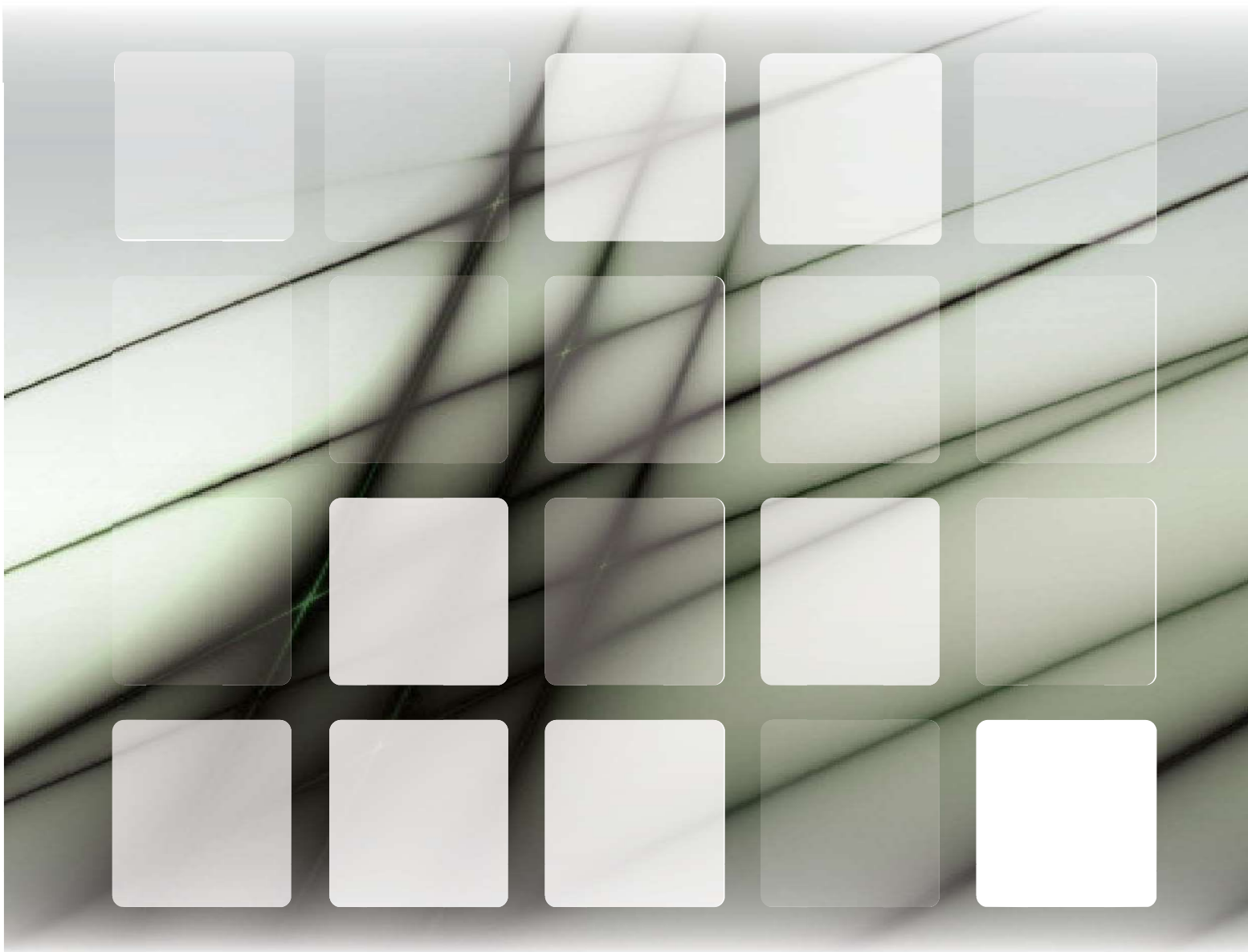


IECS-D Series Round-Flow Ceiling Cassette

Service Manual



11. Trouble shooting

11.1 Fault information and codes

Four-way Cassette:

1. Error code table(Indoor unit display)

IECS018(24)J3A-DWG053(71)

Error code	Error definition	Error display
E0	IDU EPROM fault	Immediate display, spot check
E1	ODU communication fault	Immediate display, spot check
E3	IDU fan stall fault	Immediate display, spot check
E5	ODU temperature sensor or EPROM fault	Immediate display, spot check
E50	ODU temperature sensor fault	Immediate display, spot check
E51	ODU EPROM fault	Immediate display, spot check
E52	Outdoor coil T3 temperature sensor fault	Immediate display, spot check
E53	Outdoor ambient T4 temperature sensor fault	Immediate display, spot check
E54	Outdoor discharge temperature sensor fault	Immediate display, spot check
E55	Outdoor air return temperature sensor fault	Immediate display, spot check
E6	IDU temperature sensor fault	Immediate display, spot check
E60	IDU room temperature T1 sensor fault	Immediate display, spot check
E61	IDU pipe temperature T2 sensor fault	Immediate display, spot check
E7	ODU DC fan stall fault	Immediate display, spot check
E71	Outdoor fan over-current (external driving)	Immediate display, spot check
E72	Outdoor fan stall (external driving)	Immediate display, spot check
E73	Outdoor fan phase loss (external driving)	Immediate display, spot check
E74	Outdoor fan zero speed (external driving)	Immediate display, spot check
EE	Water level alarm error	Immediate display, spot check
P0	ODU IPM protection	Immediate display, spot check
P1	Voltage protection	Immediate display, spot check
P10	Low voltage protection	Immediate display, spot check
P11	High voltage protection	Immediate display, spot check
P12	Outdoor DC-side voltage protection	Immediate display, spot check
P2	Temperature protection for compressor top	Immediate display, spot check
P4	ODU compressor feedback protection	Immediate display, spot check
P40	Main control chip and driver chip communication fault	Immediate display, spot check
P41	Compressor current sampling circuit fault	Immediate display, spot check
P42	Compressor start-up fault	Immediate display, spot check

P43	Compressor phase loss protection	Immediate display, spot check
P44	Compressor zero speed protection	Immediate display, spot check
P45	Outdoor 341 main chip drive synchronization fault	Immediate display, spot check
P46	Compressor stall protection	Immediate display, spot check
P47	Compressor lock protection	Immediate display, spot check
P48	Compressor out-synchronous protection	Immediate display, spot check
P49	Compressor over-current protection	Immediate display, spot check
P6	Compressor high discharge temperature protection	Immediate display, spot check
P8	Outdoor electric control current protection	Immediate display, spot check
P81	ODU current protection	Immediate display, spot check
P82	Input AC current sampling circuit fault	Immediate display, spot check
PA	High temperature protection of condenser	Immediate display, spot check
PF	PFC switch power-off	Immediate display, spot check
P9	Evaporator high and low temperature protection	Code will not be displayed, but can be queried
P90	Evaporator high temperature protection	Code will not be displayed, but can be queried
P91	Evaporator low temperature protection	Code will not be displayed, but can be queried
L0	Evaporator high and low temperature frequency limit	Code will not be displayed, but can be queried
L1	Condenser high temperature frequency limit	Code will not be displayed, but can be queried
L2	Compressor discharge high temperature frequency limit	Code will not be displayed, but can be queried
L3	Current frequency limit	Code will not be displayed, but can be queried
L4	Voltage frequency limit	Code will not be displayed, but can be queried
L6	PFC fault frequency limit	Code will not be displayed, but can be queried

IECS031(36,42,48)J3A-DWG090(105,120,140)

Error code	Error or protection definition	Error display
HF	IDU mismatching error	Immediate display, spot check
H4	L (L0/L1) error occurs three times in one hour, reporting H4, and this error is not recoverable. After H4 error, spot check may be performed on the latest three L errors (not limited to L0, L1). For example: report L0-L4-L8-L9-L0-L1 within one hour, and report H4 error. The errors for spot check are L9, L0, and L1.	Immediate display, spot check
E7	IDU EEPROM error	Immediate display, spot check
E9	ODU EEPROM error	Immediate display, spot check
E.9.	Wrong compressor model in parameter memory EPROM	Immediate display (display E9), spot check available
H0	Communication error between main control board and IR341	Immediate display, spot check
E1	Communication error between IDU and ODU	Immediate display, spot check
E2	T1 sensor error	Immediate display, spot check
E3	T2 sensor error	Immediate display, spot check
E4	T2B sensor error	Immediate display, spot check
E43	T3 sensor error	Immediate display, spot check
E44	T4 sensor error	Immediate display, spot check
E45	T5 sensor error	Immediate display, spot check
E5	Voltage protection error	After continuing 10 minutes Indoor unit displays, spot check available

E6	ODU DC fan error	After continuing 10 minutes Indoor unit displays, spot check available
EE	Water level alarm error	Immediate display, spot check
EH	TL sensor error	Immediate display, spot check
Eb	E6 error occurs six times in one hour, requiring power failure recovery	Immediate display, spot check
EF	PFC feedback resistance failure	After continuing 10 minutes Indoor unit displays, spot check available
PL	Heat sink TF high temperature protection	After continuing 10 minutes Indoor unit displays, spot check available
P1	High pressure protection	After continuing 10 minutes Indoor unit displays, spot check available
P2	Low pressure protection	After continuing 10 minutes Indoor unit displays, spot check available
P3	Input current protection	After continuing 10 minutes Indoor unit displays, spot check available
P4	Discharge temperature protection	After continuing 10 minutes Indoor unit displays, spot check available
P5	Outdoor condenser T3 high temperature protection	After continuing 10 minutes Indoor unit displays, spot check available
PE	Evaporator T2 high temperature protection	After continuing 10 minutes Indoor unit displays, spot check available
L0	Module protection is triggered	After continuing 10 minutes Indoor unit displays, spot check available
L1	DC bus low voltage protection	After continuing 10 minutes Indoor unit displays, spot check available
L2	DC bus high voltage protection	After continuing 10 minutes Indoor unit displays, spot check available
L4	MCE error	After continuing 10 minutes Indoor unit displays, spot check available
L5	Zero speed protection	After continuing 10 minutes Indoor unit displays, spot check available
L7	Phase loss	After continuing 10 minutes Indoor unit displays, spot check available
L8	Protection when the previous and next speed change is > 15Hz	After continuing 10 minutes Indoor unit displays, spot check available
L9	Protection for a difference of > 15Hz between the set speed and operating speed	After continuing 10 minutes Indoor unit displays, spot check available
F1	Detected DC bus voltage (PN voltage) < 200VDC for 5S after power-on	After continuing 10 minutes Indoor unit displays, spot check available
P8	Typhoon protection	After continuing 10 minutes Indoor unit displays, spot check available
EP	Ambient temperature less than or equal to 10°C in cooling mode	After continuing 10 minutes Indoor unit displays, spot check available
Ed	ODU error	/

2. Spot check query function (Press the button on the display board to spot check the system parameters)

IECS018(24)J3A-DWG053(71)

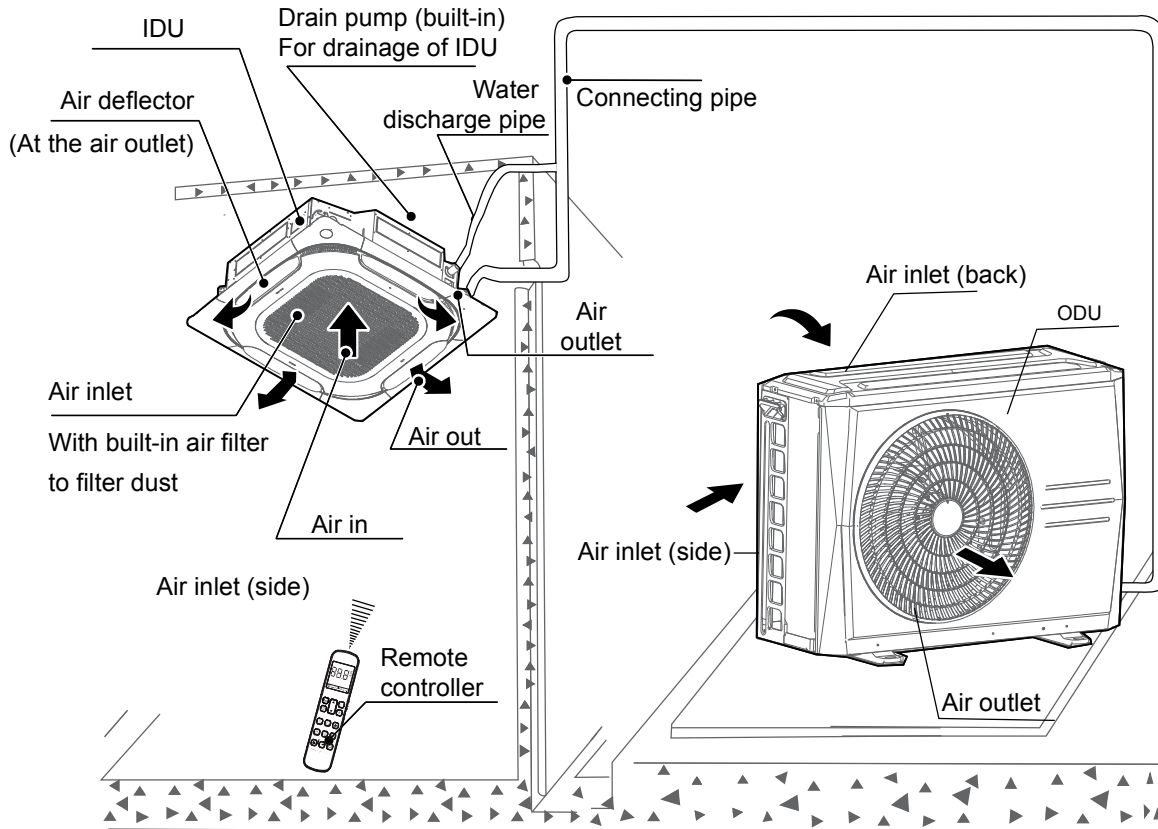
Sequence number	Spot check parameter contents	Remarks
01	Indoor unit T1 temperature	Actual value, temperature accurate to 0.5 °C
02	Indoor unit T2 temperature	Actual value, temperature accurate to 0.5 °C
03	Outdoor unit T3 temperature	Actual value, temperature accurate to 0.5 °C
04	Outdoor unit T4 temperature	Actual value, temperature accurate to 0.5 °C
05	Outdoor unit TP temperature	Actual value, it can display three digits such as 101 °C
06	Outdoor unit IPM temperature	Actual value, temperature accurate to 0.5 °C
07	Current compressor target frequency	Actual value
08	Current compressor operating frequency	Actual value
09	Current operating wind speed of internal fan	Actual value×10
10	Current operating wind speed of external fan	Actual value×10
11	Opening of electronic expansion valve of outdoor unit	No electronic expansion valve, it shows "0"
12	Voltage	Actual value
13	current	Actual value
14	Indoor unit program version number	
15	Indoor unit EEPROM parameter program version number	
16	Machine model	
17	the last fault code	No fault display "--"
18	the last but one fault code	No fault display "--"
19	the last but two fault code	No fault display "--"
20	nd	End

IECS031(36,42,48)J3A-DWG090(105,120,140)

Sequence number	Spot check parameter contents	Remarks
1	Operation mode	(0 - standby; 1 - air supply; 2 - refrigeration; 3 - heating; 4 - forced refrigeration; 6 - dehumidification)
2	Operating wind speed and level	(0-shutdown; 2-low wind; 3-mid wind; 4-high wind)
3	The number of HP of indoor unit's capacity	
4	Total capacity demand of indoor unit	
5	Capability requirements after outdoor unit modification	
6	Ts setting temperature	The actual value
7	T1 indoor temperature	The actual value
8	T2 or T2B temperature	The actual value (Heating display T2, other display T2B)
9	T3 pipe temperature	The actual value
10	T4 environment temperature	The actual value
11	T5 discharge temperature	The actual value
12	TF Module temperature	The actual value
13	TL Temperature of refrigerant radiation pipe	Refrigerant radiation pipe
14	The opening of Electronic expansion valve	The actual value×8
15	Actual current value	

16	Compressor current value	
17	Actual voltage	The actual value
18	DC Bus Voltage	The actual value
19	Machine model	
20	Network address of indoor unit(0—63)	
21	Address of outdoor unit in centralized control system (reserved)	0-7 is valid
22	Indoor unit program version number	
23	Outdoor unit program version number	
24	The last fault or protection code	If not exist, display "E-"
25	Display"—"	
26	Indoor unit SN code reading	

The air conditioner consists of the IDU, ODU, connecting pipe and wired/remote controller.



CAUTION

- Wired controller is standard.
- The air conditioner is delivered from the factory without connecting pipes.
- All the figures in the manual explain only the general appearance and dimensions of the unit. The air conditioner you purchased may not be completely consistent with the appearance and functions listed in the figures. Please refer to the actual product.

IMPORTANT SAFETY INFORMATION.....	1
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1. IMPORTANT SAFETY INFORMATION

To prevent injury or property damage from mis-operations, follow these instructions.

There are two types of safety precautions - please read both carefully.



WARNING

Failure to observe a warning may result in serious injury or death. The appliance must be installed in accordance with national wiring regulations.



CAUTION

Failure to observe a caution may result in injury or damage to the equipment.



WARNING

The appliance should not be used by children without supervision.

Children under 8 or those with a disability that prevents safe use should not use the air conditioner. Other children should be supervised when cleaning or using the unit.

Ask your dealer to install the air conditioner.

If you install the unit incorrectly yourself, you risk water leaks, electric shock, and fires.

Ask your dealer for information about upgrades, repairs, and maintenance.

To avoid electric shocks, fires, and injury, power the unit off and contact your dealer if the unit becomes faulty.

If you perform these tasks yourself, you risk water leaks, electric shock, and fires.

Do not let the indoor unit or remote controller come into contact with water.

Contact with water increases the risks of electric shocks or fires.

Do not press the remote controller buttons with a hard, pointed object.

The remote controller may be damaged.

Never replace a blown fuse with another that has a different current rating.

Using wire or copper wire may cause the unit to break down or cause a fire.

Avoid excessive direct exposure to the air flow.

Never use flammable sprays such as hair spray, lacquers, or paint near the unit because doing so may result in a fire.

It may cause a fire.

Never touch the air outlet or horizontal blades while the swing flap is in use because your fingers may become trapped or you might damage the unit.

Never put any objects into the air inlet or outlet.

Do not touch the fan with any object.

Do not inspect or service the unit yourself.

Ask a qualified service person to perform these tasks.

Do not dispose this product as unsorted waste. It must be separately collected and processed.

Do not dispose of electrical appliances as unsorted waste. They must be separately collected and processed.

Contact your local government for details.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and thus enter the food chain.

For information about refrigerant leaks, contact your dealer.

When the system is installed in a small room, keep the refrigerant below the limit; otherwise, if there's a leak, the oxygen in the room may be affected, causing a serious accident.

The refrigerant in the unit is safe and should not leak.

If it does and comes into contact with fire, a harmful gas will result.

Turn off any combustible heating devices, ventilate the room, and contact the dealer you purchased the unit from.

Do not use the unit until a technician instructs you that it's safe to do so.



CAUTION

The heating function of the indoor unit is available only when the indoor unit connected to the outdoor unit for cooling and heating.

Only use the air conditioner for its prescribed purpose.

Do not use it for cooling precision instruments, food, plants, animals, or art, or you may damage the unit.

Power the unit off before cleaning it to avoid electric shocks.

Otherwise, an electric shock and injury may result.

To avoid electric shocks or fires, install an earth leak detector.

Ensure the unit is grounded.

To avoid electric shocks, ensure the unit is grounded and that the earth wire is not connected to a gas or water pipe, lightning conductor, or telephone earth wire.

To avoid injury, do not remove the fan guard on the outdoor unit.

Do not use the unit if your hands are wet.
Doing so puts you at risk of an electric shock.

Do not touch the heat exchanger fins.
These fins are sharp and you could cut you.

Do not place items which might be damaged by moisture under the indoor unit.
Condensation may form if the humidity is above 80 percent, if the drain outlet is blocked or if the filter is polluted.

Check the unit stand and fitting for damage after the unit has been running for a long time.
If the stand is damaged, the unit may fall and cause an injury.

To avoid oxygen deficiency, ventilate the room sufficiently if equipment with a burner is used at the same time as the air conditioner.

Arrange the drainage hose to ensure smooth drainage.
Incomplete drainage may cause water leaks.

Do not touch the internal parts of the controller.
Do not remove the front panel. Some internal parts may cause injury or be damaged.

Never expose little children, plants or animals directly to the air flow.
Never expose children, plants or animals directly to the air flow.

Do not allow a child to mount on the outdoor unit and don't place objects on it to avoid injury.
Falling or tumbling may result in injury.

Do not run the air conditioner when fumigating a room with insecticide as chemicals could get in the unit, causing respiratory problems for people affected.
Failure to observe could cause the chemicals to become deposited in the unit, which could endanger the health of those who are hypersensitive to chemicals.

Do not place appliances that produce open fire in places in the path of the air flow from the unit or under the indoor unit due to the risk of combustion or warping.
It may cause incomplete combustion or deformation of the unit due to the heat.

To avoid fire, do not install the air conditioner where flammable gas may leak from.
If the gas leaks out and stays around the air conditioner, a fire may break out.

Children and the elderly should not operate the unit.



NOTE

The figures show in this manual are for reference only, and the actual product may be different.

1.1 Electric Safety Requirements

Wiring work must be done by authorized qualified electricians.

All wiring works must comply with electrical safety specifications.

It must be ensured that the air conditioner is well grounded, that is, the main switch of the air conditioner must have a reliable grounding cable.

It must be ensured that the minimum clearance between the electric heater and the flammable surface is ≥ 12 mm.

A separate power supply that meets the rated parameter values must be provided for the air conditioner.

1.2 Electric Performance Requirements

Model	Power Supply			Recommended circuit breaker (A)
	Maximum operating current	Phase	Voltage and frequency	
53	14.5	1-phase	220-240V~50Hz	16
72	19.5	1-phase	220-240V~50Hz	25
90 indoor unit	2	1-phase	220-240V~50Hz	6
90 outdoor unit	22	1-phase	220-240V~50Hz	25
105 indoor unit	2	1-phase	220-240V~50Hz	6
105 outdoor unit	27	1-phase	220-240V~50Hz	32
120 indoor unit	2	1-phase	220-240V~50Hz	6
120 outdoor unit	27	1-phase	220-240V~50Hz	32
140 indoor unit	2	1-phase	220-240V~50Hz	6
140 outdoor unit	32	1-phase	220-240V~50Hz	40
160 indoor unit	2	1-phase	220-240V~50Hz	6
160 outdoor unit	33	1-phase	220-240V~50Hz	40



CAUTION

In no circumstances can the grounding cable for main power switch be disconnected.

Do not use a damaged power cable and replace it if it is damaged.

When the air conditioner is used for the first time or when it is powered off for a long time, it needs to be warmed up for at least 12 hours before use.

2. OPERATING INSTRUCTIONS

2.1 Operation Conditions

To ensure that the product continues to perform well, please operate the air conditioner under the following temperature conditions.

Cooling	Room temperature	Above 17°C
	Outdoor temperature	10°C to 55°C
Heating	Room temperature	Under 30°C
	Outdoor temperature	-15°C to 24°C
Dehumidification	Room temperature	Above 12°C
	Outdoor temperature	10°C to 55°C



CAUTION

If the air conditioner is used outside of the above conditions, the safety protection function may be triggered and the air conditioner may malfunction.

When the relative humidity is high, it is normal for condensation or water blowing to occur on the surface of the air conditioner. Please close doors and windows.

In the cooling mode, when the outdoor temperature is high, the cooling effect will decrease.

2.2 Operating Method of Remote Controller



NOTE

Read this manual carefully before using this unit and strictly follow the instructions; otherwise, you may damage the unit or endanger your own or other people's property.

■ Air Direction Adjusting

As cold air sinks and hot air rises, adjust the direction of louver respectively in cooling and heating modes to ensure good cooling and heating effect.



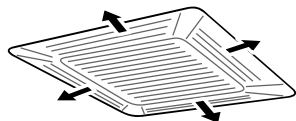
CAUTION

Heating in horizontal outlet state will cause the room temperature difference to increase.

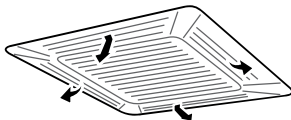
During cooling, the horizontal outlet state is selected for the guide louver.

Cooling in the downward outlet state will cause the air outlet and guide louver surface to condensate.

- In cooling mode, adjust the guide louver to be horizontal outlet.



- In heating mode, adjust the guide louver to be downward outlet.



- If you press Swing when a panel with auto-swing guide louver is used, the louver at the air outlet automatically swings, bringing better cooling and heating effect.

2.4 Best Operation

- Pay attention to the following to ensure the system achieves optimal operation. Refer to the corresponding instructions for details.

- Adjust the direction of the airflow appropriately to avoid creating direct airflow to people in the room. In the cooling mode, in order to cool the entire room, adjust the air guide to a horizontal position; in the heating mode, in order to heat the lower part of the room, adjust the air guide to a downward position.
- Set the temperature appropriately to create a comfortable environment. Do not set the temperature too high or too low.
- In cooling mode, curtains or blinds should be used to prevent direct sunlight from entering the room.
- Close the windows. If the doors and windows are opened, indoor and outdoor air will be circulated, which will lower the cooling or heating effect.
- Use the Timer button on the remote controller to set the scheduled running time.
- Do not block the airflow at the air inlet or the air outlet, as this will reduce the efficiency of the air conditioner and even stop the system.

2.5 Re-installation



CAUTION

The installation of the air conditioner must comply with the requirements of the Installation Manual.

When the air conditioner is to be installed in or moved to another place, it must be correctly installed by the professional installation technicians according to the Installation Manual and users cannot install the unit by themselves.

Improper installation of the air conditioner may cause an electric shock or fire.

■ Important Information for User

- The user must provide a qualified power source that is consistent with the nameplate of the air conditioner and the voltage must be within 90% to 110% of the rated voltage.
- The power cable must be equipped with a protective device such as a leakage protector or an air switch and its capacity must be greater than 1.5 times the maximum current of the air conditioner.
- Use the dedicated line and the effective grounding socket that matches the standard plug of the air conditioner. The plug of this unit provides a grounding plug, which must not be changed.
- Use the fuse or circuit breaker specified in the Installation Manual.
- Wiring must be completed by qualified electricians and must meet electrical safety requirements.
- It must be ensured that the air conditioner is well grounded, that is, the main switch of the air conditioner must have a reliable grounding cable.
- The power cable must be replaced by professional technicians authorized by the Clivet Air Conditioning Customer Service Center or authorized service center.

■ Installation Site

Do not install the air conditioner in the following places.

- Do not install the air conditioner in the following places.
- Do not install the air conditioner 1m away from the TV, stereo player or radio. The noise emitted from the air conditioner will affect the operation of these appliances.
- Do not install the air conditioner near high-frequency machines (such as commercial sewing machines or massage machines). Otherwise, the air conditioner will fail. Do not install the air conditioner in places with steam, smoke or corrosive gases.
- Do not install the air conditioner in salty areas, such as the seaside.
- Do not install the air conditioner in places where oil is used in large quantities.

- Do not install the air conditioner in places with strong winds, such as seaside, roof or high-rise buildings.
- Do not install the air conditioner in places exposed to sulphur gases as hot springs.
- Do not install the air conditioner on a ship or mobile crane.



CAUTION

Install the unit securely; otherwise it will cause abnormal noises and vibration due to poor installation. If necessary, take measures to reinforce the unit's stability.

Install the unit at a place where the running noise and the exhaust air do not affect neighbours.

If the air conditioner makes abnormal sounds during operation, contact your local distributor.

If you are moving or wish to move the air conditioner, contact your local distributor.

2.6 Confirmation Before Operation

Check whether the grounding cable is broken and disconnected. Turn on the power switch 12 hours before operation.

2.7 Faults Due to Causes Other Than Air Conditioning

■ Common protection of the air conditioner

Check the following items before asking a professional to provide maintenance or repair.

1. 3-minute protection

The ODU cannot operate for about 3 minutes after the ODU is turned off and on again immediately when the power switch is turned on, because the compressor cannot start within 3 minutes after shutdown. This is the self-protection function of the machine.

2. Anti-cold breeze protection

The following situations may occur in heating mode (including heating in automatic mode) to prevent the blowing of cold air: the indoor heat exchanger does not reach a certain temperature, the indoor fan temporarily stops running, or runs in Breeze mode. When the indoor fan stops running, the anti-cold/air supply indicator is on.

- The heating operation has just started.
- The unit runs in defrosting mode.
- The unit runs in heating mode when the outdoor ambient temperature is very low.

3. When the protection device works, the operation stops, as follows:

- When the starting conditions are not met and the unit is started forcibly, the indicator is on.
- The unit runs in the cooling mode.
The air inlet or outlet of the ODU is blocked; strong winds blow to the air outlet of the ODU.
- The unit runs in the heating mode.
The air inlet or outlet of the IDU is blocked.

4. Defrosting

When the outdoor temperature is low and the humidity is high, the IDU's heat exchanger may be frosted, which may reduce the heating capacity of the air conditioner. In this case, the air conditioner will stop heating, enter automatic defrosting mode, and return to heating mode after defrosting has been completed.

- During the defrosting, the outdoor fan stops running and the indoor fan runs based on the anti-cold breeze protection function.
- The defrosting operation time varies depending on the outdoor temperature and the degree of frosting. It generally takes 2 to 10 minutes.
- During the defrosting process, the ODU may emit steam due to the rapid defrosting, which is a normal phenomenon.



CAUTION

In the Fan mode, the operating indicator is on, while the anti-cold/air supply indicator is off.

■ Non-air conditioner faults

Check the following items before asking a professional to provide maintenance or repair.

1. The IDU emits white mist

- In an environment where the indoor relative humidity is too high, when the IDU runs in the cooling mode, white mist may appear due to the humidity and the temperature difference between the air inlet and outlet.
- When the air conditioner is switched to heating mode after the defrosting operation, the IDU discharges the moisture generated defrosting as steam.

2. The IDU blows dust

When the air conditioner has not been used for a long time or is used for the first time, dust that has entered the IDU is blown out.

3. The IDU emits odour

The IDU absorbs the odours of rooms, furniture or cigarettes and others, and disperses the odours during operation.

4. When the indoor relative humidity is high, it is normal for condensation or slight water blowing to occur on the surface of the air conditioner.

5. The air conditioner makes small noise.

- When the air conditioner runs in the Auto, Cool, Dry, or Heat mode, the unit can create a small and continuous hissing sound, which is caused by the flow of refrigerant between the indoor unit and the outdoor unit.
- A hissing sound may be heard in a short time after the unit stops operation or during the defrosting operation. The sound is caused when the refrigerant stops flowing or the flow is changed.
- When the air conditioner is in Cool mode (including the Cool mode in automatic mode) or Dry mode, a small and continuous rustling sound can be heard, which is caused by the running of the drain pump.
- When the air conditioner has just started running or stopped running, you may hear a squeaky sound, which is caused due to the natural expansion or contraction when the temperature of the plastic parts changes.

6. The unit is switched from Cool/Heat (unavailable on a cooling-only unit) mode to the Fan mode. When the IDU reaches the set temperature, the air conditioner controller automatically stops the compressor operation and switches to the Fan mode only. When the room temperature rises (in Cool mode) or falls (in Heat mode) to a certain extent, the compressor is restarted, the cooling or heating operation is resumed.

7. In Winter when the outdoor temperature is very low, the heating effect may be affected. During the heating operation of the cooling and heating type air conditioner, the air conditioner absorbs heat from the outdoor air and releases it to heat the indoor air. This is the heat pump heating principle of the air conditioner. When the heat pump activates, the ODU blows out cold air and the outdoor temperature drops. When the outdoor temperature is low, the heating capacity is affected. It is recommended to use other heating devices to enhance the heating effect.



NOTE

For air conditioners with electric heaters, the electric heater is secured between the wind turbine and the heat exchanger of the IDUs using screws. The user is prohibited from disassembling and repairing the part. Otherwise, a fire or other dangers may occur.

■ Fault information and codes

If one of the following circumstances takes place, shut down the air conditioner immediately, cut off the power, and contact the local customer service center of Clivet.

53/71	
Error code	Error or protection definition
E0	IDU EEPROM error
E1	Indoor-outdoor communication fault
E3	Indoor fan stall fault
E5	ODU temperature sensor or EPROM fault
E50	ODU temperature sensor fault
E51	ODU EPROM fault
E52	T3 sensor error
E53	T4 sensor error
E54	TP sensor error
E55	Air return temperature sensor error
E6	IDU temperature sensor fault
E60	IDU room temperature T1 sensor error
E61	IDU pipe temperature T2 sensor error
E7	ODU DC fan stall fault
E71	Outdoor fan over-current (external driving)
E72	Outdoor fan stall (external driving)
E73	Outdoor fan phase loss (external driving)
E74	Outdoor fan zero speed (external driving)
EE	Water level alarm error
PA	High temperature protection of condenser
PF	PFC module switch power-off
P0	ODU IPM module protection
P1	Voltage protection
P10	Low voltage protection
P11	High voltage protection
P12	Outdoor DC-side voltage protection
P2	Temperature protection for compressor top
P4	ODU compressor feedback protection
P40	Main control chip and driver chip communication fault
P41	Compressor current sampling circuit fault
P42	Compressor start-up fault
P43	Compressor phase loss protection
P44	Compressor zero speed protection
P45	ODU electric control power down protection
P46	Compressor stall protection
P47	Compressor lock protection
P48	Compressor out-synchronous protection
P49	Compressor over-current protection
P6	Compressor high discharge temperature protection
P8	Outdoor electric control current protection
P81	ODU current protection
P82	Input AC current sampling circuit fault
P9	Evaporator high or low temperature protection
P90	Evaporator high temperature protection
P91	Evaporator low temperature protection
L0	Evaporator high and low temperature frequency limit
L1	Condenser high temperature frequency limit
L2	Compressor high discharge temperature frequency limit
L3	Current frequency limit
L5	Voltage frequency limit
L6	PFC module fault frequency limit

90/105/120/140/160	
Error code	Error or protection definition
HF	IDU mismatching error
H4	L (L0/L1) error occurs three times in one hour, reporting H4, and this error is not recoverable. After H4 error, spot check may be performed on the latest three L errors (not limited to L0, L1). For example: report L0-L4-L8-L9-L0-L1 within one hour, and report H4 error. The errors for spot check are L9, L0, and L1.
E7	IDU EEPROM error
E9	ODU EEPROM error
E.9.	Wrong compressor model in EPROM
H0	Communication error between main control board and IR341
E1	Communication error between IDU and ODU
E2	T1 sensor error
E3	T2 sensor error
E4	T2B sensor error
E43	T3 sensor error
E44	T4 sensor error
E45	T5 sensor error
E5	Voltage protection error
E6	ODU DC fan error
EE	Water level alarm error
EH	TL sensor error
Eb	E6 error occurs six times in one hour, requiring power failure recovery
EF	PFC feedback resistance failure
PL	Heat sink TF high temperature protection
P1	High pressure protection
P2	Low pressure protection
P3	Input current protection
P4	Discharge temperature protection
P5	Outdoor condenser T3 high temperature protection
PE	Evaporator T2 high temperature protection
L0	Module protection is triggered
L1	DC bus low voltage protection
L2	DC bus high voltage protection
L4	MCE error
L5	Zero speed protection
L7	Phase loss
L8	Protection when the previous and next speed change is > 15Hz
L9	Protection for a difference of > 15Hz between the set speed and operating speed
F1	Detected DC bus voltage (PN voltage) < 200 VDC for 5S after power-on
P8	Typhoon protection
EP	Ambient temperature less than or equal to 10°C in cooling mode
Ed	ODU error

2.9 Fault and Troubleshooting

Fault	Cause	Solution
Starting failure	Power failure	Wait for the power supply to be restored.
	Power switch is off	Turn on the power
	The fuse of the power switch is blown.	Replace the burnt fuse.
	The time set for the timed power-on has not arrived.	Replace the batteries.
There is air blowing, but the cooling effect is poor.	The batteries of the remote controller are exhausted.	Wait or cancel the setting.
	The temperature setting is inappropriate.	Set the temperature properly. Increase or decrease the temperature. Read Operating Methods for details.
	The air inlet or outlet of the IDU or ODU is blocked	Remove the obstacles.
There is air blowing, but the unit cannot supply cold air.	Doors and windows are open.	Close the doors and windows.
	The air inlet or outlet of the IDU or ODU is blocked.	Remove the obstacles and perform the operation again.
	Compressor 3-minute protection	Wait.
	The temperature setting is inappropriate.	Set the temperature properly.

If the problem remains, please contact the distributor or Clivet's air conditioner customer service center, and provide info about the product model and the fault details.



CAUTION

Do not replace the power cable by yourself to avoid danger.
Do not repair the air conditioner by yourself.

2.10 Remote Controller Faults and Causes

No.	Symptoms	Check item	Cause
1	The fan speed cannot be adjusted.	Check whether the mode on the display is Auto.	When Auto is selected, the IDU will automatically select Auto as the fan speed.
		Check whether the mode on the display is Dry.	When Dry is selected, the IDU will automatically select Auto as the fan speed. The fan speed can only be selected in the Cool, Heat, and Fan modes.
2	No remote controller signal is sent when is pressed.	The batteries of the remote controller are exhausted.	The remote controller cannot send signals when the batteries are exhausted.
3	The temperature indicator is off.	Check whether the mode on the display is Fan.	In the Fan mode, the temperature cannot be set.
4	Timed Off disappears after a while.	Check whether the time set on the timer has been reached.	After the set time has arrived, the air conditioner stops.
5	Timed On disappears after a while.	Check whether the time set on the timer has been reached.	When the time to start the operation of the air conditioner has arrived, the air conditioner will automatically start running and the corresponding display will disappear.
6	The air conditioner makes no receiving sound when is pressed.	Check when is pressed, whether the signal transmitter of the remote controller is pointed to the receiver of the IDU. Check whether the air conditioner's power switch is on.	Point the signal transmitter of the remote controller towards the receiver of the IDU and press . The controller signal cannot be received since the air conditioner is off.
7	The remote controller does not respond to button pressing.	Check the display of the remote controller	Button is locked.

2.11 Specifications

Model	Indoor unit Outdoor unit	IECS018 ICH018	IECS024 ICH024	IECS031 ICH031	IECS036 ICH036
Power supply		220-240V~50Hz	220-240V~50Hz	220-240V~50Hz	220-240V~50Hz
Cooling	Cooling capacity	W	5300	7200	9000
	Rated current	A	7.2	10	13.1
	Rated power	W	1600	2240	3000
Heating	Heating capacity	W	6000	8200	9900
	Rated current	A	7.8	12.3	13.5
	Rated power	W	1740	2740	3000
IDU	Circulating air flow	M ³ /h	900	1000	1200
	Noise	dB (A)	44/33/32	41/34/32	47/40/38
	Net weight	kg	22.5	22.8	23.3
	External dimensions (WidthXHeightXDepth)	mm	840X840X230	840X840X230	840X840X230
ODU	Noise	dB (A)	54	55	58
	Net weight	kg	33.5	47	51
	External dimensions (WidthXHeightXDepth)	mm	795x555x287	910x712x345	910x712x345
Max. input current		A	14.5	19.5	21.5
Max. power input		W	3100	4200	4600
Permitted pressure of cooling system		MPa	4.4	4.4	4.4
Refrigerant			R410A/1450g	R410A/1600g	R410A/2000g
Refrigerant pipe	Gas side	mm	Φ12.7	Φ15.9	Φ15.9
	Liquid side	mm	Φ6.4	Φ6.4	Φ9.5

Model	Indoor unit Outdoor unit	IECS041 ICH041	IECS048 ICH048	IECS060 ICH060
Power supply		220-240V~50Hz	220-240V~50Hz	220-240V~50Hz
Cooling	Cooling capacity	W	12000	14000
	Rated current	A	21.5	26.6
	Rated power	W	4850	6000
Heating	Heating capacity	W	13200	15400
	Rated current	A	20	21.3
	Rated power	W	4500	4800
IDU	Circulating air flow	M ³ /h	1600	1720
	Noise	dB (A)	47/40/38	51/42/40
	Net weight	kg	28.7	30.8
	External dimensions (WidthXHeightXDepth)	mm	840X840X300	840X840X300
ODU	Noise	dB (A)	59	59
	Net weight	kg	68	78.5
	External dimensions (WidthXHeightXDepth)	mm	950x840x360	950x840x360
Max. input current		A	27	32
Max. power input		W	5760	6830
Permitted pressure of cooling system		MPa	4.4	4.4
Refrigerant			R410A/3000g	R410A/3200g
Refrigerant pipe	Gas side	mm	Φ15.9	Φ15.9
	Liquid side	mm	Φ9.5	Φ9.5

3. CLEANING AND MAINTENANCE

3.1 Cleanness



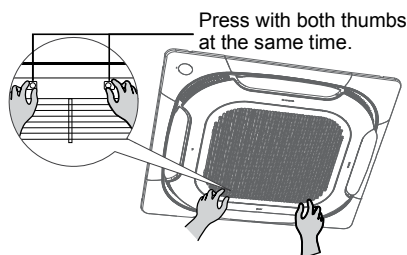
WARNING

For safety reasons, always turn off the air conditioner and turn off the power before cleaning the air conditioner.
For air conditioners with auxiliary heaters, the auxiliary heater is secured between the wind turbine and the heat exchanger of the IDUs using screws and the minimum gap with the flammable surface is 12 mm. The user is prohibited from disassembling and repairing the part. Otherwise, a fire or other dangers may occur.

■ Methods of cleaning the air filter

1. Open the air inlet grille.

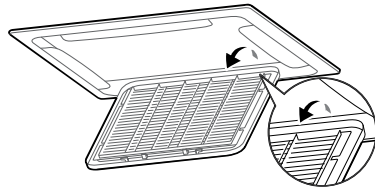
For a four-way cassette unit, press the two grille locks with both hands at the same time, and pull out the air inlet grille downwards.



CAUTION

Disconnect the control box lead and electrical wire connector of the master unit.

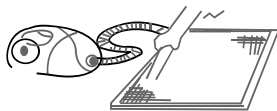
2. Remove the air inlet grille (with air filter, see the figure below), open the grille downwards to about 45°, and raise it upwards to remove it.



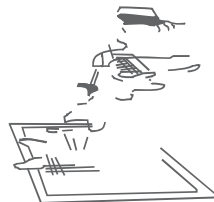
3. Clean the air filter.

Use a dust collector or water to clean the air filter.

- Clean with a dust collector with the air inlet surface upward.



- Clean with water with the air inlet surface downward.



- When the filter is too dusty, clean it with a soft brush and neutral detergent, and dry it in a cool, shady place.

4. Put the air filter back.

5. Perform the above mentioned steps 1 and 2 in reverse order to install and close the air inlet grille, and connect the control box lead to the corresponding electrical wire connector of the master unit.



CAUTION

The air filter can filter dust and other particles in the air. A blocked air filter can result in reduced performance of the air conditioner. When the air conditioner is used often, remember to clean the air filter regularly.

If the IDU is installed in dusty places, increase the frequency of cleaning the air filter screen.

If the air filter is severely stained and difficult to wash, replace it (optional accessory).

■ Method of cleaning the air outlet and panel

- Wipe the air outlet and panel with a dry cloth.
- If a stain is hard to remove, clean it with clean water or neutral detergent.



CAUTION

Do not use gasoline, benzene, volatile agents, decontamination powder and liquid insecticides. Otherwise, the air outlet or panel may de-color or deform.

Do not expose the inside of the IDU to moisture, as it may result in electric shock or fire.

When cleaning the air guide with water, do not scrub it violently.

If the air conditioner is used without the air filter screen, dust will be deposited in the air conditioner because it is not separated from the indoor air, which will cause faults.

■ ODU

Some metal edges and condenser fins are sharp and incorrect handling can cause injury. Therefore, be careful when cleaning these parts.

- Check the air outlets and air inlets of the ODU regularly to see if they are blocked by dirt or fumes.

■ Maintenance



CAUTION

Check the air inlet and outlet of the ODU and IDU after long periods of use to see if they are blocked; if an inlet/outlet is blocked, clean it immediately.

Complete the following steps before the air conditioner is set aside for a long time.

- Select the "Fan" mode to allow the IDU to run for a period of time and dry it.
- Turn off the power supply and the circuit breaker, and take out the battery in the remote controller.
- The internal components of the ODU should be inspected and cleaned regularly. Please contact Clivet local air conditioner customer service center or a designated technical service center.



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