

Product Information Packet

Model AHP-1200XHC

NEMA-4, Heat/Cool, Solid State Air Conditioner, 24 VDC

with TC-3F Temperature Control

Part #0-3035-3-000

Thank you for your purchase. Information has been enclosed regarding the installation, specifications, and wiring of your solid-state assembly. Please read and follow all instructions carefully before installation. Only qualified technicians should install this equipment.

If you have any questions regarding your equipment, please do not hesitate to call us at 773-342-4900, and we will be happy to assist you. We are open from 8:30 am-5:00 pm Central Time.

Included in this packet you will find:

Installation Notes for Air Conditioners

Product Literature and Specifications

Assembly Drawing # 1200-B-A13

Wiring Drawing # SK060968

Installation Drawing # 1200-A-F57

Temperature Control Information

Warranty Information



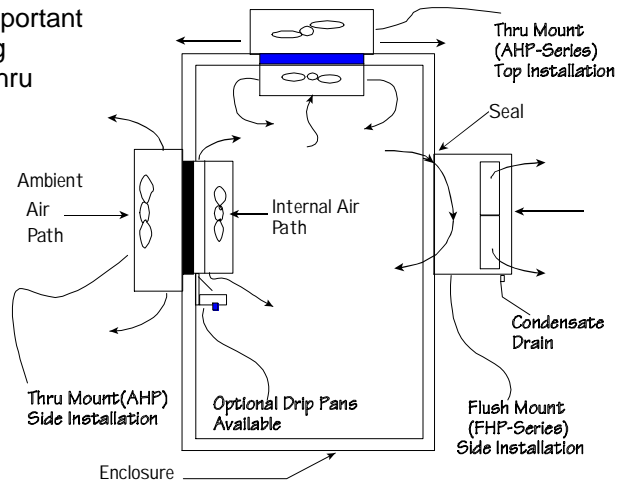
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sales@thermoelectric.com www.thermoelectric.com

Important Installation Notes for Air Conditioners

Mounting Styles: Both 'thru mount' and 'flush mount' units can be positioned in any orientation and on any enclosure surface. It is important to consider interior air flow patterns when determining the mounting location. Also of importance is an unrestricted flow of ambient air thru the hot side heat exchanger. Ease of access and inspection must be considered for those applications in particularly severe environments which may require occasional maintenance.

Vertical (Side/Front/Back) Mounting:

Vertical mounting refers to the vertical direction of the cold side or interior fins and is recommended for applications with high humidity, poor and incomplete cabinet seals or any condition which may cause the cold side fins to be maintained at temperatures below the dew point for long periods of time allowing for the formation of condensation. The vertical fin direction provides a drip path whereupon condensation can be collected via a moisture removal system (standard on FHP-units) or a drip pan positioned below the cold side fins. Drip pans are optional for thru mount units.



Condensate Removal System:

All FHP-Series and AHP-1400 air conditioners contain a built-in condensate removal system. The condensate kit consists of a antifungal sponge with a condensate wick. PVC tubing is also provided for drainage. Drip pans are optional for thru mount units which must be evaluated on an individual basis. Equations defining a relationship between the cold side fin and enclosure temperatures are provided to assist in the evaluation.

Top Mounting:

Though often the easiest location to mount it is often the most difficult to protect from condensation in this orientation due to the fin orientation, gravity and any susceptible components below. If a drip pan is employed by the end user use caution to place the pan far enough away from the internal fan to minimize the restriction of air flow. The pan should cover the fin ends as well as the fan area. When there is a choice, the vertical orientation is preferred by most users.

Maintenance:

Since the technology is solid-state, there are no filters, compressors, or fluorocarbons to maintain. The only moving parts are the fans. It is recommended for harsh or dirty environments that the heat sinks be cleaned from time to time. This can be accomplished by directing compressed air over the external fins or on NEMA 4 versions by hosing the unit down. This will increase the overall life and performance of the system.

Cautions:

Take care when mounting not to damage the seal between the hot and cold side sinks. Do not attempt to mount a unit to a warped surface or try to make the units mounting surface conform to an unflat surface. Do not pinch or damage any leads when mounting. Do not over tighten any installation screw, use reasonable force. Always mount with any condensate drain down. Do not compress the cold side between the hot side and any other surface. Do not obstruct the airflow on either side. When mounting consider the natural air flows of the enclosure. Connect power only after the installation is complete.

Notes on condensation:

Condensation occurs at the cold side fins when the surface temperature goes below the dew point. To reduce or remove condensate, consider the following:

- Regulate the Fin Temperature above the Dewpoint.
- Keep Enclosure Closed and Sealed from Outside Humidity.
- Use Desiccant (Moisture absorbing Granules.)
- Employ Condensate Removal System/Drip Pans.

If you have any questions regarding your installation, Please feel free to contact our technical department for assistance at 773-342-4900.

AHP-1200

Air Conditioner

Air Cooled
Thru Mount
NEMA-12, 4,4X

24 VDC Input

FEATURES

- Compact, (only 15"L X 7.35"W X 8.17"D)
- Weighs only 18 lbs. (8.2 kg)
- Excels in high ambient temperatures
- Environmentally safe
- Dual efficiency versions available
- No compressor, fluorocarbons or filters
- Virtually maintenance-free operation
- Stainless steel exterior housing
- Versions to withstand corrosive environments, shock and vibration
- Mounts and operates in any orientation

INCLUDES

- Adjustable temperature control
- Gasket and mounting hardware
- Power input leads



SPECIFICATIONS

	MODEL	PART NUMBER	NOTES	PERFORMANCE RATING BTU/HR	VOLTAGE VDC	RUNNING CURRENT AMPS.	WEIGHT LBS.(KG)	TEMP. CONTROL *	OPERATING AMBIENT °C	AGENCY APPROVALS (ETL)
N E M A 1 2	→ AHP-1200	0-3095-0-000	Cool only	512-580	24	9.0	18 (8.2)	NONE	-10/+70	PENDING
	AHP-1200	0-3085-0-000	Cool only	512-580	24	9.0	18 (8.2)	TC-6F	-10/+70	PENDING
	AHP-1200	0-30F5-0-000	Cool only	512-580	24	9.0	18 (8.2)	85°F (30°)	-10/+70	PENDING
	AHP-1200	0-3055-0-000	Cool only	512-580	24	9.0	18 (8.2)	EXT*	-10/+70	PENDING
	AHP-1200HC	0-3035-1-000	Heat/Cool	512-580	24	9.0	18 (8.2)	TC-3F	-10/+70	PENDING
	→ AHP-1200HC	0-3055-1-000	Heat/Cool	512-580	24	9.0	18 (8.2)	EXT**	-10/+70	PENDING
N E M A 4 X	→ AHP-1200XE	0-3095-4-000	Cool only	512-580	24	9.0	18 (8.2)	NONE	-28/+70	PENDING
	AHP-1200XE	0-3085-4-000	Cool only	512-580	24	9.0	18 (8.2)	TC-6F	-28/+70	PENDING
	AHP-1200XE	0-30F5-4-000	Cool only	512-580	24	9.0	18 (8.2)	85°F (30°)	-28/+70	PENDING
	AHP-1200XE	0-3055-4-000	Cool only	512-580	24	9.0	18 (8.2)	EXT*	-28/+70	PENDING
	AHP-1200XEHC	0-3035-5-000	Heat/Cool	512-580	24	9.0	18 (8.2)	TC-3F	-28/+70	PENDING
	AHP-1200XEHC	0-3055-5-000	Heat/Cool	512-580	24	9.0	18 (8.2)	EXT**	-28/+70	PENDING
	AHP-1200X	0-3095-2-000	Cool only	512-580	24	9.0	18 (8.2)	NONE	-28/+70	PENDING
	AHP-1200X	0-3085-2-000	Cool only	512-580	24	9.0	18 (8.2)	TC-6F	-28/+70	PENDING
	AHP-1200X	0-30F5-2-000	Cool only	512-580	24	9.0	18 (8.2)	85°F (30°)	-28/+70	PENDING
	AHP-1200X	0-3055-2-000	Cool only	512-580	24	9.0	18 (8.2)	EXT*	-28/+70	PENDING
	→ AHP-1200XHC	0-3035-3-000	Heat/Cool	512-580	24	9.0	18 (8.2)	TC-3F	-28/+70	PENDING
	AHP-1200XHC	0-3055-3-000	Heat/Cool	512-580	24	9.0	18 (8.2)	EXT**	-28/+70	PENDING

* Unit is set for 5-32 VDC external signal, relay(s) included

For other voltages contact TECA

** Unit is set for 5-32 VDC external signal, H-Bridge relay(s) included

For full shock and vibration model AHP-1200XM contact TECA

MOUNTING STYLE

ENVIRONMENTS

NEMA-4,4X IP 56

670 BTU/hr @ +20 °F ΔT *

100 Watts L35 L50

The graph illustrates the relationship between Cooling Capacity (BTU/HR and Watts) and Temperature Differential (C and F) for three different ambient temperatures. The X-axis represents Cooling Capacity in both BTU/HR (top scale, 0 to 683) and Watts (bottom scale, 0 to 200). The Y-axis represents Temperature Differential in both Celsius (left scale, -45 to 5) and Fahrenheit (right scale, -81 to 9). Three lines are plotted, corresponding to different ambient temperatures: 20 C (68 F) Ambient (red line), 40 C (104 F) Ambient (black line), and 60 C (140 F) Ambient (blue line). All three lines show a positive linear relationship between Cooling Capacity and Temperature Differential. The 20 C (68 F) Ambient line is the highest, followed by the 40 C (104 F) Ambient line, and then the 60 C (140 F) Ambient line. This indicates that for a given temperature differential, the cooling capacity is highest at the lowest ambient temperature and lowest at the highest ambient temperature.

Temperature Differential (C)	Temperature Differential (F)	Cooling Capacity (Watts) - 20 C Ambient	Cooling Capacity (Watts) - 40 C Ambient	Cooling Capacity (Watts) - 60 C Ambient
-40	-72	0	0	0
-35	-63	25	20	15
-30	-54	50	40	30
-25	-45	75	60	45
-20	-36	100	80	60
-15	-27	125	100	75
-10	-18	150	120	90
-5	-9	175	140	105
0	0	200	160	120
5	9	225	180	135

A diagram showing a closed-loop system. A rectangular box represents the system. Inside the box, there is a component with a feedback loop indicated by a blue arrow. A red arrow points from the output of the system back to the input, representing the feedback path. A purple arrow points from the output of the system to the right, representing the forward path.

Technical drawing of the 12X00.21A heat exchanger, showing three views: front, side, and top.

Front View (Left):

- Overall width: 7.35 *
- Overall height: 15.00
- Label: External Hot Side Fan
- Input Power Cable connection point at the bottom.

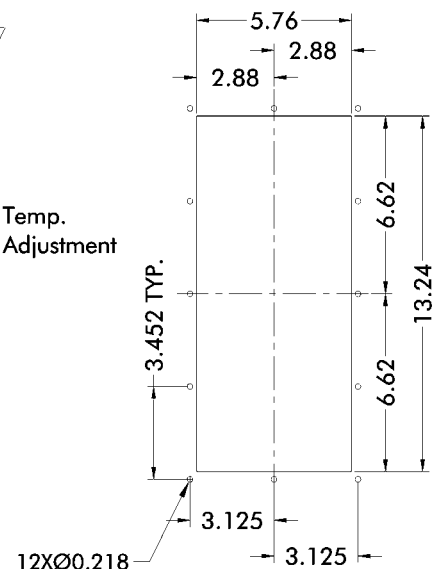
Side View (Middle):

- Overall width: 8.17
- Internal cold side fan width: 4.04
- Overall height: 13.00
- Label: Internal Cold Side Fan
- Mounting Surface at the bottom.

Top View (Right):

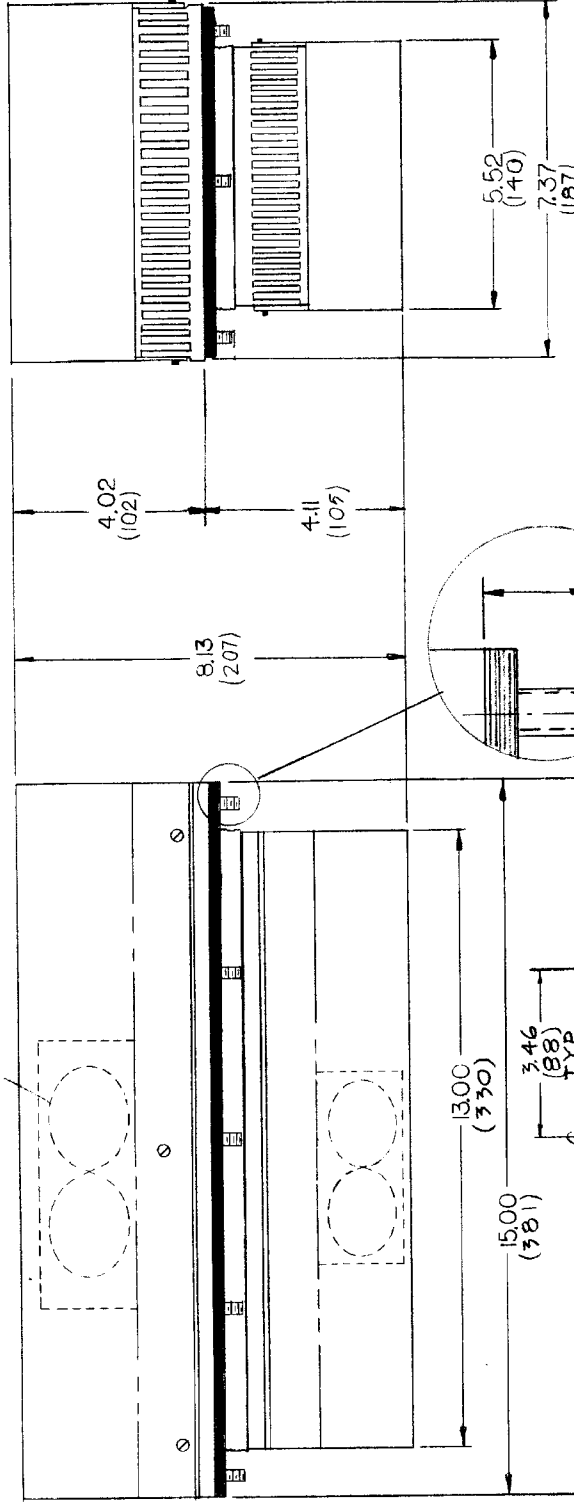
- Overall width: 5.50 *
- Overall height: 3.452 TYP.
- Label: (12) 10-32 Studs
- Temp. Adjustment screw location.
- Bottom label: 12X00.21A

MOUNTING CUTOUT DIMENSIONS



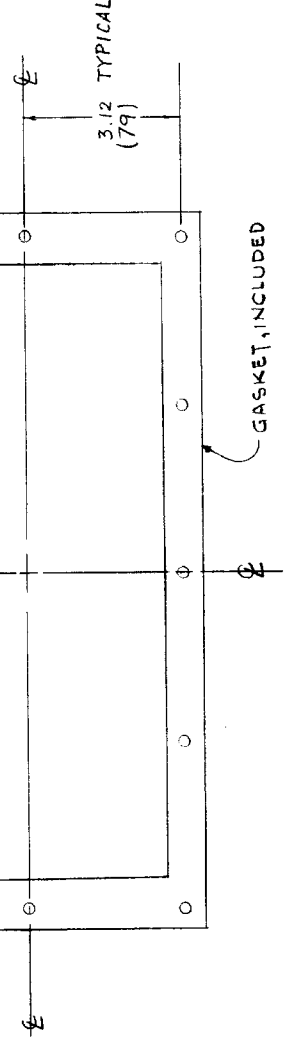
LTR	DESCRIPTION	DATE	APPROVED
A	CHANGED NUMBER OF STUDS AND DRAWING NUMBER	12-10-88	T. Z.
B	ADD METRIC DIMENSIONS	03.23.90	I.N.

FANS, (REF.)



AHP-1200X

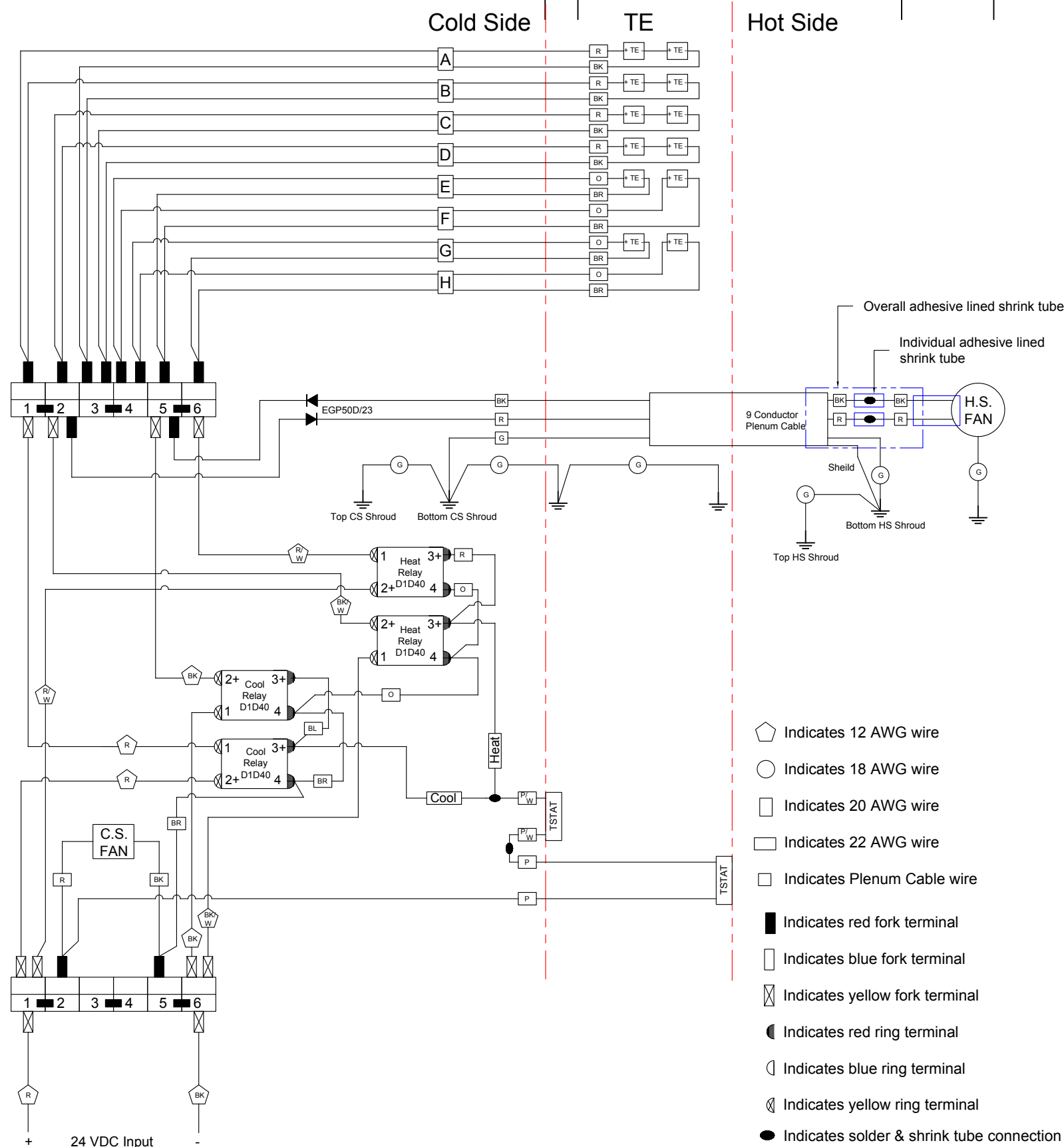
NOTE: DIMENSIONS IN INCHES
(MILLIMETERS)



GASKET, INCLUDED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		ThermoElectric Cooling America Corp.	
+	xx ±	AHP-1200 ASSEMBLY FOR LITERATURE	
-	xxx ±		
MATERIAL			
FINISH			
APPROVALS	DATE	SIZE	DRAWING NO.
DRAWN Q.M.	2-11-88	B	1200-B-A/3
CHECKED		SCALE 1" = 3/8"	SHEET 1000
			OF

REV	DESCRIPTION	Date	APPROVED
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FINISH:

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

DECIMALS	ANGLE
.XX +/—	+/-
.XXX+/-	FRACTION +/—

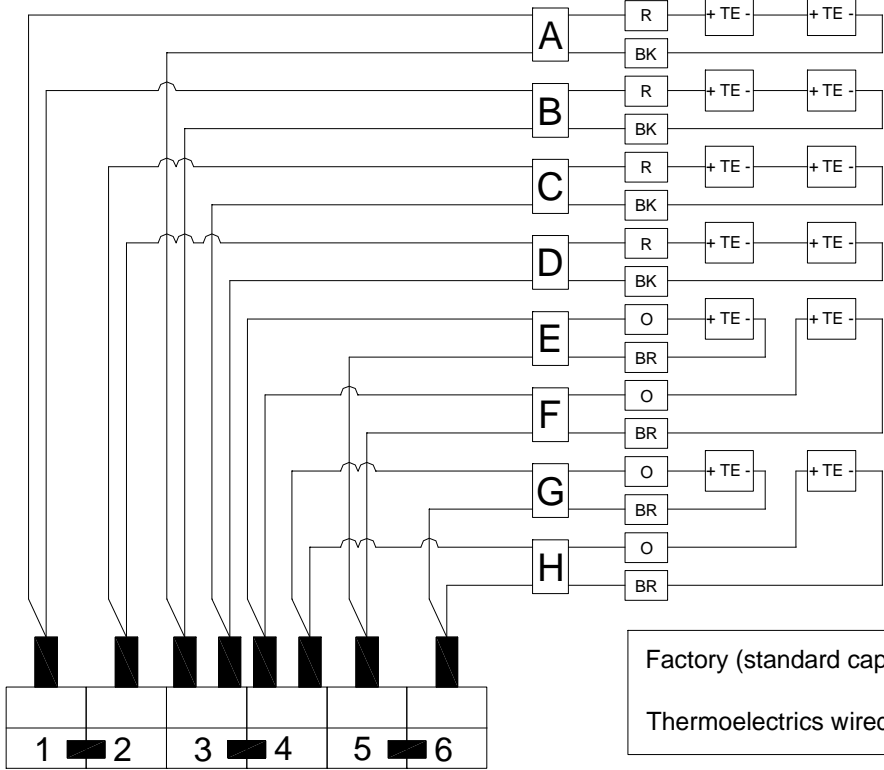
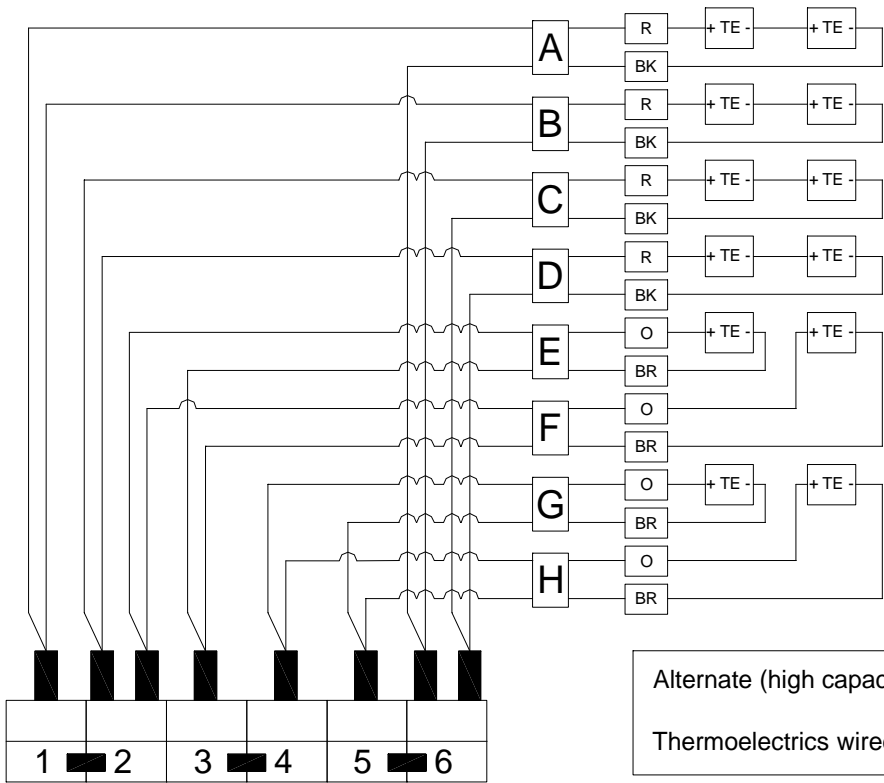
MATERIAL:

THERMOELECTRIC COOLING AMERICA CORP.

AHP-1200XHC 24 VDC
WITH TC-3F CONTROLLER
WIRING DIAGRAM

DRAWN BY: AA	DRAWING # SK060968	REV LEVEL
DATE: 09/25/06	SCALE	MASTER: SK060942
D6771		SHEET

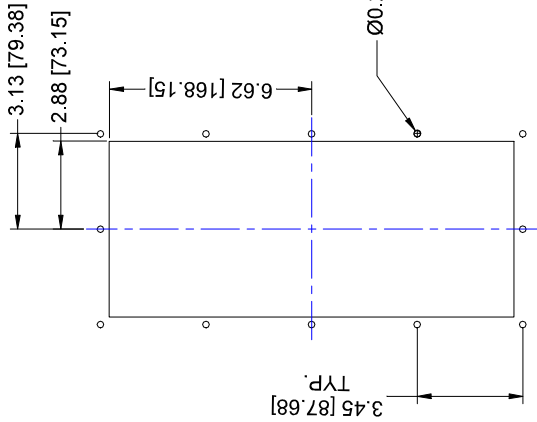
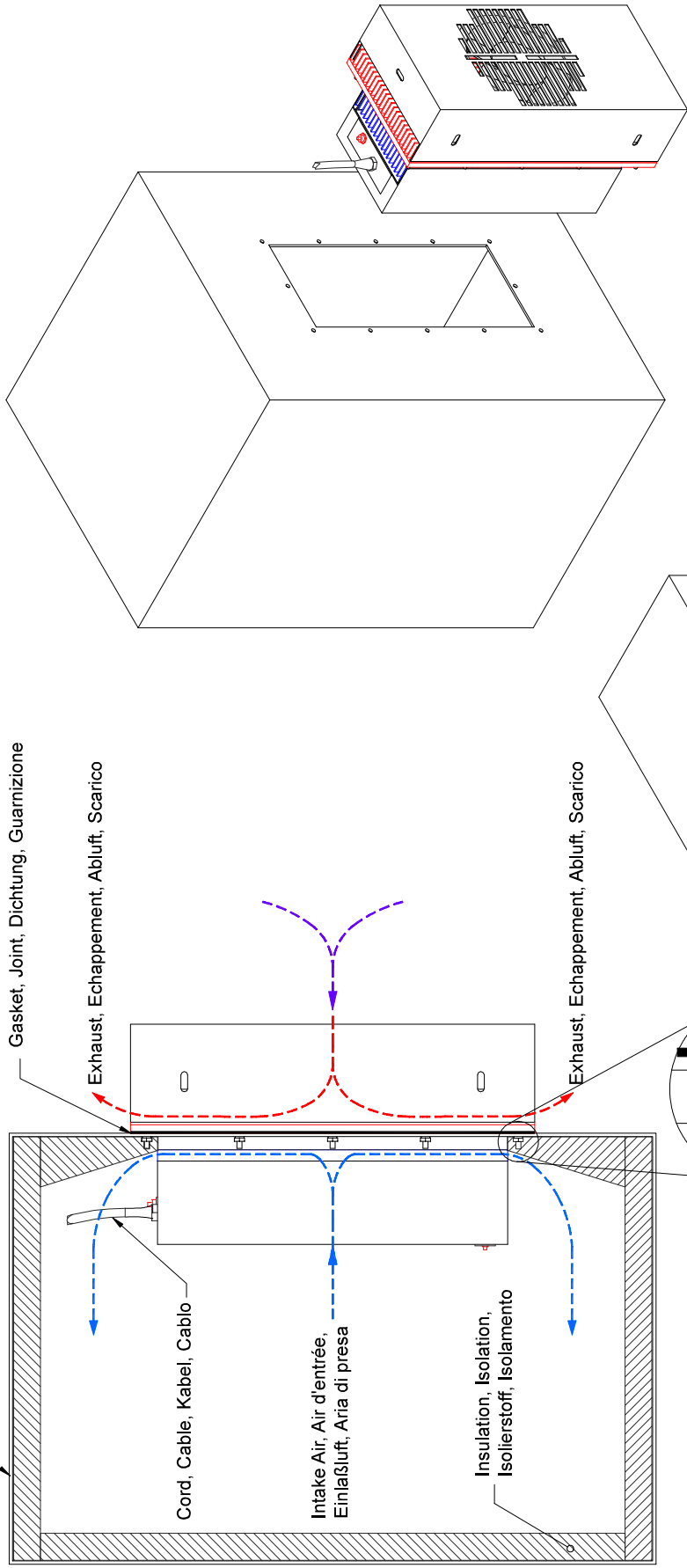
REV	DESCRIPTION	Date	APPROVED



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	DECIMALS .XX +/- .XXX+/-		ANGLE +/- FRACTION +/-		AHP-1200 DC SERIES STANDARD & ALTERNATE TE WIRING			
	FINISH:		MATERIAL:		DRAWN BY: AA		DRAWING #	
					DATE: 01/15/07	SK080114		
					D7050	SCALE	MASTER: SK060942	SHEET

Mounting, Monture, Montage, Montaggio

Enclosure, Armoire, Gehäuse, Armadi



Alternate, Alternative, Alternativa

English, Français, Deutsch, Italiano
Dimensions: Inches [Millimeters]

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FINISH:		DECIMALS ANGLE +/- .XX +/- FRACTION +/-		AHP-1200 SERIES TYPICAL FIELD MOUNTING	
MATERIAL:		DRAWN BY: AA		REV LEVEL	
		DATE: 05/21/03		1200-A-F57	
		D6033		SCALE	
		MASTER: MASTER		SHEET	

Control/Thermostats

The model **TC-6F** (Cool Only) thermostat is designed using two magnetic reed switches in conjunction with a solid state relay. A three position switch is provided to adjust between the following settings:

Position	Control Temp.	Tolerance	Reset Differential
1	35°C	+/-5°C	10°C Maximum
2	25°C	+/-5°C	10°C Maximum
3	Constant On		

The model **TC-3F** (Heat/Cool) thermostat incorporates the same technology as the TC-6F. It contains a single setting each for both heating and cooling as referenced below:

Mode	Control Temp.	Tolerance	Reset Differential
Cooling	35°C	+/-5°C	-10°C Maximum
Heating	15 °C	+/-5°C	+10°C Maximum

LIMITED WARRANTY

In the event a defect in material or workmanship is discovered in any of TECA's products within one year after the date they are delivered to Buyer, and if: (a) TECA is notified of the defect in writing by certified mail within 14 days of the date of discovery; (b) TECA may then either, at its sole discretion, inspect the product at Buyer's location, or require that the product be made available at Buyer's expense at TECA's premises for TECA's inspection within 14 days of the date of notification; and (c) the products are defective and the defects result from faulty materials and/or workmanship and not in any way from accident, misuse, misapplication, mishandling, modification, or alteration by the Buyer or the shipper, then TECA shall, at its sole option, repair or exchange defective products free of charge to Buyer, or credit to buyer the price of the defective products. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE EXCLUDED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL TECA BE LIABLE FOR ANY CLAIM BASED UPON BREACH OF EXPRESS OR IMPLIED WARRANTY OR ANY OTHER DAMAGES WHETHER SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOST PROFITS, BUSINESS INTERRUPTION, OR LOSS OF BUSINESS OR CUSTOMER RELATIONSHIPS.

RETURNED GOODS, RESTOCKING CHARGES

In order to return merchandise for any reason (repair, replacement, or credit) a return authorization number must be issued by TECA. New merchandise may not be returned for credit beyond 60 days from shipment. Charges for incidental or other damages may also be made. All returned goods must be sent freight prepaid. A restocking charge of 15% will apply. On special equipment and custom modified equipment orders, additional incremental cancellation charges may be made.