161401 SUBURBAN DIGITAL THERMOSTAT
INSTALLATION AND OPERATION INSTRUCTION
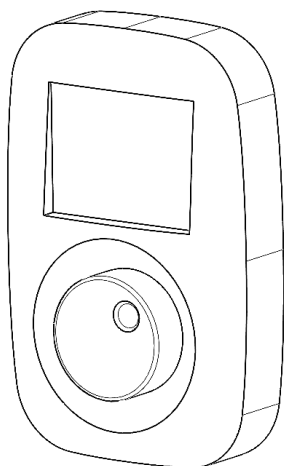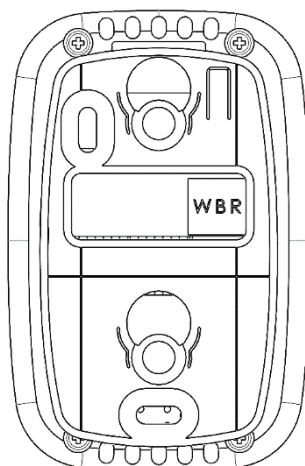

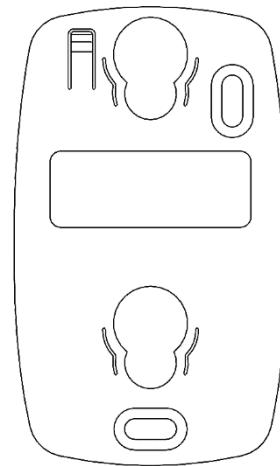**FIGURE 1 - FRONT**

FIGURE 2 - REAR

FIGURE 3 - MOUNTING PLATE

The 161401 Suburban Digital Thermostat is suitable as a temperature control for any RV furnace requiring a 12VDC control circuit input that does not exceed 2 amps.

WARNING

This appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure they can use the appliance safely.

To prevent electrical shock and/or equipment damage, disconnect electrical power to the system at the main fuse or circuit breaker until installation is complete.

Thermostat installation and all components of the system shall conform to the NEC code.

CAUTION

This thermostat should be installed by trained technicians only. Adhere to all local and national codes and ordinances.

Take care when securing and routing wires so they do not short to adjacent terminals or rear of thermostat. Personal injury and/or property damage may occur.

FEATURES

- The thermostat wiring is factory installed by the OEM (Original Equipment Manufacturer). Suburban suggests the thermostat wiring be 20 gauge. The thermostat is intended for use with a 12VDC control circuit that does not exceed 2 amps.

- The thermostat is equipped with a self-resetting PTC fuse. The fuse is designed to "open" if the circuit is mis-wired or if there is a short in the system. If the PTC fuse continues to "open", the fault must be located and corrected.

- The thermostat includes a standard mounting plate. Fastening hardware will need to be supplied by the installer.

THERMOSTAT LOCATION

The thermostat is a sensitive electronic instrument. For accurate temperature control and comfort, the following should be considered:

1. Locate thermostat on an inside wall 5' above the floor. Select a dry area with good circulation.

2. Do not install the thermostat with unusual heating conditions such as direct sunlight, near heat producing appliances (TV, radio, wall, lamp, etc.) a furnace supply register or air conditioner supply register.

3. The thermostat must be installed in a vertical orientation.

INSTALLATION

1. Place thermostat mounting plate (**FIGURE 3**) against the wall where thermostat will be mounted orienting it as shown.

2. Affix mounting plate to wall using (2) #6 pan head screws (not provided) using wall anchors if appropriate.

3. Connect appliance thermostat wiring to the thermostat. Refer to section "Wire Labeling and Connectors" in this manual for details.

4. After thermostat wiring is complete place thermostat on mounting plate and gently slide thermostat down to lock onto mounting plate.

5. Apply 12VDC power to thermostat.

Refer to the operation guide for thermostat display information and operation.

WIRE LABELING AND CONNECTORS

Labeling of thermostat terminals can be found on the rear of the thermostat (**FIGURE 2**).

LABEL	DEFINITION
W	Signal Output (+12VDC)
B	Ground
R	Power Input (+12VDC)

- The connectors of the thermostat can accept 18 - 24 AWG solid or stranded wire. To insert a wire, strip wire to the appropriate length (5/16"). The strip length can be checked by using the strip gauge on the back of the thermostat. Press the stripped wire into the connector until the initial resistance is overcome. Lightly pull on the wire to ensure the connection is secure.
- To remove a wire, press down on the connector's tab with a screwdriver and pull wire out of terminal. It will not take much force to pull the wire to remove it.
- If the thermostat had wires previously inserted into one of the connectors, it is recommended to use the same gauge wire in that position or a larger (diameter) gauge wire.
- Upon powering the thermostat, the display will show the mode set to "OFF", the current temperatures, and temperature scale (default is set to °F for Fahrenheit)
- To set the mode, press the knob, the display will not show the mode section with the currently selected mode blinking. Rotate the knob to select "HEAT". Press knob to accept.
- The display will now show mode and state (if applicable), the current temperature in the selected temperature units, and the set point temperature (when in "HEAT" mode).
- When the thermostat returns to this screen, it will check to see if any outputs need to be enabled or disabled and performs those actions.

OPERATION

The thermostat screen has a black background with a white LCD display. A rotary knob (to switch between modes and temperature settings) with a push button feature to select desired setting.

THERMOSTAT DISPLAY

- Current Temperature - Room temperature at the thermostat location
- Temperature Scale - Temperature Units of measure. Options: °F (Fahrenheit) or °C (Celsius).
- Temperature Set Point - Displays the user selected room temperature.
- State - Displays when heat is currently running.
- Mode - Displays the user selected option.
- Knob - Rotate the knob to scroll for access to other use selected options.
- Rotate the knob clockwise to increase temperature setting and counterclockwise to decrease temperature setting. (All other settings will not be displayed during temperature selection).
- Press knob to immediately accept any setting changes.

SET POINT

To select a set point, the thermostat must be in "HEAT" mode. Once a setting has been selected and the set point temperature is visible, rotate the knob. The display will now blink the set point temperature and adjust it according to the rotation direction (clockwise to increase and counterclockwise to decrease set point). When the desired set point is displayed, press the knob. The display will revert to the previously displayed information with the new set point. Once the

thermostat returns to this screen, it will energize the needed appliance to satisfy the new settings.

TEMPERATURE SCALE

The thermostat can display temperatures in either Fahrenheit or Celsius. To change the temperature scale, press and hold the knob for 4 seconds until the display changes. The display will show the current temperature, the set point temperature (if it was previously displayed), and the temperature scale options with the currently selected scale blinking. Rotate the knob to change the selection. Once the desired scale is blinking, press the knob to accept the changes. Upon selecting the new temperature scale, the temperature(s) displayed will update values accordingly.

RETAINED SETTINGS

Temperature set point and temperature units will be retained when the power is lost, or the thermostat is rebooted. Settings are stored automatically upon any changes made to any set point or temperature unit change. The set point temperature range may be set between 33–99°F (1–37°C). If the current temperature is below 32°F (0°C), the display will show "LO" and if the temperature is above 99°F (37°C), the display will show "HI".

SLEEP MODE

Sleep mode is automatically activated 10 seconds after the last user interaction. In sleep mode the LCD will dim, and power usage will drop. The first user interaction (rotation, knob press, or knob hold for 4 seconds) will wake the device and brighten the display.

AUTO ACCEPT

If the user was changing any settings (mode, set point, or temperature units) and the knob was not pressed to accept the new selection, the thermostat will automatically accept the new selection after 7 seconds and apply any changes.

MANUAL REBOOT

The thermostat can be manually rebooted by pressing and holding the knob for 12 seconds. When the knob is held for 4 seconds, the thermostat will go to the temperature scale selection screen, after another 4 seconds, the thermostat will begin a countdown. Once countdown reaches 0 and display turns off, the device will wait for knob to be released. Upon release of knob, thermostat will reboot.