



Owner's Manual

Original Instructions

24 Volt Adaptor

Model: ME34-44/G

Thank you for choosing our product.

Please read this Owner's Manual carefully before operation and retain it for future reference.

If you have lost the Owner's Manual, please contact the local agent or visit www.gree.com or send an email to global@cn.gree.com for the electronic version.

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI



To Users

Thank you for selecting Gree's product. Please read this instruction manual carefully before installing and using the product, so as to master and correctly use the product. In order to guide you to correctly install and use our product and achieve expected operating effect, we hereby instruct as below:

- (1) This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- (2) This instruction manual is a universal manual; some functions are only applicable to particular product. All the illustrations and information in the instruction manual are only for reference, and control interface should be subject to actual operation.
- (3) In order to make the product better, we will continuously conduct improvement and innovation. We have the right to make necessary revision to the product from time to time due to the reason of sales or production, and reserve the right to revise the contents without further notice.

- (4) For personal injury or property loss and damage caused by improper operation such as improper installation and debugging, unnecessary maintenance, violation of related national laws and rules and industrial standard, and violation of this instruction manual, etc., we will bear no liability.
- (5) The 24 Volt Adaptor is the universal component. When indoor unit has connected with the 24 Volt Adaptor , display status of indoor unit is decided by the indoor unit. Valid status and invalid status are all belong to normal status.
- (6) The 24 Volt Adaptor is a general model, applicable for several kinds of units. Some functions of the 24 Volt Adaptor are not available for certain kinds of units, more details please refer to the owner's manual of unit. The setting of such unavailable function will not affect unit's operation.
- (7) The final right to interpret for this instruction manual belongs to Gree Electric Appliances Inc. of Zhuhai.

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1 Safety Notices (Please be sure to abide)



WARNING: If these safety notices are not abided strictly, it may cause severe damage to the unit or the people.



NOTE: If these safety notices are not abided strictly, it may cause slight or medium damage to the unit or the people.



This sign indicates that the items operation must be prohibited. Improper operation may cause severe damage or death to people.



This sign indicates that the items must be observed. Improper operation may cause damage to people or property.



WARNING!

This product can't be installed at corrosive, inflammable or explosive environment or the place with special requirements, such as kitchen. Otherwise, it will affect the normal operation or shorten the service life of the unit, or even cause fire hazard or serious injury. As for the above special places, please adopt special air conditioners with anti-corrosive or anti-explosion function.

2 Notices for Use

 **NOTICE!**

- (1) This device use 24VAC for power supply. Do not connect other power to this device. Otherwise, it may cause fire hazard or damage to the unit.
- (2) Before touching the electric components, please be sure the appliance is disconnected to power.
- (3) Never install the appliance in a damp place or allow it to be exposed to direct sunlight.
- (4) Never install the appliance near heat source or a place that may easily get splashes of water.
- (5) Please install the appliance in a place without electromagnetic interference or dusty particles.
- (6) Make sure that the communication wires are connected to the correct ports, otherwise communication failure will occur and may damage the appliance.
- (7) Once wires are connected, use insulative tape to protect the wires from oxidation and short circuit.
- (8) Working conditions for the appliance:
 - ① Temperature: -20~+60°C;
 - ② Relative humidity: ≤85%;
 - ③ Install it indoors and avoid direct sunlight, rain and snow.
- (9) Thermostat should be configured for use with a conventional system.
- (10) Functions with “*” are optional for indoor units. If a function is not included in an indoor unit, the adaptor can't set the function, or setting of this function is invalid to the indoor unit.

3 Functions Overview

24 volt adaptor is applicable for Gree split-type unit, cassette unit, duct-type unit, floor ceiling unit and so on.

Transfer the control signal of 24VAC HVAC Thermostat (such as nest) into the control signal of Gree split-type unit, cassette unit, duct-type unit, floor ceiling unit and so on to make the third party 24VAC HVAC Thermostat can control Gree split-type unit, cassette unit, duct-type unit, floor ceiling unit and so on. The device type should be set as “24 Volt Adaptor”. As for different type of 24VAC HVAC Thermostat, the output 24VAC signal is different. Please set different interface type for 24 volt adaptor according to the output signal type of your purchased 24VAC HVAC Thermostat.

NOTE!

- ① The signal of 24VAC HVAC Thermostat is the control command for controlling compressor, 4-way valve, indoor fan and other loads (set “00” for P01). And the type of 4-way valve (P02) also needs to be set. Refer to “parameter setting” for details.
- ② The signal of 24VAC HVAC Thermostat is the control command for setting cooling, heating, fan and other operation modes (set “01” for P01).

Please refer to the section of parameter setting for detailed setting operation.
Appearance of 24 volt adaptor is shown as below:



Fig. 3.1 Appearance of 24 volt adaptor

4 Detail Introduction

4.1 Interface Function Instruction

Schematic diagram of interface of main board and interface function instruction are shown as below:

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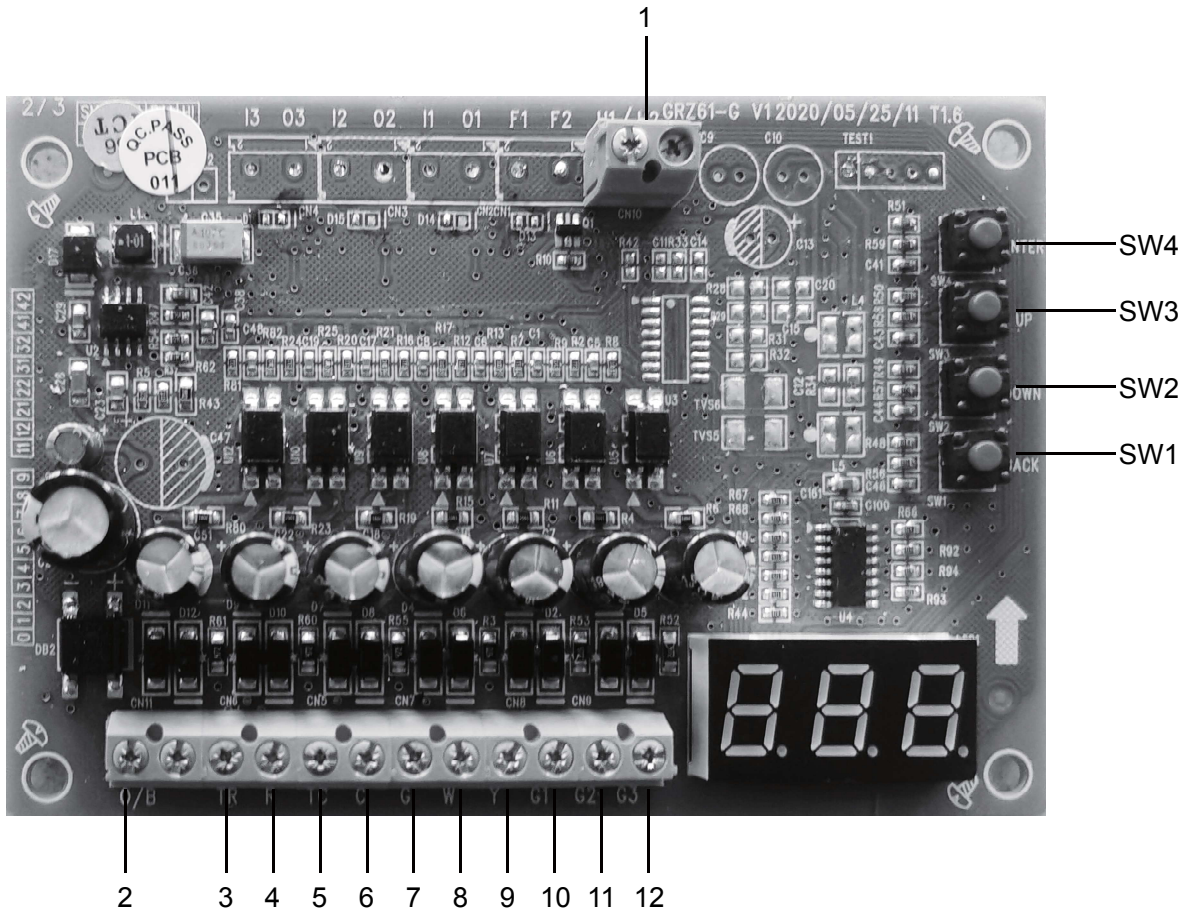


Fig.4.1 Schematic diagram of interface's function

Table 4.1.1 Function instruction of interface of main board

No.	Interface	Instruction
1	H1, H2	RS485 communication interface, connecting the indoor unit
2	O/B	4-way valve for heat pumps
3	TR	Supply power for adaptor (24VAC)

No.	Interface	Instruction
4	R	Supply power for thermostat (24VAC)
5	TC	Supply power for adapter (Common)
6	C	Supply power for thermostat (Common)
7	G	Fan/ indoor fan
8	W	Heating/E-heater
9	Y	Cooling/compressor
10	G1	Low fan speed
11	G2	Medium fan speed
12	G3	High fan speed

4.2 Button Instruction

Function instruction for buttons are shown as below:

Table 4.2.1 Function instruction for buttons

No.	Buttons name	Button function
SW1	BACK	Return after parameter setting
SW2	DOWN	Decrease parameter setting
SW3	UP	Increase parameter setting
SW4	ENTER	Enter into project parameter setting and confirm parameter setting value

4.3 Display Instruction

3-bit nixie tube displays error code and engineering parameter setting.

Table 4.3.1 Display of 3-bit nixie tube

Display content	Meaning
Error code	When there's malfunction for the unit, please contact the after-sales service person. Please refer to the section of "error code" for the detailed error content.

4.4 Function Instruction

4.4.1 Mode Setting

- (1) When setting the signal of 24VAC as the control command of compressor, 4-way valve, indoor fan and other loads (set "00" for P01), the interface meaning is as below:

Table 4.4.1 Interface meaning of 24 Volt Adaptor (load control)

Interface	Meaning
O/B	4-way valve for heat pumps
G	Indoor fan
W	E-heater
Y	Compressor
G1	Low fan speed
G2	Medium fan speed
G3	High fan speed

When setting O/B interface as the interface of 4-way valve for cooling, the corresponding operation modes for the input signals of different interfaces on the main board is:

Table 4.4.2 Corresponding operation mode for each input signal (set “01” for P02)

Note: “G” in the below table represents G/G1/G2/G3 signal of thermostat.

Y	G	O	W	Mode
*	x	*	*	OFF
x	√	*	x	Fan
√	√	x	x	Heating
x	√	*	√	Heating and E-heater
x	x	√	√	OFF
√	√	√	x	Cooling
√	√	x	√	Heating and E-heater
√	√	√	√	OFF

When setting O/B interface as the interface of 4-way valve for heating, the corresponding operation modes for the input signals of different interfaces on the main board is:

Table 4.4.3 Corresponding operation mode for each input signal (set “00” for P02)

Note: “G” in the below table represents G/G1/G2/G3 signal of thermostat.

Y	G	B	W	Mode
*	x	*	*	OFF
x	√	*	x	Fan
√	√	x	x	Cooling
x	√	*	√	Heating and E-heater

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Y	G	B	W	Mode
×	×	√	√	OFF
√	√	√	×	Heating
√	√	×	√	OFF
√	√	√	√	Heating and E-heater

- (2) When setting 24VAC signal as the control command for cooling, heating, fan and other operation modes (set “01” for P01), the interface meaning is as below:

Table 4.4.4 Interface meaning of 24 Volt Adaptor (mode control)

Interface	Meaning
G	Fan
W	Heating
Y	Cooling
G1	Low fan speed
G2	Medium fan speed
G3	High fan speed

The corresponding operation modes for the input signals of different interfaces on the main board are:

Table 4.4.5 Corresponding operation mode for each input signal (mode control)

Y	W	G	G1	G2	G3	Mode
√	×	*	*	*	*	Cooling

Y	W	G	G1	G2	G3	Mode
x	√	*	*	*	*	Heating
x	x	√	*	*	*	Fan
x	x	*	√	*	*	Fan
x	x	*	*	√	*	Fan
x	x	*	*	*	√	Fan
√	√	*	*	*	*	OFF
x	x	x	x	x	x	OFF

**NOTES!**

- ① “√” indicates ON; “x” indicates OFF; “*” indicates ON or OFF.
- ② When mode is Heating and E-heater: If the unit supports auxiliary heating, when it meets the activation condition of auxiliary heating under heating mode, the auxiliary heating mode will be turned on.
- ③ When G1, G2 and G3 are all OFF, the defaulted fan speed is auto fan speed (change the fan speed by referring to the parameter setting P03 Refer to “parameter setting” for details); When any one interface of G1, G2 and G3 is ON, the fan speed is decided by the signal of G1, G2 and G3. See the table as below:

Table 4.4.6 Control of fan speed

G	G1	G2	G3	Mode
*	*	*	√	High fan speed
*	*	√	x	Medium fan speed
*	√	x	x	Low fan speed

4.4.2 Temperature Setting

- (1) When the unit is operating under cooling mode, the adaptor is fixed to send the set temperature of 16°C to the indoor unit;
- (2) When the unit is operating under heating mode, the adaptor is fixed to send the set temperature of 30°C to the indoor unit;
- (3) When the unit is operating under fan mode, the adaptor is fixed to send the set temperature of 26°C to the indoor unit.

4.4.3 Parameter Setting

- (1) Press “ENTER” button to enter into parameter setting page. The nixie tube displays “P00”.
- (2) Press “UP” or “DOWN” button can select parameter code. Press “ENTER” button to switch to parameter value setting and the nixie tube flashes to display the parameter value. Press “UP” or “DOWN” button can adjust the parameter value and then press “ENTER” to complete the setting and return to previous level.
- (3) Press “BACK” button to return to previous level.



After entering the parameter setting state, there will be no operation in 20s, and the parameter setting state will be exited.

Unit parameters setting list is shown as below:

Table 4.4.7 Unit parameters setting list

Parameter code	Parameter name	Parameter range	Default value	Remark
P00	Error code check	The last 5 error codes occurred	--	Check historic error. When nixie tube displays "P00", press "ENTER (SW4)" button to enter historic error check; press "UP (SW3)" or "DOWN (SW2)" to switch to display 5 historic errors.
P01	Device type setting	00: 24 Volt Adaptor(load control) 01: 24 Volt Adaptor(mode control)	00	When set to "00", "01", as an adapter for the 24V thermostat, it needs to be connected to a third-party thermostat.
P02	Energization method of 4-way valve	00: 4-way valve of heating is energized 01: 4-way valve of cooling is energized	00	"O" is applicable for the unit which operates under the cooling mode and its 4-way valve is energized; "B" is applicable for the unit which operates under the heating mode and its 4-way valve is energized;
P03	Fan speed setting	00: auto 01: low 02: medium 03: high 04: turbo	00	When P03 is set at "00", the fan speed when the indoor unit is started is subject to the signal of temperature controller; when P03 is set at other parameter (not "00"), P03 shall prevail and it can be set as low, medium, high, and turbo fan speed. Air supply mode should not be set as turbo. Air supply mode cancels turbo.

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Parameter code	Parameter name	Parameter range	Default value	Remark
P04	Delay OFF time setting	00: 0min 01: 5 min 02: 10 min 03: 30 min	00	When the third party thermostat has reached to the temperature point (Y and W signal are all OFF), the adaptor will continue to operate for a period of time for ensuring the operation effect. The delay OFF time can be set through P04 setting.

5 Product Installation

5.1 Product Dimension

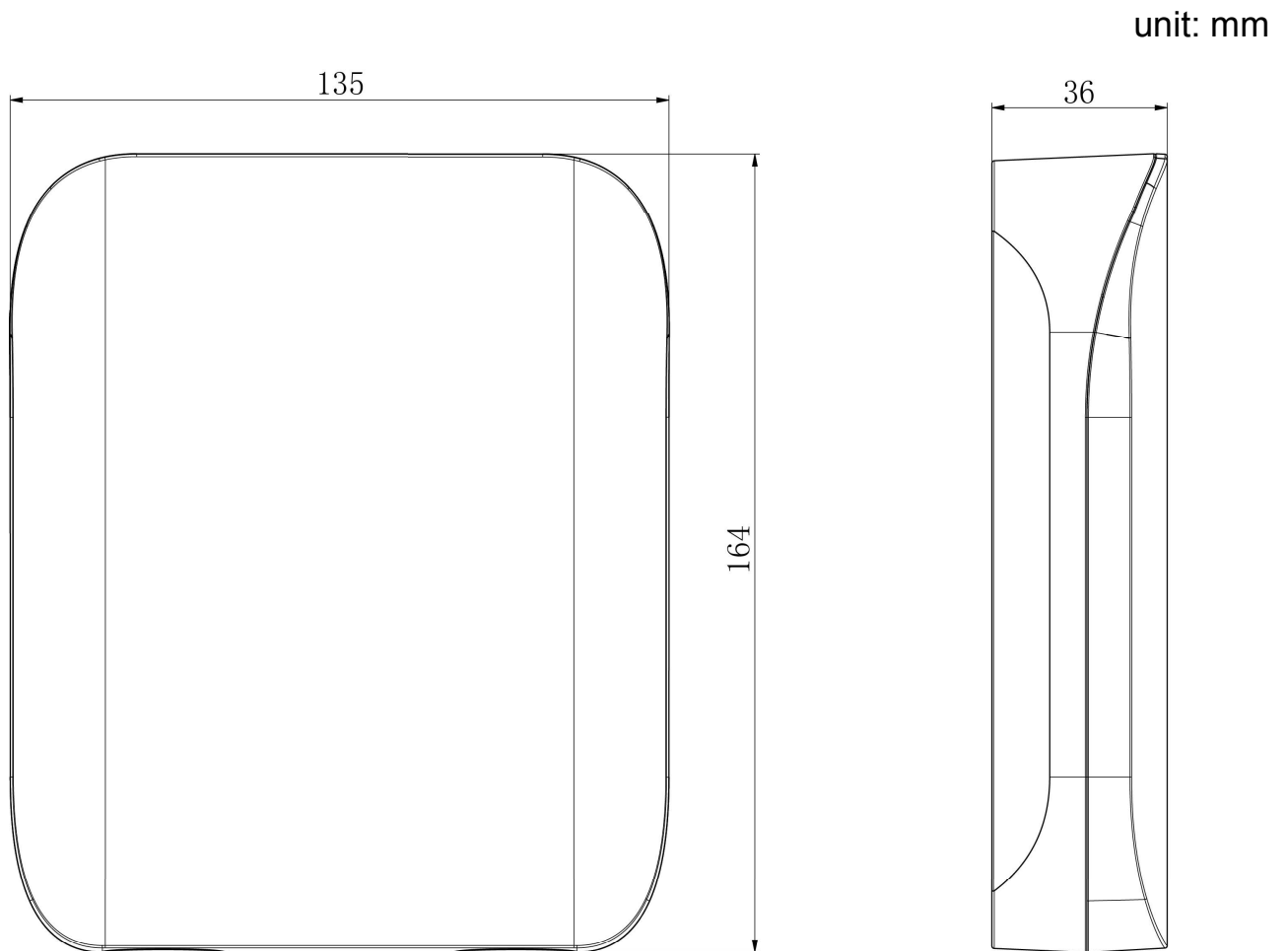


Fig. 5.1 Product dimension

5.2 Installation Procedure

- (1) Twist off the screws used for fixing the cover, and then open the cover of 24 volt adaptor.
- (2) Check whether the screws used for fixing the screws of main board is loose. If yes, please tighten the screws until the main board is fixed.
- (3) Attach the bottom case of 24 volt adaptor at the in stallation position (such as wall), and then use the screw to fix the bottom case and the installation hole on the wall together.

Connect the wires to the corresponding wiring terminal by passing through the rubber ring, and then tighten the screws on the contact to fix the connection wire.

- (4) Press the wires with wire-fixing clamp and then tighten the screws used for fixing the wire-fixing clamp.

Note:

If the wires may loose when fixing them with a wire clip, fold the wires once or more times and then fix them with a wire clip. Otherwise, the communication function may be affected due to the unreliable fixing.

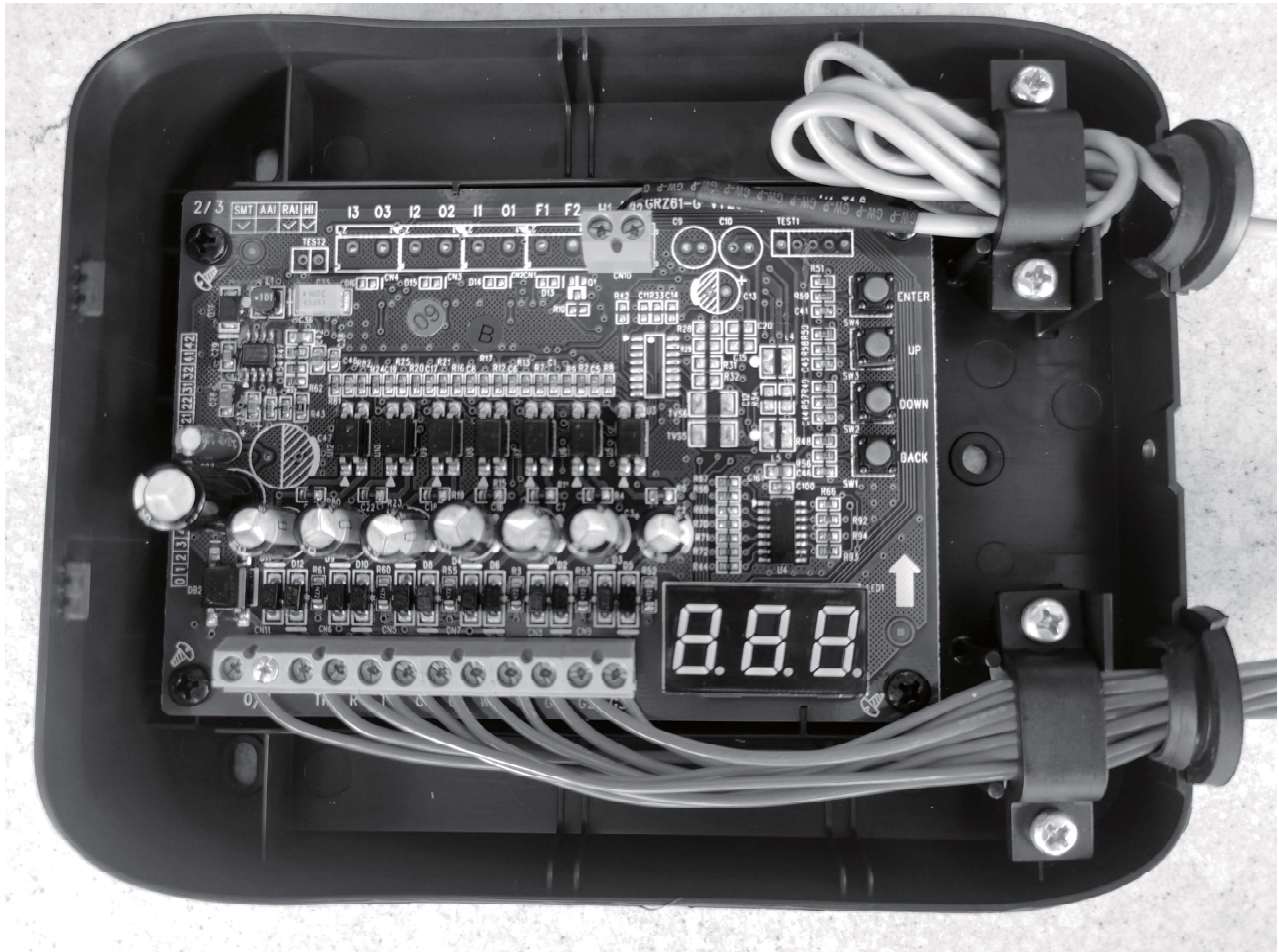


Fig. 5.2 Wiring diagram

5.3 Communication Connection

5.3.1 Connection between Adapter and Indoor Unit

Connect H1 and H2 of communication interface of adaptor RS485 to corresponding position of wired controller of unit to finish the installation.

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Communication connection method:

Wiring method with the indoor unit's network, which is shown as below:

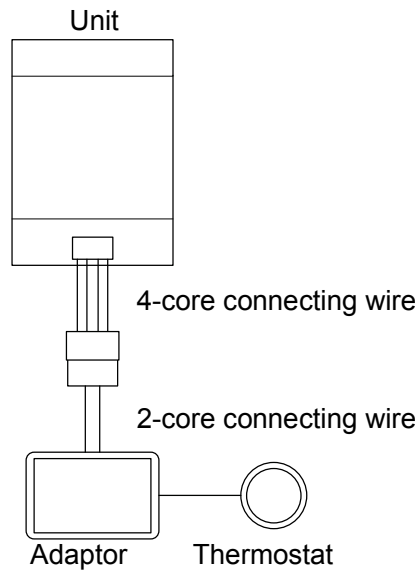


Fig. 5.3 One adaptor controls one indoor unit



NOTE!

If the indoor unit has 4-core connecting wire, please connect the 2-core connecting wires of 24 volt adaptor. If the indoor unit has no 4-core connecting wire, please connect to the mainboard of indoor unit after connecting 4-core connecting wire with 2-core connecting wire of 24 volt adaptor.

RS485 communication interface of 24 volt adaptor is the non-polar interface. It's no need to consider the polar of RS485 interface for wiring.

5.3.2 Connection of Adaptor and Thermostat

The connection between 24 volt adaptor and the third party 24VAC HVAC thermostat is shown as below:

- (1) When the output signal of thermostat is the control command of load, such

as compressor, 4-way valve, indoor fan. The connection method is shown as below:

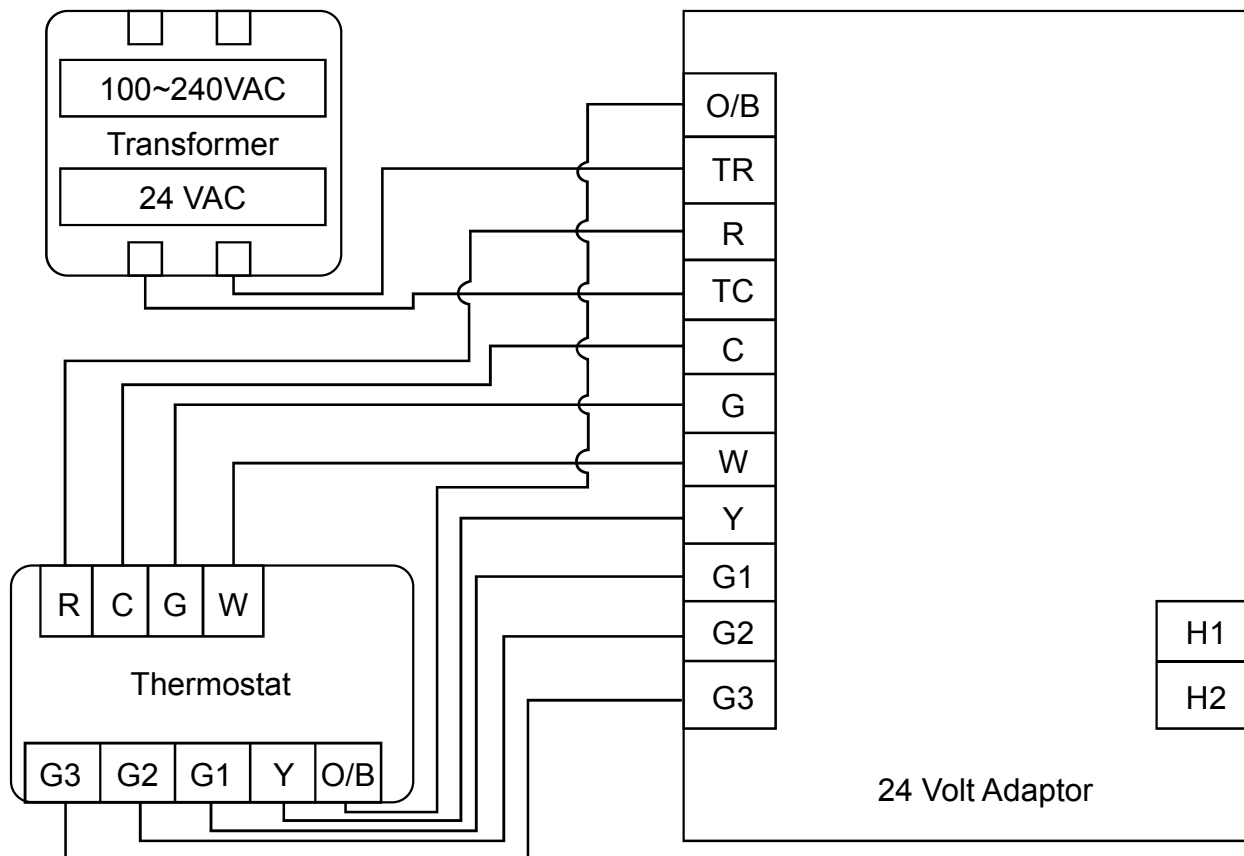


Fig. 5.4 Connection method of 24 Volt Adaptor (load control)

NOTE!

The 4-way valve interface of 24VAC HVAC thermostat may only has type “O” or

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“B”, and it can also connect O/B of adaptor , while it needs to set adaptor to ensure that the adaptor has the same meaning with the interface of 24VAC HVAC thermostat.

- (2) When the output single of 24VAC HVAC thermostat is the control command for operation mode, such as heating, cooling or fan mode. The connection method is shown as below:

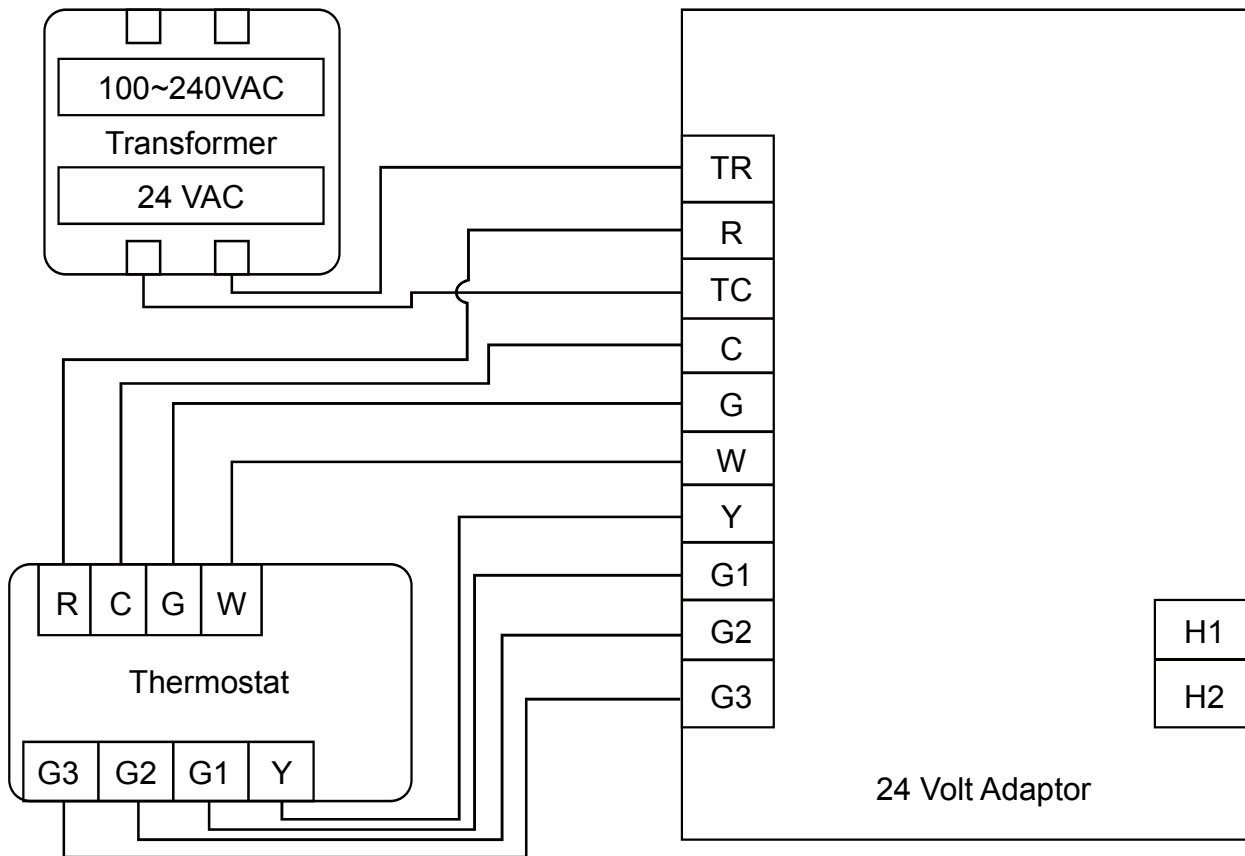


Fig. 5.5 Schematic diagram of wiring between adaptor and thermostat

**NOTE!**

If the thermostat hasn't G1, G2 and G3 (low, medium and high fan speeds) interfaces, it's no need to connect wires for these three interfaces of adaptor.

6 Malfunction Display

When there's malfunction during operation, the nixie tube of 24 volt adaptor will display the error code. If multiple malfunctions occur at the same time, error codes error codes will be displayed circularly.

**CAUTION:**

When there's malfunction, please turn off the unit and ask for professional person to maintain it.

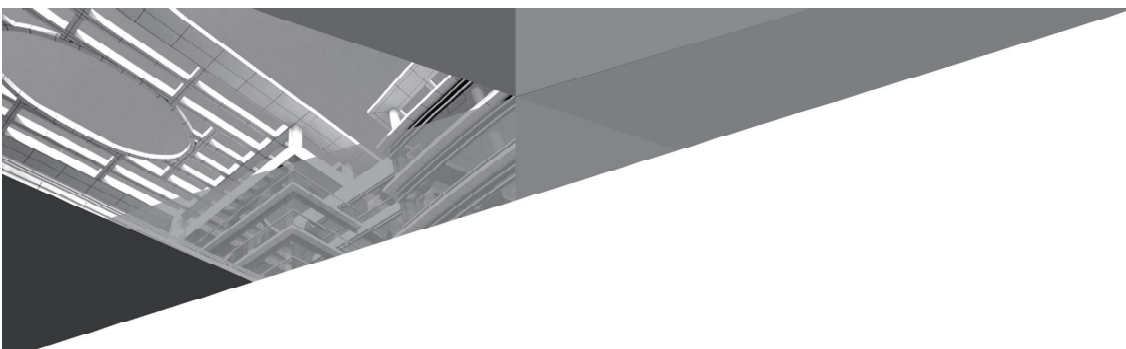
Table 6.1 Error Code List

Error	Error Code	Error	Error Code
Return air temperature sensor open/short circuited	F1	Drive board communication error	P6
evaporator temperature sensor open/short circuited	F2	Compressor overheating protection	H3
Indoor unit liquid valve temperature sensor open/short circuited	b5	Indoor and outdoor units unmatched	LP
Indoor gas valve temperature sensor open/short circuited	b7	Communication line misconnected or expansion valve error	dn
IPM temperature sensor open/short circuited	P7	Running mode conflict	E7
Outdoor ambient temperature sensor open/short circuited	F3	Pump-down	Fo

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Error	Error Code	Error	Error Code
Outdoor unit condenser mid-tube temperature sensor open/short circuited	F4	Main error at grid connection side	y2
Discharge temperature sensor open/short circuited	F5	Forced defrosting	H1
Indoor and outdoor communication error	E6	Compressor startup failure	Lc
DC bus under-voltage protection	PL	High discharge temperature protection	E4
DC bus over-voltage protection	PH	Overload protection	E8
Compressor phase current sensing circuit error	U1	Whole unit over-current protection	E5
Compressor demagnetization protection	HE	Over phase current protection	P5
PFC protection	Hc	Compressor desynchronizing	H7
IPM Temperature Protection	P8	IPM Current protection	H5
Over-power protection	L9	Compressor phase loss/reversal protection	Ld
System charge shortage or blockage protection	F0	Frequency restricted/reduced with whole unit current protection	F8
Capacitor charging error	PU	Frequency restricted/reduced with IPM current protection	En
High pressure protection	E1	Frequency restricted/reduced with high discharge temperature	F9
Low pressure protection	E3	Frequency restricted/reduced with anti-freezing protection	FH
Compressor stalling	LE	Frequency restricted/reduced with overload protection	F6
Over-speeding	LF	Frequency restricted/reduced with IPM temperature protection	EU
Drive board temperature sensor error	PF	Indoor unit full water error	E9
AC contactor protection	P9	Anti-freezing protection	E2
Temperature drift protection	PE	AC input voltage abnormal	PP

Error	Error Code	Error	Error Code
Sensor connection protection	Pd	Whole unit current sensing circuit error	U5
DC bus voltage drop error	U3	4-way valve reversing error	U7
Outdoor fan 1 error protection	L3	Motor stalling	H6
Outdoor fan 2 error protection	LA	PG motor zero-crossing protection	U8
compressor inhalation temperature sensor error	dc	Indoor fan tripping error	U0
Communication error between IDU and grid connection	Ln	IDU network address error	y3
Communication error between ODU and grid connection	LM	Ip address allocation overflow	yb



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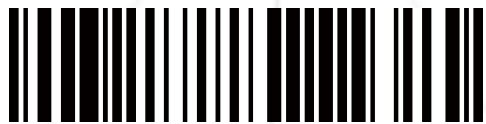
Add: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070

Tel: (+86-756) 8522218

Fax: (+86-756) 8669426

E-mail: global@cn.gree.com

Web: www.gree.com



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