CLICK ANYWHERE on THIS PAGE to RETURN to BECKETT BURNERS & CONTROLS at InspectApedia.com

OWNER'S MANUAL AND INSTALLATION INSTRUCTIONS for

Form: 7512 rev 6

Beckett *HeatManager*™

RESIDENTIAL HOT-WATER (BOILER) HEATING SYSTEM ECONOMIZER

Description

The Beckett *HeatManager* is a patented microprocessor-controlled fuel-saving device for residential hot-water (boiler) 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.

Applications

The HeatManager is only for hot water heating systems that consistently operate above 150°F during the heating season. It can be used with any heating fuel (oil, gas, or propane) and will work equally well with cold-start and maintained boilers.

Installation

- **Mounting:** The HeatManager can be mounted either vertically or horizontally to an electric junction box or directly to the aquastat. Remove a knockout from the junction box or aquastat and mount the unit using the standard ½" electrical fitting and supplied lock nut.
- **Wiring:** ***For safety, power to the boiler must be turned off during installation.*** All wiring and connections must comply with Local and National Electrical Codes. The HeatManager is electrically installed in series between the boiler Aquastat and the burner. If there is a vent damper in the system, then the HeatManager is installed between the Aquastat and vent damper. Follow the typical wiring diagrams on the following pages. All unused wires must be individually insulated with tape or wire nuts.

NOTE: Because the HeatManager can operate with different voltages for the power and control circuits, it has separate common wires for these circuits. It is necessary that these wires are connected to the proper commons or the unit will not function properly. ***See wiring diagrams on the reverse side of this sheet for details.***

Temperature Sensor(s)

- **Primary Heating Water Sensor:** Attach the sensor to the boiler outflow/supply pipe as close to the boiler as possible using tie wire or tie wraps (see Fig. 1). Make sure that the sensor makes good thermal contact with the pipe. The sensor must be covered with pipe insulation (see Fig. 2). Route the sensor wire to the HeatManager and plug into 'Heating Water Sensor' jack. Do not wrap the sensor wire around the hot supply pipe.
- **Secondary Domestic Water Temperature Sensor:** This sensor is only used with systems that have a tankless coil in the boiler; it is not needed for systems with an indirect water heater. If needed, attach the sensor to the domestic hot water outflow pipe following the same procedure used for the heating water sensor and plug into 'Domestic Water Sensor' jack. If the domestic water sensor detects a demand for hot water, it will override the HeatManager 'Economizing' mode and allow the burner to fire.

Aquastat Settings

- **High Limit:** The high limit set point should be **180°F or *higher***. If it is already above 180°F, do not readjust it.
- **Low Limit (if applicable):** The low limit set point should be **150°F or *lower*** for optimal fuel savings. If it is already below 150°F, do not readjust it. If it must be set above 150°F to provide adequate domestic hot water, constant power must be applied to ZC in the aquastat to override the triple-acting feature.

Startup / Checkout

- 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 verifying their proper functioning (they may flicker slightly), then the red light will flash indicating that sensor(s) were detected. After the sensor check, one of the green lights will activate to indicate the current operating mode.
- To verify that HeatManager is functioning properly, force a call for heat until boiler water temperature is at least 175°F then stop the call for heat. Only the 'Standby' LED should be lit. Wait a few minutes until the water temperature has dropped approx 5° and then force another call for heat. At this time the HeatManager should switch from 'Standby' to 'Economizing' (the Burner should not be running). After a further Temperature drop the HeatManager should go into the 'Burner Enabled' mode and the Burner should come on. If the above sequence does not function as described, re-check wiring and sensor installation.

Operating Modes / LED's

- **Standby:** There is no call for heat from any of the thermostats. The burner is not running.
- **Economizing:** There has been a call for heat from a thermostat, but the HeatManager detects that there is available heat in the boiler that can be used without burning fuel. The burner is not running.
- **Burner Enabled:** The 'Economizing' period has ended and the HeatManager has allowed the burner to fire. The burner is running.
- **Low Temperature Limit (Red Light on Steady):** HeatManager has sensed that there is not enough available heat in the boiler to go into 'Economizing' mode. This will happen occasionally and does not indicate a problem. The burner is running.
- **Check Sensor (Red Light Flashing):** Indicates that a sensor is not operating properly and the HeatManager has taken itself out of the circuit. The sensor is either damaged or the sensor plug is not making good contact with the socket in the HeatManager.

Note: Depending on the type of heating system, the circulator pump(s) may or may not be running when in any of the above modes.

Service and Troubleshooting

After installation and checkout, the HeatManager requires no maintenance. The unit may be disconnected at any time by putting the switch to the 'Off/Bypass' position. In this position, the unit has no effect on the system and the boiler will function as it did prior to HeatManager installation, allowing service personnel to diagnose boiler problems.

OWNER'S MANUAL AND INSTALLATION INSTRUCTIONS for

Form: 7512 rev 6

Beckett *HeatManager*™

RESIDENTIAL HOT-WATER (BOILER) HEATING SYSTEM ECONOMIZER

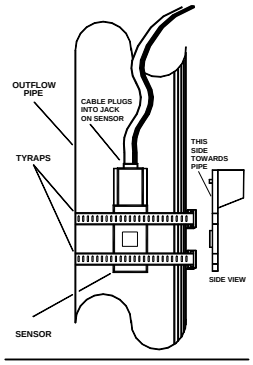


Fig. 1

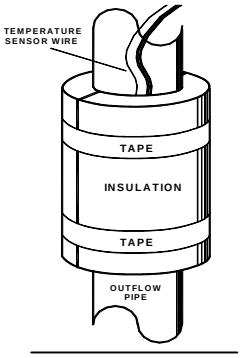
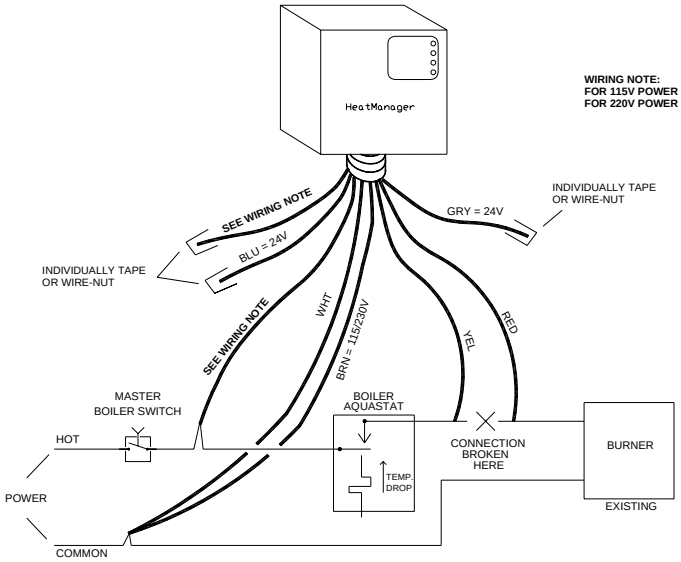
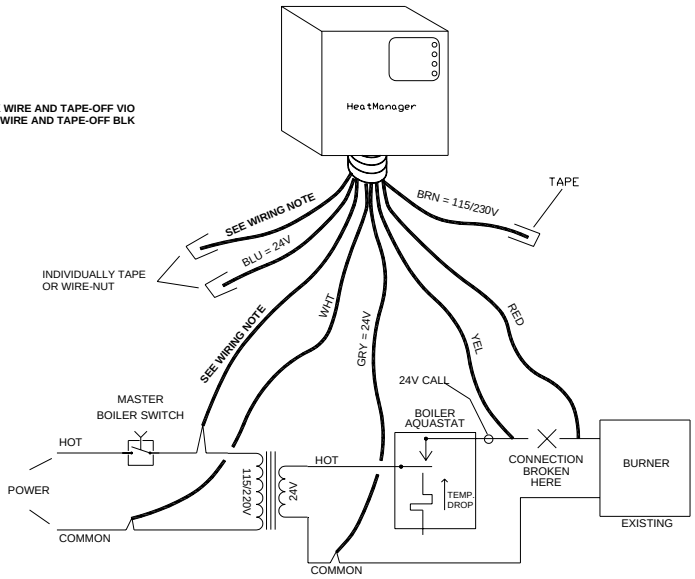


Fig. 2



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

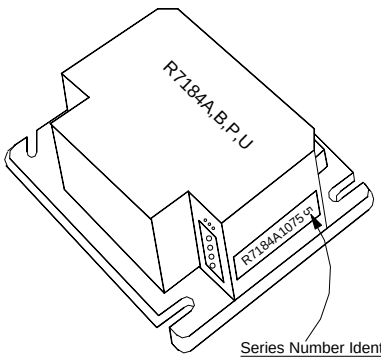
WIRING NOTE:
FOR 115V POWER USE BLK WIRE AND TAPE-OFF VIO
FOR 220V POWER USE VIO WIRE AND TAPE-OFF BLK



TYPICAL 115/220V POWER / 24V CONTROL -- BOILER BURNER CIRCUIT

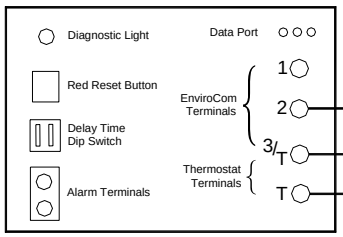
(FOR 24V POWER & CONTROL THE BLUE WIRE WOULD BE CONNECTED TO THE 24V HOT, THE WHITE TO THE 24V COMMON. THE BLACK AND VIOLET WIRES ARE NOT USED AND SEPARATELY TAPED)

Beckett HeatManager with Honeywell R7184A,B,P,U "SERIES 5" Electronic Oil Primary When Aquastat Is Wired 24VAC

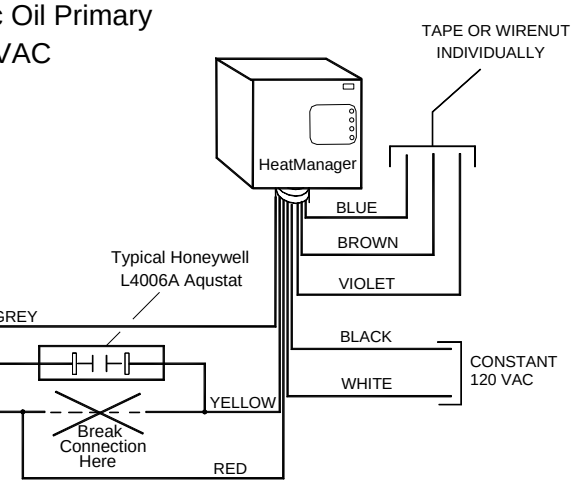


Series Number Identification
The Series number is the last number on the side label. (It is rotated 90° from the other numbers).

NOTE: R7184 Controls prior to "Series 5" should be replaced with a "Series 5" control. The old control should be returned to Beckett for exchange.



Typical Honeywell R7184 SIDE VIEW



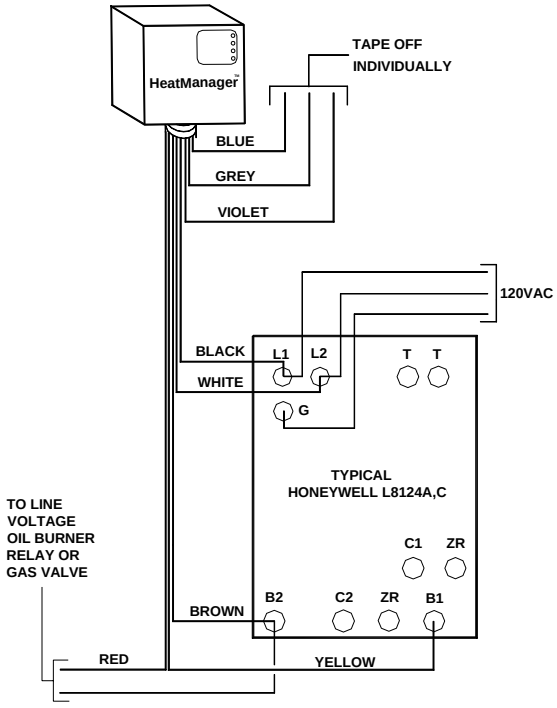
R.W. Beckett Corporation, Elyria, Ohio USA

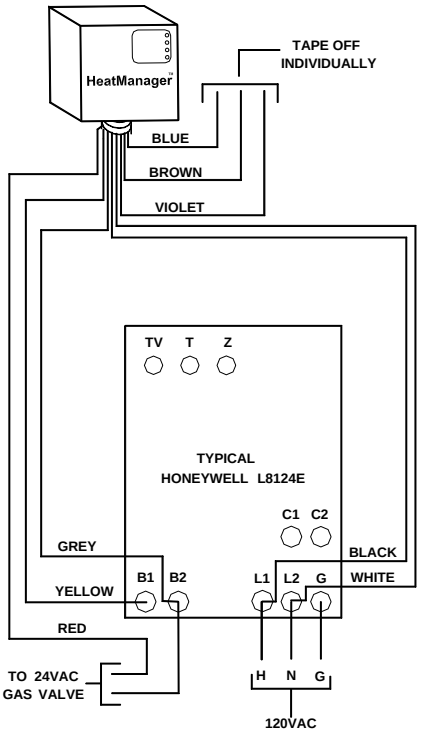
OWNER'S MANUAL AND INSTALLATION INSTRUCTIONS for

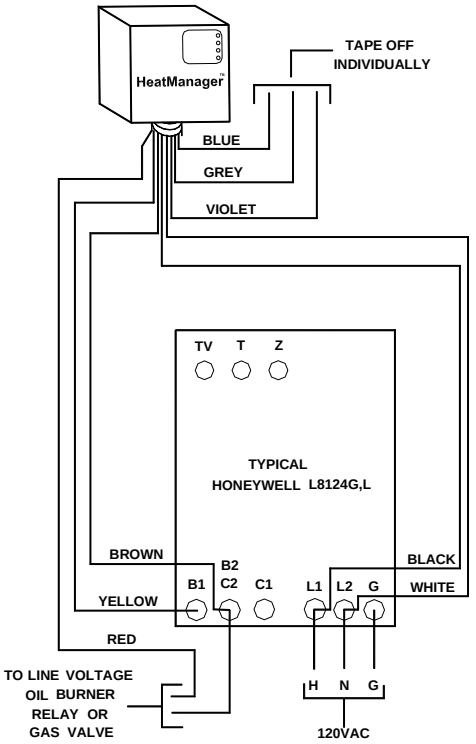
Form: 7512 rev 6

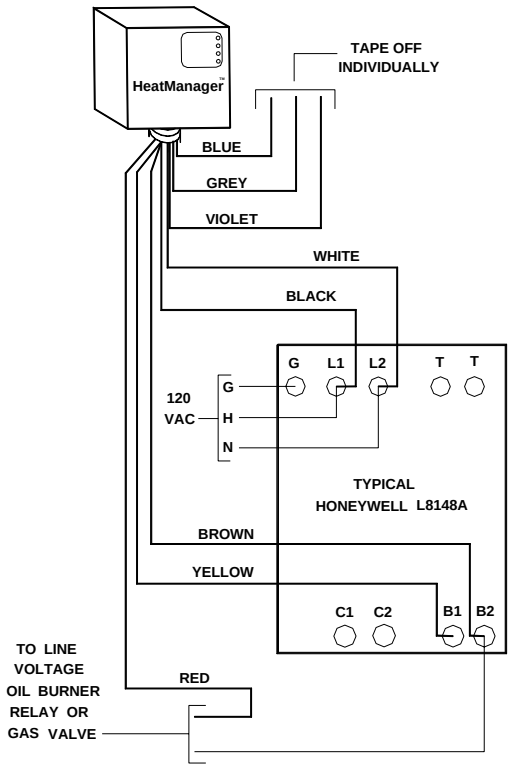
Beckett *HeatManager*™

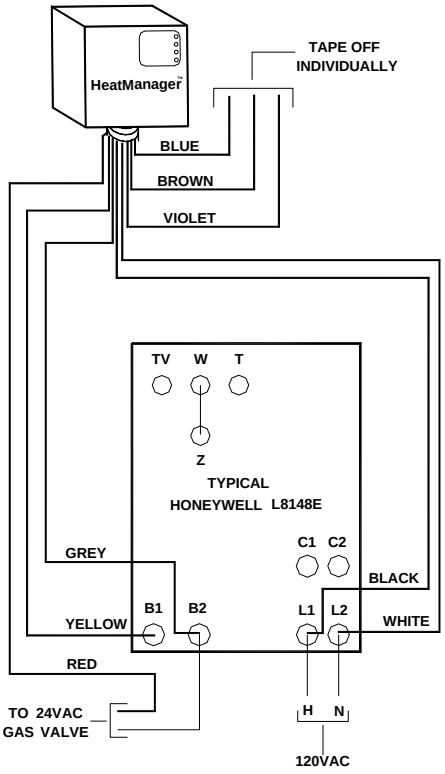
RESIDENTIAL HOT-WATER (BOILER) HEATING SYSTEM ECONOMIZER

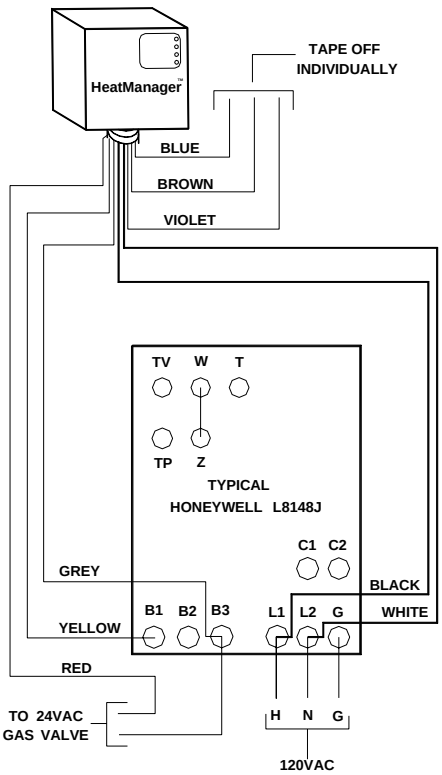










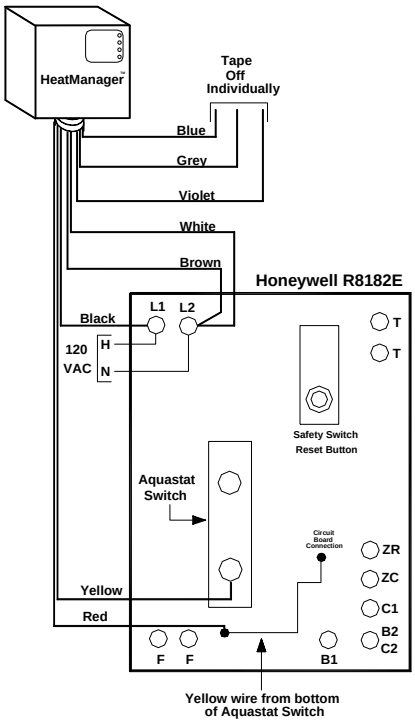


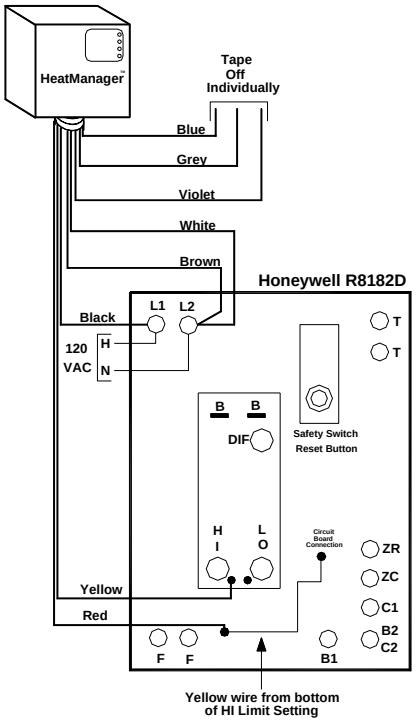
OWNER'S MANUAL AND INSTALLATION INSTRUCTIONS for

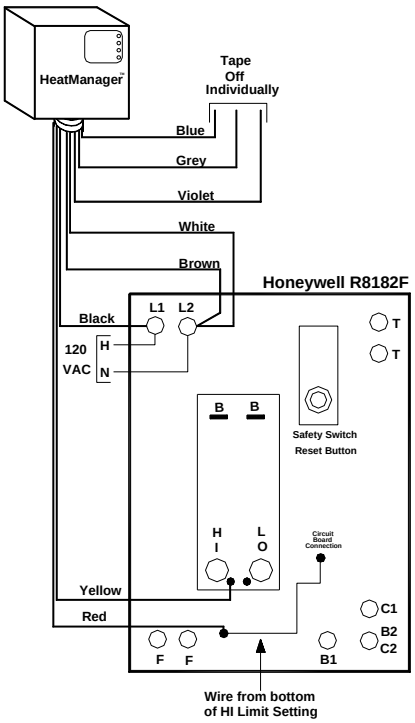
Form: 7512 rev 6

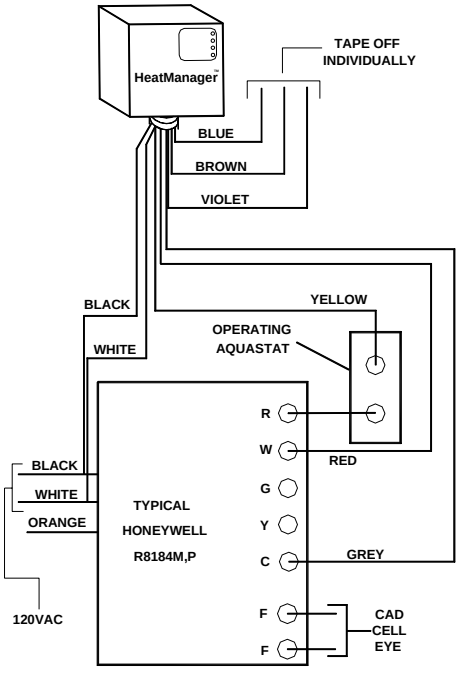
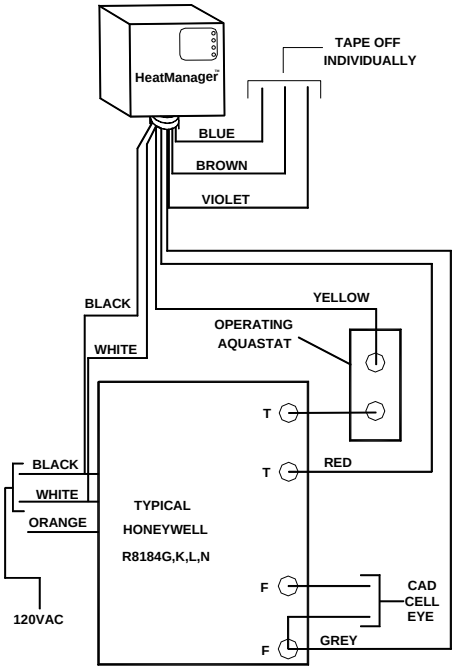
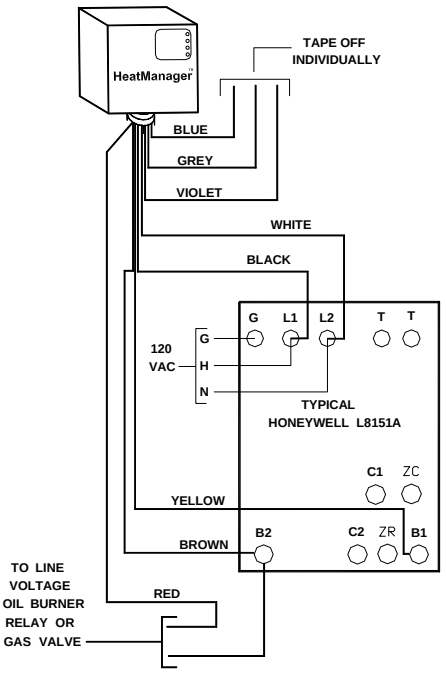
Beckett *HeatManager*™

RESIDENTIAL HOT-WATER (BOILER) HEATING SYSTEM ECONOMIZER







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.