

INSTALLATION/APPLICATION MANUAL

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

Table of Contents

Preparation Before Installation.....1

Installation Method.....2

System Configuration.....2

Application.....3

Control Logic.....7

DIP Switch Definitions.....8

Error Codes.....9

Wiring Diagram.....9



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

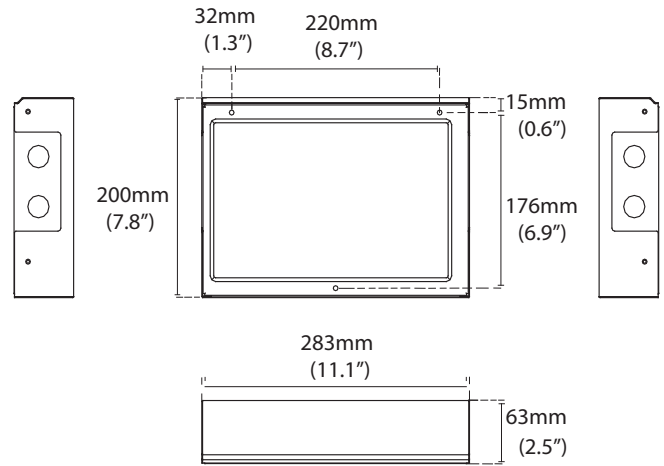
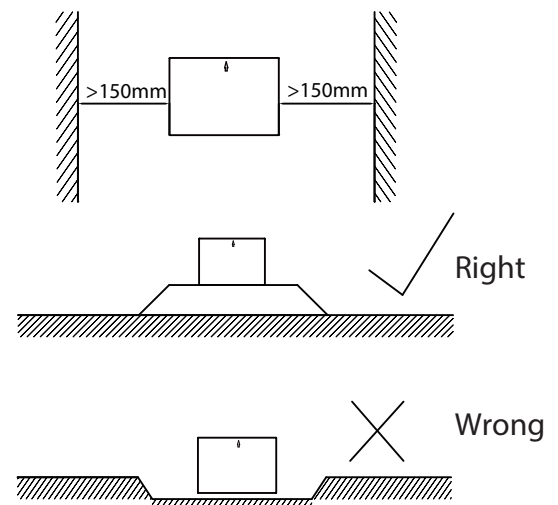


Fig. 1

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.

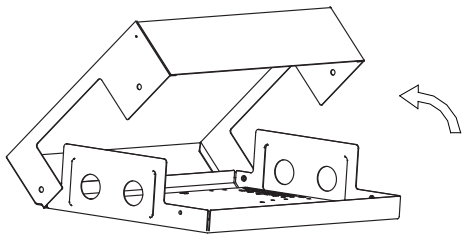


Fig. 2

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.

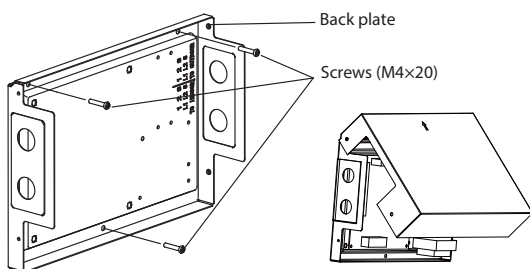


Fig. 3

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.

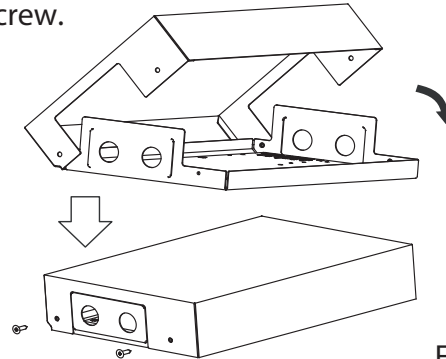


Fig. 4

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 function can be used.
- The control box can only be used for single zone system, not compatible with multi zone system.

Connection wiring specification

| Connction 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

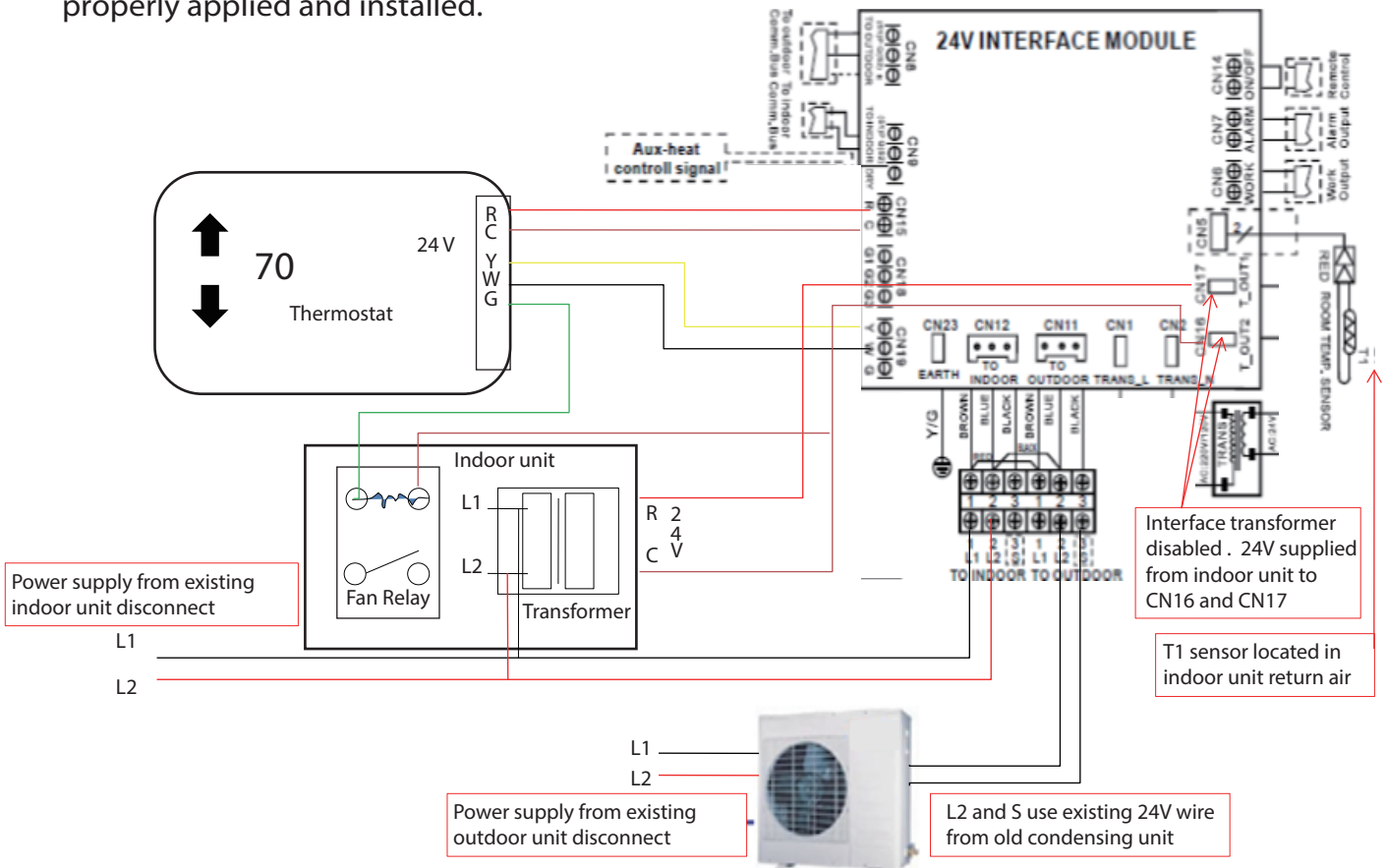
Four application scenarios :

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.

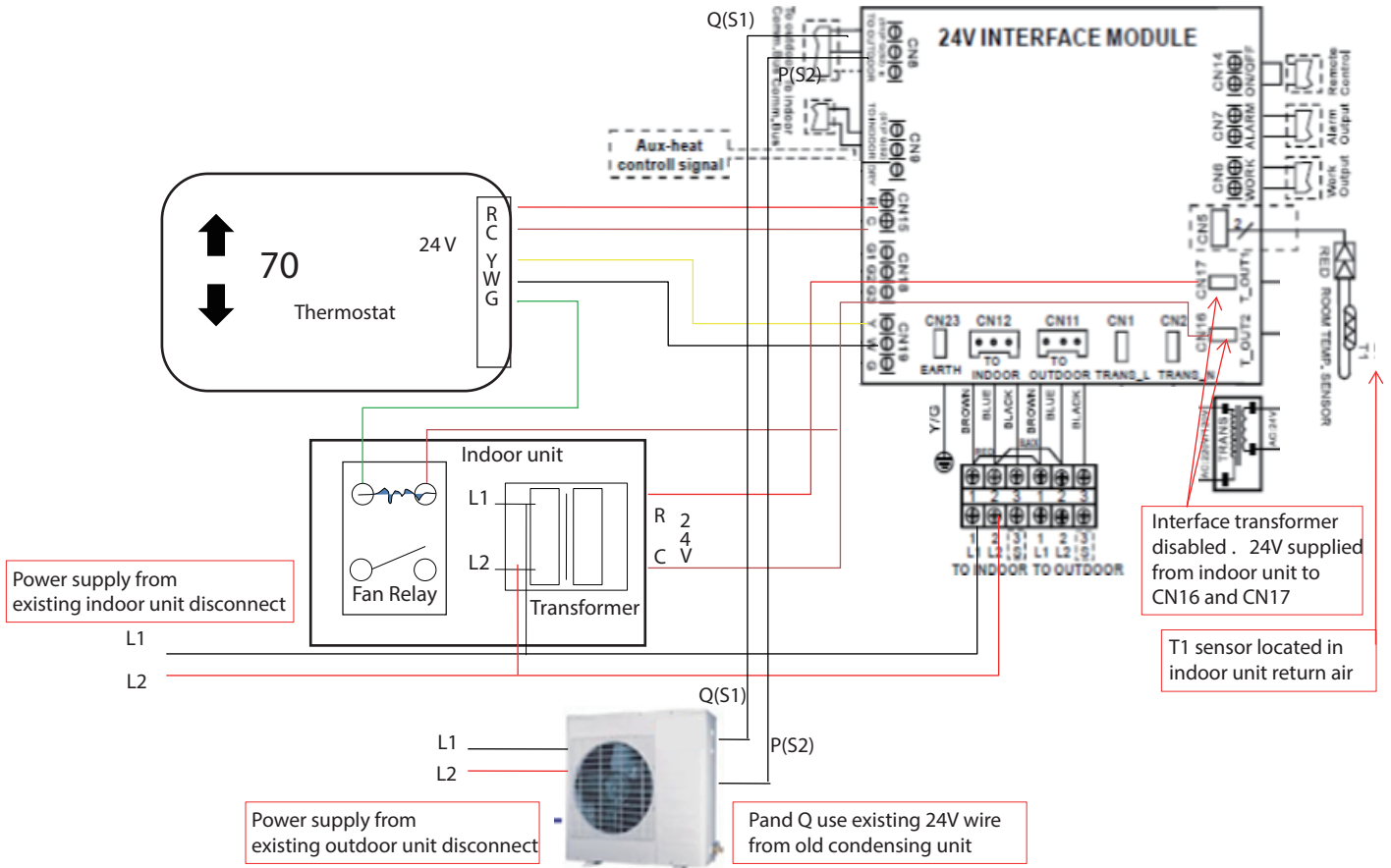
- Must remove the TXV or other metering device from the indoor unit.
- Please connect thermostat G to 24V interface G3 as default.

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.

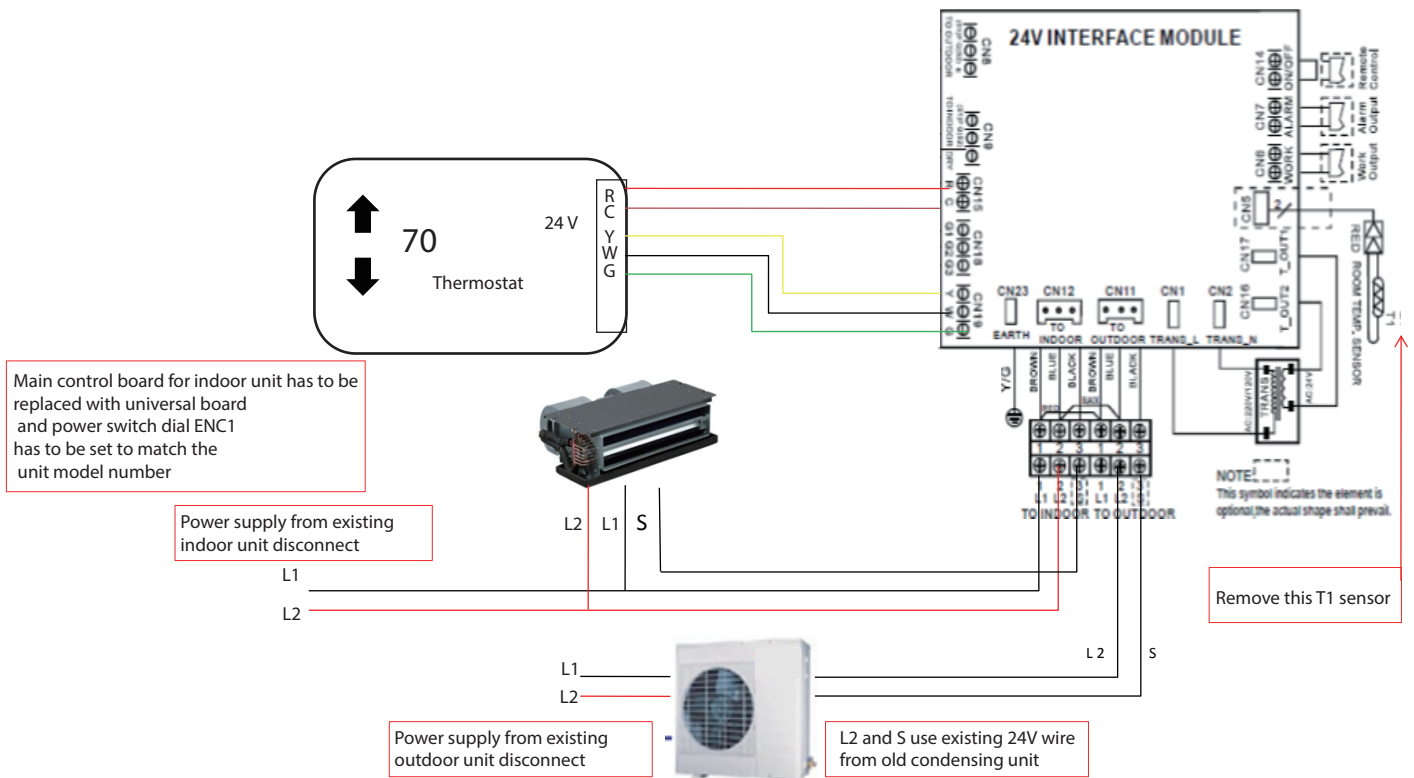
- Must remove the TXV or other throttling device from the indoor.
- Please connect thermostat G to 24V interface G3 as default.

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.

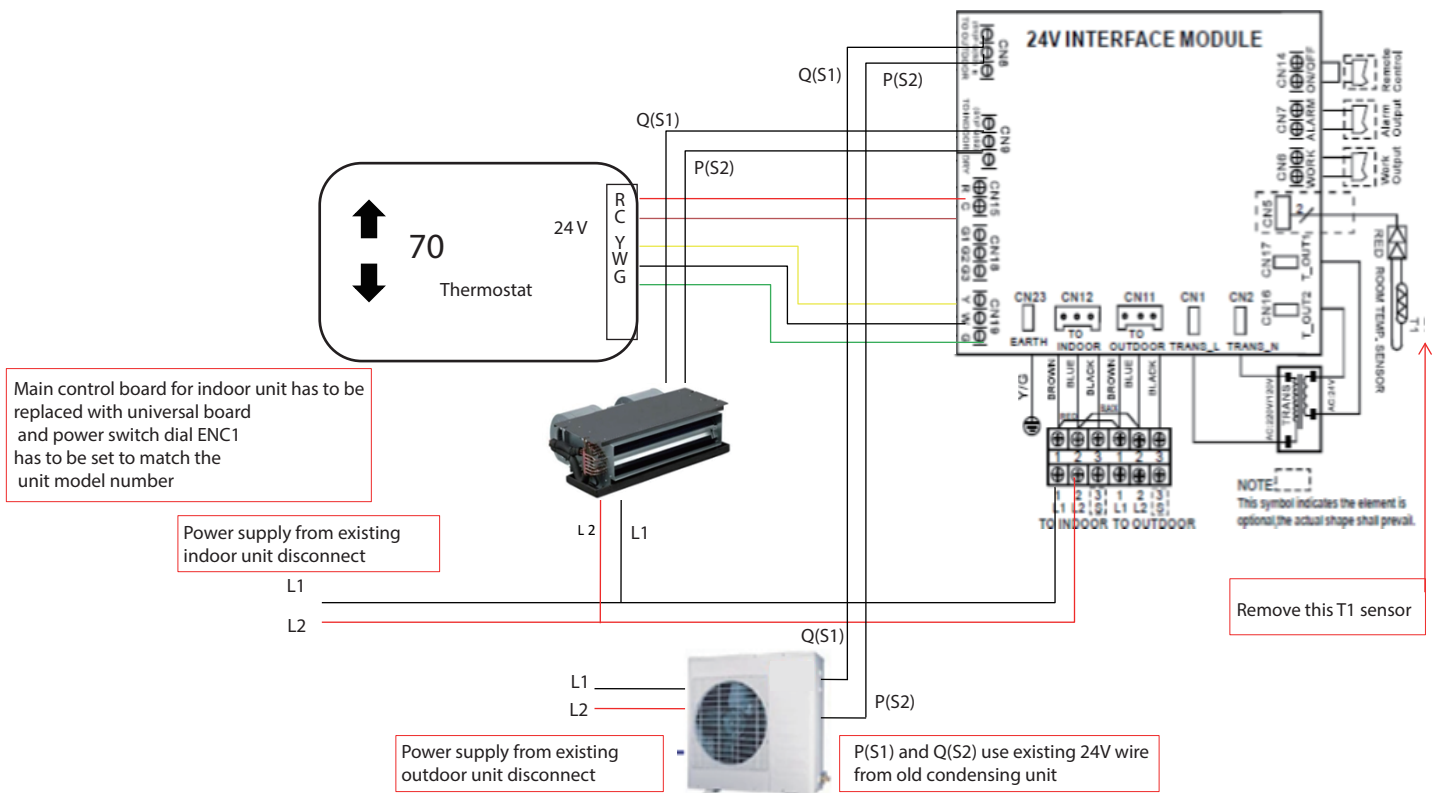
- For High wall unit, the up-down swing louver and the display on/off function is available by the wireless remote controller.
- Remove 24V control box T1 sensor when match with midea indoor unit, which has T1 sensor.

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)



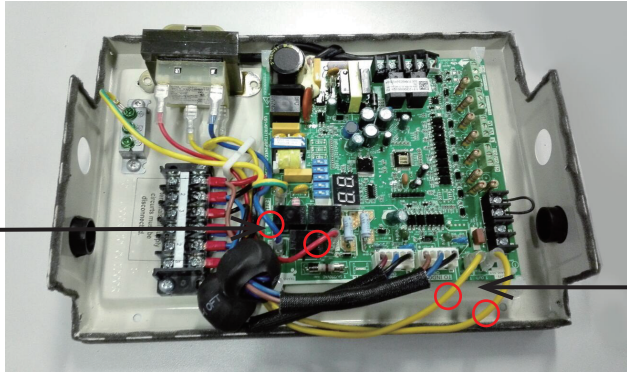
NOTE:

- 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

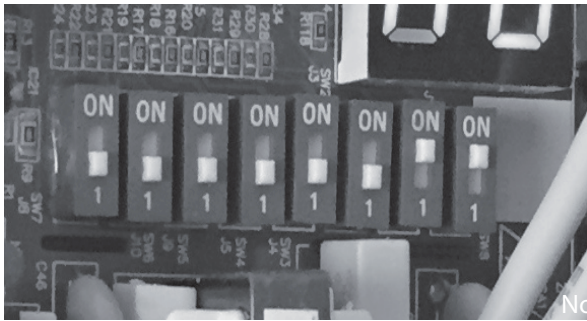
| Unit ON/OFF | G | G1 | G2 | G3 | Setting fan speed |
|-------------|---|----|----|----|-------------------|
| √ | X | X | X | X | Auto fan speed |
| √ | √ | * | * | * | Auto fan speed |
| √ | X | √ | * | * | Low speed |
| √ | X | X | √ | * | Middle speed |
| √ | X | X | X | √ | High speed |
| X | X | 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 1 and 2) Heat Pump units in Heating Mode.

Dip Switch 4

Dry is used for thermostats with a Dry Function output. An auxiliary heater is used on the 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 has not 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 | |



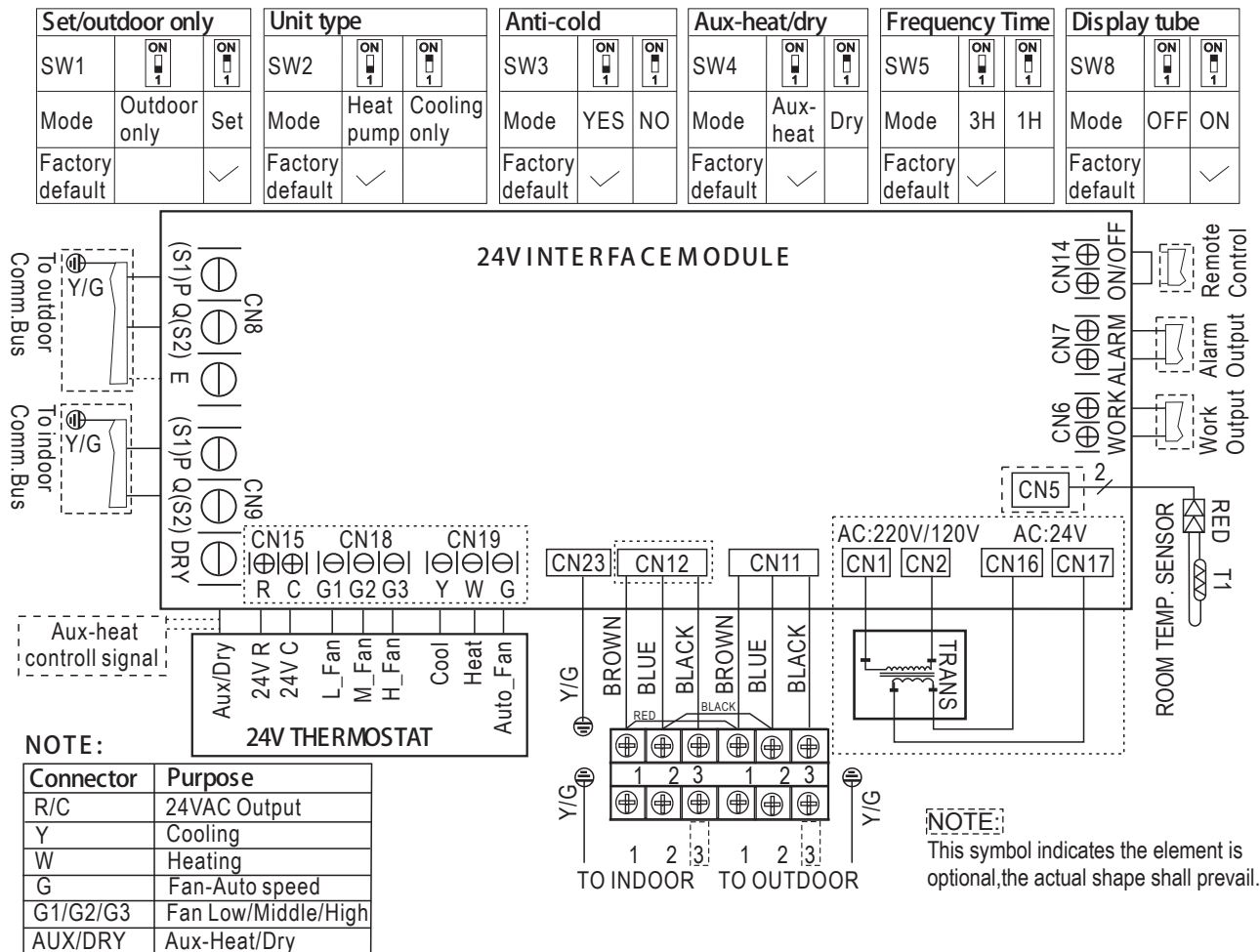
NOTE: Dip Switches 6 and 7 not used. They are reserved for future applications.

Error Codes

| Display | Malfunction & protection indication |
|---------|---|
| E0 | Indoor EEPROM error |
| E2 | Cross-zero detection error |
| E3 | Indoor fan speed malfunction |
| E4 | Indoor room temperature sensor 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



QSKZHI-001AEN
16111600000028
20170531

此面无需印刷

技术要求:

1. 双胶纸(说明书)80g非E项目大度
2. 尺寸: 210*297mm
3. 颜色: 黑白
4. 注意: 排版时注意页码数字都是靠外面的, 以便翻阅
5. 装订。