# CMC to DXM CONVERSION FOR CS/CL SERIES INSTALLATION INSTRUCTIONS

*** IMPORTANT * READ AND UNDERSTAND ALL INSTALLATION INSTRUCTIONS BEFORE BEGINNING CONVERSION. INSTALLATION OF THE NEW DXM CONTROL BOARD SHOULD ONLY BE ATTEMPTED BY A QUALIFIED TECHNICIAN.**

**1)** **Disconnect power supply(s) to heatpump unit. Failure to disconnect power supply may result in damage, serious injury, or death.**

**2)** Remove old CMC control board and mounting standoffs from unit control box. Insert wires into new retro-harness as disconnected, or label wires as removed for easier identification during installation of the new control board.

**3)** Drill (4) 1/8" diameter holes for each board in unit control box for new mounting screws using drawing provided. Install the new DXM control board using the screws provided. -**IMPORTANT**: **Electrical grounding for the DXM control board is provided via the metal standoffs of the board. ALL MOUNTING SCREWS MUST BE INSTALLED FOR PROPER BOARD OPERATION.**

**4)** Drill (1) 1/8" diameter hole and install the power block connector in the rear wall of the unit control box near where the high voltage wires enter the control box using one of the screws provided.

**5)** Drill (2) 1/8" diameter holes and install the new compressor relay in any convenient location inside the unit control box using the relay as a template.

**6)** Install the FP-1 sensors on the refrigerant line between the water coil and the metering device. See refrigerant piping detail for proper sensor location. Insulate the sensor with cork tape or any similar insulation.

- **IMPORTANT**: **The existing freezestat must be replaced with the FP-1 sensor for proper operation.** IMPORTANT: The UPS feature **MUST** be disabled. To disable move dip switch S1.1 to the OFF position. Refer to the DXM AOM for further information.

**7)** Connect the wiring from the unit safeties and sensors to the retro-harness if not done in step 2. Plug the retro-harness connector onto the new DXM board at the P7 terminal block. Connect the transformer, new compressor relay, and any accessory wiring to the new DXM board. Connect high voltage wiring to the power block connector. REFER TO THE NEW WIRING DIAGRAM, WIRE CHART AND DXM AOM PRO VIDED FOR PROPER WIRING OF THE NEW DXM CONTROL BOARD.

**8)** **Thermostat wiring:**
- For units with a unit mounted thermostat, remove wire from the push button switch terminal 3 and move to terminal 1 on the unit mounted thermostat. Connect other end of the wire to the O/W2 terminal of the P1 terminal block on the new DXM control board. **Dip switches S1.3 and S1.4 MUST be in the ON position.**
-For units with a remote thermostat, connect the thermostat control wiring to the DXM board P1 terminal strip.

**9)** **Fan wiring, low voltag**e:
-For units with a unit mounted thermostat connect a wire from the push button switch terminal 5A to the DXM board G terminal at the P1 terminal strip. Connect a wire from the push buitton switch terminal 7A to the DXM board terminal H at the P2 terminal strip. **Dipswitch S1.7 MUST be in the OFF position for proper fan speed operation.**

**-NOTE: The fan speed function of the DXM board will only be operable if there is a low voltage input to the H terminal and dipswitch S1.7 is in the OFF position. Also both motor speed wires must be connected to the DXM fan speed relay.**
-For units with a remote thermostat, connect t5he thermostat control wiring to the DXM control board P1 terminal strip.
**-NOTE: Only one fan speed will be available with remote thermostat unless the thermostat is equipped with a fan speed selector. If only one fan speed is used, connect the desired fan motor speed wire to the DXM fan speed relay N.O. terminal.**

**10)** Fan wiring, high voltage, all units:
-The COMMON wire from the fan motor will connect directly to L2 on the new power block. The fan motor HIGH speed wire will connect to the DXM board fan speed relay N.O. contact. The fan motor LOW speed wire will connect to the DXM board fan speed relay N.C. terminal. Connect a wire from the new power block L1 to the DXM board fan relay C terminal. Connect a wire from the DXM fan relay N.O. terminal to the DXM fan speed relay C terminal.

**11)** Safety Switches:
**-IMPORTANT: the factory installed switches are the N.O. Type. The following instructions must be followed for proper operation.**
**-NOTE: The new access tee MUST have a schrader core in bopth male ports. Verify both cores are installed and tightended before proceeding.**
-The new high pressure switch and access tee must be installed. To install, first connect the pressure switch to the access tee to either port. Use a small amount of clean refrigerant oil to insure the threads will seal when tightened. AFTER the new pressure switch is connected to the tee, quickly thread the tee flare nut onto the high pressure service port located on the compressor discharge line process tube.
**-NOTE: This operation must be done quickly to avoid excessive refrigerant loss.** Remove the wires from the old HPS and reconnect them to the new HPS.
-The N.O. pressure switch may be used, however the JW1 LP NORM OPEN jumper located on the DXM control **MUST** be cut for proper unit operation.

**12)** The new compressor relay low voltage wiring will connect from the DXM CC and CCG terminals to the relay coil. The compressor high voltage wires will connect to the compressor relay N.O. contacts. Connect a black wire from the power block L1 terminal to the compressor relay C terminal adjacent to the compres sor C wire. Connect a red wire from the power block L2 terminal to the capacitor C terminal. Connect a red wire from the capacitor C terminal to the compressor relay C terminal adjacent to the compressor R wire.

**13)** Check all remaining DXM board dipswitch settings and adjust only as needed. Refer to the DXM AOM for dipswitch functions and proper settings.

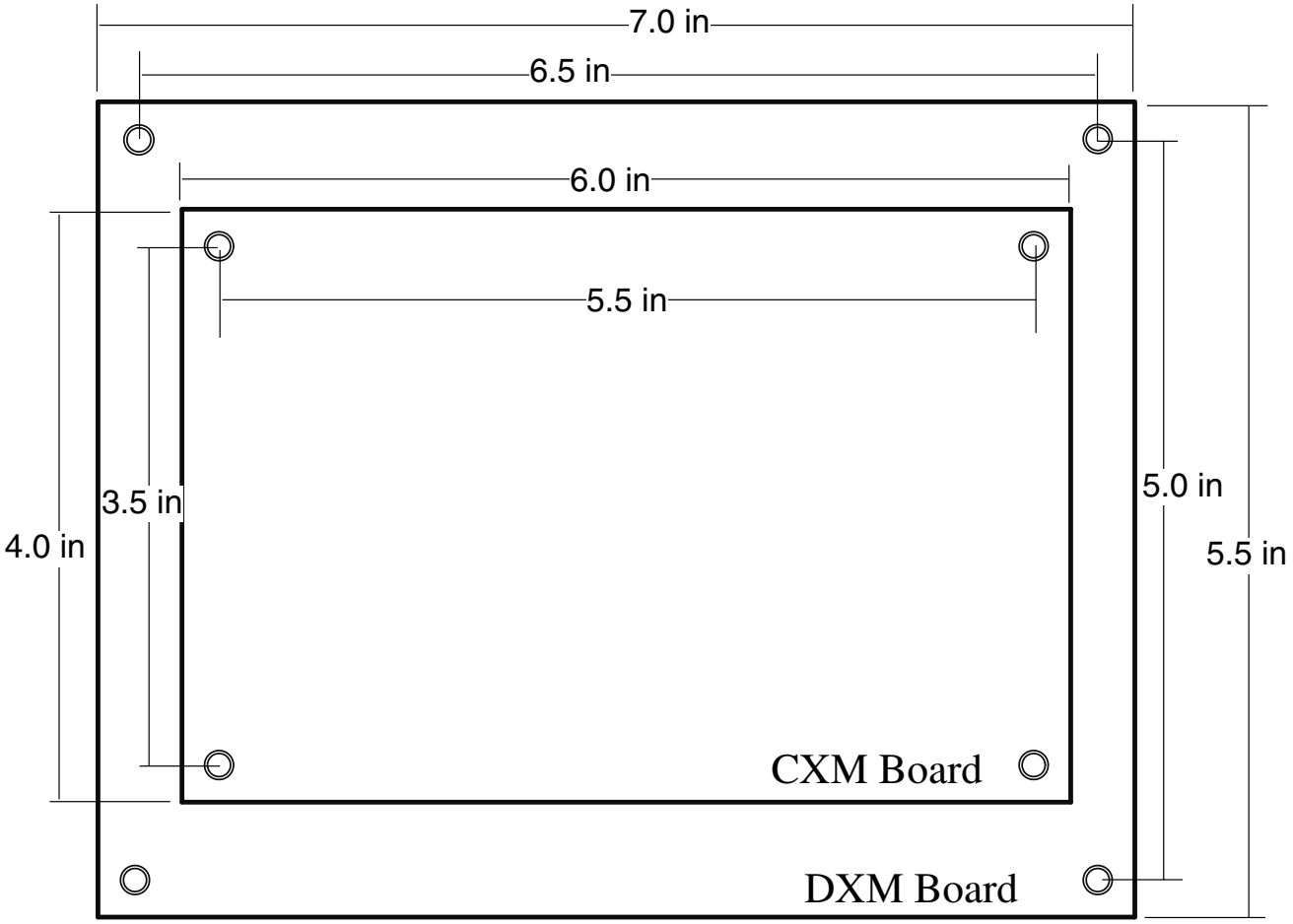
**14)** Turn on the power supply to the unit and check voltage at DXM R and C terminals. Voltage must be between 19 and 30 VAC. Adjust the thermostat settings and check unit through all models of operation.
**-NOTE: Entering the DXM board into the TEST mode will speed up all time delays by a factor of fifteen. Included are the time delays for the FP1 sensor and the low pressure switch. Use caution while in the TEST mode. Short cycling of the compressor can lead to compressor damage or failure.**

**15)** Remove and discard the old unit wiring diagram and install the proper new wiring diagram in its place. Discard any unused new wiring diagrams to avoid confusion in the future. Note any changes or special features on the new wiring diagram for future reference. Install one conversion sticker in close proximity to the unit data plate and one sticker close to the unit wiring diagram. **The new wiring diagram and conversion stickers MUST be installed to aid future servicing and parts ordering for the unit.**

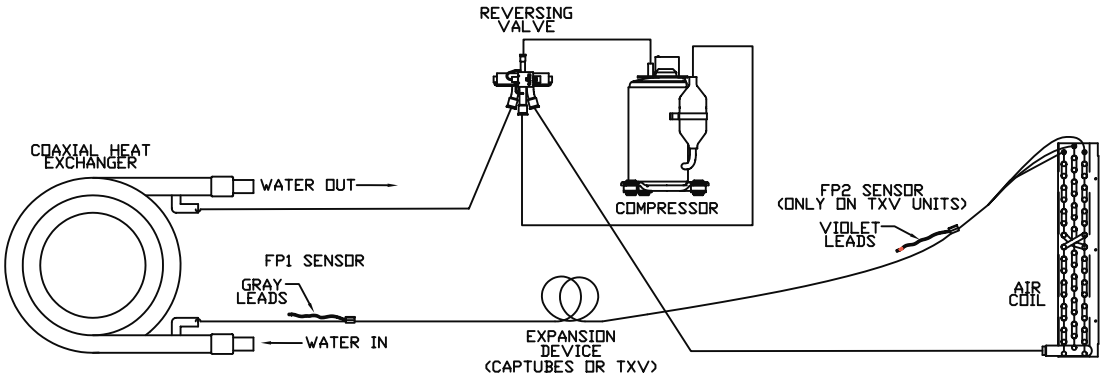
DXM WIRE CHART 1 & 2 STAGE UNITS

| COLOR | GAUGE | INSTHK | LENGTH | TERMINAL1 | TERMINAL2 | FROM | TO |
|---|---|---|---|---|---|---|---|
| BLU | 18 | 2/64 | 32 | FLAG | INS. STRAIGHT | DXM2 (CC) | CC2(COIL) |
| BRN | 18 | 2/64 | 30 | FLAG | INS. STRAIGHT | DXM1 (C) | BC(COIL) |
| BRN | 18 | 2/64 | 27 | FLAG | INS. STRAIGHT | DXM1 (CCG) | CC1(COIL) |
| BRN | 18 | 2/64 | 33 | FLAG | INS. STRAIGHT | DXM2 (CCG) | CC2(COIL) |
| GRY | 18 | 2/64 | 30 | FLAG | INS. STRAIGHT | DXM1 (FAN N.O.) | BC(COIL) |
| RED | 18 | 2/64 | 6 | FLAG | FLAG | DXM1 (R) | DXM1(FAN COM) |
| YEL | 18 | 2/64 | 26 | FLAG | INS. STRAIGHT | DXM1 (CC) | CC1 (COIL) |

**NOTE: FOR SINGLE STAGE UNIT USE ONLY WIRES FROM DXM1 CONNECTIONS. DISCARD UNUSED WIRES**.




Drawing not to scale




FP SENSOR INSTALLATION GUIDE

Part # 99D0024N01




Rev.: 06/20/02