

HeatManager™

RESIDENTIAL HYDRONIC HEATING SYSTEM ECONOMIZER

Description

The Beckett *HeatManager* is a patented microprocessor-controlled fuel-saving device for residential hydronic heating systems. The *HeatManager* reduces fuel consumption, wear on boiler parts and burner emissions by actively managing the burner, in conjunction with the aquastat, to properly match the boiler output to the required load. **This Control is NOT recommended for heating systems whose normal operating temperature is below 150°F.**

Operation

After installation, setting the switch on the unit to the 'ON' position activates the device. The lights on the front panel indicate the state of operation of the device. The three green lights indicate normal operation and will sequence as the device goes through its operating cycle. Each light indicates one of three possible modes of operation, which are:

STANDBY MODE - The boiler is operating under its own internal aquastat, which has turned the burner off. This occurs for a period of time after the burner has shut down.

ECONOMIZING - The boiler aquastat has requested the burner to come on but the *HeatManager* has sensed that there is available heat which can be used without burning fuel. The burner will remain off and useful heat will be delivered from the boiler's existing supply of hot water.

BURNER ENABLED – The burner is running.

Installation

The *HeatManager* is electrically installed in series with the boiler aquastat as shown in the wiring diagrams. For safety, **power to the boiler MUST be turned off during installation.**

Positioning

The unit can be mounted either vertically or horizontally. Depending on the boiler's configuration, the unit can be mounted on the electric junction box or directly on an external aquastat. Remove a knockout from the junction box or aquastat and mount the unit using the standard ½" electrical fitting on the case and the supplied lock-nut.

Wiring

All wiring and connections must comply with Local and National Electrical Codes. Examples of typical wiring diagrams are shown on the following pages. All unused leads should be individually insulated with tape and/or wire-nuts. See WIRING NOTE.

Primary Heating-Water Temperature Sensor

Attach the sensor to the heating-water outflow pipe as close to the boiler as possible using tie-wire or Ty-Wraps® (see Fig. 1). Make sure that the sensor makes good thermal contact with the pipe. Cover the sensor with a small piece of pipe insulation (not provided) and tape or Ty-Wrap® in place (see Fig. 2). Route the sensor wire, in a workman-like manner, to the *HeatManager* and insert the sensor connector into the 'Heating Water Sensor' jack located in the side of the unit. *To ensure maximum savings, it is recommended that the Aquastat be set to a minimum of 180°F.*

Secondary Domestic-Water Temperature Sensor

For boilers that also supply domestic hot water, install a sensor on the domestic hot water outflow pipe following the same procedure used for the heating-water outflow sensor. If this system has a storage tank, the sensor should be installed on the outflow pipe from the tank. *The sensor should be mounted as close to the boiler or tank as possible.* This sensor is not required if the boiler does not supply domestic hot water. Route the sensor wire, in a workman-like manner, to the *HeatManager* and insert the sensor connector into the 'Domestic Water Sensor' jack located in the side of the unit.

Checkout

Recheck wiring one last time and make sure that the temperature sensor(s) is plugged into the proper jack(s). The sensors are only detected during power-up. Set the *HeatManager* switch to 'Off/Bypass' and restore power to the boiler. Next, set the switch to 'On'. *HeatManager* will go through a self-test. First all 4 Lights will turn on then off verifying their proper functioning, then the lights will come on indicating the software version, next the red light will flash for each sensor found. If NO sensors are detected *HeatManager* will not function properly; turn *HeatManager* 'Off' and check the sensor installation. After the sensor-check, one of the green lights will activate depending upon the temperature of the boiler water at power-up. If the *HeatManager* comes on and goes into the 'Standby Mode'; note the aquastat setting and force a burner call by temporarily setting the aquastat higher and verifying the change of mode of the *HeatManager*. Make sure to return the aquastat to its' previous setting. This indicates the unit is operating normally. If the *HeatManager* does not come out of 'STANDBY MODE' when the boiler's aquastat is calling for the burner to run, the unit is probably miswired; see WIRING NOTE.

Service and Troubleshooting

After Installation and Checkout, the *HeatManager* requires no maintenance and will provide years of trouble free operation. The unit may be disconnected at any time by putting the toggle switch to the 'Off/Bypass' position. In this position, the unit has no effect on the system and the boiler is wired as it was prior to the *HeatManager* installation. This allows service personnel to diagnose boiler problems.

The red indicator can signify two warning conditions:

If the red light comes on continuously, during the 'BURNER ENABLED' mode, the boiler aquastat should be set slightly higher. If at any time the red light on the front panel blinks continuously, a sensor is not operating properly and *HeatManager* has taken itself out of the circuit.

For either condition, call the installer for service.

WIRING NOTE: The *HeatManager* has separate common/return wires for the Power and Burner circuits. It is necessary for these wires to be connected to the appropriate common for the circuit. If this is not done; the unit will not function properly. See wiring diagrams on the following pages.

INSTRUCTIONS FOR INSTALLING
HeatManager™
 RESIDENTIAL HYDRONIC HEATING SYSTEM ECONOMIZER

Form: 7512 rev 2

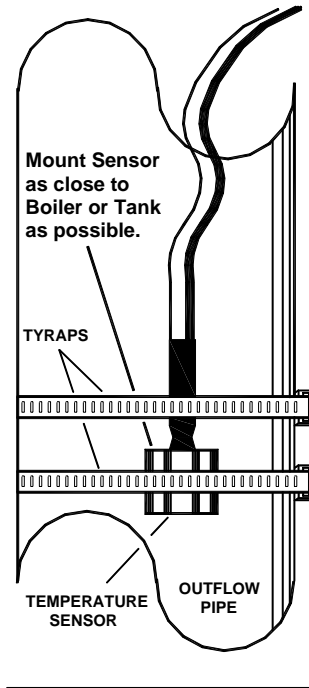


Fig. 1

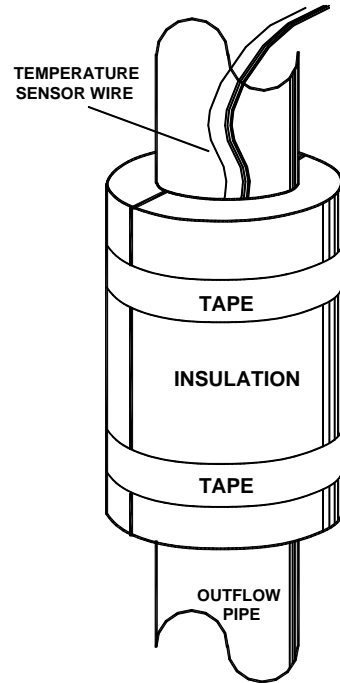
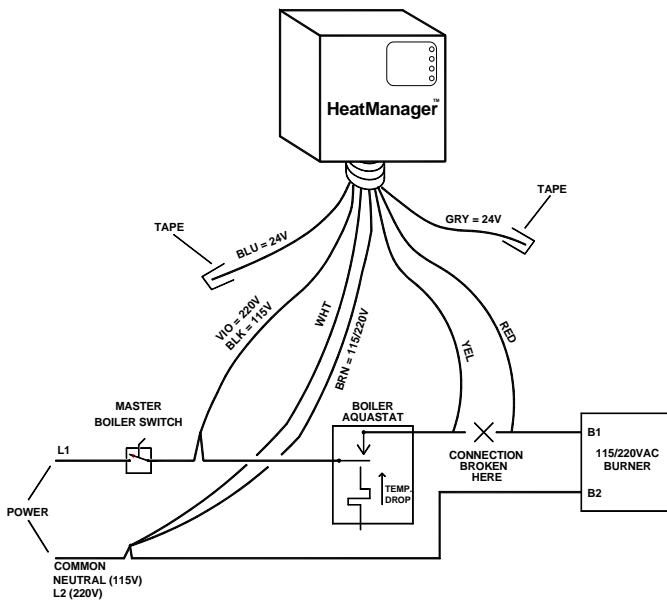
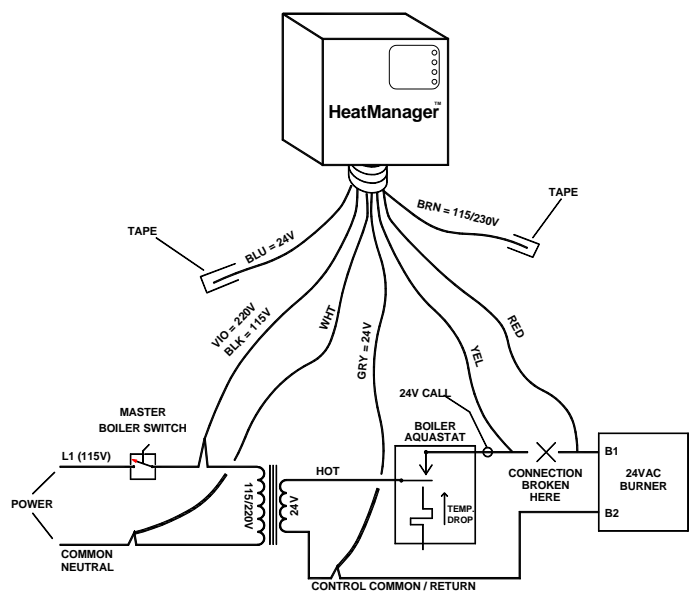


Fig. 2

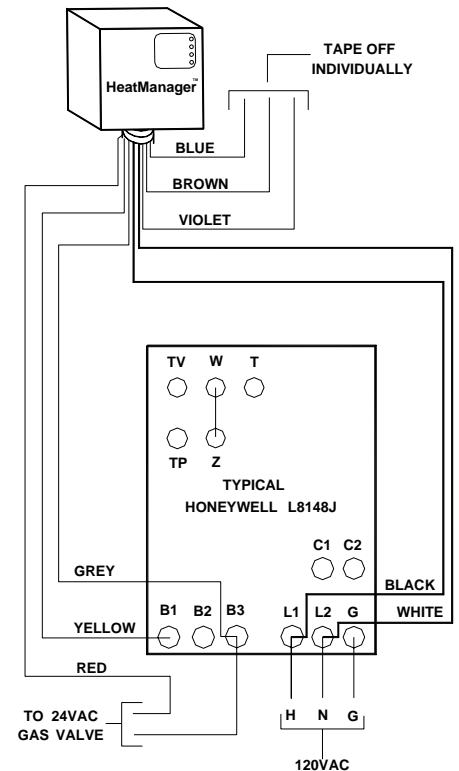
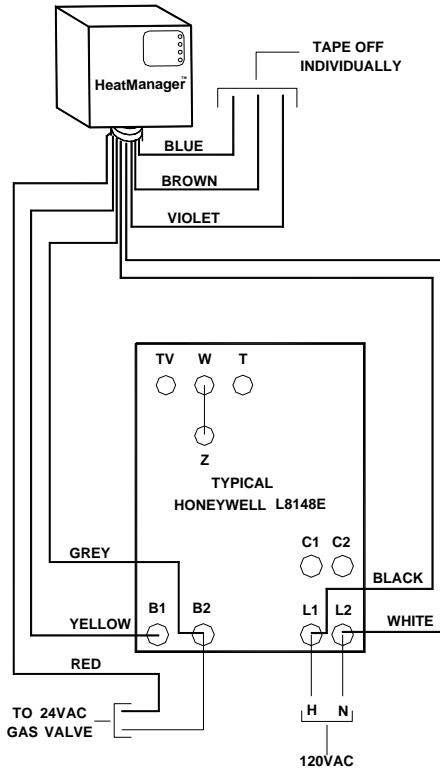
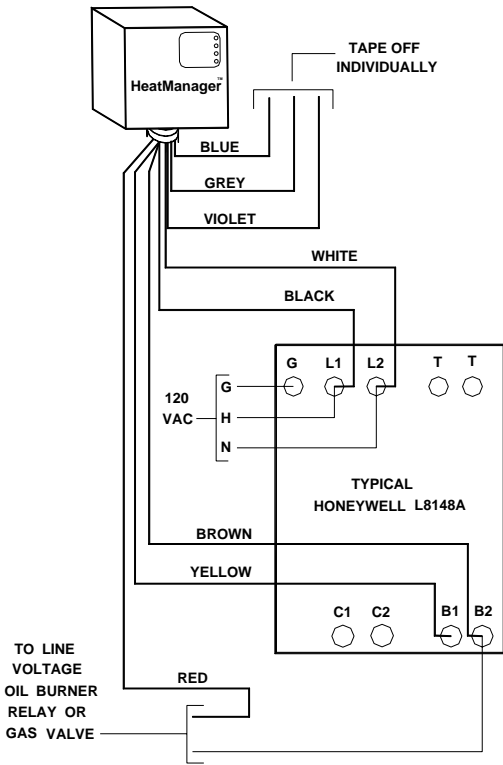
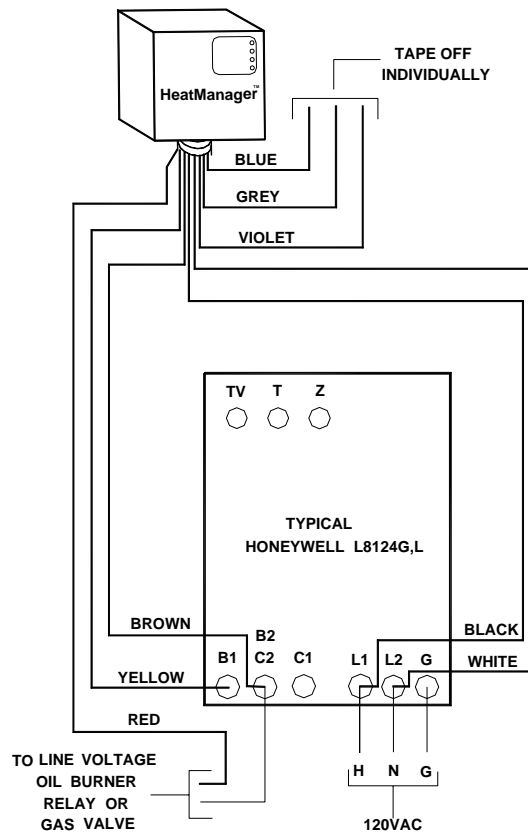
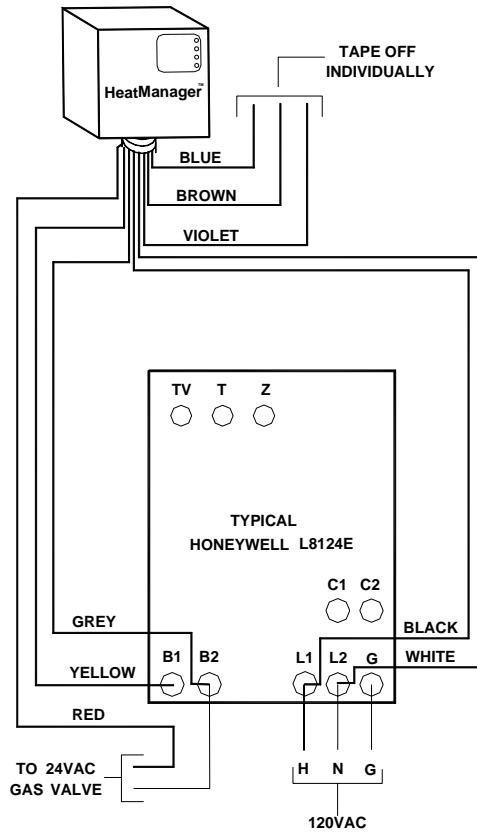


TYPICAL 115/220V POWER & CONTROL -- BOILER BURNER CIRCUIT



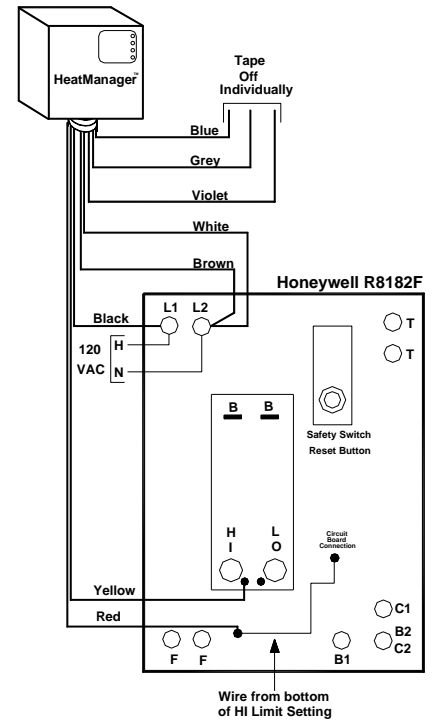
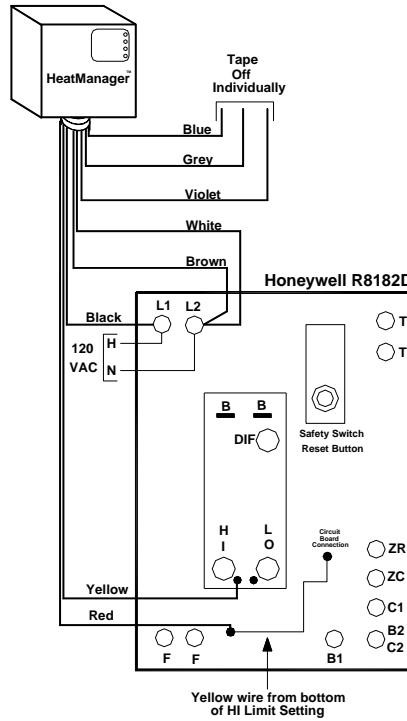
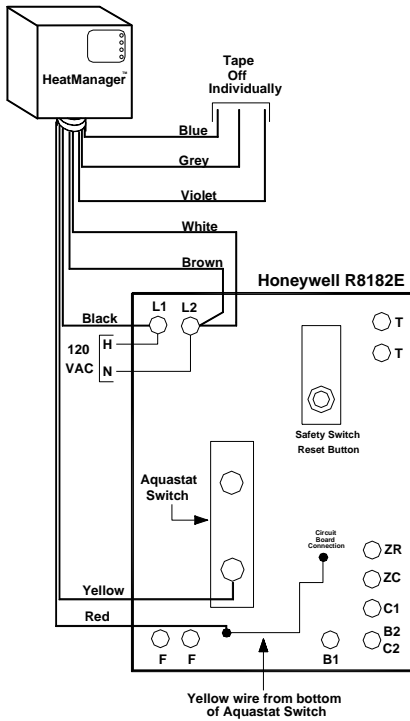
TYPICAL 115/220V POWER / 24V CONTROL -- BOILER BURNER CIRCUIT
 (FOR 24V POWER & CONTROL THE BLUE WIRE WOULD BE CONNECTED TO THE 24V HOT, THE WHITE TO THE 24V RETURN. THE BLACK AND VIOLET WIRES NOT USED AND SEPARATELY TAPED)

HeatManager™
RESIDENTIAL HYDRONIC HEATING SYSTEM ECONOMIZER



INSTRUCTIONS FOR INSTALLING HeatManager™ RESIDENTIAL HYDRONIC HEATING SYSTEM ECONOMIZER

Form: 7512 rev 2



R8182 SERIES INSTRUCTIONS
Remove the Yellow wire from the bottom of the Aquastat Switch. Connect the Yellow wire from the HeatManager to this terminal. Connect the Red wire from the HeatManager to the Yellow wire that was previously removed from the Aquastat.

