

Product Information Packet

Model FHP-1501XEHC

Flush Mount, Solid State, NEMA-4X, Air Conditioner

Heat/Cool With TC-3F Temperature Control

Part #7-2131-5-000

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 # SK050521

Wiring Drawing # SK050417

Installation Drawing # SK050520

Temperature Control Information

Warranty Information

The logo for Teca, featuring the word "teca" in a bold, lowercase, sans-serif font. The letter "t" is stylized with a vertical line extending upwards from its left side.

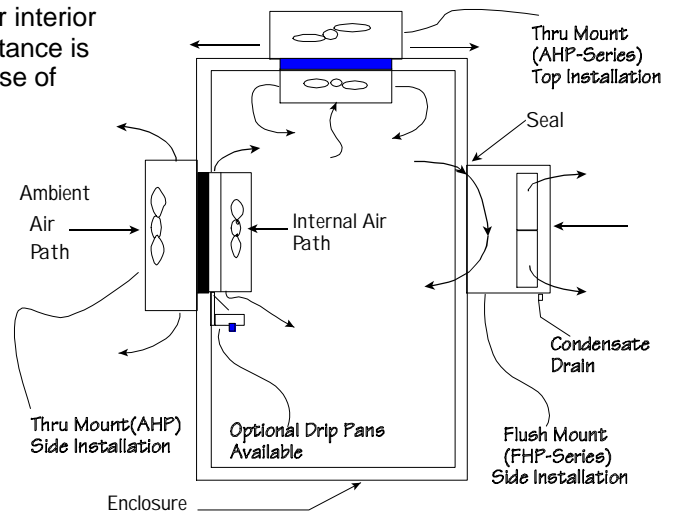
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Installation Notes for 1501XE Series Air Conditioners

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. Moisture is absorbed into the wick at the cold side heat exchanger and "wicked" to the hot side heat exchanger to be evaporated.

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.

Mounting:

- Thread 10-32 mounting hardware (included) into 10-32 mounting holes on the air conditioner.
- Apply a thin bead of Dow RTV 737 Clear Silicone Adhesive or equivalent on the interface surface of the air conditioner and gasket when the mounting surface can flex.
- Install gasket on the air conditioner using 10-32 studs and clearance holes on the gasket as guide.
- Apply a thin bead of Dow RTV 737 Clear Silicone Adhesive or equivalent on the interface of gasket and enclosure when the mounting surface can flex.
- Install the air conditioner on the enclosure, use 10-32 Hex Nut (included), 10-32 Star Washers (included) and 6-32 screws (for AHP-1501 only) to secure the air conditioner on the enclosure.
- To seal the air conditioner/enclosure interface gradually increase the torque to the screws in an alternating pattern to 10-15 in-lb [1.13-1.70 N.m] or until the gasket is compressed by 1/2 it's thickness..

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.

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

FHP-1501

Thermoelectric Air Conditioner

Air Cooled
Flush Mounted
Nema-12, 4/4X

FEATURES

- Externally mounted (no intrusion)
- Mounts in multi-unit array for incremental capacity
- Compact (only 15" L X 12" W X 9" D)
- Weighs only 55 lbs. (25 kg)
- Ambient range -10°C to +70°C
- No compressor, fluorocarbons or filters
- Virtually maintenance-free operation
- Stainless steel exterior housing
- Dual voltage (120/240 VAC)
- No moving parts except fans
- Environmentally safe



INCLUDES

- Integral power supply
- Condensate removal system
- Adjustable temperature control
- Mounting gasket for Nema-12, Nema-4 seal
- Mounting hardware

APPLICATIONS

Used to cool electronic enclosures where limited amount of space is available for through mount style.

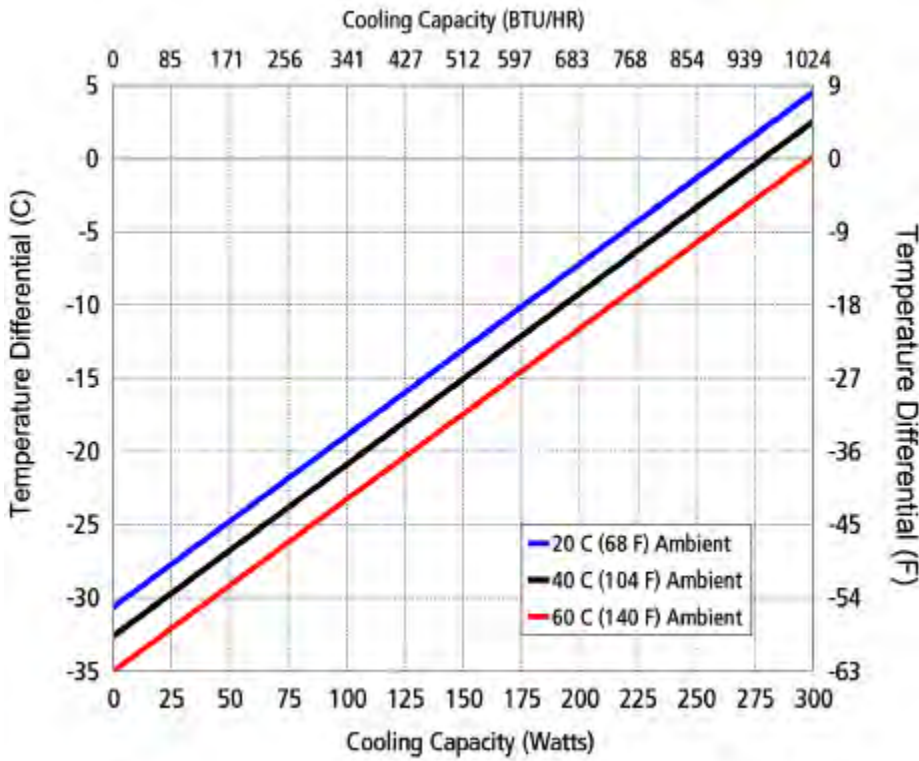
SPECIFICATIONS

	MODEL	PART NUMBER	NOTES	PERFORMANCE RATING BTU/HR	VOLTAGE VAC 50/60 HZ	CURRENT AMPS.	WEIGHT LBS. (KG)	TEMP. CONTROL *	CONDENSATE REMOVAL	OPERATING AMBIENT °C	AGENCY APPROVALS (ETL)
NEMA 12	FHP-1501	7-2181-0-000	Cool only	1000-1100	120/240	7.5/5.0	55(25)	TC-6F	Included	-10/+70	UL1995/CSA22.2, CE
	FHP-1501	7-2151-0-000	Cool only	1000-1100	120/240	7.5/5.0	55(25)	OPT*	Included	-10/+70	UL1995/CSA22.2, CE
	FHP-1501HC	7-2131-1-000	Heat/Cool	1000-1100	120/240	7.5/5.0	55(25)	TC-3F	Included	-10/+70	UL1995/CSA22.2, CE
	FHP-1501HC	7-2151-1-000	Heat/Cool	1000-1100	120/240	7.5/5.0	55(25)	OPT*	Included	-10/+70	UL1995/CSA22.2, CE
NEMA 4X	FHP-1501XE	7-2181-4-000	Cool only	1000-1100	120/240	8.0/5.5	55(25)	TC-6F	Included	-10/+60	UL1995/CSA22.2, CE
	FHP-1501XE	7-2151-4-000	Cool only	1000-1100	120/240	8.0/5.5	55(25)	OPT*	Included	-10/+60	UL1995/CSA22.2, CE
	FHP-1501XEHC	7-2131-5-000	Heat/Cool	1000-1100	120/240	7.5/5.0	55(25)	TC-3F	Included	-10/+70	UL1995/CSA22.2, CE
	FHP-1501XEHC	7-2151-5-000	Heat/Cool	1000-1100	120/240	7.5/5.0	55(25)	OPT*	Included	-10/+70	UL1995/CSA22.2, CE

*OPT; Unit is set up for TC-3300 controller (or similar)

FHP-1501

PERFORMANCE CURVE



Equation of line: $y = \Delta T(^{\circ}C) \quad x = \text{Capacity (Watts)}$

Ambient Temp	20°C	40°C	60°C
Enclosure Air	$y = .127x - 30.6$	$y = .127x - 32.6$	$y = .127x - 35.0$
Cold Sink	$y = .093x - 30.6$	$y = .093x - 32.6$	$y = .093x - 35.0$

MOUNTING STYLE

Flush Mounted

ENVIRONMENTS

Nema-12 IP 40 (maintains IP 52)

Nema-4/4X IP 56

RATING (TRADITIONAL)

950 BTU/hr @ 0 °F ΔT

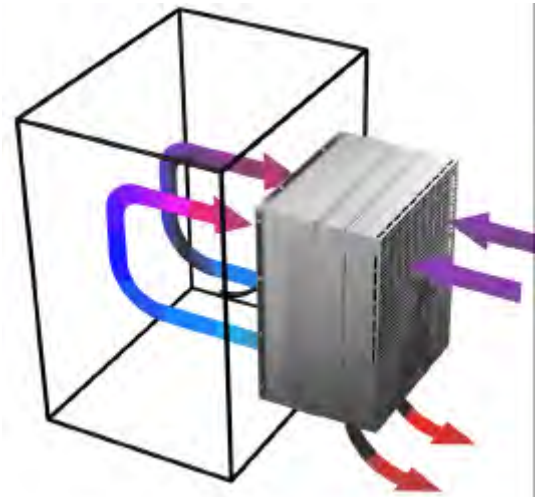
1270 BTU/hr @ +20 °F ΔT *

RATING (DIN 3168)

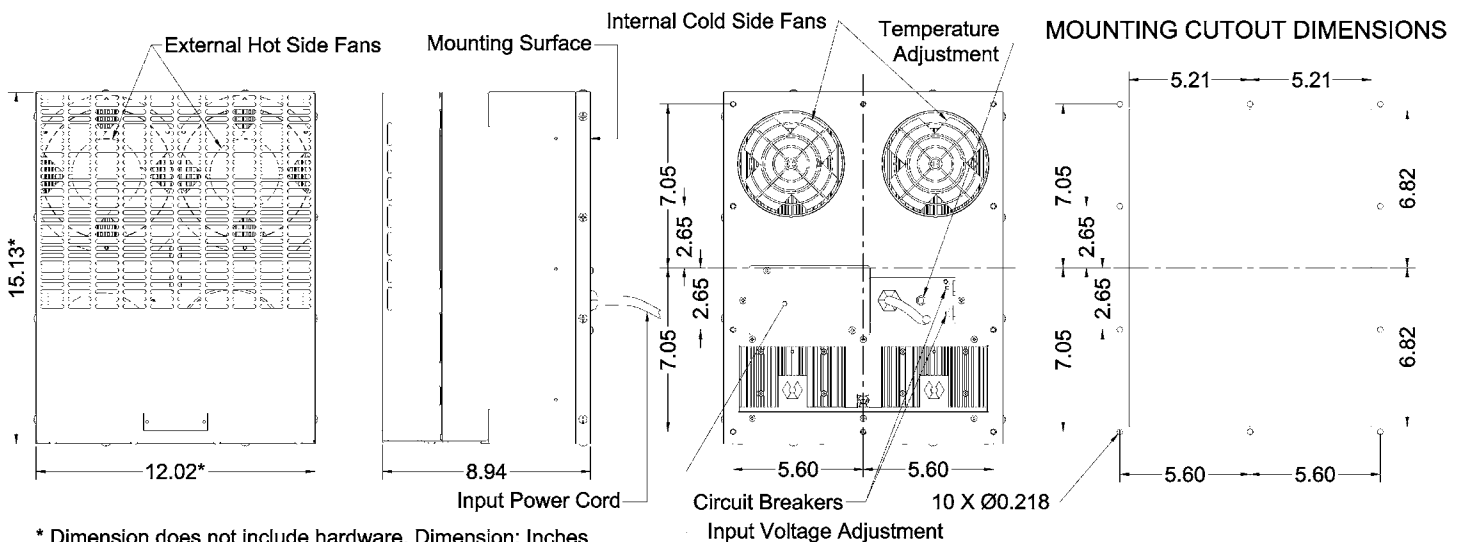
278 Watts L35 L35

162 Watts L35 L50

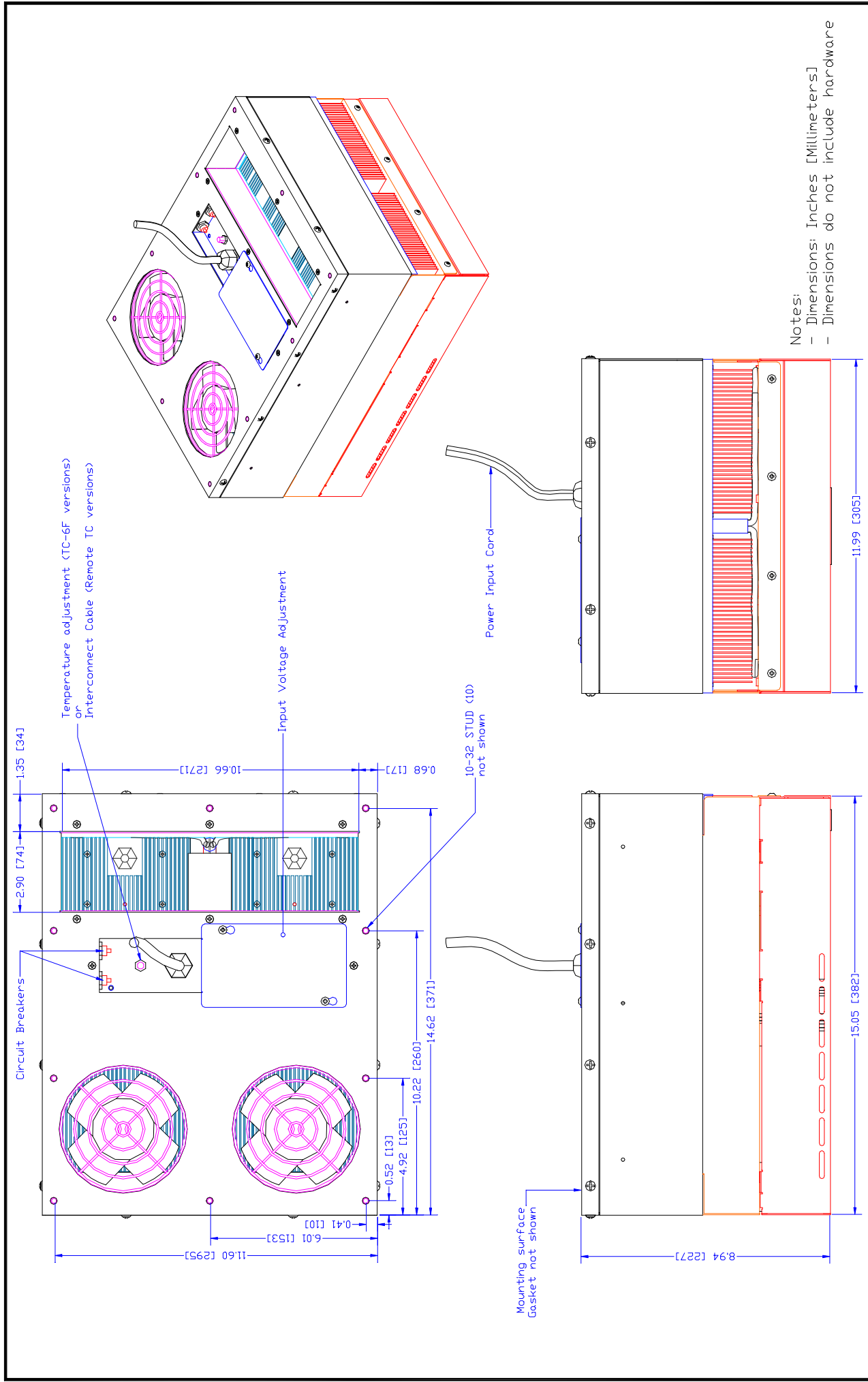
* See page 6



DIMENSIONS

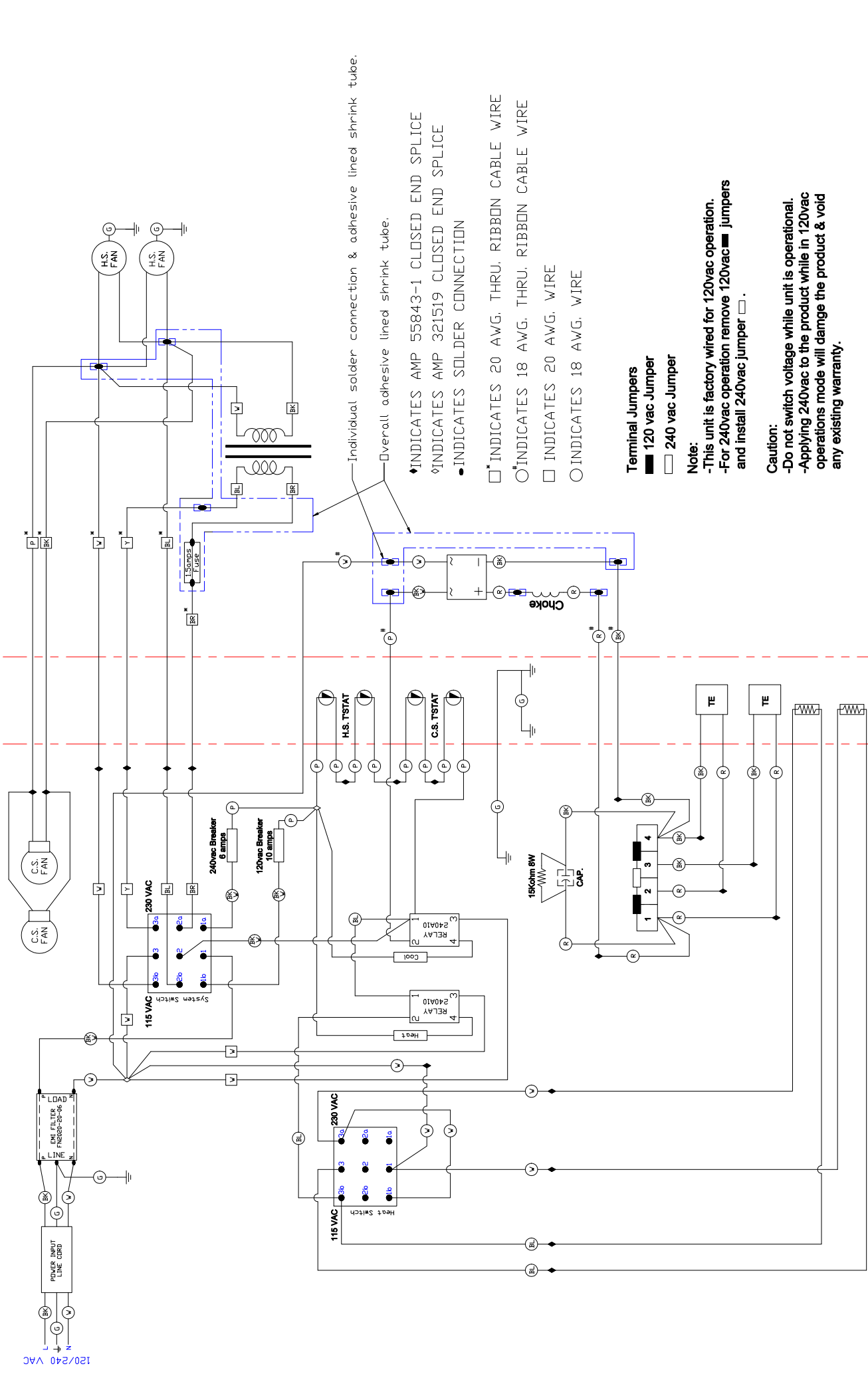


* Dimension does not include hardware. Dimension: Inches
Mounting hardware and gasket included but not shown.



Notes:
 - Dimensions: Inches [Millimeters]
 - Dimensions do not include hardware

REV	DESCRIPTION	Date	APPROVED	DRAWING #		REV LEVEL
				AA	SK050521	SHEET
				DATE: 05/20/05	SCALE	SHEET
				D6448	MASTER: SK050106	
				THERMOELECTRIC COOLING AMERICA CORP. FHP-1501 / FHP-1501XE ASSEMBLY		
INFORMATION DISCLOSED HEREIN IS THE CONFIDENTIAL PROPERTY OF TECA CORP. RECIPIENT SHALL NOT USE THE INFORMATION IN ANY UNAUTHORIZED MANNER. FINISH:				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS: .XX +/- .015 FRACTION: XXX +/- .005 ANGLE: +/-1° MATERIAL:		



Individual solder connection & adhesive lined shrink tube.

Overall adhesive lined shrink tube.

- ◆ INDICATES AMP 55843-1 CLOSED END SPLICE
- ◊ INDICATES AMP 321519 CLOSED END SPLICE
- INDICATES SOLDER CONNECTION

- INDICATES 20 AWG. THRU. RIBBON CABLE WIRE
- INDICATES 18 AWG. THRU. RIBBON CABLE WIRE
- INDICATES 20 AWG. WIRE
- INDICATES 18 AWG. WIRE

Terminal Jumpers

- 120 vac Jumper
- 240 vac Jumper

Note:

- This unit is factory wired for 120vac operation.
- For 240vac operation remove 120vac ■ jumpers and install 240vac jumper □.

Caution:

- Do not switch voltage while unit is operational.
- Applying 240vac to the product while in 120vac operations mode will damage the product & void any existing warranty.

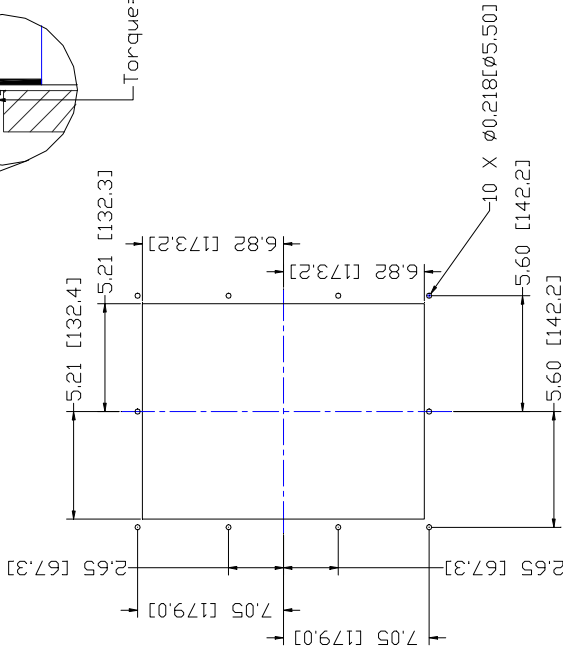
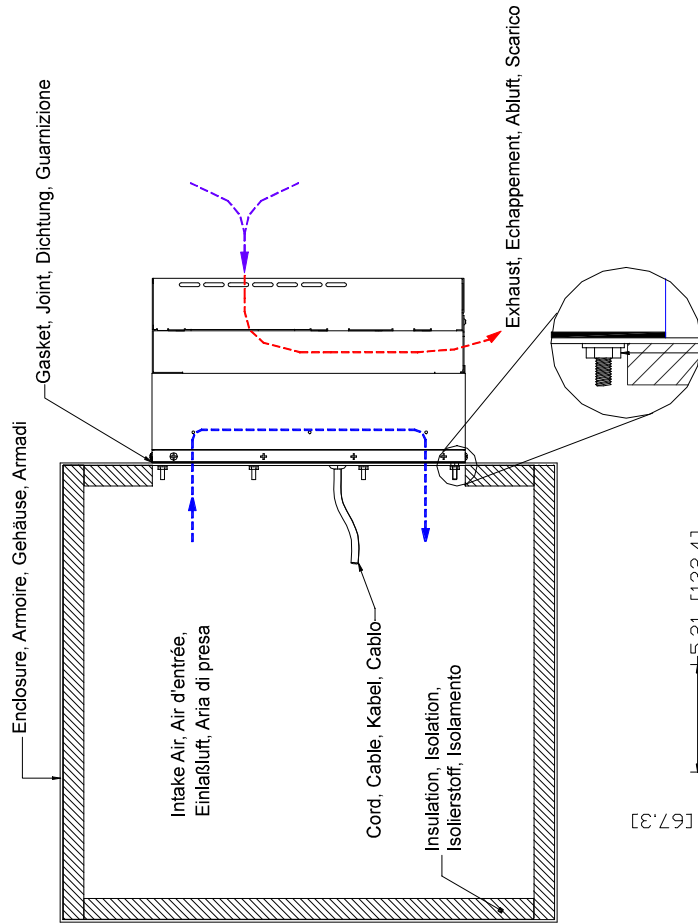
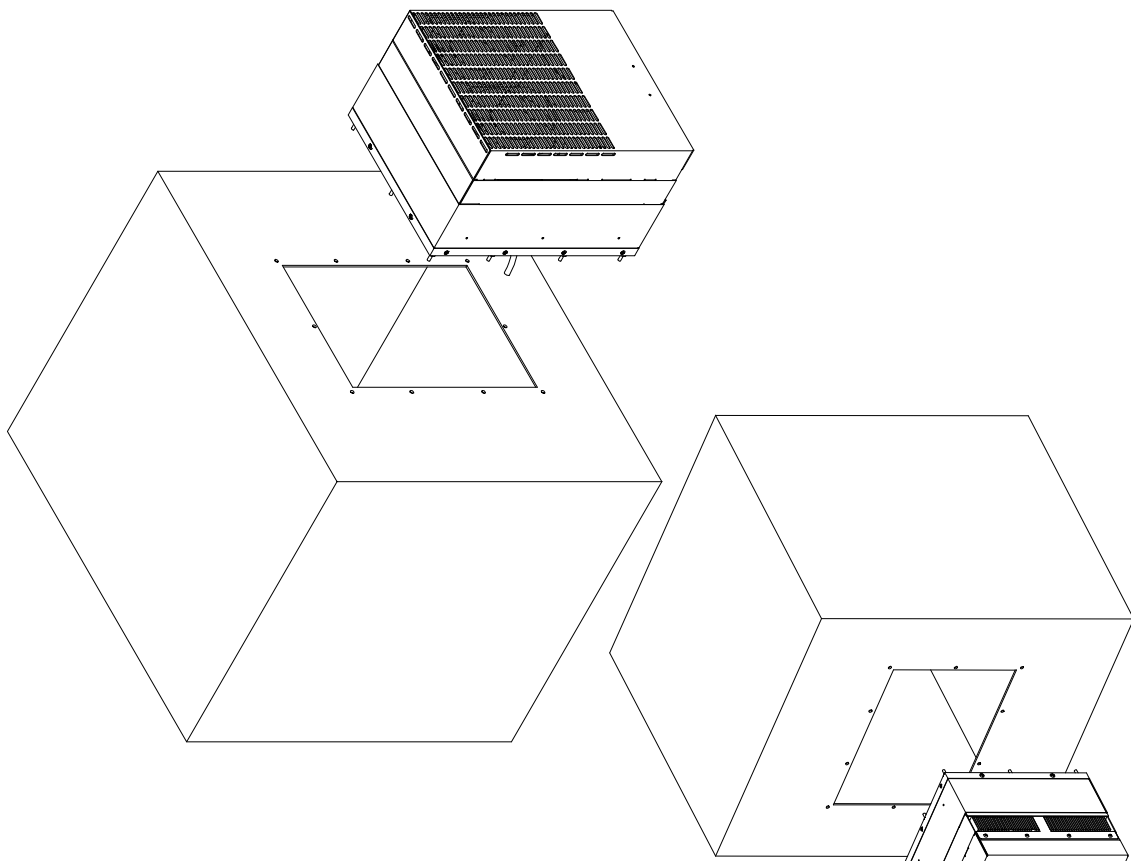
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:	
DECIMALS .XX +/-	ANGLE +/-
.XXX +/-	FRACTION +/-
MATERIAL:	

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THERMOELECTRIC COOLING AMERICA CORP.	
FHP-1501XEHC WITH TC-3F	
WIRING DIAGRAM	
DRAWN BY: AA	DRAWING # SK050417
DATE: 04/15/05	SCALE: D6406
REV LEVEL	SHEET
	MASTER: SK040939

REV	DESCRIPTION	Date	APPROVED
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Mounting, Montage, Montaggio



Torque=10-15 in.lb [1.13-1.70 N.m]

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

Alternate, Alternative, Alternativa

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UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 DECIMALS .XX +/-
 FRACTION XXX +/-
 ANGLE +/-
 MATERIAL:

REV	A	Added torque value.	12/13/05	AA	APPROVED
REV		DESCRIPTION	Date		

DRAWN BY:	AA	DRAWING #	SK050520	REV LEVEL	A
DATE:	05/19/05	SCALE		SHEET	
	D6447	MASTER:	MASTER		

THERMOELECTRIC COOLING AMERICA CORP.
FHP-1501 SERIES
FIELD MOUNTING

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



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teca@thermoelectric.com www.thermoelectric.com

DECLARATION OF CONFORMITY

TYPE OF EQUIPMENT	Electrical Heat Pump, Airconditioner, Solid State Cooling Device
BRAND NAME	AHP, FHP
TYPE DESIGNATION	1501 may be followed by XE
YEAR OF MANUFACTURE	Refer to the first two digits of the serial number on the manufacturers ID label
MANUFACTURER	TECA Corporation 4048 W. Schubert Ave. Chicago, IL, 60639 U.S.A.
APPLIED STANDARDS	
Safety of household & similar electrical appliances; Part 1: General requirements	EN 60 335-1
Safety of household & similar electrical appliances; Part 2: Particular requirements for electrical heat pumps, airconditioners & dehumidifiers (IEC 335-2-40 : 1992, Modified)	EN 60 335-2-40
Low voltage directive EMC Directive	73/23/EEC - European union (EU) 89/336/EEC - European union (EU)
TESTING AGENCY	ITS Intertek Testing Services ETL SEMKO
VP of Engineering Andy Brecklin	

November 15, 2005

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.