# INSTALLATION INSTRUCTIONS

# CMH-25
# Low Ambient Control and Compressor Start Assist Relay Kit
## For Use with W42HA, W48HA and W60HA Single Phase Wall-Mount Heat Pumps

The CMH-25 is a field-installable combination of low ambient fan cycling control and a compressor start assist device to be used with a Bard wall-mounted heat pump.

The CMH-25 kit consists of:

- 8406-112 Low Ambient Fan Cycling Switch
- 910-1997 Relay Assembly
- 910-1097 Compressor Start Assist Device
- Required fasteners
- 7960-749 Installation Instructions

The CMH-25 kit is for use with Bard models W42HA, W48HA and W60HA single phase wall-mount heat pumps.

### INSTALLATION

1. Disconnect all power to wall-mount unit.
2. Remove outer and inner control panel covers.
3. Remove right side condenser inlet grille.
4. Mount 910-1997 relay assembly to unit control panel as shown in Figure 1 on page 3. Use phillips head screws included with kit to attach relay to control panel.
5. Remove cover from vertical gray cable duct on control panel to allow wire harness from installed relay to route into it (see Figure 1).

***NOTE:*** *The unit wiring diagram (included with unit literature assembly and also located on inner control panel cover) can be used to wire this kit. However, the following instructions listed here provide the necessary connections point-by-point.*

6. Locate black wire from the relay assembly and route through cable duct to defrost control logic board (see Figure 1). Before connecting this black wire to the NC fan relay contact on the defrost control logic board, remove wire that is currently connected there (on 230V models, it's the black outdoor fan motor lead; on 460V models, red/black wire) and connect that wire to Terminal 3 on the installed relay.
7. Locate black/white wire from relay assembly and route through cable duct to defrost control logic board. Connect black/white wire to C terminal. If the heat pump is a dehum unit, remove the black/white wire already connected to C terminal and stack it back onto the black/white wire from the relay assembly.

Bard® SINCE 1914
Climate Control Solutions

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8. Locate blue wire from relay assembly and route through cable duct to defrost control logic board. Connect blue wire to B terminal. Remove blue wire already connected to B terminal and stack it back onto the blue wire from the relay assembly.
9. A service port is located on the refrigerant liquid line just above the liquid line filter drier (mounted to the outdoor fan shroud). This port is intended for the application of 8406-112 low ambient fan cycling switch (see Figure 2 on page 4). Remove the service cap from this service port and quickly thread the low ambient fan cycling switch onto this port. Once snug, use two wrenches to tighten the switch an additional 1/4 turn (one to hold the service port and one on the switch). Use soap bubbles to confirm the seal is completely tight on this connection.
10. Route the two black leads from the low ambient fan cycling switch up into the control panel with the other wires from this compartment, taking care to route and secure the wires. Use cable ties included with kit. Route the two black wires into the cable duct and then out the side of the cable duct towards the installed 910-1997 relay. Connect these two wires to Terminal 1 and Terminal 3 of the relay.
11. Use a phillips drive screw (included in kit) to attach the 910-1097 start assist device to the control panel as shown in FIgure 1.
12. The two wires from the 910-1097 start assist device connect to the compressor capacitor. Connect one wire to the COM terminal and the other to the HERM terminal.
13. Recheck all wiring. Turn on power to unit. Check for proper operation of the unit by energizing in cooling mode. The condenser fan motor should not run until the discharge pressure has exceeded 350 PSI. Should the liquid pressure fall below 225 PSI while running, the condenser fan motor will de-energize until the head pressure again builds to 350 PSI. Switch to heating mode. The condenser fan motor should run anytime the compressor is running regardless of the discharge pressure. Run unit through defrost cycle. The condenser fan motor should de-energize during the defrost cycle.
14. Apply “This unit is equipped with CMH-25 control module” label to the inside of the inner control panel cover above the unit wiring diagram.
15. Re-install right side condenser inlet grille.
16. Re-install electrical cable duct cover.
17. Re-install inner and outer control panel covers.

**FIGURE 1**
**Unit Control Panel**

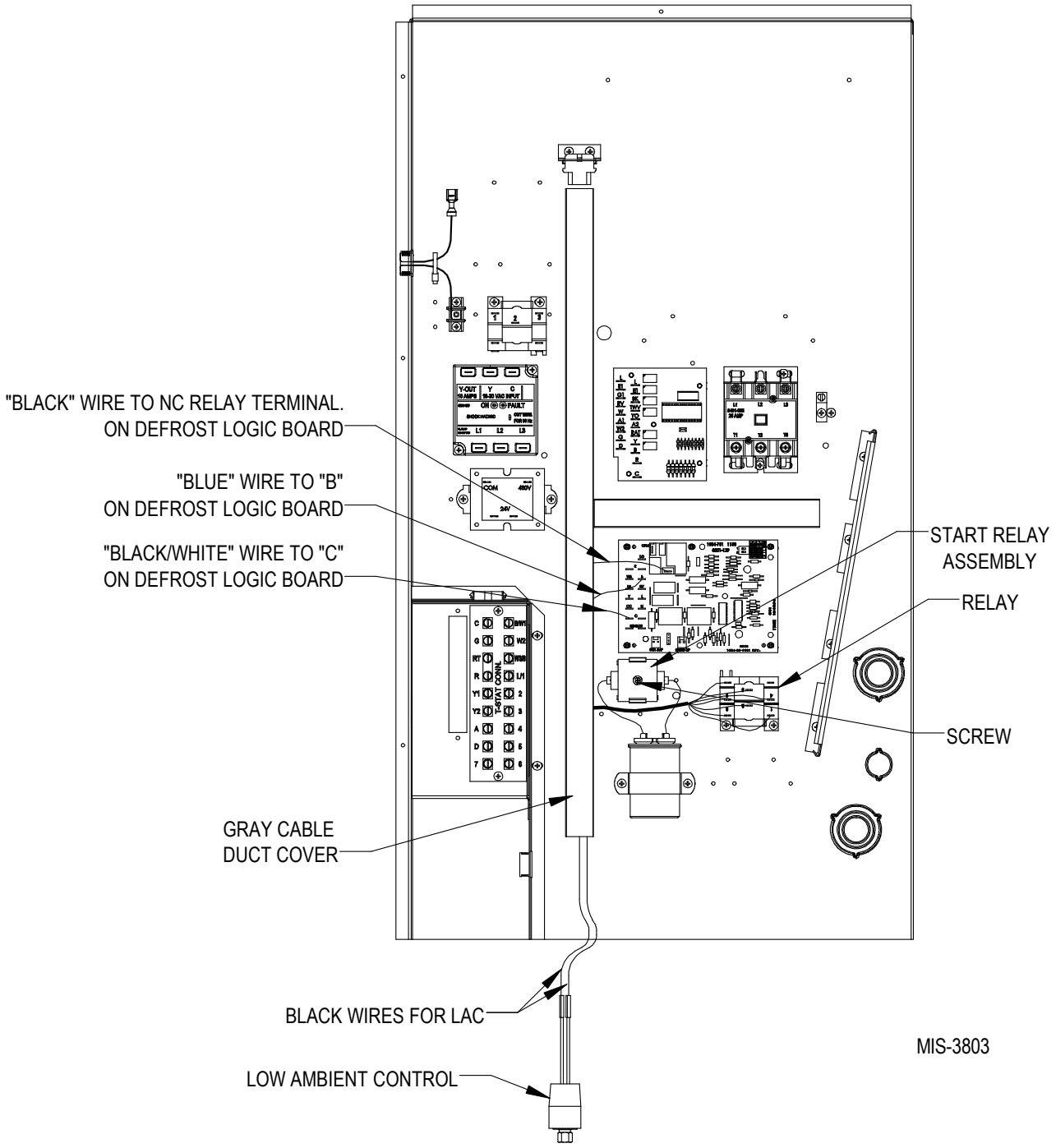
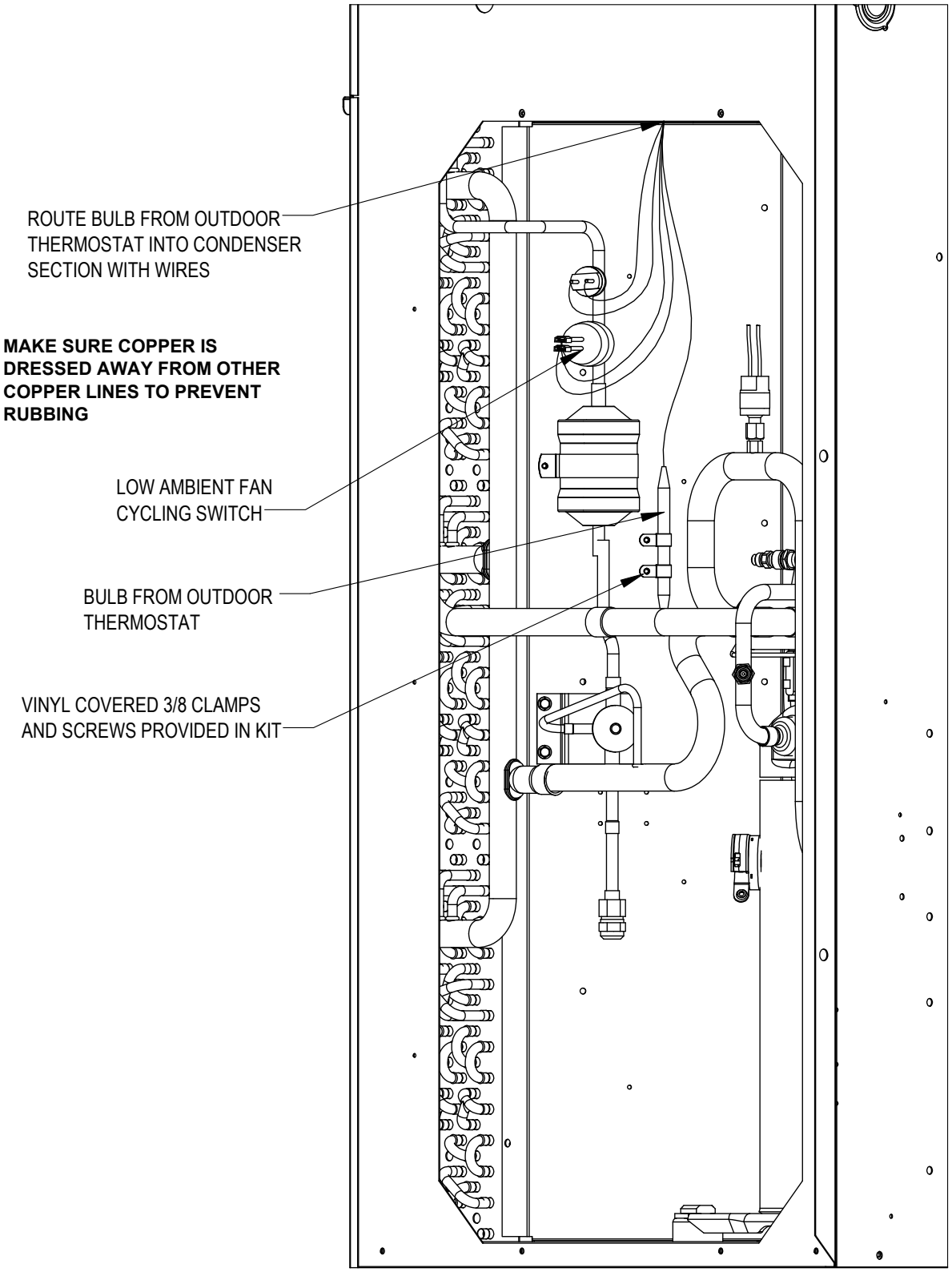


**FIGURE 2**
**Mounting Outdoor Thermostat Bulb and/or Low Ambient Fan Cycling Switch (as applicable)**

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