

# SMX II Control System (TW)

❖ INSTALLATION • OPERATION

English

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For Tempered Water SMX II Control Systems  
using SMX II and SMXir

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# SMX II Control Systems • Introduction

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## **Warning**

*This manual contains essential information concerning the installation and operation of your SMX II control system. It is very important that you read and understand the contents of this manual before using the equipment, and it should be kept on the boat for future reference. If you have any questions about the contents of this manual, contact your local Cruisair dealer or the Taylor Made Environmental Service Department for assistance.*

## **Introduction**

This manual covers the installation and operation of Cruisair SMX II computerized controls for Tempered Water (TW) marine air conditioning systems. There are many different parts required for a complete installation, so make sure that you have all the necessary items when installing the system.

Two different keypad/displays are available for use with SMX II control systems. The original SMX II keypad/display is rectangular and requires a large cutout in the mounting surface. The SMXir keypad/display has a compact housing with a decorative hinged cover, and is surface-mounted. An optional remote control can be used with the SMXir keypad/display. Hereinafter, this manual will refer to the original SMX II keypad/display as **SMX II**. The terms keypad and display are interchangeable.

Before installing the system, please read the warnings in this manual.

If you have an SMX Net control system refer to manual L-0650, *SMX Series Control Systems (TW)*.

# SMX II Control Systems • Installation



## **Warning**

Make sure all power is off before opening any electrical box.

## **Installing the SMX Keypad/Display**

To be operated satisfactorily, the SMX keypad/display should be installed so it is both visible and accessible. It should be placed in plain view and within easy reach of the operator. Overhead locations are discouraged since they make it very difficult to use the SMX control.

Select a spot on an interior, vertical surface. This can be an inside or outside wall, partition or other permanent structure with rear access for wiring. The SMX control operates on low voltage DC and is certified ignition-protected. The space behind the SMX control does not have to be ventilated since the control components do not produce heat. For SMXir keypad installation, refer to Figure 8 in the back of this manual.

## **SMX II Only**

The SMX II keypad/display requires a cutout of 2<sup>9</sup>/<sub>16</sub>" x 7<sup>1</sup>/<sub>8</sub>" (65mm X 181mm).

After cutting the hole for the keypad control, make sure it fits and the printed circuit board is clear of the bulkhead and that no objects of any kind are in a position to contact the SMX circuitry. Plug the interconnect cable in and route it to the Power/Logic (P/L) box. Refit the control in the hole and secure it with four No. 6 x <sup>3</sup>/<sub>8</sub> inch screws. Hook the decorative plastic cover at the top, press it flat from the top down, and snap it in place at the bottom.

## **Retrofitting SMXir Keypad/Display to Original SMX II or 3-Knob**

Adapter plates are available to cover the old vertical or horizontal rectangular cutout and mount the SMXir keypad/display. Part #5103612 is a black plate, and #5103612W is white. Use adapter #4163805 to connect an existing CX cable to the SMXir display. (Refer to Figure 9 in the back of this manual for cables and adapters.)

## **Installing the Power/Logic Box**

The PLTX-HV Power/Logic box is typically located near the "master" air handler. It comes with a 3 ft (.9m) long wire harness that will be connected to the air handler junction box. These wires can be extended if required. Refer to installation diagrams in this manual. Other factors to keep in mind are:

- The SMX P/L board is ignition protected, enclosed, and operates in ambient temperatures up to 130°F (54°C).
- The P/L box may be installed in any position.
- The P/L board dissipates a small amount of heat when operating, and must be installed in a ventilated location.
- The P/L box is NOT waterproof and must be placed where it will NOT get wet.

The power input to the board can be 115V or 230V. The board automatically adjusts to either voltage.

## **Installing the Temperature Sensor**

The TSEP temperature sensor measures the cabin air temperature and relays the information to the P/L board. The sensor is 1" long by ¼" diameter (25mm x 7mm diameter) and is attached to a length of flat, 4-conductor cable with a RJ-11 phone type plug at the end. Different lengths of TSEP cables are available, from 2 feet to 80 feet (.6m to 24m).

For best results, the sensor should be placed in the return air path. Directly in front of the air handler coil, or behind the return air grill, are good locations. The sensor must not touch the coil, or be placed in the discharge air.

With the TSEP in the return air path, use the default mode of continuous fan operation for the most accurate temperature control. If intermittent fan operation is desired (fan cycles on and off with the setpoint), the sensor must be wall mounted on an INSIDE surface not subject to any influence from heat outside of the area (including direct sunlight). Thermistor covers are available for wall mounting.

The TSEP cable plugs into the RJ-11 jack on the P/L board marked "INSIDE TSE". Coil up any excess cable, and tie out of the way.

If you have a P/L board manufactured before 2000, you might have a 3-pin TSE plug. Adapters are available to connect the new TSEP cables to the old P/L boards. Refer to Figure 9 in the back of this manual.

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## **SMX Interconnect Cable - Connecting Keypad/Display To Power/Logic Board**

Connection between the SMXir keypad and the Power/Logic board should be made with a CXP## cable. These are shielded, flat cables with RJ-12 phone jack plugs on each end.

If using a SMX II keypad, use a CX## cable. This is a shielded, 3-conductor cable with 4-pin plugs on each end. The plugs on each end of the cable are identical, and are polarized. Make sure all 4 pins are engaged in the plug.

Both CXP and CX cables are available in different lengths, from 2 feet (.6m) to 80 feet (24m). Route the cable from the power/logic board to the keypad. Plug the cable in at both ends, and secure per low DC voltage standards.

### **Warning**

*The SMX interconnect (CX or CXP) and temperature sensor cables (TSEP) transmit low voltage DC signals, and outside interference can affect their operation. Do not route these cables beside A/C power cables, high voltage wiring, or antenna wires. Keep the cable runs as short as possible to reduce the chance of interference.*

## **Optional Humidistat**

TW SMX allows a wall-mount humidistat (Cruisair # 4061200) to be connected to the P/L board so that the system can monitor humidity in the cabin as well as temperature. This will only work properly if the air handler has auxiliary (electric) heat.

Mount the humidistat on a wall or in the return air duct to the air handler. Remove the jumper from the HI PRESS terminals on the P/L board, and run 2 wires (low voltage) from the HI PRESS terminals to the humidistat, and connect so the circuit is open when damp, and closed when dry.

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# SMX II Control Systems • Operation

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## **The SMX Keypad/Display**

The SMX II and SMXir keypad/displays are arranged for logical operation. The button layouts on the SMX II and the SMXir are similar, and the buttons perform the same respective functions.

### **1. Data Display**

Large LED readout that provides indication of current setpoint, temperatures, programmed values and error messages.

### **2. Cooling Indicator**

Lights when the bypass valve is open, in the Cooling mode.

### **3. Heating Indicator**

Lights when bypass valve is open in the Heating mode, or the electric heat is on.

### **4. Setpoint Indicator (SMX II Display Only)**

Lights when setpoint is displayed. Off when inside temperature is displayed.

### **5. SET Key**

Press the SET key to display your currently selected setpoint (the temperature you wish to maintain in the cabin). The SET key also is used to dim the data display readout.

### **6. UP-DOWN Keys**

Press UP or DOWN to raise or lower the setpoint. Press and hold keys for large changes. Note: if inside temperature is displayed, touching the UP or DOWN key will cause the setpoint to be displayed.

### **7. TEMP Key**

Press once to display inside temperature. Press TEMP twice, and the display will alternate between inside temperature and setpoint. Press again to return to inside temperature only.

### **Hint**

*You can display temperature in degrees Fahrenheit or Celsius.*

### **8. OFF Key**

Turns system off. Note that the data display remains on. You can continue to adjust setpoint, display temperature readings and activate the manual fan to circulate air while the system is in the Off mode.

### **9. Run Indicator**

Lights when you press the RUN key to enter the Run mode.

### **10. Aux Heat Indicator**

Lights when you press the AUX HEAT key to enter the Aux Heat mode.

### **11. Run Key**

Turns the system on in the Run mode (heating or cooling).

### **12. Aux Heat Key**

Turns the system on in the Aux Heat mode (if present and enabled).

### **Hint**

Press both AUX HEAT and RUN at the same time, and the system will enter the Automatic Switchover mode, where it will automatically switch between Cooling and Electric Heating mode. When in the Automatic Switchover mode, both the RUN and AUX HEAT indicators are lit.

### **13. Manual Fan Indicator**

Lights when fan is running in Manual mode.

### **14. SLOW-FAST Keys**

Control fan speed when the fan is in the Manual mode. Pressing SLOW or FAST key when in Automatic Fan mode will change the system into Manual mode.

### **15. FAN Key**

Selects Manual or Automatic Fan Control mode. Press once to select Manual Control. Press FAN again to select Automatic Fan Speed Control. In Automatic mode, the fan speed is controlled by the microprocessor as a function of the difference between setpoint and inside temperature.

### **16. Fan Speed Indicators**

Row of five LEDs that indicates the current fan speed.

### **17. Inside Temperature Indicator (SMXir Display Only)**

When illuminated, inside temperature is displayed. When the light is off, the setpoint is displayed.

### **18. IR Receiver (SMXir Display Only)**

Infrared remote receiver.

### **19. Dehumid Key (Remote Control Only)**

Changes system into the Humidity Control program.

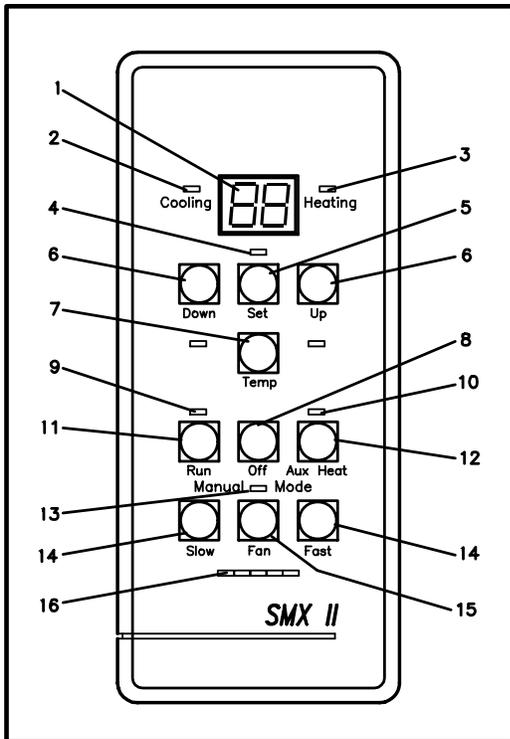
### **20. Auto Switchover Key (Remote Control Only)**

Places the system into Automatic Switchover mode.

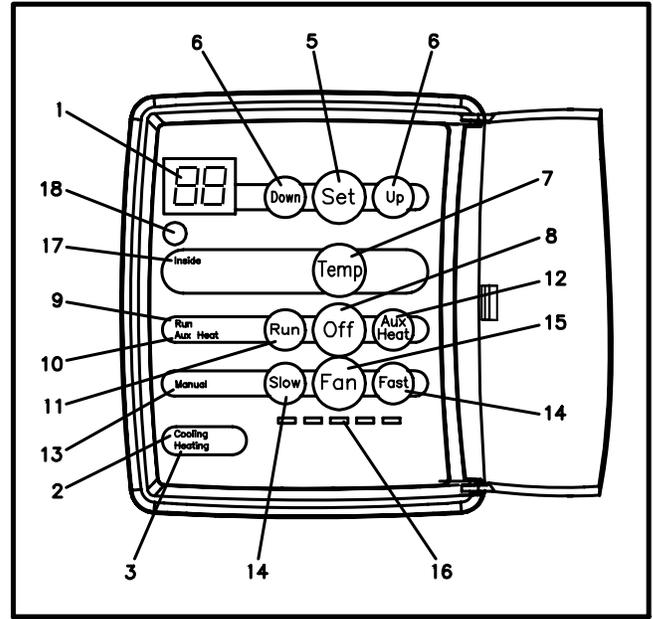
## **Definitions**

LED - Light Emitting Diode. An indicator light is used to denote mode or operating status.

Setpoint - The selected temperature you want to maintain in the area being heated or cooled.



SMX II Keypad/Display



SMXir Keypad/Display

### The SMXir Remote Control

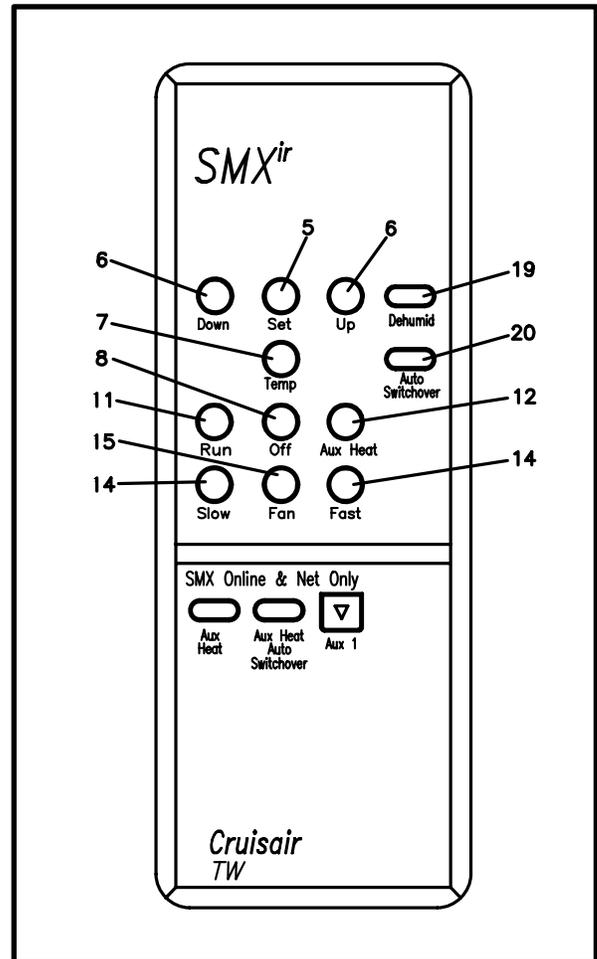
The SMXir remote control keypad has the familiar layout of the 10-button SMX keypad, and performs most of the same functions. The remote cannot be used to program settings. Programming must be done at the keypad/display.

In addition to the standard keys, the SMXir remote also has two quick-hit buttons that allow easy access to the humidity control program and the Automatic Switchover mode.

The remote has three buttons that are not used on SMX II systems. The Aux Heat, Aux Heat Auto Switchover, and the Aux 1 buttons are for SMX Net systems only.

The SMXir remote control must be pointed at the SMXir keypad/display, which has the IR remote receiver. The remote will not work if the SMXir keypad/display has the optional full coverage door and the door is closed.

See Figure 11 for SMXir Remote control angle and distance range.



SMXir Remote Control

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## Basic Operation

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### Power On

When AC power is applied to the system at the circuit breaker, the SMX microprocessor performs a self-check, and retrieves the last operating configuration from permanent memory. This process takes about four seconds, after which the system will begin operating just as it had been when power was last turned off.

### System Off

Press the OFF key to turn the system off. Note that the data display remains energized even when the system is off. The fan can be turned on manually when the system is in the off mode.

#### Note

*The SMX has built-in protection against sudden power interruptions. The system automatically stores the current operating configuration in permanent memory every time you make changes. (The new operation mode must be in affect for 30 seconds before it is saved into permanent memory.) When AC power is lost, the SMX system retains these settings, and when AC power is restored it resumes operation using the same settings as before.*

### Selecting Setpoint

Press the SET key and the current setpoint will be displayed. Press the UP or DOWN key to change the setpoint.

### Displaying Temperature

To display cabin temperature, press the TEMP key. Press TEMP twice for an alternating display of inside temperature and setpoint. Press again to return to inside temperature only.

### Changeover Thermostat:

*Each air handler has a changeover thermostat that monitors the loop water temperature. This thermostat is connected to the LOW PRESS terminals on the P/L board, and tells the SMX control if the water is hot or cold so it knows if it can heat or cool.*

*The changeover thermostat opens when the loop water is colder than 65°F (18°C). It closes when the loop water is warmer than 85°F (29°C).*

### Run Mode

To enter the Run mode, press the RUN key. The Run Indicator will light to show that you have entered the Run mode. The unit will cool or heat (and the Cooling or Heating indicators will light) depending on the system parameters.

The operation in the Run mode is:

- The unit will open the bypass valve to cool the cabin (and light the Cooling Indicator) if the room temperature is above the setpoint AND the loop water is cold (change-over thermostat is open).
- The unit will open the bypass valve to heat the cabin (and light the Heating Indicator) if the room temperature is below the setpoint AND the loop water is hot (change-over thermostat is closed).

### Aux Heat Mode

Press the AUX HEAT key to select Aux Heat mode. The Aux Heat Indicator will light to show that you have entered the Aux Heat mode. Note that electric heat is optional, and some air handlers may not have it. In addition, the Aux Heat function must be enabled in the programming, otherwise a null sign "--" will be displayed. The operation in the Aux Heat mode is:

- The electric heater will operate (and the Heating Indicator will light) if the room temperature is below the setpoint, regardless of the loop water temperature. If the loop water is hot, the bypass valve will open to allow the hot water to heat along with the electric heater.
- If the cabin temperature is above the setpoint, the unit will not cool, even if the loop water is cold.

### Automatic Switchover Mode

Press the RUN and AUX HEAT keys simultaneously for Automatic Switchover mode. Both mode indicators will light to show that the system is in the automatic switchover mode. This mode should only be used if the air handler has an electric heater installed, and it is enabled. This mode is also used when an optional humidistat is installed.

**For the SMXir Remote Control only** - Press the Auto Switchover key to enter Automatic Switchover mode.

The air handler will now heat or cool, with water or electric heat, as needed to maintain the setpoint. The operation is:



- The unit will open the bypass valve to cool the cabin (and light the Cooling Indicator) if the room temperature is above the setpoint AND the loop water is cold (change-over thermostat is open).
- The unit will open the bypass valve to heat the cabin (and light the Heating Indicator) if the room temperature is below the setpoint AND the loop water is hot (change-over thermostat is closed).
- The electric heater will operate (and the Heating Indicator will light) if the room temperature is below the setpoint AND the loop water is cold (change-over thermostat is open).

### **Humidistat Option**

If the air handler has an electric heater, a humidistat can be connected to the P/L board so that the control will monitor humidity as well as the cabin temperature. Note that this is different than the humidity control program, which simply runs the unit in cooling for a pre-programmed period of time.

To operate the Humidistat mode, the Aux Heat program must be enabled, and the system must be in the Automatic Switchover mode. A comfortable humidistat setting is 60% relative humidity.

The operation of the system in the Humidistat mode is as follows:

- If the humidistat senses that the air is dry (below the humidistat setting), the air handler responds as in the Automatic Switchover mode above.
- If the humidistat senses moist air (above the humidistat setting) AND the loop water is cold (change-over thermostat is open), the air handler bypass valve will open (the Cooling Indicator will light) to cool and dehumidify the air, regardless of the cabin temperature.
- If, during the cooling/dehumidifying stage, the cabin temperature drops below setpoint, the electric heater will be energized to reheat the air to maintain the cabin temperature (Heating Indicator will light and the Cooling Indicator will flash).
- If the loop water temperature is hot, the unit cannot dehumidify, so the system will operate as in the Automatic Switchover mode above (regardless of the humidistat).



### **Manual Fan Speed Control**

Press the FAN key to select manual fan control. The Manual Fan Indicator will light to show that it is in the manual mode. Then use the SLOW and FAST keys to select the desired fan speed.

Note that you can use the manual fan control to circulate air even when the system is in the Off mode.



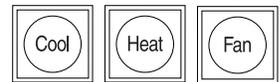
### **Automatic Fan Speed Control**

If in manual fan mode, press FAN key to select automatic fan control. The Manual Fan Indicator goes off, and the system will automatically adjust fan speed as the actual cabin temperature deviates from the setpoint. As setpoint is approached, the fan speed automatically slows. Once setpoint is reached, the compressor cycles off and the fan keeps running on low speed.

### **Adjusting Brightness**

Pressing the SET key repetitively will dim the LED display. Keep pressing SET to return to full brightness.

### **Using the Humidity Control Routine**



When engaged, the SMX humidity control routine automatically turns the air handler on in the cooling mode at timed intervals to remove moisture from the air. Note that the chiller must be left in the cooling mode for this to work. The system is programmed at the factory for average values. To change the factory settings, see "Humidity Control Program".

To start the dehumidification program:

- Press OFF.
- Press RUN, AUX HEAT and FAN keys simultaneously.
- **For the SMXir Remote Control only** - Press the Dehumid key to enter dehumidification mode.
- The display will flash HU, indicating that the program is active.
- To halt the dehumidification program, press any key. The HU message will stop flashing.

## TW SMX II Operational Chart

Mode	Water Temp	Cabin Temp	Cabin Humidity	Bypass Valve	Aux Heat	Cooling Indicator	Heating Indicator
Run	Cold	Hot	n/a	Open	-	On	-
Run	Cold	Cold	n/a	-	-	-	-
Run	Hot	Hot	n/a	-	-	-	-
Run	Hot	Cold	n/a	Open	-	-	On
Aux Heat	Cold	Hot	n/a	-	-	-	-
Aux Heat	Cold	Cold	n/a	-	On	-	On
Aux Heat	Hot	Hot	n/a	-	-	-	-
Aux Heat	Hot	Cold	n/a	Open	On	-	On
Auto S-O	Cold	Hot	n/a or Dry	Open	-	On	-
Auto S-O	Cold	Cold	n/a or Dry	-	On	-	On
Auto S-O	Hot	Hot	n/a or Dry	-	-	-	-
Auto S-O	Hot	Cold	n/a or Dry	Open	-	-	On
Auto S-O	Cold	Hot	Wet	Open	-	On	-
Auto S-O	Cold	Cold	Wet	Open	On	Flashing	On
Auto S-O	Hot	Hot	Wet	-	-	-	-
Auto S-O	Hot	Cold	Wet	Open	-	-	On

### Notes

**Water Temp:** Cold means the loop water temperature is colder than 65°F (18°C) so that the changeover thermostat is open, and Hot means the loop water temperature is warmer than 85°F (29°C) and the changeover thermostat is closed.

**Cabin Temp:** Cold means the cabin temperature is below the setpoint and Hot means the cabin temperature is above the setpoint.

**Cabin Humidity:** This is only applicable if a separate humidistat is installed. Dry means that the relative humidity in the cabin is lower than the setting on the humidistat, and Wet means the relative humidity is higher than the setting.

**Dash '-':** The Dash means that the device is off or closed.

**n/a:** Not Applicable

## Programming Summary Table

Programmable Function	Keystroke Combination	Factory Setting	Range
Factory Memory Reset	OFF & SET & FAN, then SET	See table below before reset	
Auxiliary (Electric) Heat	SET & HEAT	-	- or AH
Fahrenheit/Celsius	DOWN & TEMP & UP	F	F or C
Setpoint Differential	SLOW & FAN	12	4 to 24
Fan Response Differential	COOL & SLOW	4	2 to 8
Fan Mode (Cont. or Int.)	DOWN & FAN & UP	C	C or I
Low Fan Speed	DOWN & SET	32	30 to 56
High Fan Speed	SET & SLOW	60	41 to 90
Temperature Calibration	SET & UP	-	± 1%
HU Precirculation	TEMP & DOWN	10 Min.	10 Min.
HU Dehumidification	TEMP & SET	30 Min.	See "Humidity Control Program"
HU Time Period	TEMP & UP	12 Hrs.	

Note: The Custom Programmed Settings Form, Fig. 12, can be used to record settings for future reference.

## Programming the SMX II System

SMX control systems are programmed at the factory for average values. For optimum performance, you may wish to change these settings to suit your individual preferences.

All programming steps are entered by pressing the OFF key, followed by the SET key, then simultaneously depressing the two or three keys noted in the table below. Successful entry into a programming mode is indicated by the presence of a decimal point to the right of the two displayed characters. To raise or lower a value, touch the UP or DOWN keys. To exit the programming mode, touch the OFF key. (The SMXir Remote Control cannot be used to program the system.)

### Factory Memory Reset



You can use the memory-reset sequence to restore all programmed functions to the factory default settings. To do this:

To restore programmed functions to factory setting:

- Press OFF, SET and FAN simultaneously.
- Press SET.
- After a delay, the memory will be reset from stored values. After another delay, the display will come back on normally.

### Auxiliary (Electric) Heat

(Factory Default: Disabled)



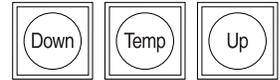
Normally the electric heat function is disabled. If the cooling unit has electric heat, the function must be enabled to operate.

To enable or disable electric heat:

- Enter the programming mode: Press OFF, Press SET
- Press AUX HEAT and SET simultaneously.
- Use the UP or DOWN key to enable or disable electric heat. The code "AH" will be displayed when it is enabled. A double dash "--" will appear when disabled.
- Press OFF to exit programming mode.

### Fahrenheit/Celsius Display

(Factory Default: Fahrenheit)



You can choose to view temperature in degrees Fahrenheit or Celsius.

To select Fahrenheit or Celsius:

- Enter the programming mode: Press OFF, Press SET
- Press DOWN, TEMP and UP simultaneously.
- Use the UP or DOWN key to select F for Fahrenheit or C for Celsius.
- Press OFF to exit programming mode.

### Note

If you switch from Fahrenheit to Celsius the setpoint differential will also operate on degrees Celsius. Thus, the factory-set setpoint differential will be 1.5° Celsius, which is too wide. To correct this, reset the differential value from 12 to 6. This will provide a differential of 0.75° C, or about 1.4° F.

This will also affect the Fan Response Differential, which is factory set at a value of 4, or 0.5° F. When changing from Fahrenheit to Celsius, you should reset the Fan Response Differential from 4 to 2. This will provide a fan differential of 0.25° C, or about 0.5° F.

### Setpoint Differential

(Factory Default: 12 = 1.5°)



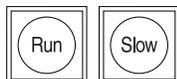
The setpoint differential is the temperature change needed for the bypass valve to cycle open and closed. The factory setting of 1.5° Fahrenheit should be adequate for most applications. Differential selections are available in increments of 1/8°. Thus, to select one degree, you should choose 8 (for 8-eighths).

To program the setpoint differential:

- Enter the programming mode: Press OFF, Press SET
- Press SLOW and FAN simultaneously. The restart differential will be displayed.
- Use the UP or DOWN key to change the setting.
- Press OFF to exit the programming mode.

## Fan Response Differential

(Factory Default: 4 = 0.5°)



When the fan is in the automatic mode, its speed is governed by how far the room temperature differs from the setpoint. The fan runs faster when the difference is great. As the room cools or warms, the temperature approaches setpoint, and the fan slows down automatically. The amount of temperature rise in the room above setpoint needed to cause the fan to increase in speed one step is called “fan speed differential.” It can be adjusted from 1/4° to 4°, in 1/8° increments.

The fan speed range is divided by the SMX microprocessor in five equal increments. If the fan response differential is set at 1/2°, the fan speed will change 20% for each 1/2° of temperature deviation from setpoint. Lowering the fan speed differential will cause the fan to increase speed quickly as temperature changes. Raising the fan speed differential will result in slower fan speed changes for a given temperature change. The factory setting of 1/2° Fahrenheit is good for most applications, but you may wish to try a slightly higher setting in your salon and a lower setting in your stateroom.

To adjust fan response differential:

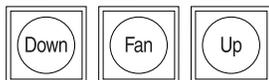
- Enter the programming mode: Press OFF, Press SET
- Press RUN and SLOW. The differential will be displayed in increments of 1/8°.
- Use the UP or DOWN key to raise or lower this value.
- Press OFF to exit the programming mode.

### Note

On SMX II systems built before 8/98, press SLOW, FAN and FAST simultaneously to adjust fan response differential.

## Fan Mode

(Factory Default: Continuous)



You can select continuous fan operation or instruct the fan to cycle on and off with the setpoint.

To select continuous or intermittent fan:

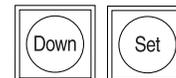
- Enter the programming mode: Press OFF, Press SET
- Press DOWN, FAN and UP simultaneously.
- Use the UP or DOWN key to select C (continuous) or I (intermittent).
- Press OFF to exit the programming mode.

### Hint

If you select intermittent fan operation, you should relocate the thermistor from the return air duct to an inside wall to best sense room temperature. Check with your dealer or call the Taylor Made Environmental, Inc. Applications Department for more information.

## Low Fan Speed Adjustment

(Factory Default: 32)



You can adjust the lowest fan speed to suit individual preferences. For instance, you may wish to decrease the low fan speed setting in your stateroom to minimize fan noise.

To adjust low fan speed:

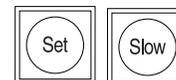
- Enter the programming mode: Press OFF, Press SET
- Press DOWN and SET simultaneously. The current low speed reference number will be displayed (factory set at 32).
- Press UP or DOWN to raise or lower speed reference number.
- Press OFF to exit the programming mode.

### Hint

You should normally keep the low fan speed at the highest possible setting, consistent with a comfortable noise level, for most efficient operation of your Cruisair system. Running the fan speed too slow can damage the blower motor.

## High Fan Speed Adjustment

(Factory Default: 60)



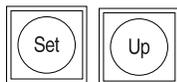
A blower will often reach its highest speed at a voltage lower than full line voltage. For example, at a line voltage of 120V, the blower might reach its fastest speed at 110V. At higher voltages, the blower speed will not increase significantly.

The SMX High Fan Speed Adjustment allows you to set the maximum high-speed voltage to the threshold of the blower high-speed response. Because SMX breaks up the fan speed voltage steps into 5 equal parts (between the low-speed and high-speed adjustments), accurately setting the high-speed adjustment can help ensure that each fan speed step results in a noticeable change of fan speed.

To adjust the high fan speed:

- Enter the programming mode: Press OFF, Press SET
- Press SET and SLOW simultaneously. The current high-speed reference number will be displayed (factory default is 60).

- While listening to the fan noise level, use the UP key to raise the displayed value past the point that you can hear an increase in the fan noise level.
- Press the DOWN key to lower the voltage until you hear a drop in fan speed, then raise that number up by 2 or 3 to ensure that it is set at the highest speed.
- Press OFF to exit the programming mode.



## Temperature Calibration

Typically, the temperature sensor is within a few degrees of actual room temperature. If it off by much, it can be calibrated to read actual temperature.

To calibrate the thermistor:

- Enter the programming mode: Press OFF, Press SET
- Press SET and UP simultaneously. The sensed temperature will be displayed.
- Place an accurate thermometer beside the thermistor and compare the temperatures.
- Use the UP or DOWN key to adjust the displayed temperature to the correct value.
- Press OFF to exit the programming mode.

## Humidity Control Program

The SMX dehumidification program automatically runs the air handler for a programmed time period to help control humidity in the boat. The chiller must be in the cool mode for the humidity control program to work. The dehumidification program works in 3 stages:

The fan comes on at high speed to circulate air for 10 minutes.

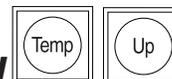
The fan then drops to low speed, and the compressor cycles on in the cooling mode to dehumidify.

After the dehumidification cycle, the system turns off. The process repeats according to the programmed time period.

The factory default settings are:

<b>Overall time period</b>	<b>12 hours</b>
<b>Precirculation cycle</b>	<b>10 min.</b>
<b>Dehumidification cycle</b>	<b>30 min.</b>

The factory settings are adequate for most moderate climates and boats. For humid climates, you may wish to shorten the overall time period and extend the dehumidification time. In dry climates, you can select longer intervals between cycles and a shorter dehumidification time.

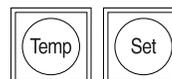


## Programming The Time Period (Factory Default: 12 hours)

The time period determines how often the system performs the dehumidification process. You can select intervals of 2, 4, 6, 8, 10, 12, 14 or 16 hours. Chose a shorter time period in climates with high humidity.

To select time period:

- Enter the programming mode: Press OFF, Press SET
- Press TEMP and UP simultaneously. The display will show the overall time period in hours.
- Use the UP or DOWN key to select the desired time period.
- Press OFF to exit the programming mode.



## Programming The Dehumidification Time (Factory Default: 30 minutes)

The dehumidification time determines how long the air handler runs in the dehumidification mode. You can select 10, 20, 30, 40, 50 or 60 minutes. Select a longer dehumidification time in humid climates.

To select dehumidification time:

- Enter the programming mode:  
Press OFF  
Press SET
- Press TEMP and SET simultaneously. The display will show the time period in minutes.
- Use the UP or DOWN key to select the desired time period.
- Press OFF to exit the programming mode.

## Recommended Humidity Control Settings

Outside Temperature	Relative Humidity	Time Period	Dehumid. Time
Below 80° F (27°C)	75-85%	12 hrs	10 min
	Above 85%	8 hrs	20 min
80° - 90° F (27° - 32°C)	75-85%	10 hrs	30 min
	Above 85%	6 hrs	40 min
Above 90° F (32°C)	75-85%	8 hrs	40 min
	Above 85%	6 hrs	60 min

---

## Fault Shutdowns and Error Messages

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The SMX control contains built-in self-check routine described below.

### Software Error

Whenever power is applied to the SMX, the microprocessor goes through an automatic self-check and software loading process. If all is well, the SMX loads the most recent operating configuration from its internal memory, and turns on normally. If a program fault is found during the self-check, the error message PE will be displayed.

Likewise, the self-diagnostic routine runs continuously whenever the SMX system is on. If a system fault is detected, the system shuts down, and the PE error message appears.

If this message occurs, contact your nearest Cruisair dealer, or call the Factory Service Department in Richmond, Virginia (804-746-1313) for assistance.

### Determining Your Software Version Number

Before calling your dealer or the factory for service assistance, determine the software version number for the SMX system. To display the software version:

- Press OFF, then Set.
- Press COOL and DOWN simultaneously. The display will read the version number.
- Press UP once to display the revision level.

#### Note

*To read version number on SMX II systems built before 8/98, press OFF, SET and FAN simultaneously, then COOL twice. Then press UP once.*

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## Fresh Air Make-Up - SMX II Control

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If your system has a Fresh Air Make-Up (FAMU) air handler with electric reheat, then it will probably use a SMX control. The parts and installation for a SMX FAMU control are basically the same as a standard air handler SMX control, but it is different in that it monitors the humidity and the **discharge** air temperature so it can reheat the air back up to setpoint.

### Installation

The Power/Logic box will be installed and wired to the FAMU air handler in the same manner as a standard unit. A humidistat will be installed to monitor the outside humidity. It should be mounted in the return airflow (outside air) to the FAMU air

handler. Remove the jumper from the HI PRESS terminals on the P/L board and run 2 wires (low voltage) from the HI PRESS terminals to the humidistat, and connect so the circuit is open when damp, and closed when dry.

The temperature sensor (TSEP) should be mounted in the discharge air duct (not return air). If using flexible duct, you can simply make a small slit in the duct and stick the sensor through, and seal with tape.

FAMU ducting should be insulated even though this unit has reheat, because if the heater ever failed the extremely cold air would cause condensation on the outside of the ducting.

Refer to Figure 5 (HTE-082A) for wiring instructions.

### Operation

- When the chiller is in cool mode, the FAMU air handler will cool the air if the discharge air temperature is higher than setpoint, or if the humidistat is open (the air is humid).
- Depending on outside air conditions, the discharge air temperature might drop lower than the setpoint, and the SMX control will then turn on the electric heater to try to bring up the air temperature to setpoint. The heater might cycle on and off somewhat quickly, which is ok.
- If the chiller is heating, the unit cannot cool or dry the air. The FAMU air handler will heat the air to try and maintain setpoint.

To run the unit in the Humidistat mode, the Automatic Switchover mode must be selected by pressing RUN and AUX HEAT at the same time.

The blower should be in Manual Fan mode, and set at high speed in most conditions. If the outside conditions are extremely hot and humid, the fan speed might need to be lowered to allow the unit to cool and dry the air more thoroughly.

The setpoint should be set to a comfortable room temperature. If outside conditions are very hot, the setpoint can be lowered to reduce the amount of reheat, which will allow the FAMU to help with the normal cooling loads. When outside conditions are mild, the setpoint can be raised to increase reheat so the FAMU unit does not over cool the cabins.

On mild, dry days, when cooling and dehumidification isn't required, the FAMU blower can be run alone (turn the system off, then press FAN).

When outside temperature is below freezing, steps should be taken to prevent the circulation water from freezing in the coil, which would cause damage. We recommend that propylene-glycol antifreeze be added to the circulation water in all conditions, but in freezing temperatures it is required. It is also good to ensure that water circulates through the coil at all times by placing the FAMU SMX in the RUN mode so the bypass valve stays open and the electric reheat doesn't operate.

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## Programming:

The SMX control must be programmed to enable Aux. Heat. Press OFF, then SET, then AUX HEAT and SET together. The null sign '- -' should appear. Use the UP or DOWN key to change this to read 'AH'. Then press OFF to exit the programming mode.

For programmable settings, refer to the SMX manual. For the FAMU system, other settings that might be adjusted are:

- High fan speed – This can be set lower so the blower reacts to each speed step.
- Bypass Valve Differential – This should be increased so the bypass valve and heater don't cycle too quickly.

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## Quick SMX II Troubleshooting Guide

Before you call for service, review this list. It may save you time and expense. This list contains some common problems and possible solutions. If further help is needed, call your nearest Cruisair dealer listed in back of this manual.

**Problem:** Unit will not operate, SMX Display Not On

**Possible Solution:**

1. Check circuit breaker.
2. Check voltage, power supply.
3. Check CX/CXP cable and connections.
4. Replace SMX keypad/display.
5. Replace SMX Power/Logic board.

**Problem:** Erratic SMX Temperature Display

**Possible Solution:**

1. Perform a Factory Memory Reset.
2. Check temperature sensor, cable and connection.
3. Ensure the temperature sensor is installed properly.
4. Calibrate temperature.
5. Replace Power/Logic board.

**Problem:** Erratic SMX operation

**Possible Solution:**

1. Perform a Factory Memory Reset.
2. Check CX/CXP cable and connections.
3. Check temperature sensor, cable and connection.
4. Check change-over thermostat operation.
5. Replace keypad/display.
6. Replace Power/Logic board.



**Warning**

*The Power/Logic board operates at 115VAC or 230VAC. Make sure the power is off before removing the cover of the Power/Logic box.*

**Problem:** Water dripping inside cabin

**Possible Solution:**

1. Clean out condensate drain pan and fittings.
2. Clear blockage in drain hose.
3. Check downhill routing of hose.
4. Ensure that insulation around ducting is not compressed or crimped.

Contact an authorized Cruisair servicing dealer if the problem continues, or for replacement parts.

# Limited Warranty Periods

Please read and keep this document with your important paperwork. Use it as a reference in the future. If you have any questions, please contact the Dometic Environmental Corporation Service Department at (804)746-1313 for clarification.

**Note:** Any model or replacement part that has been installed due to a warranty failure will carry **only** the remainder of the original warranty. All warranties begin when the customer takes possession of the equipment. The warranty is extended to all owners of the equipment commencing the date the original owner takes possession of it. Proof of original purchase may be required. **Fuses** and **MOV's** are used as safety devices to protect Cruisair equipment against over-current conditions caused by lightning or inductive switching environments. **These are not covered under warranty.** We reserve the right to change our warranty policies and procedures as well as our warranty allowances without notice.

## ***Cruisair Direct Expansion (DX) and Modulating Systems***

- New, complete system installation using any member of the SMX family.

The warranty includes the pump.

**2 year warranty including Parts and Labor**

- New, complete system installation using an electro-mechanical control (3-knob).

The warranty includes the pump.

**1 year warranty including Parts and Labor**

- New, complete model sold as a partial system retrofit to an existing system.

Includes SMX family.

**1 year warranty including Parts and Labor**

## ***Cruisair Tempered Water***

- New, complete system installation using any member of the SMX family.

**2 year warranty including Parts and Labor**

NOTE: Excludes pump which has a 1 year warranty

- New, complete model sold as a partial system retrofit to an existing system.

Includes SMX family.

**1 year warranty including Parts and Labor**

## ***Sentry Battery Chargers***

- New SM and FR series installation.

**2 year warranty including Parts and Labor**

- New G-series installation.

**1 year warranty including Parts and Labor**

## ***Refrigerators/Freezers/Fish Boxes***

The below warranty periods do not apply to systems that are installed as described in Section II, item #7, of the Owner's Limited Warranty, document # L-0123.

- New installation of entire system including condensing unit, line sets, evaporator, etc.

**1 year warranty including Parts and Labor**

- New complete model sold as a partial system retrofit to an existing Cruisair system.

**1 year warranty including Parts and Labor**

- New installation of condensing unit only, with line sets, evaporators, etc. done by others i.e. not Cruisair pre-charged line sets and evaporators.

**1 year warranty including parts and labor on mechanical and electrical parts of condensing unit only.**

## ***Replacement Parts***

- Replacement parts and components - example: A-509, 40401-30.

**90 day warranty, Parts only**

- Replacement Compressors for other than Tempered Water Systems - example: R3101-16T, DX equipment - installed in an existing Cruisair system or a competitor's system.

**1 year warranty including Parts and Labor**

- Replacement compressors for Tempered Water - example: 30130-36 installed in an existing Cruisair system.

**1 year warranty including Parts and Labor**

- A Tempered Water compressor - example: 30130-36 installed with competitor's equipment.

**90 day warranty, Parts only**

# Owner's Limited Warranty

As hereinafter described, Dometic Environmental Corporation limits the duration of any implied warranty to the duration of the underlying express warranty and also disclaims any liability for consequential or incidental damages arising from any application, installation, use or malfunction of any warranted product.

## Section I

### What does the Limited Warranty cover?

Products manufactured by Dometic Environmental Corporation (Dometic) are under limited warranty to be free from defects in workmanship or materials under normal use and service with the obligation of Dometic under this limited warranty being limited to replacing or repairing any component(s) which shall disclose defects within the time limits defined in **Section III** and which, upon examination by Dometic, shall appear to the satisfaction of Dometic to be defective or not up to specifications.

***This Limited Warranty is made in lieu of all other express warranties, obligations, or liabilities on the part of Dometic. In addition, Dometic shall not be responsible for any incidental or consequential damages.*** In those instances in which a cash refund is made, such refund shall effect the cancellation of the contract of sale without reservation of rights on the part of the purchaser. **Such refund shall constitute full and final satisfaction of all claims which purchaser has or may have against Dometic due to any actual or alleged breach of warranty, either express or implied, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose.** Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation may not apply to you. The terms and conditions of this warranty shall be governed by the laws of the Commonwealth of Virginia.

The Dealer is not an agent for Dometic except for the purpose of administering the above warranty to the extent herein provided, and Dometic does not authorize the dealer or any other person to assume for Dometic any liability in connection with such warranty, or any liability or expense incurred in the replacement or repair of its products other than those expressly authorized herein. Dometic shall not be responsible for any liability or expense except as is specifically authorized and provided in this section.

Dometic reserves the right to improve its products through changes in design or material without being obligated to incorporate such changes in products of prior manufacture, and to make changes at any time in design, materials, or part of units of any one year's model, without obligation or liability to owners of units of the same year's model of prior manufacture.

This warranty gives you, the purchaser, specific legal rights, and you may also have other rights which vary from state to state. You also have implied warranty rights, including an implied warranty of merchantability, which means that your product must be fit for the ordinary purposes for which such goods are used. ***The duration of any implied warranty rights is limited to the duration of the express warranty as found in Section III.*** Some states do not allow limitations on how long an

implied warranty lasts, so the above limitation may not apply to you.

## Section II

### What does this Limited Warranty not cover?

#### ***This Warranty Shall Not Apply to:***

1. Failures resulting from improper installation or use contrary to instructions.
2. Failures resulting from abuse, misuse, accident, fire, or submergence.
3. Any part manufactured by Dometic which shall have been altered so as to impair its original characteristics.
4. Any parts which fail as a result of misuse, improper application or improper installation.
5. Items not manufactured by Dometic, i.e., items which are purchased from another manufacturer and supplied as received by Dometic without alteration or modification except as any part of an Dometic-manufactured unit or component.
6. Components or parts used by or applied by the purchaser as an integral part of products not manufactured by Dometic.
7. Warranty does not cover damage to components that comprise a Custom Wrapped Box Evaporator refrigeration system (aka: catch boxes, fish boxes, etc.) when the box is installed in such a way that the customer can move it. These damages may include, but are not limited to: crimped refrigerant linesets (copper tubing or flexible linesets), refrigerant leaks, moisture ingress into the refrigeration system, subsequent damage to condensing unit from being operated with low refrigerant charge or moisture in the system, broken refrigerant connections, broken thermostat sensors, and/or broken constant pressure valves.

Installation and application of Dometic components is not warranted by Dometic because Dometic has no control or authority over the selection, location, application, or installation of these components.

## Section III

### What is the period of coverage?

See the Limited Warranty Periods, document # L-0694, for the period of coverage.

All Dometic components bear a data plate on which there are model and serial numbers. The serial number is date coded. To determine whether or not any Dometic component is in warranty, proceed as follows:

1. Determine the manufacture date of the component from the serial number on the data plate. If you are not familiar with the date code, write or call the Dometic Customer Service Department at (804)746-1313, to obtain the manufacture date. The hours of the Customer Service Department are 8:00 am - 5:00 pm (USA, Eastern Time Zone) Monday through Friday excluding holidays.
2. It is possible that there might exist a considerable time lag between the date a component is manufactured and the date it is put in service. In such instances, the date of manufacture could indicate that the item is out of warranty. However, based on the date the equipment is first put in service, the item may still be covered by the Dometic warranty described in **Section I**. For proof of date put in service, Dometic will require a copy of the bill of sale of the Dometic equipment from the installer or new boat dealer to the original owner.

## **Section IV**

**How do you get service? Please Read the following Warranty Procedure.**

### **WARRANTY PROCEDURE**

If the failure of a Dometic component is determined to be covered under the Dometic warranty and the time in service is determined to be within the warranty time limit, the owner has the following three options:

1. Preferred option: Have a Dometic authorized Servicing Dealer perform the work needed. The customer should call Dometic's Service Department for a recommendation as to the closest dealer. If the customer already knows an authorized servicing dealer, the dealer should be contacted directly.
2. If the customer contacts Dometic's Service Department for a Servicing Dealer and Dometic has no one in that particular area, Dometic will authorize the use of a local service company and Dometic will work with the local company to assist in any way possible.
3. The customer may send his equipment back to the factory to have the repair work done. Dometic will make every effort to return the equipment to the customer within a three week time period. If the claim represents a legitimate warranty problem, Dometic will pay the freight both ways. Dometic prefers option one and two, if at all possible.

The customer may contact the Dometic Service Department at (804) 746-1313.

## **WARNING**

Dometic Environmental Corporation (Dometic) manufacturers of Cruisair, Grunert, Marine Air, Sentry and Tundra Products, makes the following safety warnings concerning the application, installation, use and care of its products. Although these warnings are extensive, there may be specific hazards which may arise out of circumstances which we have not outlined herein. Use this as a guide for developing an awareness of potential hazards of all kinds. Such an awareness will be a key factor in assuring your SAFETY and comfort.

**ELECTRICITY** - Many Dometic products operate on 115, 230 or 440 volt AC power. Such voltages can be LETHAL; therefore, the chassis, cabinets, bases, etc., on all components must be grounded together and connected to the vessel's grounding system. Sparks can occur as switches, thermostats and relays open and close in the normal operation of the equipment. Since this is the case, ventilating blowers for the removal of hazardous fumes or vapors should be operated at least 5 minutes before and during operation of any Dometic product or group of Dometic products. All electrical connections must be covered and protected so accidental contact cannot be made by persons using the equipment, as such contact could be LETHAL.

**ELECTROLYSIS** - Electrical leakage of any component can cause electrolytic deterioration (electrolysis) of thru-hull components which could result in leakage serious enough to sink a vessel which could result in loss of life. All Dometic components must be kept clean and dry and checked periodically for electrical leakage. If any electrical leakage is detected, the component should be replaced or the fault causing the leakage corrected before the component is put back into service.

**GAS** - CRUISAIR, MARINE AIR, GRUNERT and TUNDRA components utilize R-22 (Chlorodifluoromethane), R134a refrigerant (Tetrafluoroethane), R-407C (which contains Difluoromethane (HFC-32), Pentafluoroethane (HFC125), and 1.1.1.2 -Tetrafluoroethane (HFC134a)), R404A (R125/R143a/R134 (44%/52%/4%)), or R417a, which are non-toxic, non-flammable gases; however, these gases contain no oxygen and will not support life. Refrigerant gas tends to settle in the lowest areas of the compartment. If you experience a leak, evacuate all personnel, and ventilate area. Do not allow open flames in the area of leaks because refrigerant gas, when burned, decomposes into other potentially LETHAL gases. Refrigerant components operate at high pressure and no servicing should be attempted without gloves, long-sleeved clothing and eye protection. Liquid refrigerant gas can cause severe frost burns to the skin and eyes.

**VENTILATION** - To cool or heat air, CRUISAIR, MARINE AIR and GRUNERT components are designed to move air through a heat exchanger by a blower or propeller fan. This design necessarily produces a suction on one side of the air handling component and a pressure on the other side. Air handling components must be installed so that the suction-pressure action does not: (1) pressurize an area to the extent that structural failure occurs which could cause harm to occupants or bystanders, or (2) cause a suction or low pressure in an area where hydrogen gas from batteries, raw fuel vapor from fuel tanks, carbon monoxide from operating propulsion engines, power generators or heaters, methane gas from sewage holding tanks, or any other dangerous gas or vapor could exist. If an air handling unit is installed in such a manner that allows potentially lethal gases or vapors to be discharged by the air handling unit into the living space, this could result in loss of life.

Maximum protection against the introduction of dangerous gases or vapors into living spaces can be obtained by providing living spaces which are sealed from all other spaces by use of airtight bulkheads and decks, etc., and through the introduction of clean air into the living space. Bear in mind that the advent of air conditioning, whether it be for cooling or for heating, naturally leads to the practice of closing a living space tightly. Never close all windows and doors unless auxiliary ventilating systems, which introduce clean outside air into the living space, are used. Always leave enough window and door openings to provide adequate ventilation in the event potentially lethal gases or fumes should escape from any source.

**CONDENSATE** - All cooling units produce water condensate when operating on the cooling cycle. This water must be drained from the cooling unit overboard. If condensate is allowed to drip on a wooden structure, rotting or decay and structural failure may occur which could result in loss of life. If condensate is allowed to drip on electrical components, deterioration of the electrical components could result in hazardous conditions. When an air conditioning system is in operation, condensate drains may be subjected to negative pressure. Always locate condensate drains as far as possible from points where engine waste and other dangerous gases are exhausted so no such dangerous gases can be drawn into the condensate drains.

## **Warning**

Never sleep in a closed area on a boat when any equipment, which functions as a result of the combustion of a volatile fuel, is in operation (such as engines, generators, power plants, or oil-fired heaters, etc.). At any time, the exhaust system of such devices could fail, resulting in a build-up of LETHAL gases within the closed area.

Warning Revised: 6-2-05

# Description of Figures

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- Fig. 1 HTE-070A, PLTX-HV, CBBL Wiring**
- Fig. 2 HTE-077A, PLTX-HV, AH, BPAH Wiring**
- Fig. 3 HTE-080A, PLTX-HV, CBBL, VSD Wiring**
- Fig. 4 HTE-050A, PLTX-HV, HRX-NW Wiring**
- Fig. 5 HTE-082A, PLTX-HV, FAMU Wiring**
- Fig. 6 HTE-088, Air Handler with Slave Unit Wiring Diagram**
- Fig. 7 CBBL/CHBBL Air Handler Wiring Diagrams**
- Fig. 8 CBLBL/CHBLBL Air Handler Wiring Diagrams**
- Fig. 9 086800, SMXir Template**
- Fig. 10 HTE-085 TW SMX II Cables and Adapters**
- Fig. 11 Replacement TW SMX II Parts**
- Fig. 12 SKA-1247-Rev 1 SMXir Remote Control Range**
- Fig. 13 Customized Programmed Settings Form**



Fig. 2 HTE-077A PLTX-HV, AH, BPAH Wiring

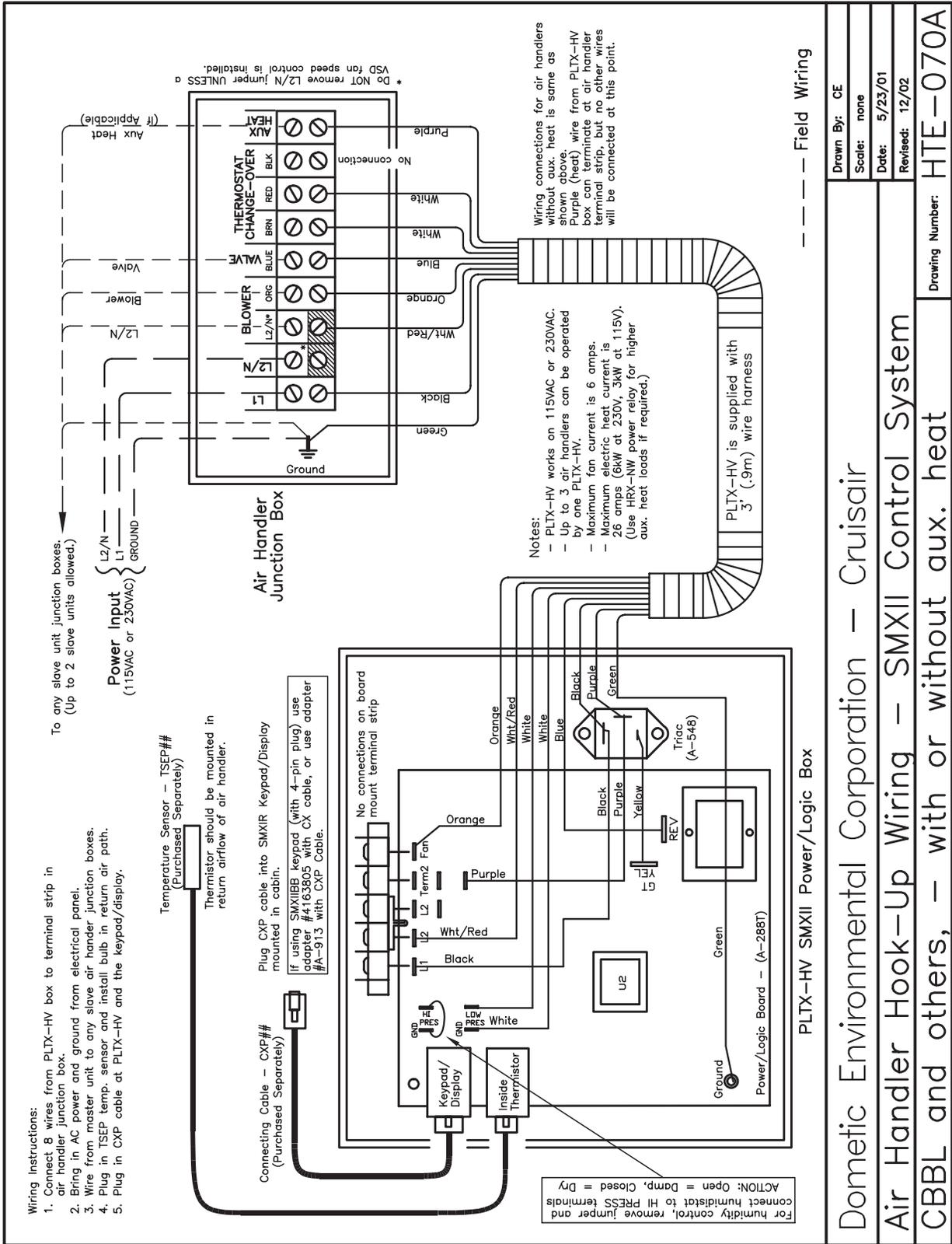


Fig. 3 HTE-080A PLTX-HV, CBBL, VSD Wiring

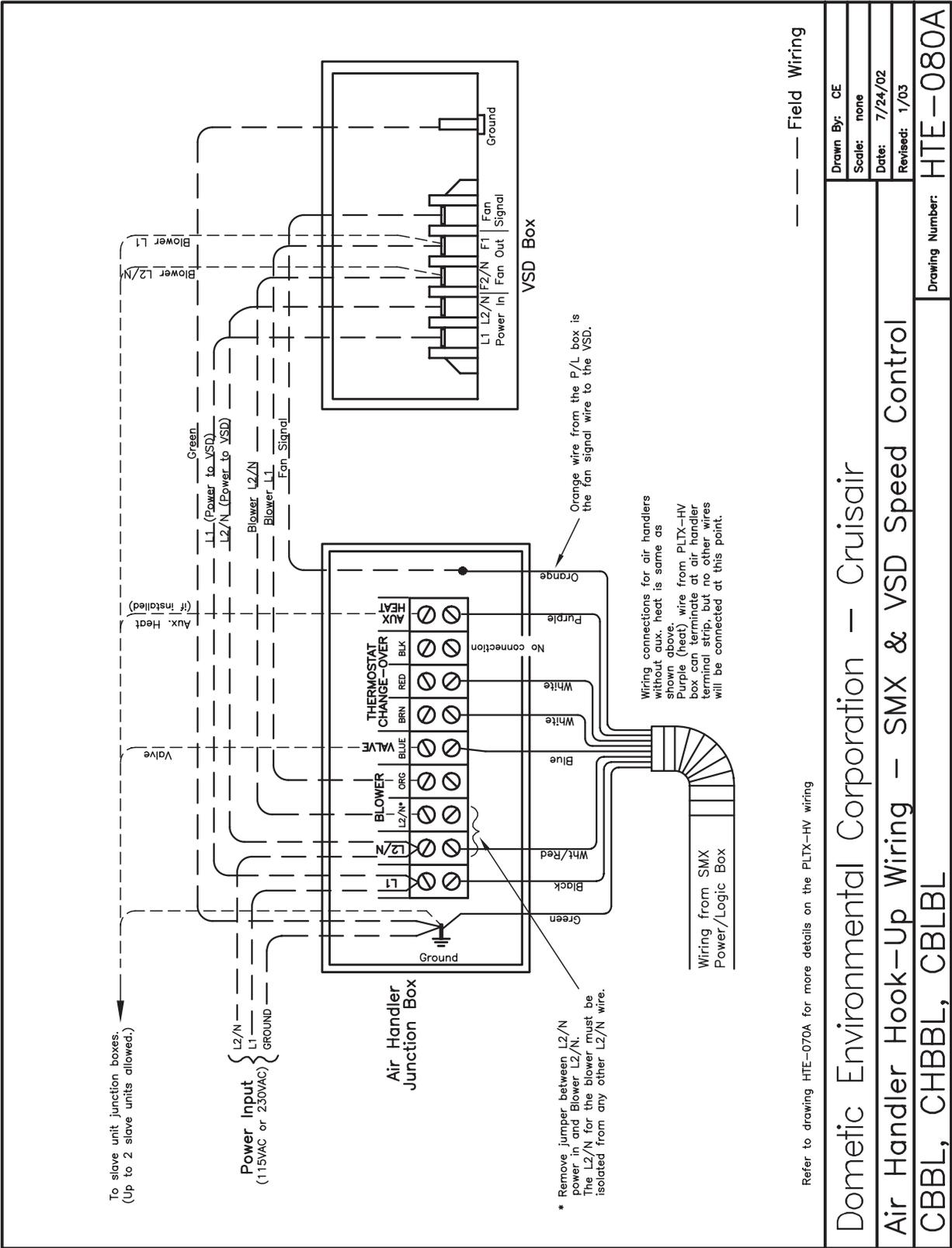


Fig. 4 HTE-050A PLTX-HV, HRX-NW Wiring

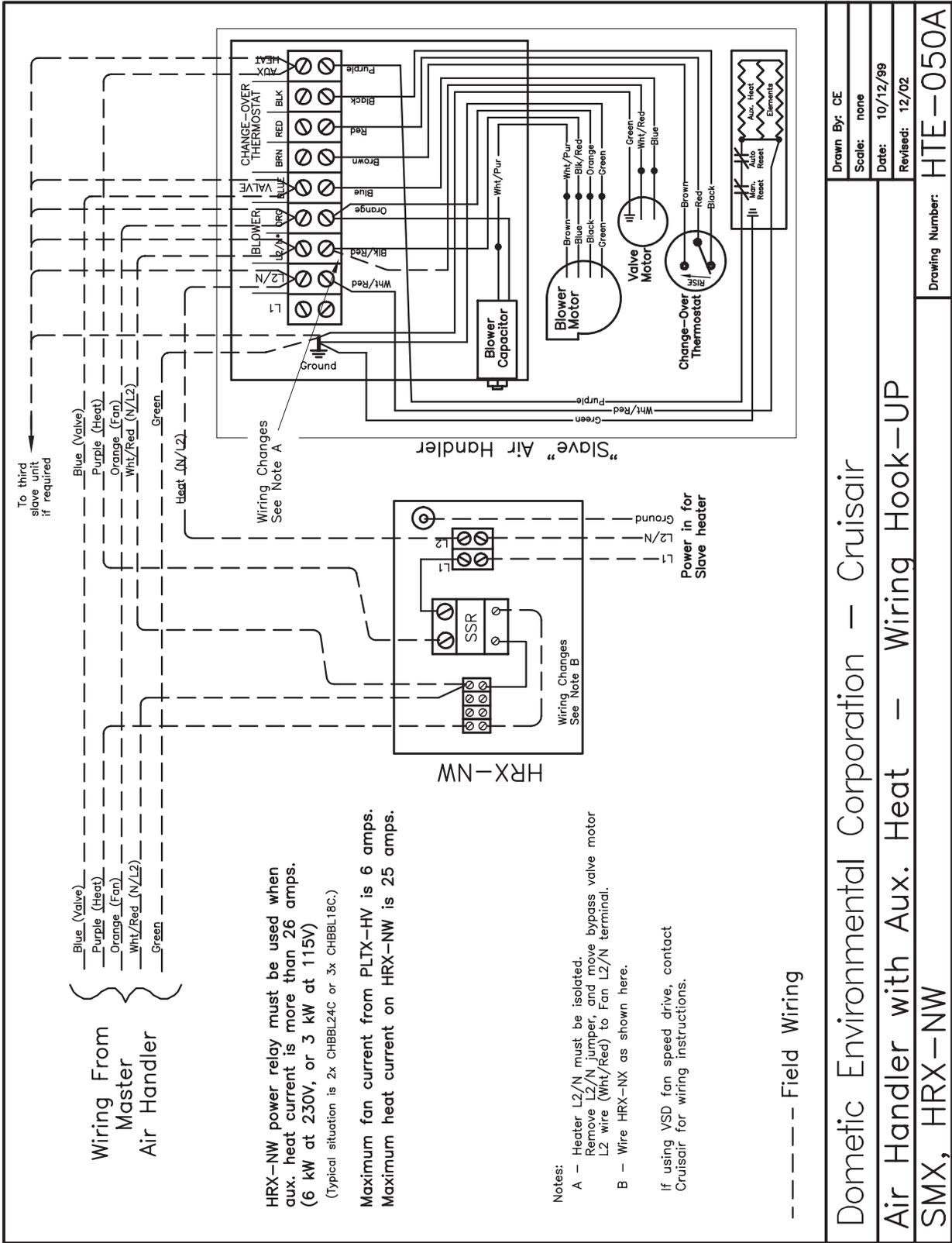


Fig. 5 HTE-082A PLTX-HV, FAMU Wiring

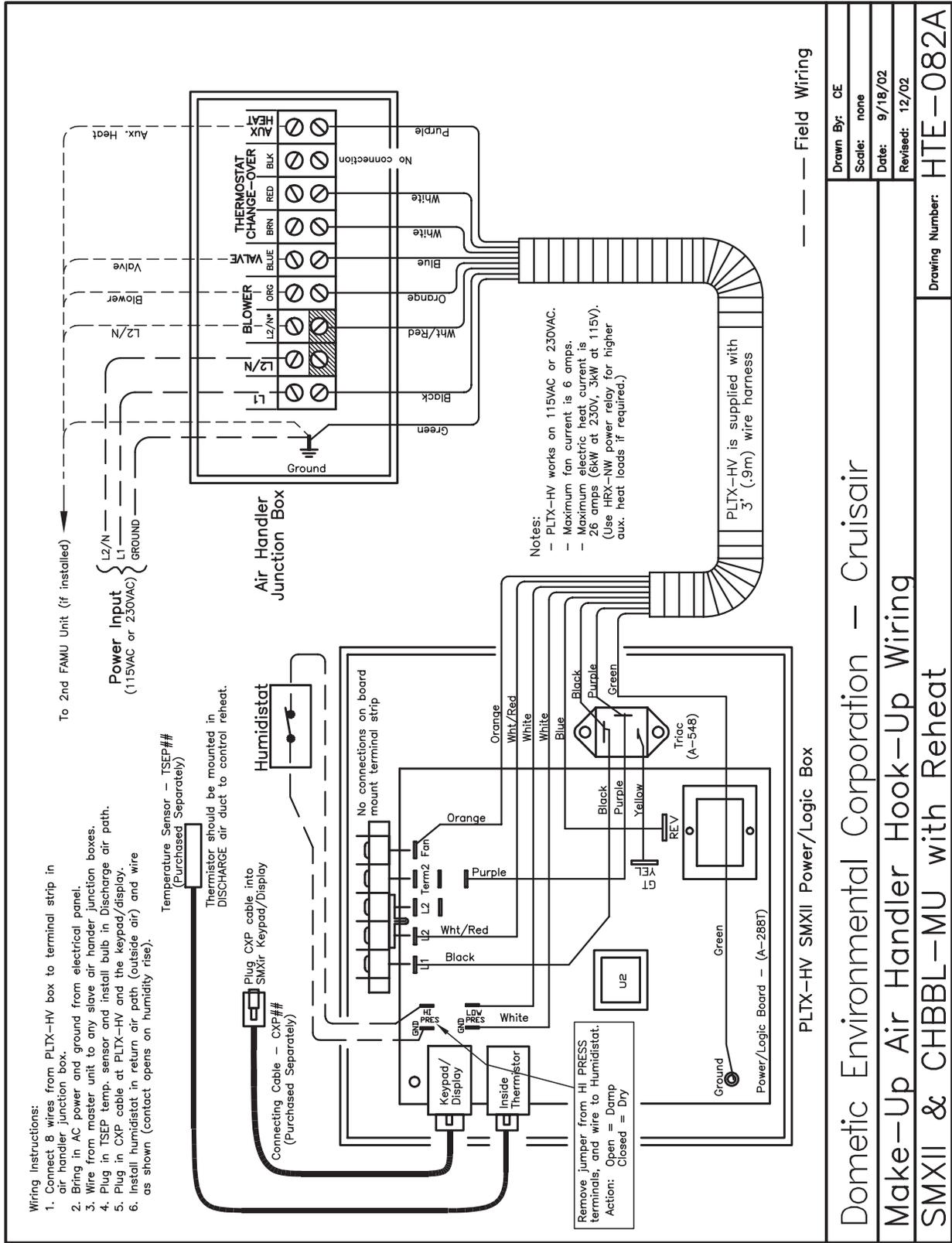
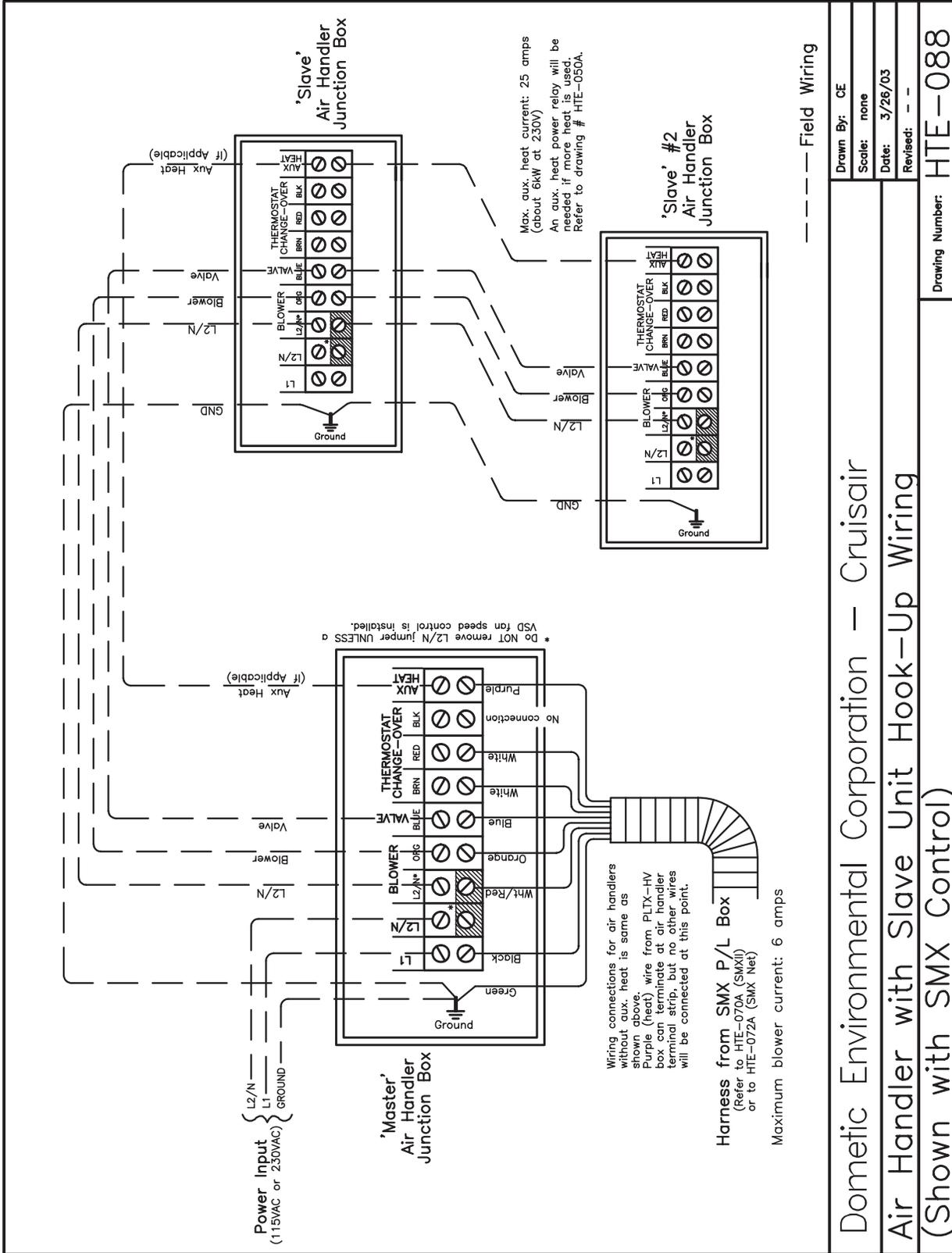


Fig. 6 HTE-088, Air Handler with Slave Unit Wiring Diagram



Domec Environmental Corporation - Cruisair		Drawn By: CE
Air Handler with Slave Unit Hook-Up Wiring		Scale: none
(Shown with SMX Control)		Date: 3/26/03
		Revised: --
Drawing Number: HTE-088		

Fig. 7 CBBL/CHBBL Air Handler Wiring Diagrams

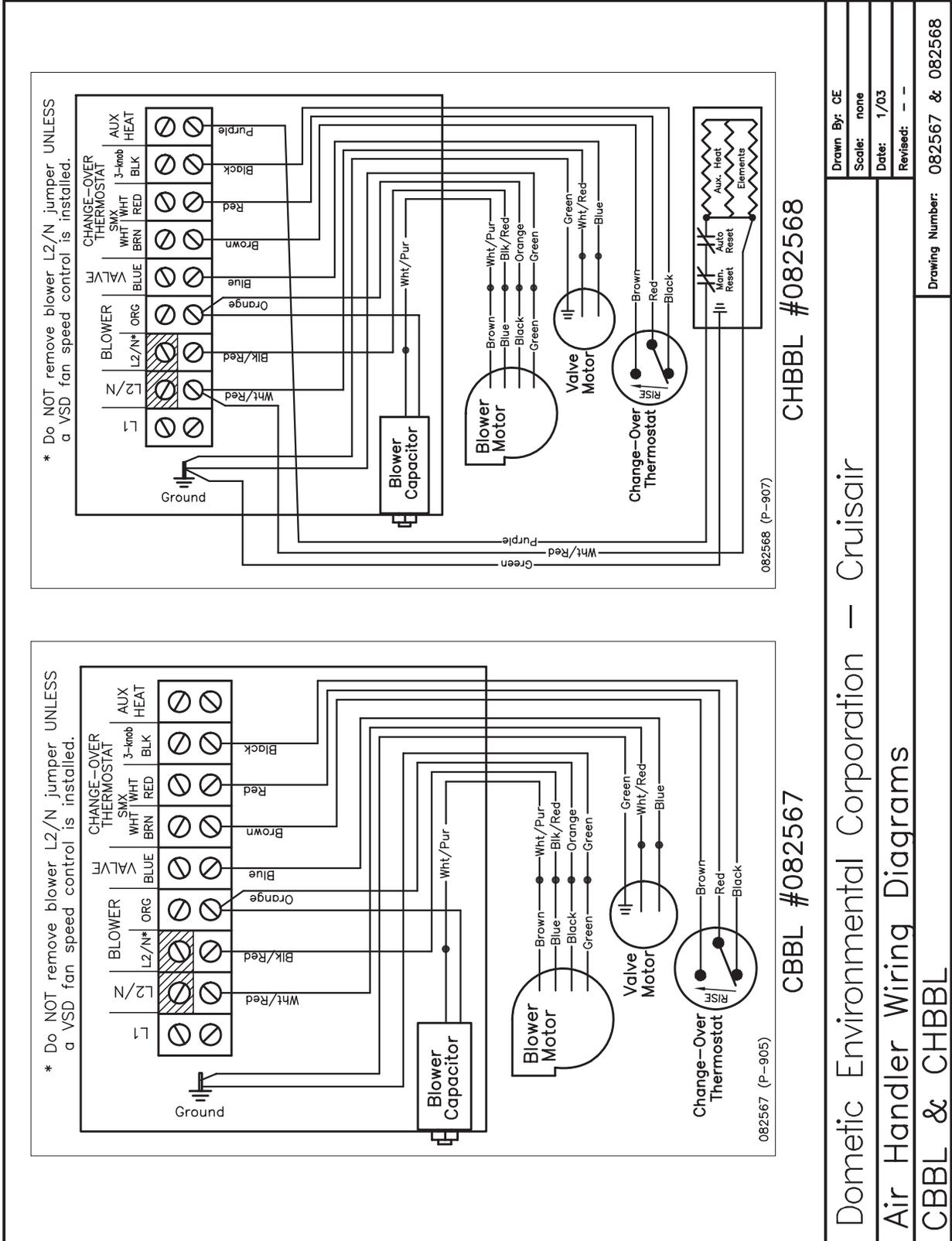
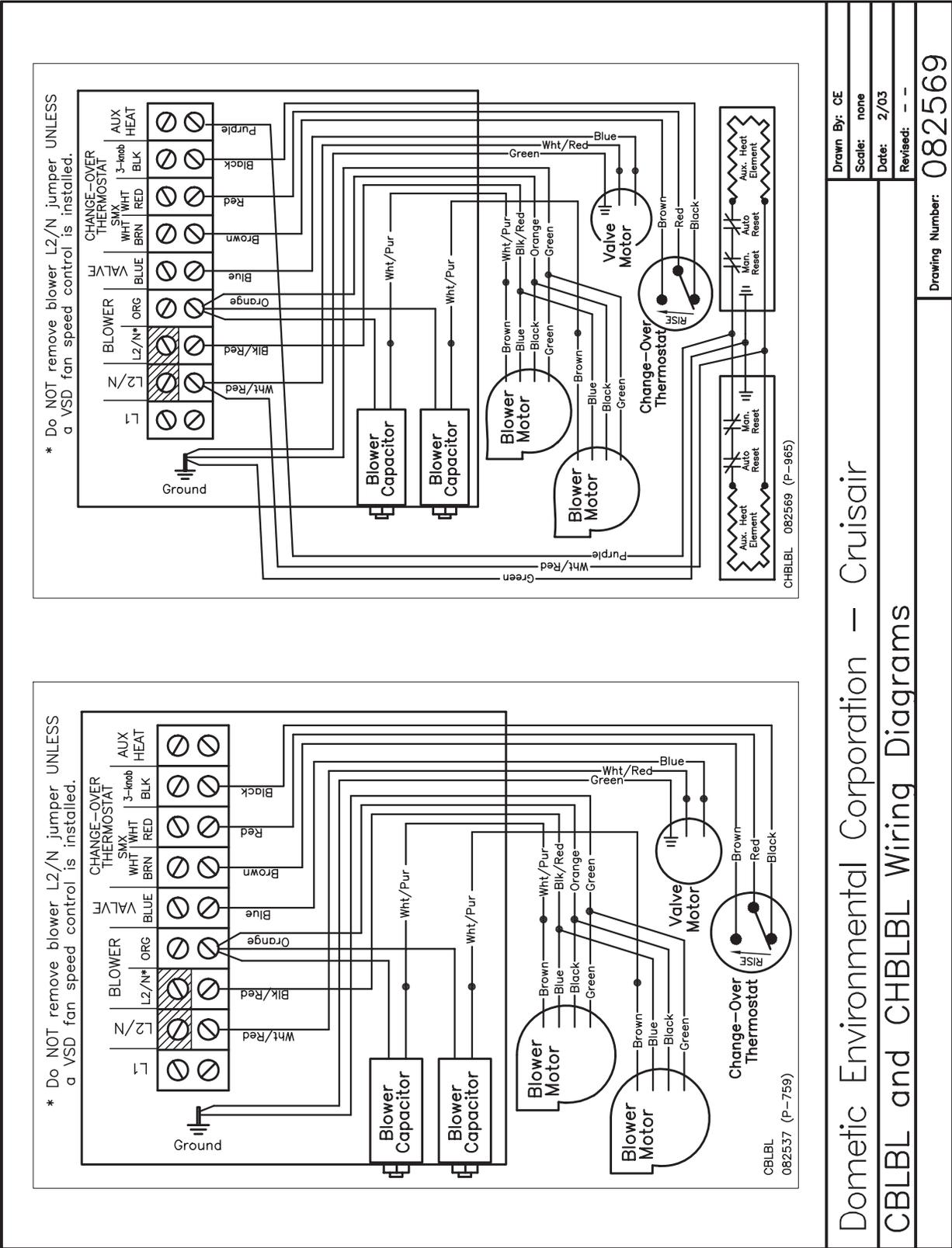


Fig. 8 CBLBL/CHLBL Air Handler Wiring Diagrams



Dometic Environmental Corporation – Cruisair		Drawn By: CE
CBLBL and CHLBL Wiring Diagrams		Scale: none
		Date: 2/03
		Revised: --
		Drawing Number: 082569

Fig. 9 086800 SMXir Template

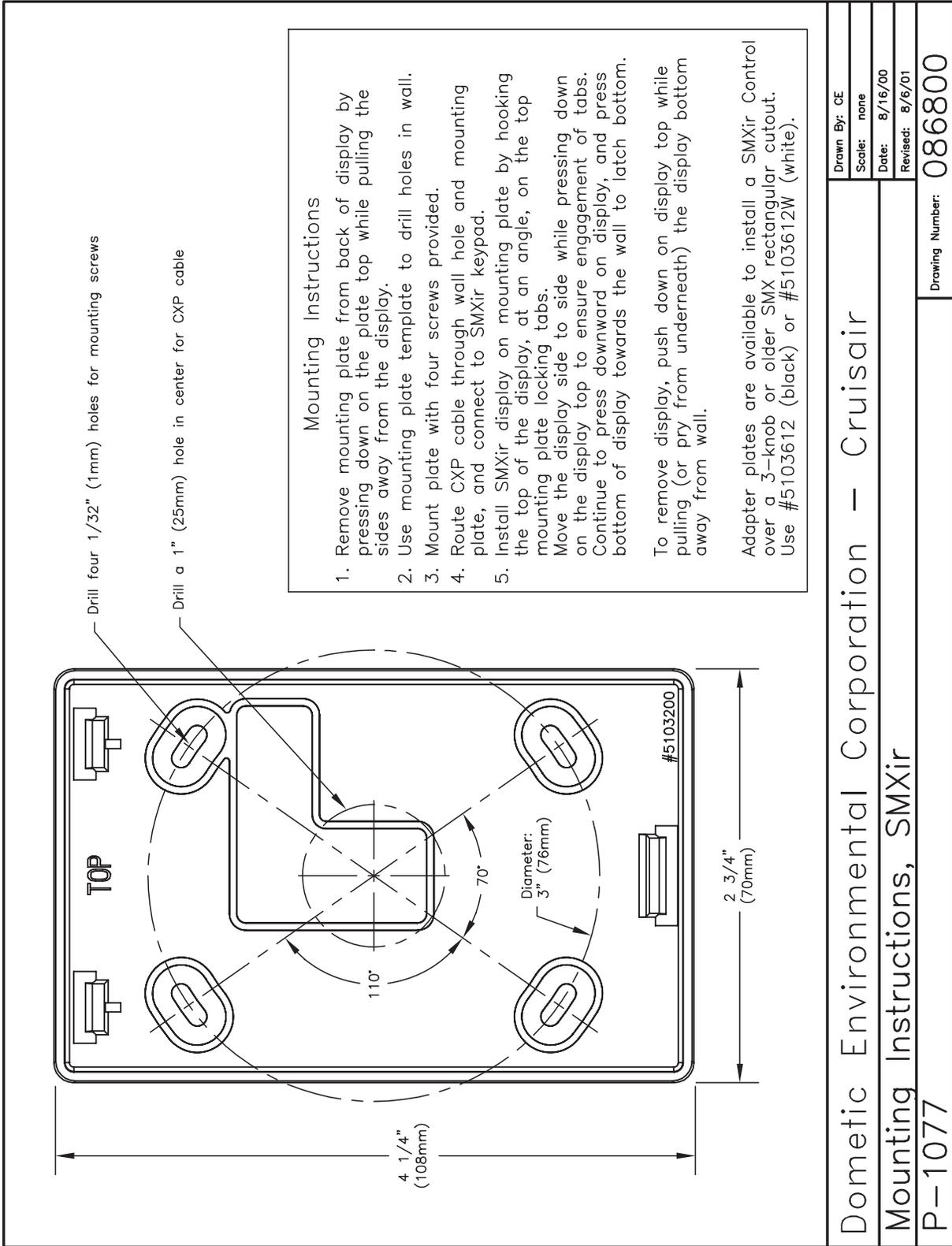
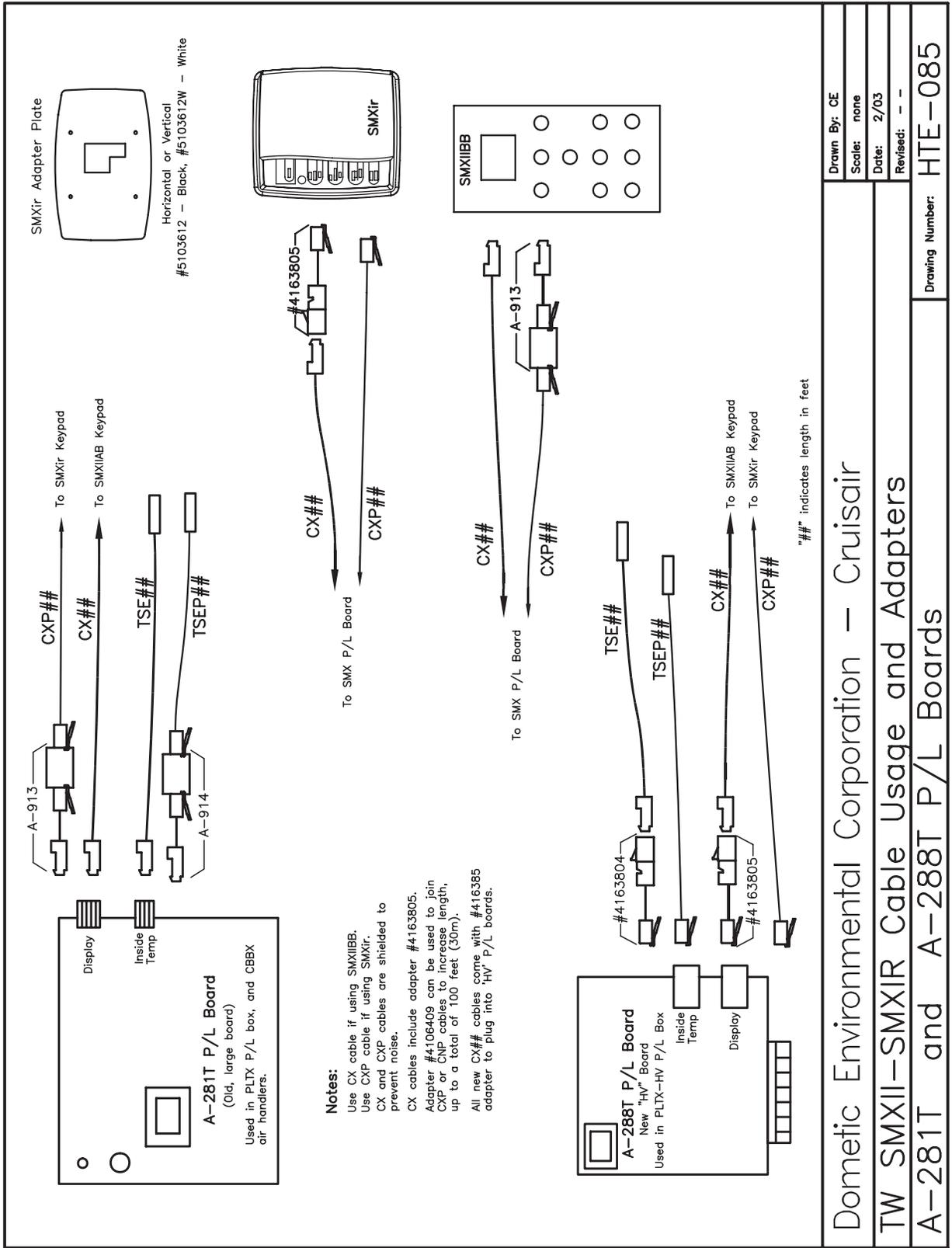


Fig. 10 HTE-085 TW SMX II Cables and Adapters



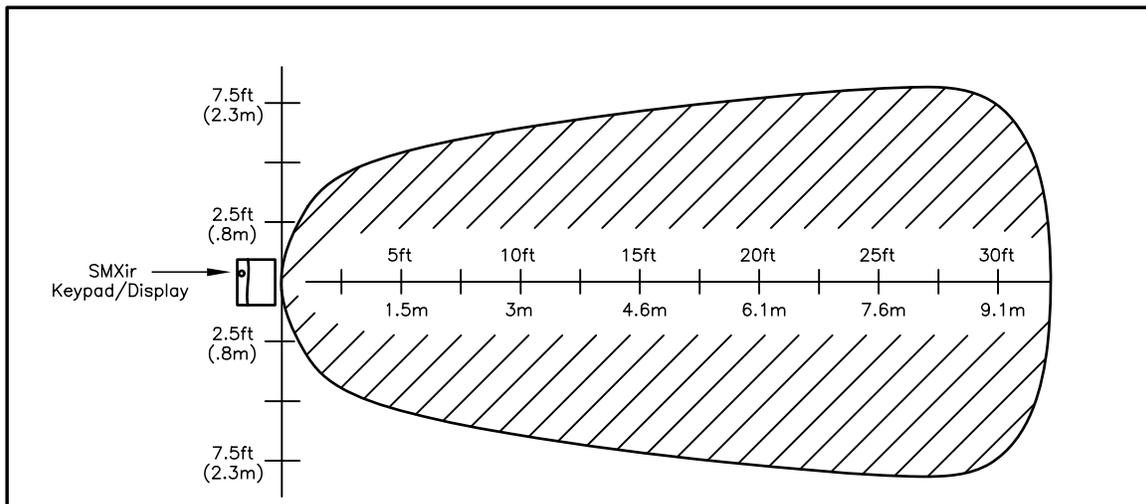
**Fig. 11 Replacement TW SMX II Parts**

Replacement TW SMXII Parts

Model	Description
SMXIRB-T	SMXIR Keypad/Display, Black, 3/4 Door
SMXIRW-T	SMXIR Keypad/Display, White, 3/4 Door
SMXIRB-T-F	SMXIR Keypad/Display, Black, Full Door
SMXIRW-T-F	SMXIR Keypad/Display, White, Full Door
SMXIR-REM-T	SMXIR Remote Control
5103400	Replacement Full Door for SMXIRB, Black
5103400W	Replacement Full Door for SMXIRW, White
SMXIIBB	SMXII Keypad/Display, Black
TPXB	Snap-on cover for SMXII, Black
TPXN	Snap-on cover for SMXII, Brown
TPXW	Snap-on cover for SMXII, White
TPXG	Snap-on cover for SMXII, Beige
CX##	Cable for SMXII keypad (## is length in feet)
CXP##	Cable for SMXir keypad (## is length in feet)
TSEP##	Temperature Sensor, RJ-11 connector
PLTX-HV	Replacement P/L box, 115/230V, HV
A-288T	Replacement P/L board, 115/230V, HV
A-281T	Replacement P/L board, 115/230V, large board

Note: Cables are available in lengths from 5 feet to 60 feet.  
See drawing # HTE-085 for different SMX cable adapters.

**Fig. 12 SKA-1247-Rev 1 SMXir Remote Control Range**





# Cruisair Worldwide Service Dealer Locator

The majority of the service listings displayed for the United States are key members of the national Cruisair distributor or master dealer network. If you need service, please contact the closest company shown. In most cases they will direct you to a local dealer or service port. We have over 500 Cruisair dealers in the national Cruisair network, and one should be convenient to you.

The **international** companies listed are, in many cases, distributors and are capable of managing the majority of service requests for the countries listed. In some cases they will refer you to a local dealer.

You may also contact us directly via the web site or call us in the US at (804) 746-1313.

**For a complete and up-to-date Dealer locator list, please visit our website at <http://www.cruisair.com/cruisair/dealer.html>**

## USA

### AAP Inc.

Location: Milford, VA, USA  
Territory: National Coach & Mobile Products Only  
Phone: 804-633-9454  
Fax: 804-633-5499  
Web: www.aap.com

### Alabama

### A.E.R. Supply, Inc.

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

### Thom Chase Heating and A/C

Location: Chattanooga, TN, USA  
Territory: Northern Alabama, Northern Mississippi, Tennessee, Western Kentucky  
Phone: 423-344-6356  
Fax: 423-344-6356  
E-mail: thomchase@aol.com

### Alaska

### Southern California Marine Enterprises

Location: San Diego, CA, USA  
Phone: 619-224-2869  
Fax: 619-226-0496  
E-mail: sales@southernmarine.com  
Web: www.southernmarine.com

### Arizona

### Southern California Marine Enterprises

Location: San Diego, CA, USA  
Phone: 619-224-2869  
Fax: 619-226-0496  
E-mail: sales@southernmarine.com  
Web: www.southernmarine.com

### Arkansas

### A.E.R. Supply, Inc.

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

### California

### Southern California Marine Enterprises

Location: San Diego, CA, USA  
Phone: 619-224-2869  
Fax: 619-226-0496  
E-mail: sales@southernmarine.com  
Web: www.southernmarine.com

### Colorado

### A.E.R. Supply, Inc.

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

## Connecticut

### GDL Services, LLC

Location: Clinton, CT, USA  
Territory: Connecticut River Area  
Phone: 860-669-5179  
Fax: 860-669-5806

### Nautical Air, Inc.

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

## Delaware

### Annapolis Cruisair

Location: Annapolis, MD, USA  
Territory: In Md: Baltimore & Areas South; In Delaware: South of the Sassafras River  
Phone: 410-224-0970  
Fax: 410-224-0050  
E-mail: cruisair45@aol.com

### Nautical Air, Inc.

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

## Florida

### Cruisair Southeast, A Division of T.K. Alley, Inc.

Location: Dania, FL, USA  
Territory: Southeast Florida  
Phone: 954-920-0300  
Fax: 954-920-0301  
E-mail: tkalley@aol.com  
Web: www.cruisair-southeast.com

### Cruisair Suncoast, Inc.

Location: St. Petersburg, FL, USA  
Territory: Tampa, St. Petersburg and surrounding areas  
Phone: 727-526-7875  
Fax: 727-528-9519  
E-mail: cruisairsuncoast@yahoo.com

### Ward's Marine Electric, Inc.

Location: Ft. Lauderdale, FL, USA  
Territory: Battery Chargers Only  
Phone: 954-523-2815  
Fax: 954-523-1967  
E-mail: info@wardsmarine.com

## Georgia

### Beard Marine/Savannah

Location: Savannah, GA, USA  
Phone: (912) 356-5222  
Fax: (912) 692-1006  
E-mail: lpstorkbms@aol.com

## Hawaii

### Southern California Marine Enterprises

Location: San Diego, CA, USA  
Phone: 619-224-2869  
Fax: 619-226-0496  
E-mail: sales@southernmarine.com  
Web: www.southernmarine.com

## Idaho

### Sure Marine Services Inc.

Location: Seattle, WA, USA  
Phone: 206-784-9903  
Fax: 206-784-0506  
E-mail: sales@suremarine.com

## Illinois

### J & S Marine Sales & Service

Location: Detroit, MI, USA  
Phone: (586) 463-3400  
Fax: (586) 463-1792  
E-mail: jandsmarine@sbcglobal.net  
Web: www.jandsmarine.com

### Midwest Marine Supply

Location: St. Clair Shores, MI, USA  
Phone: 586-778-8950  
Fax: 586-778-6108

### Nautical Air, Inc.

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

## Indiana

### J & S Marine Sales & Service

Location: Detroit, MI, USA  
Phone: (586) 463-3400  
Fax: (586) 463-1792  
E-mail: jandsmarine@sbcglobal.net  
Web: www.jandsmarine.com

### Midwest Marine Supply

Location: St. Clair Shores, MI, USA  
Phone: 586-778-8950  
Fax: 586-778-6108

### Nautical Air, Inc.

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

## Iowa

### J & S Marine Sales & Service

Location: Detroit, MI, USA  
Phone: (586) 463-3400  
Fax: (586) 463-1792  
E-mail: jandsmarine@sbcglobal.net  
Web: www.jandsmarine.com

Iowa

**Midwest Marine Supply**

Location: St. Clair Shores, MI, USA  
Phone: 586-778-8950  
Fax: 586-778-6108

**Nautical Air, Inc.**

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

Kansas

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

Kentucky

**Thom Chase Heating and A/C**

Location: Chattanooga, TN, USA  
Territory: Northern Alabama, Northern Mississippi, Tennessee, Western Kentucky  
Phone: 423-344-6356  
Fax: 423-344-6356  
E-mail: thomchase@aol.com

Louisiana

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

**Sea Chest Marine Distr.**

Location: New Orleans, LA, USA  
Territory: Gulf Coast (LA & MS)  
Phone: 800-535-8630  
Fax: 504-288-1758

Maryland

**Annapolis Cruisair**

Location: Annapolis, MD, USA  
Territory: In Md: Baltimore & Areas South; In Delaware: South of the Sassafras River  
Phone: 410-224-0970  
Fax: 410-224-0050  
E-mail: cruisair45@aol.com

Maryland (N of Baltimore)

**Nautical Air, Inc.**

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

Massachusetts

**World Wide Enterprises**

Location: Cape Cod, MA, USA  
Phone: 508-540-0963

Michigan

**J & S Marine Sales & Service**

Location: Detroit, MI, USA  
Phone: (586) 463-3400  
Fax: (586) 463-1792  
E-mail: jandsmarine@sbcglobal.net  
Web: www.jandsmarine.com

**Midwest Marine Supply**

Location: St. Clair Shores, MI, USA  
Phone: 586-778-8950  
Fax: 586-778-6108

Minnesota

**Midwest Cruisair**

Location: Red Wing, MN, USA  
Territory: Minnesota and Western Wisconsin  
Phone: 651-388-4881  
Fax: 651-388-9186  
E-mail: estelter@redwing.net

Mississippi

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

**Sea Chest Marine Distr.**

Location: New Orleans, LA, USA  
Territory: Gulf Coast (LA & MS)  
Phone: 800-535-8630  
Fax: 504-288-1758

**Thom Chase Heating and A/C**

Location: Chattanooga, TN, USA  
Territory: Northern Alabama, Northern Mississippi, Tennessee, Western Kentucky  
Phone: 423-344-6356  
Fax: 423-344-6356  
E-mail: thomchase@aol.com

Missouri

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

Montana

**Sure Marine Services Inc.**

Location: Seattle, WA, USA  
Phone: 206-784-9903  
Fax: 206-784-0506  
E-mail: sales@suremarine.com

Nebraska

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

Nevada

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

**Southern California Marine Enterprises**

Location: San Diego, CA, USA  
Phone: 619-224-2869  
Fax: 619-226-0496  
E-mail: sales@southernmarine.com  
Web: www.southernmarine.com

New Jersey

**Nautical Air, Inc.**

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

New Mexico

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

New York

**Nautical Air, Inc.**

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

North Carolina

**Martin's Marine**

Location: Wilmington, NC, USA  
Territory: North Carolina and Myrtle Beach, SC  
Phone: 910-799-9362  
Fax: 910-793-4267

North Dakota

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

Ohio

**Nautical Air, Inc.**

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

Oklahoma

**A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

Oregon

**Sure Marine Services Inc.**

Location: Seattle, WA, USA  
Phone: 206-784-9903  
Fax: 206-784-0506  
E-mail: sales@suremarine.com

Pennsylvania

**Nautical Air, Inc.**

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

Rhode Island

**Cay Electronics**

Location: Portsmouth, Rhode Island, USA  
Territory: Rhode Island  
Phone: 401-683-3520  
Fax: 401-683-3633  
Web: www.cayelectronics.com

**Nautical Air, Inc.**

Location: Copiague, NY, USA  
Territory: CT, DE (N. of Sassafras River), IO, IL, MD (N. of Baltimore), NJ, NY, PA, OH, RI,  
Phone: 631-956-3456  
Fax: 631-956-3479  
E-mail: sales@nauticalair.com  
Web: www.nauticalair.com

## South Carolina

### **Atlantic Boat ACR**

Location: Charleston, SC, USA  
Phone: 888-529-0122  
Fax: 843-529-0101  
E-mail: info@atlanticboatacr.com  
Web: www.atlanticboatacr.com

### **Martin's Marine**

Location: Wilmington, NC, USA  
Territory: North Carolina and Myrtle Beach, SC  
Phone: 910-799-9362  
Fax: 910-793-4267

## South Dakota

### **A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

## Tennessee

### **Thom Chase Heating and A/C**

Location: Chattanooga, TN, USA  
Territory: Northern Alabama, Northern Mississippi, Tennessee, Western Kentucky  
Phone: 423-344-6356  
Fax: 423-344-6356  
E-mail: thomchase@aol.com

## Texas

### **A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

## Utah

### **A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

### **Southern California Marine Enterprises**

Location: San Diego, CA, USA  
Phone: 619-224-2869  
Fax: 619-226-0496  
E-mail: sales@southernmarine.com  
Web: www.southernmarine.com

## Virginia

### **Lamy Marine, Inc.**

Location: Chesapeake, VA, USA  
Phone: 757-494-3747  
Fax: 757-494-3740  
E-mail: lamy.marine@verizon.net

## Washington

### **Sure Marine Services Inc.**

Location: Seattle, WA, USA  
Phone: 206-784-9903  
Fax: 206-784-0506  
E-mail: sales@suremarine.com

## Wisconsin (East)

### **J & S Marine Sales & Service**

Location: Detroit, MI, USA  
Phone: (586) 463-3400  
Fax: (586) 463-1792  
E-mail: jandsmarine@sbcglobal.net  
Web: www.jandsmarine.com

### **Midwest Marine Supply**

Location: St. Clair Shores, MI, USA  
Phone: 586-778-8950  
Fax: 586-778-6108

## Wisconsin (West)

### **Midwest Cruisair**

Location: Red Wing, MN, USA  
Territory: Minnesota and Western Wisconsin  
Phone: 651-388-4881  
Fax: 651-388-9186  
E-mail: estelter@redwing.net

## Wyoming

### **A.E.R. Supply, Inc.**

Location: Seabrook, TX, USA  
Phone: 281-474-3276  
Fax: 281-474-2714  
E-mail: rsmiller@aersupply.com

## Angola

### **Southern Power Products**

Location: Cape Town, South Africa  
Phone: 27-21-511-0653  
Fax: 27-21-510-3049  
E-mail: sales@southernpower.co.za

## Antigua

### **Aboard Refrigeration**

Location: English Harbour, Antigua  
Phone: 268-460-1690  
Fax: 419-858-0544  
E-mail: aboardrf@candw.ag

### **The Signal Locker**

Location: English Harbour, Antigua  
Phone: 268-460-1528  
Fax: 268-460-1148  
E-mail: lockers@candw.ag

## Argentina

### **Trimer S.A.**

Location: Buenos Aires, Argentina  
Phone: 5411-4580-0444  
Fax: 5411-4580-0440  
E-mail: trimer@trimer.com.ar  
Web: www.trimer.ar

## Australia

### **Seabreeze Industries**

Location: Coomera, Queensland, Australia  
Phone: 61-7-55806371  
Fax: 61-7-55806372  
E-mail: seabreez@bigpond.net.au  
Web: www.seabreeze-industries.com.au

## Austria

### **Dometic Marine – Italy, Sales Company**

Location: Milano, Italy  
Phone: 39 0362 44182  
Fax: 39 0362 452226  
E-mail: marine.info@dometic.it

### **Nautica Centis di Nespolo Cinzia & C. Sne**

Location: Bevazzana de Latisana (UD), Italy  
Territory: Northeast Italy, Austria, Croatia, Slovenia  
Phone: 390-431-53-644  
Fax: 390-431-53-460  
E-mail: nautica.centis@nauticacentis.it  
Web: www.nauticacentis.it

## Bahamas

### **Freezing Point, Ltd.**

Location: Nassau, Bahamas  
Phone: 242-325-3589  
Fax: 242-356-5271  
E-mail: freezingpoint@bahamas.net.bs

## **Nixon's Refrigeration**

Location: Abaco, Bahamas  
Territory: Abaco Island only  
Phone: 242-367-5219  
Fax: 242-367-5219  
E-mail: seannixon@email.com

## **Bahrain**

### **Mantech**

Location: Dubai, United Arab Emirates  
Phone: 971 4 333 25 42  
Fax: 971 4 333 06 49  
E-mail: mqe@emirates.net.ae

## **Bangladesh**

### **Tritex Equipment Pte. Ltd.**

Location: , Singapore  
Phone: (65) 6861 1188  
Fax: (65) 6861 4263, (65) 6861 8797  
E-mail: sales@tritex.com.sg  
Web: www.tritex.com.sg

## **Belgium**

### **Eberca**

Location: , Netherlands  
Phone: 31 186621955  
Fax: 31 186621818  
E-mail: info@eberca.nl

## **Bermuda**

### **Flatt's Marine**

Location: St. Georges, Bermuda  
Phone: 441-293-5740  
Fax: 441-293-5740

## **Botswana**

### **Southern Power Products**

Location: Cape Town, South Africa  
Phone: 27-21-511-0653  
Fax: 27-21-510-3049  
E-mail: sales@southernpower.co.za

## **Brazil**

### **Marine Express**

Location: Sao Paulo, Brazil  
Phone: 55-11-5182-7166  
Fax: 55-11-5183-3636  
E-mail: fabrizio@marineexpress.com.br  
Web: www.marineexpress.com.br

### **Sailing Products**

Location: Rio de Janeiro, Brazil  
Phone: 55 (0) 21 3154-9990  
Fax: 55 (0) 21 2494-7223  
E-mail: sailing@sailing.com.br

### **Sailing Products**

Location: Sao Paulo, Brazil  
Phone: 55 (0) 11 81 1985  
Fax: 55 (0) 11 81 1936

## **British Virgin Islands**

### **Cay Electronics Ltd.**

Location: Tortola, British Virgin Islands  
Phone: 284-494-2400  
Fax: 284-494-5389  
E-mail: caybvi@candwbvi.net  
Web: www.cayelectronics.com

### **Parts And Power**

Location: Tortola, British Virgin Islands  
Phone: 284-494-2830  
Fax: 284-494-1584  
E-mail: partspwr@surbvi.com

## **British West Indies**

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### **Caribbean Marine & Diesel**

Location: Turks and Caicos Islands, British West Indies  
Phone: 649-941-5903  
Fax: 649-941-5902  
E-mail: caribmarinediesel@tcway.tc

### **Marine Power**

Location: Grand Cayman Island, British West Indies  
Phone: 345-947-1945  
Fax: 345-947-1909  
E-mail: mpower@candw.ky

## **Canada**

---

### British Columbia

### **Accutemp Refrigeration and Air Conditioning**

Location: Victoria, BC, Canada  
Territory: Western Canada  
Phone: 250-475-2665  
Fax: 250-475-1957  
E-mail: info@accutemp.ca  
Web: www.accutemp.ca

### **Airon Heating And Air Conditioning**

Location: Richmond, BC, Canada  
Territory: Western Canada  
Phone: 604-270-2040  
Fax: 604-270-3888  
E-mail: dmairon@telus.net  
Web: www.aironhvac.com

### Ontario

### **J & S Marine Sales & Service**

Location: Detroit, MI, USA  
Phone: (586) 463-3400  
Fax: (586) 463-1792  
E-mail: jandsmarine@sbcglobal.net  
Web: www.jandsmarine.com

### **Northland Supply Company**

Location: Queensville, ON, Canada  
Phone: 905-478-2244  
Fax: 905-478-2295  
E-mail: norsupco@aol.com  
Web: www.norsupco.com

## **Caribbean Islands**

---

### **Aboard Refrigeration**

Location: English Harbour, Antigua  
Phone: 268-460-1690  
Fax: 419-858-0544  
E-mail: aboardrf@candw.ag

### **Agencias Navieras B&R S.A.**

Location: Santo Domingo, Dominican Republic  
Territory: Dominican Republic  
Phone: 809-562-3353  
Fax: 809-562-3383  
E-mail: hsosa@navierasbr.com

### **C.S. Services**

Location: Martinique, French West Indies  
Phone: 596-749113  
Fax: 596-749174

### **Caribbean Marine & Diesel**

Location: Turks and Caicos Islands, British West Indies  
Phone: 649-941-5903  
Fax: 649-941-5902  
E-mail: caribmarinediesel@tcway.tc

### **Cay Electronics Ltd.**

Location: Tortola, British Virgin Islands  
Phone: 284-494-2400  
Fax: 284-494-5389  
E-mail: caybvi@candwbvi.net  
Web: www.cayelectronics.com

### **Centro Cruisair de Puerto Rico**

Location: Santurce, Puerto Rico  
Phone: 787-727-3637  
Fax: 787-727-3637

### **Cool-Tech Air Conditioning**

Location: Fajardo, Puerto Rico  
Phone: (787) 860-2615  
Fax: (787) 801-2050  
E-mail: cooltech@isprr.net

### **Coral Bay Marine Service**

Location: St. John, U.S. Virgin Islands  
Phone: 340-776-6859  
Fax: 340-776-6859

### **Dr. Ice**

Location: St. Thomas, US Virgin Islands  
Territory: St. Thomas  
Phone: 340-775-4540  
Fax: 340-775-6575  
E-mail: lastlaugh44@pennswoods.net

### **Enertech N.V.**

Location: Simpson Bay, St. Maarten/St. Martin, Netherland Antilles  
Phone: 599-551-2145  
Fax: 305-675-5857 (USA)  
E-mail: service@enertechnv.com  
Web: www.enertechnv.com

### **First Needs Co.**

Location: Curacao, Netherlands Antilles  
Phone: 599 966 69139  
Fax: 599 976 79003  
E-mail: hcraft@attglobal.net  
Web: www.firstneedscuracao.com

### **Freezing Point, Ltd.**

Location: Nassau, Bahamas  
Phone: 242-325-3589  
Fax: 242-356-5271  
E-mail: freezingpoint@bahamas.net.bs

### **Iceberg Refrigeration**

Location: Guadeloupe, French West Indies  
Phone: 590-24 35 35  
Fax: 590-24 35 35  
E-mail: iceberg.refrigeration@wanadoo.fr

### **Marine Power**

Location: Grand Cayman Island, British West Indies  
Phone: 345-947-1945  
Fax: 345-947-1909  
E-mail: mpower@candw.ky

### **May Day Marine**

Location: San Juan, Puerto Rico  
Territory: Puerto Rico, Dominican Republic  
Phone: 787-720-9628  
Fax: 787-790-2551

### **Nau-T-Kol Marine Refrigeration**

Location: Chaguaramas, Trinidad  
Phone: 868-634-2174  
Fax: 868-634-2174  
E-mail: nautkol@cablet.net  
Web: www.nautkol.com

### **Nixon's Refrigeration**

Location: Abaco, Bahamas  
Territory: Abaco Island only  
Phone: 242-367-5219  
Fax: 242-367-5219  
E-mail: seannixon@email.com

### **Outfitters International**

Location: St. Georges, Grenada  
Phone: 473-440-7949  
Fax: 473-440-6680  
E-mail: footloos@caribsurf.com

### **Parts And Power**

Location: Tortola, British Virgin Islands  
Phone: 284-494-2830  
Fax: 284-494-1584  
E-mail: partspwr@surfbvi.com

### **Reefco**

Location: St. Thomas, U.S. Virgin Islands  
Phone: 340-776-0038  
Fax: 340-776-0038  
E-mail: dennedy@viaccess.net

### **Regis Electronics (St Lucia) LTD.**

Location: St. Lucia, West Indies  
Phone: 758-452-0205  
Fax: 758-452-0206  
E-mail: stlucia@regiselectronics.com

### **St. Croix Marine Corp.**

Location: St. Croix, U.S. Virgin Islands  
Phone: 340-773-0289  
Fax: 340-778-8974  
E-mail: stcroixmarine@hotmail.com

### **Sun Cool Air Conditioning Copr**

Location: Carolina, Puerto Rico  
Phone: 787-791-6971  
Fax: 787-791-3885  
E-mail: suncool1@coqui.net

### **Technical House (E.T.S. Inc.)**

Location: San Juan, Puerto Rico  
Territory: Sentry Battery Chargers Only  
Phone: 787-781-1313  
Fax: 787-781-2020  
E-mail: jdonato@technicalhouse.com  
Web: www.technicalhouse.com

### **The Signal Locker**

Location: English Harbour, Antigua  
Phone: 268-460-1528  
Fax: 268-460-1148  
E-mail: lockers@candw.ag

## **China**

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### **Chi-Mo Inc.**

Location: Shanghai, China  
Phone: 8621-5917-1111  
Fax: 8621-5917-1166  
E-mail: sales@springfieldmarine.com.cn  
Web: www.springfieldmarine.com.cn

### **Tritex Equipment (H.K.) Ltd**

Location: Shanghai, Beijing, Guangzhou, Wuhan, China  
Phone: 8621-5240-2638  
Fax: 8621-5240-2153  
E-mail: tritex@public.sta.net.cn  
Web: www.tritex.com.sq

### **Tritex Equipment Pte. Ltd.**

Location: , Singapore  
Phone: (65) 6861 1188  
Fax: (65) 6861 4263, (65) 6861 8797  
E-mail: sales@tritex.com.sq  
Web: www.tritex.com.sq

## **Costa Rica**

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### **Gato Frío**

Location: Playa Jaco, Costa Rica  
Territory: Costa Rica, Panama  
Phone: 506-637-7181  
Fax: 506-637-7180  
E-mail: eric@yachtshare.net

### **Metro Marine**

Location: Herradura Bay, Costa Rica  
Phone: 506-643-2409  
Fax: 506-643-2409  
Web: marinometro@racsa.co.cr

## Croatia

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### Dometic Marine – Italy, Sales Company

Location: Milano, Italy  
Phone: 39 0362 44182  
Fax: 39 0362 452226  
E-mail: marine.info@dometic.it

### Nautica Centis di Nespolo Cinzia & C. Sne

Location: Bevazzana de Latisana (UD), Italy  
Territory: Northeast Italy, Austria, Croatia, Slovenia  
Phone: 390-431-53-644  
Fax: 390-431-53-460  
E-mail: nautica.centis@nauticacentis.it  
Web: www.nauticacentis.it

## Cyprus

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### Dometic Marine - United Kingdom, Sales Company

Location: Poole, Dorset, United Kingdom  
Phone: 44 (0) 870 3306101  
Fax: 44 (0) 870 3306102  
E-mail: sales@dometicmarine.com  
Web: www.dometic.com

### Tuti Mare Trading Ltd

Location: Limassol, Cyprus  
Phone: 35 725 431313  
Fax: 35 725 431300

## Dominican Republic

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### Agencias Navieras B&R S.A.

Location: Santo Domingo, Dominican Republic  
Territory: Dominican Republic  
Phone: 809-562-3353  
Fax: 809-562-3383  
E-mail: hsosa@navierasbr.com

### May Day Marine

Location: San Juan, Puerto Rico  
Territory: Puerto Rico, Dominican Republic  
Phone: 787-720-9628  
Fax: 787-790-2551

## Ecuador

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### Navas-Bustos Representaciones

Location: Guayaquil, Ecuador  
Phone: 593-2-252542  
Fax: 593-2-251-421

## Egypt

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### Climate Company

Location: Cairo, Egypt  
Phone: 20-2-2598092  
Fax: 20-2-4523028  
E-mail: climate@tedata.net.eg

## Eritrea

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### DM Electrical Engineering

Location: Asmara, Eritrea  
Phone: 291-1-126737  
Fax: 291-1-127650

## France

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### Dometic Marine - France, Sales Company

Location: 60 128 Plailly, France  
Phone: Cell: 0033 (0)680 415 543  
Fax: 0033 (0)344 633 518  
E-mail: marine.sales@dometic.fr

### Polymarine Distribution

Location: Cannet, Rocheville, France  
Phone: 0033 493463634  
Fax: 0033 493463634  
E-mail: polymarine.bailey@free.fr

## French West Indies

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### C.S. Services

Location: Martinique, French West Indies  
Phone: 596-749113  
Fax: 596-749174

### Iceberg Refrigeration

Location: Guadeloupe, French West Indies  
Phone: 590-24 35 35  
Fax: 590-24 35 35  
E-mail: iceberg.refrigeration@wanadoo.fr

## Germany

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### GEMO GmbH

Location: Travemunde, Germany  
Phone: 49-4502-2466  
Fax: 49-4502-2425  
E-mail: gemo\_gmbh@t-online.de  
Web: www.gemo\_online.de

## Greece

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### Dometic Marine - United Kingdom, Sales Company

Location: Poole, Dorset, United Kingdom  
Phone: 44 (0) 870 3306101  
Fax: 44 (0) 870 3306102  
E-mail: sales@dometicmarine.com  
Web: www.dometic.com

### Polfrost Technical Ltd.

Location: Piraeus, Greece  
Phone: 30-210-461-3370  
Fax: 30-210-461-4376

### Athens

### Agean Diesel Electric LT

Location: , Piraeus, Greece  
Phone: 3014222484  
Fax: 3014175201  
E-mail: info@ade-marine.gr

## Grenada

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### Outfitters International

Location: St. Georges, Grenada  
Phone: 473-440-7949  
Fax: 473-440-6680  
E-mail: footloos@caribsurf.com

## Guam

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### Fentress Refrigeration Service Co.

Location: Tamuning, Guam  
Phone: 671-565-4038  
Fax: 671-565-3315

## Guatemala

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### Automotores y Marina, S.A.

Location: Villa Nueva, Guatemala  
Phone: 502-6631-2033  
Fax: 502-6631-2034  
E-mail: info@automotoresymarina.com

## Hong Kong

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### Astral Marine, Ltd.

Location: Sai Kung, NT, Hong Kong  
Phone: 852-271 959 82  
Fax: 852-219 444 63  
E-mail: funcle@pacific.net.hk  
Web: www.astral.com.hk

### Tritex Equipment (H.K.) Ltd.

Location: Kowloon, Hong Kong  
Phone: 852-2341-3329  
Fax: 852-2343-1830  
E-mail: tx1607@netvigator.com

## Indonesia

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### Tritex Equipment Pte. Ltd.

Location: , Singapore  
Phone: (65) 6861 1188  
Fax: (65) 6861 4263, (65) 6861 8797  
E-mail: sales@tritex.com.sg  
Web: www.tritex.com.sg

## Israel

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### Yamit Mil Ltd.

Location: Ramat-Gan, Israel  
Phone: 972 3 6123192  
Fax: 972 3 6123197  
E-mail: mil@yamitysb.co.il

## Italy

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### Cummins Diesel Italia S.P.A

Location: Milan, Italy  
Territory: Central & Southern Italy  
Phone: 39 02 51 655 856  
Fax: 39 02 51 65 58 55  
E-mail: luigi.casaburi@cummins.com

### Dometic Marine – Italy, Sales Company

Location: Milano, Italy  
Phone: 39 0362 44182  
Fax: 39 0362 452226  
E-mail: marine.info@dometic.it

### Nautica Centis di Nespolo Cinzia & C. Sne

Location: Bevazzana de Latisana (UD), Italy  
Territory: Northeast Italy, Austria, Croatia, Slovenia  
Phone: 390-431-53-644  
Fax: 390-431-53-460  
E-mail: nautica.centis@nauticacentis.it  
Web: www.nauticacentis.it

## Japan

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### Gunji Corporation

Location: Osaka, Japan  
Phone: 81-6-6451-5615  
Fax: 81-6-6454-0056  
E-mail: gunji@gunji.com  
Web: www.gunji.com

## Kuwait

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### Mantech

Location: Dubai, United Arab Emirates  
Phone: 971 4 333 25 42  
Fax: 971 4 333 06 49  
E-mail: mge@emirates.net.ae

## Luxembourg

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### Eberca

Location: , Netherlands  
Phone: 31 186621955  
Fax: 31 186621818  
E-mail: info@eberca.nl

## Malaysia

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### Tritex Equipment Pte. Ltd.

Location: , Singapore  
Phone: (65) 6861 1188  
Fax: (65) 6861 4263, (65) 6861 8797  
E-mail: sales@tritex.com.sg  
Web: www.tritex.com.sg

## Maldives

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### Tritex Equipment Pte. Ltd.

Location: , Singapore  
Phone: (65) 6861 1188  
Fax: (65) 6861 4263, (65) 6861 8797  
E-mail: sales@tritex.com.sg  
Web: www.tritex.com.sg

## Wheel Engineering Services

Location: Malé, Maldives  
Territory: Maldives  
Phone: 960-327806  
Fax: 960-324145  
E-mail: wes@avasmail.com.mv

## Malta

### Dometic Marine - United Kingdom, Sales Company

Location: Poole, Dorset, United Kingdom  
Phone: 44 (0) 870 3306101  
Fax: 44 (0) 870 3306102  
E-mail: sales@dometicmarine.com  
Web: www.dometic.com

### Inmartech Ltd

Location: Swieqi, STJ 04, Malta  
Territory: Malta  
Phone: 356 21376476  
Fax: 356 21376476  
E-mail: inmartech@waldonet.net.mt

## Mexico

### Southern California Marine Enterprises

Location: San Diego, CA, USA  
Phone: 619-224-2869  
Fax: 619-226-0496  
E-mail: sales@southernmarine.com  
Web: www.southernmarine.com

## Monaco

### Polymarine Distribution

Location: Cannet, Rocheville, France  
Phone: 0033 493463634  
Fax: 0033 493463634  
E-mail: polymarine.bayle@free.fr

## Mozambique

### Southern Power Products

Location: Cape Town, South Africa  
Phone: 27-21-511-0653  
Fax: 27-21-510-3049  
E-mail: sales@southernpower.co.za

## Myanmar

### Tritex Equipment Pte. Ltd.

Location: , Singapore  
Phone: (65) 6861 1188  
Fax: (65) 6861 4263, (65) 6861 8797  
E-mail: sales@tritex.com.sg  
Web: www.tritex.com.sg

## Namibia

### Southern Power Products

Location: Cape Town, South Africa  
Phone: 27-21-511-0653  
Fax: 27-21-510-3049  
E-mail: sales@southernpower.co.za

## Netherlands

### Eberca

Location: , Netherlands  
Phone: 31 186621955  
Fax: 31 186621818  
E-mail: info@eberca.nl

## Netherlands Antilles

### Enertech N.V.

Location: Simpson Bay, St. Maarten/St. Martin, Netherland Antilles  
Phone: 599-551-2145  
Fax: 305-675-5857 (USA)  
E-mail: service@enertechnv.com  
Web: www.enertechnv.com

### First Needs Co.

Location: Curacao, Netherlands Antilles  
Phone: 599 966 69139  
Fax: 599 976 79003  
E-mail: hcraft@attglobal.net  
Web: www.firstneedscuracao.com

## New Caledonia

### Altomarine

Location: Noumea, New Caledonia  
Phone: 687 25 96 12  
Fax: 687 25 43 30  
E-mail: altomar@altomarine.com

## New Zealand

### Whiting Power Systems

Location: Auckland, New Zealand  
Phone: 64-9-358-2050  
Fax: 64-9-358-0285  
E-mail: sales@whiting.co.nz  
Web: www.whitingpower.com

## Norway

### Refnor A.S.

Location: Østerås, Norway  
Phone: 47-67 14 07 50  
Fax: 47-67 14 70 88  
E-mail: refnor.as@c2i.net

## Oman

### Hi-Tech Projects LLC

Location: Muscat, Oman  
Phone: 968-595056/57/58  
Fax: 968-595054  
E-mail: hitech1@omantel.net.om

### Mantech

Location: Dubai, United Arab Emirates  
Phone: 971 4 333 25 42  
Fax: 971 4 333 06 49  
E-mail: mqe@emirates.net.ae

## Pakistan

### Communications & Machinery Corp.

Location: Karachi, Pakistan  
Phone: 92-21-5678252  
Fax: 92-21-5683283  
E-mail: cmcorp@cyber.net.pk

## Panama

### Compañía Evans Masters

Location: La Chorrera, Panama  
Territory: Panama  
Phone: 507-232-5406  
Fax: 507-232-7648  
E-mail: info@evanmasters.com  
Web: www.evansmasters.com

### Gato Frío

Location: Playa Jaco, Costa Rica  
Territory: Costa Rica, Panama  
Phone: 506-637-7181  
Fax: 506-637-7180  
E-mail: eric@yachtshare.net

## Papua New Guinea

### Lohberger Engineering Pty

Location: Pors Moresby, Papau New Guinea  
Phone: 675-321-2122  
Fax: 675-321-2704  
E-mail: loheng@online.net.pg

## Philippines

### Tritex Equipment Pte. Ltd.

Location: , Singapore  
Phone: (65) 6861 1188  
Fax: (65) 6861 4263, (65) 6861 8797  
E-mail: sales@tritex.com.sg  
Web: www.tritex.com.sg

## Portugal

### Powercool Lda

Location: Portimao, Portugal  
Phone: 351 91 786 63 73  
Fax: 351 282 461 818  
E-mail: info@powercool.org  
Web: www.powercool.org

## Puerto Rico

### Centro Cruisair de Puerto Rico

Location: Santurce, Puerto Rico  
Phone: 787-727-3637  
Fax: 787-727-3637

### Cool-Tech Air Conditioning

Location: Fajardo, Puerto Rico  
Phone: (787) 860-2615  
Fax: (787) 801-2050  
E-mail: cooltech@isppr.net

### May Day Marine

Location: San Juan, Puerto Rico  
Territory: Puerto Rico, Dominican Republic  
Phone: 787-720-9628  
Fax: 787-790-2551

### Sun Cool Air Conditioning Copr

Location: Carolina, Puerto Rico  
Phone: 787-791-6971  
Fax: 787-791-3885  
E-mail: suncool1@coqui.net

### Technical House (E.T.S. Inc.)

Location: San Juan, Puerto Rico  
Territory: Sentry Battery Chargers Only  
Phone: 787-781-1313  
Fax: 787-781-2020  
E-mail: jdonato@technicalhouse.com  
Web: www.technicalhouse.com

## Qatar

### Mantech

Location: Dubai, United Arab Emirates  
Phone: 971 4 333 25 42  
Fax: 971 4 333 06 49  
E-mail: mqe@emirates.net.ae

## Russia

### Standarte

Location: Starbeevo, Moscow region, Russia  
Phone: 7 095 575 67 23  
Fax: 7 095 575 39 77  
E-mail: info@standarte.ru  
Web: www.standarte.ru

## Saudi Arabia

### Mantech

Location: Dubai, United Arab Emirates  
Phone: 971 4 333 25 42  
Fax: 971 4 333 06 49  
E-mail: mqe@emirates.net.ae

## Samaco Marine

Location: Jeddah, Saudi Arabia  
Phone: 966-2-6990064  
Fax: 966-2-6991024

## Scandinavia

### Dometic Marine – Nordic Sales, Sales Company

Location: Halmstad, Sweden  
Phone: +46 35 16 57 00  
Fax: +46 35 16 57 10  
E-mail: marine.info@dometic.se  
Web: www.dometic.com

### Refnor A.S.

Location: Østerås, Norway  
Phone: 47-67 14 07 50  
Fax: 47-67 14 70 88  
E-mail: refnor.as@c2i.net

## Singapore

### Tritex Equipment Pte. Ltd.

Location: , Singapore  
Phone: (65) 6861 1188  
Fax: (65) 6861 4263, (65) 6861 8797  
E-mail: sales@tritex.com.sg  
Web: www.tritex.com.sg

## Slovenia

### Dometic Marine – Italy, Sales Company

Location: Milano, Italy  
Phone: 39 0362 44182  
Fax: 39 0362 452226  
E-mail: marine.info@dometic.it

### Nautica Centis di Nespolo Cinzia & C. Sne

Location: Bevazzana de Latisana (UD), Italy  
Territory: Northeast Italy, Austria, Croatia, Slovenia  
Phone: 390-431-53-644  
Fax: 390-431-53-460  
E-mail: nautica.centis@nauticacentis.it  
Web: www.nauticacentis.it

## South Africa

### Southern Power Products

Location: Cape Town, South Africa  
Phone: 27-21-511-0653  
Fax: 27-21-510-3049  
E-mail: sales@southernpower.co.za

## Spain

### Acastimar

Location: Tarragona, Spain  
Phone: 349-77-362118  
Fax: 349-77-362687  
E-mail: acastimar@acastimar.com

## Sri Lanka

### G&M Enterprises

Location: Borella-Colombo 8, Sri Lanka  
Phone: 94-11-2691966  
Fax: 94-11-2691751  
E-mail: gandm@sltnet.lk

## Sweden

### Dometic Marine – Nordic Sales, Sales Company

Location: Halmstad, Sweden  
Phone: +46 35 16 57 00  
Fax: +46 35 16 57 10  
E-mail: marine.info@dometic.se  
Web: www.dometic.com

## Switzerland

### Marine Parts Heimgartner

Location: Volketswil, Switzerland  
Phone: 41-1-997 40 90  
Fax: 41-1-997 40 94  
E-mail: info@marineparts.ch  
Web: www.marineparts.ch

## Taiwan

### Ing Hai Company, Ltd.

Location: Kaohsiung, Taiwan  
Phone: 886-7-802-1809  
Fax: 886-7-802-1809

### Ing Hai Company, Ltd.

Location: Taipei, Taiwan  
Phone: 886-2-2531-2088  
Fax: 886-2-2523-6531  
E-mail: inghai@tpts6.seed.net.tw

## Thailand

### Thai Kolon Co. Ltd.

Location: Bangkok, Thailand  
Phone: 66-2-745-6468-77 (10 lines)  
Fax: 66-2-745-6152  
E-mail: thkolon@ji-net.com

## Trinidad & Tobago

### Nau-T-Kol Marine Refrigeration

Location: Chaguramas, Trinidad  
Phone: 868-634-2174  
Fax: 868-634-2174  
E-mail: nautkol@cablenet.net  
Web: www.nautkol.com

## Turkey

### Dometic Marine - United Kingdom, Sales Company

Location: Poole, Dorset, United Kingdom  
Phone: 44 (0) 870 3306101  
Fax: 44 (0) 870 3306102  
E-mail: sales@dometicmarine.com  
Web: www.dometic.com

### Egemar Mühendislik Ltd

Location: Istanbul, Turkey  
Phone: 90 216 494 2168  
Fax: 90 216 494 22 18  
E-mail: sales@egemar.com.tr  
Web: www.egemar.com.tr

## U.S. Virgin Islands

### Coral Bay Marine Service

Location: St. John, U.S. Virgin Islands  
Phone: 340-776-6859  
Fax: 340-776-6859

### Dr. Ice

Location: St. Thomas, US Virgin Islands  
Territory: St. Thomas  
Phone: 340-775-4540  
Fax: 340-775-6575  
E-mail: lastlauch44@pennswoods.net

### Reefco

Location: St. Thomas, U.S. Virgin Islands  
Phone: 340-776-0038  
Fax: 340-776-0038  
E-mail: dennnyedy@viaccess.net

### St. Croix Marine Corp.

Location: St. Croix, U.S. Virgin Islands  
Phone: 340-773-0289  
Fax: 340-778-8974  
E-mail: stcroixmarine@hotmail.com

## Ukraine

### Standarte

Location: Starbeevo, Moscow region, Russia  
Phone: 7 095 575 67 23  
Fax: 7 095 575 39 77  
E-mail: info@standarte.ru  
Web: www.standarte.ru

## United Arab Emirates

### Mantech

Location: Dubai, United Arab Emirates  
Phone: 971 4 333 25 42  
Fax: 971 4 333 06 49  
E-mail: mqe@emirates.net.ae

## United Kingdom

### Dometic Marine - United Kingdom, Sales Company

Location: Poole, Dorset, United Kingdom  
Phone: 44 (0) 870 3306101  
Fax: 44 (0) 870 3306102  
E-mail: sales@dometicmarine.com  
Web: www.dometic.com

## Uruguay

### Trimer S.A.

Location: Buenos Aires, Argentina  
Phone: 5411-4580-0444  
Fax: 5411-4580-0440  
E-mail: trimer@trimer.com.ar  
Web: www.trimer.ar

## Venezuela

### Rich Marine Center, C.A.

Location: Puerto La Cruz., Estado Anzoategui, Venezuela  
Phone: 58 281 2181630  
Fax: 58 281 2811630  
E-mail: richmarine@telcel.net.ve  
Web: www.tuyate.net

## West Indies

### Aboard Refrigeration

Location: English Harbour, Antigua  
Phone: 268-460-1690  
Fax: 419-858-0544  
E-mail: aboardrf@candw.ag

### Regis Electronics (St Lucia) LTD.

Location: St. Lucia, West Indies  
Phone: 758-452-0205  
Fax: 758-452-0206  
E-mail: stlucia@regiselectronics.com

## Zambia

### Southern Power Products

Location: Cape Town, South Africa  
Phone: 27-21-511-0653  
Fax: 27-21-510-3049  
E-mail: sales@southernpower.co.za

## Zimbabwe

### Southern Power Products

Location: Cape Town, South Africa  
Phone: 27-21-511-0653  
Fax: 27-21-510-3049  
E-mail: sales@southernpower.co.za





**Dometic Environmental Corporation**

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For Sales and Service Calls within Europe and the Middle East, please contact +44 (0) 870 330 6101

Email: [sales@cruisair.com](mailto:sales@cruisair.com) • Website: [www.cruisair.com](http://www.cruisair.com)



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