

Product Information Packet

Model LHP-1 200XP

NEMA-4X Liquid Cooled Solid State Air Conditioner
Hazardous locations: C1D1 and Zone 1

Set For Remote Temperature Control

Part #2-3050-2-030

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 # SK061004

Wiring Drawing # SK130806

Installation Drawing # SK080407

Warranty Information

Do not operate this air conditioner without running coolant fluid

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

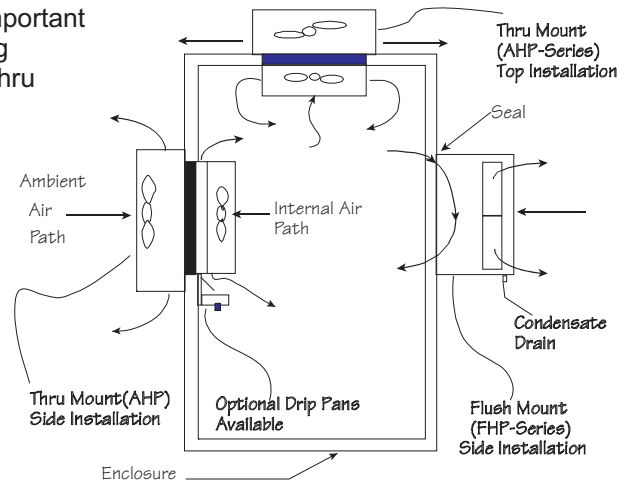
ThermoElectric Cooling America Corporation
4048 W. Schubert Avenue • Chicago, IL (U.S.A.) 60639
Ph: 773/342-4900 Fx: 773/342-0191
sales@thermoelectric.com www.thermoelectric.com

Important Installation Notes for Air

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.

LHP-1200XP

Liquid Cooled Air Conditioner

Liquid Cooled
Through Mounted
NEMA-4, 4X, CID2, CID1 & ATEX Zone 1
(No Agency Approvals)

120 VAC Input
613 BTU/HR



FEATURES

- Compact, (only 15" L X 8" W X 7.3" D)
- Can be mounted entirely inside purged enclosure or maintain purge when wall mounted
- Mounts and operates in any orientation: horizontal, vertical, etc.
- No moving parts except fans
- Environmentally safe
- No compressor, fluorocarbons or filters
- Virtually maintenance-free operation
- Stainless steel exterior housing
- Operating ambient/coolant temperature range 0/+70 °C
- Operating enclosure temperature range -10/+60 °C
- Weight 21 LBS.

INPUTS

Voltage	120 VAC
Current, Active	3.7 AMPS
Coolant Flow	> 0.3 GPM (1.0 LPM)

CONTROL TEMPERATURES

Temp. Control	Active Heat °C	ECO-Mode °C	Active Cool °C
TC-1F	-	-	35
TC-6F	-	-	25 or 35
TC-3F	10	-	35

PERFORMANCE RATINGS

Cooling (Traditional)	613 BTU/HR
Cooling (Din 3168)	180 WATTS
Cooling COP (at L35 L35)	0.41
Weight	21 LBS.

INCLUDES

- Integral power supply
- Mounting gasket and hardware
- Power input cord
- In/Out 1/4-18 NPT connectors for coolant

CONFIGURATIONS

MODEL	PART NUMBER	NOTES	TEMPERATURE CONTROL	ENVIRONMENT
LHP-1200XP	2-3090-2-027	Cool only	None	NEMA-4X IP 56, CI D2
LHP-1200XP	2-3080-2-028	Cool only	TC-6F	NEMA-4X IP 56, CI D2
LHP-1200XP	2-30F0-2-029	Cool only	TC-1F	NEMA-4X IP 56, CID2
LHP-1200XP	2-3050-2-030	Cool only	EXT*	NEMA-4X IP 56, CI D2
LHP-1200XPHC	2-3030-3-031	Heat/Cool	TC-3F	NEMA-4X IP 56, CI D2
LHP-1200XPHC	2-3050-3-032	Heat/Cool	EXT*	NEMA-4X IP 56, CI D2
LHP-1200XP	2-3090-2-021	Cool only	None	NEMA-4X IP 56, CI D1 ATEX Zone 1
LHP-1200XP	2-3080-2-022	Cool only	TC-6F	NEMA-4X IP 56, CI D1 ATEX Zone 1
LHP-1200XP	2-30F0-2-023	Cool only	TC-1F	NEMA-4X IP 56, CI D1 ATEX Zone 1
LHP-1200XP	2-3050-2-024	Cool only	EXT*	NEMA-4X IP 56, CI D1 ATEX Zone 1
LHP-1200XPHC	2-3030-3-025	Heat/Cool	TC-3F	NEMA-4X IP 56, CI D1 ATEX Zone 1
LHP-1200XPHC	2-3050-3-026	Heat/Cool	EXT*	NEMA-4X IP 56, CI D1 ATEX Zone 1

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

Designed for Nema-4, Nema-4X, CID2, CID1 and ATEX Zone 1, **not certified**. ATEX certification will require full system approvals. All specifications subject to change without notice

LHP-1200X

MOUNTING STYLE

Through Mounted

ENVIRONMENTS SERVED

NEMA-4X IP 56, CID2, CID1, Zone 1

RATING (TRADITIONAL)

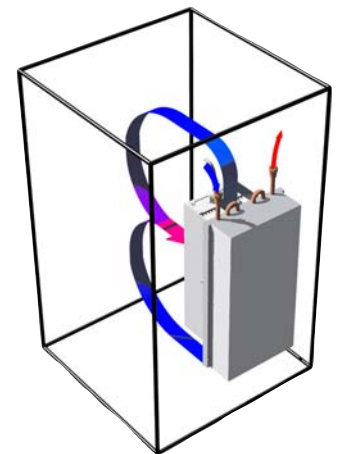
613 BTU/hr @ 0 °F ΔT

770 BTU/hr @ +20 °F ΔT

RATING (DIN 3168)

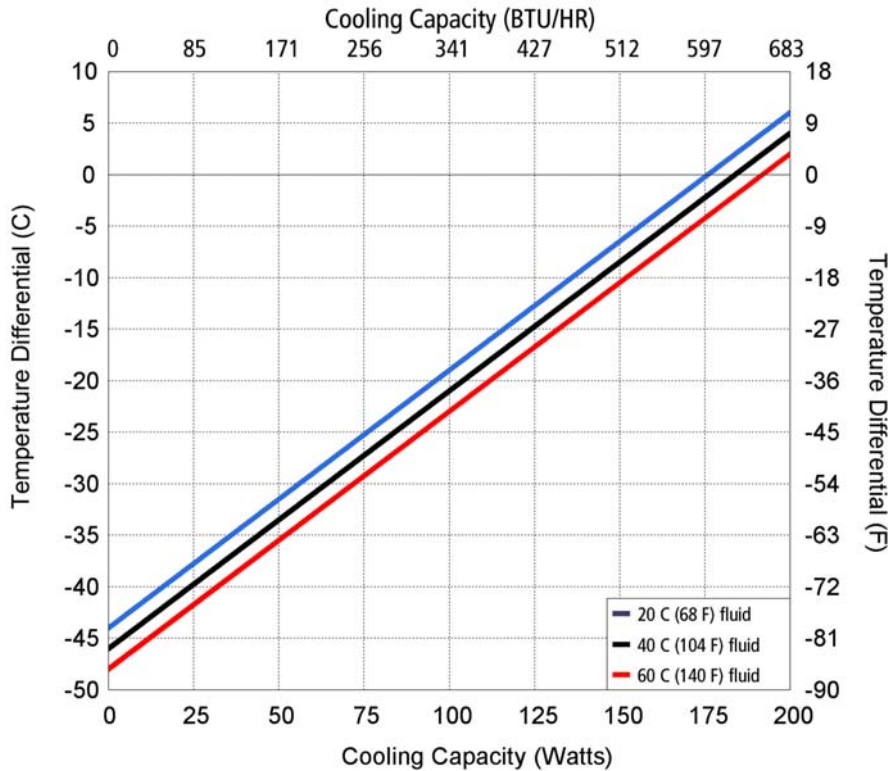
180 Watts L35 L35

125 Watts L35 L50



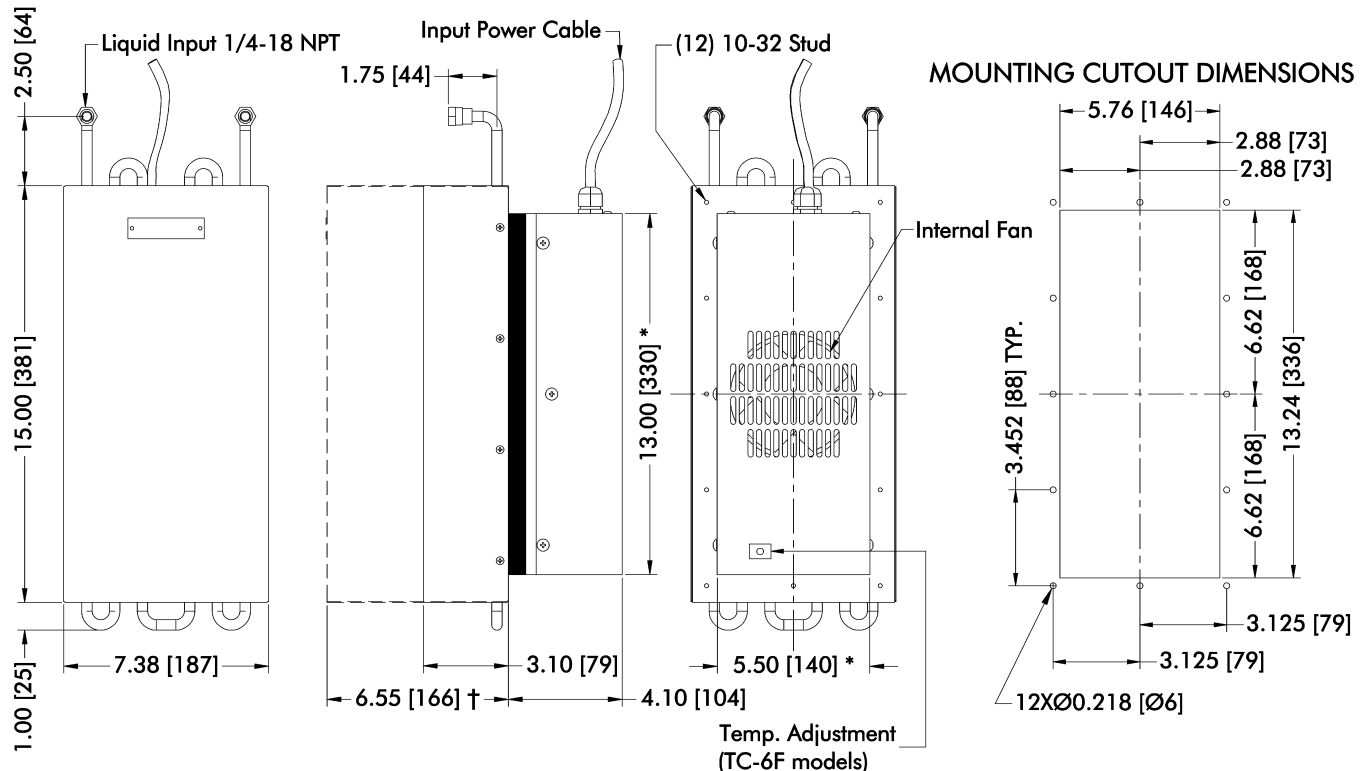
Air Flow Pattern

PERFORMANCE CURVE



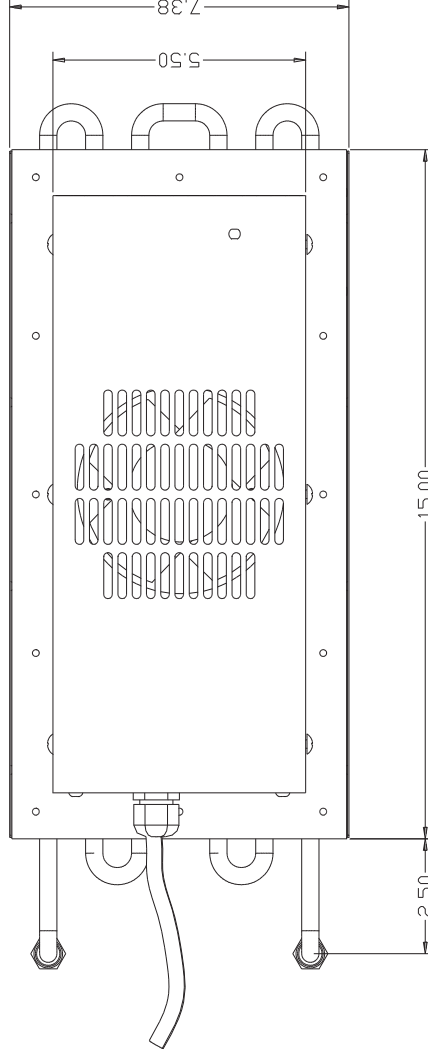
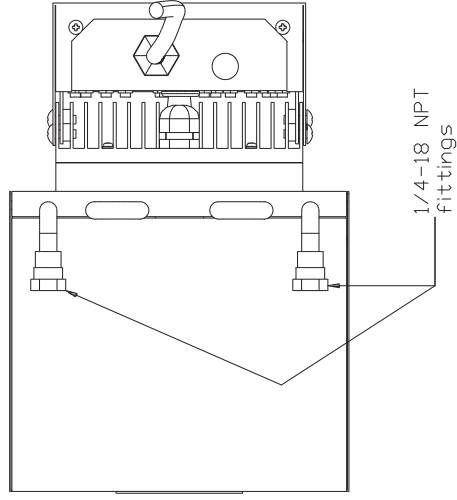
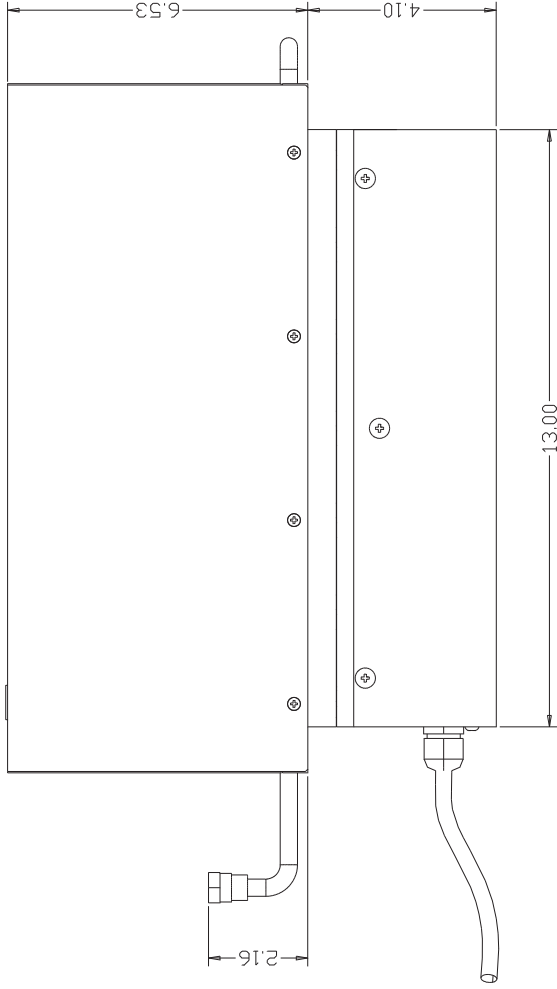
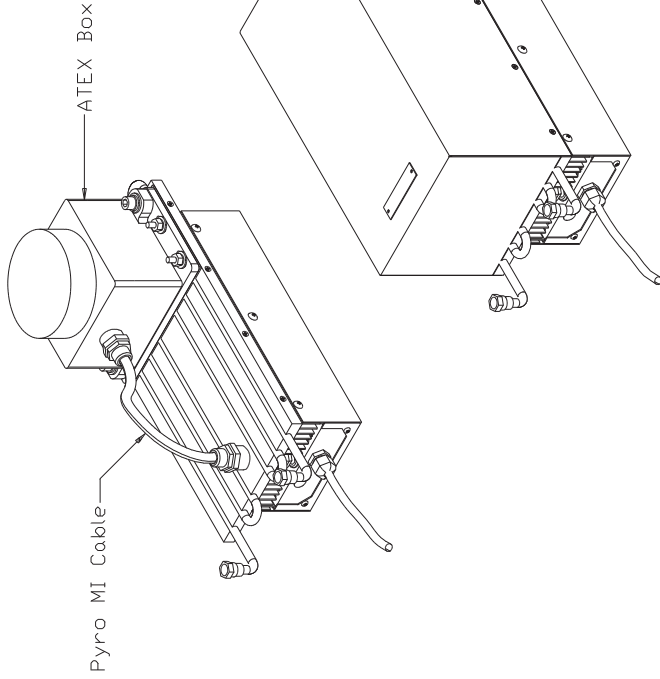
Equation of line: $y = \Delta T(^{\circ}C)$ $x = \text{Capacity (Watts)}$			
Fluid Temp	20°C	40°C	60°C
Enclosure Air	$y = .25x - 44.0$	$y = .25x - 46.0$	$y = .25x - 48.0$
Cold Sink	$y = .19x - 44.0$	$y = .19x - 46.0$	$y = .19x - 48.0$

DIMENSIONS



* Dimension does not include hardware. Mounting hardware and gasket included but not shown.

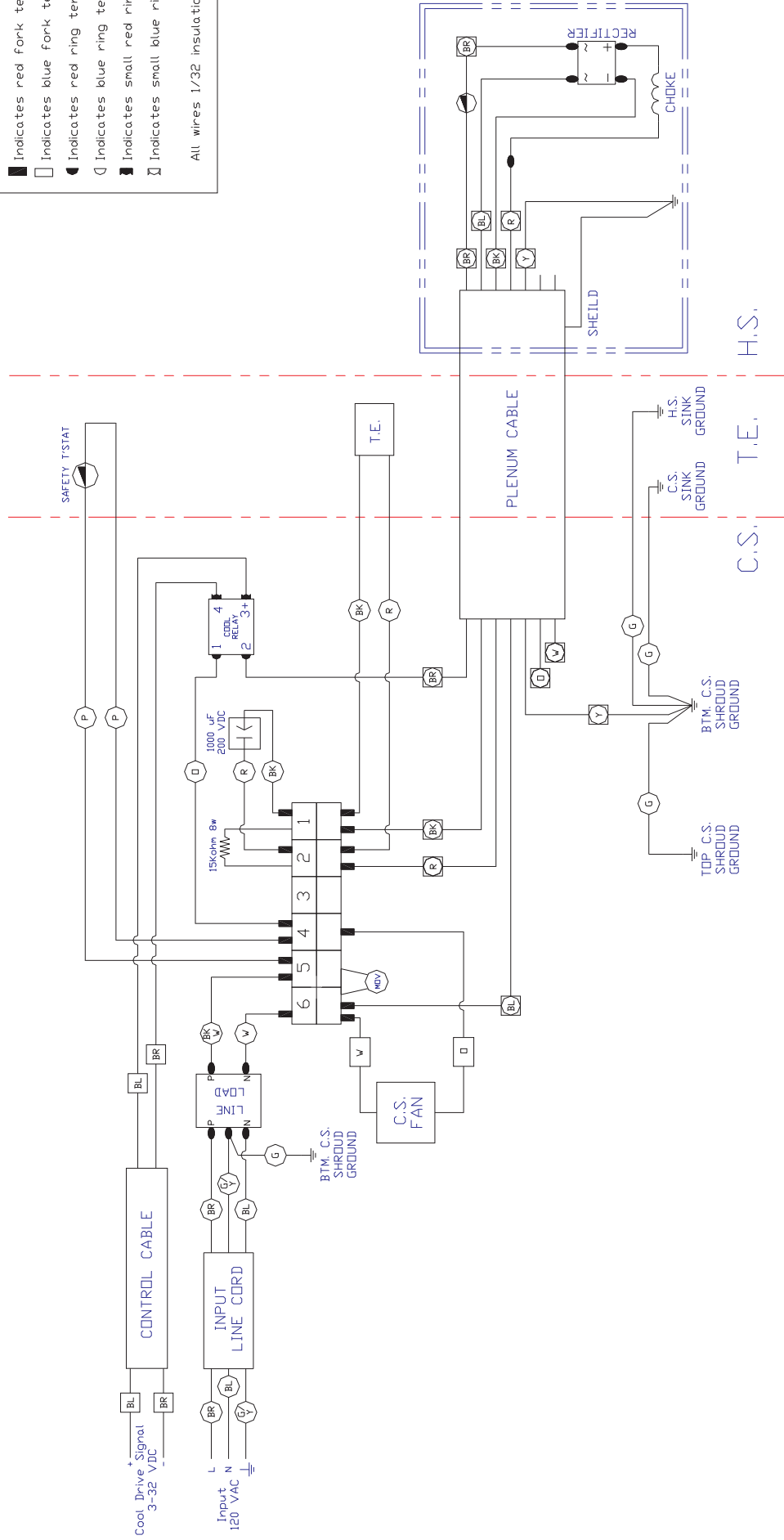
† Dimension applies to XP versions.
Dimensions: Inches [Millimeters]



REV	DESCRIPTION	Date	APPROVED
A	Updated drawing title block (changed from P061006M to LHP-1200XP).	04/14/08	AA

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FINISH:	MATERIAL:	DECIMALS .XX +/-	ANGLE +/-
		.XXX +/-	FRACTION +/-
THERMoeLECTRIC COOLING AMERICA CORP. LHP-1200XP LIQUID COOLED AIR CONDITIONER		DRAWN BY: AA DATE: 10/24/06	DRAWING # SK061004
REV	LEVEL	SCALE	SHEET
	A	D6782	MASTER

- Indicates 18 AWG wires
 - Indicates 20 AWG wires
 - Indicates 22 AWG wires
 - Indicates M1 cable wires
 - Indicates solder connection
 - Indicates red fork terminal
 - Indicates blue fork terminal
 - Indicates red ring terminal
 - Indicates blue ring terminal
 - Indicates small red ring terminal
 - Indicates small blue ring terminal
- All wires 1/32 insulation



THERMOELECTRIC COOLING AMERICA CORP.		DRAWING #	REV LEVEL
LHP-1200XP SET FOR REMOTE CONTROL WIRING DIAGRAM		AA	SK130806
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		08/01/2013	SK070314
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS ANGLE +/- .XX +/- .XXX +/- FRACTION +/- MATERIAL:		SCALE	SHEET
		D8798	1
REV	DESCRIPTION	Date	APPROVED

Mounting, Monture, Montage, Montaggio

Enclosure, Armoire, Gehäuse, Armadi

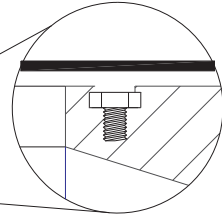
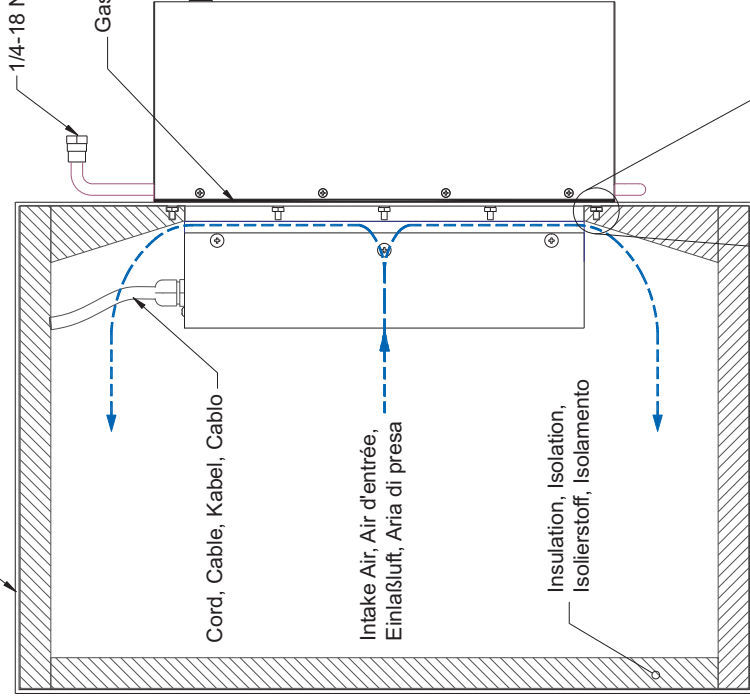
1/4-18 NPT Connector

Gasket, Joint, Dichtung, Guarnizione

Cord, Cable, Kabel, Cabo

Intake Air, Air d'entrée,
Einlaßluft, Aria di presa

Insulation, Isolation,
Isolierstoff, Isolamento



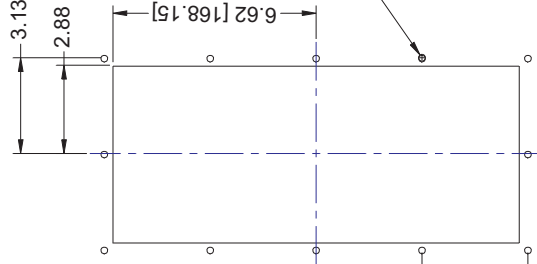
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2.88 [73.15]

6.62 [168.15]

3.45 [87.68]
TYP.

Ø0.22 [Ø5.59]



Alternate, Alternative, Alternativa

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

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FINISH:

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

DECIMALS	ANGLE	+	-
.XX	°	+	-
XXX	FRACTION	+	-
+		+	-

MATERIAL:

THERMOELECTRIC COOLING AMERICA CORP.

LHP-1200XP
TYPICAL FIELD MOUNTING

DRAWN BY: AA

DATE: 04/14/08

DRAWING #

SK080407

SCALE

MASTER:
MASTER

REV
LEVEL

SHEET

REV

DESCRIPTION

Date

APPROVED

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.