Model: VR-2A

INSTALLATION AND OPERATING INSTRUCTIONS

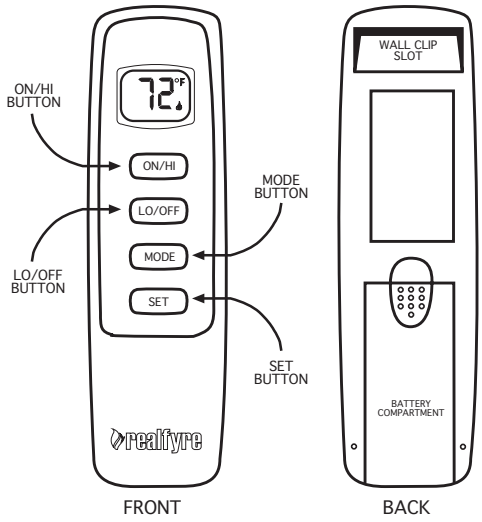
MULTI-FUNCTION WIRELESS REMOTE CONTROL SYSTEM
FOR OPERATING SERVO MOTOR VALVE, MANUALLY AND WITH A THERMOSTAT FUNCTION

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

INTRODUCTION

This remote control system was developed to provide a safe, reliable, and user-friendly remote control system for gas heating appliances. The system is operated manually from the transmitter. The system operates on radio frequencies (RF) within a 20-feet range using non-directional signals. The system operates on one of 1,048,576 security codes that are programmed into the transmitter at the factory; the remote receiver's code must be matched to that of the transmitter prior to initial use.

TRANSMITTER



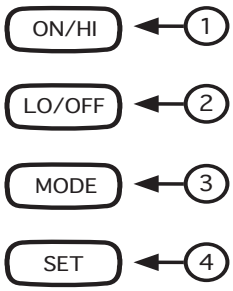
This remote control SYSTEM offers the user a battery-operated remote control to power up to a 6 VDC servo motor such as those used with gas valves used in some heater rated gas logs, gas fireplaces and other gas heating appliances.

The servo motor circuit uses the battery power from the receiver to operate a servo motor. The circuit has reversing polarity software which reverses the positive (+) and negative (-) output of the receiver's battery power to drive the servo motor forward/backward. (HI/LO FLAME) The SYSTEM is controlled by the remote transmitter.

The transmitter operates on a (2) 1.5V AAA batteries.

It is recommended that ALKALINE batteries always be used for longer battery life and maximum operational performance.

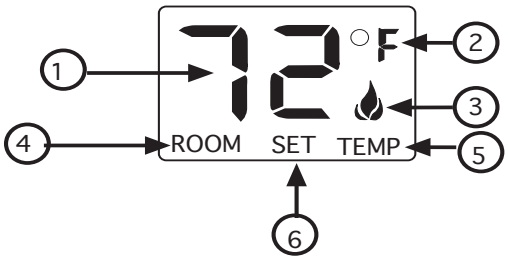
Before using the transmitter, install the (2) AAA transmitter batteries into the battery compartment. (Use caution that batteries are installed in the proper direction)



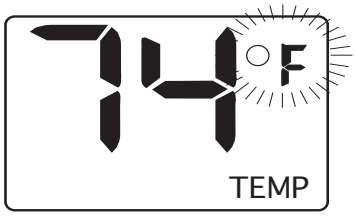
KEY SETINGS

- ON/HI -Operates unit to ON position, Manually operated servo HI.
- LO/OFF - Operates unit to OFF position, Manually operated servo LO.
- MODE - Changes unit from manual mode to thermo mode.
- SET - Sets temperature in thermo mode.

LCD - Liquid Crystal Display



1. **DISPLAY** Indicates CURRENT room temperature **.**
2. **^{0} F** OR **^{0}** C Indicates degrees Fahrenheit or Celsius.
3. **FLAME** Indicates burner/valve in operation.
4. **ROOM** Indicates remote is in THERMO operation.
5. **TEMP** Appears during manual operation.
6. **SET** Appears during time the of setting the desired temperature in the thermo operation.

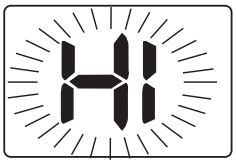


SETTING ^{0} F / ^{0}C SCALE

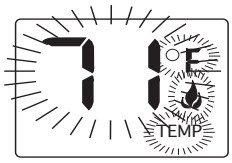
The factory setting for temperature is **^{0} F**. To change this setting to ^{0} C, first

- Press the ON/HI key and the LO/OFF key on the transmitter at the same time this will change from **^{0}** F to **^{0}** C. Follow this same procedure to change from ^{0} C back to **^{0} F**.

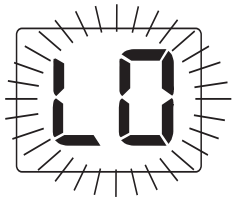
MANUAL FUNCTION



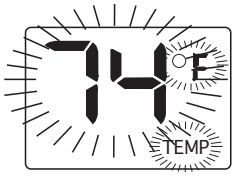
SCREEN DURING ADJUSTING TO ON



SCREEN AFTER 3 SECOND DEFAULT



SCREEN DURING ADJUSTING TO OFF



SCREEN AFTER 3 SECOND DEFAULT

To operate the system in the manual "MODE" do the following.

ON OPERATION

Press and hold the ON/HI key until the appliance flame comes on and reaches the desired flame height or is at full on. During this time the LCD screen will show HI, after 3 seconds the LCD screen will default to display room temperature and the word TEMP will show**. (Flame icon will appear on LCD screen in manual on mode)**

OFF OPERATION

Press and hold the LO/OFF key until the appliance flame reaches the desire flame height or completely shuts off. During this time the LCD screen will show LO, after 3 seconds the LCD screen will default to display room temperature and the word TEMP will show.

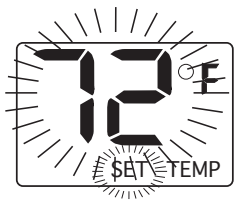
THERMOSTAT FUNCTION

SETTING DESIRED ROOM TEMPERATURE

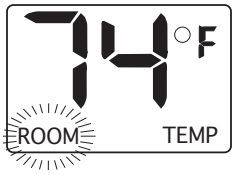
This remote control system can be thermostatically controlled when the transmitter is in the THERMO mode (The word **ROOM must be displayed on the screen).** To set the THERMO MODE and DESIRED room temperature,

Press the MODE key until the LCD screen shows the word ROOM, then the remote is in the thermostatic mode.

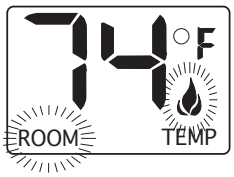
Press and hold the SET key until the desired set temperature is reached. (By pressing and holding the set key the LCD screen set numbers will increase from 45^0 to 99^0 then restart over at 45^0) Next release the SET key. The LCD screen will display the set temperature for 3 seconds and the LCD screen will flash the set temperature for 3 seconds, then the LCD screen will default to display the room temperature.



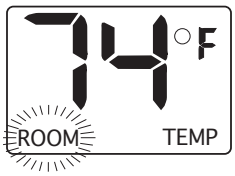
THERMO SET



THERMO MODE



THERMO ON



THERMO OFF

TO CHANGE THE SET TEMPERATURE

Press and hold the SET key until the desired set temperature is reached. (By pressing and holding the set key the LCD screen set numbers will increase from 45^0 to 99^0 then restart over at 45^0). Next, release the SET key. The LCD screen will display the set temperature for 3 seconds, then will flash the set temperature for 3 seconds, then the LCD screen will default to display the room temperature.

Press the MODE key to disengage the thermo mode. The word ROOM on the LCD screen will not show when the thermo is not in operation.

NOTE: The highest SET temperature is 99˚ Fahrenheit (32˚ Celsius) and the lowest temperature is (45˚ Fahrenheit - 6˚ Celsius).

OPERATIONAL NOTES:

1. While in the Thermo mode the flame height can be adjusted to a lower than FULL /ON setting if desired by pressing the LO/OFF key. This setting will hold only until the next update of the transmitter. Then the setting will return to FULL/ON. This will not disengage the thermo mode. The transmitter reads changes in room temperature and updates every two minutes.
2. To hold the lower than FULL/ON setting until the next OFF cycle you must manually turn the flame adjustment knob on the control valve to a lower setting. This setting will hold until the room temperature is 2 deg. above the set temperature (OFF cycle) at that time the transmitter will send a signal to the receiver to shut the appliance OFF. At the next ON cycle the appliance will return to FULL/ON.

The Thermo Feature on the transmitter operates the appliance 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 an appliance may be 2-4 times per hour depending on how well the room or home is insulated from the cold or drafts. The factory setting for the “swing number” is 2. This represents a temperature variation of +/- 2˚ F (1˚C) between SET temperature and ROOM temperature, which determines when the fireplace will be activated.

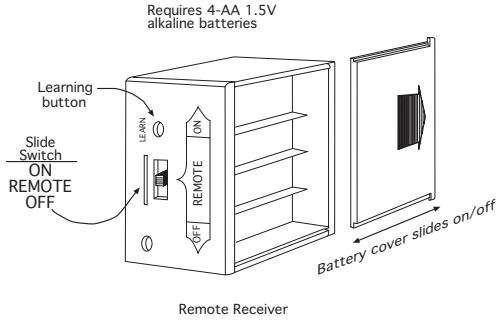
The transmitter has ON/HI and LO/OFF manual functions that are activated by pressing either button on the face of the transmitter. When a button on the transmitter is pressed the word HI or LO will appear on the LCD screen to show while the signal is being sent. Upon initial use, there may be a delay of three seconds before the remote receiver will respond to the transmitter. This is part of the system's design.

REMOTE RECEIVER

IMPORTANT

The remote receiver (right) operates on four 1.5V AA-size batteries. It is recommended that ALKALINE batteries be used for longer battery life and maximum microprocessor performance. IMPORTANT: New or fully charged batteries are essential to proper operation of the remote receiver as a servo motor's power consumption is substantially higher than standard remote control systems.

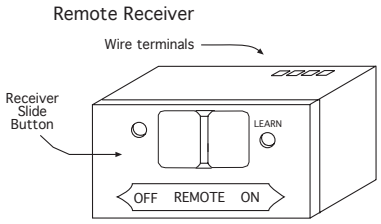
NOTE: The remote receiver will only respond to the transmitter when the 3-position slide button on the remote receiver is in the REMOTE position. The remote receiver houses the microprocessor that responds to commands from the transmitter to control system operation.



Remote Receiver

FUNCTIONS:

1. With the slide switch in the REMOTE position, the system will only operate if the remote receiver receives commands from the transmitter.
2. Upon initial use or after an extended period of no use, the ON button may have to be pressed for up to three seconds before activating servo motor. If the system does not respond to the transmitter on initial use, see LEARNING TRANSMITTER TO RECEIVER section.
3. Move slide switch to ON position and you can manually operate the system without the transmitter.
4. The receiver slide switch is for positive OFF, REMOTE or manual ON operation.
5. With the slide in the OFF position, the system is off.
6. It is suggested that the slide switch be placed in the OFF position if you will be away from your home for an extended period of time.
7. Placing the slide switch in the OFF position also functions as a safety "lock out" by both turning the system OFF and rendering the transmitter inoperative.



INSTALLATION INSTRUCTIONS

WARNING

DO NOT CONNECT REMOTE RECEIVER DIRECTLY TO 110-120VAC POWER. THIS WILL BURN OUT THE RECEIVER. FOLLOW INSTRUCTIONS FROM MANUFACTURER OF GAS VALVE FOR CORRECT WIRING PROCEDURES. IMPROPER INSTALLATION OF ELECTRIC COMPONENTS CAN CAUSE DAMAGE TO GAS VALVE AND REMOTE RECEIVER.

INSTALLATION

The remote receiver can be mounted on or near the fireplace hearth. PROTECTION FROM EXTREME HEAT IS VERY IMPORTANT. Like any piece of electronic equipment, the remote receiver should be kept away from temperatures exceeding 130º F inside the receiver case. Battery life is also significantly shortened if batteries are exposed to high temperatures.

HEARTH MOUNT

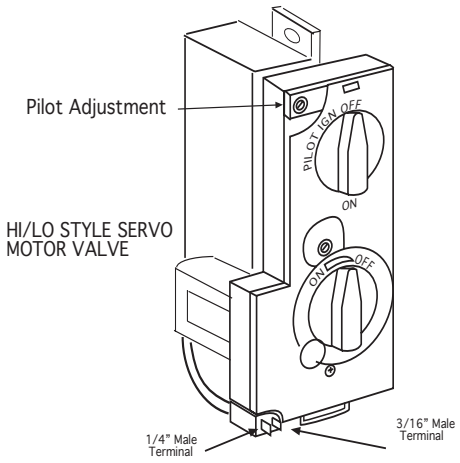
The remote receiver can be placed on the fireplace hearth or under the fireplace, behind the control access panel. Position where the ambient temperature inside the receiver case does not exceed 120º F.
NOTE: Black Button is used on Hearth Mount Applications.

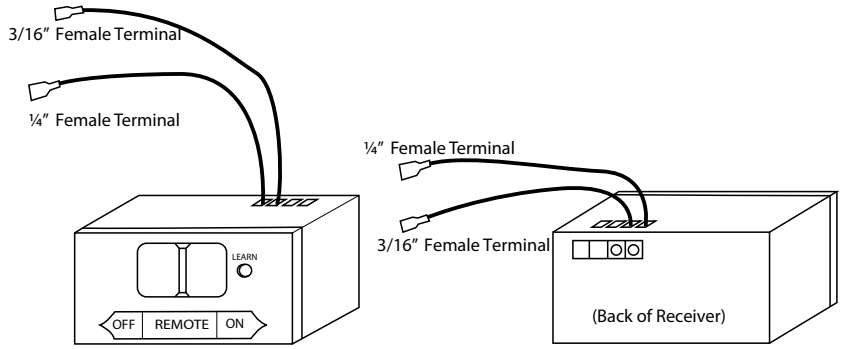
WIRING INSTRUCTIONS

CONNECTING THE RECEIVER TO A HI/LOW SERVO MOTOR STYLE VALVE SYSTEM

1. Connect the BLACK 18 gauge stranded wire with the 1/4” female terminal from the receiver to the 1/4” male terminal on the valve servo motor.
2. Connect the Black 18 gauge stranded wire with the 3/16" female terminal from the receiver to the 3/16” male terminal on the valve servo motor.
3. After receiver wires are connected to the valve servo motor terminals make sure the receiver shield is located over the receiver and then locate the receiver in an area that will not exceed the 130° F.
4. Depending on where the receiver is located it may be necessary to shorten the length of the wires. This can be done by removing the (2) wires from the receiver cutting them to the desired length then reinstalling them into the same connections on the receiver.
5. Always mount the receiver to the side of the valve kit away from the fire.

IMPORTANT NOTE: Operation of these controls is dependent on which wire is attached to which terminal. If operation of control does not correspond to operating buttons on transmitter, reverse wire installation at the receiver or at the control.
NOTE: Up to 6 VDC of power is provided at the receiver terminal.





GENERAL INFORMATION

CP (CHILDPROOF) FEATURE

This remote control includes a CHILDPROOF "LOCK-OUT" feature that allows the user to "LOCK-OUT" operation of the appliance, from the TRANSMITTER.

SETTING "LOCK-OUT" –(CP)

- To activate the "LOCK-OUT" feature, press and hold the ON/HI button and the MODE button at the same time for 5 seconds. The letters CP will appear in the TEMP frame on the LCD screen.
- To disengage the "LOCK-OUT", press and hold the ON/HI button and the MODE button at the same time for 5 seconds and the letters CP will disappear from the LCD screen and the transmitter will return to its normal operating condition.
- To verify that transmitter is in the CP lock-out mode press any key and the LCD screen will show "CP"

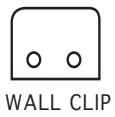
NOTE: If the appliance is already operating in the ON or THERMO MODES, engaging the "LOCK-OUT" will not cancel the operating MODE. Engaging the "LOCK-OUT" prevents only the manual operation of the TRANSMITTER. If in the auto modes, the THERMO operation will continue to operate normally. To totally "LOCK-OUT"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

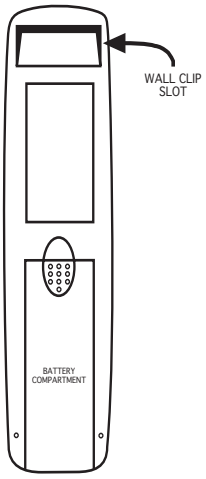
LEARNING TRANSMITTER TO RECEIVER

Each transmitter uses a unique security code. It will be necessary to press the LEARN button on the receiver to accept the transmitter security code upon initial use, if batteries are replaced, or if a replacement transmitter is purchased from your dealer or the factory. In order for the receiver to accept the transmitter security code, be sure the slide button on the receiver is in the REMOTE position; the receiver will **not** LEARN if the slide switch is in the ON or OFF position. The LEARN button in located on the front face of the receiver; inside the small hole labeled LEARN. Using a small screwdriver or end of a paperclip gently press and release the black LEARN button inside the hole. When you release the LEARN button the receiver will emit an audible "beep". After the receiver emits the beep **PRESS** any button on the transmitter and release. The receiver will emit several beeps indicating that the transmitter's code has been accepted into the receiver.
The microprocessor that controls the security code matching procedure is controlled by a timing function. If you are unsuccessfu 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.

TRANSMITTER WALL CLIP

The transmitter can be hung on a wall using the clip provided. If the clip is installed on a solid wood wall, drill 1/8" pilot holes and install with the screws provided. If it is installed on a plaster/wallboard wall, first drill two 1/4" holes into the wall. Then use a hammer to tap in the two plastic wall anchors flush with the wall; then install the screws provided.





BATTERY LIFE

Life expectancy of the alkaline batteries in the VR-2A can be up to 12 months depending on use of the servo function. Replace all batteries annually. When the transmitter no longer operates the remote 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. It is important that the remote receiver batteries are fully charged, providing combined output voltage of at least 4.5volts. The transmitter should operate with as little as 2.5 volts battery power. **NOTE**: Extensive use of the SERVO MOTOR setting will reduce the receiver's battery life significantly.

TROUBLE SHOOTING

If you encounter problems with your appliance system, the problem may be with the appliance itself or it could be with the VR-2D remote system. Review the fireplace manufacturer's operation manual to make sure all connections are properly made. Then check the operation of the remote in the following manner:

1. Make sure the batteries are correctly installed in the RECEIVER. One reversed battery will keep receiver from operating properly.
2. Check battery in TRANSMITTER to ensure contacts are touching (+) and (-) ends of battery. Bend metal contacts in for tighter fit.
3. Be sure RECEIVER and TRANSMITTER is within 20-25-feet operating range.
4. Clear Codes: Memory in the receiver might be full if the learn button is pressed too many times. If this happens it will not allow any more codes to be learned and no audible beep will be heard. To clear memory, place the receiver slide switch into the REMOTE position. Press the learn button and release after 10 seconds. You should hear three (3) long audible beeps indicating all codes have cleared. You can now “learn” the transmitter to the receiver as described in the General Information Section.
5. Keep RECEIVER from temperatures exceeding 130° F. Battery life shortened when ambient temperatures are above 115° F.
6. If RECEIVER is installed in tightly enclosed metal surround, the operating distance will be shortened.

SPECIFICATIONS

Batteries: Transmitter (2) 1.5 volt AAA t batteries
Remote Receiver 6V - 4 ea. AA 1.5 Alkaline
Operating Frequency: 303.8 MHZ
Output: 6VDC/1A output maximum

FCC Requirements
Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to the equipment. Such modifications could void the user's authority to operate the equipment.

Federal Communication Commission Interference Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 residential installation. This equipment generates, used and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the use is encouraged to try to correct the interference by one of more of the following measures:

- Reorient of relocate the receiving antenna.
- **I**ncrease the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: The Grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

RF Warning

The device has been evaluated to meet general RF exposure requirement. This equipment complies with FCC's RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna(s) must not be co-located or conjunction with any other antenna or transmitter.

IC Warning

This device complies with Industry Canada license-exempt RSS standards(s).
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le pre'sent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation set autorise'e aux deux conditiions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilsateur de l'appareil doit accepter tout brouillage radio'electrique subi, meme si le brouillage est suseptible d'e compromettre le fonctionnement.