SAVE THESE INSTRUCTIONS

GENERAL INFORMATION

FRONTIER KING I ELECTRONICS CO., LTD.

TH-920D(TX)

Programmable R/F Thermostat

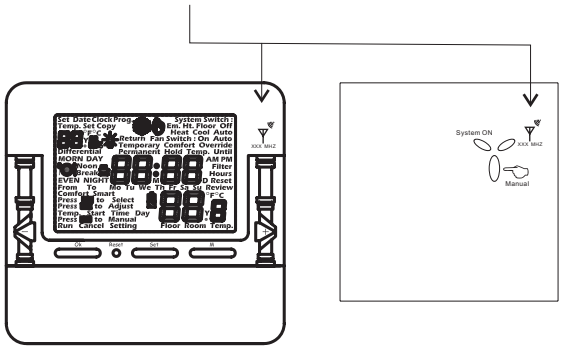
This Programmable R/F controlled Room Thermostat consists of a Transmitter Uni TH-920D(TX) and a Receiver unit RV-0356 (either volt-free or volt-output).

Its installation requires no wiring and can be fitted in any normal operation environment within 30 meters range between transmitter and receiver.

Unique facility of **R/F-address code setting** is built into R/F Receiver as part of commissioning procedure to ensure that your R/F Receiver will only respond to instruction sent to it from Transmitter.

The special feature of blue-backlit & soft-Key which is made of translucent rubber allows Red LED shines through provides an easy operation in dim surrounding.

There are 3 separate working frequencies, be sure to check descriptions on top right on out front of both Transmitter and Receiver, be certain marked frequency band areconsistent.



Transmitter thermostat is powered by 4 x AAA Alkaline,2 batteries to power the thermostat, another 2 designed to provide power to Blue-backlit/Red-Indicator.

Internal setting

These setting were **preset at factory** upon production, they are non- adjustable to users. Be certain to consult with your supplier to acquire suitable model to your demand before ordering.

1.Cool or Heat mode: Factory default “HEAT” mostly)
2.Shortest cycle protection at 3-minute :
Factory default “Deactivated”
3.7d/5-2d : Program period(event) per Day
subject to ordering.
4.P6/P4 : 6 or 4 Program period(event) per day
subject to ordering.

Technical Data

Transmitter TH-920D(T433 ~ T868 ~ T915)
1.Power Supply: 1.5V AAA Battery x 4pcs
(2 pieces each for Thermostat’s power supply and Blue-backlit(auto))
2. Battery : 1 year typical
3.Temperature reading: ℃/°F selectable.
4. Clock format : 24/12H selectable.
5.Temerature Sampling Rate: 1 Min.
6.Switching Differential: 0.5℃
7.Temperature control rage: 5~35℃
8.Temperature display range: 0~50℃
9.**Working Frequency:** 3 type for options
(preset at factory, non-selectable at user’s side)
T433: 433.92 MHZ
T868: 868.35 MHZ
T915: 915 MHZ
10.Working Distance: 30m
11.Dimension : 110.8 H x 104 W x 21.5 D mm

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INSTALLATION AND MAINTENANCE

⚠ DANGER ⚠

Electric Shock Or Fire Hazard

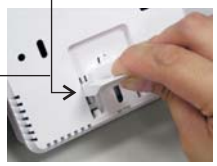
READ ALL WIRE SIZING, VOLTAGE REQUIREMENT AND SAFETY DATA AVOID PROPERTY DAMAGE AND PERSONAL INJURY

Fixing the Plug-in stand on transmitter

1.Insert "—" head screw-driver into position shown above.

2.Push upward.

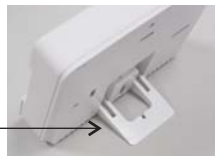
3.Pull stand off back plastic housing.



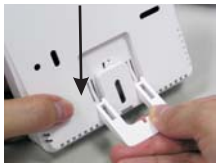
Make sure the "stand" faces to correct direction.

4.Hold the stand with hand, press it vertically against the "groove" originally is to store the stand.

5.Glide the "stand" downward.

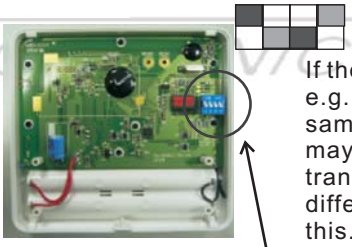


6.The stand is now fixed.

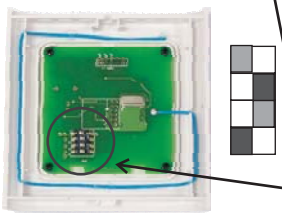


Pressing "stand" downward, as shown in picture above, can take it off from back housing.

RF Address Code Setting

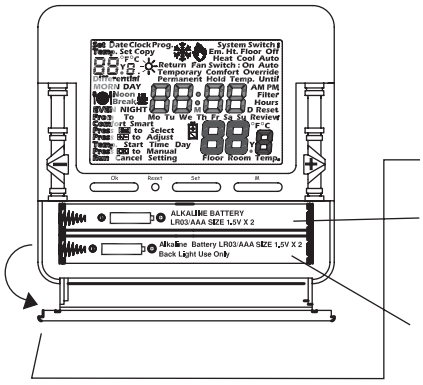


If there is another user nearby, e.g. in the next house, installs the same RV-0356 unit, your receiver may be fault triggered by his/her transmitter. You may select a different RF address code to prevent this. Receiver can only response to RF coding with the same address code setting as its own address code.



Position both Transmitter and Receiver DIP-Switches with the same arrangement.

Replacing batteries in Transmitter



Flip to open the flap on front plastic housing.

Upper compartment 2 x 1.5V AAA for powering transmitter.

Lower compartment , 2 x 1.5V AAA for backlit.

Internal setting (adjustable to users)

There are 6 setting are designed to be adjustable to users for required applications. Before start programming this transmitter thermostat, it's necessary to complete selecting these 6 settings.

Follow procedure description below;

Pressing and hold Set for 6 seconds to enter setting selection mode. And to follow flashing Digits or Symbols on LCD to complete following settings.

1. **C/F:** Press ▶ or ◀ to choose F or C setting.
2. Press Ok to enter next setting(24H/12H selection) after C/F selection complete. Continuing to use ▶ or ◀ buttons to choose.
3. Repeating procedure of "pressing Ok for next setting and then pressing ▶ or ◀ buttons to select preferred setting, to complete rest of internal settings;
   Date--Month,Day and YEAR
   Clock--Hour and Minute
   Switching differential (Hysteresis)
   Filter (Service interval)-- Counting the time that the transmitter has been in used.
   smallest time counting unit: 100 hours
4. Press Ok after adjustable internal setting completed, and start programming transmitter thermostat.

SAVE THESE INSTRUCTIONS

PROGRAMMING INSTRUCTIONS- ❶ -Transmitter Thermostat

Within programming mode, transmitter thermostat shall automatically resume its functioning 30 seconds after there was no any further data input.

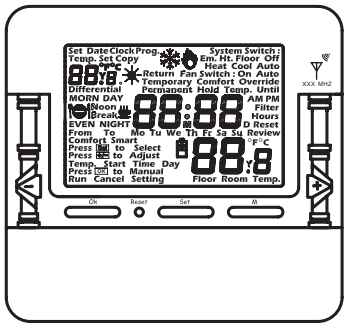
Start programming

This unit has 2 styles each of of day-programming format and “program-period(event) per day” for user’s option, they are by factory default, non-adjustable at user’s side.

Their programming procedures are different, check the model you have acquired, and programming it in accordance with following instruction descriptions.

The unit was produced with special feature of “flashing display” on LCD to assist users to completing programming.

Descriptions for buttons



+ / − : Up / Down keys.

M : Override function control keys.

Set : Programming Selection

Reset :Reset Thermostat

Ok : Press to memorize setting and to enter select next setting mode

Programming 7-d

Each of 7 days of week, can be programmed separately. Follow up with flashing display to complete programming.

1. Press Set to enter program setting, (you shall read temperature reading in flashing)

2. Press + or − to set desired **temperature-setpoint** for **1st** program- period (event).

3. Press Ok to enter setting **time-setpoint** for 1st program-period (event),after temperature-setpoint of 1st program-period completed. (You shall read "Hour & Start Time" begin flashing)

4. Press + or − to set time-setpoint for 1st program-period (event).

5. Press Ok to enter setting temperature- setpoint for **2nd** program-period (event),after time-setpoint of 1st program-period completed. (flashing temperature reading appears on LCD again)

6 Repeat same programming procedure

“pressing Ok → + or − → Ok

to complete each of Temperature & Time setpoints for every program-period of day and rest of days in week.

7. When entire programming completed, pressing Set **twice** and then press Ok

to start executing programs.

Reminder

In programming-mode, if users want to stop programming thermostat, either to wait for 30 seconds, thermostat shall automatic begin executing or to press SET key twice and then press OK key, to set thermostat to immediate run programming.

Follow up with the guidance by flashing digits/symbols on LCD to complete programming.

Importance

1. To program's logic, each day's ending time is at 11:59 in 12H-Format, 23:59 in 24H-Format. Therefore；do not set 12:00 PM for NIGHT(P4) nor 24:00 for NIGHT(P6).

2. Thermostat is designed to run programs by sequential order, do not set program either “overlap” In time sequence, nor non-sequential Time-setting in program setting, this will lead chaos to Thermostat's operational logic.

Copy function (**In 7-d format only**)

First to select any day of whole 7-day and to complete entire Temperature/Time setpoints to each program-period of the day.
(Read Programming procedure described in the **Programming 7-d**)

Taking the selected day as **reference-day** for this '**Copy**' function, and follow descriptions below;

1. Press Set to enter program setting, and then once again pressing Set .

‘**From**' begins flashing on LCD.
(Choosing the reference-day **from**)

2. Press + to select the reference-day.

3. Press Ok after reference-day selected.

‘**To**' shall begin flashing on LCD.

4. Press + to select the day in week to copy programs to it.

5. Press Ok after the day for "**copy programs to**" selected.

6. Repeating procedure by pressing + → Ok to select more days to copy programs to.

or pressing − to delete the selected day.

7. Press Ok twice, after desired days for “**copy**” was completed.

SAVE THESE INSTRUCTIONS

PROGRAMMING INSTRUCTIONS-❷-Transmitter Thermostat

Within programming mode, transmitter thermostat shall automatically resume its functioning 30 seconds after there was no any further data input.

Programming 5-1-1d

All 5 weekdays shall have same programming, Saturday & Sunday to be programmed separately.

1. Press Set to enter program setting.
   (Temperature reading shall be flashing on LCD)

2. Press + or − to set desired **temperature-setpoint** for 1st program-period(event).

3. Press Ok after temperature-setpoint for **1st** program-period completed.
   (you shall read "Hour & Start Time" begin flashing)

4. Press + or − to set desired **time-setpoint** for 1st program-period (event).

5. Press Ok to enter setting temperature setpoint for **2nd** program-period (event),after Time setpoint of 1st program-period completed.
   (flashing temperature reading appears on LCD again)

6. Repeat programming procedure

   Ok → + or − → Ok

   to complete each of temperature & time setpoints for every program-period(event) of weekdays(5-d).

   And to complete programming Saturday & Sunday after programming weekdays was completed.

7. Pressing Set **twice** and then pressing Ok to run programs.

Factory preset programs period (initial default)

Mode 7-d P6 factory preset

Mon ~ Fri	Time	Temperature	
		Heating mode	Cooling mode
MORN(**P1**)	6:00	70**°F** (21**°C**)	75**°F** (24**°C**)
DAY(P2)	8:30	60 (15.5)	85 (29.5)
NOON(P3)	***12:00pm***	***70 (21)***	***75 (24)***
BREAK(P4)	***2:00pm***	***60 (15.5)***	***85 (29.5)***
EVEN(P5)	4:30pm	70 (21)	75 (24)
NIGHT(P6)	10:30pm	65 (18.5)	80 (26.5)
Saturday	**Time**	**Temperature**	
		Heating mode	**Cooling mode**
MORN(P1)	7:00	70**°F** (21**°C**)	75**°F** (24**°C**)
DAY(P2)	8:30	70 (21)	75 (24)
NOON(P3)	***12:00pm***	***70 (21)***	***75 (24)***
BREAK(P4)	***2:00pm***	***70 (21)***	***75 (24)***
EVEN(P5)	4:30pm	70 (21)	75 (24)
NIGHT(P6)	10:30pm	***65*** (18.5)	80 (26.5)
Sunday	**Time**	**Temperature**	
		Heating mode	**Cooling mode**
MORN(P1)	7:00	70**°F** (21**°C**)	75**°F** (24**°C**)
DAY(P2)	8:30	70 (21)	75 (24)
NOON(P3)	***12:00pm***	***70 (21)***	***75 (24)***
BREAK(P4)	***2:00pm***	***70 (21)***	***75 (24)***
EVEN(P5)	4:30pm	70 (21)	75 (24)
NIGHT(P6)	10:30pm	***65*** (18.5)	80 (26.5)

NOON and BREAK will not appear in P6 mode.

Mode 5-1-1d P4 Factory Preset

	Time	Temperature	
Mon. ~ Fri.		Heating mode	Cooling mode
MORN(P1)	6:00	70**°F** (21**°C**)	75**°F** (24**°C**)
DAY(P2)	8:30	60 (15.5)	85 (29.5)
EVEN(P3)	4:30 PM	70 (21)	75 (24)
NIGHT(P4)	10:30 PM	65 (18.5)	80 (26.5)
Saturday	Time	Temperature	
		Heating mode	Cooling mode
MORN(P1)	7:00	70**°F** (21**°C**)	75 (24**°C**)
DAY(P2)	8:30	70 (21)	85 (29.5)
EVEN(P3)	4:30 PM	70 (21)	75 (24)
NIGHT(P4)	10:30 PM	65 (18.5)	80 (26.5)
Sunday	Time	Temperature	
		Heating mode	Cooling mode
MORN(P1)	7:00	70**°F** (21**°C**)	75**°F** (24**°C**)
DAY(P2)	8:30	60 (15.5)	85 (29.5)
EVEN(P3)	4:30 PM	70 (21)	75 (24)
NIGHT(P4)	10:30 PM	65 (18.5)	80 (26.5)

SAVE THESE INSTRUCTIONS

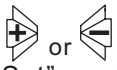
PROGRAMMING INSTRUCTIONS- ❸ -Transmitter Thermostat

Within programming mode, transmitter thermostat shall automatically resume its functioning 30 seconds after there was no any further data input.

Override Function

---operation guide to each of **4 modes.**

A. Temporary Override- Change current temperature setting until next setpoint

1. Press  adjust temperature.
("Temp. Set" symbol shall be flashing on LCD)

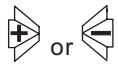
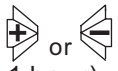
2. Wait for 10 seconds, thermostat shall automatically run this temporary override setpoint.

(or to press  to immediate run this override without waiting for 10 seconds)

3. After T**emporary Override** is in executing,

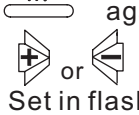
Press  shall terminate its executing.

B.Comfort Override---Change current temperature setpoint to new setpoint for desired hours. Thermostat shall resume its original programming after Comfort Override executing stopped**.**

1. Press 
2. Press  to adjust desired temperature.(Temp. Set in flashing on LCD screen)
3. Press  to select desired hours for comfort-override executing
4. Press  to set desired hours (minimum 1 hour).
5. Press  to run **Comfort Override**.
6. Upon **Comfort Override** is in executing,

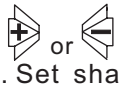
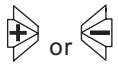
Press  again shall immediate stop this Overrride.

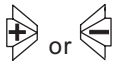
C.Permanent Hold Temperature---Hold temperature at desired setpoint permanently until it is called off.

1. Press 
2. Press  again (read indicator on LCD)
.
3. Press  to set desired temperature. (Temp. Set in flashingon LCD screen)
4. Press  to run **Permanent Hold Temperature** (LCD display shall indicate its executing)
5. Upon **Permanent Hold Temperature** is in executing,

Press  shall immediate this Overrride.

D. Temperature Until.(Vacation Hold)---Hold temperature at desired setpoint till to specified date.

1. Press 
2. Press  twice again.
2. Press  to set desired temperature setpoint. (Temp. Set shall be in flashing)
3. Press  to select desired duration of **Hold-Temperature Until**.
4. Press  to select **Month** first, and then

Press  again to select **Day,** again by pressing  to select desired **DAY.**

5. Press '**OK'** to run **Hold Temperature Until**.
6. Upon **Hold Temperature Until**. is in executing,

Press  shall immediate stop this override.

REMINDER

In Override setting mode, thermostat shall automatic resume its prior programming, after 30 seconds in pending input any further data

Keep to press **M** key, users shall read Override modes appears on LCD screen in sequence.

To follow guidance by flashing on LCD throughout entire procedure of programming overrride functions.

TO ERASE MEMROY BACKUP (EEPROM)

Pressing  and  together for 6 seconds, "**Reset**" shall appear on LCD display.

To press **"Reset"** button.

All previous setting shall be deleted, thermostat shall resume its factory default setting.

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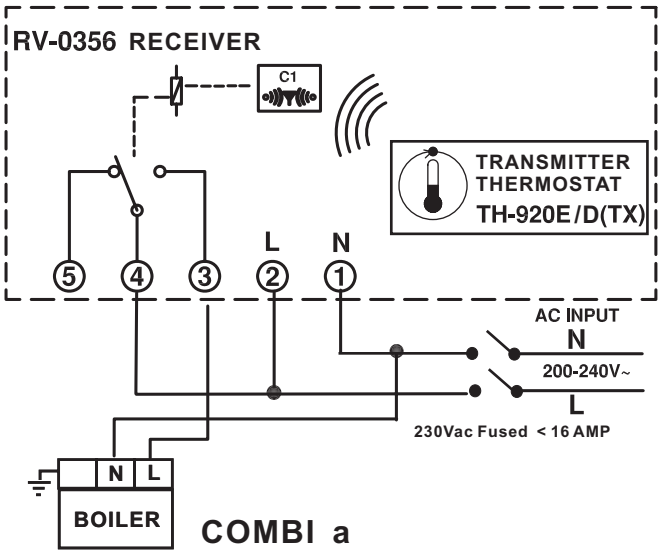
PROPOSED WRING APPLICATION — RV-0356

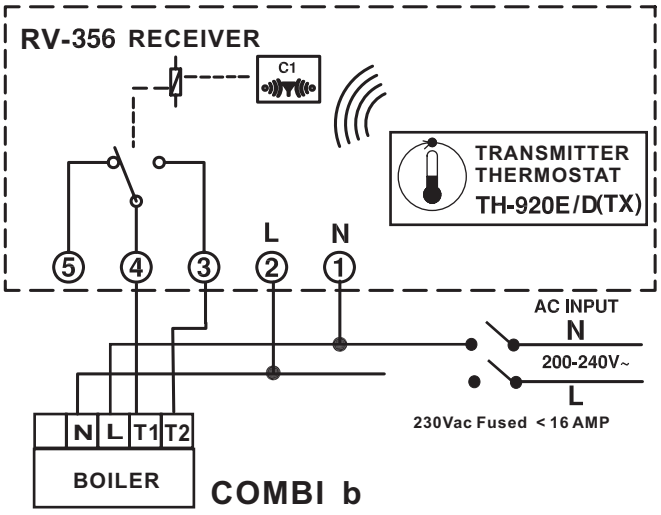
DANGER

Electric Shock Or Fire Hazard

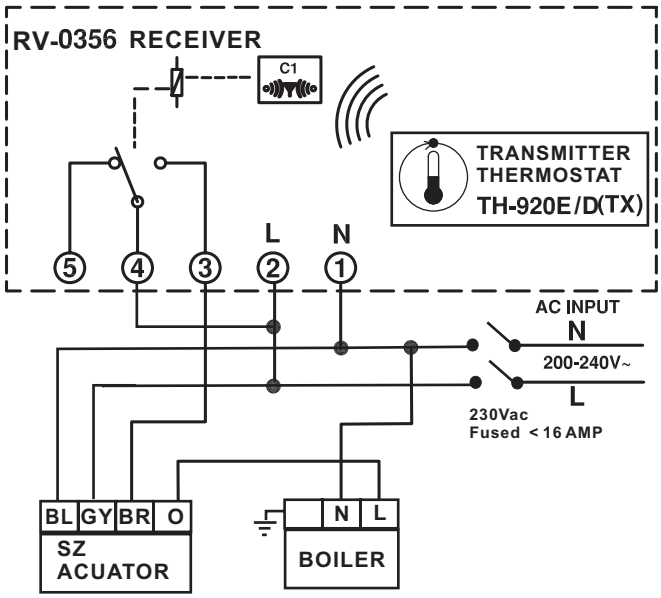
READ ALL WIRE SIZING, VOLTAGE REQUIREMENT AND SAFETY DATA AVOID PROPERTY DAMAGE AND PERSONAL INJURY



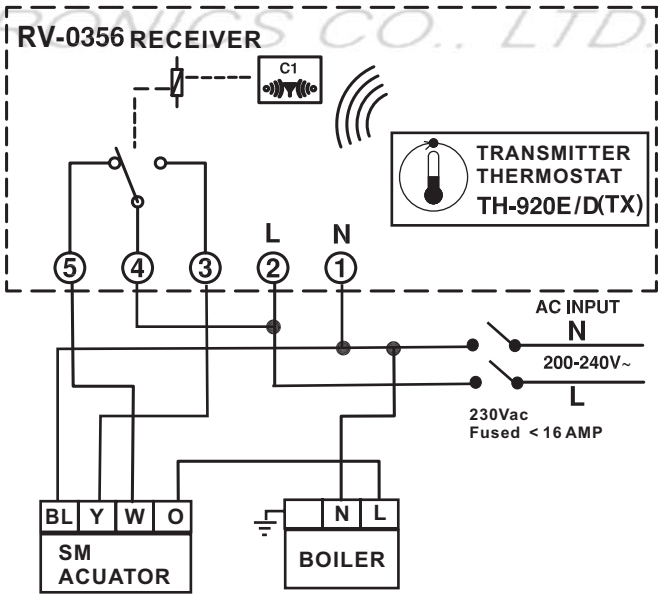
COMBI a



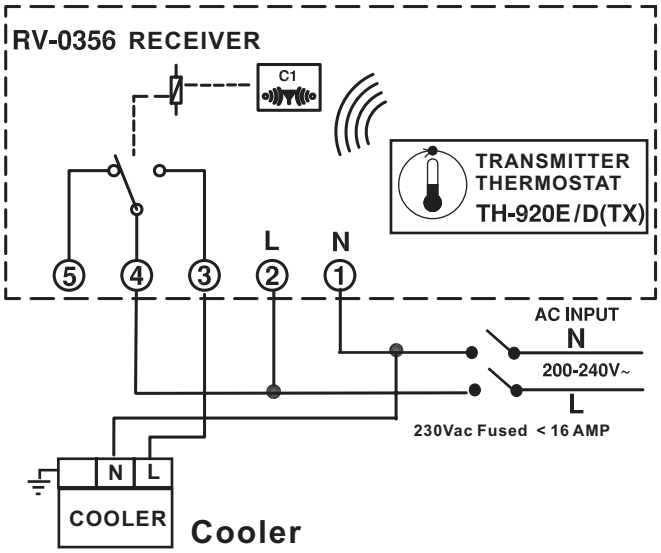
COMBI b



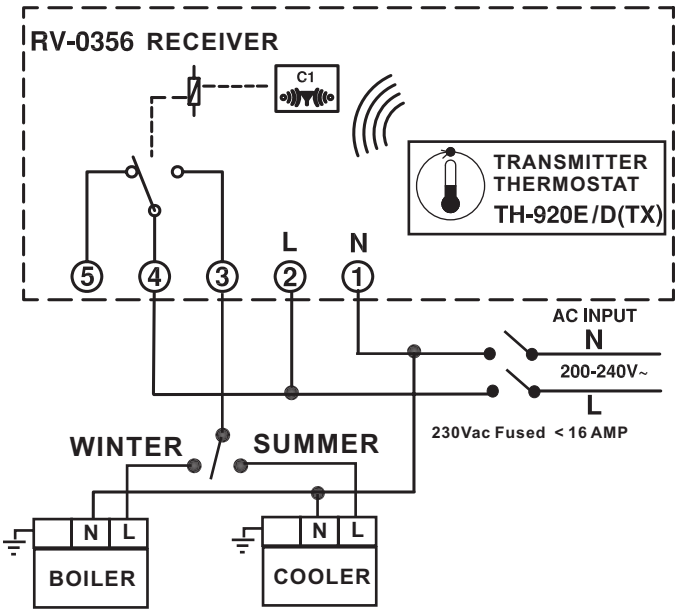
SPRING RETURN ACTUATOR



MOTOR ON/OFF ACTUATOR



Cooler



HEATER / COOLER

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PROPOSED WIRING APPLICATION — RV-0356H

FRONTIER KING I ELECTRONICS CO., LTD.

DANGER

Electric Shock Or Fire Hazard

READ ALL WIRE SIZING, VOLTAGE REQUIREMENT AND SAFETY DATA AVOID PROPERTY DAMAGE AND PERSONAL INJURY