Installation Instructions

Part Number 40VM900006A

For Commercial Use Only

CONTENTS

SAFETY CONSIDERATIONS

Read and follow manufacturer instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage thermostat.

Understand the signal words — DANGER, WARNING, and CAUTION. DANGER identifies the most serious hazards which will result in severe personal injury or death. WARNING signifies hazards that could result in personal injury or death. CAUTION is used to identify unsafe practices, which would result in minor personal injury or product and property damage.

Recognize safety information. This is the safety-alert symbol (⚠). When this symbol is displayed on the unit and in instructions or manuals, be alert to the potential for personal injury. Installing, starting up, and servicing equipment can be hazardous due to system pressure, electrical components, and equipment location.

GENERAL

The VRF (variable refrigerant flow) touch screen central controller is a wall-mounted, low-voltage controller that provides site-level control of multiple VRF systems. The controller allows central management of mode, setpoint, and scheduling of indoor units (IDUs).

The touch screen central controller is available for use with the VRF (variable refrigerant flow) outdoor units / systems listed in Table 1.

Table 1: Touch Screen Central Controller Accessory Usage

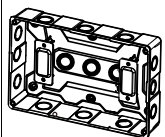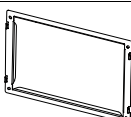| UNIT	SIZES
38VMAR Heat Recovery System	072,096,120,144, 168, 192, 216, 240, 264, 288, 312, 336
38VMAH Heat Pump System	036, 048, 060, 072, 096, 120, 144, 168, 192, 216, 240, 264, 288, 312, 336, 360, 384, 408, 432

Table 2: Components shipped with Unit

NAME	IMAGE	QTY	FUNCTION
Mounting Box		1	Plastic mounting enclosure
Mounting Plate		1	Steel plate connecting controller to front of Mounting Box
Screws (Short)		6	Used to Install Mounting Box to Wall
Screws		4	Used to install Mounting Plate on Mounting Box
Washers		8	Used to install Mounting Plate on Mounting Box (2 extra washers for fine adjustment if wall is uneven)

Table 3: Specifications

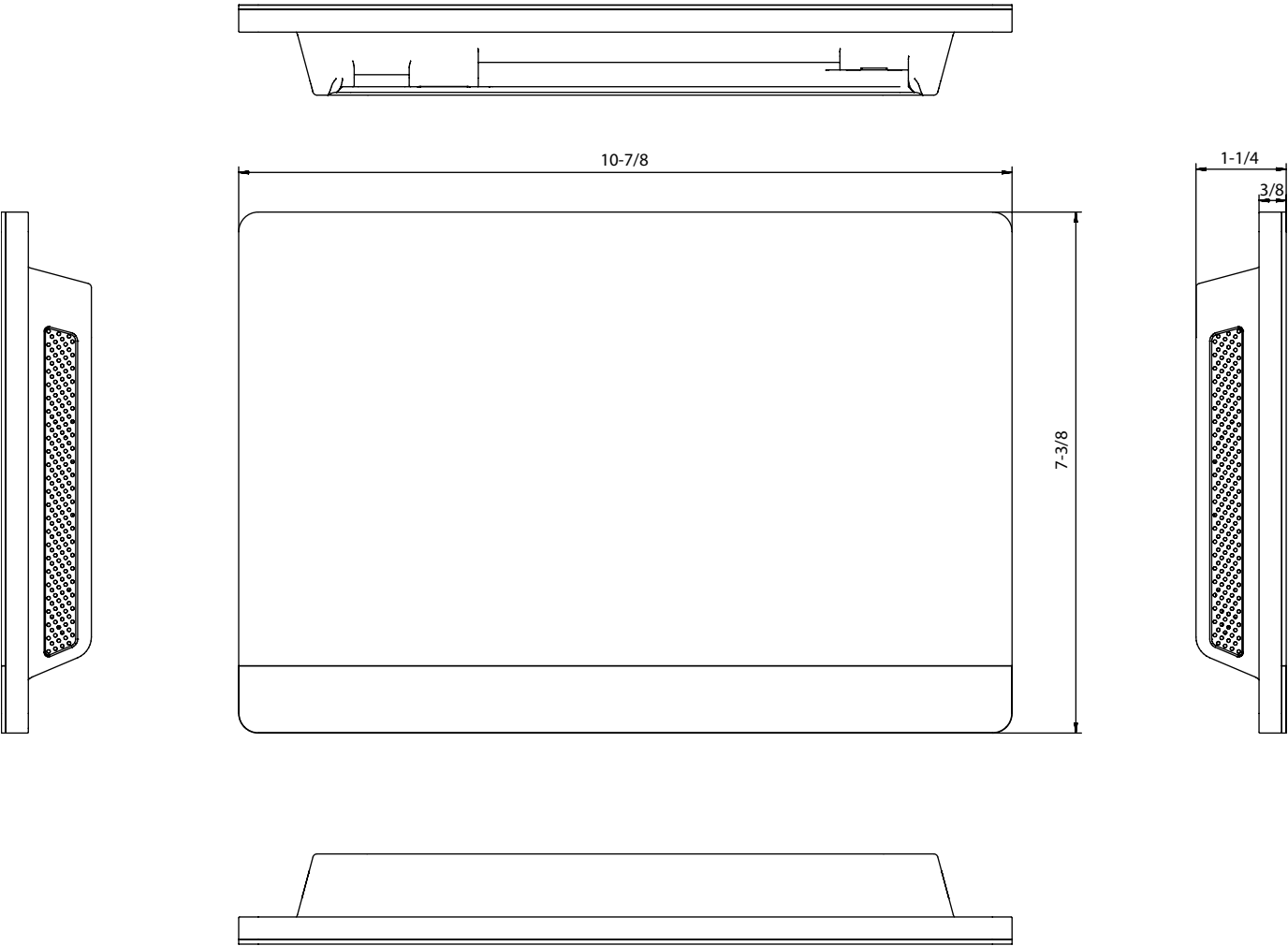| Power Supply (field provided)	Rated Voltage	24V AC, 60 Hz
	Current Requirement	1A
Dimensions (inches)	H	7-3/8
	W	10-7/8
	D	1-1/4
Total Weight	Touch Screen Controller, Mounting Box, Mounting Plate, & Screws: 2 lbs 12 oz	
Number of X/Y Bus Lines	6	
Max. Refrigerant Systems/IDUs per Line	8/64	

DIMENSIONAL DRAWING

10-7/8

7-3/8

1-1/4

3/8

Fig. 1 — Dimensions
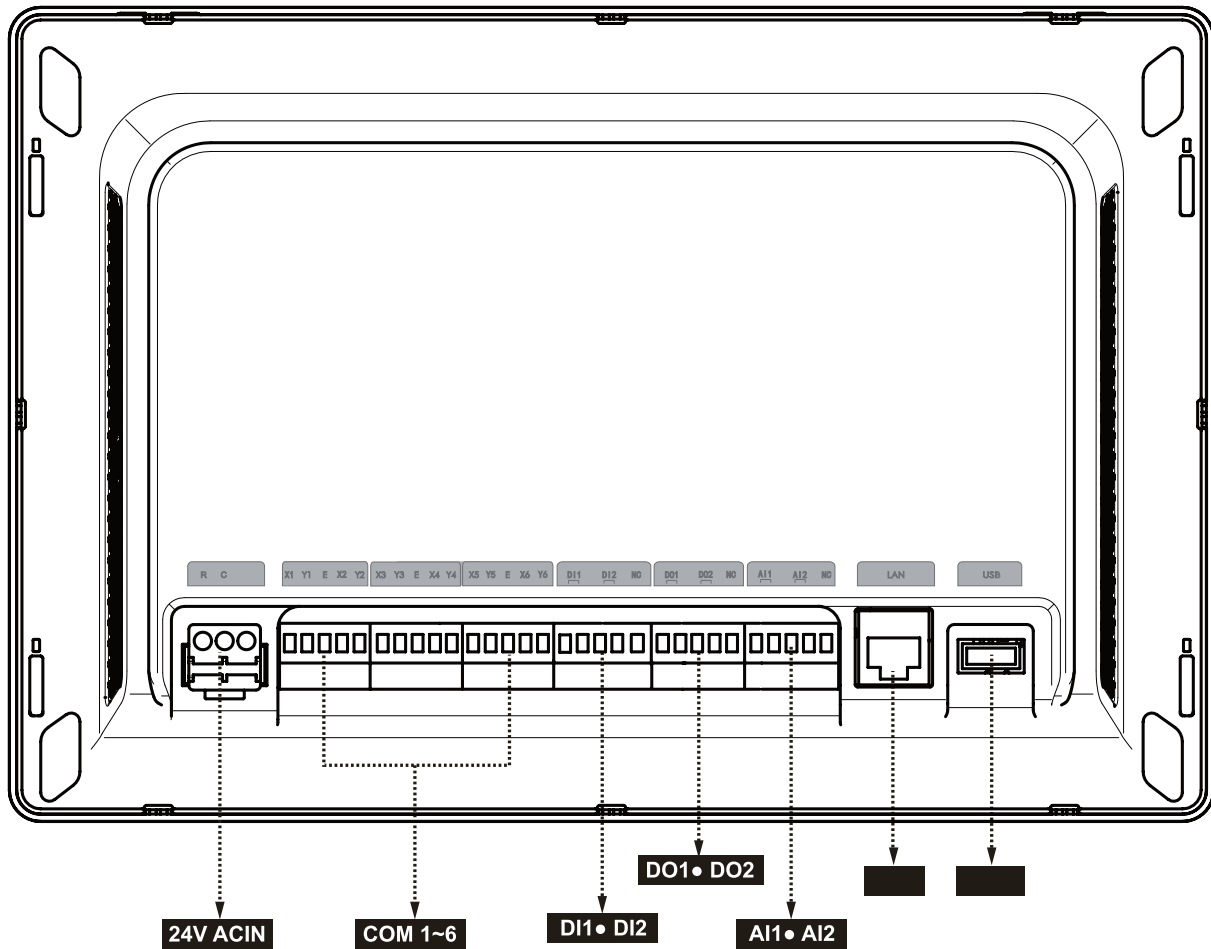
Fig. 2 — Connection Description

Table 4 — Connection Description

NAME	FUNCTION
R	24VAC power
C	24VAC common
X	X conductor, X/Y bus (no 1-6)
Y	Y conductor, X/Y bus (no 1-6)
E	Shield conductor, X/Y bus (no 1-6)
DI1	Emergency Shutdown dry contact input*
DI2	(reserved)
DO1	(reserved)
DO2	(reserved)
AI1	(reserved)
AI2	(reserved)
LAN	Local Area Network connection, Ethernet
USB	Universal Serial Bus connection for service
*Emergency Shutdown input is not suitable for life-safety applications, such as fire or smoke sequences.	

INSTALLATION CONSIDERATIONS

The controller should be mounted:
- at a location that allows easy access
- on a section of wall without water or drainage pipes

The controller should **NOT** be mounted:
- near heat sources such as direct sunlight, heaters, dimmer switches, and other electrical devices.

INSTALLATION

To install the controller, perform the following procedure:

1. Turn off all power to the outdoor units, indoor units, and MDCs.

⚠ WARNING

Electrical shock can cause personal injury and death. Before installing thermostat, shut off all power to this equipment during installation. There may be more than one power disconnect. Tag all disconnect locations to alert others not to restore power until work is completed.

⚠ CAUTION

Failure to follow this caution may result in equipment damage or improper operation.

Improper wiring or installation may damage the thermostat. Check to make sure wiring is correct before proceeding with installation or turning on unit.

2. Control Wire: Use 16 to 20 AWG (American Wire Gage), stranded twisted pair shielded 2-core wiring (copper wire). Be sure the distance between the controller and the furthest outdoor units is not more than 3937 ft. Field-Provided 24VAC Power Wire: Use copper wire rated for the current requirement shown in Table 3; follow all applicable electrical codes.

3. For flush-mount installation, provide a 10-1/4" by 6-5/8" opening in drywall or mounting surface to accommodate the mounting box.

⚠ CAUTION

Over-tightening the screw will cause deformation to the rear cover and LCD damage.

4. Pull all wires through drywall or surface opening, and then through knockout(s) in Mounting Box.

5. Install the Mounting Box (3) into the 10-1/4" by 6-5/8" opening in dry wall or mounting surface making sure the box is flush with the wall surface. See Figure 3. Use the 6 short screws to fasten the plastic mounting box. Use plastic washers as needed for alignment and to prevent damage to components.
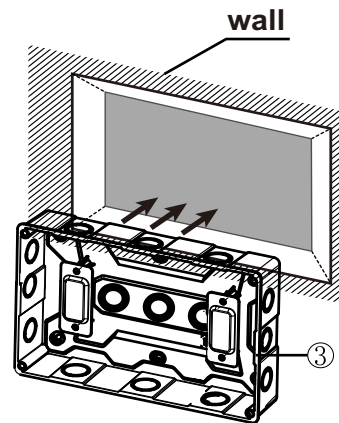

Fig. 3 — Installing the Mounting Box

6. Install Mounting Plate:

Make sure the metal hooks are facing upward. Attach the mounting plate (2) onto the mounting box (3) using the four long screws (4) and four plastic washers. Do not overtighen the screws. See Figures 4 and 5.
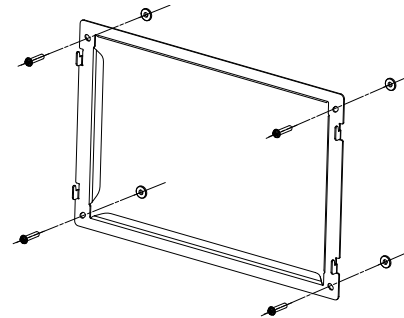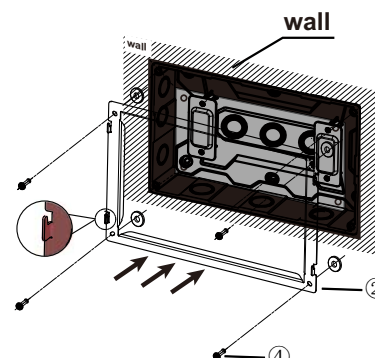

Fig. 4 — Installing the Back Plate Washers

Fig. 5 — Installing the Back Plate to Box

7. Wire the Controller:

Control Wire: Use 16 to 20 AWG (American Wire Gage), stranded twisted pair shielded 2-core wiring (copper wire).

The controller has 6 central control bus (X/Y) lines. Each line can support up to 8 refrigerant systems and 64 indoor units, maximum. Using control wire, connect outdoor units' X/Y central control bus terminals in a "daisy chain" configuration; connect terminating end to the Central Controller's designated X/Y line (#1 through 6). For larger Heat Pump systems with dual or triple modules on a refrigerant system, wire X/Y daisy chain only to the Header outdoor unit of each refrigerant system. See Figure 6.
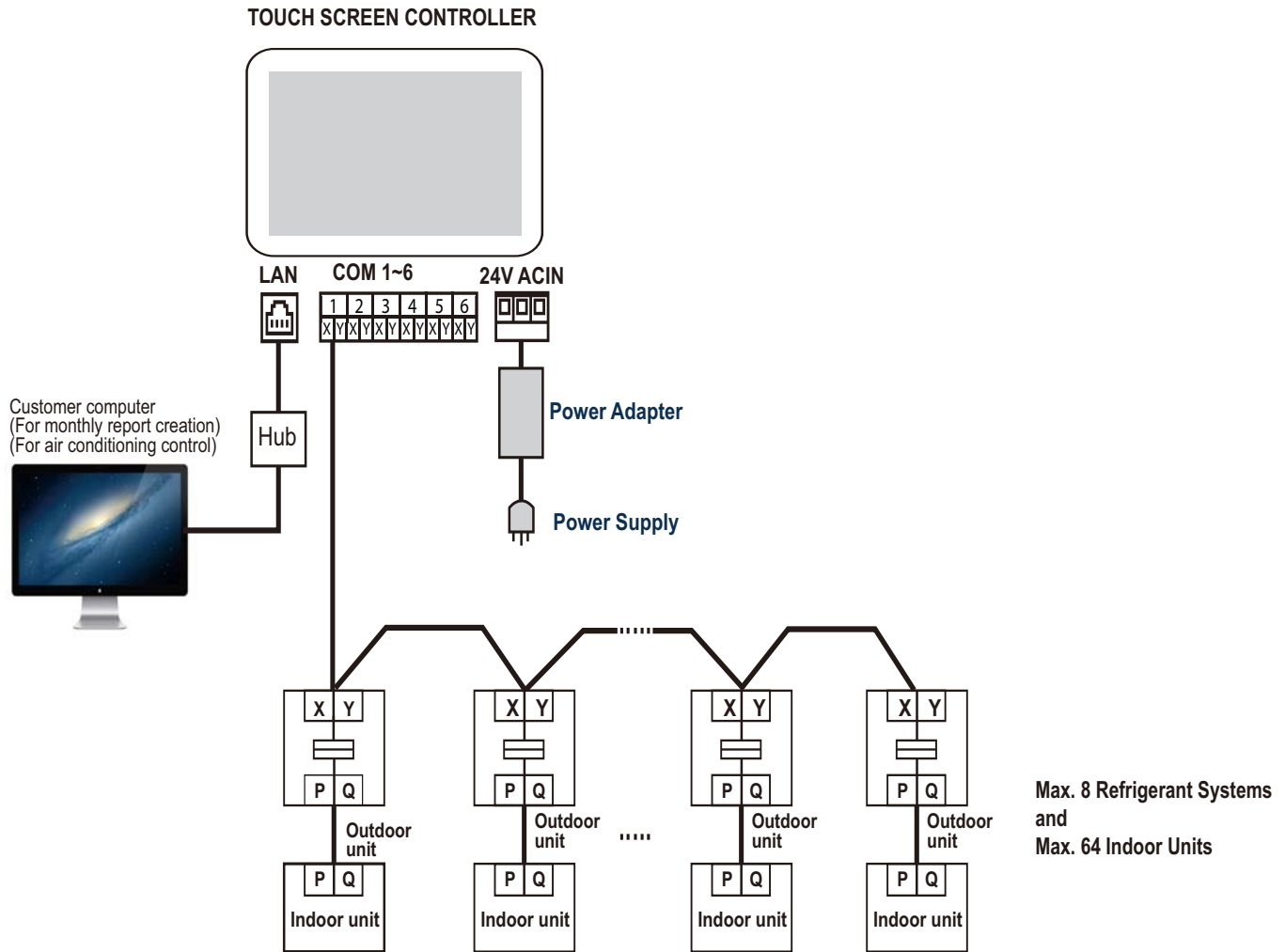

Fig. 6 — System Wiring Diagram

Connect field-supplied 24VAC power (copper wire) to R and C terminals. Connect Ethernet to LAN (where applicable).

8. Install the Controller:

After wiring, install the controller (1) onto the mounting plate. Position the holes over the metal hooks and slide down to lock into place. See Figure 7.
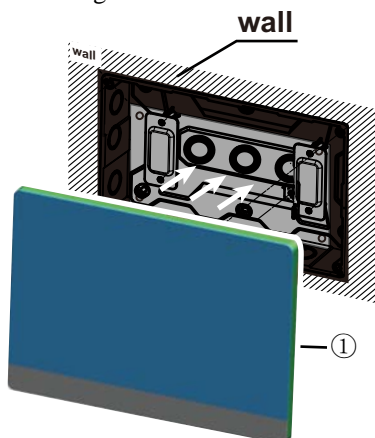

Fig. 7 — Installing the Controller

SETTING NETWORK ADDRESS

Make sure each outdoor unit / refrigerant system has its own unique network address: 0-7. Set by turning rotary encoders shown below (ENC4 for 3-Phase Heat Pump and Heat Recovery; ENC2 for single Phase Heat Pump).
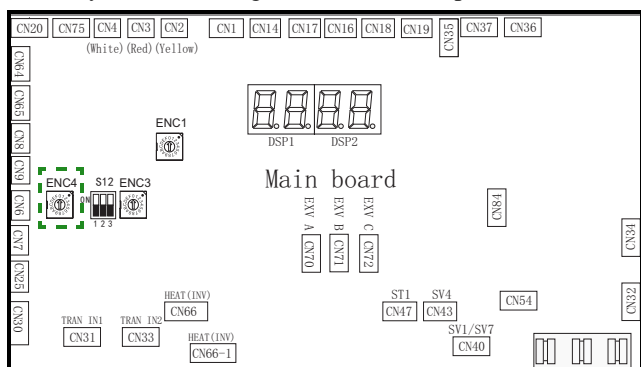

Fig. 8 —Heat Pump ENC4

For larger Heat Pump systems with dual or triple modules, set all addresses the same for each module within the refrigerant system.
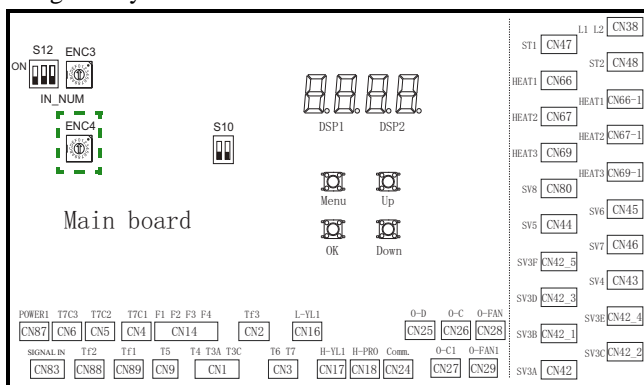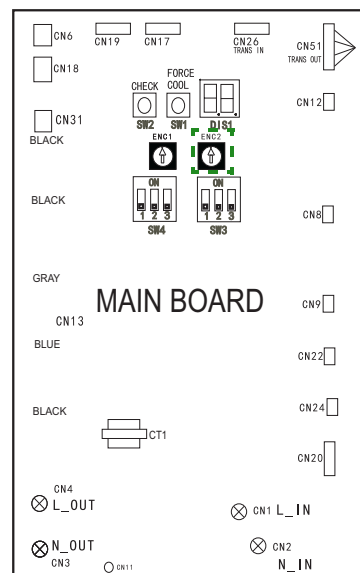

Fig. 9 —Heat Recovery ENC4

Fig. 10 —Single Phase ENC2

BASIC CONFIGURATION

Once all outdoor refrigerant systems are connected and operational, the controller may be powered up for initial login and basic configuration.

Login / Brand Selection (Carrier or Bryant)

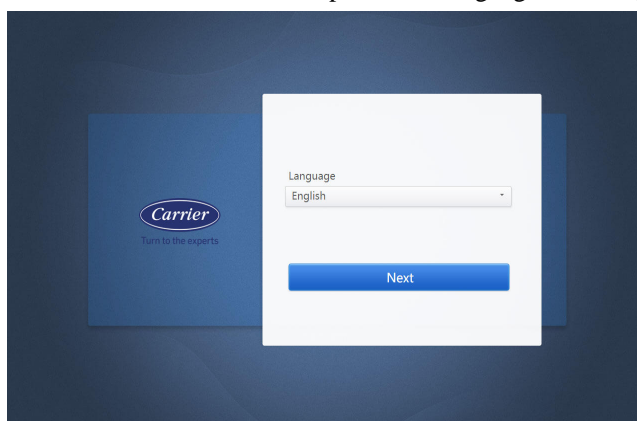When the controller is start up, choose language on, as Fig.1

Fig. 11 —Initial Screen when Powered On

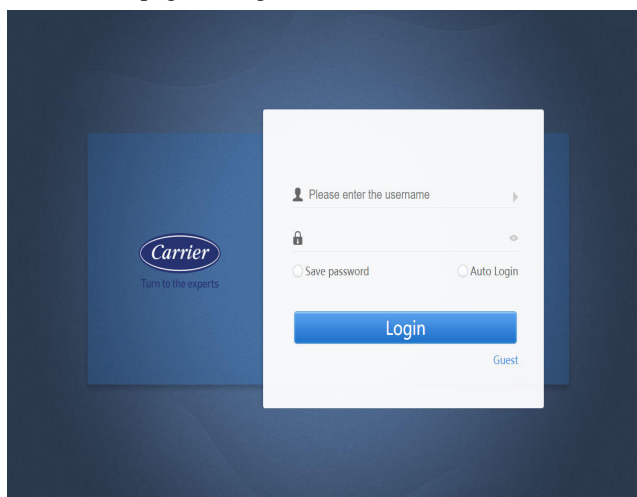Click 5 times quickly on "Carrier" logo, it will enter brand selection page, as Fig. 2

Fig. 12 —Brand Choice Screen

2. Select "Carrier" or "Bryant" or "ICP" or "No logo" and click "Save".

One of the following screens will be displayed depending on the user selection:
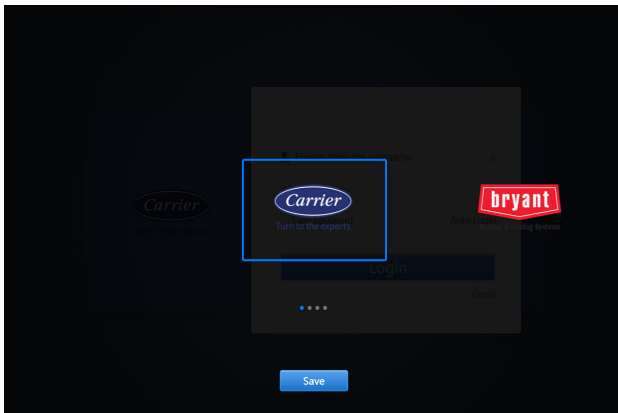

Fig. 13 —Bryant Login Screen

Auto Search — The Touch Screen Central Controller can automatically search and connect to the system's connected units. Devices connected to the controller are automatically searched for and registered. You can register a device automatically as follows. See Figures 14 and 15.
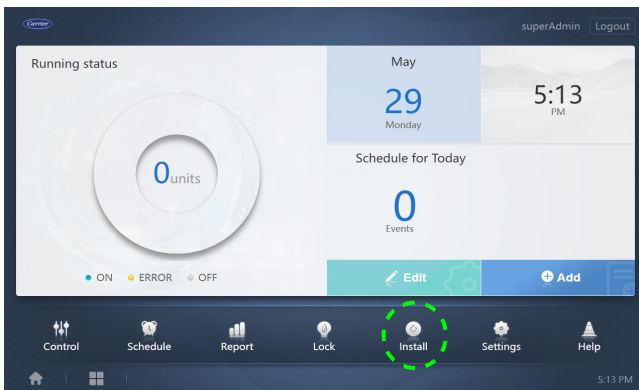
1. In the main menu, click the [Install] menu icon.

Fig. 14 — Install Menu

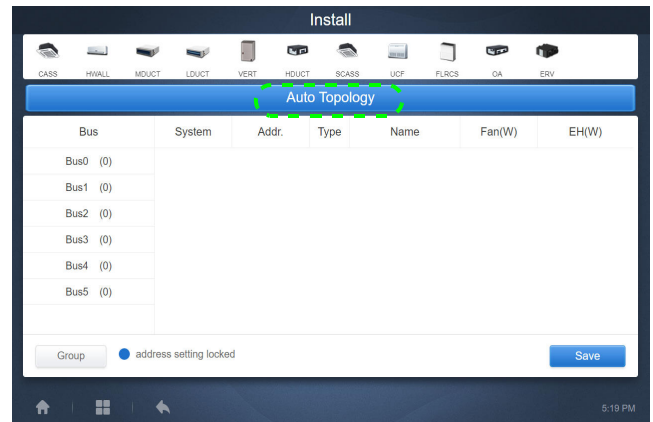2. Click the [Auto Topology] button. See Figure 15.

Fig. 15 — Auto Topology

Refer to the User Manual for additional details on operation.

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