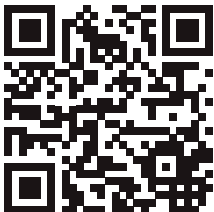




FlexFit 110 Quick Start Guide

The **FlexFit** Package



PREFERRED
UTILITIES MFG CORPORATION



⚠
WARNING

The equipment covered in this manual can cause property damage, severe injury, or death. It is the responsibility of the owner or user to ensure that the equipment described herein is installed and commissioned in compliance with the requirements of all national and local legislation, whichever may prevail.

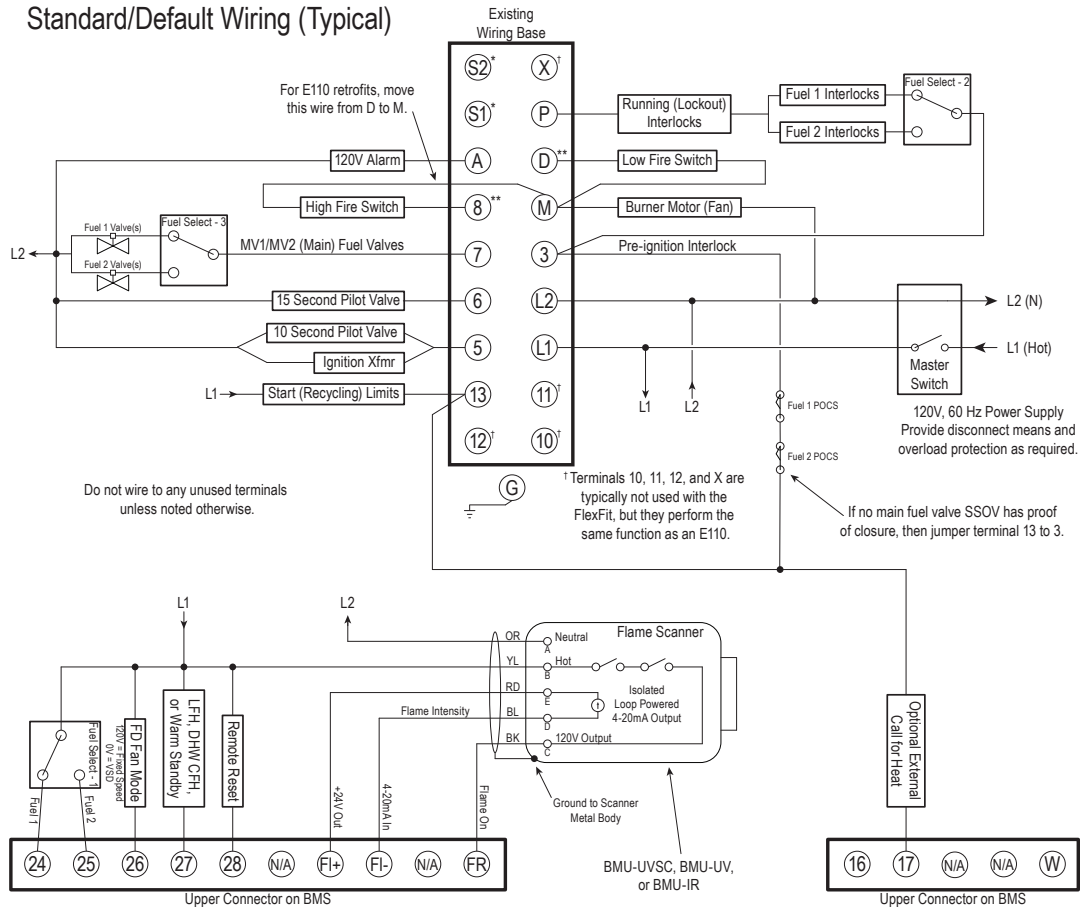
The installation and commissioning of this product must be carried out by suitably trained personnel who are experienced with the intended functions of this product and the operation of the equipment and systems to which it is applied. The manufacturer of this equipment accepts no liability for any consequences resulting from the inappropriate, negligent or incorrect installation, commissioning or adjustment of operating parameters of this equipment.

For detailed installation steps, further warnings, clarifications, and recommendations, see the full FlexFit manual.

STEP 1 **INSTALL FLEXFIT FLAME SAFEGUARD**

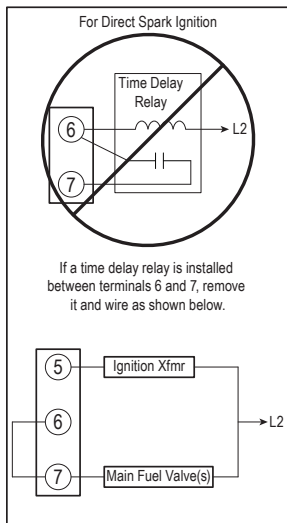
- a. For detailed instructions, refer to section "Burner Management System (Flame Safeguard) Installation" on page 2-14 of the FlexFit manual.
- b. Remove the old Flame-Monitor burner management control device.
- c. Remove any mod motor if necessary.
- d. Remove the old flame scanner, and install the new flame scanner as described below.
- e. Wire/verify wiring of the flame safeguard in accordance with the wiring diagram shown below. If using the Flex Sequence option, see "Figure 2–3 FF-110 BMS Flex Sequence Wiring Diagram (Typical) (Field Selectable)" on page 2-17 of the technical manual.
- f. Install the flame safeguard into the wiring base.

**FF-110 Flame Safeguard (BMS)
Standard/Default Wiring (Typical)**



*Note: Disconnect any existing wires from terminals S1 and S2; they are not used.

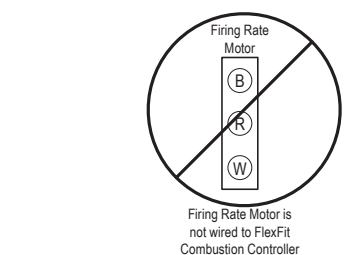
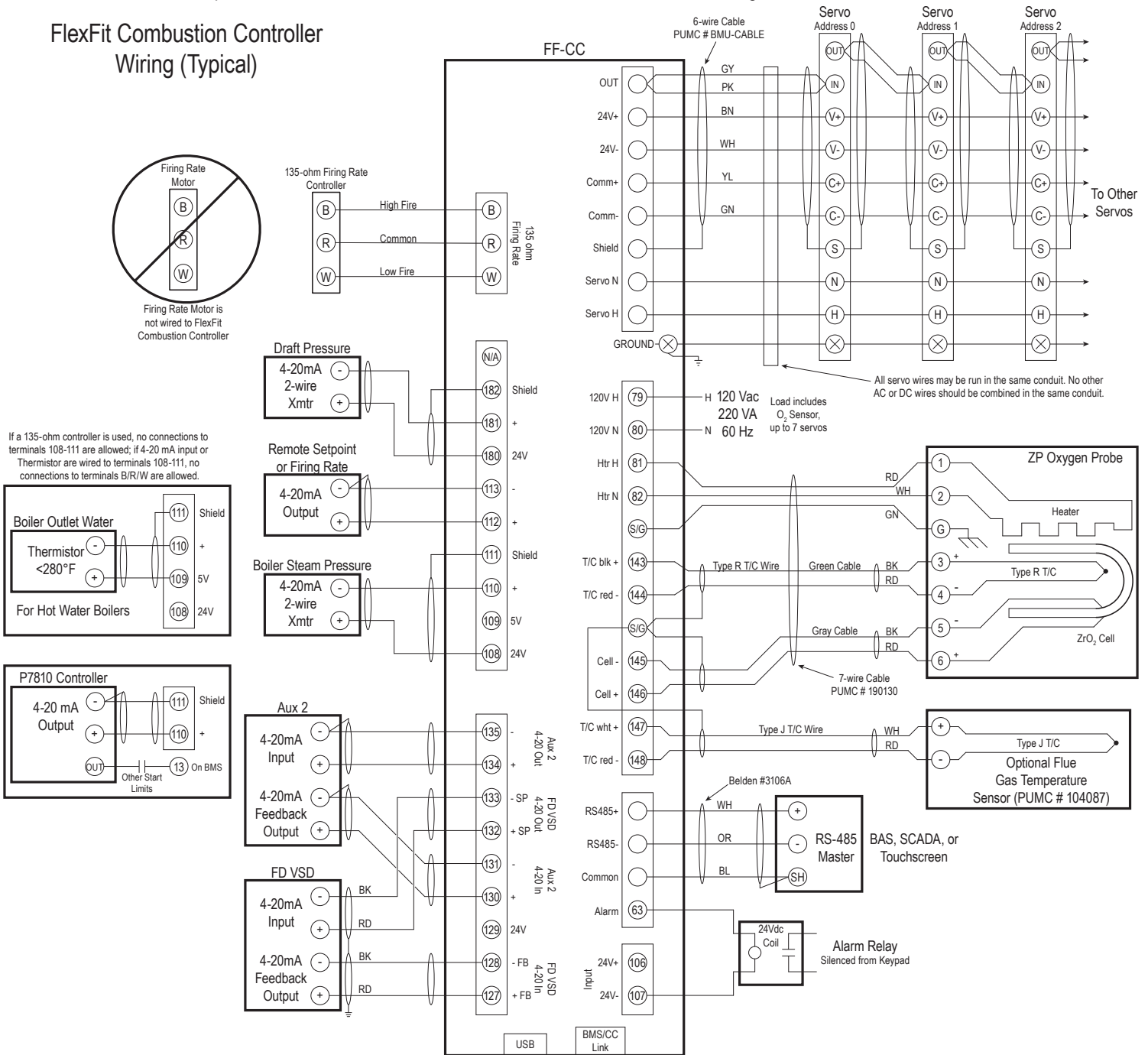
**Note: Remove the mod motor. If low fire proving interlocks are used, then wire them from M to D. If low fire proving is only by servo, then jumper M to D. If high fire proving interlocks (including purge air flow) are used, then wire them from M to 8. If high fire proving is only by servo, then jumper M to 8.



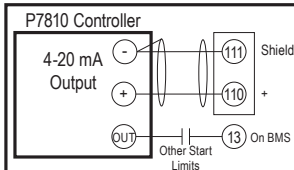
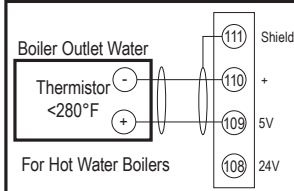
STEP 2 INSTALL FLEXFIT COMBUSTION CONTROL

- For detailed instructions, refer to section "Combustion Control Installation" on page 2-18 of the FlexFit manual.
- Make a 4 1/2" by 9 3/8" cutout in the panel in the desired location of the control pad.
- Place the FlexFit-CC in the hole and attach using the supplied cinch brackets.
- Connect a 135-ohm controller or boiler outlet sensor (pressure or temperature).
- Install servos as described below.
- Install ZP O₂ sensor (option) as described below.
- Wire the combustion control in accordance with the wiring diagram shown below.
- Connect the 9-pin D-Sub connector between the FlexFit-CC and the FlexFit flame safeguard.

FlexFit Combustion Controller Wiring (Typical)



If a 135-ohm controller is used, no connections to terminals 108-111 are allowed; if 4-20 mA input or Thermistor are wired to terminals 108-111, no connections to terminals B/R/W are allowed.



STEP 3 INSTALL THE VSD

- a. For detailed instructions, refer to section "Variable Speed Drive Installation" on page 2-20 of the FlexFit manual.
- b. Connect the blower (fan) output on the FF-BMS (terminal M) to the VSD as shown in the wiring diagram.
- c. The VSD must be configured to output 120 VAC to terminal 26 when it is running in bypass and 0 VAC when it is running in variable speed. This is usually accomplished via a user-selectable relay in the VSD. See the VSD documentation for how to accomplish this.
- d. On the FlexFit-CC, terminals 132 and 133 are the 4-20 mA output (set-point) signal to the VSD and terminals 127 and 128 are the 4-20 mA input (feedback) signal from the VSD.
- e. When running 3-phase cables to the VSD and between the VSD and motor, all noise suppression notes must be followed.

STEP 4 INSTALL SERVOS

- a. For detailed instructions, refer to section "Servo Installation" on page 2-21 of the FlexFit manual.
- b. Mechanically connect the servo to the valve or damper such that the shaft will not slip.
- c. If necessary, rotate the servo mounting connection 90 or 180 degrees to avoid the forbidden zone.
- d. Drill and pin the servo shaft coupling to the valve or damper to ensure that alignment does not slip or change.
- e. If desired, configure the travel limit switches now.
- f. Wire the servo to the FlexFit-CC or to the previous servo in the daisy-chain.

STEP 5 INSTALL FLAME SCANNER

- a. For detailed instructions, refer to section "Flame Scanner/Relay" on page 2-27 of the FlexFit manual.
- b. Attach the flame scanner to the mounting nipple on the burner.
- c. Angle the scanner for the best view of the flame when firing. Under no circumstances should it see igniter spark.
- d. Angle the sighting pipe slightly downward to prevent ingress of undesired material.
- e. Terminate the flame scanner wiring at the FlexFit flame safeguard.

STEP 6 INSTALL ZP OXYGEN SENSOR (OPTION)

- a. For detailed instructions, refer to section "ZP Oxygen Sensor Installation" on page 2-32 of the FlexFit manual.
- b. Select a stack location and mount a pipe nipple and 3" 125# flat-faced flange on the duct.
- c. Mount the ZP sensor on the flange.
- d. Check the flange temperature.
- e. Run 1/4" calibration gas tubing to floor level.
- f. Terminate the detector wiring at the FlexFit-CC.

STEP 7 COMMISSION THE BURNER

- a. For detailed instructions, refer to section 3 "Commissioning" on page 3-39 in the FlexFit manual.
- b. Ensure mechanical and electrical installation is complete and the burner and facility are in a safe condition.
- c. Obtain a temporary password and create permanent passwords for the FlexFit.
- d. Configure the necessary parameters via the FlexFit Edit software or the front panel LCD.
- e. Configure servos – including limit switches, addresses, functions, zero, and span.
- f. Enter commission mode.
- g. Create standby, purge, and ignition curve points for each type of fuel.
- h. Start the burner and verify correct curve points.
- i. Create fuel/air ratio curves for each type of fuel – including low fire, high fire, and avoid points.
- j. Verify fuel/air ratio curve points and exit commission mode.
- k. Tune PID loops.
- l. Document commissioning data.