

Enclosure Coolers

Keep Electrical Enclosures Cool, Clean and Protected



Have your production lines or equipment ever shutdown from overheated electrical enclosures? It's a common problem, and one that can have serious consequences. Research by control manufacturers has shown that for each 18°F (10°C) increase in temperature, online production shutdowns will occur twice as often. Vortex Coolers offer a simple, reliable and affordable solution to keeping control panels cool, clean and protected.

Thermostatically-controlled to save energy

Continuous cooling models are available

Powered by compressed air, utilizing a vortex tube to generate cold air without Freon or other refrigerants (CFCs/HCFCs)

Exceptionally reliable, no moving parts to break or wear

Low maintenance

Cooling capacities to 5000 BTUH (1250 kcal/H)

Maintains NEMA 4, 4X and 12 ratings. All models are UL-listed

Today's small and compact, multi-function electronic controls, variable speed drives, servos and programmable logic controllers are extremely sensitive to heat and contamination. Smaller cabinet sizes make temperature control difficult and contribute to significant premature failures. Excessive heat causes components to "cook", digital displays to misread, controls to drift, and breakers to trip below their rated loads. The result is often lost productivity from machine or line shutdowns.

Fans often provide inadequate cooling and commonly pull in dirty, humid air creating another source of failure. Air conditioners require ongoing maintenance and are relatively expensive, large and difficult to install.

ITW Vortec's Vortex Cooler Enclosure Coolers are the affordable, low maintenance, easy to install alternative for keeping enclosures cool and clean without Freon or other refrigerants.



Enclosure Coolers

With no moving parts to wear out or maintain, Vortex Coolers use only compressed air and vortex tube technology to produce quiet, efficient and reliable cabinet cooling. As an added benefit, these coolers create a slight positive pressure inside the enclosure to prevent dirt or dust from entering - even in the most challenging environments.

From small computer cabinets and touch-screen control panels to large electrical enclosures, a Vortex Cooler can protect sensitive controls from overheating to eliminate heat and dirt related shutdowns. Models are available to provide cooling capacities ranging from 400 to 5000 BTUH (101 to 1250 kcal/H).

- ◆ Compact and easier to install than air conditioners and most fan units
- ◆ Has no moving parts for highly reliable cooling protection
- ◆ Keeps components clean - no outside air ever enters the cabinet
- ◆ Offers quiet operation and little to no maintenance
- ◆ An affordable, UL-listed solution that maintains NEMA 4, 4X and 12 ratings



| NEMA Type | MODEL NO. | | CAPACITY | | AIR CONSUMPTION | |
|-----------|-----------------|--------------------|----------|----------|-----------------|------|
| | with Thermostat | without Thermostat | BTUH | Kcal/hr. | SCFM | SLPM |
| NEMA 12 | 750 | 760 | 400 | 101 | 8 | 227 |
| | 740 | 730 | 900 | 225 | 15 | 425 |
| | 790 | 780 | 1500 | 378 | 25 | 708 |
| | 795 | 785 | 2500 | 630 | 35 | 991 |
| | 7970 | 7870 | 5000 | 1260 | 70 | 1981 |
| NEMA 4 | 747 | 737 | 900 | 225 | 15 | 425 |
| | 770 | (a) | 1500 | 378 | 25 | 708 |
| | 797 | 787 | 1700 | 428 | 25 | 708 |
| | 797-35H | 787-35H | 2500 | 630 | 35 | 991 |
| | 770-35H | (a) | 2500 | 630 | 35 | 991 |
| | 7975 | 7875 | 5000 | 1260 | 70 | 1981 |
| NEMA 4X | 747SS | 737SS | 900 | 225 | 15 | 425 |
| | 797SS | 787SS | 1700 | 428 | 25 | 708 |
| | 797SS-35H | 787SS-35H | 2500 | 630 | 35 | 991 |
| | 7975SS | 7875SS | 5000 | 1260 | 70 | 1981 |

Models with 5000 BTUH capacity include two Vortex Coolers which use a common air line filter, solenoid and thermostat.

Thermostat models are factory set at 90°F±2°/32°C±1° with the exception of the following:
 (a) Panel Guard Vortex Coolers (770 and 770-35H) use a non-adjustable, mechanical thermostat which has an approximate control of 87-92 F / 29-32 C

NEMA 4X Vortex Coolers feature stainless steel construction for washdown protection and resistance to oxidation and corrosive surroundings.

For assistance in sizing the appropriate model to your requirements, Call our Technical Service Department at 800-441-7475, or use the Interactive Sizing and Selection Worksheet on our website.

www.itwvortec.com

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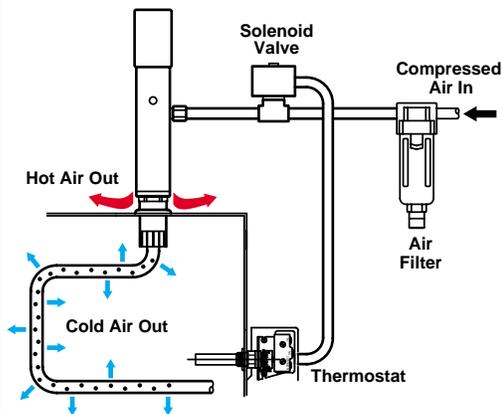


All Vortex Cooler systems include a 5-micron Auto-Drain filter and a ducting kit to distribute cold air throughout the enclosure. Thermostatically controlled models also contain a solenoid valve and thermostat, limiting compressed air usage to those times when cooling is required.

All Vortex Coolers are UL-listed and maintain NEMA 4, 4x and 12 ratings based on selected model. Coolers are designed to use a filtered factory compressed air supply of 80 -100 PSIG.

| NEMA RATINGS | |
|--------------|---|
| 12 | Indoor Dust Tight/Drip Tight |
| 4 | Outdoor Weatherproof/Washdown |
| 4X | Outdoor Weatherproof/Washdown Corrosion Resistant |

TECH notes



Inside the Vortex Cooler, a Vortex Tube spins the supplied compressed air, separating it into hot and cold airstreams. (See Vortex Tubes for more detail) The cold airstream is distributed throughout the enclosure via a ducting tube, while the hot side exits out the side of the Cooler body. The low pressure cold air flows into the cabinet forcing the heated internal air out a relief valve or vent built into the base of the Cooler. This slight positive pressure helps purge the cabinet of dust and dirt. Thermostat controlled models utilize a solenoid valve to activate the compressed air flow to the unit.



Models 770 and 770-35H Panel Guard coolers feature an integral, mechanical thermostat. A heat sensitive element at the base of the cooler activates a control valve to open/close the compressed air supply. The non-adjustable thermostat requires no electrical connections and will provide cooling protection to maintain enclosure temperatures in the range of 80-92°F (27-32°C).

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Vortex Coolers easily mount in tight spaces, with all models ranging from approximately 7 to 11 inches tall.

| MODEL NO. | ACCESSORIES |
|-----------|---|
| 701S-48 | Auto-Drain Oil Removal Filter, 3/8" NPT(F), rated to 25 SCFM / 708 SLPM |
| 701S-54 | Auto-Drain Oil Removal Filter, 1/2" NPT(F), rated to 70 SCFM / 1981 SLPM |
| 721T-70 | Solenoid Valve & Thermostat Kit, 1/4" NPT(F), 110V/60Hz, 25 SCFM / 708 SLPM |
| 721T-75 | Solenoid Valve & Thermostat Kit, 3/8" NPT(F), 110V/60Hz, 35 SCFM / 991 SLPM |

APPLICATION

notes

One of the leading US manufacturers of shrink-wrap packaging equipment uses Vortex Coolers to maintain safe temperatures in control panels near heated shrink tunnels.

Since the evolution of catalyzed coating systems has spawned the need to control paint temperature in many applications, insulated enclosures equipped with Vortex Coolers are now available to keep paint cold and within specifications for optimal spraying.

ITW Vortec Vortex Coolers are offered as a thermal management solution by leading electrical enclosure fabricators and control panel designers.

Model #790 Vortex Coolers were installed on computer control panels on three robotic welding stations in an automotive assembly plant. The cooling solution purged the panels of dirty welding fumes and high ambient temperatures that were causing the computer malfunctions.

A major snack foods company uses ITW Vortec Vortex Coolers on the control cabinets on all of their baking ovens to prevent heat-related shutdowns. Compact, easy to install Vortex Coolers are popular for enclosure protection on industrial ovens and heat finishing / processing systems and equipment.

Choose the best thermal management solution for your electrical enclosures and control panels

