

# Product Information Packet

Model AHP-300CP

Solid State Cold Plate

Part #1-7097-0-000

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:

Product Literature and Specifications

Assembly Drawing # 301-B-A48

Wiring Drawing # 301-B-E11

Installation Drawing # 301-B-F5

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. The logo is positioned on the left side of the page, above a horizontal line.

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# AHP-300CP AHP-150CP

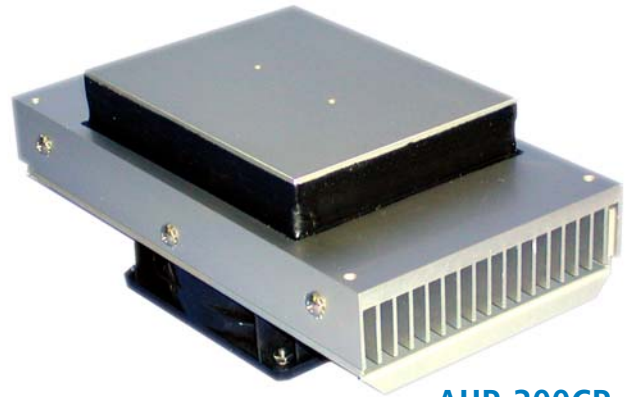
Air Cooled

# Thermoelectric Cold Plate

General Purpose VDC Input

## FEATURES

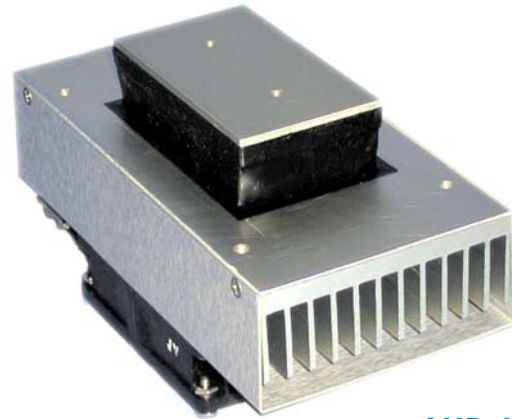
- Direct contact cooling as much as 56 °C below room temperature
- No compressor, fluorocarbons or filters
- Virtually maintenance-free operation
- Mounts in any orientation
- Works with TC-3500



**AHP-300CP**

## INCLUDES

- Cold plate accessory tapped holes
- Machined surface
- Terminal strip for wire hook up



**AHP-150CP**

## SPECIFICATIONS AHP-300CP

MODEL	PART NUMBER	NOTES	PERFORMANCE RATING BTU/HR	VOLTAGE VDC	CURRENT AMPS.	WEIGHT LBS. (KG)	TEMP. CONTROL	OPERATING AMBIENT °C
AHP-300CP	1-7097-0-000	Cool only	290-330	12/24/48	12/6/3	6(2.7)	none	-10/+70
AHP-300CPHC	1-7094-1-000	Heat/Cool	290-330	12	12	6(2.7)	none	-10/+70
AHP-300CPHC	1-7095-1-000	Heat/Cool	290-330	24	6	6(2.7)	none	-10/+70
AHP-300CPHC	1-7097-1-001	Heat/Cool Rev. Pol.*	290-330	12/24/48	12/6/3	6(2.7)	none	-10/+70

## SPECIFICATIONS AHP-150CP

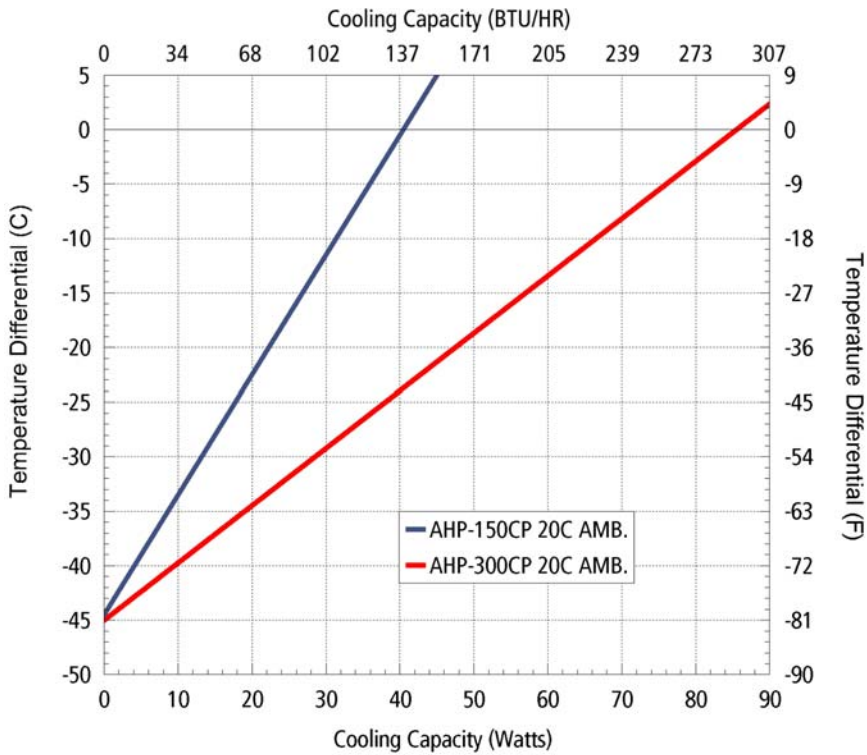
MODEL	PART NUMBER	NOTES	PERFORMANCE RATING BTU/HR	VOLTAGE VDC	CURRENT AMPS.	WEIGHT LBS. (KG)	TEMP. CONTROL	OPERATING AMBIENT °C
AHP-150CP	1-8098-0-000	Cool only	140-160	12/24	6/3	2.5(1.2)	None	-10/+70
AHP-150CPHC	1-8094-1-000	Heat/Cool	140-160	12	6	2.5(1.2)	None	-10/+70
AHP-150CPHC	1-8095-1-000	Heat/Cool	140-160	24	3	2.5(1.2)	None	-10/+70
AHP-150CPHC	1-8098-1-001	Heat/Cool Rev. Pol.*	140-160	12/24	6/3	2.5(1.2)	None	-10/+70

Note: Options for temperature control, consult factory.

\* Reverse polarity unit can be used with external TC-3500 controller see P. 112

See also, "Power Supplies", P. 117

## PERFORMANCE CURVE



Cold Plate - Air Cooled

## AHP-300CP

### ENVIRONMENTS

Bench Top, Laboratory, Industrial

### COOLING CAPACITY

85 Watts @ 0 °C ΔT

## AHP-150CP

### ENVIRONMENTS

Bench Top, Laboratory, Industrial

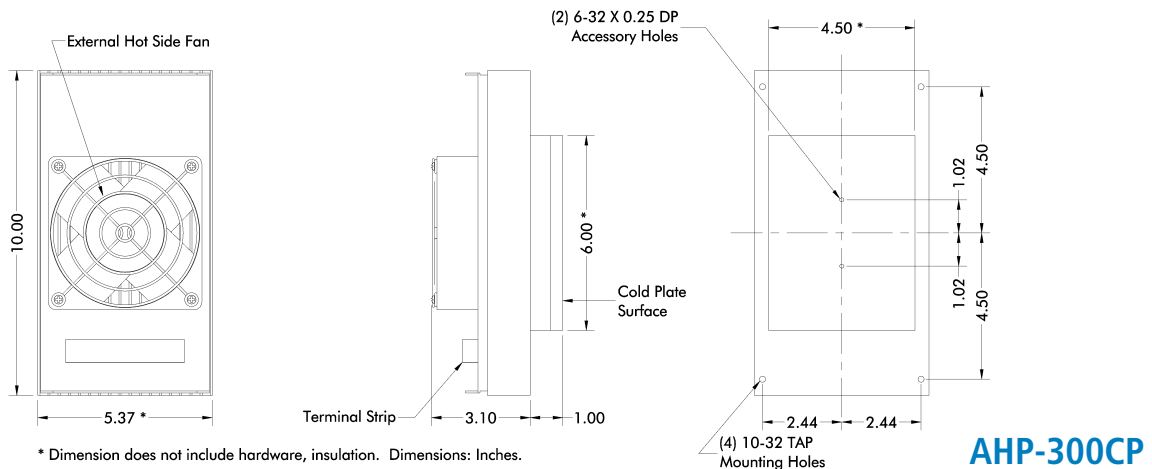
### COOLING CAPACITY

40 Watts @ 0 °C ΔT

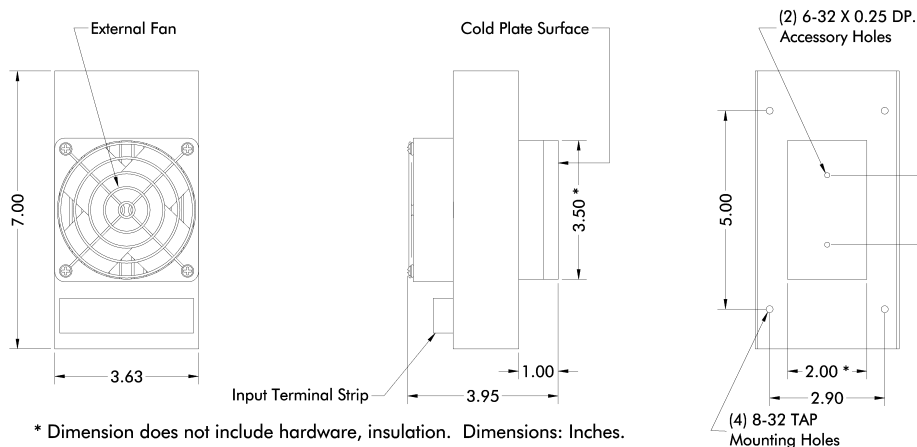
Equation of line:  $y = \Delta T(^{\circ}C)$   $x = \text{Capacity (Watts)}$

Ambient Temp	20°C	40°C	60°C
300CP Cold Plate	$y = .526x - 45.0$	$y = .526x - 48.0$	$y = .526x - 51.0$
150CP Cold Plate	$y = 1.1x - 44.5$	$y = 1.1x - 48$	$y = 1.1x - 51.5$

## DIMENSIONS



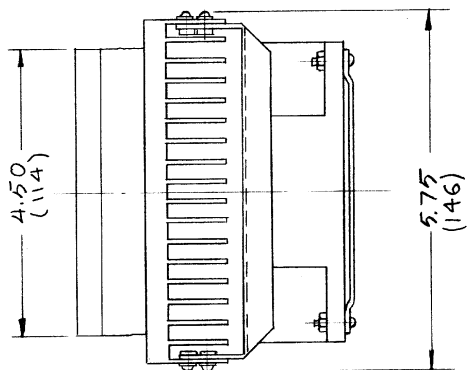
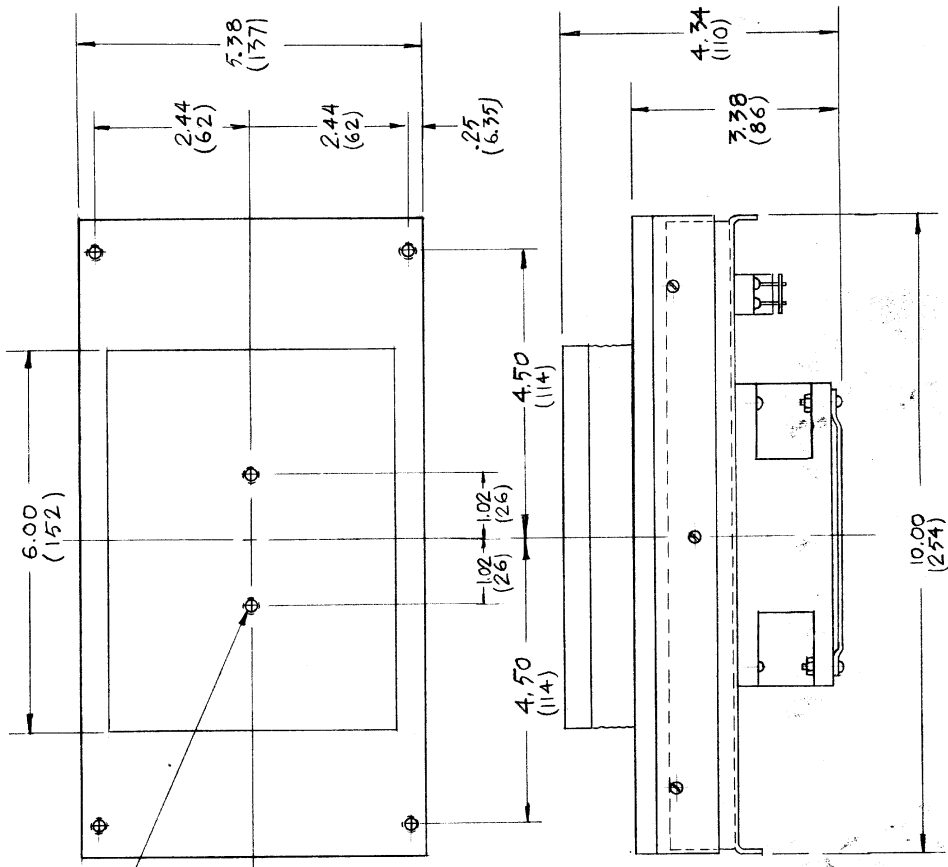
**AHP-300CP**



**AHP-150CP**

LTR	DESCRIPTION	DATE	APPROVED
A	ADD. DIMS. 4.50, 6.00 & TAP INFO.	08.28.95	J.A.

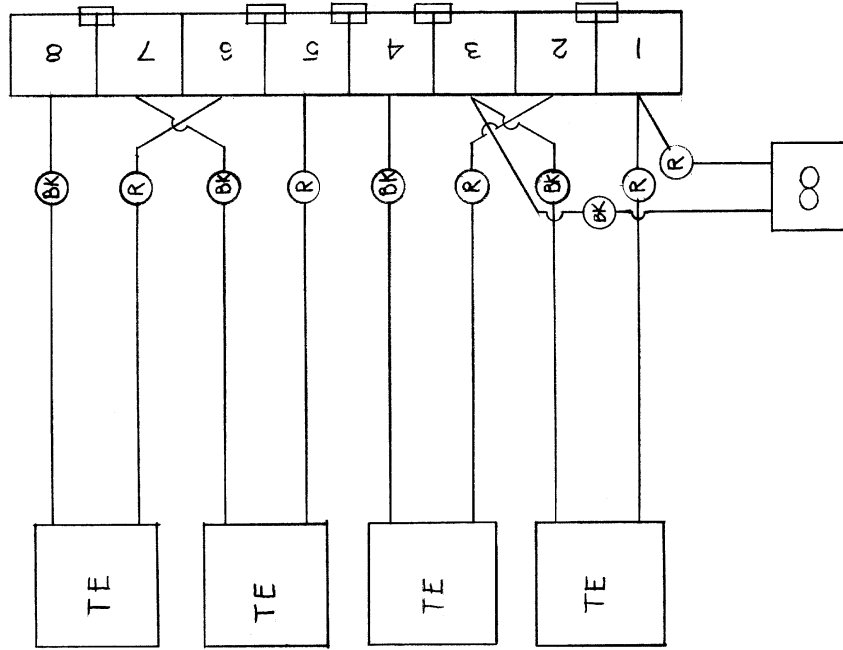
6-32 TAP  
.25 DEEP



NOTE: 10-32 x 3/4 STUDS AND GASKET  
NOT SHOWN  
DIMENSIONS: INCHES  
(MILLIMETERS)

 ThermoElectric Cooling America Corp.	
AHP 300 CP ASSEMBLY	
MATERIAL	SIZE
FINISH	DRAWING NO.
APPROVALS	DATE
DRAWN I.N.	02.06.90
CHECKED	
SCALE 1/2	D0298
SHEET	OF
301-B-A48	

LTR	DESCRIPTION	DATE	APPROVED
A	ADDED JUMPERS	05.29.90	IN



NOTE WIRED FOR 24 VDC

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

MATERIAL  
FINISH

APPROVALS	DATE
DRAWN I.N.	10.20.89
CHECKED	



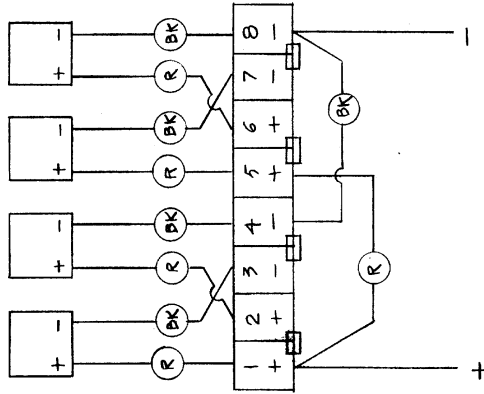
ThermoElectric Cooling America Corp.

AHP-300 CP - FINAL WIRING  
DIAGRAM

SIZE	DRAWING NO.
B	301-B-E II
SCALE	SHEET
	OF

00346

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

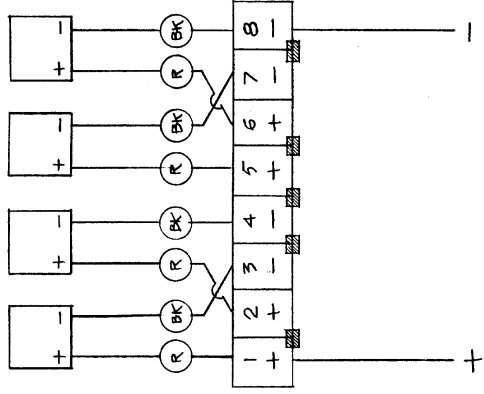


12 VDC

- 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.

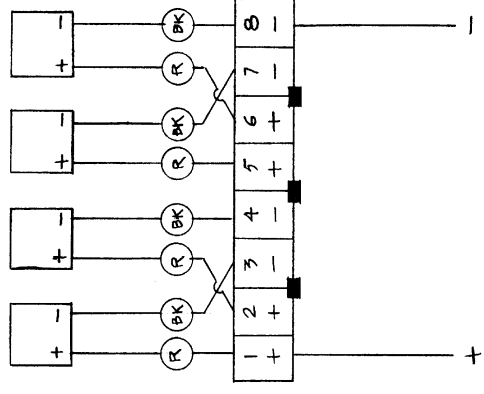
- FOR YOUR CONVENIENCE WE HAVE INCLUDED 8 INPUT LEADS. IT IS RECOMMENDED THAT THESE BE ATTACHED PRIOR TO FINAL INSTALLATION OF THE TERMINAL STRIP COVER.

- INPUT LEADS ARE NOT ATTACHED BY TECA, THEY ARE INCLUDED IN SHIPPING PACKAGE.



24 VDC

- 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.



48 VDC

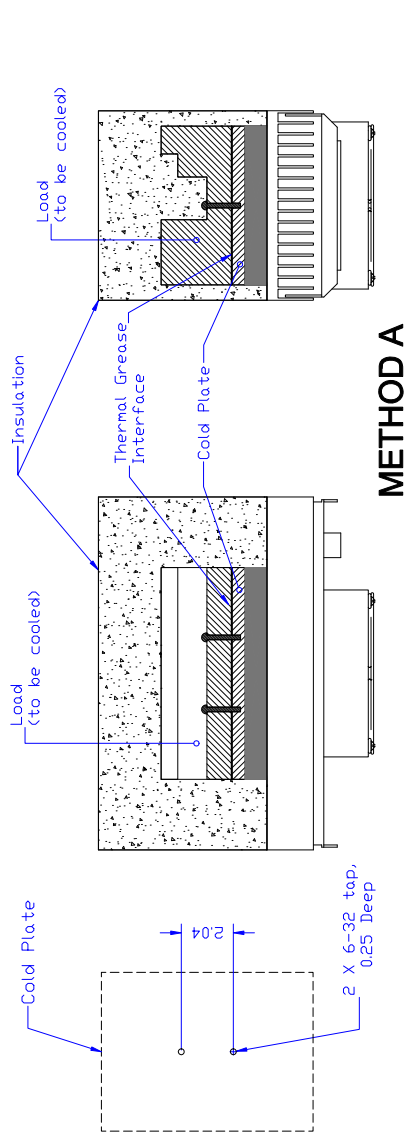
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:	
FRACTIONS	DECIMALS
ANGLES	
+	.XX ± .015 ±
MATERIAL	.XXX ± .005
FINISH	
APPROVALS	DATE
DRAWN	IN
CHECKED	

**teca**  
 ThermoElectric Cooling America Corp.

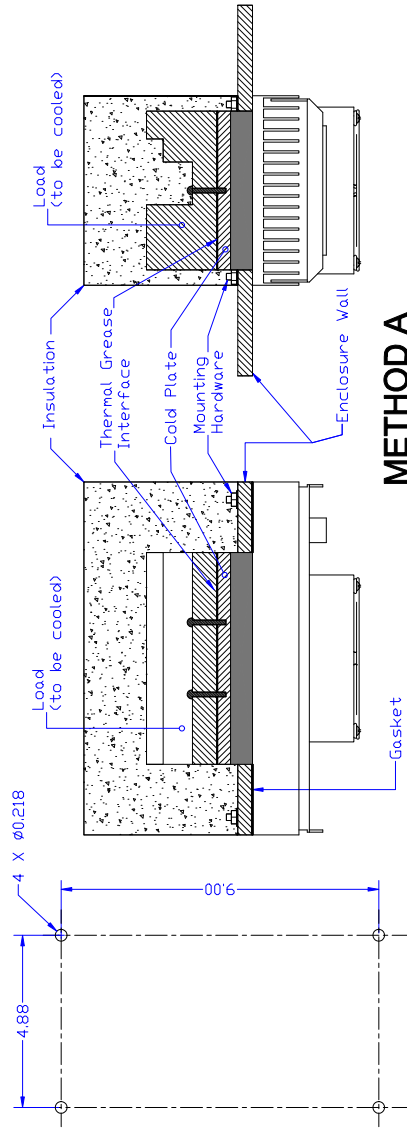
AHP 300 - JUMPERS

SIZE	DRAWING NO.	SHEET	OF
B	301-B-E10	10347	
SCALE			

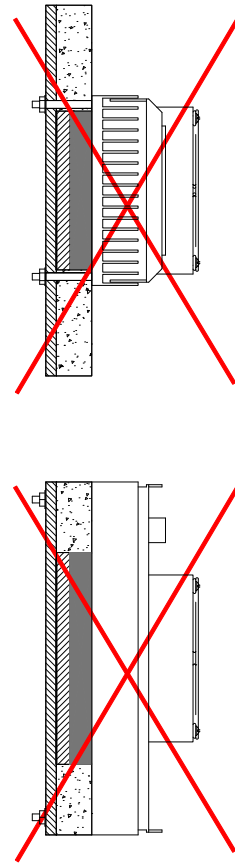
FACTORY WIRED FOR 24VDC



**METHOD A**



**METHOD A**



**Note: Do not use this method. Over compression may cause irreversible damage to the thermoelectrics and void the warranty.**

**INSTALLATION INSTRUCTIONS**

- 1- Choose Mounting Method (A or B).
- 2- Prepare mounting surface/component as indicated. Ideal component surface flatness is  $\pm 0.01$  T.I.R.
- 3- Spread an even, approximately 10 MIL, layer of thermal grease (Dow type 340 or equivalent) on both thermal contact surfaces (component and cold plate). A speedball rubber roller works well for this.
- 4- Install unit without sliding against mating surface using stainless steel screws and lock washers if available. Rotate slightly to "seat" them. Torque screws until snug. Do not overtighten.
- 5- Fit insulation around cold plate surfaces as required.
- 6- If desired, caulk insulation to seal and secure insulation.
- 7- Connect power per appropriate wiring diagram.

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 ±.01  
 ANGLES ±.1°  
 FRACTIONS ±.01

TECAMELECTRIC COOLING AMERICA CORP.  
 AHP-300CP  
 INSTALLATION INSTRUCTIONS

REV	DESCRIPTION	DATE	APPROVED
A	Redrawn in CAD.	01/13/2010	AA

DRAWN BY:	AA	DRAWING #	301-B-F5
DATE:	01/13/2010	SCALE	MASTER
MATERIAL:		SHEET	
MATERIAL:		MASTER	
MATERIAL:		SHEET	
MATERIAL:		MASTER	

## 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.