

# Product Information Packet

Model AHP-300FF

Solid State Air Conditioner

Part #0-7097-0-000

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 8:30 am-5:00 pm Central Time.

Included in this packet you will find:

Installation Notes for Air Conditioners

Product Literature and Specifications

Assembly Drawing # 301-B-A49

Wiring Drawing # 301-B-E13

Installation Drawing # 301-B-F2

Warranty Information



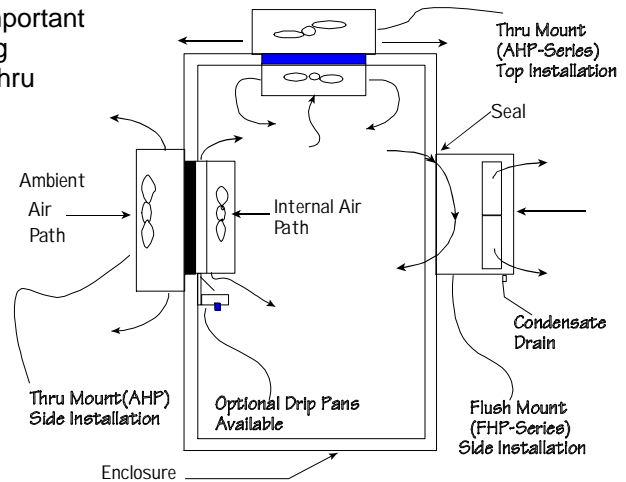
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# Important Installation Notes for Air

**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.

# AHP-300FF

Air Cooled  
Thru Mount  
Nema-12, 4, and 4x

# Solid-State Air Conditioner

## FEATURES

- Compact (only 10"L X 5.37"W X 6.45"D)
- Weighs only 7.5 lbs. (3.4 kg)
- Ambient range -10°C to +70°C
- No compressor, fluorocarbons or filters
- Virtually maintenance-free operation
- Mounts in any orientation
- X versions use mil-grade hot side fan
- XE versions use industrial grade high quality sealed fans

## INCLUDES

- Gasket and mounting hardware
- Hook-up leads
- Mounting hardware

## OPTIONS

- Temperature Control TC-6F DC for cool only
- Temperature Control TC-3F DC for heat/cool
- Adaptable for TC-3300 control

## APPLICATIONS

Cools electronic enclosures and control cabinets in telecommunications and telecom applications.



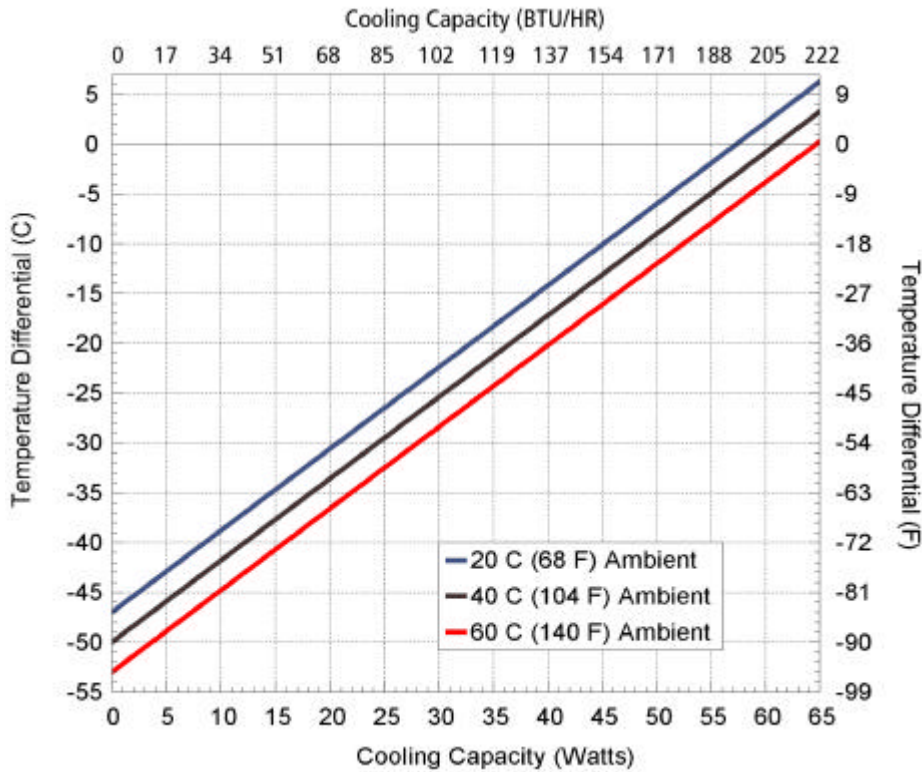
## SPECIFICATIONS

	MODEL	PART NUMBER	NOTES	PERFORMANCE RATING BTU/HR	VOLTAGE VDC *	CURRENT AMPS.	WEIGHT LBS.(KG)	TEMP. CONTROL	OPERATING AMBIENT °C
N 1 2	AHP-300FF	0-7097-0-000	Cool only	200-220	12/24/48	12/6/3	7.5(3.4)	none	-10/+70
	AHP-300FFHC	0-7094-1-000	Heat/Cool	200-220	12	12	7.5(3.4)	none	-10/+70
	AHP-300FFHC	0-7095-1-000	Heat/Cool	200-220	24	6	7.5(3.4)	none	-10/+70
N 4 X	AHP-300XE	0-7097-4-000	Cool only, sealed fan	200-220	12/24/48	12/6/3	7.5(3.4)	none	-10/+70
	AHP-300XEHC	0-7095-5-000	Heat/Cool, sealed fan	200-220	24	6	7.5(3.4)	none	-10/+70
	AHP-300X	0-7097-2-000	Cool only, Mil grade fan	200-220	12/24/48	12/6/3	9.2(4.2)	none	-10/+70
	AHP-300XHC	0-7094-3-000	Heat/Cool, Mil grade fan	200-220	12	12	9.2(4.2)	none	-10/+70
	AHP-300XHC	0-7095-3-000	Heat/Cool, Mil grade fan	200-220	24	6	9.2(4.2)	none	-10/+70

\*See also , "Power Supplies", P. 67

# AHP-300FF

## PERFORMANCE CURVE



	$y = \Delta T(^{\circ}\text{C})$ $x = \text{Capacity (Watts)}$		
Ambient Temp	20°C	40°C	60°C
Enclosure Air	$y = .82x - 47.0$	$y = .82x - 50.0$	$y = .82x - 53.0$
Cold Sink	$y = .64x - 47.0$	$y = .64x - 50.0$	$y = .64x - 53.0$

## MOUNTING STYLE

Thru Mount

## ENVIRONMENTS

Nema-12 IP 40 (maintains IP 52)

Nema-4/4X IP 56

## RATING (TRADITIONAL)

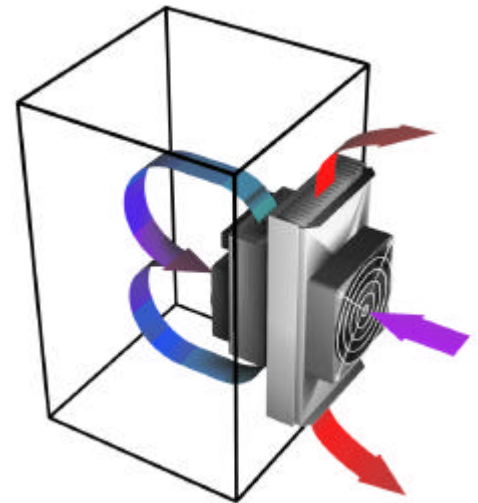
210 BTU/hr @ 0 °F  $\Delta T$ 250 BTU/hr @ +20 °F  $\Delta T$  \*

## RATING (DIN 3168)

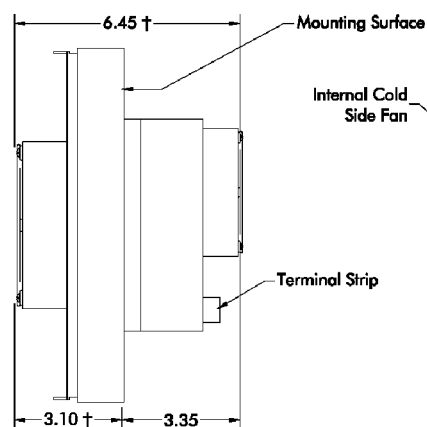
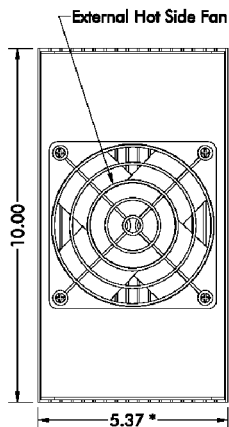
61 Watts L35 L35

44 Watts L35 L50

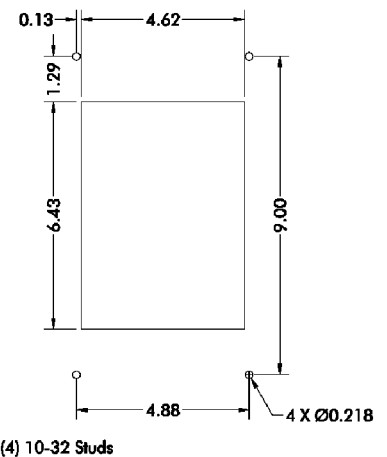
\* See page 6



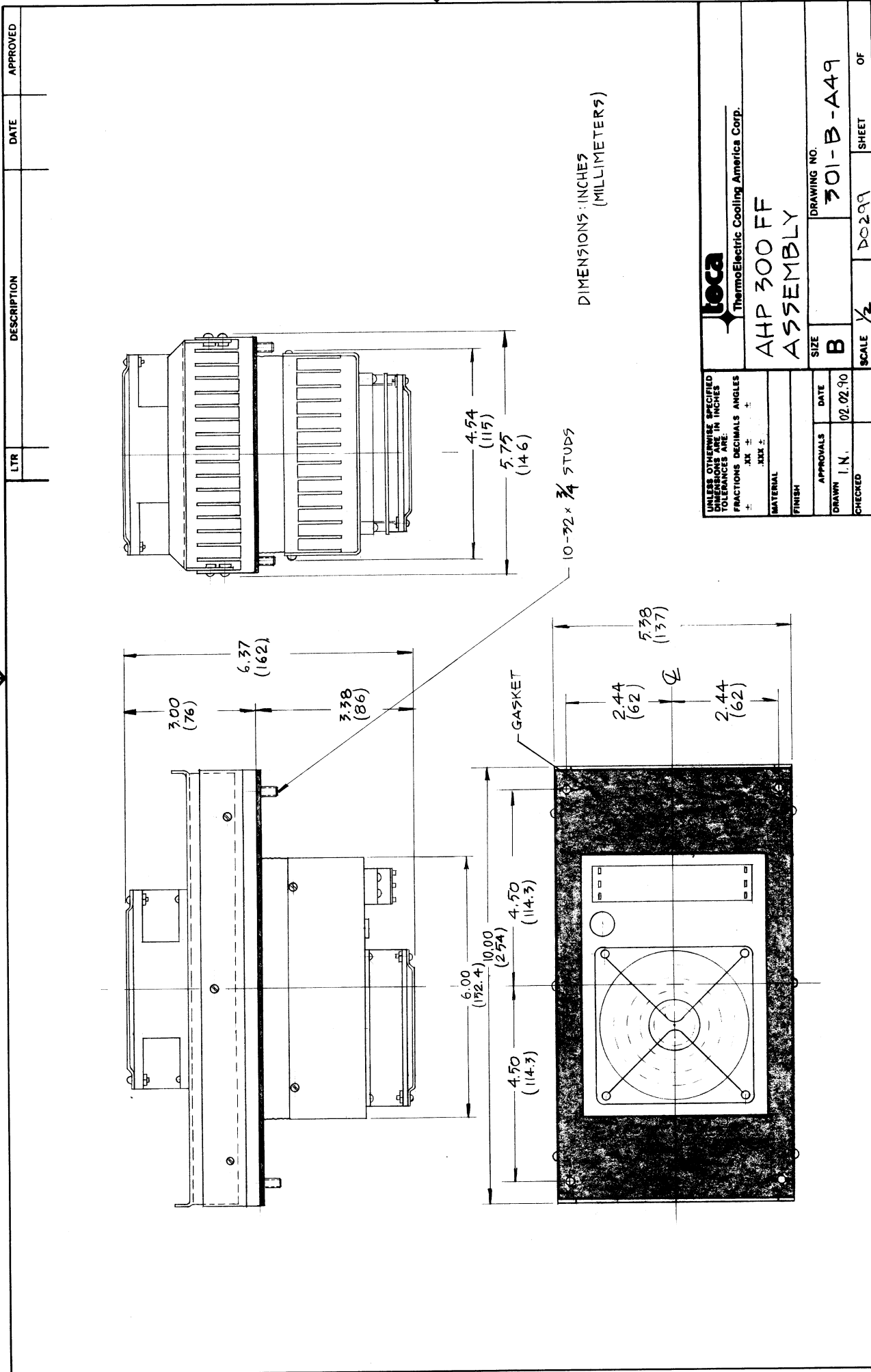
## DIMENSIONS



## MOUNTING CUTOUT DIMENSIONS

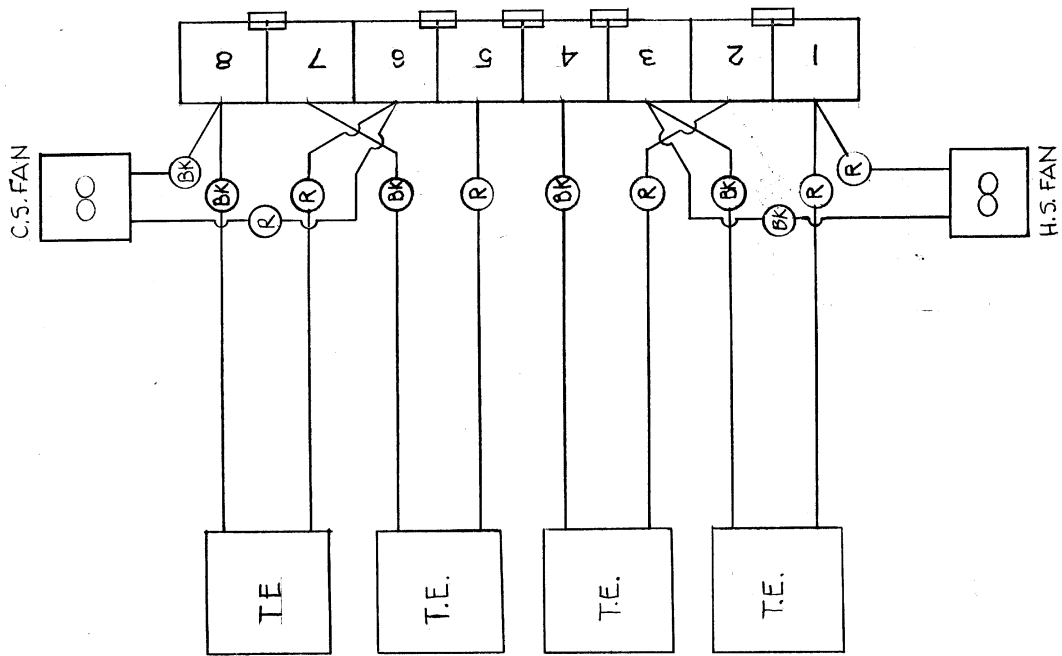


\* Dimension does not include hardware, insulation. Dimensions: Inches, Mounting hardware and gasket included but not shown.  
 † On all models of AHP-300X, these dimensions are greater by 0.25 inch.



<b>loca</b> ThermoElectric Cooling America Corp.		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES TOLERANCES ARE:	
+	.XX ±	+	.XX ±
+	.XXX ±	+	.XXX ±
MATERIAL		DATE	
FINISH		APPROVALS	
DRAWN I.N.		02.02.90	
CHECKED		DRAWING NO.	
SIZE B		701-B-A49	
SCALE 1/2		SHEET 12	
OF		OF	

LTR	DESCRIPTION	DATE	APPROVED
A	ADD. JUMPER	0529.90	IN

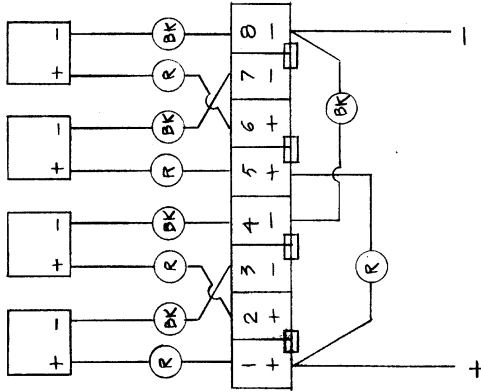


NOTE: WIRED FOR 24 VDC.

<b>leca</b> ThermoElectric Cooling America Corp.	
AHP-300 FF - FINAL WIRING DIAGRAM	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: .XX ± .015 ± .XXX ± .005	DRAWING NO. 301-B-E13
MATERIAL FINISH	SIZE B
APPROVALS DRAWN I.N.	DATE 10.20.89
CHECKED	SCALE DO351
SHEET OF	OF

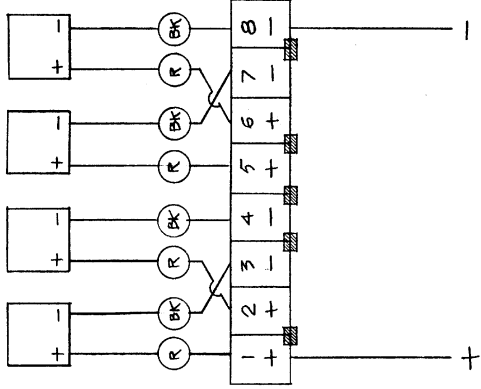


LTR	DESCRIPTION	DATE	APPROVED
A	REDRAW 4 MODIFIED T.E. WIRING	05.29.90	IN.
B	ADD. NOTES REGARDING JUMPERS	10.06.97	Adg

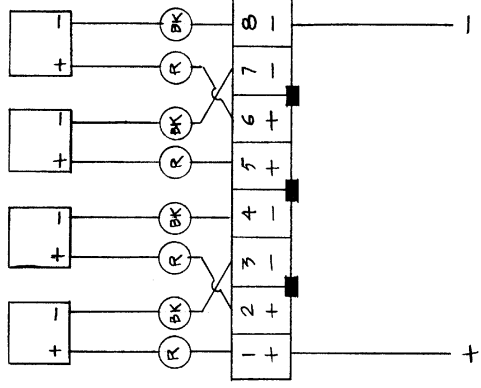


12 VDC

- TO CHANGE FROM 24VDC TO 12VDC: USE A PHILLIPS SCREW DRIVER TO LOOSEN THE SCREWS AT TERMINALS 1, 4, 5 AND 8 WHICH HOLD THE TERMINAL JUMPERS IN PLACE. REMOVE THE TERMINAL JUMPER BETWEEN TERMINALS 4 AND 5, AND STORE FOR FUTURE USE. ATTACH THE WIRE TERMINAL JUMPERS AS INDICATED IN ABOVE DIAGRAM FOR 12VDC. RETIGHTEN ALL THE SCREWS.
- FOR YOUR CONVENIENCE WE HAVE INCLUDED 6" INPUT LEADS. IT IS RECOMMENDED THAT THESE BE ATTACHED PRIOR TO FINAL INSTALLATION OF THE TERMINAL STRIP COVER.
- INPUT LEADS ARE NOT ATTACHED BY TECA, THEY ARE INCLUDED IN SHIPPING PACKAGE.




24 VDC



48 VDC

- TO CHANGE FROM 24VDC TO 48VDC: USE A PHILLIPS SCREW DRIVER TO LOOSEN THE SCREWS AT TERMINALS 1, 2, 3, 4, 5, 6, 7 AND 8 WHICH HOLD THE TERMINAL JUMPERS IN PLACE. REMOVE ALL OF THE TERMINAL JUMPERS. INSTALL THE THREE TERMINAL JUMPERS AS INDICATED IN THE ABOVE DIAGRAM FOR 48VDC OPERATION. STORE THE REMAINING JUMPERS FOR FUTURE USE.

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
TOLERANCES ARE:  
+ .XX ± .015 ±  
XXX ± .005

 ThermoElectric Cooling America Corp.	
AHP 300 - JUMPERS	
DRAWING NO. 301-B-EIQ	
APPROVALS	DATE
DRAWN IN	05.29.90
CHECKED	
SIZE	B
SCALE	D0347
SHEET	OF

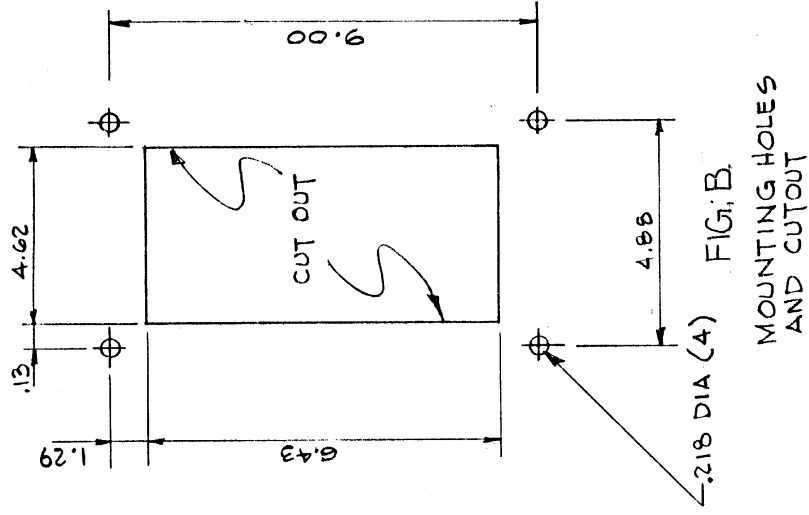
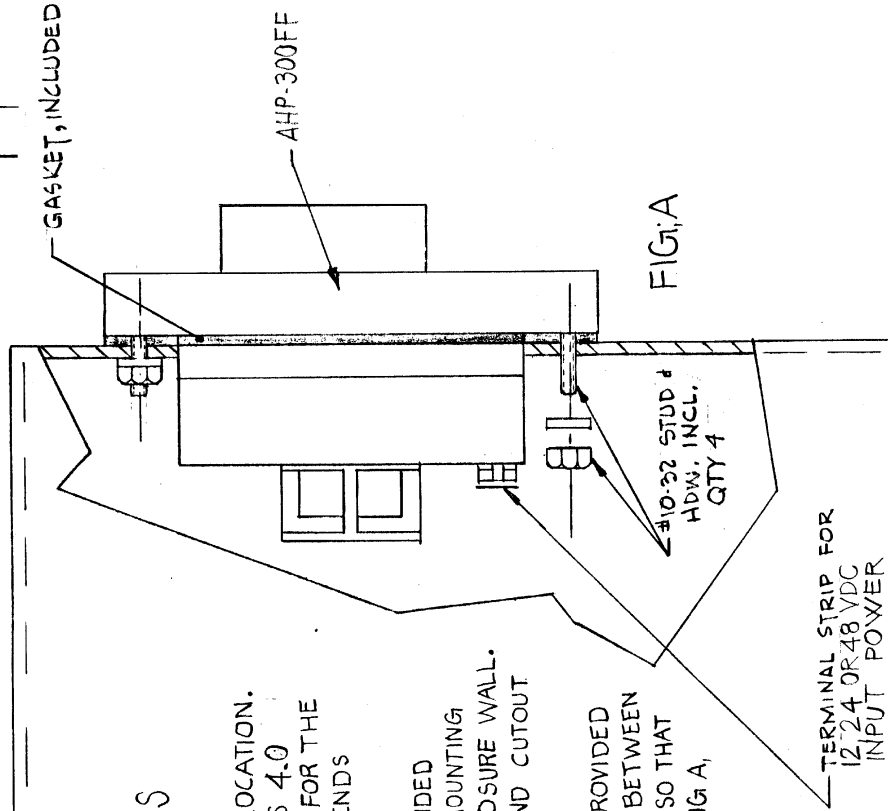
FACTORY WIRED FOR 24VDC





## MOUNTING INSTRUCTIONS

- DETERMINE DESIRED MOUNTING LOCATION. INTERNAL CLEARANCE REQUIRED IS 4.0 DEEP X 4.75" WIDE X 6.00 LONG FOR THE PORTION OF THE UNIT THAT EXTENDS INTO THE ENCLOSURE.
- A RECTANGULAR CUTOUT SURROUNDED BY CLEARANCE HOLES FOR THE MOUNTING STUDS IS REQUIRED IN THE ENCLOSURE WALL. SEE FIG B, MOUNTING HOLES AND CUTOUT FOR DIMENSIONS.
- MOUNT UNIT USING HARDWARE PROVIDED. GRASKET SHOULD BE IN PLACE BETWEEN HEATSINK AND ENCLOSURE WALL SO THAT POSITIVE SEAL RESULTS. SEE FIG A,



MOUNTING HOLES  
AND CUTOUT

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
TOLERANCES ARE:  
FRACTIONS DECIMALS ANGLES  
XX ± .015 ±  
XXX ± .005

MATERIAL  
FINISH

APPROVALS DATE  
DRAWN I.N. 10.27.89  
CHECKED

**teca**

ThermoElectric Cooling America Corp.

FIELD MOUNTING AHP 300FF

SIZE B  
DRAWING NO. AHP 301-B-F2

SCALE D0368 SHEET OF



## 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.