

PRODUCT DESCRIPTION

The **Passport® I/O** 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-Passport I/O** in that application. The control operates at 115 or 230 volts, each operable at 50 or 60 cycles. The display is available in black, white or silver.

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.

Internal self-diagnostic programs provide complete electronic checks of all lights, sensors, keys and circuits. Fused circuits and M.O.V.s (metal oxide varistors) provide component and board protection.

The **Passport I/O** control meets or exceeds applicable ABYC, U.S. Coast Guard Regulations and CE Directives.



FEATURES

User Selectable Functions

- Automatic humidity control - reduces moisture when the boat is unattended.
- Cool only, heat only, or automatic mode selection.
- Temperature displayed in Fahrenheit or Celsius.
- Multiple fan speed selections - automatic or six manual speeds.
- Cycle fan with compressor or continuous fan operation.
- Compressor time delay staging for multiple unit applications.
- Calibration of fan speed settings and temperature display 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.

Design Features

- Low voltage for optimum safety.
- Built-in air sensor (optional remote sensor).
- Universal symbols with tactile switches and embossed power key - international recognition.
- Cabin temperature is continuously displayed.
- Lexan face plate available in black with cameo graphics.

Installation

- The circuit board and display cable are factory installed in the electrical box.
- Display panels can be mounted with adhesive strips, or use screws with the optional, soft bulkhead adapter.
- Easy connections using phone-type modular jacks which are shielded and grounded.

SPECIFICATIONS

Model	PASSPORT I/O	
Voltage (VAC)	115	230
Cycle (Hz)	50/60	50/60
Phase (ø)	1	1
Circuits ⁽¹⁾		
Compressor Output ⁽²⁾	40A	40A
Locked Rotor Amps(LRA)	80A	80A
R.V. Output ⁽³⁾	1/4A	1/4A
Fan Output	6A	6A
Heater Output	30A	20A
Pump Output ⁽²⁾	1/4 HP	1/2 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(mm)		
Display Panel	4.50(114) W x 3.86(98) H x 0.88(22) D	
Cut Out	3.375(86) W x 2.875(73) 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) cable included with some AH-Elite & AH-Passport I/O kits.	

(1) Maximum loads should not exceed 85% of listed output ratings.

(2) Does not apply to AH-Passport I/O.

(3) Used as water valve output in AH-Passport I/O mode.

(4) Maximum length for display and air sensor cables is 75'.
Maximum length for water inlet sensor cable is 75'.

Installation Guidelines for Passport I/O Environmental Control Unit

Each *Passport I/O 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 fasteners provided. Secure remote electrical boxes containing the *Passport I/O* circuit board with the hardware 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.

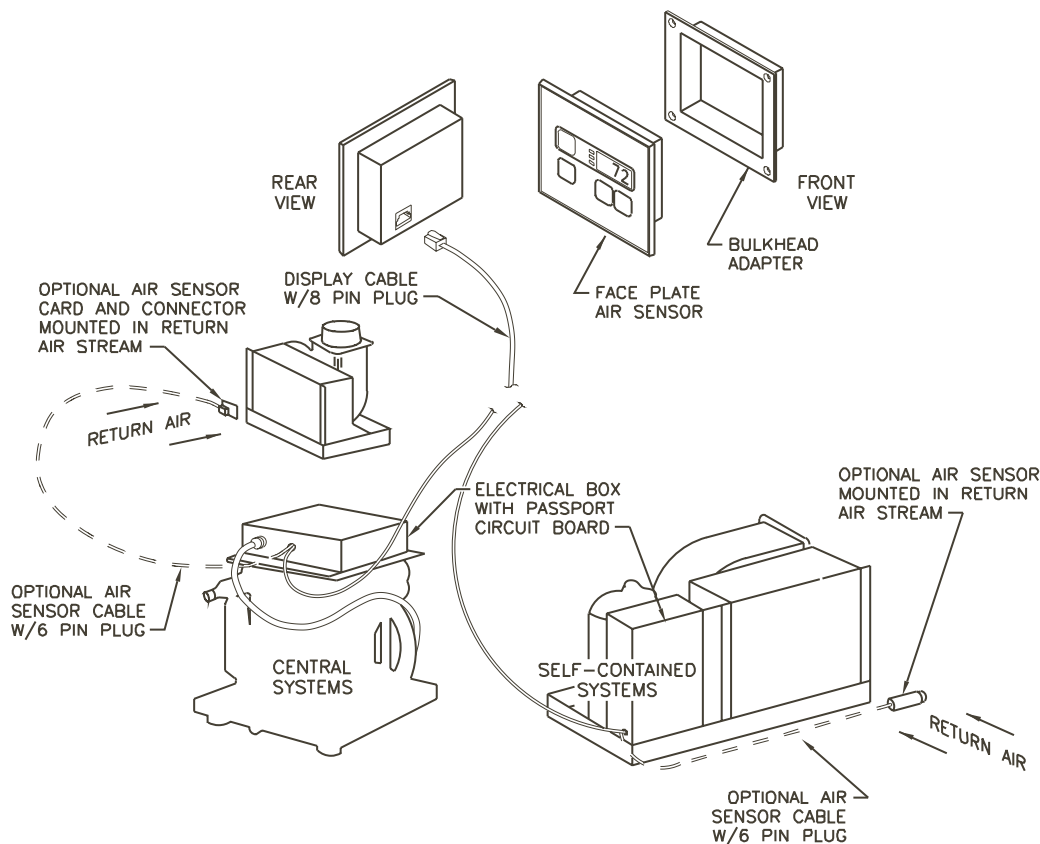
Determine the proper location for the display panel in the cabin area (see installation manual) and cut out the bulkhead for mounting. Properly route and secure the display cable between the control circuit board and the display panel.

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 enough length 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 the display cable into the Passport I/O circuit board (8-pin connector). Attach the other end of the display cable to the display panel. Secure the panel to the bulkhead with the adhesive strips attached, or use the optional bulkhead adapter.

The alternate inside 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. Using the alternate air sensor will disable the face plate air sensor on the display. 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.**

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 the power is off before opening the electrical box.**



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

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