

# Product Information Packet

## Model AHP-590CPHC

24 VDC Solid State Cold/Hot Plate

Reverse Polarity Capable

Part #1-G095-1-001

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 # SK140709

Wiring Drawing # SK140736

Installation Drawing # SK140710

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.

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# AHP-590CP

# Cold/Hot Plate

Air Cooled

General Purpose 24 VDC  
High Efficiency  
145 Watts

## FEATURES

- Flat aluminum plate (8" x 4.70") [203 x 119]
- Standard 6-32X.25 UNC threads
- Compact (only 10" x 5.76" x 4.45") [254 x 146 x 113]
- Mounts and operates in any orientation: horizontal, vertical, etc.
- Low vibration and noise
- No moving parts except fan
- Environmentally safe
- No compressor, fluorocarbons or filters
- Cools and heats via reverse polarity
- Virtually maintenance-free operation
- Pivot clean
- Weight 7 LBS. (3.2 KG)



## INCLUDES

- Mounting gasket
- Mounting hardware
- Power input leads

## OPTIONS

- Custom cold plate threads and/or inserts
- Flat plate without holes or threads
- Stainless steel exterior fan shroud and housing
- Custom fans: Quiet, Speed Control, Waterproof
- Use with TC-3400, TC-3500 and TC-4600 controls

## PERFORMANCE RATINGS

Cooling	145 WATTS
Cooling COP	1
Heating	> 145 Watts

## SPECIFICATIONS

MODEL	PART NUMBER	NOTES	PERFORMANCE RATING WATTS	VOLTAGE VDC	CURRENT AMPS.	TEMP. CONTROL	OPERATING AMBIENT °C
AHP-590CPHC	1-G095-1-001	Heat/Cool	145	24	6	None	-10/+60

Heat function via reverse polarity (requires controller with H-Bridge)

# AHP-590CP

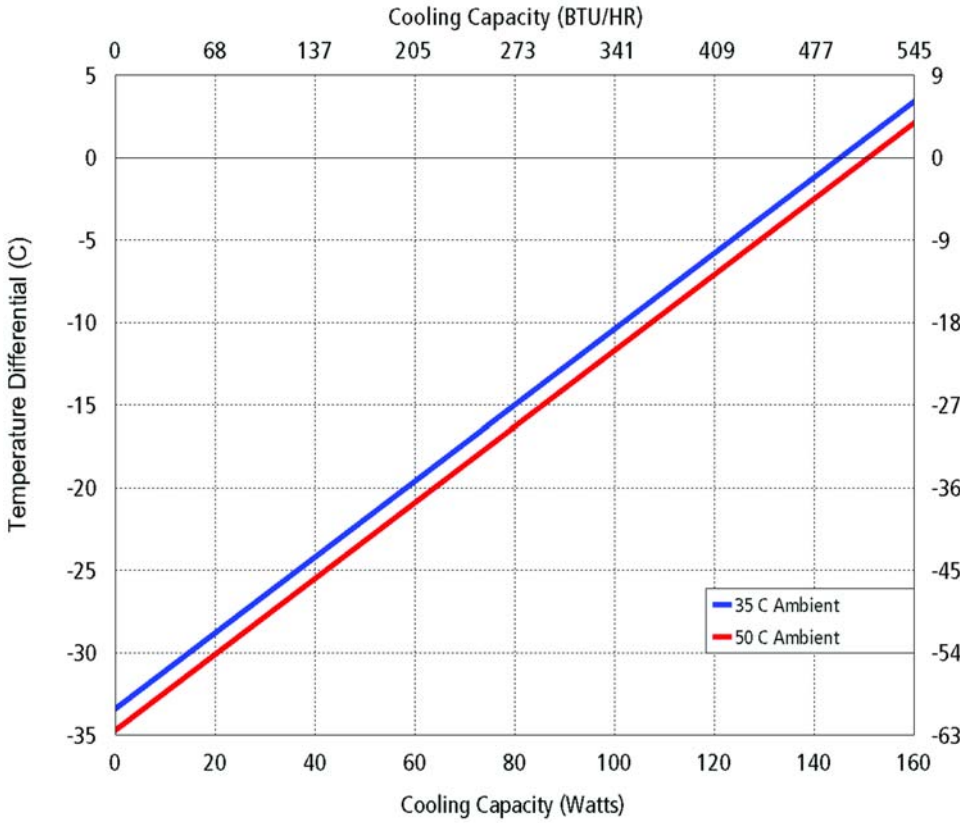
## ENVIRONMENTS

Bench Top, Factory, Industrial, OEM

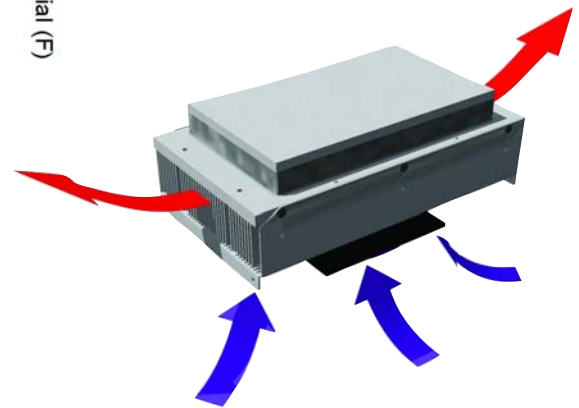
## COOLING CAPACITY

145 Watts @ 0 °C ΔT

## PERFORMANCE CURVE

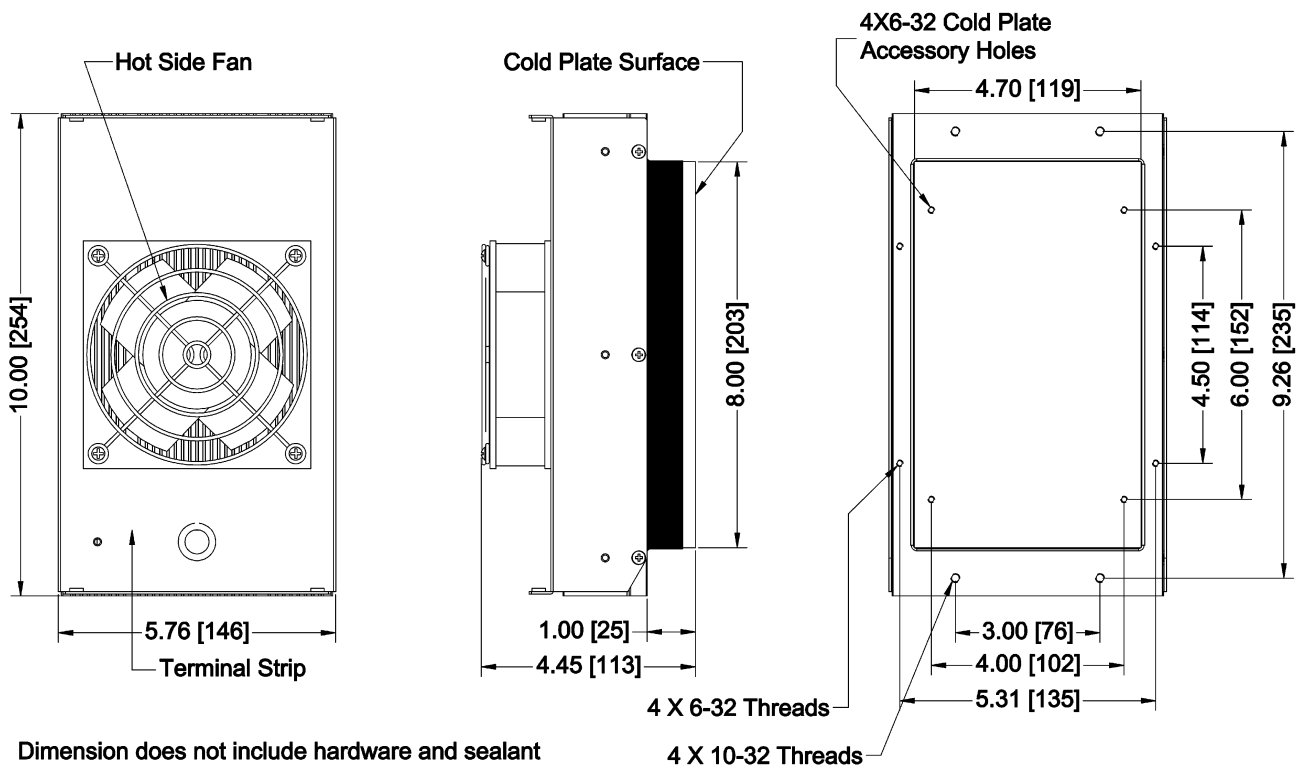


Equation of Line: $y = \Delta T(^{\circ}C)$ $x = \text{Capacity (Watts)}$		
Ambient Temp	35°C	50°C
Cold Plate	$y = 0.23x - 33.4$	$y = 0.23x - 34.7$

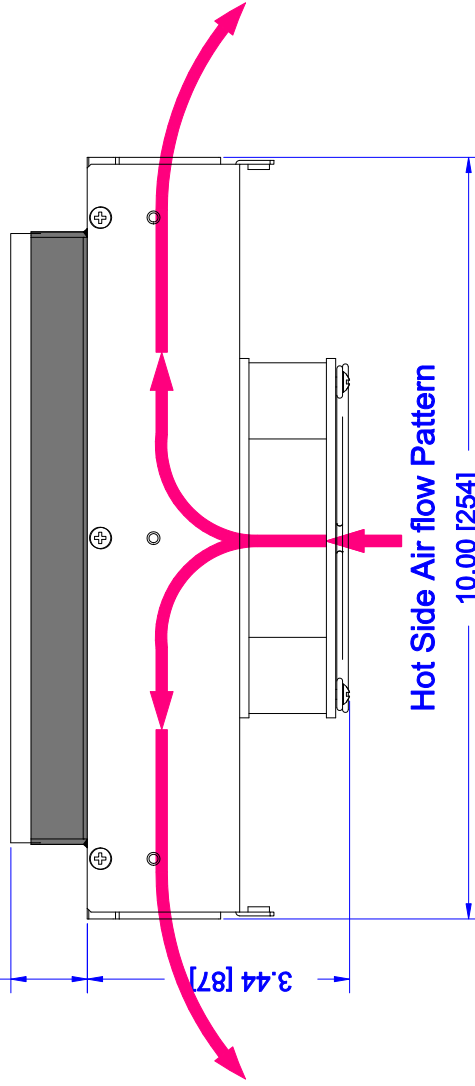
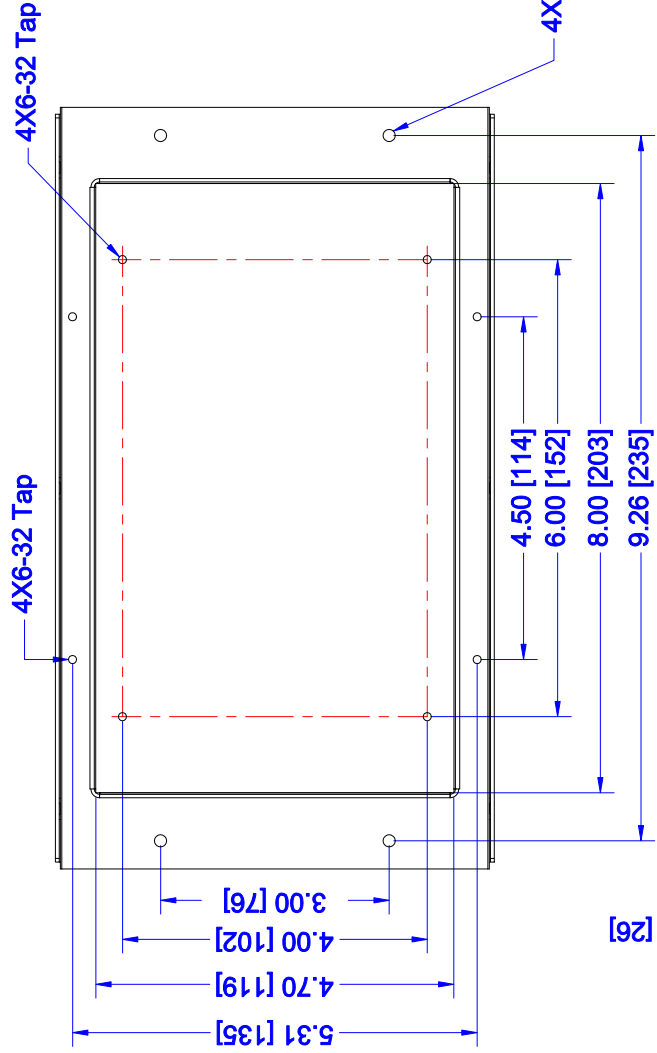
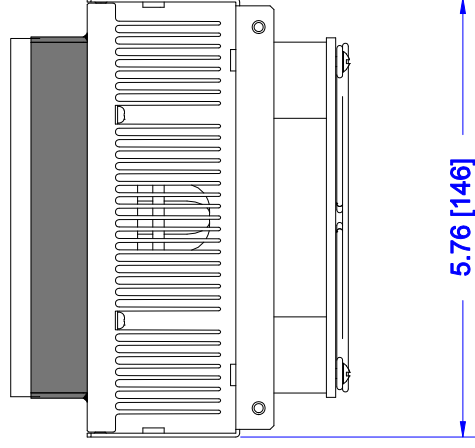
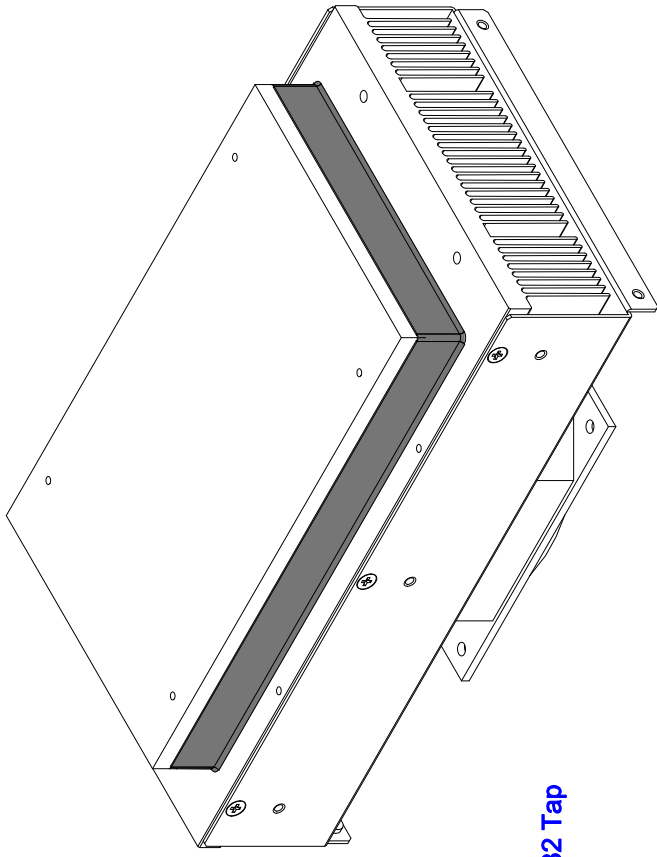


Air Flow Pattern

## DIMENSIONS



Dimension does not include hardware and sealant  
 Hardware and gasket included but not shown  
 Dimensions: Inches [Millimeters]



REV	DESCRIPTION	Date	APPROVED	FINISH:	INFORMATION DISCLOSED HEREIN IS THE CONFIDENTIAL PROPERTY OF TECA CORP. RECIPIENT SHALL NOT USE THE INFORMATION IN ANY UNAUTHORIZED MANNER.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:	DECIMALS	ANGLE	DRAWING #	REV LEVEL
							.XX +/-	+/-		
							.XXX +/-	+/-	AA	
									SK140709	
									D9305	
									MASTER:	

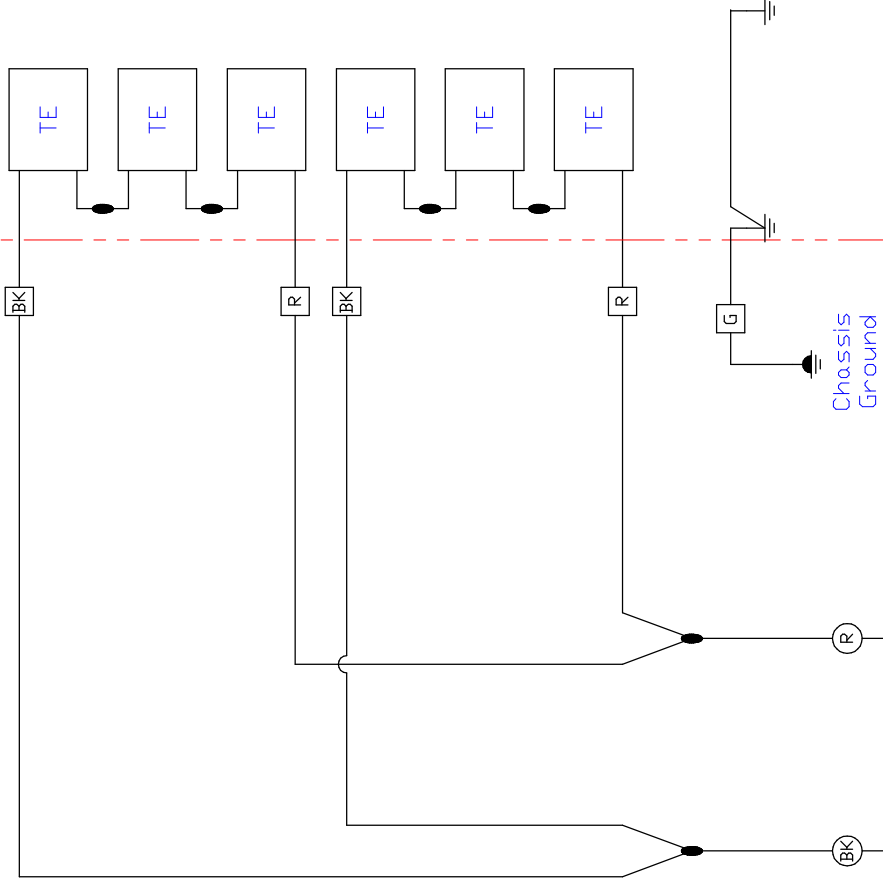
**THERMOELECTRIC COOLING AMERICA CORP.**  
**AHP-400CP, AHP-500CP SERIES**  
**THERMOELECTRIC COLD PLATE**

MASTER: **MASTER**

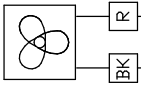
HOT SIDE

TE

COLD PLATE



H.S. FAN



24 VDC Input to Fan (continuous)

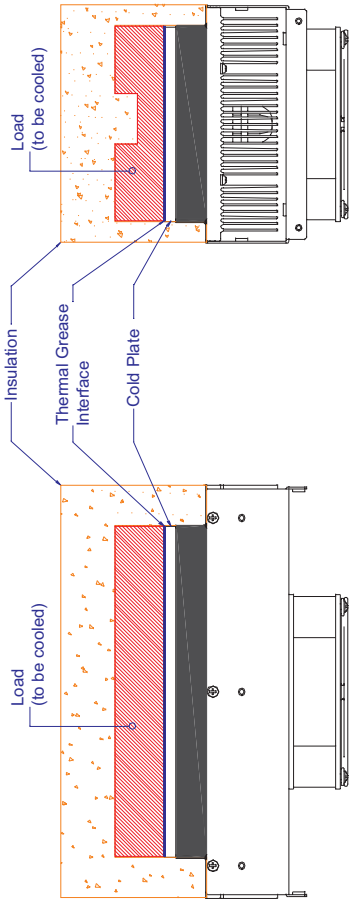
24 VDC Input to TE (PWM control)

- Red Ring Terminals
- Solder & Shrink Tube Connection
- 22 AWG Wires
- 18 AWG Wires

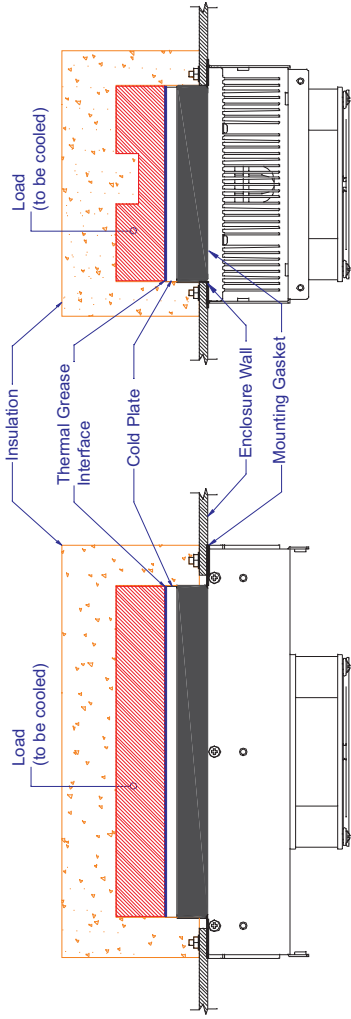
A	Corrected TE & fan input (12vdc to 24vdc).	12/01/2014	AA	APPROVED
	DESCRIPTION	Date	AA	
REV				

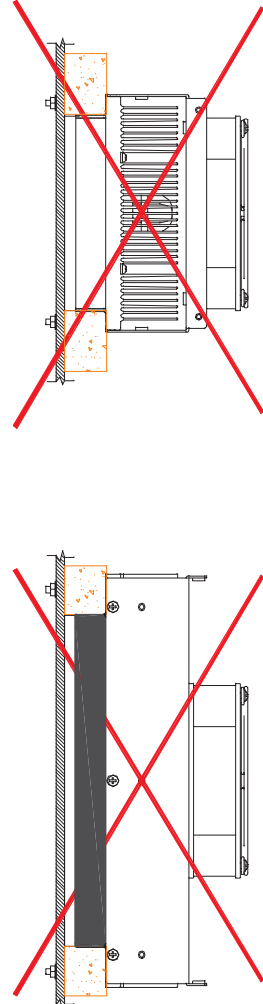
INFORMATION DISCLOSED HEREIN IS THE CONFIDENTIAL PROPERTY OF TECA CORP. RECIPIENT SHALL NOT USE THE INFORMATION IN ANY UNAUTHORIZED MANNER. FINISH:		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS .XX +/- FRACTION .XXX +/- MATERIAL:
THERMOELECTRIC COOLING AMERICA CORP. AHP-590CPHC (24 VDC) WIRING DIAGRAM REVERSE POLARITY CAPABLE		DRAWN BY: AA DATE: 07/15/2014 D9332
DRAWING # SK140736 SCALE		MASTER: SK140720
REV	LEVEL	SHEET
A	A	1



**METHOD A**



**METHOD B**



**INSTALLATION INSTRUCTIONS**

- 1- Choose Mounting Method (A or B).
- 2- Prepare mounting surface/component as indicated. Ideal component surface flatness is  $\pm 0.001$  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, rotate slightly to "seat" them.
- 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.

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

REV	DESCRIPTION	Date	APPROVED	<b>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:</b>		<b>INFORMATION DISCLOSED HEREIN IS THE CONFIDENTIAL PROPERTY OF TECA CORP. RECIPIENT SHALL NOT USE THE INFORMATION IN ANY UNAUTHORIZED MANNER. FINISH:</b>		<b>OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:</b>		<b>THE THERMOELECTRIC COOLING AMERICA CORP.</b>	
				DECIMALS .XX +/- XXX+/-	ANGLE +/- FRACTION +/-	MATERIAL:	DRAWN BY: AA DATE: 07/03/2014 SCALE: D9306	DRAWING # SK140710	REV LEVEL SHEET		
						SHALL NOT USE THE INFORMATION IN ANY UNAUTHORIZED MANNER. FINISH:		DIMENSIONS ARE IN INCHES TOLERANCES ARE:		AHP-400C0, 500CP, 600CP SERIES INSTALLATION INSTRUCTIONS	
											MASTER: SK140709

## 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.