

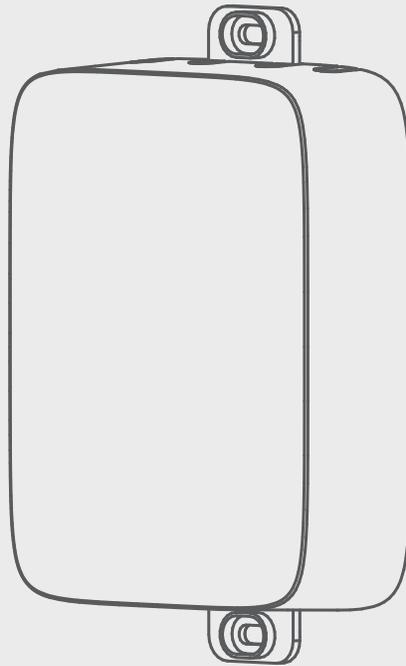


Installation Instructions

24 Volt Interface

208/230V~60Hz 1Ph & 115V~60Hz 1Ph

Climate 5000 Series - Gen 4



BTC 769203313 A / 01.2025



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1 Key to Symbols and Safety Instructions

1.1 Key to Symbols

Warnings

In warnings, signal words at the beginning of a warning are used to indicate the type and seriousness of the ensuing risk if measures for minimizing danger are not taken.

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

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor to moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

Important information



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

1.2 Safety



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



WARNING

Improper or dangerous operation!

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



WARNING

Hazardous voltage!

All wiring must be rated for the control box amperage rating.

All wiring installed must meet general industry standards and practices.



WARNING

Fire, explosion!

Do not install adapter near flammable liquids or gases.



WARNING

Personal injury!

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



WARNING

Electrical hazard!

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



WARNING

Contains lead!

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.

NOTICE

Improper operation!

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

2 Dimensions

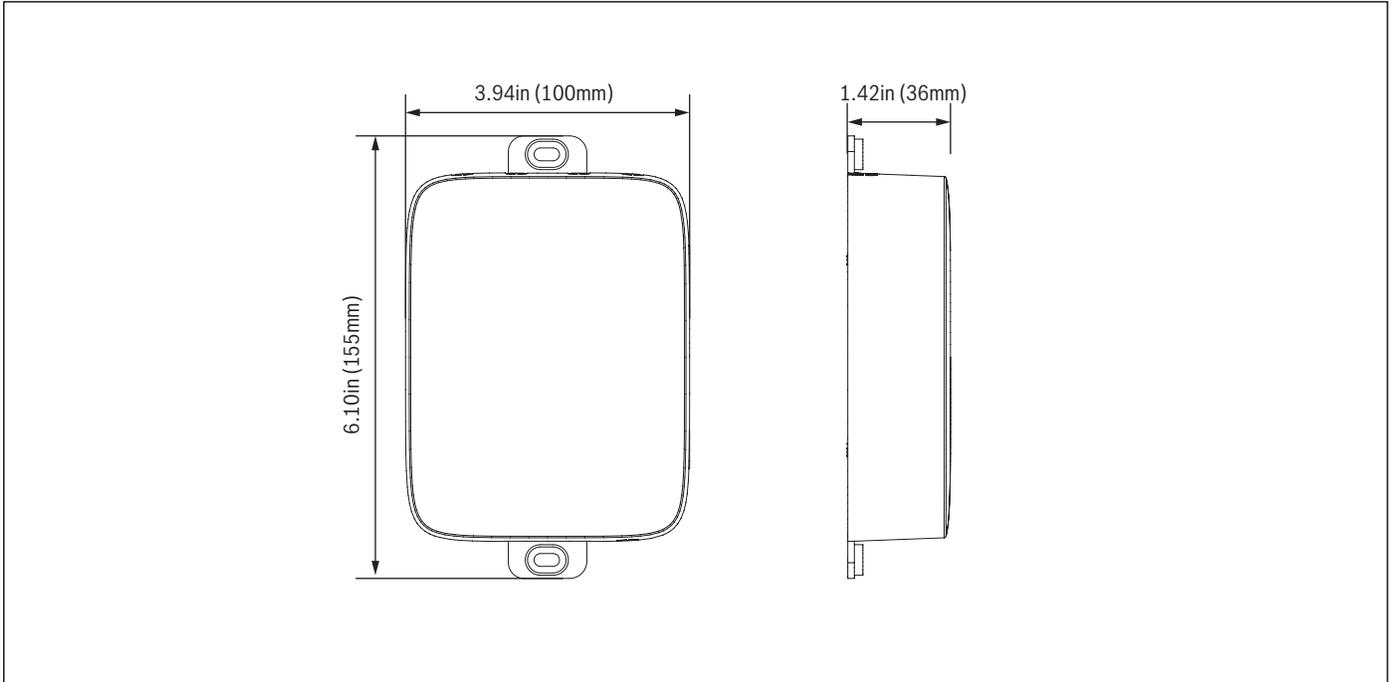


Figure 1

3 Installation

3.1 Preparation

1. Ensure that you have the following parts (supplied with the interface):

No.	Name	Quantity	Remarks
1	Base plate (24V Minibox)	1	
2	Installation and User Manual	1	
3	Screws	2	M3.9 X 25 (For mounting on the wall)
4	Wall Plugs	2	For mounting on the wall
5	Connective wires group	3	Separately for connecting the internal board and base plate.
6	Screw	1	M4 X 8 (For mounting the connective wire group)

Table 1



A transformer (24V AC) is not included with the 24V Interface, and should be purchased separately.

2. Prepare the following tools:

No.	Name	Quantity
1	Switch box	1
2	Transparent insulation (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.

3.2 Precautions

1. This manual provides information on how to install the base plate. For details on how to connect the base plate to the indoor unit, please refer to the wiring diagrams supplied in this manual.



WARNING

Electrical hazard!

DO NOT CONNECT TO HIGH VOLTAGE. Power supply to the base plate must be 24VAC.

2. The shielded wire of the base plate must be grounded firmly.

3.3 Installation Process

1. Remove the upper part of base plate. Insert a slot screwdriver into the slots in the lower part of the base plate (2 places), and remove the upper part of the base plate.

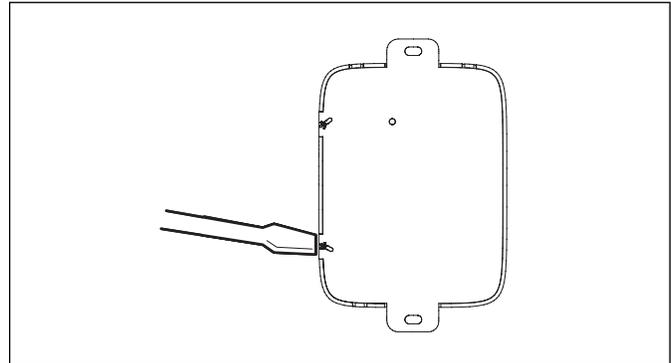


Figure 2



Gently twist the screwdriver in the slots. Do not try to pry up or down.



The PCB is mounted in the upper part of the base plate. Be careful not to damage the board with the screwdriver.

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

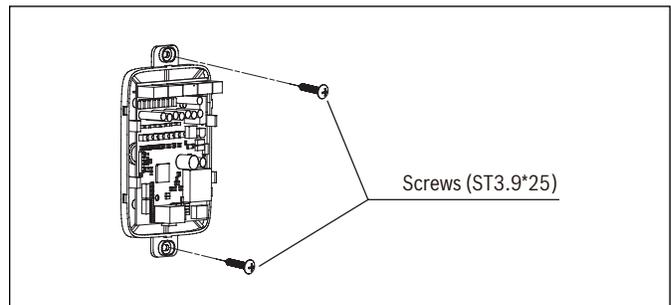


Figure 3



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 the following connection methods for the appropriate wiring procedures.

4. Reattach the upper part of the base plate.

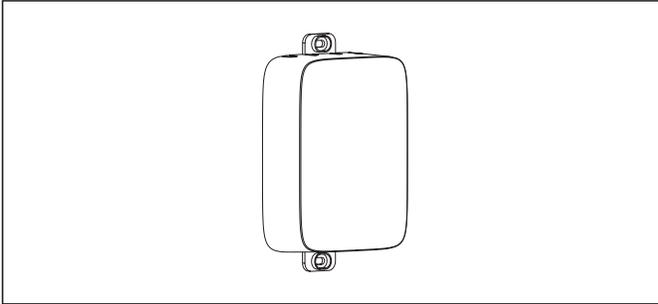


Figure 4

Connection wiring specification

Type	Appliance Amps (A)	AWG
ODU & IDU 1,2,3	10	18
	13	16
	18	14
	25	12
	30	10
R,C	—	18
Y/W/G/G1/G2/G3/Dry	—	18

Table 3

4 Applications

Compatible Indoor models

Type	Model #	Part #	Description
Wall Mounted	BMS500-AAU006-1AHWXD	8-733-962-676	Minisplit 6kBTU Universal Wall Mounted 230V
	BMS500-AAU009-1AHWXD	8-733-962-672	Minisplit 9kBTU Universal Wall Mounted 230V
	BMS500-AAS012-0AHWXD	8-733-962-670	Minisplit 12kBTU Single Zone Wall Mounted 115V
	BMS500-AAU012-1AHWXD	8-733-962-673	Minisplit 12kBTU Universal Wall Mounted 230V
	BMS500-AAU018-1AHWXD	8-733-962-674	Minisplit 18kBTU Universal Wall Mounted 230V
	BMS500-AAU024-1AHWXD	8-733-962-675	Minisplit 24kBTU Universal Wall Mounted 230V
	BMS500-AAS030-1AHWXD	8-733-962-677	Minisplit 30kBTU Single Zone Wall Mounted 230V
	BMS500-AAS036-1AHWXD	8-733-962-679	Minisplit 36kBTU Single Zone Wall Mounted 230V
Cassette	BMS500-AAU009-1AHZXD	8-733-962-666	Minisplit 9kBTU One-Way Cassette 230V
	BMS500-AAU009-1AHCXD	8-733-962-716	Minisplit 9kBTU 4-Way Cassette 230V
	BMS500-AAU012-1AHZXD	8-733-962-667	Minisplit 12kBTU One-Way Cassette 230V
	BMS500-AAU012-1AHCXB	8-733-962-717	Minisplit 12kBTU 4-Way Cassette 230V
	BMS500-AAU018-1AHZXD	8-733-962-668	Minisplit 18kBTU One-Way Cassette 230V
	BMS500-AAU018-1AHCXD	8-733-962-718	Minisplit 18kBTU 4-WayCassette 230V
	BMS500-AAU024-1AHCXB	8-733-962-681	Minisplit 24kBTU 4-Way Cassette 230V
	BMS500-AAU036-1AHCXD	8-733-962-682	Minisplit 36kBTU 4-WayCassette 230V
Ducted	BMS500-AAU048-1AHCXD	8-733-962-683	Minisplit 48kBTU 4-WayCassette 230V
	BMS500-AAU009-1AHDXD	8-733-962-709	Minisplit 9kBTU Universal Ducted 230V
	BMS500-AAU012-1AHDXD	8-733-962-710	Minisplit 12kBTU Universal Ducted 230V
	BMS500-AAU018-1AHDXD	8-733-962-711	Minisplit 18kBTU Universal Ducted 230V
	BMS500-AAU024-1AHDXD	8-733-962-712	Minisplit 24kBTU Universal Ducted 230V
	BMS500-AAU036-1AHDXD	8-733-962-713	Minisplit 36kBTU Universal Ducted 230V
	BMS500-AAU048-1AHDXD	8-733-962-714	Minisplit 48kBTU Universal Ducted 230V
	BMS500-AAU060-1AHDXD	8-733-962-715	Minisplit 60kBTU Universal Ducted 230V

Table 4

Wall Mounted (Sizes 9K~36K)

Cassette (Sizes 9K~24K)

Ducted (Sizes 9K~24K)

Wiring

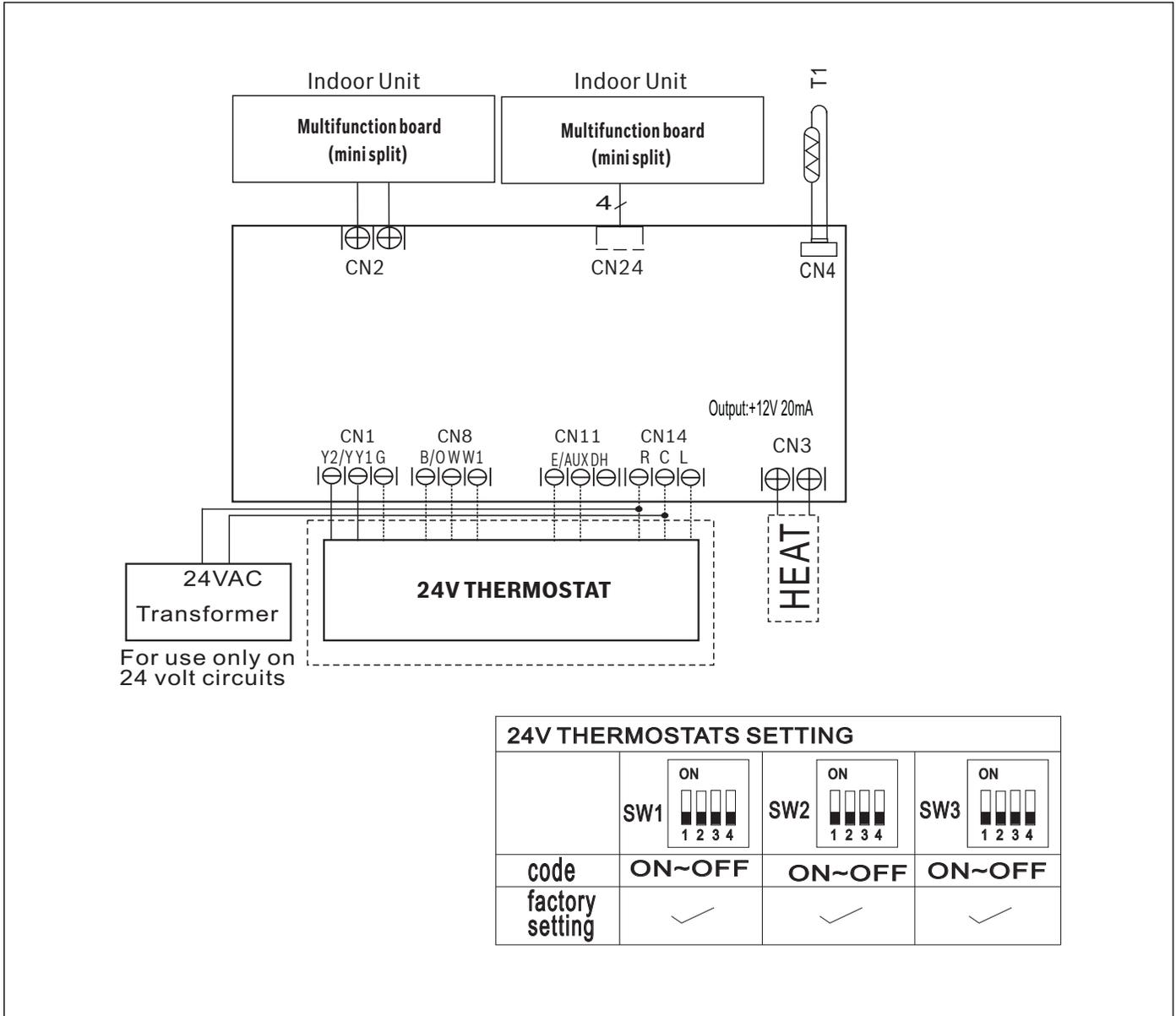


Figure 5



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.

4.1 Connection Guide for Gen 3 Backwards Compatibility

1. Open the back side of the minibox, exposing the circuit board.
2. Connect the 4-Core connection cable to CN24 on 24V mini-box interface. Refer to image below.

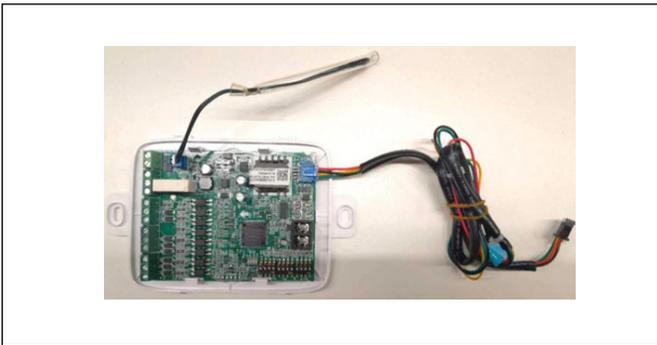


Figure 6

3. Connect the interface to the Thermostat according to the wiring (see Table 5)

24V Thermostat	Connect to	24V Minibox Interface
Terminal		Terminal
C	→	C
Y	→	Y2
R	→	R
G	→	G
W	→	W
O/B	→	O/B

Table 5



Bosch Air to Air products energize "B" for heating.

Applies Only to Multifunction Boards in R410-System Models:

4. Connect the 24V mini-box interface thermostat port CN24 to the X Y E 5V port at the multi function board.

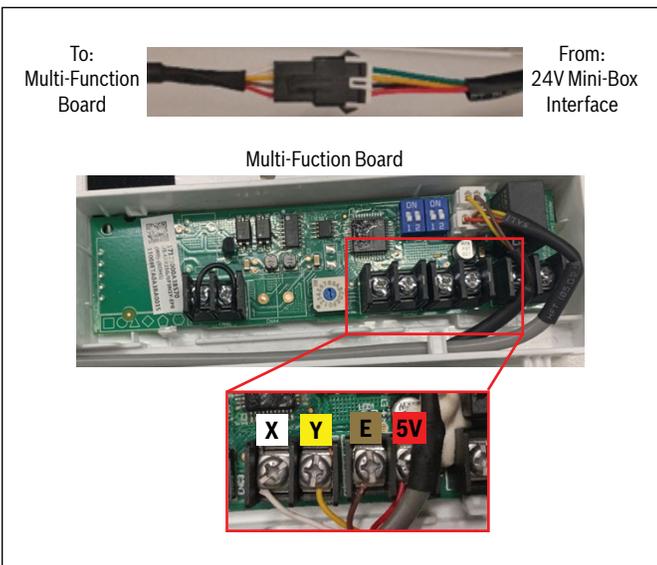


Figure 7

Applies Only to Multifunction Boards in R454B-System Models:

4. Connect the 24V mini-box interface thermostat port CN24 to the X Y E 5V port at the multi function board.

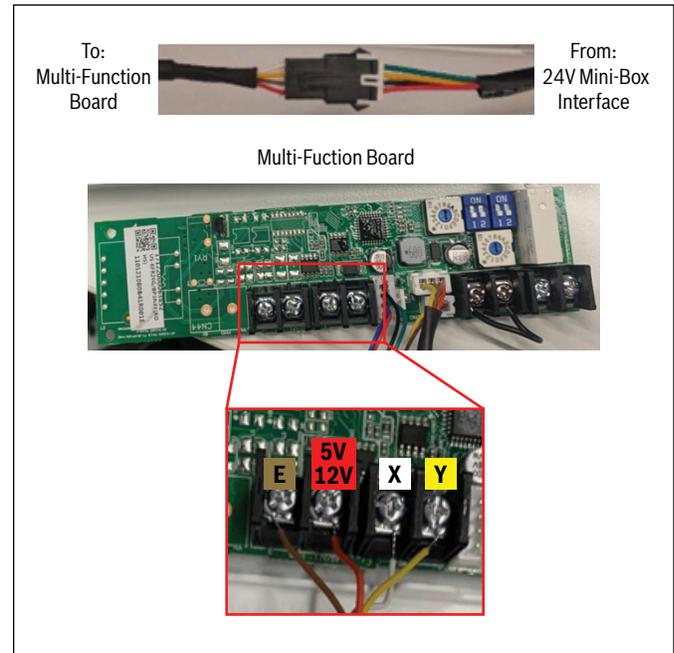


Figure 8

5. Make sure that all the connections are according to the wiring diagram (Fig. 6). Ensure that the 24V Transformer (installer-supplied) is connected correctly.

5 Control Logic

5.1 Connector

Connector	Purpose
Y1	1st Stage Compressor
Y2/Y	2nd Stage Compressor
W	Heating control
W1	Electric Heating
G	Fan-Auto speed
B/O	Reversing Valve
DH	Dehumidification
L	Malfunction signal
R	24V Power connection
AUX/DRY	Aux-Heat/Dry
C	Common

Table 6

5.2 Mode Setting

Setting mode	Priority	G	Y	Y2	B/O	W	W1	E/AHU	DH	Fan Speed	NOTE
OFF	/	0	0	0	0	0	0	0	—	OFF	
Fan only	6	1	0	0	—	0	0	0	—	LOW	NOTE 1
Cooling Stage 1	5	—	1	0	0	0	0	0	—	DIP Switch setting Fan Speed	
Cooling Stage 2		—	—	1	0	0	0	0	—	DIP Switch setting Fan Speed	
Heat pump stage 1	4	—	1	0	1	0	0	0	—	DIP Switch setting Fan Speed	
Heat pump stage 2		—	—	1	1	0	0	0	—	DIP Switch setting Fan Speed	

Table 7

NOTE 1: When the heating mode is changed to the fan mode, the fan of the indoor unit may not run depending on the T1 and T2 sensor readings. This will prevent the unit from blowing out cold air.

6 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.

6.1 DIP Switch Settings

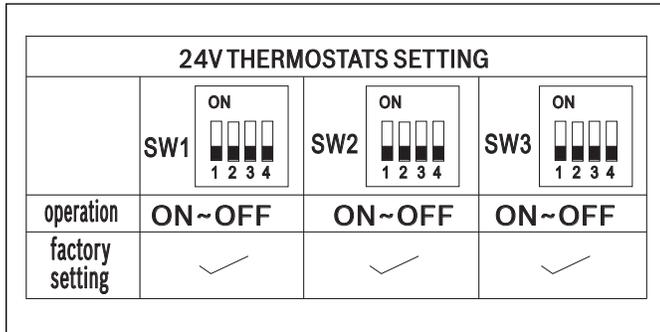


Figure 9

Cooling Fan Speed					
Dial Code	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	Medium	High	Turbo

Table 8

Heating Fan Speed					
Dial Code	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	Medium	High	Turbo

Table 9

Modes					
No.	Dial Code	Function	ON	OFF	NOTE
1	SW2-3	Set type selection, multi-split and split models selection.	Multi-split	Split	
2	SW2-4	Split selective DIP switch setting 1	See table 12 for a description of the dialling code options for split model	See table 12 for a description of the dialling code options for split model	Split AB models and multi-split do not have this function.
3	SW3-2	Prolonged non-temperature time setting.	60 Minutes	30 Minutes	
4	SW3-3	Heat port on/off temperature difference.	2F	4F	Split AB models do not have this function.
5	SW3-4	Split selective dialing code 2	See table 12 for a description of the dialling code options for split model	See table 12 for a description of the dialling code options for split model	This code is valid only when the SW2-4 dialling code is OFF. Split AB models do not have this function.

Table 10

Dip Switch Setting with Different Combination			
Combination	SW2-3	SW2-4	SW3-4
Indoor Unit (Wall Mounted, 1W/4W CST + Single Zone Outdoor Unit	OFF	ON	—
Ducted Unit Gen 2 or Gen 3 + Single Zone Outdoor Unit.	OFF	OFF	ON
Indoor Unit (Wall Mounted, 1W/4W CST + Multi Zone Outdoor Unit	ON	—	OFF
Ducted Unit Gen 2 Or Gen 3 + Multi Zone Outdoor Unit	ON	—	OFF

Table 11

Online Help Resources

Alternatively, please visit our Service & Support webpage to find FAQs, videos, service bulletins, and more; www.boschheatingcooling.com/service or use your cellphone to scan the code below.

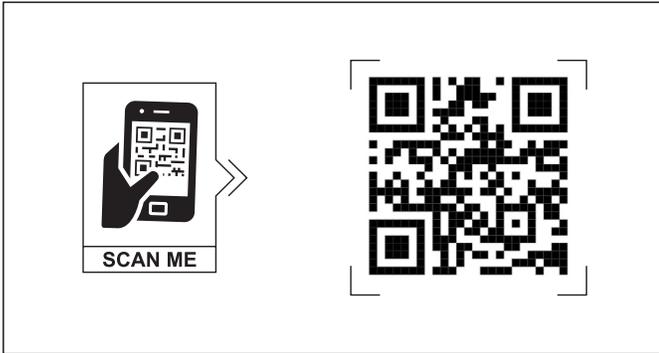


Figure 10

NOTES:

**United States and Canada
Bosch Thermotechnology Corp.
65 Grove St.
Watertown, MA 02472**

**Tel: 800-283-3787
www.bosch-homecomfort.us**

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