

# Product Information Packet

## Model FHP-401

120 VAC Flush Mounted Solid State Air Conditioner

Set For Remote Temperature Control

Part #7-F050-0-000

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 8:00 am-4:30 pm Central Time.

Included in this packet you will find:

Product Literature and Specifications

Assembly Drawing # SK110824

Wiring Drawing # SK110852

Installation Drawing # SK110826

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 stem.

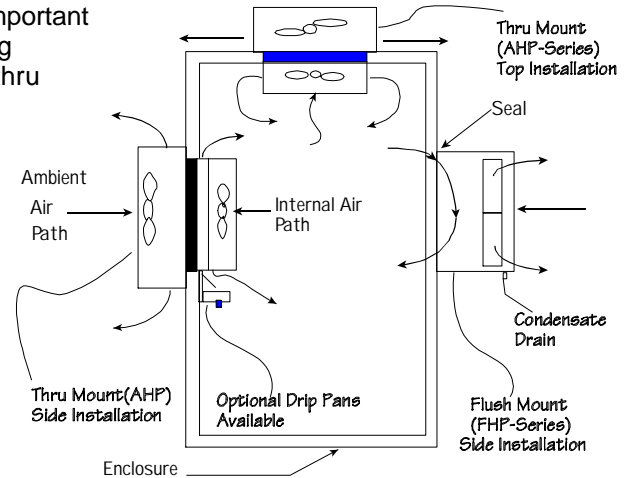
**ThermoElectric Cooling America Corporation**  
4048 W. Schubert Avenue • Chicago, IL (U.S.A.) 60639  
Ph: 773/342-4900 Fx: 773/342-0191  
sales@thermoelectric.com www.thermoelectric.com

# Important Installation Notes for Air

**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.

# FHP-401 Air Conditioner Series

Air Cooled  
Flush Mount  
Nema-12

120/240 VAC

## FEATURES

- Compact (only 10" X 5.86" X 8.95")
- Weighs only 18 lbs. (8.2 kg)
- Mounts and operates in any orientation: horizontal, vertical, etc.
- Low vibration and noise
- No moving parts except fans
- Environmentally safe
- Dual voltage
- No compressor, fluorocarbons or filters
- Virtually maintenance-free operation
- Stainless steel exterior housing

## INCLUDES

- Integral power supply 120/240 VAC
- Gasket and mounting hardware
- Temperature control

## OPTIONS

- Internal mounting
- Custom finishes or no cover
- Consult factory for other voltages



## SPECIFICATIONS

MODEL	PART NUMBER	NOTES	PERFORMANCE RATING BTU/HR	VOLTAGE VAC 50/60HZ	CURRENT AMPS.	TEMP. CONTROL	OPERATING AMBIENT TEMPERATURE RANGE °C	OPERATING ENCLOSURE TEMPERATURE RANGE °C
FHP-401	7-F090-0-000	Cool only	310-350	120	1.3	None	-10/+70	-10/+60
FHP-401	7-F080-0-000	Cool only	310-350	120	1.3	TC-6F	-40/+70	-10/+60
FHP-401	7-F0F0-0-000	Cool only	310-350	120	1.3	85°F (30°C)	-40/+70	-10/+60
FHP-401	7-F050-0-000	Cool only	310-350	120	1.3	EXT*	-40/+70	-10/+60
FHP-401HC	7-F0I0-1-000	Heat/Cool	310-350	120	1.3	TC-7F	-40/+70	-10/+60
FHP-402	7-F092-0-000	Cool only	310-350	240	0.70	None	-10/+70	-10/+60
FHP-402	7-F082-0-000	Cool only	310-350	120	0.70	TC-6F	-40/+70	-10/+60
FHP-402	7-F0F2-0-000	Cool only	310-350	120	0.70	85°F (30°C)	-40/+70	-10/+60
FHP-402	7-F052-0-000	Cool only	310-350	120	0.70	EXT*	-40/+70	-10/+60
FHP-402HC	7-F0I2-1-000	Heat/Cool	310-350	120	0.70	TC-7F	-40/+70	-10/+60

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

NEMA 12

# FHP-401

## MOUNTING STYLE

Flush Mount

## ENVIRONMENTS SERVED

NEMA-12 IP 52

## RATING (TRADITIONAL)

302 BTU/hr @ 0 °F ΔT

447 BTU/hr @ +20 °F ΔT

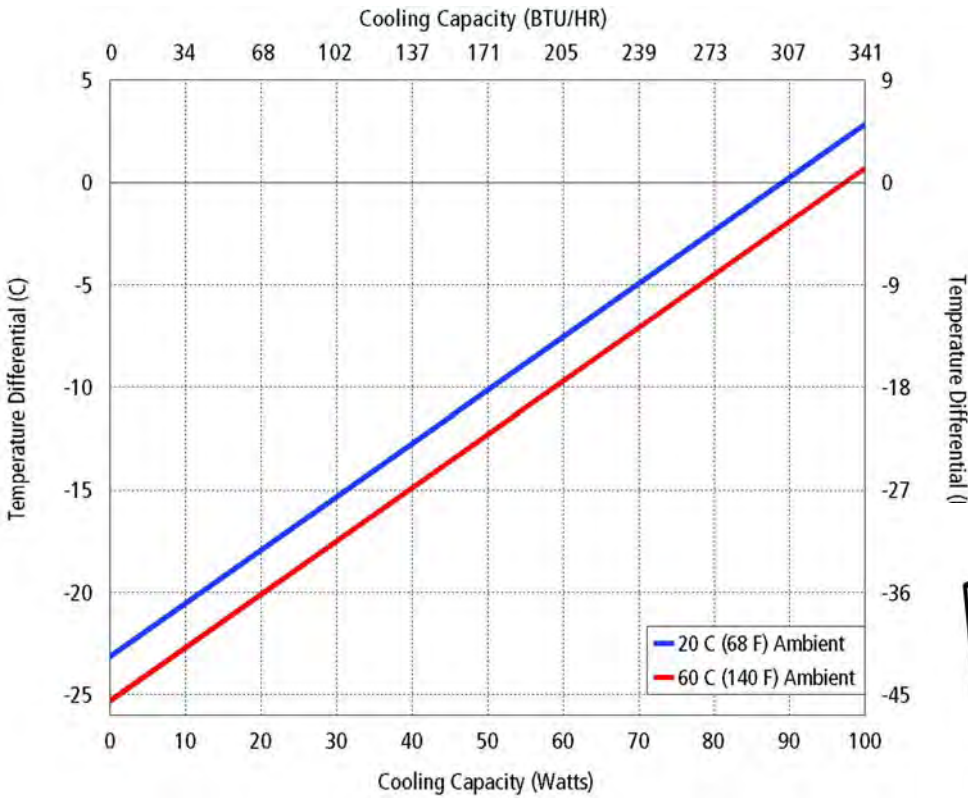
## RATING (DIN 3168)

91 Watts L35 L35

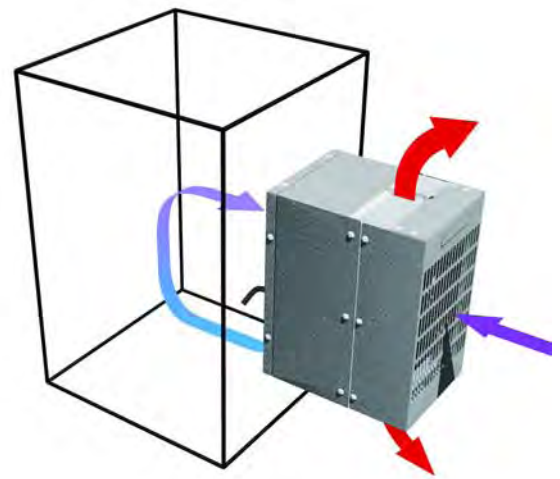
38 Watts L35 L50

\* See page 10

## PERFORMANCE CURVE

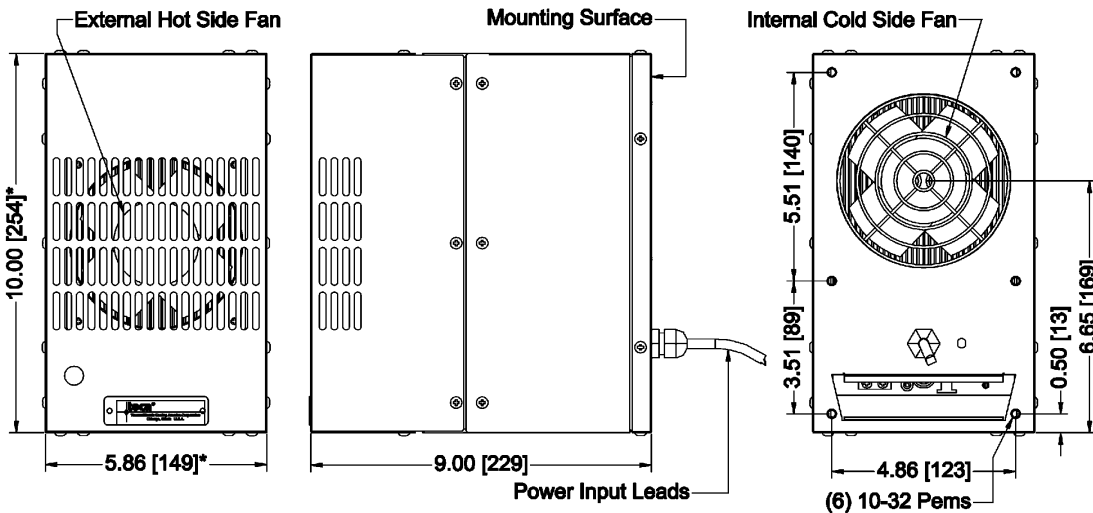


Equation of Line: $y = \Delta T(^{\circ}\text{C})$ $x = \text{Capacity (Watts)}$		
Ambient Temp	20°C	60°C
Enclosure Air	$y = .26x - 23.1$	$y = .26x - 25.3$



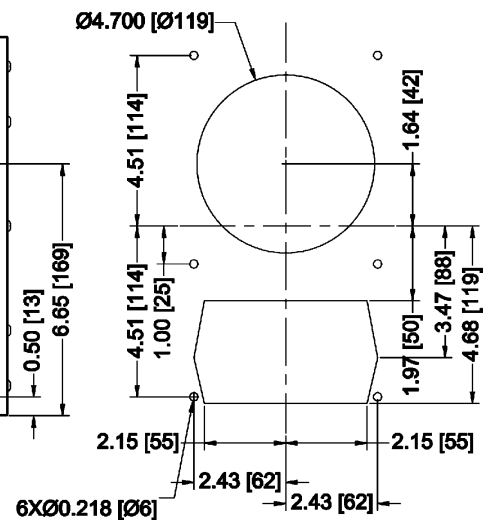
Air Flow Pattern

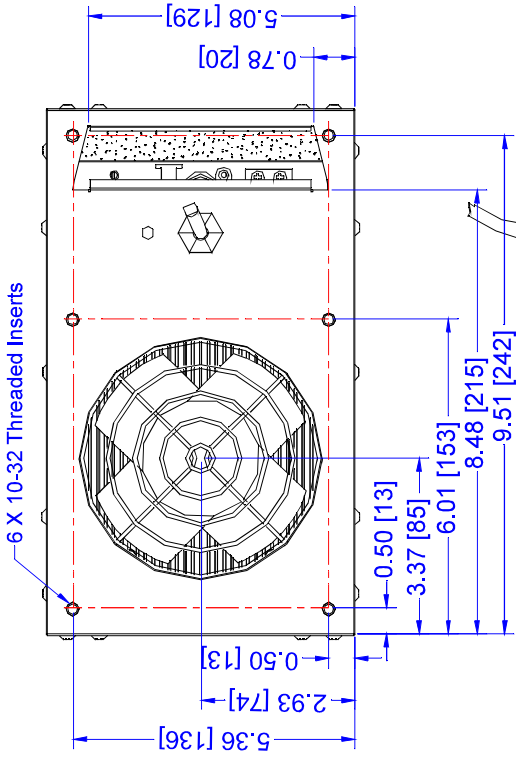
## DIMENSIONS



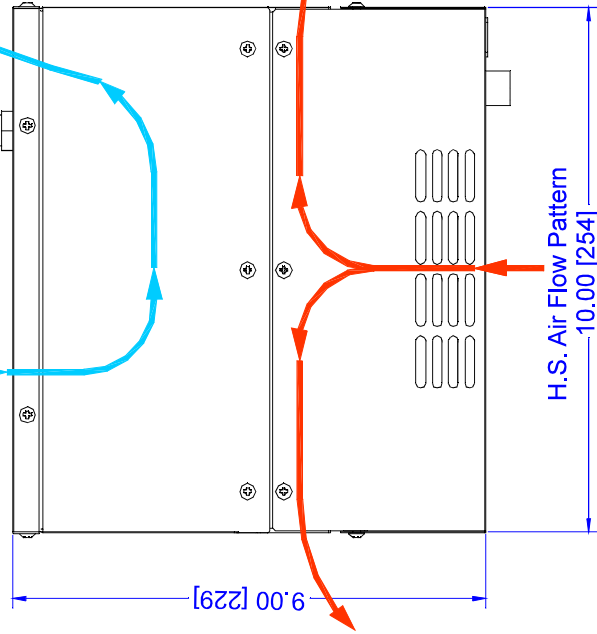
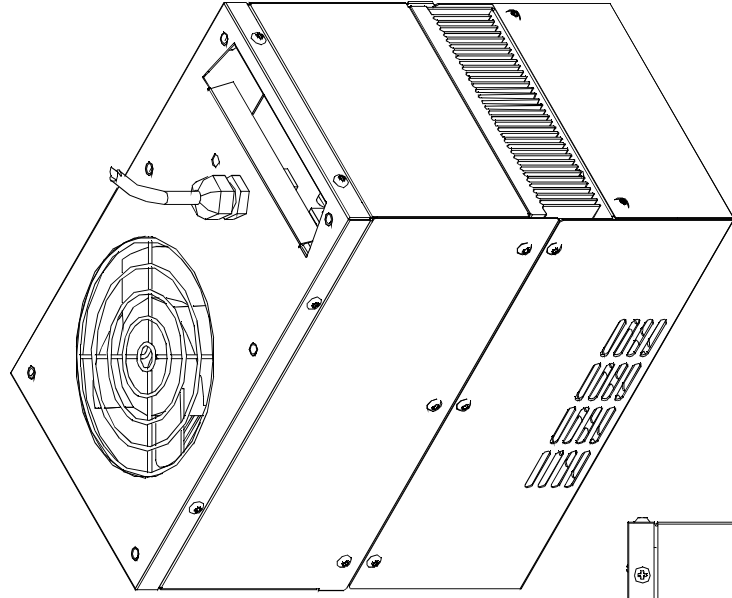
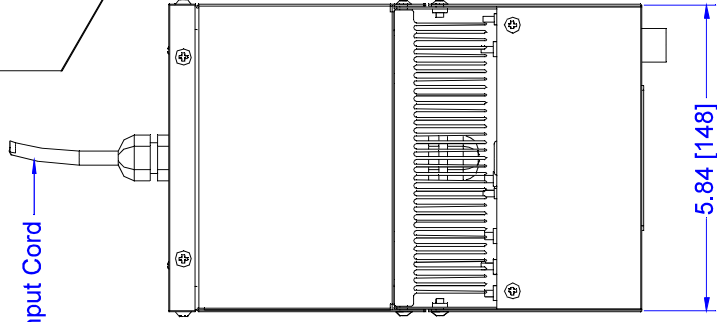
\* Dimension does not include hardware and gasket  
 Mounting hardware and gasket included but not shown  
 Dimensions: Inches [Millimeters]

## MOUNTING CUTOUT DIMENSIONS





C.S. Air Flow Pattern



Dimensions: Inches [Millimeters]

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FINISH:

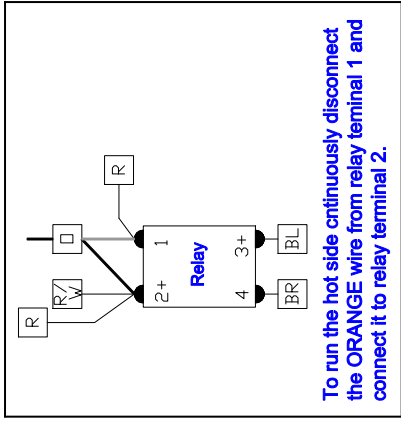
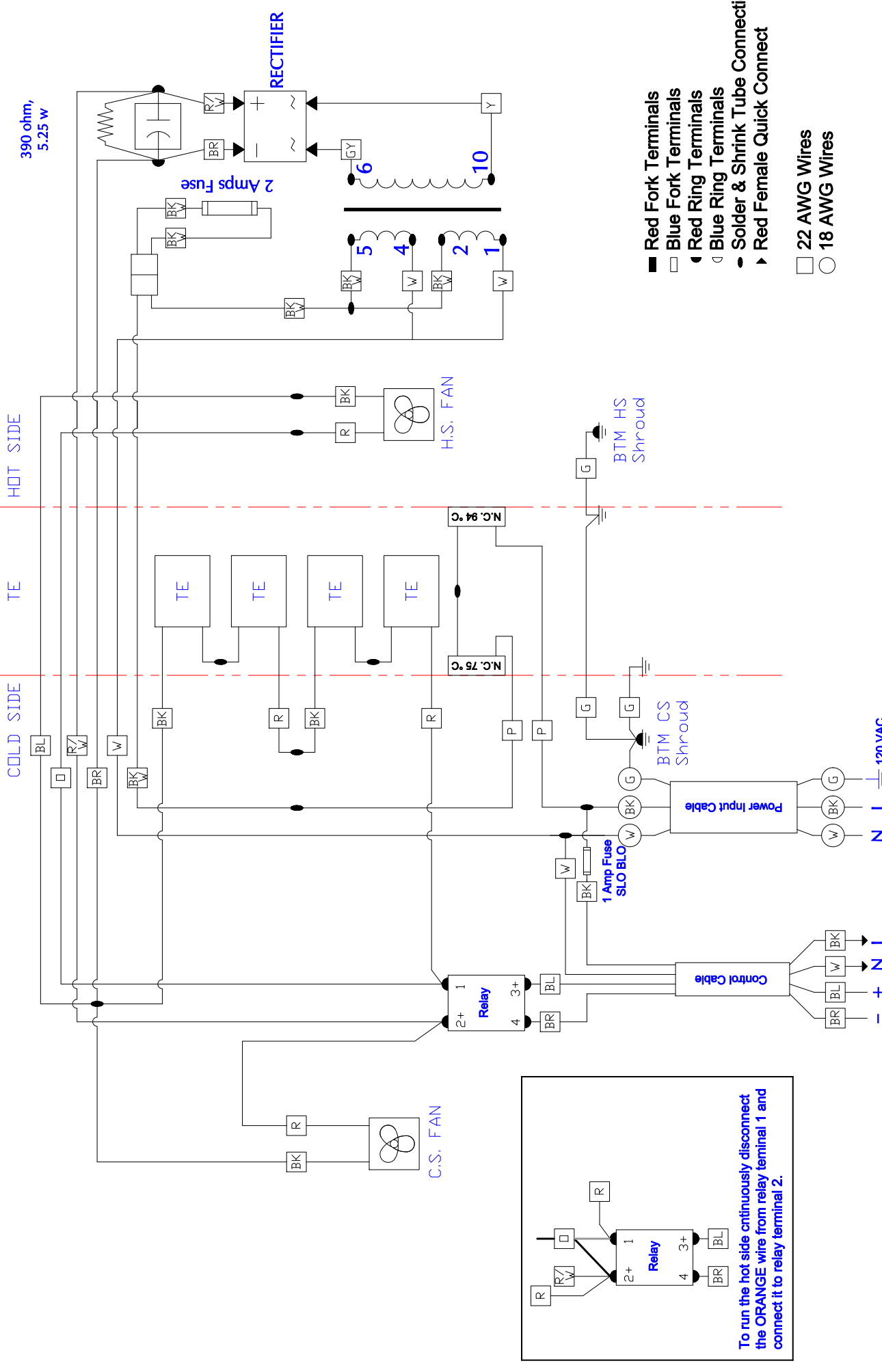
UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
TOLERANCES ARE:  
DECIMALS .XX +/-  
FRACTION XX/+-  
ANGLE +/-  
MATERIAL:

**THERMOELECTRIC COOLING AMERICA CORP.**  
**FHP-401**  
**ASSEMBLY**

DRAWN BY: AA  
DATE: 08/09/2011  
DRAWING # SK110824  
SCALE: D8170  
MASTER: MASTER

REV	DESCRIPTION	Date	APPROVED

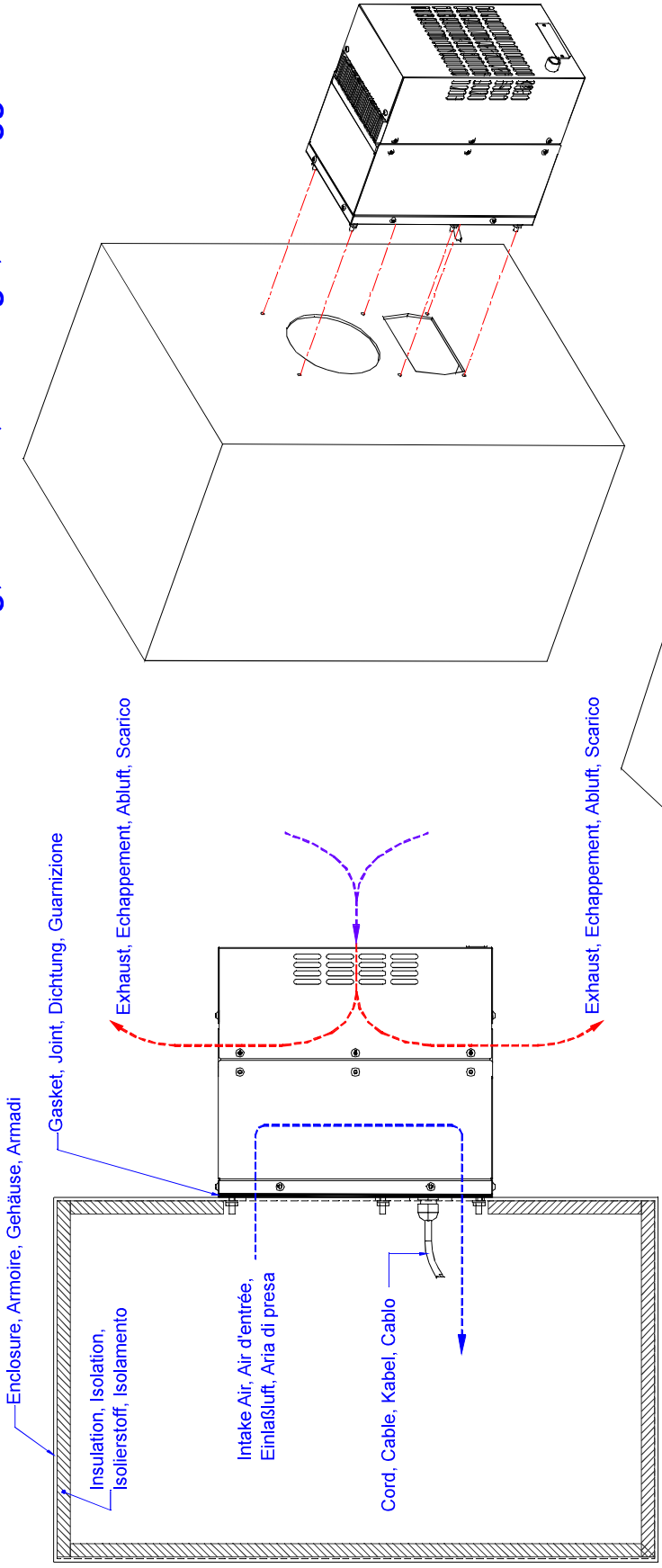
REV	LEVEL	SHEET



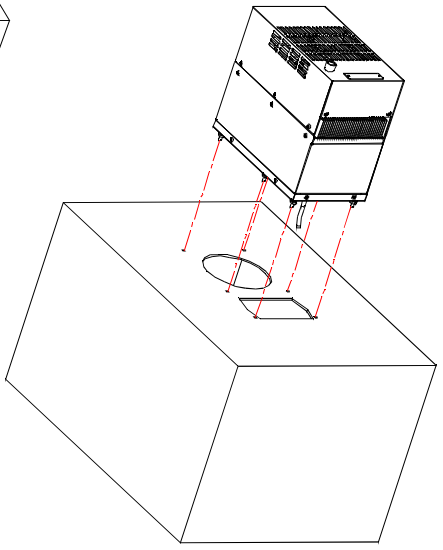
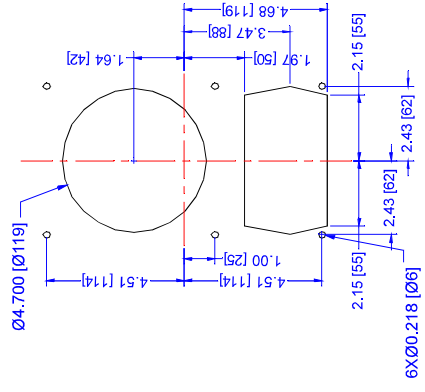
To run the hot side continuously disconnect the ORANGE wire from relay terminal 1 and connect it to relay terminal 2.

REV	DESCRIPTION	Date	AA	APPROVED	FINISH:	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:	DRAWN BY: AA	DRAWING # SK110852	REV LEVEL A	SHEET
A	Revised to reflect fans change from AC to DC; And changed from AC switching to DC switching control.	09/28/2011	AA			DECIMALS .XX +/- FRACTION .XXX +/- ANGLE +/- FRACTION +/-		<b>THERMOELECTRIC COOLING AMERICA CORP.</b> AHP-401/FHP-401 FOR REMOTE CONTROL WIRING DIAGRAM		

# Mounting, Monture, Montage, Montaggio



## MOUNTING CUTOUT DIMENSIONS



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

REV	DESCRIPTION	Date	APPROVED									
<p>INFORMATION DISCLOSED HEREIN IS THE CONFIDENTIAL PROPERTY OF TECA CORP. RECIPIENT SHALL NOT USE THE INFORMATION IN ANY UNAUTHORIZED MANNER.</p> <p>FINISH:</p>												
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</p> <p>TOLERANCES ARE:</p> <table border="1"> <tr> <td>DECIMALS</td> <td>ANGLE</td> <td>+/-</td> </tr> <tr> <td>.XX +/-</td> <td>FRAC</td> <td>+/-</td> </tr> <tr> <td>.XXX +/-</td> <td>FRAC</td> <td>+/-</td> </tr> </table>		DECIMALS	ANGLE	+/-	.XX +/-	FRAC	+/-	.XXX +/-	FRAC	+/-	<p>MATERIAL:</p>	
DECIMALS	ANGLE	+/-										
.XX +/-	FRAC	+/-										
.XXX +/-	FRAC	+/-										
<p><b>THERMOELECTRIC COOLING AMERICA CORP.</b></p> <p><b>FHP-400 / 500</b></p> <p><b>FIELD MOUNTING</b></p>												
DRAWN BY: AA		DRAWING #										
DATE: 08/09/2011		SK110826										
D8172		SCALE										
REV LEVEL		MASTER: SK110824										
SHEET												

## 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.