3324R

INSTALLATION AND OPERATING INSTRUCTIONS
(This Remote System is to be used on the Robert/Shaw HI/LO Valve Only)

IF YOU CANNOT READ OR UNDERSTAND THESE INSTALLATION INSTRUCTIONS, DO NOT ATTEMPT TO INSTALL OR OPERATE

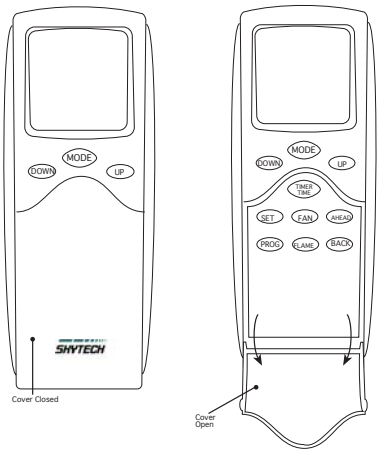
INTRODUCTION

This SKYTECH remote control system was developed to provide a safe, reliable, and user-friendly remote control system for gas heating appliance. The system can be operated thermostatically or manually from the transmitter. The system operates on radio frequencies (RF) within a 20''range using non-directional signals. The system operates one of 1,048,576 security codes that are programmed into the transmitter at the factory.

TRANSMITTER

IMPORTANT: Before operating remote control, transmitter and receiver must have matching security codes. See section: MATCHING **SECURITY CODES**

IMPORTANT: Review THERMO SAFETY SECTION under TRANSMITTER section and RECEIVER section. These signal/temperature safety features shut down the fireplace system when a potentially unsafe condition exists.

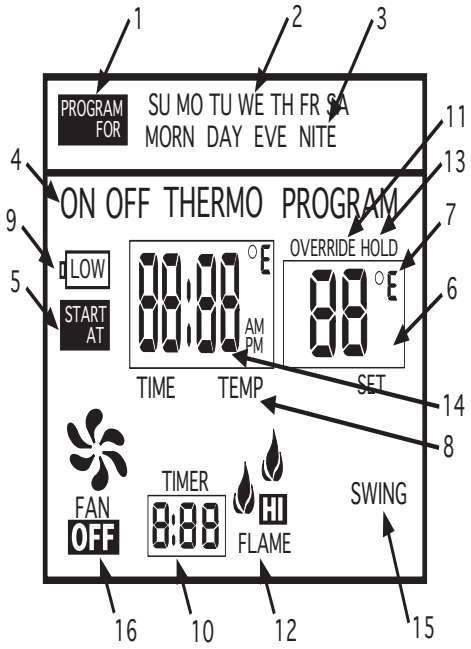


The transmitter operates on 2AAA-size 1.5V batteries. It is recommended that ALKALINE batteries always be used for longer battery life and maximum operational performance.
IMPORTANT: New or fully charged batteries are essential for proper operation of the multi-function transmitter.

Insert 2 AAA-size 1.5 V batteries into the battery compartment on the back of the transmitter, positioning the (+) and (-) ends of the batteries as indicated on the casing. When the batteries
are inserted, the screen (with similar numbers) will display.

Note: If a LOW battery icon appears on the screen, check the position of the batteries; a reversed battery will activate the LOW battery icon.

LCD DISPLAY



1. PROGRAM FOR: Flashes <u>when programming</u> days of week and periods of the day. When in normal state, only current DAY displays. When programming or in PROGRAM mode, both day and week will display.
2. DAY – Flashes when current day or day of week is being programmed.
3. PERIOD – Flashes when current period of day or period of week is being programmed.
4. MODE – Indicates operation MODE of system. ON indicates the system is on, either manually or thermostatically. OFF indicates the entire system is turned off. THERMO indicates the system will automatically cycle ON/OFF, depending on programmed SET temperature. PROGRAM – Indicates the system is operating with PROGRAMMED settings.
5. START AT – Flashes when programming the time to turn system ON.
6. SET – Indicates desired SET room temperature, when in THERMO or PROGRAM mode.
7. ^{0}F/ ^{0}C – Factory programmed in ^{0}F.(^{0}C indicates degrees in Celsius.)
8. TIME/TEMP – Displays the CURRENT room temperature. In same frame the current time will display in AM or PM. You must depress the TIME/TIMER button to display current time.
9. LOW – Battery power is low. Replace batteries within 2 weeks.
10. TIMER – When displayed indicates countdown timer in operation.
11. OVERRIDE – Displays when “programmed”” SET temperature is overridden.

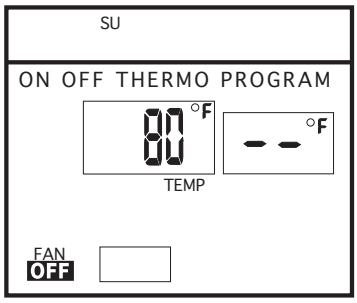
CAUTION: All wiring should be done by a qualified electrician and shall be in compliance with local codes and with the National Electric Code ANSI/NPFA No. 70-current (in the United States), or with the current CSA C22.1 Canadian Electric Code (in Canada).

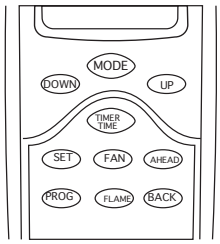
12. FLAME – Single or double flame symbol indicates burner/valve is operational.
13. HOLD – Displays when "programmed" SET temperature is overridden and will hold that temperature until cancelled or next program period change.
14. CP – Displays when CHILD PROOF "LOCK-OUT" is engaged. Pressing the UP and TIMER buttons together, engages CP.
15. SWING- Displays in SET frame when setting TEMPERATURE DIFFERENTIAL.
16. FAN – Indicates the fan is on (when fan blade displayed). OFF indicates fan is not in operation.

FUNCTIONS

To operate the system, press the MODE button on the transmitter to select the operational MODE desired.

1. ON indicates the system is on, either manually or thermostatically.
2. OFF indicates the entire system is turned off.
3. THERMO indicates the system will automatically cycle ON/OFF, depending on programmed set temperature.
4. PROGRAM indicates the system will automatically cycle ON and OFF in the programmed mode depending on the 7 day/4 period program that is in memory.

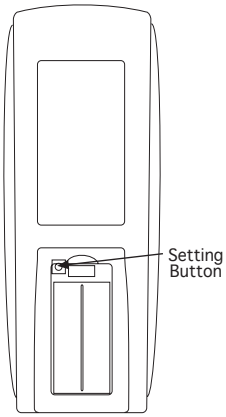




BUTTON SETTINGS

Flip down the plastic cover on the front of the transmitter to expose the "SET" buttons. The flip cover protects the SET buttons from being changed accidentally. Close the cover after completing the following settings/programming.

Flashing numbers on the display indicate the system is awaiting user input, such as using the UP and DOWN buttons to program a new setting. If no change is made to flashing digits within 15 seconds, the system will complete the procedure last programmed and reset the display to its normal state.



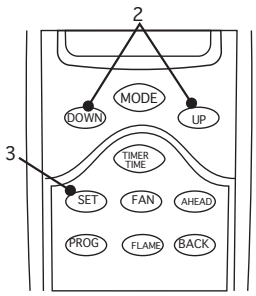
INITIAL SET-UP PROGRAMMING OF TRANSMITTER

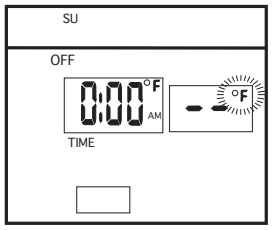
Follow the procedures below, upon FIRST USE of transmitter, setting the following program options:

1. TEMPERATURE SETTING – ^{0}F (Fahrenheit) or ^{0}C (Celsius)
2. CURRENT DAY OF WEEK – SU, MO, TU, WE, TH, FR, SA
3. CURRENT TIME OF DAY – Hours and minutes
4. FLAME CONTROLLER – HI/LO solenoid

NOTE: Factory settings are NG, ^{0}F, and HI/LO FLAME CONTROL. On this 3324R system do not change.

To program settings, first remove the battery cover on the back of the transmitter. If you have not already installed the 2-AAA batteries, this would be a good time to do so. Note the small push button at the upper left side of the battery compartment. This is the button used to perform the initial transmitter programming. You will need to use a paper clip or sharp end of a pencil to depress this button.

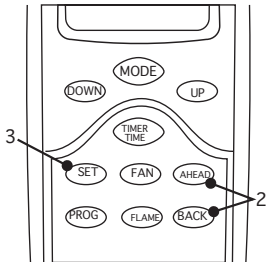


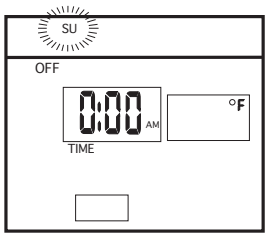


CHANGING THE TEMPERATURE SCALE

1. After pressing the small button in the battery compartment to start the set up process the ^{0}F symbol will begin flashing on the LCD screen.
2. To change ^{0}F to ^{0}C, press the UP or DOWN button on the front of the transmitter.
3. After setting/confirming the preferred temperature SCALE, press the SET button on the front of the transmitter.

NOTE: You will need to press the SET button, confirming ^{0}F if you want the temperature readings to be in ^{0}F.

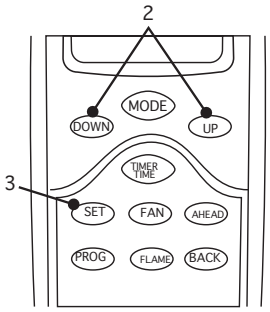


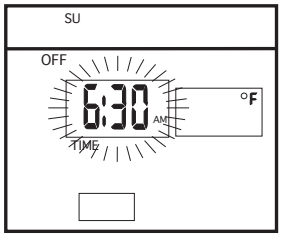


SETTING THE CURRENT DAY OF THE WEEK

1. Following Step 3 on the previous page, the symbol SU will begin flashing on the LCD screen.
2. To change to the CURRENT day of the week, press the AHEAD or BACK button on the front of the transmitter.
3. After setting/confirming the current Day of the week, press the SET button on the front of the transmitter.

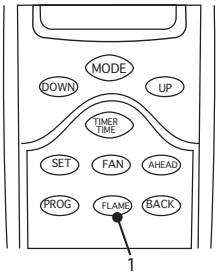
NOTE: You will need to press the SET button, confirming SU, if that is the current day.

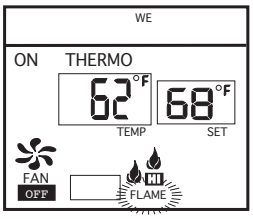




SETTING THE CURRENT HOUR AND MINUTES

1. Following Step 3 above, the HOUR digits will begin flashing in the TIME frame on the LCD screen.
2. To set the current HOUR, press the UP or DOWN button setting the HOUR for the corresponding AM/PM time period.
3. After setting the current HOUR, press the SET button on the front of the transmitter, and the MINUTE digits will begin flashing on the LCD screen
4. To set the current MINUTES, press the UP or DOWN button setting the correct MINUTES.
5. After setting the HOURS and MINUTES, press the SET button on the front of the transmitter





SETTING THE FLAME CONTROLLER

1. Following step 5 above, two flames, words HI FLAME will begin flashing on the LCD screen.
2. On this 3324R system press SET this will set the flame controller to HI/LO operation.
3. You can push the UP or DOWN button setting HI/LO or MODULATION on the LCD screen.
4. NOTE: The 3324R solenoid will only work when the flame controller is set to HI/LO.

The initial set-up/programming of the transmitters is now complete. Be sure the slide-on battery cover is reinstalled and proceed to the next step. The LCD screen will now display in its normal state.

PROGRAM OPERATION OF REMOTE CONTROL

BUILT –IN FACTORY PROGRAM

DAY	PERIOD	TIME/TEMP
All 7 Days Factory-Programmed	MORN	6:00 AM 70°
	DAY	8:30 AM 60°
	EVE	3:00 PM 70°
	NIGHT	11:00 PM 63°

The transmitter has a factory program built in. Each day has been broken into four periods and each period has its own starting time and temperature. A chart of the built- in programs is at the left.

You may change any of the factory settings by following the procedures below. Should you wish to return to the factory program, follow the procedures under heading PROGRAM REVIEW or PROGRAM CANCELLATION depending on which process you select.

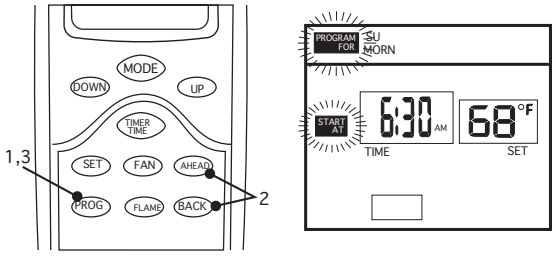
PROGRAMMING DAYS/PERIOD OF DAY/SET TEMPERATURES

	PERIOD				
DAY	MORN	DAY	EVE	NITE	TIME/TEMP
SU					
MO					
TU					
WE					
TH					
FR					
SAT					

PROGRAMMING THE TRANSMITTER

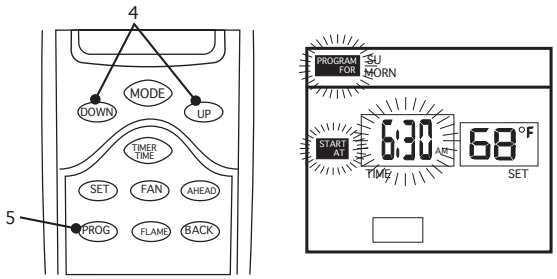
The user may change the built-in time and temperature programs to suit their personal schedule. Each day is divided into four periods: MORNING, DAY, EVENING, AND NIGHT. A blank programming chart is provided to the left to record your customized time and temperature settings.

If desired, you may change a single day or all seven days that have the built-in factory program. To change one or all seven days, complete the following steps:

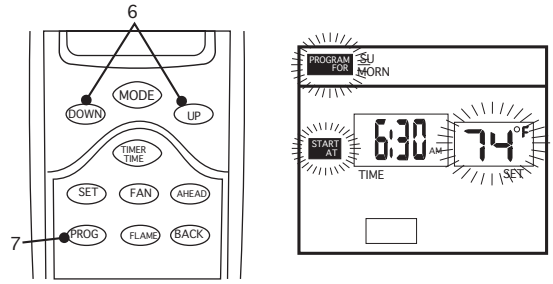


1. Press the PROG button for 4 seconds. The shaded boxes on the LCD screen with the words PROGRAM FOR and START AT will begin to flash. The current DAY, PERIOD, TIME and SET temperature of the BUILT-IN FACTORY PROGRAM will also be displayed.

NOTE: If the above settings were not previously completed during the initial SET-UP and PROGRAMMING procedure, then the LCD screen will
display SU, MORN, TIME and SET temperature digits. You must go back and perform the initial set-up procedure or the remote will not operate properly in the PROGRAM mode.

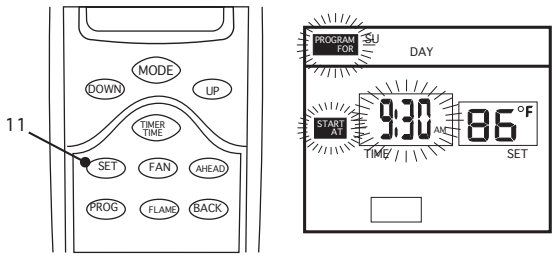


2. To program the DAY and PERIOD OF DAY, press the AHEAD or BACK buttons to display the DAY and PERIOD you wish to program.
3. When the DAY and PERIOD being programmed displays, then press the PROG button and the TIME will flash on the LCD screen.
4. To program the START TIME, press the UP or DOWN button. Programmed start time settings are in 15 minute segments. The new set time will display on the LCD screen.
5. When the desired START TIME displays, press the PROG button and the SET TEMPERATURE will flash on the LCD screen.
6. To program the SET TEMPERATURE, press the UP or DOWN button.
7. When the desired SET TEMPERATURE displays, then press the PROG button.
8. After pressing the PROG button in step 7, the next PERIOD of the same or next day will display on the LCD screen.
9. To program the next PERIOD follow steps 3, 4, 5, 6 and 7.
10. Continue to follow steps 3, 4, 5, 6 and 7 until all 7 days and the 4 time periods in each day are programmed.
11. Once ALL the programming has been completed, then press the SET button. The programming data that has been entered will now over-ride the factory built-in program and operate your remote control system.



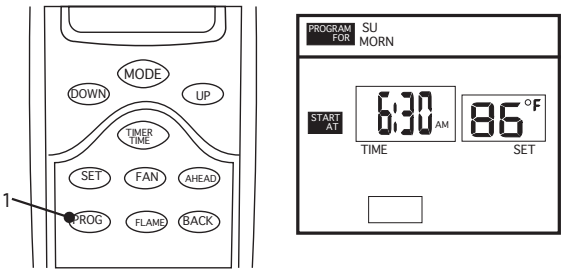
PROGRAMMING NOTE:

Once in the programming process and you want to advance the programming procedure, you may bypass some of the DAYS or PERIODS OF DAY, by pushing the AHEAD or BACK buttons. This allows you to eliminate the need to enter the TIME and TEMPERATURE for each DAY/PERIOD speeding up the programming process by skipping some of the ”software prompts”. Once the LCD screen displays a DAY/PERIOD you want to reprogram, press the PROG button and follow the programming steps outlined above.



PROGRAM REVIEW

If you want to review the settings for either the FACTORY program and/or your CUSTOMIZED program, you may do so by pressing the PROG button for one second. To review other settings, press the PROG button allowing one second between each press of the PROG button. If you press the PROG button for 4 seconds, then you go into the programming process. Press the SET button should you hold the PROG button too long.

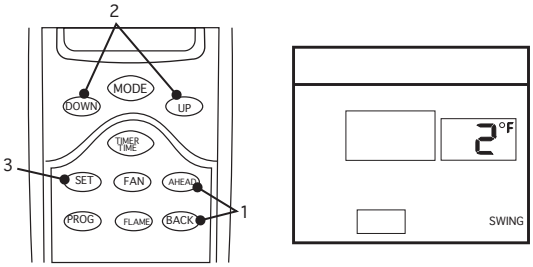


PROGRAM CANCELLATION

Should you want to cancel the CUSTOMIZED program that you have entered and return to the FACTORY program, you may do so. To cancel a CUSTOMIZED program:

1. Press the SET button to make sure the LCD screen is in normal state.
2. Then press and hold the PROG button and, at the same time, press the SET button for a period of 10 seconds.
3. The customized programs will be cancelled when the display icons/numbers flash with some icons disappearing. The LCD screen will begin flashing PROGRAM FOR, START AT, and the digits in the TIME and SET frames will begin flashing. This confirms CUSTOMIZED programs have been cancelled.
4. Push the SET button to return LCD screen to normal state or wait 10 seconds and LCD screen will return to normal state automatically.

ADDITIONAL PROGRAMMING OPTIONS



SWING (TEMPERATURE DIFERENTIAL)

The thermo-transmitter operates the fireplace system whenever the ROOM TEMPERATURE varies a certain number of degrees from the SET TEMPERATURE. This variation is called the "SWING" or TEMPERATURE DIFFERENTIAL. The normal operating cycle of a fireplace system may be 2-4 times per hour depending on how well the room or home is insulated from the cold or drafts. A smaller "swing number" increases the number of cycles so the room temperature is more constant. A larger "swing number" decreases the number of cycles, which saves energy, in most cases. The factory setting for the "swing number" is 2. This represents a temperature variation of +/- 2^0 F (1^0 C) between SET temperature and ROOM temperature which determines when the fireplace will be activated. The "SWING" number values are:
1= +/- 1^0 F ($.5^0$ C), 2= +/- 2^0 F (1^0 C), 3 = +/-3^0 F (1.6^0 C).

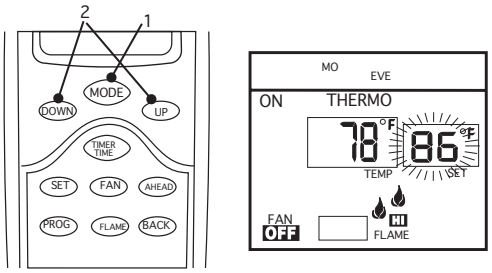
MANUAL CHECK OF "SWING" OR TEMPERATURE DIFFERENTIAL

The operation of the factory set "THERMO SWING" can be checked by adjusting the SET TEMP 2^0 F above or below the room temperature. This will cause the system to turn ON or OFF. Normally the system will only respond to temperature changes every two minutes. Manually changing the SET temperature will activate the system in less than 10 seconds. If the "SWING" is changed, then a new room temperature differential will respond. Factory setting of SWING temperature is 2^0 F.

1. To change the temperature "SWING" setting (1-3), press the AHEAD + BACK buttons simultaneously to display the current "SWING" setting in the SET TEMP frame. The word SWING will display on the LCD screen.
2. Press the UP or DOWN button to change the temperature differential or "SWING" (1-3). See above for 1-3 "SWING" temperature values.
3. To store the "swing number", press the SET button or allow 15 seconds to lapse, and the new "swing number" will be automatically programmed.

OPERATING INSTRUCTIONS

THERMO OPERATION – (Systems operates thermostatically based on SET TEMP setting, ONLY)



SETTING DESIRED ROOM TEMPERATURE

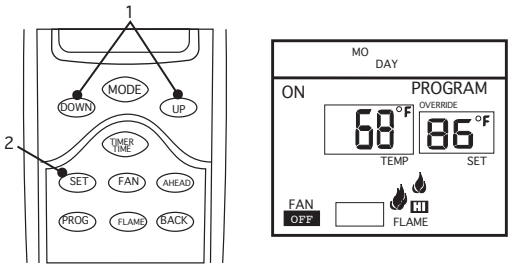
This remote control system can be thermostatically controlled when the transmitter is in the THERMO mode (THERMO must be displayed on the screen).

1. To set the DESIRED room temperature, press the MODE button to place the transmitter into THERMO mode. THERMO ON or OFF will display.

2. Then press the UP or DOWN button to select the DESIRED room temperature. The highest SET temperature is 99^0 F (32^0 C). The lowest SET temperature is 45^0 F (6^0 C).
3. The TRANSMITTER will "sense" the room temperature every two minutes automatically turning the fireplace ON or OFF thermostatically.

MANUAL CHECK OF THERMO OPERATION

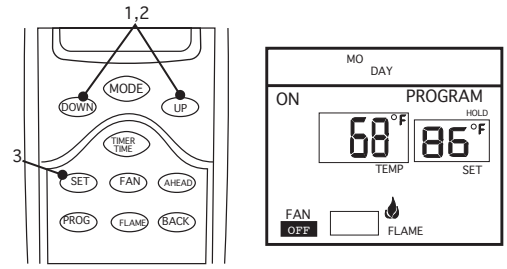
The operation of the Thermo setting can be checked on demand by adjusting the SET temperature 2^0 F above or below the room temperature, which will cause the system to turn ON or OFF, respectively. Normally, however, the system will only respond to temperature changes every two minutes. NOTE: if "SWING" number has been changed, then activation will occur at the new "SWING" setting.



TEMPERATURE OVERRIDE – (Operates only in PROGRAM mode)

The user may change the current SET temperature without changing the programs stored in the transmitter's memory. The OVERRIDE feature will be automatically cancelled at the start of the next PROGRAM PERIOD.

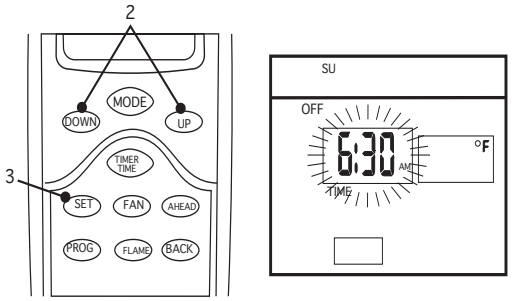
1. To change current SET TEMP, press the UP or DOWN key. (Setting will be cancelled automatically when next program period begins.) The word OVERRIDE will appear over the SET frame on the LCD.
2. To cancel temperature OVERRIDE, press SET button.



TEMPERATURE HOLD – (Operates only in PROGRAM mode.)

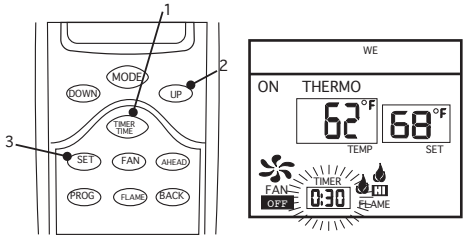
The user may override the SET temperature during any period, adjusting the SET temperature to a CONSTANT new SET/HOLD temperature.

1. Press the UP or DOWN button to change the SET temperature to the level desired. The word OVERRIDE will appear in SET frame on the LCD.
2. To HOLD the new temperature at a CONSTANT setting, push the UP and DOWN buttons TOGETHER to activate the HOLD function. The word HOLD will appear over the SET frame and the word OVERRIDE will disappear.
3. To cancel OVERRIDE or HOLD, press the SET button or HOLD will last until the next programmed period change.



TIME OF DAY DISPLAY

1. To check the current TIME of day, press the TIMER/TIME button on the transmitter for less than 1 second. The current TIME of day will appear in the TIME/TEMP frame replacing the temperature reading the TEMPERATURE will reappear in 15 seconds.
2. press the SET button to cancel the display of the time.



SETTING THE COUNTDOWN TIMER

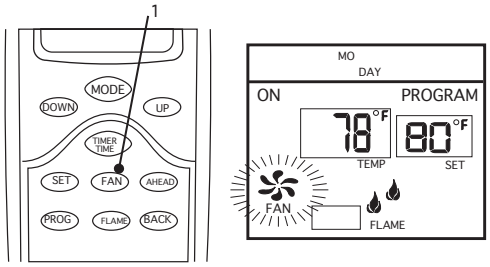
This remote control can operate with a built-in, countdown timer when the transmitter is in the ON or THERMO mode (THERMO or ON must be displayed on the LCD screen). DOES NOT operate in PROGRAM MODE as times are pre-programmed into the transmitter.

1. Press the TIMER/TIME button on the transmitter for more than 2 seconds. The word TIMER and 0:15 flash on the LCD screen.
2. Press the UP or DOWN button on the transmitter to begin advancing through each of the countdown time options. Available

countdown times are 15 min., 30 min, 45 min, 1 hr, 1 hr 30 min, 2 hr, 2 hr 30 min, and each additional half hour up to nine hours.

3. To set the TIMER press the SET button on the transmitter. If the system is ON, it will remain on until the "timer time" has expired. If the system is in the THERMO mode, it will turn ON and OFF as the room temperature requires until the "timer time" has expired.
4. To cancel the TIMER operation, press the TIMER/TIME button for more than 2 seconds.

OPERATIONAL NOTE: When the TIMER is used in the THERMO mode, the THERMO operation will discontinue only when the "countdown time" has expired.

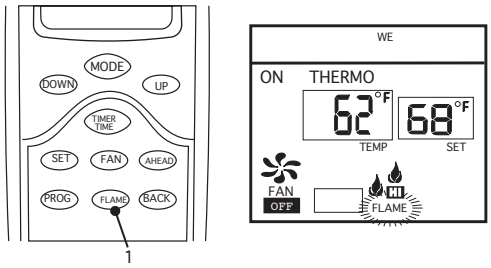


OPERATING A FAN - (Operates only in ON/THERMO/PROGRAM MODES)

This remote control system has the capability of controlling the ON/OFF operation of a 110 VAC fan or blower system that may be included with your gas appliance. It only operates the ON/OFF function for the fan/blower and cannot adjust a variable speed controller. When properly connected to the remote receiver, the fan will only go ON or OFF by remote. You will still be able to vary the speed of the fan/blower at the appliance, but not remotely with the transmitter.

1. To turn the fan ON, press the Fan button on the transmitter. When the fan is operating, the fan blade will display. Press the FAN button to turn fan OFF. When the fan is off, OFF will display on the LCD screen below the word FAN.
2. When the transmitter is in the THERMO or PROGRAM modes and the FAN button is pressed to ON, the FAN will operate ON and OFF as the cycling of the THERMO or PROGRAM occurs. IF the FAN is in the OFF position, the fan will not operate until activated by the FAN button.

ADJUSTING THE FLAME HEIGHT



ame height from LO to HI with a single press of the FLAME button. The word een when HI flame is operated.

OPERATING THE HI/LO SOLENOID

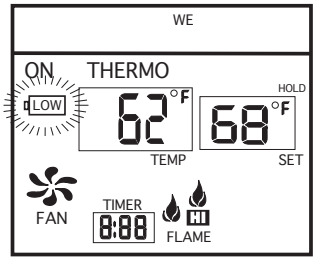
To operate the HI/LO control, from the transmitter, ON/THERMO ON or PROGRAM ON must be displayed on the LCD screen. NOTE User must have FLAME CONTROLLER set to HI/LO. Review the procedure SETTING THE FLAME CONTROLLER under INITIAL SET-UP PROGRAMMING OF TRANSMITTER in earlier section.

1. Press the FLAME button on the transmitter to change flame height from LO to HI. You will note the word HI and a 2nd FLAME icon will appear on the LCD screen. Press again to change from HI to LO.

The HI/LO flame controller is powered by a 24 VDC transformer. The orange wires from the FLAME terminals on the receiver are attached to the terminals on the valve's FLAME CONTROLLER.

NOTE: How much the flame height changes, visually, depends on the BTU rating of the appliance. For example, the flame of a 30,000 BTU rated appliance will probably appear to change less than that of a 50,000 BTU rated appliance. This is a normal operating condition.

NOTE: During the first 5 seconds of operation, the flame height will operate at the highest setting to provide the most efficient ignition for the appliance. It will then adjust to the previous setting.



LOW/BATTERY INDICATOR

The word LOW outlined by a battery on the left side of the LCD screen will appear when battery power has dropped significantly. At this time, approximately two weeks of battery power remains until the transmitter may experience partial or complete loss of functions. NOTE: A reversed battery will activate the LOW battery icon.

TRANSMITTER

OPERATING SAFETY MONITORS: SYSTEMS SHUTDOWN

The SKYTECH remote control operates on RF (radio frequency) signals that are sent by the TRANSMITTER (remote) to the RECEIVER that operates the appliance. It is recommended that the TRANSMITTER always be located within the 20 foot operating range, preferably in the same room in which the appliance is located.

THERMO UPDATING FEATURE –TRANSMITTER – (T/S –TX)

This SKYTECH remote control has a THERMO UPDATING Feature built into its software. The THERMO UPDATING Feature operates in the following manner, but only in the THERMO and PROGRAM MODES:

The transmitter normally reads the ROOM temperature every 2 minutes checking the ROOM temperature against the SET temperature it sends a signal to the receiver.

SKYTECH ORIGINAL DESIGN

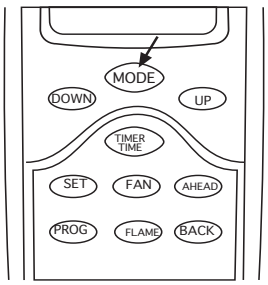
COMMUNICATION – SAFETY – TRANSMITTER – (C/S – TX)

This SKYTECH series remote control has a COMMUNICATION –SAFETY function built into its software. It provides an extra margin of safety when the TRANSMITTER is out of the normal 20 foot operating range of the receiver.

The COMMUNICATION – SAFETY feature operates in the following manner, in all OPERATING MODES – ON/THERMO/TIMER/PROGRAM.

At all times and in all OPERATING MODES, the transmitter sends an RF signal every fifteen (15) minutes, to the receiver, indicating that the transmitter is within the normal operating range of 20 feet. Should the receiver NOT receive a transmitter signal every 15 minutes, the IC software, in the RECEIVER< will begin a 2-HOUR (120-minute) countdown timing function. If during this 2-hour period, the receiver does not receive a signal from the transmitter, the receiver will shut down the fireplace being controlled by the receiver. The RECEIVER will then emit a series of rapid “beeps” for a period of 10 seconds. Then after 10 seconds of rapid beeping, the RECEIVER will continue to emit a single “beep” every 4 seconds until a transmitter signal is again received. The intermittent 4 second beeping will go on for as long as the receiver’s batteries last which could be in excess of one year.

To “reset” the RECEIVER and operate the fireplace system, you must press the MODE button on the transmitter. The word ON must display on the LCD screen. By turning the system to ON, the COMMUNICATION -SAFETY operation is overridden and the system will return to normal operation depending on the MODE selected at the transmitter. The COMMUNICATION – SAFETY feature will reactivate should the transmitter be taken out of the normal operating range or should the transmitter’s batteries fail or be removed.



The COMMUNICATION –SAFETY feature operates in all OPERATING MODES and can be considered a back-up to the THERMO-SAFETY feature previously described.

WARNING

This SKYTECH remote control system must be installed exactly as outlined in these instructions. Read all instructions completely before attempting installation. Follow instructions carefully during installation. Any modification of the SKYTECH remote control or any of its components will void the warranty and may pose a fire hazard.

Do not connect any gas valve or electronic module directly to 110-120 VAC power. Consult gas appliance manufacturer's instructions and wiring schematics for proper placement of all wires. All electronic modules are to be wired to manufacturer's specifications.

The diagrams that follow are for illustration purposes only. Follow instructions from manufacturer of gas valve and/ or electronic module for correct wiring procedures. Improper installation of electric components can cause damage to electronic module, gas valve, and remote receiver.

WIRING INSTRUCTIONS

IMPORTANT: THE REMOTE RECEIVER SHOULD BE POSITIONED WHERE AMBIENT TEMPERATURES INSIDE THE RECEIVER DO NOT EXCEED 130 DEGREES F.

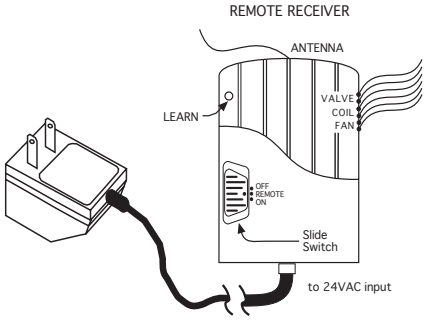
CAUTION: All wiring should be done by a qualified electrician and shall be in compliance with local codes and the National Electric Code ANSI/NFPA No. 70-current CSA C22.1 Canadian Code 9 (in Canada).

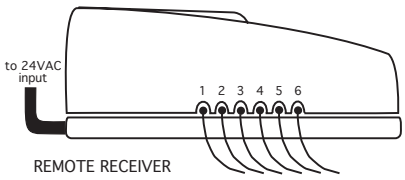
The remote receiver is powered by 24VAC, supplied by a 110VAC/24VAC step-down transformer that may be supplied by the fireplace manufacturer. The remote receiver can be positioned under the firebox in the control compartment of the fireplace if ambient temperatures do not exceed 120 degree F. The remote receiver accepts commands from the transmitter and is capable of remotely operating up to three separate circuit5 functions. The system is designed to control the following circuits.

WIRE COLORS

Gas Valve	- Millivolt or electronic ignition	Red
Flame Controller	-24 VDC HI/LO solenoid or modulation coil	Orange
Fan	-ON/OFF dry contact circuit	Blue

NOTE: Note remote receiver will only respond to the transmitter when the 3-position slide button on the remote receiver is in the REMOTE position. IF the system does not respond to the transmitter on initial use, see section, MATCHING SECURITY CODES.



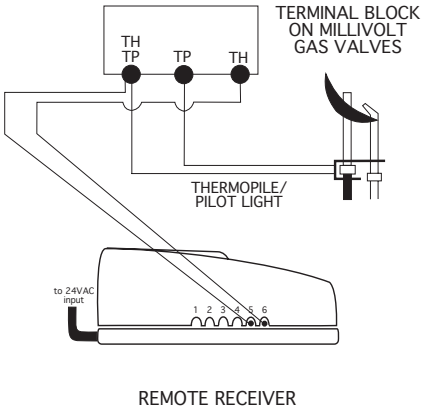


Function Controlled

Wires 1 & 2	to 110 VAC Fan switch –BLUE wires with female connectors.
Wires 3& 4	to 24 VDC HI/LO modulating coil flame controller- ORANGE wires with female connectors.
Wires 5 & 6	to TH terminals on millivolt valve –RED wires with female connectors.

WIRING MILLIVOLT VALVES

Connect the two red 18-gauge wires from the remote receiver to the TH and TH/TP terminals on the terminal block on the millivolt gas valve. Normally these can be connected to either TH terminal on the gas valve.

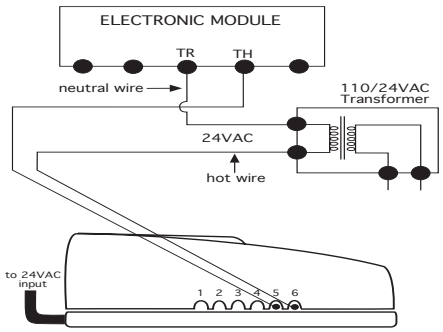


NOTE

Some gas valves are polarized. If the remote receiver's ON/REMOTE/OFF functions don't operate the gas valve, reverse the receiver wires at the TH terminals on the gas valve terminal block.

Operation of the remote receiver is similar to that of a thermostat in that both turn the gas valve on and off. A thermostat's input signals are from different temperatures. The remote receiver's input signals are from the transmitter, either manually or thermally.

WIRING ELECTRONIC SPARK IGNITION



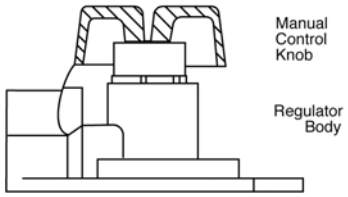
REMOTE RECEIVER

The remote receiver can be connected to a 24 VAC transformer that operates an electronic ignition module, using the same VALVE terminals on the remote receiver to complete the 24 VAC circuit to the electronic ignition module.

Connect the neutral wire from the 24 VAC transformer to the TR (transformer) terminal on the ELECTRONIC IGNITION MODULE. Connect the hot wire from the 24 VAC transformer to either VALVE terminal on the remote receiver. Connect another same-gauge wire (not included) between the other VALVE terminal on the remote receiver to the TH (thermostat) terminal on the ELECTRONIC IGNITION MODULE.

INSTALLATION: 24 Volt DC HI/LOW SOLENOID

Notice: Please leave these instructions for the consumer and retain for future reference.

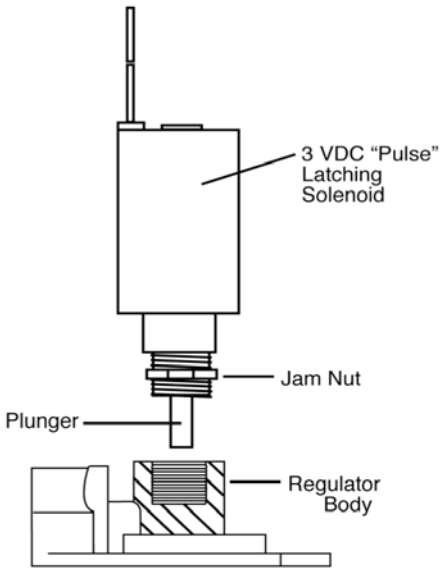


Variable Regulator
W/ Manual Control
(for RS7000 Valve)

Preparing the RS7000 valve to install the HI/LOW solenoid

5. Remove the phillips screw at the center of the HI/LOW manual control knob that holds the HI/LOW manual control knob on the valve regulator.
6. Remove the manual control knob from the regulator shaft.
7. After removing the screw and manual control knob from the valve regulator you will need to use a 7/16" wrench to remove the regulator shaft from the regulator. (Retain all parts to reinstall at a later date, (If removal of the solenoid is required)

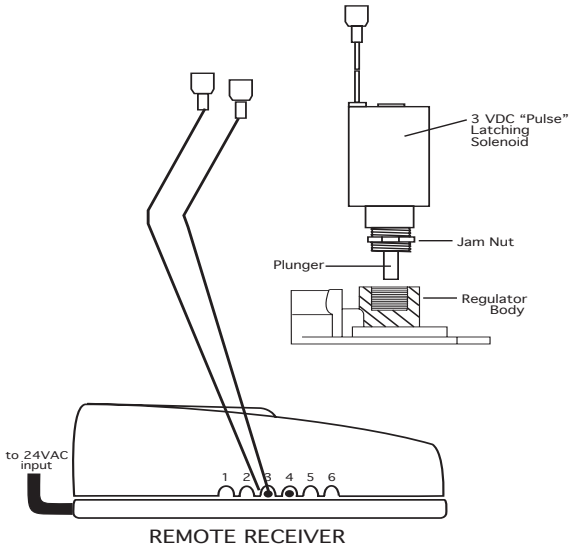
Installing and connecting the HI/LOW solenoid.



8. After removing the solenoid from the plastic bag, You will need check the rating plate of the gas appliance to determine if the valve that the solenoid is being installed on is Natural or Propane Gas. You will find the Blue (Natural Gas) plunger installed in the solenoid with a small piece of tape holding it in place for shipping. The Red (Propane Gas) plunger is taped to the side of the solenoid. **(Use caution: these plungers are very small.** After selecting the correct plunger (Red or Blue) insert the plunger into the small hole on the threaded end on the solenoid. **(Use caution while handling solenoid that plunger does not fall out and get lost)**
9. Thread (Screw) the solenoid with the selected (Red or Blue) plunger into the regulator where the regulator shaft was removed from. **(Use caution when threading the solenoid into the regulator not to cross thread due to the fact that the regulator is aluminum)** Thread (Screw) the solenoid all the way in until the solenoid reaches the bottom (Finger tight). **Do not over tighten solenoid)**
10. Hold the solenoid and tighten the jam nut down to hold the solenoid in place.
11. After solenoid is mounted on the valve.
12. Refer to the **WIRING FLAME CONTROLLER** section of this Sky 3324R remote control installation instructions.
    After wire connections have been completed, check the operation of the remote ON/OFF and flame HI/LOW.

Caution: After any work is preformed on a control valve, always check for gas leaks with soapy water.

WIRING THE FLAME CONTROLLER



Connect the two ORANGE 18-gauge wires from the remote receiver to the spade terminals on the flame controller. It does not matter which wire goes to the terminal. The input voltage to the flame controller has been changed from 24VAC to 24VDC within the remote.

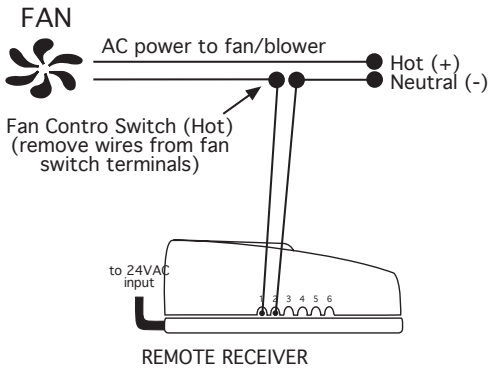
CAUTION: DO NOT ATTACH WIRES FROM THE FLAME CONTROLLER TERMINALS TO THE TERMINAL BLOCK ON THE GAS VALVE. THE FLAME CONTROLLER TERMINALS HAVE AN OUTPUT OF 24VDC AND WILL BURN OUT THE MILLIVOLT VALVE.

WIRING A FAN/BLOWER

NOTE: When connecting wires to the fan terminal, make sure the 110VAC power to the fan has been turned off!

Fireplace systems with a factory-installed fan or blower will include an ON/OFF switch leading from the power source to the fan/blower. Remove the two wires leading to the terminals on this switch and instead connect the two BLUE wires from the remote receiver to these two wires. Either wire from the remote receiver goes to either power source female wire terminal. Be sure these wires are positioned in the coolest pathway leading from the switch to the remote receiver.

This remote control system is designed to control the fan motor to either ON or OFF. It will not operate a 3-speed variable speed controller other than to turn it OFF or ON at whatever position the switch or controller is set. If your fireplace system has a 3-speed or variable speed fan and you wish to remotely control it ON/OFF, attach the two BLUE wires from the remote receiver to the "hot" power leg leading to the variable speed switch. The speed selection switch will still be operational, however, the receiver will only operate the fan/blower ON/ OFF at the current setting of the speed controller. Additional wire terminals are required to make a multi-speed fan operate, or, the power line leading to the fan switch can be spliced into, allowing operation of the multi-speed functions at the switch.



DO NO CONNECT 110VAC TO WIRES LEADING TO THE REMOTE RECEIVER

CAUTION: All wiring should be done by a qualified electrician and shall be in compliance with local codes and with the National Electric Code ANSI/NFPA No. 70- current (in the United States), or with the current CSA C22.1 Canadian Code (in Canada).

OPERATING SAFETY MONITORS – SYSTEM SHUTDOWN

THERMO- SAFETY FEATURE – RECEIVER (T/S –RX)

This SKYTECH remote control has a THERMO- SAFETY feature that is built into the system's RECEIVER. This feature is temperature- activated and provides an extra margin of safety when the RECEIVER is operating where ambient temperatures exceed 130 degrees inside the receiver case.

The THERMO-SAFETY feature, in the RECEIVER, operates in the following manner, when the fireplace is in operation.

The receiver is thermally protected from extreme heat conditions. Heat can have a negative effect on the operation of the receiver's microprocessors.

The receiver's THERMO-SAFETY operation is controlled by a "resetable" THERMISTOR that shuts down the fireplace when the ambient temperature, ***inside the receiver case***, exceeds 130 ^{0}F. This is especially important when the receiver is in the THERMO mode, and the fireplace is cycling ON and OFF, automatically. Should the homeowner be away from the home and

an extreme heat condition occurs at the receiver, (especially the battery-operated receiver), the fireplace may not be able to process the transmitter's thermal signal and the fireplace may not shut down causing a high heat condition in the home.

When the ambient temperature at the THERMISTOR, *inside the receiver case*, reaches 130 ^{0}F, the THERMISTOR will automatically shut the fireplace system down and the RECEIVER will begin emitting a series of 2 "beeps", every 4 seconds. When the ambient temperature, at the RECEIVER, drops between 120 ^{0}F and 130 ^{0}F, the user can reactivate the fireplace by pushing the MODE button on the transmitter. The word ON must display on the LCD screen. When the MODE button is pressed to ON, the THERMISTOR "resets" itself and the fireplace will begin operating again. However, the "beeping" will continue, if the ambient temperature remains between 120 ^{0}F and 130 ^{0}F. This "beeping" alerts the user that the RECEIVER should be repositioned so the ambient temperature drops below 120 ^{0}F.

When the temperature drops below 120 ^{0}F, the "beeping" will cease, providing the user has "reset" the THERMISTOR by pushing the MODE button to ON to operate the fireplace, either manually or thermally. Allow sufficient time for the receiver to cool below 120 ^{0}F, and then press MODE button to stop beeping.

SYSTEM CHECK

MILLIVOLT VALVES

Light your gas appliance following the lighting instructions that came with the appliance. Confirm that the pilot flame is on; it must be in operation for the main gas valve to operate.

1. Slide the 3-position button on the remote receiver to the ON position. The main gas flame (i.e., the fire) should ignite. Slide the button to OFF the flame should extinguish (the pilot flame will remain on).
2. Slide the button to REMOTE (the center position), then press the button on the transmitter to change the system to ON. The main gas flame should ignite.
3. Press the MODE button on the transmitter to change the system to OFF. The flame should extinguish (the pilot flame will remain on).
4. Press the MODE button on the transmitter to change the system to THERMO. Advance the SET temperature on the transmitter to a temperature of a least 2 ^{0}F (1 ^{0}C) above the ROOM temperature displayed on the LCD screen with this manual setting, the normal thermostatic cycle is overridden and the system flame will ignite. Set the SET temperature to at least 2 ^{0}F (1 ^{0}C) below the room temperature and the system flame will extinguish in a few seconds. Thereafter, it should continue to cycle to on and off thermostatically approximately every two minutes as the ROOM temperature changes, but only when the temperature differential between ROOM and SET temperatures differ at least 2 ^{0} F (1 ^{0}C). The 2 ^{0}F differential is the factory setting.

ELECTRONIC SPARK IGNITION SYSTEMS

1. Slide the 3-position button on the remote receiver to the ON position. The spark electrode should begin sparking to ignite the pilot (the pilot may ignite after only one spark). After the pilot flame is lit, the main gas valve should open and the main gas flame should ignite.
2. Slide the button to OFF. The main gas flame and pilot flame should BOTH extinguish.
3. Slide the button to REMOTE (the center position), then press the MODE button on the transmitter to change the system to ON.
4. The spark electrode should begin sparking to ignite the pilot. After the pilot is lit, the main gas valve should open and the main gas flame should ignite.
5. Press the MODE button on the transmitter to OFF. The main gas flame and pilot flame should BOTH extinguish.
6. Press the MODE button on the transmitter to change the system to THERMO. Advance the SET temperature on the transmitter to a temperature of at least 2 ^{0} F (1 ^{0}C) above the ROOM temperature displayed on the LCD screen. With this manual setting the normal thermostatic cycle is overridden and the system flame will ignite. Set the SET temperature to at least 2 ^{0}F (1 ^{0}C) below the room temperature and the system flame will extinguish in a few seconds. Thereafter, it should continue to cycle to on and off thermostatically approximately every two minutes as the ROOM temperature changes, but only when the temperature differential between ROOM and SET temperatures differ at least 2 ^{0} F (^{0}C). (The 2 ^{0}F differential is the factory setting).

TIMER

The countdown timer will operate in either the manual ON or THERMO mode. Once the fireplace system is in an operating mode, set the countdown timer to turn off in 15 minutes. The timer function will allow operation to continue until the countdown "time" on the LCD screen expires. After 15 minutes elapses, the system should turn OFF.

If you have any problems with operation, recheck your connections and ensure transmitter batteries are fully charged. If no problem is found, contact the dealer where your purchased your fireplace/remote control.

GENERAL INFORMATION

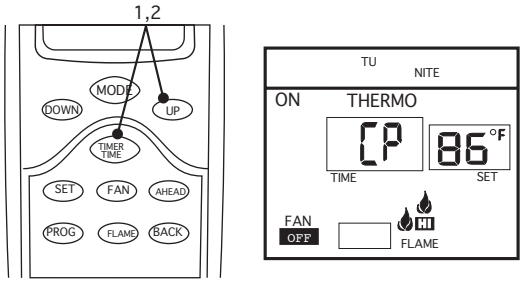
MATCHING SECURITY CODES

Each transmitter can use one of 1,048,576 unique security codes. It may be necessary to program the remote receiver to LEARN the security code of the transmitter upon initial use, if batteries are replaced, or if a replacement transmitter is purchased from your dealer or the factory. When matching security codes, be sure slide button on the receiver is in the REMOTE position; the code will NOT "LEARN" if the slide switch is in the ON or OFF position. Program the remote receiver to LEARN a new security code by pushing in the LEARN button on the top of the remote receiver and then pressing the MODE button on the transmitter. A change in the beeping pattern, at the receiver, indicates the transmitter's code has been programmed into the receiver. When an existing receiver is matched to a new transmitter, the new security code will overwrite the old one.

The microprocessor that controls the security code matching procedure is controlled by a timing function. If you are unsuccessful in matching the security code on the first attempt, wait 1-2 minutes before trying again – this delay allows the microprocessor to reset its timer circuitry – and try up to two or three more times.

CHILD-PROOF "LOCK –OUT" –(CP)

This SKYTECH remote control includes a CHILD-PROOF "LOCK-OUT" feature that allows the user to "LOCK –OUT" operation of the fireplace, from the TRANSMITTER.



SETTING "LOCK-OUT" – (CP)

1. To activate the "LOCK-OUT" feature, press and hold the UP and TIMER/TIME buttons, together, for 5 seconds. The letters CP will appear in the TEMP frame on the LCD screen.
2. To disengage the "LOCK-OUT", press and hold the UP and TIMER/TIME buttons, together for 5 seconds or more, and the letters CP will disappear from the LCD screen and the transmitter will return to its normal operating condition.

NOTE: If the fireplace system is already operating in the ON, THERMO or PROGRAM MODES, engaging the "LOCK-OUT" will not cancel the operating MODE. Engaging the "LOCK-OUT" prevents only the manual operation of the TRANSMITTER. If in the auto modes, the THERMO and/or PROGRAM operation will continue to operate normally. To totally "LOCK-OUT" the operation of the TRANSMITTER'S operating signals, the transmitter's MODE must be set to OFF.

THERMO FUNCTION

When the transmitter is in the THERMO mode, it should be kept away from direct sources of heat such as fireplaces, incandescent lighting, and direct sunlight. Leaving the transmitter in direct sunlight, for example, will cause its heat-sensing diode to read the room temperature higher than it actually is; if in THERMO mode, it may not turn on the appliance even if the ambient ROOM temperature is below the SET temperature.

BATTERY LIFE

Life expectancy of alkaline batteries in the SKYTECH 3324R should be at least 12 months. Replace all batteries annually. When the Transmitter no longer operates the receiver from a distance it did previously (i.e., the transmitter's range has decreased) or the remote receiver does not function at all, the batteries should be checked. The Transmitter should operate with as little as 2.5 volts of battery power, measuring at the (2) 1.5 volt batteries.

TROUBLE SHOOTING

Should you encounter problems with your fireplace system, the problem may be with the fireplace itself or it could be with the SKYTECH remote control. Review the fireplace manufacturer's operation manual to make sure all connections are properly made. Then check the operation of the SKYTECH remote in the following manner:

1. Check the receptacle supplying power to the 24VAC transformer. The output should be 110-120 VAC. If there is no power to receptacle, check fuse or circuit breaker at main electrical panel. NOTE: Be sure receptacle is not controlled by a wall switch.
2. Be sure the transmitter's batteries are properly installed and that the battery output is 2.5V or more.
3. Check to make sure the transmitter is communicating with the receiver.
    1. If the receiver beeps when the MODE button is depressed on the transmitter they are communicating.
    2. If the receiver does not beep when the MODE button is depressed on the transmitter, you will need to teach the receiver the code of the transmitter. This is done by holding the LEARN button down on the receiver, and at the same time depress the MODE button on the transmitter. A change in the beeping pattern at the receiver indicates when the code is accepted.
4. Make sure the transmitter is within the 15' – 20' range of the receiver.
5. Positioning of the receiver is important. If the receiver is "enclosed" in a metal surround, the operation of the receiver may be affected as noted below. Reposition the receiver to improve operating range. It is suggested that a heat shield be installed to protect the receiver from extreme heat. If the receiver is "enclosed" in a metal surround, this can:

    1. Cause the RF signal to get lost and not communicate with the receiver.
    2. Cause the working distance to be shorter than normal.

NOTE Areas that exceed 130 ^{0}F will cause the THERMO-SAFETY feature to cut in, requiring you to reposition the receiver to stop the warning beeps, and to "reset" the receiver's operation.

SPECIFICATIONS

BATTERIES: Transmitter 3V- 2 ea. AAA 1.5V, Alkaline
Remote Receiver 24 VAC, 60 Cycle FCC ID No.'s: transmitter –K9L3301TX; receiver – K9L3001RX
Operating Frequency: 303.8MHZ Canadian IC ID No.'s: transmitter – 2439-3301TX; receiver – 2439 102 760A

WARRANTY

All warranty information is listed on the warranty sheet packed with this product. If you did not receive this warranty sheet, please contact Skytech Systems, Inc. at the following:
9230 Conservation Way, Fort Wayne, IN 46809
888-672-8929 or (260) 459-1703

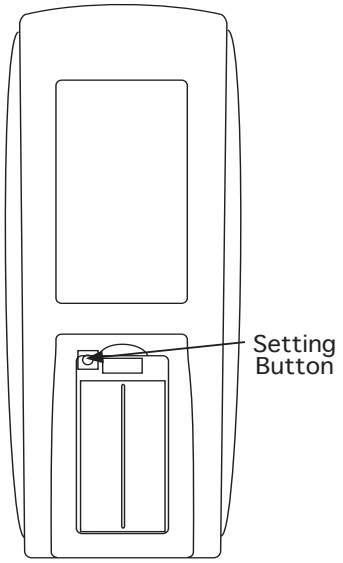
FOR TECHNICAL SERVICE, CALL:	U.S. INQUIRIES	CANADIAN INQUIRIES
	888/672-8929 or 260/459-1703	877/472-3923
	Website: skytechsystem.com	

MANUFACTURED EXCLUSIVELY FOR SKYTECH II, INC

QUICK SET-UP GUIDE
FOR SKYTECH 3324R PROGRAMMABLE TRANSMITTER

This guide is a "short cut" method to SETUP and OPERATE the SKYTECH programmable transmitter. For detailed instructions for each feature and function, see OWNER"S MANUAL.

INITIAL SET-UP SET FUNCTIONS USING BUTTONS ON FRONT OF TRANSMITTER

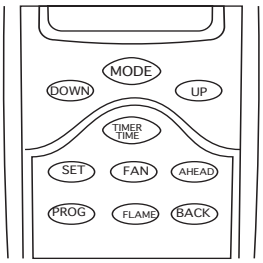


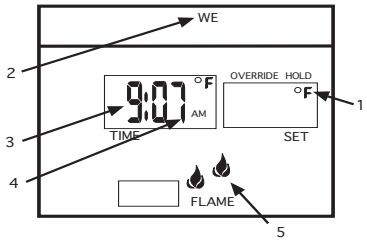
1. Remove battery cover.
2. Insert 2AAA batteries.
3. Press SETTING button.
4. Replace battery cover.

All further programming to be made on front of transmitter.

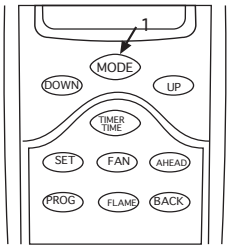
1. SCALE (DEGREE F/ DEGREE C) – Press UP or DOWN button. Press SET button.
2. DAY OF WEEK – Press AHEAD or BACK button. Press SET button.
3. HOUR OF DAY – Press UP or DOWN button. Press SET button. NOTE: AM or PM on LCD.
4. MIN. OF DAY – Press UP or DOWN button. Press SET button.
5. FLAME CONTROL- Press UP or DOWN button. Press SET button.

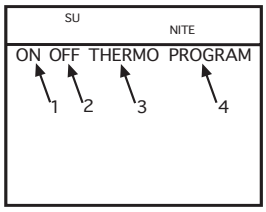
NOTE: Each SETTING will flash, separately, on LCD screen. After each SETTING you must push SET/RETURN button. You may not have to change factory setting, but you must push SET/RETURN button.





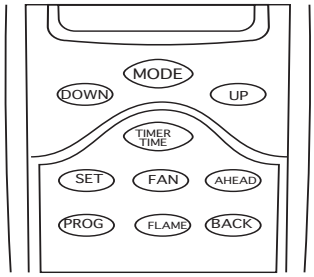
OPERATION – Press MODE button on TRANSMITTER to change operating functions.





1. ON indicates the system is on, either manually or thermostatically.
2. OFF indicates the entire system is turned off.
3. THERMO indicates the system will automatically cycle ON/OFF, depending on programmed SET temperature.
4. PROGRAM indicates the system is operating with PROGRAMME settings.

OTHER OPERATIONS – Press corresponding buttons on TRANSMITTER to activate functions.



1. TIME OF DAY – Press TIMER/TIME button for less than ONE second.
2. TIMER OPERATION – Press and hold TIMER/TIME button for two seconds.
3. SET COUNTDOWN TIME by pressing UP or DOWN buttons.
4. FAN OPERATION – Press FAN button.
5. HI/LO FLAME levels depending on type of electronic valve on appliance.
6. NOTE: Press SET button to stop LCD Digits from flashing.

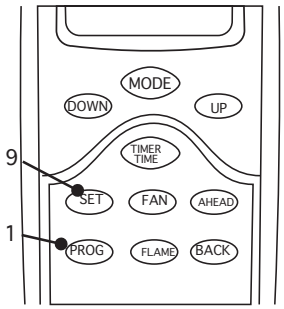
QUICK PROGRAMMABLE GUIDE
FOR SKYTECH 3324R PROGRAMMABLE TRANSMITTER

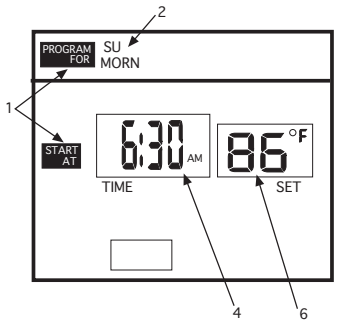
This guide is a "short cut" method to PROGRAM the operation of the SKYTECH programmable transmitter. For detailed instructions for each feature and function, see OWNER"S MANUAL.

PROGRAMMING DAILY OPERATION

NOTE: A FACTORY PROGRAM is already installed in the transmitter's software.
You may change the daily "SET TIMES" and "SET TEMPERATURES" by
following the instructions below.

DAY	PERIOD	TIME/TEMP
All 7 Days Factory-Programmed	MORN	6:00 AM 70°
	DAY	8:30 AM 60°
	EVE	3:00 PM 70°
	NIGHT	11:00 PM 63°





SHORT CUT PROGRAMMING

1. Press PROG button for more than 4 seconds. The PROGRAM FOR START AT boxes on the LCD will begin blinking.
2. Program DAY OF WEEK and PERIOD OF DAY by pressing AHEAD and BACK buttons.
3. Again, press PROG button. START TIME will begin flashing.
4. Program START TIME by pressing UP or DOWN button.
5. Again, press PROG button. SET TIME will begin to flash.
6. Program SET TEMP by pressing UP or DOWN button.
7. Again, press PROG button. The next PERIOD and DAY will begin to flash.
8. Repeat steps 2 through 7 for all 7 DAYS until each PERIOD OF DAY is programmed.
9. When all programmed settings are complete, then press the SET to lock in new programming.
10. To REVIEW, either FACTORY or USER programs, push the PROG button for ONE SECOND; then scroll through each DAY and PERIOD OF DAY by pressing PROG button, allowing ONE SECOND between each press of this button. Press the SET button when through reviewing the programmed times and temperatures.
11. To CANCEL user-customized programming, press and hold PROG and SET buttons together, for 10 seconds; all USER programs will be cancelled and the FACTORY program will return

NOTE: Push AHEAD or BACK buttons to advance day and period should you not want to change each SET time or SET temperature.