INSTALLATION INSTRUCTIONS

8620-303 Dust Sensor Upgrade Kit

The 8620-303 dust sensor upgrade kit is for use with Bard FUSION-TEC HR**BP* models.

IMPORTANT: The 8620-303 dust sensor kit is only compatible with software version FTS1000.3.1.0 and later. See latest revision of FUSION-TEC unit service instructions for information on unit software version.

The 8620-303 kit consists of:

- 2100-728 Installation Instructions
- 8612-064 Dust Sensor Alarm Board
- 3000-1641 Dust Sensor Cable Assembly
- 3018-2152 Dust Sensor Enable Wire
- 112-799 Dust Sensor Mounting Bracket
- 8612-091 Dust Particulate Sensor
- 1012-085 #10 – Self-Tapping Screw (2)
- Alarm Board Plastic Standoff (4)

Field-supplied tools needed:

- Personal protection equipment, including gloves and safety glasses
- 5/16" nut driver
- Small terminal screwdriver
- Small needle nose pliers

⚠ WARNING

Electrical shock hazard.

Disconnect the remote electric power supply or supplies before servicing.

Failure to do so can result in serious injury or death.

⚠ WARNING

Exposed moving parts.

Disconnect all electrical power before servicing.

Failure to do so can result in severe injury or amputation.

⚠ CAUTION

Sharp metallic edges.

Take care and wear appropriate protective devices to avoid accidental contact with sharp edges.

Failure to do so can result in personal injury.

Installation

1. Verify all tools and parts needed for installation.

2. Disconnect all power to the unit.

3. Remove blower access panel (A in Figure 1), controls access panel (B), outdoor access panel (C) and filter access panel (D).

FIGURE 1
Wall Unit Panels

4. Install new dust sensor.

   A. Insert the dust sensor in the dust sensor mounting bracket with the retaining tabs covering to the side without the fan (see Figure 2).

FIGURE 2
Dust Sensor Installed in Mounting Bracket

   B. Using the self-tapping screws included, mount the new dust sensor inside the outdoor air intake section (inside panel C in Figure 1) on the partition wall just above the outdoor air temperature/humidity sensor (see Figure 3). The sensor should be mounted roughly 1" below the screw protruding through the partition wall.

   C. Plug the dust sensor communication cable into the dust sensor and carefully route the other side of the cable through the wire grommet.

FIGURE 3
Dust Sensor Mounted on Partition Wall

5. Remove old dust sensor alarm board located in the upper left corner of the evaporator/blower section (panel A in Figure 1).

   A. Remove dust sensor alarm board cover (see Figure 4).

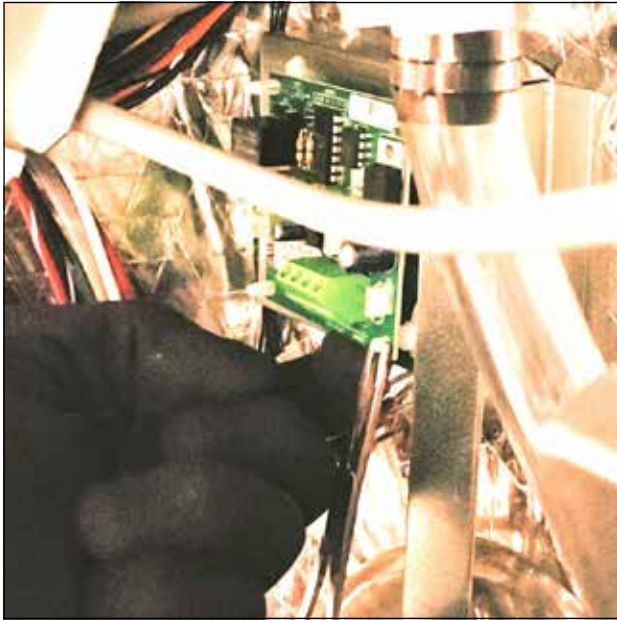**FIGURE 4**
Remove Dust Sensor Alarm Board Cover

   B. Disconnect dust sensor communication cable (see Figure 5).

   C. Using a terminal screwdriver, loosen the wire terminal screws and remove wires from terminals.

   D. Carefully remove wires from the dust sensor alarm board cover wire grommet.

FIGURE 5
Disconnect Dust Sensor Alarm Board Wires

E. Using a set of small needle-nose pliers, gently squeeze the retaining tab on the dust sensor alarm board standoffs while gently pulling out on the corner of the board (see Figure 6). (New standoffs are supplied in this kit in case any of the standoffs are damaged in this process.)

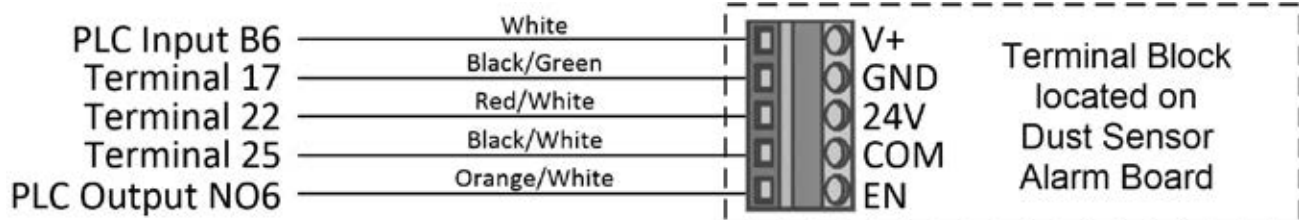**FIGURE 6**
Remove Dust Sensor Alarm Board

6. Install new dust sensor alarm board (see Figure 7).

A. Inspect the dust sensor alarm board standoffs for damage. If any standoff is damaged, continue to step i. If none of the standoffs are damaged, continue to step B.

   i. Use side-cutters to cut the standoff at its base.

   ii. Push the remaining standoff through the back of the mounting plate.

   iii. Firmly press a new standoff into the hole in the mounting plate.

FIGURE 7
Install New Dust Sensor Alarm Board

B. With the main wire terminal block pointed down, line up the mounting holes on the dust sensor alarm board with the standoffs attached to the mounting plate.

C. Firmly press down on all corners evenly until the retaining tabs on the standoffs are holding the dust sensor alarm board in place.

D. Route the dust sensor communication cable through the wire grommet in the dust sensor alarm board cover.

E. Route the wires, including the orange/white wire included in the kit, through the wire grommet in the dust sensor alarm board cover.

F. Rewire the old wires to the designated terminals and then wire the orange/white wire included in the kit to the EN terminal (see Figure 8).
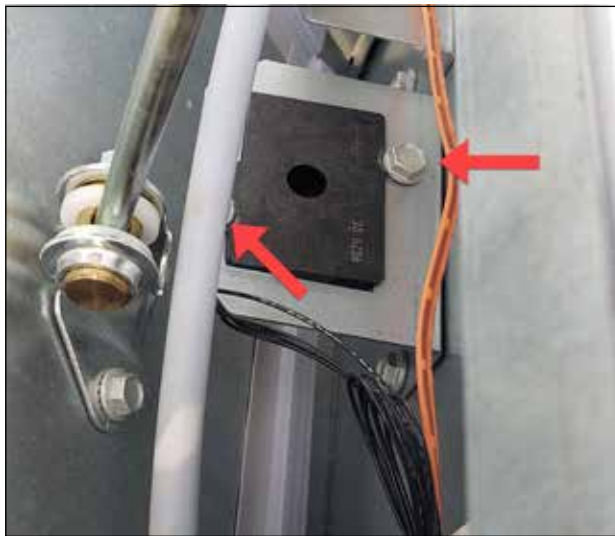
FIGURE 8
Dust Sensor Alarm Board Connections

G. Install the dust sensor alarm board cover.

H. Route the opposite end of the orange/white wire up the cableway and through the control panel wire grommet.

I. After routing the orange/white wire through the cable channel, connect to output NO6 on the PLC.

7. Remove the old dust sensor assembly located just above the left intake damper in the mixed air section (panel D in Figure 1 on page 2).

A. Remove the two hold-down screws from the dust sensor mounting bracket, located just inside the filter access panel opening (see Figure 9).

FIGURE 9
Remove Old Dust Sensor Assembly

B. Lift dust sensor from the mounting bracket.

C. Disconnect the dust sensor communication cable from the dust sensor.

D. Remove the dust sensor and associated hold down hardware.

E. Verify dust sensor communication cable is removed from the alarm board, and remove the cable from the wire grommet in the blower section partition.

8. Verify operation.

A. Re-install the filter access panel.

B. Re-install the blower access panel in the lower position (see Figure 10). (In case of high wind, use two screws in the center panel holes to secure panel to the unit.)

C. Connect TEC-EYE service tool to wall unit.

D. Reconnect power to unit and wait for PLC to boot.

FIGURE 10
Verify Operation with TEC-EYE

E. The following steps are completed using the TEC-EYE service tool.

i. Press MENU key to go to the Main Menu screen.

ii. Press UP or DOWN keys and ENTER key to enter TECHNICIAN password 1313.

iii. Press UP or DOWN keys to scroll to **I/O Config**; press ENTER key.

iv. Press UP or DOWN keys to scroll to Digital In Config (C2); press ENTER key.

v. Press UP or DOWN keys to scroll to **Dust Sensor C8**; press ENTER key.

vi. If sensor is reading 0 or in an alarm state, check that there is no offset applied to the dust sensor input in the PLC I/O menu, and then verify sensor wiring and cable pins are not loose. Dust sensor should read above .4 if operating properly.

F. Remove TEC-EYE service tool and re-install all access panels.