TS820 Touchscreen RF Wireless Thermostat [110915]

> **CAUTION:**
> 1. Turn off TS820 electronic source and the electrical devices (e.g. heater, cooler) which will be connected before installation and maintenance.
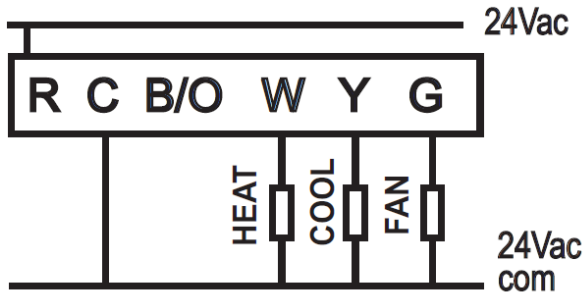> 2. The installer must be a trained service engineer.

1. Installation Location

The thermostat should be mounted on an inner wall 60" above the floor in position where it is readily affected by changes of the general room temperature with freely circulating air. Prevent direct exposure to sunlight; dripping or splashing area. Do not place this unit at a location where air circulation is low, or where it has great temperature changes (e.g. near door). Do not place the thermostat near heat generating sources (radiators, hot air vents, TV or lights).
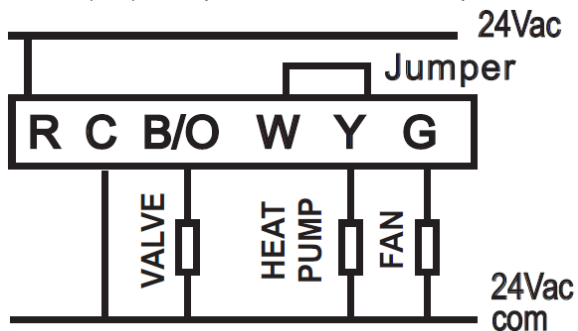
2. Wiring of receiver

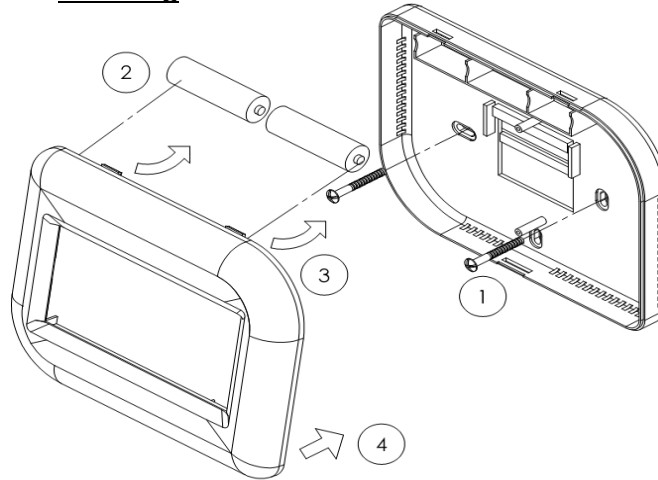This thermostat works with receiver RT01R/MA.

For thermostat use :

For heat-pump use : **(need to connect W and Y)**

CAUTION :
- TURN OFF any electrical devices before wiring.
- There are 5 terminals. Connect RH and RC to power supply. Connect terminals G, Y and W as shown in the figure above for Fan, Cooling and Heating.
- Push all cables back into wall prior to fixing to avoid trapping wires.
- Do not use metal conduit or of cable provided with a metal sheath.

3. Mounting

1. Base housing
   - Adjust the base on the wall or junction box and ensure the base is at surface level and cover the junction box comfortably
   - If necessary, pull the cables out at the middle hole of the base
   - Place the 2pcs of wall anchors at the wall if necessary.
   - Fasten the base with the 2pcs of long screws
2. Insert the 2XAA batteries into the thermostat battery case (Beware of wrong battery poles)
3. Hold the thermostat on the base. Align the screw blocks with the pins at the back of the thermostat.
4. Push the thermostat straight onto the base until snaps into place.

Communication Setup

1. There is a blue 8-pin dip switch on both the transmitter and receiver.
2. Set them to be the same so that they can communicate to each other. (256 choices)
3. After placing you thermostat, select FAN to ON instead of AUTO.
4. After the above step is made, wait for about 10 seconds. The receiver's FAN LED should then be turned on.
5. In case the LED is not turned on, please try the following.
   i. Check both transmitter and receiver have the same address setting.
   ii. If problem continues, power down receiver for at least half a minute and then power it on. Then try toggle the fan status so as to check communication.

Feature list:

- Battery powered (2 "AA" alkaline batteries)
- Temperature display in °F or °C
- Temp. Measurable Range: 32 – 99 °F / 0 – 40 °C
- EEPROM stores system settings
- Calendar
- Real clock in 12hr/ 24hr
- Real clock in 12hr/ 24hr
- Daylight Saving Index
- Filter, UV, and Energy usage counter
- Filter, UV and Energy usage limit setting
- Cleaning screen mode
- Security mode

System Setup mode

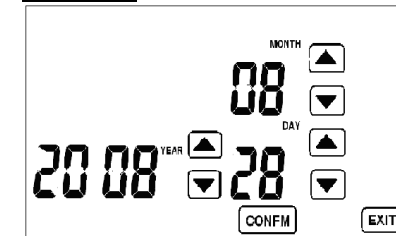There are 8 settings in the setup mode:
1. Calendar
2. 24/12 hours selection
3. C/F display selection
4. Fan HE/HG selection
5. Thermostat / Heat-pump selection
6. Span Selection
7. Delay/ Long delay selection
8. DST (Daylight savings time) selection
9. Screen lock selection

Press and hold SYSTEM for 5 seconds to enter the setup mode.
During setup mode, press CONFM to accept current setting and proceed to next setting.
Press EXIT to discards changes and return to normal mode.

Calendar

Press ▼ / ▲ to change the year, month and year
Press CONFM to accept changes and proceed to next setting.

24/12 hours

Press ▼ / ▲ to choose either 12h (12-hour) or 24h (24-hour) representation.
Press CONFM to accept changes and proceed to next setting.

C/F display

Press ▼ / ▲ to change temperature unit to display in °C/°F
Press CONFM to accept changes and proceed to next setting.

Fan HE/HG

Press ▼ / ▲ to toggle between HE/HG setting.
Press CONFM to accept changes proceed to next setting.
(HE/HG setting is effective for thermostat only)

	Heat On	Cool On
HE	Fan On	Fan On
HG	Fan Off	Fan On

Thermostat / Heat-pump

Press ▼ / ▲ to toggle between th / HP selection.
(th = thermostat,   HP = heat pump)

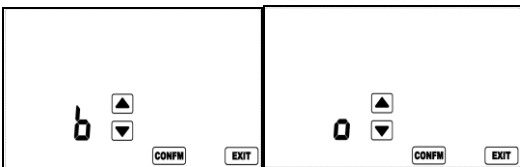Press CONFM to accept changes.
If HP (heat pump) is selected, it will go to B/O selection.
Press ▼ / ▲ to toggle B / O selection.
Press CONFM to accept changes and proceed to next setting.

Span Selection

"P" represents span and will be displayed in either °C / °F depending on the previous temperature unit setting.

Press ▼ / ▲ to change span setting. The selectable values are 0.5°C(1°F) / 1.0°C(2°F) / 1.5°C(3°F).

Press CONFM to accept changes and proceed to next setting.

Delay/ Long delay

Press ▼ / ▲ to change Delay/ Long delay selection. Delay for Heat on and Cool on is to prevent short cycling of system.

Press CONFM to accept changes and proceed to next setting.

(Delay setting is effective for thermostat only. When HP is selected, there will always be a 4~5 minutes off-on interval.)

	Delay	Long delay
Heat mode	5~10sec	4~5 min
Cool mode	4~5 min	4~5 min

DST (Daylight savings time)

Press ▼ or ▲ to turn on or off DST function.

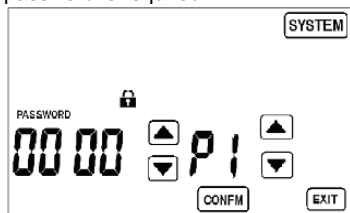If the date is in the DST period, the clock will be automatically activated,

Press CONFM to accept changes and proceed to next setting.

Remark: The DST bases on the USA time zone.

Security lock

Press ▼ or ▲ to turn on/off the screen lock function.

Press CONFM to accept changes. When ON is selected, a 4-digit password is required.

The screen shows a 4-digit password. Press ▼ / ▲ on the left to change the password number. P1 represents the 1st digit password (read from left), which is selected.

After setting all 4 digits, press CONFM to activate the security mode and return to normal mode. When security mode is activated, "🔒" is shown on the LCD and all keys are disabled expect SYSTEM.

Disable the security mode.
1. Press "SYSTEM" and enter the correct password.
2. If the password is correct, security mode will be deactivated. Otherwise the security mode remains activated.

(* security lock cannot maintains once power is lost)

View Calendar
1. Press the Weekday to show current date.
2. Press the EXIT to return the normal mode or it will automatically return to normal mode after idling for 20 seconds

Clock setting
1. Press CLOCK to enter the clock setting mode.
2. Press ▼ / ▲ to change the hour. Press CONFM to save the setting.
3. Press ▼ / ▲ to change the minute. Press CONFM to save the setting and return the normal.

Fan Setting
When FAN is set AUTO, fan may be turned on based on HE/HG selection. If ON is selected, fan will always be turned on.

Cleaning screen mode
1. Press CLEAR to enter the cleaning screen mode
2. There is a 20 seconds count down.
3. During counting, all keys are disabled.
4. When the counting is done, press EXIT to return to normal mode or press CLEAR to repeat the count down.

Usage
TS820 can record the Filter Usage, UV usage and energy usage. The counters count in hour. Each counter is 4-digital long (0~9999).
Filter usage starts counting when the fan is turned on. UV usages start counting when TS820 is turned on.
Energy usage counts when either Heat or Cool is on. When the counts reach the set interval, the corresponding usage icons will be shown.
1. Press USAGE to enter the usage mode.
2. Filter counter, UV counter and Energy counter are shown alternatively by pressing USAGE
3. Press CLEAR to clear the counts.
4. Press EXIT to exit the usage mode.

Adjusting Usage Interval Time
1. Press and hold the USAGE for 5 seconds during usage mode.
2. Press ▼ / ▲ to change the internal time (0~9999).
3. Press CONFM to save the setting
4. Press EXIT to exit the interval setting.
(* set interval time to zero to disable counter)

Changing Setting Temperature
1. The setting temperature is shown on the screen.
2. For heat mode, the setting temperature can be set from $5^{\circ}C$ ~ $29.5^{\circ}C$. / $41^{\circ}F$ ~ $85^{\circ}C$
3. For cool mode, the setting temperature can be set from $18.5^{\circ}C$ ~ $35^{\circ}C$ / $65^{\circ}F$ ~ $95^{\circ}F$

Defrost
When the room temperature is below to 5°C / 41°F, HEATER will always be turned ON and COOLER will always be turned OFF irrespective to the current control temperature set. ❄ defrost indicator will be shown.

System setting
In normal mode, press SYSTEM to enter System mode. System mode is set in the sequence of:
HEAT→ COOL→ OFF→ HEAT

System Mode	
HEAT MODE	Relay will be turned on when the room temperature is lower than the setting temperature
COOL MODE	Relay will be turned on when the room temperature is higher than the setting temperature
OFF MODE	Relay will always be turned off at any temperature.

LO will be shown when room temperature is below 0°C / 32°F.
HI will be shown when room temperature is above 40°C / 99°F.

When the heater or cooler is turned on, ① and ON will be shown on the LCD.

Low battery
If the voltage batteries drop below 2.7V, 🔋 icon will be on.

Electrical Interface

Temperature measurement:	0~40°C / 32~99°F
Control temperature range:	5~35°C / 41~95°F
Temperature resolution:	0.5°C / 1°F
Temperature accuracy:	±0.5°C / ±1°F
Transmitter input voltage:	2 X AA alkaline battery
Receiver (RT01R/MA) Input voltage:	24 Vac 50/60Hz
Relay contact Current:	1A Max
Operating Temperature:	0 ~ 50°C
Storage Temperature:	-10 ~ 60°C

FCC Statement

The 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.

Warning: Changes or modifications to this unit 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 on or more of the following measures:

☐ **Reorient of 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 needed.**
☐ **Consult the dealer or an experienced radio/TV technician for help**

Marra Air Conditioning Services Inc.
Address : 108-C Taylor Street Ocoee, Florida 34761, USA
Phone : 407-877-6765