MINI-PTAC
SERVICE MANUAL

Models Covered:
ACiQ-08TTW
ACiQ-10TTW
ACiQ-12TTW
ACiQ-14TTW

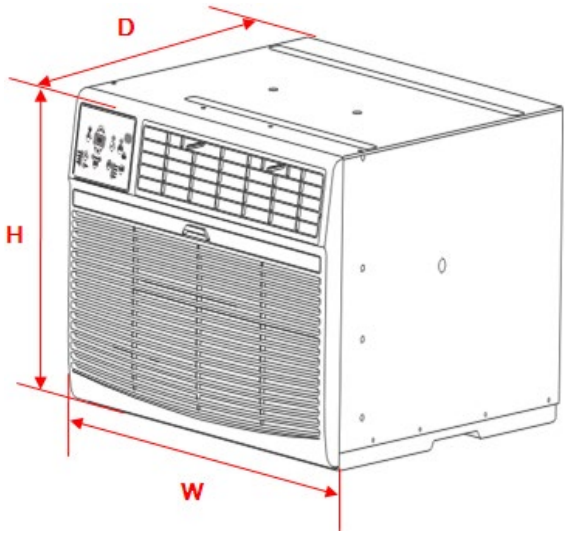
VERSION DATE: 10-25-24

Contents

■ 1. Model

8K	ACiQ-08TTW
10K	ACiQ-10TTW
12K	ACiQ-12TTW
14K	ACiQ-14TTW

■ 2.Dimension

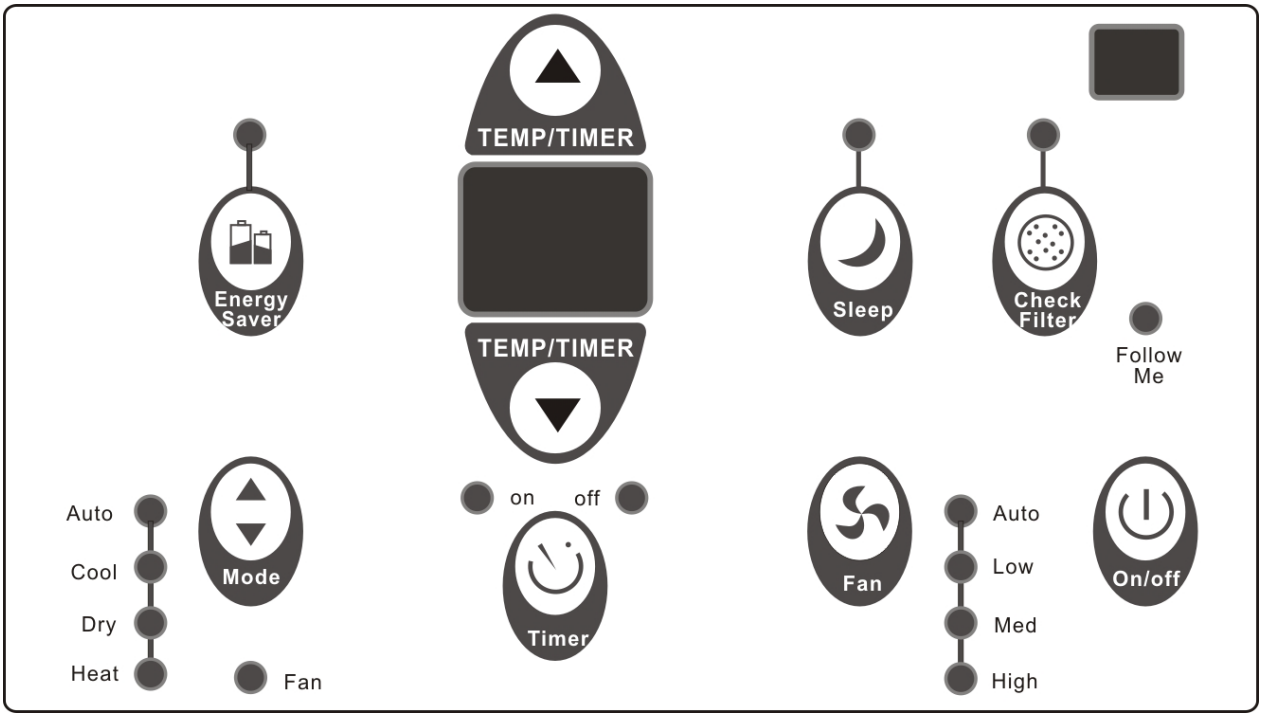


TTW sleeve

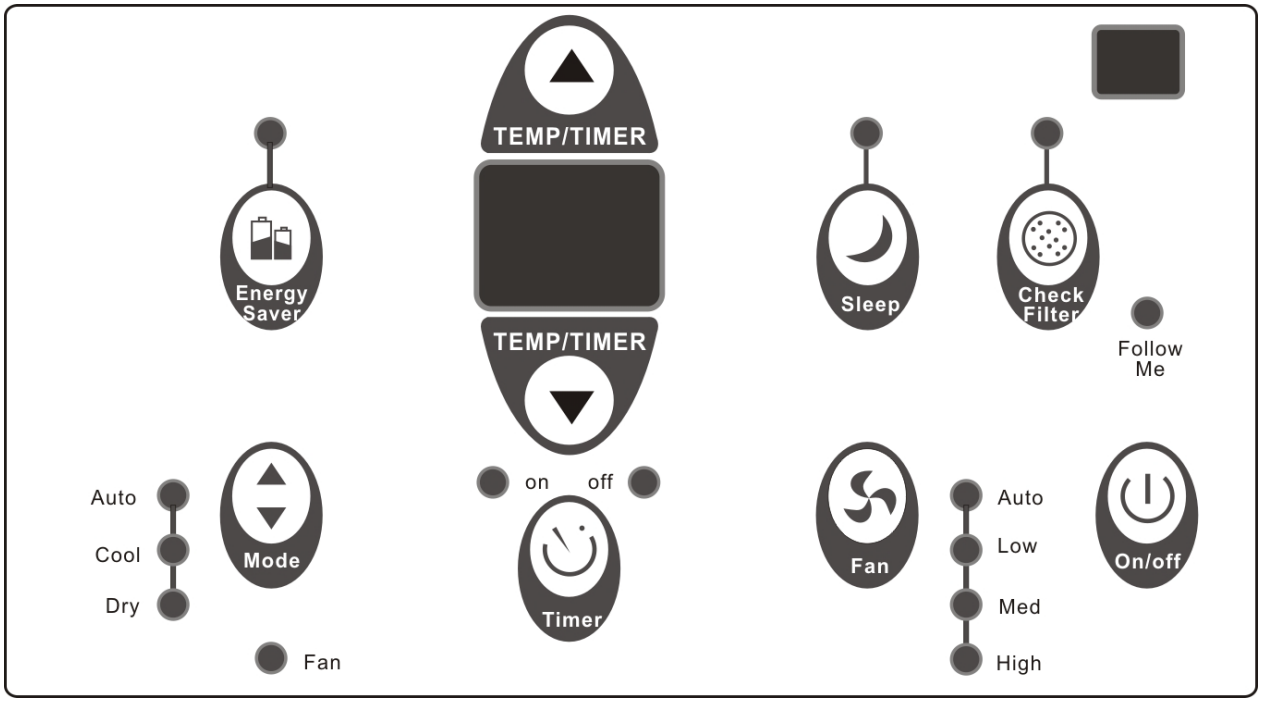
Dimension Mode	W (mm, inch)		H (mm, inch)		D (mm, inch)	
TTW	615	24.2	369	14.5	515	20.3
TTW sleeve	649	25.6	388	15.3	445	17.5

■ 3. Operation Modes and Instructions

3.1 Display control



ELECTRONIC HEATING MODELS



COOLING-ONLY MODELS

On-Off Button

Press  to turn on or off the unit.

NOTE: The unit will initiate automatically the Energy Saver function under cool, Dry, Auto (only Auto-Cooling and Auto-Fan) modes.

Up and Down Button

Press or hold either Up(▲) or Down(▼) the setting temperature 2℉/1℃ each times from 62℉ (17℃) to 86℉ (30℃). Also can be used for time adjust in Timer function.

Some models press and hold both Up and Down buttons for 3 seconds, will change the display from ℉ to ℃.

Mode select Button

Press  to change the operation mode, each time you press the button, a mode is selected in a sequence that goes from Auto, Cool, Dry and Fan.

The unit will initiate automatically the Energy Saver function under Cool, Dry, Auto (only Auto-Cooling and Auto Fan) modes.

Base on Energy Stars' requirement.

Fan speed Button

Press  to change the fan speed, each time you press the button, the fan speed in four steps, Auto, Low, Med and High. The fan speed can't be adjusted under HEAT mode. On Dry mode, the fan speed is controlled at Low automatically.

Timer Button

Press  to start or stop the Auto On or Auto Off function. Press or hold either Up (▲) or Down (▼) the setting time from 0.0 to 24 hours.

Sleep Button

Press  to start or stop the sleep function.

Energy Saver Button

Press  to start or stop the energy saver function. This function is available on Cool, Dry, Auto (only Auto-Cooling and Auto-Fan) modes.

When the room temperature is meet the compressor shut off condition, the fan motor will continue running for 3 minutes, after that, the fan motor will running for 2 minutes every 10 minutes, until the compressor start.

Check Filter Button

This function is a reminder to clean the Air Filter for more efficient and more health. The LED light will keep illuminate after 250 hours of operation, until press  .

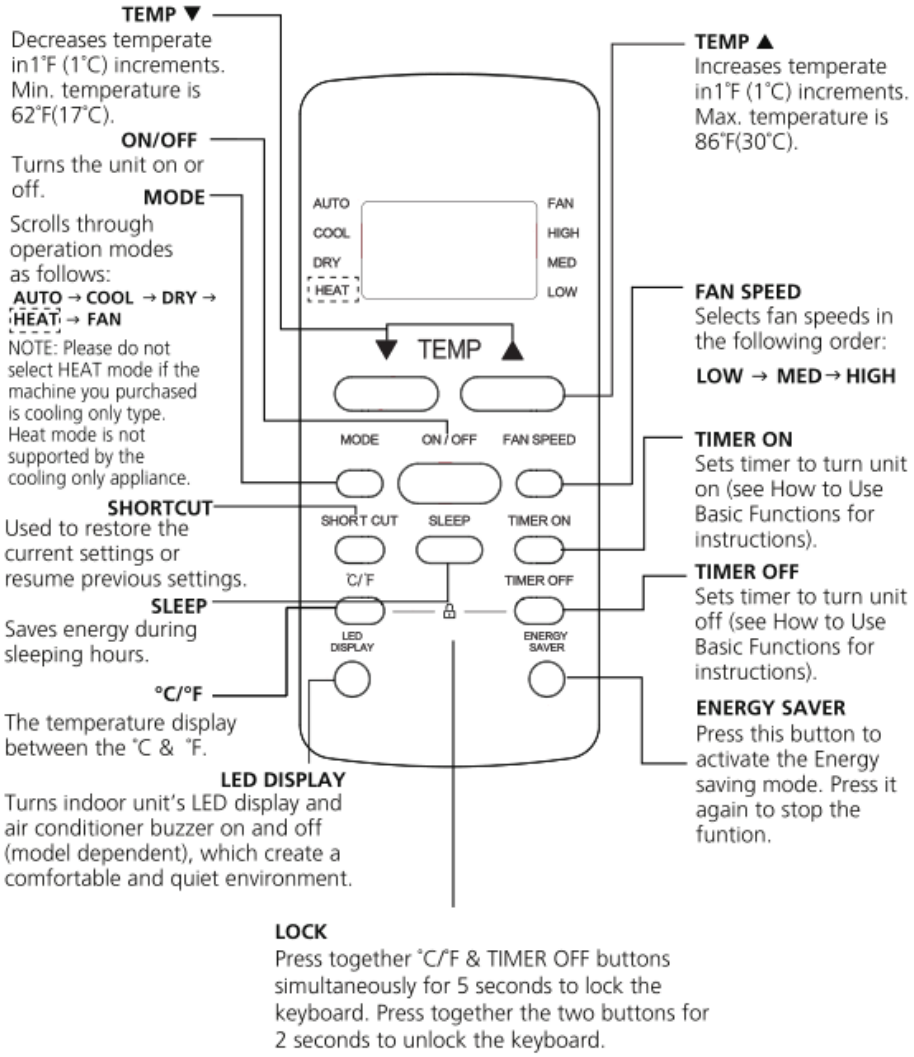
Follow Me Feature (on some models)

This feature can be activated from the remote control only. The remote control serves as a remote thermostat allowing for the precise temperature control at its location. (Follow Me)

To activate the Follow Me feature, point the remote control towards the unit and press the Follow Me button. The remote display is actual temperature at its location. The remote control will send this signal to the air conditioner every 3 minutes interval until press the Follow Me button again. If the unit does not receive the Follow Me signal during any 7 minutes interval, the unit will beep to indicate the Follow Me mode has ended.

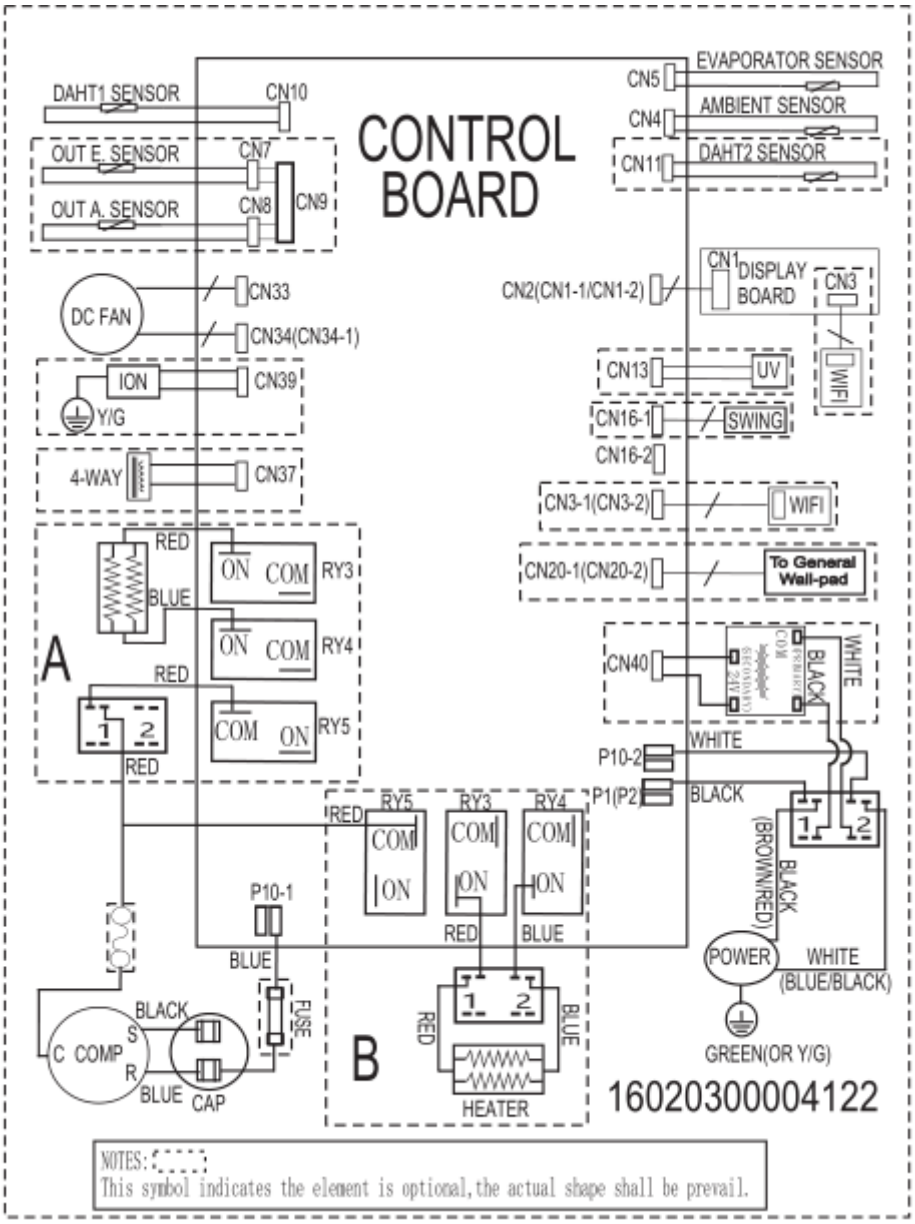
3.2 Remote control

RG51G5(1)/EU1



■ 4 Wiring Diagram

ACiQ-08TTW, ACiQ-10TTW, ACiQ-12TTW, & ACiQ-14TTW



■ 5 Electronic function(For remote control models)

5.1 Terms and definitions

- TA: Temperature of indoor ambient (T1)
- TE: Temperature of evaporator (T2).
- TC: Temperature of condenser (T3).
- TO: Temperature of outdoor ambient (T4)
- TS: The set temperature.
- DAHT: Sensor of heater(T5)

5.2 Protection function

1. The compressor restart protection functions with a delay of 3 minutes.
2. Sensor redundancy and automatic shutoff.

5.3 Auto mode

In Auto mode, the unit will choose cooling or fan-only mode according to ΔT(ΔT =TA-Ts)

ΔT=TA-Ts	Running mode
ΔT＞4°F(2°C)	Cooling
-2°F(-1°C)≤ΔT≤4°F(2°C)	Fan-only
ΔT<-2°F(-1°C)	Heating (Setting temperature is TS-1°F(0.5°C)); Or Fan-only (for cooling only models).

5.4 Fan-only mode

1. The temperature can't be controlled at the mode, and the room ambient temperature is display on LED.

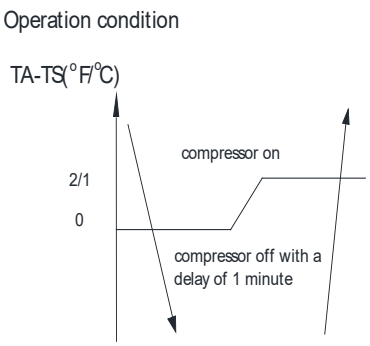
The temperature only display 32 to 99 ℉(0 to 37℃), If out of range will display LO or HI.

2. The Ion/ Timer functions are valid at the fan-only mode.
3. Auto fan: In fan-only mode, AC operates the same as auto fan in cooling mode with the temperature set at 75°F(24°C).

5.5 Cooling mode

1. The temperature can be set from 62 to 86℉(17 to 30℃)

2. Compressor Control
The compressor operates as below:



When TA≤TS, compressor off

When T1>TS+2℉(1℃), fan on, compressor on 12s later

3. Fan Control
In cooling mode, the indoor fan operates continuously. The fan speed can be set to high, medium or low.

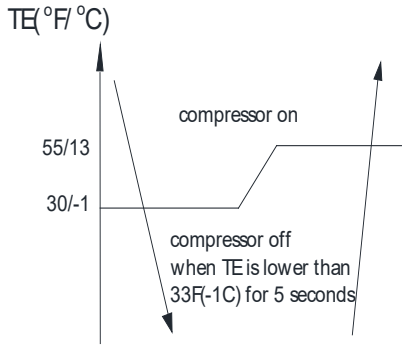
1) When the fan runs at low fan: when T1≥TS+2.5℉(1.5℃), the fan will run at medium fan.

2) When the fan runs at medium fan:
A. After 1 minute, switch to high fan when T1≥TS+2.5℉(1.5℃).

B. After 1 minute, switch to low fan when T1≤TS-1℉(0.5℃)

3) When the fan runs at high fan for 1 minute , it will run at medium fan when T1≤TS.

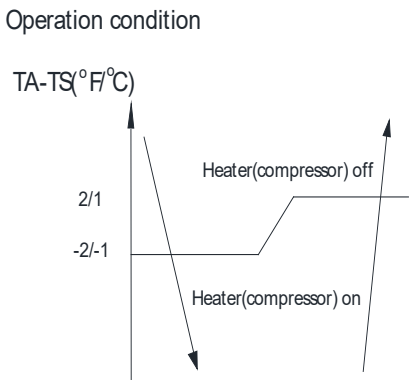
4. Auto-defrosting function protection as below:
When TE is lower, it means that the evaporator frosts. Then the unit starts defrosting, and the indoor fan keeps working at the moment. When the temperature is up, the unit stops defrosting.



5.6 Heating mode

1. The temperature can be set from 62 to 86℉(17 to 30℃)

2. Compressor Control
The compressor operates as below:



3. Fan Control
In heating mode, the indoor fan operates continuously. The fan speed can be set to high, medium or low.

1) When the fan runs at low fan: when T1≤TS-2.5℉ (1.5℃), the fan will run at medium fan.

2) When the fan runs at medium fan:
A. After 1 minute, switch to high fan when T1≤TS-2.5 ℉(1.5℃).

B. After 1 minute, switch to low fan when T1≥TS+1℉ (0.5℃)

3) When the fan runs at high fan for 1 minute , it will run at medium fan when T1≥TS.

4. In heating mode, ION/Sleep/Timer/Follow me function are valid.

5.7 Dry mode

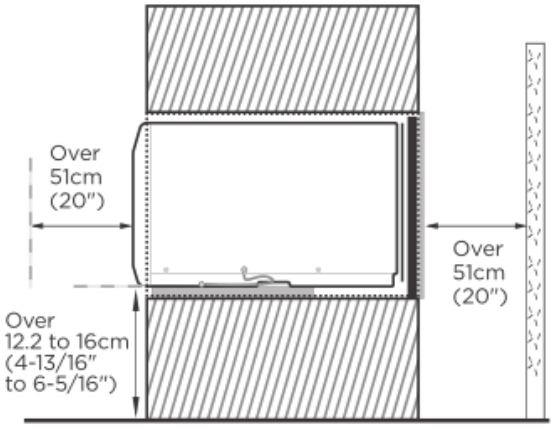
1. The temperature can be setting the same as cooling mode.
2. The fan speed will keep running at low speed and can't be controlled at the mode.

5.8 Sleep mode

1. The sleep function is available in cooling, heating, or auto mode.
2. In this mode the fan speed will be change to auto fan.
3. In this mode the selected temperature will increase (cooling) or decrease (heating) by 2°F/1 (or 2)°C 30 minutes after the mode is selected. The temperature will then increase (cooling) or decrease (heating) by another 2°F/1 (or 2)°C after an additional 30 minutes. This new temperature will be maintained for 7 hours before it returns to the originally selected temperature. This ends the Sleep mode and the unit will continue to operate as originally programmed.
4. When the function is start, if you do any operation below, the function will stop.
   - Press sleep button again, or use the remote control to set anything.
   - Turn off the unit.
   - It is time to turn off the unit, for timer off function.

■ 6 Installation and use notice

6.1 To make the appliance work better, please do not place a barrier in the air outlet, and select the installation location of the product according to the requirements in the following figure.



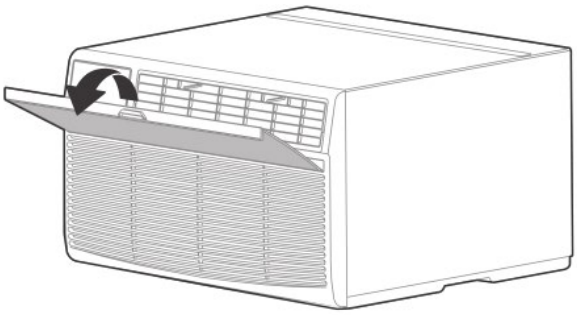
Side View

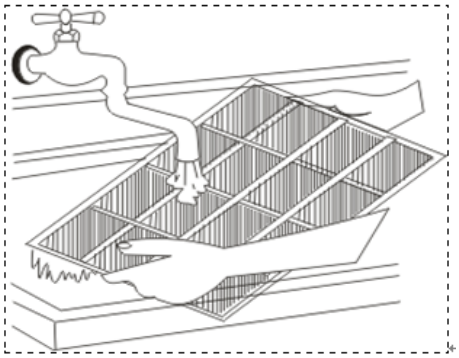
6.2 Cleaning filter

The air filter should be checked at least once a month to see if cleaning is necessary. Trapped particles in the filter can build up and cause an accumulation of frost on the cooling coils.

• Take the filter by the center and pull up and out.

• Wash the filter using liquid dishwashing detergent and warm water. Rinse filter thoroughly. Gently shake excess water from the filter. Be sure the filter is thoroughly dry before replacing. Instead of washing, you may vacuum the filter clean.





Notice:

- Never use hot water over 104℉(40℃) to clean the air filter. Never attempt to operate the unit without the air filter.

6.3 Cabinet Cleaning

• Be sure to unplug the air conditioner to prevent shock or fire hazard. The cabinet and front may be dusted with an oil-free cloth or washed with a cloth dampened in a solution of warm water and mild liquid dishwashing detergent. Rinse thoroughly and wipe dry.

• Never use harsh cleaners, wax or polish on the cabinet front.

• Be sure to wring excess water from the cloth before wiping around the controls. Excess water in or around the controls may cause damage to the air conditioner.

• Plug in air conditioner.

6.4 Winter Storage

If you plan to store the air conditioner during the winter, remove it carefully from the window according to the installation instructions. Cover it with plastic or return it to the original carton.

■ 7 Troubleshooting

In general, possible trouble is classified in three kinds. One is called Starting Failure which is caused from an electrical defect, another is ineffective Air Conditioning caused by a defect in the refrigeration circuit and improper application, and the other is called the Structure Damage.

7.1 Troubleshooting

Problem	Solution
Air conditioner does not start	Wall plug disconnected. Push plug firmly into wall outlet.
	House fuse blown or circuit breaker tripped. Replace fuse with time delay type or reset circuit breaker.
	Plug Current Device Tripped. Press the RESET button.
	Power is OFF. Turn power ON.
Air from unit does not feel cold enough	Room temperature below 17 ℃(62℉). Cooling may not occur until room temperature rises above 17 ℃(62℉).
	Temperature sensing behind air filter element touching cold coil. Keep it from the cold coil.
	Set to a Lower temperature.
	Compressor stopped when changing modes. Wait for 3 minutes after set to the COOL mode.
Air conditioner cooling, but room is too warm- ice forming on cooling coil behind decorative front.	Outdoor temperature below 17 ℃(62℉). To defrost the coil, set FAN ONLY mode.
	Air filter may be dirty. Clean filter. Refer to Care and Cleaning section. To defrost, set to FAN ONLY mode.
	Thermostat set too cold for night-time cooling. To defrost the coil, set to FAN ONLY mode. Then, set temperature to a Higher setting.
Air conditioner cooling, but room is too warm- NO ice forming on cooling coil behind decorative front.	Dirty air filter- air restricted. Clean air filter. Refer to Care and Cleaning section.
	Temperature is set too High, set temperature to a lower setting.
	Air directional louvers positioned improperly. Position louvers for better air distribution.
	Front of units is blocked by drapes, blinds, furniture, etc. - restricts air distribution. Clear blockage in front of unit.
	An open doors, windows, or register may allow cold air to escape. Close any doors, windows or registers.
	The room may be too warm. Allow additional time to remove “Stored heat” from walls, ceiling, floor and furniture.
Air conditioner turns on and off rapidly	Dirty air filter- air restricted. Clean air filter
	Outside temperature extremely hot. Set FAN speed to a Higher setting to bring air past cooling coils more frequently.
Noise when unit is cooling	Air movement sound. This is normal. If too loud, set to a slower FAN setting.
	Window vibration - poor installation. Refer to installation instructions or check with installer.
Water dripping INSIDE when unit is cooling.	Improper installation. Tilt air conditioner slightly to the outside to allow water drainage. Refer to installation instructions - check with installer.
Water dripping OUTSIDE when unit is cooling.	Unit removing large quantity of moisture from humid room. This is normal during excessively humid days.
Remote Sensing Deactivating Prematurely (some models)	Remote control not located within range. Place remote control within 20 feet and pointed in the general direction of the air conditioner unit.
	Remote control signal obstructed. Remove obstruction.
Room too cold	Set temperature too low. Increase set temperature.

7.2 Error codes and solution

7.2.1 Error codes

LED display	Stand for
AS	Room temperature sensor T1 is in open circuit or has short circuited
LO	Room temperature sensor T1 is in open circuit in fan only mode
HI	Room temperature sensor T1 has short circuit in fan only mode
HS	Electric heating sensor is in open circuit or has short circuited
oS	Outdoor room temperature sensor T4 is in open circuit or has short circuited
CS	Condenser coil temperature sensor T3 is in open circuit or has short circuited
ES/●	Evaporator temperature sensor T2 is in open circuit or has short circuited
E3	The indoor fan speed is operating outside of the normal range

Malfunction display:

When the malfunction happened at the same time, the priority is E3>AS> HS> oS>CS>ES
When error occurs, unplug the unit and plug it back in. If error repeats, call for service.

7.2.2 Troubleshooting

7.2.2.1 AS- Room temperature sensor T1 is in open circuit or has short circuited
LO- Room temperature sensor T1 is in open circuit in fan only mode
HI- Room temperature sensor T1 has short circuit in fan only mode
HS- Electric heating sensor is in open circuit or has short circuited
oS- Outdoor room temperature sensor T4 is in open circuit or has short circuited
CS- Condenser coil temperature sensor T3 is in open circuit or has short circuited
ES- Evaporator temperature sensor T2 is in open circuit or has short circuited

Causation:

a) Port of temperature sensor is loose.
b) Temperature sensor is bad.
c) Circuit component is bad.

Solution:

a) Check the connection between temperature sensor and adaptor is ok, if not, please make sure the port plugs into the adaptor hard.
b) Restart the unit. If it can not resume. Measure the resistance value of sensor using a multi-meter. Check corresponding temperature sensor resistance value table (Refer to 7.3). If it is not within acceptable parameter, please use another good temperature sensor instead.
c) Restart the unit. If it also can not resume. Please replace the PCB.

7.2.2.2 E3- The indoor fan speed is operating outside of the normal range

Solution:

Power off, then restart If it can not resume after 2 minutes.

a) If the motor can rotate

1. Disassemble the machine and check whether the fan feedback line on the power board is plugged in.

2. If it is plugged in, the power board is faulty. Replace the PCB.

b) If the motor cannot rotate

1. Check whether the fan line of the power board is plugged in.

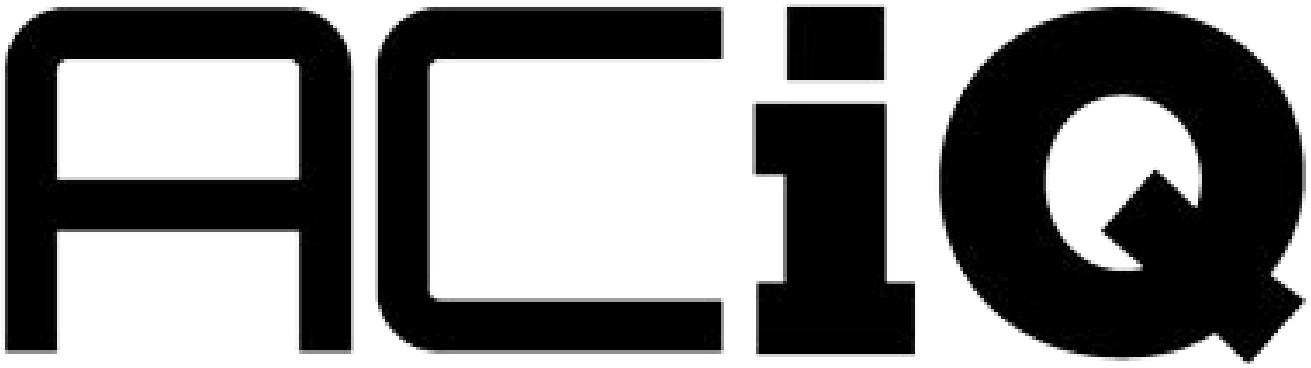
2. If it is plugged in, the power board is broken. Replace the PCB.

3. If the problem still cannot be solved, the motor is faulty.

7.3 Characteristic of temperature sensor

Temp.℃	Temp.℉	Resistance KΩ	Temp.℃	Temp.℉	Resistance KΩ
-10	14	62.2756	31	87.8	7.6241
-9	15.8	58.7079	32	89.6	7.2946
-8	17.6	56.3694	33	91.4	6.9814
-7	19.4	52.2438	34	93.2	6.6835
-6	21.2	49.3161	35	95	6.4002
-5	23	46.5725	36	96.8	6.1306
-4	24.8	44.0000	37	98.6	5.8736
-3	26.6	41.5878	38	100.4	5.6296
-2	28.4	39.8239	39	102.2	5.3969
-1	30.2	37.1988	40	104	5.1752
0	32	35.2024	41	105.8	4.9639
1	33.8	33.3269	42	107.6	4.7625
2	35.6	31.5635	43	109.4	4.5705
3	37.4	29.9058	44	111.2	4.3874
4	39.2	28.3459	45	113	4.2126
5	41	26.8778	46	114.8	4.0459
6	42.8	25.4954	47	116.6	3.8867
7	44.6	24.1932	48	118.4	3.7348
8	46.4	22.5662	49	120.2	3.5896
9	48.2	21.8094	50	122	3.4510
10	50	20.7184	51	123.8	3.3185
11	51.8	19.6891	52	125.6	3.1918
12	53.6	18.7177	53	127.4	3.0707
13	55.4	17.8005	54	129.2	2.959
14	57.2	16.9341	55	131	2.8442
15	59	16.1156	56	132.8	2.7382
16	60.8	15.3418	57	134.6	2.6368
17	62.6	14.6181	58	136.4	2.5397
18	64.4	13.918	59	138.2	2.4468
19	66.2	13.2631	60	140	2.3577
20	68	12.6431	61	141.8	2.2725
21	69.8	12.0561	62	143.6	2.1907
22	71.6	11.5000	63	145.4	2.1124
23	73.4	10.9731	64	147.2	2.0373
24	75.2	10.4736	65	149	1.9653
25	77	10.000	66	150.8	1.8963
26	78.8	9.5507	67	152.6	1.8300
27	80.6	9.1245	68	154.4	1.7665
28	82.4	8.7198	69	156.2	1.7055
29	84.2	8.3357	70	158	1.6469

30	86	7.9708			



The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details. Any updates to the manual will be uploaded to the service website, please check for the latest version.

Service Manual:
SM_Window_TTW_US_R32_A_230928