

OIL BURNERS

STEP-BY-STEP INSTRUCTIONS FOR INSTALLING

VERY IMPORTANT: Disconnect ALL power to the burner before making any connections. Also make sure the OnWatch Model 51 Burner Monitor is OFF when making connections. Do NOT turn on the Model 51 until all connections are completed and power is restored to the burner and its thermostat circuit.

ATTENTION: Go to the appropriate section, below, for the type of burner system.

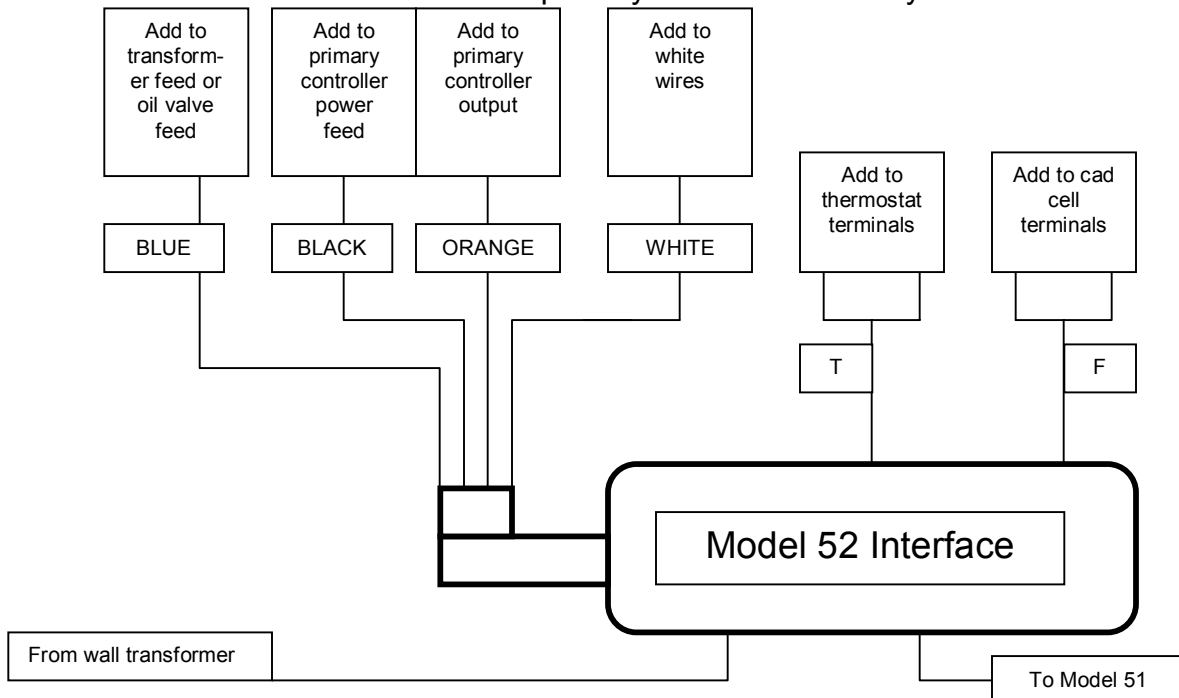
OIL BURNERS CONTROLLED BY A THERMOSTAT – NO POWER VENTER PRESENT

STEP ONE: If a 24-volt, normally-open thermostat controls the burner, start here. If, however, the T-T terminals are jumped out, go to Step Two.

Connect the two wires labeled “T” with fork connectors of the Model 52 Interface to the T-T terminals from the thermostat. Polarity does not matter. If the burner is controlled by a boiler control and these terminals are “jumped out,” DO NOT connect these wires and go to Step Two.

STEP TWO

Connect the two wires with forked connectors labeled “F” of the Model 52 Interface to the F-F terminals of the primary controller. Polarity does not matter.



STEP THREE

Mount the 90-degree BX-type connector on an available knockout of the electrical box housing the wires for the burner primary controller.

- Locate the 120 volt wire that powers the primary controller, generally a black wire. Add the black wire from the Model 52 to this.
- Locate the output wire from the primary controller, generally an orange wire. Add the orange wire from the Model 52 to this.
- Add the white wire from the Model 52 to the grounded or neutral (white) wires.

[See Special Cases, below, for some particular applications.]

STEP FOUR

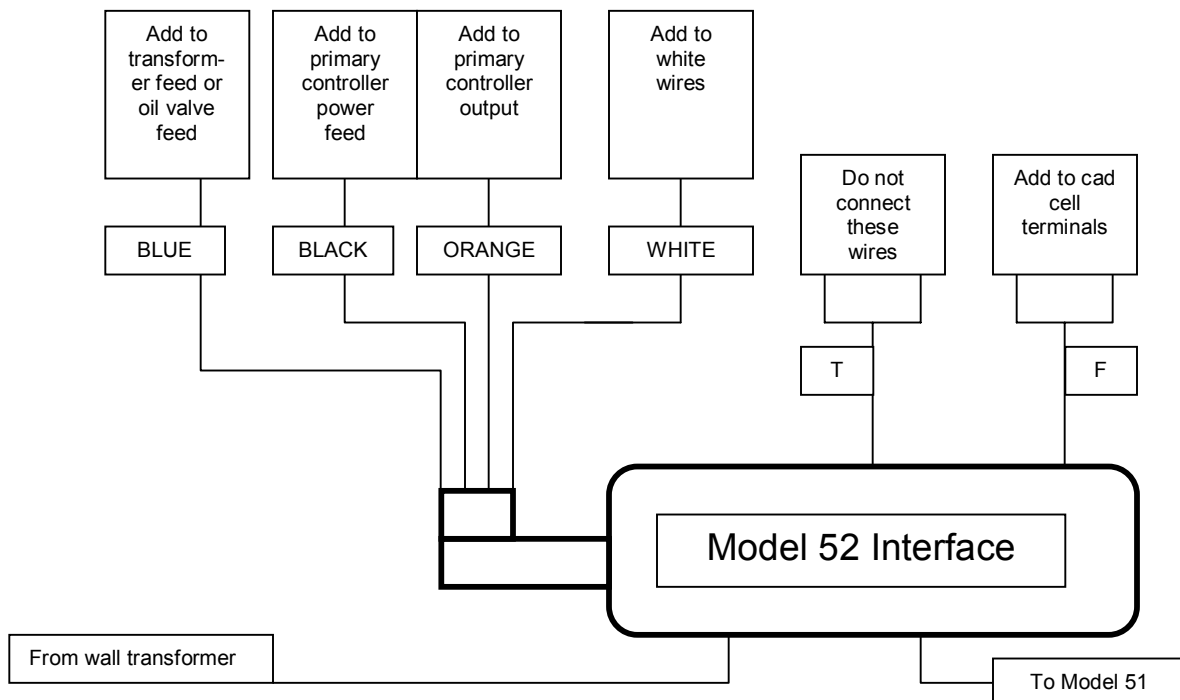
Connect the Model 51 to the Model 52 Interface using the cable with connectors marked “1” and “3”. Match the ends of the cable with the numbers on the labels. Keep the numbers up when inserting the plugs.

STEP 5

The Model 52 has its own power transformer. Plug this into the jack of the Model 52 labeled **POWER IN** and into an outlet that is live at all times.

OIL BURNERS CONTROLLED BY BOILER CONTROLS – NO POWER VENTER

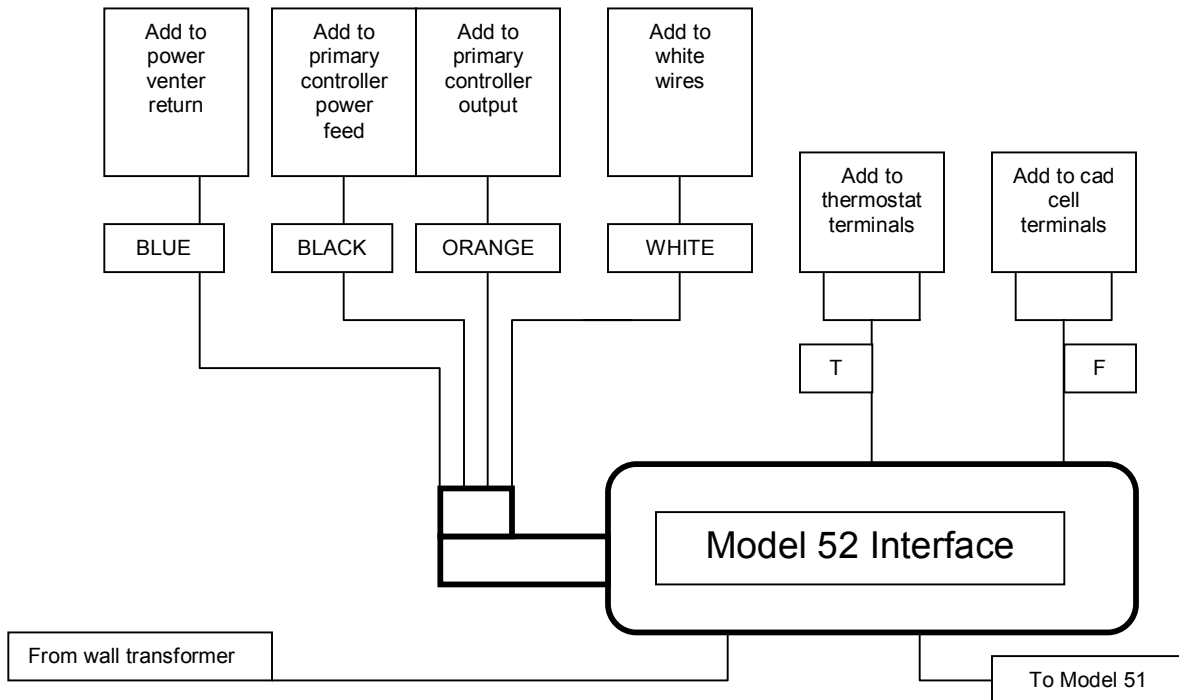
Follow the directions above except do not connect the “T” wires of the Model 52.



OIL BURNERS WITH POWER VENTERS

STEP ONE – If a 24-volt, normally-open thermostat controls the burner, start here. If, however, the T-T terminals have a jumper between them, go to Step Two.

Connect the two wires labeled “T” of the Model 52 Interface to the T-T terminals from the thermostat. Polarity does not matter. If the burner is controlled by a boiler control, DO NOT connect these wires. Go to Step Two, below.



STEP TWO

Connect the two wires labeled “F”, with forked connectors, of the Model 52 Interface to the F-F terminals of the primary controller. Polarity does not matter.

STEP THREE

Mount the 90-degree BX-type connector on an available knockout of the electrical box housing the wires for the burner primary controller.

- Wire the orange, black and blue wires according to the diagram above.
- Add the white wire to the grounded or neutral (white) wires.

STEP FOUR

Connect the Model 51 to the Model 52 Interface using the cable with connectors labeled “1” and “3”. Match the numbers to the corresponding numbers on the labels. Keep the numbers up when inserting the plugs.

STEP FIVE

The Model 52 has its own power transformer. Plug this into the jack of the Model 52 labeled POWER IN and into an outlet that is live at all times.

SPECIAL CASE INSTALLATIONS

Riello Burners

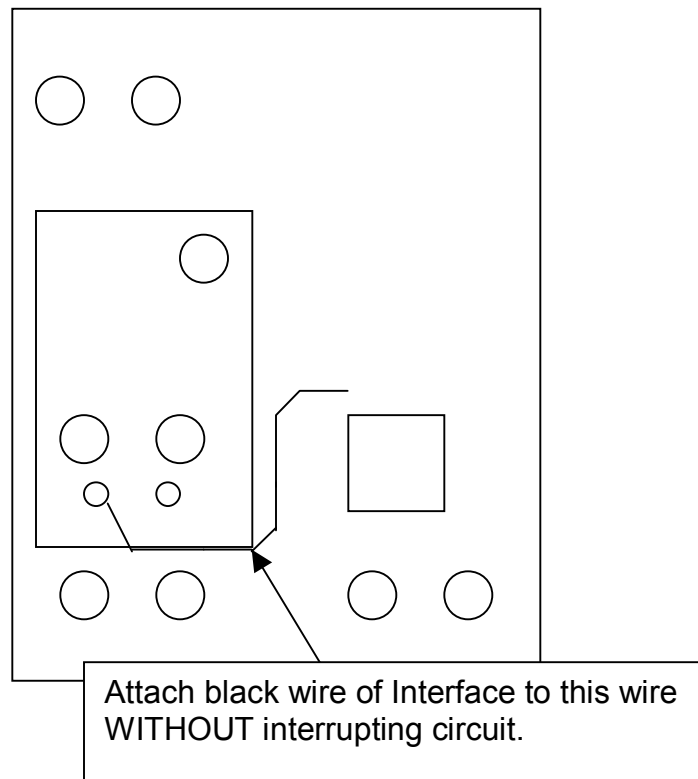
On Riello burners, it is recommended that the orange wire of the Model 52 Interface be connected to the Riello BLUE wire on Terminal #6. This will provide the desired voltage readings. Connect all other wires as described above.

Energy Kinetics

When attaching the OnWatch Model 51 to an Energy Kinetics System Manager, the only difference from the standard installations is to attach the cable with the two forked terminals labeled “T” to the T-T connections of the burner primary controller. This will allow recording of the B1 and B2 of the System Manager.

Honeywell R8182D or H

On the Honeywell Models R8182D and R8182H, approximately midway on the left side is a white block containing the high and low limit setting knobs. There are two wires coming out of this block just below these setting knobs. The left of these two wires (usually yellow in color) is energized (120 volts nominal) any time the water temperature is below the low limit. The black wire of the Model 52 Interface must be connected to this wire without interrupting its circuit.



STEP SIX – TEMPERATURE SENSOR

Remove a sheet metal screw from the vent pipe. Put the sheet metal screw through the ring terminal of the thermistor and replace the screw in the vent pipe. **DO NOT OVERTIGHTEN THIS SCREW!** Just snug it. Make sure the wire is not in contact with the vent pipe.

STEP SEVEN

Plug the connector marked with the circle into the jack of the Model 51 labeled TEMP, also marked with a circle. Keep the circle up when inserting the plug.

PRESSURE and VACUUM SENSORS - GENERAL

NOTE: Individual sensors are calibrated for a particular Model 51. All serial numbers for sensors must match those in memory. See SETUP PARAMETERS in User's Guide.

STEP EIGHT

Install the Model 44 Pressure Sensor anywhere on the pressure side of the pump. If there is a fuel valve, install the pressure sensor in the "nozzle" line using a tee. This location will allow data to be recorded on the functioning of the oil valve. When installing, **USE A WRENCH ON THE FLATS TO TIGHTEN. DO NOT TIGHTEN BY TWISTING THE SENSOR BODY.**

Connect the pressure sensor to the Model 51 using the cable marked with an "A" into the jack also marked with an "A". Keep the mark up when inserting the plug.

STEP NINE

If you intend on using the Model 45 Vacuum Sensor, install it anywhere on the vacuum side of the pump. When installing, **USE A WRENCH ON THE FLATS TO TIGHTEN. DO NOT TIGHTEN BY TWISTING THE SENSOR BODY.**

Connect the vacuum sensor to the Model 51 using the cable marked with a "B" into the jack also marked with a "B". Keep the mark up when inserting the plug.

STEP TEN

Remember there are two power transformers that must be connected. One plugs into the jack of the Model 51 labeled "**POWER IN**", and the other plugs into the jack of the Model 52 Interface, also labeled.

Now restore power to the oil burner and the thermostat circuit, then turn on the Model 51 with the slide switch on the bottom edge.

The screen should be on and the Model 51 will be going through its power-up test. Follow any instructions on the screen.

The Model 51 should now be at the MAIN MENU. You make all your choices from the MAIN MENU.

If this is a new installation, clear memory. See CLEAR MEMORY in the User's Guide.

If you must disable the fault mode, go to SETUP PARAMETERS and do so. See SETUP PARAMETERS in the User's Guide.

Now press [RECORD].

STEP ELEVEN

Activate the thermostat or boiler control and watch the screen while the burner operates through one cycle. Observe all readings on the screen. This will allow you to check cable connections.

IMPORTANT – WARNING

Observe the oil burner through one complete cycle including shutdown to ensure that all components are operating properly.

Hang the Model 51 from a suitable object so that it is not subjected to damage or water. It will do its job of recording events.