



A2A SERIES AIR TO AIR HEAT EXCHANGERS

THERMAL EDGE AIR TO AIR HEAT EXCHANGER

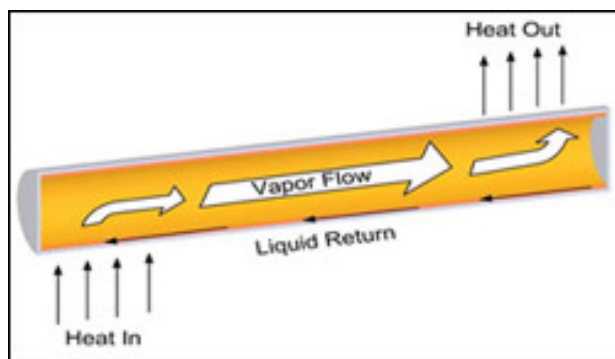
The Thermal Edge Air to Air Heat Exchanger is a closed loop cooling system which employs the heat pipe principle to exchange heat from an electrical enclosure to the outside. Where ambient temperatures are suitable for heat pipes, they are the most efficient method of cooling as the waste heat is the 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.



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- All units are available in NEMA Type 12, 4 and 4X
- All units include thermostat except Hazardous location applications
- 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)
A2AC040120	Compact	723	11	120 50/60	.37	160°F	16.5" x 11" x 3.5"
A2AC040230	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"
A2AS040120	Slim	723	11	120 50/60	.37	160°F	21.00" X 5.6" X 11"
A2AS040230	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"
A2AC080120	Compact	1446	22	120 50/60	.37	160°F	16.5" x 11" x 3.5"
A2AC080230	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"
A2AS080120	Slim	1446	22	120 50/60	.37	160°F	21.00" X 5.6" X 11"
A2AS080230	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"
A2AD120120	Deep	2171	33	120 50/60	.37	160°F	16.5" x 11" x 5.5"
A2AD120230	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"
A2AS120120	Slim	2171	33	120 50/60	.37	160°F	21.00" X 5.6" X 11"
A2AS120230	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"
A2AD160120	Deep	2894	44	120 50/60	.37	160°F	16.5" x 11" x 5.5"
A2AD160230	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"
A2AS160120	Slim	2894	44	120 50/60	.37	160°F	21.00" X 5.6" X 11"
A2AS160230	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"
A2AT200120	Tall	3666	55	120 50/60	.47	160°F	29" x 13.88 x 5.5"
A2AT200230	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"
A2AT260120	Tall	4887	71.6	120 50/60	.47	160°F	29" x 13.88 x 5.5"
A2AT260230	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



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Notes:

- Heat Tubes utilize a methanol filled tube to prevent freezing and increase efficiency
- Design efficiency: 200 BTUH is gained from a single 16" tube
- 11°C = 20°F

Watts/°C Delta is difference between ambient and enclosure temperature; with ambient always being lower. All units are rated in degrees C and degrees F

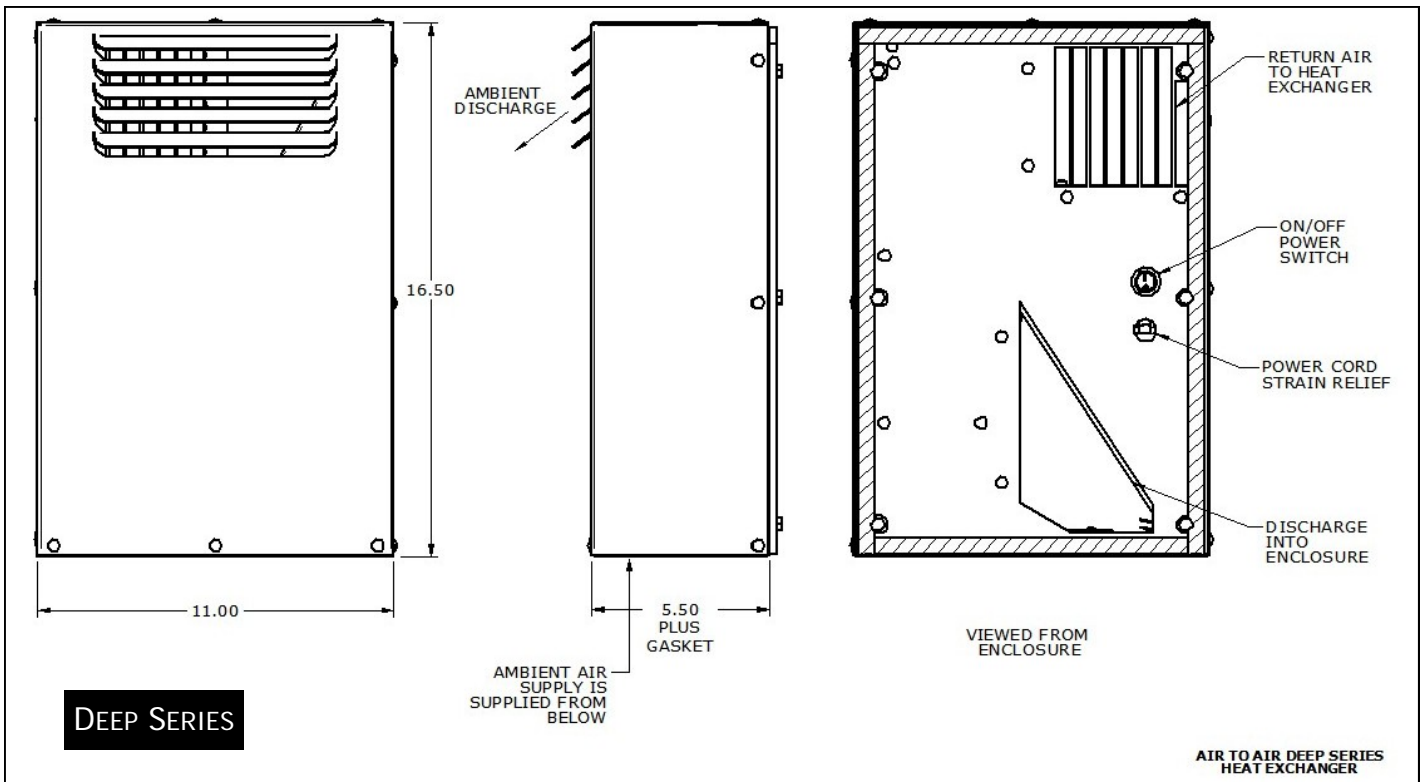
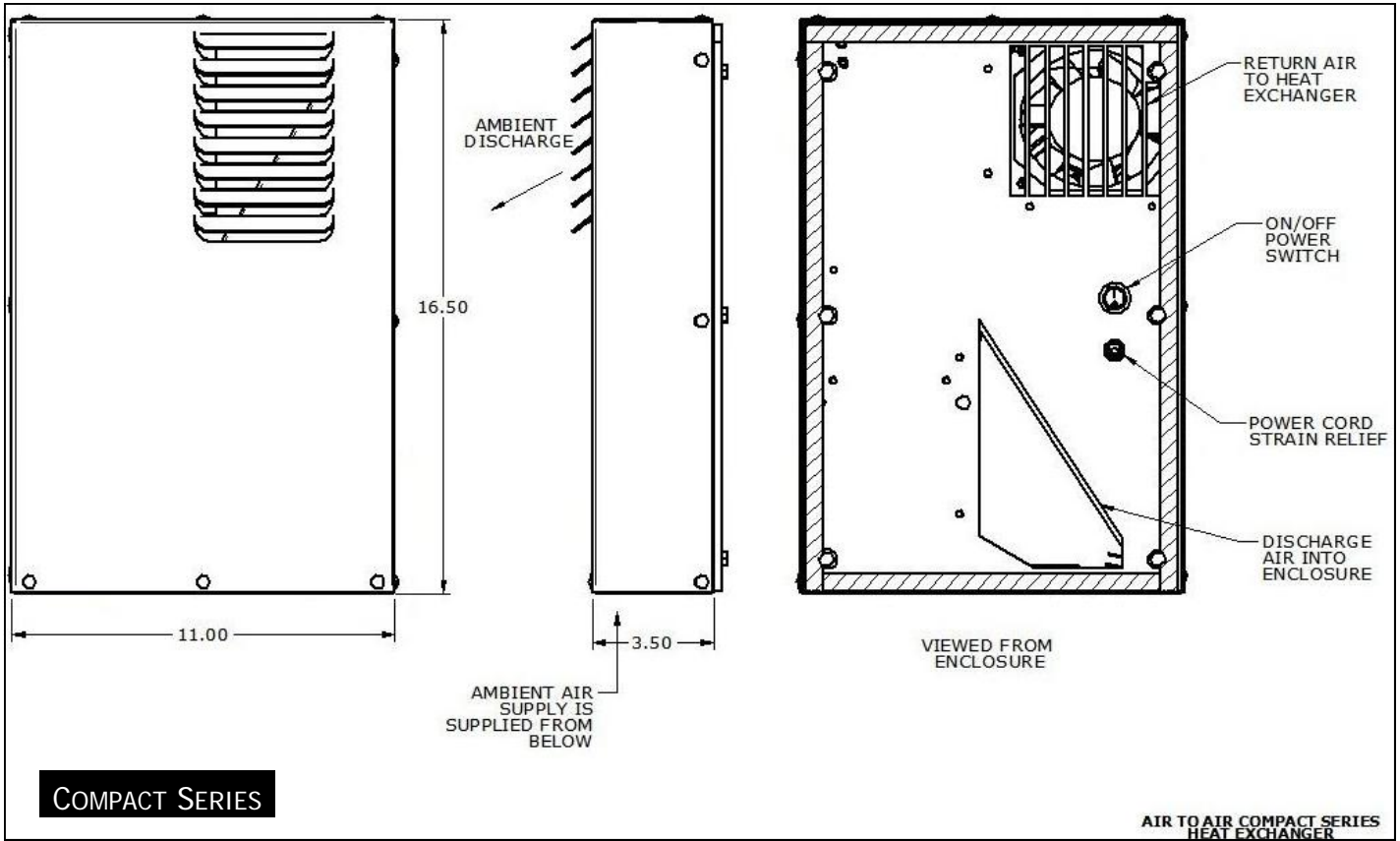
Thermal Edge Series A2A Heat Exchangers beats the competition:

- Better sealing (closed loop)
- Thermostat is standard and included on all general purpose units
- Filterless Operation
- Full use of insulation to preserve the cold fraction
- Deliberate use of physical isolation of coil from casing where we want to transfer heat
- Deliberate use of contact between coil and casing for another increment of heat transfer to the enclosure environment
- Available in 120V, 230V, 24VDC, 48VDC
- Available in NEMA Type 12, 4 and 4X



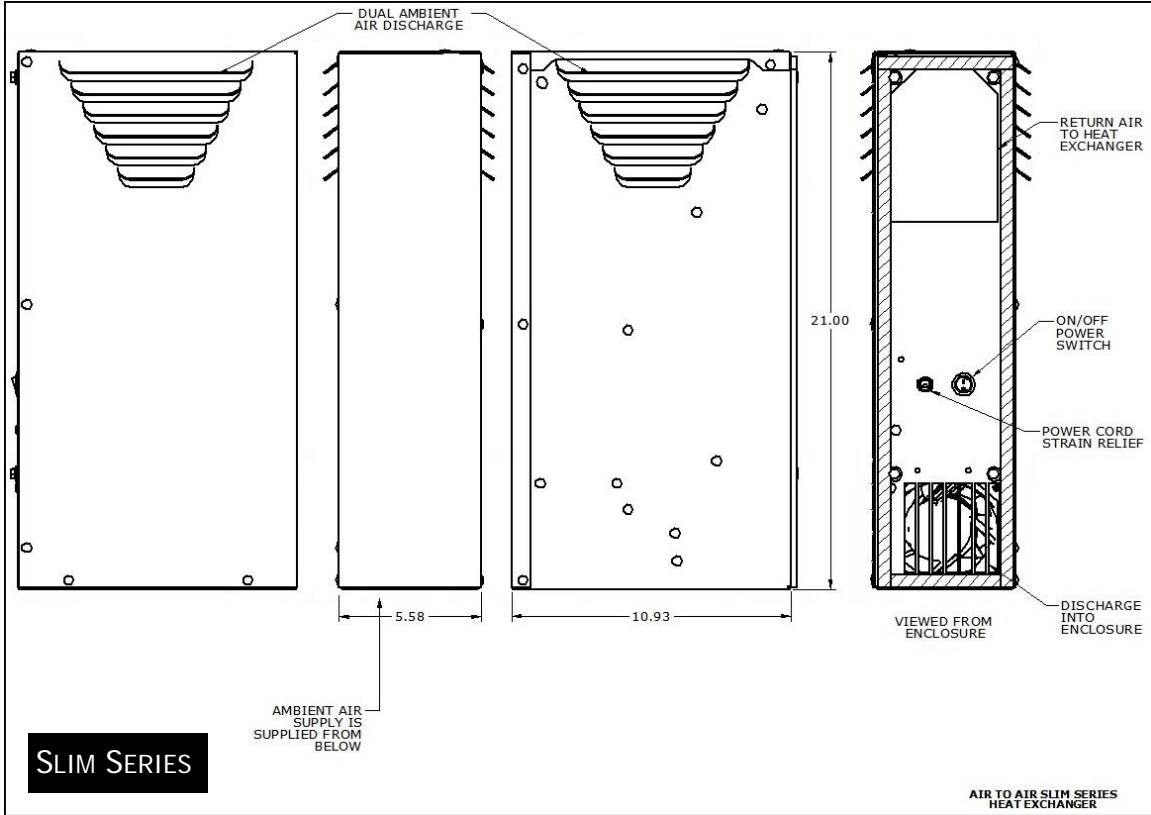
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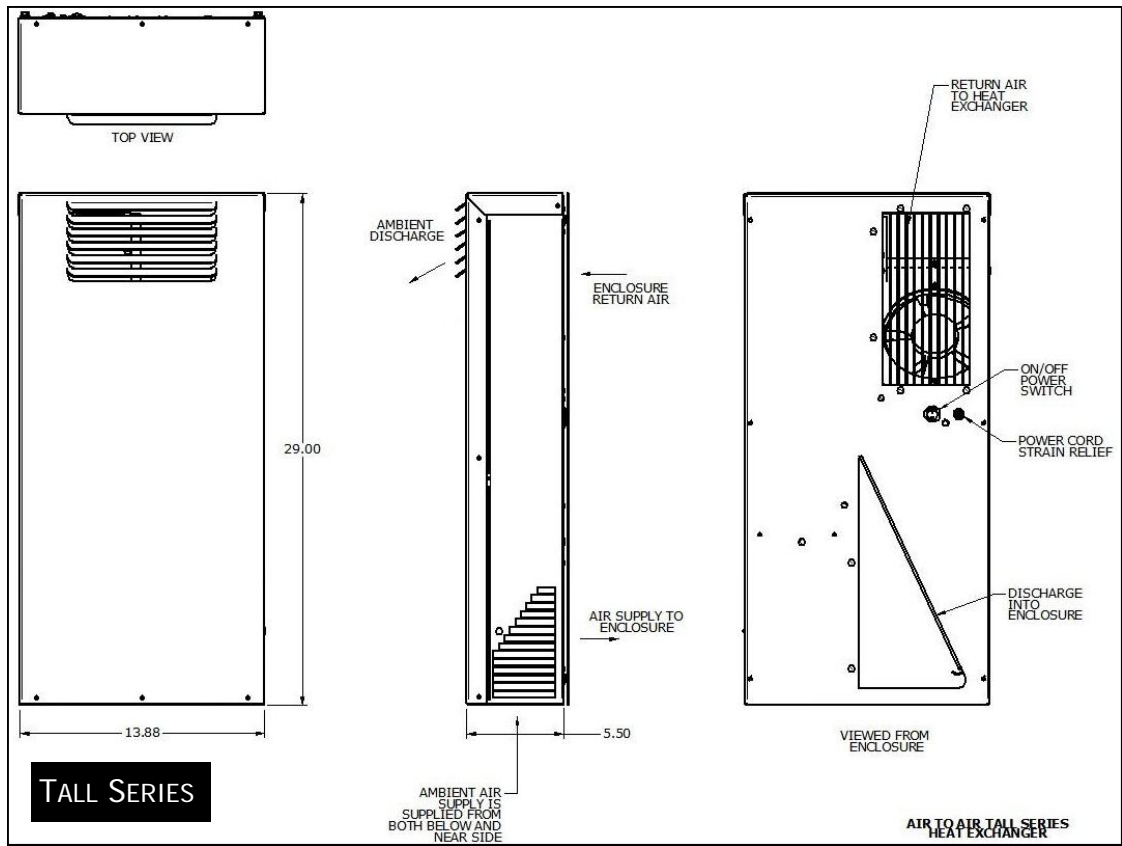
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SLIM SERIES

AIR TO AIR SLIM SERIES HEAT EXCHANGER



TALL SERIES

AIR TO AIR TALL SERIES HEAT EXCHANGER



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