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:

- Installation Notes for Air Conditioners
- Product Literature and Specifications
- Assembly Drawing # 1800-B-A18
- Wiring Drawing # SK141007
- Installation Drawing # 1800-A-F49
- Temperature Control Information
- Warranty Information
Important Installation Notes for 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. 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-1800 Air Conditioner

Features:
- High capacity thermoelectric design
- Lower profile intrusion into enclosure
- Closed loop design
- Condensate control and evaporation system
- Compact
- Increased efficiency at higher ambients by as much as 12%
- Virtually maintenance free
- No compressor
- Environmentally friendly and safe
- Stainless steel exterior housing
- Mounts and operates in any orientation
- Integral temperature controller
- Operating ambient temperature range -40/+65 °C
- Operating enclosure temperature range -10/+60 °C
- Weight 55 LBS.

Power Inputs:
- Voltage: 24 VDC
- Current, Active: 18 AMPS
- Current, ECO-Mode: 1.9 AMPS

Performance Ratings:
- Cooling (Traditional): 1100 BTU/HR
- Cooling (DIN 3168): 322 WATTS
- Cooling COP (at L35 L35): 0.74
- Heating (Traditional): > 1473 BTU/HR
- Heating (DIN 3168): > 432 WATTS
- Heating COP: > 1.0

Includes:
- Temperature controller
- Mounting gasket
- Mounting hardware
- Power input leads

250 VDC configuration for crane applications available

Consult factory for full shock and vibration models.

TECA 1-888-TECA-USA (832-2872) www.teca-usa.com
**Equation of line:**

\[ y = \Delta T^\circ C \times \text{Capacity (Watts)} \]

<table>
<thead>
<tr>
<th>Ambient Temp</th>
<th>20°C</th>
<th>40°C</th>
<th>60°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure Air</td>
<td>( y = 0.129x - 38.1 )</td>
<td>( y = 0.129x - 40.1 )</td>
<td>( y = 0.129x - 42.0 )</td>
</tr>
<tr>
<td>Cold Sink</td>
<td>( y = 0.09x - 38.1 )</td>
<td>( y = 0.09x - 40.1 )</td>
<td>( y = 0.09x - 42.0 )</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

- **Input Power Cable:** 12.35 [314] *
- **External Hot Side Fans:** Width 16.00 [407]
- **Mounting Surface:** Width 16.46 [418]
- **Circuit Breakers (VAC models only):** Width 5.45 [138]
- **Terminal Strip (1801 models only):** Width 4.34 [110]

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

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**AHP-1800**

- **Mounting Style:** Through Mounted
- **Environments Served:**
  - NEMA-12 IP 52
  - NEMA-4X IP 56
- **RATING (TRADITIONAL):**
  - 1100 BTU/hr @ 0 °F \( \Delta T \)
  - 1420 BTU/hr @ +20 °F \( \Delta T \)
- **RATING (DIN 3168):**
  - 322 Watts L35 L35
  - 210 Watts L35 L50

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**TECA**

[www.teca-eu.com](http://www.teca-eu.com)  1-888-TECA-USA (832-2872)
Warning - If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. UL 489 defines branch circuit protection of no more than 4X the rating of the supplemental protector to be used upstream. We suggest a slow reacting, 10-15 Amps circuit breaker.

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Avertissement - Si le cordon d'alimentation est endommagé, il doit être remplacé par le fabricant, son agent de service ou une personne de qualification similaire afin d'éviter un danger. UL 489 définit la protection du circuit de pas plus de 4X la cote du protecteur supplémentaire pour être utilisé en amont. Nous suggérons une lente réaction, 10-15 disjoncteur Amps.

LES ENFANTS DOIVENT ÊTRE SURVEILLÉS AFIN DE S'ASSURER QU'ILS NE JOUENT PAS AVEC L'APPAREIL.

Achtung - Wenn das Netzkabel beschädigt ist, muss es durch den Hersteller, seinen Kunden dienst oder eine ähnlich qualifizierte Person, um eine Gefahr zu vermeiden ersetzt werden. UL 489 definiert den Schutz der Stromzweige nicht mehr als 4X das Rating der Beschützer weiter flussaufwärts genutzt werden. Wir empfehlen eine langsame Reaktion, 10-15 Ampere-Sicherung.

- Dieses Gerät ist nicht für die Verwendung durch Personen (einschließlich Kinder) mit eingeschränkten physischen, sensorischen oder geistigen Fähigkeiten oder Mangel an Erfahrung und Wissen, bestimmt, sofern sie eine angemessene Aufsicht oder ausführliche Anleitung zur Benutzung des Geräts durch eine verantwortliche Person für ihre Sicherheit. Kinder sollten beaufsichtigt werden, um sicherzustellen, dass sie nicht mit dem Gerät spielen.

Attenzione - Se il cavo di alimentazione è danneggiato, esso deve essere sostituito dal produttore, dal suo agente di servizio o da un professionista al fine di evitare rischi. UL 489 definisce il circuito di protezione filiale di non più di 4X il rating del protettore supplementare da utilizzare a monte. Vi suggeriamo una lenta reazione, 10-15 interruttore Amp.

LE BAMBINI DEVONO ESSERE SUPERVIZZIATI PER ASSICURARE CHE NON GIOCHINO CON L'APPARECCHIO.

**Thermoelectric Cooling America Corp.**

**AHP-1800 Series**

**Typical Field Mounting**

**Dimensions: Inches [Millimeters]**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Inches</th>
<th>Millimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intake Air</td>
<td>8.45</td>
<td>[214.6]</td>
</tr>
<tr>
<td>Exhaust</td>
<td>8.63</td>
<td>[219.2]</td>
</tr>
<tr>
<td>Ø0.22</td>
<td></td>
<td>[5.5]</td>
</tr>
<tr>
<td>4.34</td>
<td>[110.2]</td>
<td></td>
</tr>
<tr>
<td>5.45</td>
<td>[138.4]</td>
<td></td>
</tr>
<tr>
<td>1.34</td>
<td>[34.0]</td>
<td></td>
</tr>
</tbody>
</table>

**Additional Information:**

- Added UL489 branch circuit protection note and added unqualified operator and supervision note.
- 01/24/2012
- 06/05/03
- D6037
- 1800-A-F49
- REV A
- Sheet A
- Scale 1:1
- Material stainless steel
- Finish polished stainless steel
- Drawn by AA
- Approved by AA

**WARNING:**

- AHP-1800 series is designed for professional use by qualified operators. Use by unqualified operators is strictly prohibited. The apparatus is not intended for use by children without supervision.

**NOTICE:**

- Any unauthorized use of the AHP-1800 series will void all warranties and liability protection.

**LIMITED WARRANTY:**

- Thermoelectric Cooling America Corp. warrants this product to be free from defects in material and workmanship for a period of two years from the date of purchase. In the event of failure during this warranty period, Thermoelectric Cooling America Corp. will repair or replace the product, at its discretion, without charge, providing the product was used in accordance with the instructions and service conditions specified by the company. Any implied warranty of merchantability or fitness for a particular purpose is limited in duration to the extent permitted by law. Thermoelectric Cooling America Corp. shall not be liable for any incidental, special, or consequential damages, whether based in contract, tort, or otherwise, arising out of the use of this product. Thermoelectric Cooling America Corp. disclaims all liability for the accuracy of any data or information contained in this document.

**LEGAL DISCLAIMER:**

- The information contained in this document is for general reference only and is subject to change without notice. Thermoelectric Cooling America Corp. reserves the right to make changes to the product and documentation without prior notice. Thermoelectric Cooling America Corp. does not warrant the accuracy or completeness of any information contained in this document and shall not be liable for any loss or damage sustained by any person as a result of any use, misuse, or reliance on the information contained in this document.

**CONFIDENTIALITY:**

- The information disclosed herein is the confidential property of Thermoelectric Cooling America Corp. Recipient shall not use the information in any unauthorized manner.

**CERTIFICATION:**

- The AHP-1800 series is certified by Underwriters Laboratories (UL) and complies with the National Electrical Code (NEC) and other applicable standards for electrical safety. It is also UL-listed for use in commercial and industrial environments. The apparatus is designed to provide reliable and safe performance in a variety of applications.
Power Temperature Controllers

TC-1F Power Temperature Switches
Models TC-1F power temperature controller, with small tolerance and reset differential, are the simplest and most cost effective way to control a cooling or heating device (VAC or VDC) without a need for a relay. For circuits that have higher current draw simply use them in conjunction with a solid state relay.

Part Numbers:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Part Number</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool</td>
<td>TC-1C-XX</td>
<td>switch closes on temperature rise</td>
</tr>
<tr>
<td>Heat</td>
<td>TC-1H-XX</td>
<td>switch closes on temperature drop</td>
</tr>
</tbody>
</table>

XX: Specify temperatures 20 °C, 25 °C, 30 °C, 35 °C for cool mode and 10°C, 15°C for heat mode

Example: TC-1C-20 and TC-1H-10

TC-4F Cool Only with ECO-Mode
Model TC-4F is similar to TC-1F plus it has a 2nd power switch for heat exchanger mode (ECO-Mode). The active cool set point for TC-4F is 35 °C and for heat exchanger mode (ECO-Mode) is 25 °C.

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
<th>Notes</th>
<th>N1 Temp. °C</th>
<th>N2 Cool Temp. °C</th>
<th>Reset (Max) °C</th>
<th>Reset (Typ) °C</th>
<th>Operating Voltage</th>
<th>Switching Voltage</th>
<th>Active Mode Switching Current</th>
<th>ECO-Mode Switching Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-4F-DC</td>
<td>4F-24G-00-000</td>
<td>24 VDC 25 +/- 3 35 +/- 3 6.5 3 24 VDC 24 VDC .02 - 20 ADC 1.3 ADC</td>
<td></td>
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</table>

TC-6F Cool Only
Model TC-6F (Cool Only) thermostat is designed using two temperature power switches in conjunction with a solid state relay. A three position switch is provided to adjust temperature settings.

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
<th>Notes</th>
<th>N1 Temp. °C</th>
<th>N2 Cool Temp. °C</th>
<th>Reset (Max) °C</th>
<th>Reset (Typ) °C</th>
<th>Operating Voltage</th>
<th>Switching Voltage</th>
<th>Active Mode Switching Current</th>
<th>ECO-Mode Switching Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-6F</td>
<td>6F-00A-00-000</td>
<td>No Relay 35 +/- 5 25 +/- 5 10 +/- 3 6.5 3 Continuous On NA NA NA</td>
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</tr>
<tr>
<td>TC-6F-AC</td>
<td>6F-03T-00-000</td>
<td>VAC Version 35 +/- 5 25 +/- 5 10 +/- 3 6.5 3 Continuous On 85-250 VAC 24-280 VAC 10</td>
<td></td>
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<tr>
<td>TC-6F-DC</td>
<td>6F-43D-00-000</td>
<td>12/24 VDC 35 +/- 5 25 +/- 5 10 +/- 3 6.5 3 Continuous On 12/24 VDC 0-100 VDC .02-20 ADC</td>
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</table>

TC-3F Heat and Cool
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:

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-3F-AC</td>
<td>3F-04R-00-000</td>
<td>VAC Version 35 +/- 5 15 +/- 5 6.5 3 85-280 VAC 24-280 VAC 10 AMPS</td>
<td></td>
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</tr>
<tr>
<td>TC-3F-DC</td>
<td>3F-44G-00-000</td>
<td>12/24 VDC 35 +/- 5 15 +/- 5 6.5 3 3.5-32 VDC 0-100 VDC .02 - 20 ADC</td>
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</tr>
</tbody>
</table>

* H-Bridge relays included

TC-7F Heat/Cool with ECO-Mode
Model TC-7F (Heat/Cool) thermostat incorporates the same technology as the TC-3F. It contains a single setting each for both heating and cooling and a heat exchanger mode (ECO-Mode).

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
<th>Notes</th>
<th>N1 Temp. °C</th>
<th>N2 Cool Temp. °C</th>
<th>Reset (Max) °C</th>
<th>Reset (Typ) °C</th>
<th>Operating Voltage</th>
<th>Switching Voltage</th>
<th>Switching Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-7F-DC</td>
<td>7F-24G-00-000</td>
<td>24 VDC 35 +/- 3 25 +/- 3 10 +/- 3 6.5 3 24 VDC 24 VDC .02 - 20 ADC</td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

* H-Bridge relays included

For custom variations of any of the controls, contact TECA.
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.