

Product Information Packet

Model AHP-1801EPHC

Solid State, NEMA 12, C1D2, Heat/Cool Air Conditioner

with TC-3F Temperature Control

Part #0-0131-1-003

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 # SK160427

Installation Drawing # 1800-A-F49

Temperature Control Information

Warranty Information



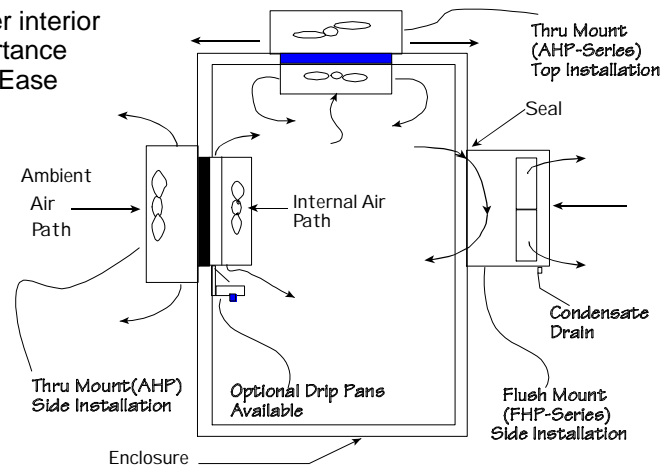
ThermoElectric Cooling America Corporation
4048 W. Schubert Avenue • Chicago, IL (U.S.A.) 60639
Ph: 773/342-4900 Fx: 773/342-0191
sales@thermoelectric.com www.thermoelectric.com

Important Installation Notes for Air 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

Hazardous Location Air Conditioner

Air Cooled
Through Mounted
NEMA-12, 4X, Class I Div 2

120 VAC, 240 VAC Input
1100 BTU/HR
Hazardous Locations

FEATURES

- Compact, (18" L X 12.35" W X 9.69"D)
- Excels in high ambient temperatures
- Environmentally Safe
- Dual voltage versions available, consult factory.
- No compressor, fluorocarbons or filters
- Virtually maintenance-free operation
- Stainless steel exterior housing
- Versions to withstand corrosive environments, shock and vibration
- Mounts and operates in any orientation
- Groups A, B, C, D
- Easy to use Pivot Clean feature
- Agency approvals: UL 1604, UL 1995, CSA 22.2

INCLUDES

- Adjustable temperature control
- Mounting gasket and hardware
- Power input line cord

OPTIONS

- Other temperature settings for single set point controls



SPECIFICATIONS

MODEL	PART NUMBER	VOLTAGE VAC 50/60 HZ	CURRENT AMPS.	WEIGHT LBS.(KG)	TEMP. CONTROL	OPERATING AMBIENT TEMPERATURE RANGE °C	OPERATING ENCLOSURE TEMPERATURE RANGE °C	ENVIRONMENT
AHP-1800EP	0-0180-0-002	120	8.0	46(21)	TC-6F	-40/+63	-10/+60	NEMA-12
AHP-1800EP	0-01F0-0-002	120	8.0	46(21)	TC-1F	-40/+63	-10/+60	NEMA-12
AHP-1800EP-1	0-0170-0-004	120	8.0	46(21)	EXT*	-40/+63	-10/+60	NEMA-12
AHP-1800EPHC	0-0130-1-003	120	8.0	46(21)	TC-3F	-40/+63	-10/+60	NEMA-12
AHP-1800EPHC-1	0-0170-1-006	120	8.0	46(21)	EXT*	-40/+63	-10/+60	NEMA-12
AHP-1801EP	0-0181-0-002	120/240	8.0/5.0	46(21)	TC-6F	-40/+63	-10/+60	NEMA-12
AHP-1801EP	0-01F1-0-002	120/240	8.0/5.0	46(21)	TC-1F	-40/+63	-10/+60	NEMA-12
AHP-1801EP-1	0-0171-0-002	120/240	8.0/5.0	46(21)	EXT*	-40/+63	-10/+60	NEMA-12
AHP-1801EPHC	0-0131-1-003	120/240	8.0/5.0	46(21)	TC-3F	-40/+63	-10/+60	NEMA-12
AHP-1801EPHC-1	0-0131-1-006	120/240	8.0/5.0	46(21)	EXT*	-40/+63	-10/+60	NEMA-12
AHP-1800XP	0-0180-2-002	120	8.0	47(21.4)	TC-6F	-40/+75	-10/+60	NEMA-4X
AHP-1800XP	0-01F0-2-002	120	8.0	47(21.4)	TC-1F	-40/+75	-10/+60	NEMA-4X
AHP-1800XP-1	0-0170-2-004	120	8.0	47(21.4)	EXT*	-40/+75	-10/+60	NEMA-4X
AHP-1800XPHC	0-0130-3-003	120	8.0	47(21.4)	TC-3F	-40/+75	-10/+60	NEMA-4X
AHP-1800XPHC-1	0-0170-3-006	120	8.0	47(21.4)	EXT*	-40/+75	-10/+60	NEMA-4X
AHP-1801XP	0-0181-2-002	120/240	8.0/5.0	47(21.4)	TC-6F	-40/+75	-10/+60	NEMA-4X
AHP-1801XP	0-01F1-2-002	120/240	8.0/5.0	47(21.4)	TC-1F	-40/+75	-10/+60	NEMA-4X
AHP-1801XP-1	0-0171-2-005	120/240	8.0/5.0	47(21.4)	EXT*	-40/+75	-10/+60	NEMA-4X
AHP-1801XPHC	0-0131-3-003	120/240	8.0/5.0	47(21.4)	TC-3F	-40/+75	-10/+60	NEMA-4X
AHP-1801XPHC-1	0-0171-3-004	120/240	8.0/5.0	47(21.4)	EXT*	-40/+75	-10/+60	NEMA-4X

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

Consult factory for shock and vibration models

AHP-1800EP

MOUNTING STYLE

Through Mounted

ENVIRONMENTS SERVED

Class I Div 2 NEMA-12 IP 52

Class I Div 2 NEMA-4X IP 56

RATING (TRADITIONAL)

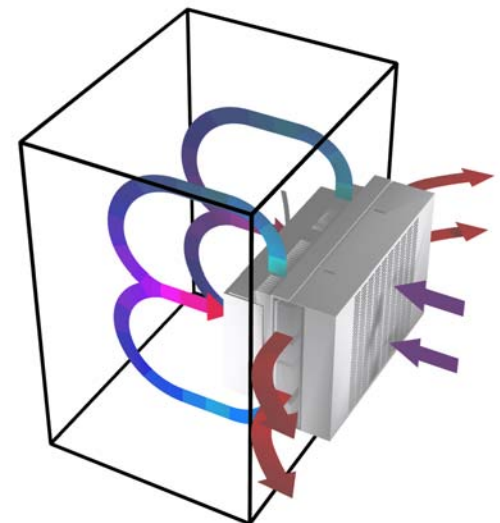
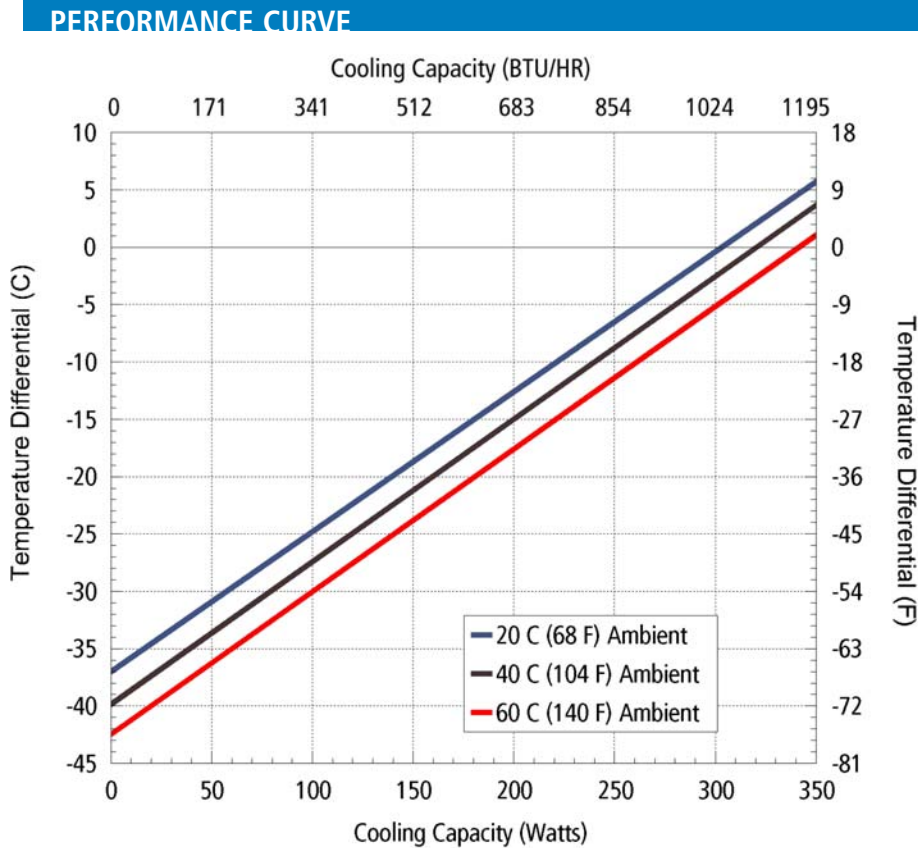
1100 BTU/hr @ 0 °F ΔT

1420 BTU/hr @ +20 °F ΔT

RATING (DIN 3168)

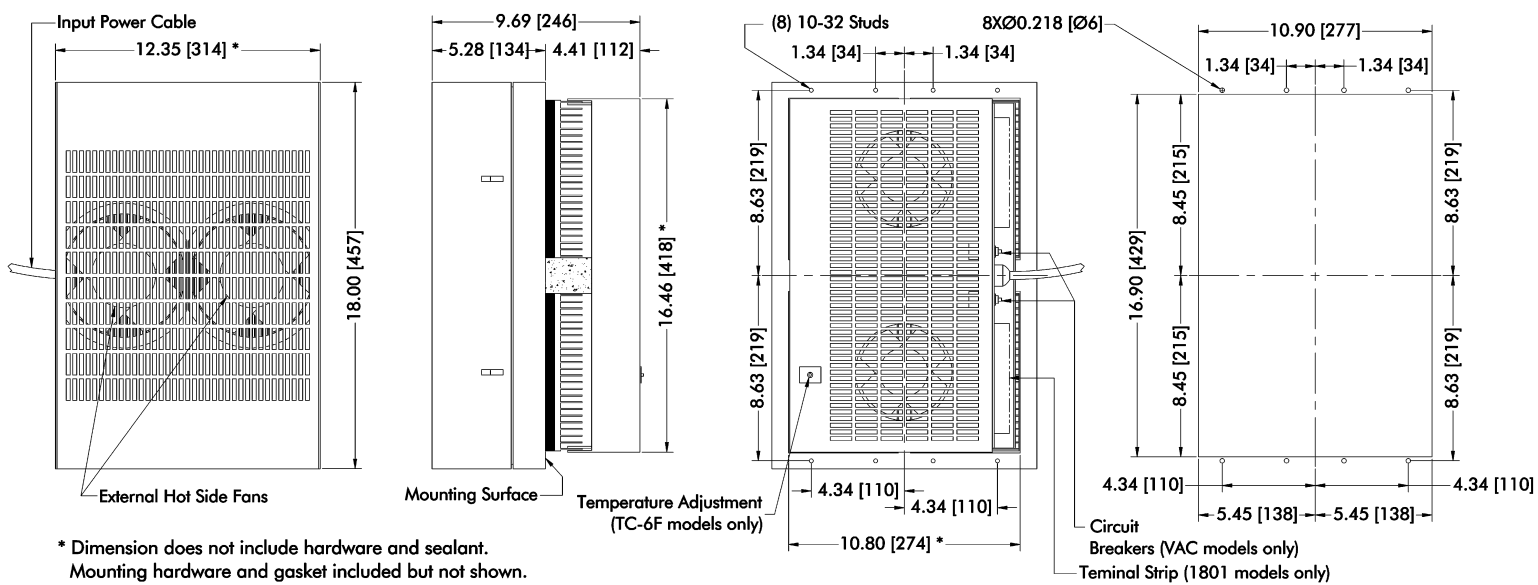
322 Watts L35 L35

210 Watts L35 L50

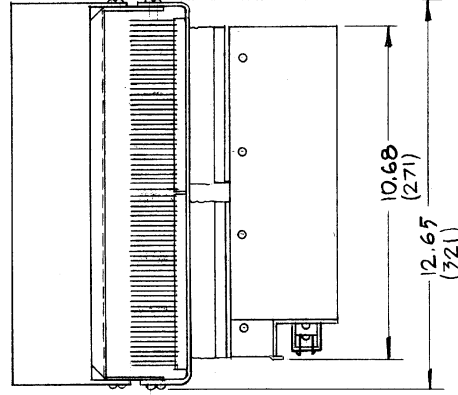


Air Flow Pattern

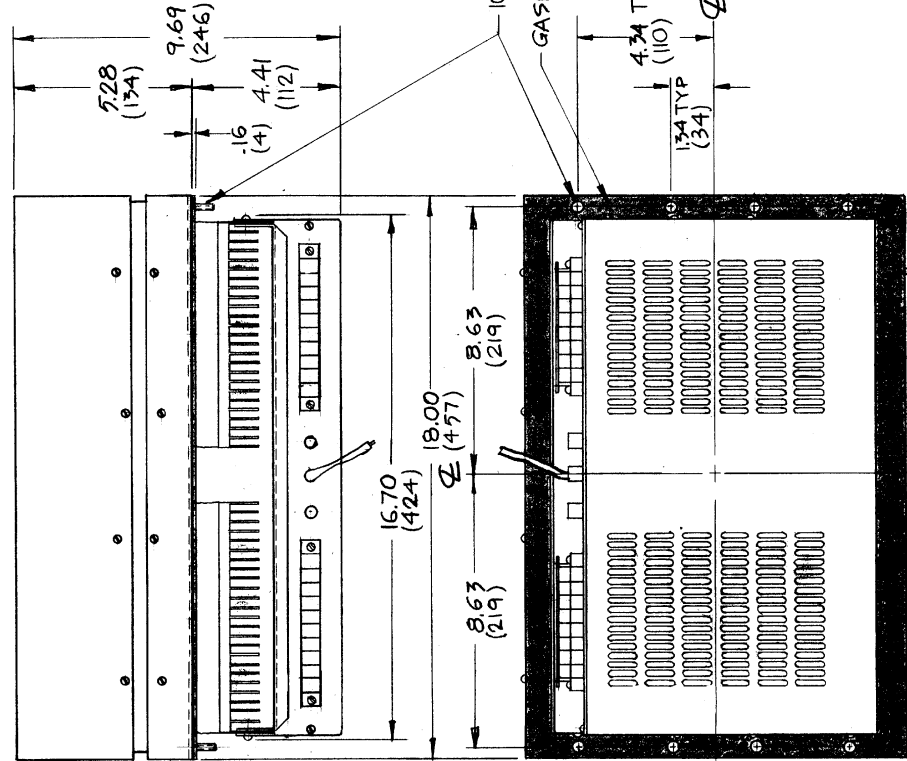
DIMENSIONS



LTR	DESCRIPTION	DATE	APPROVED
A	ADD METRIC DIMENSIONS	03.23.90	1.1N
B	REVISED TITLE	05.13.90	IN
C	CORRECTED (44) TO (34)	09.10.92	IN



NOTE: DIMENSIONS IN INCHES
(MILLIMETERS)



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

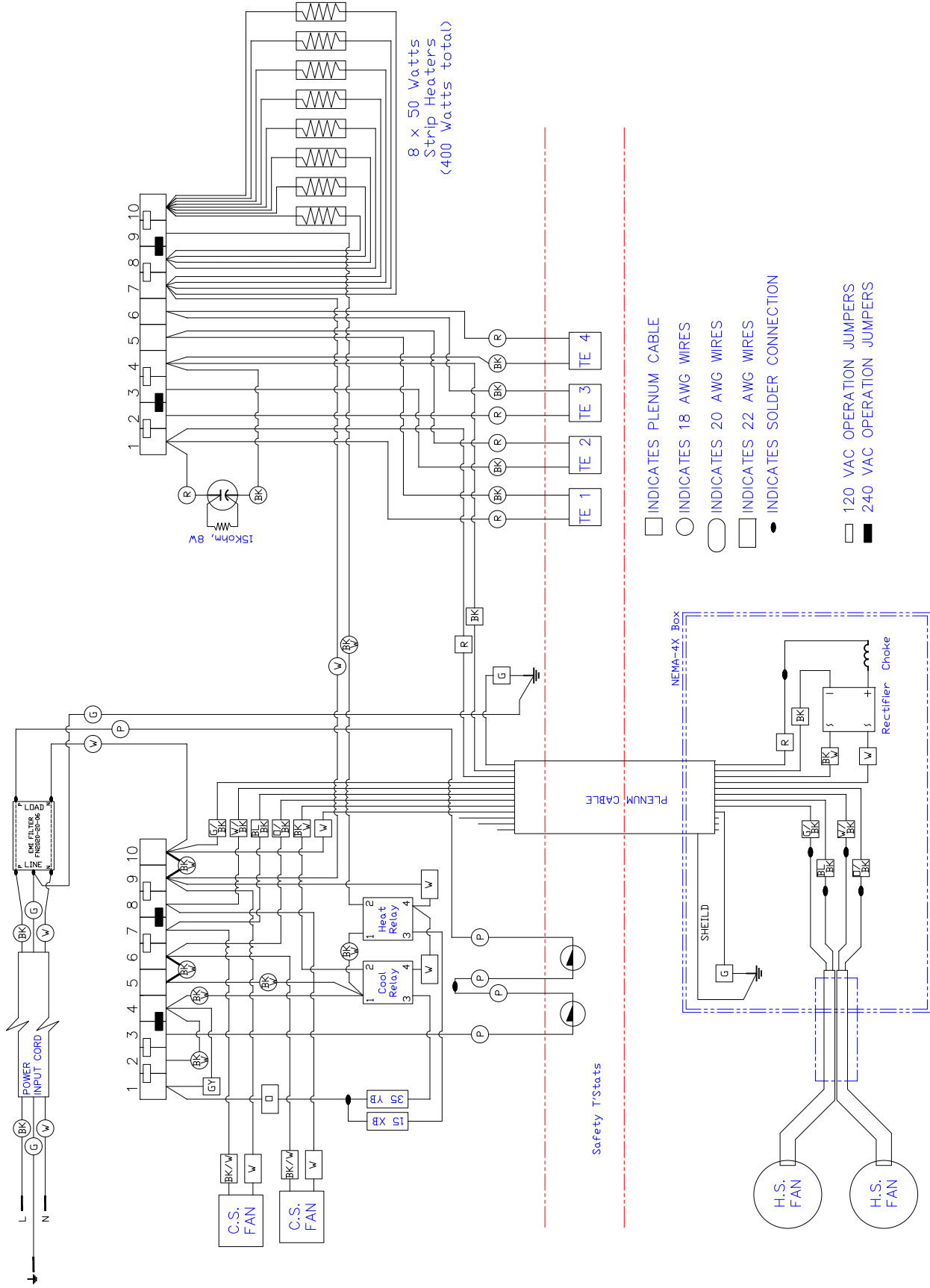
MATERIAL
FINISH

APPROVALS
DATE
DRAWN I.N. 1.23.90
CHECKED

SIZE
B
DRAWING NO.
1800-B-A18
SCALE 1/4" = 1" SHEET 12 OF 18

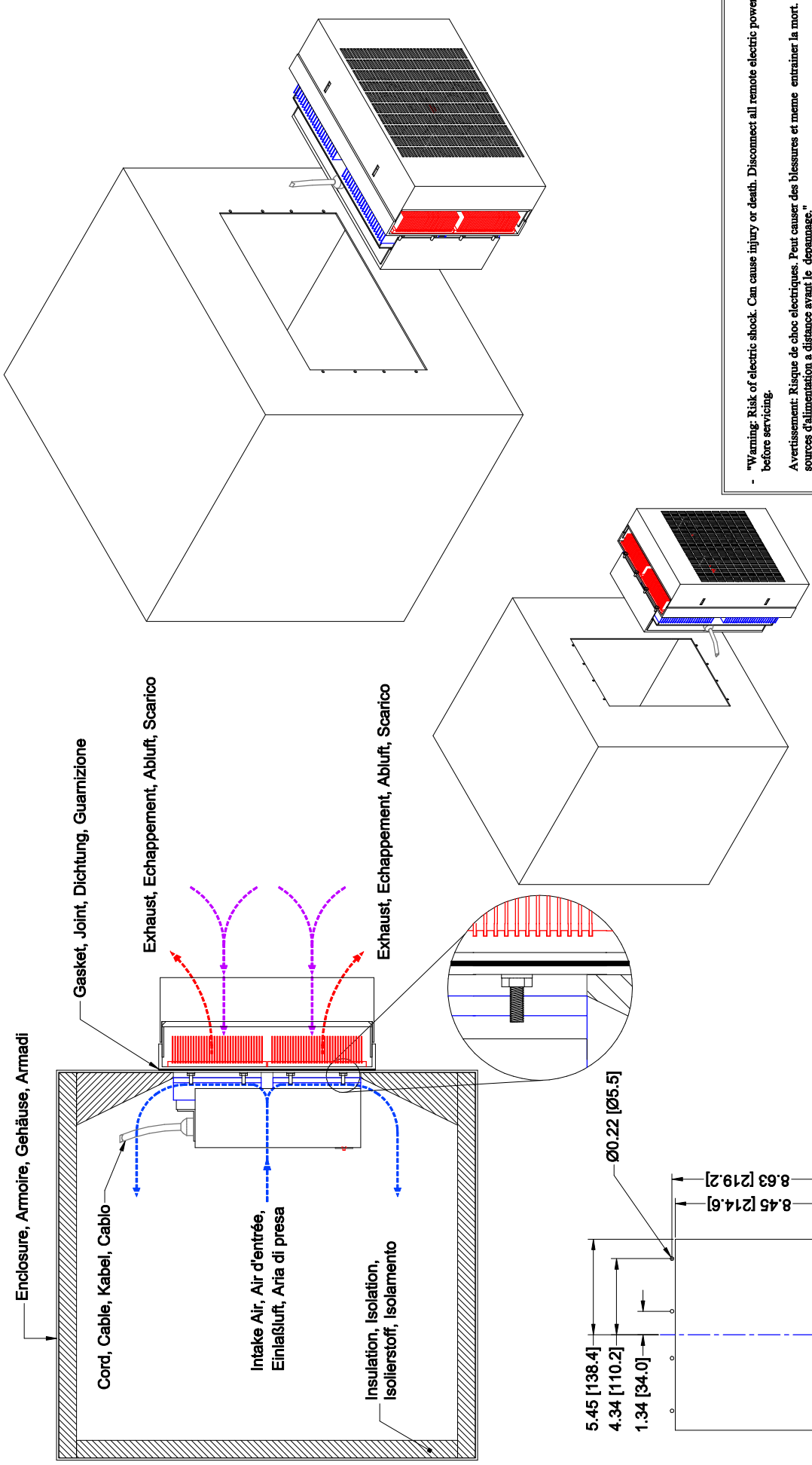
teca
ThermoElectric Cooling America Corp.

AHP 1801/1801X
ASSEMBLY



REV	DESCRIPTION	Date	APPROVED									
<div>INFORMATION DISCLOSED HEREIN IS THE CONFIDENTIAL PROPERTY OF TECA CORP. RECIPIENT SHALL NOT USE THE INFORMATION IN ANY UNAUTHORIZED MANNER.</div> <div>FINISH:</div> <div>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:<table><tr><td>DECIMALS</td><td>ANGLE</td><td>+/-</td></tr><tr><td>.XX +/-</td><td>FRACTION</td><td>+/-</td></tr><tr><td>.XXX +/-</td><td></td><td>+/-</td></tr></table></div> <div>MATERIAL:</div>				DECIMALS	ANGLE	+/-	.XX +/-	FRACTION	+/-	.XXX +/-		+/-
DECIMALS	ANGLE	+/-										
.XX +/-	FRACTION	+/-										
.XXX +/-		+/-										
THERMOELECTRIC COOLING AMERICA CORP.												
AHP-1801EPHC WITH TC-3F												
WIRING DIAGRAM												
DRAWN BY: AA		DRAWING #										
DATE: 04/19/16		SK160427										
S0550		SCALE	MASTER: MASTER									
		REV LEVEL										
		SHEET										

Mounting, Monture, Montage, Montaggio



Alternate, Alternative, Alternativa

- "Warning: Risk of electric shock. Can cause injury or death. Disconnect all remote electric power supplies before servicing.
Avertissement: Risque de choc electriques. Peut causer des blessures et meme entrainer la mort. Couper les sources d'alimentation a distance avant le depannage."
- "Warning - Explosion Hazard - Substitution of components may impair suitability for Class 1, Division 2.
Avertissement - Risque D'Explosion - La substitution de composants peut rendre ce material inacceptable pour les emplacements de Class 1, Division 2."

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

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	TOLERANCES ARE:		
	DECIMALS	ANGLE	+/-
	.XX +/-	XXX +/-	FRACTION +/-

REV	DESCRIPTION	Date	APPROVED	AA	AA
A	Changed AHP-1800P to AHP-1800EP in title block.	09/01/2011	AA	AA	
B	Revised warning notes to reflect the Intertek report.	05/25/2016	AA	AA	

THERMoeLECTRIC COOLING AMERICA CORP.

AHP-1800EP / AHP-1800XP SERIES
TYPICAL FIELD MOUNTING

DRAWN BY: AA	DRAWING # 1800-A-F52	REV LEVEL B
DATE: 05/23/2011	SCALE	MASTER: MASTER
D8090		SHEET

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.

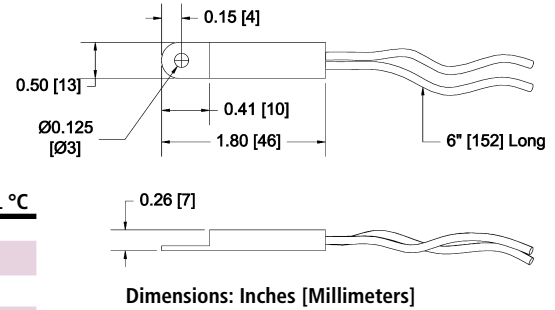
Part Numbers:

Mode	Part Number	Note
Cool	TC-1C-XX	switch closes on temperature rise
Heat	TC-1H-XX	switch closes on temperature drop

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

VOLTAGE	CURRENT AMPS	SET POINT TOLERANCE °C	RESET DIFFERENTIAL °C
125 VAC	2	+/- 3	3 - 6
250 VAC	1.3	+/- 3	3 - 6
12 VDC	2	+/- 3	3 - 6
24 VDC	1.3	+/- 3	3 - 6



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.

MODEL NUMBER	PART NUMBER	NOTES	HX TEMP. °C	COOL TEMP. °C	RESET (MAX) °C	RESET (TYP) °C	OPERATING VOLTAGE	SWITCHING VOLTAGE	ACTIVE MODE SWITCHING CURRENT	ECO-MODE SWITCHING CURRENT
TC-4F-DC	4F-24G-00-000	24 VDC	25 +/- 3	35 +/- 3	6.5	3	24 VDC	24 VDC	.02 - 20 ADC	1.3 ADC

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.

MODEL NUMBER	PART NUMBER	NOTES	TEMP @ T1 °C	TEMP @ T2 °C	T1-T2 (MAX) °C	RESET (TYP) °C	RESET °C	TEMP @ T3	OPERATING VOLTAGE	SWITCHING VOLTAGE	SWITCHING CURRENT
TC-6F	6F-00A-00-000	No Relay	35 +/- 5	25 +/- 5	10 +/- 3	6.5	3	Continuous On	NA	NA	NA
TC-6F-AC	6F-03T-00-000	VAC Version	35 +/- 5	25 +/- 5	10 +/- 3	6.5	3	Continuous On	85-250 VAC	24-280 VAC	10
TC-6F-DC	6F-43D-00-000	12/24 VDC	35 +/- 5	25 +/- 5	10 +/- 3	6.5	3	Continuous On	12/24 VDC	0-100 VDC	.02-20 ADC
TC-6F-DC	6F-33D-00-000	48 VDC	35 +/- 5	25 +/- 5	10 +/- 3	6.5	3	Continuous On	48 VDC	0-100 VDC	.02-20 ADC

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:

MODEL NUMBER	PART NUMBER	NOTES	COOL TEMP. °C	HEAT TEMP. °C	RESET (MAX) °C	RESET (TYP) °C	OPERATING VOLTAGE	SWITCHING VOLTAGE	SWITCHING CURRENT
TC-3F-AC	3F-04R-00-000	VAC Version	35 +/- 5	15 +/- 5	6.5	3	85-280 VAC	24-280 VAC	10 AMPS
TC-3F-DC	3F-44G-00-000	12/24 VDC	35 +/- 5	15 +/- 5	6.5	3	3.5-32 VDC	0-100 VDC	.02 - 20 ADC
TC-3F-DC*	3F-44P-00-000	12/24 VDC	35 +/- 5	15 +/- 5	6.5	3	3.5-32 VDC	0-100 VDC	.02 - 20 ADC

* 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).

MODEL NUMBER	PART NUMBER	NOTES	COOL TEMP. °C	HX TEMP. °C	HEAT TEMP. °C	RESET (MAX) °C	RESET (TYP) °C	OPERATING VOLTAGE	SWITCHING VOLTAGE	SWITCHING CURRENT
TC-7F-DC	7F-24G-00-000	24 VDC	35 +/- 3	25 +/- 3	10 +/- 3	6.5	3	24 VDC	24 VDC	.02 - 20 ADC

H-Bridge relays included

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



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teca@thermoelectric.com www.thermoelectric.com

DECLARATION OF CONFORMITY

TYPE OF EQUIPMENT

Electrical Heat Pump, Air Conditioner
Solid State Cooling Devices

MODEL NUMBERS

Model nos. AHP followed by -1200XP, or -1200XPM, or 1200EP, or -1201XP, or -1201XPM or -1201EP; may be followed by HC may be followed by -1 or W/TC followed by -3F or -6F.

Model nos. AHP followed by 1800XP or 1800EP; may be followed by HC; may be followed by -1, or -2, or W/TC followed by 3F or 6F.

Model nos. AHP followed by -1801XP or -1801EP; may be followed by HC; may be followed by -1 or -2, or W/TC followed by 3F or 6F.

Model no. AHP followed by -1802XP or 1802EP may be followed by HC, may be followed by -1, or -2, or W/TC followed by 3F or 6F.

YEAR OF MANUFACTURE

Refer to the first two digits of the serial number on the manufacturers ID label

MANUFACTURER

TECA Corporation
4048 W. Schubert Avenue
Chicago, IL 60639
U.S.A.

APPLIED STANDARDS

- Standard for Electrical Equipment for Use in Class I and Class II, Division 2 and Class III Hazardous (Classified) Locations (UL 1604 - 3rd Edition 10/06/1995)
[Note: For use in Class I, Division 2 Locations Only]
- Standard for Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations; Industrial Products; General Instruction No. 1 (CSA C22.2 No. 213-M1987 Ed.1 R1992)
- Standard for Safety of Heating and Cooling Equipment (UL 1995 / CSA C22.2.2 No. 236-05 - 3rd Edition, dated: February 18, 2005)

TESTING AGENCY

ITS Intertek Testing Services ETL SEMKO



REPORT No.

551722

VP of Engineering
Andy Brecklin

May 26, 2011

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.