Haier SERVICE MANUAL

Order No.AC1011S006V0

FACTORY MODEL NO.
ESA405N

Feature

- Top Discharge Airflow Pattern
- Modern Family-look Design
- 3 Cool Settings, 3 Fan Settings
- Easy-to-install Mounting Kit
- Easy-Access Washable Filter
- Digital Time & Temperature Display
- 24 Hour on/off Timer
- Filter Reset
- Sheeping

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death

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Haier Group

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1.Product Code Illumination and Series introduction

1). Model identification:

ESA	□	□□	□	1309S	001	V0
A	B	C	D	E	F	G

A: Abbreviation of Energy Star
B: The type of refrigerant
4: R410A
C: Nominal cooling capacity (BTU/h) with the first two numbers based on one thousand unit
D: Design code
E: Compile time
F: Serial number
G: Version number

Examples:
ESA405N
It represents remote control window air conditioner. Cooling capacity is 5200BTU/h and the refrigerant is R410A .

2). Standard situation/conditions

No.	Operating condition	Indoor air state		outdoor air state	
		D.B. ℃	W.B. ℃	D.B. ℃	W.B. ℃
1	Nominal cooling	26.7	19.4	35	23.9

2.Specification

Item			Unit	ESA405N
Cooling capacity			BTU/h	5200
Heating capacity			BTU/h	/
Power supply				1PH/115V/60HZ
Cooling		Power input	W	465
		Running current	A	4.1
		EER	BTU/(h·W)	11.2
Heating		Power input	W	/
		Running current	A	/
		COP	BTU/(h·W)	/
Sound Level		Indoor side	dB(A)	54
		Outdoor side	dB(A)	58
Net dimensions		Height	inches	12 7/16
		Width	inches	18 1/2
		Depth	inches	14
Packaging dimensions		Height	inches	15
		Width	inches	20 1/4
		Depth	inches	17 3/4
Weight		Net	kg	21
		Gross	kg	23.6
Compressor		Type		Rotary
		Model	/	39B111AA&0DKA
		Running cap. For comp.	μF	35
Pressure		Hi-Pressure	Psig	500
		Low-Pressure	Psig	240
Refrigerant		Model	R22 or R410A	R410A
		Charge	OZ	12.9
Fan	Type	Indoor unit	/	centrifugal
		Outdoor unit	/	axial
	Fan Speed	Indoor unit	r/min	1410/1350/1250
Air volume			CFM	155
Moisture removal			Pints/hr	1.2

3. Safety and Precaution

WARNING:

The information in this use & care guide must be followed to minimize the risk of personal injury, fire,electric shock or other unsafe conditions.
The instructions in this use & care guide are not meant to include every possible conditionor situation that may occur. Use caution and care when installing, operating and cleaning the air conditioner.

1. Use this air conditioner only for its intended application as described in this Use & Care Guide.
2. This air conditioner must be properly installed and use the correct wall outlet that matches with the air conditioner's power supply cord in accordance with the Installation Section of this Use & Care Guide before it is operated.
3. Never unplug the air conditioner by pulling on the power supply cord.Always grip the plug firmly and pull straight out from the wall outlet.
4. Replace the power supply cord immediately if it becomes damaged in any way. A new power supply cord must be purchased from the air conditioner manufacturer and installed by a qualified technician. DO NOT use a power supply cord that is cracked, split, cut, or damaged anywhere along its length or either at the plug end or connector end.
5. Turn off the air conditioner and unplug it from the wall outlet before performing any cleaning or maintenance.
6. Do not store or use combustible or flammable materials or liquids on or near the air conditioner.
7. If the wall outlet configuration does not match the plug configuration on the air conditioner, the wall outlet must be changed by a qualified electrician.
8. This air conditioner contains R410a refrigerant and requires certified technicians to use the proper equipment, tools and safety standards that are approved for this refrigerant. Use only equipment certified for R410a refrigerant. In addition, under federal law, all refrigerant must be properly removed from the air conditioner prior to its disposal.

4.Warning and Cautions

WARNING

- Electrical shock hazard
- Plug into a mating, grounded 3 prong outlet.
- Do not remove the ground prong from the power supply cord.
- Do not use a plug adapter, extension cord, surge protector, or multi-outlet adapter
- Failure to follow these instructions can result in injury, fire, or electrical shock.

ELECTRICAL REQUIREMENTS

1. DO NOT cut or remove the grounding prong on the attached power supply cord. Doing so may cause sparks or fire, and voids all warranties. For safety purposes the air conditioner must be properly grounded.
2. To avoid a fire hazard or possible electric shock, DO NOT use an adapter plug, extension cord,surge protectors, or multi-outlet adapters with the air conditioner.
3. The power supply cord is equipped with a 3-prong plug which mates with a standard 115 volt wall outlet to minimize the possibility of electrical shock from this air conditioner.
4. The power supply cord includes a leakage current detection interrupter device (LCDI). A RESET and TEST button are on the plug case. The device should be tested on a periodic basis by pressing the TEST button and then the RESET button while it is plugged into the wall outlet. If the TEST button does not trip or the RESET will not stay engaged, do not use the air conditioner and contact a qualified service technician.
5. Have the wall outlet and circuit inspected by a qualified electrician to ensure that the wall outlet is properly grounded.
6. If there is a 2-prong wall outlet present and not a 3-prong wall outlet, it is the responsibility of the user to have it replaced with a properly grounded 3-prong outlet.
7. The air conditioner should always be plugged into a dedicated electrical outlet which has a voltage rating that matches the serial label on the side of the air conditioner.
8. The electrical ratings for your air conditioner are listed on the Model/Serial Number label. The Model/Serial Number label is located on the side of the air conditioner cabinet, or behind the front grille.
9. Specific electrical requirements are listed in the chart below. Follow the requirements for the type of plug on the power supply cord.

Recommended grounding method

This air conditioner must be grounded. This air conditioner is equipped with a power supply cord that has a 3 prong grounding plug. The power supply cord must be plugged into a mating, grounded 3 prong outlet, and grounded in accordance with all local codes and ordinances. If a mating outlet is not available, it is the customer's responsibility to contact a qualified electrician and ensure that a properly grounded 3 prong outlet is installed.

Power supply cord

This room air conditioner is equipped with an a leakage current detection interrupter (LCDI) power supply cord required by UL. This power supply cord contains a current detection device. If the power supply cord is crushed, this device will detect current leakage and power will be disconnected from the air conditioner. If this power supply cord is damaged, it cannot be repaired and must be replaced with a cord from the product manufacturer.

Energy Saving Guide

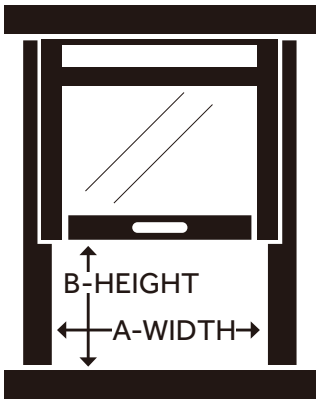
- When installing your air conditioner , make sure to seal all areas where there is a possibility of air leakage .
- The airflow should not be blocked , either inside by curtains , drapes or furniture , or outside by shrubs or bushes .
- Do not needlessly use electrical light or other appliances that produce heat .
- Keep the blinds and drapes drawn on all other windows .
- While cooking ,use an exhaust fan in the kitchen to remove the excess heat .
- Always use the correct BTU size air conditioner to cool the room to attain optimum efficiency .

5. Installation and Accessory Parts

1. This air conditioner contains no consumer serviceable parts. If you have problems or questions regarding the operation of your air conditioner always call Haier Customer Service: 1-877-337-3639.
2. Be sure that the air conditioner is properly and securely installed in the window according to the installation instructions included in this Use & Care Guide.
3. DO NOT drill any holes in the base or sides of the air conditioner.
4. DO NOT place fingers or objects in the air discharge or air intake in the front of the air conditioner.
5. DO NOT operate the air conditioner with a protective cover on the outside section.
6. DO NOT block the air discharge or air intake areas on the front panel.
7. DO NOT block the side louvers on the outside of the air conditioner.
8. DO NOT place any objects either on the indoor or outdoor sections of the air conditioner
9. Operate the air conditioner with the air filter installed.
10. Keep this Use & Care Guide, carton and packing material for future use in removing, storing and reinstalling the air conditioner.

Window Installation

Window opening measurements:



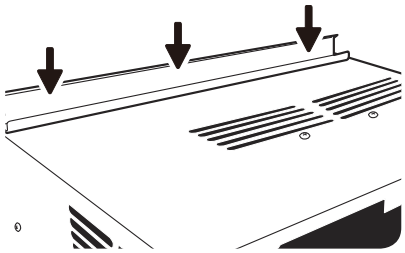
A. Width

B. Height

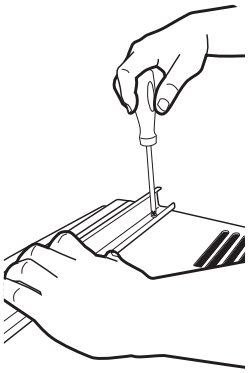
Prepare Air Conditioner for Installation

Install Top Channel

1. Place the top channel on the top of the air conditioner, lining up the holes in the top channel with the holes in the top of the air conditioner.Make sure the channel is facing forward as indicated by the sticker.



2. Using 3/8 " self-tapping screws, attach the top channel to the top of the air conditioner.
   Use three (3) 3/8" self-tapping screws.



Install Side Curtains

NOTE: Attach side curtains to the air conditioner before placing the unit in the window.

1. Place the tabbed side of the side curtain in the track on the right-hand side of the air conditioner cabinet. (See Fig.1)

Fig. 1

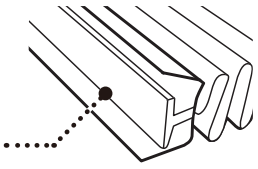


Fig. 2

2. Slide the tabbed side of the side curtain down over all 3 tracks until the curtain is aligned with the top and bottom of the air conditioner cabinet. (See Fig.3)
3. Slide the side curtain frame over the top of the side curtain, then into the channel on the top of the air conditioner and into the track on the bottom of the air conditioner. (See Fig.4)
4. Slide the side curtain frame as close to the air conditioner cabinet as necessary to lock the side curtain to the frame. Gently press the frame until it clicks.(See Fig.2 & Fig.4)
5. Repeat above steps for the left-hand side curtain and frame. Make sure no gaps are left to ensure that air does not escape into or out of the room.

Fig. 3

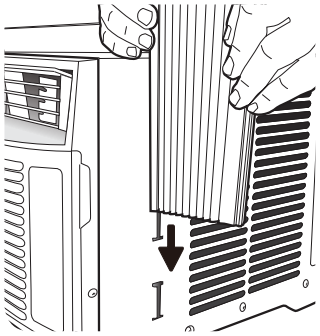
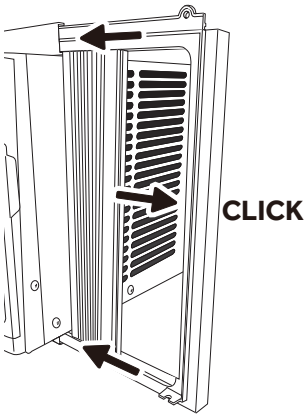


Fig. 4



Prepare Window for Installation

1. Measure the width of the window opening.(See Fig.5)
2. Mark the center line on the inside of the windowsill with a pencil. (See Fig.6)

WIDTH OF
WINDOW OPENING

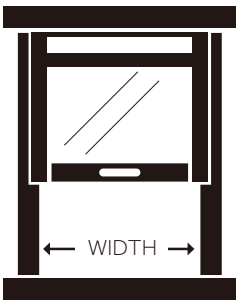


Fig. 5

CENTER LINE

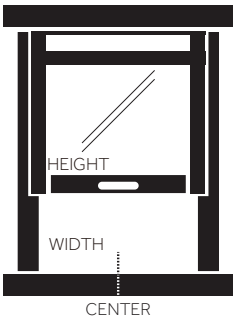


Fig. 6

Notes and warnings:

Be sure your air conditioner does not fall out of the window opening during installation or removal.

- Do not block the air discharge or air intake areas on the front panel.
- Do not block the louvers on the outside of the air conditioner.

3. Center the air conditioner in the window sill.Make sure to place the unit so that it is resting on the windowsill with a ¼" to ½" downward tilt towards the outside. Lower the window sash behind the top channel to hold the unit in place.(See Fig.7)

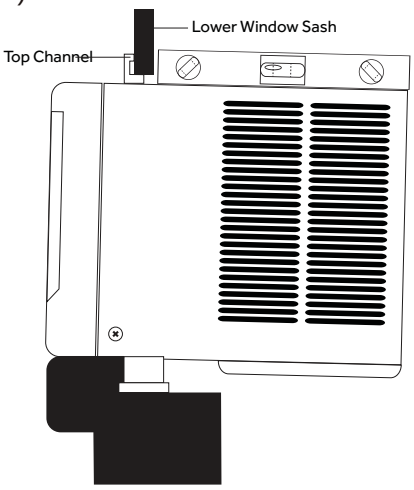


Fig. 7

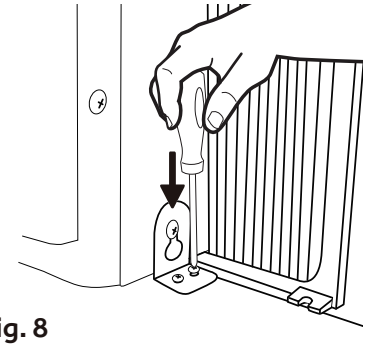


Fig. 8

NOTE: The appearance of your model may differ from the one shown.

4. Loosen the screw located on the lower-right hand corner of the air conditioner.
5. Slide the side bracket over the screw. The side bracket should be resting on the window sill.(See Fig.8)
6. Partially tighten the screw. Secure the unit before tightening completely.
7. Use 1/8" drill bit to drill a starter hole through the holes in the side bracket.
8. Using two (2) 1" wood screws, attach the side bracket to the window sill.
9. Repeat for side bracket installation on the left-hand side of the air conditioner.

Completing the installation

Attach side curtains to window

1. Pull the left-hand curtain and frame out until it fits flush to the side of the window frame. (See Fig.9)

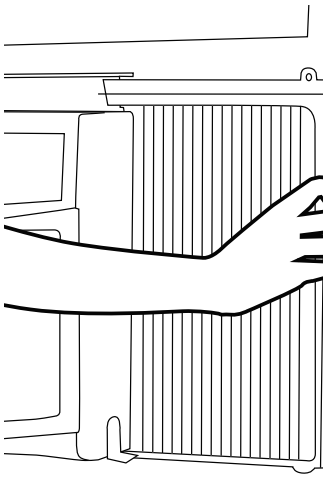


Fig. 9

2. Use a 1/8” drill bit to drill a starter hole through the top hole in the side curtain and into the window sash.
3. Insert one (1) 1" wood screws through the top hole of the left hand curtain and into the window sash.(See Fig.10)

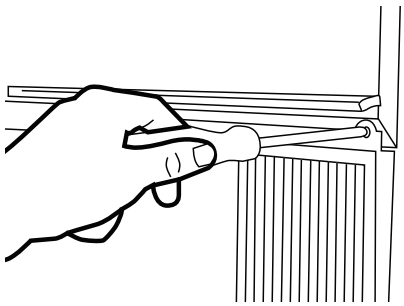


Fig. 10

4. Repeat for the right-hand curtain.
5. Use a 1/8" drill bit to drill a starter hole into the window sash using the top hole in the side curtain as a guide.
6. Insert one (1) of the 1" wood screws through the bottom hole of the left-hand curtain and into the window frame. (See Fig.11)

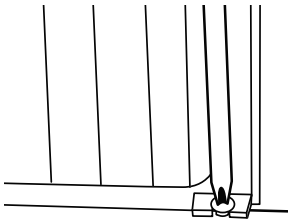


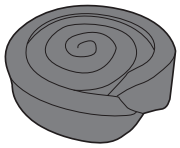
Fig. 11

7. Repeat for the right-hand curtain.

Final installation

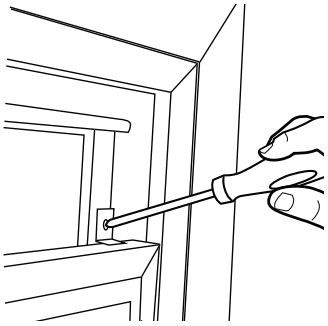
1. Uncoil the included foam seal.(See Fig.12)

Fig. 12



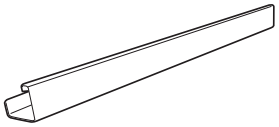
2. Insert the foam seal behind the top of the lower window sash and against the glass of the upper window.
3. Place the window lock bracket as shown in the diagram using a screwdriver. Use a 1/8" drill bit to drill a starter hole through the hole in the window lock bracket and into the upper window. (See Fig.13)
4. Attach the window lock bracket to the upper window with one (1) 1" wood screw to secure the unit in place.
5. Plug unit into a grounded 3 prong outlet.
6. Press RESET on the power supply cord. A green light will come on. See “Electrical Requirements" for full detail.

Fig. 13

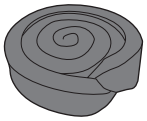


Parts

Check that all parts for your specific air conditioner are included in parts package.



Top channel

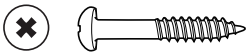


Foam seal

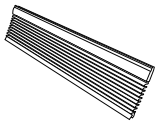
Side bracket(2)

Window lock bracket

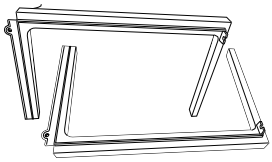
3/8" self tapping screws(3)



1" wood screws(9)



Side curtains(2)



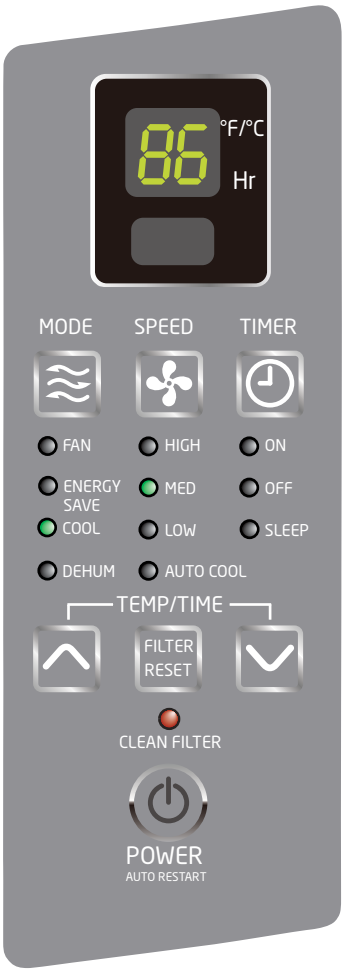
Side curtain frames(2)

Remote control

Tools

- Phillips head screwdriver
- Scissors
- Level
- Tape measure
- Drill and 1/8” bit
- Pencil

6.Parts and Functions



MODE

1. Press MODE until you see the indicator light come on next to the desired setting.
2. Choose Fan, Energy Saver, Cool or Dehum.
   - Fan—Only the fan runs. Press SPEED to select High, Med or Low fan speed. The display shows the current room temperature.
   - Energy Save—In this mode the fan runs only when cooling is needed. The fan will run for 3 minute after the compressor shuts off. The fan then cycles on for 2 minutes at 10 minute intervals until the temperature in the room is above the set temperature. The compressor then turns back on.
   - Cool—Cools the room. Press SPEED to select High, Med, Low or Auto Cool fan speed. Press the TEMP/TIME up or down arrow button to adjust the temperature.
   - Dehum—Aids in removing humidity from the room. The air conditioner automatically selects the temperature.This setting will NOT cool the room.

SPEED

1. Press FAN SPEED until you see the indicator light come on next to the desired setting.
2. Choose High, Med Low or Auto Cool.
   - High—for maximum cooling
   - Med—for normal cooling
   - Low—for minimum cooling
   - Auto Cool—Adjusts the fan speed automatically to provide ideal cooling based on the room temperature.

TIMER

To set the air conditioner to turn off between 1 hour and 24 hours (The air conditioner must be ON to set):

1. Press TIMER. Timer Off indicator light will flash. The display will show the remaining hours before the air conditioner will turn off.
2. Press the TEMP/TIME up or down arrow button to change the delay time from 1 hour to 24 hours.
3. After 5 seconds, Timer Off indicator light will remain on. The display will show the left time to Timer Off.

To set the Timer to turn on the air conditioner, keeping the previous settings:

1. Turn on the unit.
2. Press TIMER. Timer On indicator light will flash. The display will show the remaining hours before the air conditioner will turn on.
3. Press the TEMP/TIME up or down arrow button to change the delay time from 1 hour to 24 hours.
4. Timer On indicator light will remain on.

To clear timer program:

NOTE: Air conditioner can be either on or off.

Press TIMER until Timer indicator light turns off.

To view or change the remaining time (in hours):

TIMER OFF

1. Press the TEMP/TIME up or down arrow button to increase or decrease the time.
2. After 5 seconds, the display will show the remaining time to Timer OFF.

TIMER ON

1. Press the TEMP/TIME up or down arrow button to increase or decrease the time.
2. After 5 seconds, the display will show the remaining time to Timer ON.

SLEEP

1. Press the TIMER button to choose Sleep mode. The indicator light will turn on.
2. The temperature will increase by 2˚F 1 hour after the mode is chosen. The temperature then increases another 2˚F increases another 2˚F after 1 hour. The unit will hold this temperature for 8 hours then stops.
3. To turn off Sleep mode, press the TIMER button until the indicator light is off.

TEMP/TIME

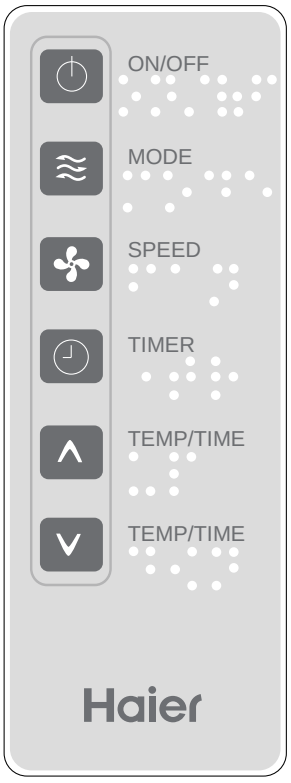
1. Press the TEMP/TIME up arrow button to raise the temperature. Each time you press the TEMP/TIME up arrow button, the temperature will go up 1°F until it reaches 86°F (30°C).
2. Press the TEMP/TIME down arrow button to lower the temperature. Each time you press the TEMP/TIME down arrow button, the temperature will go down 1°F until it reaches 61°F (16°C).

NOTE: After 5 seconds, under Fan mode,the display will show the current temperature,Under Energy Save, Cool or Dehum mode,the display will show the set temperature.

FILTER RESET

This feature automatically notifies you that the air filter must be cleaned. The indicator light will come on after 240 hours of operation. Clean the air filter (refer to Care and Cleaning), place it back in the front panel, and press the Filter Reset button. The light will turn off.

USING THE REMOTE CONTROL



NOTE: Remove and discard protective film prior to use. The remote control runs on one CR2025 battery (included). Replace battery after 6 months of use, or when the remote control starts to lose power. To change battery, first remove screw on back panel of remote.

POWER

Prbutton, the air conditioner will operate in Energy Save mode, low fan speed and temperature of 72°F. You can select any other mode to satisfy your needs.ess ON/OFF to turn on the air conditioner. When you first press the ON/OFF

Mode

Press MODE to choose Fan, Energy Save, Cool or Dehum.

Speed

Press SPEED to choose High, Med, Low or Auto Cool.

TIMER

To set the air conditioner to turn off after a set amount between 1 hour and 24 hours (unit must be ON):

1. Press TIMER. Timer OFF indicator light on the air conditioner control panel will flash.
2. Press the TEMP/TIME up or down arrow button to change the delay time from 1 hour to 24 hours.
3. After 5 seconds, Timer OFF indicator light on the air conditioner control panel will remain on.

To set timer to turn on the air conditioner, keeping previous settings:

1. Turn on the air conditioner.
2. Press TIMER. Timer On indicator light on the air conditioner control panel will flash.
3. Press the TEMP/TIME up or down arrow button to change the delay time from 1 hour to 24 hours.
4. After 5 seconds, Timer On indicator light on the air conditioner control panel will remain on.

To clear timer delay program:

NOTE: Air conditioner can be either on or off.

Press TIMER until Timer indicator light turns off.

To see or change the remaining time (in hours):

TIMER OFF:

1. Press the TEMP/TIME up or down arrow button to increase or decrease the time.
2. After 5 seconds, the display on the air conditioner control panel will show the remaining time to Timer Off.

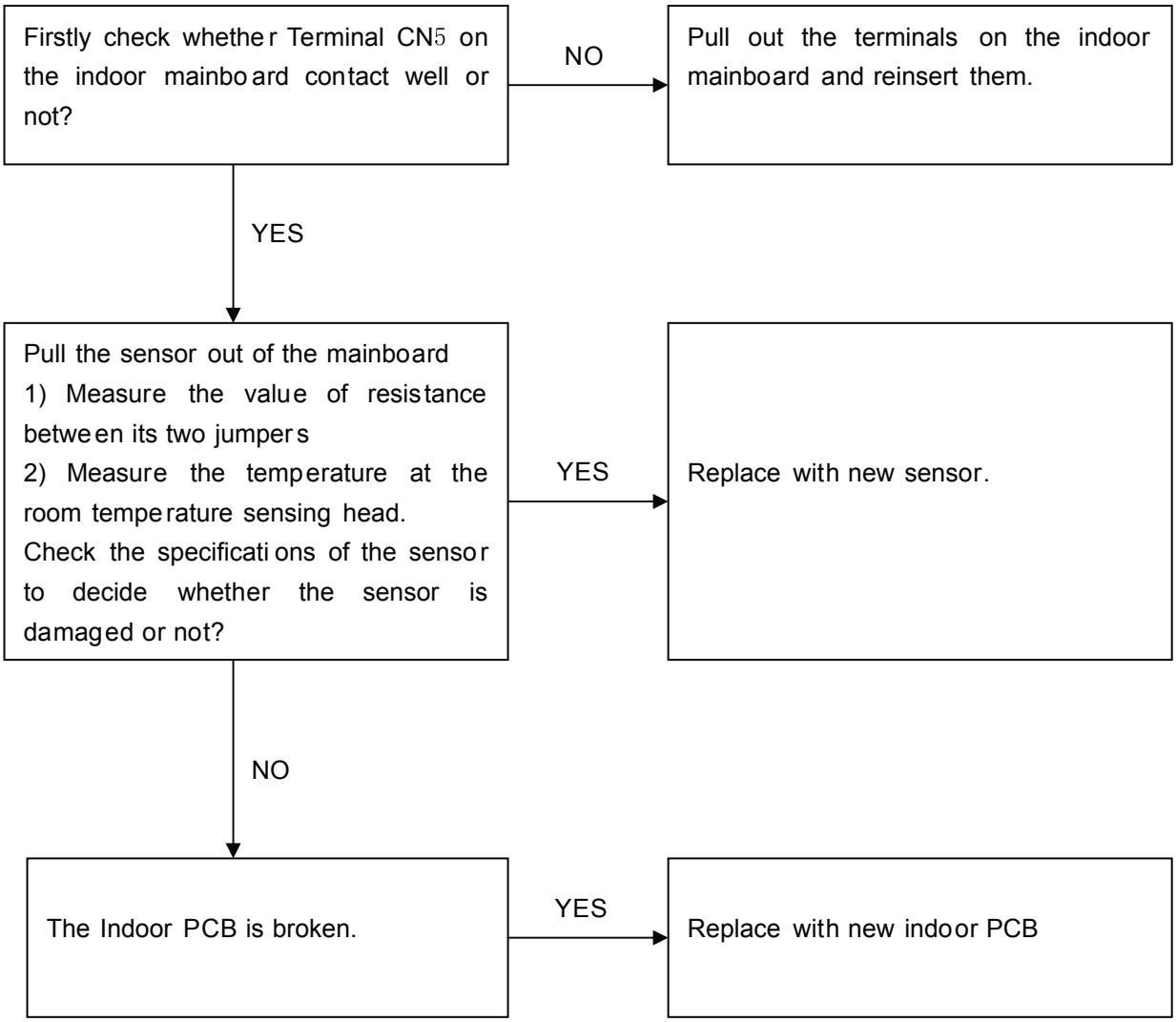
TIMER ON:

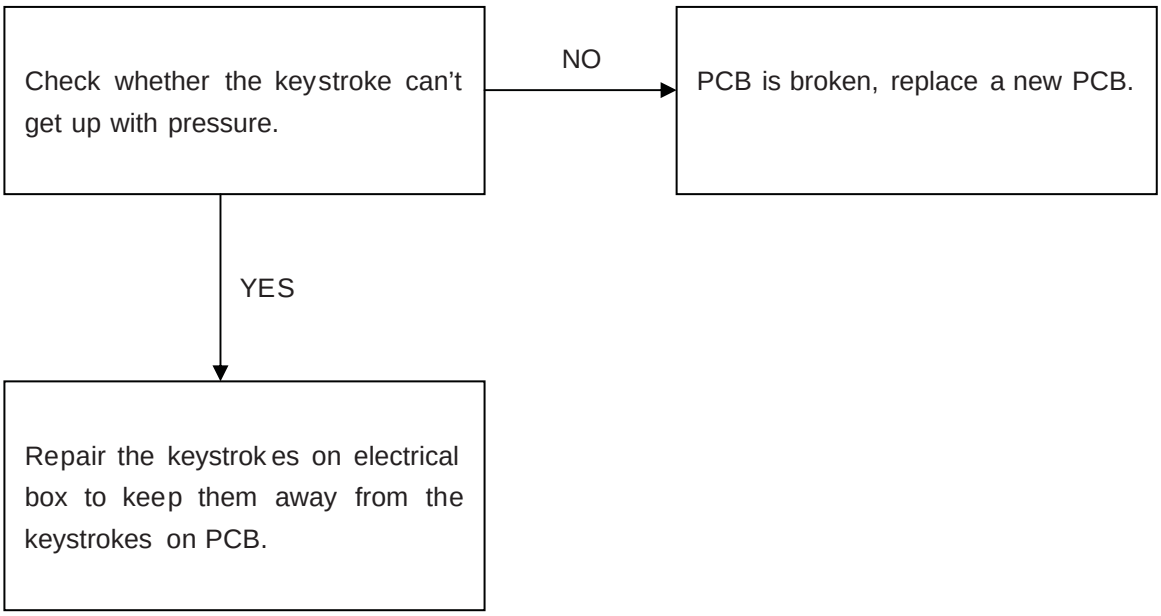
1. Display on the air conditioner control panel will show remaining time.
2. Press the TEMP/TIME up or down arrow button to increase or decrease the time.

7. Abnormity Diagnose

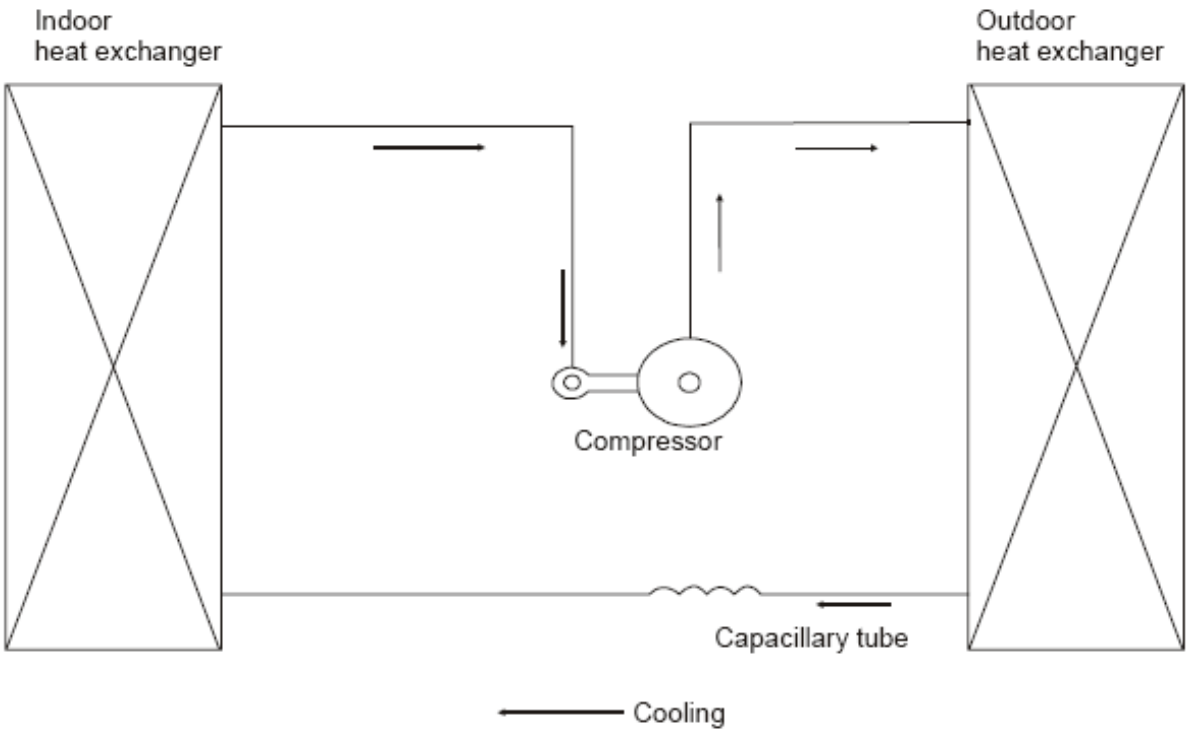
1.Sensor Diagnose:

2 seconds after the sensors open circuit or short circuit , the unit will turn off automatically and the LED wil show E0 until the sensors resume .

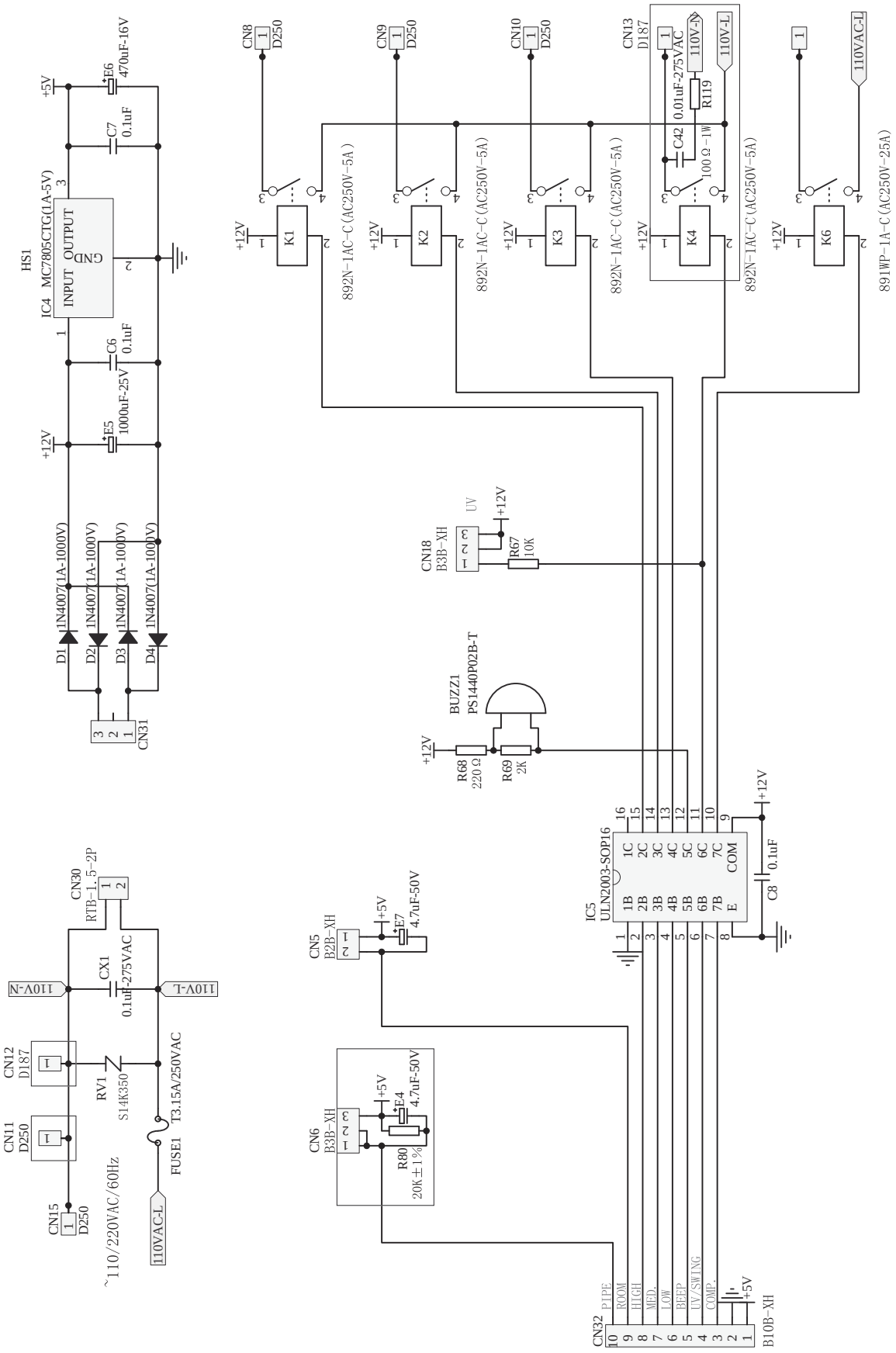


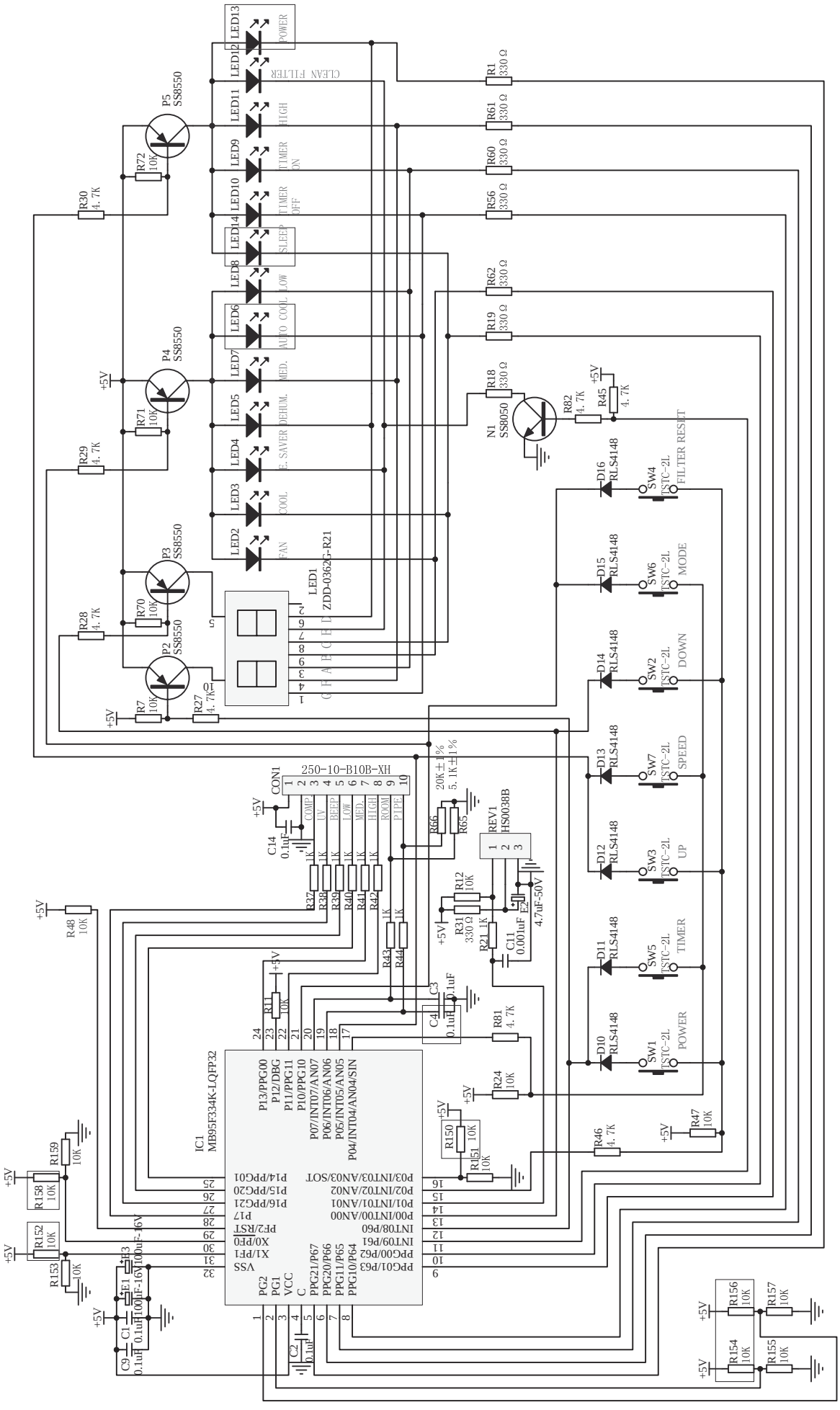

Check whether the keystroke can't get up with pressure.
NO
PCB is broken, replace a new PCB.
YES
Repair the keystrokes on electrical box to keep them away from the keystrokes on PCB.

8. System Flow Chart

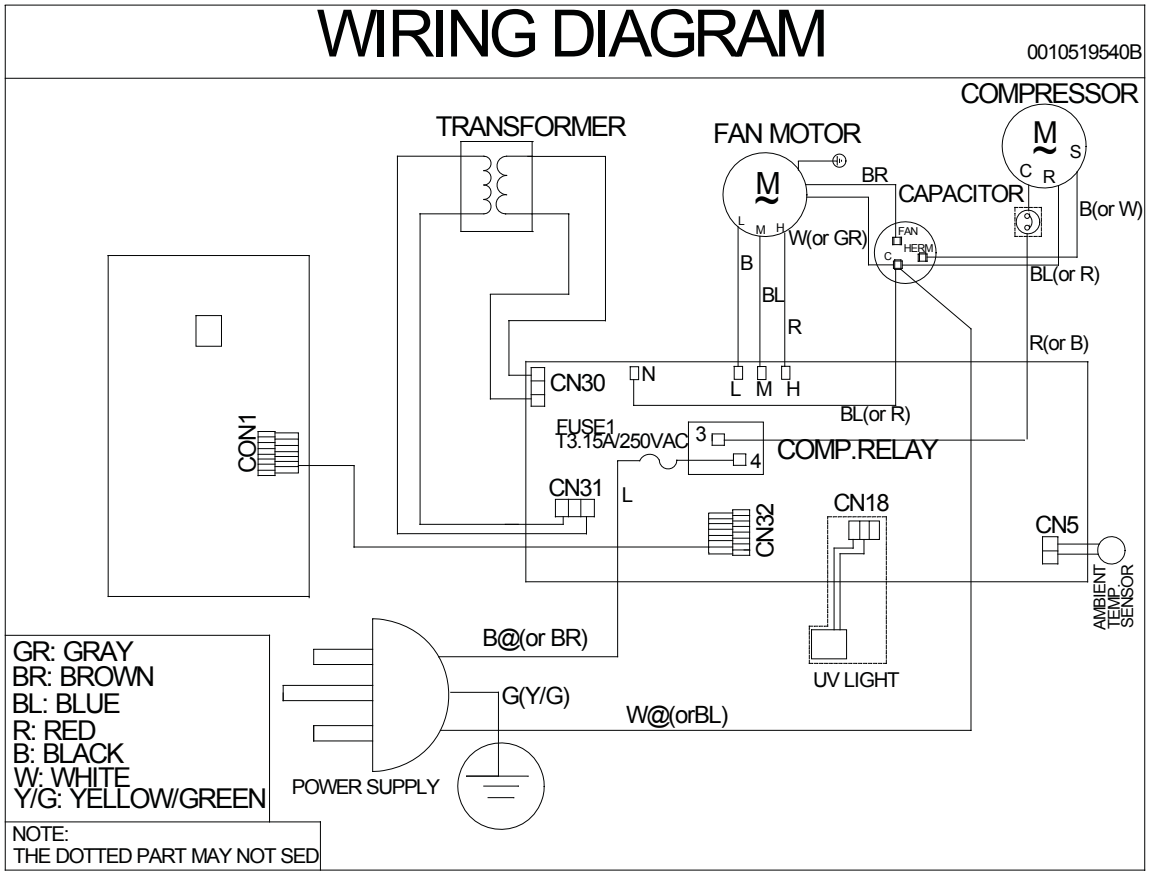


9.Circuit Diagram




LED1
ZDD-0362G-R21
LED13 POWER
LED12 CLEAN FILTER
LED11 HIGH
LED9 TIMER ON
LED10 TIMER OFF
LED14 SLEEP
LED8 LOW
LED6 AUTO COOL
LED7 MED.
LED5 DEHUM.
LED4 E. SAVER
LED3 COOL
LED2 FAN
P5 SS8550
P4 SS8550
P3 SS8550
P2 SS8550
N1 SS8050
R1 330Ω
R61 330Ω
R60 330Ω
R56 330Ω
R62 330Ω
R19 330Ω
R18 330Ω
R30 4.7K
R29 4.7K
R28 4.7K
R72 10K
R71 10K
R70 10K
R7 10K
R27 4.7K
R82 4.7K
R45 4.7K
D16 RLS4148
D15 RLS4148
D14 RLS4148
D13 RLS4148
D12 RLS4148
D11 RLS4148
D10 RLS4148
SW4 STC-2L FILTER RESET
SW6 STC-2L MODE
SW2 STC-2L DOWN
SW7 STC-2L SPEED
SW3 STC-2L UP
SW5 STC-2L TIMER
SW1 STC-2L POWER
CON1 250-10-B10B-XH
COMP UV BEEP LOW MED. HIGH ROOM PIPE
REV1 HS0038B
R66 20K±1%
R65 5.1K±1%
R12 10K
R31 330Ω
R21 1K
C11 0.001uF
E2 4.7uF-50V
C14 0.1uF
R37 1K
R38 1K
R39 1K
R40 1K
R41 1K
R42 1K
R43 1K
R44 1K
R48 10K
R11 10K
C3 0.1uF
C4 0.1uF
R81 4.7K
R24 10K
R150 10K
R151 10K
R46 4.7K
R47 10K
IC1 MB95F334K-LQFP32
P13/PPG00
P12/DBG
P11/PPG11
P10/PPG10
P07/INT07/AN07
P06/INT06/AN06
P05/INT05/AN05
P04/INT04/AN04/SIN
P14/PPG01
P15/PPG20
P16/PPG21
P17
PF2/RST
X0/PF0
X1/PF1
VSS
PG2
PG1
VCC
C
PPG21/P67
PPG20/P66
PPG11/P65
PPG10/P64
PPG01/P63
PPG00/P62
INT09/P61
INT08/P60
P00/INT00/AN00
P01/INT01/AN01
P02/INT02/AN02
P03/INT03/AN03/SOT
R158 10K
R159 10K
R152 10K
R153 10K
R154 10K
R155 10K
R156 10K
R157 10K
C1 0.1uF
C2 0.1uF
C9 0.1uF
E1 100uF-16V
E3 100uF-16V
+5V

10. Wiring diagram



Sincere Forever

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