



Thermal Edge Inc.

TEMPERATURE CONTROL SOLUTIONS FOR ELECTRICAL ENCLOSURES

AIR TO AIR HEAT EXCHANGERS

HEAT PIPE TECHNOLOGY

CLOSED LOOP DESIGN

THERMOSTATICALLY CONTROLLED

AVAILABLE IN 120, 230, 24VDC & 48VDC

NEMA TYPE 12, 4 AND 4X

UL LISTED AND UL LISTED FOR HAZARDOUS LOCATION



GET THE EDGE... GET THERMAL EDGE



A2A SERIES AIR TO AIR HEAT EXCHANGERS

THERMAL EDGE AIR TO AIR HEAT EXCHANGER

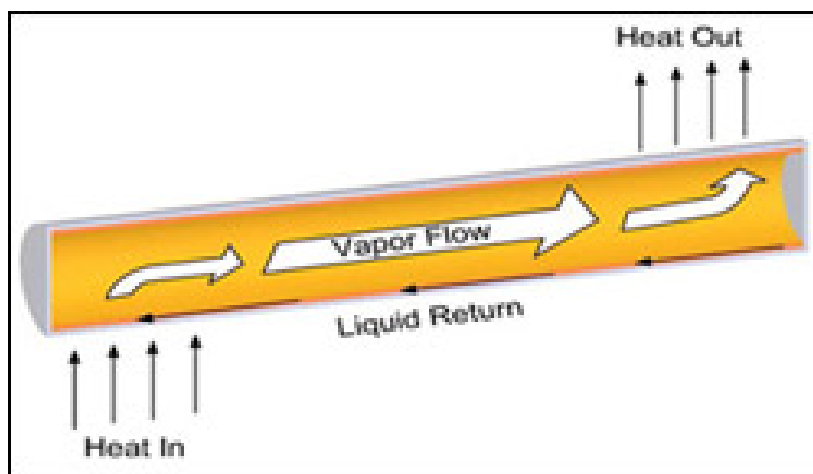
The Thermal Edge Air to Air Heat Exchanger is a closed loop cooling system which employs the heat pipe principle to exchange heat from an electrical enclosure to the outside. Where ambient temperatures are suitable for heat pipes, they are the most efficient method of cooling as the waste heat is the 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. Each heat pipe has an evaporator section and a condenser section which are separated by a permanent baffle so as to provide a closed loop.

The bottom of each heat pipe is in contact with heated air from the electrical enclosure. When the enclosure air reaches approximately 75 degrees F., the refrigerant changes to vapor phase (boils) and the vapor (steam) rises to the top of the tube which is in contact with cooler 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. It then falls to the bottom and repeats the cycle endlessly so long as there is a negative temperature differential between the enclosure and outside. Heat pipes will not operate in reverse cycle so heat cannot be transferred from the ambient to the interior of the enclosure. Although the operation is self limiting, thermostatic control is standard to shut off the fans when not needed.

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 swaged into the heat pipe coil, provides an air tight seal between the two air systems.



UL File # 33288 Under UL standard 1995



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A2A SERIES AIR TO AIR HEAT EXCHANGERS

- All units are available in NEMA Type 12, 4 and 4X
- All units include thermostat except Hazardous Location units
- Motors have a sealed overload protector so can be used in Hazardous Location

Model	Body Style	BTU/Hour @20°C	Watts/°C	Voltage/Hz.	Running Amps	Maximum Ambient	H x W x D (Mounting Dimensions)
A2AC040126	Compact	723	11	120 50/60	.37	160°F	16.5" x 11" x 3.5"
A2AC040236	Compact	723	11	230 50/60	.18	160°F	16.5" x 11" x 3.5"
A2AC040D24	Compact	723	11	24VDC	.8	160°F	16.5" x 11" x 3.5"
A2AC040D48	Compact	723	11	48VDC	TBD	160°F	16.5" x 11" x 3.5"
A2AS040126	Slim	723	11	120 50/60	.37	160°F	21.00" X 5.6" X 11"
A2AS040236	Slim	723	11	230 50/60	.18	160°F	21.00" X 5.6" X 11"
A2AS040D24	Slim	723	11	24VDC	.8	160°F	21.00" X 5.6" X 11"
A2AS040D48	Slim	723	11	48VDC	TBD	160°F	21.00" X 5.6" X 11"
A2AC080126	Compact	1446	22	120 50/60	.37	160°F	16.5" x 11" x 3.5"
A2AC080236	Compact	1446	22	230 50/60	.18	160°F	16.5" x 11" x 3.5"
A2AC080D24	Compact	1446	22	24VDC	.8	160°F	16.5" x 11" x 3.5"
A2AC080D48	Compact	1446	22	48VDC	TBD	160°F	16.5" x 11" x 3.5"
A2AS080126	Slim	1446	22	120 50/60	.37	160°F	21.00" X 5.6" X 11"
A2AS080236	Slim	1446	22	230 50/60	.18	160°F	21.00" X 5.6" X 11"
A2AS080D24	Slim	1446	22	24VDC	.8	160°F	21.00" X 5.6" X 11"
A2AS080D48	Slim	1446	22	48VDC	TBD	160°F	21.00" X 5.6" X 11"
A2AD120126	Deep	2171	33	120 50/60	.37	160°F	16.5" x 11" x 5.5"
A2AD120236	Deep	2171	33	230 50/60	.18	160°F	16.5" x 11" x 5.5"
A2AD120D24	Deep	2171	33	24VDC	.8	160°F	16.5" x 11" x 5.5"
A2AD120D48	Deep	2171	33	48VDC	TBD	160°F	16.5" x 11" x 5.5"
A2AS120126	Slim	2171	33	120 50/60	.37	160°F	21.00" X 5.6" X 11"
A2AS120236	Slim	2171	33	230 50/60	.18	160°F	21.00" X 5.6" X 11"
A2AS120D24	Slim	2171	33	24VDC	.8	160°F	21.00" X 5.6" X 11"
A2AS120D48	Slim	2171	33	48VDC	TBD	160°F	21.00" X 5.6" X 11"
A2AD160126	Deep	2894	44	120 50/60	.37	160°F	16.5" x 11" x 5.5"
A2AD160236	Deep	2894	44	230 50/60	.18	160°F	16.5" x 11" x 5.5"
A2AD160D24	Deep	2894	44	24VDC	.8	160°F	16.5" x 11" x 5.5"
A2AD160D48	Deep	2894	44	48VDC	TBD	160°F	16.5" x 11" x 5.5"
A2AS160126	Slim	2894	44	120 50/60	.37	160°F	21.00" X 5.6" X 11"
A2AS160236	Slim	2894	44	230 50/60	.18	160°F	21.00" X 5.6" X 11"
A2AS160D24	Slim	2894	44	24VDC	.8	160°F	21.00" X 5.6" X 11"
A2AS160D48	Slim	2894	44	48VDC	TBD	160°F	21.00" X 5.6" X 11"
A2AT200126	Tall	3666	55	120 50/60	.47	160°F	29" x 13.88 x 5.5"
A2AT200236	Tall	3666	55	230 50/60	.243	160°F	29" x 13.88 x 5.5"
A2AT200D24	Tall	3666	55	24VDC	1.94	160°F	29" x 13.88 x 5.5"
A2AT200D48	Tall	3666	55	48VDC	TBD	160°F	29" x 13.88 x 5.5"
A2AT260126	Tall	4887	71.6	120 50/60	.47	160°F	29" x 13.88 x 5.5"
A2AT260236	Tall	4887	71.6	230 50/60	.243	160°F	29" x 13.88 x 5.5"
A2AT260D24	Tall	4887	71.6	24VDC	1.94	160°F	29" x 13.88 x 5.5"
A2AT260D48	Tall	4887	71.6	48VDC	TBD	160°F	29" x 13.88 x 5.5"



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Due to design and part development, all information is subject to change

Components are Failing inside electrical enclosures when using Filtered Fan Packages

FACT: FILTERED FANS INTRODUCE DIRT AND CONTAMINATION INTO EVERY ELECTRICAL ENCLOSURE USING THEM

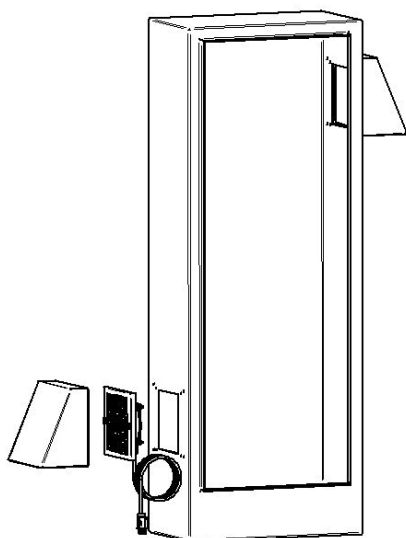
FACT: DRIVES AND PLCs DO NOT LIKE DIRT, DUST AND CONTAMINATION

FACT: FILTERED FANS CAN NEVER PRODUCE A TRUE CLOSED LOOP COOLING SOLUTION

FACT: NO MATTER HOW EFFECTIVE YOUR FILTER IS, DIRT AND PARTICULATES WILL ENTER YOUR ENCLOSURE

CONSIDER A BETTER SOLUTION - **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.

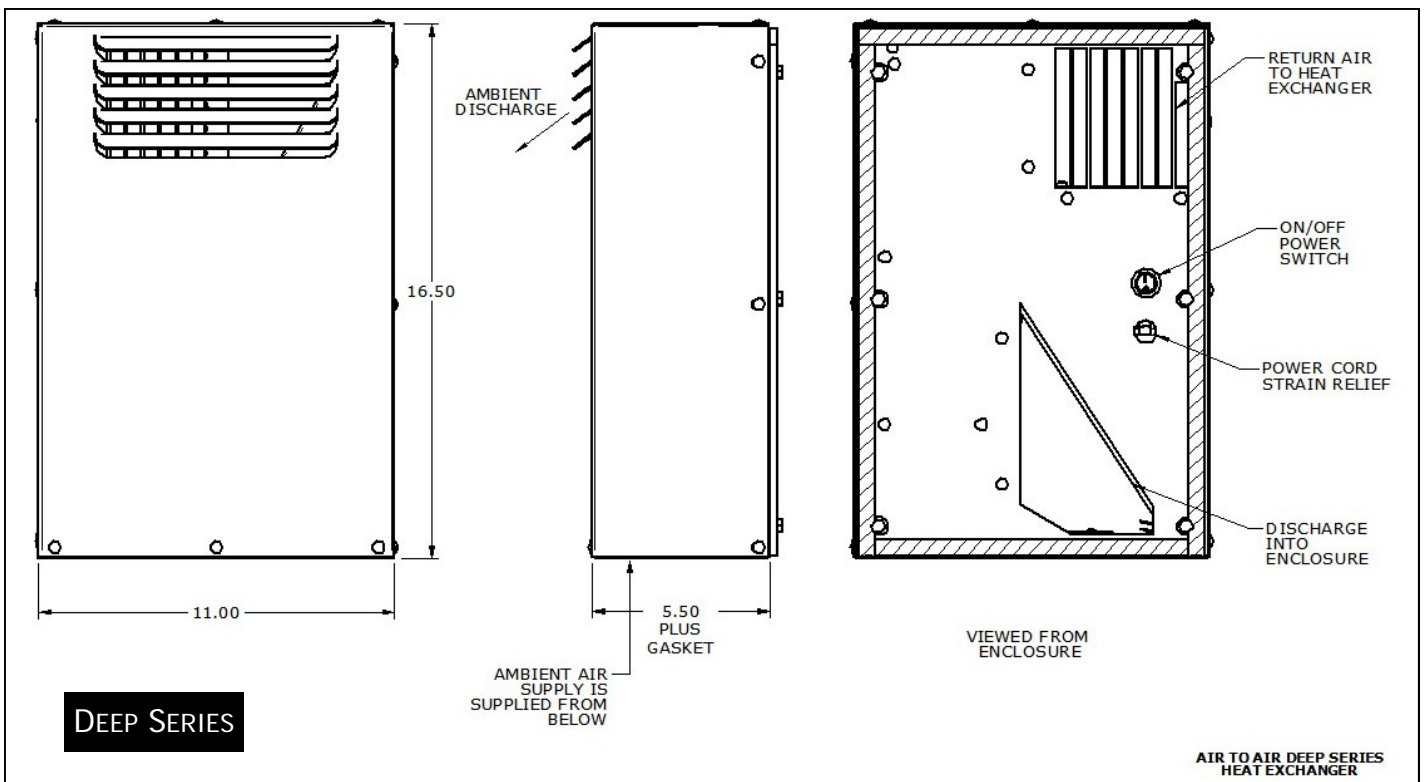
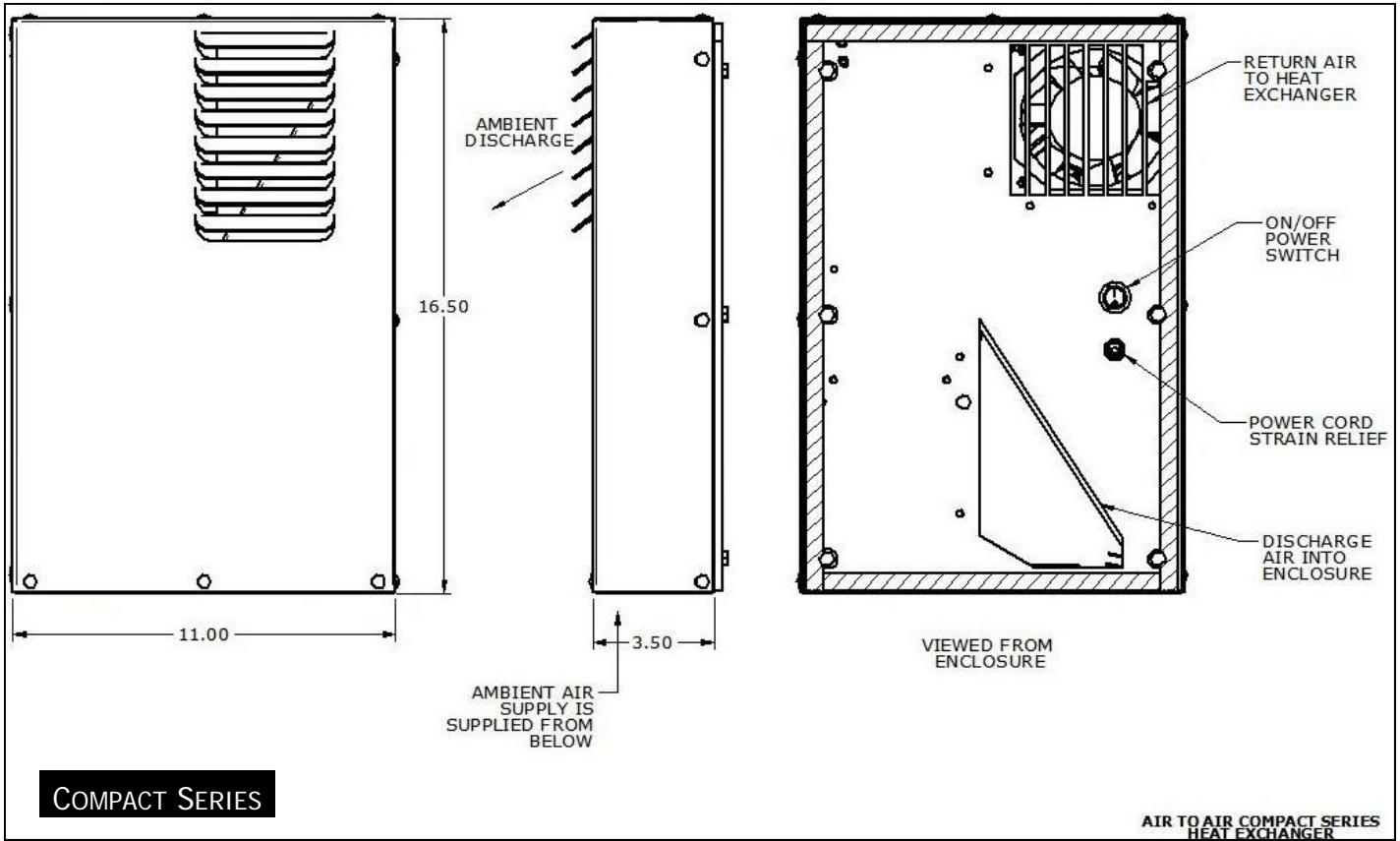
We are happy and qualified to assist you in sizing your application to remove heat issues in your electrical enclosures. Call us today at (972) 580-0202 or (888) 580-0202



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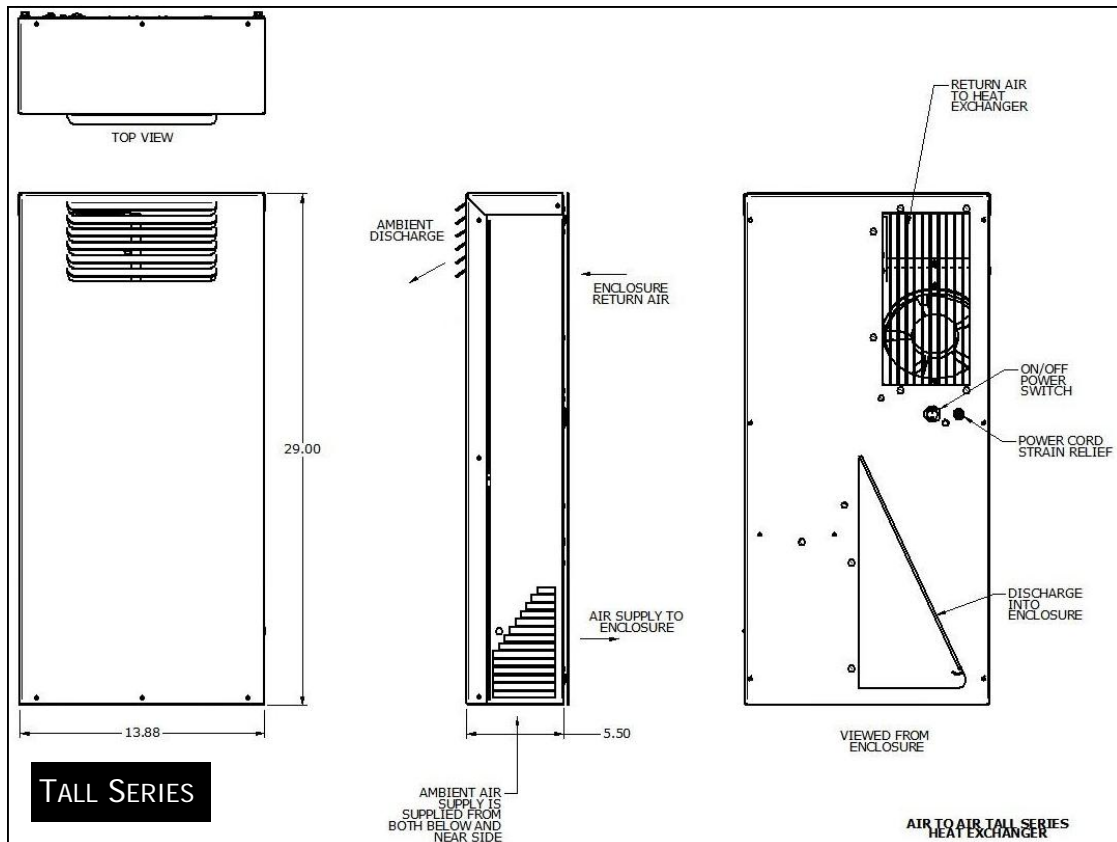
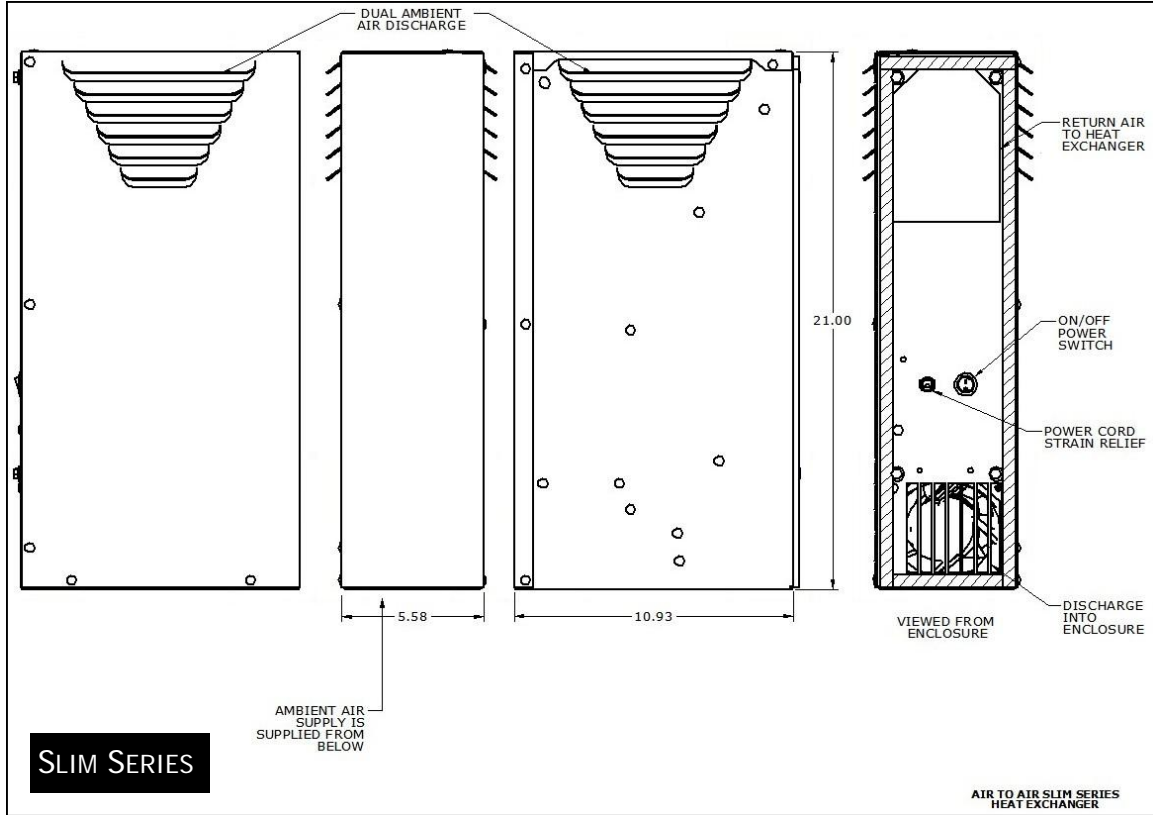


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