MachAir™ OLED
Thermostat/Controller

General Description

The MachAir™ OLED is a digital thermostat/controller that provides temperature and humidity control, 28 fan speed selections, and shows fault conditions in a compact, easily readable display. The MachAir™ OLED thermostat/controller is designed to operate with SeaMach™ self contained models SPB and SCB and split systems models, CUB and CCB. The SeaMach OLED (Organic Light Emitting Diode) is the latest in display technology with features not available in other, less advanced systems. OLED (Organic Light Emitting Diode) displays are brighter, thinner, lighter and use less power than older LCDs. In addition, OLED's offer wider viewing angles and higher contrast than LCDs.

MachAir™ OLED Display with Black Rondó Technopolymer Cover Plate

The MachAir™ OLED thermostat/controller consists of a circuit board that is factory installed in the SeaMach reverse cycle air conditioner, the OLED display, and a 20 ft. (610cm) connecting cable. The board is corrosion protected for tropical and marine environments and is built using the latest, state of the art technology. Flash programming allows for future software updates without replacing the board. The display is mounted on the wall of the room, like a typical thermostat. A built-in temperature sensor on the display senses room temperature. (An optional remotely mounted temperature sensor can be field installed.) Temperature display is in either °F of °C. Non-volatile memory stores set points & selections indefinitely in the event of power loss. Both the board and the display are ground shielded for protection against static interference and RF noise. Microprocessors in both the board and display allow constant dialogue for rapid response to temperature changes and other information.

The thermostat/controller is easily programmed to allow the user to customize the operation of the SeaMach unit. Intuitive icons enable the viewer to see at a glance the operating status of the unit and the cabin temperature. A four-position touch pad provides quick and easy input of desired temperature and operational set points. If the display has not been touched for 4-1/2 minutes, the display enters the QUIET mode. During this time, a small light rotates around the display's perimeter, showing that the system is functioning. Fuses on the circuit board protect the board from voltages fluctuations.

The MachAir™ OLED board and control meets all applicable CE Directives, US Coast Guard and ABYC regulations or guidelines. Complete installation and programming instructions can be found in the Installation and Service manual for the self-contained and split system reverse cycle air conditioners.

Alarms

In addition to controlling the temperature, the MachAir™ OLED controller also monitors the operation of the SeaMach™ unit and will display fault conditions. If a problem is detected, a text message will be displayed on the screen. Alarm notifications include:

- high or low refrigerant pressure,
- low voltage if the voltage drops below a specified limit for more than 10 seconds,
- a failure or improperly installed internal or remote temperature sensor,
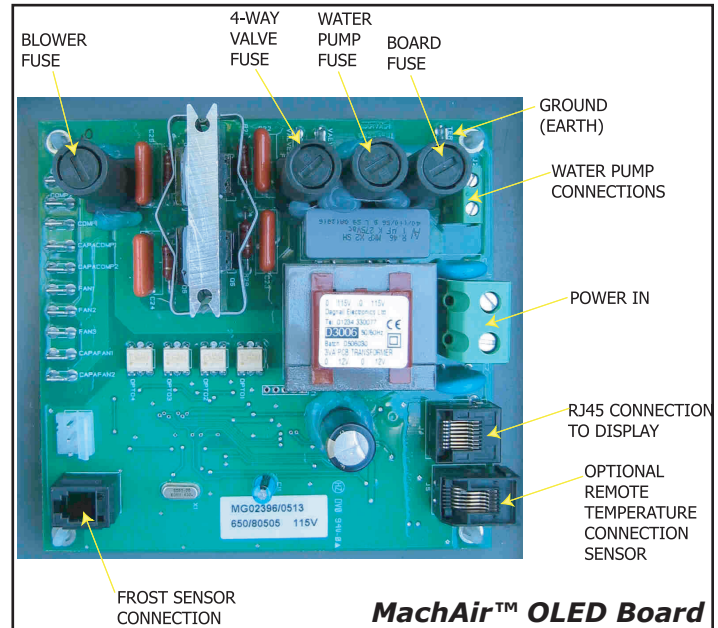- a defective or improperly installed coil sensor.

Ease of Installation

- The MachAir™ OLED display connects to the SeaMach™ unit with an Ethernet type cable and gold plated RJ45 jacks. Standard length of cable is 20 ft. (61cm). Jacks are shielded and grounded.
- To compliment any décor, the display is designed to be installed in any of the hundreds of the three module Vimar® or Gewiss® cover plates. (Note: Cover plates must be ordered separately. Refer to the SeaMach price list for a listing of our cover plates.)
- Convenient power terminals for input power and power to the pump.

Operation Modes

The MachAir™ OLED controller has five modes of operation:

- Auto – Automatically switches the SeaMach™ reverse cycle air conditioner from heating to cooling, depending upon the room temperature.
- Cool – The SeaMach reverse cycle air conditioner will only operate in the cooling mode.
- Heat – The SeaMach reverse cycle air conditioner will only operate in the heating mode.
- Fan Only – The fan will run in the SeaMach unit, but the compressor will not operate.
- Dehumidification – The SeaMach unit will operate in the cooling mode for 15 minutes every 6 hours to remove moisture from the cabin. The unit will operate in the dehumidification mode has long as the air temperature is 67°F (19°C) or higher. Dehumidification mode is recommended when the boat is going to be unoccupied for more than 48 hours during warm or hot seasons.

MachAir™ OLED Board

Labels: BLOWER FUSE, 4-WAY VALVE FUSE, WATER PUMP FUSE, BOARD FUSE, GROUND (EARTH), WATER PUMP CONNECTIONS, POWER IN, RJ45 CONNECTION TO DISPLAY, OPTIONAL REMOTE TEMPERATURE CONNECTION SENSOR, FROST SENSOR CONNECTION

Fan Speed Control

Both the operation and the speed of the fan in the SeaMach unit can controlled. Options for the operation include:

- Manual - the fan runs at a constant speed and the speed is user selected.
- Auto - the fan will automatically change speeds, depending on the difference between the temperature in the cabin and the set point temperature. The fan will start on maximum speed. As the cabin temperature approaches the set point temperature, the fan will slow down to the minimum set speed.
- Continuous - the fan runs continuously, but the compressor cycles on/off to maintain desired temperature.

Internal Protection

- As a protection for the SeaMach™ unit, the circuit board has fuses to protect the fan, the reversing valve, the water pump and the board from erratic voltage fluctuations. The fuses are conveniently located on the board and can be easily replaced if blown.
- To prevent short cycling of the compressor and simultaneous starting of multiple SeaMach units, the board has an internal time delay that allows the unit to resume operation only after a 2 to 3 minute delay. While the time delay is in effect, a bar in the lower left hand corner of the display rotates. This rotating bar indicates that the delay is in process. When the compressor time delay has elapsed, the compressor will turn on, COMP will be displayed, and the bar will disappear.
- Automatic defrost mode prevents excessive ice formation on the indoor coil.

Options & Accessories (See price pages for complete availability.)
- Wood, metal and technopolymer cover plates.
- Remote temperature sensor and 20 ft. (610 cm) cable.

Dimensions inches (mm)
- Display: 3 x 1-1/2 x 1-3/8" (76 x 38 x 35mm) [LxWxD]
- Panel Cut-out: 3 1/8 x 2" (83 x 51mm) [LxW]
- Cover plate size (outside dimensions): 4 7/8 x 3 1/4 x 1/4" (123 x 82 x 9mm) [LxWxD]

Temperature Ranges
- Set point temperatures: 59°F to 84°F (15°C to 29°C)

As part of the Marvair® continuous improvement program, specifications are subject to change without notice.

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