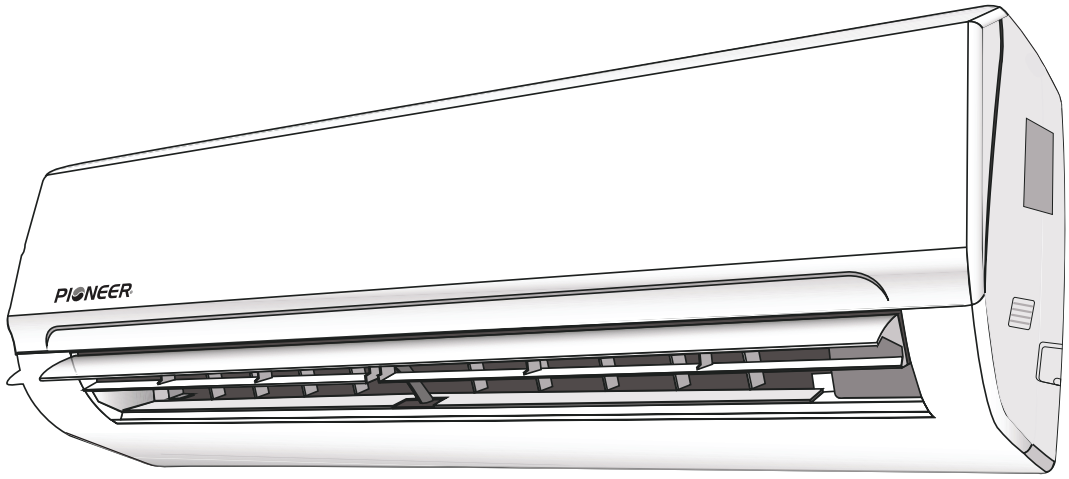
DUCTLESS MINI SPLIT SYSTEM AIR CONDITIONER / HEAT PUMP

PIONEER®

WYT-24 Inverter Series

For 9,000-23,000 BTU/hr Systems

Quantum Ultra (R-454B) - WT Indoor and YN Outdoor



Service Manual

Note
Intended for use with **Single-Zone Split Systems**. If the indoor sections will be installed as part of a **Multi-Zone System**, refer to the supplemental instructions provided with the Multi-Zone Outdoor Unit for complete and accurate guidance. Certain specifications—such as minimum floor area requirements—may differ, and are outlined in more detail within the **Multi-Zone Section** documentation.

IMPORTANT NOTICE:
Read this manual carefully before installing or operating your new air conditioning system. Be sure to save this manual for future reference.

CONTENTS

1. Important Notice 3
2. Maintenance Notes 4
3. R-454B Refrigerant Notes 7
4. Product Overview 13
5. Refrigerant Piping Specifications 19
6. Maintenance 20
7. Troubleshooting 22
8. Unit Control 59
9. Remote Control 67
10. Emergency Manual Button 70
11. Wiring Diagrams 71
12. PCB Layouts 75
13. Refrigeration Cycle Diagram 81
14. Operation Characteristics Curve 82
15. Thermistor Temperature Characteristics 87

Important Notice

1

This service manual is intended for individuals with adequate electrical, electronic, and mechanical experience. Any attempt to repair the appliance may result in personal injury and property damage. The manufacturer or seller is not responsible for the interpretation of this information, nor does it assume any liability in connection with its use.

Information, specifications, and parameters are subject to change without prior notice due to technical modifications or improvements. Actual specifications are provided on the product nameplate label.

How to Order Spare Parts

To ensure your order is accurate, provide the following information:

1. Model numbers of the indoor and outdoor units.
2. Item number in the exploded diagram.
3. Part number.
4. Required quantity.

Maintenance Notes

2

Carefully read all safety precautions before maintenance. The following information is essential for safe and proper execution.

- Follow all instructions and correct procedures during maintenance to eliminate risks of electrical shock, injury, and equipment accidents.
- Ensure all electrical work is performed by a licensed technician in compliance with national and local electrical codes.
- Ensure an authorized distributor or qualified professional perform all maintenance.
- Observe all warnings and cautions throughout this manual.
- Test the area with a flammable gas detector before unloading and opening the container.
- Keep the area free of open flames and smoking materials.

A. Electrical Safety Precautions

Electrical & Power Supply Requirements

- Connect the air conditioner to a dedicated circuit; do not share the circuit with other appliances.
- Install an appropriate circuit breaker (such as a GFCI/RCD) if the indoor unit is located in a humid or damp environment.
- For hardwired systems (without a plug), install a circuit breaker that features all-pole disconnection and a minimum contact separation of 0.1 inches (3 mm).

Wiring Safeguards

- Ensure all wiring terminals are securely connected during maintenance.
- Properly match the live, neutral, and grounding wires from the power supply to the corresponding air conditioner terminals.
- Adequately ground the unit; the grounding wire must not be used for any other purpose.
- Ensure the power cord and connection wires are not crushed, pinched, or compressed by surrounding components or hard objects.
- Install protective accessories, including protective boards, cable routing loops, and clips to safeguard the wiring.

Maintenance Notes

2

Maintenance & Component Replacement

- Turn off the air conditioner's power supply prior to checking the unit or performing maintenance.
- Use only the supplied or specified components during installation to ensure proper system performance.
- If the power cord or connection wire is damaged, it must be replaced by a qualified technician.
- If the power cord length is insufficient, obtain an approved replacement from the manufacturer or distributor; do not splice or extend the wire yourself.
- If a fuse is blown, replace it with a new fuse of the exact same specification; do not use copper wires or jumper wires as a substitute.
- Handle the unit with care during transport; a team lift is required if the unit weighs more than 44 lbs (20 kg).
- Wear a safety harness at all times if the working height exceeds 7 feet (2 m).
- Ensure no foreign objects remain inside the unit upon completion of installation; debris can cause electrical shock, fire, explosion, or personal injury.

Pre-Start & Commissioning Checks

- Confirm all wiring and piping connections are secure and all valves are open prior to energizing the system.
- Test the unit body for electrical leakage; resolve any faults before allowing the system to operate.

B. Fire Safety Precautions

Warning: Risk of fire due to the flammable refrigerant used

- Review all safety precautions in this manual before attempting any product service or repair.
- Handle the equipment carefully in strict compliance with all national regulations.
- Ensure only trained service personnel perform system repairs.
- Avoid puncturing the refrigerant tubing during maintenance.
- Dispose of all materials properly in accordance with national, state, and local regulations.

Maintenance Notes

2

C. Relocation Safety Precautions

- Avoid relocation areas where corrosive or flammable gases may leak, as accumulated gas can lead to explosions or other accidents.
- Do not use extension cords or multi-outlet adapters; if the power cord is of insufficient length, contact an authorized service center for an approved replacement to prevent electrical shock or fire hazards.
- Securely clamp all interconnecting wiring between indoor and outdoor units to eliminate external stress on the terminals. Using non-specified wires or insecure connections poses a severe electrical shock or fire hazard.
- Securely attach the connecting pipe before operating the compressor; running the compressor with open valves and disconnected piping will draw in air, causing dangerous pressure spikes, compressor overheating, or gas leaks.
- Charge the unit only with the specific refrigerant listed on the nameplate during installation or relocation; using unapproved or non-specified refrigerants can cause operational failures, mechanical malfunctions, or severe safety hazards.
- When recovering refrigerant (pump down) during relocation or repair:
    - Confirm the indoor unit is running in Cooling mode.
    - Fully close the liquid-side valve (2-way valve).
    - Wait 30 to 40 seconds, then fully close the gas-side valve (3-way valve).
    - Immediately stop the unit and disconnect the power supply.
    - CAUTION: The entire refrigerant recovery process must not exceed 1 minute. Running the process too long will cause the compressor to overheat, risking equipment failure or personal injury.
- Purge the refrigerant circuit during relocation to ensure it is completely free of air and moisture; foreign substances will cause abnormal pressure spikes or compressor failure, resulting in personal injury.
- Ensure both the liquid-side and gas-side valves are fully closed and the power is disconnected before detaching the connecting pipe; disconnecting the pipe while valves are open allows the compressor to suck in air, causing abnormal pressure, compressor overheating, or gas leaks.

R-454B Refrigerant Notes

3

A. Introduction

This air conditioner uses R-454B, an environmentally friendly refrigerant. Compared to conventional refrigerants, R-454B does not deplete the ozone layer and has a lower global warming potential (GWP). Note that R-454B is odorless and mildly flammable, and may pose a risk of fire or explosion under certain conditions.

B. Precautions

General Compliance & Servicing

- Ensure all maintenance is performed exclusively by authorized professionals in strict compliance with the manufacturer's operating manual.
- Contact the nearest authorized service center to arrange professional servicing.
- Comply with all national gas safety laws and regulations.

Flammable Refrigerant Handling & Worksite Safety

- Conduct a safety inspection prior to servicing any system using combustible refrigerants to minimize fire risks.
- Recover all refrigerant from the system prior to performing maintenance or decommissioning the air conditioner.
- Handle flammable refrigerants with extreme care to eliminate the risk of severe injuries and equipment damage.
- Eliminate all ignition sources and high-temperature hazards from the work area.
- Keep surrounding surfaces and equipment below 745°F (396°C) when handling R-454B refrigerant.
- Wear appropriate anti-static clothing and gloves when installing systems with R-454B refrigerant.

R-454B Refrigerant Notes

3

C. Special Tools

Tool Name	Requirement(s) for Use
Mini Vacuum Pump	An explosion-proof vacuum pump that ensures high precision. Its vacuum degree must be below 10 Pa.
Filling Device	A special explosion-proof filling device that ensures precision. Its filling deviation must be below 5g.
Leak Detector	A detector that it is calibrated regularly. Its annual leak rate should not exceed 10g.
Concentration Detector	• Equip the maintenance site with a fixed combustible refrigerant concentration detector. Connect this detector to a safeguard alarm system. Its error must not exceed ±5%. • Equip the installation site with a portable combustible refrigerant concentration detector that features a two-level audible and visual alarm. Its error must not exceed ±10%. • Ensure that the concentration detectors are calibrated regularly. Check and confirm their functionality before each use.
Pressure Gauge	Ensure that the pressure gauges are calibrated regularly. Confirm that the pressure gauges are compatible with R-454B refrigerant.
Fire Extinguisher	Carry fire extinguishers during installation and maintenance. Ensure that the maintenance site is equipped with two or more types of fire extinguishers (dry powder, carbon dioxide, or foam). These extinguishers must have highly visible labels and be placed in designated locations.

R-454B Refrigerant Notes

3

D. Maintenance

Inspections for the Maintenance Environment

- Verify the room is free of refrigerant leaks prior to operation.
- Only operate the system in rooms that meet the area requirements specified on the nameplate.
- Ensure that the room is continuously ventilated.
- Do not permit open flames, welding, smoking, drying ovens, or any other ignition sources with temperatures exceeding 745°F (396°C) in the room.
- Ensure that mobile phones and all other electronic devices are turned off while in the room.
- Equip the maintenance area with a functional dry powder or carbon dioxide (CO_2) fire extinguisher.

Inspections for the Maintenance Equipment

- Confirm that the maintenance equipment is compatible with the refrigerant. Use only the professional equipment recommended by the air conditioner manufacturer.
- Verify that the refrigerant leak detector has been calibrated. Ensure its maximum alarm concentration does not exceed 25% of the lower explosion limit (LEL). The leak detector must remain operational during all maintenance procedures.

Inspections for the Air Conditioner

- Before performing maintenance, ensure the air conditioner is reliably grounded.
- Turn off the power and completely discharge the capacitor before beginning maintenance. If power is required during maintenance, continuously perform leak detection at the highest-risk locations to prevent hazards.
- Verify that all warning labels on the air conditioner are legible and in good condition; immediately replace any that are damaged or obscured.

Leak Inspection Before Maintenance

- Before starting maintenance, use a manufacturer-recommended leak detector or pump-type concentration detector to ensure there are no active leaks.
- If a leak is suspected:
    - Extinguish or remove all open flames and ignition sources from the area.
    - Turn off the air conditioner immediately.
    - Ensure the workspace is thoroughly ventilated.

R-454B Refrigerant Notes

3

Safety Principles During Maintenance

- Ensure the workspace is well-ventilated throughout the maintenance process.
- Do not smoke, weld, use open flames, or operate mobile phones in the work area.
- Wear anti-static clothing and gloves if the relative humidity falls below 40%.
- Immediately initiate forced ventilation and seal the leak source if a combustible refrigerant leak is detected.
- Transport the product back to the service station if the refrigerant system must be opened for maintenance; welding refrigerant pipes or performing similar operations at the customer's site is strictly prohibited.
- Restore the air conditioner to its original state and verify that the refrigerant system is reliably grounded if a follow-up service visit is necessary due to missing spare parts.
- Secure the cylinder vertically when storing it in a vehicle or at the maintenance site, keeping it away from electrical equipment, heat, radiation, and ignition sources.

Requirements for the Maintenance Location

- Ensure the maintenance location is well-ventilated, located at ground level, and not in a basement.
- Divide and label the maintenance location into separate welding and non-welding areas, ensuring a safe distance between them.
- Equip the maintenance location with proper ventilation and air exhaust systems to prevent refrigerant gas accumulation.
- Install the main power switch outside the maintenance area, and ensure it is equipped with explosion-proof protective devices.
- Maintain an instrument management system for all combustible refrigerant leak detectors, and verify that the detectors are functioning normally prior to maintenance.
- Equip the maintenance area with functional fire extinguishers suitable for electrical fires, such as dry chemical or carbon dioxide (CO_2) extinguishers.
- Prohibit the use of temporary wiring or extension sockets within the maintenance location.

R-454B Refrigerant Notes

3

Requirements for Filling the Refrigerants

- Purge and vacuum the system for at least 30 minutes using nitrogen before operating the refrigerant system.
- Avoid cross-contamination among different refrigerants when using the charging device.
- Keep the total pipeline length as short as possible to minimize residual refrigerant inside the lines.
- Store and maintain all refrigerant storage tanks in an upright position.
- Ground the refrigeration system securely prior to charging it with refrigerant.
- Charge the system using only the specific refrigerant type and volume indicated on the product nameplate.
- Prohibit overcharging under any circumstances.
- Seal the refrigeration system properly upon completing all maintenance work.
- Verify that no maintenance procedures alter, damage, or reduce the original safety protection grade of the system.

In-Maintenance Welding

- Ensure the workspace is well-ventilated throughout the maintenance process.
- Confirm the refrigeration system is completely drained and cleaned, ensuring no residual refrigerant remains in the outdoor unit before beginning any welding.
- Close the outdoor unit stop valve before performing any torch-welding or brazing maintenance.

Maintenance of Electrical Components

- Ensure the workspace is well-ventilated throughout the maintenance process.
- Store refrigerant tanks vertically in a separate, well-ventilated location at a temperature range of 14°F to 122° F (-10°C to 50°C).
- Affix clear hazard warning labels to all refrigerant storage tanks.
- Confirm the refrigeration system is completely drained and cleaned, ensuring no residual refrigerant remains in the outdoor unit before beginning any welding.
- Close the outdoor unit stop valve before performing any torch-welding or brazing maintenance.
- Disconnect the unit's power before removing sealing covers. If power is required during maintenance, perform continuous leak detection at the most critical points to prevent potential hazards.
- Ensure all replacement parts and materials strictly meet the specifications recommended by the manufacturer.

R-454B Refrigerant Notes

3

- Verify that sealing materials have not degraded due to aging, ensuring they retain their full ability to prevent combustible gas leaks.
- Ensure that the sealing function is not compromised or damaged after performing maintenance.
- Ensure that the maintenance of electrical components does not interfere with the proper reinstallation of the protective cover.
- Inspect the area around the serviced electrical parts using a specialized leak detector to ensure there are no refrigerant leaks.
- Do not modify, remove, or bypass any safety protection components after completing maintenance.
- Verify that the unit has a reliable ground connection and is completely free of refrigerant leaks before performing a trial operation.

Maintenance of Electrical Components

- Establish an emergency response plan for the maintenance location.
- Implement appropriate safety precautions during all work activities.
- Prohibit ignition sources (such as matches or lighters) and static-producing clothing or footwear within the work area.
- In the event of a large combustible refrigerant leak, follow these emergency procedures:
    - Activate ventilation systems immediately while isolating all other power sources.
    - Evacuate all affected personnel from the area urgently.
    - Inform nearby residents to evacuate to a distance of at least 66 feet (20 m) from the site.
    - Place an immediate emergency alarm call.
    - Set up an emergency boundary and prohibit unauthorized personnel and vehicles from approaching.
    - Ensure responding professional firefighters wear anti-static clothing while handling the emergency on-site.
    - Direct firefighters to locate and cut off the source of the refrigerant leak as soon as possible.
    - Blow nitrogen across the site, focusing specifically on low-lying areas, to clear away any residual combustible refrigerant gas.
    - Use a handheld detector to thoroughly scan the area surrounding the leak source.
    - Do not clear or turn off the emergency alarm until the refrigerant concentration reads exactly zero.

Product Overview

4

Model Numbers

Note

The serial number is located behind the electric control box cover on each unit.

Model	Full System	Indoor Unit	Outdoor Unit
9K 110~120V	WYT009ALSI24RL	WT009ALSI24HLG	YN009ALSI24RPG
9K 208~230V	WYT009GLSI24RL	WT009GLSI24HLG	YN009GLSI24RPG
12K 110~120V	WYT012ALSI24RL	WT012ALSI24HLG	YN012ALSI24RPG
12K 208~230V	WYT012GLSI24RL	WT012GLSI24HLG	YN012GLSI24RPG
18K	WYT018GLSI24RL	WT018GLSI24HLG	YN018GLSI24RPG
23K	WYT024GLSI24RL	WT024GLSI24HLG	YN024GLSI24RPG

Product Overview

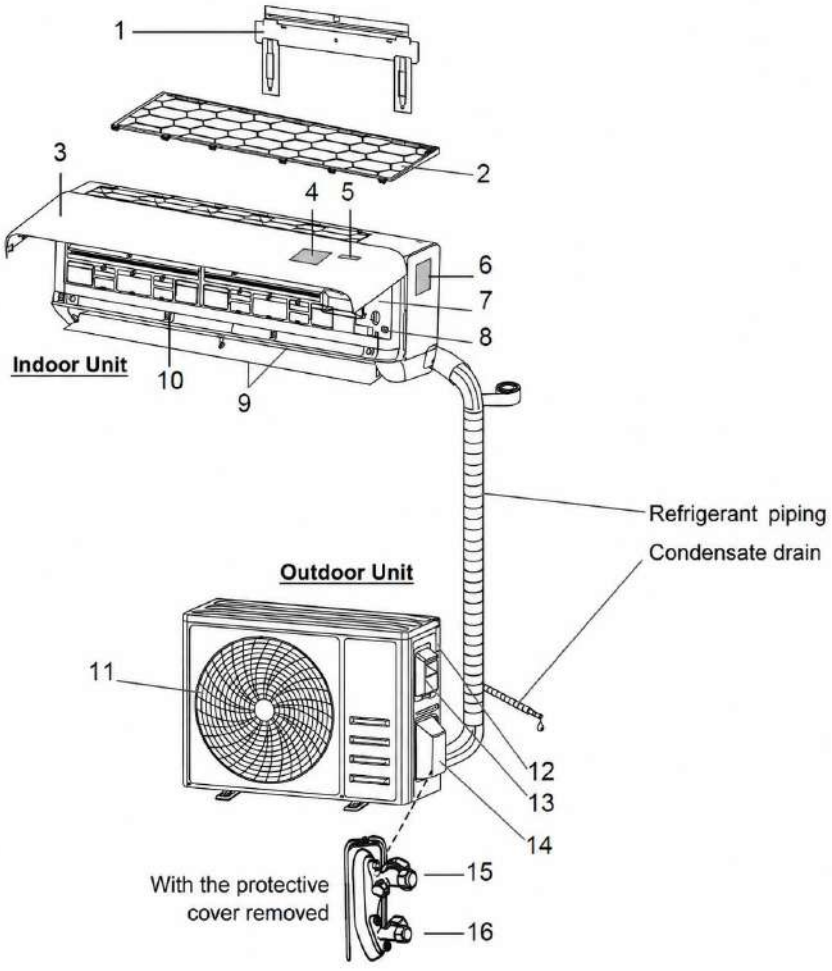
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Part Names

Note

Illustrations in this manual are for explanatory purposes. The actual shape of the indoor unit may be slightly different. The actual shape shall prevail.

The system consists of two units connected by insulated copper pipes and an electrical communication cable. Mount the indoor unit on a wall inside the room selected for air conditioning. Install the outdoor unit on the ground or on the wall using suitable mounting brackets.



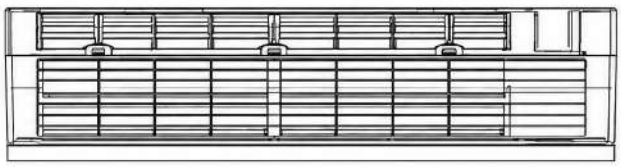
No.	Description
1	Wall mounting plate
2	Air filter
3	Front panel
4	LED display
5	Controller signal receiver
6	Indoor unit rating label
7	Terminal block cover
8	Emergency (Manual) button
9	Air deflector & flap
10	Air outlet
11	Air outlet grille
12	Outdoor unit nameplate
13	Terminal block cover
14	Valve protection cover
15	Gas (Suction) line valve
16	Liquid line valve

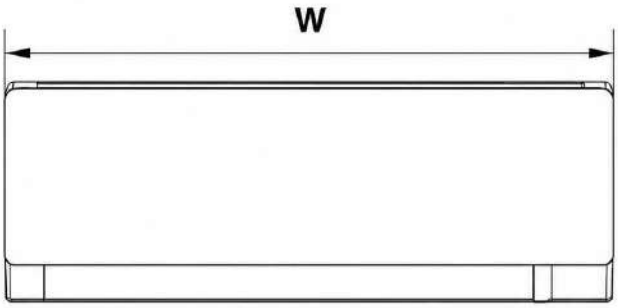
Product Overview

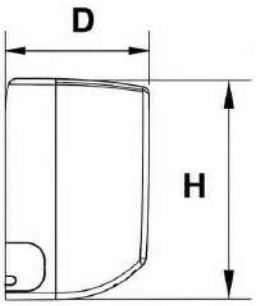
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Dimensions & Weight

Indoor Unit:







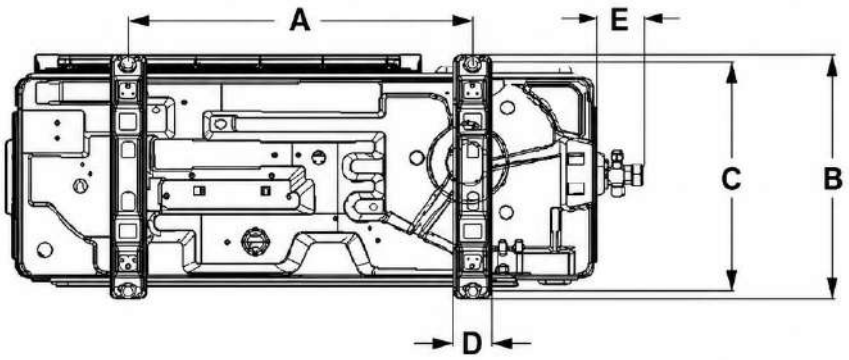
Indoor Unit	Dimensions		
	W	D	H
WT009ALSI24HLG	32-1/4 in	7-5/8 in	12 in
	819 mm	194 mm	305 mm
WT009GLSI24HLG	32-1/4 in	7-5/8 in	12 in
	819 mm	194 mm	305 mm
WT012ALSI24HLG	36-1/2 in	7-5/8 in	12 in
	927 mm	194 mm	305 mm
WT012GLSI24HLG	36-1/2 in	7-5/8 in	12 in
	927 mm	194 mm	305 mm
WT018GLSI24HLG	43-1/8 in	8-3/4 in	13 in
	1,095 mm	222 mm	330 mm
WT024GLSI24HLG	43-1/8 in	8-3/4 in	13-1/8 in
	1,095 mm	222 mm	333 mm

Indoor Unit	Net Unit Weight
WT009ALSI24HLG	20.7 lbs
	9.4 kgs
WT009GLSI24HLG	20.7 lbs
	9.4 kgs
WT012ALSI24HLG	23.1 lbs
	10.5 kgs
WT012GLSI24HLG	23.1 lbs
	10.5 kgs
WT018GLSI24HLG	30.9 lbs
	14.0 kgs
WT024GLSI24HLG	30.9 lbs
	14.0 kgs

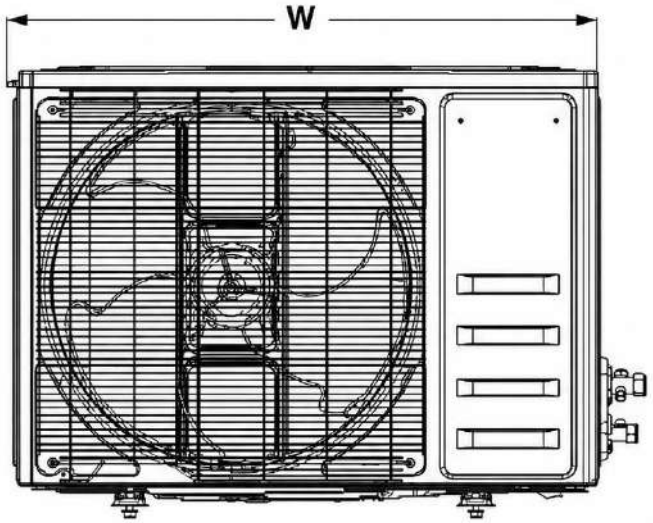
Product Overview

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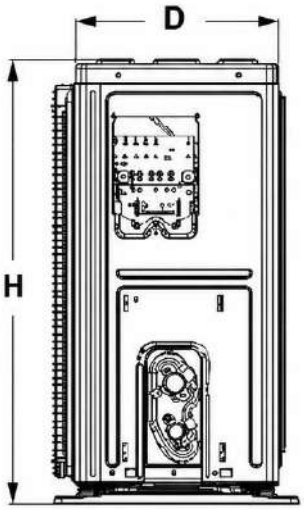
Outdoor Unit:



Underside view



Front view



Side view

Outdoor Unit	Dimensions							
	W	D	H	A	B	C	D	E
YN009ALSI24RPG	31-7/8 in	12 in	21-5/8 in	17-1/8 in	12 in	11-1/4 in	1-7/8 in	2-1/4 in
	810 mm	305 mm	549 mm	435 mm	305 mm	286 mm	48 mm	57 mm
YN009GLSI24RPG	31-7/8 in	12 in	21-5/8 in	17-1/8 in	12 in	11-1/4 in	1-7/8 in	2-1/4 in
	810 mm	305 mm	549 mm	435 mm	305 mm	286 mm	48 mm	57 mm
YN012ALSI24RPG	31-7/8 in	12 in	21-5/8 in	17-1/8 in	12 in	11-1/4 in	1-7/8 in	2-1/4 in
	810 mm	305 mm	549 mm	435 mm	305 mm	286 mm	48 mm	57 mm
YN012GLSI24RPG	31-7/8 in	12 in	21-5/8 in	17-1/8 in	12 in	11-1/4 in	1-7/8 in	2-1/4 in
	810 mm	305 mm	549 mm	435 mm	305 mm	286 mm	48 mm	57 mm
YN018GLSI24RPG	36-1/2 in	15 in	27-1/2 in	23-1/8 in	14-3/4 in	13-3/4 in	2-1/8 in	2-1/4 in
	927 mm	381 mm	698.5 mm	587 mm	375 mm	349 mm	54 mm	57 mm
YN024GLSI24RPG	38-1/2 in	16-5/8 in	31-5/8 in	23-7/8 in	16-5/8 in	15-3/8 in	2-3/8 in	2-1/2 in
	978 mm	422 mm	803 mm	606 mm	422 mm	390.5 mm	60 mm	63.5 mm

Product Overview

4

Outdoor Unit	Net Unit Weight
YN009ALSI24RPG	52.7 lbs
	23.9 kgs
YN009GLSI24RPG	52.7 lbs
	23.9 kgs
YN012ALSI24RPG	58.4 lbs
	26.5 kgs
YN012GLSI24RPG	58.4 lbs
	26.5 kgs
YN018GLSI24RPG	90.4 lbs
	41.0 kgs
YN024GLSI24RPG	104.7 lbs
	47.5 kgs

Product Overview

4

Operating Temperatures

The system is designed to run within a certain range of temperatures, which are listed below. The system has built-in protections that may stop the appliance when the ambient temperatures goes outside of these ranges.

Operating Temperatures	°F / °C
Temperature Setting Range	62~86°F
	17~30°C
Ambient Temperature Range for Cooling	5~131°F
	-15~55°C
Ambient Temperature Range for Heating	-13~86°F
	-25~30°C

Testing and rating agencies develop standard rating conditions to obtain full system-rated capacity and efficiency. Within certain limitations, variable speed compressors compensate the deviations from the rating conditions, especially the atmospheric conditions.

Heat pump systems function by exchanging energy between the indoor air and outdoor ambient air (atmospheric) in the form of heat. The system's net cooling or heating capacities and efficiencies change by atmospheric conditions, as well as the indoor air conditions, such as temperatures and humidity levels.

Professional individuals use detailed calculations to determine the capacity of the system required for a specific area or application, which are based on several internal and external factors.

To further optimize the performance of the unit, complete the following:

- Keep doors and windows closed.
- Use Timer On and Timer Off functions to limit energy usage.
- Do not block air inlets or outlets.
- Regularly inspect and clean air filters.

Refrigerant Piping Specifications

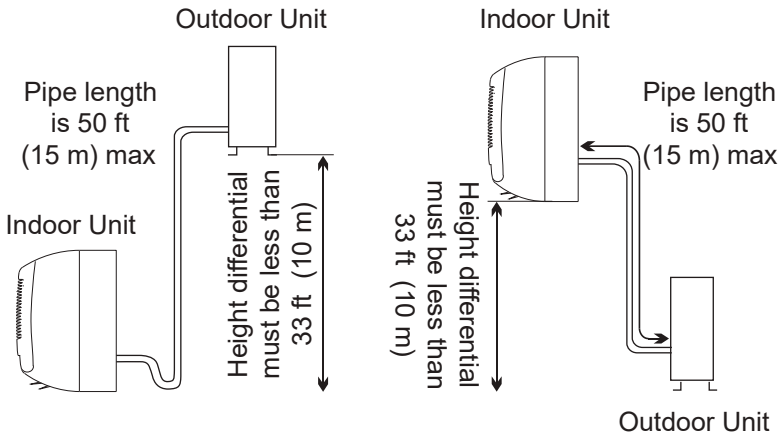
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Refer to these tables for refrigerant piping specifications, such as maximum length and drop height.

WYT-24	9K BTU 110~120V	9K BTU 208~230V	12K BTU 110~120V	12K BTU 208~230V	18K BTU
Liquid Pipe Diameter	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)
Gas Pipe Diameter	Φ 3/8 in (9.5 mm)	Φ 3/8 in (9.5 mm)	Φ 3/8 in (9.5 mm)	Φ 3/8 in (9.5 mm)	Φ 1/2 in (12.7 mm)
Max. Length of Pipe with Standard Charge	25 ft / 7.6 m				
Max. Length Between Indoor and Outdoor Unit	50 ft / 15.2 m	50 ft / 15.2 m	50 ft / 15.2 m	50 ft / 15.2 m	65 ft / 19.8 m
Adjustment Refrigerant Charge (For each additional foot after 25 ft.)	0.11oz/ft				
Max. Drop Height Between Indoor and Outdoor Unit	33 ft / 10 m	33 ft / 10 m	33 ft / 10 m	33 ft / 10 m	50 ft / 15.2 m
Type of Refrigerant	R-454B				

WYT-24	23K BTU
Liquid Pipe Diameter	Φ 1/4 in (6.4 mm)
Gas Pipe Diameter	Φ 5/8 in (15.9 mm)
Max. Length of Pipe with Standard Charge	25 ft / 7.6 m
Max. Length Between Indoor and Outdoor Unit	65 ft / 19.8 m
Adjustment Refrigerant Charge (For each additional foot after 25 ft.)	0.11oz/ft
Max. Drop Height Between Indoor and Outdoor Unit	50 ft / 15.2 m
Type of Refrigerant	R-454B

Consider the following height and length restrictions:



For 9K & 12K BTU Systems

Follow the given constraints in the figures to the left.

For 18K and 23K BTU Systems:

- The allowable height differential increases to 50 feet / 15 m.
- The allowable pipe length is 65 feet / 20 m.

Maintenance

6

Performing periodic maintenance, such as cleaning the anti-dust filters and the indoor air handler's interior, will ensure the system remains efficient.

CAUTION

- Before performing any maintenance, ensure the system's power supply is turned off for more than 5 minutes.
- Wear safety gloves when working on the equipment, due to the coil's sharp aluminum fin edges.
- Do not spray water directly into the indoor unit, as it can damage the insulation and electrical components.

A. Anti-Dust Filters

Inspect the anti-dust filter once every 2 weeks.

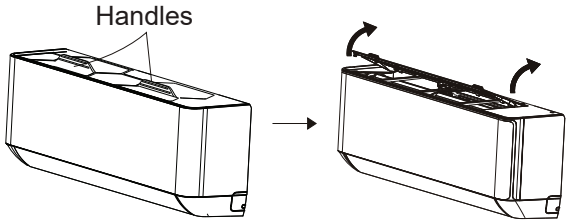
1. Reach for the top area of the interior unit and grasp both the exposed handles.

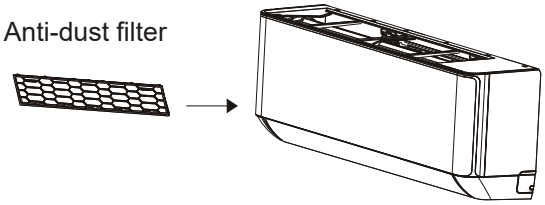
2. Gently remove the single anti-dust filter by pulling upwards and backwards as shown in the illustrations.

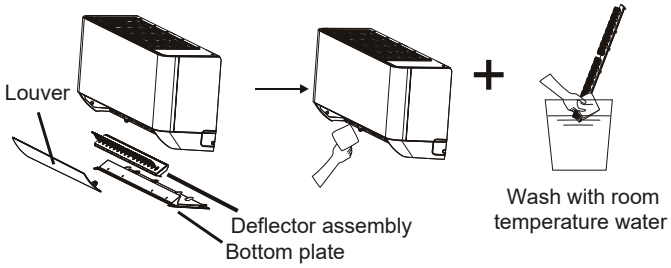
3. Clean the washable filters with warm water (under 113°F / 45°C).

4. Leave the filters to dry in a cool, dry place.

5. Once fully dry, re-insert the filter into its original location.







Note

Accessorial electrostatic or deodorizing filters are not washable and should be replaced every 6 months.

Maintenance 6

B. Interior of the Indoor Air Handler

Inspect the indoor unit's interior as well as the inner coil every season.

1. Disconnect the front panel and remove the top hinge where the pegs connect. This offers easier inspection of the interior and behind the air filters.

2. Clean the interior with a damp, soft cloth and neutral soaps. Do not use any types of aggressive solvents or detergents.

Maintenance - Long Periods of Non-Use

If the air conditioner won't be used for an extended period of time.

Clean all filters

Turn on the Fan function until the unit dries out completely

Turn off the unit and disconnect the power

Remove the batteries from the remote control

Maintenance - Pre-Season Inspection

After long periods of non-use or before periods of frequent use, do the following:

Check for damaged wires

Clean all filters

Check for leaks



Make sure nothing is blocking the air inlets and outlets

Replace the batteries

Troubleshooting

7

Malfunction	Possible Causes
If the appliance does not operate or respond...	There is a power failure / plug pulled out or tripped / wrong breaker (wrong wiring)
	The indoor / outdoor unit fan motor is damaged
	There is a faulty compressor or thermomagnetic circuit breaker
	There is a faulty protective device or fuses
	The electrical connections are loose
	The system has entered a protection mode
	The system has entered an overvoltage or undervoltage protection
	The Timer-On function is active
	The electronic control board was damaged
If there are strange odors...	The air filter is dirty
If there is running water...	There is a back-flow of condensate water into the system's drain pan.
If a fine mist is coming from the air outlet...	This occurs when the air in the room becomes considerably cold. For example in "Cooling" or "Dehumidification / Dry" modes
If strange noises are being emitted...	This noise is made by the expansion or contraction of the front panel due to variations in temperature. If so, this is normal
If the airflow is insufficient, and the air is not hot or cold enough...	The temperature setting is unsuitable
	The air conditioner intakes and outlets may be obstructed
	The air filter may be dirty
	The fan speed may be set at the minimum
	There may be too many other heat sources in the room
	The system may be getting low on refrigerant. Pressures should be checked
If the appliance does not respond to commands...	The remote control may not be close enough to the indoor unit
	The batteries of the remote control may need to be replaced
	There are obstacles between the remote control and indoor unit signal receiver
If the display is off...	The Display button has been pressed
	There has been a power failure
Switch off the air conditioner immediately and cut off the power supply in the event of...	Strange noises not due to expansion/contraction are heard during operation
	The electronic control board is faulty or malfunctioning
	Any fuses or switches are faulty or malfunctioning
	The sound of spraying water or objects are heard inside the appliance
	The cables or plugs have overheated
	There are very strong odors being emitted from the appliance

Error Signals on the Display

In case of errors, the display on the indoor unit may show the following codes:

Display	Description of the error	Display	Description of the error
E1	Indoor temperature sensor fault	E8	Outdoor discharge temperature sensor fault
E2	Indoor pipe temperature sensor fault	E9	Outdoor IPM module fault
E3	Outdoor pipe temperature sensor fault	EA	Outdoor current detection fault
E4	Refrigerant system leakage or fault	EO	Indoor ↔Outdoor unit communication fault
E6	Malfunction of the indoor fan motor	FY	Refrigerant leak / Low pressure detected
E7	Outdoor air temperature sensor fault	EH	Outdoor suction temperature sensor fault

Do not attempt to use the system until the error code is diagnosed and resolved. Forcing the system to run can cause irreversible damage.

Troubleshooting

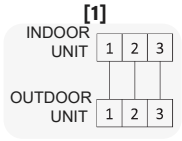
7

Solutions to Common Issues & Scenarios

Issue: The indoor air handler does not turn on

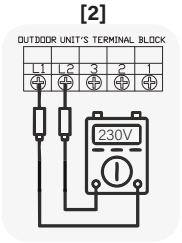
- Solution: Try the manual emergency button on the indoor unit to rule out remote control issues.

[1]



- Solution: Verify that the wiring order is identical between the indoor and outdoor units. The color sequence must match exactly. Check for splices or damage along the control cable. To eliminate variables, temporarily disconnect all accessory items, such as UV lights or condensate pumps, until the problem is resolved.

[2]



- Solution for 230V systems: Use a multimeter to check the AC voltage across terminals L1 and L2 on the outdoor system. Place one probe on L1 and the other on L2. Do not measure each leg to ground. Verify that the reading is between 208~253 VAC.
    - If the reading is between 208~253 VAC, check whether it is the same across terminals 2 and 3 on both the indoor and outdoor units. All readings must match. The system requires a full 230V reading to function.

    - A reading of 0 VAC indicates that the system is not receiving power from the source. Some common reasons are:
        - A fused disconnect is being used, but the fuses are blown and improperly inserted.
        - The disconnect box bus-bar is turned off.
        - A double-pole breaker is not being used. Single or tandem breakers will not operate.

Issue: The pressure reading does not rise when releasing refrigerant during the leak check

- Solution: Verify that the manifold gauge hose pin fully engages the outdoor unit's service port Schrader valve. A pin that is over-extended or under-extended will block access to the refrigerant circuit, preventing pressure measurement and proper vacuuming. The depressor pin inside the hose connector is adjustable to ensure proper engagement.
    - A telltale sign that this is happening is if the gauge reading goes to an instant vacuum when the pump is first turned on, meaning only the gauge is being vacuumed.

    - If so, vacuuming will need to be re-performed, since only the gauge was vacuumed.

Troubleshooting 7

Issue: The system is not holding a vacuum

- Solution: There is likely a leak in the gauge hoses. Repair it and check the vacuum pump.
- Solution: Check the connection points for proper contact and torque, then tighten if necessary.

Issue: The indoor air handler is leaking water

- Solution: Verify that the indoor unit is level both horizontally and vertically.
- Solution: Confirm that the drain tube pitches continuously downward.
    - Pour a cup of water over the indoor unit's coils to ensure it reaches the drain pan.
    - Verify that water drains freely from the tube. If it does not, find the cause and correct it.

Issue: The system indicates that a refrigerant leak is present

- Solution: Cut off the power to the system. Prepare a soapy water spray and apply it to the connection points of the lineset. The point where bubbles form is where the leak is located. Tighten the connection and re-test the system. After the leak is repaired, recharge the system.

Issue: The fan runs in Cooling mode but in Heating mode there is weak or no airflow

- Solution: Fan speed control is typically unavailable in Heating mode. If the coil cannot heat up, the fan will not run at speed. This issue may also indicate low refrigerant.

Troubleshooting

7

Error Codes

Code	Reason	Remark
bc	PM2.5 sensor error (indoor unit; optional feature)	Use the remote control to check the error code
bE	CO_2 sensor error (indoor unit; optional feature)	/
bf	TVOC sensor error (indoor unit; optional feature)	Use the remote control to check the error code
bj	Humidity sensor error (indoor unit)	Use the remote control to check the error code
CL	Filter cleaning reminder	Clean the air filter
d4	Drain pan full protection	/
d5	Access control signal protection	/
E0	Indoor and outdoor units communication error	Is the wiring connection between the units correct?
E1	Indoor unit room temperature sensor error (IDU RT sensor)	Indoor unit sensor and PCB
E2	Indoor unit coil temperature sensor error (IDU IPT sensor)	Indoor unit sensor and PCB
E3	Outdoor unit coil temperature sensor error (ODU OPT sensor)	Outdoor unit sensor and PCB
E4	System abnormality / refrigerant shortage	Gas leakage / 2-way or 3-way valve blocked / etc.
E5	Model configuration mismatch (production line testing only)	/
E6	Indoor unit DC fan fault (IDU fan)	Fan blade, fan motor, and indoor unit PCB

Troubleshooting

7

Code	Reason	Remark
E7	Outdoor unit ambient temperature sensor error (OAT sensor)	Outdoor unit ambient sensor and PCB
E8	Outdoor unit discharge temperature sensor error (ODT sensor)	Outdoor unit discharge sensor and PCB
E9	Outdoor unit IPM / compressor drive fault	Outdoor unit PCB, compressor, etc.
EA	Outdoor unit current sensor error	Is the outdoor unit PCB broken?
Eb	Communication error between indoor main PCB and display board (IDU)	Display board and main PCB
EC	Outdoor unit module communication error	/
EE	Outdoor unit EEPROM error	1. Is the outdoor unit PCB broken? 2. Try to re-power the unit
EF	Outdoor unit DC fan motor error	Fan motor and outdoor unit PCB
EH	Outdoor unit suction temperature sensor error	/
Ej	Outdoor unit mid-coil temperature sensor error	/
En	Outdoor unit gas pipe temperature sensor error	/
EP	Outdoor unit compressor top temperature sensor error	/
EU	Outdoor unit voltage detection circuit abnormality	Outdoor unit PCB
Ey	Outdoor unit liquid pipe temperature sensor error	/

Troubleshooting

7

Code	Reason	Remark
F0	Indoor unit infrared sensor error	Use the remote control to check the error code
F1	Indoor unit power detection module error	Use the remote control to check the error code
F2	Outdoor unit discharge temperature sensor error protection	Check the troubleshooting for details
F3	Outdoor unit coil temperature sensor error protection	Check the troubleshooting for details
F4	Abnormal refrigerant flow protection	Check the troubleshooting for details
F5	Outdoor unit PFC protection	Check the troubleshooting for details
F6	Compressor phase loss / Phase reversal protection	Check the troubleshooting for details
F7	Outdoor unit IPM abnormal temperature protection	Check the troubleshooting for details
F8	Outdoor unit 4-way valve reversing abnormality	Check the troubleshooting for details
F9	Outdoor unit IPM temperature sensor error	Outdoor unit PCB
FA	Outdoor unit compressor phase current detection circuit failure	Outdoor unit PCB
Fb	Cooling / Heating overload frequency limit	Use the remote control to check the error code
FC	Frequency reduction due to high power consumption	Use the remote control to check the error code
Fd	Refrigerant leak sensor communication error	Check the troubleshooting for details

Troubleshooting

7

Code	Reason	Remark
FE	Outdoor unit IPM / compressor phase overcurrent protection	Use the remote control to check the error code
FF	Frequency reduction due to high IPM temperature	Use the remote control to check the error code
FH	Frequency reduction due to compressor drive limit	Use the remote control to check the error code
Fj	Frequency reduction due to high discharge temperature	Use the remote control to check the error code
Fn	Frequency reduction due to high AC input current	Use the remote control to check the error code
FP	Frequency reduction to prevent condensation	Use the remote control to check the error code
FU	Frequency reduction to prevent coil freezing	Use the remote control to check the error code
Fy	Refrigerant deficiency protection	Check the troubleshooting for details
H1	Outdoor unit high-pressure switch error	/
H2	Outdoor unit low-pressure switch error	/
Hd	Refrigerant leak protection	/
P0	Outdoor unit IPM protection	Outdoor unit PCB
P1	Overvoltage / undervoltage protection	1. Is the outdoor unit PCB broken? 2. Is the power supply abnormal?
P2	Overcurrent protection	1. Is the outdoor unit PCB broken? 2. Is the power supply abnormal?

Troubleshooting

7

Code	Reason	Remark
P4	Outdoor unit high discharge temperature protection	Check the troubleshooting for details
P5	Cooling / Dry mode overcooling protection	Check the troubleshooting for details
P6	Cooling mode overheat protection	Check the troubleshooting for details
P7	Heating mode overheat protection	Check the troubleshooting for details
P8	Outdoor ambient high / low temperature protection	Check the troubleshooting for details
P9	Outdoor unit compressor drive overload protection	Check the troubleshooting for details
PA	Mode conflict / Indoor unit upper airflow module communication error	Check the troubleshooting for details

Note: Remote Controller Failure Code Querying Function

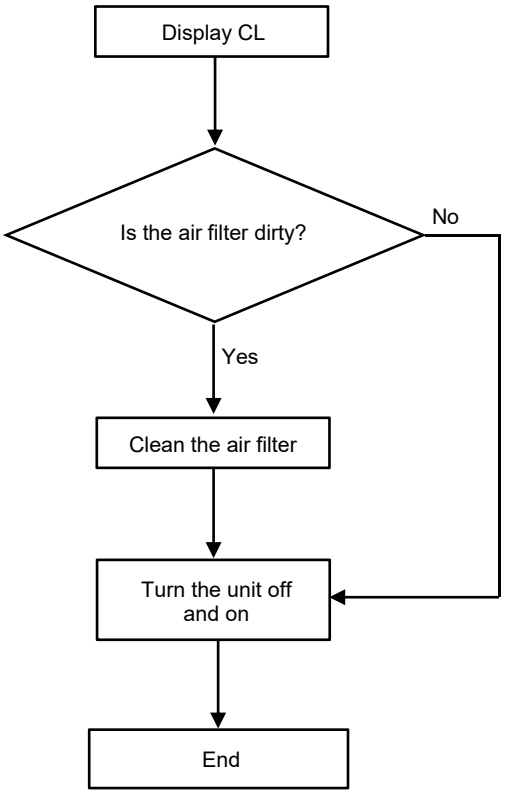
As shown in the table above, some codes (Fb–bj) can only be viewed using the remote control. To view these codes, press the ECO button on the remote control 8 times within 8 seconds. The buzzer beeps twice to confirm the query.

Troubleshooting

7

CL Code: Filter Cleaning Reminder

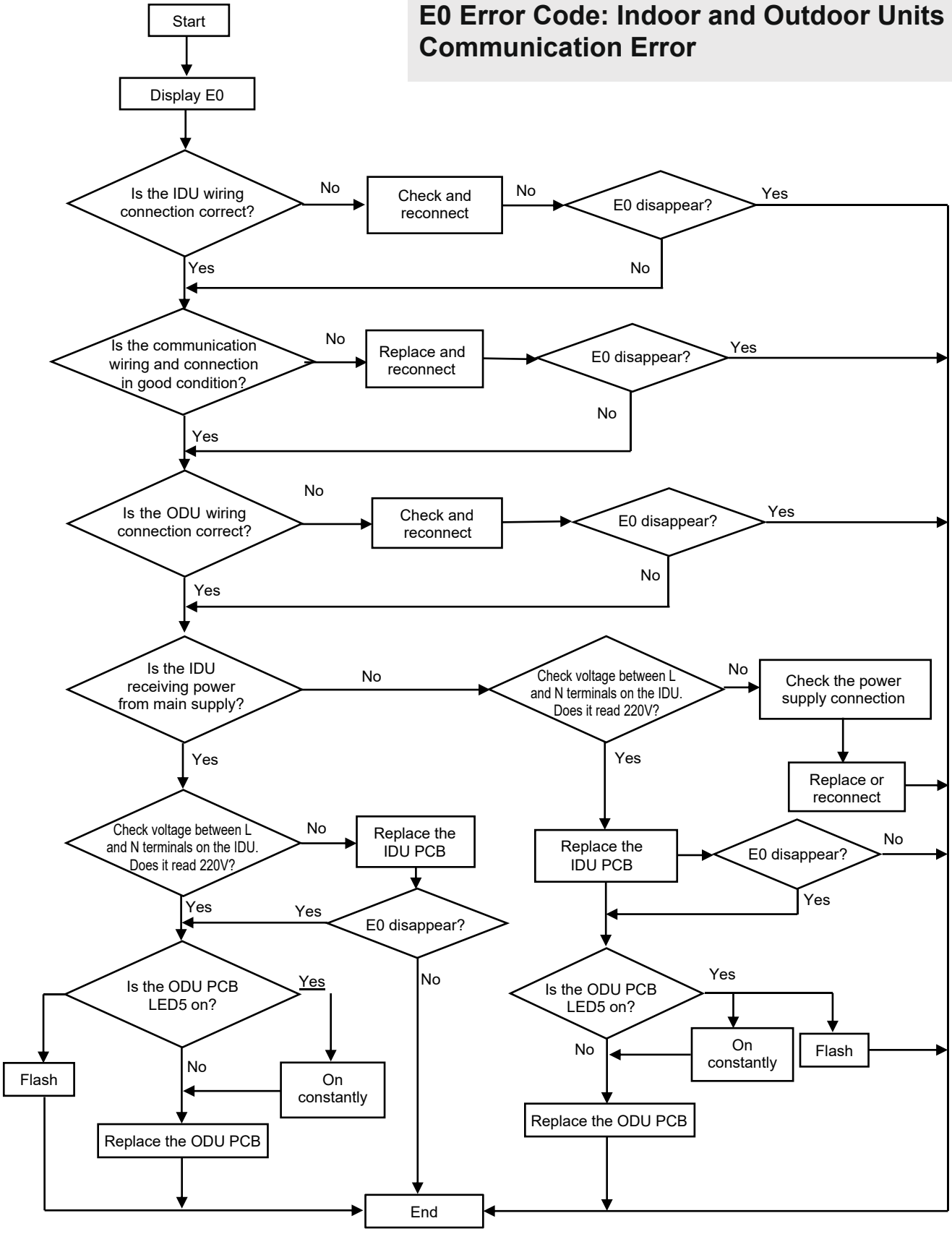
After the system has run for a total of 500 hours, the display shows “CL” to remind you to clean the air filter. This is a reminder, not an error code.



Troubleshooting

7

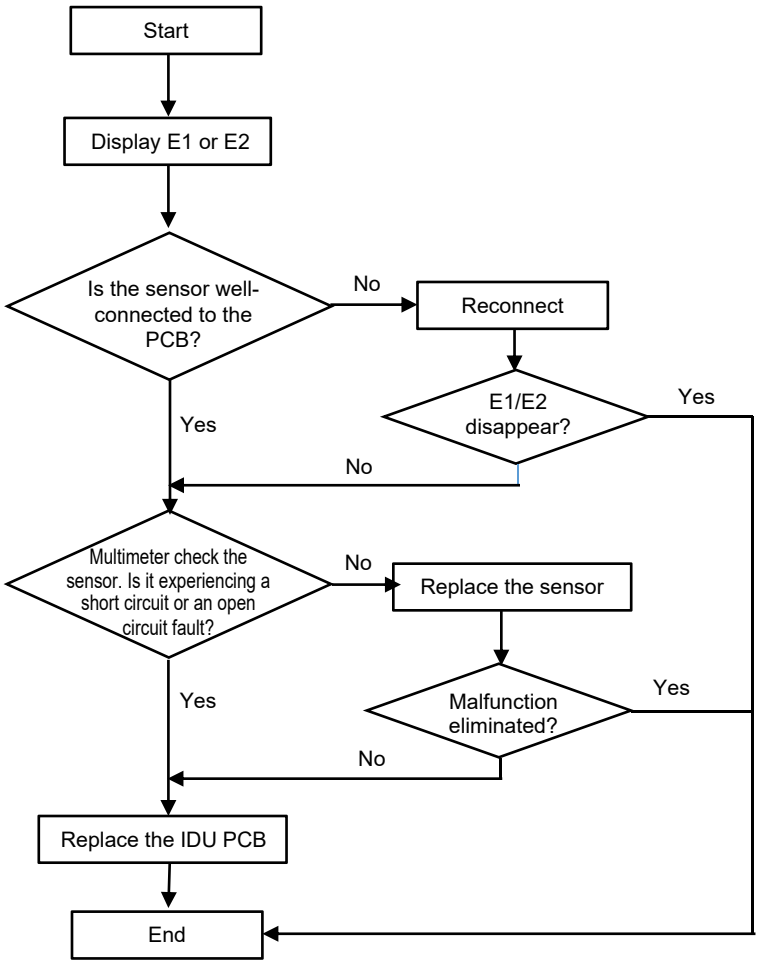
E0 Error Code: Indoor and Outdoor Units Communication Error



Troubleshooting

7

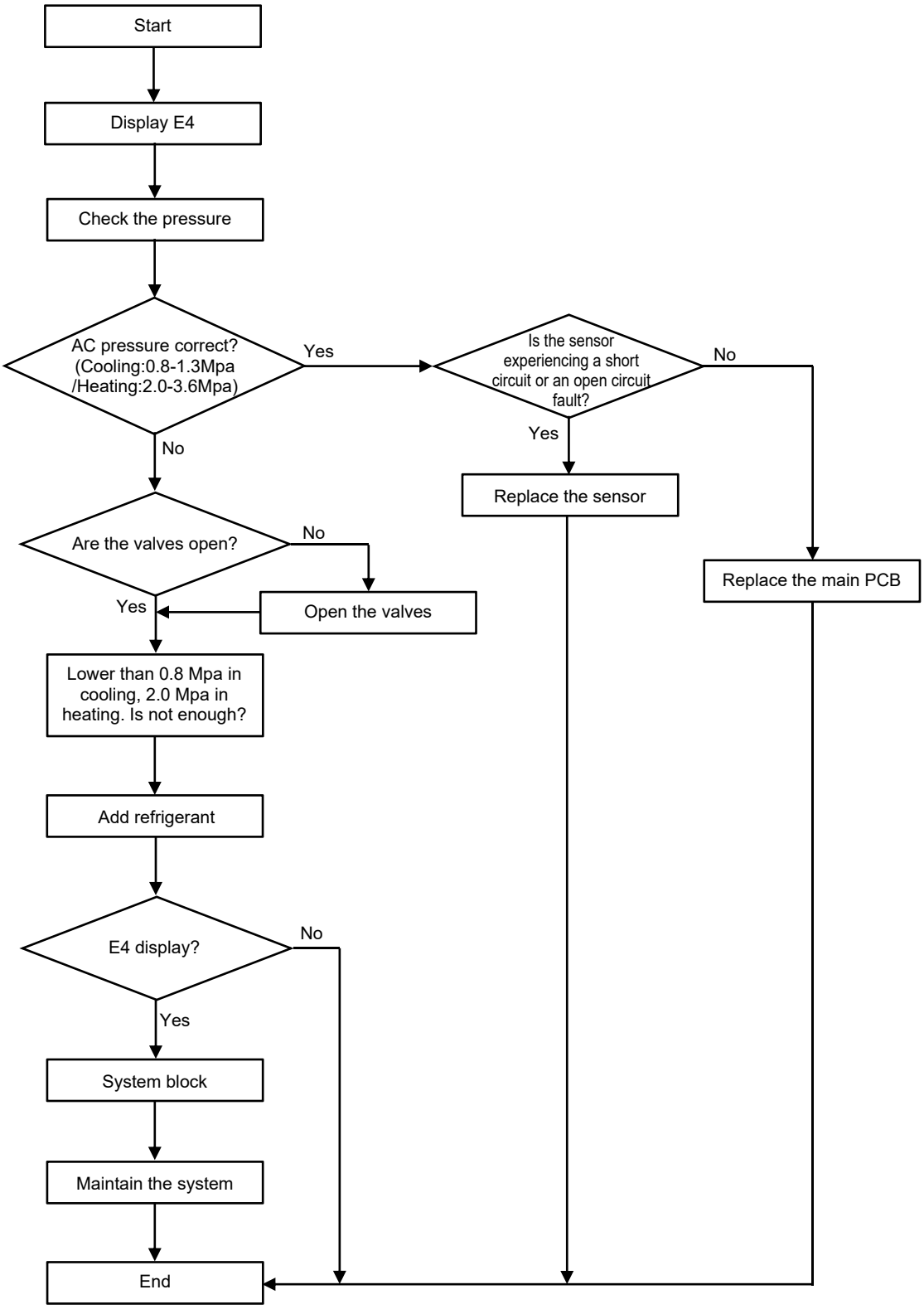
E1 / E2 Error Codes: Indoor Unit Room Temperature Sensor Error and/or Indoor Unit Coil Temperature Sensor Error



Troubleshooting

7

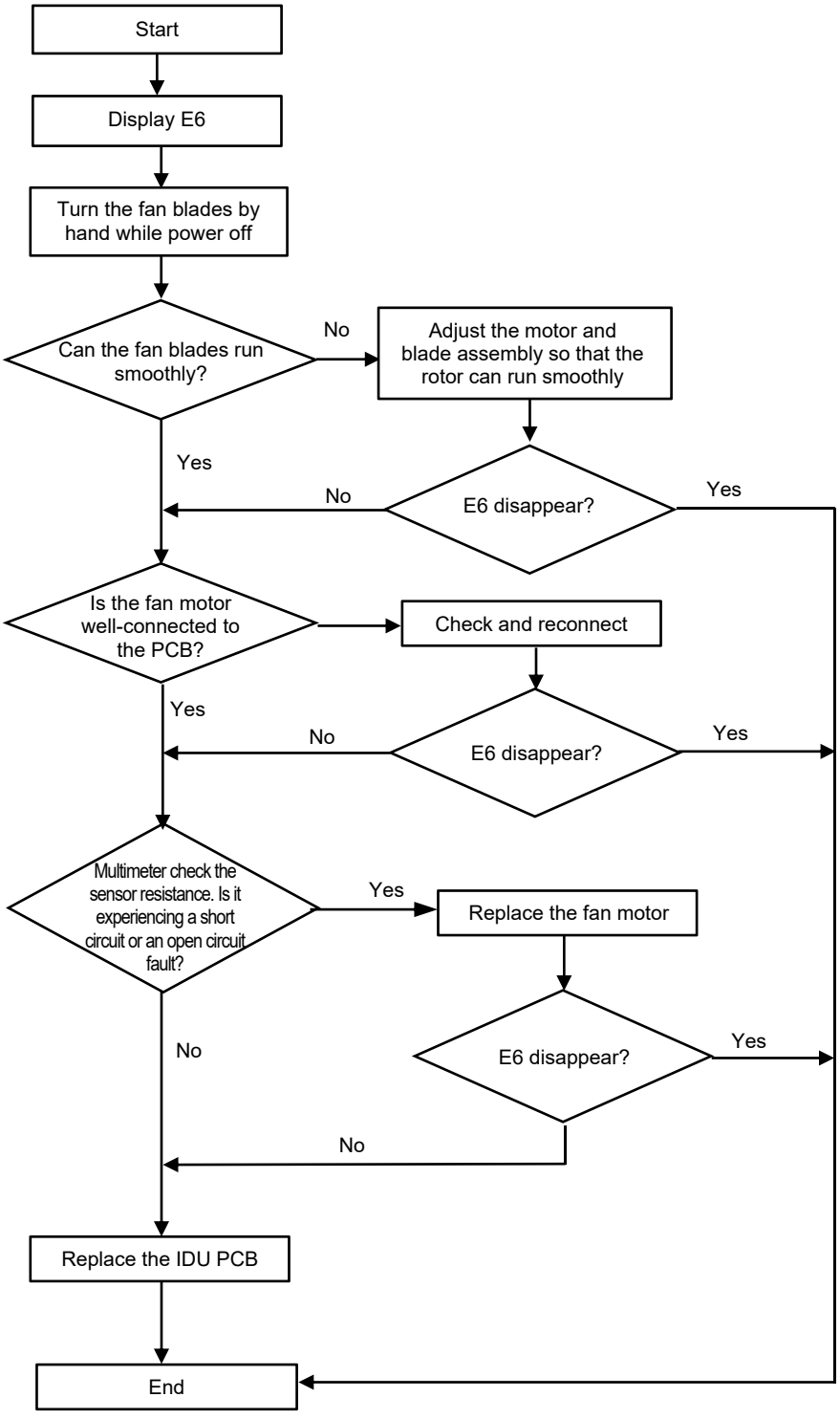
E4 Error Code: System Abnormality / Refrigerant Shortage



Troubleshooting

7

E6 Error Code: Indoor Unit DC Fan Fault



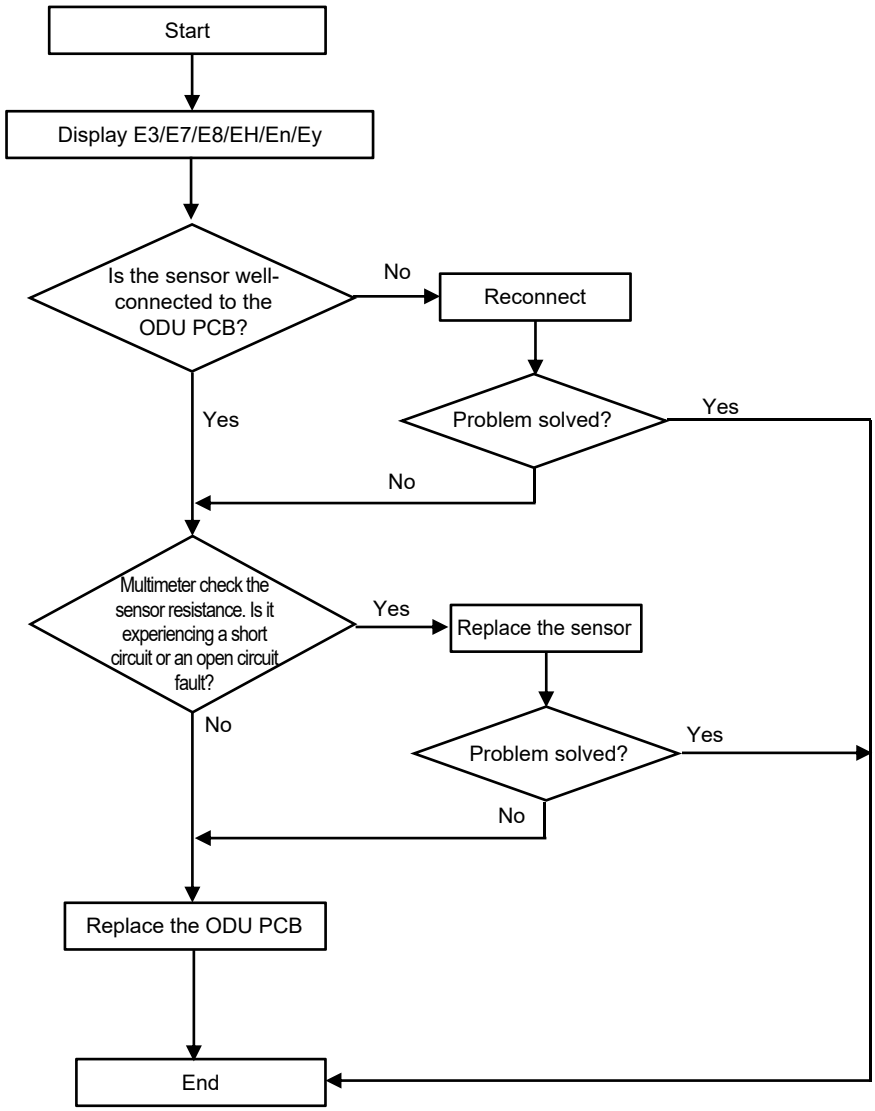
Troubleshooting

7

E3 / E7 / E8 / EH / En / Ey Error Codes:

E3: Outdoor unit coil temperature sensor error
E7: Outdoor unit ambient temperature sensor error
E8: Outdoor unit discharge temperature sensor error
EH: Outdoor unit suction temperature sensor error
En: Outdoor unit gas pipe temperature sensor error
Ey: Outdoor unit liquid pipe temperature sensor error

If any temperature sensor has a short circuit or open circuit, the system displays the corresponding error code, and both the indoor and outdoor units turn off. When the sensor returns to normal, the system goes into standby and can be turned on again as usual.

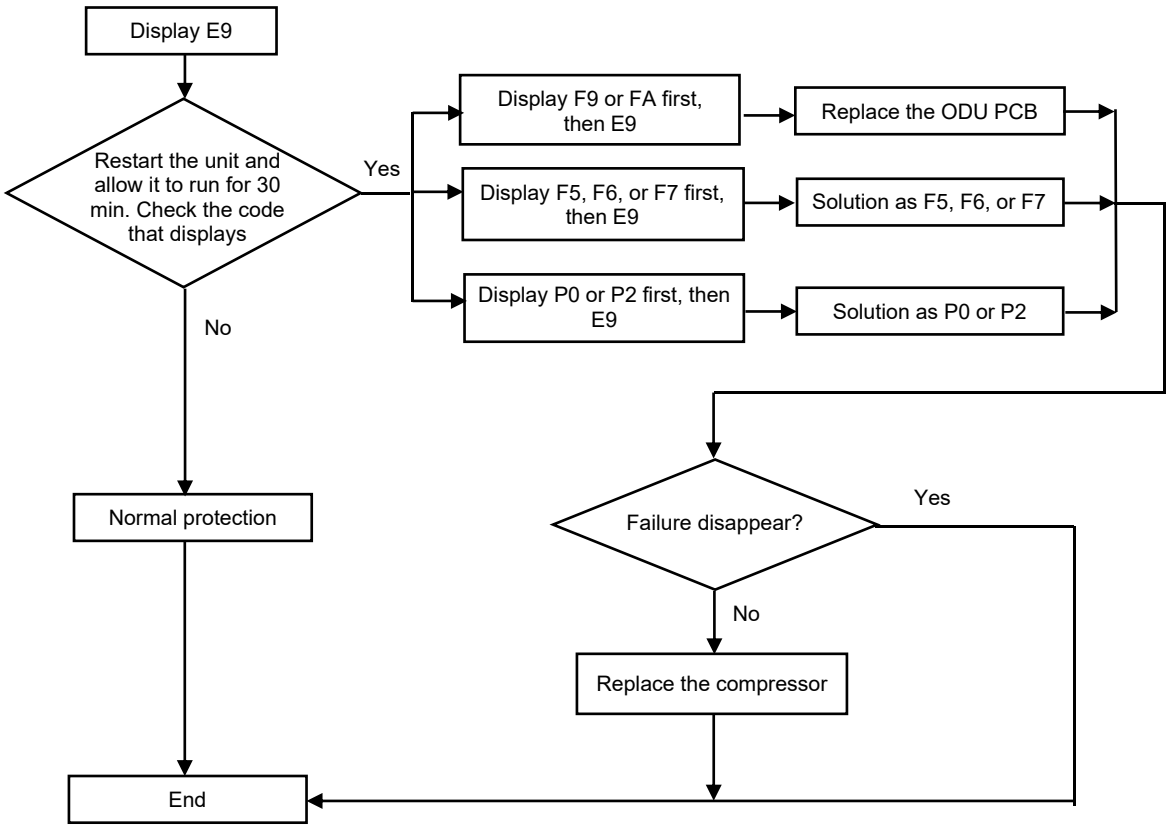


Troubleshooting

7

E9 Error Code: Outdoor Unit IPM / Compressor Drive Fault

If the IPM protection stops the unit six times in a row, the system displays error code "E9" and will not restart until the Power button is pressed.



Troubleshooting

7

EA Error Code: Outdoor Unit Current Sensor Error

Cause: Outdoor current sampling circuit failure or drive parameter mismatch.

Solution: Replace the outdoor unit PCB.

Eb Error Code: Communication Error Between Indoor Main PCB & Display Board

Causes:
1. The communication wire is damaged.
2. The outdoor unit main board is damaged.
3. The operating board is damaged.

Solutions:
1. Replace the communication wire.
2. Replace the outdoor unit main board.
3. Replace the operating board.

EE Error Code: Outdoor Unit EEPROM Error

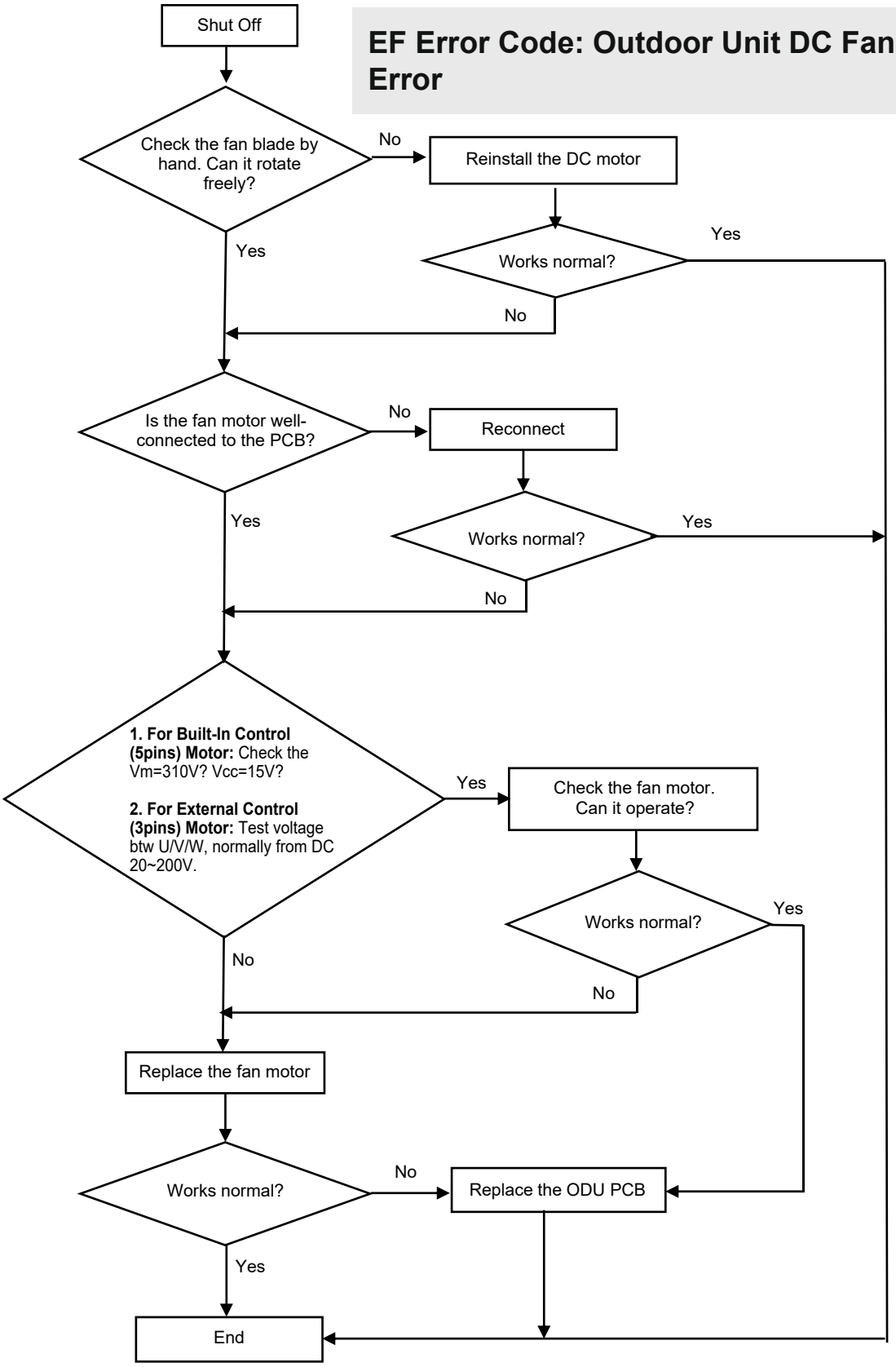
Cause: The outdoor unit main board is damaged.

Solution: Replace the outdoor unit PCB.

Troubleshooting

7

EF Error Code: Outdoor Unit DC Fan Motor Error

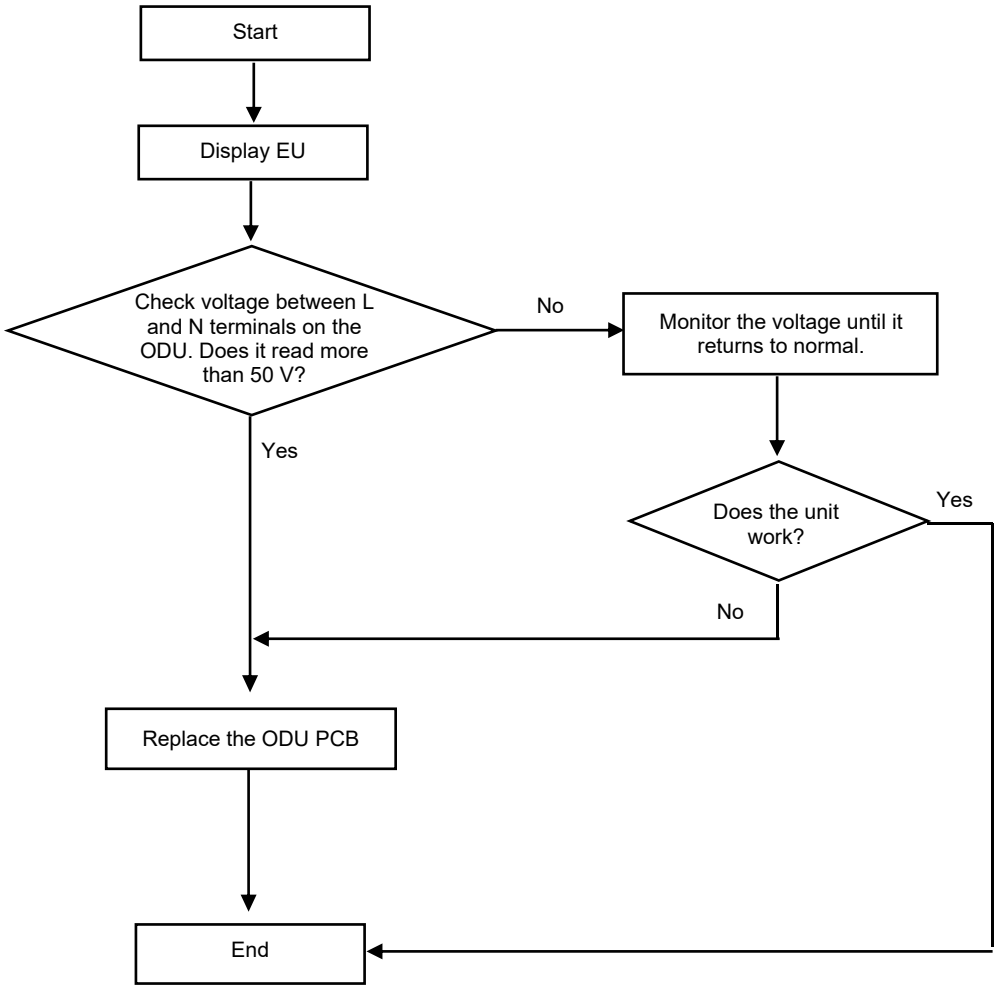


Troubleshooting

7

EU Error Code: Outdoor Unit Voltage Detection Circuit Abnormality

After the power relay is energized, if the measured voltage stays below 50 V for 3 consecutive seconds, the system displays error code "EU."

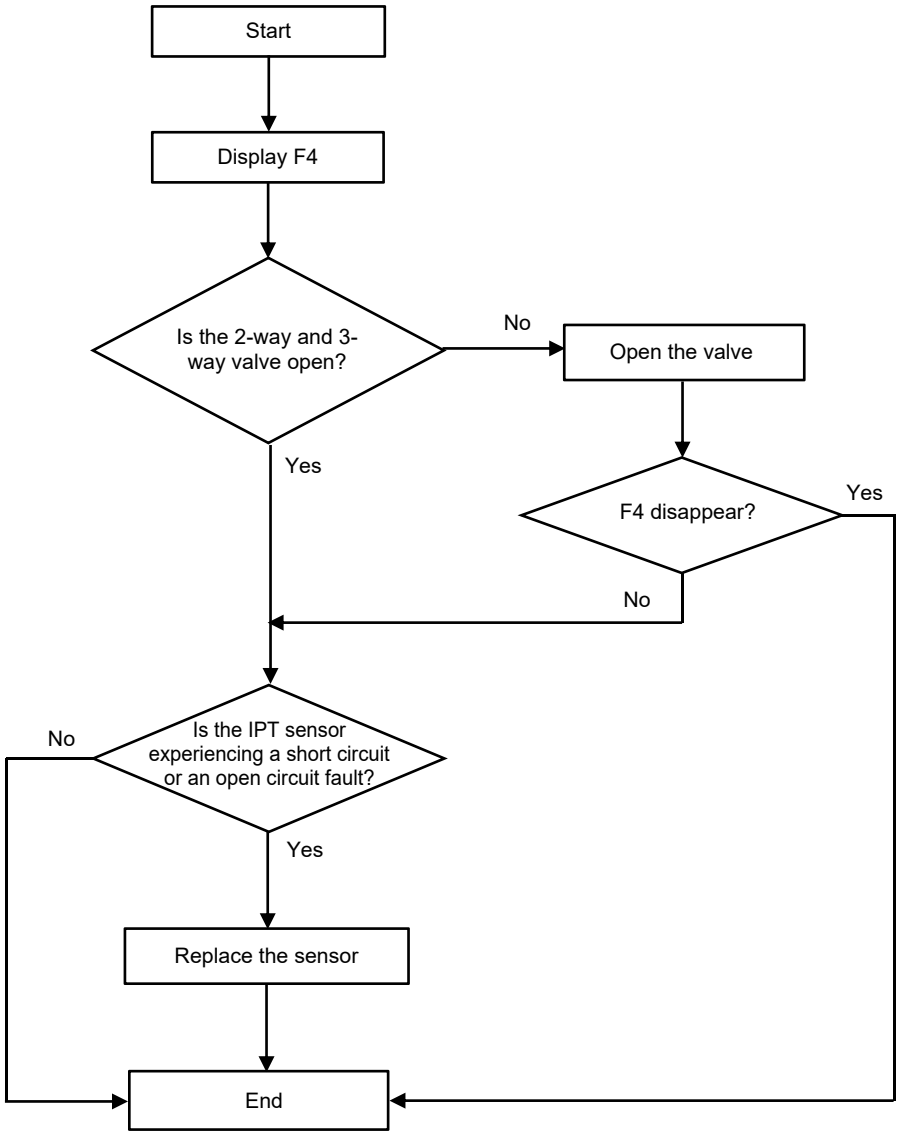


Troubleshooting

7

F4 Error Code: Abnormal Refrigerant Flow Protection

When the compressor starts, the system monitors changes in the indoor coil temperature. If the 2-way or 3-way valve on the outdoor unit has not been opened during installation, refrigerant cannot flow through the system. The system then activates refrigerant flow protection, stops, and displays error code "F4."

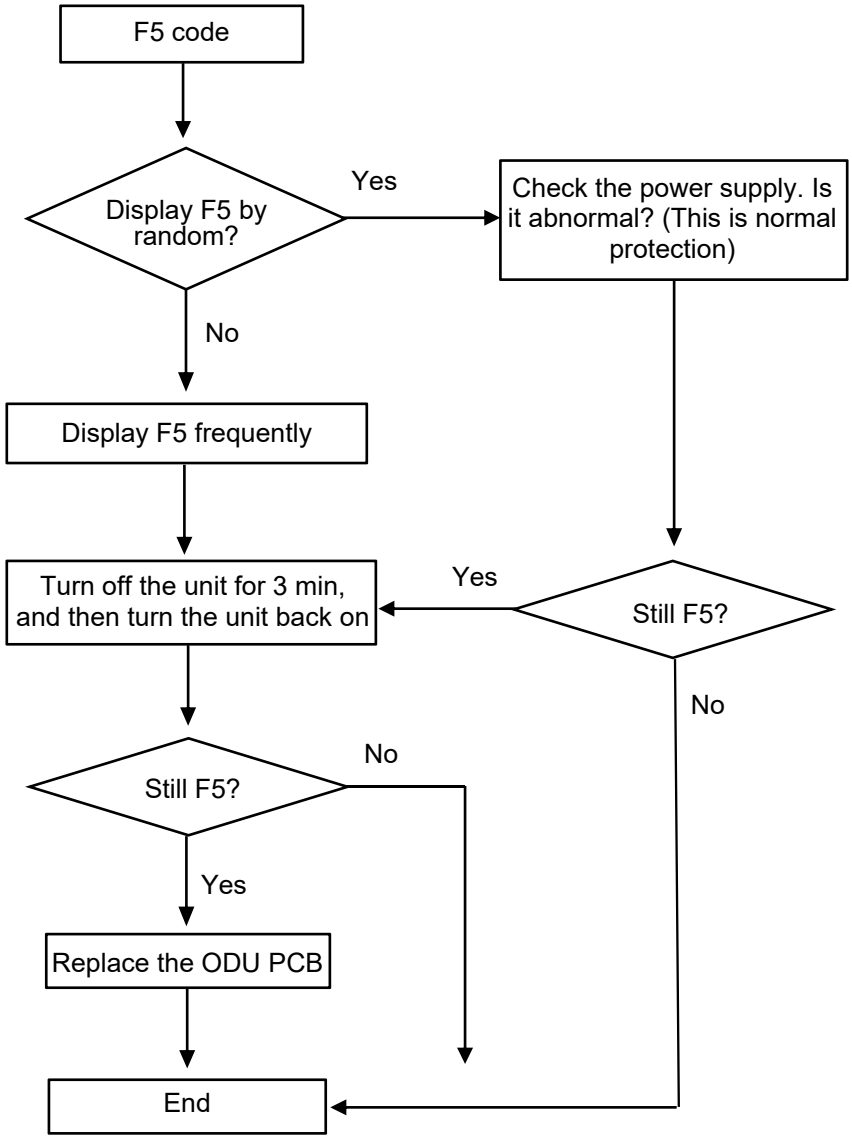


Troubleshooting

7

F5 Error Code: Outdoor Unit PFC Protection

If the outdoor unit undergoes PFC protection, the system displays the "F5" error code.

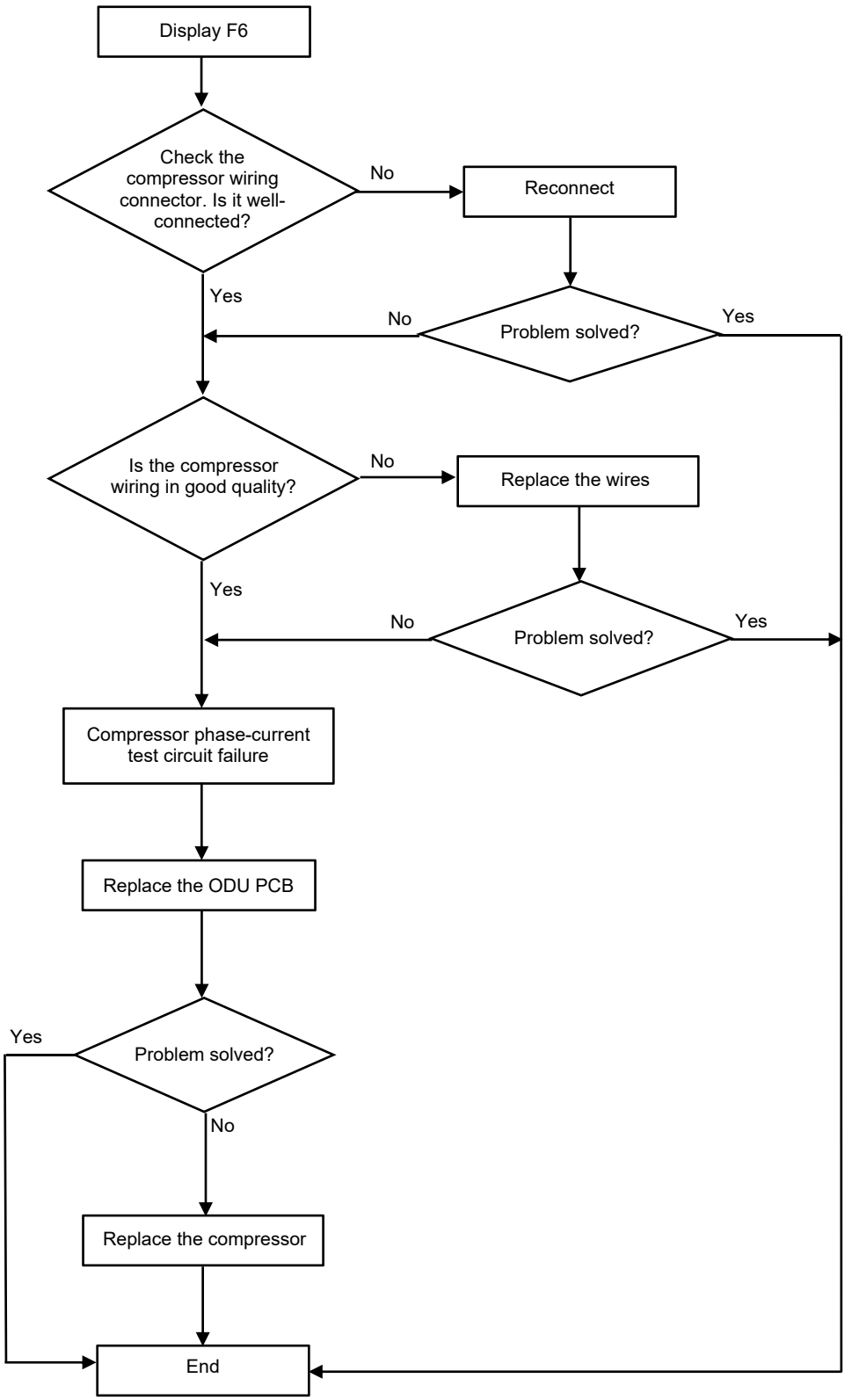


Troubleshooting

7

F6 Error Code: Compressor Phase Loss / Phase Reversal Protection

If the outdoor unit PCB cannot detect current in one or more phases of the compressor, the system activates phase loss protection, stops, and displays error code "F6."



Troubleshooting

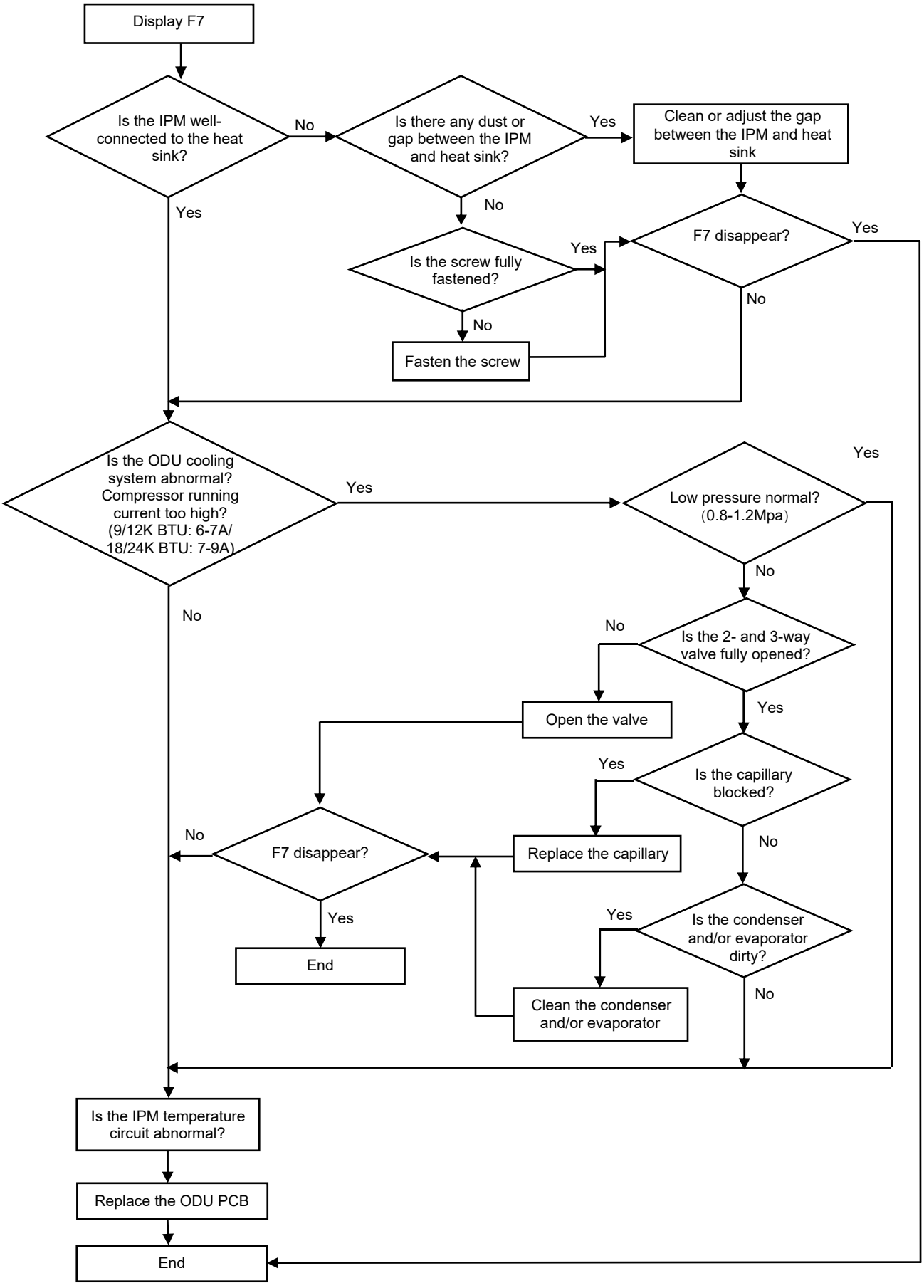
7

F7 Error Code: Outdoor Unit IPM Abnormal Temperature Protection

If the IPM temperature rises above 203°F (95°C), IPM overheat protection activates and the outdoor unit stops. The system displays error code "F7."

Troubleshooting

7

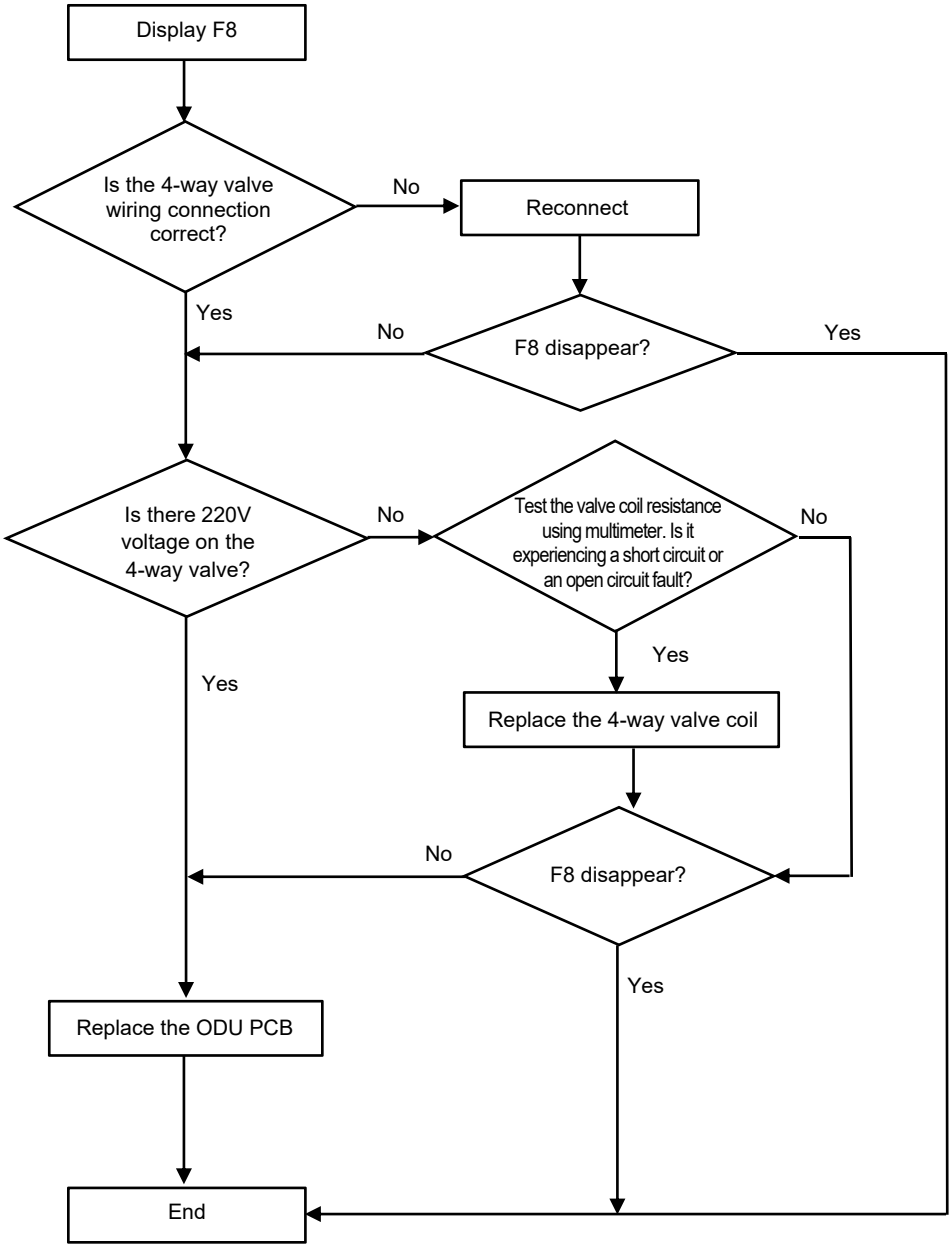


Troubleshooting

7

F8 Error Code: Outdoor Unit 4-Way Valve Reversing Abnormality

In Heating mode, if the IPT is 41°F (5°C) or lower after the compressor has run for 8 minutes, the system displays error code "F8."



Troubleshooting

7

F9 Error Code: Outdoor Unit IPM Temperature Sensor Error

Reason: The IPM module temperature test circuit failure.

Solution: Replace the outdoor unit PCB.

FA Error Code: Outdoor Unit Compressor Phase Current Detection Circuit Failure

Reason: The compressor phase-current test circuit failure.

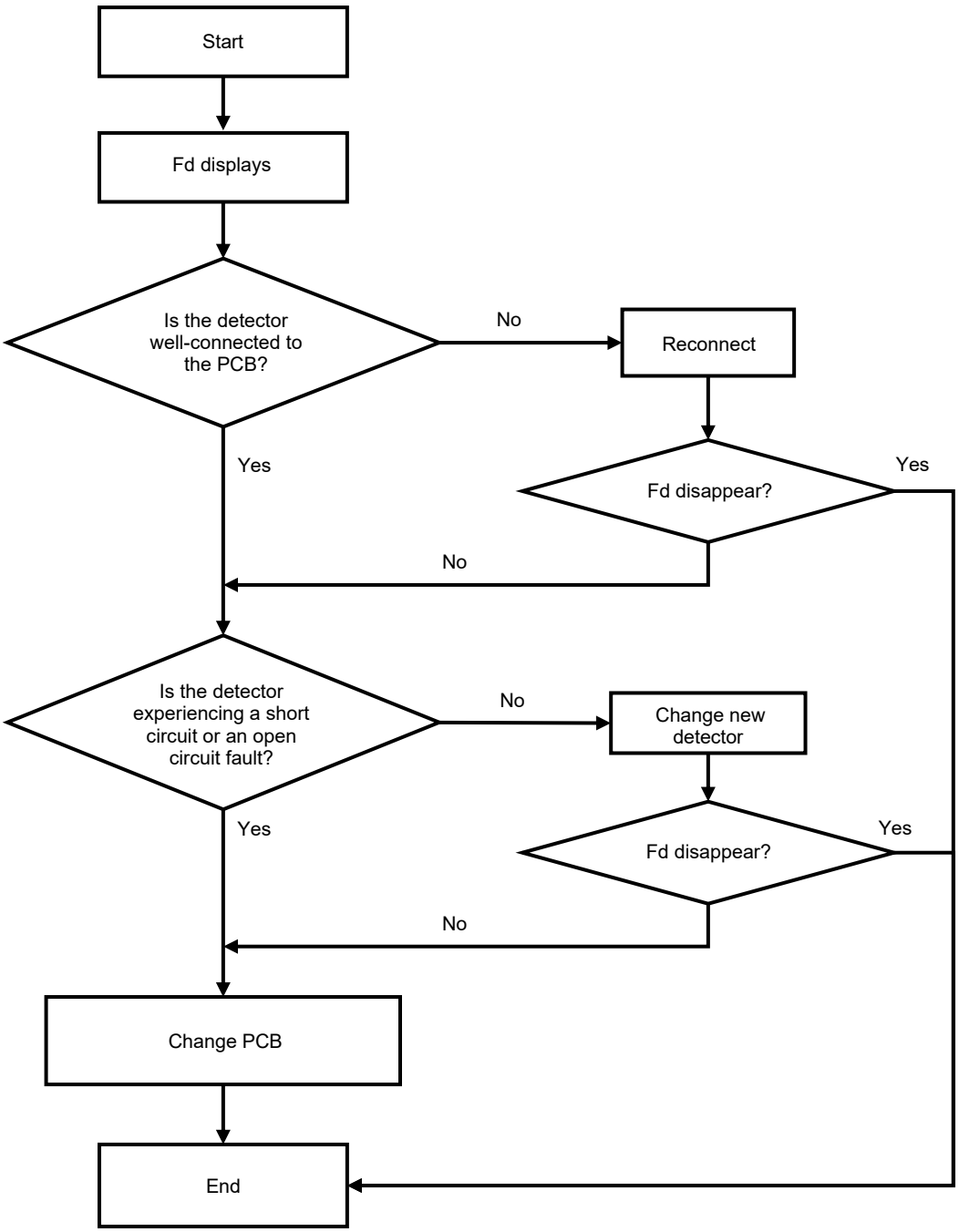
Solution: Replace the outdoor unit PCB.

Troubleshooting

7

Fd Error Code: Refrigerant Leak Sensor Communication Error

If the system detects a refrigerant leak, it displays error code "Fd." Turn off the system immediately and contact a qualified technician to locate the leak.

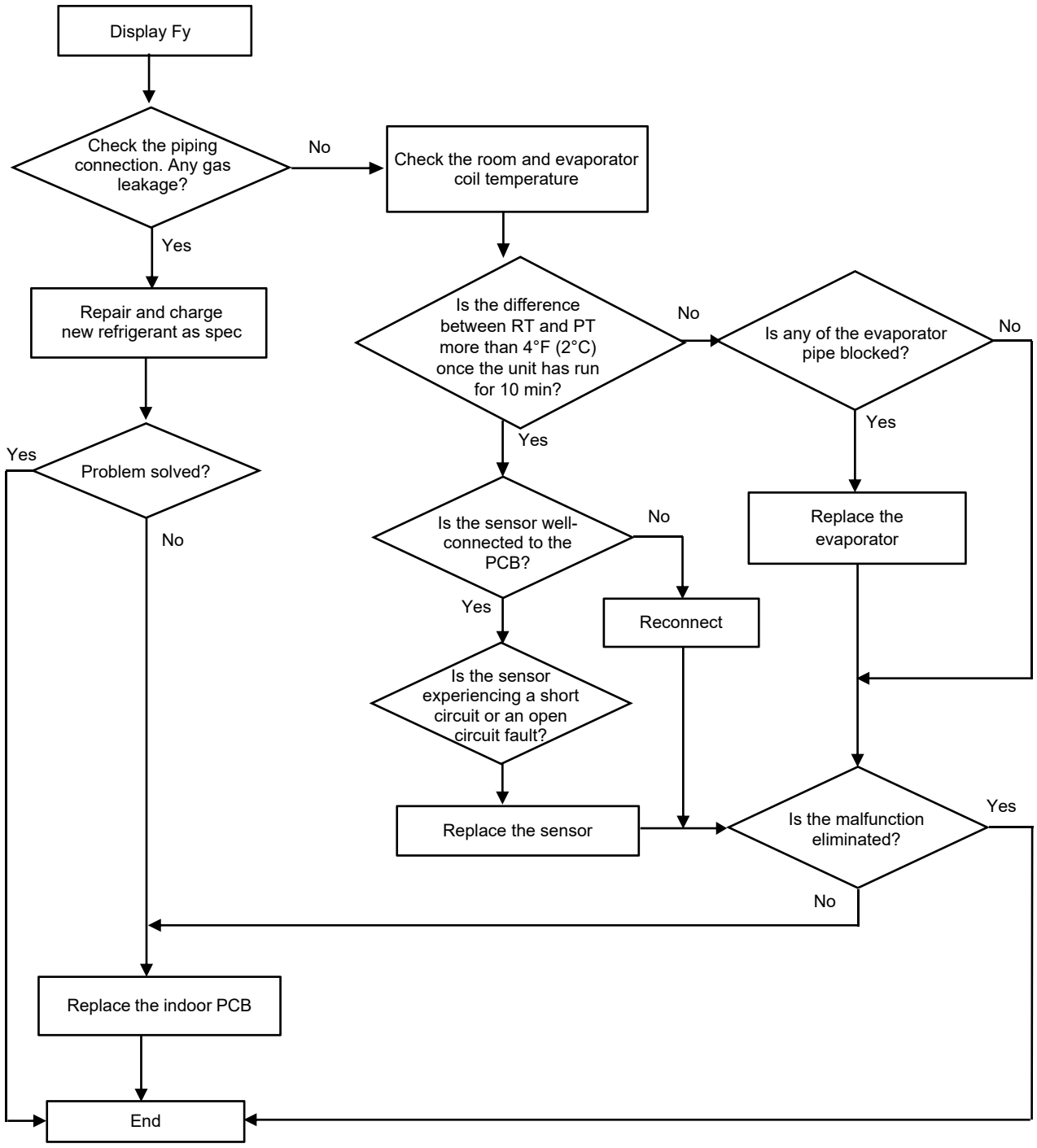


Troubleshooting

7

Fy Error Code: Refrigerant Deficiency Protection

After the compressor has run at high frequency for 9 minutes, if the indoor and outdoor coil temperatures have changed very little from their earlier readings but the compressor discharge temperature stays high, the system displays error code "Fy."

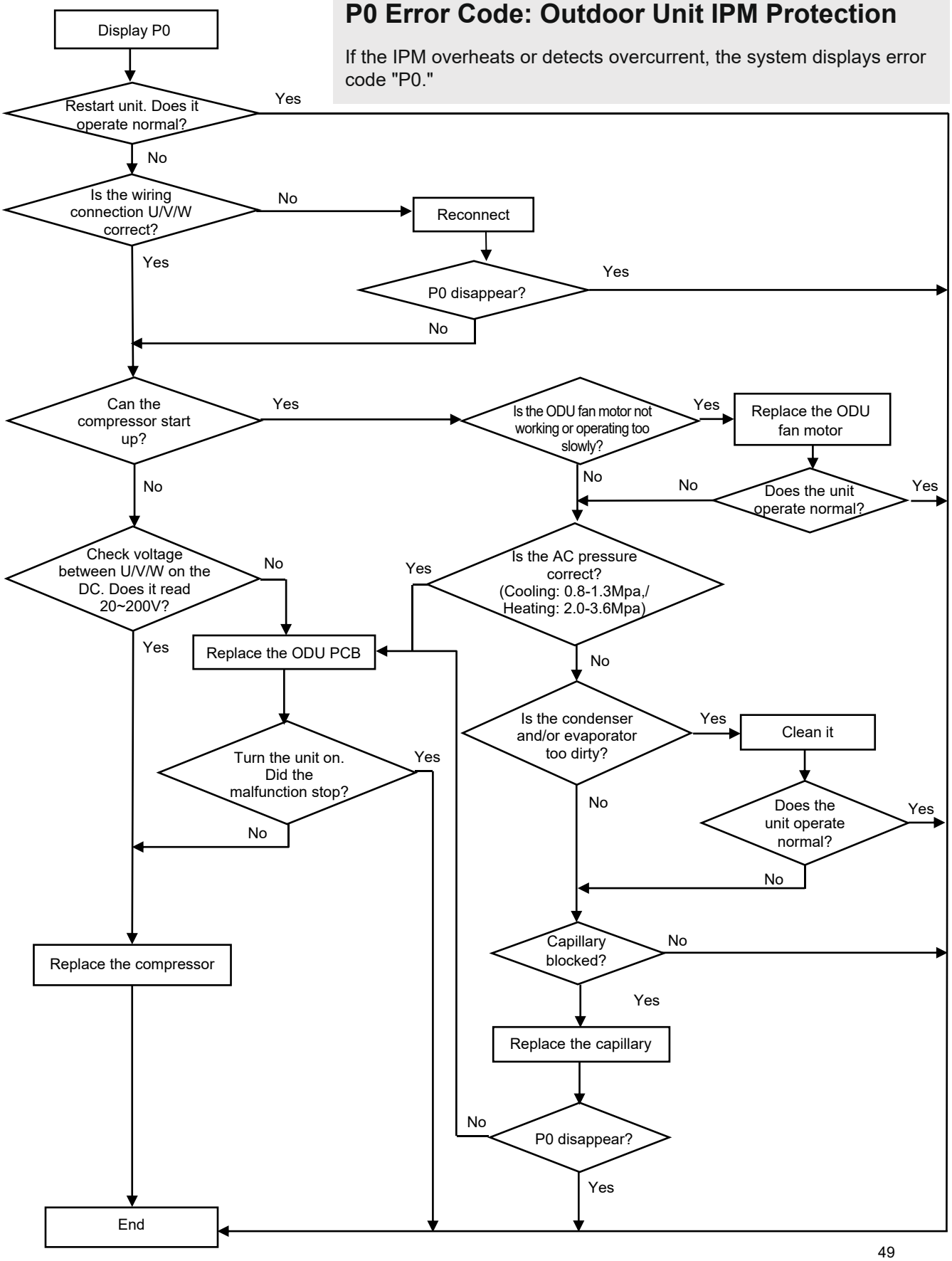


Troubleshooting

7

P0 Error Code: Outdoor Unit IPM Protection

If the IPM overheats or detects overcurrent, the system displays error code "P0."



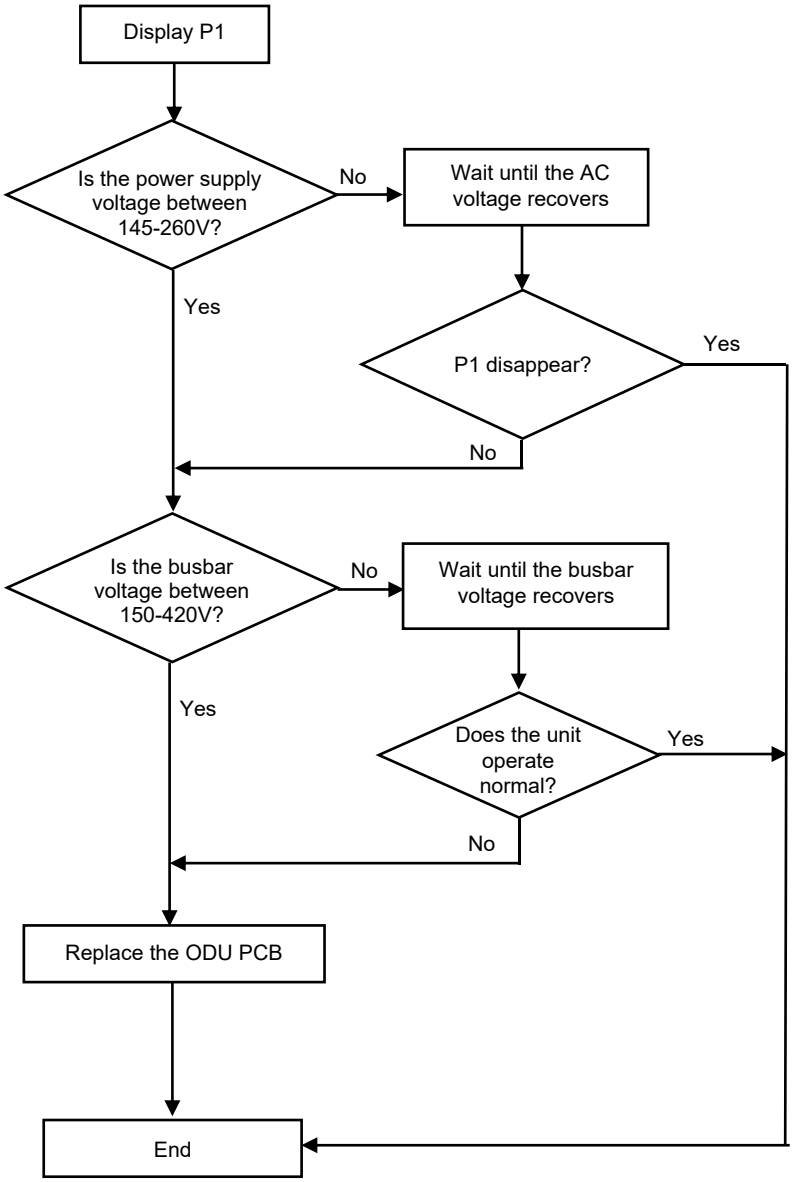
Troubleshooting

7

P1 Error Code: Overvoltage / Undervoltage Protection

1. The system monitors the supply voltage between L and N. If the voltage rises above 260 V AC or drops below 150 V AC, it displays error code "P1." The system returns to its previous operating state when the voltage rises above 155 V AC.

2. The system monitors the DC bus voltage across the large electrolytic capacitor on the outdoor unit PCB. If the voltage rises above 420 V DC or drops below 150 V DC, the system stops displaying error code "P1". The system returns to its previous operating state when the voltage is between 190 V DC and 410 V DC.

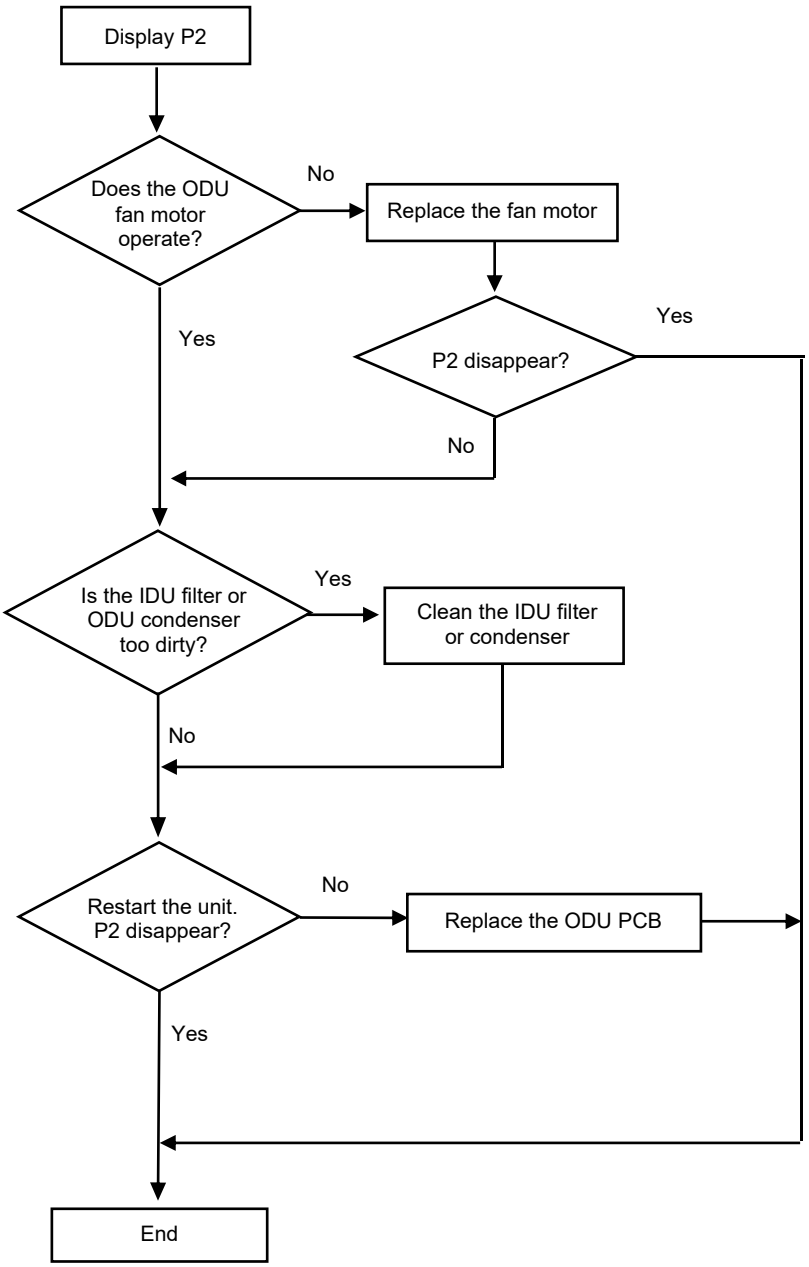


Troubleshooting

7

P2 Error Code: Overcurrent Protection

If the system's operating current exceeds Imax, it stops and displays error code "P2." The Imax value varies by model.



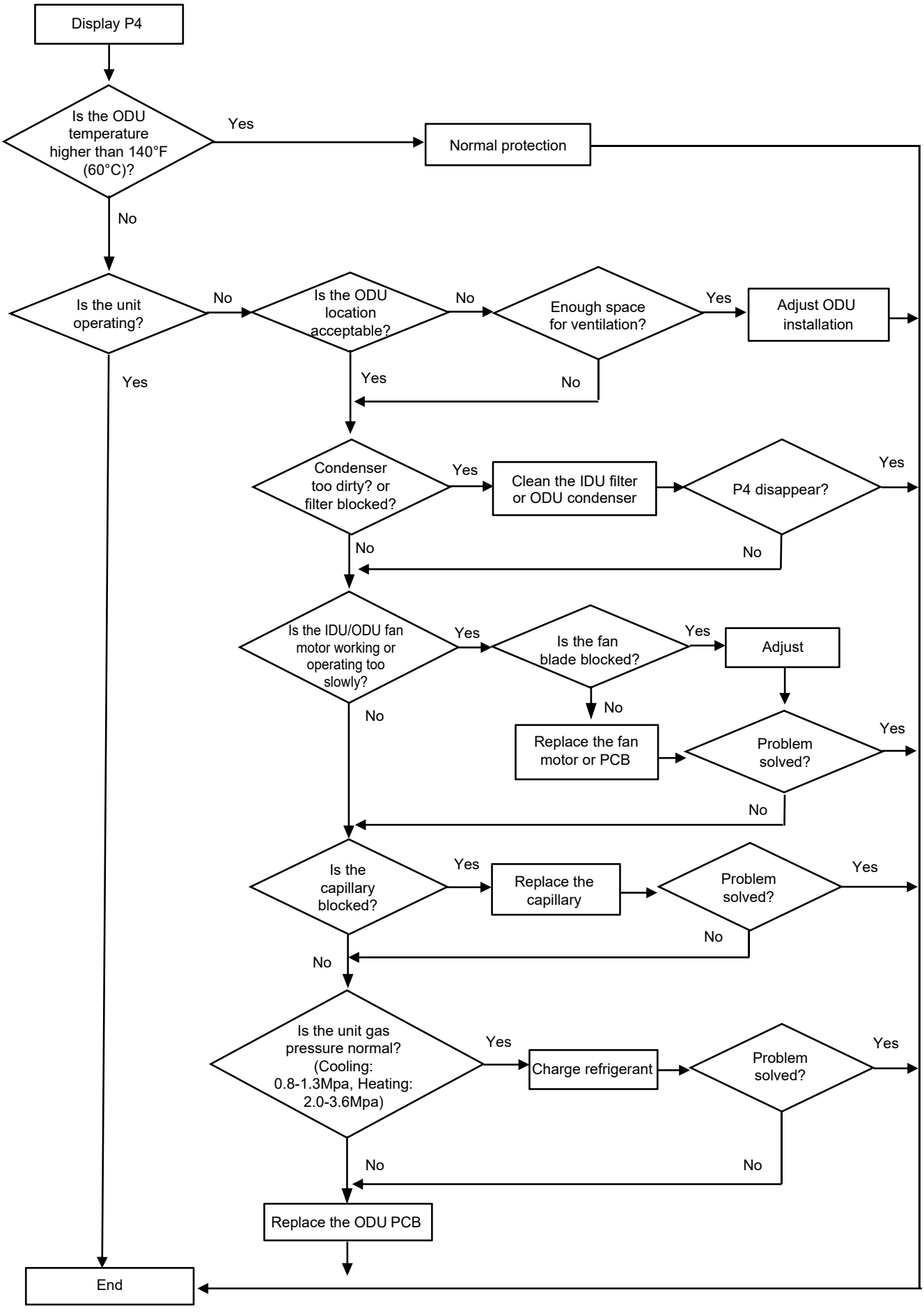
Troubleshooting

7

P4 Error Code: Outdoor Unit High Discharge Temperature Protection

Troubleshooting

7

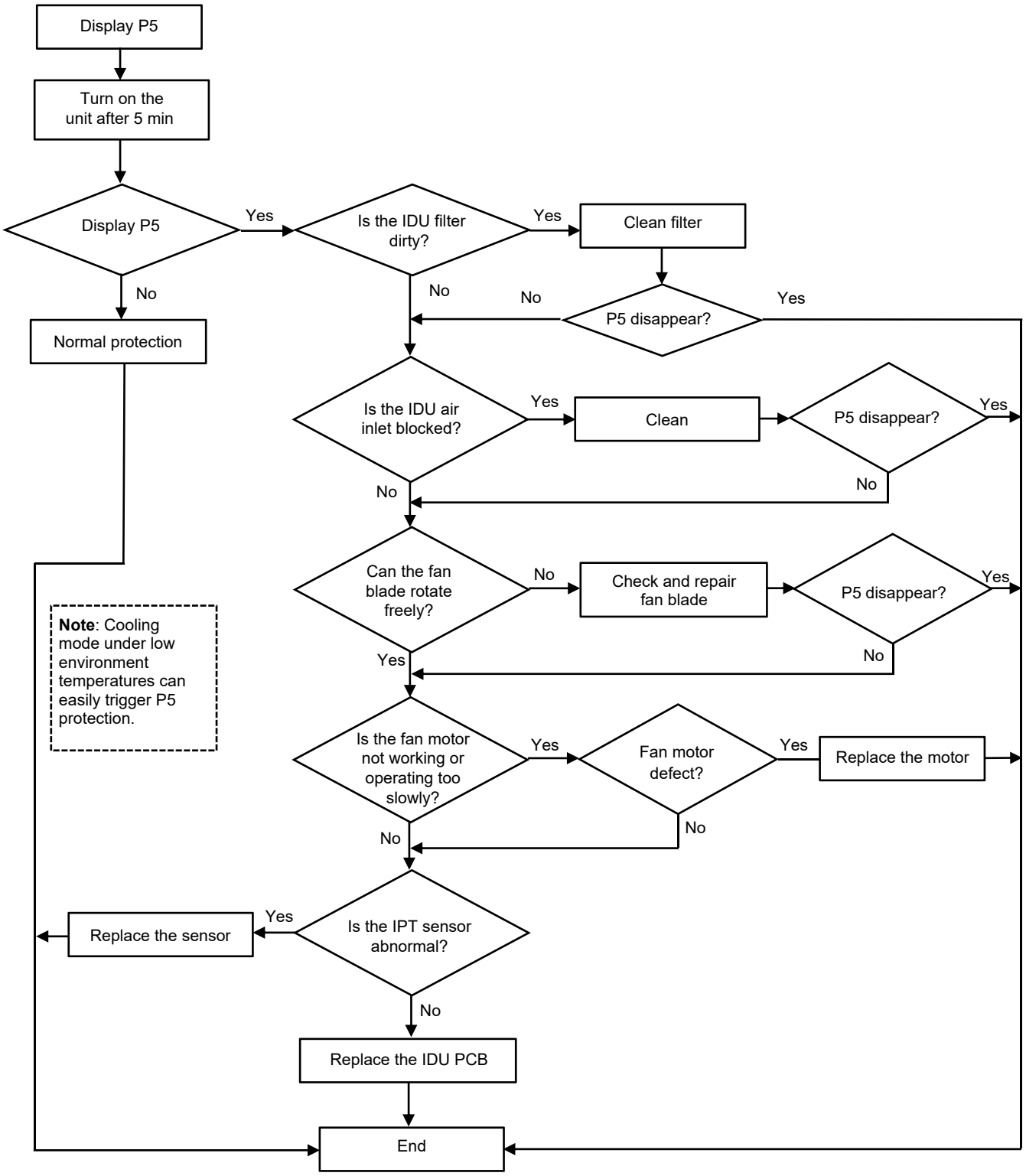


Troubleshooting

7

P5 Error Code: Cooling / Dry Mode Overcooling Protection

In Cooling or Dry mode, after the compressor has run for 6 minutes, if the IPT stays below 34°F (1°C) for 3 consecutive minutes, the outdoor unit stops and the system displays error code "P5."

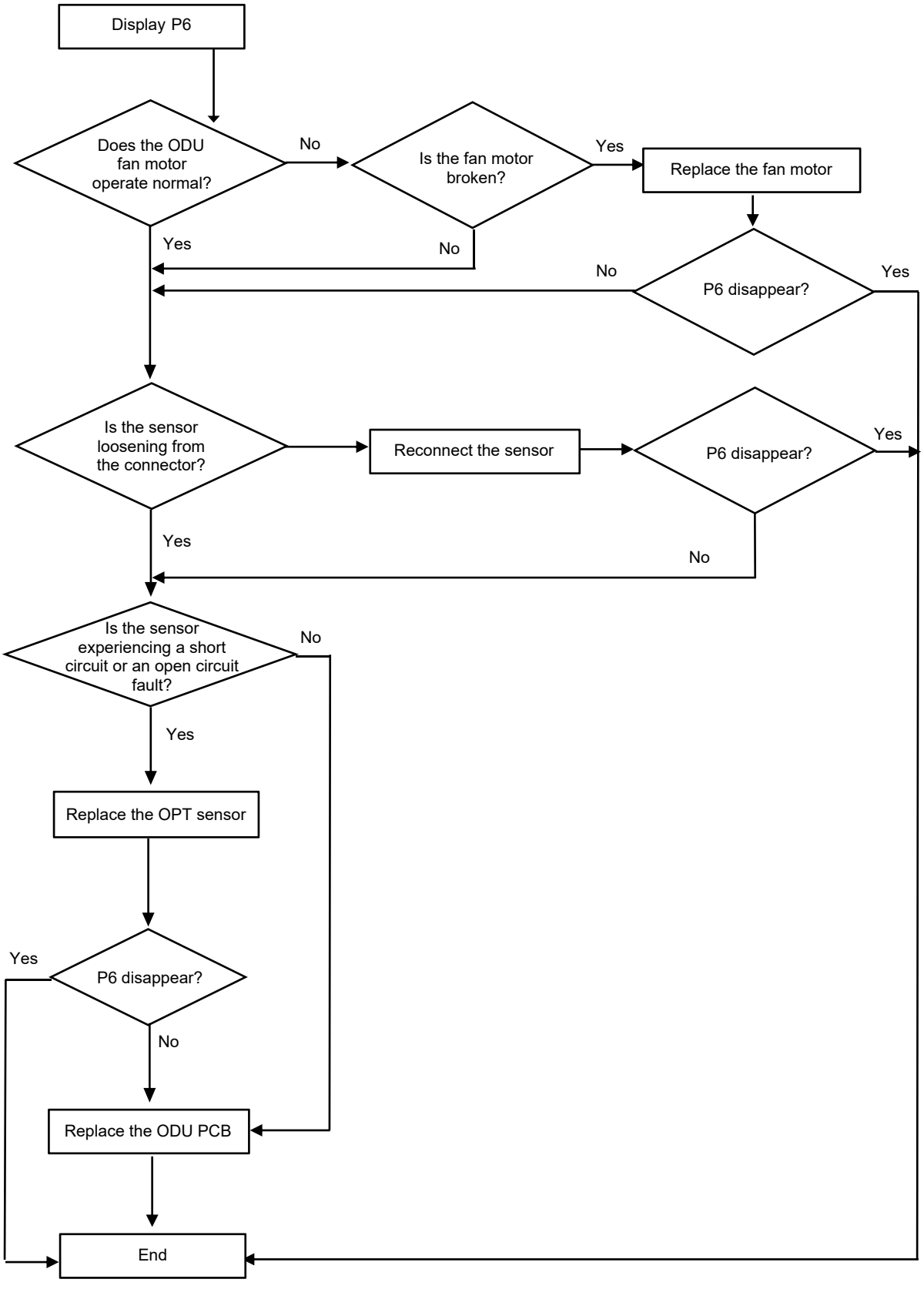


Troubleshooting

7

P6 Error Code: Cooling Mode Overheat Protection

In Cooling or Dry mode, if the outdoor coil temperature reaches 144°F (62°C) or higher, the outdoor unit stops and the system displays error code "P6."

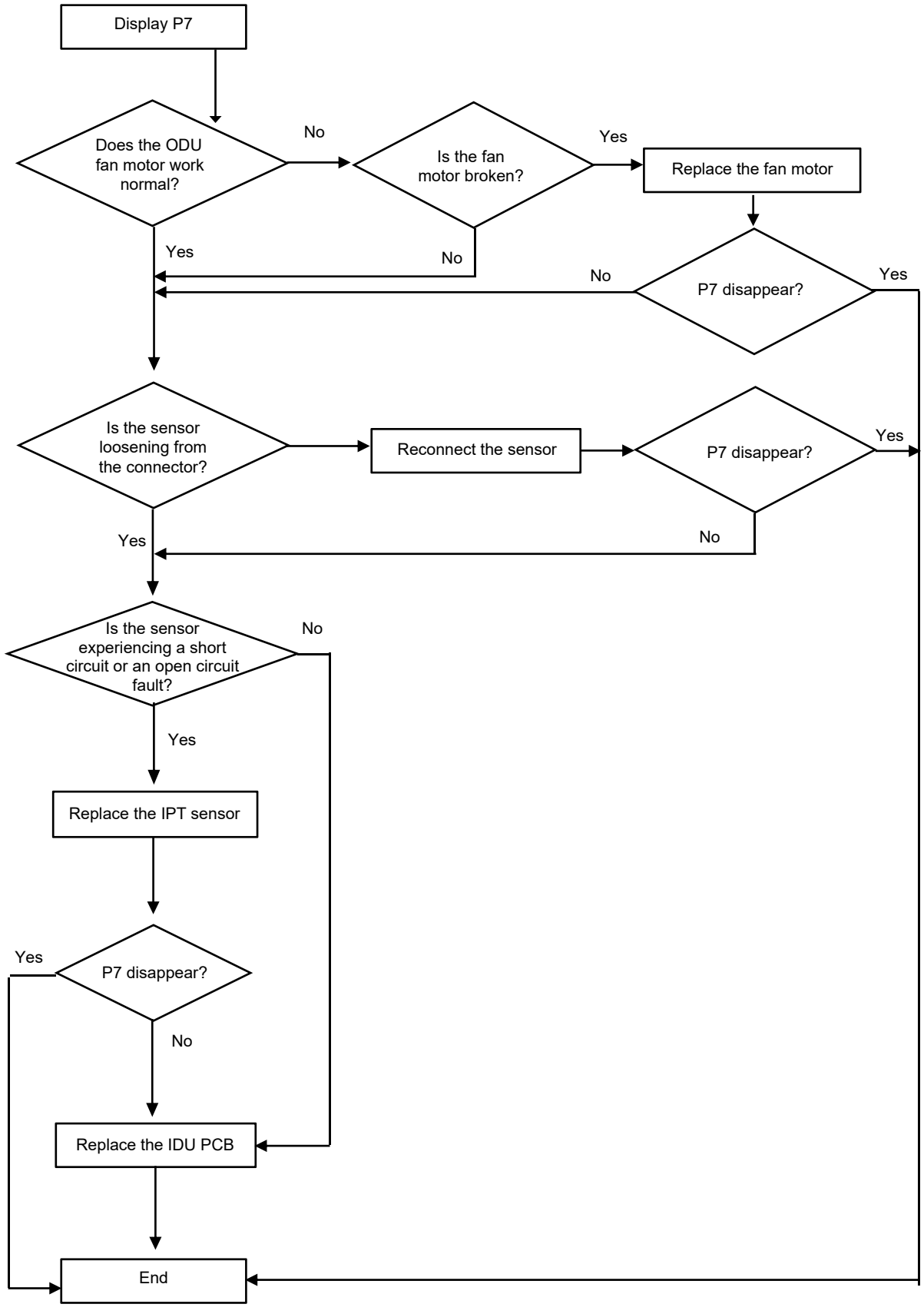


Troubleshooting

7

P7 Error Code: Heating Mode Overheat Protection

In Heating mode, if the IPT reaches 144°F (62°C) or higher, the outdoor unit stops and the system displays error code "P7."



Troubleshooting

7

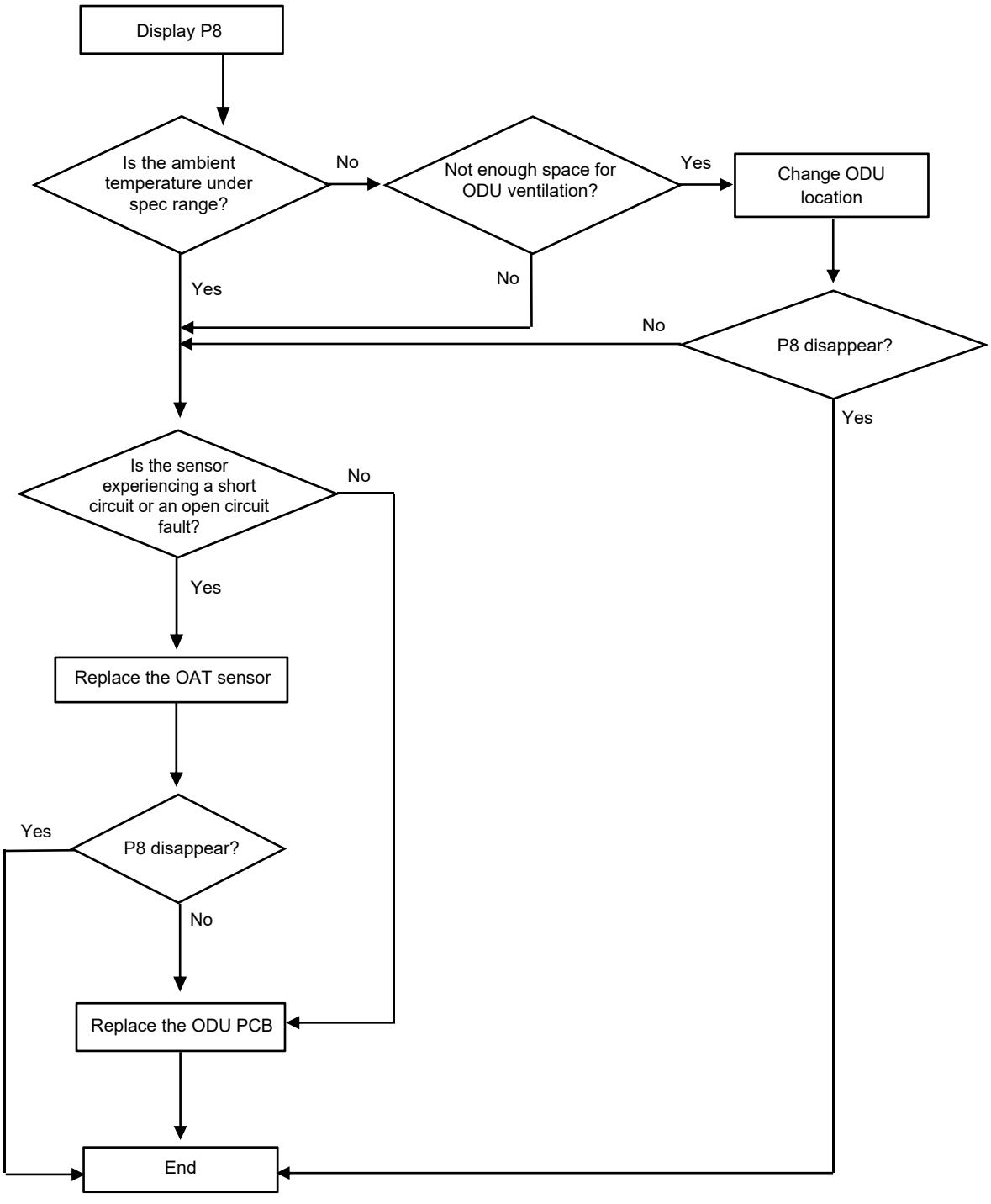
P8 Error Code: Outdoor Ambient High / Low Temperature Protection

If the outdoor ambient temperature goes outside the following range, the compressor stops. After 200 seconds, the system displays error code "P8."

Cooling or Dry mode: Below -4°F (-20°C) or above 145°F (63°C).

Heating Mode:

A. OAT ≥ 104°F (40°C)
B. 86°F (30°C) < OAT ≤ 104°F (40°C) and RT > 95°F (35°C)



Troubleshooting

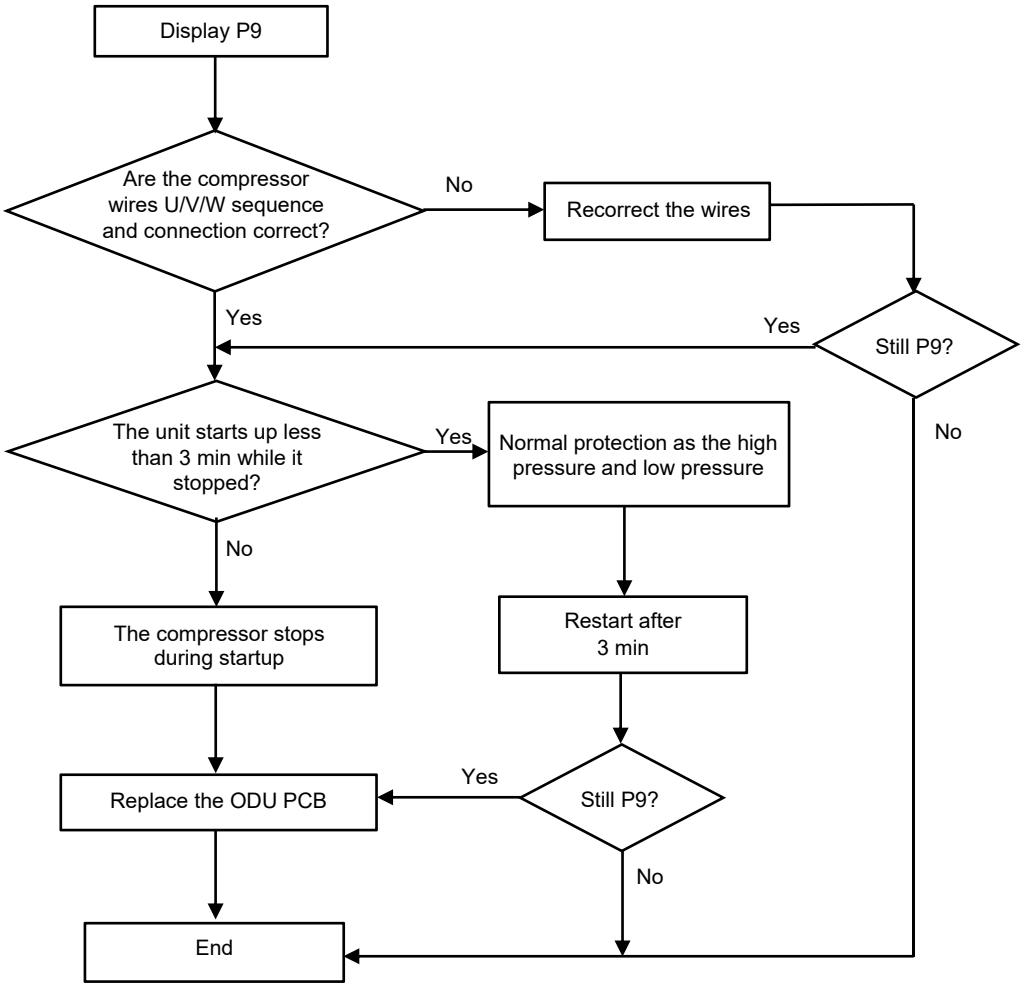
7

P9 Error Code: Outdoor Unit Compressor Drive Overload Protection

If any of the following occurs while the compressor is starting or running, the outdoor unit stops and the system displays error code "P9":

1. The control board does not receive a feedback signal from the compressor.
2. The control board detects an abnormal signal from the compressor.
3. The compressor fails to start normally.

The system then attempts to restart up to six times. If the compressor still does not operate normally, it displays the error code again.



Unit Control

8

A. Introduction

Abbreviations

RT: Room Temperature
IPT: Indoor Pipe (Coil) Temperature
ST: Indoor Set Temperature
OPT: Outdoor Pipe Temperature
OAT: Outdoor Ambient Temperature
ODT: Outdoor Discharge Temperature
CRT: Compensated Room Temperature
IDU: Indoor Unit (Air Handler)
ODU: Outdoor Unit (Condenser)

Temperature Variation

The temperature measured at the indoor unit's air inlet may differ from the actual room temperature. Because the temperature sensor is located inside the air inlet rather than in the main area of the room, the unit's control board applies a temperature compensation to make up for this difference.

1. Cooling mode: CRT=RT
2. Heating mode: CRT=RT 27°F (-3°C) - Split AC

B. Operating Modes & Functions

Auto Mode

1. In Auto mode, the temperature can be set from 61°F to 88°F (16°C to 31°C). The fan speed and louver position adjust automatically according to the Auto mode presets.

2. When the indoor unit is set to Auto mode, it automatically selects Cooling, Heating, or Fan mode based on Δt (the difference between the RT and the ST), as shown in the table below.

Mode	Δt = RT-ST
Cooling	Δt > 34°F (1°C)
Fan	30°F (-1°C) ≤ Δt ≤ 34°F (1°C)
Heating	Δt < 30°F (-1°C)

Unit Control

8

Cooling Mode

Temperature Control: In Cooling mode, the temperature can be set between 61°F and 88°F (16°C and 31°C). The fan speed and louver position adjust automatically based on the Cooling mode presets.

Compressor & System Control:

- The compressor starts, and the indoor unit operates according to the customer's preset settings when:
  - RT-ST reaches or exceeds 34°F (1°C)

- When:
  - The RT falls 2°F (1°C) or more below the ST, the compressor stops.
  - The RT is within 2°F (1°C) of the ST, the compressor remains in its current state.
  - The RT rises 2°F (1°C) or more above the ST, the compressor starts.

- During Cooling mode, the compressor frequency is fixed.

- The compressor stops operating when the indoor unit is:
  - Switched off
  - Under protection
  - Changed to Fan mode

- During normal operation, the compressor runs for at least 6 minutes before the control program can stop it.

- During normal operation, once the compressor stops, it will not restart for at least 3 minutes.

Outdoor Unit Fan Motor Control:

- When the unit is:
  - Switched off
  - Under protection
  - At the set temperature

- After the compressor stops, the fan motor continues to run for 50 seconds and then stops.

- When the indoor unit is turned on in Cooling mode, the outdoor unit's fan motor starts 3 seconds after the compressor.

- If the outdoor unit stops operating due to a fault or safety protection, the indoor unit maintains its preset operation.

Anti-Frosting Protection (Compressor Shutdown):

- After the compressor has run for 6 minutes, if the IPT remains below 32°F (0°C) for 3 consecutive minutes, the compressor stops.

- After the compressor has run for 6 minutes, if the IPT remains below 28°F (-2°C) for 3 consecutive seconds, the compressor stops.

- Once the compressor has stopped due to anti-frosting protection, it will not restart until the IPT rises above 50°F (10°C).

Unit Control

8

Dry Mode

Temperature Control: 61-88°F (16-31°C)

Fan Speed: Low

Vane Blade Position: The customer's preset

- If the outdoor unit fails or enters protection mode, the indoor unit will continue to operate according to its preset configuration.

Compressor & Unit Control:

- When the RT rises 2°F (1°C) or more above the ST, the compressor starts and the unit operates according to the user's settings.
- When:
  - When the RT falls more than 4°F (2°C) below the ST, the compressor stops.
  - When the RT is within 4°F (2°C) of the ST, the compressor starts. It then runs for 6 minutes, stops for 4 minutes, and repeats this cycle.
  - When the RT rises more than 4°F (2°C) above the ST, the compressor starts.
- The compressor stops operating when the unit is:
  - Switched off
  - Under protection
  - At the set temperature
- During normal operation, the compressor runs for at least 6 minutes before the control program can stop it.
- During normal operation, once the compressor stops, it will not restart for at least 3 minutes.

Energy Saving & Sleep Mode: Invalid.

Anti-Frosting Protection (Compressor Shutdown):

- When RT − ST > 4°F (2°C): After the compressor has run for 6 minutes, if the IPT remains below 32°F (0°C) for 3 consecutive minutes, the compressor stops.
- When RT − ST > 4°F (2°C): After the compressor has run for 6 minutes, if the IPT remains below 28°F (-2°C) for 3 consecutive seconds, the compressor stops.
- When -4°F (-2°C) ≤ RT − ST ≤ 4°F (2°C): After the compressor has run for 3 minutes, if the IPT remains below 32°F (0°C) for 3 consecutive minutes, the compressor stops.
- Once the compressor has stopped due to anti-frosting protection, it will not restart until the IPT rises above 50°F (10°C).

Unit Control

8

Heating Mode

Temperature Control: 61-88°F (16-31°C)

Compressor & Unit Control:

- When ST − CRT ≥ 2°F (1°C), the compressor starts and the unit operates according to the user's settings.
- When:
  - ST − CRT ≤ -2°F (-1°C): The compressor stops.
  - -2°F (-1°C) < ST − CRT < 2°F (1°C): The compressor remains in its current state.
  - -2°F (-1°C) < ST − CRT < 2°F (1°C): The compressor remains in its current state.
- The compressor frequency is fixed.
- The compressor will stop operating when the unit is:
  - Switched off
  - Under protection
  - Changed to Fan mode
- During normal operation (cooling or heating), the compressor runs for a minimum of 6 minutes before the control program can stop it.
- During operation, once the compressor stops, it will not restart for at least 3 minutes.

Indoor Unit Time Delay:

- In Heating mode, when the compressor stops or the unit is turned off, the indoor unit fan continues to run for 50 seconds.

Outdoor Unit Fan Motor Control:

- The fan motor will stop operating when the unit is:
  - Switched off
  - Under protection
  - To the set temperature
- The fan motor stops 50 seconds after the compressor stops.
- When the unit switches to Heating mode, the fan motor starts 3 seconds before the compressor.
- During defrosting, the fan motor stops 40 seconds after the compressor stops.
- When defrosting ends, the compressor stops and the fan motor starts at the same time.

Unit Control

8

4-Way Valve Control:

- In Heating mode, the 4-way valve is on. In Cooling, Dry, and Fan modes, the 4-way valve is off.
- When the unit is turned off in Heating mode or switches from heating to another mode, the 4-way valve turns off 2 minutes after the compressor stops.
- If the unit stops due to any protection function, the 4-way valve turns off 2 minutes after the unit stops.
- During defrosting, the 4-way valve turns off 40 seconds after the compressor stops.
- When defrosting finishes, the compressor stops operating and the 4-way valve will turn on after a 20-second delay.

Defrost Start Conditions:

t1: Compressor continuous run time
t2: Compressor accumulated run time
t3: Maximum value of (IPT − RT), measured starting 8 minutes after the compressor starts.

- The unit starts defrosting when the following conditions are met:
  - t1 ≥ 120 minutes
  - t2 ≥ 45 minutes
  - t3 − (IPT − RT) ≥ 7°F (4°C)
- Defrost Start: The compressor stops and restarts 45 seconds later.
- Defrost End Conditions: The defrosting operation has run for 10 minutes.
- Defrost End: The compressor stops and restarts 25 seconds later.

Cold Air Prevention: This function prevents cold air from blowing out when heating starts.

- Indoor unit fan motor for cold air prevention:
  - When the RT is below 75°F (24°C):
    - If the ITP exceeds 88°F (31°C) while the compressor operates for 5 minutes, the fan motor will run at the preset fan speed.
    - If the IPT reaches or falls below 88°F (31°C), the fan motor stops during the first 2 minutes of compressor operation.
    - If the IPT reaches or exceeds 81°F (27°C), the fan motor operates at low speed for 2 minutes before switching to the preset speed.
  - When the RT reaches or exceeds 75°F (24°C):
    - Within 2 minutes after the compressor starts, and once the IPT exceeds 81°F (27°C), the fan motor switches to the preset speed.
    - After the compressor has run for 2 minutes, the fan motor switches directly to the preset speed.

Unit Control

8

- Vane blade operation for cold air prevention:
    - If the vane blade is in non-swing mode when the IPT reaches a specific threshold, the vane will shift to one of the following positions below:
        - Default angle
        - Previous position
        - Customer preset
    - The operation described above runs only once per compressor cycle. After the compressor stops, the unit checks the operating conditions again.
    - If the vane is in swing mode when the indoor unit exits cold air prevention, the vane will operate according to its preset settings.

46°F (8°C) Heating Function:

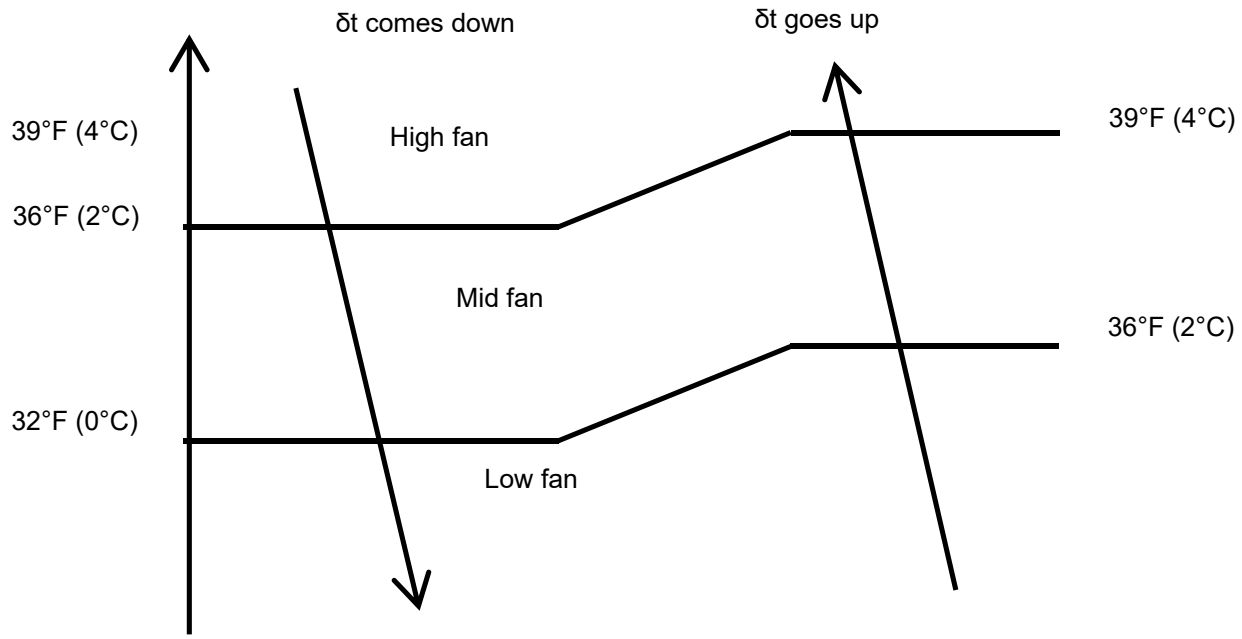
When this function is enabled, the indoor unit automatically switches to Heating mode if the room temperature drops below 46°F (8°C).

Fan Mode

Temperature Control: 61-88°F (16-31°C)

Fan Speed & Vane Position: Maintained at preset levels. This function applies exclusively to remote controller 58E.

- When the fan speed is set to Auto, the indoor fan motor adjusts its speed based on the difference between the room temperature and the set temperature.
- The outdoor unit is always off.



Unit Control

8

Sleep Mode

When the indoor unit operates in Sleep mode, the power and Sleep indicator lights remain on by default, and the temperature display turns off after 15 seconds. In this mode, the indoor unit follows the preset Sleep Curve for 10 hours. It then exits Sleep mode and returns to its previously selected settings.

Timer

The unit features a timer function. When the preset time is reached, the unit automatically turns on or off. If no selection is made within 10 seconds while setting the timer, the unit exits timer setup without saving.

Timer On

1. The Timer On function can only be configured while the indoor unit is turned off.
2. Press "Timer" on the remote control once to enter the time settings.
3. Press “▲” or “▼” to set the start time for the indoor unit.
4. Configure other functions, such as Mode, Fan Speed, and Swing.
5. Press "Timer" again to confirm the Time On setting.

Timer Off

1. The Timer Off function can only be configured while the indoor unit is turned on.
2. Press "Timer" on the remote control once to enter the time settings.
3. Press “▲” or “▼” to set the start time for the indoor unit.
4. Press "Timer" again to confirm the Time Off setting.

Auto-Restart Function

While the system is operating, the main control board saves the current settings, such as the operating mode and set temperature, to its memory. When power is restored after a power failure, the Auto-Restart function automatically resumes operation with the previous settings.

To activate the Auto-Restart function, turn on the unit, and within 3 minutes, set the mode to Cooling, the temperature to 86°F (30°C), and the fan speed to Medium. Then press the ECO or SLEEP button 10 times within 8 seconds.

Calibration Test Mode

Set the unit to the following:

- Cooling mode
- Temperature: 86°F (30°C)
- Mid-fan speed

To switch the unit to Calibration Test mode, press the ECO button 7 times within 8 seconds. The buzzer sounds 3 times to confirm.

Unit Control

8

Energy Saving (ECO)

This function is available only in Cooling or Heating mode. In Cooling mode, the set temperature range is 79–88°F (26–31°C). In Heating mode, the set temperature range is 61–77°F (16–25°C).

Turbo

This function is available in Cooling, Heating, Fan, and Auto modes. When it is active, the fan runs at its highest speed.

Communication Control

If the outdoor unit's control board does not receive a signal from the indoor unit for 2 consecutive minutes, the system stops and displays error code E0, indicating a communication failure between the indoor and outdoor units. Once communication is restored and the compressor has been off for at least 3 minutes, the system automatically resumes operation.

C. Protection

Overheat Protection for Heating Mode

- If:
    - The IPT reaches or exceeds 144°F (62°C), the compressor and the outdoor unit fan stop.
    - The IPT reaches or exceeds 129°F (54°C), the outdoor unit fan stops operating.
    - The IPT reaches or falls below 118°F (48°C), the compressor and outdoor unit can restart.
- Over-Heating Protection Logic:
    - Unit Lockout: If the overload protection stops the unit 6 times in a row, or if the IPT reaches or exceeds 144°F (62°C), the unit displays an error code and will not restart until the On/Off button is pressed.
    - Automatic Counter Reset: The overload protection counter resets to zero once the compressor has run continuously for more than 6 minutes.
    - Immediate Clearance: The error code and protection counter are cleared immediately when the unit is turned off or switched to Fan or Heating mode.

Remote Control

9

Notes

- Although button shapes and positions vary by model, their features and functions remain identical.
- The display and functional features of the remote controller may vary depending upon the specific system model.
- The unit beeps to confirm each button command.
- There may be a difference between the number of digits shown on the remote control (3) and the number on the indoor unit (2).

Remote Control

9

Remote Buttons Overview

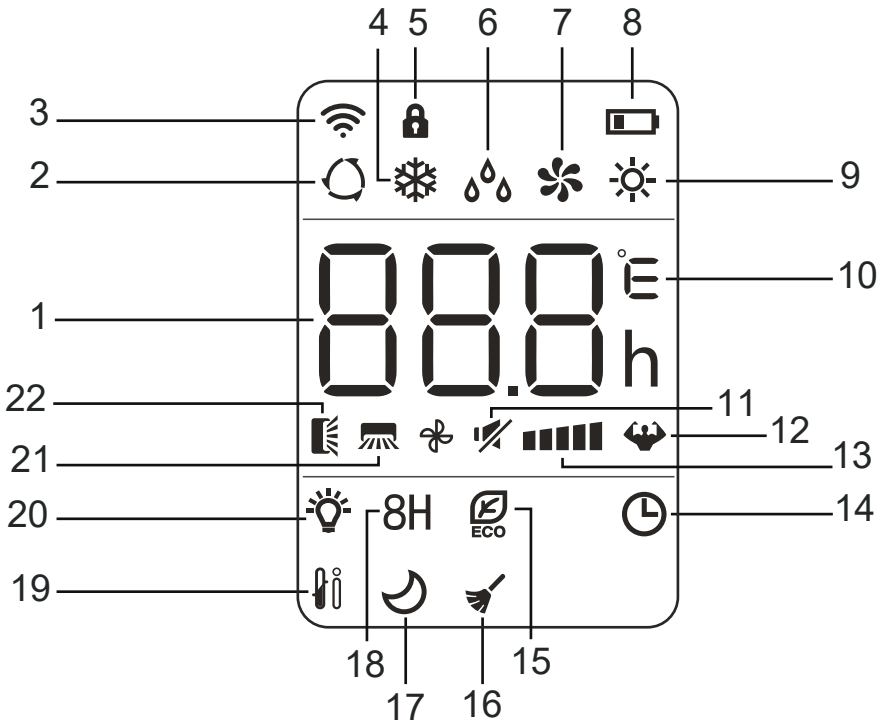
Button	Description
⏻	Turn the air conditioner on or off
TURBO	Activate/deactivate the Turbo feature to allow the system to rapidly reach set temperatures
MUTE	Put the system into Silent mode
MODE	Select the mode of operation (Auto, Cool, Dry, Fan, and Heat modes)
ECO	Activate/deactivate the ECO feature
	Long press to activate the 46°F “Away from Home” freeze protection setting
TIMER	Configure the automatic on/off times
∧	Increase set temperature and timing, as well as navigate the functional menu
∨	Decrease set temperature and timing, as well as navigate the functional menu
FAN	Configure the fan speed (Auto, Low, Mid, and High)
	Activate/deactivate the up-down louver motor
	Activate/deactivate the left-right louver motor
DISPLAY	Turn the LED display on or off
SLEEP	Toggle the system’s Sleep mode
I FEEL	Activate/deactivate the system’s Follow Me mode
MEMORY	Recall saved temperature/mode/fan settings
CLEAN	Activate/deactivate Self-Clean mode
ACC	Reserved for future usage
LOCK	Hold MODE+TIMER for child-lock



Remote Control

9

Remote Control LED Screen & Icons



No.	Icon	Description
1	88	Temperature indicator
2		Auto mode
3		Signal transmit indicator
4		Cooling mode
5		Child lock indicator
6		Dry mode
7		Fan Only mode
8		Battery level indicator
9		Heating mode
10		Unit of temperature (°C/°F)
11		Mute function

No.	Icon	Description
12		Turbo mode
13		Fan speed (Auto or Fixed)
14		Timer active indicator
15	ECO	ECO mode
16		Self-Clean function
17		Sleep function
18	8H	8°C (46°F) Heating function
19		I Feel/Follow Me mode
20		LED display on/off
21		Left-Right swing indicator
22		Up-Down swing indicator

Emergency Manual Button

10

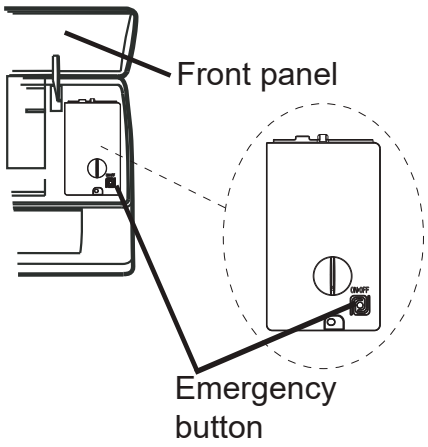
Emergency Manual Button

The emergency button on the front of the indoor unit can be used for a function test if the remote controller is malfunctioning or the batteries have lost power. Do not press the emergency switch during normal operation.

The following are available functions using the Emergency manual button:

- First press: Activates Cooling mode.
- Second press (within 3 seconds): Activates Heating mode.
- Third press: Turns the system off.

The emergency button is under the front panel, on the unit's terminal block cover.



If the remote controller fails to operate the system, follow these steps:

1. Open and lift the front panel at an angle to access the emergency button.

2. Press the manual button once to start the unit in Cooling mode.

3. Press the button again within 3 seconds to start the unit in Heating mode.

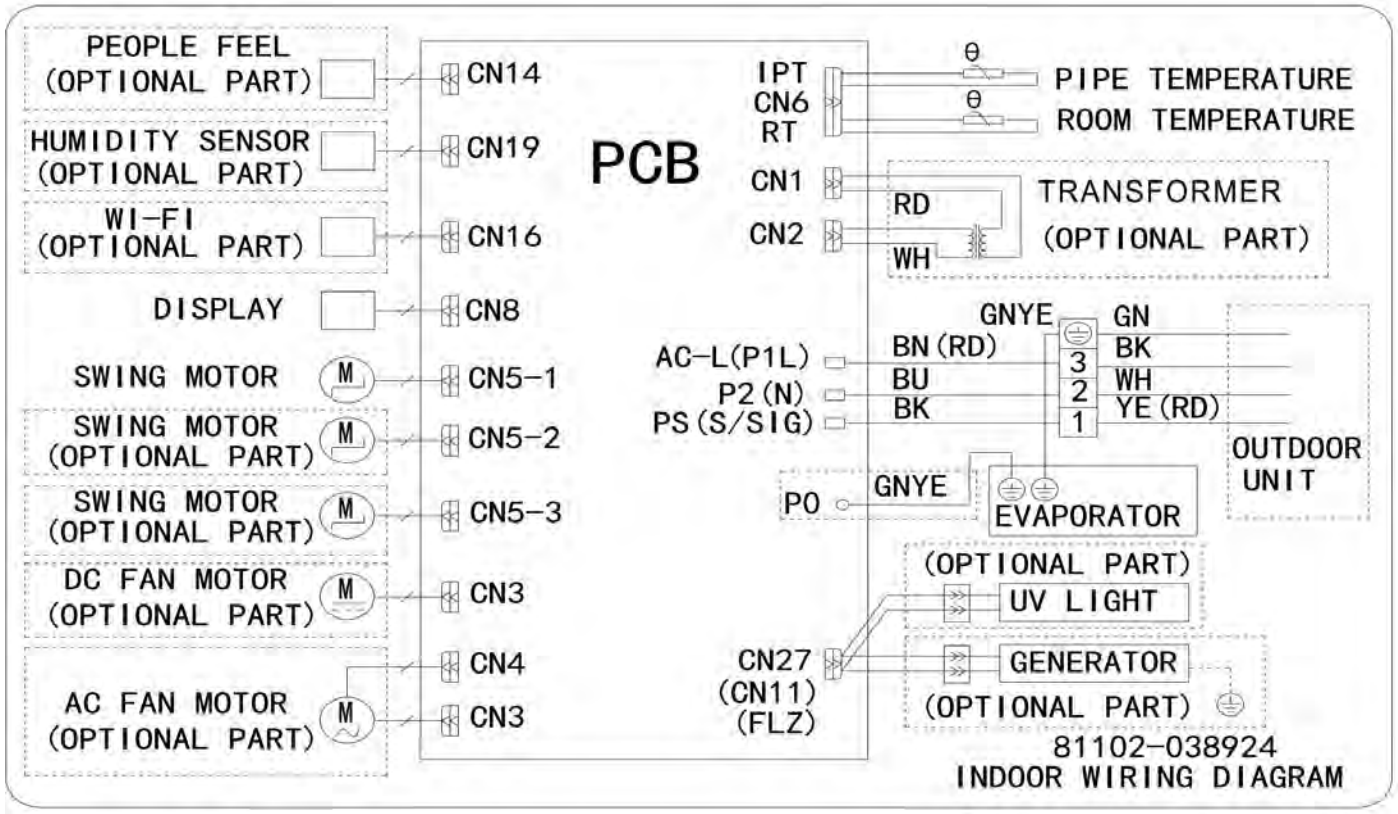
4. Press the button a third time within 5 seconds to turn off the unit.

Wiring Diagrams

11

Control Board Wiring Diagrams

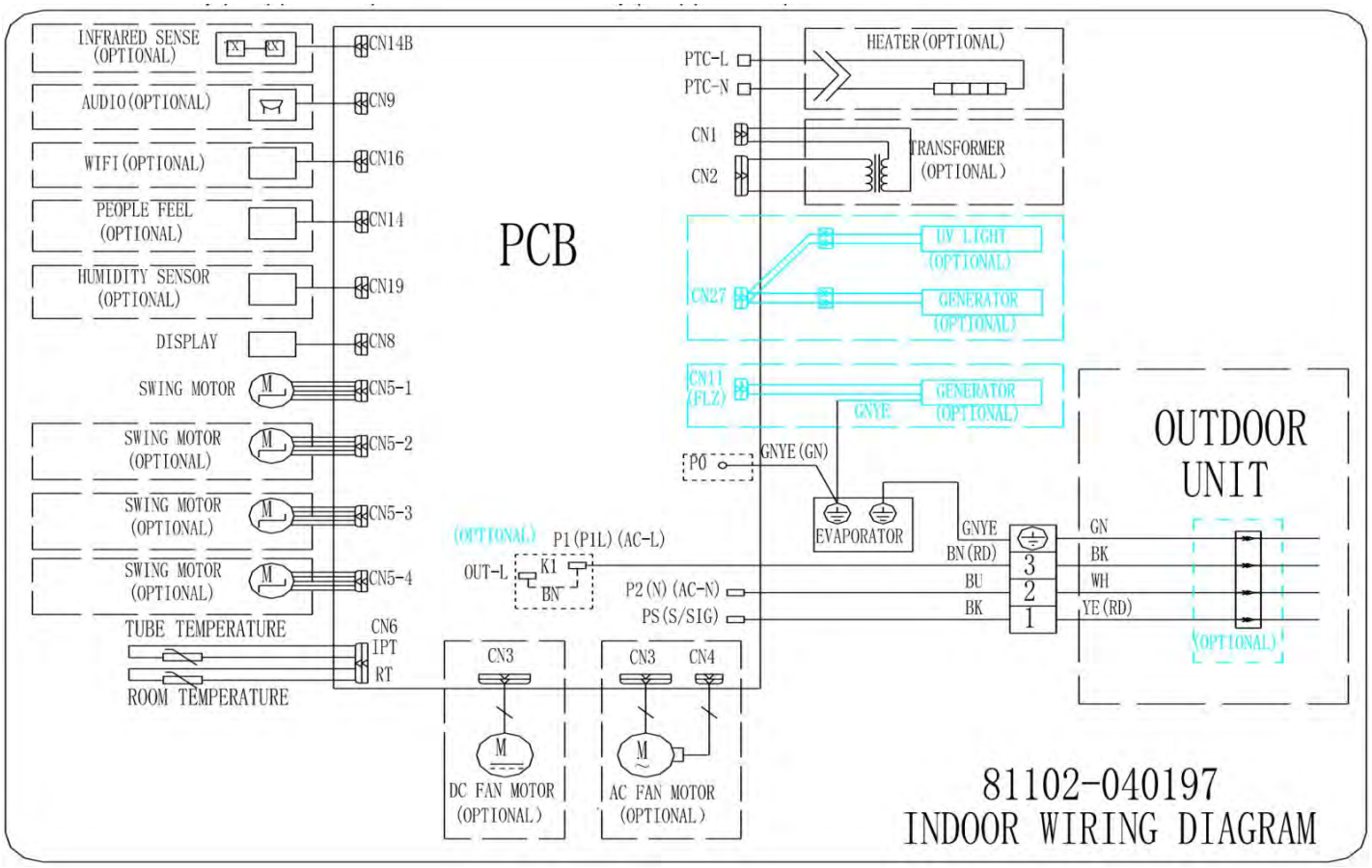
Indoor Units: WT009GLSI24HLG | WT024GLSI24HLG



Wiring Diagrams

11

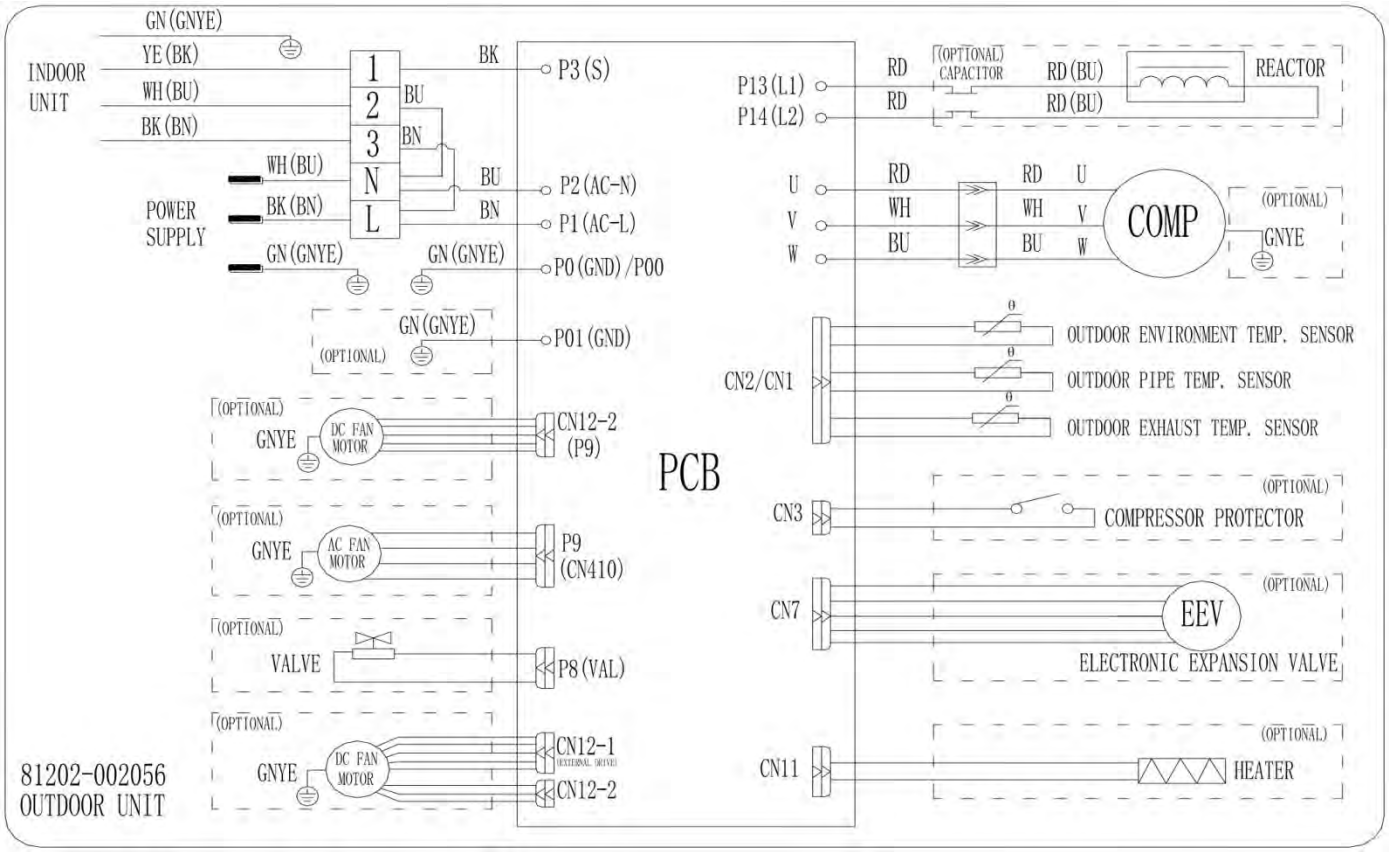
Indoor Units: WT009ALSI24HLG | WT012ALSI24HLG | WT012GLSI24HLG | WT018GLSI24HLG



Wiring Diagrams

11

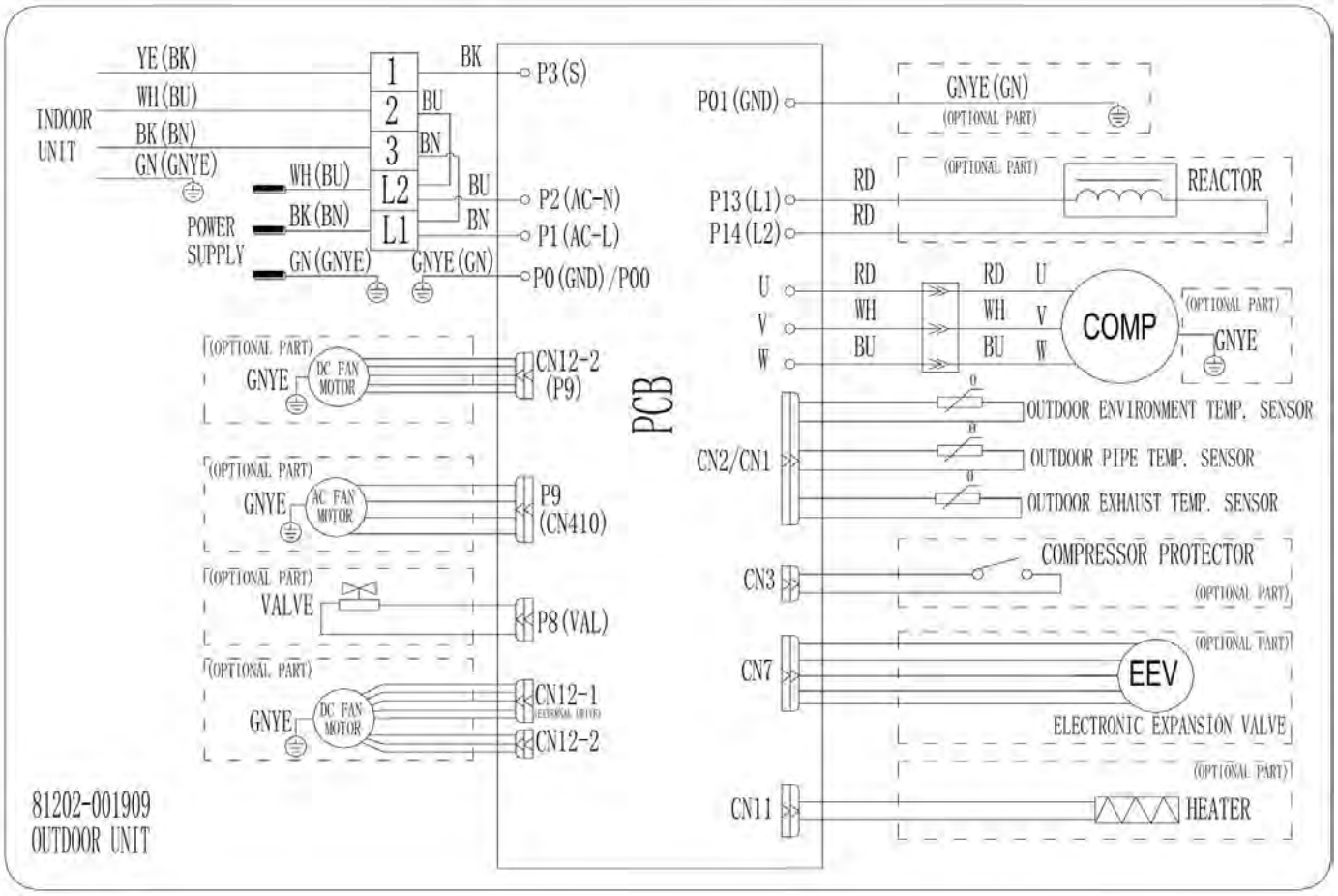
Outdoor Units: YN009ALSI24RPG | YN012ALSI24RPG



Wiring Diagrams

11

Outdoor Units: YN009GLSI24RPG | YN012GLSI24RPG | YN018GLSI24RPG | YN024GLSI24RPG

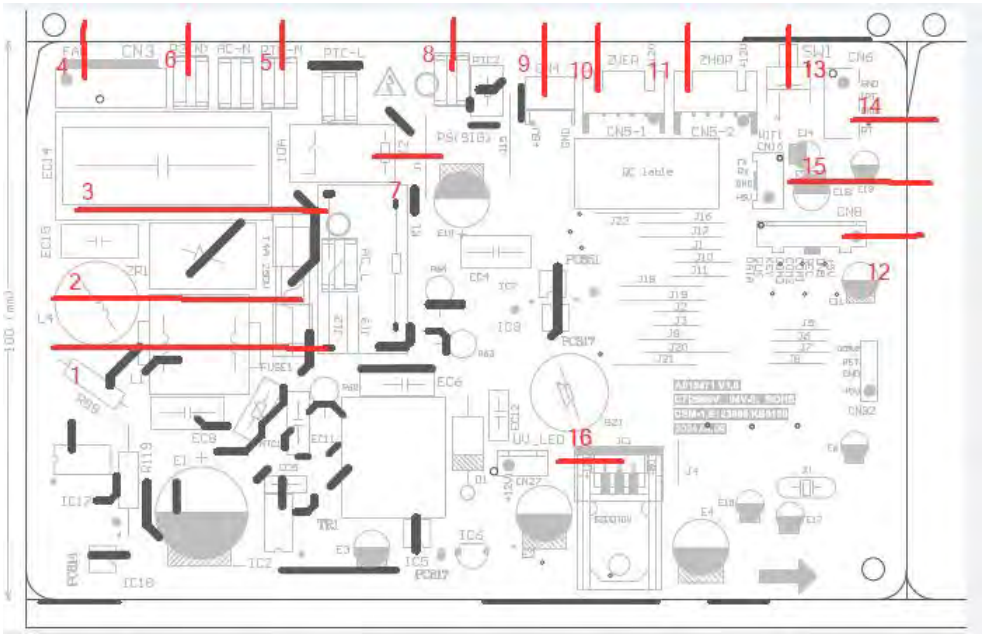


PCB Layouts

12

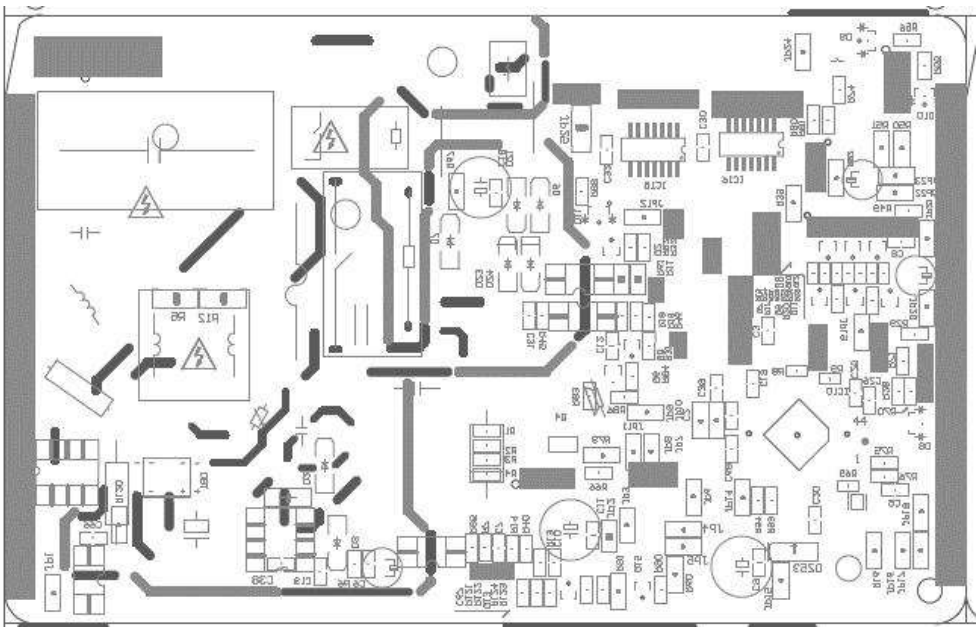
Indoor Units: WT009GLSI24HLG | WT024GLSI24HLG

Top View



1	ODU AC power output
2	Fuse
3	ODU AC power input
(3)	AC motor driver
4	IDU/ODU wiring connection-N connector
5	Power supply-N connector
6	/
7	IDU/ODU communication wiring
8	AC motor feedback
9	Up-down swing connector
10	Left-right swing connector
11	Display
12	Emergency button
13	Temperature sensor connector
14	Wi-Fi connector
15	Anion connector

Bottom View

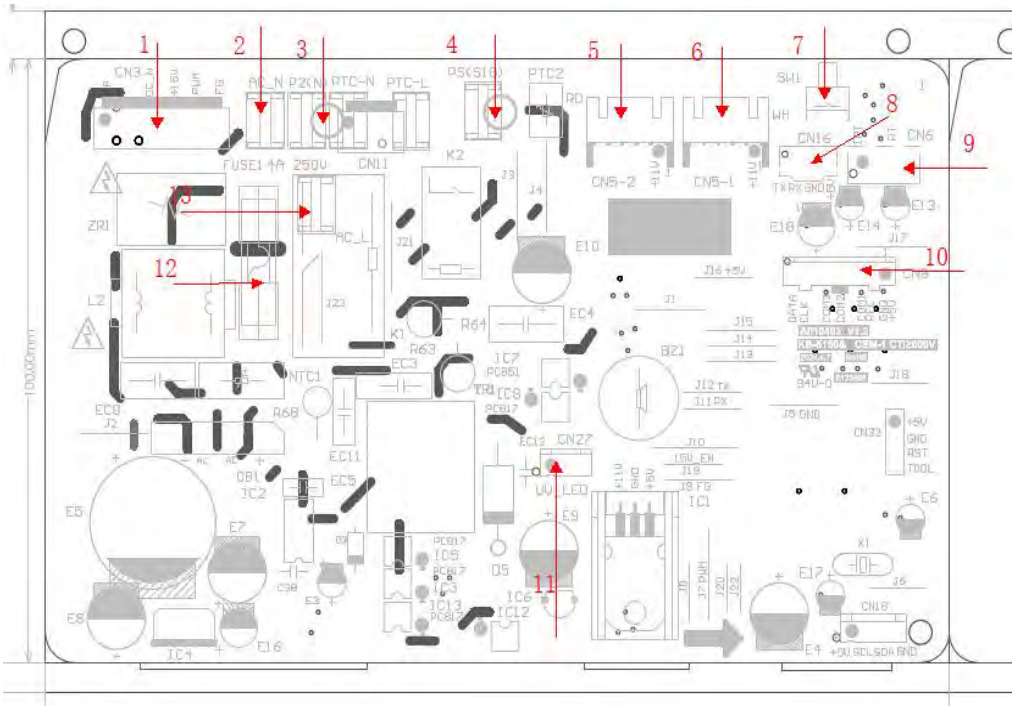


PCB Layouts

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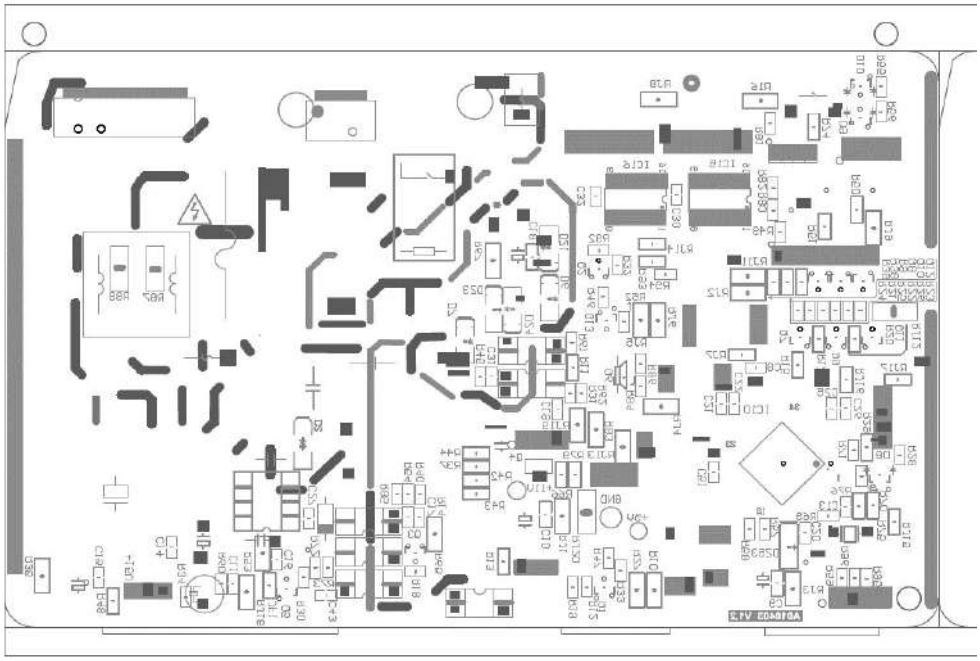
Indoor Units: WT009ALSI24HLG | WT012ALSI24HLG | WT012GLSI24HLG | WT018GLSI24HLG

Top View



1	DC motor driver
2	Power supply-N connector
3	IDU/ODU wiring connection-N connector
(3)	IDU/ODU communication wiring
4	Left-right swing connector
5	Up-down swing connector
6	Emergency button
7	Wi-Fi connector
8	Temperature sensor connector
9	Display
10	Cold plasma generator
11	Fuse
12	ODU AC power input
13	DC motor driver
14	Power supply-N connector

Bottom View

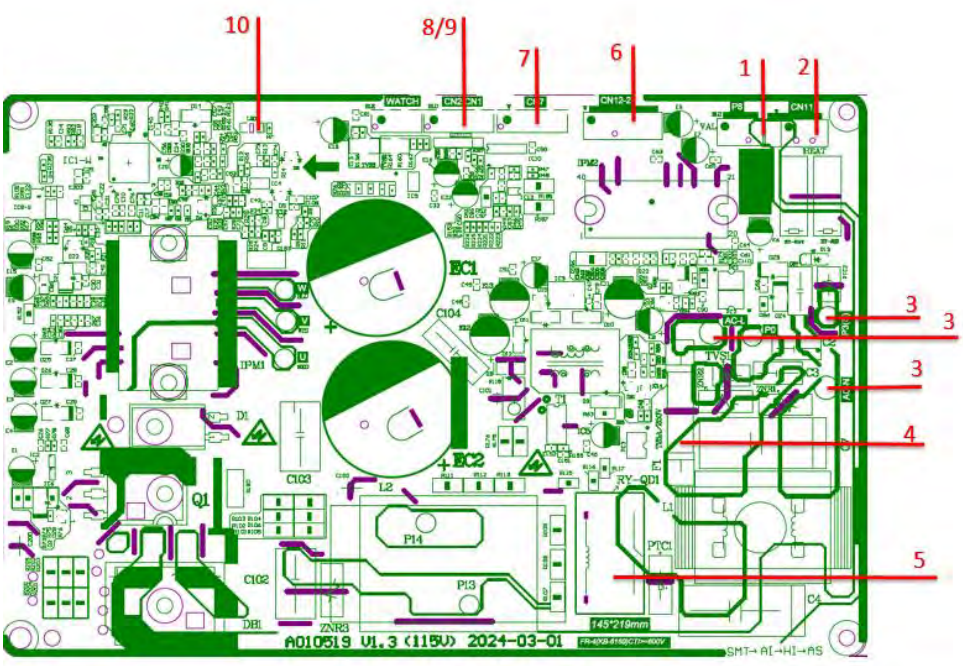


PCB Layouts

12

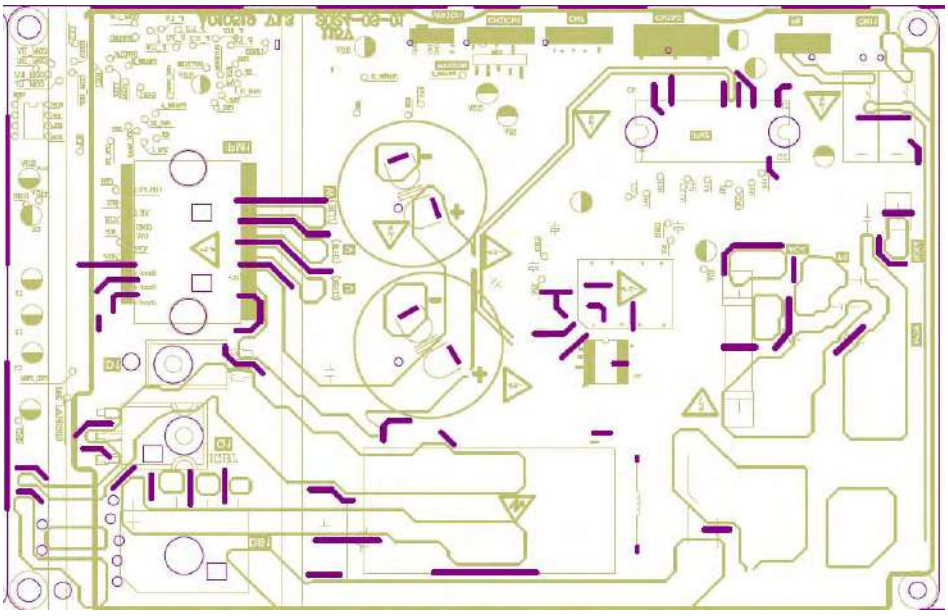
Outdoor Units: YN009ALSI24RPG | YN012ALSI24RPG

Top View



1	4-way valve
2	Heater
3	L, N and Communication
4	Fuse
5	ODU PCB main relay
6	DC motor connector
7	Electronic expansion valve
8	Discharge sensor connector
9	OAT/OPT sensor connector
10	LED5

Bottom View

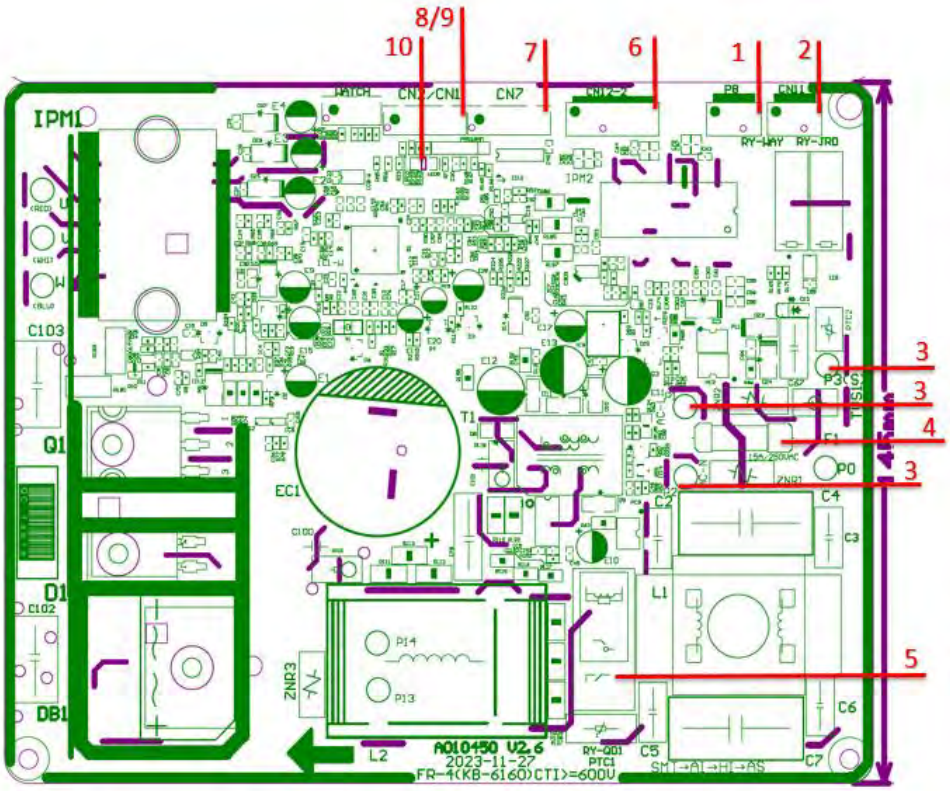


PCB Layouts

12

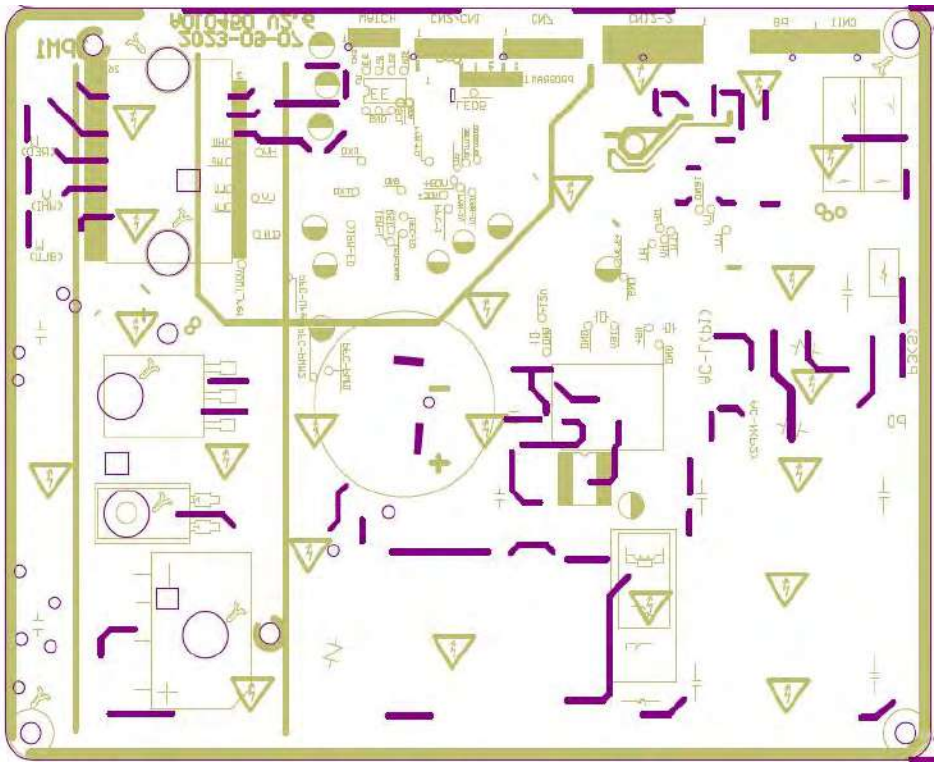
Outdoor Units: YN009GLSI24RPG | YN012GLSI24RPG

Top View



1	4-way valve
2	Heater
3	L, N and Communication
4	Fuse
5	ODU PCB main relay
6	DC motor connector
7	Electronic expansion valve
8	Discharge sensor connector
9	OAT/OPT sensor connector
10	LED5

Bottom View

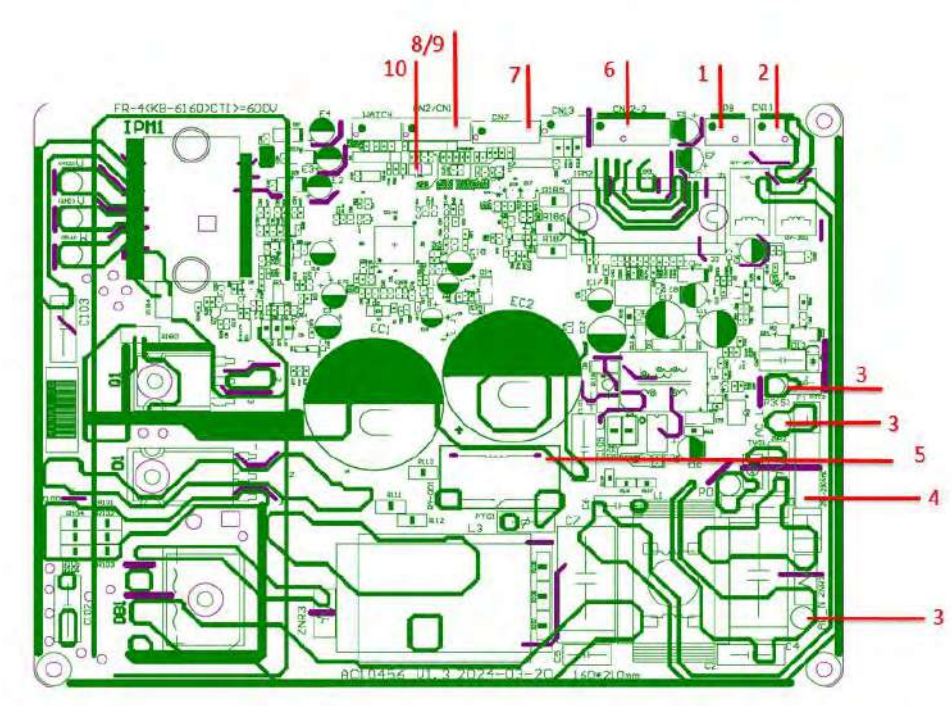


PCB Layouts

12

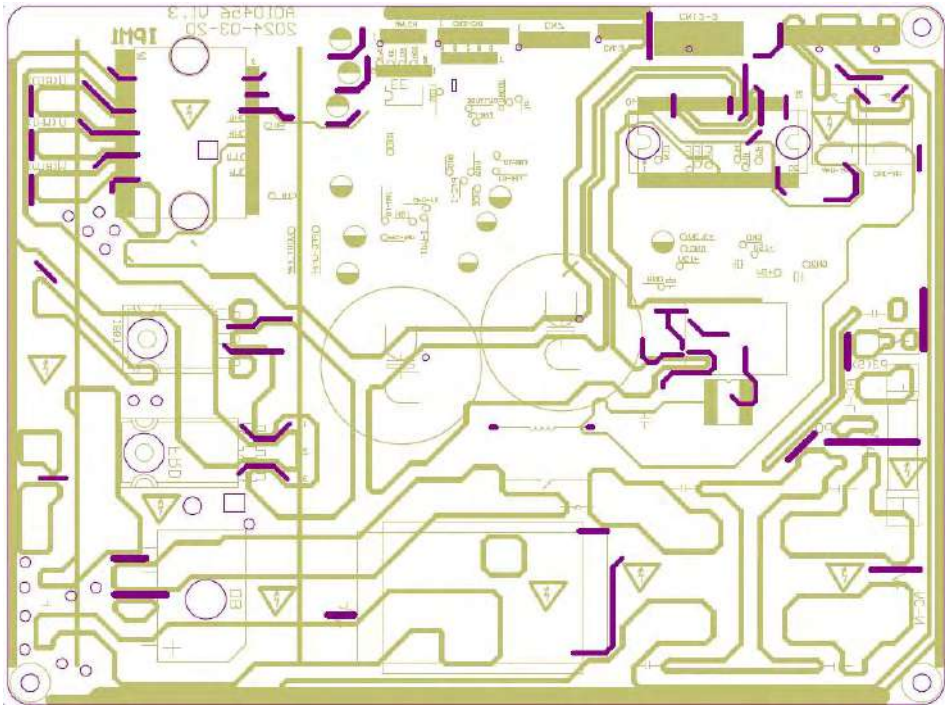
Outdoor Unit: YN018GLSI24RPG

Top View



1	4-way valve
2	Heater
3	L, N and Communication
4	Fuse
5	ODU PCB main relay
6	DC motor connector
7	Electronic expansion valve
8	Discharge sensor connector
9	OAT/OPT sensor connector
10	LED5
11	4-way valve
12	Heater
13	L, N and Communication

Bottom View

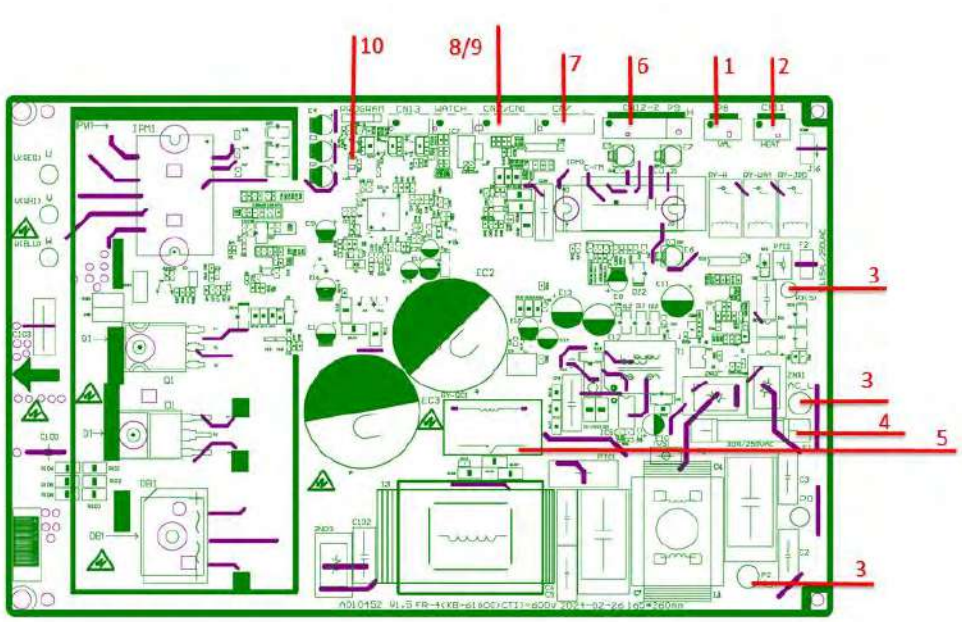


PCB Layouts

12

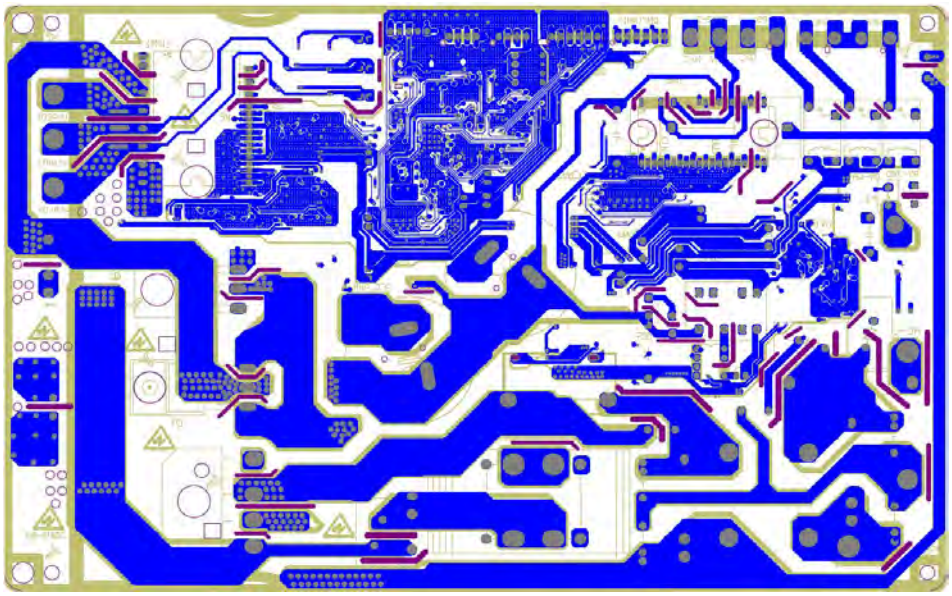
Outdoor Unit: YN024GLSI24RPG

Top View



1	4-way valve P8
2	Heater CN11
3	L, N and Communication
4	Fuse 1
5	ODU PCB main relay RY-QD1
6	DC motor connector CN12-2
7	Electronic expansion valve CN7
8	Discharge sensor connector CN2
9	OAT/OPT sensor connector CN1
10	LED5
11	AC motor connector P9
12	LED1-LED4

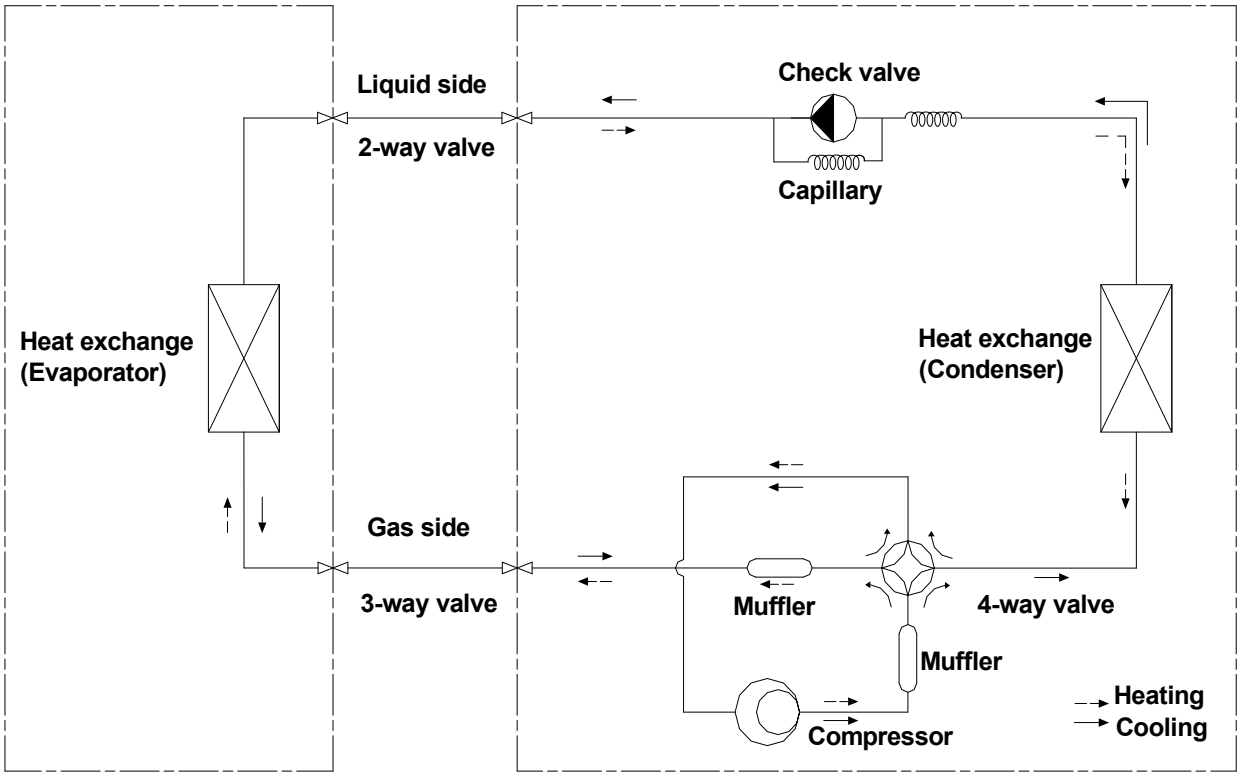
Bottom View



Note:
OAT: Outdoor ambient temperature
OPT: Outdoor pipe temperature

Refrigeration Cycle Diagram

13



Operation Characteristic Curve 14

Test Conditions

The data below was measured under standard laboratory test conditions. Actual high pressure (HP) and low pressure (LP) values will vary with changes in operating frequency, ambient temperature, and/or fan speed.

Rated Cooling:
Indoor Unit: Dry Bulb: 81°F (27°C) / Wet Bulb: 66°F (19°C)

Outdoor Unit: Dry Bulb: 95°F (35°C) / Wet Bulb: 93°F (34°C)

Connection Pipes: 16 feet (5 m)

Rated Heating:
Indoor Unit: Dry Bulb: 68°F (20°C) / Wet Bulb: 59°F (15°C)

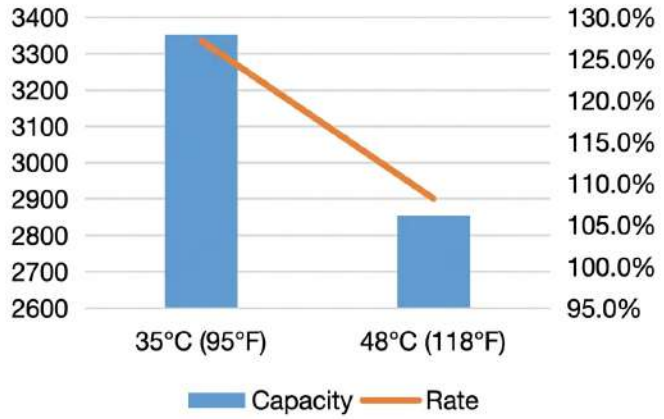
Outdoor Unit: Dry Bulb: 45°F (7°C) / Wet Bulb: 43°F (6°C)

Connection Pipes: 16 feet (5 m).

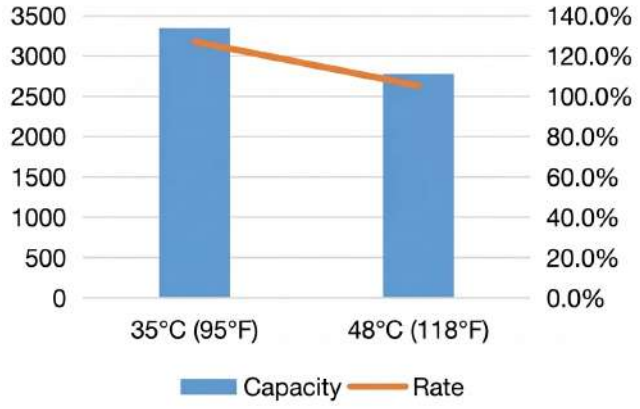
Operation Characteristic Curve 14

Relation Curve of Capacity-Ambient Temperature

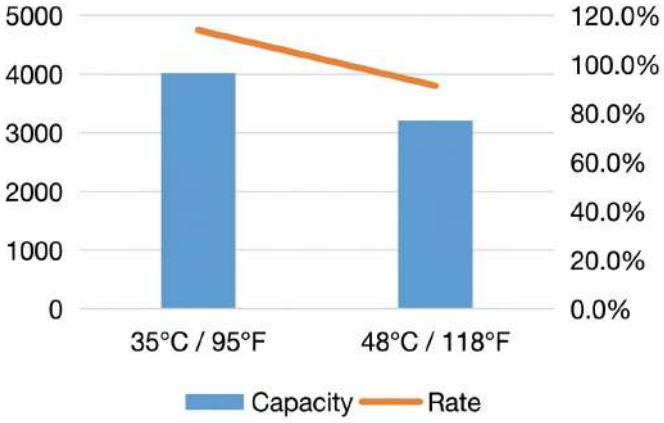
WYT009ALSI24RL



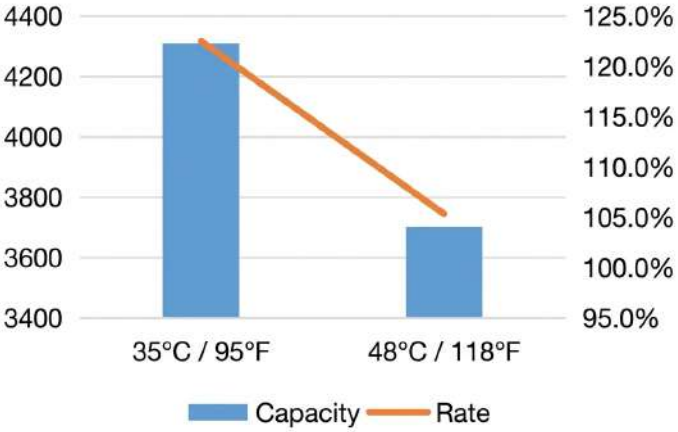
WYT009GLSI24RL



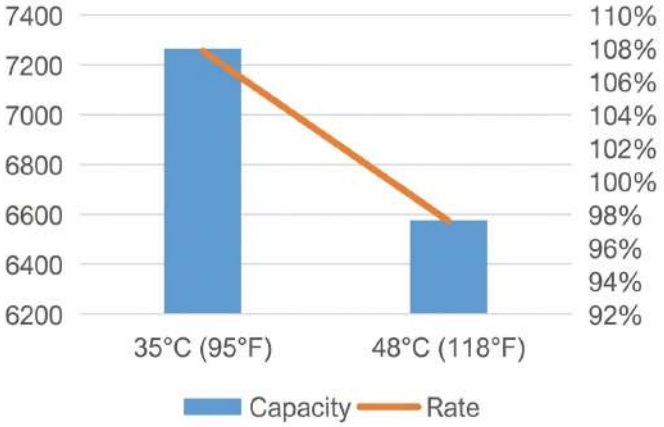
WYT012ALSI24RL



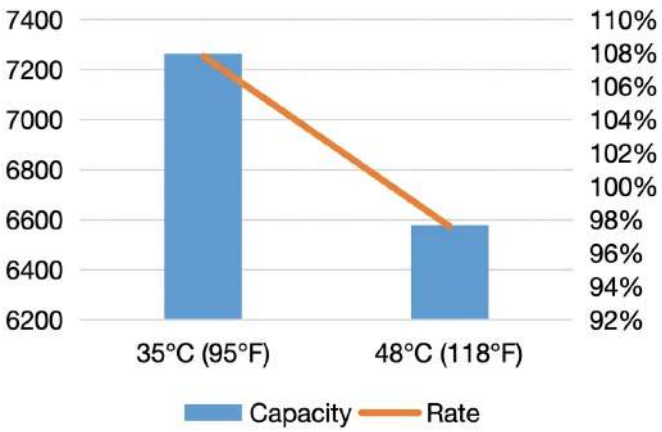
WYT012GLSI24RL



WYT018GLSI24RL



WYT024GLSI24RL



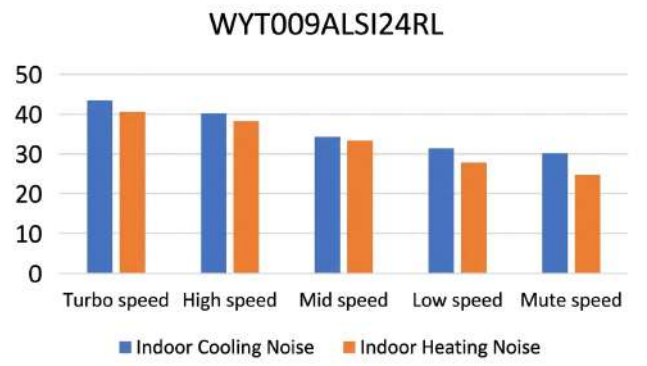
Operation Characteristic Curve 14

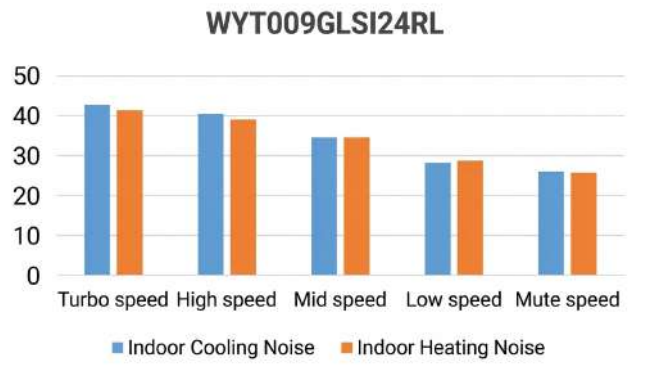
Relation Curve of Pressure-Temperature

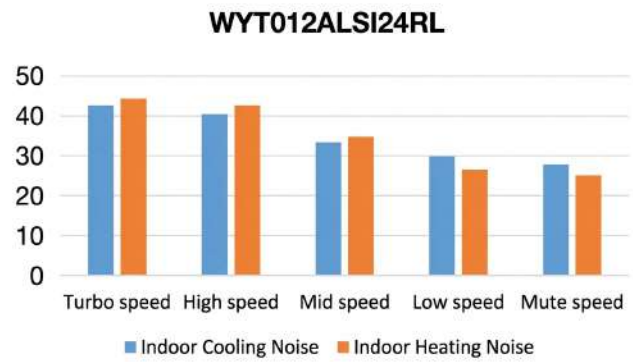
	WYT009GLSI24RL			WYT009ALSI24RL			WYT012GLSI24RL		
	f(Hz)	HP (MPa/psi)	LP (MPa/psi)	f(Hz)	HP (MPa/psi)	LP (MPa/psi)	f(Hz)	HP (MPa/psi)	LP (MPa/psi)
95°F (35°C) Cooling	70	2.06/298.78	0.98/142.13	70	2.01/291.52	0.96/139.23	80	2.02/292.97	0.99/143.59
109.4°F (43°C) Cooling	66	2.54/368.4	1.02/147.94	64	2.5/362.59	0.97/140.69	78	2.51/364.04	1.01/146.48
118.4°F (48°C) Cooling	54	2.88/417.71	1.21/175.49	56	2.83/410.45	1.15/166.79	70	2.9/420.6	1.17/169.69
44.6°F (7°C) Heating	72	2.15/311.83	0.67/97.17	72	2.29/332.13	0.66/95.72	86	2.4/348.09	0.68/98.62
	WYT012ALSI24RL			**WYT018GLSI24RL**			**WYT024GLSI24RL**		
	f(Hz)	HP (MPa/psi)	LP (MPa/psi)	f(Hz)	HP (MPa/psi)	LP (MPa/psi)	f(Hz)	HP (MPa/psi)	LP (MPa/psi)
95°F (35°C) Cooling	74	1.94/281.37	0.98/142.14	80	2.78/403.2	0.79/114.58	80	2.54/368.39	0.65/94.27
109.4°F (43°C) Cooling	64	2.45/355.34	1.05/152.28	76	3.1/449.6	0.85/123.3	74	2.97/430.71	0.73/105.88
118.4°F (48°C) Cooling	54	2.88/417.7	1.24/179.84	66	3.39/491.68	0.99/143.59	66	3.31/480.1	0.86/124.7
44.6°F (7°C) Heating	84	2.17/314.73	0.69/100.08	88	2.87/416.25	0.58/84.12	80	3.23/468.5	0.99/143.58

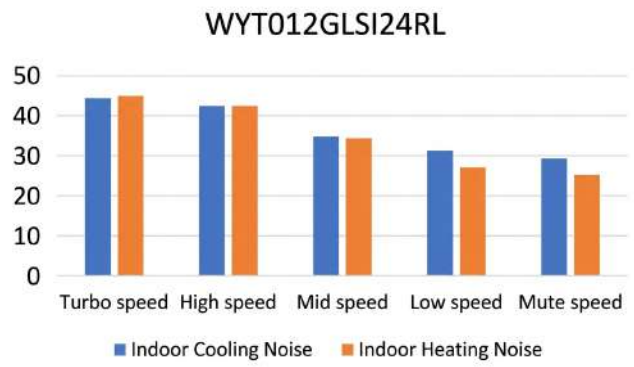
14 Operation Characteristic Curve

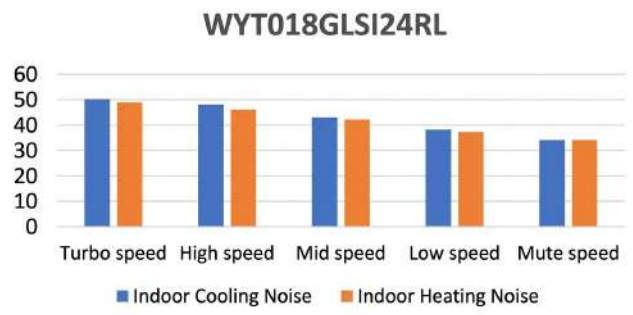
Relation Curve of Noise-Operation Frequency

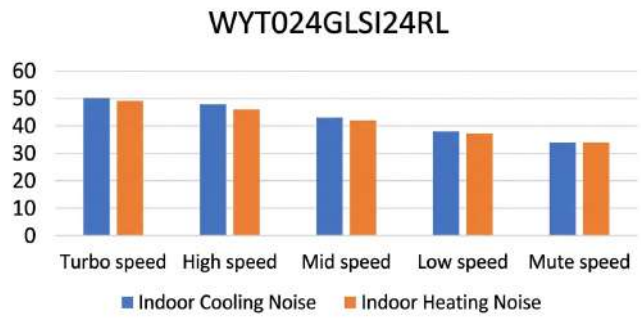












Operation Characteristic Curve 14

Normal Temperature Range for Working Environments

	WYT009ALSI24RL		WYT009GLSI24RL		WYT012ALSI24RL	
Mode	**Room Temperature**	**Outdoor Temperature**	**Room Temperature**	**Outdoor Temperature**	**Room Temperature**	**Outdoor Temperature**
Cooling	17~32°C 63~90°F	-20~53°C -4~127°F	17~32°C 63~90°F	-20~53°C -4~127°F	17~32°C 63~90°F	-20~53°C -4~127°F
Heating	0~30°C 32~86°F	-25~30°C -13~86°F	0~30°C 32~86°F	-25~30°C -13~86°F	0~30°C 32~86°F	-25~30°C -13~86°F
Drying	10~32°C 50~90°F	0~50°C 32~122°F	10~32°C 50~90°F	0~50°C 32~122°F	10~32°C 50~90°F	0~50°C 32~122°F
	WYT012GLSI24RL		**WYT018GLSI24RL**		**WYT024GLSI24RL**	
Mode	**Room Temperature**	**Outdoor Temperature**	**Room Temperature**	**Outdoor Temperature**	**Room Temperature**	**Outdoor Temperature**
Cooling	17~32°C 63~90°F	-20~53°C -4~127°F	17~32°C 63~90°F	-20~53°C -4~127°F	17~32°C 63~90°F	-20~53°C -4~127°F
Heating	0~30°C 32~86°F	-25~30°C -13~86°F	0~30°C 32~86°F	-25~30°C -13~86°F	0~30°C 32~86°F	-25~30°C -13~86°F
Drying	10~32°C 50~90°F	0~50°C 32~122°F	10~32°C 50~90°F	0~50°C 32~122°F	10~32°C 50~90°F	0~50°C 32~122°F

Thermistor Temperature Characteristics

15

A. Indoor and Outdoor Units Exchange Temperature and Outside Air Temperature Sensor Temperature Characteristics

Temp. °F/°C	Resistance (k Ohm)	Voltage of Resistance	Temp. °F/°C	Resistance (k Ohm)	Voltage of Resistance	Temp. °F/°C	Resistance (k Ohm)	Voltage of Resistance
-22°F/-30°C	63.513	4.628	59°F/15°C	7.447	2.968	140°F/60°C	1.464	1.115
-20°F/-29°C	60.135	4.609	61°F/16°C	7.148	2.918	142°F/61°C	1.418	1.088
-18°F/-28°C	56.956	4.589	63°F/17°C	6.863	2.868	144°F/62°C	1.374	1.061
-17°F/-27°C	53.963	4.568	64°F/18°C	6.591	2.819	145°F/63°C	1.331	1.035
-15°F/-26°C	51.144	4.547	66°F/19°C	6.332	2.769	147°F/64°C	1.290	1.009
-13°F/-25°C	48.488	4.524	68°F/20°C	6.084	2.720	149°F/65°C	1.250	0.984
-11°F/-24°C	45.985	4.501	70°F/21°C	5.847	2.671	151°F/66°C	1.212	0.960
-9°F/-23°C	43.627	4.477	72°F/22°C	5.621	2.621	153°F/67°C	1.175	0.936
-8°F/-22°C	41.403	4.452	73°F/23°C	5.404	2.572	154°F/68°C	1.139	0.913
-6°F/-21°C	39.305	4.426	75°F/24°C	5.198	2.524	156°F/69°C	1.105	0.890
-4°F/-20°C	37.326	4.399	77°F/25°C	5.000	2.475	158°F/70°C	1.072	0.868
-2°F/-19°C	35.458	4.371	79°F/26°C	4.811	2.427	160°F/71°C	1.040	0.847
0°F/-18°C	33.695	4.343	81°F/27°C	4.630	2.379	162°F/72°C	1.009	0.825
1°F/-17°C	32.030	4.313	82°F/28°C	4.457	2.332	163°F/73°C	0.979	0.805
3°F/-16°C	30.458	4.283	84°F/29°C	4.292	2.285	165°F/74°C	0.950	0.785
5°F/-15°C	28.972	4.252	86°F/30°C	4.133	2.238	167°F/75°C	0.922	0.765
7°F/-14°C	27.567	4.219	88°F/31°C	3.981	2.192	169°F/76°C	0.895	0.746
9°F/-13°C	26.239	4.186	90°F/32°C	3.836	2.146	171°F/77°C	0.869	0.728
10°F/-12°C	24.984	4.152	91°F/33°C	3.697	2.101	172°F/78°C	0.843	0.710
12°F/-11°C	23.795	4.117	93°F/34°C	3.563	2.057	174°F/79°C	0.819	0.692
14°F/-10°C	22.671	4.082	95°F/35°C	3.435	2.012	176°F/80°C	0.795	0.675
16°F/-9°C	21.606	4.045	97°F/36°C	3.313	1.969	178°F/81°C	0.773	0.658
18°F/-8°C	20.598	4.008	99°F/37°C	3.195	1.926	180°F/82°C	0.751	0.641
19°F/-7°C	19.644	3.969	100°F/38°C	3.082	1.883	181°F/83°C	0.729	0.625
21°F/-6°C	18.732	3.930	102°F/39°C	2.974	1.842	183°F/84°C	0.709	0.610
23°F/-5°C	17.881	3.890	104°F/40°C	2.870	1.800	185°F/85°C	0.689	0.595
25°F/-4°C	17.068	3.850	106°F/41°C	2.770	1.760	187°F/86°C	0.669	0.580
27°F/-3°C	16.297	3.808	108°F/42°C	2.674	1.720	189°F/87°C	0.651	0.566
28°F/-2°C	15.565	3.766	109°F/43°C	2.583	1.681	190°F/88°C	0.633	0.552

Thermistor Temperature Characteristics

15

A. Indoor and Outdoor Units Exchange Temperature and Outside Air Temperature Sensor Temperature Characteristics (Continued)

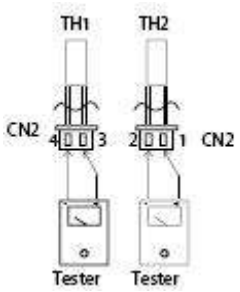
Temp. °F/°C	Resistance (k Ohm)	Voltage of Resistance	Temp. °F/°C	Resistance (k Ohm)	Voltage of Resistance	Temp. °F/°C	Resistance (k Ohm)	Voltage of Resistance
30°F/-1°C	14.871	3.723	111°F/44°C	2.494	1.642	192°F/89°C	0.615	0.538
32°F/0°C	14.212	3.680	113°F/45°C	2.410	1.604	194°F/90°C	0.598	0.525
34°F/1°C	13.586	3.635	115°F/46°C	2.328	1.567	196°F/91°C	0.582	0.512
36°F/2°C	12.991	3.590	117°F/47°C	2.250	1.530	198°F/92°C	0.566	0.499
37°F/3°C	12.426	3.545	118°F/48°C	2.174	1.495	199°F/93°C	0.550	0.487
39°F/4°C	11.889	3.499	120°F/49°C	2.102	1.459	201°F/94°C	0.535	0.475
41°F/5°C	11.378	3.452	122°F/50°C	2.032	1.425	203°F/95°C	0.521	0.463
43°F/6°C	10.893	3.406	124°F/51°C	1.965	1.391	205°F/96°C	0.507	0.452
45°F/7°C	10.431	3.358	126°F/52°C	1.901	1.357	207°F/97°C	0.493	0.441
46°F/8°C	9.991	3.310	127°F/53°C	1.839	1.325	208°F/98°C	0.480	0.430
48°F/9°C	9.573	3.262	129°F/54°C	1.779	1.293	210°F/99°C	0.467	0.419
50°F/10°C	9.174	3.214	131°F/55°C	1.721	1.262	212°F/100°C	0.455	0.409
52°F/11°C	8.795	3.165	133°F/56°C	1.666	1.231			
54°F/12°C	8.433	3.116	135°F/57°C	1.613	1.201			
55°F/13°C	8.089	3.067	136°F/58°C	1.561	1.172			
57°F/14°C	7.760	3.017	138°F/59°C	1.512	1.143			

R—Resistance
Resistance at 77°F (25°C):5 kΩ.

TH1: Indoor room temperature sensor and outside air temperature sensor

TH2: Indoor exchange temperature sensor and outside exchange temperature sensor

Before measuring resistance, disconnect the connectors as shown above.



Thermistor Temperature Characteristics

15

B. Outdoor Unit Sensor Temperature Characteristics

Temp. (°F/°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)	Temp. (°F/°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)	Temp. (°F/°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)
-22°F/-30°C	283.3	322.9	367.7	75°F/24°C	19.36	20.89	22.52	172°F/78°C	2.563	2.654	2.745
-20°F/-29°C	267.4	304.4	346.3	77°F/25°C	18.55	20	21.54	174°F/79°C	2.481	2.567	2.654
-18°F/-28°C	252.5	287.1	307.4	79°F/26°C	17.77	19.14	20.6	176°F/80°C	2.402	2.484	2.567
-17°F/-27°C	238.5	270.9	307.4	81°F/27°C	17.03	18.32	19.7	178°F/81°C	2.327	2.404	2.483
-15°F/-26°C	225.4	255.7	289.8	82°F/28°C	16.32	17.55	18.85	180°F/82°C	2.254	2.327	2.401
-13°F/-25°C	213.1	241.4	273.3	84°F/29°C	15.65	16.81	18.04	181°F/83°C	2.183	2.253	2.323
-11°F/-24°C	201.5	228	257.9	86°F/30°C	15	16.1	17.27	183°F/84°C	2.115	2.182	2.248
-9°F/-23°C	190.6	215.5	243.4	88°F/31°C	14.39	15.43	16.54	185°F/85°C	2.05	2.113	2.176
-8°F/-22°C	180.3	203.6	229.8	90°F/32°C	13.81	14.79	15.34	187°F/86°C	1.985	2.047	2.109
-6°F/-21°C	170.7	192.5	217	91°F/33°C	13.25	14.18	15.17	189°F/87°C	1.922	1.983	2.045
-4°F/-20°C	161.6	182.1	205	93°F/34°C	12.72	13.6	14.54	190°F/88°C	1.861	1.922	1.983
-2°F/-19°C	153.1	172.3	193.7	95°F/35°C	12.21	13.05	13.93	192°F/89°C	1.802	1.862	1.923
0°F/-18°C	145	163.1	183.2	97°F/36°C	11.72	12.52	13.36	194°F/90°C	1.746	1.805	1.865
1°F/-17°C	137.5	154.4	173.2	99°F/37°C	11.26	12.01	12.81	196°F/91°C	1.692	1.75	1.809
3°F/-16°C	130.3	146.2	163.9	100°F/38°C	10.82	11.53	12.29	198°F/92°C	1.639	1.697	1.755
5°F/-15°C	123.6	138.5	155.1	102°F/39°C	10.29	11.07	11.78	199°F/93°C	1.589	1.646	1.703
7°F/-14°C	117.3	131.3	146.8	104°F/40°C	9.986	10.63	11.31	201°F/94°C	1.54	1.596	1.653
9°F/-13°C	111.3	124.4	139	106°F/41°C	9.6	10.21	10.85	203°F/95°C	1.493	1.549	1.604
10°F/-12°C	105.6	118	131.7	108°F/42°C	9.231	9.813	10.42	205°F/96°C	1.448	1.502	1.558
12°F/-11°C	100.3	111.9	124.7	109°F/43°C	8.878	9.43	10	207°F/97°C	1.404	1.458	1.512
14°F/-10°C	95.24	106.2	118.2	111°F/44°C	8.54	9.064	9.612	208°F/98°C	1.362	1.415	1.469
16°F/-9°C	90.49	100.8	112.1	113°F/45°C	8.217	8.714	9.233	210°F/99°C	1.321	1.373	1.426
18°F/-8°C	85.99	95.68	106.3	115°F/46°C	7.908	8.38	8.872	212°F/100°C	1.284	1.335	1.387
19°F/-7°C	81.75	90.86	100.8	117°F/47°C	7.612	8.06	8.526	214°F/101°C	1.245	1.296	1.348
21°F/-6°C	77.74	86.31	95.74	118°F/48°C	7.328	7.754	8.196	216°F/102°C	1.209	1.258	1.309
23°F/-5°C	73.94	82.01	90.88	120°F/49°C	7.057	7.461	7.88	217°F/103°C	1.173	1.222	1.272
25°F/-4°C	70.35	77.95	86.29	122°F/50°C	6.797	7.18	7.578	219°F/104°C	1.139	1.187	1.236
27°F/-3°C	66.96	74.11	81.96	124°F/51°C	6.548	6.912	7.289	221°F/105°C	1.105	1.153	1.202

Thermistor Temperature Characteristics

15

B. Outdoor Unit Sensor Temperature Characteristics (Continued)

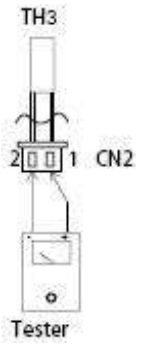
Temp. (°F/°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)	Temp. (°F/°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)	Temp. (°F/°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)
28°F/-2°C	63.74	70.48	77.87	126°F/52°C	6.309	6.655	7.013	223°F/106°C	1.073	1.12	1.168
30°F/-1°C	60.69	67.05	74	127°F/53°C	6.08	6.409	6.748	225°F/107°C	1.042	1.089	1.136
32°F/0°C	57.81	63.8	70.34	129°F/54°C	5.861	6.173	6.495	226°F/108°C	1.013	1.058	1.104
34°F/1°C	55.08	60.72	66.88	131°F/55°C	5.651	5.947	6.253	228°F/109°C	0.9833	1.028	1.074
36°F/2°C	52.49	57.81	63.61	133°F/56°C	5.449	5.73	6.02	230°F/110°C	0.9553	0.9997	1.045
37°F/3°C	50.03	55.05	60.52	135°F/57°C	5.255	5.522	5.798	232°F/111°C	0.9283	0.9719	1.016
39°F/4°C	47.71	52.44	57.59	136°F/58°C	5.07	5.323	5.585	234°F/112°C	0.9021	0.9451	0.9892
41°F/5°C	45.5	49.97	54.82	138°F/59°C	4.891	5.132	5.381	235°F/113°C	0.8765	0.9191	0.9626
43°F/6°C	43.41	47.62	52.2	140°F/60°C	4.72	4.949	5.101	237°F/114°C	0.8524	0.894	0.9367
45°F/7°C	41.42	45.4	49.71	142°F/61°C	4.556	4.774	4.997	239°F/115°C	0.8087	0.8595	0.9117
46°F/8°C	39.53	43.2	42.33	144°F/62°C	4.398	4.605	4.817	241°F/116°C	0.8059	0.8461	0.8875
48°F/9°C	37.74	41.29	45.12	145°F/63°C	4.247	4.448	4.644	243°F/117°C	0.7837	0.8233	0.8641
50°F/10°C	36.04	39.39	43.01	147°F/64°C	4.101	4.288	4.479	244°F/118°C	0.7623	0.8012	0.8413
52°F/11°C	34.42	37.59	41	149°F/65°C	3.961	4.139	4.32	246°F/119°C	0.7415	0.7798	0.8193
54°F/12°C	32.89	35.87	39.1	151°F/66°C	3.827	3.995	4.167	248°F/120°C			
55°F/13°C	31.43	34.25	37.29	153°F/67°C	3.698	3.858	4.021	250°F/121°C	0.702	0.7386	0.7773
57°F/14°C	30.04	32.71	35.58	154°F/68°C				252°F/122°C	0.6631	0.7195	0.7572
59°F/15°C	29.72	31.24	33.95	156°F/69°C				253°F/123°C	0.6649	0.7007	0.7378
61°F/16°C				158°F/70°C	3.339	3.476	3.616	255°F/124°C	0.6472	0.6824	0.7189
63°F/17°C				160°F/71°C	3.229	3.359	3.491	257°F/125°C	0.6301	0.6647	0.7006
64°F/18°C	25.13	27.26	29.55	162°F/72°C	3.122	3.246	3.372	259°F/126°C	0.6135	0.6476	0.6829
66°F/19°C	24.05	26.07	28.23	163°F/73°C	3.02	3.138	3.257	261°F/127°C	0.5974	0.6309	0.6657
68°F/20°C	23.02	24.93	26.97	165°F/74°C	2.921	3.033	3.146	262°F/128°C	0.5818	0.6148	0.649
70°F/21°C	22.04	23.84	25.77	167°F/75°C	2.827	2.933	3.04	264°F/129°C	0.5667	0.5991	0.6328
72°F/22°C	21.1	22.81	24.63	169°F/76°C	2.735	2.836	2.938	266°F/130°C	0.5521	0.5839	0.6171
73°F/23°C	20.21	21.83	23.55	171°F/77°C	2.647	2.743	2.84				

R—Resistance

Resistance at 77°F (25°C):20 kΩ

TH3: Outdoor unit discharge pipe sensor

Before measuring resistance, disconnect the connectors as shown above.



The design and specifications of this product are subject to change without prior notice as development continues. Consult with the sales agency or manufacturer for details. Refer to the equipment nameplate for all other applicable specifications.

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