

# INSTALLATION AND OPERATING INSTRUCTIONS

Model: FC202-01

FCC ID: 2ATZEFC20201

MULTI-FUNCTION WIRELESS REMOTE CONTROL SYSTEM

FOR OPERATING A LATCHING SOLENOID VALVE, MANUALLY OR WITH A THERMOSTAT FUNCTION

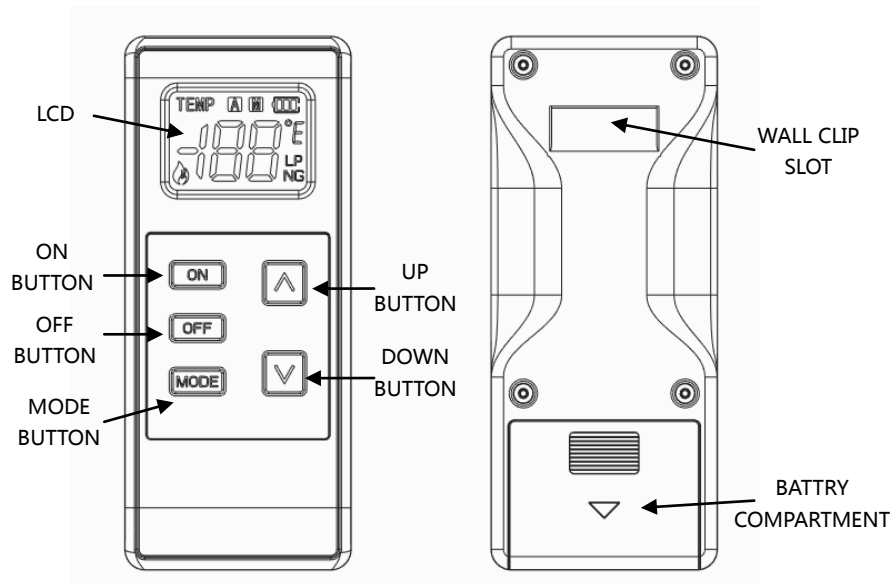
**IF YOU CANNOT READ OR UNDERSTAND THESE INSTALLATION INSTRUCTIONS DO NOT  
ATTEMPT TO INSTALL OR OPERATE**

## **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' range using non-directional signals. The system operates on one of 16777216 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.

Review COMMUNICATION SAFETY SECTION under TRANSMITTER section under REMOTE RECEIVER section. This signal safety feature shuts down the fireplace system when a potentially unsafe condition exists.

## **TRANSMITTER FC202-01**



This remote control system provides remote control operation for a battery-powered latching solenoid valve, such as those used with gas valves, for gas heaters, air convection heaters, positive displacement water heaters, wall-mounted heating Furnaces, commercial gas appliances, and all other gas appliances that have high requirements for temperature control.

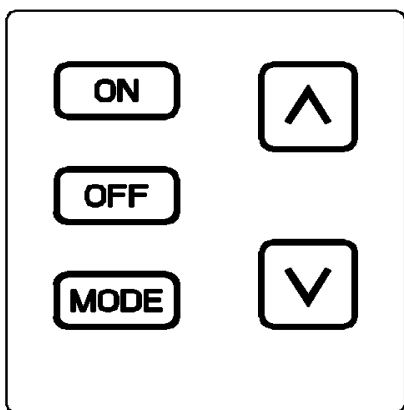
The solenoid circuit uses the battery power from the receiver to operate a solenoid. The circuit has

reversing polarity software which reverses the positive (+) and negative) output of the receiver's battery power to drive a latching solenoid ON/OFF. 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)

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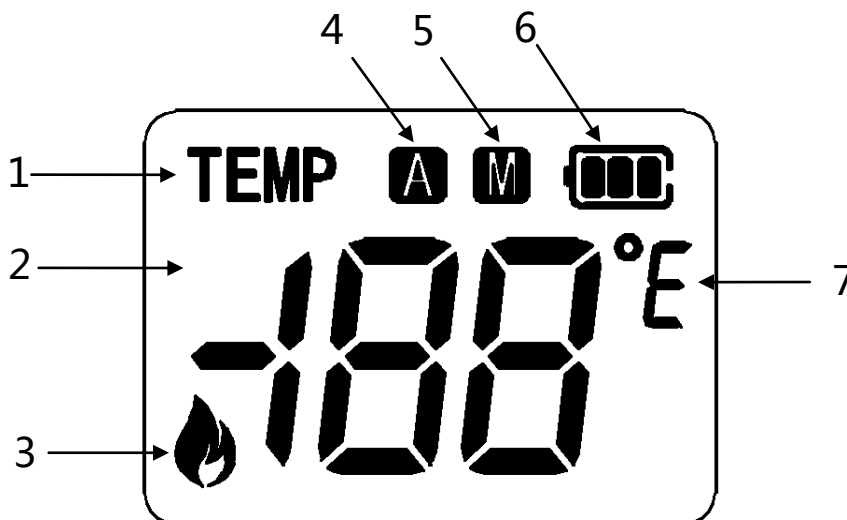


**KEY SETTINGS**

- ON : Operates unit to on position, manually operated solenoid ON
- OFF : Operates unit to off position, manually operated solenoid OFF.
- MODE : Changes unit from manual mode to thermostat mode.
- ^ : Set the increase temperature in the thermostat function.
- v : Set the temperature to decrease in the thermostat function.

function.

**LCD LIQUID CRYSTAL DISPLAY**



- 1. TEMP : Temperature indication
- 2.DISPLAY : Indicates CURRENT room temperature.
- 3. : Valve opening indication

4.A : Thermostat function

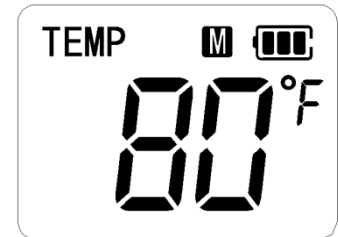
5.M : Manual function

6.  : Remote control battery display

7. °F or °C : Indicates degrees Fahrenheit or Celsius.

## INSTRUCTIONS

When the remote control is loaded with the battery and any button on the remote control is pressed, the full screen lights up. Then the ambient temperature is displayed. The default unit is °F, manual mode, and the battery level is displayed.

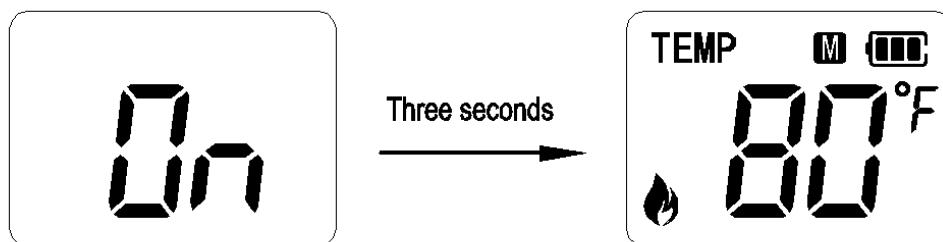


## MANUAL FUNCTION

In the manual mode of the operating system, please do the following.

### ON OPERATION

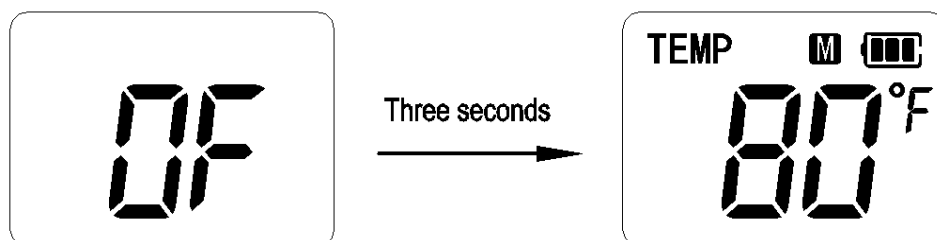
Press the "ON" button to send a signal to the receiver to perform the action of opening the solenoid valve. At the same time, the display shows "ON" for 3 seconds, it is converted to ambient temperature display, and the flame icon is on. (The flame icon will appear on the LCD screen in manual



open mode)

### OFF OPERATION

Press the "OFF" button to send a signal to the receiver to perform the action of closing the solenoid valve. At the same time, the display shows "OF" for 3 seconds, it is converted to the ambient temperature display, and the flame icon is off.



## THERMOSTAT FUNCTION

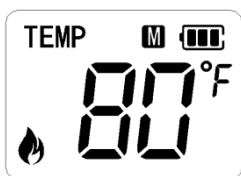
Press the "MODE" button to switch to the automatic constant temperature mode. The "A" icon on

the display lights up and the "M" icon goes out. Press the "MODE" button again to switch back to the manual mode. The "A" icon on the display is off, and the "M" icon is on and the cycle is switched.

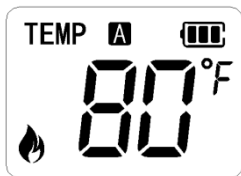
**TO CHANGE THE SET TEMPERATURE**

In the automatic constant temperature mode, directly press the "▲" and "▼" keys to adjust the target temperature value (the manual mode cannot be adjusted). When adjusting, the "TEMP" icon is off. After the target temperature is adjusted, do not press any button. After 2 seconds, the target temperature flashes 3 times and then changes to the ambient temperature display. "▲", "▼" button, when adjusting the target temperature, each time you press it, increase or decrease by 1 degree, long press to increase or decrease rapidly.

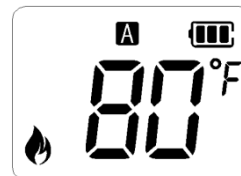
- a. If the adjusted target temperature is lower than the ambient temperature, the side flame icon is off, and a signal is sent to the receiver to perform the closing solenoid valve action.
- b. If the adjusted target temperature is higher than or equal to the ambient temperature, the flame icon is on, and a signal is sent to the receiver to activate the solenoid valve.



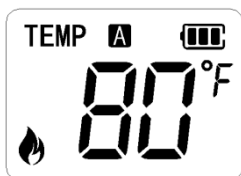
MANUAL FUNCTION  
M : BRIGHT, A : OFF



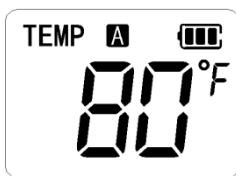
THERMOSTAT FUNCTION  
M : OFF, A : BRIGHT



WHEN ADJUSTING THE TARGET TEMPERATURE, TEMP IS OFF



WHEN THE TARGET TEMPERATURE IS HIGHER THAN OR EQUAL TO THE AMBIENT TEMPERATURE, THE FLAME IS BRIGHT.



WHEN THE TARGET TEMPERATURE IS LOWER THAN THE AMBIENT TEMPERATURE, THE FLAME IS EXTINGUISHED.

After adjusting the target temperature, when the temperature is changed to the ambient temperature for 3 seconds, the ambient temperature value is immediately refreshed.

NOTE: The highest SET temperature is 90° Fahrenheit (32° Celsius) and the lowest temperature is 42° Fahrenheit (6° Celsius)

**OPERATIONAL NOTES:**

The Thermostat 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 remote control has the manual function of turning on and off. The "ON" and "OFF" keys must be executed at all times. When the "OFF" is pressed, a signal is sent to the receiver to perform the action of closing the solenoid valve. At the same time, after 10 seconds, the display is turned off. When the button on the remote control is pressed, the words "ON" or "OFF" appear on the LCD screen to display when a signal is sent. When first used, there may be a 3 second delay before the remote receiver responds to the transmitter. This is part of the system design.

## **SETTING °F/°C SCALE**

The factory setting for temperature is °F. To change this setting to °C

Press the ON key and the OFF key on the transmitter at the same time. This will change from °C back to °F. Follow this same procedure to change from °C back to °F.

## **BATTERY DISPLAY**

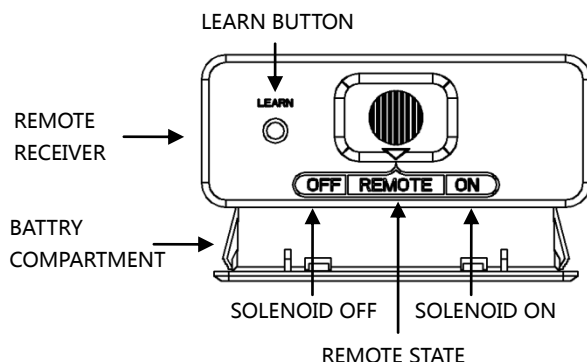
The power display is divided into 4 files, 3 grids, 2 grids, 1 grid, and blank grid. When the blank cell display flashes, it will be powered off after 5 seconds.

## **REMOTE RECEIVER ( FC202-02 )**

### IMPORTANT

THE REMOTE RECEIVER SHOULD BE POSITIONED WHERE AMBIENT  
TEMPERATURES DO NOT EXCEED 130°F.

The remote receiver (right) works with 4 1.5 V AA batteries. The battery compartment is detachable and can be detachably mounted to the fireplace panel or combined with the receiver on the side of the fireplace. It is important to use alkaline batteries to extend battery life and maximize microprocessor performance: new or fully charged batteries are critical to proper operation of the remote receiver because of the high power consumption of the latching solenoid Higher than the standard remote control system.



## **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.

## **FUNCTIONS:**

- With the slide switch in the OFF position (toward the LEARN button), the system is off.
- With the slide switch in the REMOTE position (centered), the system will only operate if the remote receiver receives commands from the transmitter.
- With the slide switch in the ON position (away from the LEARN button), the system will remain on until the slide switch is placed in the OFF or REMOTE position.
- 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. If the remote receiver is mounted out of children's reach, placing the slide switch in the OFF position also functions as a safety "lock-out" by both turning the system off and rendering the remote receiver inoperative.

NOTE: The RECEIVER comes from the factory programmed to provide pulse DC voltage (5.5 VDC to 6.3 VDC) to a latching solenoid.

## **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. DAMAGE CAUSED BY IMPROPER INSTALLATION WILL NOT BE COVERED BY WARRANTY.**

## **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 130° 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 130° F.

## **WIRING INSTRUCTIONS**

Make sure the remote receiver switch is in the OFF position. For best results it is recommended that stranded wires should be used to make connections and should be no longer than 20 ft.

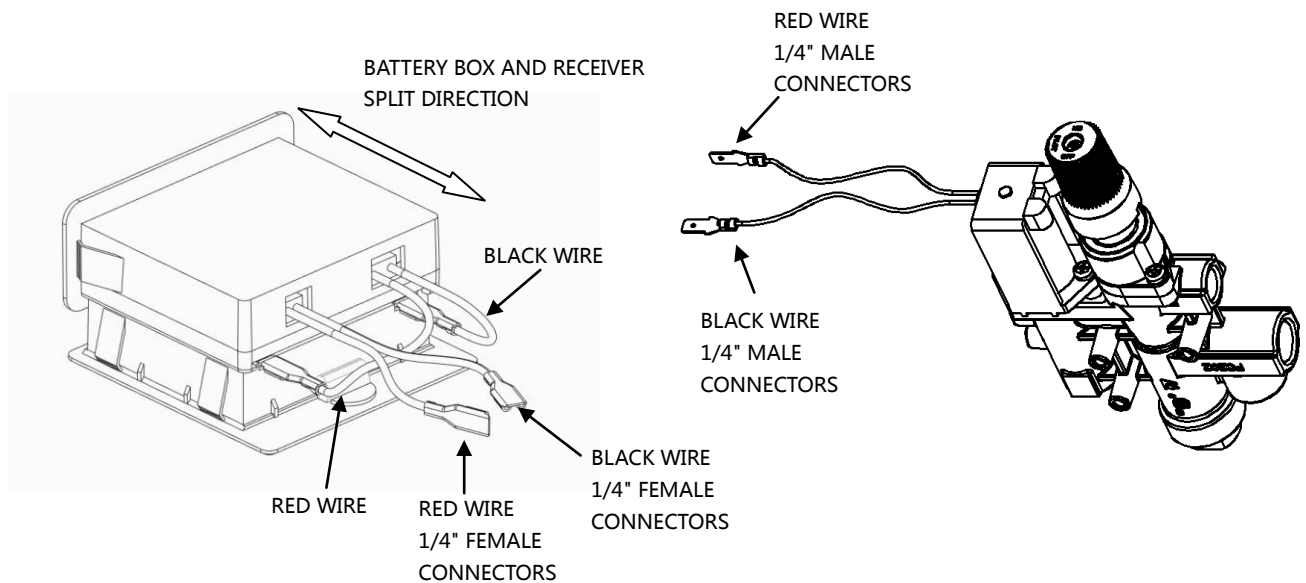
This remote receiver is to be connected to a manual valve with a latching ON/OFF solenoid.

Connect two stranded or solid wires from the remote receiver terminals to the latching solenoid. (See

figure to the down)

**IMPORTANT NOTE:** Operation of this control 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 6.3 VDC of power is provided at the receiver terminal.



## **GENERAL INFORMATION**

### **COMMUNICATION-SAFETY -TRANSMITTER**

This 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 feet operating range of the receiver.

The COMMUNICATION-SAFETY feature operates in the following manner, in all OPERATING MODES-ON/ ON THERMOSTAT.

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 appliance 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 ON or MODE Button is pressed to reset the receiver. The intermittent 4-second beeping will go on for as long as the receiver batteries last, which could be in excess of one year.

To "reset the RECEIVER and operate the appliance, you must press the ON or MODE button on the transmitter. 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 transmitters batteries fail or be removed.

### **CP (CHILDPROOF) FEATURE**

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

#### **SETTING "LOCK-OUT"-(CP)**

To activate the "LOCK-OUT" feature, press and hold the ON 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 button and the MODE button at the same time for 5 seconds and the letters CP will disappear from the LCD screen and 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.

### **MATCHING SECURITY CODES**

Each transmitter can use one of 16777216 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 OFF position. Program the remote receiver to LEARN a new security code Press and Release the LEARN button on the top of the remote receiver and then press any 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.

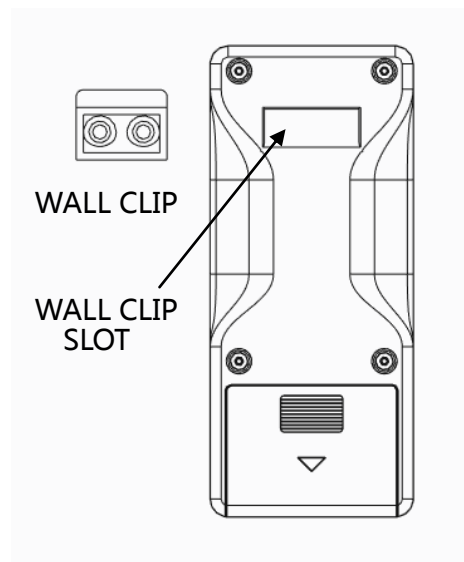
The microprocessor that controls the security code matching procedure is controlled by a timing function. If you are unsuccessful in matching the security code on the first attempt, wait 1 -2 minutes before trying again-this delay allows the microprocessor to reset its timer circuitry--and try up to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



or three more times.

## **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 FC202-1/FC202-2 can be up to 12 months depending on use of the solenoid 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 5.5volts. The transmitter should operate with as little as 2.5 volts battery power.

## **TROUBLE SHOOTING**

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

- Make sure the batteries are correctly installed in the RECEIVER. One reversed battery will keep receiver from operating properly.
- Check battery in TRANSMITTE to make sure contacts are touching (+) and (-) ends of battery. Bend metal contacts in for tighter fit.
- Be sure RECEIVER and TRANSMITTER are within 20' -25' operating range.
- Keep RECEIVER from temperatures exceeding 130° F. Battery life shortened when ambient temperatures are above 115° F.
- If RECEIVER is installed in tightly enclosed metal surround, the operating distance will be shortened.

## **SPECIFICATION**

BATTERIES: Transmitter (2) 1.5 volt AAA t bateries

Remote Receiver 6V - 4 ea. AA 1.5 Alkaline

FCC ID No.'s: 2ATZEFC20201

Operating Frequency: 303.8 MHZ

## **FCC REQUIREMENTS**

**NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.**

## **FCC Warning**

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.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses 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 user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase 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.