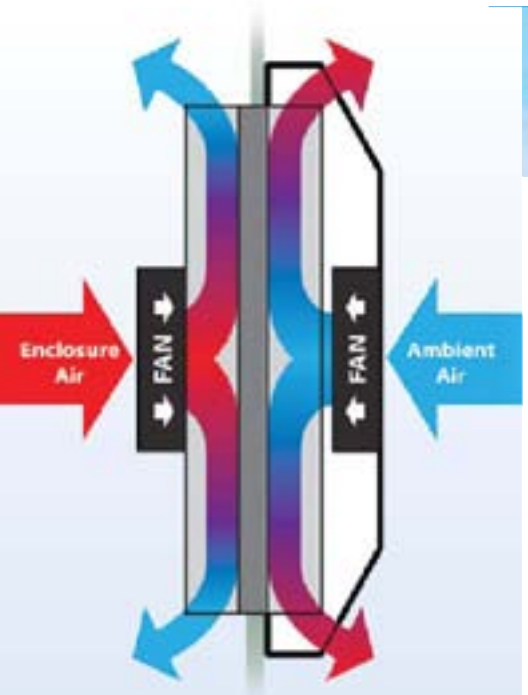
McLean™
COOLING TECHNOLOGY

Protecting Electronics.
Exceeding Expectations.™

Thermoelectric Cooler

Exceptionally easy-to-use Peltier cooling for outdoor telecommunications and industrial applications.

Pentair
Technical Products



HOW THERMOELECTRIC COOLING TECHNOLOGY WORKS.

Thermoelectric cooling is created by running electricity through two adjacent materials. The Peltier effect occurs as heat is transferred to one side of the device, effectively cooling the other side. By applying more power, more cooling is created on one side of the device and additional heat on the other, which may be dissipated or utilized for heating.

The major advantages of a McLean Thermoelectric Cooler versus conventional refrigerant systems include greater mechanical simplicity with no moving parts or liquids, a smaller footprint and less maintenance. Ideal for climate control applications in compact spaces to maintain a consistent temperature, McLean Thermoelectric Coolers provide effective, reliable operation in demanding environments.

Unshrouded model shown below

Ambient side

Enclosure side

Shrouded model shown above

McLean Thermoelectric Cooler

1. Industrial-rated fans for indoor or outdoor applications use producing air flow from 24 CFM / 41 M^3 per hour to 86 CFM / 146 M^3 per hour
2. Terminal block wiring for easy connection
3. Filter-free high performance operation
4. Anodized aluminum heat sink
5. Type 3R/4 IP65 enclosure protection
6. 60, 100 and 200 W cooling capacity (204 to 682 BTU/hr.)
7. Partial recess mounting
8. Galvanized steel shroud powder coated paint RAL 7035 (light gray)
9. Stainless steel shroud #4 brushed finish standard
10. Compact platforms 5" W x 7" D x 9" H to 7.5" W x 7.5" D x 16" H
11. Common sizing facilitates easy replacement of competitive solutions

Shrouded model shown above

McLean™ Thermoelectric Coolers

Rugged and compact cooling.

Compressor-free air conditioning for small indoor or outdoor enclosures.

McLean™ Thermoelectric Coolers from Pentair Technical Products allow you to cool small indoor or outdoor enclosures. Featuring Peltier effect technology, McLean Thermoelectric Coolers are designed with 60, 100 and 200 W of cooling for telecommunications battery cabinets, industrial enclosures, security systems and other applications. Compact and reliable, no refrigerant, compressors or filters are required, making the coolers an ideal solution for demanding or low-maintenance environments. The 24 VDC and 48 VDC Coolers are CE marked and UL recognized and available in thirteen models to suit the broadest variety of applications.

Cool your electronics with minimal space, cost and maintenance requirements.

McLean Thermoelectric Coolers minimize downtime and component loss by removing heat around critical components within an enclosure. The compact, low-profile coolers may be mounted vertically or horizontally. Multiple units may be used on an enclosure to increase overall cooling capacity.

ADVANTAGES AND FEATURES:

- **13 standard models** with and without sheet metal shroud for enclosure integration flexibility
- **Peltier effect cooling capacities** from 60 to 200 W (nominal); (204 to 682 BTU/hr.)
- **Thermoelectric Temperature Controller** option regulates cooling and heating automatically (sold separately)
- **Broad operating temperature range** of -40 to 55 C to provide long-lasting performance
- **UL Type 4 Rating** for usage in indoor and outdoor environments
- **DC powered** operation for 24 V and 48 V applications
- **Filterless design** reduces maintenance requirements
- **UL recognized and CE marked** to save time and money on agency acceptance
- **Superior customer service** before and after-market

Other advantages of McLean Thermoelectric Coolers

- Extend life and increase reliability of electrical components
- Prewired with simple terminal block for easy wiring connection
- Contains no refrigerant, making it earth friendly
- Can function in demanding and small-space environments where conventional cooling methods are not feasible
- Low noise and vibration operation; 65-68 dBA
- Low-profile design allows for mounting on any enclosure to avoid interference with internal components
- Can be configured to heat instead of cool

Type 3R/4
IP65

Specifications subject to change without notice

	60 Watt (nominal)			100 Watt (nominal)			
Description	24 V w/o shroud	24 V w/painted shroud	24 V w/SS shroud	24 V w/o shroud	24 V w/painted shroud	24 V w/SS shroud	48 V w/o shroud
CATALOG NUMBER	**TE090624020**	**TE090624010**	**TE090624011**	**TE121024020**	**TE121024010**	**TE121024011**	**TE121048020**
COOLING PERFORMANCE							
95 F / 95 F (35 C / 35 C): **BTU/hr.** **Watts**	**178** **52**	**178** **52**	**178** **52**	**321** **94**	**321** **94**	**321** **94**	**321** **94**
Operating Temperature Range	-40 C to 55 C (-40 F to 131 F)			-40 C to 55 C (-40 F to 131 F)			
Airflow at Zero Static Pressure: **Internal Loop** **External Loop**	24 CFM / 41 M^3 per hour 80 CFM / 136 M^3 per hour			62 CFM / 105 M^3 per hour 86 CFM / 146 M^3 per hour			
Nominal Heating Watts	64	64	64	94	94	94	94
ELECTRICAL DATA							
Input DC Voltage **Nominal (VDC)** **Minimum (VDC)** **Maximum (VDC)**	**24** 18 27.6	**24** 18 27.6	**24** 18 27.6	**24** 18 27.6	**24** 18 27.6	**24** 18 27.6	**48** 40 55.2
Nominal Power Consumption 95 F / 95 F (35 C / 35 C):	89	89	89	162	162	162	162
Max Current (Amps)	4.4	4.4	4.4	8.1	8.1	8.1	4.2
Agency Approvals	UL/cUL Recognized, CE			UL/cUL Recognized, CE			
Power Input Description	Terminal Block			Terminal Block			
ENCLOSURE PROTECTION							
UL Type/IP Rating	Type 3R/4 IP65			Type 3R/4 IP65			
SOUND LEVEL							
dBA at 1.5 Meters	65	65	65	68	68	68	68
CONSTRUCTION							
Heat Sink Material	Anodized Aluminum			Anodized Aluminum			
Shroud Material/Finish	N/A	Galvanized Steel, Powder Coat RAL 7035 (Light Gray)	Stainless Steel #4 Brushed	N/A	Galvanized Steel, Powder Coat RAL 7035 (Light Gray)	Stainless Steel #4 Brushed	N/A
UNIT DIMENSIONS							
Height (in. / mm)	9.06 / 230	9.29 / 236	9.29 / 236	11.81 / 300	12 / 305	12 / 305	11.81 / 300
Width (in. / mm)	4.84 / 123	5.02 / 128	5.02 / 128	6.02 / 153	6.18 / 157	6.18 / 157	6.02 / 153
Depth (in. / mm)	6.91 / 176	6.95 / 177	6.95 / 177	7.15 / 182	7.18 / 182	7.18 / 182	7.15 / 182
Weight (lb. / kg)	6.0 / 2.7	7.8 / 3.6	7.8 / 3.6	8.5 / 3.9	11.0 / 5.0	11.0 / 5.0	8.5 / 3.9

Thermoelectric Temperature Controller

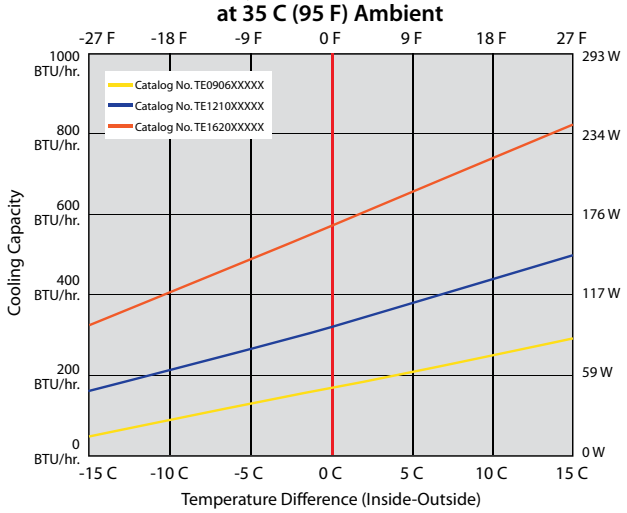
CATALOG NUMBER	TEC24VCNTLR	TEC48VCNTLR
Rated Voltage (VDC)	24	48
Operating Range (VDC)	18 to 30	40 to 60
Current @ Rated Voltage (A)	17.2	8.6
Power (watts)	410	
Cooling Set Points (6) Range	22.5 to 35.0 C (72.5 to 95 F)	
Heating Set Points (7) Range	-15 to 15 C (5 to 59 F)	
Operating Temperature Range	Min -40 C to Max 65 C (-40 to 149 F)	
MATERIAL & FINISH	Galvanized Steel; RAL 7035 light gray powder-coat paint	
UNIT DIMENSIONS		
Height & Width (in./mm)	(H) 6.50/165.0 (W) 6.12/155.5	
Depth - overall (in./mm)	2.50/63.5	
Depth - enclosure (in./mm)	1.75/44.5	
Weight (lb./kg)	3.0/1.6	
INDUSTRY STANDARDS	UL 60730, CSA	

Control temperatures automatically and switch between cooling and heating.

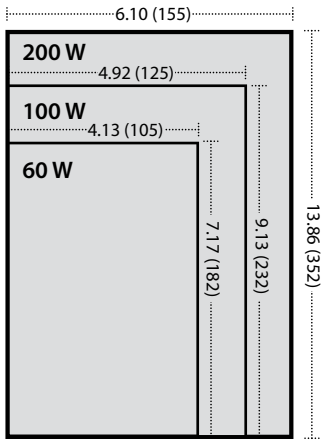
Available as an option, the Thermoelectric Temperature Controller provides PWM regulation of cooling and heating output for the Thermoelectric Cooler, allowing the user to control temperatures automatically. Select from among six cooling and seven heating temperature set points. LED indicators signal operators if low or high temperature conditions occur and provide indication of system status, and a dry contact relay output provides for an external alarm.

200 Watt (nominal)					
48 V w/painted shroud	24 V w/o shroud	24 V w/painted shroud	24 V w/SS shroud	48 V w/o shroud	48 V w/painted shroud
TE121048010	**TE162024020**	**TE162024010**	**TE162024011**	**TE162048020**	**TE162048010**
321 **94**	**567** **166**	**567** **166**	**567** **166**	**567** **166**	**567** **166**
	-40 C to 55 C (-40 F to 131 F)				
	62 CFM / 105 M^3 per hour 86 CFM / 146 M^3 per hour				
94	146	146	146	146	146
48 40 55.2	**24** 18 27.6	**24** 18 27.6	**24** 18 27.6	**48** 40 55.2	**48** 40 55.2
162	295	295	295	295	295
4.2	14.3	14.3	14.3	7.4	7.4
	UL/cUL Recognized, CE				
	Terminal Block				
	Type 3R/4 IP65				
68	68	68	68	68	68
	Anodized Aluminum				
Galvanized Steel, Powder Coat RAL 7035 (Light Gray)	N/A	Galvanized Steel, Powder Coat RAL 7035 (Light Gray)	Stainless Steel #4 Brushed	N/A	Galvanized Steel, Powder Coat RAL 7035 (Light Gray)
12 / 305	15.75 / 400	15.93 / 405	15.93 / 405	15.75 / 400	15.93 / 405
6.18 / 157	7.09 / 180	7.35 / 187	7.35 / 187	7.09 / 180	7.35 / 187
7.18 / 182	7.00 / 178	7.02 / 178	7.02 / 178	7.00 / 178	7.02 / 178
11.0 / 5.0	14.8 / 6.7	18.6 / 8.4	18.6 / 8.4	14.8 / 6.7	18.6 / 8.4

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



Mounting Cutouts

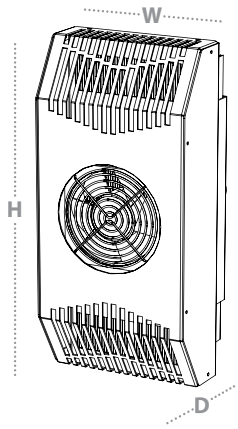


See instruction manual for all mounting data.

Meets a wide variety of applications

- Outdoor telecom enclosures
- Outdoor displays
- Pole-mount enclosures
- Electronic cabinets in demanding environments
- Battery enclosures
- Security Systems
- Conveyor systems

Easy to assemble and apply



About Pentair Technical Products

Pentair Technical Products, a Pentair global business unit, is the leading provider of worldwide product and service solutions for enclosing, protecting and cooling electrical and electronic systems. Its industry-leading brands—Hoffman™, Schroff™ and McLean™ Cooling Technology—provide a broad variety of standard, modified and engineered solutions to the commercial, communications, energy, general electronics, industrial, infrastructure, medical, and security and defense markets.

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