

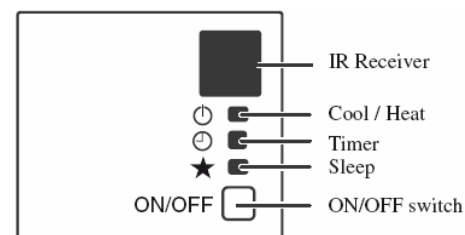
1. Troubleshooting By LED Display or Wired Controller Display

Applicable Model Non Inverter Split Series

Product Range FTYN25/35/50/60LV1B



LED Indication



SLEEP  (Red)	COOL/HEAT  (Green/Red)	TIMER  (Yellow)	Wired Controller Display	Operation / Faulty Indication	Details of Malfunction (Reference Page)
 / 	 Green		-	Cooling mode	n/a
 / 	 Red		-	Heating mode	n/a
			-	Timer On	n/a
			-	Sleep mode On	n/a
			-	Fan mode On	n/a
			-	Dry mode On	n/a
	 1 time		E1	Room air sensor contact loose / short	2
 Continuous	 2 times		E2	Indoor coil sensor contact open	3
	 3 times		E3	Outdoor coil sensor contact open	4
		 1 time	E4	Compressor overload / Indoor coil sensor / Outdoor coil sensor short	5
	 Red		-	Defrost operation	n/a
		 3 times	E5	Gas leak	6
		 6 times	E8	Hardware error (tact switch pin short)	7
 Continuous	 4 times		E9	No Feedback from indoor fan motor	8
	 5 times		EE	EEPROM defrost	n/a

 ON  /  ON or OFF  BLINKING

1.1 “E1” Room air sensor contact open / short

Wired Controller Display	E1						
LED indications	<table><tr><td>SLEEP  (Red)</td><td>POWER  (Green/Red)</td><td>TIMER  (Yellow)</td></tr><tr><td></td><td> 1 time</td><td></td></tr></table>	SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)		 1 time	
SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)					
	 1 time						
Error Generation	The error is generated when room sensor is disconnected or shorted while system running.						
Supposed causes	The possible causes are: - Faulty sensor - Broken wire - Loosen wire contact						
Troubleshooting	Check the room sensor connector condition ↓ Disconnect or loose? → No → reconnect ↓ Yes Check room sensor resistance value (Refer to Appendix: Table 1) ↓ Normal? → No → Replace room sensor ↓ Yes Replace PCB						

1.2 “E2” Indoor coil sensor open

Wired Controller Display	E2						
LED indications	<table><tr><td>SLEEP  (Red)</td><td>POWER  (Green/Red)</td><td>TIMER  (Yellow)</td></tr><tr><td> Continuous</td><td> 2 times</td><td></td></tr></table>	SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)	 Continuous	 2 times	
SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)					
 Continuous	 2 times						
Error Generation	The error is generated when indoor coil sensor is disconnected while system running.						
Supposed causes	The possible causes are: ▪ Broken wire ▪ Loosen wire contact						
Troubleshooting	Check the coil sensor connector condition ↓ Disconnected or loose? Yes → Reconnect No → Check resistance value (Refer to Appendix: Table 1) ↓ Normal? No → Replace room sensor Yes → Replace PCB						

1.3 “E3” Outdoor coil sensor open

Wired Controller Display	E3						
LED indications	<table><tr><td>SLEEP  (Red)</td><td>POWER  (Green/Red)</td><td>TIMER  (Yellow)</td></tr><tr><td></td><td> 3 times</td><td></td></tr></table>	SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)		 3 times	
SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)					
	 3 times						
Error Generation	The error is generated when outdoor coil sensor is disconnected while system running.						
Supposed causes	The possible causes are: ▪ Broken wire ▪ Loosen wire contact						
Troubleshooting	Check the coil sensor connector condition ↓ Disconnected or loose? Yes → Reconnect No ↓ Check resistance value (Refer to Appendix: Table 1) ↓ Normal? No → Replace room sensor Yes ↓ Replace PCB						

1.4 “E4” Compressor overload / Indoor coil sensor short / Outdoor coil sensor short

Wired Controller Display	E4						
LED indications	<table><tr><td>SLEEP  (Red)</td><td>POWER  (Green/Red)</td><td>TIMER  (Yellow)</td></tr><tr><td></td><td></td><td> 1 time</td></tr></table>	SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)			 1 time
SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)					
		 1 time					
Error Generation	The error is generated when outdoor coil sensor > 68°C in cooling or indoor coil sensor > 68°C in heating; indoor coil sensor is shorted; outdoor coil sensor is shorted.						
Supposed causes	The possible causes are: ▪ Compressor high current ▪ Faulty indoor coil sensor ▪ Faulty outdoor coil sensor						
Troubleshooting	Check the compressor Running ampere highly increase? Yes Replace the compressor No Check coil sensor resistance value (Refer to Appendix: table 1) Normal? No Replace coil sensor Yes Replace PCB						

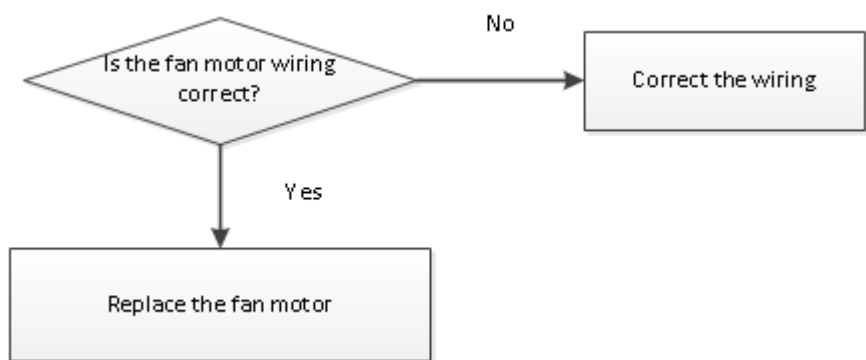
“E5” Low refrigerant charge / Gas leak

Wired Controller Display	E5						
LED indications	<table><tr><td>SLEEP  (Red)</td><td>POWER  (Green/Red)</td><td>TIMER  (Yellow)</td></tr><tr><td></td><td></td><td> 3 times</td></tr></table>	SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)			 3 times
SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)					
		 3 times					
Error Generation	The error is generated when indoor coil sensor temperature is > 25°C in cooling or < 20°C in heating after compressor running for 30minutes.						
Supposed causes	The possible causes are: ▪ Refrigerant leaking ▪ Indoor coil sensor faulty						
Troubleshooting	Perform a leak test Leaking? Repair the leak spot Top up refrigerant Check coil sensor resistance value (Refer to Appendix: table 1) Normal? Replace PCB Replace coil sensor						

“E8” Hardware error (tact switch pin short)

Wired Controller Display	E8						
LED indications	<table><tr><td>SLEEP  (Red)</td><td>POWER  (Green/Red)</td><td>TIMER  (Yellow)</td></tr><tr><td></td><td></td><td> 6 times</td></tr></table>	SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)			 6 times
SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)					
		 6 times					
Error Generation	The error is generated when tact switch pin is shorted.						
Supposed causes	The possible causes are: ▪ Tact switch pin is short circuit.						
Troubleshooting	Check for tact switch pin condition Normal? No Replace tact switch pin Yes Replace PCB						

“E9” No Feedback from indoor fan motor

Wired Controller Display	E9						
LED indications	<table><tr><td>SLEEP  (Red)</td><td>POWER  (Green/Red)</td><td>TIMER  (Yellow)</td></tr><tr><td> Continuous</td><td> 4 times</td><td></td></tr></table>	SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)	 Continuous	 4 times	
SLEEP  (Red)	POWER  (Green/Red)	TIMER  (Yellow)					
 Continuous	 4 times						
Error Generation	The error is generated when there is no signal feedback from indoor fan motor.						
Supposed causes	The possible causes are: ▪ Indoor fan motor is malfunction ▪ Indoor fan motor connection wiring loosen						
Troubleshooting	 <pre>graph TD A{Is the fan motor wiring correct?} -- No --> B[Correct the wiring] A -- Yes --> C[Replace the fan motor]</pre>						

2. Troubleshooting By Component Failure

Component	Failure Type	Failure Causes	Reference Page
Compressor	2.1 Unit not working	• Wrong wiring • Terminal burnt • Poor ventilation • Short body • Jammed • High Ampere	10
	2.2 Unit not cold	• Compressor noisy • Poor ventilation • Short body • Jammed • High Ampere	11
	2.3 Outdoor noisy	• Compressor noisy • Unit noisy	12
Fan Motor	2.4 Short body	• Severe fluctuation of voltage • Winding scratch during assembly process • Expose to the wet humidity environment • Assembly method incorrect	13
	2.5 Noisy	• Bearing misalign during the assembly process • Assembly method not correct • Anti rust coating not enough • Expose to the wet humidity environment	14
	2.6 Jammed	• Grease dry offs • Assembly method not correct • Anti rust coating not enough • Expose to the wet humidity environment	15
	2.7 Not working	• Severe fluctuation of voltage • Thermal overload • Winding scratch during assembly process • Expose to the wet humidity environment	16
	2.8 Running slow	• Capacitor wire loose/burst • Auxiliary winding/ Lead wire broken • Wrong wire color	17
PCB	2.9 Not functioning	• Noise interference • Connection loosen • Transformer faulty • Component faulty	18

2.1 Unit Not Working

Supposed causes	The possible causes are: • Wrong wiring • Terminal burnt • Poor ventilation • Short body • Jammed • High Ampere
Troubleshooting	<pre> graph TD Start[Unit not working] --> Q1{Is the compressor wiring correct?} Q1 -- No --> A1[Wrong wiring → (i)] Q1 -- Yes --> Q2{Is the terminal wire burnt?} Q2 -- Yes --> A2[Terminal burnt → (ii)] Q2 -- No --> Q3{Is the indoor and outdoor unit properly ventilated?} Q3 -- No --> A3[Poor ventilation → (iii)] Q3 -- Yes --> Q4{Check the compressor, is it short body?} Q4 -- Yes --> A4[Short body → (iv)] Q4 -- No --> Q5{Is the compressor jammed?} Q5 -- Yes --> A5[Jammed → (v)] Q5 -- No --> A6[High Amp → (vi)] </pre>

2.2 Unit Not Cold

Supposed causes	The possible causes are: • Compressor jammed • Poor ventilation • Short body • Jammed • High Ampere
Troubleshooting	<pre> graph TD Start([Unit not cold]) --> Q1{Is the compressor jammed?} Q1 -- Yes --> A1[Jammed → (v)] Q1 -- No --> Q2{Is the indoor and outdoor unit properly ventilated?} Q2 -- No --> A2[Poor ventilation → (iii)] Q2 -- Yes --> Q3{Check the compressor, is it short body?} Q3 -- Yes --> A3[Short body → (iv)] Q3 -- No --> Q4{Is the compressor making humming noise?} Q4 -- Yes --> A4[Compressor noisy → (vii)] Q4 -- No --> A5[High Amp → (vi)] </pre> The flowchart starts with a rectangular box labeled "Unit not cold". An arrow points down to a diamond-shaped decision box: "Is the compressor jammed?". From this diamond, a "Yes" path leads right to a rectangular box "Jammed → (v)", and a "No" path leads down to another diamond: "Is the indoor and outdoor unit properly ventilated?". From this second diamond, a "No" path leads right to a rectangular box "Poor ventilation → (iii)", and a "Yes" path leads down to a third diamond: "Check the compressor, is it short body?". From this third diamond, a "Yes" path leads right to a rectangular box "Short body → (iv)", and a "No" path leads down to a fourth diamond: "Is the compressor making humming noise?". From this fourth diamond, a "Yes" path leads right to a rectangular box "Compressor noisy → (vii)", and a "No" path leads down and then right to a final rectangular box "High Amp → (vi)".

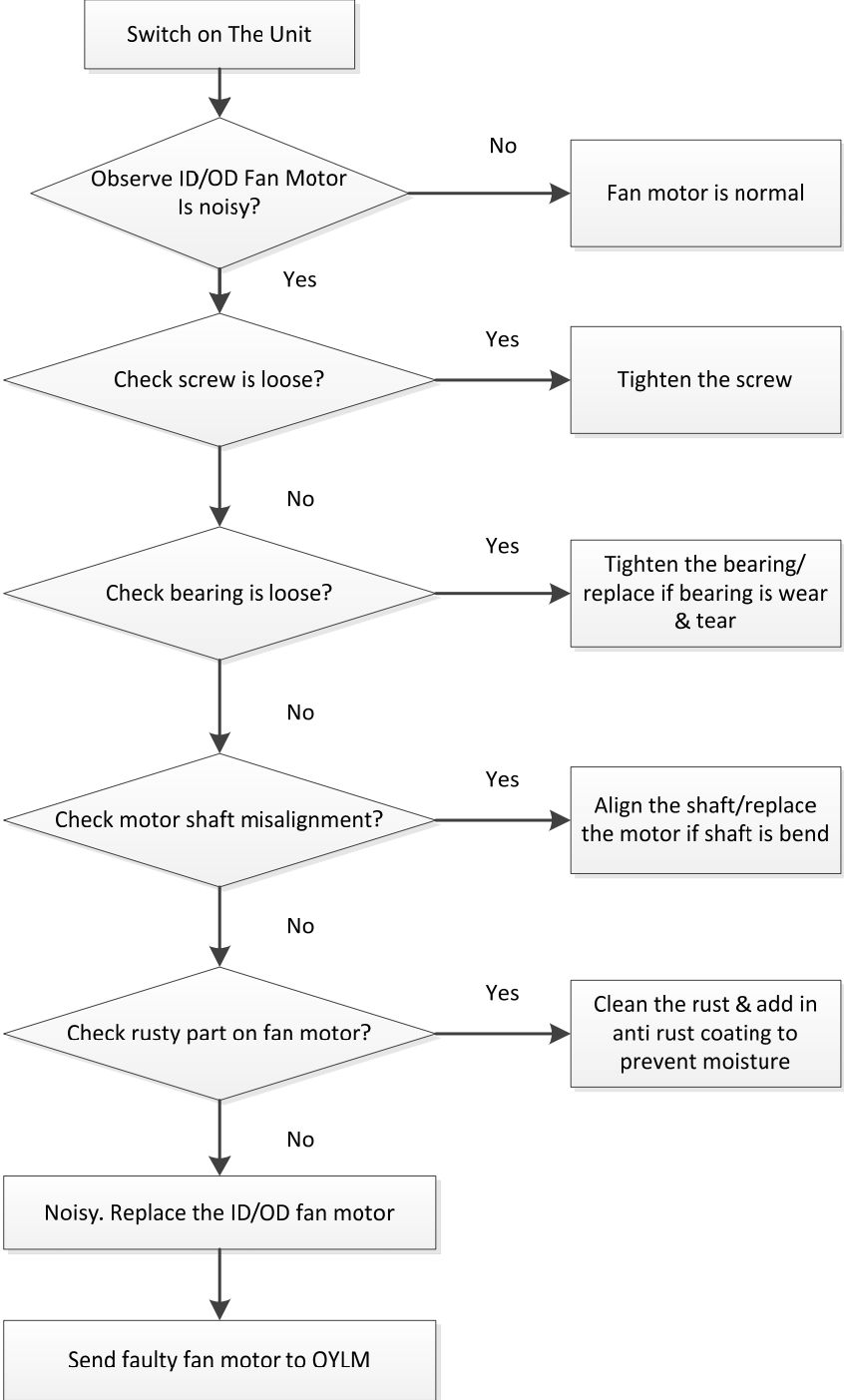
2.3 Outdoor Noisy

Supposed causes	The possible causes are: • Compressor noisy • Unit noisy
Troubleshooting	<pre>graph TD; A[Outdoor noisy] --> B{Is the noise generated from the compressor?}; B -- Yes --> C[Compressor noisy → (vii)]; B -- No --> D[Unit noisy → (viii)];</pre> The flowchart starts with a rectangular box labeled "Outdoor noisy". An arrow points down to a diamond-shaped decision box labeled "Is the noise generated from the compressor?". From the decision box, two paths emerge: a "Yes" path leading right to a rectangular box labeled "Compressor noisy → (vii)", and a "No" path leading down to a rectangular box labeled "Unit noisy → (viii)".

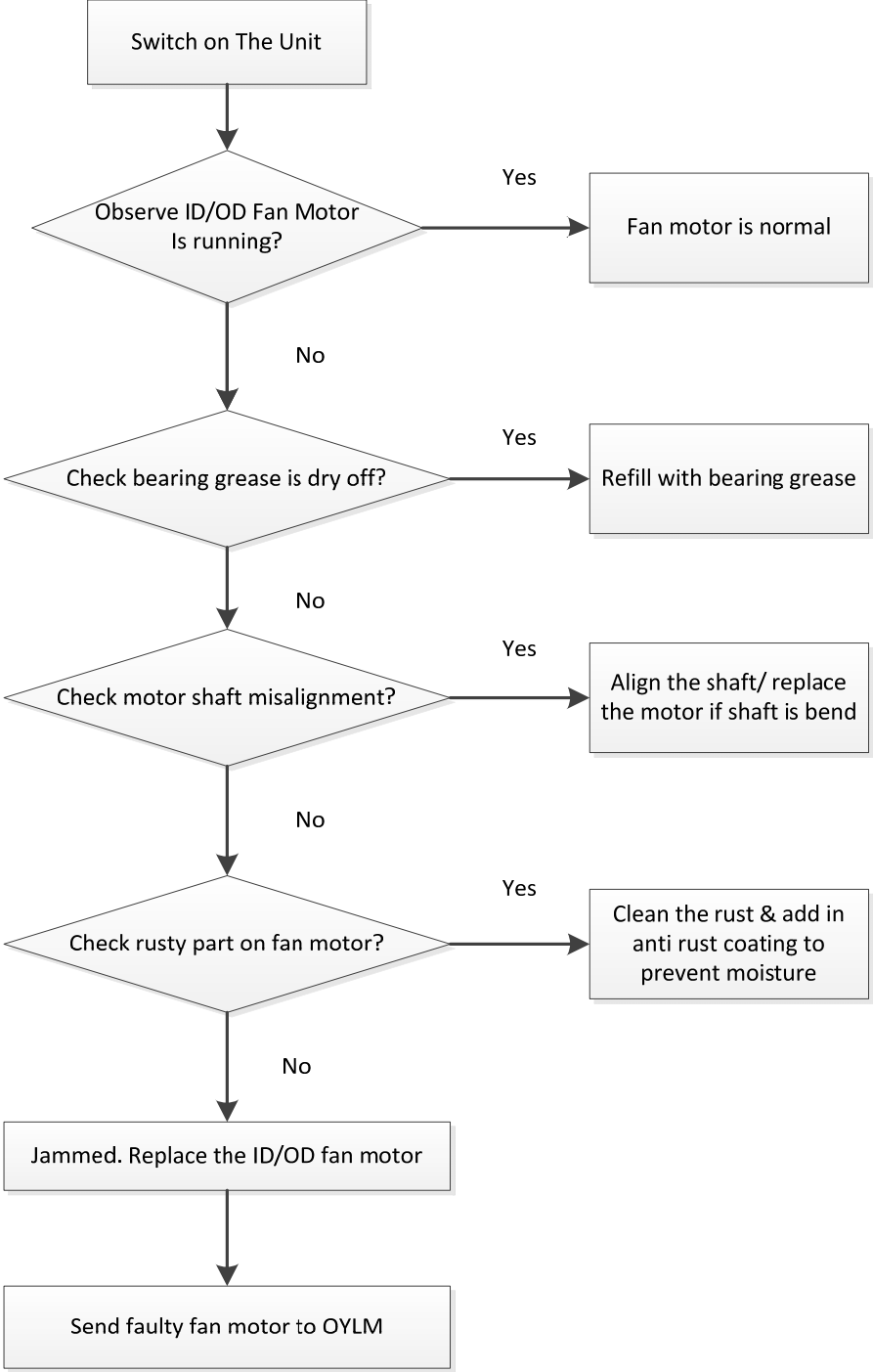
2.4 Fan Motor Short Body

Supposed causes	The possible causes are: • Severe fluctuation of voltage • Winding scratch during assembly process • Expose to the wet humidity environment • Assembly method incorrect
Troubleshooting	<pre> graph TD Start([Switch on The Unit]) --> D1{Observe ID/OD Fan Motor Is Turning?} D1 -- Yes --> Normal[Fan motor is normal] D1 -- No --> D2{Phase connect correctly? (refer to TM)} Normal --> End([Send faulty fan motor to OYLM]) D2 -- No --> D1 D2 -- Yes --> D3{Running current within spec?} D3 -- No --> D4{Connectively correct?} D3 -- Yes --> End D4 -- No --> D5{Reconnect the wire connection} D4 -- Yes --> End D5 --> D6{Winding resistance within spec?} D6 -- No --> D7{Visual check winding is burnt?} D6 -- Yes --> SendOYLM1[Send faulty fan motor to OYLM for further investigation] D7 -- No --> SendOYLM1 D7 -- Yes --> ReplaceMotor[Short body. Replace the ID/OD fan motor] ReplaceMotor --> End </pre> Refer to S/N sticker on unit Refer to wiring diagram on unit Refer to Appendix: Table 2

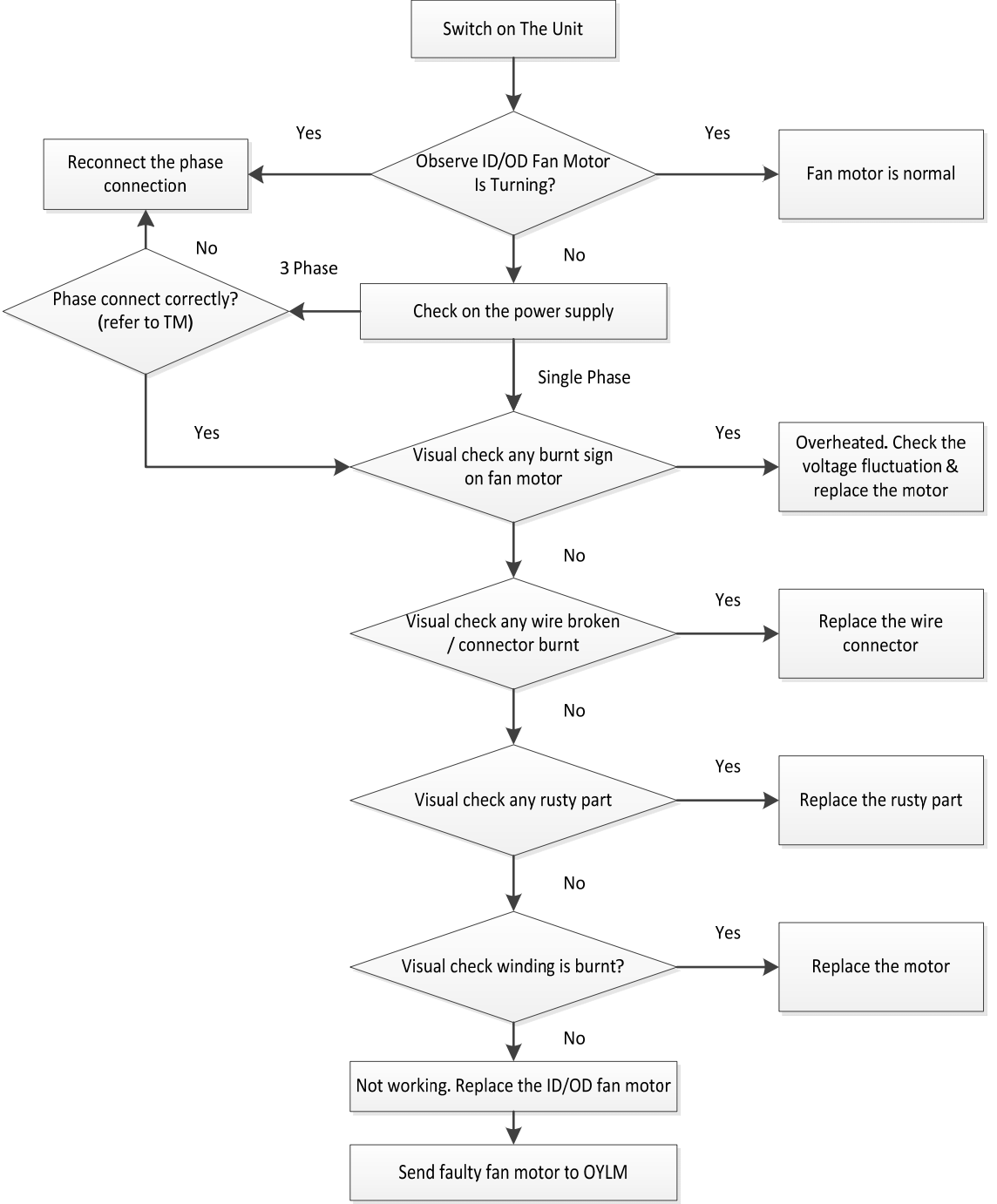
2.5 Fan Motor Noisy

Supposed causes	The possible causes are: • Bearing misalign during the assembly process • Assembly method not correct • Anti rust coating not enough • Expose to the wet humidity environment
Troubleshooting	 <pre> graph TD Start([Switch on The Unit]) --> Q1{Observe ID/OD Fan Motor Is noisy?} Q1 -- No --> A1[Fan motor is normal] Q1 -- Yes --> Q2{Check screw is loose?} Q2 -- Yes --> A2[Tighten the screw] Q2 -- No --> Q3{Check bearing is loose?} Q3 -- Yes --> A3[Tighten the bearing/ replace if bearing is wear & tear] Q3 -- No --> Q4{Check motor shaft misalignment?} Q4 -- Yes --> A4[Align the shaft/replace the motor if shaft is bend] Q4 -- No --> Q5{Check rusty part on fan motor?} Q5 -- Yes --> A5[Clean the rust & add in anti rust coating to prevent moisture] Q5 -- No --> A6[Noisy. Replace the ID/OD fan motor] A6 --> A7[Send faulty fan motor to OYLM] </pre> The flowchart outlines the troubleshooting steps for a noisy fan motor. It begins with switching on the unit and observing if the ID/OD fan motor is noisy. If not, the motor is normal. If yes, the steps proceed through checking for loose screws, bearing looseness, motor shaft misalignment, and rusty parts, each with specific corrective actions. If none of these are found, the fan motor is replaced and sent to OYLM.

2.6 Fan Motor Jammed

Supposed causes	The possible causes are: • Grease dry offs • Assembly method not correct • Anti rust coating not enough • Expose to the wet humidity environment
Troubleshooting	 <pre> graph TD A[Switch on The Unit] --> B{Observe ID/OD Fan Motor Is running?} B -- Yes --> C[Fan motor is normal] B -- No --> D{Check bearing grease is dry off?} D -- Yes --> E[Refill with bearing grease] D -- No --> F{Check motor shaft misalignment?} F -- Yes --> G[Align the shaft/ replace the motor if shaft is bend] F -- No --> H{Check rusty part on fan motor?} H -- Yes --> I[Clean the rust & add in anti rust coating to prevent moisture] H -- No --> J[Jammed. Replace the ID/OD fan motor] J --> K[Send faulty fan motor to OYLM] </pre> The flowchart outlines the troubleshooting steps for a jammed fan motor. It begins with switching on the unit and observing if the ID/OD fan motor is running. If it is running, the motor is normal. If not, the next steps are to check if the bearing grease is dry (refill if yes), check for motor shaft misalignment (align or replace if yes), and check for rusty parts (clean and coat with anti-rust if yes). If none of these steps resolve the issue, the motor is jammed and should be replaced, then sent to OYLM.

2.7 Fan Motor Not Working

Supposed causes	The possible causes are: • Severe fluctuation of voltage • Thermal overload • Winding scratch during assembly process • Expose to the wet humidity environment
Troubleshooting	 <pre> graph TD Start([Switch on The Unit]) --> Q1{Observe ID/OD Fan Motor Is Turning?} Q1 -- Yes --> End1[Fan motor is normal] Q1 -- No --> Q2{Check on the power supply} Q2 -- 3 Phase --> Q3{Phase connect correctly? refer to TM} Q3 -- No --> Q4[Reconnect the phase connection] Q4 --> Q1 Q3 -- Yes --> Q5{Visual check any burnt sign on fan motor} Q2 -- Single Phase --> Q5 Q5 -- Yes --> End2[Overheated. Check the voltage fluctuation & replace the motor] Q5 -- No --> Q6{Visual check any wire broken / connector burnt} Q6 -- Yes --> End3[Replace the wire connector] Q6 -- No --> Q7{Visual check any rusty part} Q7 -- Yes --> End4[Replace the rusty part] Q7 -- No --> Q8{Visual check winding is burnt?} Q8 -- Yes --> End5[Replace the motor] Q8 -- No --> End6[Not working. Replace the ID/OD fan motor] End6 --> End7[Send faulty fan motor to OYLM] </pre>

2.8 Fan Motor Running Slow

Supposed causes	The possible causes are: • Capacitor wire loose/burst • Auxiliary winding/ Lead wire broken • Wrong wire color
Troubleshooting	<pre> graph TD A[Switch on The Unit] --> B{Observe ID/OD Fan Motor Is noisy?} B -- No --> C[Fan motor is normal] B -- Yes --> D{Wrong connection of fan motor wire?} D -- Yes --> E[Connect the fan motor wire according to TM] D -- No --> F{Capacitor wire is loose/burst?} F -- Yes --> G[Solder the capacitor wire/ replace if the capacitor was burst] F -- No --> H{Visual check lead wire broken?} H -- Yes --> I[Replace the broken lead wire] H -- No --> J{Visual check Aux winding is burnt?} J -- Yes --> K[Replace the motor] J -- No --> L[Running slow. Replace the ID/OD fan motor] L --> M[Send faulty fan motor to OYLM] </pre>

2.9 PCB Not Functioning

Supposed causes	The possible causes are: • Noise interference • Connection loosen • Transformer faulty • Component faulty
Troubleshooting	<pre> graph TD A[Turn the power supply off once and then back on] --> B{Normal reset} B -- Yes --> C[Could be outside cause (noise, etc) other than malfunction] B -- No --> D[Turn off power and remove the faulty PCB] D --> E{Visual Inspection I • Component lifted? • Copper track lifted? • Connectors sitting. Lifted, solder crack or others? • Solder condition: broken wire or epoxy broken? • Burnt?} E -- Yes --> F[Replace sensors or PCB] E -- No --> G{Visual Inspection II • Connector: Fit or loose? • Insertion of the connector: Correct or wrong?} G -- Yes --> H[Reconnect] G -- No --> I[Check continuity for transformer and capacitor by using multimeter. Replace the PCB if no continuity] </pre>

(i) Wrong Wiring

Supposed causes	The possible causes are: • Wire connection is loosen • Lead wire is broken
Troubleshooting	<pre> graph TD A[Wrong wiring] --> B{Is the wiring connection of compressor connected correctly?} B -- No --> C[Reconnect the compressor wiring and restart the system] B -- Yes --> D{Is the wiring connection loose?} D -- Yes --> E[Tighten the compressor wiring and restart the system] D -- No --> F{Is the wire broken or too old?} F -- Yes --> G[Replace the compressor wire and restart the system] F -- No --> H[2.1 Unit Not Working] </pre>

(ii) Terminal Burnt

Supposed causes	The possible causes are: • Voltage fluctuation • Incorrect capacitor specification
Troubleshooting	<pre> graph TD A[Terminal burnt] --> B{Check the incoming voltage. Is it within specification?} B -- Yes --> C{Is the voltage supplied stable?} B -- No --> D[Check the power supply and solve the problem] C -- Yes --> E{Check the starting capacitor or starting relay. Is it normal?} C -- No --> D E -- Yes --> F[Replace contractor] E -- No --> G[Fix/ replace the starting capacitor or starting relay] </pre> The flowchart starts with a rectangular box labeled "Terminal burnt". An arrow points down to a diamond-shaped decision box: "Check the incoming voltage. Is it within specification?". From this diamond, a "Yes" path leads down to another diamond: "Is the voltage supplied stable?". A "No" path from the first diamond leads right to a rectangular box: "Check the power supply and solve the problem". From the second diamond, a "Yes" path leads down to a third diamond: "Check the starting capacitor or starting relay. Is it normal?". A "No" path from the second diamond also leads right to the "Check the power supply and solve the problem" box. From the third diamond, a "Yes" path leads down to a final rectangular box: "Replace contractor". A "No" path from the third diamond leads right to a rectangular box: "Fix/ replace the starting capacitor or starting relay".

(iii) Poor Ventilation

Supposed causes	The possible causes are: • Filter dirty • Blockage at discharge air • Fan motor is malfunction
Troubleshooting	<pre> graph TD Start[Poor ventilation] --> D1{Is there any blockage on outdoor discharge air or fin coil?} D1 -- Yes --> A1[Remove any blocking material and restart the system] D1 -- No --> D2{Is the outdoor fan motor running normally?} D2 -- No --> A2[Fix/ replace the outdoor fan motor and restart the system] D2 -- Yes --> D3{Check indoor unit, any blockage on coil or air discharge?} D3 -- Yes --> A3[Remove any blocking material and restart the system] D3 -- No --> D4{Check indoor unit, is indoor fan motor functioning normally?} D4 -- No --> A4[Fix/ replace the indoor fan motor and restart the system] D4 -- Yes --> D5{Is the installation of indoor and outdoor within specification?} D5 -- No --> A5[Consult installer to reinstall and restart the system] D5 -- Yes --> End[2.1 Unit Not Working] </pre>

(iv) Compressor Short Body

Faulty Phenomenon	Compressor Short Body
Supposed causes	The possible causes are: • Less oil return • Liquid flash back • Winding is scratched
Troubleshooting	<pre> graph TD Start([Short body]) --> D1{Check refrigerant charge of the unit. Is it correct?} D1 -- No --> D2{Is there any leakage at the coil} D1 -- Yes --> D3{Is the TXV functioning normally?} D2 -- No --> A1[Recharge the system to the correct pressure value and restart the system] D2 -- Yes --> A2[Fix the leaking area. Then recharge the system to the correct pressure value and restart the system] D3 -- No --> A3[Replace the TXV and restart the system] D3 -- Yes --> D4{Is the crankcase heater off or not functioning?} D4 -- Yes --> A4[Replace/on crankcase heater for some time and restart the system] D4 -- No --> D5{Check the length of piping. Within specs? (long piping)} D5 -- No --> A5[Check for long piping and ensure it is within specs] D5 -- Yes --> A6[Replace compressor] </pre>

(v) Compressor Jammed

Faulty Phenomenon	Jammed
Supposed causes	The possible causes are: • Less oil return • Thermal overload • Lock rotor activate (running current > lock rotor ampere)
Troubleshooting	<pre> graph TD Start([Jammed]) --> D1{Check refrigerant charge of the unit. Is it correct?} D1 -- No --> D2{Is there any leakage at the coil} D1 -- Yes --> D3{Is the indoor unit having any air blockage?} D2 -- No --> A1[Recharge the system to the correct pressure value and restart the system] D2 -- Yes --> A2[Fix the leaking area. Then recharge the system to the correct pressure value and restart the system] D3 -- No --> A3[Remove any obstacles and restart the system] D3 -- Yes --> D4{Is the indoor fan motor working normally?} D4 -- No --> A4[Repair /replace the indoor fan motor and restart the system] D4 -- Yes --> D5{Is the crankcase heater off or not functioning?} D5 -- Yes --> A5[Replace/on crankcase heater for some time and restart the system] D5 -- No --> D6{Check the length of piping. Within specs? (long piping)} D6 -- No --> A6[Check for long piping and ensure it is within specs] D6 -- Yes --> D7{Is the TXV functioning normally?} D7 -- No --> A7[Replace the TXV and restart the system] D7 -- Yes --> A8[Replace compressor & cap tube] </pre>

(vi) Compressor High Ampere

Supposed causes	The possible causes are: ▪ Low voltage supply ▪ Blockage at air discharge ▪ Low refrigerant charge ▪ Indoor/Outdoor fan not running ▪ Chocking in refrigerant system
Troubleshooting	<pre> graph TD Start([High Amp]) --> D1{Check the input voltage. Is the voltage stable?} D1 -- No --> A1[Check the power supply and solve the problem. Restart the system.] D1 -- Yes --> D2{Check refrigerant charge of the unit. Is it correct?} D2 -- No --> D3{Is there any leakage at the coil} D2 -- Yes --> D4{Is there any outdoor/indoor air blockage?} D3 -- No --> A2[Recharge the system to the correct pressure value and restart the system] D3 -- Yes --> A3[Fix the leaking area. Then recharge the system to the correct pressure value and restart the system] D4 -- Yes --> A4[Remove any obstacles and restart the system] D4 -- No --> D5{Is the indoor/outdoor fan motor working?} D5 -- No --> A5[Repair /replace the indoor fan motor and restart the system] D5 -- Yes --> D6{Is the system's piping length within specification?} D6 -- No --> A6[Check installation manual] D6 -- Yes --> D7{Is the TXV functioning normally?} D7 -- No --> A7[Replace the TXV and restart the system] D7 -- Yes --> D8{Is the oil trap installed properly?} D8 -- No --> A8[Reinstall the oil trap according to specification] D8 -- Yes --> End([Replace compressor]) </pre>

(vii) Compressor Noisy

Supposed causes	The possible causes are: ▪ Low refrigerant charge ▪ Blockage at air discharge ▪ Chocking in refrigerant system ▪ Liquid return to compressor
Troubleshooting	<pre> graph TD Start([Compressor Noisy]) --> D1{Check refrigerant charge of the unit. Is it correct?} D1 -- Yes --> D2{Is the indoor unit having any air blockage?} D1 -- No --> D3{Is there any leakage at the coil} D2 -- Yes --> A1[Remove any obstacles and restart the system] D2 -- No --> D4{Is the indoor fan motor working normally?} D3 -- Yes --> A2[Recharge the system to the correct pressure value and restart the system] D3 -- No --> A3[Recharge the system to the correct pressure value and restart the system] D4 -- No --> A4[Repair /replace the indoor fan motor and restart the system] D4 -- Yes --> D5{Is the power supply connection to compressor correct?} D5 -- No --> A5[Connect the power supply correctly and restart the system] D5 -- Yes --> D6{Is the TXV functioning normally?} D6 -- No --> A6[Replace the TXV and restart the system] D6 -- Yes --> D7{Is the crankcase heater off or not functioning?} D7 -- Yes --> A7[Replace /On crankcase heater for some time and restart the system] D7 -- No --> D8{Check the length of piping. Within specs? (long piping)} D8 -- No --> A8[Check for long piping and ensure it is within specs] D8 -- Yes --> End([Replace compressor]) </pre>

(viii) Unit Noisy

Faulty Phenomenon	Unit Noisy
Supposed causes	The possible causes are: • Metal parts touching • Fan motor humming noise
Troubleshooting	<pre> graph TD Start([Unit noisy]) --> D1{Is there any vigorous vibration of parts during unit operation?} D1 -- Yes --> A1[Check the connection of the part. Reduce the vibration by adding damper on the vibrating part] D1 -- No --> D2{Check the mounting of the unit. Is the noise come from mounting?} D2 -- Yes --> A2[Add damper/ insulation on the mounting to reduce the noise] D2 -- No --> D3{Check the fan motor. Any humming noise?} D3 -- Yes --> A3[Fix/replace the fan motor and restart the system] D3 -- No --> D4{Check the grommet. Is it hardened/faulty?} D4 -- Yes --> A4[Fix/ replace the indoor fan motor and restart the system] D4 -- No --> D5{Is there any parts touching during unit operation?} D5 -- Yes --> A5[Fix the problem parts and restart the system] D5 -- No --> End[2.3 Outdoor Noise] </pre>

Appendix: Table 1 Resistance – Temperature Characteristics

Resistance R25=10.0k Ω $\pm$ 1.0%B Value B25/30=3450K $\pm$ 1.0%

T°C	Rmin (k Ω)	Rnom (k Ω)	Rmax (k Ω)	T°C	Rmin (k Ω)	Rnom (k Ω)	Rmax (k Ω)
-10	4.42E+01	4.53E+01	4.65E+01				
-8	4.02E+01	4.12E+01	4.22E+01	42	5.28E+00	5.37E+00	5.45E+00
-6	3.66E+01	3.74E+01	3.83E+01	44	4.92E+00	5.01E+00	5.09E+00
-4	3.33E+01	3.41E+01	3.49E+01	46	4.59E+00	4.67E+00	4.76E+00
-2	3.04E+01	3.11E+01	3.18E+01	48	4.29E+00	4.37E+00	4.42E+00
0	2.78E+01	2.84E+01	2.90E+01	50	4.01E+00	4.09E+00	4.16E+00
2	2.54E+01	2.59E+01	2.65E+01	52	3.75E+00	3.82E+00	3.90E+00
4	2.33E+01	2.37E+01	2.42E+01	54	3.51E+00	3.58E+00	3.65E+00
6	2.14E+01	2.18E+01	2.21E+01	56	3.29E+00	3.36E+00	3.43E+00
8	1.96E+01	2.00E+01	2.03E+01	58	3.08E+00	3.15E+00	3.22E+00
10	1.80E+01	1.83E+01	1.86E+01	60	2.89E+00	2.96E+00	3.01E+00
12	1.66E+01	1.69E+01	1.71E+01	62	2.71E+00	2.78E+00	2.84E+00
14	1.53E+01	1.55E+01	1.57E+01	64	2.55E+00	2.61E+00	2.67E+00
16	1.41E+01	1.43E+01	1.45E+01	66	2.40E+00	2.45E+00	2.51E+00
18	1.30E+01	1.32E+01	1.33E+01	68	2.25E+00	2.31E+00	2.37E+00
20	1.20E+01	1.22E+01	1.23E+01	70	2.12E+00	2.17E+00	2.23E+00
22	1.11E+01	1.12E+01	1.14E+01	72	2.00E+00	2.05E+00	2.10E+00
24	1.03E+01	1.04E+01	1.05E+01	74	1.88E+00	1.93E+00	1.98E+00
26	9.52E+00	9.62E+00	9.72E+00	76	1.77E+00	1.82E+00	1.87E+00
28	8.82E+00	8.92E+00	9.02E+00	78	1.67E+00	1.72E+00	1.77E+00
30	8.17E+00	8.27E+00	8.37E+00	80	1.58E+00	1.62E+00	1.67E+00
32	7.58E+00	7.68E+00	7.78E+00	82	1.49E+00	1.53E+00	1.58E+00
34	7.04E+00	7.14E+00	7.23E+00	84	1.41E+00	1.45E+00	1.49E+00
36	6.54E+00	6.64E+00	6.73E+00	86	1.33E+00	1.37E+00	1.41E+00
38	6.09E+00	6.18E+00	6.27E+00	88	1.26E+00	1.30E+00	1.34E+00
40	5.67E+00	5.75E+00	5.84E+00	90	1.19E+00	1.23E+00	1.27E+00

Appendix: Table 2 Fan Motor Winding Resistance

(i) Indoor Unit

Coil	Model Color	Resistance (Ω)			
		<i>FTYN25LV1B</i>	<i>FTYN35LV1B</i>	<i>FTYN50LV1B</i>	<i>FTYN60LV1B</i>
Main	White-Black	435.0	435.0	297.0	211.0
Aux	Black-Red	336.0	336.0	247.4	246.9

Note:

1. The above resistance is measured at 20°C for reference only. Tolerance is $\pm 15\%$
2. Specification is subjected to change by manufacturer without prior notice.

(ii) Outdoor Unit

Coil	Model Color	Resistance (Ω)			
		<i>RYN25LV1B</i>	<i>RYN25LV1B</i>	<i>RYN50LV1B</i>	<i>RYN60LV1B</i>
Main	Black-Blue	457.0	278.0	169.5	159.0
Aux	Black-Red	307.0	246.0	147.5	165.0

Note:

1. The above resistance is measured at 25°C for reference only. Tolerance is $\pm 10\%$
2. Specification is subjected to change by manufacturer without prior notice.