Installation Instructions

Read and become familiar with these instructions before beginning installation.

SAFETY CONSIDERATIONS

Read these instructions thoroughly and follow all warnings or cautions included in the literature and attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements. Recognize safety information.

This is the safety−alert symbol ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand these signal words: **DANGER**, **WARNING**, and **CAUTION**. These words are used with the safety−alert symbol. **DANGER** identifies the most serious hazards which **will** result in severe personal injury or death. **WARNING** signifies hazards which **could** result in personal injury or death. **CAUTION** is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ **WARNING**

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before beginning any modification or installation of this kit, be sure the main electrical disconnect is in the OFF position. Ensure power is disconnected to the fan coil unit. On some systems both the fan coil and the outdoor unit may be on the same disconnect. Tag the disconnect switch with a suitable warning label. There may be more than one disconnect.

⚠ **CAUTION**

EQUIPMENT DAMAGE HAZARD

Failure to follow this warning may result in equipment damage.

Do not install the wired controller in an area subjected to excessive steam, oil or sulfide gas. Doing so may cause the controller to deform and/or fail.

⚠ **WARNING**

INSTALLATION

Entrust the distributor or authorized professionals to install the unit. Installation by unskilled persons may lead to improper installation, electric shock, or fire. Re−installation must be performed by authorized professionals. Non−compliance may lead to electric shock or fire.

OVERVIEW

The 24V INTERFACE KIT is used to connect a SINGLE ZONE Ductless System to a 3rd party single stage conventional thermostat.

NOTE: Images are for illustration purposes only. Actual models may be slightly different.

Table 1 – Kit Contents: Confirm the following parts are included

No.	Description	Qty	Remarks
1	Control box	1	N/A
2	Installation Manual	1	N/A
3	Screws	3	M4X20 (for wall mounting)
4	Wall anchors	3	For wall mounting
7	Return Air Thermistor Assembly	1	Used on future applications
8	16.4ft. (5m) Return Air Thermistor Assembly Extension Wires	1	Used on future applications

Table 2 – Field Supplied Components: Prepare the following assemblies on site

No.	Description	Qty	Type	Remarks
1	Switch Box	1	N/A	N/A
2	Wiring Tube (insulating sleeve and tightening screw)	1	N/A	N/A

⚠ **WARNING**
• The wiring should adapt to the wire control current. Otherwise, electric leakage or overheating may occur and result in a fire.
• The specified cables shall be used in the wiring. No external force may be applied to the terminal. Otherwise, the wire may be damages and heating may occur and result in a fire.

⚠ **CAUTION**
• The shielded wire must be grounded.
• Sensor connecting cable should not be longer than 23in. (7m).
• The control box operates on low voltage circuit loops. DO NOT connect a 220V or 380V cable to the circuit loop.
• Ensure the configured tubes are 12–20in. (30–50cm) or more apart.
• DO NOT use a ohmmeter to detect the insulation after wiring the control box.

DIMENSIONS
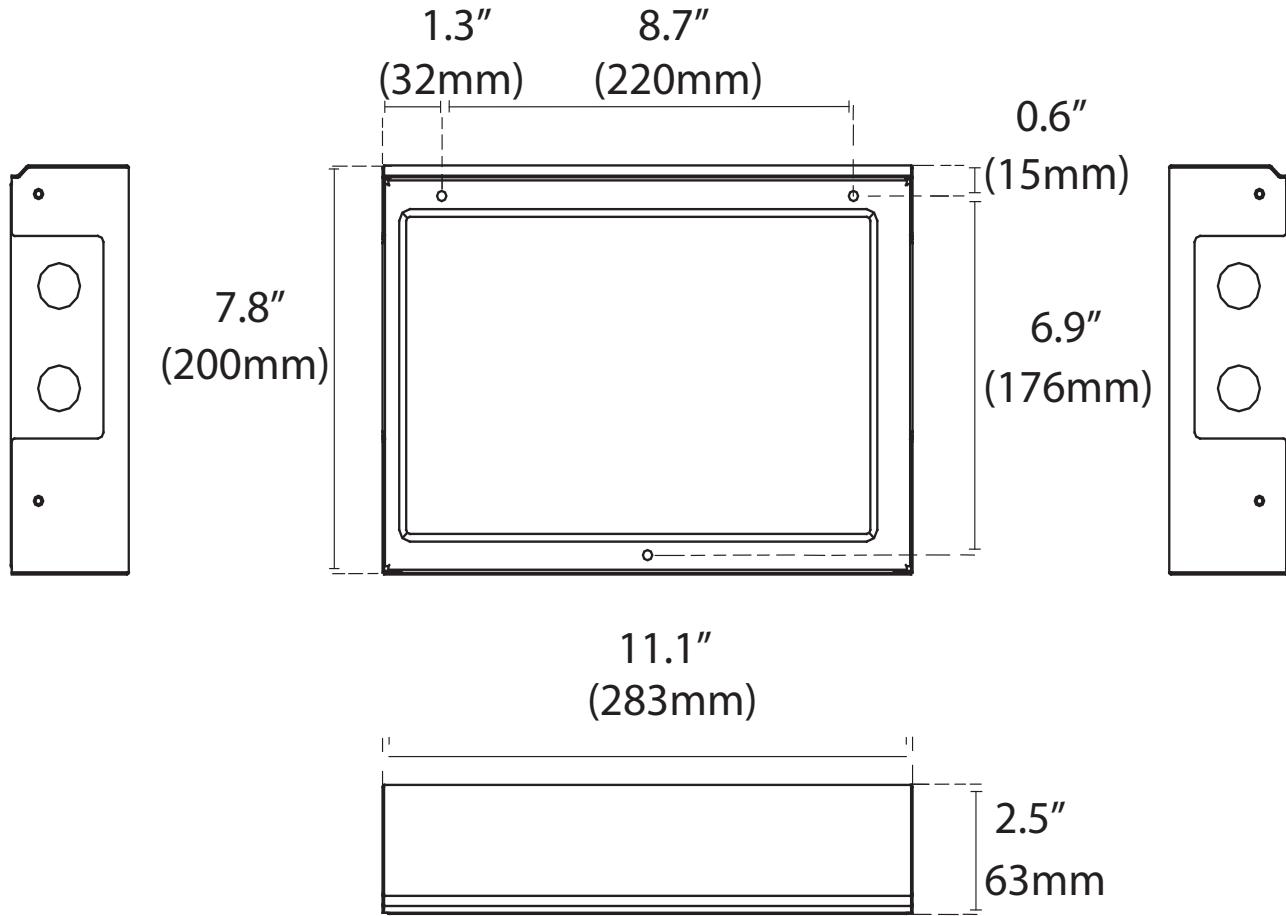
Fig. 1 – 24V interface structure size

CLEARANCES

Table 3 – 24VAC Interface Clearance Dimensions

Clearances	
Unit	Minimum Value In (mm)
Sides	3.5 (89)
Front	24 (610)*
Top and Bottom	3 (76.2)

NOTE: *24 in (610mm) minimum for service access or use local code.

INSTALLATION

Installation Location

The 24V INTERFACE KIT is rated for outdoor and indoor mounting (depending on the application).

⚠ CAUTION

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

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1. Remove the cover of the 24V INTERFACE KIT. Remove the six screws of the 24V INTERFACE KIT with a screwdriver or similar tool. Rotate the lid along the hem to disassemble.
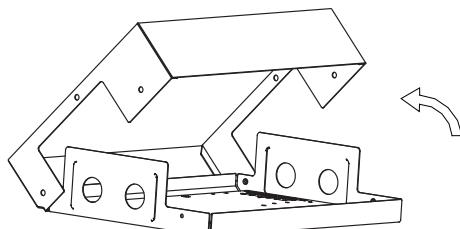
Fig. 2 – Remove the Cover

2. Mount the 24V INTERFACE KIT horizontally (see Fig. 3), by fastening the back plate to the wall with 3 screws (M4x20) and anchors.

⚠ CAUTION

The 24V Interface kit cover has a directional arrow on the cover. In case of outdoors installation verify, during the mounting process, that this arrow will point UP upon installation. Failure to mount the kit correctly can cause water ingress into the box which may compromise the electrical component integrity.
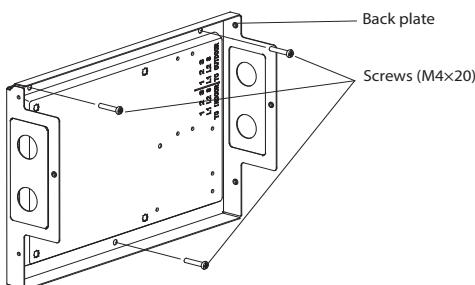

Fig. 3 – 24V Interface Kit

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.

3. WIRING – Based on the system used, wire the unit as shown on the System Configuration Scenarios Section.

4. Cover the 24V INTERFACE KIT Lid, and lock back in place using the six screws previously removed.
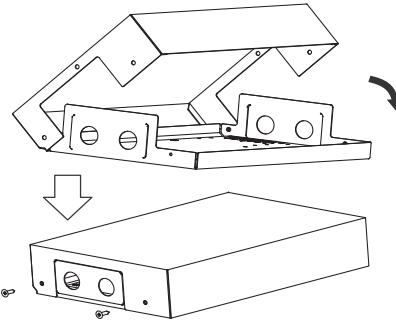
Fig. 4 – Cover the screw

SYSTEM CONFIGURATION SCENARIOS

Scenario No. 1: 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)
- Console (Sizes 9–24)
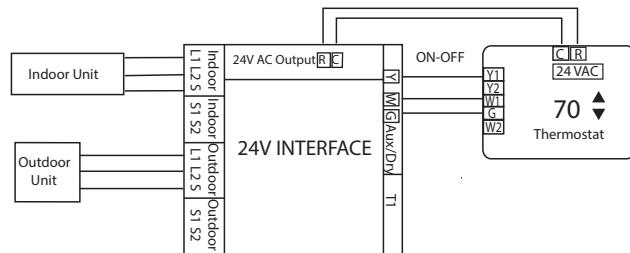
Fig. 5 – Scenario 1

NOTE: On selected indoor units, the Up–Down Swing Louver function as well as the control to turn off the indoor unit display is available on the unit's Wireless Remote controller.

⚠ CAUTION

The indoor unit requires an updated control board for compatibility with the 24V interface. High Wall Indoor units starting with serial # 4216V10001 are shipped the compatible control board.

Ducted Indoor units starting with serial # 4616V10001 are shipped the compatible control board.

Indoor units with new control board are also marked with a blue sticker on the shipping label.

Scenario No. 2: Match the following ductless indoor units with the corresponding compatible **SINGLE ZONE** outdoor units:

- Cassette (Sizes 36–48)
  Ducted (Sizes 36–58)
  Console (Sizes 36–58).
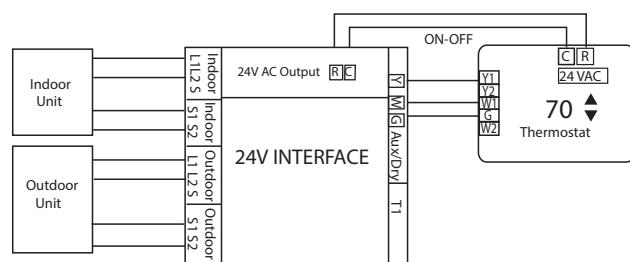
Fig. 6 – Scenario 2

<table>
<tr><td colspan="2" align="center">⚠ **CAUTION**</td></tr>
</table>

```
┌─────────────────────────────────────────────────┐
│   ⚠   CAUTION                                     │
├─────────────────────────────────────────────────┤
│                                                   │
│  The conventional thermostat must be configured   │
│  for use with a single stage air conditioner      │
│  (Y output ONLY) and a single stage heating       │
│  (W) system.                                      │
│                                                   │
└─────────────────────────────────────────────────┘
```

Control Logic

Table 4 – Conventional Thermostat Connections

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

Table 5 – 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 (Auto Fan Speed)
X	X	X	√	☆	☆	X	Fan only (Low Fan Speed)
X	X	X	X	√	☆	X	Fan only (Medium Fan Speed)
X	X	X	X	X	√	X	Fan only (High Fan Speed)
√	√	☆	☆	☆	☆	☆	OFF
X	X	X	X	X	X	X	OFF
X	X	☆	☆	☆	☆	√	DRY

FAN SPEED – Select Auto, Low Medium or High Airflow

To provide airflow at the rates described in Tables 4 and 5, the Fan Speed input G (Auto), G1 (Low), G2 (Medium) or G3 (High) must be selected. Use the selection options provided to adjust the airflow supplied to meet the individual installation needs for such things as noise, comfort, and humidity removal.

Table 6 – 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	√	☆	Medium Speed
√	X	X	X	√	High Speed
X	X	X	X	X	Fan OFF

LEGEND

√	ON
X	OFF
☆	ON or OFF

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.
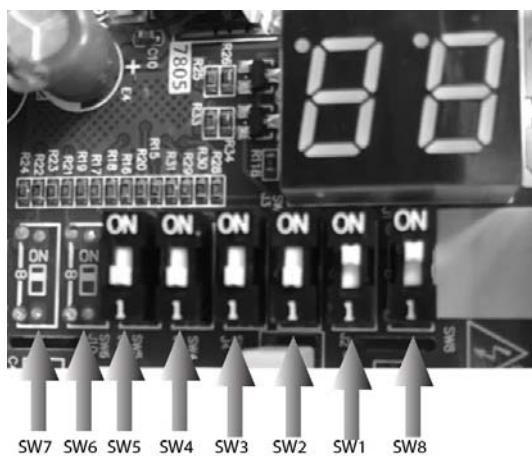

Fig. 7 – DIP Switch Definitions

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.

Table 7 – Dip Switch 5

SW5	Result	Note
ON	1h	
OFF	3h	Default

Dip Switch 4

Dry is used for thermostats with a Dry Function output. An auxiliary heater is used on the Ducted Style Indoor Units (Scenario 1 and 2) to control a secondary Heat Source.

Table 8 – Dip Switch 4

SW4	Result	Note
ON	Dry	
OFF	Aux Heater	Default

Dip Switch 3

Used for freeze protection of the indoor coil.

Table 9 – Dip Switch 3

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

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

Dip Switch 2

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

Table 10 – Dip Switch 2

SW2	Result	Note
ON	Cooling Only	
OFF	Heat Pump	Default

Dip Switch 1

Used for selection of the indoor unit type.

Table 11 – Dip Switch 1

SW1	Result	Note
ON	Sets − Both Ductless Indoor and Outdoor Units	Default
OFF	Outdoor Only (see Fig. 8)	

Dip Switch 8

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

Table 12 – Dip Switch 8

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

For ease of service, the 24V Interface is equipped with a diagnostic code display LED on the control board.

Table 13 – Error Codes

Display	Malfunction and 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 successful power up and in standby
IN	Module and indoor unit communication malfunction
OU	Module and outdoor unit communication malfunction

COMPATIBILITY

The 24V INTERFACE KIT is compatible with most thermostats matched with the Ductless Systems listed below. Before installation, check the compatibility of your Ductless System. Professional installation is recommended

Table 14 – Scenario 1

Type of Indoor Unit	Indoor Family Name	Outdoor Family Name	KSAIC0101115	KSAIC0101230
HIGH WALL	40MPHA	38MPRA		○
	619PHA	38MPRA		○
	DHMPHA	38MPRA		○
	DLFPHA	DLCPRA		○
	40MAQ	38MA*R	○ 115V	○ 208/230V
	619P*B	38MA*R	○ 115V	○ 208/230V
	DHMSHA	38MA*R	○ 115V	○ 208/230V
	DLFSHA	DLCSRA	○ 115V	○ 208/230V
	40MHH	38MHR	○ 115V	○ 208/230V
	DLFEHA	DLCERA	○ 115V	○ 208/230V
CASSETTE	40MBQB*C	38MA*R		
	40MBCQ	38MA*R		○
	DLFSCA	DLCSRA		○
	DLFLCA	DLCLRA		○
DUCTED	40MBQB*D	38MA*R		
	40MBDQ	38MA*R		○
	DLFSDA	DLCSRA		○
	DLFLDA	DLCLRA		○
CONSOLE	40MBQB*F	38MA*R		
	40MBFQ	38MA*R		○
	DLFSFA	DLCSRA		○
	DLFLFA	DLCLRA		○

○	Optional
	Not Compatible

NOTES:

— The Indoor unit requires an updated control board for compatibility with the 24V Interface Kit.

— High Wall units starting with Serial # 4316V10001 are shipped with the compatible control board.

— Ducted units starting with Serial # 4616V10001 are shipped with the compatible control board.

— For other model numbers not shown on the table above, please contact your ductless representative.

WIRING DIAGRAM

|	Frequency Time			Aux-heat/dry			Anti-cold			Unit type			Set/outdoor only			Display tube		
	SW5	ON	1	SW4	ON	1	SW3	ON	1	SW2	ON	1	SW1	ON	1	SW8	ON	1
Mode	3H	1H		Mode	Aux-heat	Dry	Mode	YES	NO	Mode	Heat pump	Cooling only	Mode	Outdoor only	Set	Mode	OFF	ON
Factory default		✓		Factory default		✓		Factory default	✓		Factory default	✓		Factory default		✓	Factory default		✓
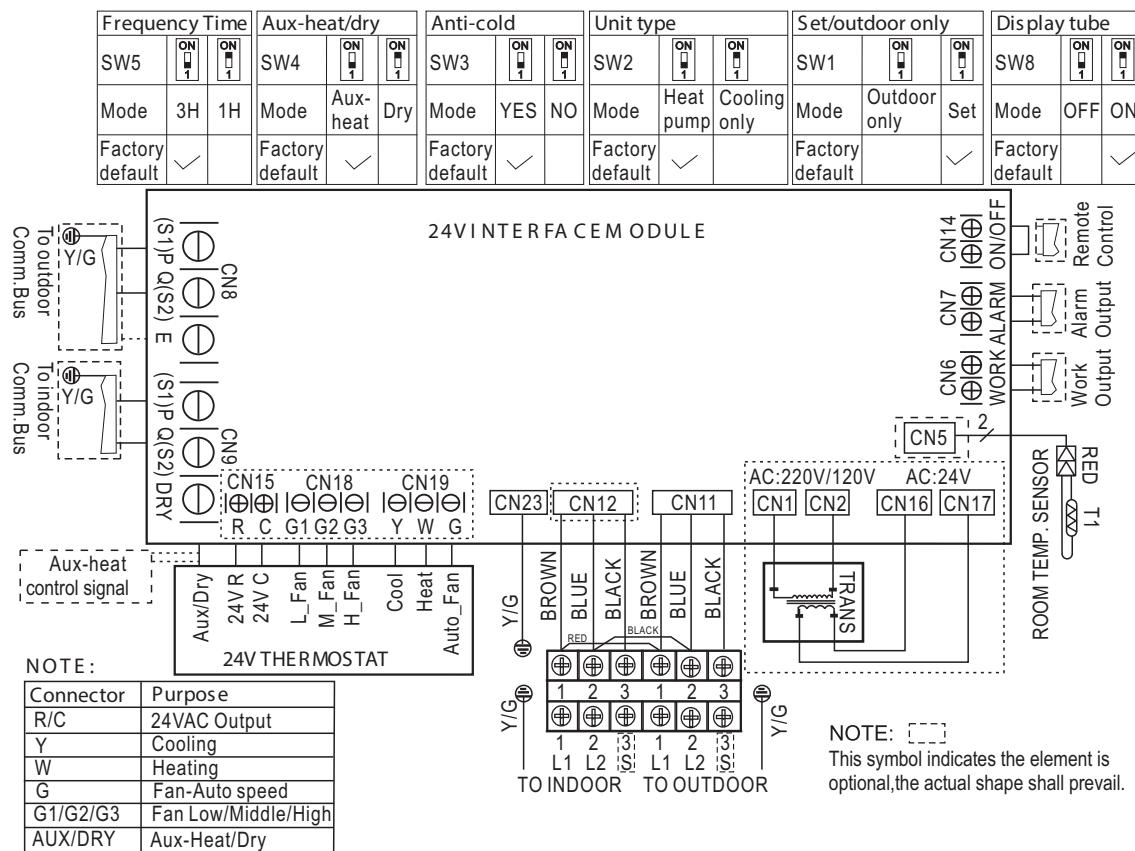
Fig. 8 – 24V Interface Wiring Diagram

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.