INSTALLATION/APPLICATION MANUAL

24 Volt Interface Adapter
208/230V~60Hz,1Ph
115V~60Hz，1Ph

Table of Contents

Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.

⚠ WARNING

- Wires must be properly sized according to the NEC/NFPA 70, CEC and all prevailing codes, ordinances and standards.
- All conductors must be installed with a strain relief eliminating stress on the wire following installation which may result in wire damage and/or overheating with a potential for fire.
- Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.
- All wiring to be rated for the control box amperage rating.
- All wiring installed to meet general industry standards and practices,
- Do not install adapter near flammable liquids or gases.
- Do not operate the unit with wet hands, as this could lead to electrical shock.

! CAUTION

- When connecting with RS 485 communication to the outdoor unit, shielded wire must be used and grounded at one end only.
- When using shielded wire the cable should be grounded at one end to reduce EMI.
- T1 sensor cable shall not exceed 23' (7 m).

Read this manual carefully before installing or operating your new air conditioning unit.Make sure to save this manual for future reference.

Wall-Mounted 24V INTERFACE KIT Installation

Wear appropriate personal protection equipment (PPE) when installing or servicing.

24V INTERFACE KIT Dimensions

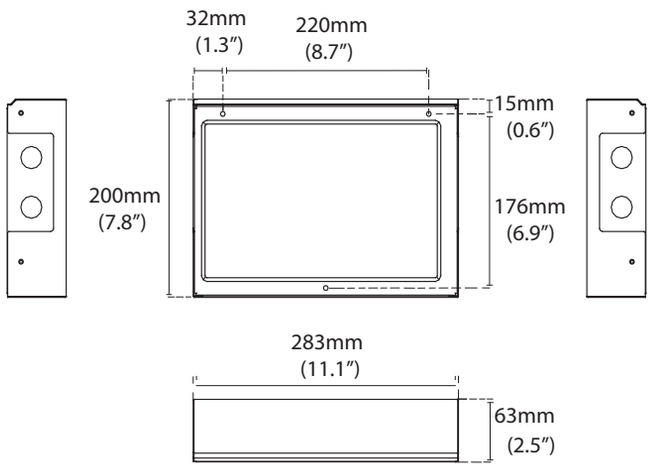
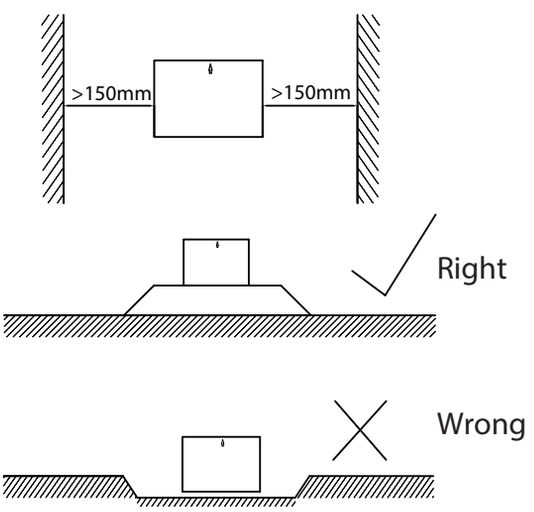


Fig. 1

This interface must be installed indoors in an area free from drips and moisture.



General installation instructions
Location and clearances

Preparation Before Installation

1. Ensure you have the following parts

Table 1

No	Name	Quantity	Remarks
1	Control box	1	
2	Screws	3	M4X20 (For mounting on the wall)
3	Anchors	3	For mounting on the wall
4	The connective wires group	2	For connecting the sensor
5	5m connective wires group	1	

2. Prepare the following tools

Table 2

No	Name	Quantity
1	Switch box	1
2	Wiring tube (insulating sleeve and tightening screw)	1

3. Select installation location

DO NOT install the 24V INTERFACE KIT near flammable liquids or gases such as gasoline or hydrogen sulfide.Doing so creates a fire hazard.

Installation Method

1. Remove the cover of 24V INTERFACE KIT

Remove the four screws of 24V INTERFACE KIT with a screwdriver or similar tool. Along the hem rotating separation lifted the lid.

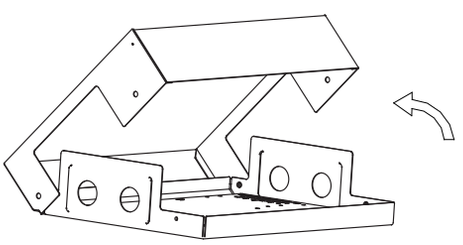


Fig. 2

Minimum free space required around the kit is 7" (180 mm).

2. Mount the back plate of the 24V INTERFACE KIT

Mount 24V INTERFACE KIT vertically, and folding in on, fasten the back plate to the wall with 3 screws (M4x20) and anchors.

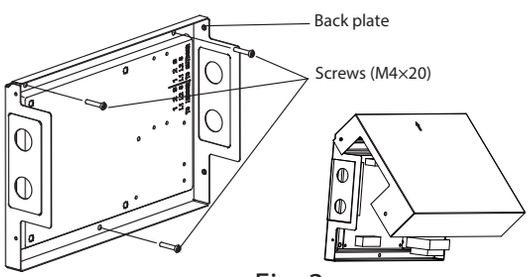


Fig. 3

NOTE:

- Place the unit on a flat surface. Be careful not to distort the back plate of the 24V INTERFACE KIT by over tightening the screws.
- When installed vertically, the direction of the arrow must be up.

3. Wiring.

4. Cover the 24V INTERFACE KIT lid, locking screw.

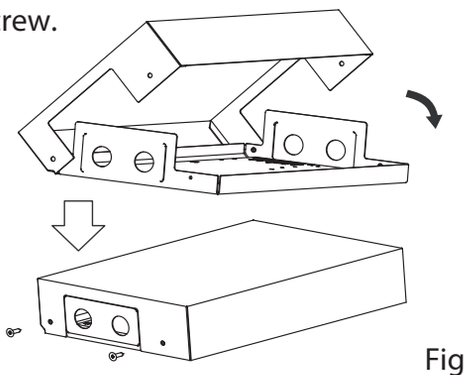


Fig. 4

System Configuration

NOTE:

- Thermostat should be configured for use with a conventional system.
- The remote controller,wiring controller, central controller and WiFi can not be used with this control box at the same time.Only the Swing and LED fucation can be used.
- The control box can only be used for single zone system,not compatible with multi zone system.

Connection wiring specification

Conncetion wiring	Outdoor 1,2,3	Indoor 1,2,3	R,C	Y/W/G/G1/G2/ G3/Dry
Size	Refer to outdoor connecting wires size	Refer to indoor connecting wires size	18AWG (minimum)	24AWG (minimum)

Application:

* This Interface Module is designed for the operation of a DC Inverter Side Discharge Heat Pump System to be coupled with a Conventional Gas Furnace or Air Handler using 24 Vac controls.

  The Inverter Technology will maintain its full functionality and modulation when installed according to this manual.

  All 24 Vac North American thermostats equipped with standard HVAC terminals are compatible with this system when properly applied and installed.

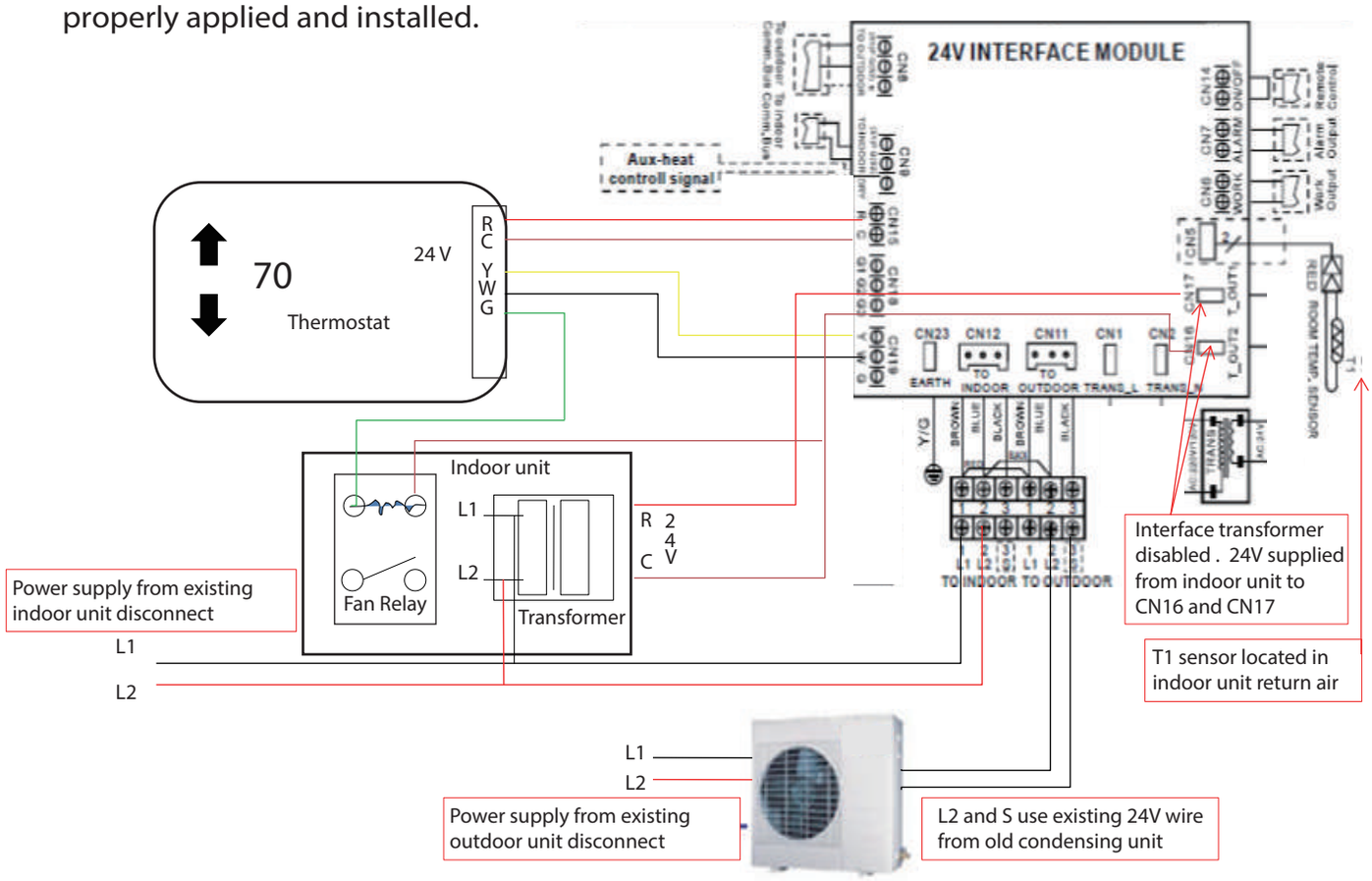
SYSTEM CONFIGURATION SCENARIOS

Four application scenarios:

Scenario No. 1:

Midea current loop (L2 S) communication inverter outdoor unit to be matched with any brand gas furnace or air handler equipped with 24Vac controls. This Interface board is compatible with the following outdoor units :

Eco-Air Hyper Heat Models: 9k - 36k
Eco-Air 20 SEER Models: 9k - 36k



NOTE:

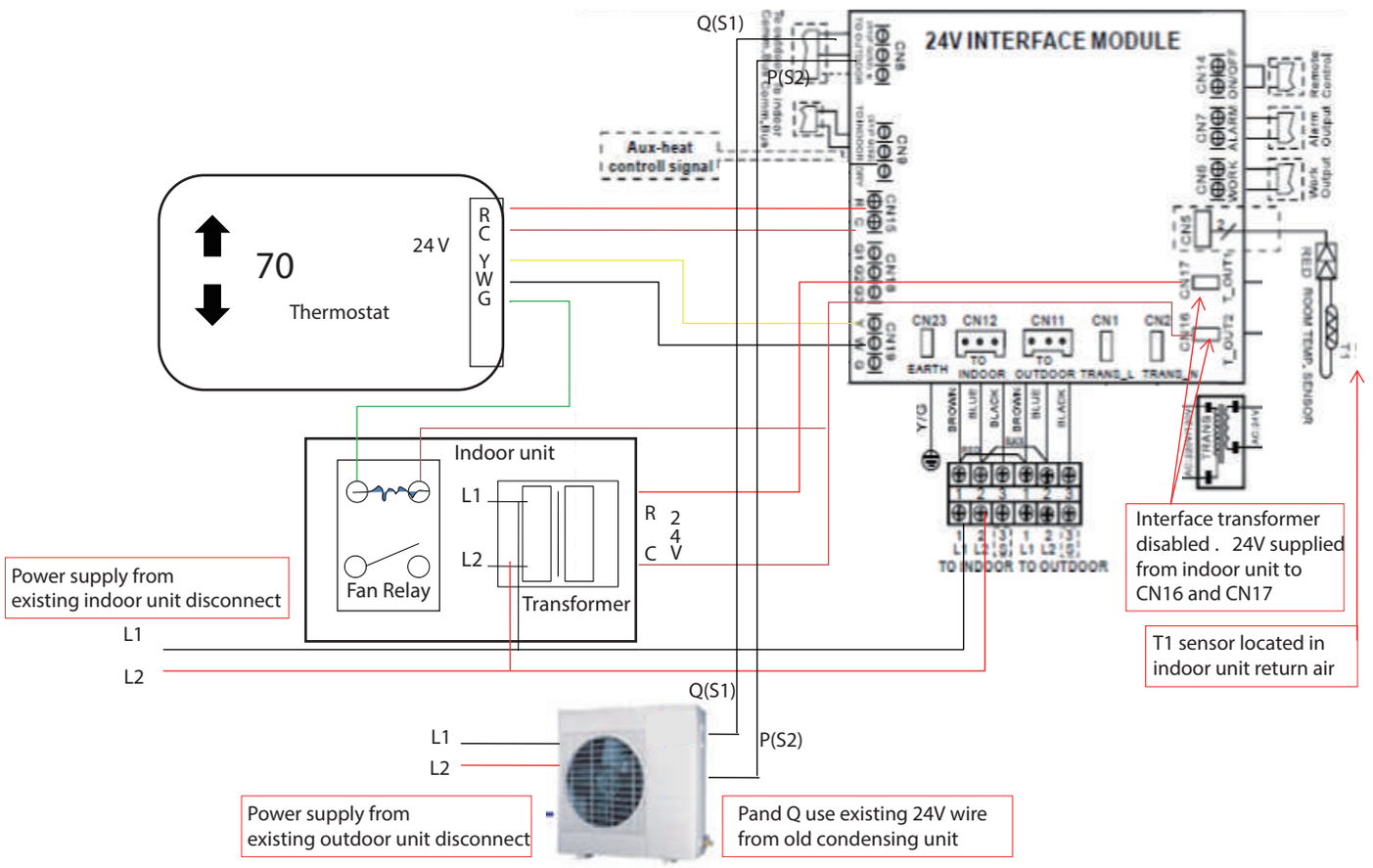
- T1(Room temperature) sensor should be located in the air inlet side.
- If the indoor unit already with a 24V transformer , removing away the transformer from the interface or disconnect the transformer of the interface.
- Must remove the TXV or other metering device from the indoor unit.
- Please connect thermostat G to 24V interface G3 as default.

Scenario No. 2:

Midea 485 (P Q)or(S1 S2) communication inverter outdoor unit match with conventional other brand 24V indoor unit ;

Match with following outdoor units :

- Cassette (Sizes 36~48)
- Ducted (Sizes 36~48)
- Floor ceiling (36K-60K)



NOTE:

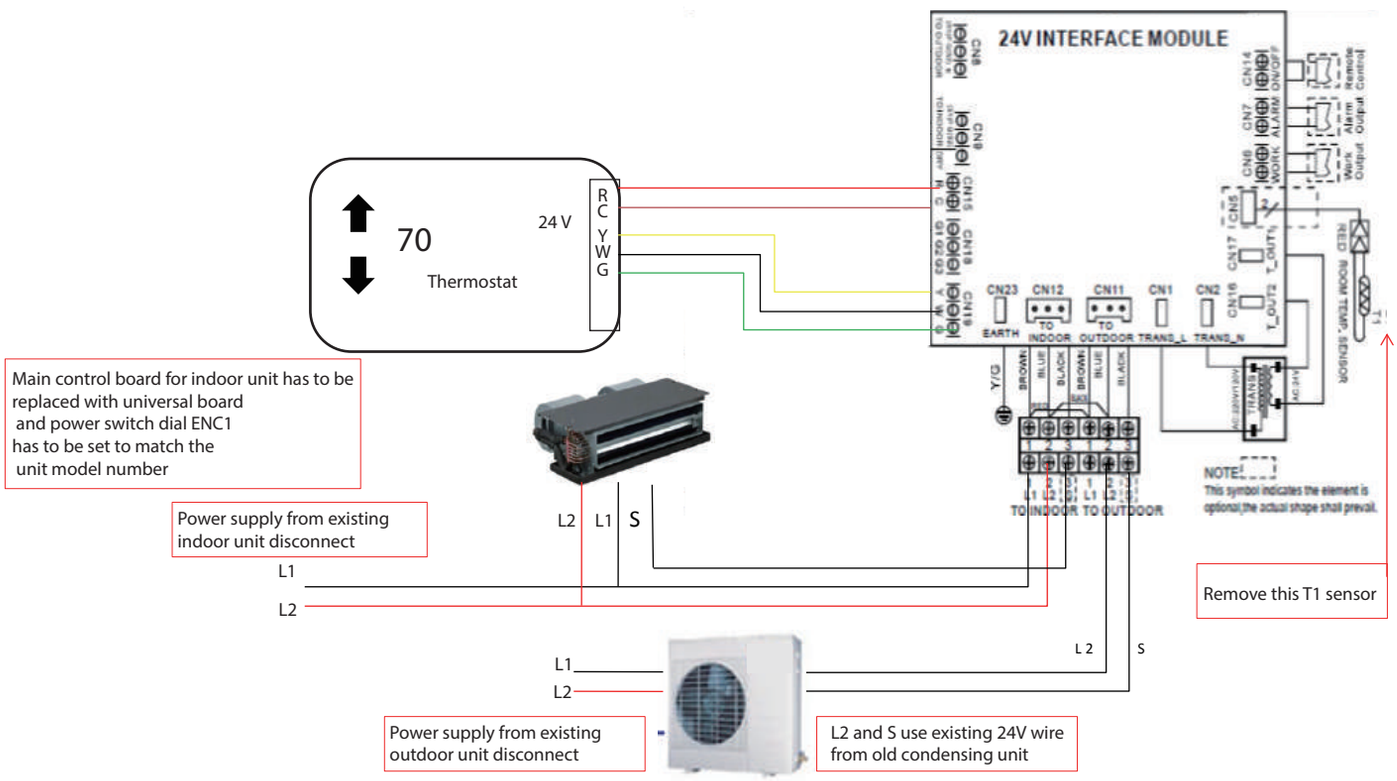
- T1(Room temperature) sensor should be located in the air inlet side.
- If the indoor unit already has a 24V transformer, removing the transformer from the interface or disconnect the transformer of the interface.
- Must remove the TXV or other throttling device from the indoor.
- Please connect thermostat G to 24V interface G3 as default.

Scenario No. 3:

Midea current loop (L2 S) inverter outdoor unit match with Midea current loop inverter indoor unit ;

Match the following ductless indoor units with the corresponding compatible SINGLE ZONE outdoor units:

- High Wall (Sizes 9~36)
- Cassette (Sizes 9~24)
- Ducted (Sizes 9~24)
- Floor Console (Sizes 9~12)
- Floor ceiling (18K-24K)



NOTE:

- Indoor PCB board must be updated.
- Please connect thermostat G to 24V interface G as default.
- Make sure the power supply is correct.

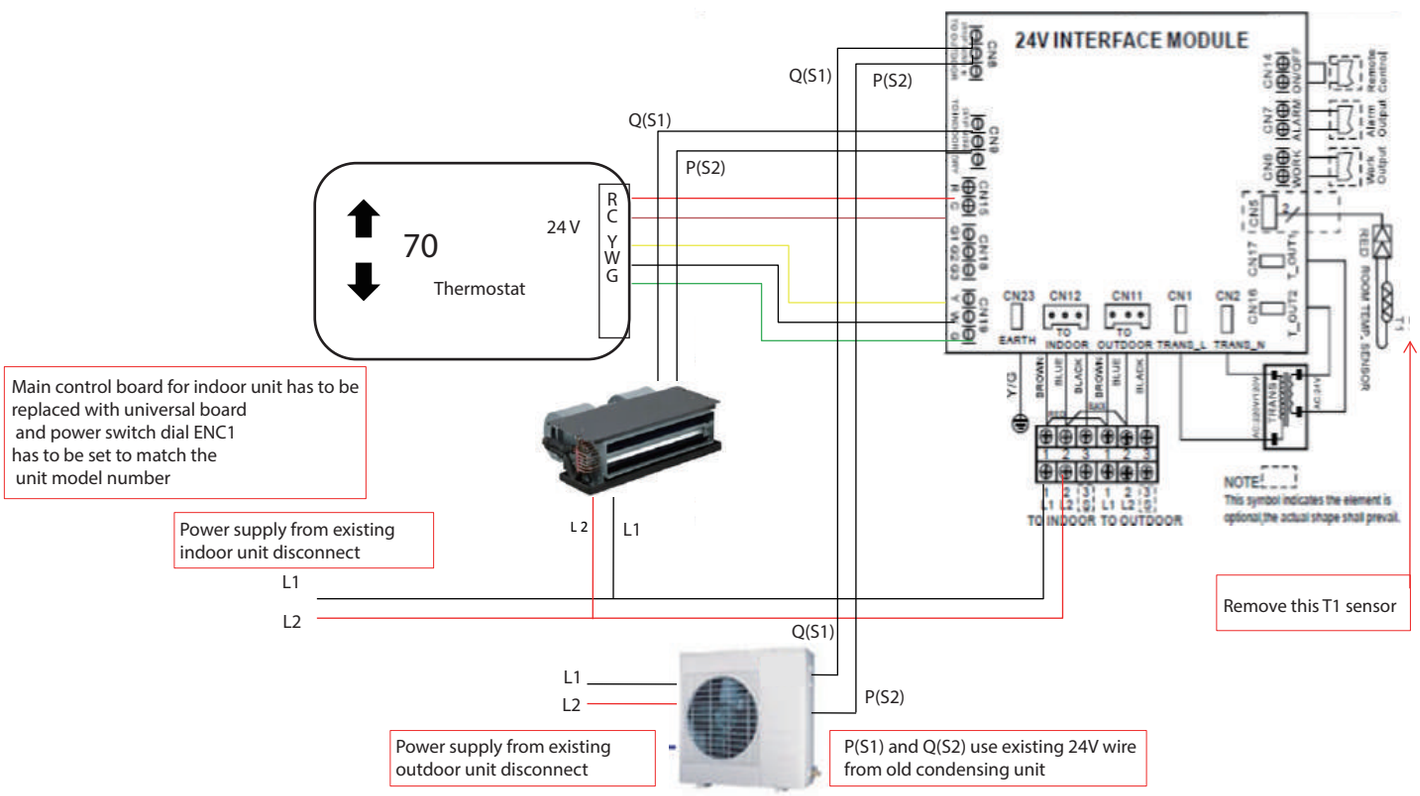
- For High wall unit ,the up-down swing louver and the display on/off funcation is available by the wireless remote controller.
- Remove 24V control box T1 sensor when match with midea indoor unit , which has T1 sensor.

Scenario No. 4:

Midea 485 (P Q)or(S1 S2)inverter outdoor unit match with Midea 485 inverter indoor unit ;

Match the following ductless indoor units with the corresponding compatible SINGLE ZONE outdoor units:

- Cassette (Sizes 36~48)
- Ducted (Sizes 36~48)
- Floor ceiling (36K-60K)



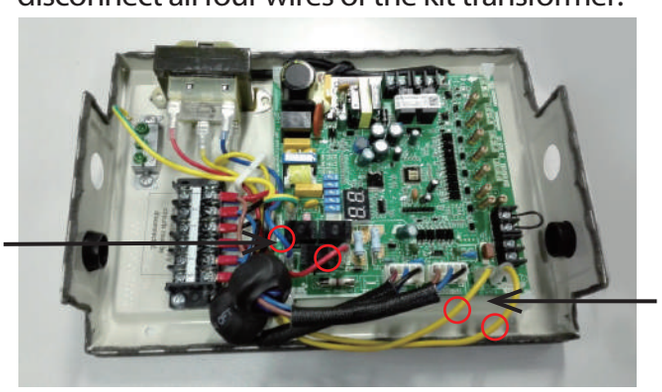
NOTE:

- Indoor PCB board must be updated.
- Please connect thermostat G to 24V interface G as default.

- Make sure the power supply is correct.
- Remove 24V control box T1 sensor when match with midea indoor unit , which has T1 sensor.

Key Considerations

- The following steps should be taken when using this device with a conventional central air conditioning unit:
  * Indoor coil metering device must be removed.
  * 24V transformer in the interface module must be disconnected.
  * Refrigerant charge amount may need to be adjusted， depending on the pipe size and length， see outdoor recharge instruction.
  * The maximum air flow should not exceed 400 CFM/Ton.
- When the indoor air handler or furnace has its own 24 vac transformer, you must disconnect all four wires of the kit transformer.



- Suction and liquid refrigerant lines must be properly insulated to prevent condensation and energy loss.
- You must remove the expansion device from an indoor evaporator coil as the refrigerant is controlled by a metering device in the outdoor unit.
- The following steps should be taken when using this device with a Midea Hi wall (9K-36K Btu/hr) Cassette, Console, Duct, Floor Ceiling (9K - 24K Btu/hr).
- Indoor PCB must be updated (**2016 and earlier products)
- Power switch on new board is changed.
- Indoor unit power switch setting, ENC-1 must be changed to the proper motor wattage: Eg. 36K = 8 48K = 9

Control Logic

Connector

Connector	Purpose
R/C	24VAC Output
Y	Cooling
W	Heating
G	Fan - Auto speed
*G1/G2/G3	Fan Low/Middle/High
AUX/DRY	Aux-Heat/Dry

Mode setting

Y	W	G	G1	G2	G3	Aux/Dry	Setting mode
√	X	*	*	*	*	*	Cooling
X	√	*	*	*	*	X	Heating (without aux-heater)
X	√	*	*	*	*	√	Heating (with aux-heater)
X	X	√	*	*	*	X	Fan only
X	X	X	√	*	*	X	Fan only
X	X	X	X	√	*	X	Fan only
X	X	X	X	X	√	X	Fan only
√	√	*	*	*	*	*	OFF
X	X	X	X	X	X	X	OFF
X	X	*	*	*	*	√	Dry

Fan speed setting

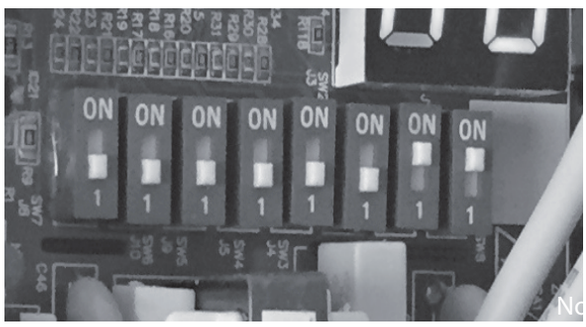
Unit ON/OFF	G	G1	G2	G3	Setting fan speed
√	X	X	X	X	Auto fan speed
√	√	*	*	*	Auto fan speed
√	X	√	*	*	Low speed
√	X	X	√	*	Middle speed
√	X	X	X	√	High speed
X	X	X	X	X	Fan OFF

√	ON
X	OFF
*	ON or OFF

DIP Switch Definitions

DIP SWITCHES CONFIGURATION

The 24V INTERFACE KIT must be configured to operate properly with the system components with which it is installed. To successfully configure the system move the Dip Switches to match the components and functions used.



DIP Switch Definitions

Dip Switch 1

Used for selection of the indoor unit type.

SW1	Result	Note
ON	Sets - Both Ductless Indoor and Outdoor Units	Default
OFF	Outdoor only ----- Compatible with other fix speed 24V control indoor (Wall Hung/ Pancake etc.). Note: 1) Need to remove the indoor unit throttle (piston/ TXV/ orifice); 2) Indoor fan may not stop during the defrost.	*

NOTE: If this control box is matched with other brand indoor unit,you must set OFF.

Dip Switch 2

Used for selection of the system: Cooling Only or Heat Pump.

SW2	Result	Note
ON	Cooling only	
OFF	Heat pump	Default

Dip Switch 3

Used for freeze protection of the indoor coil.

SW3	Result	Note
ON	Fan do not stop	
OFF	Fan will stop if the indoor coil temperature is low	Default

NOTE: Applicable only to Ductless Style Indoor (scenario 1and 2) Heat Pump units in Heating Mode.

Dip Switch 4

Dry is used for thermostats with a Dry Function output. Anauxiliary heater is used onthe Ducted Style Indoor Units 1 and 2) to control a secondary Heat Source.

SW4	Result	Note
ON	Dry	
OFF	Aux-heater	Default

Dip Switch 5

Used to increase the compressor frequency in case the set point hasnot been reached after 1 hour or 3 hours of operation.

SW5	Result	Note
ON	1h	
OFF	3h	Default

Dip Switch 8

Used to turn ON or OFF the diagnostic code display LED on the control board of the 24V Interface Kit.

SW8	Result	Note
ON	Display on	Default
OFF	Display off	

NOTE: Dip Switches 6 and 7 not used. They are reserved for future applications.

Error Codes

Display	Malfunction & protection indication
E0	Indoor EEPROM error
E2	Cross-zero detection error
E3	Indoor fan speed malfunction
E4	Indoor room temperature sen sor error
E5	Evaporator coil temperature sensor error
EC	Refrigerant leak detection system malfunction
F0	Current overload protection
F1	Outdoor ambient temperature sensor (T4) malfunction
F2	Condenser coil temperature sensor (T3) malfunction
F3	Condenser coil temperature sensor (T5) malfunction
F4	Outdoor unit EEPROM parameter error
F5	Outdoor fan speed has been out of control
F6	T2b sensor error
P0	Inverter module (IPM) malfunction
P1	Over-voltage or under-voltage protection
P2	Compressor top high temperature protection (OLP)
P3	Low ambient temperature cut off in heating
P4	Compressor drive malfunction
--	Mode conflict
P6	Compressor low-pressure protection
00	Module boot mode and indoor running mode for power off
IN	Module and indoor unit communication malfunction
OU	Module and outdoor unit communication malfunction

Wiring Diagram

Set/outdoor only		
SW1	ON 1	ON 1
Mode	Outdoor only	Set
Factory default		✓

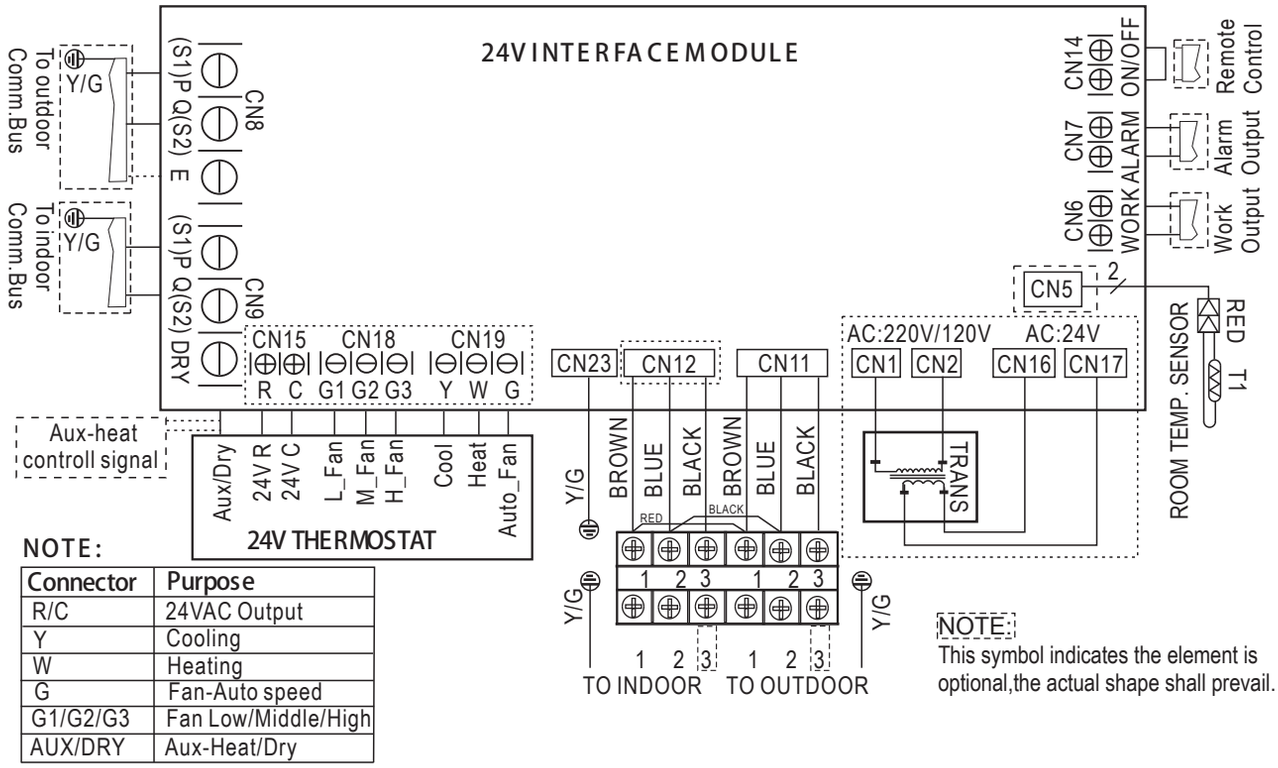
Unit type		
SW2	ON 1	ON 1
Mode	Heat pump	Cooling only
Factory default	✓	

Anti-cold		
SW3	ON 1	ON 1
Mode	YES	NO
Factory default	✓	

Aux-heat/dry		
SW4	ON 1	ON 1
Mode	Aux-heat	Dry
Factory default	✓	

Frequency Time		
SW5	ON 1	ON 1
Mode	3H	1H
Factory default	✓	

Display tube		
SW8	ON 1	ON 1
Mode	OFF	ON
Factory default		✓



NOTE:

Connector	Purpose
R/C	24VAC Output
Y	Cooling
W	Heating
G	Fan-Auto speed
G1/G2/G3	Fan Low/Middle/High
AUX/DRY	Aux-Heat/Dry

NOTE:
This symbol indicates the element is optional,the actual shape shall prevail.