KSAIC0601230

24v Interface, Mini

INSTALLATION MANUAL

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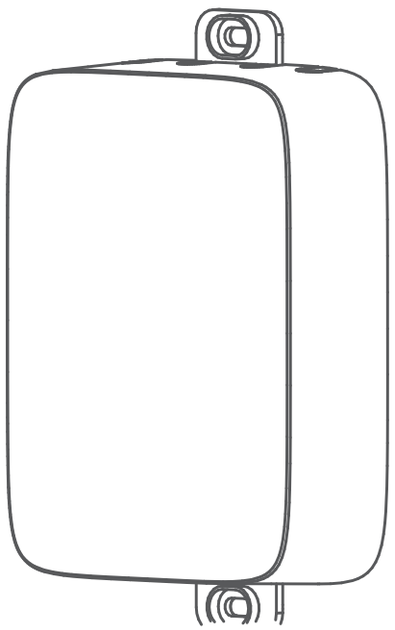


24V Interface, Mini

A NOTE ABOUT SAFETY

Safety Symbol

Any time you see this symbol ⚠ in manuals, instructions and on the unit, be aware of the potential for personal injury. There are 3 levels of precaution:

1. **DANGER** identifies the most serious hazards which will result in severe personal injury or death.
2. **WARNING** signifies hazards that could result in personal injury or death.
3. **CAUTION** is used to identify unsafe practices which could result in minor personal injury or product and property damage.
4. **NOTE** is used to highlight suggestions which will result in enhanced installation, reliability, or operation.

⚠ WARNING

PERSONAL INJURY AND PROPERTY DAMAGE HAZARD

For continued performance, reliability, and safety, the only approved accessories and replacement parts are those specified by the equipment manufacturer. The use of non-manufacturer approved parts and accessories could invalidate the equipment limited warranty and result in a fire risk, equipment malfunction, and failure.

Please review the manufacturer's instructions and replacement parts catalogs available from your equipment supplier.

⚠ WARNING

PERSONAL INJURY, DEATH AND / OR PROPERTY DAMAGE HAZARD

Failure to follow this warning could result in personal injury, death or property damage.
Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or service agency must use factory-authorized kits or accessories when modifying this product.
Read and follow all instructions and warnings, including labels shipped with or attached to the unit before operating your new air conditioner.

GENERAL

NOTE: Please read this manual carefully before installing or operating your 24V interface. Make sure to save this manual for future reference.

This manual gives detailed descriptions of the precautions that should be followed during operation.

In order to ensure correct service of the 24V interface please read this manual carefully before using the unit.

For future reference, keep this manual after reading it.

All the pictures in this manual are for explanation purposes only. There may be slight differences from the 24V interface you purchased (depend on model).

INSTALLATION

Select the Installation location

Don’t install in a place where exposure heavy oil, vapor or sulfuretted gas is present. Otherwise, this product may be deformed and lead to a system malfunction.

⚠ CAUTION

Indoor Installation ONLY.

Preparation before Installation

Confirm that all the following parts are available as needed:

Table 1: Parts List

NO.	NAME	QTY.	REMARKS
1	24V Interface, Mini	1	—
2	Installation and Owner’s Manual	1	—
3	Screws	2	M3.9*25 (For Mounting on the Wall)
4	Wall plugs	2	For Mounting on the Wall
5	Connective wire group	3	For connecting the internal board and 24V interface
6	Screw	1	M4X8 (for mounting the connective wire group)
7	Transformer	1	*Not supplied

Table 1: Parts List (cont)

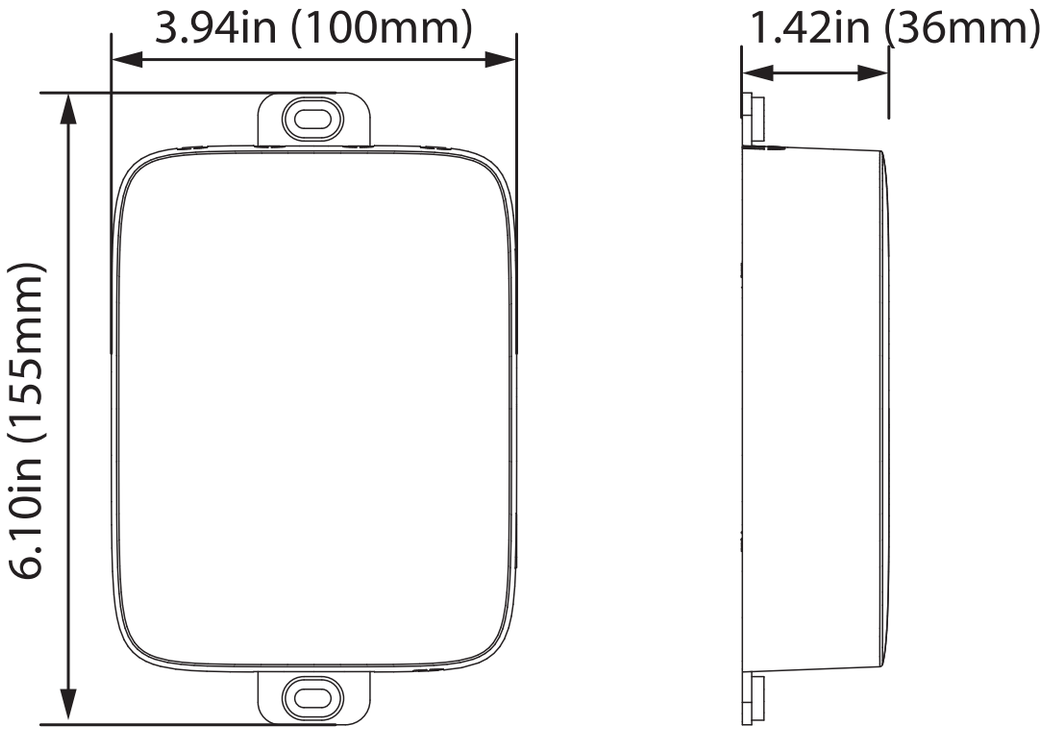
NO.	NAME	QTY.	REMARKS
8	7in Return Air Thermistor Assembly	1	RCD part number 11201007006664
9	16ft. (5m) Return Air Thermistor Assembly Extension Wires	*	***Not supplied** **Optional Accessory** - RCD part number 17401204010126

Prepare the Following Assemblies On-site.

Precautions installing the 24V interface.

1. This section provides the installation method for the 24V interface. Please refer to the wiring diagram of this installation manual to connect the 24V interface with indoor unit.
2. The 24V interface works in a low voltage loop circuit. Do not directly contact the cable of high voltage (115V, 220V), and don't wire this into the loop; wiring clearance between configured tubes should be in the range of 11.8-19.7in (300-500mm) or above.
3. The shielded wire of the 24V interface must be grounded firmly.
4. Upon finishing the 24V interface connection, do not megger the wiring.

24V Interface Structural Dimensions

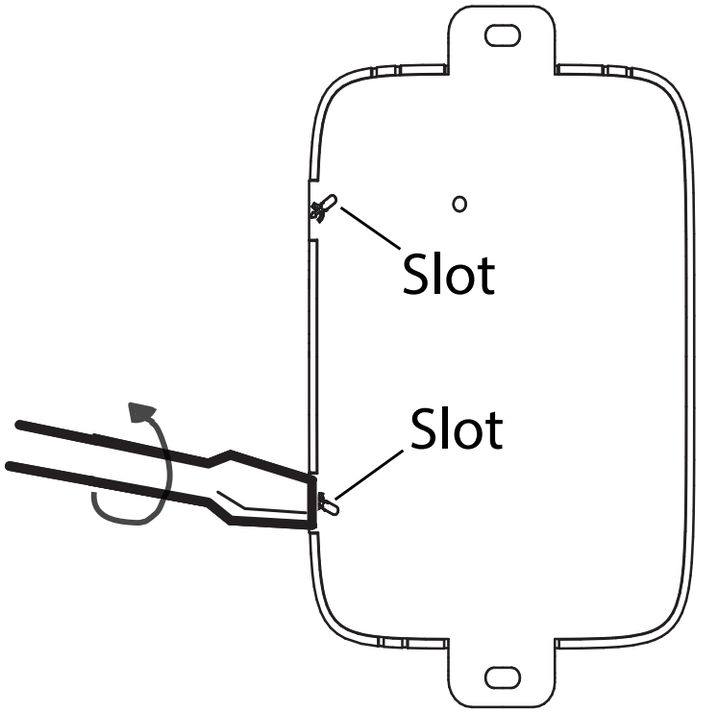


Remove 24V Interface Cover

Insert a slot screwdriver into the slots in the lower part of the 24V interface (2 places), and remove the upper part (cover) of the 24V interface.

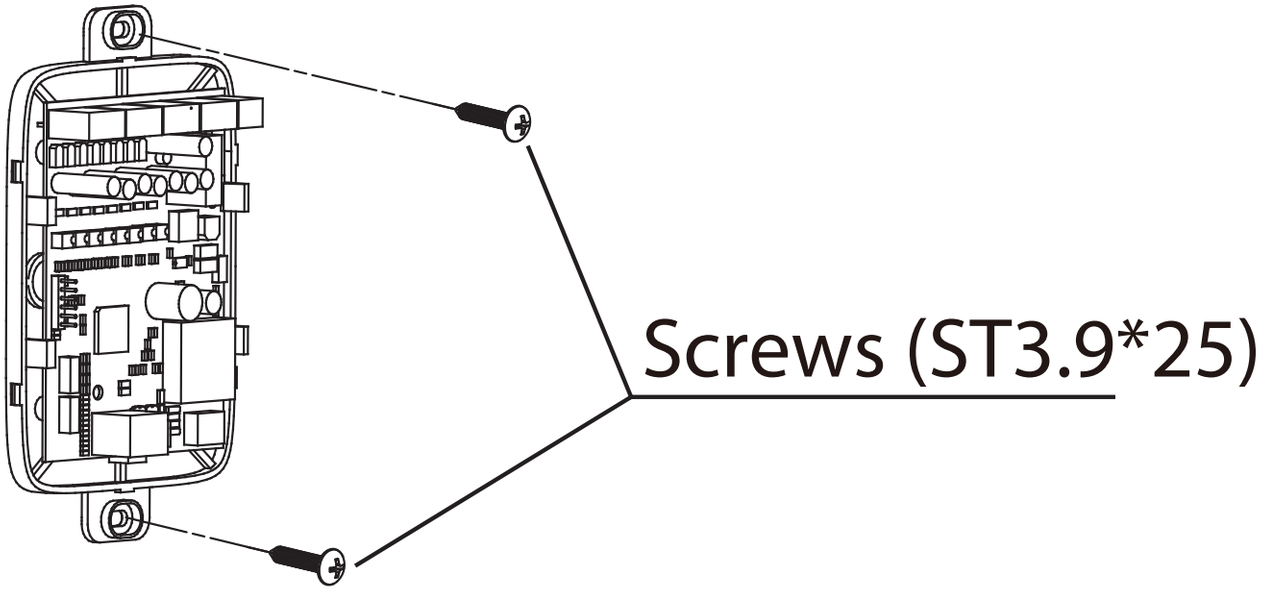
NOTE: Do not pry up and down on the screwdriver, just rotate it.

NOTE: The PCB is mounted in the upper part of the 24V interface. Be careful not to damage the board with the screwdriver.



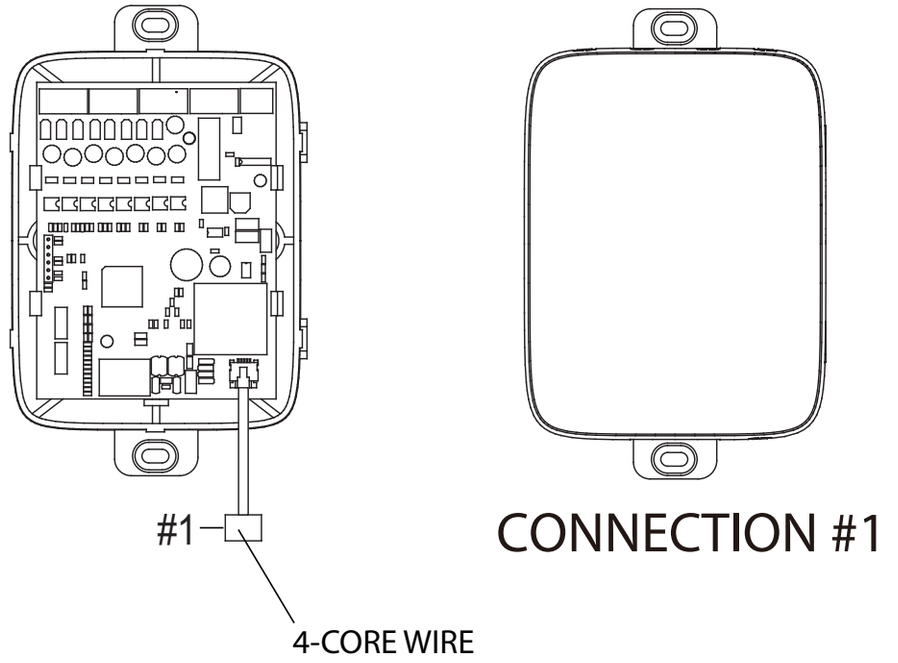
Fasten the Back Plate of the 24V Interface

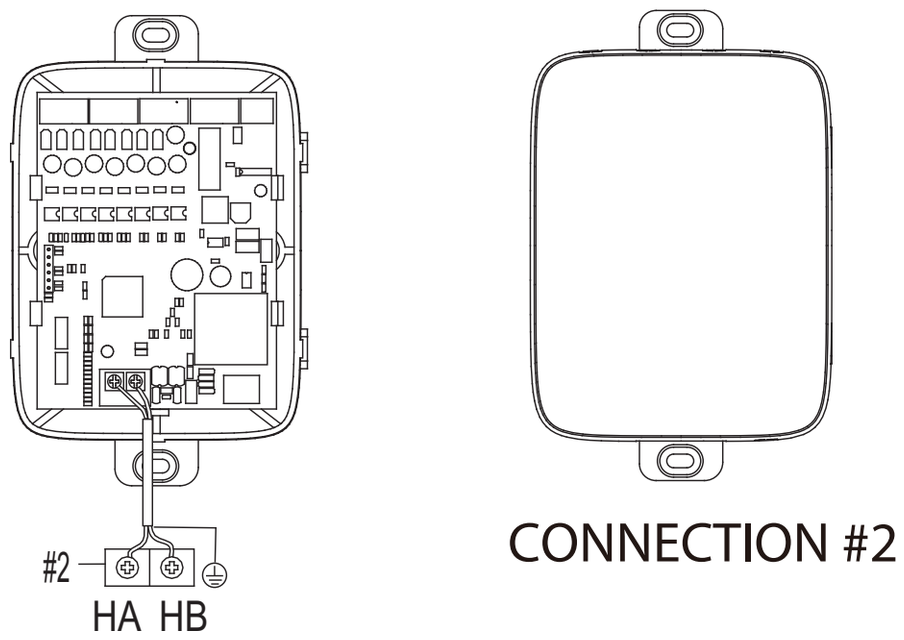
For exposed mounting, fasten the back plate on the wall with the 2 screws (ST3.9*25) and plugs.



NOTE: Put on a flat surface. Be careful not to distort the back plate of the 24V interface by over-tightening the mounting screws.

Wire the Indoor Unit

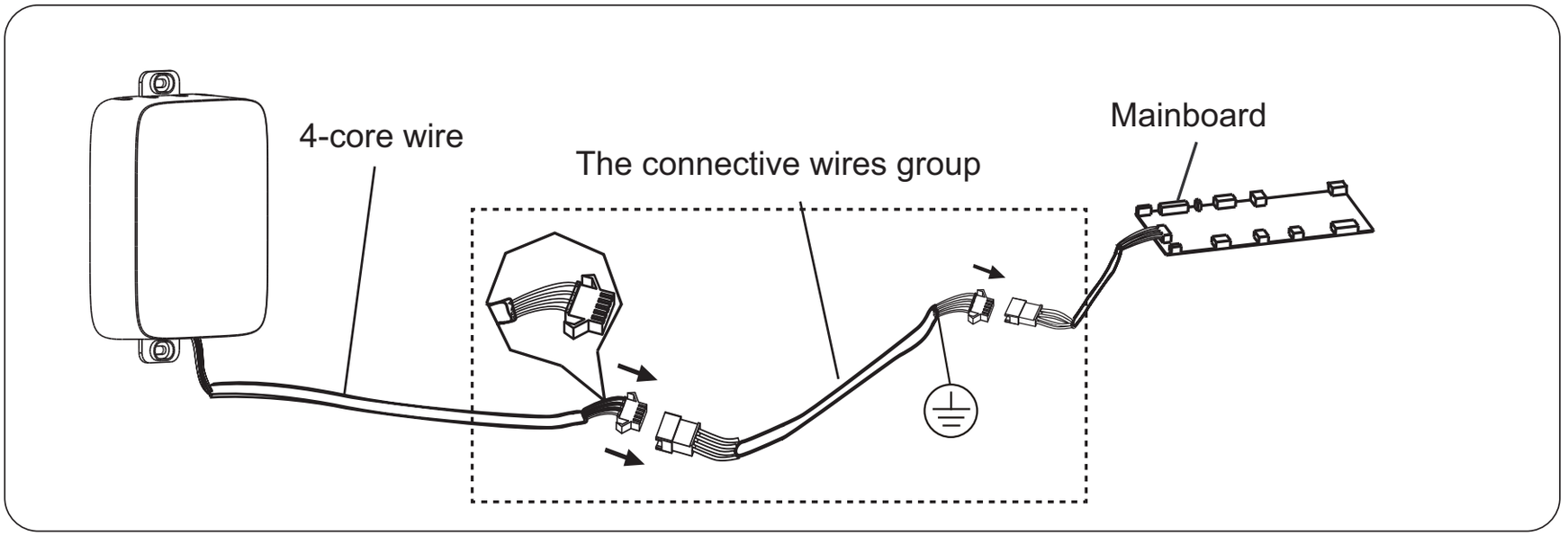




NOTE: Connection # 1 connects to a multi-function board via a 4-core wire X-Y-E (power supply).

Connection #1

Connect the wire from the display panel of the indoor unit to a connecting cable. Then connect the other side of the connecting cable to the remote control. Indoor units with a main control board CN40 connection (slim ducts, cassettes, 18K and above consoles) can utilize connection #1 via CN40 for both R-454B and R-410A. R-410A high walls are not compatible with this interface; R-454B high walls are compatible through the X-Y-E connections on the multi-function board.



Connection #2 (Indoor Unit)

Notch the part for the wiring to pass through with nippers, etc.

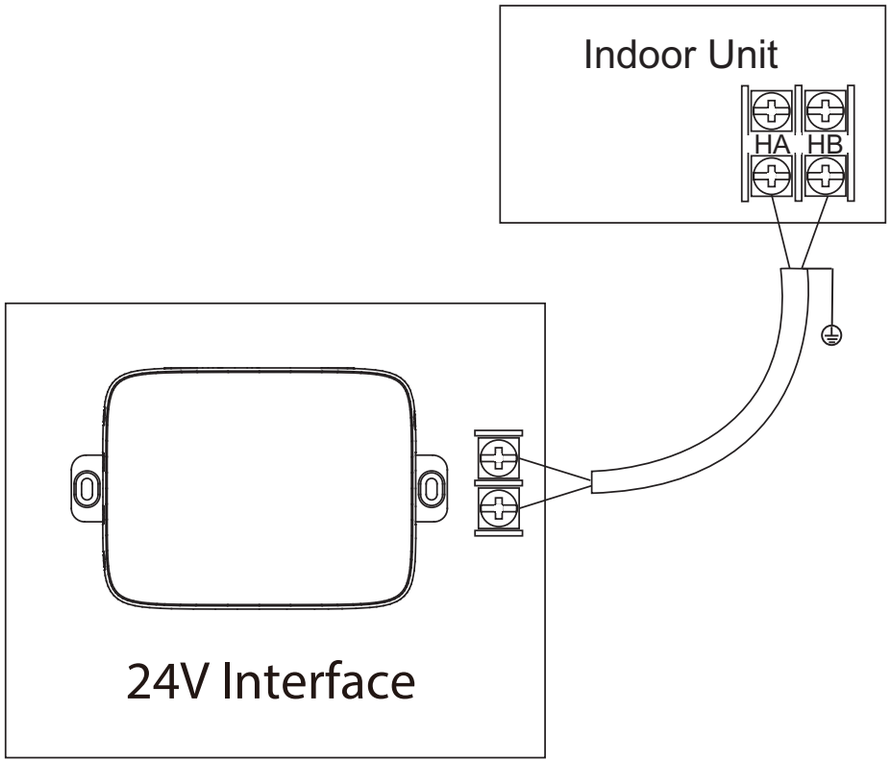
Connect the terminals to CN2 on the 24V interface (HA, HB), and the terminals of the indoor unit (HA, HB). (HA and HB do not have polarity.)

The 24V interface connects to the unit through the HA and HB ports.

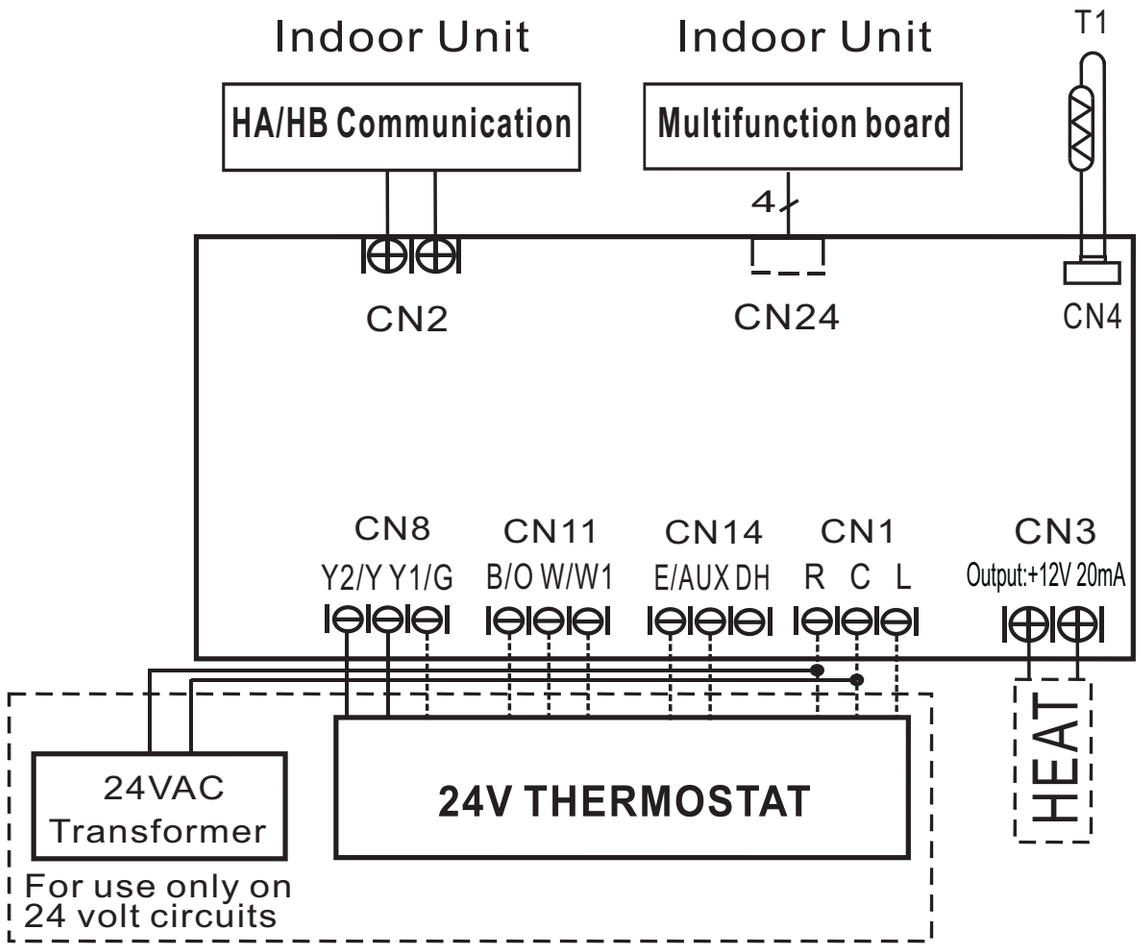
NOTE: DO NOT allow water to enter the 24V interface. Use the trap and putty to seal the wires.

NOTE: Connecting wires must be fixed securely and cannot be pulled on.

Please refer to the Product Data for full compatibility of this product.



Wiring Diagram

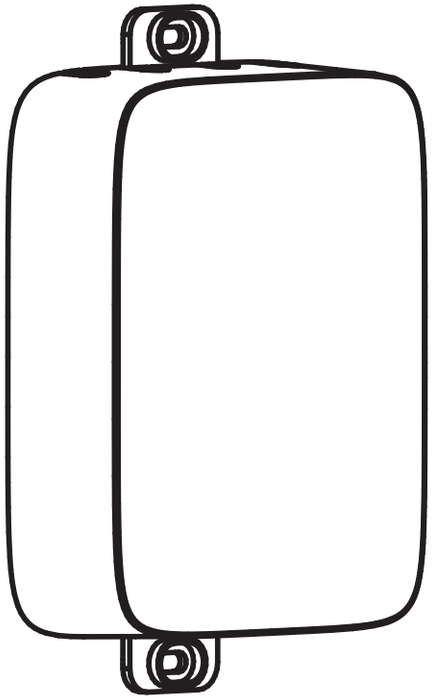


1. ⌐ ¬ This symbol indicates the element is optional, the actual shape shall prevail. These items are not included with the unit.

24V THERMOSTATS SETTING			
Dip switch settings	SW1 	SW2 	SW3 
Code	ON~OFF	ON~OFF	ON~OFF
Factory setting	✓	✓	✓

Reattach the 24V Interface Cover

Position the upper case, then secure it. Avoid clamping the wiring during installation.



Specifications

Table 2 – Specifications

INPUT VOLTAGE - INDOOR UNIT	12VDC
INPUT VOLTAGE - THERMOSTAT TRANSFORMER	24VAC
AMBIENT TEMPERATURE	23-110^{0}F(-5-43^{0}C)
AMBIENT HUMIDITY	RH40%~RH90%

Wiring Specifications

NOTE: It is suggested to use a maximum connection wire length of no more than 19.7ft (6 meters). For longer connections, a shielded cable (not provided) is recommended.

Application

This system is designed for operation with standard 24VAC HVAC thermostats. Either standard conventional, or heat pump thermostats are allowed for use.

NOTE: The T1 room temperature sensor is placed in the indoor space to detect the ambient temperature of the room.

1. When using the thermostat to control the single-zone system, the fan of indoor unit may stop running when the thermostat changes from the heating mode to the air supply mode. This design is to ensure that the Anti-cold Air function of the indoor unit is still effective after heating to the set temperature by the thermostat. The fan will stop when the evaporator temperature is low and the fan not will stop when the temperature of the evaporator is high.
2. During heating operation, the fan of the indoor unit will stop during defrost. This is designed to ensure proper defrost functionality.
3. When using the thermostat to connect this product for controlling the indoor unit and when the thermostat is on, that only allows the user to use the remote control for the wind swing function of the air conditioner. Other functions can't be used by the remote control for the indoor unit.
4. All operating modes depend on the T1 sensor of mini interface. When the mini interface is connected to indoor unit, its sensor will take effect automatically, and override the sensor of indoor unit.
5. Even if the thermostat keeps sending a G signal to interface, it does not affect the defrosting algorithm. The fan will shut off during defrost based on indoor unit control logic.

Step-by-Step Guide to Using the T1 Thermistor

1. Understand the Purpose of the T1 Thermistor
   The remote T1 thermistor helps improve temperature accuracy by measuring room temperature more accurately than the indoor unit's built-in RT1 thermistor. This is especially useful when there is a temperature difference between:
   - The indoor unit's sensor (often affected by placement)
   - And a 3rd-party thermostat in a different location
2. Identify When to Use the Remote T1 Thermistor
   Use the remote T1 thermistor in the following cases where the indoor unit may be installed:
   - Near ceilings (hot air rises)
   - In enclosed spaces
   - Near exterior walls or drafts
   - When there is a noticeable difference between the unit's built-in sensor reading and the actual room conditions or thermostat reading
3. Choose the Best Placement for the T1 Thermistor
   Place the remote T1 thermistor:
   - In a central area of the room
   - Away from direct sunlight, heat sources, or air vents
   - Avoid corners, doors, or spots near electronics that generate heat
   - For high-wall installations, plan placement carefully and consider the cable length
4. T1 Thermistor Extension Cable (RC part number — 17401204010126)
   When to use an extension cable:
   - If the ideal placement is farther than the default cable allows
   - Use an extension cable to increase placement flexibility
   - To ensure accurate calibration between the ductless unit and the thermostat
5. Follow Installation Guidance
   Review the installation manual for any additional setting of the 24V Interface Mini.

Dialing Codes

Table 3 – Fan Speeds - Cooling/Heating

COOLING FAN SPEED					
DIAL CODE NUMBER	**1**	**2**	**3**	**4**	**5**
SW1-1	OFF	OFF	OFF	OFF	ON
SW1-2	OFF	OFF	ON	ON	OFF
SW1-3	OFF	ON	OFF	ON	OFF
FUNCTION	Auto Fan (Default)	Low	Middle	High	Turbo

HEATING FAN SPEED					
DIAL CODE NUMBER	**1**	**2**	**3**	**4**	**5**
SW1-4	OFF	OFF	OFF	OFF	ON
SW2-1	OFF	OFF	ON	ON	OFF
SW2-2	OFF	ON	OFF	ON	OFF
FUNCTION	Auto Fan (Default)	Low	Middle	High	Turbo

NOTE: Do NOT use low speed setting for heat as damage to the compressor may occur.

Table 4 – Dial Codes

NO.	DIAL CODE	FUNCTION	ON	OFF	NOTE
1	SW2-3	Set type selection, multi-zone and single zone models selection	Multi-zone	Single zone	—
2	SW2-4	Single zone selective dialing code 1	See Table 5 for a description of the dialing code options for single zone model	See Table 5 for a description of the dialing code options for single zone model	Multi-zone do not have this function.
3	SW3-2	Compressor recovery time setting	60 minutes	30 minutes	—
4	SW3-3	Heat port on/off temperature difference	2F	4F	—
5	SW3-4	Single zone selective dialing code 2	See Table 5 for a description of the dialing code options for single zone model	See Table 5 for a description of the dialing code options for single zone model	This code is valid only when the SW2-4 dialing code is OFF.

Table 5 – Dip Switch Settings

DIP SWITCH SETTINGS WITH DIFFERENT COMBINATIONS				
COMBINATION	**SW2-3**	**SW2-4**	**SW3-4**	**NOTE**
Indoor unit type 1(GA) + split single-zone outdoor unit type 2 (Non GA)	OFF	OFF	OFF	Default
Indoor unit type 1(GA) + split single-zone outdoor unit type1(GA)	OFF	ON	*	-
Indoor unit type 2 (Non GA) + multi-zone outdoor unit type 1(GA) or; Indoor unit type 2 (Non GA) + single-zone outdoor unit type 2 (Non GA)	OFF	OFF	ON	-
Indoor unit type 1(GA) + multi-zone outdoor unit	ON	*	OFF	-
Indoor unit type 2(Non GA) + multi-zone outdoor unit	ON	*	ON	-
NOTE: Indoor unit type and outdoor unit type are queried according to the model code.				

1. Refer to Table 6 for applicable GA/Non GA units.
2. An * indicates the denoted Dip Switch is not applicable in this specific configuration.

Table 6 – Applicable GA and Non-GA Units

R-454B PRODUCTS		
GA/Non GA	**CBP**	**ICP**
GA	37MVRA	D5CVRA
GA	37MBRA	D5CVRA
GA	37MBHA	D5CLHA
Non GA	37MGRA	D5CLHA
Non GA	37MGRA	D5CMRA
Non GA	37MTRA	D5CMTA
Non GA	37MGHA	D5CMHA
GA	45MBDA	D5FSDA
GA	37MAHA	D5CSHA
GA	37MPRA	D5CPRA
GA	37MHRA	D5CERA
GA	37MARA	D5CSRA
GA	37MHRA	D5CERA
GA	45MBFA	D5FSFA
GA	45MCFA	D5FSFA
GA	45MUHA	D5FUHA
GA	37MURA	D5CURA
GA	37MUHA	D5CUHA
GA	45MUAA	D5FUAA
GA	45MBAA	D5FSAA
GA	45MHHA	D5FEHA
GA	D5MVHA	D5FVHA
GA	45MPHA	D5FPHA
GA	45MAHA	D5FSHA
GA	45MBCA	D5FSCA
GA	45MCCA	D5FSOA

R-410A PRODUCTS		
GA/Non GA	**CBP**	**ICP**
Non GA	DHMVHA	DLFVHAH
Non GA	38MVRA	DLCVRA
Non GA	40MBCQ	DLFSCA
Non GA	40MBFQ	DLFSFA
Non GA	40MBFQ	DLFLFA
Non GA	40MBDQ	DLFSDA
Non GA	40MBDQ	DLFLDA
Non GA	38MGRB	DLCMRB
Non GA	38MGHB	DLCMRB
Non GA	38MGHB	DLCMHB
Non GA	38MTRA	DLCMTA
Non GA	40MBDA	DLFSDA
Non GA	40MBDA	DLFLDA
GA	40MPHB	DLFPHB
GA	38MPRB	DLCPRB
GA	40MAHB	DLFSHC
GA	38MARB	DLCSRB
GA	—	DLFSHB
GA	38MURA	DLCURA
GA	40MBCA	DLFSCB
GA	40MBCA	DLFLCB
GA	40MBFA	DLFSFB
GA	38MBRC	DLCLRC

Interface Input Description

Table 7 – Connectors

Connector	Purpose
G	Fan control
Y1	1st stage compressor
Y2/Y	2nd stage compressor or 1 stage only thermostat
B/O	Reversing valve
W	Heating control, conventional heat
W1	Electric heating with heat pump
E/AUX	Emergency heating. E/AUX is not used for all compatible units with the mini interface.
DH	Dehumidification. **DH is not active.**
L	Malfunction signal
R	24V Power connection
C	Common

1. When you use the thermostat to control the air conditioner, the dehumidification (DH) mode is not supported.

24V Signal Chart

Table 8 – Signal Chart - 24V Input Terminals

24V INPUT TERMINAL											
Mode	**Priority**	**G**	**Y1**	**Y2**	**B/O**	**W**	**W1**	**E/AUX**	**DH**	**Fan speed**	**NOTE**
OFF	/	0	0	0	0	0	0	0	*	OFF	
FAN	6	1	0	0	*	0	0	0	*	Low	NOTE 1
Cooling Y 1	5	*	1	0	0	0	0	0	*	Dialing Code Fan Speed	
Cooling Y 2		*	*	1	0	0	0	0	*	Dialing Code Fan Speed	
Heat pump Y 1	4	*	1	0	1	0	0	0	*	Dialing Code Fan Speed	
Heat pump Y 2		*	*	1	1	0	0	0	*	Dialing Code Fan Speed	
Heat pump Y 2		*	*	*	*	1	0	0	*	Dialing Code Fan Speed	

NOTE: 1(a) For a multizone indoor unit, when the heating mode is transferred to the fan mode, the fan of indoor unit will stop running.

1(b) For a single zone indoor unit, when the heating mode is transferred to the fan mode, the anti-cold-air function is effective.

1(c) When the OFF mode or cooling mode are transferred to the fan mode, the fan of indoor unit will run in low speed.

NOTE: 2 An * indicates it may be set to either 1 or 0, as it doesn't apply for the indicated mode.

NOTES:

Edition Date: 05/25 Catalog No. IM-KSAICM-02

 Replaces: New