

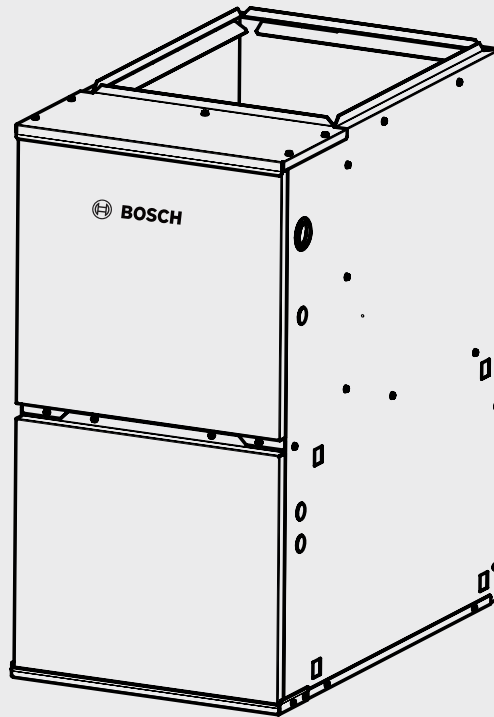


BOSCH

Service Manual

Bosch IDS Heat Pump **115V Modular Blower**

Compatible with Bosch R-454B IDS Products



BTC 762002307 A / 09.2025



Table of Contents

1	Key to Symbols and Safety Instructions	4
1.1	Key to Symbols	4
1.2	Safety	4
2	Troubleshooting	5
2.1	Electrostatic Discharge (ESD) Precautions	5
2.2	Indoor Fan Motor Check	6
3	Control Module (for Reference)	7
4	Wiring Diagram	8
5	Troubleshooting Chart	9
6	LED Flashing Troubleshooting	10

1 Key to Symbols and Safety Instructions

1.1 Key to Symbols

Warnings

In warnings, signal words at the beginning of a warning are used to indicate the type and seriousness of the ensuing risk if measures for minimizing danger are not taken.

The following keywords are defined and can be used in this document:

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor to moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

Important information



The info symbol indicates important information where there is no risk to people or property.

1.2 Safety

Please read safety precautions before installation

WARNING

Improper or dangerous operation!

Do not use this furnace if any part has been under water. A flood-damaged furnace is extremely dangerous. Attempts to use the furnace can result in fire or explosion. A qualified service agent must inspect the furnace and replace all gas controls, control system parts, and electrical parts that have been wet, or the furnace if deemed necessary.

WARNING

Fire hazard!

The furnaces must be kept free and clear of insulating materials. Inspect surrounding area to ensure insulation material is at a safe distance when installing furnaces or adding insulation materials.

Insulation materials may be combustible.

Maintain a 1 in. clearance from combustible materials to supply air ductwork for a distance of 36 in. horizontally from the furnace. See NFPA 90B or local code for further requirements.

CAUTION

Personal injury!

Failure to follow this caution may result in personal injury. Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing, safety glasses and gloves when handling parts and servicing furnaces.

WARNING

Personal injury!

This product can expose you to chemicals including Lead and Lead components, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

2 Troubleshooting



WARNING

Fire, explosion, and asphyxiation hazard!

Installation and service must be performed by a qualified service agency or the gas supplier.

Refer to the troubleshooting diagrams on Section 6 for assistance in determining the source of unit operational problems.

Use the diagnostic LED blinks to troubleshoot the unit. The number of blinks refers to a specific code.

2.1 Electrostatic Discharge (ESD) Precautions

NOTICE

Product damage!

Discharge body's static electricity before touching unit. An electrostatic discharge can adversely affect electrical components.

Observe the following precautions during furnace installation and servicing to protect the integrated control module from damage.

By putting the furnace control and the person at the same electrostatic potential these steps will help avoid exposing the integrated control module to electrostatic discharge. This procedure is applicable to both installed and uninstalled (ungrounded) furnaces.

1. Disconnect all power to the furnace. Do not touch the integrated control module or any wire connected to the control prior to discharging your body's electrostatic charge to ground.
2. Firmly touch a clean unpainted metal surface of the furnace away from the control. Any tools held in a person's hand during grounding will be discharged.
3. Service integrated control module or connecting wiring following the discharge process in step 2. Use caution not to recharge your body with static electricity; (i.e. do not move or shuffle your feet, do not touch ungrounded objects, etc.). If you come in contact with an ungrounded object, repeat step 2 before touching control or wires.
4. Discharge your body to ground before removing a new control from its container. Follow steps 1 through 3 if installing the control on a furnace. Return any old or new controls to their containers before touching any ungrounded object.

2.2 Indoor Fan Motor Check

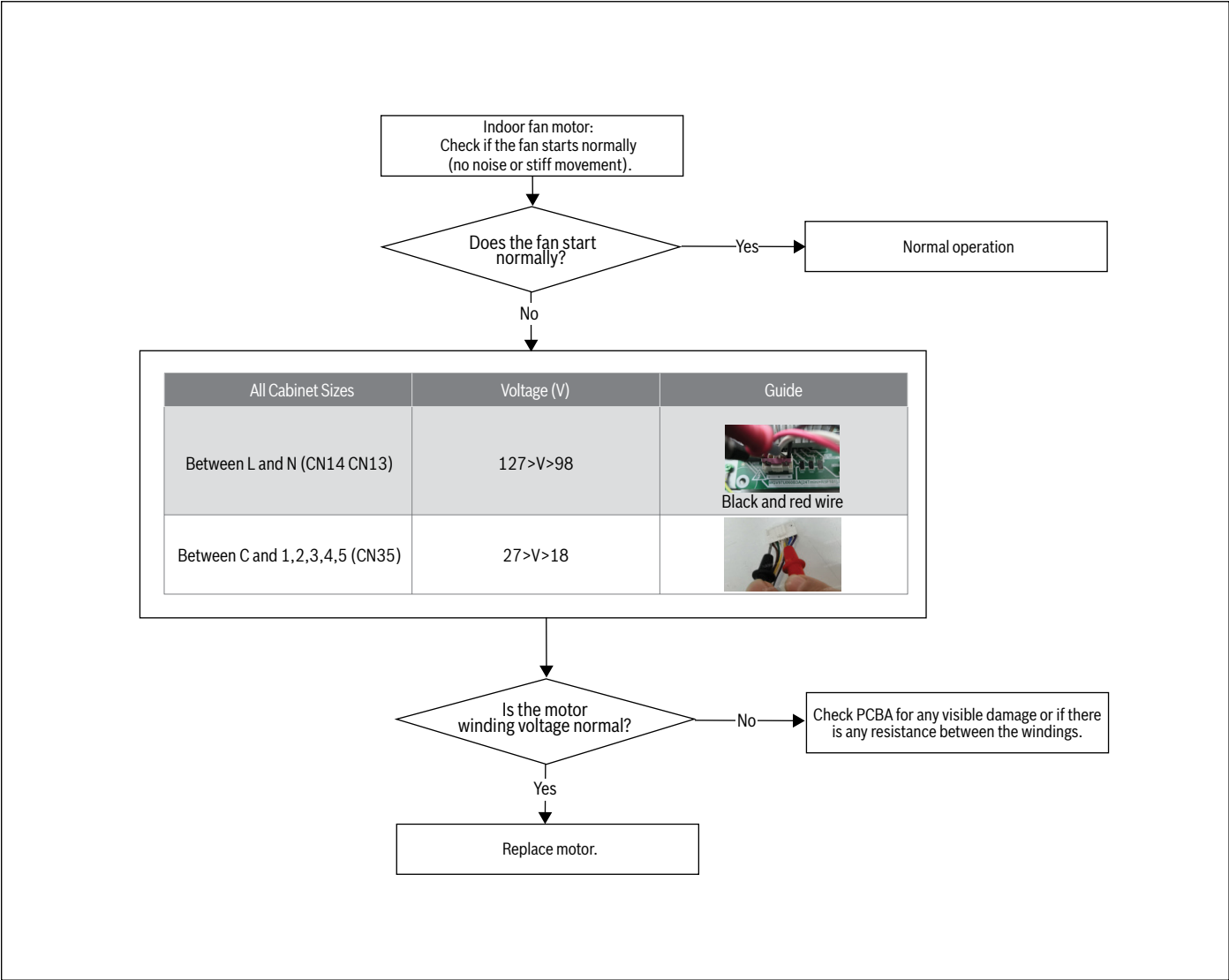


Figure 1

4 Wiring Diagram

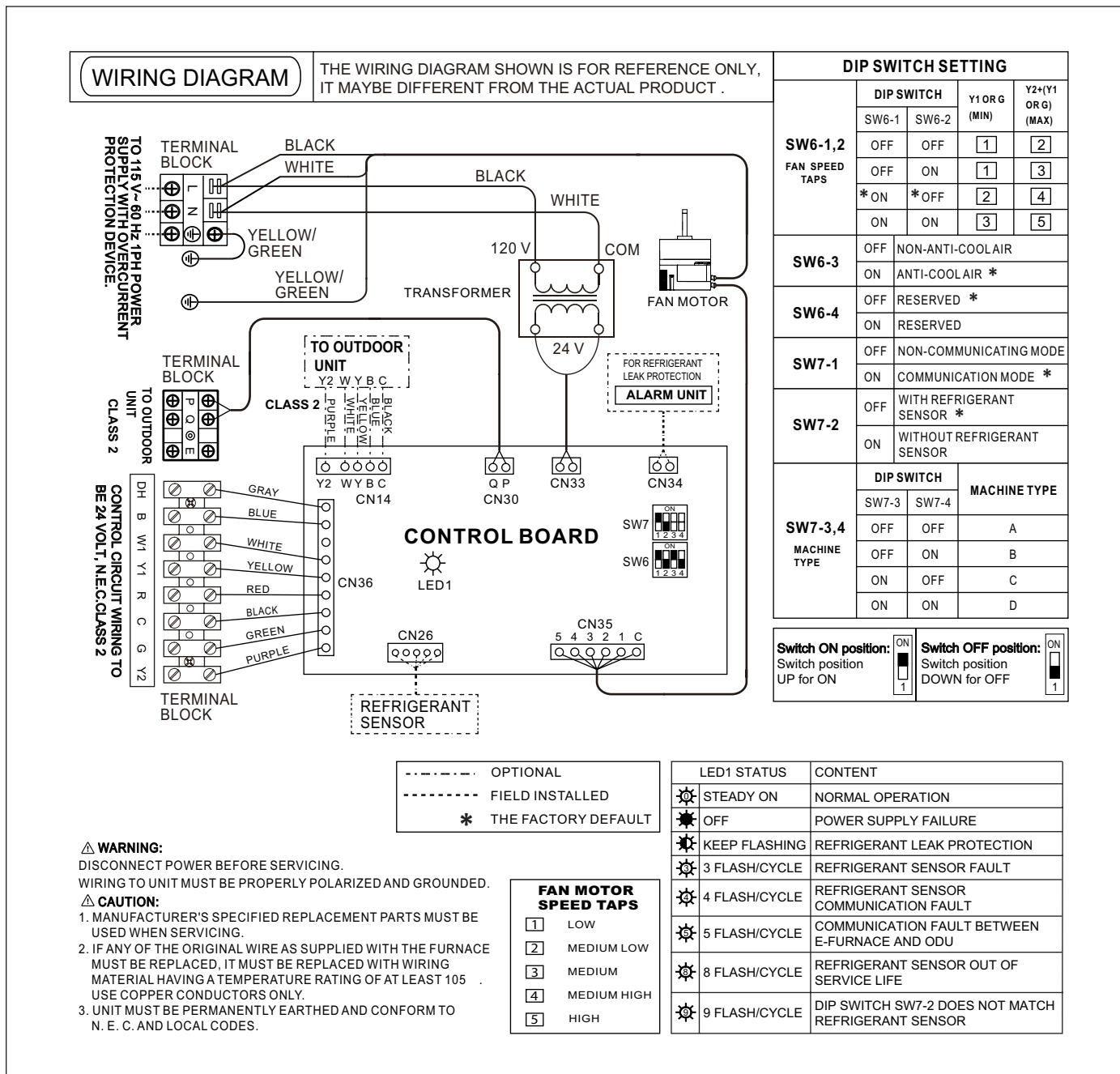


Figure 3

5 Troubleshooting Chart

Error code (Displayed on ODU)	LED1	Error/Condition	Troubleshooting
b3	3	Refrigerant sensor fault	The alarm port outputs a strong electric alarm, cooling stops and the Y signal is disconnected. The W signal output is normal, and the blower is running in 5 speed. Replace the refrigerant gas sensor with a new one.
b4	4	Communication fault between refrigerant sensor and main control chip	The alarm port outputs a strong electric alarm, and after 30 seconds it reports a communication fault with the refrigerant sensor. The module board reports b4, and the Y signal is disconnected. The W signal output is normal, and the blower is running in 5 speed. Contact the installation service provider.
b5	5	Communication fault between furnace and ODU	Check the wiring and the driver board then reconnect the wires. If communication fault persists, contact the after-sales staff.
b7	Rapid Flashing	Refrigerant leakage protection	Alarm port outputs strong current alarm. 1. Maintain ventilation and turn off the compressor to reduce refrigerant circulation. Avoid open flames; 2. Disconnect the Y signal, the W signal output is normal, the internal fan is running in 5 speed, and after running for ≥ 5 minutes, the refrigerant concentration is continuously detected. After returning to normal, connect the Y signal and the fan is running normally.
b8	8	Refrigerant sensor out off service life	The alarm port outputs a strong electric alarm, the cooling stops and the Y signal is disconnected. The W signal output is normal, and the blower is running in 5 speed. Replace the refrigerant gas sensor with a new one.
b9	9	Dip switch SW7-2 does not match refrigerant sensor	Check the status of the refrigerant sensor and dip switch. No refrigerant sensor, SW7-2 is ON; Refrigerant sensor connected, SW7-2 is OFF. Contact the installation service provider to check the dialing status of the machine.

Table 1

6 LED Flashing Troubleshooting

Indoor unit fault codes can be diagnosed via observing the behavior of LED1. The number of flashes per cycle correspond to certain faults as described below.

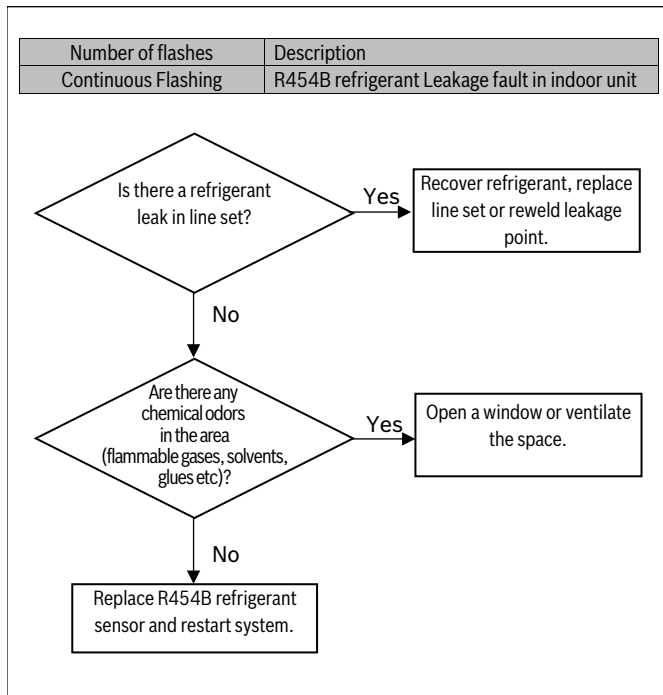


Figure 4

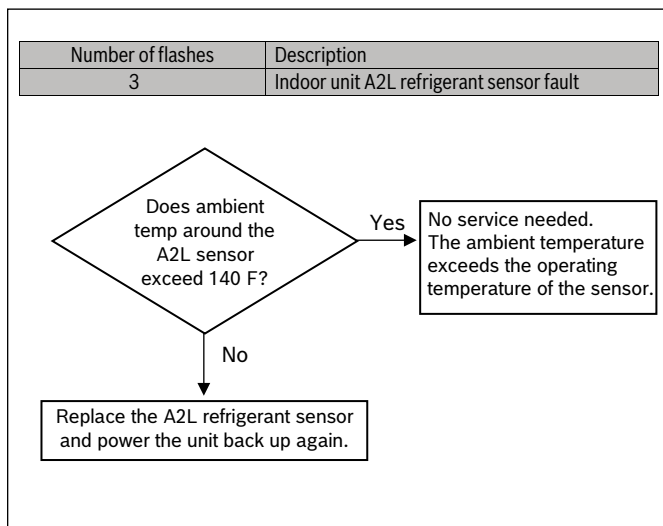


Figure 5

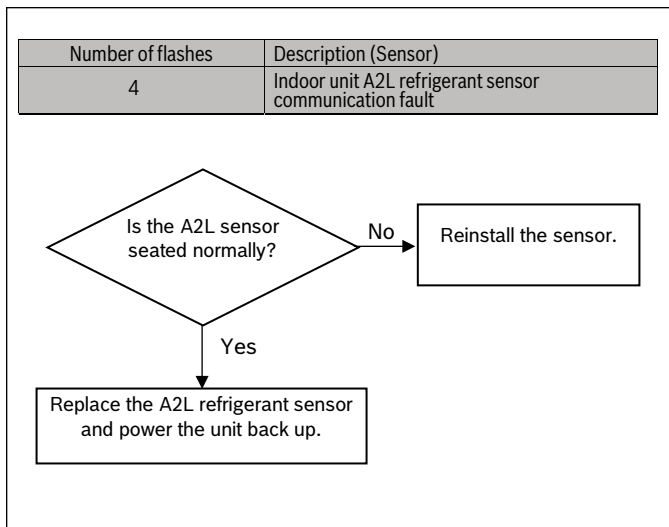


Figure 6

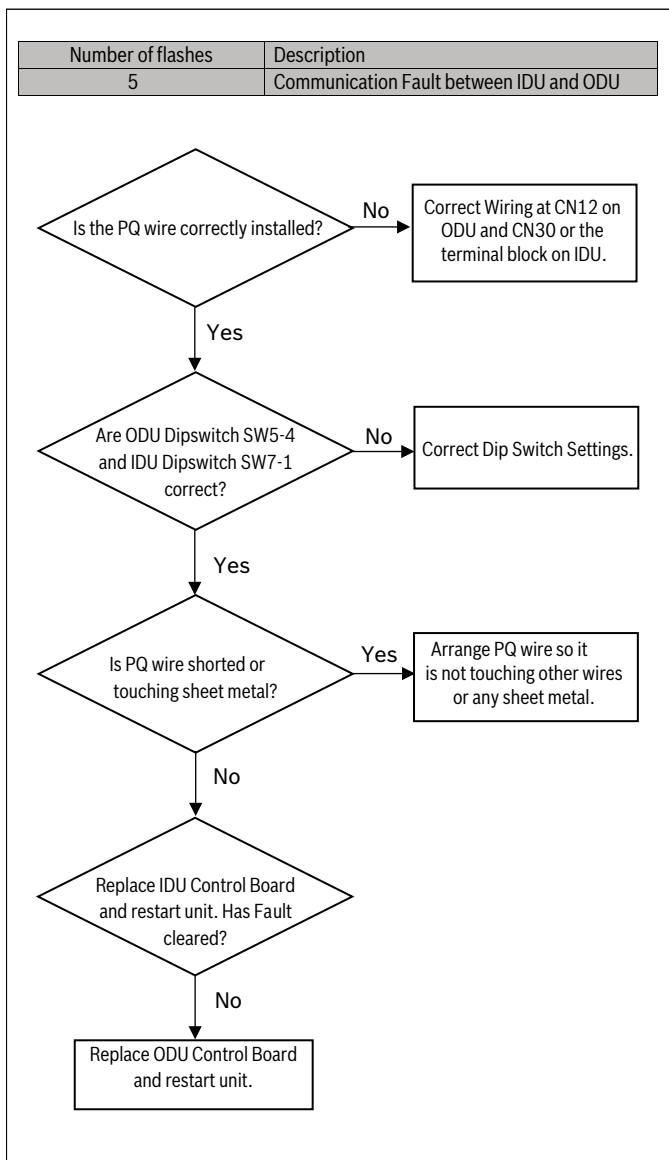


Figure 7

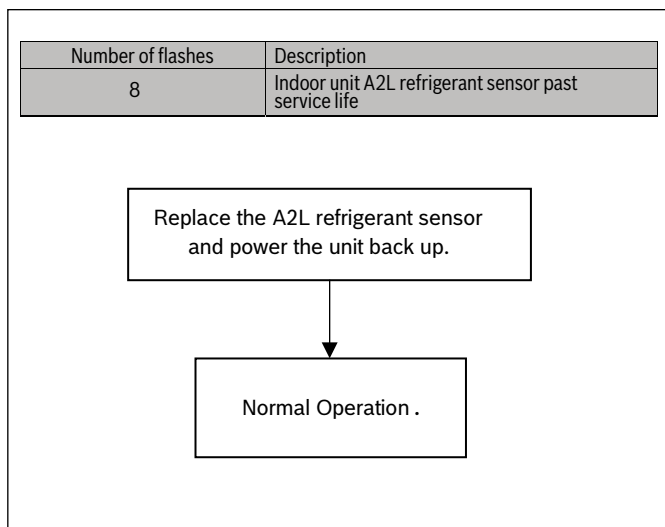


Figure 8

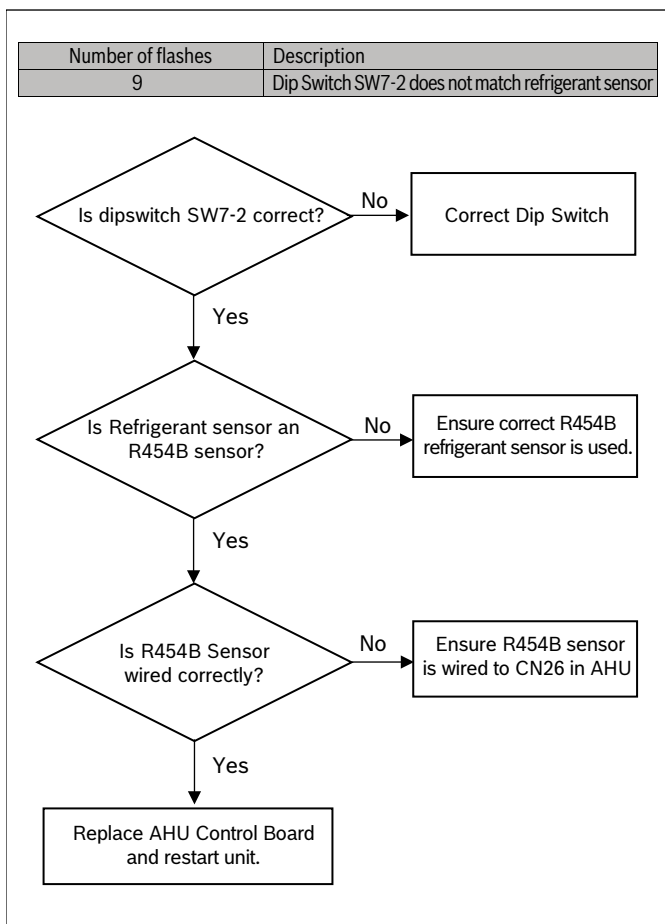


Figure 9

LED1 Flashing Troubleshooting:

Refer to Table 2 for fault statuses related to the indoor unit and refrigerant sensor:

LED1 Number of green flashes	Fault Description	Fault Cause	Troubleshooting Steps
Continuous Flashing	R454B refrigerant leakage detected in indoor unit	There is an active refrigerant leak	Check for leaks in the refrigerant circuit and perform repairs or replacements. Check for natural gas/propane leaks, maintain ventilation and avoid open flames. Replace the refrigerant sensor if a leak is not found. (See Figure 4)
3	R454B refrigerant sensor fault in indoor unit	Damaged R454B refrigerant sensor Ambient temperature exceeds operating temperature	Ensure the temperature around the sensor does not exceed 140°F. Replace the sensor if temperature is less than 140°F during active fault. (See Figure 5)
4	R454B refrigerant sensor communication fault with main control chip	The communication with the refrigerant sensor fails for 2 minutes	Check if the sensor is plugged in correctly Replace the refrigerant sensor and restart the unit (See Figure 6)
5	Communication Fault between indoor and outdoor unit	There is an error in communication between the indoor and outdoor units when set up in communication mode	Ensure the PQ Communication wire is properly connected and not damaged Ensure dipswitches are properly configured (See Figure 7)
8	R454B Refrigerant Sensor Over Service Life	The sensor is operating over the designed service lifetime	Replace the refrigerant sensor and restart the unit (See Figure 8)
9	Dip Switch Setting Does Not Match R454B Refrigerant Sensor	The sensor is connected and communication is normal, but SW7-2 is in the "ON" position	Check whether SW7-2 is set to "OFF" position (See Figure 9)

Table 2

Online Help Resources

Alternatively, please visit our Service & Support webpage to find FAQs, videos, service bulletins, and more; www.bosch-homecomfort.us/service or use your cellphone to scan the code below.

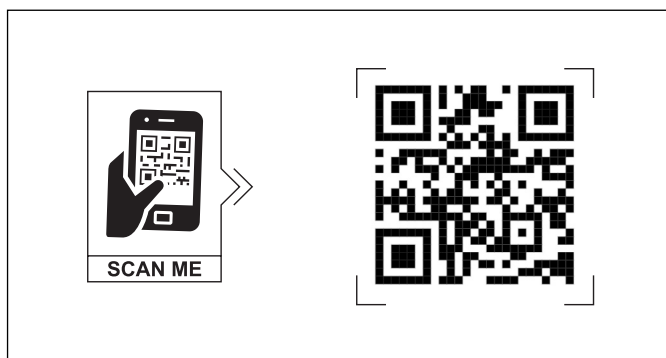


Figure 10

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Version Française

