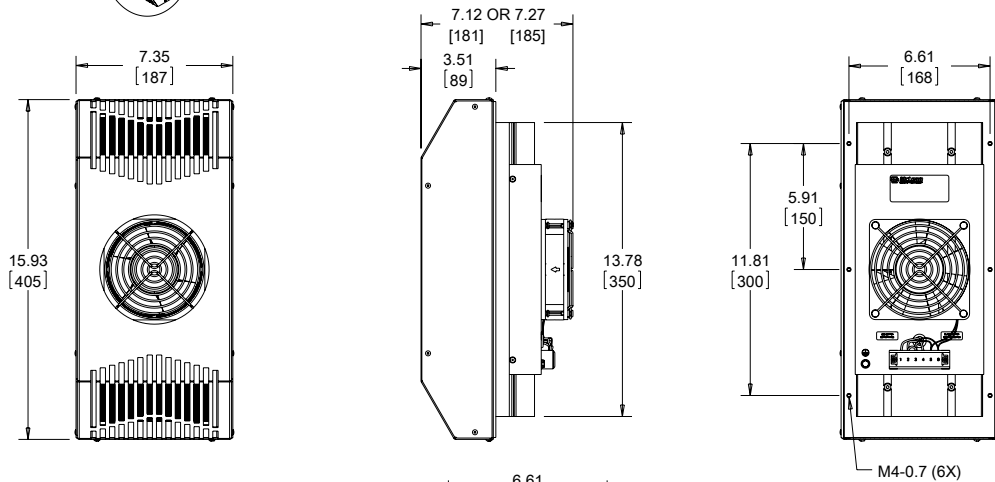
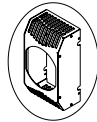
Performance Data **TE16 200W 682 BTU/Hr. (24/48 V)**

| <b>CATALOG NUMBERS</b>                         |                                  |  |                                  |                                  |  |
|--|----------------------------------|--|----------------------------------|----------------------------------|--|
| Description                                    | 24V w/o shroud                   | 24V w/ painted shroud  | 24V w/ SS shroud                 | 48V w/o shroud                   | 48V w/ painted shroud  |
| Catalog Number                                 | TE162024020                      | TE162024010  | TE162024011                      | TE162048020                      | TE162048010  |
| <b>COOLING PERFORMANCE</b>                     |                                  |  |                                  |                                  |  |
| <b>BTU/Hr.</b>                                 | <b>567</b>                       | <b>567</b>   | <b>567</b>                       | <b>567</b>                       | <b>567</b>   |
| <b>Watts</b>                                   | <b>166</b>                       | <b>166</b>   | <b>166</b>                       | <b>166</b>                       | <b>166</b>   |
| Operating Temperature Range:                   |                                  |  |                                  |                                  |  |
| Maximum (°C / °F)                              | 55 / 131                         | 55 / 131   | 55 / 131                         | 55 / 131                         | 55 / 131   |
| Minimum (°C / °F)                              | -40 / -40                        | -40 / -40  | -40 / -40                        | -40 / -40                        | -40 / -40  |
| Air Flow at 0 Static Pressure:                 |                                  |  |                                  |                                  |  |
| Internal loop (CFM / M <sup>3</sup> /Hr.)      | 62 / 105                         | 62 / 105   | 62 / 105                         | 62 / 105                         | 62 / 105   |
| External loop (CFM / M <sup>3</sup> /Hr.)      | 86 / 146                         | 86 / 146   | 86 / 146                         | 86 / 146                         | 86 / 146   |
| Nominal Heating Watts                          | 146                              | 146  | 146                              | 146                              | 146  |
| <b>ELECTRICAL DATA</b>                         |                                  |  |                                  |                                  |  |
| <b>Input DC Voltage</b>                        |                                  |  |                                  |                                  |  |
| Nominal (VDC)                                  | <b>24</b>                        | <b>24</b>  | <b>24</b>                        | <b>48</b>                        | <b>48</b>  |
| Minimum (VDC)                                  | 18                               | 18   | 18                               | 40                               | 40   |
| Maximum (VDC)                                  | 27.6                             | 27.6   | 27.6                             | 56.7                             | 56.7   |
| Power Consumption<br>95 F / 95 F (35 C / 35 C) | 295                              | 295  | 295                              | 295                              | 295  |
| Max Current (Amps)                             | 14.7                             | 14.7   | 14.7                             | 7.6                              | 7.6  |
| Agency Approvals                               | UR, cUR Recognized<br>CE<br>GOST | UR, cUR Recognized<br>CE<br>GOST                                       | UR, cUR Recognized<br>CE<br>GOST | UR, cUR Recognized<br>CE<br>GOST | UR, cUR Recognized<br>CE<br>GOST                                       |
| Power Input Description                        | Terminal Block                   | Terminal Block   | Terminal Block                   | Terminal Block                   | Terminal Block   |
| <b>ENCLOSURE PROTECTION</b>                    |                                  |  |                                  |                                  |  |
| UL Type / IP Rating                            | Type 12,3R,4,4X / IP 65          | Type 12,3R,4 / IP 65   | Type 12,3R,4,4X / IP 65          | Type 12,3R,4,4X / IP 65          | Type 12,3R,4 / IP 65   |
| <b>SOUND LEVEL</b>                             |                                  |  |                                  |                                  |  |
| At 1.5 Meters                                  | 68 dBA                           | 68 dBA   | 68 dBA                           | 68 dBA                           | 68 dBA   |
| <b>UNIT CONSTRUCTION</b>                       |                                  |  |                                  |                                  |  |
| Heat Sink Material                             | Anodized Aluminum                | Anodized Aluminum  | Anodized Aluminum                | Anodized Aluminum                | Anodized Aluminum  |
| Shroud Material                                | N/A                              | Galvanized Steel   | Stainless Steel                  | N/A                              | Galvanized Steel   |
| Shroud Finish                                  | N/A                              | RAL 7035 light-gray,<br>semi-textured<br>powder-coat<br>paint standard | No. 4 Brushed Finish             | N/A                              | RAL 7035 light-gray,<br>semi-textured<br>powder-coat<br>paint standard |
| <b>UNIT DIMENSIONS</b>                         |                                  |  |                                  |                                  |  |
| Height (in. / mm)                              | 15.75/400                        | 15.93/405  | 15.93/405                        | 15.75/400                        | 15.93/405  |
| Width (in. / mm)                               | 7.09/180                         | 7.35/187   | 7.35/187                         | 7.09/180                         | 7.35/187   |
| Depth (in. / mm)                               | 7.25/184                         | 7.27/185   | 7.27/185                         | 7.25/184                         | 7.27/185   |
| Weight (lb. / kg)                              | 14.80/6.70                       | 18.60/8.40   | 18.60/8.40                       | 14.80/6.70                       | 18.60/8.40   |

200 W 24/48 V

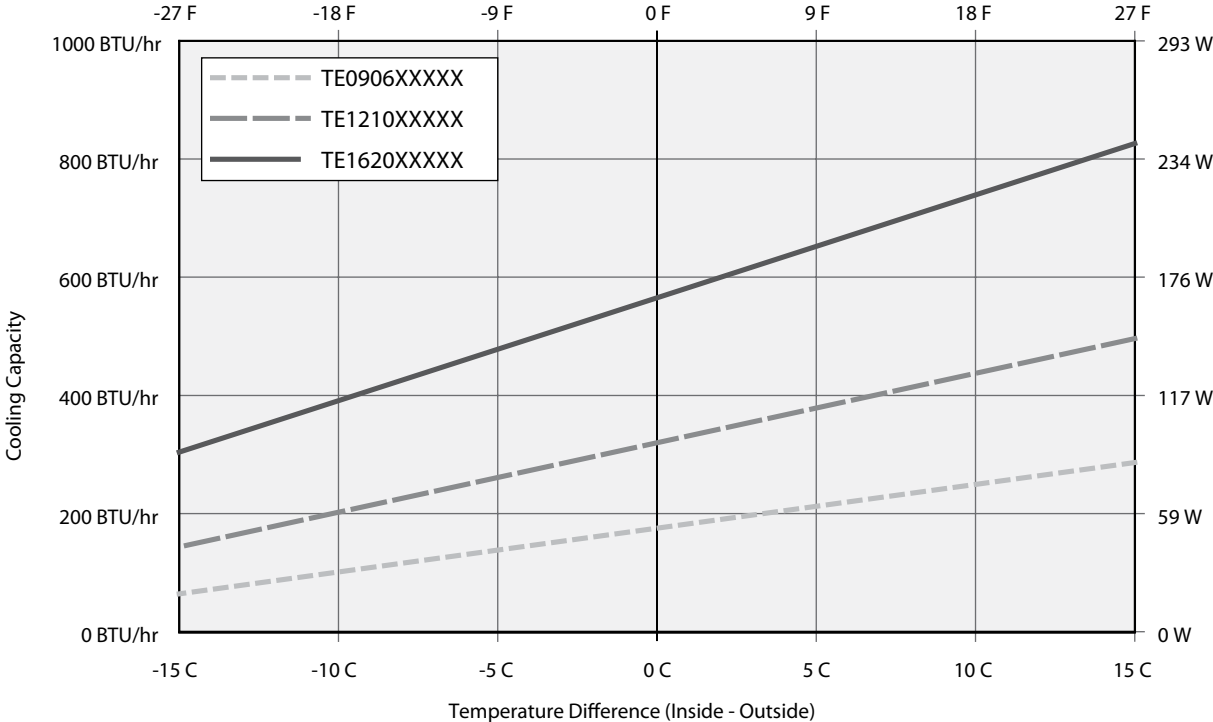


200 W 24/48 V



Cutout Dimensions

Cooling Capacity versus Temperature D at 35 C (95 F) Ambient difference





**THERMOELECTRIC TEMPERATURE CONTROLLER**

**INDUSTRY STANDARDS**

|                               |
|-------------------------------|
| UL Recognized; File No. 60730 |
|-------------------------------|

**FEATURES**

- Provides PWM regulation of cooling and heating output for TEC units
- Automatically switches between cooling and heating
- 4 cooling temperature set points range from 22.5 C to 35 C (35 C Factory Setting)
- 3 heating temperature set points range from -5 C to 15 C (15 C Factory Setting)
- Heating function can be easily disabled if desired
- On-board LEDs indicate low temp, high temp alarm, and overall system status
- Dry contact relay output provides for external alarm indication

**Performance Data**

| <b>CATALOG NUMBERS</b>             |  |  |
|------------------------------------|--|--|
|                                    | TEC24VCNTRLN   | TEC48VCNTRLN   |
| <b>ELECTRICAL DATA</b>             |  |  |
| <b>Rated Voltage (VDC)</b>         | 24   | 48   |
| Operating Range (VDC)              | 18 to 30   | 40 to 60   |
| Current @ Rated Voltage (Amps)     | 17.2   | 8.6  |
| Operating Temperature Range        |  |  |
| Maximum (°F/°C)                    |  | 131 / 55   |
| Minimum (°F/°C)                    |  | -40 / -40  |
| Temperature Accuracy (°F/°C)       |  | ± 3.6 / 2.0  |
| Alarm Contact Rating               | 1) 0.5 A max @ 24 VDC - from same source of power as unit, SELV, non-power limited (greater than 15 W);<br>OR<br>2) 0.5 A max @ 24 VAC - from, SELV, Class 2 safety isolating transformer. | 1) 0.5 A max @ 48 VDC - from same source of power as unit, SELV, non-power limited (greater than 15 W);<br>OR<br>2) 0.5 A max @ 24 VAC - from, SELV, Class 2 safety isolating transformer. |
| <b>UNIT DIMENSIONS</b>             |  |  |
| <b>PCB Dimensions</b>              |  |  |
| Height (in/mm)                     | 1.20 / 30  |  |
| Width (in/mm)                      | 2.88 / 73  |  |
| Length (in/mm)                     | 6.50 / 165   |  |
| Weight (lb./kg)                    | 0.21 / 0.10  |  |
| <b>Mounting Bracket Dimensions</b> |  |  |
| Height (in/mm)                     | 0.50 / 13  |  |
| Width (in/mm)                      | 3.19 / 91  |  |
| Length (in/mm)                     | 6.50 / 165   |  |
| Weight (lb./kg)                    | 0.29 / 0.13  |  |
| <b>Accessories</b>                 |  |  |
| Input Supply Harness               | 60-in. (1525mm) long Supply Harness<br>Catalog Number TECSUPPLYHARNESS   |  |
| Board to TEC Harness               | 36-in. (915mm) long Control Harness<br>Catalog Number TECCONTROLHARNESS  |  |

**THERMOELECTRIC CONDENSATE MANAGER**



**INDUSTRY STANDARDS**

Maintains UL/cUL Type 3R, 12, 4 and 4X rating when properly installed

**FEATURES**

- Includes all required hardware and vent drain
- Maintains the integrity of Type 4 or Type 4X enclosure
- Drains condensation to bottom of enclosure via vent drain (vent drain included with package)
- Utilizes existing mounting holes and fasteners of thermoelectric cooler that requires no additional mounting

**FINISH**

- Pan Material Galvanized steel polyester powder coat paint with RAL 7035
- Vent drain material options include stainless steel or non-metallic

Performance Data

| CATALOG NUMBERS     |   |              |                 |              |                 |              |
|---------------------|---|--------------|-----------------|--------------|-----------------|--------------|
|                     | TEC60WCMSS4   | TEC60WCMNM   | TEC100WCMSS4    | TEC100WCMNM  | TEC200WCMSS4    | TEC200WCMNM  |
| Fits TEC Unit Model | All TE09  | All TE09     | All TE12        | All TE12     | All TE16        | All TE16     |
| UNIT CONSTRUCTION   |   |              |                 |              |                 |              |
| Pan Material        | Galvanized Steel  |              |                 |              |                 |              |
| Pan Finish          | RAL 7035 light-gray, semi-textured powder-coat paint standard |              |                 |              |                 |              |
| Vent Drain Material | Stainless Steel   | Non-Metallic | Stainless Steel | Non-Metallic | Stainless Steel | Non-Metallic |
| UNIT DIMENSIONS     |   |              |                 |              |                 |              |
| Height (in./mm)     | .75/19  | .75/19       | .75/19          | .75/19       | .75/19          | .75/19       |
| Width (in./mm)      | 5.50/140  | 5.50/140     | 6.25/159        | 6.25/159     | 7.44/189        | 7.44/189     |
| Depth (in./mm)      | 2.50/64   | 2.50/64      | 2.50/64         | 2.50/64      | 2.50/64         | 2.50/64      |