MARINE AIR SYSTEMS®

elite
Environmental Control Unit

Product Description

The ***Elite***™ Environmental Control Unit is a microprocessor based controller designed for the precise monitoring of split and self-contained direct expansion air conditioning systems in marine environments.The control can also be used with chilled water air handlers and is called ***AH-Elite*** in this application. The control operates at 115 or 230 volts, each operable at 50 or 60 cycles.

The new ***Elite*** control has a sleek, modern Euro design. It features raised buttons for easy access and control. The mode button is used to scroll through the four modes of operation, simplifying programming. Decorative snap-on Vimar® bezels are available in *Rondo* (shown) and *Classica* styles, in a variety of colors and materials to match your vessel's interior[5]. Other Vimar bezel styles are available by special order.

The Elite display operates with the new Passport® I/O circuit board. This new circuit board utilizes state-of-the-art SMT technology. The Elite display is flash programmable, which will allow for future software upgrades without the need to replace the circuit board.

The assembly has a ground shield to protect against static interference and RF noise. The circuit board is conformally coated to provide high resistance to external damage or corrosion.

A display cable with gold plated phone-type modular jacks connects the panel to the system controller. An optional air sensor cable is connected to the circuit board in the same manner. Non-volatile memory stores all user-selectable parameters indefinitely during operation or any power failure situations. Fused circuits and M.O.V.s (metal oxide varistors) provide component and board protection.

The ***Elite*** control meets or exceeds applicable ABYC, U.S. Coast Guard Regulations and CE Directives.

Features

Selectable Functions

- Automatic humidity control - reduces moisture when the boat is unattended.
- Cool only, heat only, dehumidify, or automatic mode selection.
- New heater relay allows for optional electric heat.
- Temperature displayed in Fahrenheit or Celsius.
- Multiple fan speed selections - automatic or three manual speeds.
- Cycle fan with compressor or continuous fan operation.
- Cycle pump with compressor or continuous pump operation.
- Compressor time delay staging for multiple unit applications.
- Calibration of fan speed and temperature settings to maintain precise control.
- Blank display lights when desired.
- Controls shaded pole and split capacitor fan motors.
- Compressor fail-safe protection.
- Programmable de-icing cycle.
- New "Pump Sentry" protects system if seawater pump fails.
- Built in air sensor (optional remote sensor).
- Water inlet sensor for individual cabin heating with chill chasers (AH-Elite).
- Force open water valves for four hours to bleed system (AH-Elite).

Installation

- The circuit board and display cable are factory installed in the electrical box .
- Display panels are mounted with screws for a secure fit. Bezel snaps on, hiding the screws.[5]
- Easy connections using phone-type modular jacks which are shielded and grounded.

Rondo style bezel shown

Specifications

Model	**ELITE ENVIRONMENTAL CONTROL**	
Voltage (VAC)	**115**	**230**
Cycle (Hz)	50/60	50/60
Phase (ø)	1	1
Circuits [1]		
Compressor Output[2]	40A-115VAC	20A-230VAC
R.V. Output[3]	6A-115VAC	6A-230VAC
Fan Output	6A-115VAC	6A-230VAC
Heater Output	30-115VAC	30A-230VAC
Pump Output[2]	Quarter HP	Half HP
Temperature Ranges ˚F*(˚C)*		
Set Point Temperature	65-85*(18-29)*	
Display Temperature	5-150*(-15-66)*	
Air Sensor Temperature	5-150*(-15-66)*	
Sensor Accuracy	±2˚F at 77˚F*(±3.6˚C at 25˚C)*	
Dimensions in*(cm)*		
Display Panel	4.41*(11.2)* **W** x 2.96*(7.5)* **H** x 1.08*(2.7)* **D**	
Panel Cut-Out	3.31*(8.4)* **W** x 2.19*(5.6)* **H**	
Bezel Size[5]	4.85*(12.3)* **W** x 3.25*(8.3)* **H**	
Cables Included[4]		
Display ft*(m)*	VCD: 15*(4.6)* CMCD: 10*(3.0)* CSD: 30*(9.1)* Chilled Water: 15*(4.6)*	
Water Inlet Sensor	7' *(2.1m)* cables included with some AH-Elite & AH-Passport I/O kits.	
Other Cables Available[4] *Most Cables Available in 5' increments*		
Display ft*(m)*	10' - 75' *(3.0 - 22.9)*	
Alternate/Remote Air (optional)	7' - 60' *(2.1 - 18.3)*	
Outside Air Sensor (optional)	7' - 50' *(2.1 - 15.2)*	
Pump Sentry (optional)	7' - 60' *(2.1 - 18.3)*	
Water Inlet Sensor (AH-Elite)	7' - 60' *(2.1 - 18.3)*	

[1] Maximum loads should not exceed 85% of listed output ratings.
[2] Does not apply to AH-Elite.
[3] Used as water valve output in AH-Elite mode.
[4] Maximum length for display and air sensor cables is 75'. Maximum length for water inlet sensor cable is 75'.
[5] Idea® type bezels from Vimar sold separately. Dimensions may vary depending on style.

Installation Guidelines for Elite Environmental Control Unit

Each ***Elite Environmental Control Unit*** comprises a display panel, display cable, and a control circuit board assembled into the air conditioning unit's electrical box. Determine the proper location of all components before proceeding with the installation.

Locate and secure the air conditioning unit in a dry, accessible area with the fastener provided. Secure remote electrical boxes containing the ***Passport I/O*** circuit board with the fittings provided. The central system condensing unit's electrical box can remain factory-installed on top of the unit. Some electrical boxes contain position-sensitive components and require correct mount positioning.

Allow adequate access for all wiring connections. Wiring and circuit breakers must be sized according to marine design standards. Only stranded tinned copper wire should be used. Make sure all components are properly grounded.

Determine the proper location for the display panel in the cabin area (see installation manual) and cut out the bulkhead for mounting (3.31" **W** x 2.19" **H**). Properly route and secure the display cable between the control circuit board and the display panel.

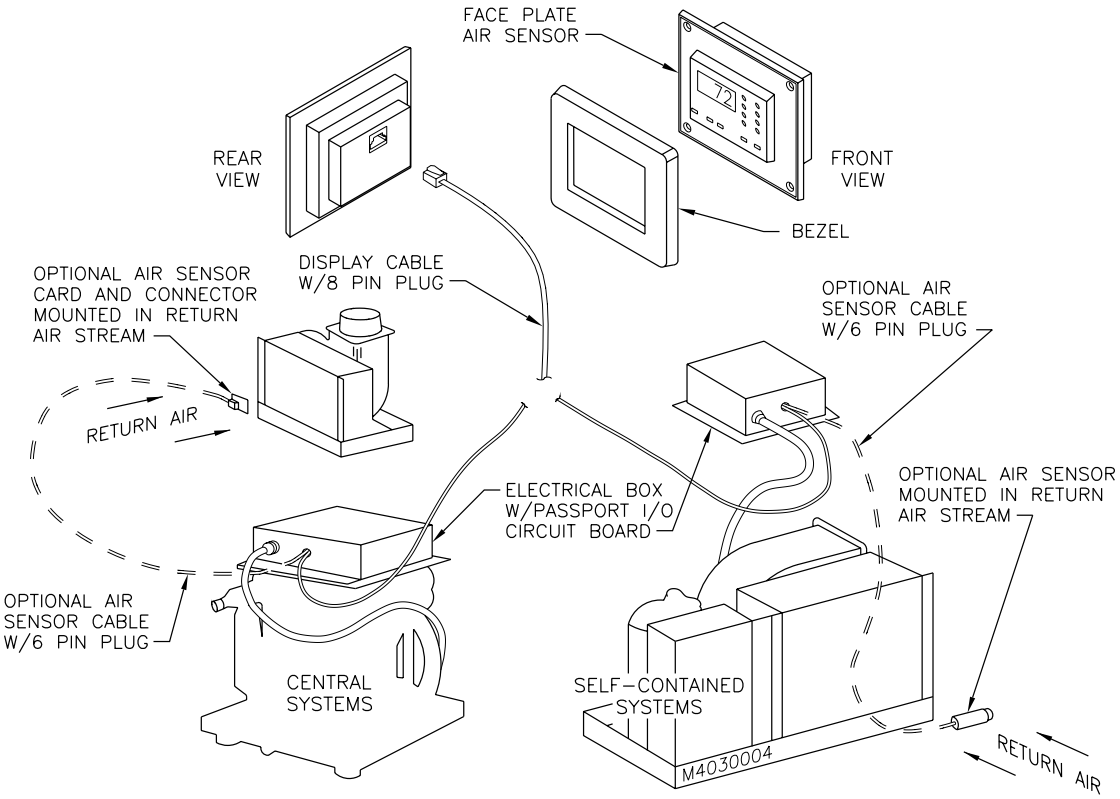
Note: In central system applications, the display cable could be routed with the refrigerant line set from the condensing unit to the evaporator/blower assembly. Leave a few inches of extra cable at each end for ease of installing or removing components. Do not stretch or pull a cable. Do not use staples to secure any cable.

Plug in the display cable (8-pin connector). Attach the other end of the display cable to the display panel. Secure the panel to the bulkhead.

The optional remote air sensor, when used, must be plugged into the 6-pin socket on the circuit board marked "J4" (ALT AIR). It must be located and installed properly in the return air stream. When used as an outside air temperature sensor, it must be plugged into socket "J3" (OAT), routed and secured properly to a pre-determined location outside the cabin areas. ***The sensor should not be located in direct sunlight.*** **Refer to the AH-Elite operations manual for proper programming and locations of air and chilled water sensors.**

The new optional "Pump Sentry" feature monitors condenser coil temperature, and shuts the system down if the coil gets too hot due to loss of seawater flow. The 6-pin water sensor must be plugged into socket "J5" (SERVICE/H20). Connect the water sensor to the condenser coil water outlet and insulate it. When using the AH-Elite with a chilled water air handler, plug the water inlet sensor cable into socket "J5" (SERVICE/H2O).

Access to the control circuit board is achieved by removing the screws on the electrical box. Slide the front piece containing the components away from the mounting base. Turning this piece over to any side will expose the circuit board and electrical components. A complete wiring diagram is secured to the inside of the mounting base and/or in the operations manual for reference. Be sure that power is "off" before opening electrical box.



In the interest of product improvement, Taylor Made Environmental's specifications and design as outlined herein are subject to change without prior notice.

Sold and Serviced By:

Taylor Made Environmental, Inc.

2000 N. Andrews Ave. Ext. • Pompano Beach, FL USA 33069-1497 • 954-973-2477 • Fax: 954-979-4414 • sales@tmenviro-fl.com • www.tmenviro.com

P.O. Box 15299 • Richmond, VA USA 23227-0699 • 804-746-1313 • Fax: 804-746-7248 • sales@tmenviro-va.com

Fleets Industrial Estate • 26 WIllis Way • Poole, Dorset • England BH15 3SU • +44 (0)870 3306101 • Fax: +44 (0)870 3306102 • sales@tmenviro-eu.com

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