



Cabinet Cooler® Systems



Cabinet Cooler® Systems

Stop electronic control downtime due to heat, dirt, and moisture!

Cabinet Coolers maintain NEMA 4, 4X, and 12 integrity.

All Cabinet Coolers are

cUL^{US} and C E compliant!
LISTED

What is an EXAIR Cabinet Cooler System?



A low cost, reliable way to cool and purge electronic control panels. EXAIR Cabinet Coolers incorporate a vortex tube to produce cold air from compressed air - **with no moving parts**. The compact Cabinet Cooler can be installed in minutes through a standard electrical knockout. NEMA 12, 4, and 4X (IP54 and IP66) Cabinet Coolers that match the NEMA rating of the enclosure are available in many cooling capacities for large and small control panels.

Why EXAIR Cabinet Cooler Systems?

The vortex tubes incorporated in the EXAIR Cabinet Coolers are constructed of **stainless steel**. The wear, corrosion and oxidation resistance of stainless steel assures long life and maintenance free operation. **All Cabinet Coolers are UL Listed and CE compliant.**

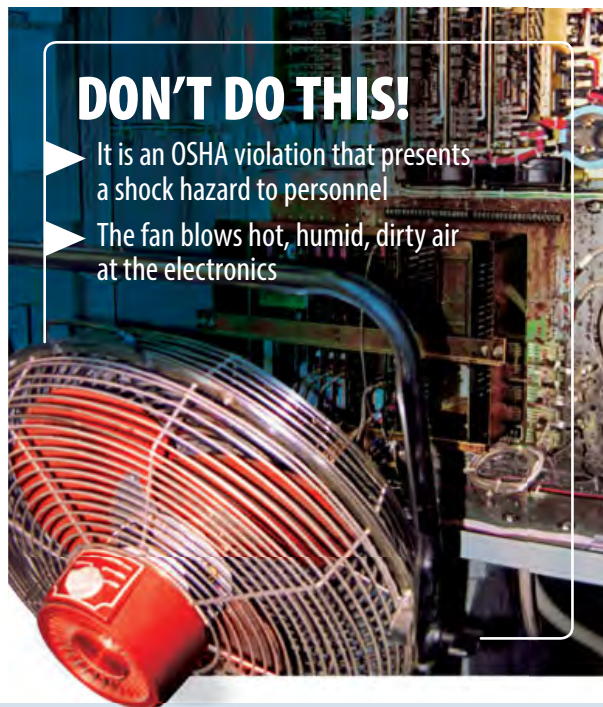


A Model 4830 NEMA 4 Cabinet Cooler cools a panel with 20°F (-7°C) air while keeping the inside dry.



DON'T DO THIS!

- It is an OSHA violation that presents a shock hazard to personnel
- The fan blows hot, humid, dirty air at the electronics



Applications

- Programmable controllers
- Line control cabinets
- Motor control centers
- Relay panels
- NC/CNC systems
- Modular control centers
- CCTV cameras
- Computer cabinets
- Laser housings
- Electronic scales
- Food service equipment

Advantages

- Low cost
- Compact
- Cooling capacities to 5,600 Btu/hr. (1,411 Kcal/hr.)
- Quiet
- Install in minutes
- Maintain NEMA 12, 4 and 4X integrity (IP54 and IP66)
- Stabilize enclosure temperature and humidity
- No CFC's
- No moving parts-maintenance free
- Mount in standard electrical knockout

- Stop nuisance tripping
- Stop heat damage
- Eliminate fans and filters
- Eliminate lost production
- Stop circuit drift
- Stop dirt contamination
- Provide washdown protection

Special Cabinet Coolers

- High temp. models for ambients up to 200°F (93°C) available
- Type 316 stainless steel available
- Purge models for non-hazardous locations available

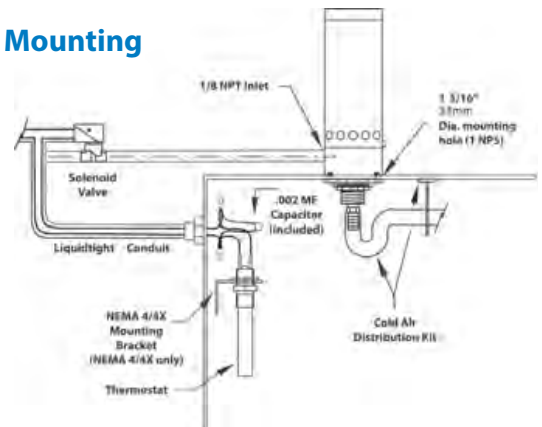


How The Cabinet Cooler Works



Compressed air enters the vortex tube powered Cabinet Cooler and is converted into two streams, one hot and one cold. (For more information on vortex tube operation, see page 175.) Hot air from the vortex tube is muffled and exhausted through the **vortex tube exhaust**. The cold air is discharged into the control cabinet through the cold air distribution kit. The displaced hot air in the cabinet rises and exhausts to atmosphere through the **cabinet air exhaust** at a slight positive pressure. Thus, the control cabinet is both cooled and purged with cool, clean air. **Outside air is never allowed to enter the control panel.**

Mounting



The Cabinet Cooler mounts to the enclosure through a drilled hole or electrical knockout. The NEMA 12 (IP54) Cabinet Coolers may be mounted on the top or side of the panel. NEMA 4 and 4X (IP66) Cabinet Coolers must be mounted on the top of the panel or on the side of the panel using one of our Side Mount Kits (See page 200).

Selecting The Right Model – Know Your System Options

Each different NEMA rated Cabinet Cooler system is available with a thermostat control or as a continuous operation system. Each of these systems will include a water-dirt filter separator to prevent water condensate and dirt from entering your enclosure and cold air distribution kit used to direct the air for circulation or on to hot spots. EXAIR also manufactures Cabinet Cooler systems for difficult environments. We have provided additional information on our Cabinet Cooler systems suitable for high temperature environments, Non-Hazardous purge environments and Type 316SS material coolers for highly corrosive environments.

NEMA Rating

The first step to solving your overheating problem is to identify the NEMA integrity your enclosure will require. At right is an explanation to help you determine which NEMA integrity Cabinet Cooler system we should ship to you.

Environmental Considerations

NEMA 12 (IP54) Cabinet Coolers (dust-tight, oil-tight) are ideal for general industrial environments where no liquids or corrosives are present.

NEMA 4 (IP66) Cabinet Coolers (dust-tight, oil-tight, splash resistant, indoor/outdoor service) incorporate a low pressure relief valve for both the vortex tube and cabinet air exhaust. This valve closes and seals when the cooler is not operating **to maintain the integrity of a NEMA 4 enclosure.**

NEMA 4X (IP66) Cabinet Coolers offer the same protection as NEMA 4 but are **constructed of stainless steel for food service and corrosive environments.**

Thermostat Control

The thermostat control systems are the most efficient way to operate a Cabinet Cooler. They save air by activating the cooler only when internal temperatures approach critical levels. Thermostat controlled cooler systems are the best option when experiencing fluctuating heat loads caused by environment or seasonal changes. The standard thermostat control systems include an adjustable thermostat factory set at 95°F (35°C).



Systems with thermostat control include a Cabinet Cooler, thermostat, solenoid valve, cold air distribution kit and filter.

Cabinet Cooler® Systems

Selecting The Right Model – Know Your System Options (continued)

ETC Electronic Temperature Control

EXAIR's digital ETC (Electronic Temperature Control) provides precise temperature control for your electrical enclosure. It can accurately maintain a constant temperature that is slightly under the maximum rating of the electronics, permitting just enough cooling for the electronics without going so cold as to waste compressed air. The LED readout of the ETC displays the internal temperature

of the electrical enclosure (°F or °C) that is constantly being monitored by a quick response thermocouple. The control activates the solenoid valve (included) when the temperature setting is exceeded. The polycarbonate plastic enclosure of the ETC is suitable for NEMA 12, 4 and 4X environments. (Cabinet Cooler not included.)

| Model | Voltage | Sample Rate | Max Temp | Solenoid Valve | Setting Temp | Supply Current | Sensor |
|-------|------------------|-------------|--------------|----------------|--------------|----------------|---------------------|
| 9238 | 120VAC, 50-60 Hz | 1/sec. | 158°F (70°C) | ¼ NPT | Push Button | 250 mA max | Type J Thermocouple |
| 9258 | 120VAC, 50/60 Hz | 1/sec. | 158°F (70°C) | ½ NPT | Push Button | 325 mA max | Type J Thermocouple |
| 9239 | 240VAC, 50/60 Hz | 1/sec. | 158°F (70°C) | ¼ NPT | Push Button | 165 mA max | Type J Thermocouple |
| 9259 | 240VAC, 50/60 Hz | 1/sec. | 158°F (70°C) | ½ NPT | Push Button | 215 mA max | Type J Thermocouple |

ETC controls are available within Cabinet Cooler Systems (see pages 197-199) or separate for retrofitting on existing coolers. All ETC enclosures are NEMA 4X (IP66), UL508 and UL94-5V. ETCs are RoHS and CE compliant.



ETC (Electronic Temperature Control) units are available in four different models. See above for details.

Continuous Operation

Also available in any of our NEMA ratings, continuous Cabinet Cooler systems are recommended when constant cooling and constant positive purge are desirable.



Systems for continuous operation include a Cabinet Cooler, cold air distribution kit and filter.

Special Cabinet Coolers

EXAIR manufactures special NEMA 12 (IP54), 4 (IP66) and 4X (IP66) Cabinet Coolers suited to specific environmental requirements:

High Temperature Cabinet Coolers (*shown top right*) for ambient temperatures of 125° to 200°F (52° to 93°C) are available. Internal components can withstand high temperatures (like those near furnaces, ovens, etc.).

Non-Hazardous Purge Cabinet Cooler Systems (*shown middle right*) are ideal for dirty areas where contaminants might normally pass through small holes or conduits. Under normal conditions, the NHP Cabinet Cooler Systems provide a slight positive pressure in the enclosure by passing 1 SCFM (28 SLPM) of air through the cooler, when the solenoid valve is in the closed position. When the thermostat detects high temperature, it energizes the solenoid valve to pass full line pressure and volume of compressed air to the Cabinet Cooler, giving it full cooling capability.

Type 316 Stainless Steel NEMA 4X Cabinet Coolers (*shown bottom right*) are suitable for food service, pharmaceutical, harsh and corrosive environments, and other applications where 316SS is preferred. Capacities from 275 to 5,600 Btu/hr. (69 to 1,411 Kcal/hr.) are available.

EXAIR High Temperature Cabinet Coolers, Non-Hazardous Purge Cabinet Coolers and Type 316 Cabinet Coolers are **now available from stock**.



Filtration: EXAIR Cabinet Cooler Systems include a 5 micron automatic drain water and dirt filter. This filter is **critical** for protection of electronics from water in the compressed air line. If oil is present in the compressed air, a coalescing (oil removal) filter, such as EXAIR Model 9005 is recommended. (See page 201)

Inlet Air Temperature: Cabinet Cooler Systems provide a 50°F (28°C) temperature drop from supply air temperature when the inlet pressure is 80 PSIG (5.5 BAR). Elevated inlet temperature will produce a corresponding rise in cold air temperature and reduction in cooling capacity. Low air pressures will also reduce the cooling capacity.

Humidity: For a continuous operating Cabinet Cooler System, relative humidity inside the enclosure stabilizes at 45%. No moisture condenses inside the enclosure. (The enclosure must be sealed to prevent condensation.)



Cold Air Distribution Kit:

The kit includes a length of flexible vinyl tubing used to direct the cold air for circulation, or to hot spots. Tubing connectors and adhesive backed clips to hold the tubing in place are provided.



Solenoid Valve and Thermostat:

Cabinet Cooler Systems with thermostat control include a solenoid valve and thermostat that limit the flow of compressed air to only cool when needed. The solenoid valve is rated 120V, 60Hz or 110V, 50Hz. It is UL Listed, CSA Certified. See page 205 for more options.



The thermostat is factory set at 95°F (35°C). It will normally hold $\pm 2^\circ\text{F}$ (1°C) inside the cabinet. It is rated 24VAC-240VAC, 50/60Hz, 24VDC and is UL Recognized, CSA Certified.



Heat Can Stop Your Machines

When hot weather causes the electronics inside a control cabinet to fail, there is a panic to get the machinery up and running again. There are several cooling options out there and it's important to know the facts.

A

A. Heat Exchangers and Heat Pipes

These have serious limitations. On hot summer days when the temperatures of the room and inside of the enclosure are about equal, there's not enough difference for effective heat exchange.

- They fail when dust and dirt clog the filter
- The cooling capacity is limited due to ambient conditions

B

B. Refrigerant Panel Air Conditioners

These coolers are prone to failure in dirty, industrial environments when dust and dirt clog the filter.

- It takes almost a day to install
- Vibration from machinery causes refrigerant leaks and component failures

EXAIR Cabinet Cooler® Systems

EXAIR has a complete line of Cabinet Cooler Systems to dependably cool and purge your electrical enclosures. They convert an ordinary supply of compressed air into clean, cold 20°F (-7°C) air. They mount in minutes through an ordinary electrical knockout and have no moving parts to wear out. The compressed air filtration that is provided keeps water, oil and other contaminants out of the enclosure.



- There is no room air filter to clog
- An accurate electrical thermostat control minimizes compressed air use
- All Cabinet Coolers are UL Listed to US and Canadian safety standards
- They are the only compressed air powered coolers that are CE compliant

Cabinet Cooler® Systems

Sizing Guide - Let us do the work

On the following page, EXAIR provides a simple guide to fill in and send to us so we may do the heat load calculations for you and specify a Cabinet Cooler system. You may e-mail the information to techhelp@exair.com, call 1-800-903-9247, online chat with us at www.EXAIR.com, or fax the information to 1-866-329-3924.

How To Calculate Heat Load for Your Enclosure

If you would like to determine the correct model for your enclosure without our assistance, it is first necessary to determine the total heat load to which the control panel is subjected. This total heat load is the combination of two factors – heat dissipated within the enclosure and heat transfer from outside the enclosure.

To Calculate Btu/hr.:

1. First, determine the approximate Watts of heat generated within the enclosure. $\text{Watts} \times 3.41 = \text{Btu/hr.}$
2. Then, calculate outside heat transfer as follows:
 - a. Determine the area in square feet exposed to the air, ignoring the top of the cabinet.
 - b. Determine the temperature differential between maximum surrounding temperature and desired internal temperature. Then, using the Temperature Conversion Table (*below*), determine the Btu/hr./ft.² for that differential. Multiplying the cabinet surface area times Btu/hr./ft.² provides external heat transfer in Btu/hr.
3. Add internal and external heat loads for total heat load.

| Temperature Conversion Table | |
|------------------------------|--------------------------|
| Temperature Differential °F | Btu/hr./ft. ² |
| 5 | 1.5 |
| 10 | 3.3 |
| 15 | 5.1 |
| 20 | 7.1 |
| 25 | 9.1 |
| 30 | 11.3 |
| 35 | 13.8 |
| 40 | 16.2 |

After picking which NEMA integrity you need, choosing your options and calculating your heat load - go to page 197-199 to specify a model number.

OR Contact EXAIR and we'll walk you right through it.

To Calculate Kcal/hr.:

1. First, determine the approximate Watts of heat generated within the enclosure. $\text{Watts} \times .86 = \text{Kcal/hr.}$
2. Then, calculate outside heat transfer as follows:
 - a. Determine the area in square meters exposed to the air, ignoring the top of the cabinet.
 - b. Determine the temperature differential between maximum surrounding temperature and desired internal temperature. Then, using the Metric Temperature Conversion Table (*below*), determine the Kcal/hr./m² for that differential. Multiplying the cabinet surface area times Kcal/hr./m² provides external heat transfer in Kcal/hr.
3. Add internal and external heat loads for total heat load.

| Temperature Conversion Table (METRIC) | |
|---------------------------------------|-------------------------|
| Temperature Differential °C | Kcal/hr./m ² |
| 3 | 4.5 |
| 6 | 9.7 |
| 9 | 15.1 |
| 12 | 21.0 |
| 15 | 27.0 |
| 18 | 34.0 |
| 21 | 41.0 |

Example:

Internal heat dissipation: 471 Watts or 1,606 Btu/hr.
Cabinet area: 40 ft.²
Maximum outside temperature: 110°F
Desired internal temperature: 95°F

The conversion table (*above*) shows that a 15°F temperature differential inputs 5.1 Btu/hr./ft.²

$40 \text{ ft.}^2 \times 5.1 \text{ Btu/hr./ft.}^2 = 204 \text{ Btu/hr.}$ external heat load.

Therefore, 204 Btu/hr. external heat load plus 1,606 Btu/hr. internal heat load = 1,810 Btu/hr. total heat load or Btu/hr. refrigeration required to maintain desired temperature.

In this example, the correct choice is a 2,000 Btu/hr. Cabinet Cooler System. Choose a Cabinet Cooler model by determining the NEMA rating of the enclosure (type of environment), and with or without thermostat control.

Example:

Internal heat dissipation: 471 Watts or 405 Kcal/hr.
Cabinet area: 3.7m²
Maximum outside temperature: 44°C
Desired internal temperature: 35°C

The conversion table (*above*) shows that a 9°C temperature differential inputs 15.1 Kcal/hr./m².

$3.7\text{m}^2 \times 15.1 \text{ Kcal/hr./m}^2 = 56 \text{ Kcal/hr.}$ external heat load.

Therefore, 56 Kcal/hr. external heat load plus 405 Kcal/hr. internal heat load = 461 Kcal/hr. total heat load or Kcal/hr. refrigeration required to maintain desired temperature.

In this example, the correct choice is a 504 Kcal/hr. Cabinet Cooler System. Choose a Cabinet Cooler model by determining the NEMA rating of the enclosure (type of environment), and with or without thermostat control.

EXAIR® Cabinet Cooler® System Sizing Guide

Deliver your Data – Receive a Quote

Use this form to gather the information necessary to specify a Cabinet Cooler system and choose a delivery method below.



Submit online

www.exair.com/sizing.htm



Call us at

1-800-903-9247

1-513-671-3322



TO QUICK
MOBILE
VERSION

www.exair.com/m_ccszg.htm



Online chat with us at

www.exair.com



it to

1-866-329-3924

1-513-671-3363

We'll respond with our recommended solution within 24 hours.

-----Send Us The Facts!-----

Cabinet Cooler Sizing Guide

To: Application Engineering Department, **EXAIR® Corporation**

From: **Name** _____

Company _____

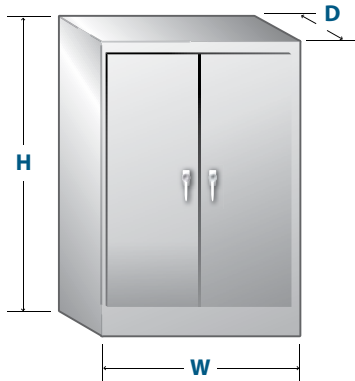
FAX number _____

Phone number _____ **Ext.#** _____

E-mail _____

In a hurry? For help NOW, call our Application Engineering Department at 1-800-903-9247

You can fill this form out online at:
www.exair.com/sizing.htm



1. Height (H) _____ 2. Width (W) _____ 3. Depth (D) _____

4. * External air temperature now? _____ °F or °C

5. * Internal air temperature now? _____ °F or °C

6. Maximum external air temperature possible? _____ °F or °C

7. Maximum internal air temperature desired? _____ °F or °C

8. My cabinet rating is: ☐ NEMA 12 ☐ NEMA 4 ☐ NEMA 4X

☐ Other (explain) _____



*Using a "Temperature Gun" or infrared thermometer will result in measuring surface temperatures. Air temperatures are needed for the cabinet cooling calculations. Please use a standard thermometer or thermocouple to measure the air temperature.

9. My cabinet is (check all that apply): ☐ Vented - outside air circulates through the enclosure
☐ Not Vented - outside air does not circulate through the enclosure
☐ Wall mounted
☐ Fan(s)/Vent(s) - Indicate diameter or SCFM _____
Number of fans/vents _____

10. Available voltage for thermostat control: ☐ 24 VDC ☐ 120 VAC ☐ 240 VAC

Cabinet Cooler® Systems

Cabinet Coolers Keep Working at Full Capacity After Seven Years of Near Constant Operation

The Problem: A manufacturer of automotive radiators had a problem relating to an overheated motor drive which caused one of their two production lines to come to a stop. They used a refrigerant based air conditioner set on the panel, but the air conditioner began leaking water into the inside of the panel. The water got into the motor drive, shorted it out and caused the production line to go down. Not only was production down for 1 month, but the motor drive cost them \$20,000 to replace by the time they purchased, had it shipped and got it installed.



Seven years later, this manufacturer contacted EXAIR for another application. They mentioned the old EXAIR Cabinet Cooler system still on the motor drive panel, cranking out cold air. No maintenance had been performed on the Cabinet Cooler System in that time (as none was necessary) even though the environment was quite dirty. It was still working perfectly!



The Solution: The manufacturer was unsure of what they were going to use for an air conditioning unit because the motor drives had to stay cool. They purchased EXAIR's **Model 4330 NEMA 12 2,000 Btu/hr. (504 Kcal/hr.) Cabinet Cooler System** with thermostat control for the panel. The Cabinet Cooler System worked perfectly at solving the cooling problem.

Comment: When we talk to customers about the EXAIR Cabinet Cooler Systems, one of their initial concerns is how long they last. With a source of clean/dry compressed air, the life span of a Cabinet Cooler can easily be in the range of 20 years or more, since there are no moving parts to wear out. In that time frame, you could have to purchase four refrigerant based units, pay to have them changed out and pay for them to be maintained 2 - 4 times per year, changing filters, replacing compressors, and re-charging refrigerant. Not only does the Cabinet Cooler last a long time, but when it is operating, it produces a positive pressure inside the panel which keeps dust and debris from getting inside your cabinet over time.

Cooling in a Hostile Environment



The Problem: A traditional refrigerant based air conditioner was installed on wastewater clarifier controls but could not withstand the harsh chemical environment of the wastewater industry. Controls on a wastewater clarifier process were mounted outdoors and experienced weather related overheating problems in the hotter months of the year. Not only did higher temperatures compromise the performance of the traditional refrigerant based air conditioner, the corrosive environment from the many different wastewater chemicals, acids and bases prematurely wore the critical moving parts of the air conditioner.

The Solution: A **Model 4850SS-316 Cabinet Cooler System** provided 3,400 Btu/hr. (857 Kcal/hr.) of cooling for the clarifier controls and kept them running efficiently. The Cabinet Cooler is resistant to seasonal temperature fluctuations because it operates from a source of compressed air and not ambient air. The 316SS construction also provided high corrosion resistance to the chemical environment. Since EXAIR Cabinet Coolers have no moving parts, another maintenance concern was eliminated.

Comment: The inherent reliability of the vortex tube operated Cabinet Cooler System is another important advantage in this application. Because they have no moving parts, **EXAIR Cabinet Coolers are virtually impervious to hostile environments.** Wastewater treatment, chemical processing, paper manufacturing, steel mills and power generation are just a few of the facilities benefitting from this simple, yet effective technology.

NEMA 12 (IP54) Cabinet Cooler Systems

| | 120V Thermostat Control Model # | ETC 120V Thermostat Control Model # | ETC 240V Thermostat Control Model # | High Temp Thermostat Control Model # | Non-Hazardous Purge Thermostat Control Model # | Capacity* Btu/ Hr | Kcal/ hr | Sound level dBA |
|---|---------------------------------------|---|---|--|--|-------------------------|-------------|--------------------|
| NEMA 12 (IP54) (Dust, Oil Resistant) | 4304 | 4304-ETC120 | 4304-ETC240 | N/A | NHP4304 | 275 | 69 | 59** |
| | 4308 | 4308-ETC120 | 4308-ETC240 | N/A | NHP4308 | 550 | 139 | 67** |
| | 4315 | 4315-ETC120 | 4315-ETC240 | HT4315 | NHP4315 | 1,000 | 252 | 73** |
| | 4325 | 4325-ETC120 | 4325-ETC240 | HT4325 | NHP4325 | 1,700 | 428 | 74** |
| | 4330 | 4330-ETC120 | 4330-ETC240 | HT4330 | NHP4330 | 2,000 | 504 | 74** |
| | 4340 | 4340-ETC120 | 4340-ETC240 | HT4340 | NHP4340 | 2,800 | 706 | 78** |
| | 4350 | 4350-ETC120 | 4350-ETC240 | HT4350 | NHP4350 | 3,400 | 857 | 75** |
| | 4360 | 4360-ETC120 | 4360-ETC240 | HT4360 | NHP4360 | 4,000 | 1,007 | 77** |
| | 4370 | 4370-ETC120 | 4370-ETC240 | HT4370 | NHP4370 | 4,800 | 1,209 | 77** |
| | 4380 | 4380-ETC120 | 4380-ETC240 | HT4380 | NHP4380 | 5,600 | 1,411 | 79** |

| | Cabinet Cooler Only Model # | Continuous Operation Model # | High Temp Continuous Operation Model # | Capacity* Btu/Hr | Kcal/hr | Sound level dBA |
|---|--------------------------------|---------------------------------|--|---------------------|---------|--------------------|
| NEMA 12 (IP54) (Dust, Oil Resistant) | 4004 | 4204 | N/A | 275 | 69 | 59** |
| | 4008 | 4208 | N/A | 550 | 139 | 67** |
| | 4015 | 4215 | HT4215 | 1,000 | 252 | 73** |
| | 4025 | 4225 | HT4225 | 1,700 | 428 | 74** |
| | 4030 | 4230 | HT4230 | 2,000 | 504 | 74** |
| | 4040 | 4240 | HT4240 | 2,800 | 706 | 78** |
| | N/A | 4250 | HT4250 | 3,400 | 857 | 75** |
| | N/A | 4260 | HT4260 | 4,000 | 1,007 | 77** |
| | N/A | 4270 | HT4270 | 4,800 | 1,209 | 77** |
| | N/A | 4280 | HT4280 | 5,600 | 1,411 | 79** |

*Cooling capacity at 100 PSIG (6.9 BAR) supply pressure. **With optional cold muffler installed.

NEMA 12 (IP54) Cabinet Cooler systems are dust and oil tight. They are ideal for general industrial environments where no liquids or corrosives are present.

Thermostat control systems (Models 4304-4380) are the most efficient cabinet cooler system because it will turn itself on and off as needed to cool your enclosure. Includes cooler, solenoid valve, thermostat, filter separator and cold air distribution kit. Models are available in 120VAC, 240VAC and 24VDC.

Continuous operation systems (Models 4204-4280) include the cooler, a filter separator and cold air distribution kit.

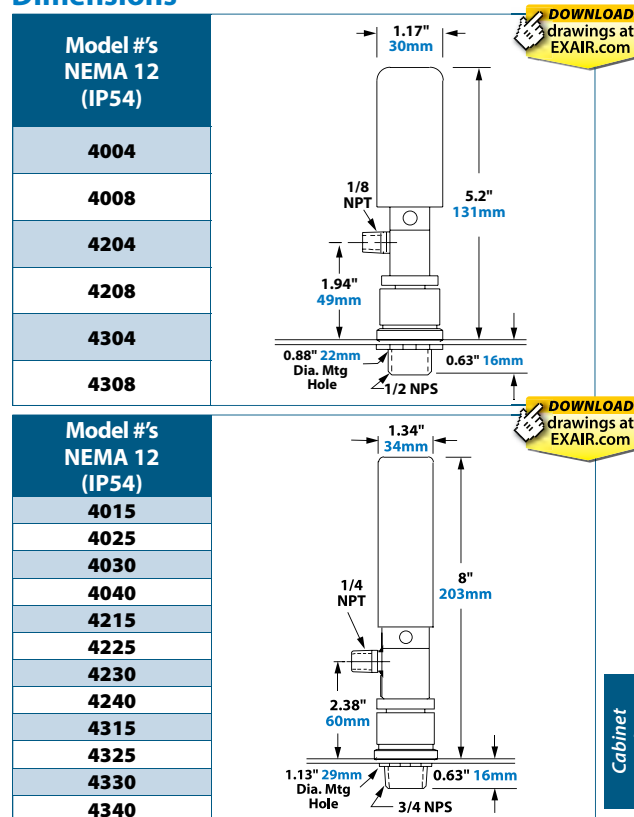
ETC Thermostat control systems provide on the fly temperature adjustment and displays internal temperature in real time.

High Temperature Cabinet Cooler systems should be used when ambient temperatures reach 125°F to 200°F (52°C to 93°C).

Non-Hazardous Purge (NHP) models provide a continuous positive purge within the enclosure to prevent contaminants from entering. They are suited for extremely dirty and dusty environments.

Dual Cabinet Cooler systems (Models ##50-##80) provide for additional cooling.

Dimensions



Cabinet Cooler® Systems

NEMA 4 (IP66) Cabinet Cooler Systems

| | 120V Thermostat Control Model# | ETC 120V Thermostat Control Model# | ETC 240V Thermostat Control Model# | High Temp Thermostat Control Model# | Non-Hazardous Purge Thermostat Control Model# | Capacity* Btu/ Hr | Kcal/ hr | Sound level dBA |
|---|--------------------------------------|--|--|---|---|-------------------------|-------------|-----------------------|
| NEMA 4 (IP66) (Splash Resistant) | 4804 | 4804-ETC120 | 4804-ETC240 | N/A | NHP4804 | 275 | 69 | 59** |
| | 4808 | 4808-ETC120 | 4808-ETC240 | N/A | NHP4808 | 550 | 139 | 67** |
| | 4815 | 4815-ETC120 | 4815-ETC240 | HT4815 | NHP4815 | 1,000 | 252 | 73 |
| | 4825 | 4825-ETC120 | 4825-ETC240 | HT4825 | NHP4825 | 1,700 | 428 | 80 |
| | 4830 | 4830-ETC120 | 4830-ETC240 | HT4830 | NHP4830 | 2,000 | 504 | 80 |
| | 4840 | 4840-ETC120 | 4840-ETC240 | HT4840 | NHP4840 | 2,800 | 706 | 82 |
| | 4850 | 4850-ETC120 | 4850-ETC240 | HT4850 | NHP4850 | 3,400 | 857 | 84 |
| | 4860 | 4860-ETC120 | 4860-ETC240 | HT4860 | NHP4860 | 4,000 | 1,007 | 84 |
| | 4870 | 4870-ETC120 | 4870-ETC240 | HT4870 | NHP4870 | 4,800 | 1,209 | 84 |
| | 4880 | 4880-ETC120 | 4880-ETC240 | HT4880 | NHP4880 | 5,600 | 1,411 | 85 |

| | Cabinet Cooler Only Model# | Continuous Operation Model# | High Temp Continuous Operation Model# | Capacity* Btu/Hr | Kcal/hr | Sound level dBA |
|---|-------------------------------|--------------------------------|---|---------------------|---------|--------------------|
| NEMA 4 (IP66) (Splash Resistant) | 4604 | 4704 | N/A | 275 | 69 | 59** |
| | 4608 | 4708 | N/A | 550 | 139 | 67** |
| | 4615 | 4715 | HT4715 | 1,000 | 252 | 73 |
| | 4625 | 4725 | HT4725 | 1,700 | 428 | 80 |
| | 4630 | 4730 | HT4730 | 2,000 | 504 | 80 |
| | 4640 | 4740 | HT4740 | 2,800 | 706 | 82 |
| | N/A | 4750 | HT4750 | 3,400 | 857 | 84 |
| | N/A | 4760 | HT4760 | 4,000 | 1,007 | 84 |
| | N/A | 4770 | HT4770 | 4,800 | 1,209 | 84 |
| | N/A | 4780 | HT4780 | 5,600 | 1,411 | 85 |

*Cooling capacity at 100 PSIG (6.9 BAR) supply pressure. **With optional cold muffler installed.

NEMA 4 (IP66) Cabinet Cooler systems are dust and oil tight, splash resistant and indoor/outdoor capable. By incorporating a low pressure valve for all air exhaust, the valve closes and seals when not operating to **maintain NEMA 4 enclosure integrity**.

Thermostat control systems (Models 4804-4880) are the most efficient system because it will turn itself on and off as needed to cool your enclosure. Includes cooler, solenoid valve and thermostat, filter separator and cold air distribution kit. Models are available in 120VAC, 240VAC and 24VDC.

Continuous operation systems (Models 4704-4780) include the cooler, a filter separator and cold air distribution kit.

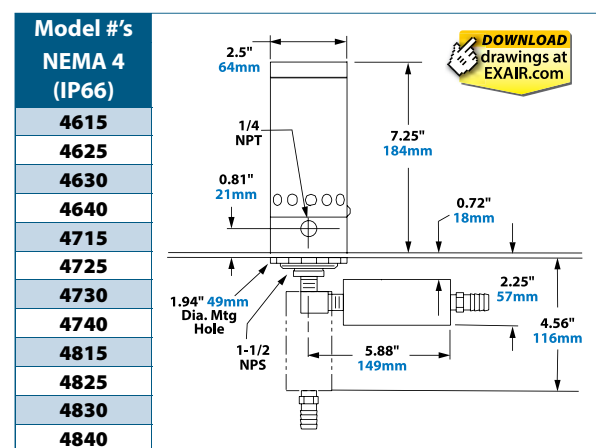
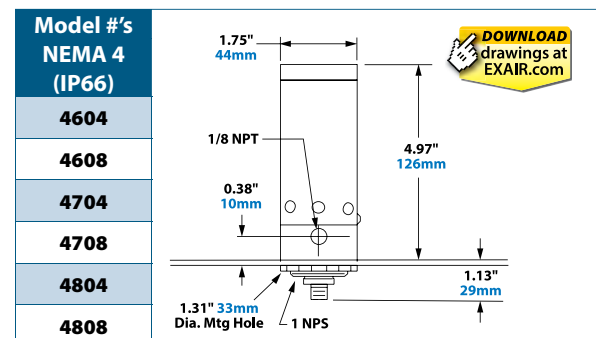
ETC Thermostat control systems provide on the fly temperature adjustment and displays internal temperature in real time.

High Temperature Cabinet Cooler systems should be used when ambient temperatures reach 125°F to 200°F (52°C to 93°C).

Non-Hazardous Purge (NHP) models provide a continuous positive purge within the enclosure to prevent contaminants from entering. They are suited for extremely dirty and dusty environments.

Dual Cabinet Cooler systems (Models ##50-##80) provide for additional cooling.

Dimensions



NEMA 4X (IP66) Cabinet Cooler Systems

| | 120V Thermostat Control Model# | ETC 120V Thermostat Control Model# | ETC 240V Thermostat Control Model# | High Temp Thermostat Control Model# | Non-Hazardous Purge Thermostat Control Model# | Capacity* Btu/ Hr | Kcal/ hr | Sound level dBA |
|--|--------------------------------------|--|--|---|---|-------------------------|-------------|-----------------------|
| NEMA 4X (IP66) (Corrosion- Resistant) | 4804SS | 4804SS-ETC120 | 4804SS-ETC240 | N/A | NHP4804SS | 275 | 69 | 59** |
| | 4808SS | 4808SS-ETC120 | 4808SS-ETC240 | N/A | NHP4808SS | 550 | 139 | 67** |
| | 4815SS | 4815SS-ETC120 | 4815SS-ETC240 | HT4815SS | NHP4815SS | 1,000 | 252 | 73 |
| | 4825SS | 4825SS-ETC120 | 4825SS-ETC240 | HT4825SS | NHP4825SS | 1,700 | 428 | 80 |
| | 4830SS | 4830SS-ETC120 | 4830SS-ETC240 | HT4830SS | NHP4830SS | 2,000 | 504 | 80 |
| | 4840SS | 4840SS-ETC120 | 4840SS-ETC240 | HT4840SS | NHP4840SS | 2,800 | 706 | 82 |
| | 4850SS | 4850SS-ETC120 | 4850SS-ETC240 | HT4850SS | NHP4850SS | 3,400 | 857 | 84 |
| | 4860SS | 4860SS-ETC120 | 4860SS-ETC240 | HT4860SS | NHP4860SS | 4,000 | 1,007 | 84 |
| | 4870SS | 4870SS-ETC120 | 4870SS-ETC240 | HT4870SS | NHP4870SS | 4,800 | 1,209 | 84 |
| | 4880SS | 4880SS-ETC120 | 4880SS-ETC240 | HT4880SS | NHP4880SS | 5,600 | 1,411 | 85 |

| | Cabinet Cooler Only Model# | Continuous Operation Model# | High Temp Continuous Operation Model# | Capacity* Btu/Hr | Kcal/hr | Sound level dBA |
|---|-------------------------------|--------------------------------|---|---------------------|---------|-----------------------|
| NEMA 4X (IP66) (Corrosion Resistant) | 4604SS | 4704SS | N/A | 275 | 69 | 59** |
| | 4608SS | 4708SS | N/A | 550 | 139 | 67** |
| | 4615SS | 4715SS | HT4715SS | 1,000 | 252 | 73 |
| | 4625SS | 4725SS | HT4725SS | 1,700 | 428 | 80 |
| | 4630SS | 4730SS | HT4730SS | 2,000 | 504 | 80 |
| | 4640SS | 4740SS | HT4740SS | 2,800 | 706 | 82 |
| | N/A | 4750SS | HT4750SS | 3,400 | 857 | 84 |
| | N/A | 4760SS | HT4760SS | 4,000 | 1,007 | 84 |
| | N/A | 4770SS | HT4770SS | 4,800 | 1,209 | 84 |
| | N/A | 4780SS | HT4780SS | 5,600 | 1,411 | 85 |

*Cooling capacity at 100 PSIG (6.9 BAR) supply pressure. **With optional cold muffler installed.

NEMA 4X (IP66) Cabinet Cooler systems are made from 303 stainless steel, dust and oil tight, splash resistant, indoor/outdoor capable and corrosion resistant. By incorporating a low pressure valve for all air exhaust, the valve closes and seals when not operating **to maintain NEMA 4X enclosure integrity.**

Thermostat control systems (Models 4804SS-4880SS) are the most efficient system because it will turn itself on and off as needed to cool your enclosure. Includes cooler, solenoid valve and thermostat, filter separator and cold air distribution kit. Models are available in 120VAC, 240VAC and 24VDC.

Continuous operation systems (Models 4704SS-4780SS) include the cooler, a filter separator and cold air distribution kit.

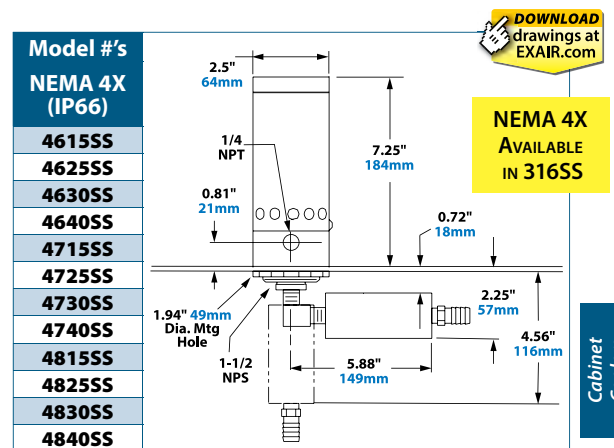
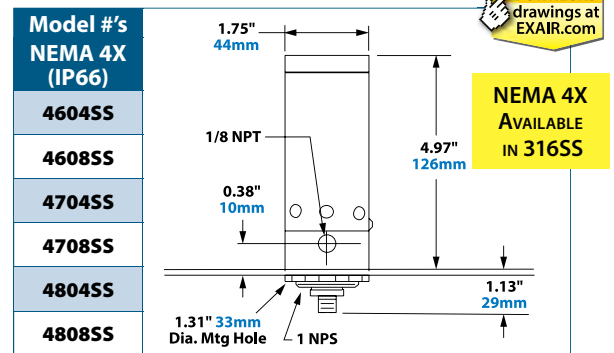
ETC Thermostat control systems provide on the fly temperature adjustment and displays internal temperature in real time.

High Temperature Cabinet Cooler systems should be used when ambient temperatures reach 125°F to 200°F (52°C to 93°C).


Non-Hazardous Purge (NHP) models provide a continuous positive purge within the enclosure to prevent contaminants from entering. They are suited for extremely dirty and dusty environments.

Dual Cabinet Cooler systems (Models ##50-##80) provide for additional cooling.

Dimensions



Cabinet Cooler® Systems

| Accessories and Components | | | |
|----------------------------|---|---|--|
| Model # | Description | Model # | Description |
| 4902 | Cold Muffler only | 9044 | Valve and Thermostat Kit, 240V, 50/60 Hz |
| 4904 | Cold Air Distribution Kit (For all Cabinet Coolers 650 Btu/hr. and higher) | 9016 | NEMA 4-4X Valve and Thermostat Kit, 120V, 50/60 Hz |
| 4905 | Cold Air Distribution Kit (For Cabinet Coolers up to 550 Btu/hr.) | 9045 | NEMA 4-4X Valve and Thermostat Kit, 240V, 50/60 Hz |
| 9004 | Automatic Drain Filter Separator, 1/4 NPT, 43 SCFM (1,359 SLPM) | 9017 | Thermostat Only, 24V-240V, 50/60Hz |
| 9027 | Oil Removal Filter (For Cabinet Coolers with 550 Btu/hr. output), 1/4 NPT, 7-24 SCFM (198-680 SLPM) | 9018 | NEMA 4-4X Solenoid Valve Only, 120V, 50/60 Hz, 1/4 NPT, 40 SCFM (1,133 SLPM) |
| 9005 | Oil Removal Filter (For all Cabinet Coolers except 550 Btu/hr. output), 3/8 NPT, 15-37 SCFM (425-1,048 SLPM) | 9024 | NEMA 4-4X Solenoid Valve Only, 240V, 50/60 Hz, 1/4 NPT, 40 SCFM (1,133 SLPM) |
| 9006 | Oil Removal Filter, 3/4 NPT, 50-150 SCFM (1,416-4,248 SLPM) | 9020 | Solenoid Valve Only, 120V, 50/60 Hz, 1/4 NPT, 40 SCFM (1,133 SLPM) |
| 9008 | Pressure Regulator with Gauge, 1/4 NPT, 50 SCFM (1,416 SLPM) | 9021 | Solenoid Valve Only, 200-240V, 50/60 Hz, 1/4 NPT, 40 SCFM (1,133 SLPM) |
| 9238 | ETC - Electronic Temperature Control, 120V, 50/60 Hz, 1/4 NPT | 9031 | NEMA 4-4X Solenoid Valve Only, 24VDC, 1/4 NPT, 40 SCFM (1,133 SLPM) |
| 9239 | ETC - Electronic Temperature Control, 240V, 50/60 Hz, 1/4 NPT | 9034 | NEMA 4-4X Solenoid Valve Only, 120V, 50/60 Hz, 1/2 NPT, 100 SCFM (2,832 SLPM) |
| 9258 | ETC - Electronic Temperature Control, 120V, 50/60 Hz, 1/2 NPT | 9058 | NEMA 4-4X Solenoid Valve Only, 24VDC, 1/2 NPT, 100 SCFM (2,832 SLPM) |
| 9259 | ETC - Electronic Temperature Control, 240V, 50/60 Hz, 1/2 NPT | EXAIR's Side Mount Kits for NEMA 12, 4 and 4X Cabinet Coolers offer convenient mounting to the side of an electrical enclosure.  | |
| 9015 | Valve and Thermostat Kit, 120V, 50/60 Hz | | |

Side Mount Kits

EXAIR's Side Mount Kits make mounting on the side of an electrical enclosure possible when there is limited space on the top or side. (NEMA 4 and 4X Cabinet Cooler Systems must be mounted vertically.) The Side Mount Kits maintain the NEMA rating of large and small NEMA Type 12, 4 and 4X enclosures. They mount in a standard electrical knockout (1-1/2 NPS). Side Mount Kits for NEMA 12 Cabinet Cooler Systems have an aluminum construction. Those for NEMA 4 and 4X Cabinet Cooler Systems are Type 303 or Type 316 stainless steel.

| Accessories and Components | |
|----------------------------|--|
| Model # | Description |
| 4909 | Side Mount Kit for NEMA 12 Cabinet Coolers up to 550 Btu/hr. (139 Kcal/hr.) |
| 4910 | Side Mount Kit for NEMA 12 Cabinet Coolers, 650 Btu/hr. (165 Kcal/hr.) and higher |
| 4906 | Side Mount Kit for NEMA 4 and 4X Cabinet Coolers up to 550 Btu/hr. (139 Kcal/hr.) |
| 4907 | Side Mount Kit for NEMA 4 and 4X Cabinet Coolers, 650 Btu/hr. (165 Kcal/hr.) and higher |
| 4906-316 | Type 316 Stainless Steel Side Mount Kit for NEMA 4 and 4X Cabinet Coolers, up to 550 Btu/hr. (139 Kcal/hr.) |
| 4907-316 | Type 316 Stainless Steel Side Mount Kit for NEMA 4 and 4X Cabinet Coolers, 650 Btu/hr. (165 Kcal/hr.) and higher |



| 90 Degree Side Mount Kit Dimensions | | | | | | | |
|-------------------------------------|----|------|------|------|------|------|-----------|
| Model | | A | B | C | D | E | F |
| 4906 | in | 2.50 | 2.50 | 1.50 | 3.50 | 3.03 | 1 NPS |
| | mm | 64 | 64 | 38 | 89 | 77 | |
| 4907 | in | 2.50 | 2.50 | 1.50 | 3.50 | 3.03 | 1-1/2 NPS |
| | mm | 64 | 64 | 38 | 89 | 77 | |
| 4909 | in | 2.50 | 2.50 | 1.50 | 2.19 | 1.73 | 1/2 NPS |
| | mm | 64 | 64 | 38 | 56 | 44 | |
| 4910 | in | 2.50 | 2.50 | 1.50 | 2.19 | 1.73 | 3/4 NPS |
| | mm | 64 | 64 | 38 | 56 | 44 | |

Side Mount Kit Dimensions

