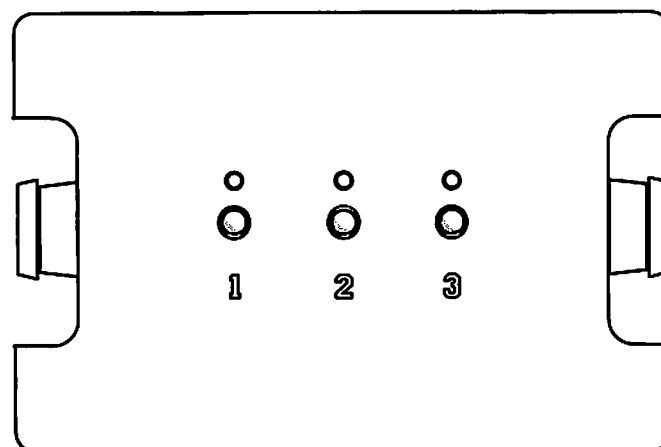


T9000 Wireless Thermostat System

Model 14800 Accessory

User Setup Guide



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INTRODUCTION

The T9000 Wireless system consists of a model 12400 battery powered thermostat (*Figure 1*) and at least one Remote Control Node or "RCN". An RCN provides an interface with the HVAC equipment under control, and communicates with its thermostat using unlicensed 900 MHz radio frequency energy. This manual primarily deals with the model 14800 Remote Control Node. For more detail concerning the model 12400 thermostat please refer to *Pub No. 12401-012210*.

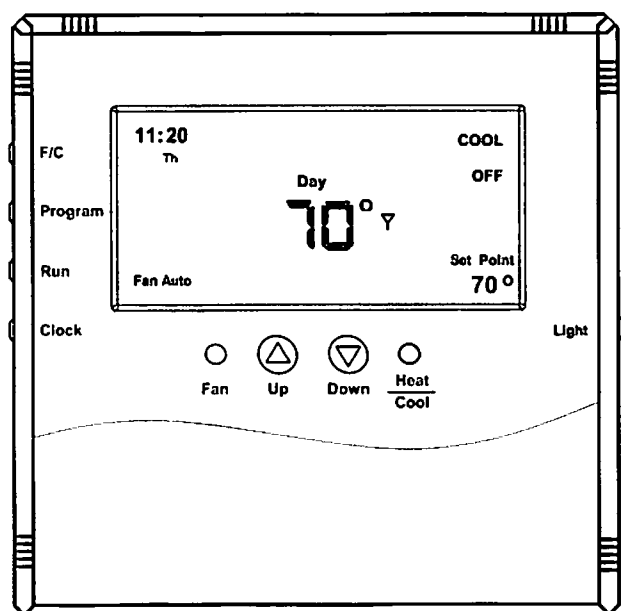


Figure 1 — Model 12400

MODEL 14800 REMOTE CONTROL NODE

The model 14800 RCN shown in Figure 2 & 3 is designed as a plug-on accessory to compatible HVAC equipment controls. Figure 2 shows the front or button side of the RCN. Buttons 1 – 3 and adjacent indicator LED's are explained later in this guide. Figure 3 shows the connector/component side of the RCN. The P1 connector mates with J3 on the HVAC controls, plastic cover snaps engage for mechanical connection. Once in place, it is ready to be linked to a model 12400 wireless thermostat.

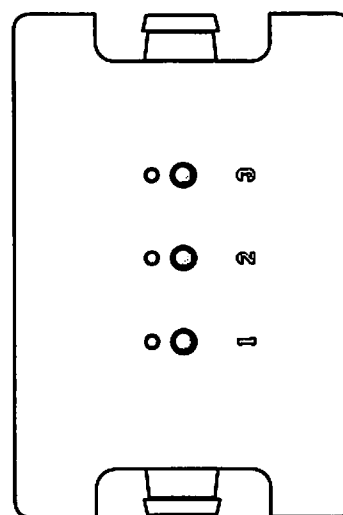


Figure 2 – Model 14800 RCN
(Button Side View)

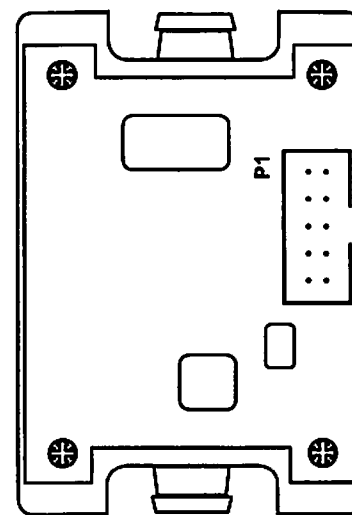


Figure 3 – Model 14800 RCN
(Connector Side View)

INSTALLING AND REMOVING NODES

A T9000 thermostat and Remote Control Node will not operate as a system until they are linked together through the installation process. The linking process binds one or more control nodes to a thermostat so that they will communicate with each other as a control system. Up to eight nodes can be linked to a single thermostat. Once linked, a control node will only respond to its specific thermostat. The thermostat and RCN that have been linked will not interfere with or be affected by any other thermostat or RCN in adjacent rooms, apartments, or neighboring homes. Linking information is stored in non-volatile memory — *It is not necessary to re-link the thermostat to it's RCN(s) if the thermostat batteries are replaced or after a power outage.*

Installing Nodes

If multiple installation teams are installing and linking thermostats at the same time, coordinate the activity to avoid the possibility of installers simultaneously attempting to perform the linking process. Because this is an RF system, installers in nearby rooms where it is possible RF overlap could exist run the risk of interfering with each other. Installation and linking activity going on around a system already installed will not interfere with it.

Refer to *Figure 4* for inside thermostat button and jumper locations and functions.

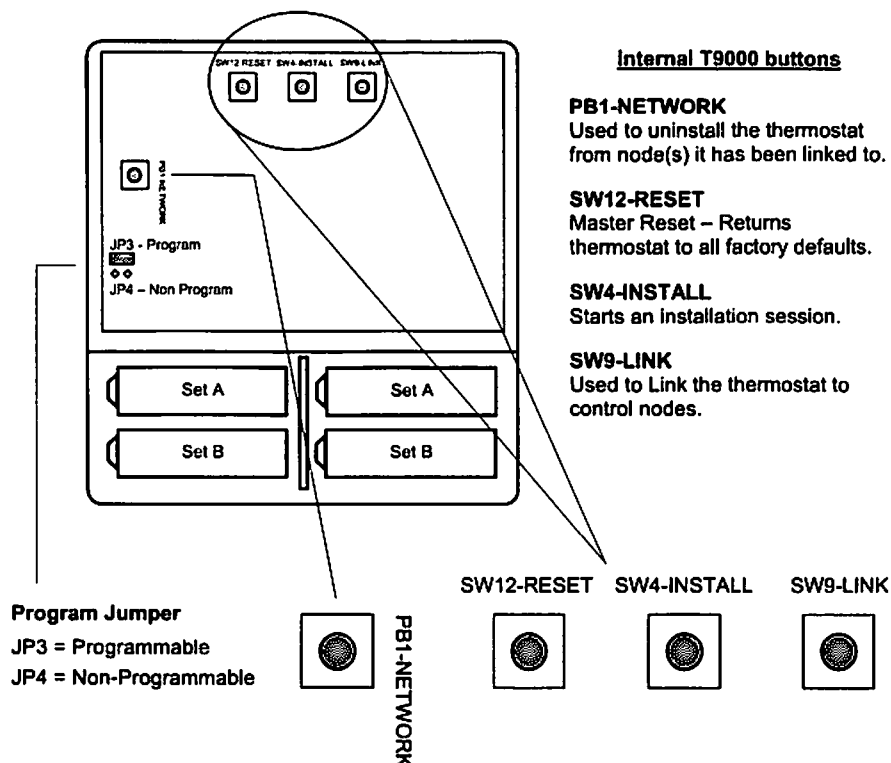


Figure 4 – Model 12400 Internal Buttons

Step 1

Press the SW4-INSTALL button inside the thermostat. The display will change to the Install Session screen shown in *Figure 5*, with the 'Install' icon blinking.

Note:

The active item ready to be changed will blink off and on.

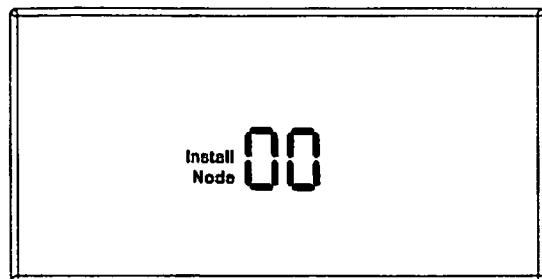


Figure 5 – Install Setup Display

Step 2

The UP button on the front of the thermostat is used to toggle between the following two choices:

- Install — Install a Node
- Remove — Uninstall ALL Nodes

(The Remove option is discussed in Pub No. 12401-012210.)

Press HEAT/COOL to select Install.

Step 3

The node number digits will now flash. Use the UP button to set number 0 – 7. If this is the first node or only node to be installed to this thermostat leave the node number at zero.

Press the HEAT/COOL button to select the node number.

Note:

When using the model 14800 in mesh network building automation system applications, giving each RCN a number is required and node numbers become a consideration effecting RCN numbering strategies. Please refer to Pub. No. RCN-NUM-070611 for additional information.

Step 4

After selecting the node number, the HEAT and COOL icon will flash in the upper right hand corner of the display (Figure 6). No

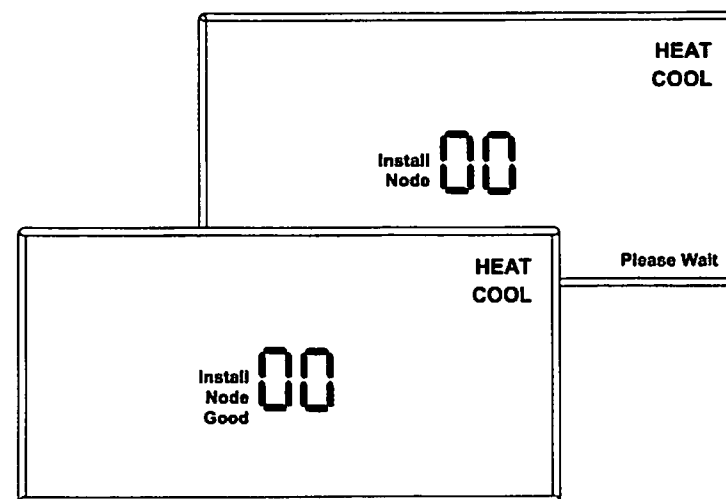


Figure 6 – Install Link Display

change is needed when installing the model 14800 RCN. Press the HEAT/COOL button.

At this point all selections have been made and nothing on the display should be blinking. You are ready to link the node.

Step 5

Press the SW9-LINK button inside the thermostat (see *Figure 4*) and within 5-seconds activate a Link Service Request on the model 14800 RCN by either applying power or pressing Push Button 1 (see *Figure 2*).

When the SW9-LINK button is pressed, the thermostat will display a "Please Wait" message (*Figure 6*) in the bottom right corner of the LCD while it searches for a node. You have several seconds to initiate a Link Service Request at the control node. The thermostat will link with the first node it hears that initiates a Link Service Request. (See *Installing Nodes on page 4.*) Once the thermostat finds its node, linking information is exchanged, the "Please Wait" message is extinguished and a "Good" message will appear (*Figure 6*).

If another node is to be installed to this thermostat, press the HEAT/COOL button. The 'Install' icon will flash, press HEAT/COOL again. Increment the node number by one using the UP button and continue with the remaining steps. When all nodes are installed press the SW4-INSTALL button to close the installation session and return to normal thermostat operation.

If you receive a "Bad" message during installation, repeat the 'Installing Nodes' process from the beginning. If the problem persists, perform a 'Thermostat Installation Reset' and repeat the install process. Refer to *Pub No. 12401-012210*.

Note:

A thermostat that does not have a node linked to it will display "Install Node" when in normal operation mode screen (Figure 7). This is the factory default condition. Once a node is linked to the thermostat, this message will no longer be displayed.

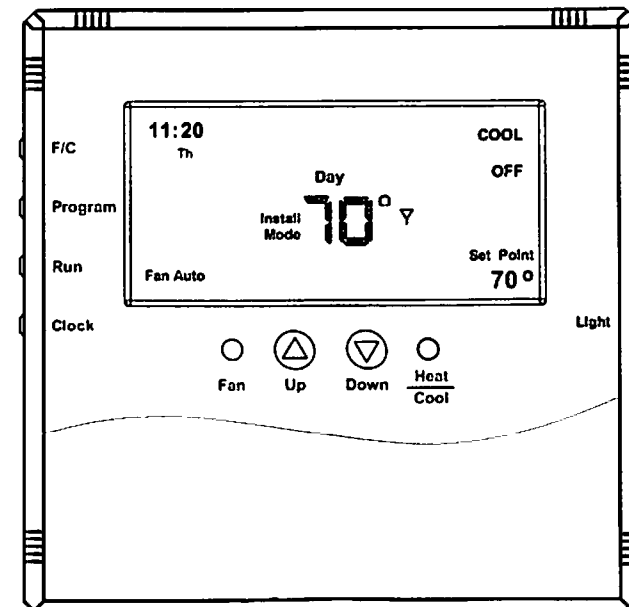


Figure 7 – Factory Default Display

MODEL 14800 CONFIGURATION

Model 14800 series Remote Control Nodes can be configured to work with the model 13200 wireless motion/occupancy sensor.

PROPERTY TABLES

- Occupancy Mode Configuration
- Occupancy Timeout Configuration

The configuration tables that follow provide operational descriptions and factory default settings. Selections are indicated through the FLASH-COUNT of LED's 2 (RED) and 3 (GREEN). (Refer to Figure 2 above.) LED 2 FLASH-COUNT indicates the property table that is active. LED 3 FLASH-COUNT indicates the operational 'property' in the selected table.

(Refer to Figure 2 for button and LED locations)

Push Button 1, 2 and 3 (PB1, 2, 3) will switch the unit into and out of the configuration mode. Holding PB1 down for approximately 7 seconds will take you into the configuration area. To leave the configuration area, simply press and release PB1. PB2 selects the configuration table that is active, indicated by the red LED 2 FLASH-COUNT.

PB3 selects the configuration property as indicated by the green LED 3 FLASH-COUNT. Pressing PB1 to leave the configuration area will save changes made. Refer to the configuration tables below for descriptions and perform the following:

1. Press and hold PB1 until LED indicator lamps 2 & 3 flash alternately. (*NOTE: At any time during the setup process PB1 can be pressed again to return to normal operation, saving changes made.*) LED 2 will flash once indicating Table 1, followed by LED 3 lamp FLASH-COUNT indicating the configuration property active in Table 1. (*NOTE: LED 2 and 3 will flash repeatedly to indicate the Table and Configuration.*) Pressing PB2 will advance to the next configuration table, indicated by the FLASH-COUNT. Pressing PB3 will advance to the next property in that table, indicated by the FLASH-COUNT of LED 3. (Refer to Tables below)
2. Press PB2 to advance to the desired table
3. Press PB3 until the FLASH-COUNT that corresponds to the desired configuration is reached. (Refer to Tables below)
4. Press PB1 to exit configuration, saving any changes you've just made.

OCCUPANCY MODE CONFIGURATION — TABLE 1

		LED 2	LED 3	
	CONFIGURATION	FLASH COUNT	FLASH COUNT	DESCRIPTION
1	OFF	1	1	System does not respond to unoccupied status condition.
2	2 °F drift from set point Contact Closure = Unoccupied	1	2	Temperature will drift 2-degrees (down in HEATING, up in COOLING) from users set point when an unoccupied condition is in effect.
3	4°F drift from set point Contact Closure = Unoccupied	1	3	Temperature will drift 4-degrees (down in HEATING, up in COOLING) from users set point when an unoccupied condition is in effect.
4	6°F drift from set point * Contact Closure = Unoccupied	1	4	Temperature will drift 6-degrees (down in HEATING, up in COOLING) from users set point when an unoccupied condition is in effect.
5	8°F drift from set point Contact Closure = Unoccupied	1	5	Temperature will drift 8-degrees (down in HEATING, up in COOLING) from users set point when an unoccupied condition is in effect.
6	10°F drift from set point Contact Closure = Unoccupied	1	6	Temperature will drift 10-degrees (down in HEATING, up in COOLING) from users set point when an unoccupied condition is in effect.

* Factory default setting.

LED 2 will flash in normal operation when the node goes into the unoccupied state.

OCCUPANCY TIMEOUT CONFIGURATION — TABLE 2

		LED 2	LED 3	
	CONFIGURATION	FLASH COUNT	FLASH COUNT	DESCRIPTION
1	2 Minute Delay *	2	1	System responds to an unoccupied status condition within 2-minutes.
2	1 Hour Delay	2	2	System responds to an unoccupied status 1-hour after condition is sensed.
3	4 Hour Delay	2	3	System responds to an unoccupied status 4-hours after condition is sensed.
4	8 Hour Delay	2	4	System responds to an unoccupied status 8-hours after condition is sensed.
5	16 Hour Delay	2	5	System responds to an unoccupied status 16-hours after condition is sensed.
6	24 Hour Delay	2	6	System responds to an unoccupied status 24-hours after condition is sensed.

* Factory default setting.

DIAGNOSTICS

PB2 and PB3 can be used during normal operation to run useful diagnostic tests as follows:

PB2 — Neighbor Count

In a mesh network it is anticipated that each node will be within RF range of one or more other nodes — a requirement for the network to function. During initial installation or otherwise troubleshooting, determining if and how many Neighbors any given node is able to access can be useful. During normal operation, PB2 can be pressed to request a Neighbor count. Upon pressing and releasing PB2, the node will check how many neighbors it can access and provide a Neighbor count indicated by a FLASH-COUNT on LED 2.

PB3 — Communication Check

The Model 14800 RCN is intended as a plug-on accessory to a compatible HVAC control. During normal operations PB3 can be pressed to check communication between the Model 14800 RCN and the HVAC controls. Upon pressing and releasing PB3, the node will initiate several messages to the HVAC control micro processor. Messages sent from the RCN will be indicated by green LED 2 flashes. Responses back from the HVAC control will be indicated by red LED 3 flashes.

For more detail concerning the model 12400 thermostat please refer to *Pub No. 12401-012210*.