

24 Volt Interface

For use with Bosch Split-Type Ductless Air Conditioner / Heat Pump

208/230V~60Hz 1Ph

115V~60Hz 1Ph



BOSCH

Installation Manual



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1 Key to Symbols and Safety Instructions

1.1 Key to Symbols

Warnings



Warnings in this document are identified by a warning triangle printed against a grey background. Keywords at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.

The following keywords are defined and can be used in this document:

- ▶ **DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- ▶ **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- ▶ **CAUTION** indicates a hazardous situation which, if not avoided, could result in minor to moderate injury.
- ▶ **NOTICE** is used to address practices not related to personal injury.

Important information



This symbol indicates important information where there is no risk to people or property.

1.2 Safety Instructions



Read this manual carefully before installing or operating your new 24 Volt Interface Adapter. Make sure to save this manual for future reference.



WARNING:

- ▶ Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.



WARNING:

- ▶ All wiring to be rated for the control box amperage rating.
- ▶ All wiring installed to meet general industry standards and practices.



WARNING:

- ▶ Do not install adapter near flammable liquids or gases.



CAUTION:

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



WARNING: ELECTRICAL SHOCK HAZARD

- ▶ Do not operate the unit with wet hands, as this could lead to electrical shock.

NOTICE:

- ▶ When connecting to the outdoor unit, shielded wire must be used and grounded at one end only to reduce Electromagnetic interference (EMI).



WARNING:

- ▶ This product can expose you to chemicals including Lead and Lead components, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

2 Dimensions

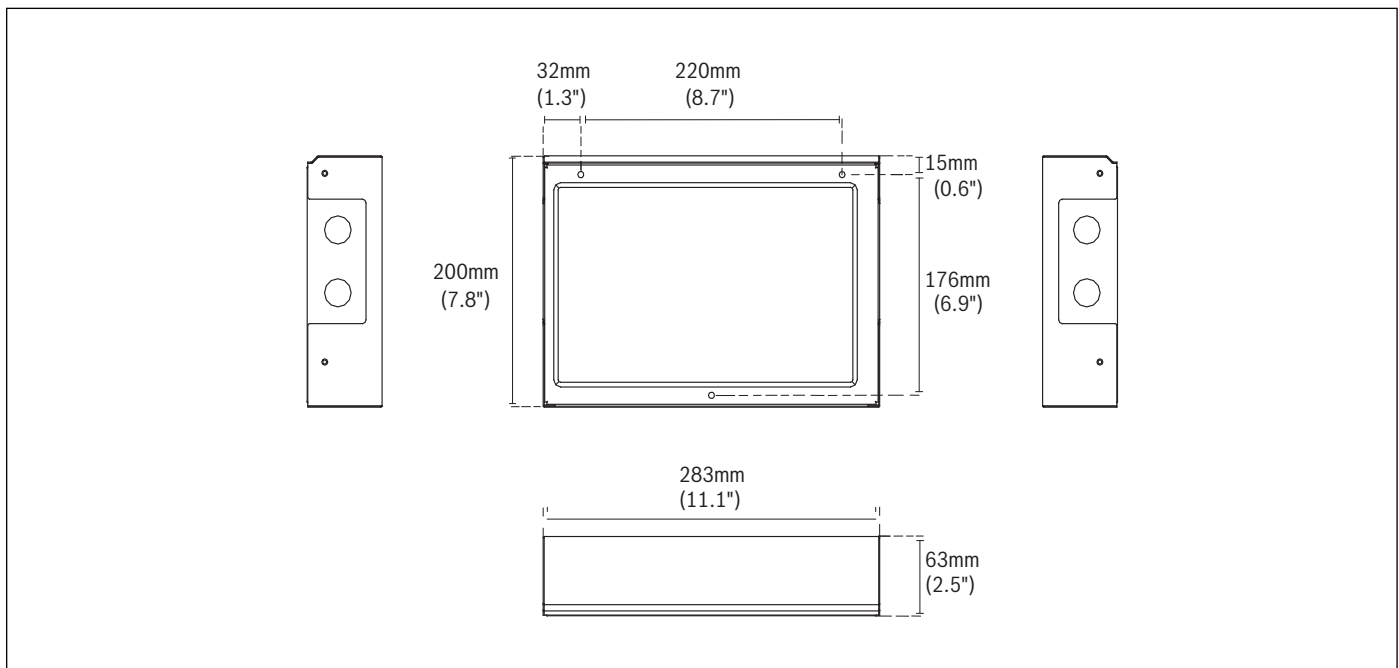


Figure 1

3 Clearances

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

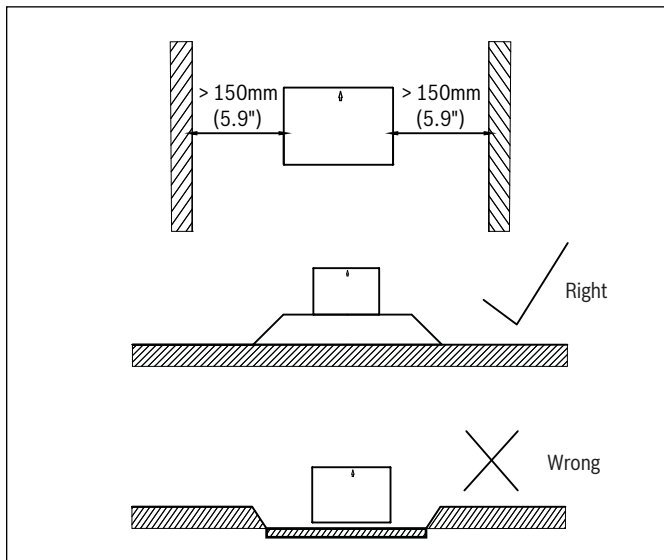


Figure 2

4 Installation

4.1 Preparation

1. Ensure you have the following parts:

No.	Name	Quantity	Remarks
1	Control box	1	
2	Screws	3	M4 x20 (For mounting on the wall)
3	Anchors	3	For mounting on the wall
4	Connective wires group	2	For connecting the sensor
5	5m connective wires group	1	

Table 1

2. Prepare the following tools:

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

Table 2

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

4.2 Installation Process

1. Remove the cover of the 24V INTERFACE. Remove the four screws of the 24V INTERFACE with a screwdriver. Lift the top cover as shown in Fig. 3.

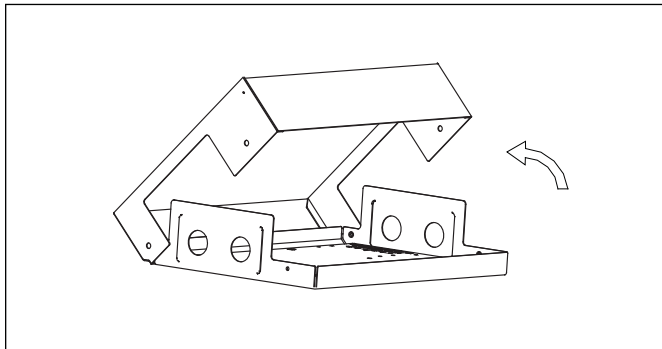


Figure 3



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

2. Mount the back plate of the 24V INTERFACE on the wall. Mount the 24V INTERFACE vertically and fasten the back plate to the wall with 3 screws (M4 x20) and anchors (see Fig. 4).

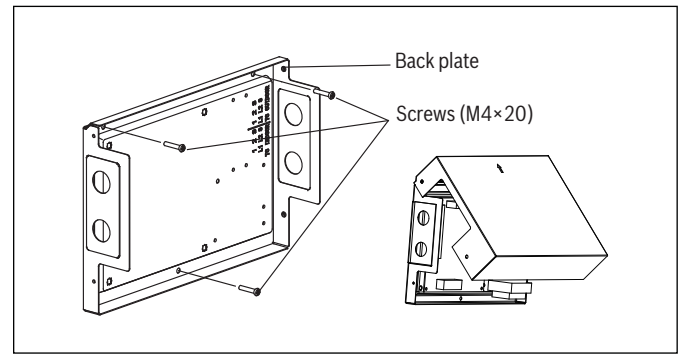


Figure 4



Place the unit on a flat surface. Be careful not to distort the back plate of the 24V INTERFACE by over tightening the screws.

When installed vertically, the direction of the arrow must be up.

3. Wiring: please refer to following pages for model specific wiring procedures.
4. Reinstall the cover and fasten screws (see Fig. 5).

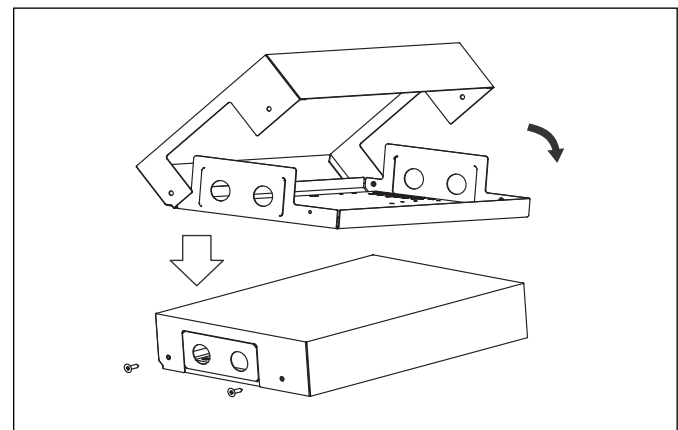


Figure 5



System Configuration

- ▶ Thermostat should be configured for use with a conventional system.
- ▶ The remote controller, wiring controller, central controller and WiFi cannot be used with this control box at the same time. Only the Swing and LED function can be used.

Connection wiring specification

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

Table 3

5 Applications

5.1 Application 1

Applicable Indoor models

Type	Model #	Part #	Description
Wall Mounted	BMS500-AAS012-0AHWXB	8733953249	Minisplit 12kBTU Single Zone Wall Mounted 115V
	BMS500-AAU009-1AHWXB	8733953094	Minisplit 9kBTU Universal Wall Mounted 230V
	BMS500-AAU012-1AHWXB	8733953095	Minisplit 12kBTU Universal Wall Mounted 230V
	BMS500-AAU018-1AHWXB	8733953096	Minisplit 18kBTU Universal Wall Mounted 230V
	BMS500-AAU024-1AHWXB	8733953097	Minisplit 24kBTU Universal Wall Mounted 230V
	BMS500-AAS030-1AHWXB	8733953098	Minisplit 30kBTU Single Zone Wall Mounted 230V
	BMS500-AAS036-1AHWXB	8733953100	Minisplit 36kBTU Single Zone Wall Mounted 230V
Cassette	BMS500-AAU009-1AHCXB	8733953109	Minisplit 9kBTU Universal Cassette 230V
	BMS500-AAU012-1AHCXB	8733953110	Minisplit 12kBTU Universal Cassette 230V
	BMS500-AAU018-1AHCXB	8733953111	Minisplit 18kBTU Universal Cassette 230V
	BMS500-AAU024-1AHCXB	8733953112	Minisplit 24kBTU Universal Cassette 230V
Ducted	BMS500-AAU009-1AHDXB	8733953102	Minisplit 9kBTU Universal Ducted 230V
	BMS500-AAU012-1AHDXB	8733953103	Minisplit 12kBTU Universal Ducted 230V
	BMS500-AAU018-1AHDXB	8733953104	Minisplit 18kBTU Universal Ducted 230V
	BMS500-AAU024-1AHDXB	8733953105	Minisplit 24kBTU Universal Ducted 230V

Table 4

Wall Mounted (Sizes 9K~36K)

Cassette (Sizes 9K~24K)

Ducted (Sizes 9K~24K)

Wiring

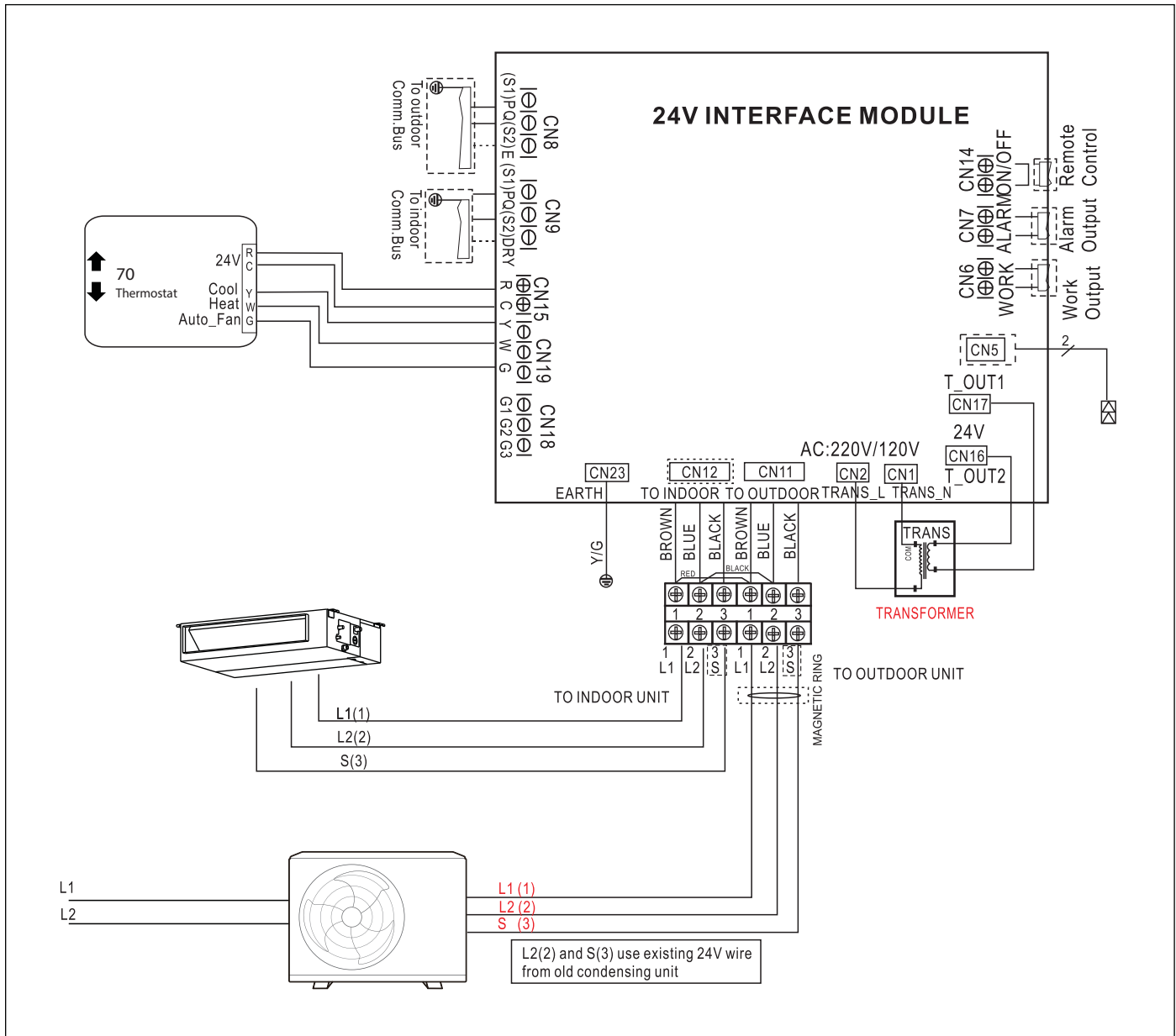


Figure 6



Please connect thermostat G to 24V interface G as default.
Make sure the power supply is correct.



For Wall Mounted unit, the up-down swing louver and the display on/off function is available with the wireless remote control.

5.2 Application 2

Applicable Indoor models

Type	Model #	Part #	Description
Cassette	BMS500-AAU036-1AHCXB	8733953113	Minisplit 36kBTU Universal Cassette 230V
	BMS500-AAU048-1AHCXB	8733953114	Minisplit 48kBTU Universal Cassette 230V
Ducted	BMS500-AAU036-1AHDXB	8733953106	Minisplit 36kBTU Universal Ducted 230V
	BMS500-AAU048-1AHDXB	8733953107	Minisplit 48kBTU Universal Ducted 230V
	BMS500-AAU060-1AHDXB	8733953108	Minisplit 60kBTU Universal Ducted 230V

Table 5

Cassette (Sizes 36K~48K)

Ducted (36K~60K)

Wiring

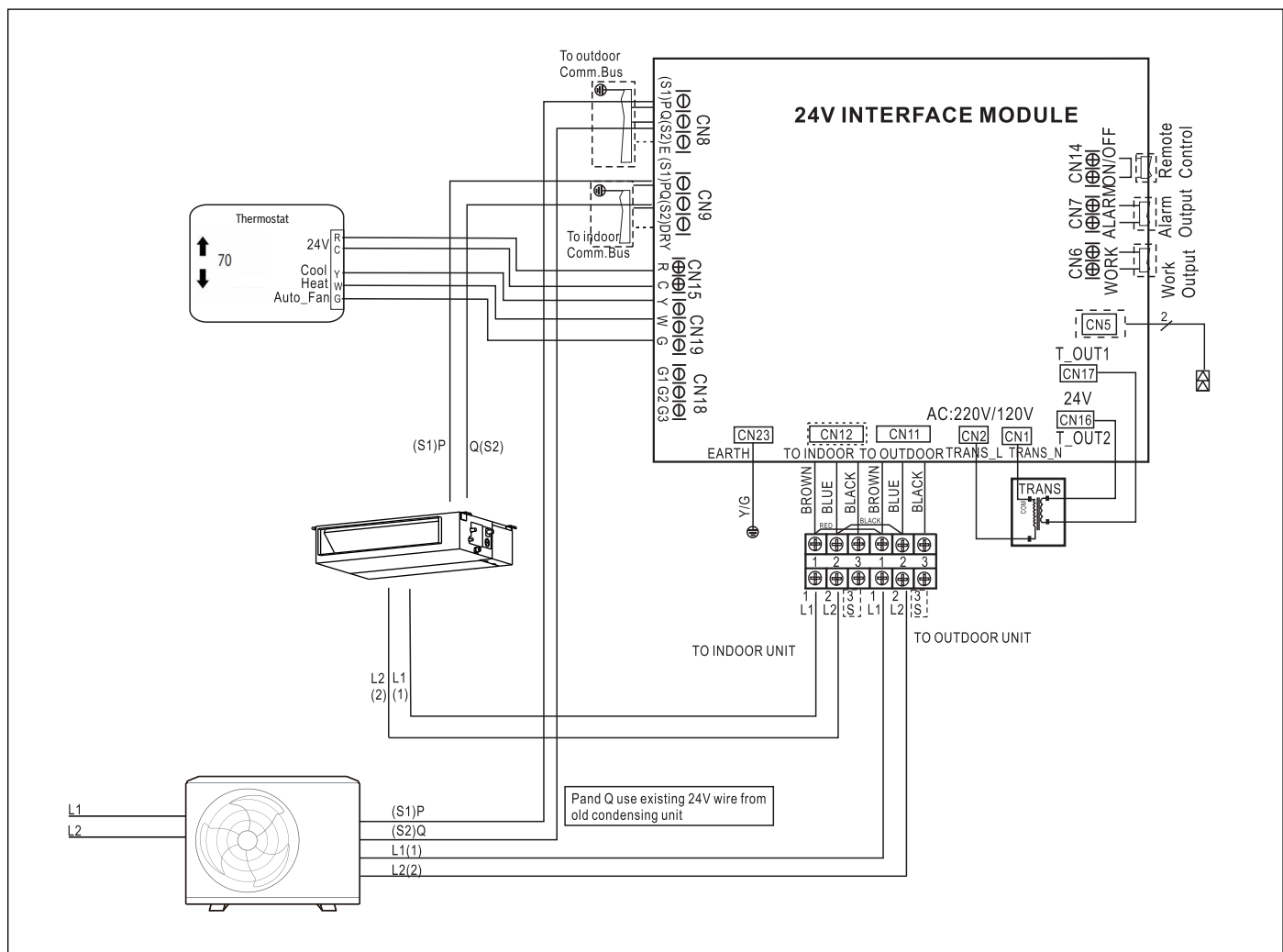


Figure 7



Please connect thermostat G to 24V interface G as default.
Make sure the power supply is correct.

6 Control Logic

6.1 Connector

Connector	Purpose
Y	Cooling
W	Heating
G	Fan- Auto speed
AUX/DRY	Aux-Heat/Dry

Table 6

6.2 Mode Setting

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

Table 7

✓ = ON

X = OFF

* = ON or OFF

6.3 Fan Speed Setting

Unit ON/OFF	G	Setting fan speed
✓	X	Auto fan speed
✓	✓	Auto fan speed
X	X	Fan OFF

Table 8

✓ = ON

X = OFF

7 Dip Switch Configuration

The 24V INTERFACE 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.

7.1 Dip Switch Definitions

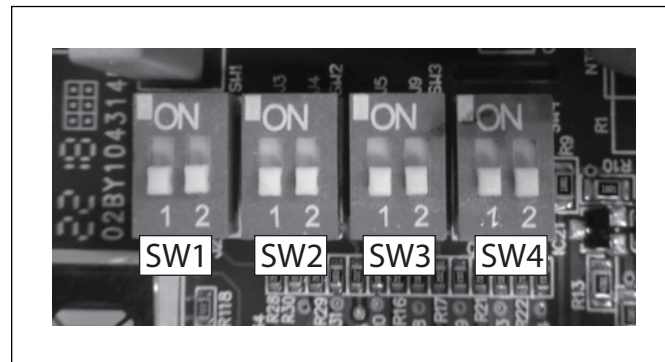


Figure 8

Dip Switch 1-1

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

SW1-1	Result	Note
ON	Display on	
OFF	Display off	Default

Table 9

Dip Switch 1-2

Used for selection of the indoor unit type.

SW1-2	Result	Note
ON	Enables 24V INTERFACE to work with IDU & ODU	
OFF	N/A	Default

Table 10



Must be switched to ON before using the system.

Dip Switch 2-1

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

SW2-1	Result	Note
ON	Cooling only	
OFF	Heat pump	Default

Table 11

Dip Switch 2-2

Used for freeze protection of the indoor coil.

SW2-2	Result	Note
ON	Fan does not stop	
OFF	Fan will stop if the indoor coil temperature is too low	Default

Table 12



Applicable only while system is running in Heating mode.

Dip Switch 3-1

Dry is used for thermostats with a Dry Function output. An auxiliary heater is used on the Ducted Indoor Units to control a secondary Heat Source.

SW3-1	Result	Note
ON	Dry	
OFF	Aux-heater	Default

Table 13

Dip Switch 3-2

Used to increase the compressor frequency in case the set point has not been reached after 1 hour or 3 hours of operation.

SW3-2	Result	Note
ON	1h	
OFF	3h	Default

Table 14

Dip Switch 4-1

For factory test only.

SW4-1	Note
OFF	Default

Table 15

Dip Switch 4-2

For factory test only.

SW4-2	Note
OFF	Default

Table 16

8 Error Codes

Display	Malfunction & protection indication
E0	Indoor EEPROM error
E2	Cross-zero detection error
E3	Indoor fan speed error
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 error
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
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

Table 17

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