Thermal Edge Inc.

TEMPERATURE CONTROL SOLUTIONS FOR ELECTRICAL ENCLOSURES

Air to Air Heat Exchangers

High efficiency heat pipe design

UL Listed for standard & hazardous location

Thermal Edge Air to Air Heat Exchangers are a closed loop cooling system which employs the heat pipe principle to exchange heat from an electrical enclosure to the outside. Where ambient temperatures are suitable for heat pipes, they are the most efficient method of cooling as the waste heat is the engine which drives the system. The only power requirement is to operate two circulating fans or blowers.

Closed Loop Design

Cool air inlet and outlet vents are completely covered by the heat exchanger. This provides NEMA Type 12, 4 or 4X.

Heat Pipe Technology

Heat pipes operate with a phase change process, much like that of mechanical air conditioning, but without the compressor.

Energy Efficient Operation

The only power requirement is to operate two circulating fans or blowers.

Indusrty Leading 5-Year Warranty

Thermal Edge products are warranted to be free of defects in workmanship, materials and components

Thermal Edge Inc.™

A2A Series Air to Air Heat Exchangers

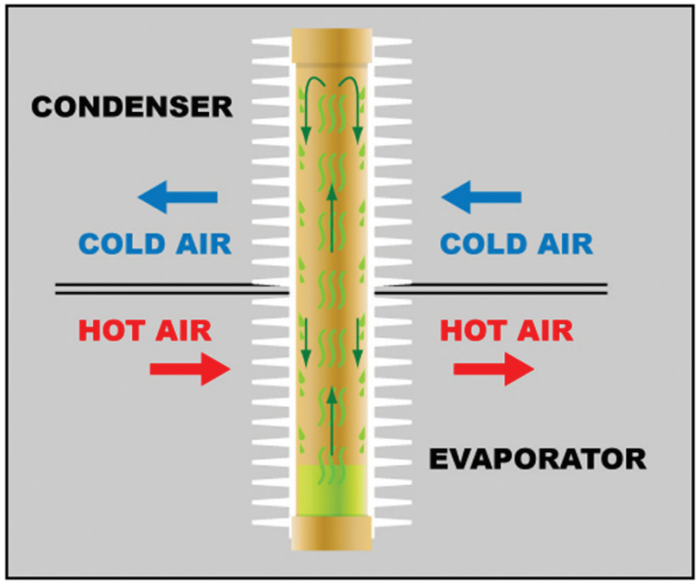
The Thermal Edge Air to Air Heat Exchanger is a closed loop cooling system which employs the heat pipe principle to exchange heat from an electrical enclosure to the outside. Where ambient temperatures are suitable for heat pipes, they are the most efficient method of cooling as the waste heat is the engine which drives the system. The only power requirement is to operate two circulating fans or blowers.

Heat pipes have a liquid refrigerant under a partial vacuum inside sealed tubes. They operate with a phase change process which is much like that of mechanical air conditioning, but without the compressor. The heat pipes are assembled with finned evaporator and condenser sections which are separated by a sealed baffle so as to provide a closed loop.

The lower section of the heat pipe assembly is in contact with heated air from the electrical enclosure. The heat causes the refrigerant to change phase (vaporize). The vapor flashes (at the speed of sound) to the top of the pipe which is in contact with the outside (ambient) air. When the outside air temperature is lower than the enclosure temperature, the refrigerant vapor gives up heat to the outside air and returns to the liquid phase. The liquid falls to the bottom and repeats the cycle endlessly, so long as there is a negative temperature differential between the outside air and the enclosure. Heat pipes will not operate in reverse cycle so heat cannot be transferred from the ambient to the interior of the enclosure.

The Thermal Edge design has a top-to-bottom enclosure air flow pattern with maximum separation of the inlet and outlet. This design pulls the hottest air from the top of the enclosure and returns the cooled air from the bottom of the heat pipe to the enclosure. The air flow on the ambient side is bottom in, top out, so that the hotter discharge air moves up and away rather than being recirculated.

As with all of our coil systems, we use aluminum end plates and baffles which improve conduction and reduce corrosion for longer life. The center aluminum baffle, which is swedged into the heat pipe coil, provides an air tight seal between the two air systems.



1800 Hurd Drive, Irving, Texas 75038

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A2A Series Air to Air Heat Exchangers

Model	Body Style	Watts/ °C	Watts/°F	Voltage/ Hz.	Running Amps	Maximum Ambient	H x W x D (Mounting Dimensions)
A2AC080120	Compact	22	12	115 50/60	.35	149°F	16.5” x 11” x 3.5”
A2AC080230	Compact	22	12	230 50/60	.20	149°F	16.5” x 11” x 3.5”
A2AC080D24	Compact	22	12	24VDC	.80	149°F	16.5” x 11” x 3.5”
A2AD160120	Deep	44	24	115 50/60	.35	149°F	16.5” x 11” x 5.5”
A2AD160230	Deep	44	24	230 50/60	.18	149°F	16.5” x 11” x 5.5”
A2AD160D24	Deep	44	24	24VDC	.80	149°F	16.5” x 11” x 5.5”
A2AD160D48	Deep	44	24	48VDC	.40	149°F	16.5” x 11” x 5.5”
A2AT260120	Tall	71.6	40	115 50/60	.47	160°F	29” x 13.88 x 5.5”
A2AT260230	Tall	71.6	40	230 50/60	.24	160°F	29” x 13.88 x 5.5”
A2AT260D24	Tall	71.6	40	24VDC	1.94	160°F	29” x 13.88 x 5.5”
A2AT260D48	Tall	71.6	40	48VDC	.96	160°F	29” x 13.88 x 5.5”

Options:
Hazardous Location Class 1, Div 2, Groups A,B,C,D (XJX)

ADVANTAGES

- Industry leading 5-Year Workmanship Warranty
- High efficiency heat pipe design
- Standard units include on/off switch
- NEMA Type 12, 4 & 4X
- Coated coils standard on all units
- 115VAC, 230VAC, 24VDC & 48VDC
- Needs no filter
- UL Listed for standard & hazardous location
- Customer Service Reps answering your calls
- A website that is easy to navigate AND solutions that are easy to find
- Equipment tested to perform and built to last
- Units designed with our customers’ applications and environments in mind

UL File # 33288 Under
UL standard 1995

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MADE IN AMERICA MATTERS...

(972) 580-0200
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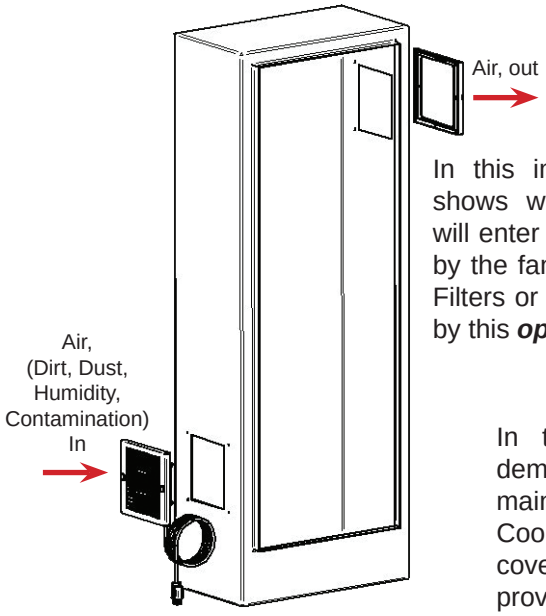
Thermal Edge Inc.™

Components are Failing inside electrical enclosures when using Filtered Fan Packages

CONSIDER A BETTER SOLUTION - AN **AIR TO AIR HEAT EXCHANGER:**

- ALWAYS CLOSED LOOP
- LOW COST AND MAINTENANCE FREE
- EASIER TO MOUNT ON ONLY ONE SIDE OF YOUR ENCLOSURE
- ENERGY EFFICIENT, USING NO MORE POWER THAN A FILTERED FAN SYSTEM
- FILTER FREE, SO NO DIMINISHED COOLING CAPACITY.
- AIR TO AIR HEAT EXCHANGERS ARE AVAILABLE IN NEMA TYPES 12, 4 AND 4X



In this image, a standard installation shows where the dirt and particulate will enter the enclosure and be pulled in by the fans on your drives and devices. Filters or not, contamination is invited in by this ***open loop*** approach.

In this image, a standard installation demonstrates the ***closed loop*** condition maintained by the Air to Air Heat Exchanger. Cool air inlet and outlet vents are completely covered by the heat exchanger. This provides NEMA Type 12, 4 or 4X.

Compact Series

12 **Watts/°F**

Deep Series

24 **Watts/°F**

Tall Series

40 **Watts/°F**

5-YEAR WARRANTY

CERTIFIED ISO 9001:2015 COMPANY

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Brochure #2
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