Retrofit Instructions

Marvair Sea Mach™
To
FX-2 System
(OLED and EasyTouch Compatible)

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Introduction:

Marvair Marine sold a number of "Sea Mach" controllers in the early years of production. These controllers are not available and no direct replacement for them exists. The following document outlines the steps necessary to retrofit the "Mach Air" style controller also known as an FX II into the original Sea Mach™ electrical box. This controller is produced by Microair corp. and is available as a kit that includes most of the parts needed to complete the installation.

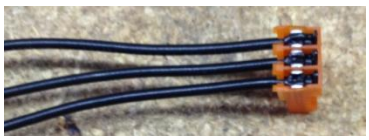
Original Sea Mach™ board

FX II completed installation

Materials required:

1. 4mm (#8) spade terminals appropriate for the gauge wire used (usually 14-16 AWG - Blue).

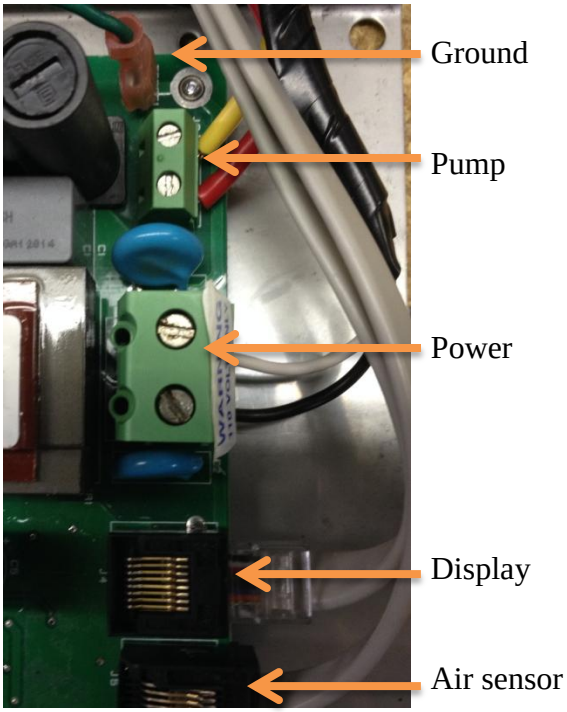
2. Refrigerant pressure switch connector (supplied SUB-072-X06).



3. 20 cm (8 in.) 1.29mm (16 AWG) diameter insulated wire.
4. Butt joint connectors appropriate for the gauge wire used (usually 14-16 AWG - Blue).
5. RJ45 connector strip and crimp tool and 1 RJ45 connector. This is the standard "CAT5" style tool for 8 pin cables.
6. FXII kit consisting of: mounting plate, FXII control (ASY-360), OLED touch display (ASY-386) or EasyTouch display (ASY-389), display cable (SUB-031), and refrigerant pressure switch connector (SUB-072-X06). An optional air sensor (ASY-056-X15) is recommended to replace the existing air sensor.

Rework Procedure:

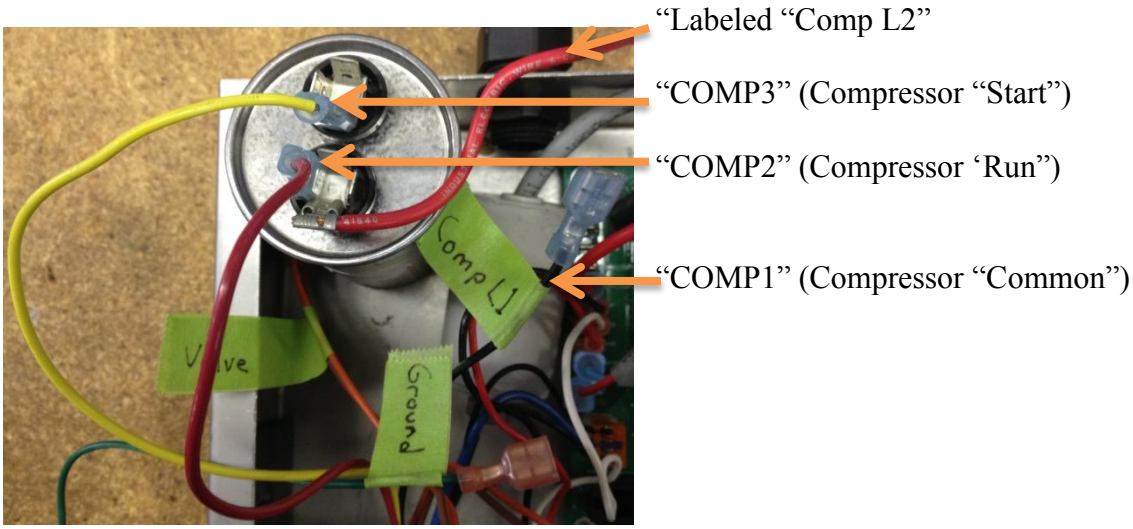
1. Remove power from the system by turning off the breaker powering the system.
2. Open the electrical box and remove the power L1 and L2 connections from the large green connector. Use masking tape to label these connections as “AC Line”. Install a spade terminal on each wire.



3. Disconnect the display cable.
4. Disconnect the air sensor cable and completely remove the air sensor from the system. Install the new air sensor in the same location as the old one leaving the cable unplugged for now.

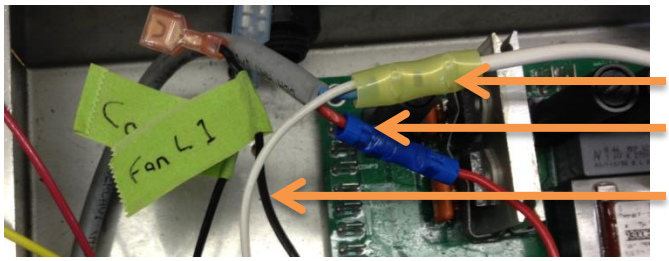
5. Disconnect the pump wires and use masking tape to label the wires as “Pump”. Install a spade terminal on each wire. Disconnect the green ground wire connected to the “TERRE1” terminal. Label the wire “Ground” using masking tape. Remove the existing connector and install a spade terminal on the wire.

6. Disconnect the wires connected to the “Valve1” and “Valve2” terminals. Label the wires “Valve” using masking tape. Remove the existing connectors and install spade terminals on each of the wires.
7. Disconnect the wires from the “COMP3” and “CAPACOM1” terminals and splice them together. In some installations, the “CAPACOM1” wire can be removed and the “COMP3” wire connected directly to the run capacitor if wire length permits.
8. Disconnect the wire connected to the “COMP1” terminal. Label this wire “COMP L1” using masking tape. Remove the existing connectors and install a spade terminal on each wire.



9. Disconnect the wires from the “COMP2” and “CAPACOM2” terminals. Follow the “CAPACOM2” wire to the connection on the run capacitor. Connect the “COMP2” wire to the same terminal group that the “CAPACOM2” wire connects to. Label the disconnected end of the “CAPACOM2” wire as “Comp L2”. Remove the existing connector and install a spade terminal on the end of this wire.
10. Disconnect the wires connected to the ‘FAN3” and “CAPAFAN1” terminals and splice them together.
11. This step requires a 20 cm. (8 in.) piece of wire at least 1.29mm (16 AWG). Disconnect the wires connected to the ‘FAN2” and “CAPAFAN2” terminals and splice them together with the 20cm piece of wire. Connect a spade terminal to the end of the 20 cm wire and label the wire “Fan L2” using masking tape. Install a spade terminal on the end of this wire.

12. Disconnect the wire connected to the “FAN1” terminal and label it “FAN L1”using masking tape. Remove the existing connector and install a spade terminal on this wire.

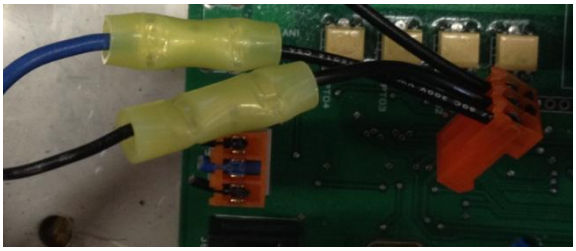


CAPAFAN2, FAN2, 20cm wire.
CAPAFAN1, FAN 3
FAN1

13. Cut the wire from the plug connected to J3 that is closest to the “CAPAFAN2” terminal and splice it to the loose wire on the supplied connector.

14. Cut the center wire on the plug connected to J3 and splice it to the remaining outer wire on the supplied connector.

15. Cut the remaining wire from the plug connected to J3 and connect it to the middle wire on the supplied connector.



16. Remove the coil sensor from J6 if one is connected. The coil sensor can be completely removed as it is not used in the new installation.

17. Remove the old board and install the FXII control board.

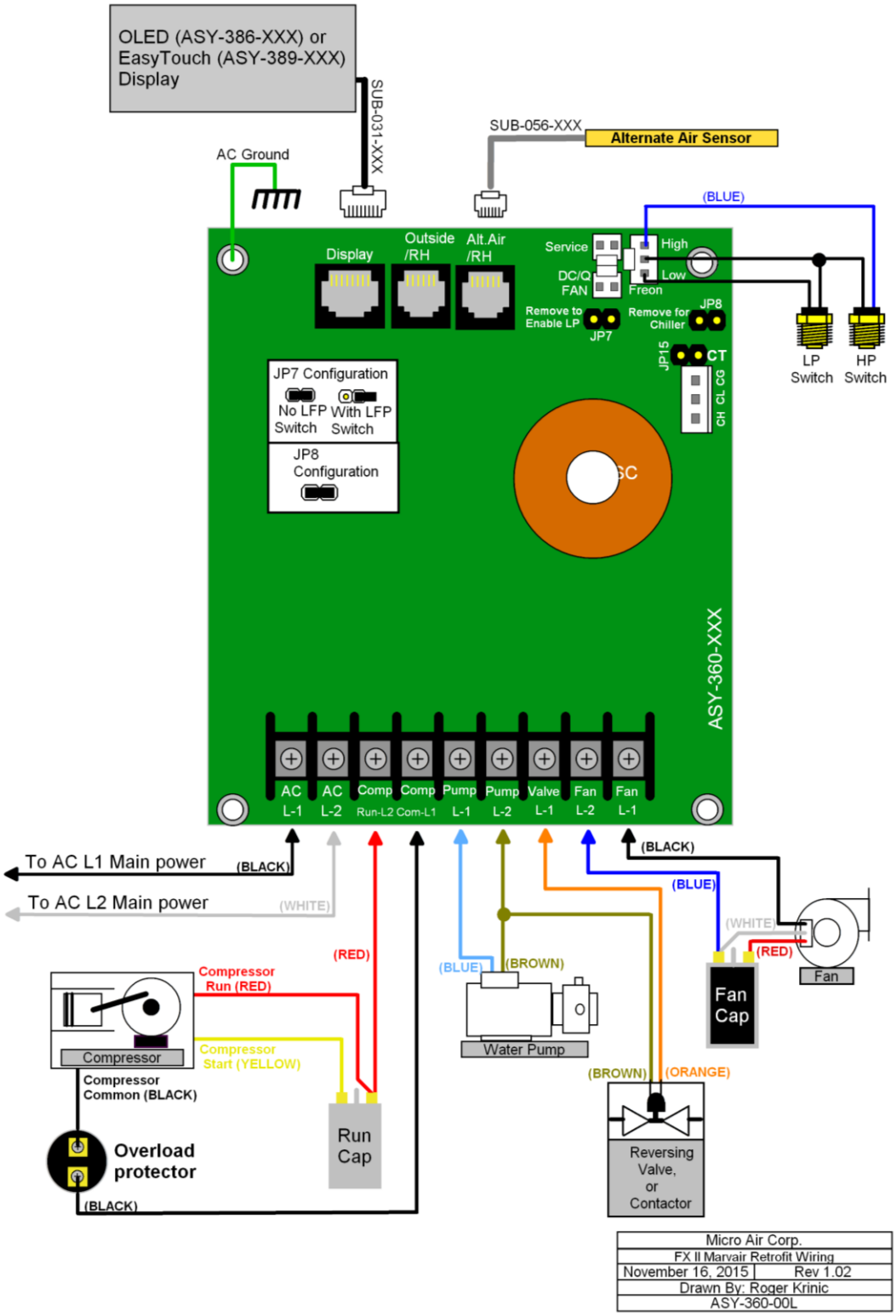
18. Connect the labeled wires to the terminal strip as follows:
    a. Connect the Fan L1 wire to FAN L1 terminal.
    b. Connect Fan L2 wire to FAN L2 terminal.
    c. Connect one of the valve wires to VALVE L1 terminal.
    d. Connect the second valve wire and one of the pump wires to PUMP L2 terminal.
    e. Connect the remaining pump wire to PUMP L1 terminal.
    f. Connect the Comp L1 wire to the COMP COM-L1 terminal.
    g. Connect the Comp L2 wire to the COMP RUN-L2 terminal.
    h. Connect the AC L2 wire to the AC L2 terminal.
    i. Connect the AC L1 wire to the AC L1 terminal.

19. Connect the ground wire to one of the corner board mounting screws.
20. Plug in the air sensor in the ALT AIR jack.
21. Plug in the refrigerant pressure jack into the white "FREON" jack.
22. If you system has a low pressure switch, remove jumper JP7.
23. Verify the 3 pin jumper JP11 is set for the OLED position.
24. Verify that JP9 is removed or covering only one pin.
25. The display cable end must be removed and reversed to use the display. Mark the pin side with a permanent marker.

26. Cut off the plug. With the appropriate tool, strip the cable and install a new end on the cable. The end should be placed on the cable with the pins facing opposite of the marks made in step 26.

27. Crimp the new end using the appropriate tool.
28. Install the display. A new OLED display must be used with the FX II system.
29. Reinstall the electrical box and replace the cover.
30. Breaker on the unit.
31. Change programmable parameters as necessary for the installation.

Finished Wiring Diagram



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