Please scan the QR code and sign in now.

NOTE: You should receive email notification when successful.
(check your spam folder if you don't see it)

Please scan the QR code and sign in now.

NOTE:
You should receive email notification when successful.
(check your spam folder if you don't see it)

Training will begin in:

10:00

Carrier Enterprise

Please scan the QR code and sign in now.

NOTE: You should receive email notification when successful. (check your spam folder if you don't see it)

STEP 2

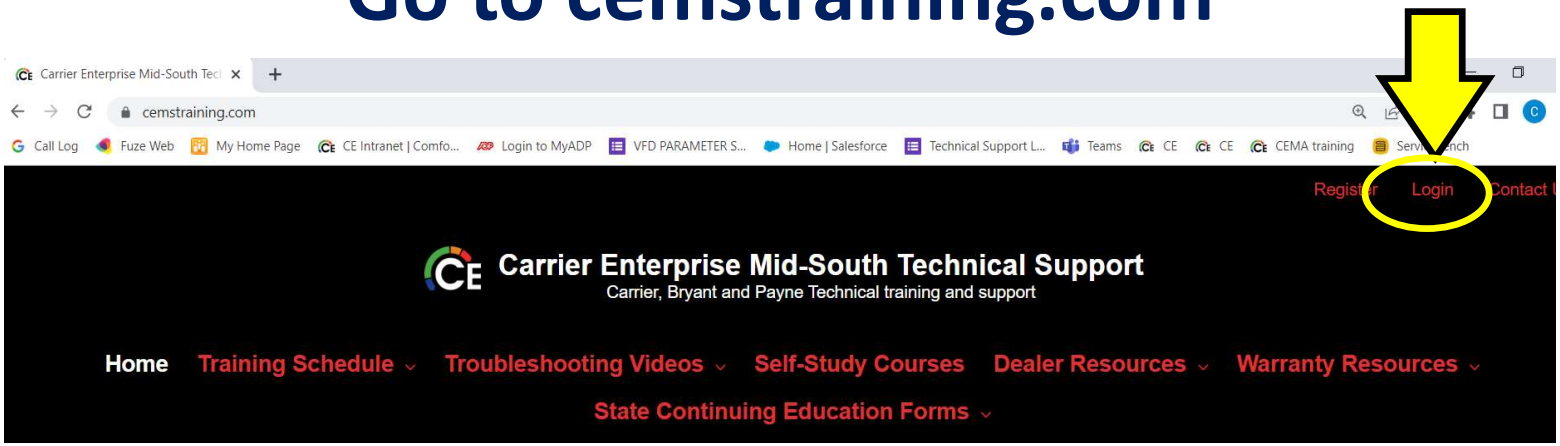
MAKE SURE YOU CAN LOG IN TO YOUR ACCOUNT AT

CEMSTRAINING.COM

NOTE: You must be logged in to YOUR account to take the exam and receive training credit.

Training Verification

Go to cemstraining.com



WELCOME TO THE CARRIER ENTERPRISE MIDSOUTH TECHNICAL SUPPORT SITE

IMPORTANT INFORMATION ABOUT OUR NEW TRAINING POLICY

All attendees will be required to login to their cemstraining.com account during class to take a quiz. Passing the quiz is the only way to receive class credit.

Only those who have received a confirmation email will be allowed to attend. **No walk-ins, student change, or last-minute admittance.**

Meet the MidSouth Team

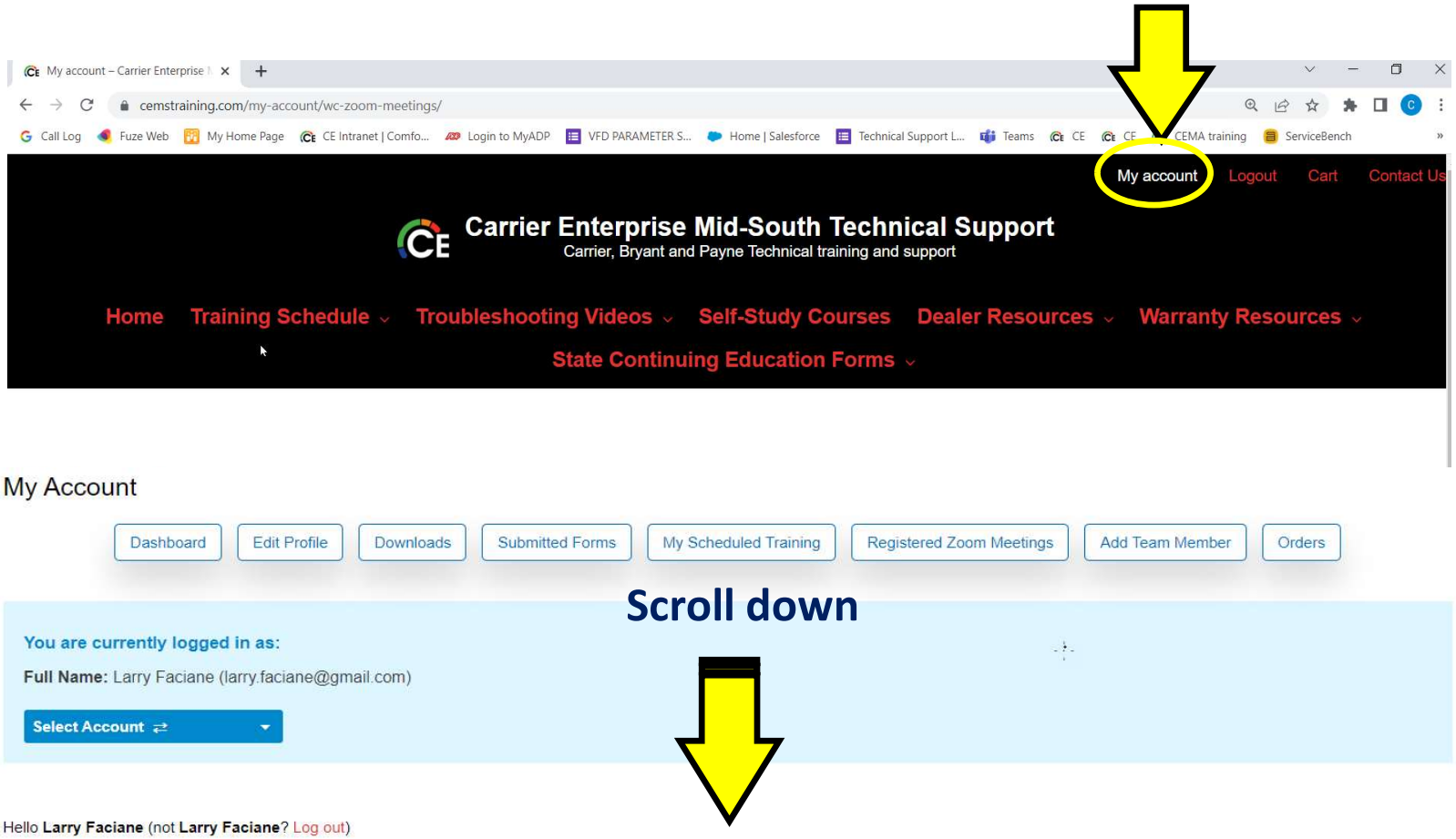
Need a Carrier Manual

Need a Bryant Manual?

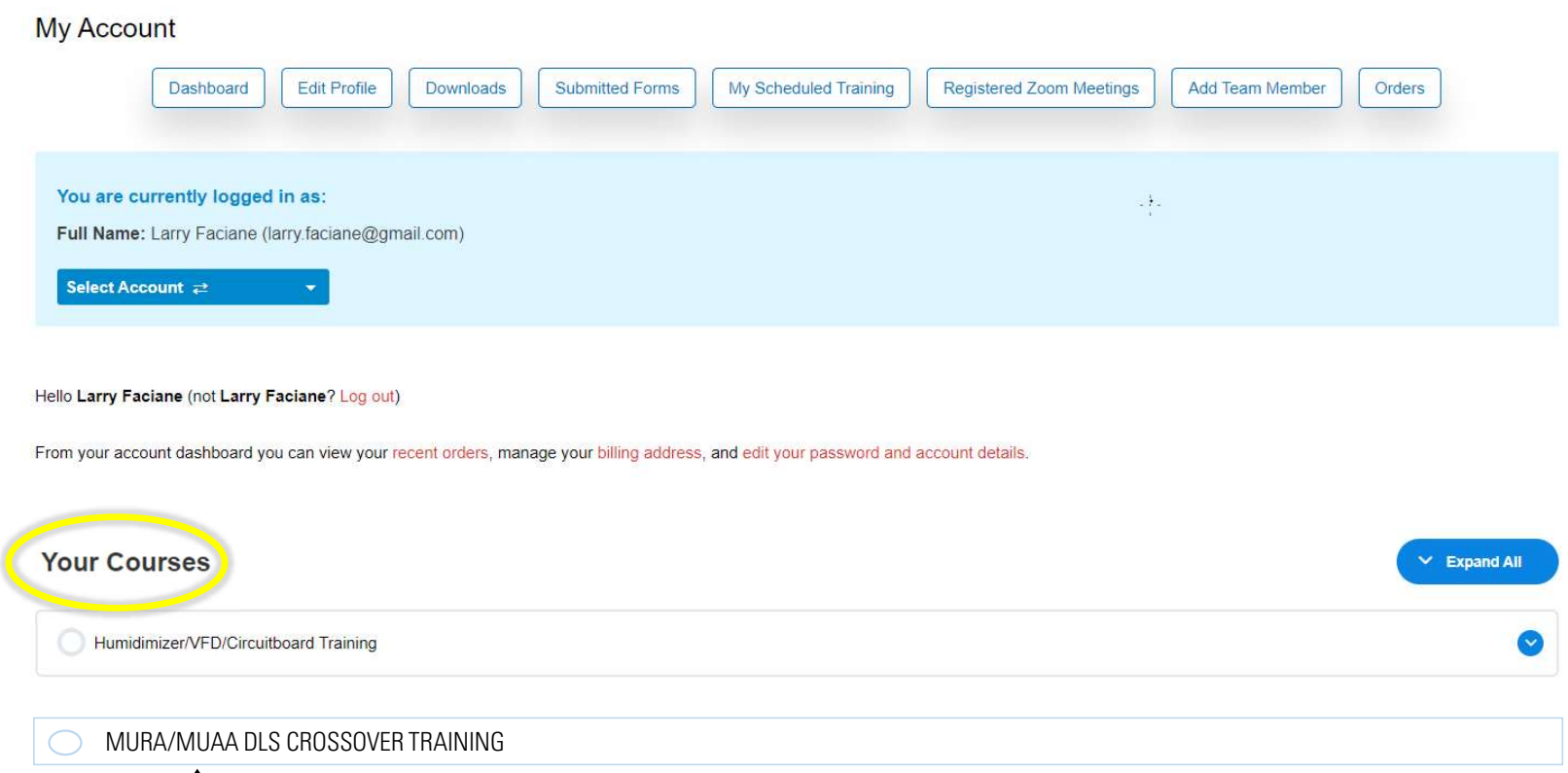
The Carrier Enterprise MidSouth Technical site, built by HVAC tech's for HVAC tech's.

Our goal is to help todays HVAC Technician gain a better understanding

Training Verification



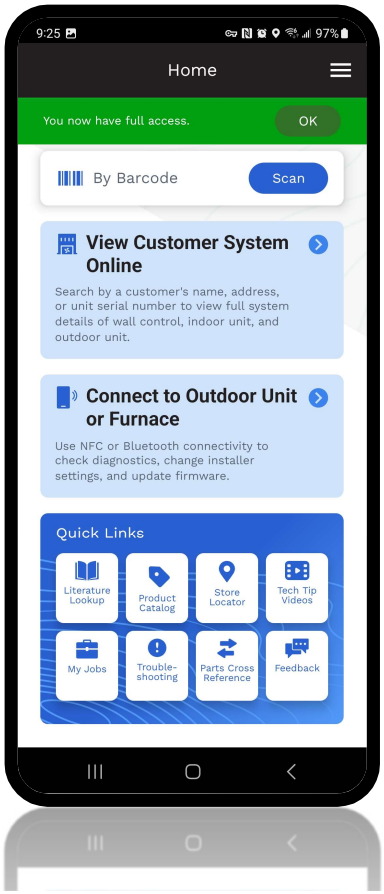
Training Verification



Verify today's training class is listed here!

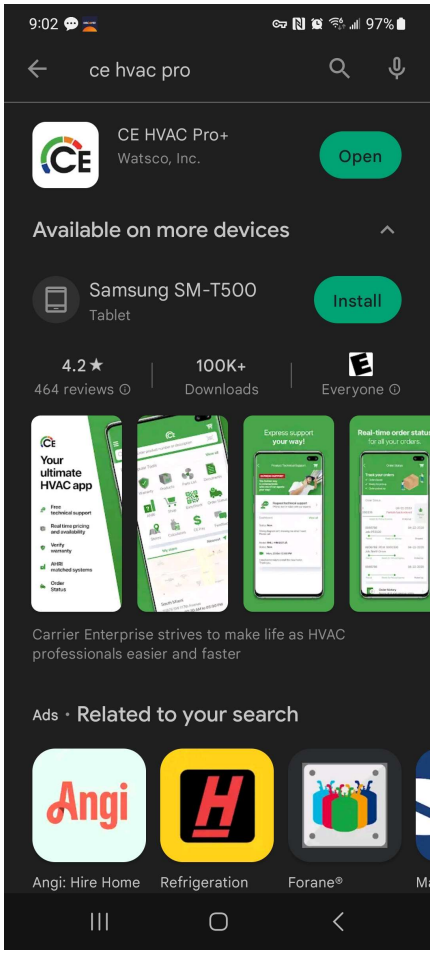
Service Tech app

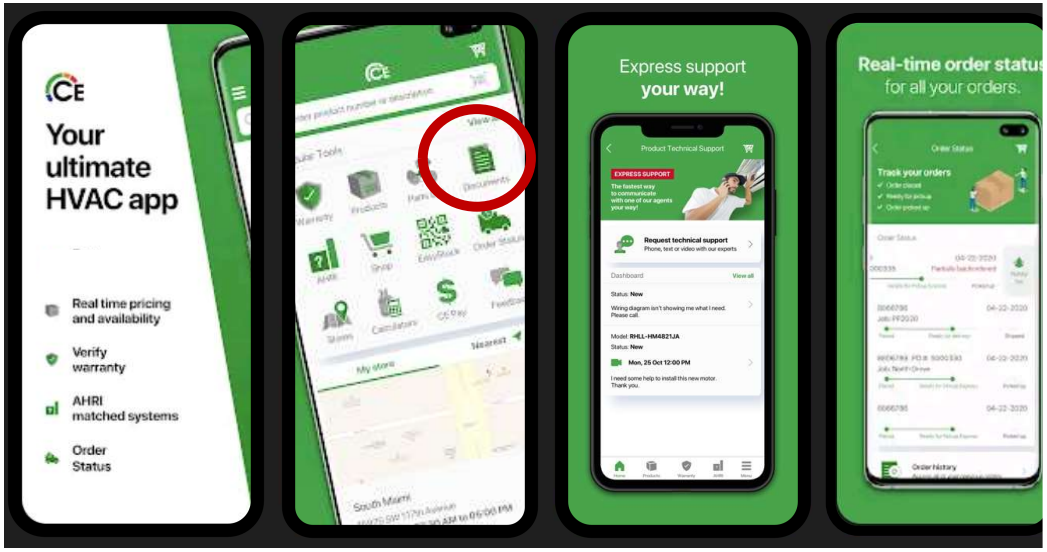
Carrier/Bryant Service Tech App

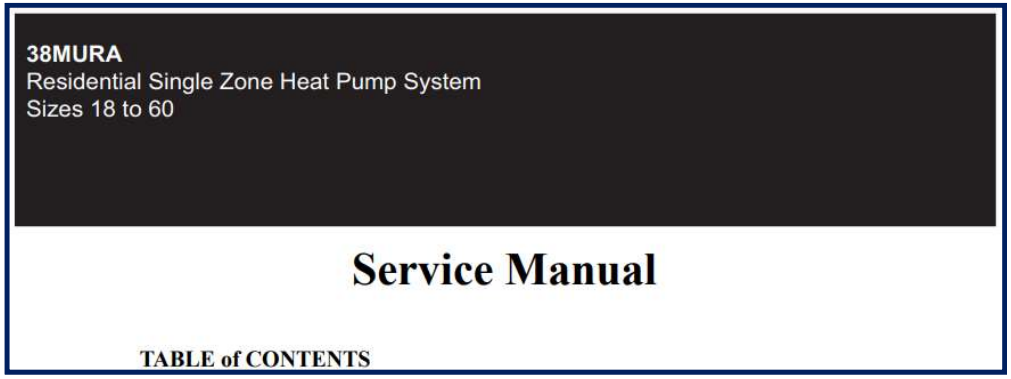


- **Interactive Troubleshooting Tool NEW**
- **Barcode scanning of unit's serial or model number**
- **Warranty entitlement & service history**
- **Literature list for models and ability to search all available**
- **Bill of Material parts list including part supersession**
- **Tech Tips videos for installation guides, troubleshooting help and best practices**

CE HVAC Pro+ app







Crossover Training 38MURA/40MUAA

Instructor: Jim Barie

Moderator Larry Faciane

Agenda

Introduction
Break
40MUAA Fan Coil
Break
38MURA Heat Pump
Break
Crossover Applications
Quiz

Carrier Enterprise Customer Assurance
MidSouth
TN
AR
MS
LA
CE
CA

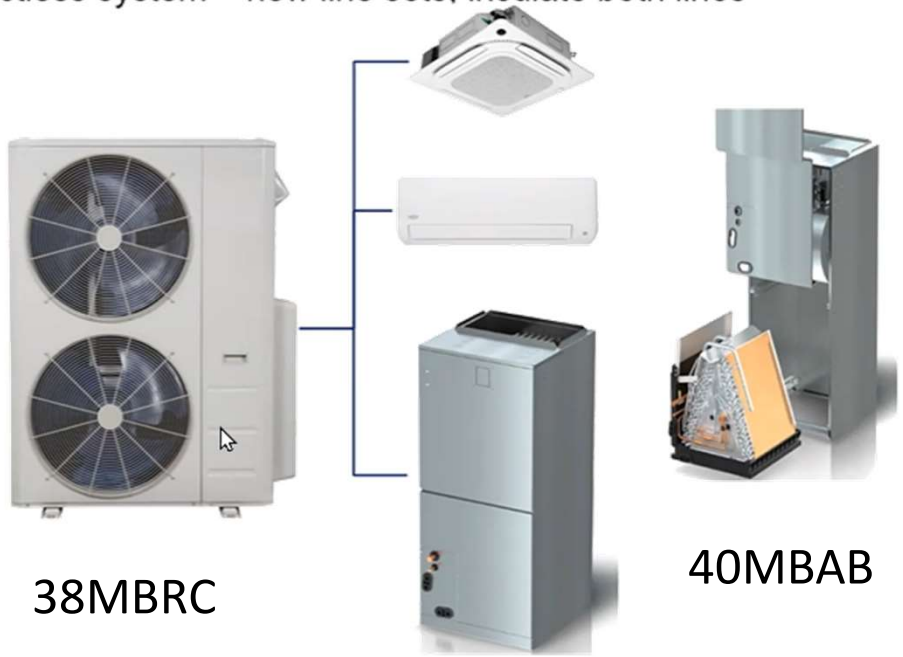
Technical Support

800-264-2512 opt 3 then 1

Introduction

2nd Gen AIR HANDLER

- New Construction & Major Remodel
- Single & Multi-Zone Compatibility
- Ductless system – new line sets, insulate both lines



38MBRC

40MBAB

2nd Gen AIR HANDLER

NEW HORIZONTAL DISCHARGE SYSTEM

- Add-On-Replacement focus
- 18K-60K Standard & High Heat systems
- New inverter heat pump series
  conventional installation: re-use existing line sets; only insulate suction line

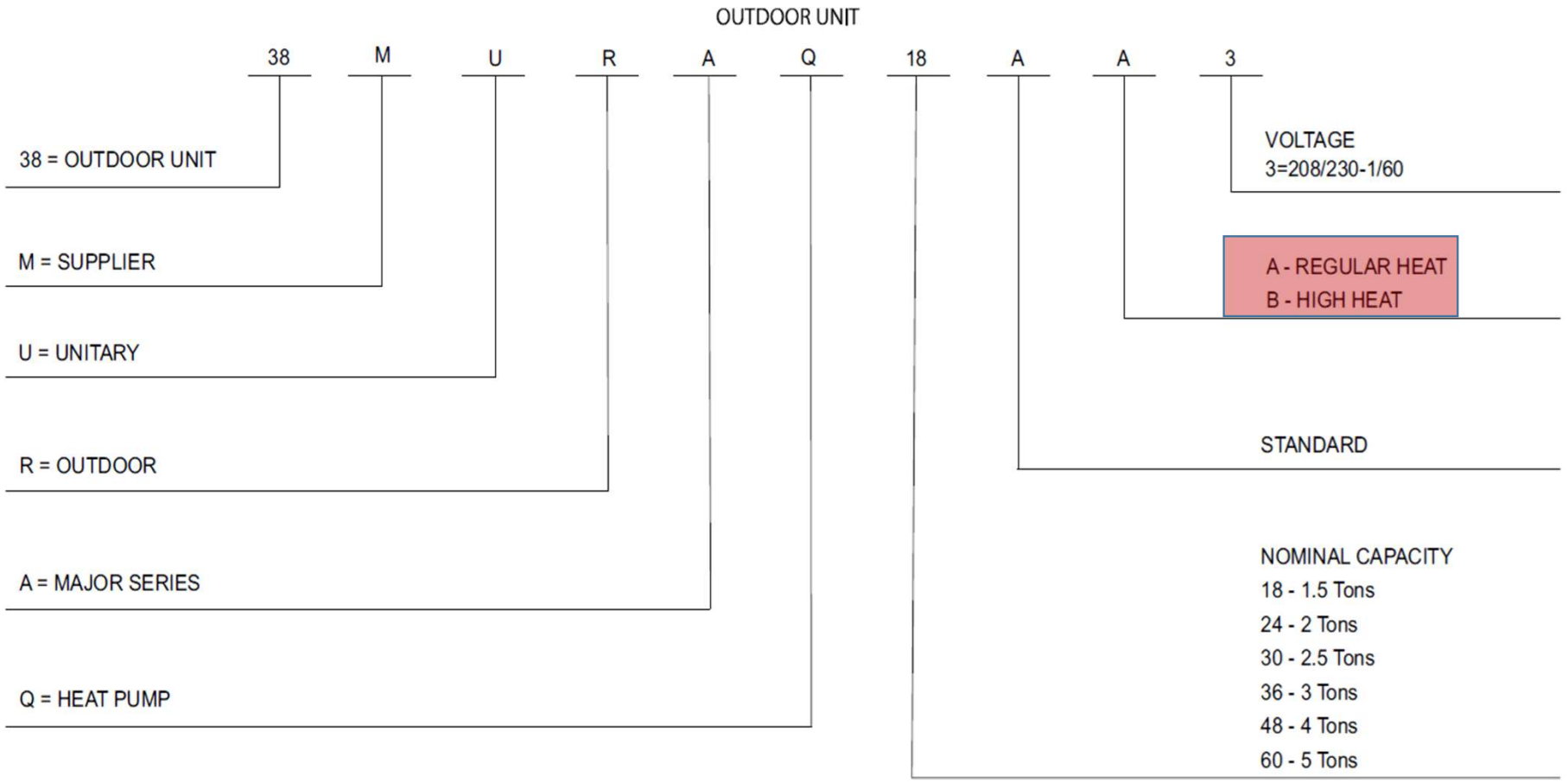
Is not compatible with zoning!

38MURA

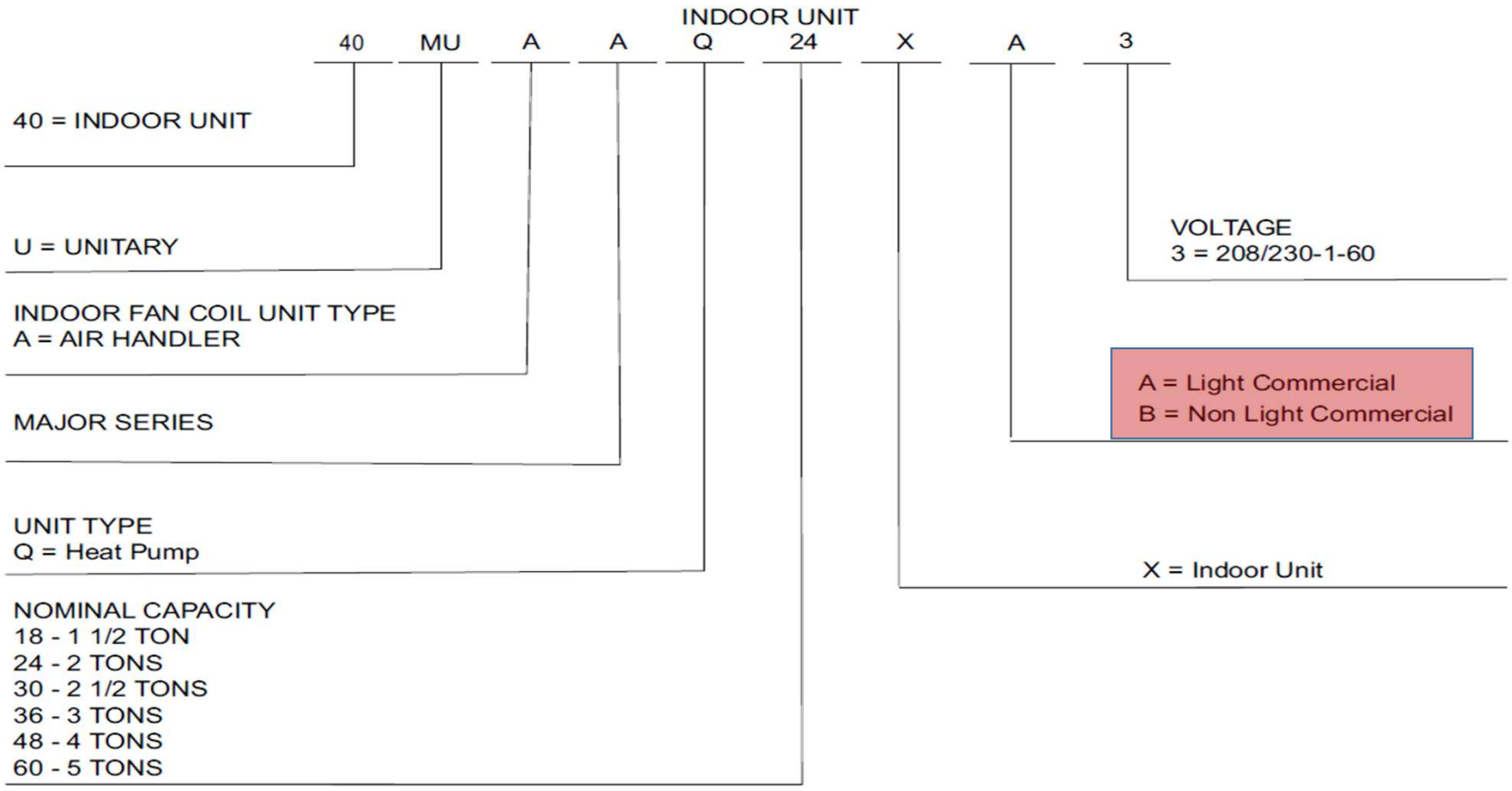
40MUAA

Introduction

MODEL NUMBER NOMENCLATURE



Introduction



Introduction

Application and Sizing

Heat Pump (Standard Heat)

Outdoor Size		1.5T	2T	2.5T	3T	4T	5T
M1 Ratings							
Cooling Rated Capacity	Btu/h	18,000	24,000	30,000	36,000	47,000	57,000
Cooling Cap. Range Min - Max	Btu/h	5400~18700	7500~26000	9500~33000	8900~38900	10500~48000	4400~60200
SEER2		16.0	17.0	17.3	16.9	15.8	14.7
EER2		10.8	10.5	10.6	10.1	8.8	8.7
Heating Rated Capacity (47°F)	Btu/h	18,000	26,000	31,000	36,000	55,000	60,000
Heating Rated Capacity (17°F)	Btu/h	11,500	20,700	20,000	20,500	36,500	36,000
Heating Rated Capacity (5°F)	Btu/h	10,000	17,000	17,800	21,000	36,500	34,800
Heating Cap. Range Min - Max	Btu/h	5600~18700	5600~30000	12200~32000	6000~36400	11700~57000	11400~63100
HSPF2		8.7	9.1	8.5	8.2	9.4	8.4
COP (47°F)	W/W	3.50	3.45	3.25	3.39	3.15	3.45
COP (17°F)	W/W	2.75	2.40	2.45	2.40	2.30	2.35
COP (5°F)	W/W	1.90	2.00	1.75	1.88	1.98	1.89

See Product Data for full information

Introduction

Best Practices

NOTES: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

⚠ WARNING

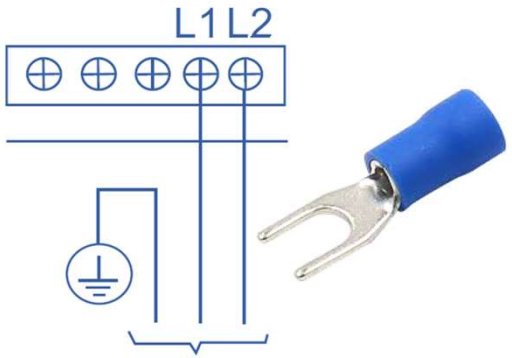


Fig. 20 —Match Fork Terminal to Terminal Labels

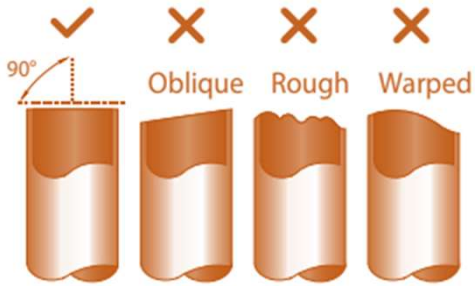
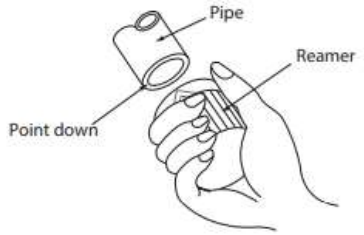


Fig. 12 —Pipe Cutting



Deburring

Introduction

Required Tools

Nitrogen

Vacuum Hose

Digital Scale

410A Flaring Tool

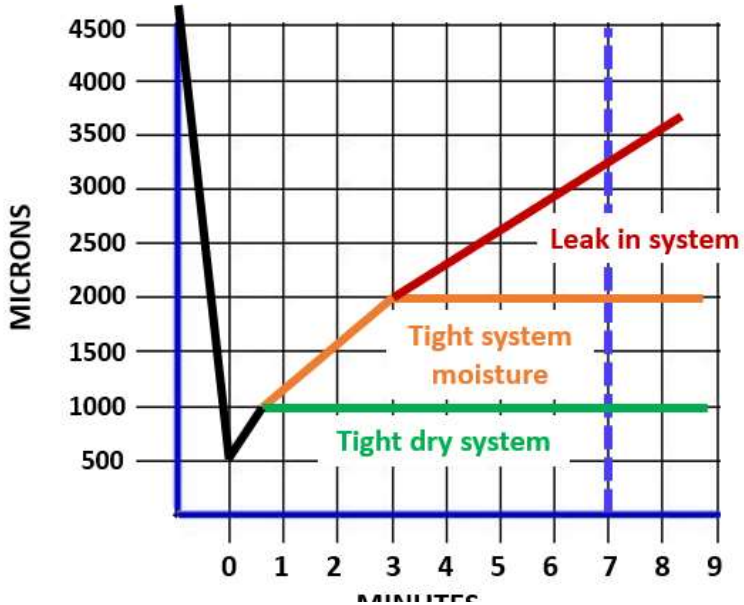
Torque Wrench Set

Introduction

Evacuation

The deep vacuum method is the most positive way of assuring a system is free of air and moisture.

1. Attach vacuum pump, (with new oil) and micron gauge to system.
2. Allow pump to run until 500 microns or below.
3. Turn off pump and close off your gauges (micron gauge must still be attached to system).
4. Pressure must hold for 7 minutes below 1000 microns.



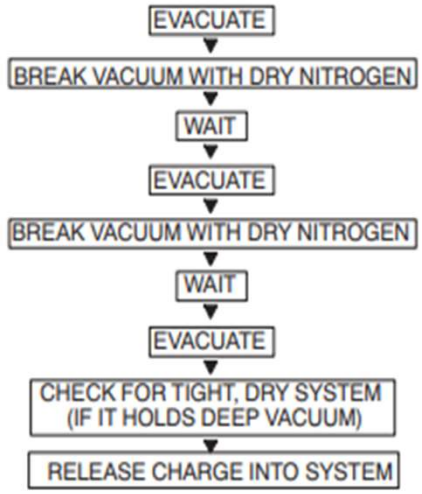
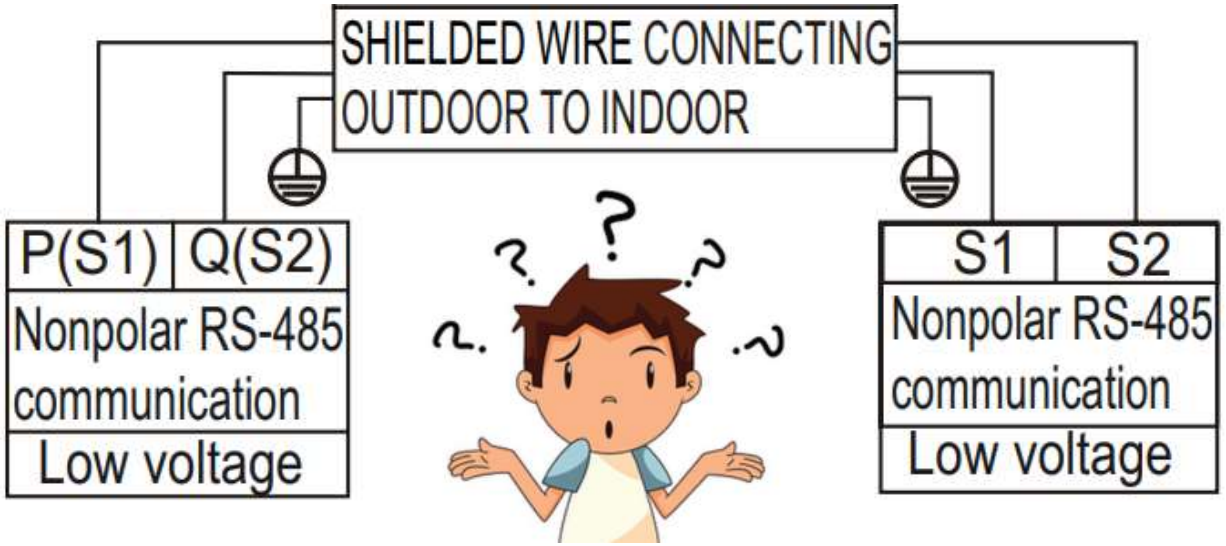


Fig. 16 — Triple Evacuation Method

Introduction

New Type of Communication



RS485 ~ < 5 Vdc

.1-.3 ~Vdc

Introduction

Clarification

Horizontal discharge system

Wired Controller
2 wire

KSACN1001

Non-polarity RS-485

Binary terminology: ON = 1, OFF = 0 (Example: 011 = off, on, on)

Available settings are 000/001/010/011. Each digit corresponds an individual switch position.

Mode	Priority	G	Y1	Y/Y2	B	W	W1	W21	E/AUX	DH/DS/BK	Display
Shut Down	/	0	0	0	0	0	0	0	0	*	00
Fan	7	1	0	0	0	0	0	0	0	1	01
Fan		1	0	0	0	0	0	0	0	0	
Cooling	6	*	1	0	0	0	0	0	0	1	02
Cooling2		*	*	1	0	0	0	0	0	1	03
Dehumidification 1		*	1	0	0	0	0	0	0	0	04

Introduction

38MURA

18K, 24K, 30K, 36K *AA3

36K *AB3, 48K, 60K

10-year warranty (original owner with registration)
Standard or High Heat Options
Operational Range: Cool 5°F - 130°F
Heat -5°F - 86°F
Capable of 24Vac thermostat operation
Conventional line set sizes and insulation
15.0 SEER2 (5T) – 18.0 (3T) (not Energy Star rated)

40MUAA

18K, 24K, 30K, 36K, 48K, 60K

4-way installation (Upflow, Downflow, Left, or Right)
ESP up to .8 in.W.G.
Easier electric heat installation
24Vac interface built-in (operate using thermostat)
Can operate using wired control and/or wireless
EEV conventional location
New algorithms are less dependent upon T1 sensor

See Product Data for full feature information

Introduction

Piping

Table 6 — Piping and Refrigerant

System Size		18K	18K High Heat	24K	24K High Heat	30K	30K High Heat	36K	36K High Heat	48K	48K High Heat	60K	60K High Heat
(208/230 V)													
Min. Piping Length	ft.(m)	9.8 (3)											
Standard Piping Length	ft.(m)	24.6 (7.5)											
Max. outdoor-indoor height difference (OU higher than IU)	ft.(m)	65.6 (20)	65.6 (20)	82 (25)	82 (25)	82 (25)	82 (25)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)
Max. outdoor-indoor height difference (IU higher than OU)	ft.(m)	65.6 (20)	65.6 (20)	82 (25)	82 (25)	82 (25)	82 (25)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)
Suction Pipe (size - connection type)	in (mm)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø7/8" (22)	ø7/8" (22)
Liquid Pipe (size-connection)	in (mm)	ø3/8" (9.52)											
Refrigerant Type	Type	R410A											
Charge Amount	lb. (kg)	3.53 (1.6)	5.07 (2.3)	4.63 (2.1)	6.39 (2.9)	6.72 (3.05)	8.38 (3.8)	8.16 (3.7)	10.36 (4.7)	10.4 (4.7)	10.58 (4.8)	10.8 (4.9)	10.58 (4.8)

Over 24.6 feet, add .69 oz/ft

5/16'' SAE Female to 1/4'' SAE Male

System Size	Max. Piping Length with no additional refrigerant charge per System	Additional refrigerant charge	Total Maximum Piping Length per system
	ft. (m)	Oz/ft (g/m)	ft. (m)
18K	24.6 (7.5)	0.69 (65)	98 (30)
24K - 30K			164 (50)
36K - 60K			213 (65)

Liquid service valve

Vapor service valve

Liquid line drier 3/8"

Only the vapor line must be insulated

3/4" or 7/8"

Introduction

Accessories

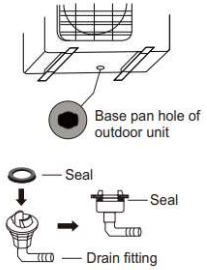
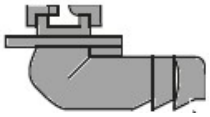
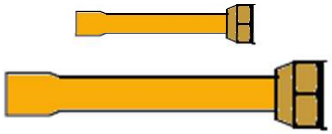


Fig. 11 — Drain Joint



Drain adapter

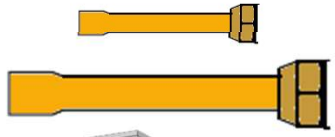
Braze to flair adapters



Must be ordered separate

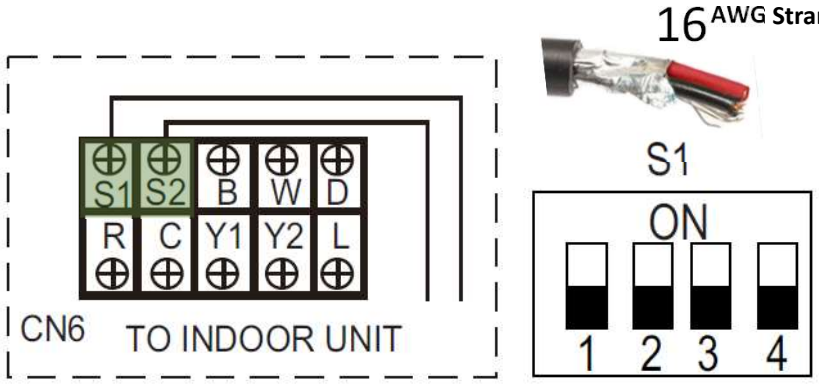
RG 10 Remote

Braze to flair adapters



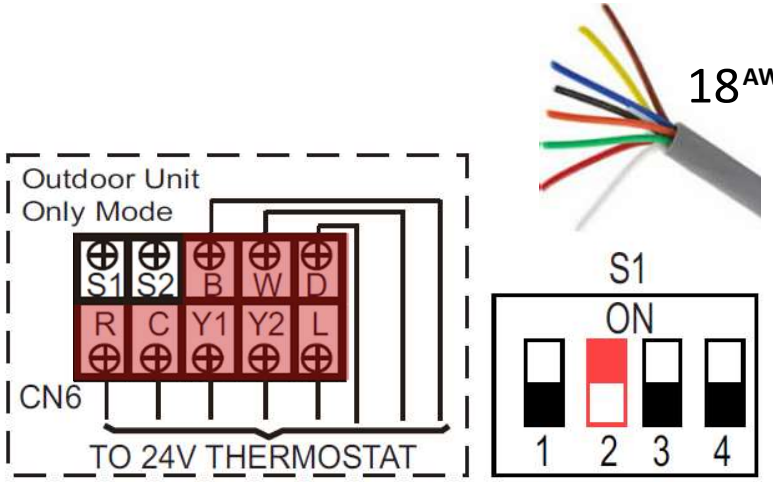
Introduction

Control Wiring Outdoor



Option 1: Non-polarity RS485 Communication

Default



Option 2: 24V Communication

OPTIONS	COMMUNICATION TYPE	RECOMMENDED CABLE SIZE
1	Non-Polarity RS485 Communication (S1 - S2)	16 AWG (stranded shielded)

Introduction

Scenario 1 - 24V Thermostat with RS485 Communication

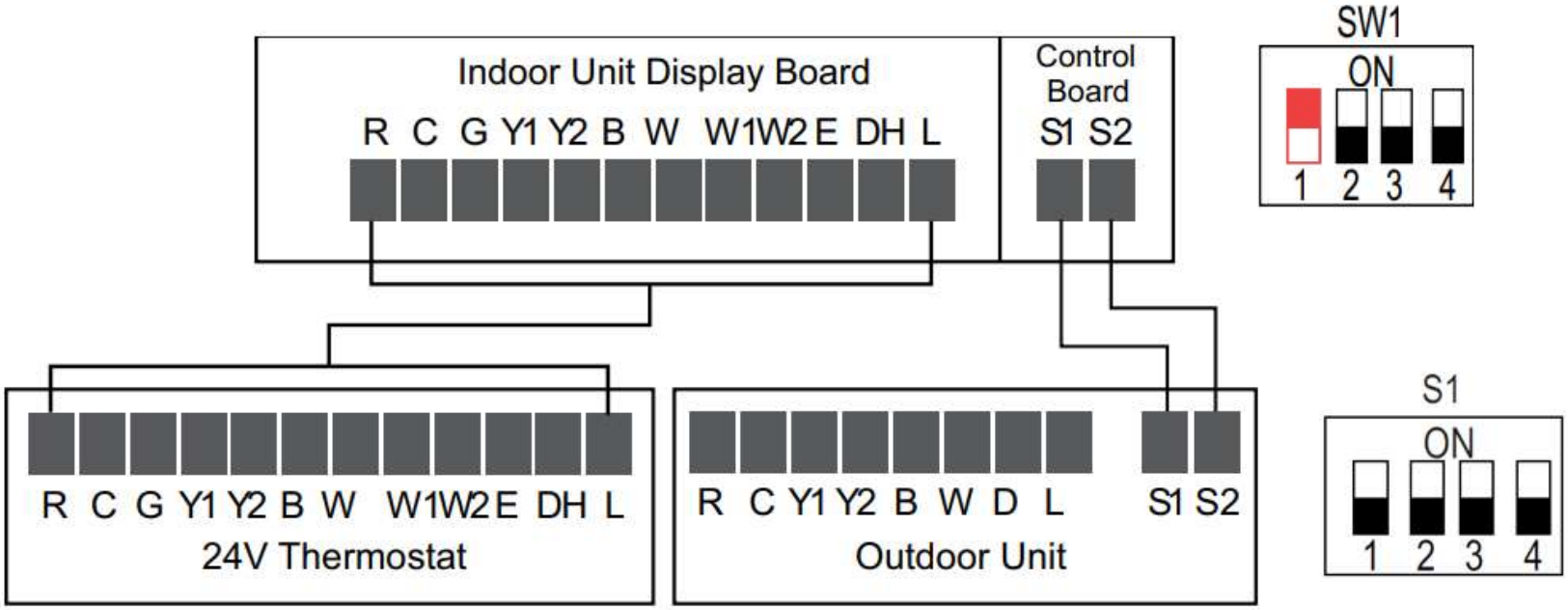


Fig. 49 —Scenario 1

Introduction

Scenario 2 - RS485 Communication

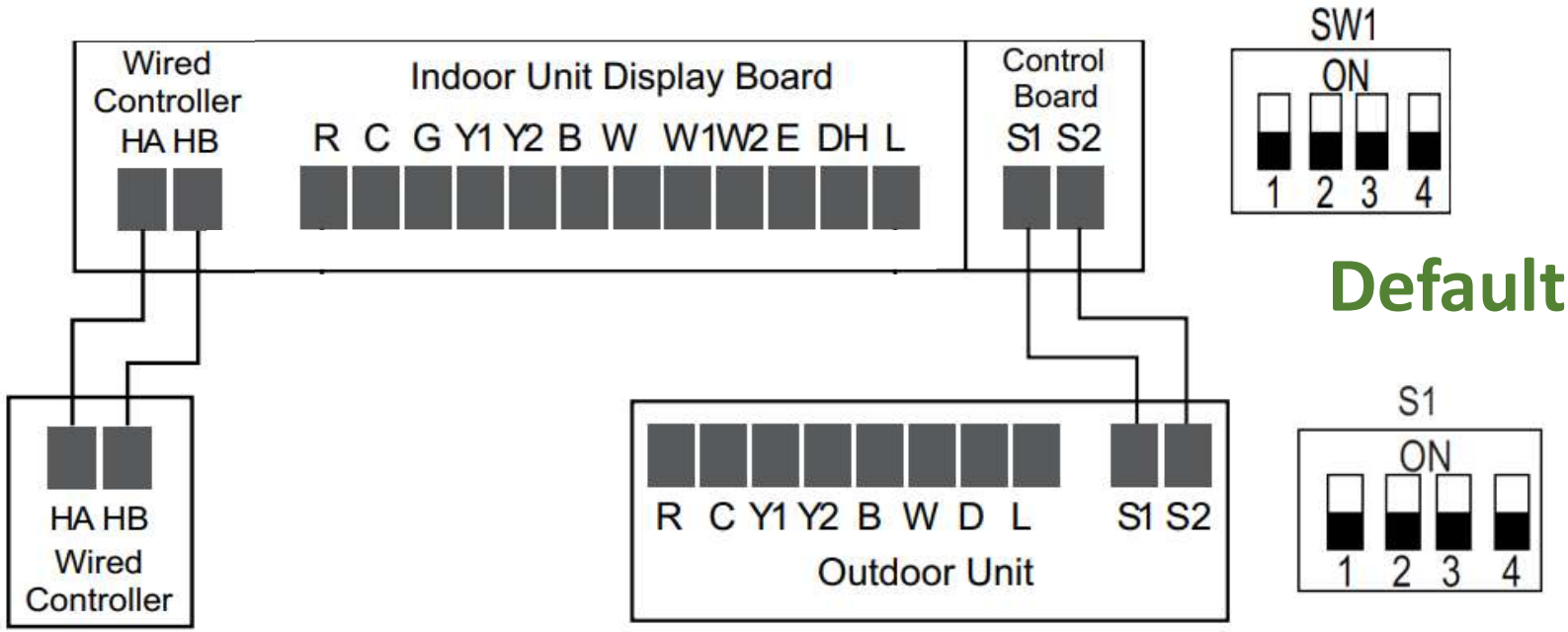


Fig. 50 —Scenario 2

Introduction

Scenario 3 – 24V Thermostat

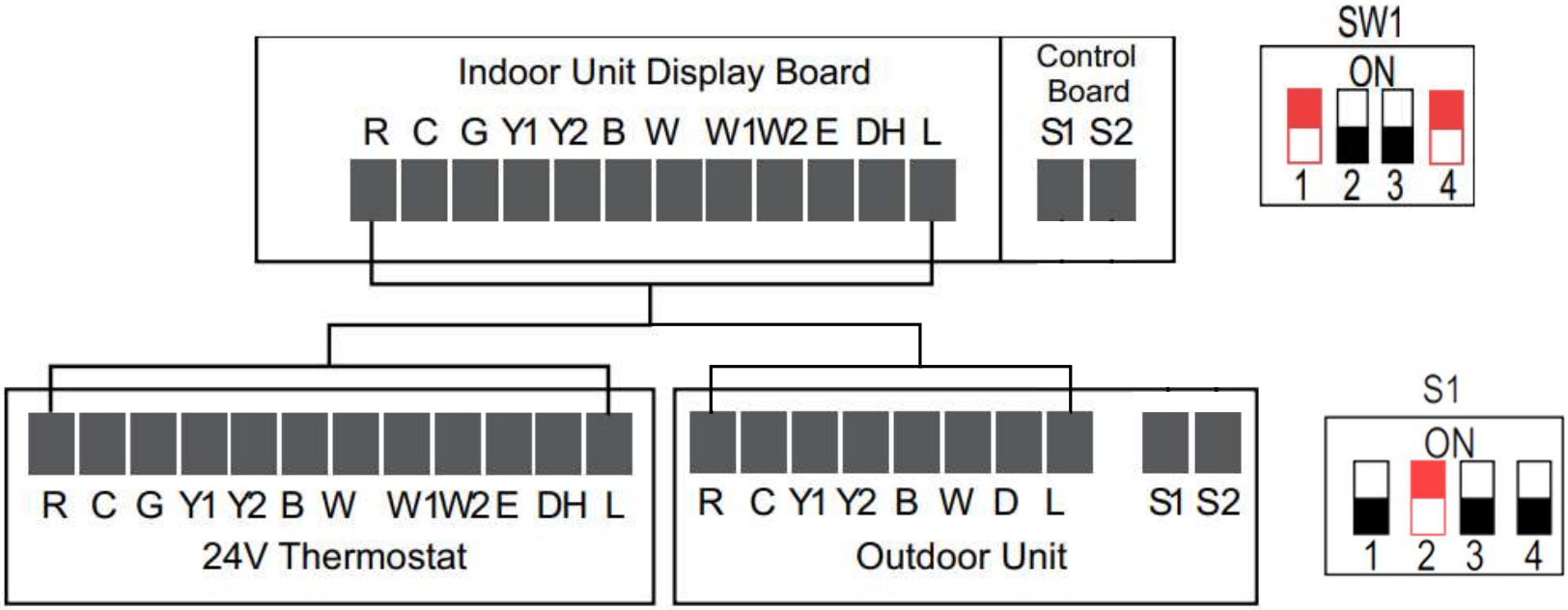
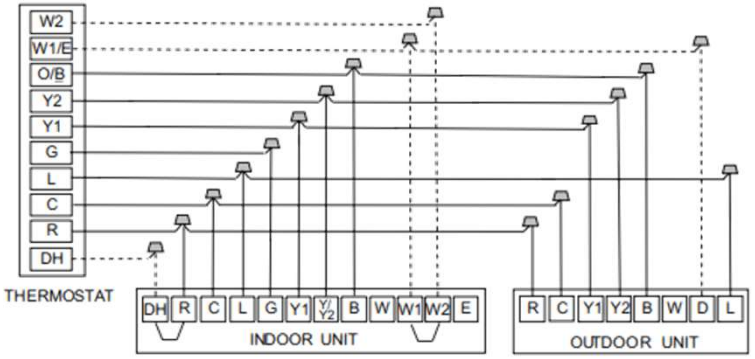
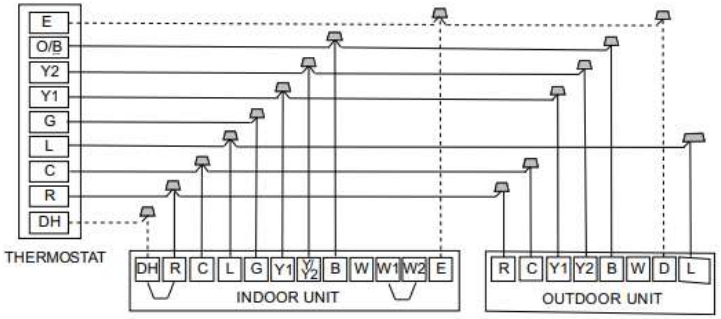


Fig. 51 —Scenario 3

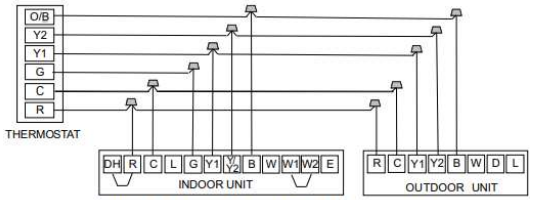
Introduction



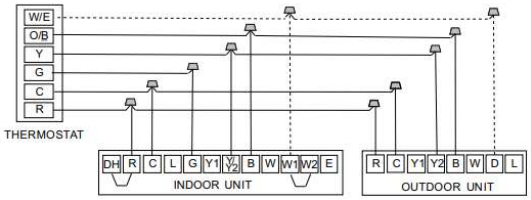
Wiring for 4H and 2C Thermostat



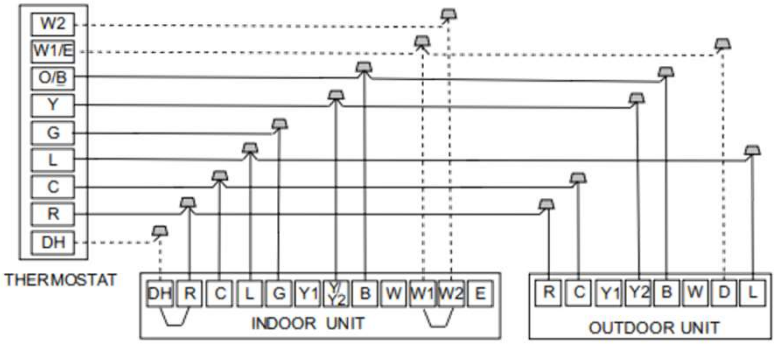
Wiring for 3H and 2C Thermostat



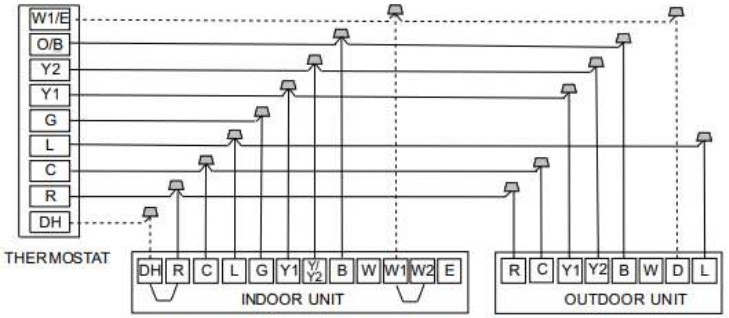
Wiring for 2H and 2C Thermostat



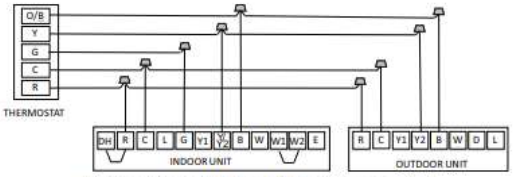
Wiring for 2H and 1C Thermostat



Wiring for 3H and 1C Thermostat



Wiring for 3H and 2C Thermostat

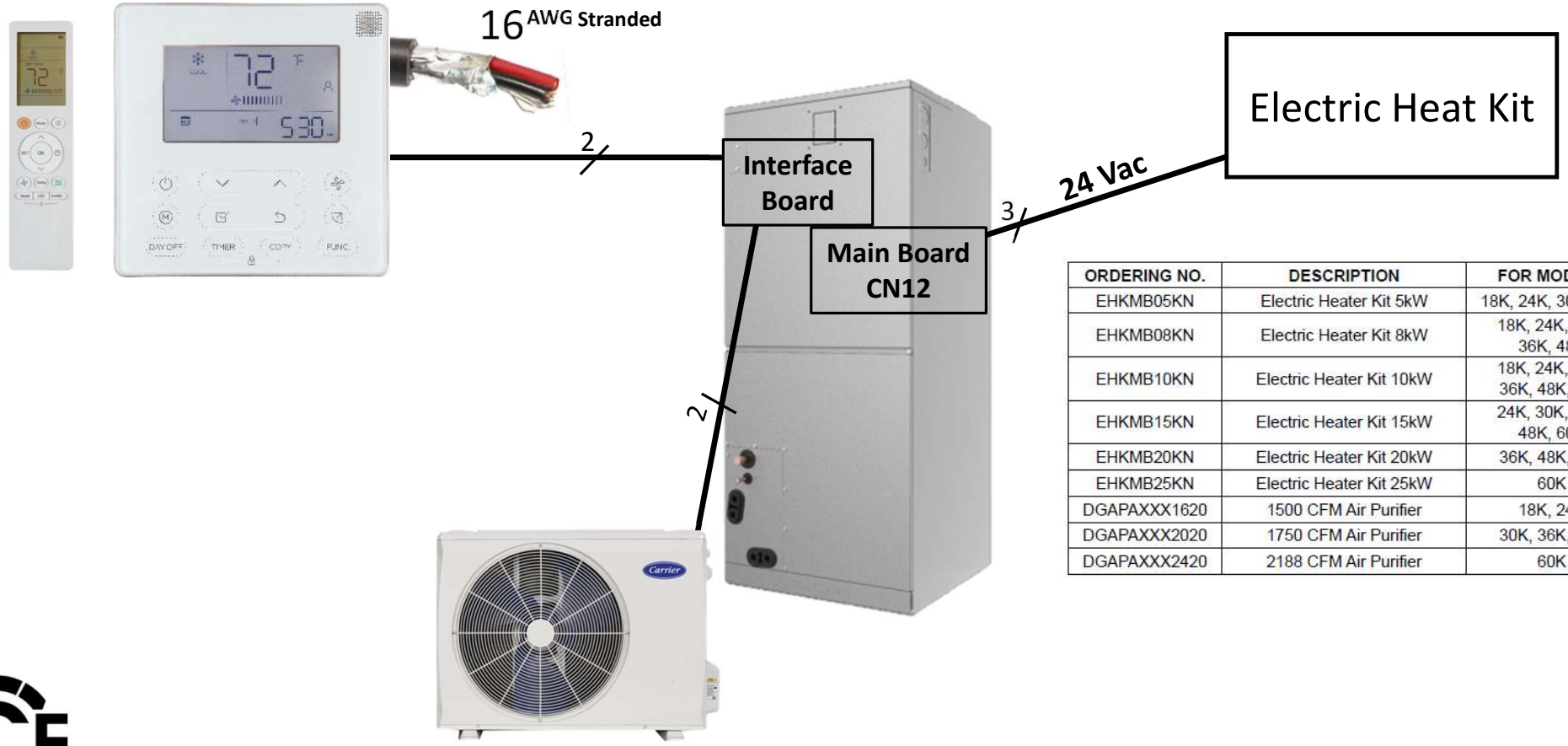


Wiring for 1H and 1C Thermostat

See Installation manual

Introduction

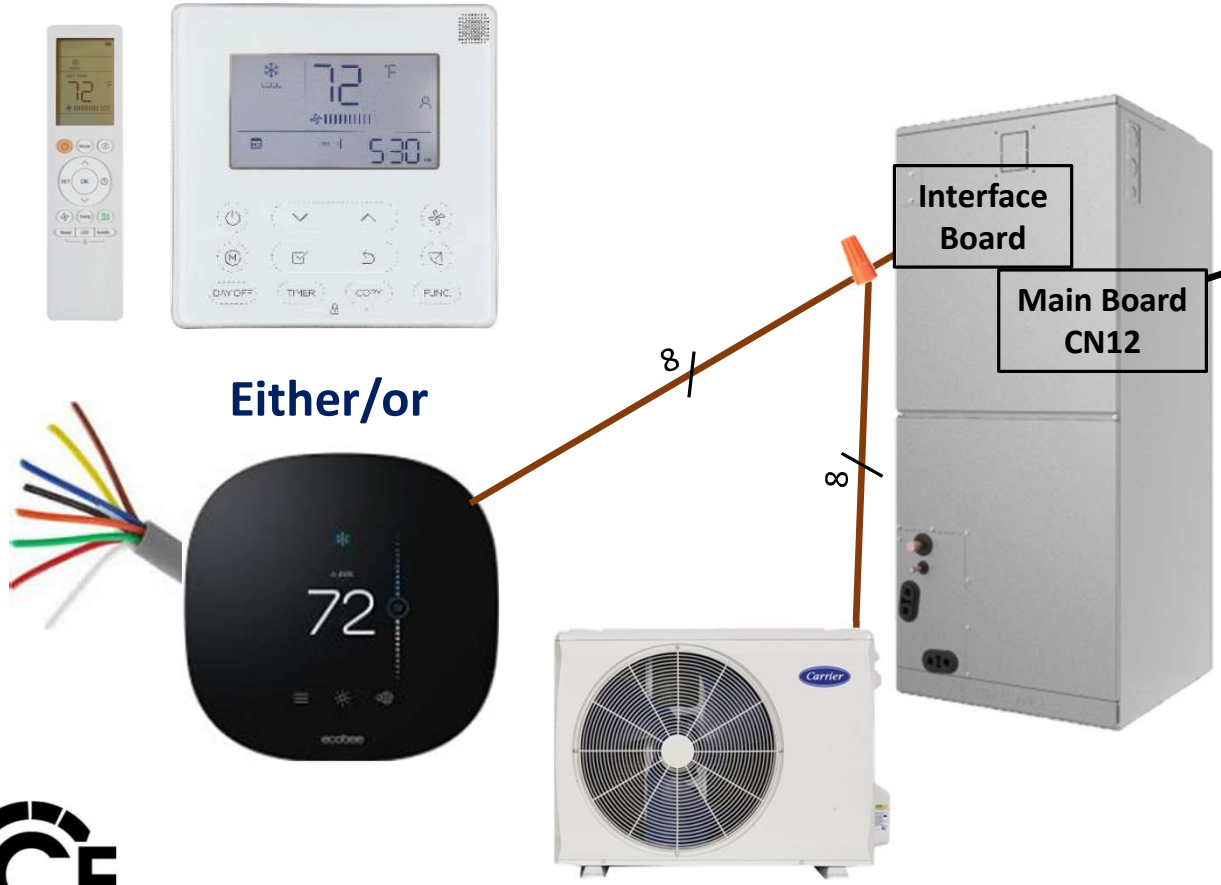
Control Wiring Indoor (wired/wireless)



ORDERING NO.	DESCRIPTION	FOR MODELS
EHKMB05KN	Electric Heater Kit 5kW	18K, 24K, 30K, 36K
EHKMB08KN	Electric Heater Kit 8kW	18K, 24K, 30K, 36K, 48K
EHKMB10KN	Electric Heater Kit 10kW	18K, 24K, 30K, 36K, 48K, 60K
EHKMB15KN	Electric Heater Kit 15kW	24K, 30K, 36K, 48K, 60K
EHKMB20KN	Electric Heater Kit 20kW	36K, 48K, 60K
EHKMB25KN	Electric Heater Kit 25kW	60K
DGAPAXXX1620	1500 CFM Air Purifier	18K, 24K
DGAPAXXX2020	1750 CFM Air Purifier	30K, 36K, 48K
DGAPAXXX2420	2188 CFM Air Purifier	60K

Introduction

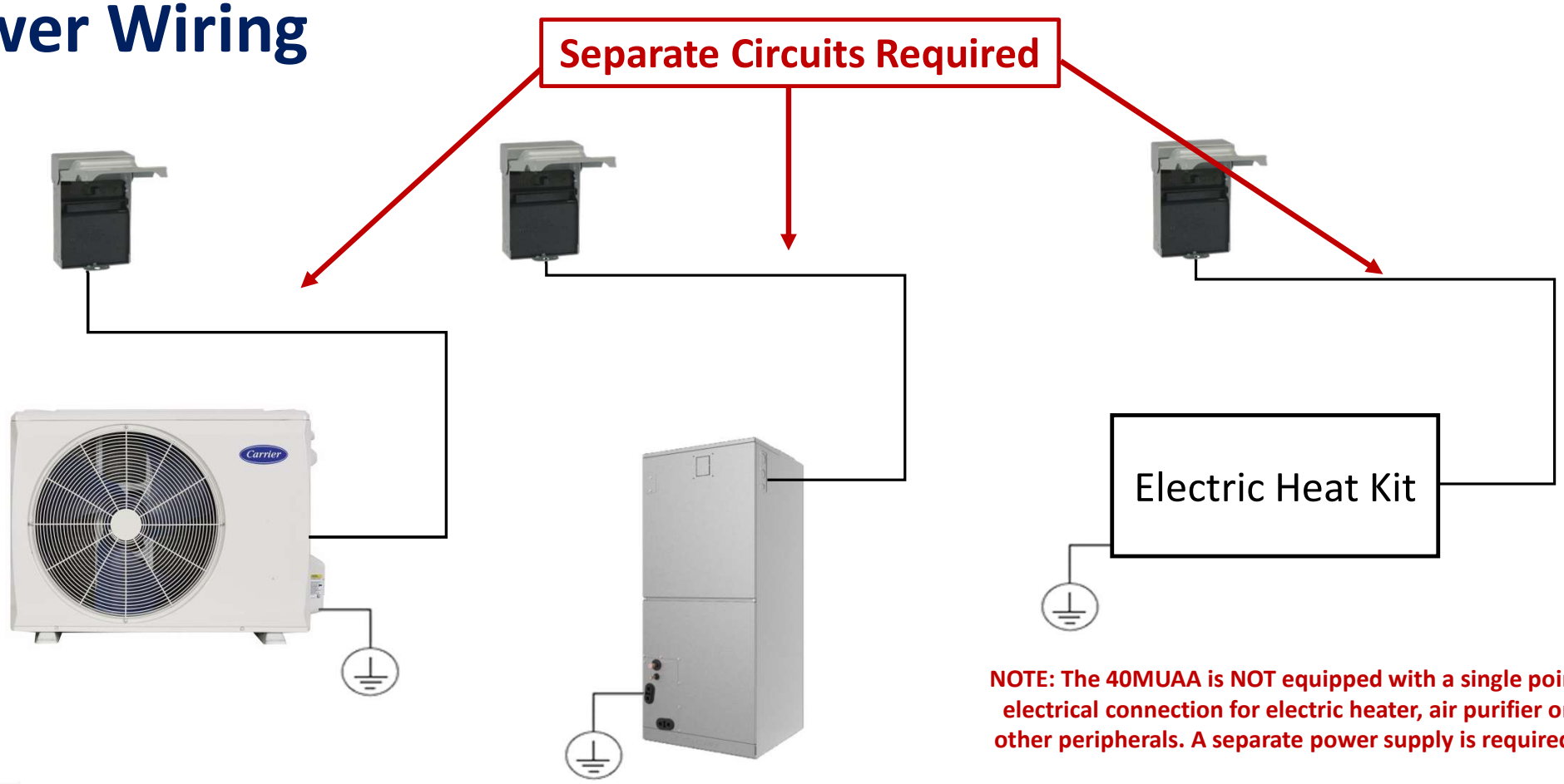
Control Wiring Indoor (24 Vac Thermostat)



ORDERING NO.	DESCRIPTION	FOR MODELS
EHKMB05KN	Electric Heater Kit 5kW	18K, 24K, 30K, 36K
EHKMB08KN	Electric Heater Kit 8kW	18K, 24K, 30K, 36K, 48K
EHKMB10KN	Electric Heater Kit 10kW	18K, 24K, 30K, 36K, 48K, 60K
EHKMB15KN	Electric Heater Kit 15kW	24K, 30K, 36K, 48K, 60K
EHKMB20KN	Electric Heater Kit 20kW	36K, 48K, 60K
EHKMB25KN	Electric Heater Kit 25kW	60K
DGAPAXXX1620	1500 CFM Air Purifier	18K, 24K
DGAPAXXX2020	1750 CFM Air Purifier	30K, 36K, 48K
DGAPAXXX2420	2188 CFM Air Purifier	60K

Introduction

Power Wiring



NOTE: The 40MUAA is NOT equipped with a single point electrical connection for electric heater, air purifier or other peripherals. A separate power supply is required.

Introduction

Wired Remote (optional-accessory)

KSACN1001AAA

- 7 Day Programmable Wired Wall Remote Controller
- Indoor Setting Temperature Range: 62°F~86°F
- Defaulted to Follow Me (Senses Temp at Controller, not indoor unit)
- Maximum wire length: 18 gauge 66', 16 gauge 164'
- Control up to 16 indoor units.

The 1001 looks and works the same as the 601, 701 or 801, but connects differently. Use field supplied 16 gauge stranded 2-wire.

Introduction

Wired Remote (optional-accessory)

KSACN1001AAA

Table 4 — Troubleshooting

DISPLAY ON IDU	INDOOR UNIT ERROR CODE DEFINITION
EH00	Indoor EEPROM malfunction
EL01	Communication malfunction between the indoor and outdoor units
EH03	Indoor fan speed malfunction
EC51	Outdoor EEPROM malfunction
EC52	Condenser coil temperature sensor (T3) malfunction
EC53	Outdoor ambient temperature sensor (T4) malfunction
EC54	Outdoor unit exhaust temperature sensor error
EH60	Indoor Room Temperature Sensor T1 Error
EH61	Indoor Evaporator coil Temperature Sensor T2 Error
EH62	Air inlet temperature sensor Error
EC07	Outdoor DC fan speed malfunction
EH0b	Indoor PCB and display board communication error
EL0C	Refrigerant leakage detection
EH0E	Indoor water level warning Error
FL09	New and old platform match malfunction
PC00	Inverter module (IPM) protection
PC01	Over high voltage or over low voltage protection
PC02	High temperature protection of compressor top/ IPM Temperature protection
PC04	Inverter compressor drive Error
PC03	Low pressure protection
PC0L	Low temperature protection of outdoor unit
EHb3	Communication error between the wire controller and the indoor unit
----	Indoor units mode conflict
NOTE: The digital tube shows that DF / FC is in a normal operation state, not fault or protection.	

Introduction

Wired Remote

Wired Remote / Wireless Remote

The RG10F wireless remote can be used with the Infrared Receiver built in to the wired remote.

Wireless Remote must be pointed at the IR and be within range, (25 feet).

The RG10F “Inquiry Mode” is only available in this setup, (Scenario 2 Full RS-485).

Introduction

INFORMATION INQUIRY

To enter the engineer mode, in power-on or standby mode, and in non-locked state using hand held remote,

1. Press the key combination **On/Off** + **Fan** for 7 seconds:
2. After entering the engineer mode, the remote control displays the following icons **"Auto, Cool, Dry, Heat"**, plus the battery icon; at the same time, it also displays the numeric code of the current engineer mode (for the initial engineer mode, the numeric code displayed is 0), and all other icons are inactive. In engineer mode, the value of the current numeric code can be adjusted circularly through the **Up/Down** key, with the setting range of 0 to 30. Each time the current numeric code is adjusted, the special code of the engineer mode is transmitted with a delay of 0.6s. The code can also be transmitted by pressing "**OK**", and the special code of the engineer mode sent contains information of the currently displayed numeric code (if the numeric code is 0, the code to enter the engineer mode is transmitted). In engineer mode, other keys or operations are invalid except for the **On/Off** key, the **Up/Down** key, the **OK** key or executing the operation to exit the engineer mode.

Inquiry Information

Inquiry Information (Sheet 1 of 2)

CODE	QUERY CONTENT	ADVANCED FUNCTION SETTING
0	Error Code	
1	T1 Temperature	Press "**On/Off**" for 2s to enter the Power Down Memory Selector, the code displayed is **"Ch"**, press **"OK"** to send the Query Power Down Memory Selector code; press the **Up/Down** key to select 1 or 0 and press **"OK"** to confirm, 1 indicates that the power down memory exists, and 0 indicates that no power down memory exists; and press "**On/Off**" for 2s to exit. (Set within 1 minute after power on)
2	T2 Temperature	Press "**On/Off**" for 2s to enter the Internal Fan Control Selector after the preset temperature is reached, the code displayed is **"Ch"**, press **"OK"** to send the Query Internal Fan Control Selector code; press the **Up/Down** key to select 1 to 11: 1 - Stop the fan, 2 - Min. air speed, 3 - Set the air speed, 4 - Terminal running for 5min, press **"OK"** to confirm, and press "**On/Off**" for 2s to exit. (Set within 1 minute after power on)
3	T3 Temperature	Press **"On/Off"** for 2s to enter the Mode Selector, press the Up/Down key to select CH (cool and heat, **Auto+Cool+Dry+Heat+Fan**), **CC** (Cool only without **Auto**, **Cool+Dry+Fan**), press **"OK"** to confirm, and the mode selected can be memorized when the remote control is powered down and powered on; and press **"On/Off"** for 2s to exit. When the remote control does not burn any parameters, the mode setting will not be memorized. (Set within 1 minute after power on)

Advanced function unavailable at this time.

Introduction

CODE	INQUIRY	INQUIRY DESCRIPTION	SERVICE/ INQUIRY	FOR SERVICE, PRESS ON/OFF FOR 2 SECONDS TO:	SELECTION GUIDE/NOTES
0		Error Code Check	SERVICE AND INQUIRY	Review error memory function. Displays "Ch". Press **OK** to send the query error code memory.	
1	T1	Indoor Ambient Temperature	SERVICE AND INQUIRY	Change the power off memory selection. This feature determines whether the unit memorizes the set conditions prior to a power failure. Displays "Ch". Press **OK** to return the current setting. Press **UP** or **DOWN** to cycle through settings **1** and **0**.	0. Memory settings are off 1. Memory settings are on
2	T2	Indoor Coil Temperature	SERVICE AND INQUIRY	Change the option to control the indoor fan operation after reaching the set temperature. Displays "Ch". Press **OK** to return the current setting. Press **UP** or **DOWN** to cycle through settings 1 through 11. Next, press **OK** to confirm the selection.	1. Stop the fan 2. Minimum fan speed 3. Set speed 4. Intermittent fan-off 4 minutes/on 1 min 5. Terminate after run time of 10 mins 6. Terminate after run time of 15 mins 7. Terminate after run time of 20 mins 8. Terminate after run time of 30 mins 9. Terminate after run time of 40 mins 10. Terminate after run time of 50 mins 11. Terminate after run time of 60 mins
3	T3	Outdoor Coil Temperature	SERVICE AND INQUIRY	Change the option to control the **COOLING** and **HEATING** modes available for use on the unit. Press **UP** or **DOWN** to cycle through the settings **CH**, **HH**, **CC**, **nU**. Press **OK** to confirm.	**CH - COOLING** and **HEATING**: **AUTO**, **COOLING**, **DRY**, **HEATING** and **FAN** modes available **HH - HEATING** Only: **HEATING** and **FAN** modes available **CC - COOLING** without **AUTO**: **COOLING**, **DRY** and **FAN** modes available **nU - COOLING** and **HEATING** without **AUTO**: **COOLING**, **DRY**, **HEATING** and **FAN** modes available
4	T4	Outdoor Ambient Temperature	SERVICE AND INQUIRY	Change the selection of the lowest set temperature. **NOTE: Temperature range is 60°F ~ 75°F (16°C ~ 24°C).**	
5	TP (T5)	Compressor Discharge Temperature	SERVICE AND INQUIRY	Change the temperatur **NOTE: Ter (25°C ~ 30** Press **UP** setting. Pr	
6	FT	Compressor target frequency	INQUIRY ONLY		
7	Fr	Compressor run frequency	INQUIRY ONLY		
8	dL	Unit amperage	SERVICE AND INQUIRY	Change th Displays "C setting. Pr settings 0 t test). Pres	
9	Uo	Unit voltage	INQUIRY ONLY		
10	Sn	Capacity test (special usage)	INQUIRY ONLY		
11	----	Not available	INQUIRY ONLY		

1

CODE	INQUIRY	INQUIRY DESCRIPTION	SERVICE/ INQUIRY	FOR SERVICE, PRESS ON/OFF FOR 2 SECONDS TO:	SELECTION GUIDE/NOTES
12	Pr	Indoor fan speed	SERVICE AND INQUIRY	Change the heating frequency lower limit selection. Displays "Ch". Press **OK** to return the current heating minimum frequency limit selection code. Press **UP** and **DOWN** to select the minimum heating frequency limit value. Press **OK** to confirm.	
13	Lr	Electronic Expansion Valve (EEV) opening	SERVICE AND INQUIRY	Change the maximum operating frequency of T4 Cooling Only intervals. Displays "Ch". Press **OK** to return the current operating frequency code of the T4 Cooling Only intervals. Press **UP** or **DOWN** to select the limit value and then press **OK**.	
14	ir	Indoor fan speed	INQUIRY ONLY		Multiple the display number by 8 to calculate the actual RPM
15	HU	Relative Humidity	INQUIRY ONLY		Available in INQUIRY mode for the high tier/new mid tier units that have an RH sensor.
16	TT	Setpoint compensation temperature	INQUIRY ONLY		
17	dT	Dust concentration (not used)	INQUIRY ONLY		
18	WIFI	Wi-Fi signal strength	INQUIRY ONLY		The value is measured in **dBm**. The display values are 0, 1, 2, 3 and 4 (4 is the highest and 0 is the lowest)
19	----	Not available	SERVICE ONLY	Change the cooling frequency upper limit selection in Hz. Displays "Ch". Press **OK** to return the current frequency limit. Press **UP** or **DOWN** to select the preferred frequency upper limit value (in Hz). Press **OK** to confirm.	For example, the unit may be factory set to fluctuate between 40 and 84 Hz. If set to 50, the unit will now be limited to operating between 40 and 50 Hz.
				Change the heating frequency upper limit selection in Hz.	

2

CODE	INQUIRY	INQUIRY DESCRIPTION	SERVICE/ INQUIRY	FOR SERVICE, PRESS ON/OFF FOR 2 SECONDS TO:	SELECTION GUIDE/NOTES
24	----	Minimum Cooling Fan Speed	SERVICE ONLY	Change the minimum cooling fan speed setting as it relates to RPM. **NOTE: Changing this setting is not recommended as it may trigger unit protection protocols.** Displays "Ch". Press **OK** to return the current minimum cooling fan speed setting. Press **UP** or **DOWN** to select the minimum cooling fan speed. Press **OK** to confirm.	For example, the unit may be factory set to fluctuate between 300 and 1000 RPM. If set to 500, the unit is limited to operating between 500 and 1000 RPM.
25	----	Maximum Heating Fan Speed	SERVICE ONLY	Change the maximum heating fan speed setting as it relates to RPM. Displays "Ch". Press **OK** to return the current maximum heating fan speed setting. Press **UP** or **DOWN** to select the maximum heating fan speed. Press **OK** to confirm.	For example, the unit may be factory set to fluctuate between 300 and 1000 RPM. If set to 800, the unit will now be limited to operating between 300 and 800 RPM.
26	----	Minimum Heating Fan Speed	SERVICE ONLY	Change the minimum heating fan speed setting as it relates to RPM. **Note: Changing this setting is not recommended as it may trigger unit protection protocols.** Displays "Ch". Press **OK** to return the current minimum heating fan speed setting. Press **UP** or **DOWN** to select the minimum heating fan speed. Press **OK** to confirm.	For example, the unit may be factory set to fluctuate between 300 and 1000 RPM. If set to 500, the unit is limited to operating between 500 and 1000 RPM.
27	----	Not available			
28	----	Not available			
29	----	Not available			
30	----	Not available			

3

Introduction

Accessing the INQUIRY Mode

⚠ CAUTION

Read and understand the function changes you wish to make in advance. Neither the indoor unit nor the remote control displays the new level of any of the changes made while in the **INQUIRY** mode. Be sure to document the changes you've made to the system's programming using the **INQUIRY** mode. Once you complete the changes and exit the **INQUIRY** mode, if additional changes are made to the programming, the system will not show the new previously set level(s).

For example, when you first access **CODE 22**, **Heating Temperature Compensation**, the remote control display defaults to **0**. If you change it to **-2,** then save and exit out of the **INQUIRY** mode, the next time someone goes back in and accesses **CODE 22**, the remote's display will not display **-2**. Instead it will show **0** because that's the default. If you are unsure of the previous changes, due to a lack of documentation, you could press the **DOWN** symbol to the maximum change range of **-6**, then press the **UP** symbol until you are back to **0**, and make the new adjustments accordingly. Be sure to document the changes when you are done.

1. Simultaneously press **ON/OFF** and **FAN SPEED** for 8 seconds.
   a. The remote is now in the **INQUIRY** mode.
   b. The remote control remains in the **INQUIRY** mode for 1 minute if no other button is pressed.
   c. While in the **INQUIRY** Mode, the remote display cancels all icons except **AUTO**, **COOL**, **DRY**, **HEAT** and **Battery Strength**.
   d. The remote control digital display defaults to **0** upon entering the **INQUIRY** mode.
   e. In the **INQUIRY** mode, each digital code (from 0 to 30) is accessed by pressing the **UP** or **DOWN** arrows .
   f. The **INQUIRY** information appears on the high wall indoor unit display in approximately 1 second after accessing the digital code. Press **OK** to send as well.
   g. In the **INQUIRY** mode, all other buttons and operations are invalid except for **UP**, **DOWN** and **OK** or the operation to exit the **INQUIRY** mode.

Remote Controller Service Mode Functions

Note: While in the INQUIRY mode, refer to the following instructions to enter SERVICE mode for the applicable codes.

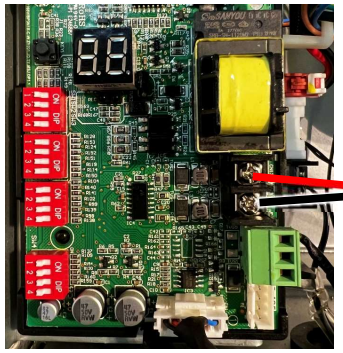
Below is a list of **INQUIRY** modes and serviceable functions.

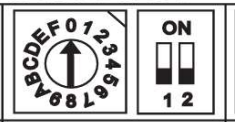
a. Before using the remote's service functions, turn **OFF** the indoor unit with the remote.
b. Turn **OFF** the power to the outdoor unit for 2 minutes. Turn the power back **ON**.
c. Remove the batteries from the remote and wait for the remote screen to clear. Within 30 seconds of replacing the batteries, use **UP** or **DOWN** to scroll through the **INQUIRY** modes.
d. To enter the **SERVICE** mode for an applicable **INQUIRY** mode, press **ON/OFF** for 2 seconds.
e. After **SERVICE** adjustments have been made, press **ON/OFF** for 2 seconds to exit the **SERVICE** mode and return to the **INQUIRY** mode.
f. Once operations in the **INQUIRY** mode are complete, press **ON/OFF** and **FAN SPEED** for 2 seconds to exit. All buttons on the remote controller are disabled for 60 seconds
g. To ensure changes are locked, power down the outdoor unit for three (3) minutes after all the service mode changes are made.

Introduction

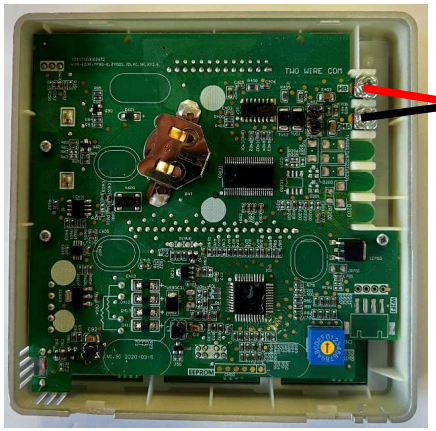
KSACN1001

- Connect the 1001 controller's HA & HB terminals to the Indoor Unit's HA & HB terminals.
- Connections are not polarity sensitive.
- Shielded wire is not necessary.



FOR SETTING NETADDRESS		
S1+S2		
CODE	0~F	
NETADDRESS	0~15	
FACTORY SETTING	✓	

No change needed on a one-to-one matchup .



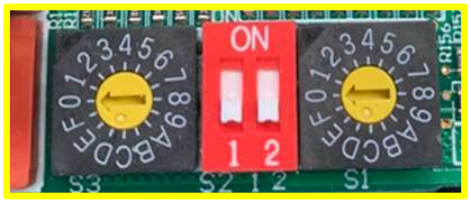
KSACN01001AAA

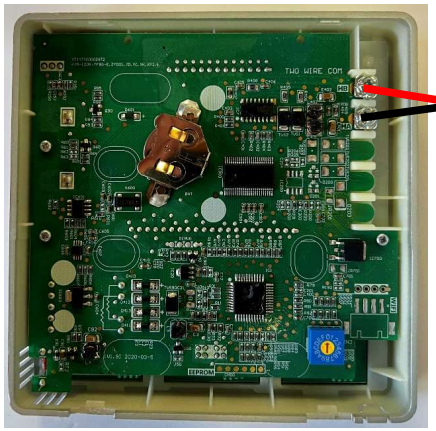
16 AWG Stranded

Introduction

KSACN1001

- Up to 16 indoor units can be daisy chained using one controller.
- Each indoor unit must be set with a different net address.

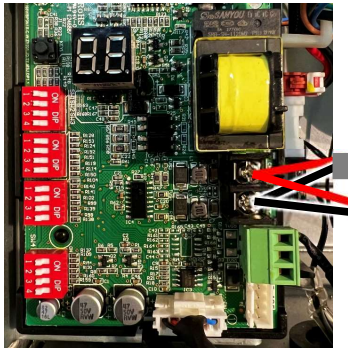


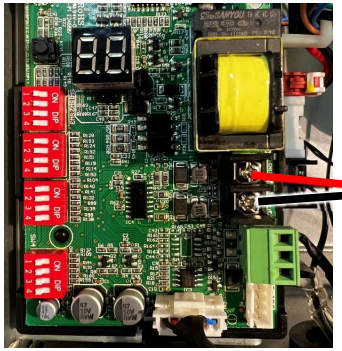


KSACN01001AAA

FOR SETTING NETADDRESS

S1+S2	
CODE	0~F
NETADDRESS	0~15
FACTORY SETTING	✓





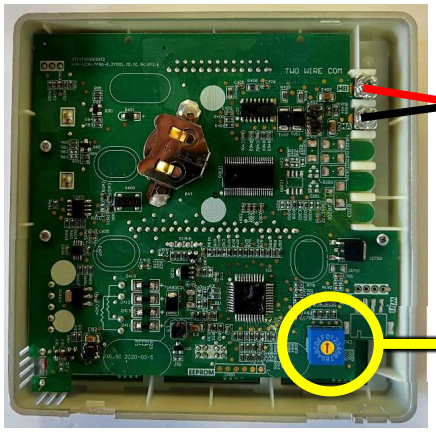
FOR SETTING NETADDRESS

S1+S2	
CODE	0~F
NETADDRESS	0~15
FACTORY SETTING	✓

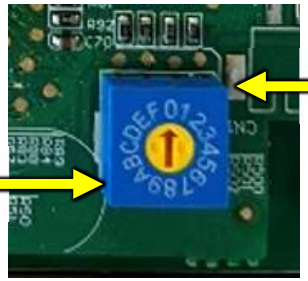
Introduction

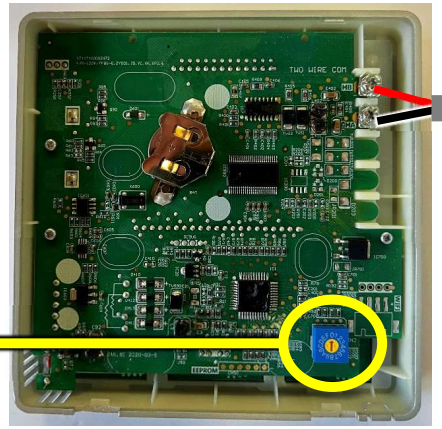
KSACN1001

- Main and Secondary Control.
- System uses last input from either control.
- Main rotary switch is set to 0, Secondary is set to 1.



KSACN01001AAA





KSACN01001AAA

Introduction

Key Points 38MURA with 40MUAA Combination

Review

Control Scenario	24V Tstat, S1+S2	1
	Wired Controller S1+S2	2
	Full 24V	3

Scenario 2

Inquiry and Functions Only With Wireless/Wired Combination (Scenario 2)

Must be ordered separately.

Conventional Line Set Sizes

Table 6 — Piping and Refrigerant

System Size		18K	18K High Heat	24K	24K High Heat	30K	30K High Heat	36K	36K High Heat	48K	48K High Heat	60K	60K High Heat
(208/230 V)													
Min. Piping Length	ft.(m)	9.8 (3)											
Standard Piping Length	ft.(m)	24.6 (7.5)											
Max. outdoor-indoor height difference (OU higher than IU)	ft.(m)	65.6 (20)	65.6 (20)	82 (25)	82 (25)	82 (25)	82 (25)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)
Max. outdoor-indoor height difference (IU higher than OU)	ft.(m)	65.6 (20)	65.6 (20)	82 (25)	82 (25)	82 (25)	82 (25)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)	98.4 (30)
Suction Pipe (size - connection type)	in (mm)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø3/4" (19)	ø7/8" (22)	ø7/8" (22)
Liquid Pipe (size-connection)	in (mm)	ø3/8" (9.52)											
Refrigerant Type	Type	R410A											
Charge Amount	lb. (kg)	3.53 (1.6)	5.07 (2.3)	4.63 (2.1)	6.39 (2.9)	6.72 (3.05)	8.38 (3.8)	8.16 (3.7)	10.36 (4.7)	10.4 (4.7)	10.58 (4.8)	10.8 (4.9)	10.58 (4.8)

Introduction

Scenario 1 - 24V Thermostat with RS485 Communication

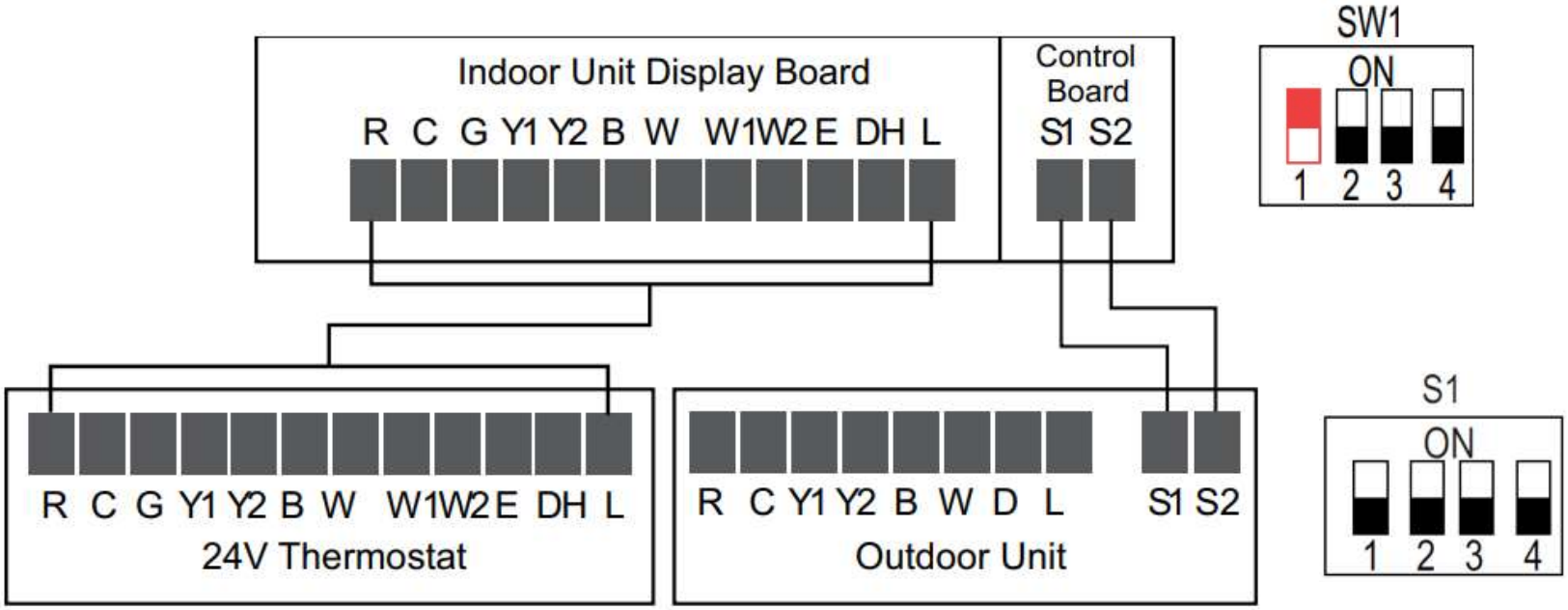


Fig. 49 —Scenario 1

Introduction

Scenario 2 - RS485 Communication

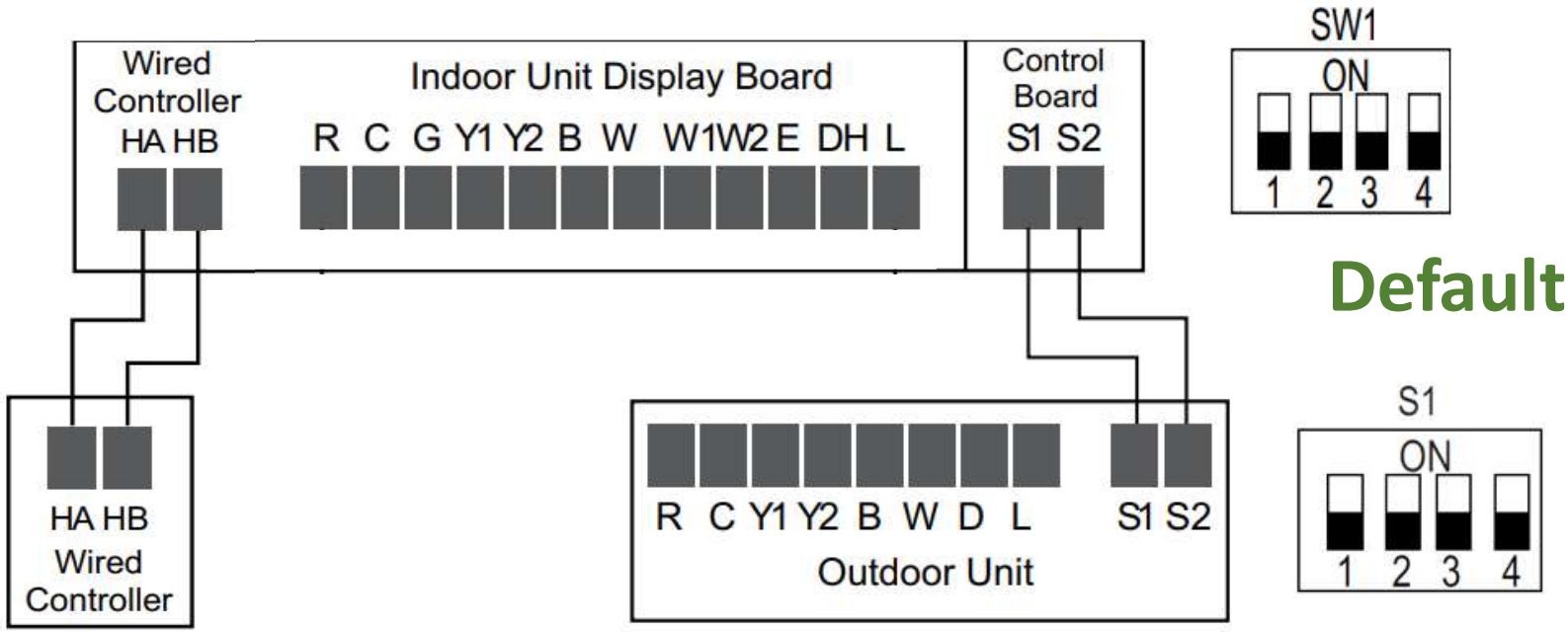


Fig. 50 —Scenario 2

Introduction

Scenario 3 – 24V Thermostat

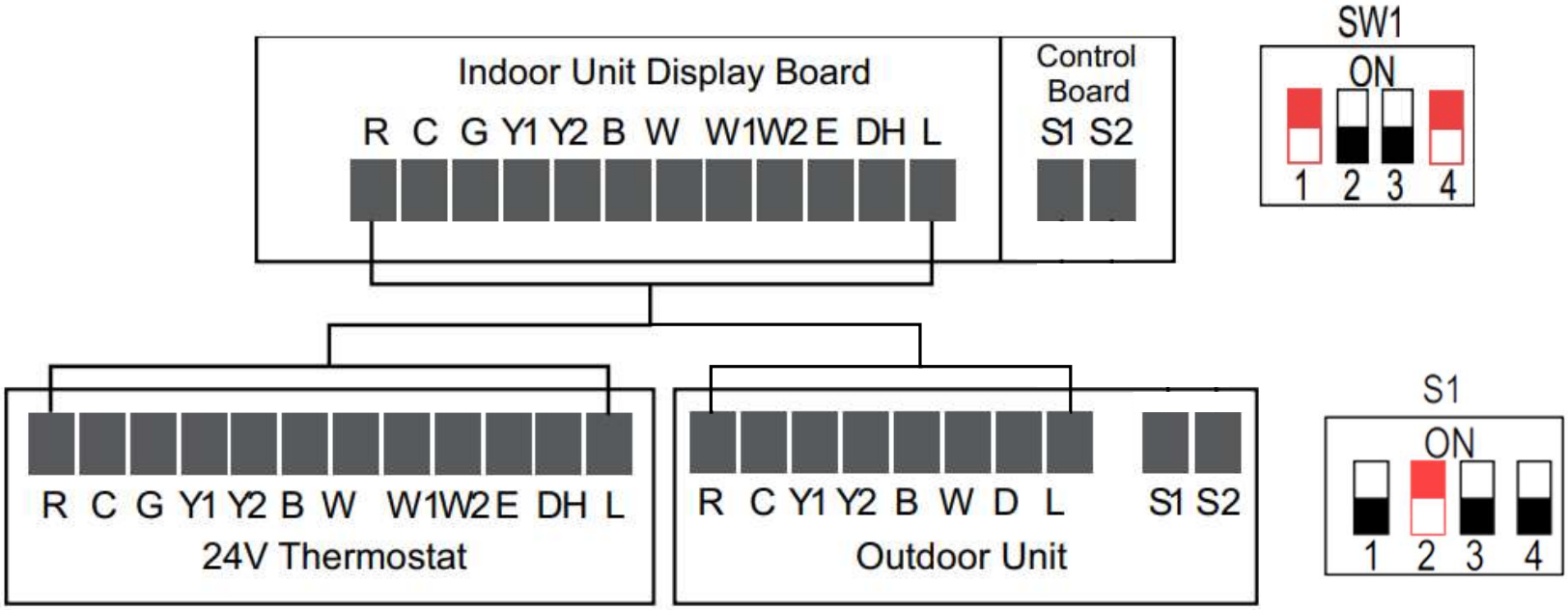


Fig. 51 —Scenario 3

Training will resume in:

05:00

Carrier Enterprise

Five minute break

40MUAA FAN COIL

Orientation

Configurations: Upflow, downflow, horizontal left and right.

Horizontal applications require secondary drain pan.

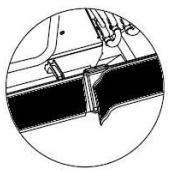
If installed in unconditioned space insulate fan coil.

Seal all corners and add insulation material to the entire surface.

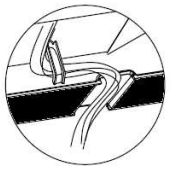
Modifications:

A. Upflow or Horizontal-Left: no field conversion needed.

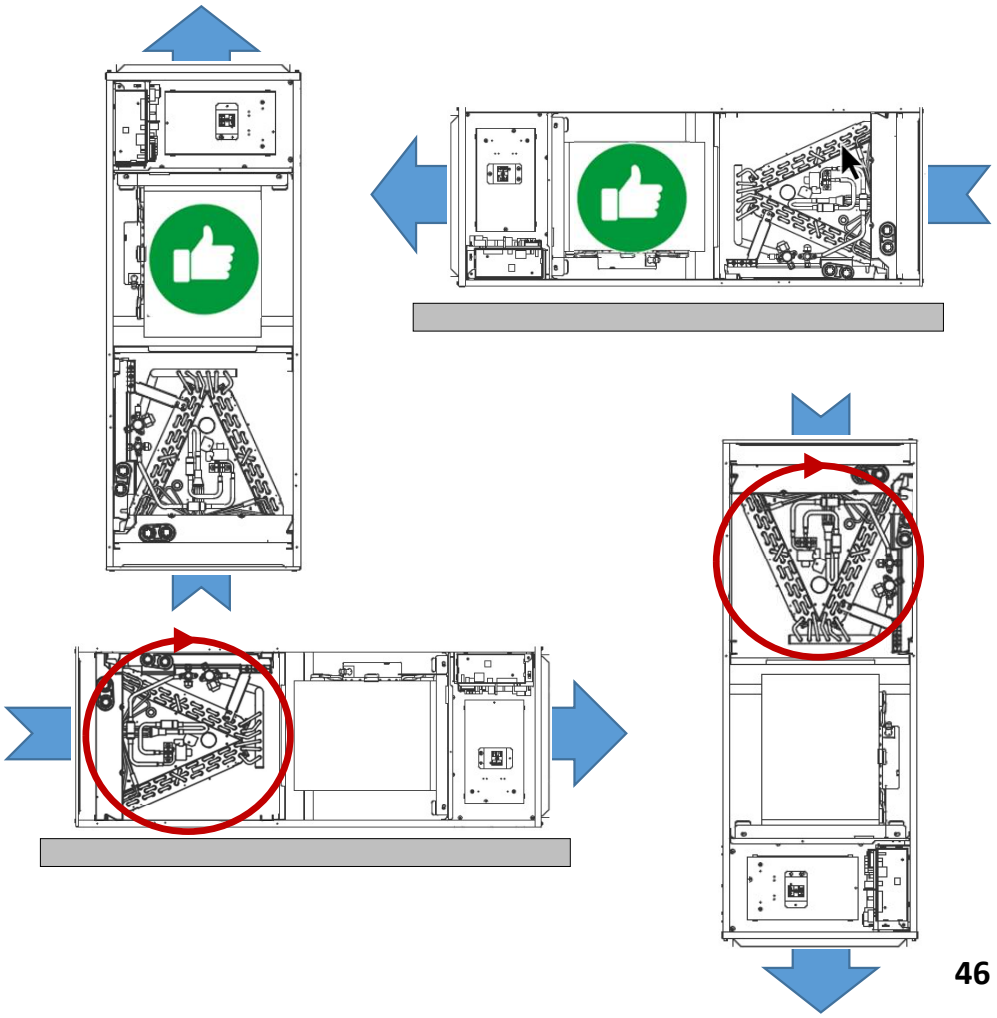
B. Downflow or Horizontal-Right: field conversion required.



Cut the foam gasket.

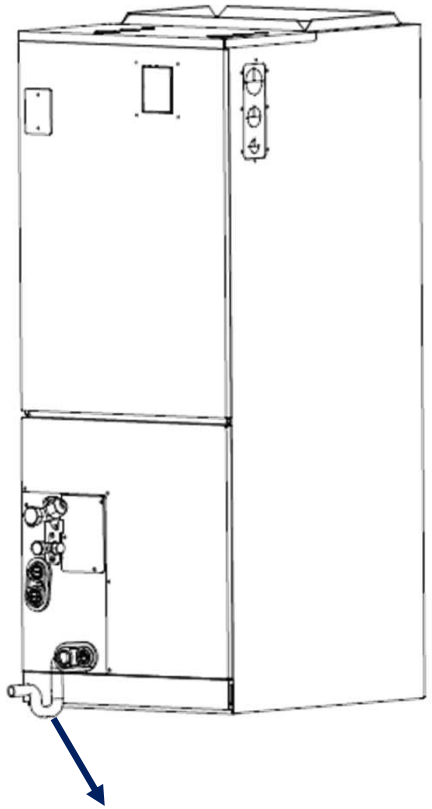


Hook the wire into the buckle and go down from the wire slot.

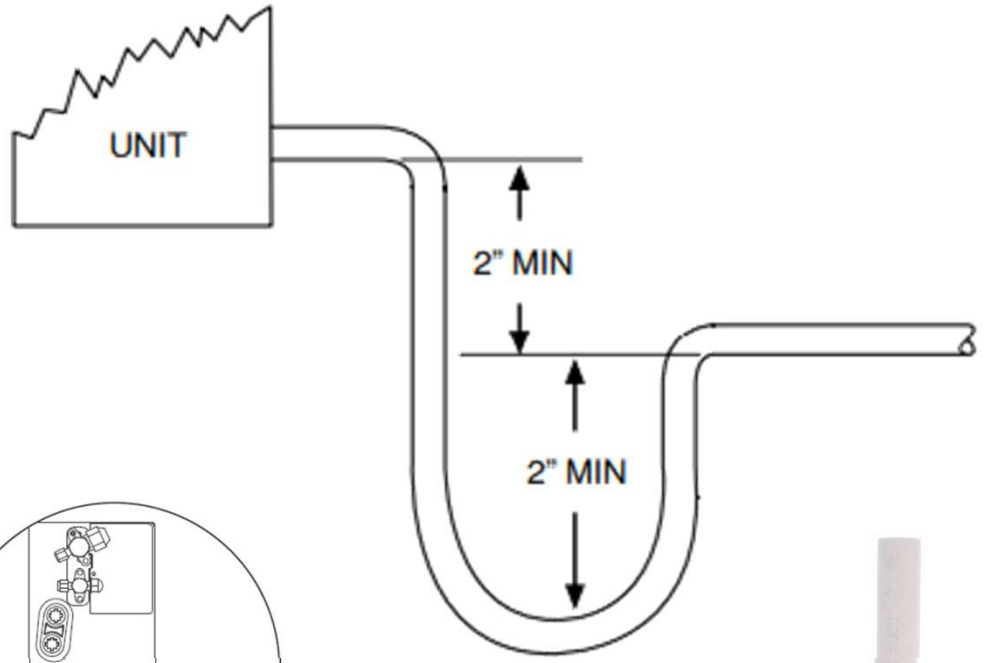


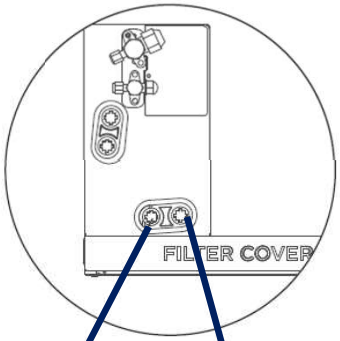
40MUAA FAN COIL

Drain Line



Primary drain line





Primary drain outlet

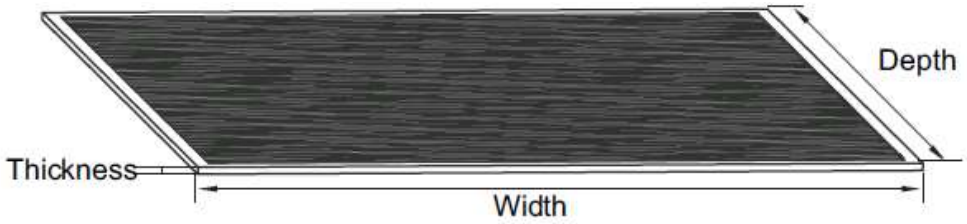
Overflow drain outlet

CE part number 5-414

40MUAA FAN COIL

Filter

- All sizes come with a reusable air filter located on the bottom of the unit.
- The Filter Door is held in place with magnets.
- The air filter is a durable metal mesh and frame.
- Washable and reusable.

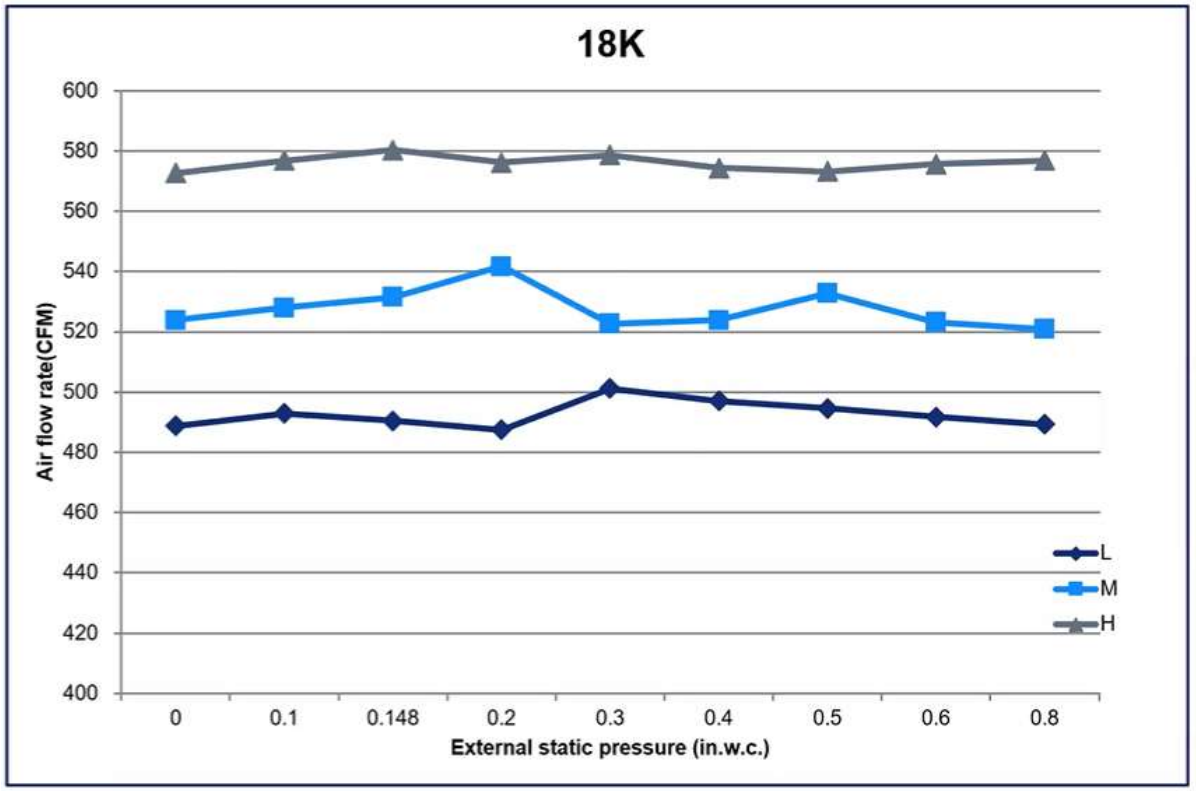


Model (Btu/h)	Width		Depth		Thickness	
	Inch	mm	Inch	mm	Inch	mm
18-24K	16	406.4	20	508	1	25.4
30-48K	19-1/2	495.3	20	508	1	25.4
60K	23	584.2	20	508	1	25.4

Fig. 9 —Recommended Filter Size

40MUAA FAN COIL

Blower

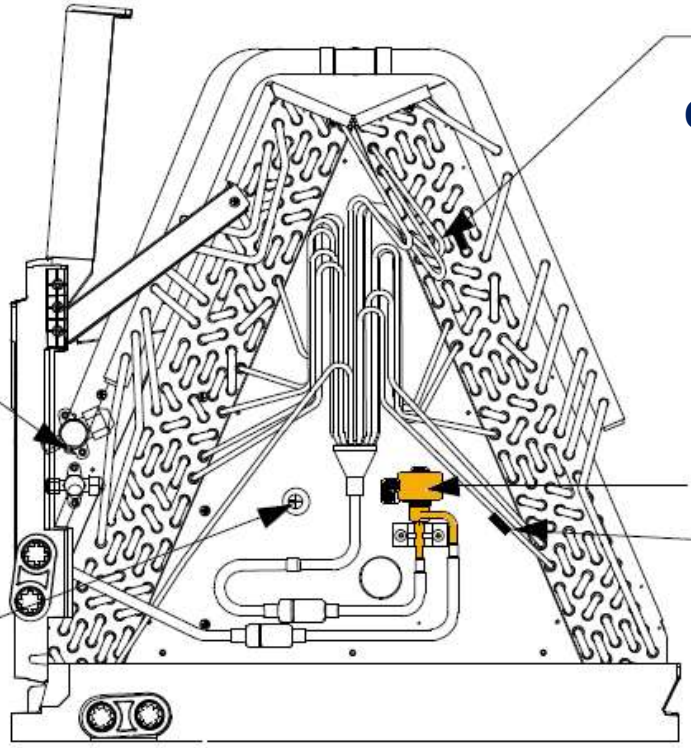


Automatic Airflow Adjustment

- Constant Air ECM (maintains CFM from .1 - .8 ESP)
- No configuration necessary for different ESP levels
- ECM will automatically adjust airflow to changes in ESP

40MUAA FAN COIL

Evaporator Coil and Sensors



T2
Coil Temp Sensor

T2B
Outlet Coil Temp Sensor

Electronic Expansion Valve

EEV

T2A
Inlet Coil Temp Sensor

T1
Room Temp Sensor

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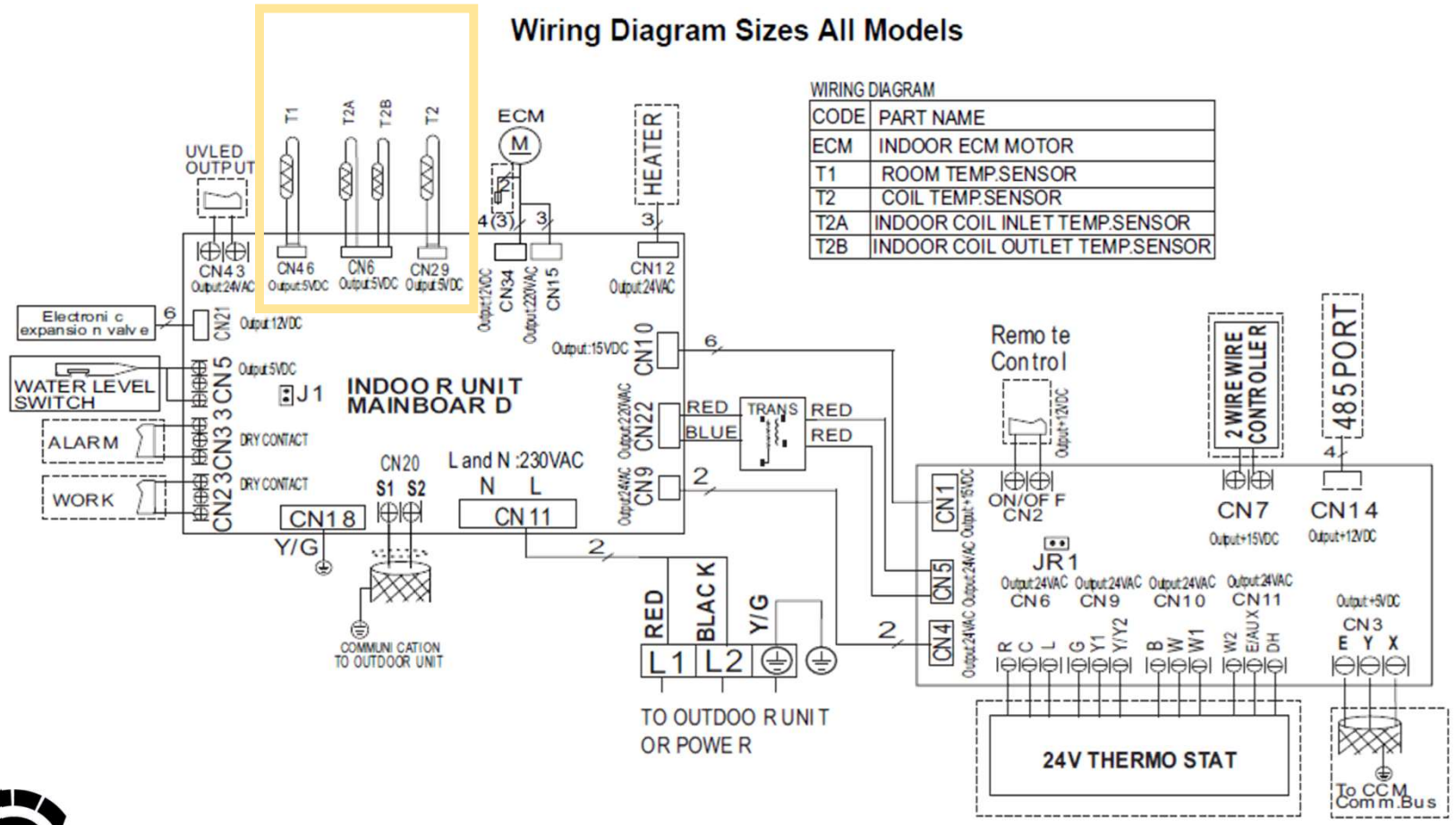

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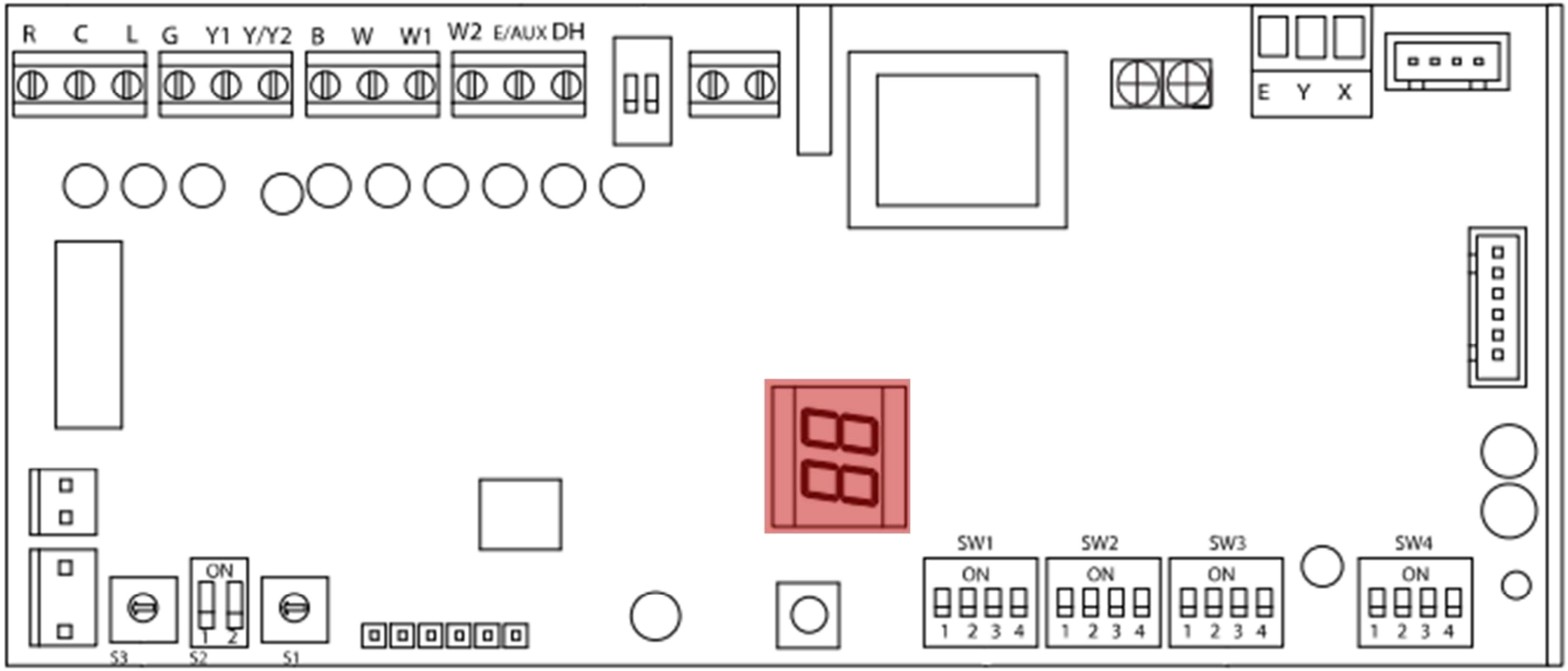
Interface Board



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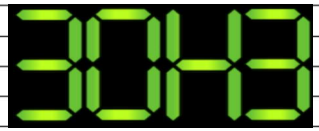
Error Codes and Display

DISPLAY	ERROR INFORMATION
E H 0 0	Indoor EEPROM Malfunction
E L 0 1	Communication malfunction between the indoor and outdoor units
E H 0 3	Indoor fan speed malfunction
E C 5 1	Outdoor EEPROM malfunction
E C 5 2	Condenser coil temperature sensor (T3) malfunction
E C 5 3	Outdoor ambient temperature sensor (T4) malfunction
E C 5 4	Outdoor unit exhaust temperature sensor error
E H 6 0	Indoor Room Temperature Sensor T1 Error
E H 6 1	Indoor Evaporator Coil Temperature Sensor T2 Error
E H 6 2	Air inlet temperature sensor error
E C 0 7	Outdoor DC fan speed malfunction
E H 0 b	Indoor PCB and display board communication error
E L 0 C	Refrigerant leakage detection
E H 0 E	Indoor water level warning error
F L 0 9	New and old platform match malfunction
P C 0 0	Inverter module (IPM) protection
P C 0 1	Over high voltage or over low voltage protection
P C 0 2	High temperature protection of compressor top/IPM temperature protection
P C 0 4	Inverter compressor drive error
P C 0 3	Low pressure protection
P C 0 L	Low temperature protection of outdoor unit
- - - -	Indoor units mode conflict

NOTE: If the LED display shows DF (Defrost) or FC (Forced Cooling), these are operational codes and, not fault or protection.

Two digits – pause – two digits



Only valid when using RS485

40MUAA FAN COIL

Error Codes and Display

DISPLAY	ERROR INFORMATION
E H 0 0	Indoor EEPROM Malfunction
E L 0 1	Communication malfunction between the indoor and outdoor units
E H 0 3	Indoor fan speed malfunction
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E C 5 3	Outdoor ambient temperature sensor (T4) malfunction
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NOTE: If the LED display shows DF (Defrost) or FC (Forced Cooling), these are operational codes and, not fault or protection.

40MUAA FAN COIL

Error Codes and Display

DISPLAY	ERROR INFORMATION
EH00	Indoor EEPROM Malfunction
EL01	Communication malfunction between the indoor and outdoor units
EH03	Indoor fan speed malfunction
EC51	Outdoor EEPROM malfunction
EC52	Condenser coil temperature sensor (T3) malfunction
EC53	Outdoor ambient temperature sensor (T4) malfunction
EC54	Outdoor unit exhaust temperature sensor error
EH60	Indoor Room Temperature Sensor T1 Error
EH61	Indoor Evaporator Coil Temperature Sens
EH62	Air inlet temperature sensor error
EC07	Outdoor DC fan speed malfunction
EH0b	Indoor PCB and display board communica
EL0C	Refrigerant leakage detection
EH0E	Indoor water level warning error
FL09	New and old platform match malfunction
PC00	Inverter module (IPM) protection
PC01	Over high voltage or over low voltage prot
PC02	High temperature protection of compresso
PC04	Inverter compressor drive error
PC03	Low pressure protection
PC0L	Low temperature protection of outdoor uni
----	Indoor units mode conflict

NOTE: If the LED display shows DF (Defrost) or FC (Forc

Quick Maintenance by Error Code

Review Tables 8 - 11 for common faulty parts associated with each error code.

Table 8 — Quick Maintenance by Error Code

PART REQUIRING REPLACEMENT	ERROR CODE									
	EH 00	EL 01	EH 03	EH 60	EH 61	EH 62	EH 65	EL 0C	EH 0E	EC 53
Indoor PCB	√	√	√	√	√	√	√	√	√	x
Outdoor PCB	x	√	x	x	x	x	x	x	x	√
Indoor fan motor	x	x	√	x	x	x	x	x	x	x
T1 sensor	x	x	x	√	x	x	x	x	x	x
T2 Sensor	x	x	x	x	√	x	x	x	x	x
T2B Sensor	x	x	x	x	x	√	x	x	x	x
T2A Sensor	x	x	x	x	x	x	√	x	x	x
T3 Sensor	x	x	x	x	x	x	x	x	x	x
T4 Sensor	x	x	x	x	x	x	x	x	x	√
Reactor	x	√	x	x	x	x	x	x	x	x
Compressor	x	x	x	x	x	x	x	x	x	x

System Components

Thermistor

A thermistor is a type of resistor.

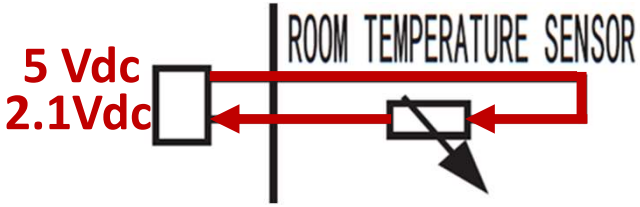
As the temperature changes; the resistance will change.

As the resistance changes; the voltage drop across the thermistor changes.

System Components

Thermistor Testing Voltage drop

A thermistor is a type of resistor.
As the temperature changes; the resistance will change.
As the resistance changes; the voltage drop across the thermistor changes.



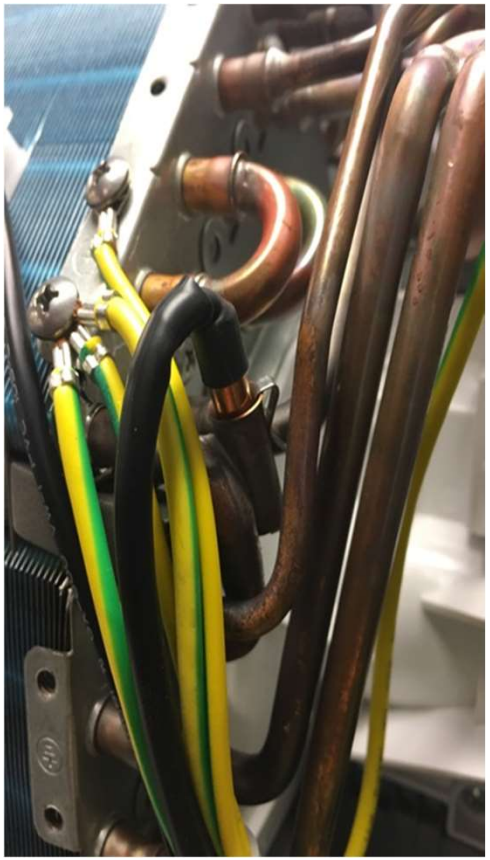
TEMP (F)	VOLTAGE DROP (V)	RESISTANCE K(Ohms)
61	2.994	14,925
62	2.963	14,549
63	2.932	14,180
64	2.901	13,824
65	2.870	13,478
66	2.839	13,139
67	2.808	12,814
68	2.777	12,493
69	2.746	12,187
70	2.715	11,884
71	2.684	11,593
72	2.653	11,308
73	2.622	11,031
74	2.592	10,764
75	2.561	10,501

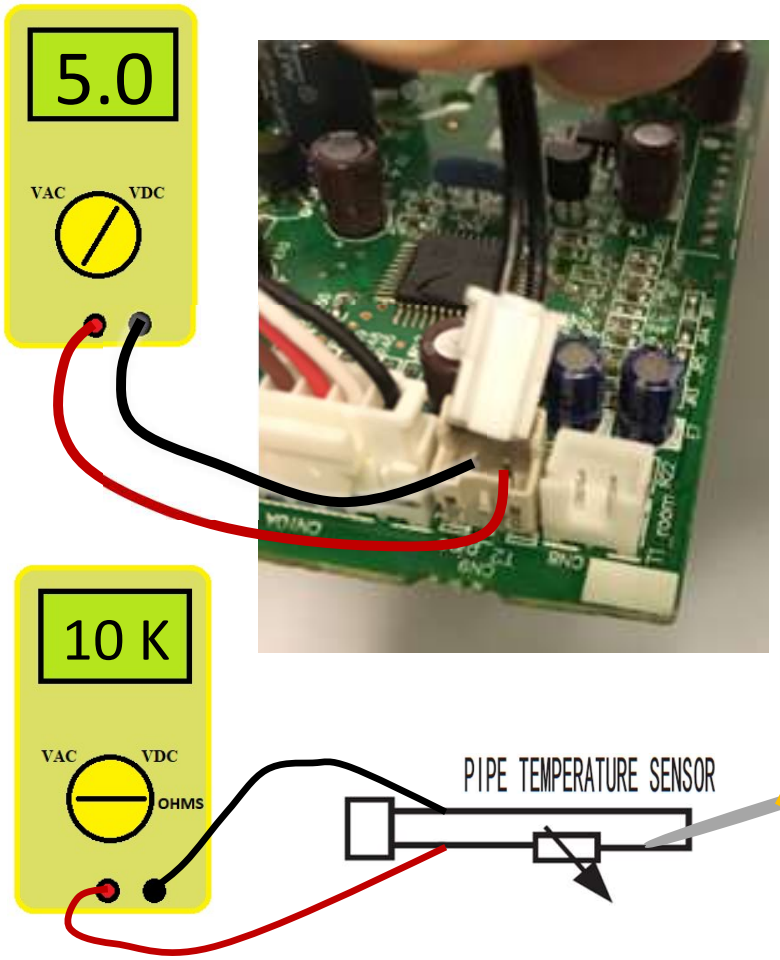
Testing: Resistance

5 Vdc output from board ***
Power off / isolate the component / resistance
Not OL (over limit)
Not 0Ω (shorted internally)
Matches chart in service manual ✓

System Components

Thermistor Testing





APPENDICES

Appendix 1

Table 14 — Temperature Sensor Resistance Value Table for T1, T2, T3, T4 (°C--K) **T2a, T2b**

°C	°F	K OHM	°C	°F	K OHM	°C	°F	K OHM	°C	° F	K OHM
-20	-4	115.266	20	68	12.6431	60	140	2.35774	100	212	0.62973
-19	-2	108.146	21	70	12.0561	61	142	2.27249	101	214	0.61148
-18	0	101.517	22	72	11.5	62	144	2.19073	102	216	0.59386
-17	1	96.3423	23	73	10.9731	63	145	2.11241	103	217	0.57683
-16	3	89.5865	24	75	10.4736	64	147	2.03732	104	219	0.56038
-15	5	84.219	25	77	10	65	149	1.96532	105	221	0.54448
-14	7	79.311	26	79	9.55074	66	151	1.89627	106	223	0.52912
-13	9	74.536	27	81	9.12445	67	153	1.83003	107	225	0.51426
-12	10	70.1698	28	82	8.71983	68	154	1.76647	108	226	0.49989
-11	12	66.0898	29	84	8.33566	69	156	1.70547	109	228	0.486
-10	14	62.2756	30	86	7.97078	70	158	1.64691	110	230	0.47256
-9	16	58.7079	31	88	7.62411	71	160	1.59068	111	232	0.45957
-8	18	56.3694	32	90	7.29464	72	162	1.53668	112	234	0.44699
-7	19	52.2438	33	91	6.98142	73	163	1.48481	113	235	0.43482
-6	21	49.3161	34	93	6.68355	74	165	1.43498	114	237	0.42304
-5	23	46.5725	35	95	6.40021	75	167	1.38703	115	239	0.41164
-4	25	44	36	97	6.13059	76	169	1.34105	116	241	0.4006
-3	27	41.5878	37	99	5.87359	77	171	1.29078	117	243	0.38991
-2	28	39.8239	38	100	5.62961	78	172	1.25423	118	244	0.37956
-1	30	37.1988	39	102	5.39689	79	174	1.2133	119	246	0.36954
0	32	35.2024	40	104	5.17519	80	176	1.17393	120	248	0.35982
1	34	33.3269	41	106	4.96392	81	178	1.13604	121	250	0.35042
2	36	31.5635	42	108	4.76253	82	180	1.09958	122	252	0.3413
3	37	29.9058	43	109	4.5705	83	181	1.06448	123	253	0.33246
4	39	28.3459	44	111	4.38736	84	183	1.03069	124	255	0.3239
5	41	26.8778	45	113	4.21263	85	185	0.99815	125	257	0.31559
6	43	25.4954	46	115	4.04589	86	187	0.96681	126	259	0.30754

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Error Codes and Display

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EL01	Communication malfunction between the indoor and outdoor units
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EH0E	Indoor water level warning error
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PC01	Over high voltage or over low voltage
PC02	High temperature protection of comp
PC04	Inverter compressor drive error
PC03	Low pressure protection
PC0L	Low temperature protection of outdo
----	Indoor units mode conflict

NOTE: If the LED display shows DF (Defrost) or FC

Quick Maintenance by Error Code

Review Tables 8 - 11 for common faulty parts associated with each error code.

Table 8 — Quick Maintenance by Error Code

PART REQUIRING REPLACEMENT	ERROR CODE									
	EH 00	EL 01	EH 03	EH 60	EH 61	EH 62	EH 65	EL 0C	EH 0E	EC 53
Indoor PCB	√	√	√	√	√	√	√	√	√	x
Outdoor PCB	x	√	x	x	x	x	x	x	x	√
Indoor fan motor	x	x	√	x	x	x	x	x	x	x
T1 sensor	x	x	x	√	x	x	x	x	x	x
T2 Sensor	x	x	x	x	√	x	x	x	x	x
T2B Sensor	x	x	x	x	x	√	x	x	x	x
T2A Sensor	x	x	x	x	x	x	√	x	x	x
T3 Sensor	x	x	x	x	x	x	x	x	x	x
T4 Sensor	x	x	x	x	x	x	x	x	x	√
Reactor	x	√	x	x	x	x	x	x	x	x
Compressor	x	x	x	x	x	x	x	x	x	x
Additional refrigerant	x	x	x	x	x	x	x	√	x	x

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Index:

1. Indoor DC Fan Motor (control chip is on PCB)

   Power on the unit and when the unit is in the **STANDBY** mode, measure the pin1&pin2 voltage of **CN15**, and pin3 of **CN34** in the fan motor connector. If the voltage value is not in the range shown in Table 12, the PCB has an issue and needs to be replaced.

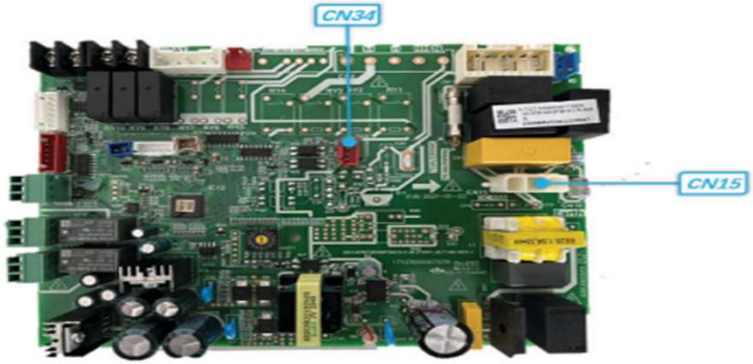

Table 12 — CN34

NO.	COLOR	SIGNAL	VOLTAGE
1	/	/	
2	Black	GND	
3	Orange	PWM	5-12VDC
4	Blue	FG	0-12DVC

Table 13 — CN15

NO.	COLOR	SIGNAL	VOLTAGE
1	Yellow		208/230VAC
2	Black		208/230VAC
3	Yellow-Green	GND	

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Functional Display and Inputs

Mode	Priority	G	Y1	Y/Y2	B	W	W1	W21	E/AUX	DH	Display
Shut Down	/	0	0	0	0	0	0	0	0	*	00
Fan	7	1	0	0	0	0	0	0	0	1	01
Fan		1	0	0	0	0	0	0	0	0	
Cooling	6	*	1	0	0	0	0	0	0	1	02
Cooling2		*	*	1	0	0	0	0	0	1	03
Dehumidification 1		*	1	0	0	0	0	0	0	0	04
Dehumidification 2		*	*	1	0	0	0	0	0	0	05
Heating 1	5	*	1	0	1	0	0	0	0	1	06
Heating 2		*	*	1	1	0	0	0	0	1	07
Heating 2		*	*	*	*	1	0	0	0	1	
Electric Heating 1	3	*	0	0	0	0	1	0	0	*	8
Electric Heating 1		*	0	0	0	0	0	1	0	*	
Electric Heating 2		*	0	0	0	0	1	1	0	*	9
Heating 1 + Electric Heating 1	4	*	1	0	1	0	1	0	0	1	10
Heating 1 + Electric Heating 1		*	1	0	1	0	0	1	0	1	
Heating 2 + Electric Heating 1		*	*	1	1	0	1	0	0	1	
Heating 2 + Electric Heating 1		*	*	*	*	1	1	0	0	1	
Heating 2 + Electric Heating 1		*	*	1	1	0	0	1	0	1	
Heating 2 + Electric Heating 1		*	*	*	*	1	0	1	0	1	
Heating 1 + Electric Heating 2		*	1	0	1	0	1	1	0	1	11
Heating 2 + Electric Heating 2		*	*	1	1	0	1	1	0	1	
Heating 2 + Electric Heating 2		*	*	*	*	1	1	1	0	1	
Emergency Heating	1	*	*	*	*	*	*	*	1	*	12
Heating Zone Control	2	*	1	0	1	0	*	*	0	0	13
Heating Zone Control		*	*	1	1	0	*	*	0	0	
Heating Zone Control		*	*	*	*	1	*	*	0	0	

1: Signal
0: No Signal

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Indoor Connections

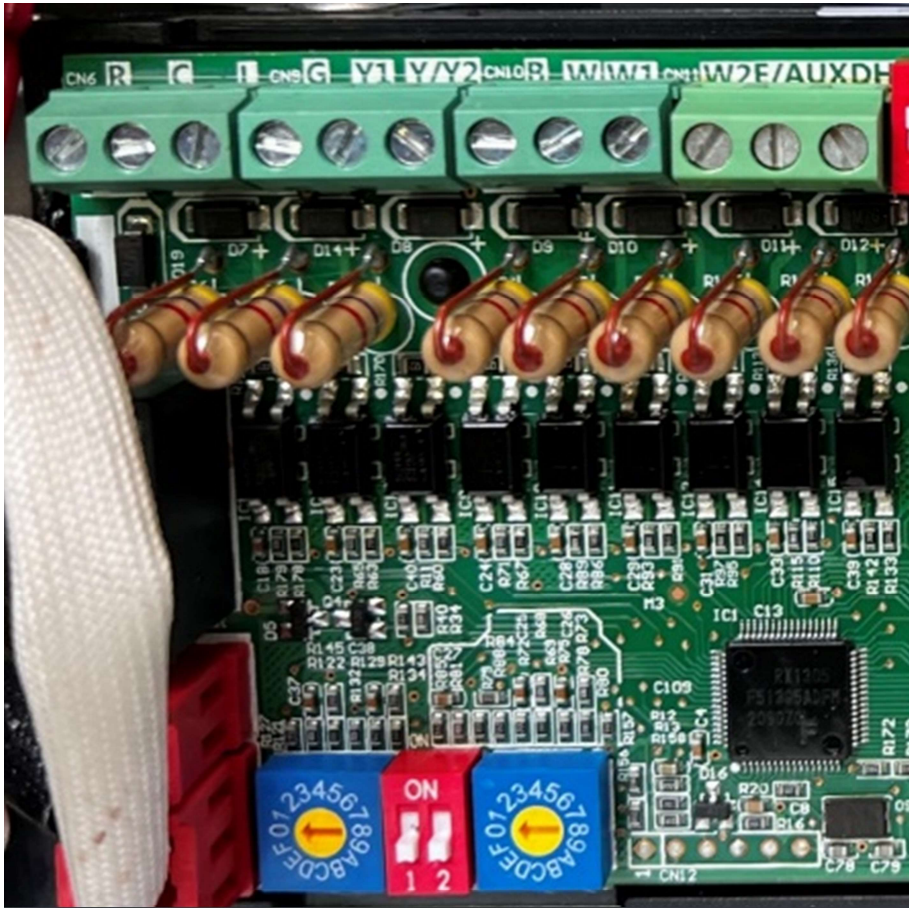

Table 16 — Indoor Unit Connector

Connector	Purpose
R	24V
C	COM
G	FAN
Y	First stage cooling
Y Y2	Second stage cooling
B	Heating (Four-way valve)
W	Heating operation
W1	Electric Heating Operation 1
W2	Electric Heating Operation 2
E/AUX	Emergency Heat / Auxiliary Heat
DH	Dehumidification
L	Error Signal

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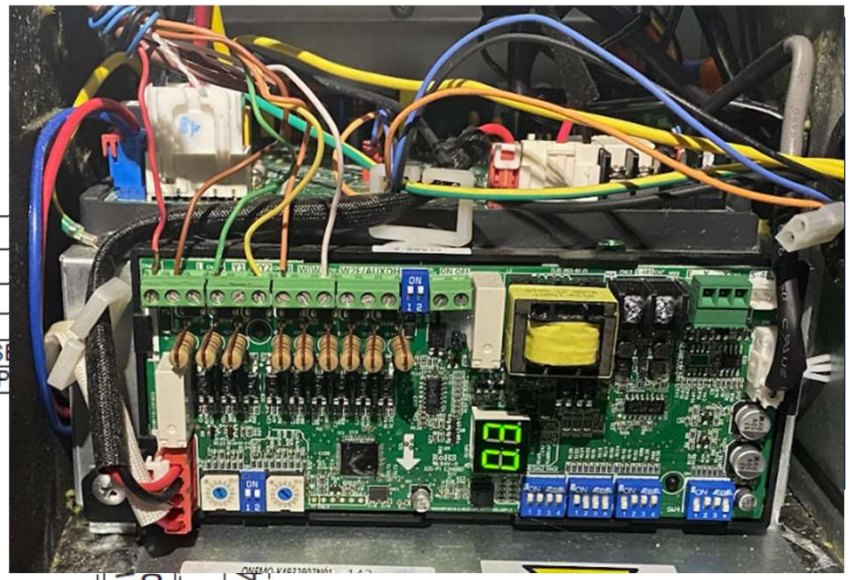
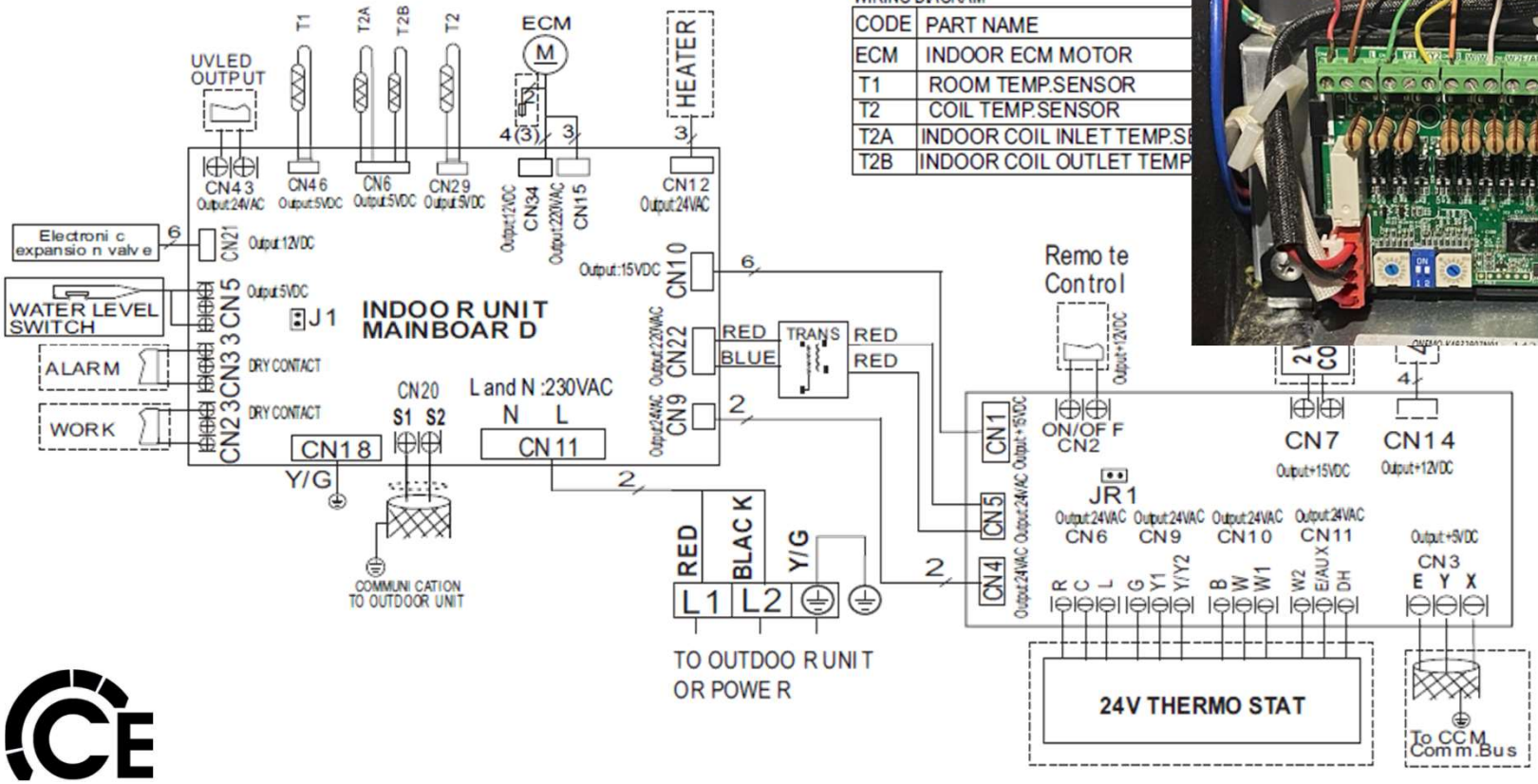


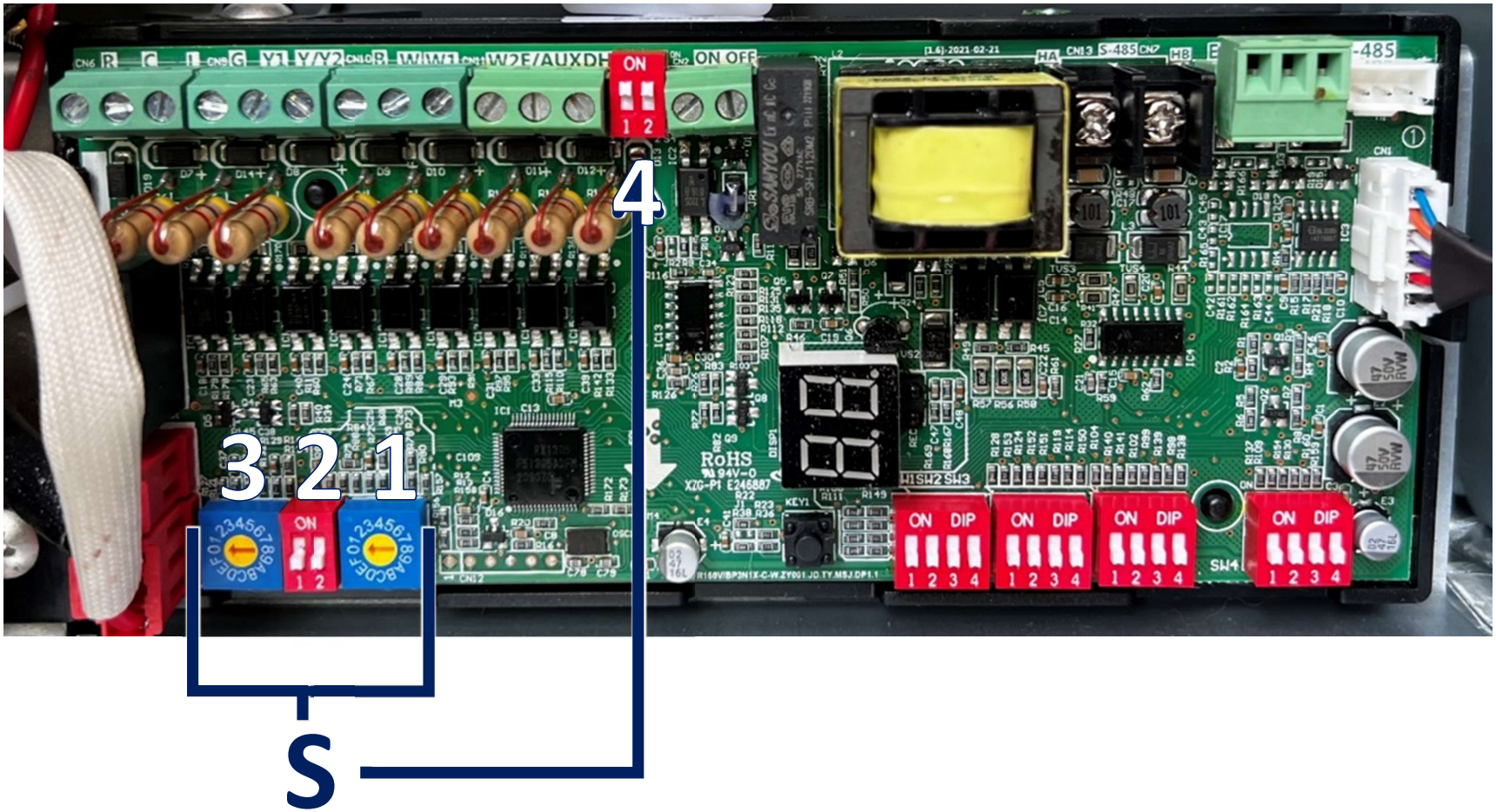
Wiring Diagram Sizes All Models

WIRING DIAGRAM

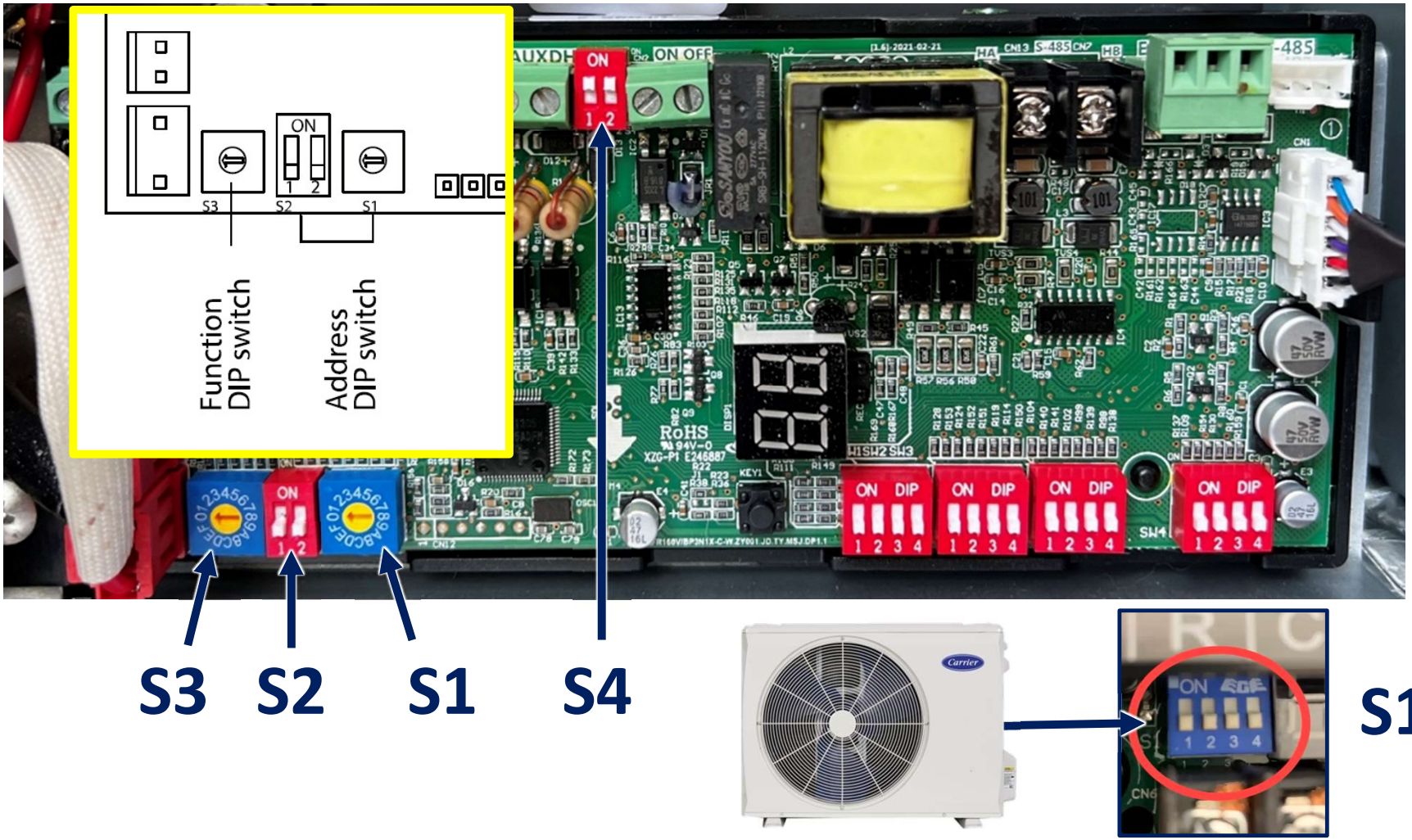
CODE	PART NAME
ECM	INDOOR ECM MOTOR
T1	ROOM TEMP.SENSOR
T2	COIL TEMP.SENSOR
T2A	INDOOR COIL INLET TEMP.SE
T2B	INDOOR COIL OUTLET TEMP



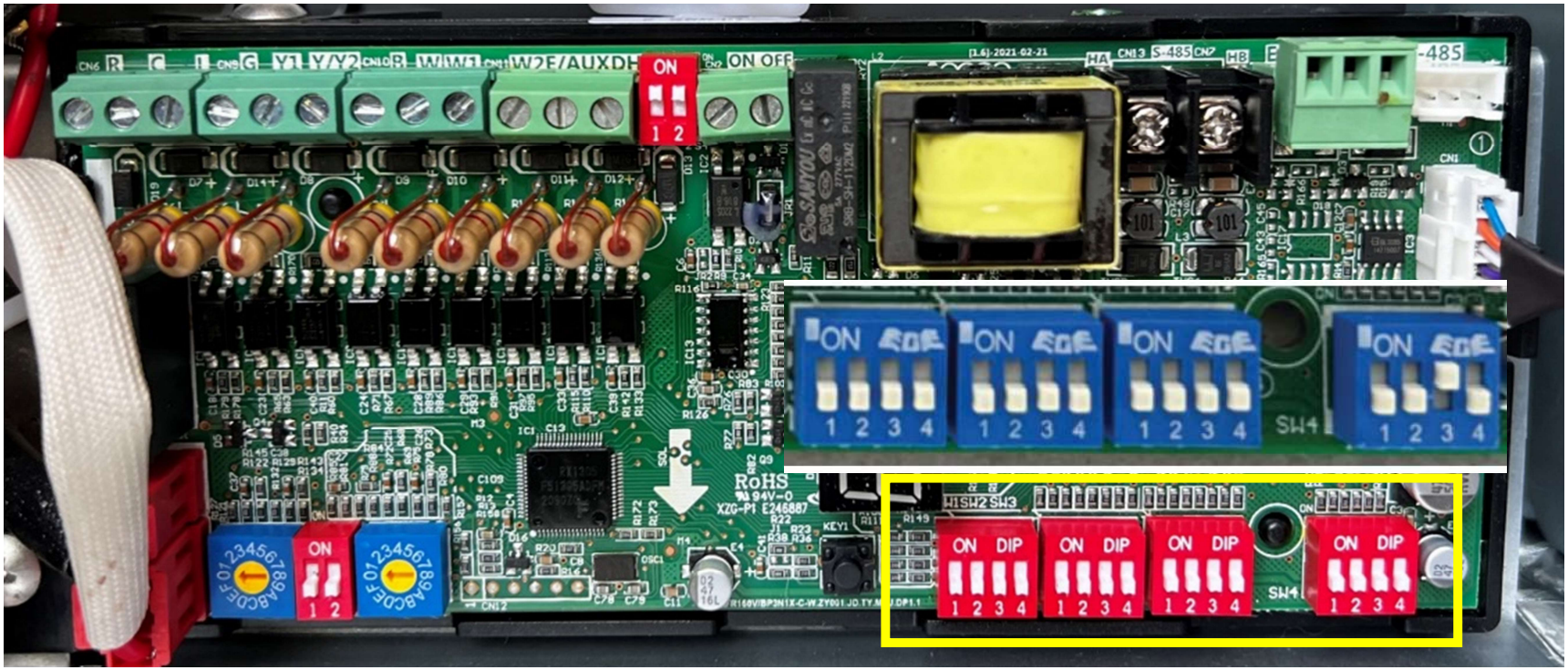
40MUAA FAN COIL



40MUAA FAN COIL



40MUAA FAN COIL



SW

40MUAA FAN COIL

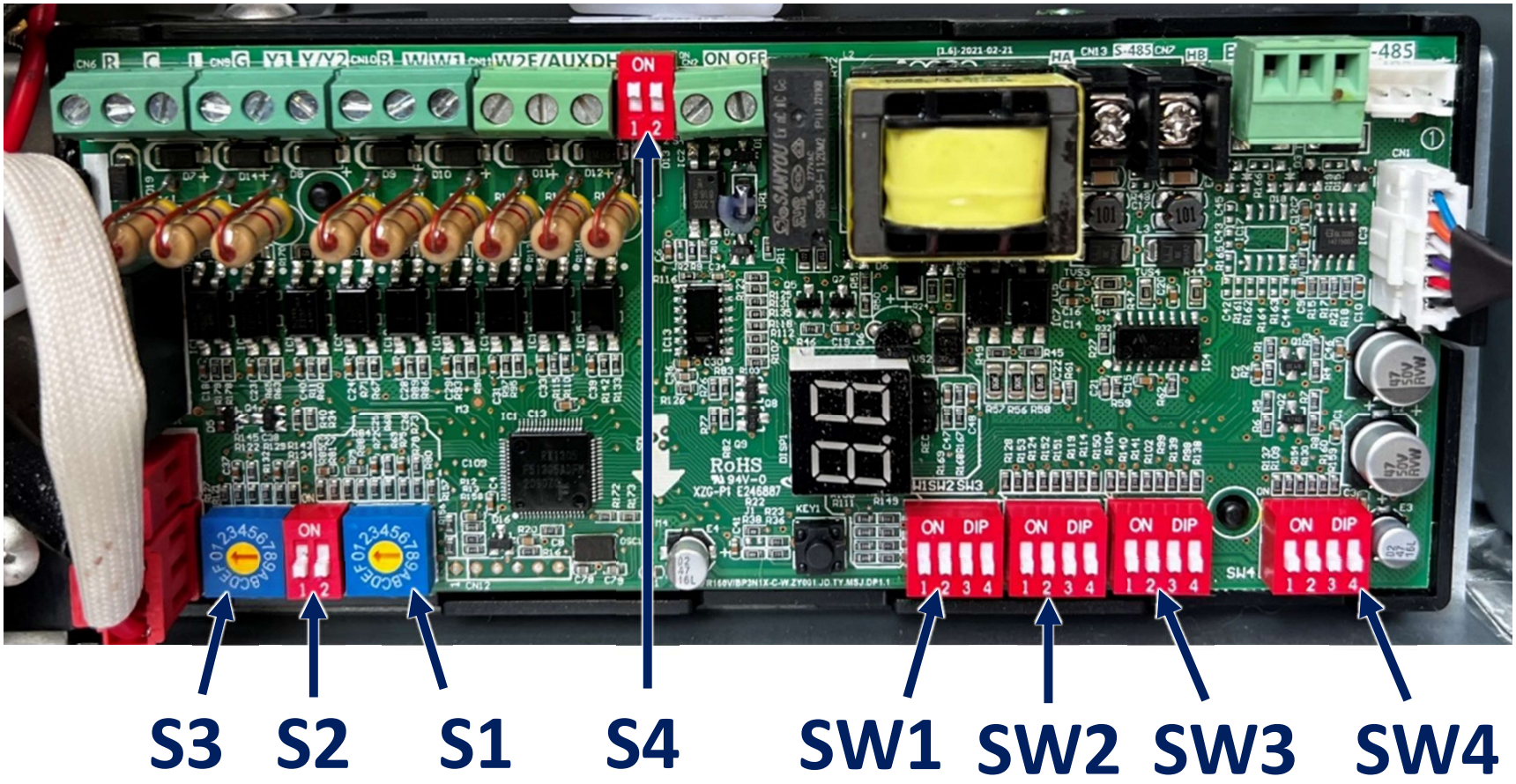


Table 11 — Dip Switch Definitions

Dial Code	Control Scenario	Function	ON	OFF
SW1-1*	OFF for 2 ON for 1 and 3 **Please note:** SW 1-4 needs to be ON as well for Scenario 3	Control Function	24 V Communication	[Default] Auto Detect or RS485 S1-S2 Communication
SW1-2	1,2	Anti-cold blow protection option	NO	[Default] YES
SW1-3	1,2,3	Single cooling / heating and cooling options	Cooling	[Default] Cooling & Heating
SW1-4*	OFF for 1 and 2 ON for 3 Please note: only active for scenario 3 when used with SW 1-1 ON	Control Function	Scenario 3	[Default] Auto Detect or Scenario 1

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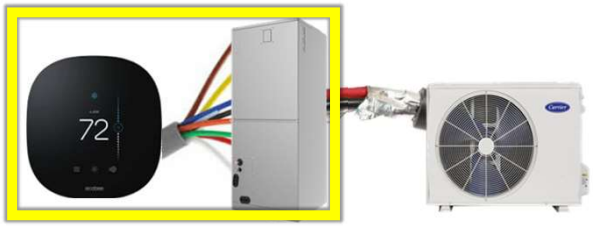
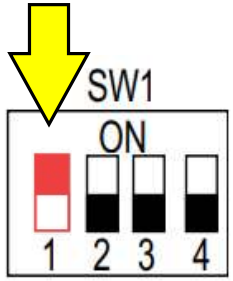
Outdoor Control Function

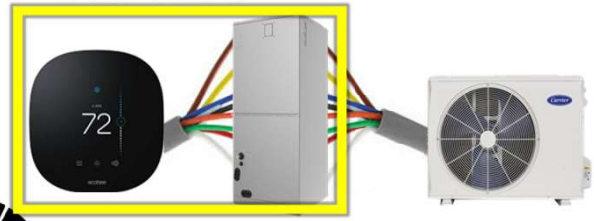
Scenario 1 - 24V Thermostat

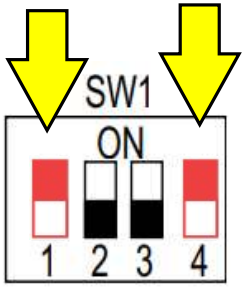




Scenario 2 - RS485

Scenario 3 - 24V Thermostat





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SW1-2	1,2	Anti-cold blow protection option	NO	[Default] YES
SW1-3	1,2,3	Single cooling / heating and cooling options	Cooling	[Default] Cooling & Heating
SW1-4*	OFF for 1 and 2 ON for 3 Please note: only active for scenario 3 when used with SW 1-1 ON	Control Function	Scenario 3	[Default] Auto Detect or Scenario 1
SW2-1	1	Compressor Running Compensation (Demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW2-1	2	Temperature differential to activate first stage auxiliary heat (the GAP of T1 and Ts) Wire controller demand with heat pump + Electric heat working together	2°F	[Default] 4°F
SW2-2	2	Electric heat on delay	YES	[Default] NO
SW2-3	2	Electric auxiliary heating delay to start time	30 minutes	[Default] 15 minutes
SW2-4	2	Compressor/Auxiliary heat outdoor ambient lockout	The compressor will not operate if the outdoor temperature is lower than the temperature represented by S3	[Default] The heater will not operate if the outdoor temperature is greater than the temperature represented by S3
Rotary Switch S3	2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	0 means that the temperature protection is not turned on, the dial range is 1 through F, 1 equals -4°F and it increased up to 46°F	
SW3-1	1	Maximum continuous runtime allowed before system automatically stages up capacity to satisfy set point. This adds 1 to 5°F to the user set point in the calculated control point to increase capacity and satisfy user set point	30 minutes	[Default] 90 minutes
SW3-2	1	Cooling and heating Y/Y2 compressor speed adjustment.	Compressor slower speed	[Default] Faster Compressor
SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW3-3	2	Temperature differential to activate second stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump+ Electric heat working together	4°F	[Default] 6°F
SW3-4	1,3	Fan speed of the COOLING mode when 24V thermostat is applied for.	Turbo	Off
SW4	1,2,3	Electric heat nominal CFM adjustment	Available settings are 000/001/010/011. Each digit corresponds an individual switch position. For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010. See table 11 for the corresponding CFM adjustment	
S4-1	1,3	Default ON	[Default] For single stage supplemental heat, W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.
S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

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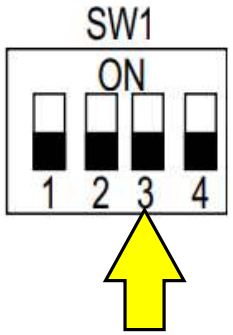
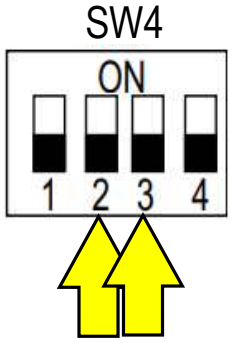
Control Scenario

Scenario 1 - 24V + RS485

Scenario 2 - RS485

Scenario 3 - 24V Thermostat





SW1-3:
ON: cooling only;
OFF: heating and cooling, Default

Capacity	External Static Pressure Range			Air Volume CFM
40MUAAQ18XA3	0 - 0.80 in. w.g.	10KW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	653
		10KW, 8KW	SW4-1=OFF SW4-2=OFF SW4-3=ON	624
		8KW	SW4-1=OFF SW4-2=ON SW4-3=OFF	594
		5KW	SW4-1=OFF SW4-2=ON SW4-3=ON	565

SW4: Air Flow Adjustment

Setting nominal electric heat air flow, switches 1-3. Default OFF
Only switches 2-3 will be altered.
Installation Table 12

SW4	1,2,3	Electric heat nominal CFM adjustment	011. Each digit corresponds an individual switch position. For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010. See table 11 for the corresponding CFM adjustment	
S4-1	1,3	Default ON	[Default] For single stage supplemental heat, W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.
S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

40MUAA FAN COIL

Control Scenario

Scenario 1 - 24V + RS485

Scenario 2 - RS485

Scenario 3 - 24V Thermostat

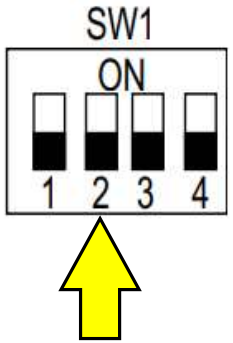


Table 11 — Dip Switch Definitions

Dial Code	Control Scenario	Function	ON	OFF
SW1-1*	OFF for 2 ON for 1 and 3 **Please note:** SW 1-4 need[illegible] for Scenario 3	Control Function	24 V Communication	[Default] Auto Detect or RS485 S1-S2 Communication
SW1-2	1,2	Anti-cold blow protection option	NO	[Default] YES
SW1-3		Single cooling / heating and cooling options	Cooling	[Default] Cooling & Heating
SW2-3	2	time	30 minutes	[Default] 15 minutes
SW2-4	2	Compressor/Auxiliary heat outdoor ambient lockout	The compressor will not operate if the outdoor temperature is lower than the temperature represented by S3	[Default] The heater will not operate if the outdoor temperature is greater than the temperature represented by S3
Rotary Switch S3	2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	0 means that the temperature protection is not turned on, the dial range is 1 through F, 1 equals -4°F and it increased up to 46°F	
SW3-1	1	Maximum continuous runtime allowed before system automatically stages up capacity to satisfy set point. This adds 1 to 5°F to the user set point in the calculated control point to increase capacity and satisfy user set point	30 minutes	[Default] 90 minutes
SW3-2	1	Cooling and heating Y/Y2 compressor speed adjustment.	Compressor slower speed	[Default] Faster Compressor
SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW3-3	2	Temperature differential to activate second stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump+ Electric heat working together	4°F	[Default] 6°F
SW3-4	1,3	Fan speed of the COOLING mode when 24V thermostat is applied for.	Turbo	Off
SW4	1,2,3	Electric heat nominal CFM adjustment	Available settings are 000/001/010/011. Each digit corresponds an individual switch position. For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010. See table 11 for the corresponding CFM adjustment	
S4-1	1,3	Default ON	[Default] For single stage supplemental heat, W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.
S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

SW1-2: Anti-cold blow

Heat Mode: Stops fan until coil warms up.

ON: Allows fan to run,

OFF: Stops the fan, Default

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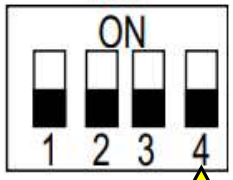
Control Scenario

Scenario 1 - 24V + RS485

Scenario 2 - RS485

Scenario 3 - 24V Thermostat

SW3



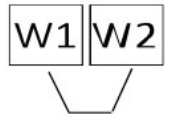
S4

Table 11 — Dip Switch Definitions

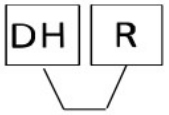
Dial Code	Control Scenario	Function	ON	OFF
SW1-1*	OFF for 2 ON for 1 and 3 **Please note:** SW 1-4 needs to be ON as well for Scenario 3	Control Function	24 V Communication	[Default] Auto Detect or RS485 S1-S2 Communication
SW1-2	1,2	Anti-cold blow protection option	NO	[Default] YES
SW1-3	1,2,3	Single cooling / heating and cooling options	Cooling	[Default] Cooling & Heating
		together		
SW2-2	2	Electric heat on delay	YES	[Default] NO
SW2-3	2	Electric auxiliary heating delay to start time	30 minutes	[Default] 15 minutes
SW2-4	2	Compressor/Auxiliary heat outdoor ambient lockout	The compressor will not operate if the outdoor temperature is lower than the temperature represented by S3	[Default] The heater will not operate if the outdoor temperature is greater than the temperature represented by S3
Rotary		Set outdoor temperature Limitation (for	0 means that the temperature protection is not turned on, the dial	
SW3-3	1	working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
S4-1	1,3	Default ON	supplemental heat, W1 and W2 are connected	W2 are controlled independently.
S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

SW3-4: Blower speed in cool mode,
ON: TURBO
OFF: High speed, Default

S4-1:
ON: W1 and W2 are connected. Default
OFF: W1 and W2 are controlled independently.



S4-2:
ON: Dehumidification control not available.
R and DH are connected, Default
OFF: Dehumidification feature is enabled.



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Control Scenario

Scenario 1 - 24V + RS485

Scenario 2 - RS485

Scenario 3 - 24V Thermostat

Table 11 — Dip Switch Definitions

Dial Code	Control Scenario	Function	ON	OFF
SW1-1*	OFF for 2 ON for 1 and 3 **Please note:** SW 1-4 needs to be ON as well for Scenario 3	Control Function	24 V Communication	[Default] Auto Detect or RS485 S1-S2 Communication
SW1-2	1,2	Anti-cold blow protection option	NO	[Default] YES
SW1-3	1,2,3	Single cooling / heating and cooling options	Cooling	[Default] Cooling & Heating
SW1-4*	OFF for 1 and 2 ON for 3 Please note: only active for scenario 3 when used with SW 1-1 ON	Control Function	Scenario 3	[Default] Auto Detect or Scenario 1
SW2-1	1	Compressor Running Compensation (Demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW2-1	2	Temperature differential to activate first stage auxiliary heat (the GAP of T1 and Ts) Wire controller demand with heat pump + Electric heat working together	2°F	[Default] 4°F
SW2-2	2	Electric heat on delay	YES	[Default] NO
SW2-3	2	Electric auxiliary heating delay to start time	30 minutes	[Default] 15 minutes
SW2-4	2	Compressor/Auxiliary heat outdoor ambient lockout	The compressor will not operate if the outdoor temperature is lower than the temperature represented by S3	[Default] The heater will not operate if the outdoor temperature is greater than the temperature represented by S3
Rotary Switch S3	2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	0 means that the temperature protection is not turned on, the dial range is 1 through F, 1 equals -4°F and it increased up to 46°F	
SW3-1	1	Maximum continuous runtime allowed before system automatically stages up capacity to satisfy set point. This adds 1 to 5°F to the user set point in the calculated control point to increase capacity and satisfy user set point	30 minutes	[Default] 90 minutes
SW3-2	1	Cooling and heating Y/Y2 compressor speed adjustment.	Compressor slower speed	[Default] Faster Compressor
SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW3-3	2	Temperature differential to activate second stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump+ Electric heat working together	4°F	[Default] 6°F
SW3-4	1,3	Fan speed of the COOLING mode when 24V thermostat is applied for.	Turbo	Off
SW4	1,2,3	Electric heat nominal CFM adjustment	Available settings are 000/001/010/011. Each digit corresponds an individual switch position. For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010. See table 11 for the corresponding CFM adjustment	
S4-1	1,3	Default ON	[Default] For single stage supplemental heat, W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.
S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

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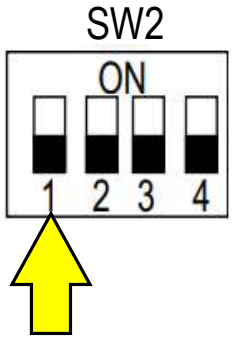
Control Scenario

Scenario 1 - 24V + RS485



SW2-1: Controls compressor speed when heat pump and W1 are energized simultaneously.
ON: Slower compressor speed, (energy conservation)
OFF: Faster compressor speed, Default

SW2-1	1	(Demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW2-1	2	Temperature differential to activate first stage auxiliary heat (the GAP of T1 and Ts) Wire controller demand with heat pump + Electric heat working together	2°F	[Default] 4°F
SW2-2	2	Electric heat on delay	YES	[Default] NO
SW2-3	2	Electric auxiliary heating delay to start time	30 minutes	[Default] 15 minutes
SW2-4	2	Compressor/Auxiliary heat outdoor ambient lockout	The compressor will not operate if the outdoor temperature is lower than the temperature represented by S3	[Default] The heater will not operate if the outdoor temperature is greater than the temperature represented by S3
Rotary Switch S3	2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	0 means that the temperature protection is not turned on, the dial range is 1 through F, 1 equals -4°F and it increased up to 46°F	
SW3-1	1	Maximum continuous runtime allowed before system automatically stages up capacity to satisfy set point. This adds 1 to 5°F to the user set point in the calculated control point to increase capacity and satisfy user set point	30 minutes	[Default] 90 minutes
SW3-2	1	Cooling and heating Y/Y2 compressor speed adjustment.	Compressor slower speed	[Default] Faster Compressor
SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW3-3	2	Temperature differential to activate second stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump+ Electric heat working together	4°F	[Default] 6°F
SW3-4	1,3	Fan speed of the COOLING mode when 24V thermostat is applied for.	Turbo	Off
SW4	1,2,3	Electric heat nominal CFM adjustment	Available settings are 000/001/010/011. Each digit corresponds an individual switch position. For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010. See table 11 for the corresponding CFM adjustment	
S4-1	1,3	Default ON	[Default] For single stage supplemental heat, W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.
S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

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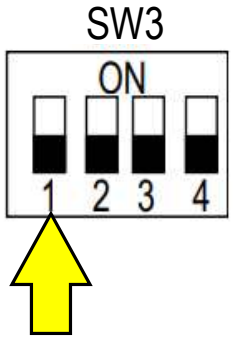
Control Scenario

Scenario 1 - 24V + RS485



SW3-1: Maximum continuous runtime allowed before system stages up to satisfy demand.
ON: 30 minutes.
OFF: 90 minutes, Default.

SW2-1	1	(Demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor

SW3-2: Cooling/Heating compressor speed
ON: Slower compressor speed, (energy conservation).
OFF: Faster compressor speed, Default.

Rotary Switch S3	2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	0 means that the temperature protection is not turned on, the dial range is 1 through F, 1 equals -4°F and it increased up to 46°F	
SW3-1	1	Maximum continuous runtime allowed before system automatically stages up capacity to satisfy set point. This adds 1 to 5°F to the user set point in the calculated control point to increase capacity and satisfy user set point	30 minutes	[Default] 90 minutes
SW3-2	1	Cooling and heating Y/Y2 compressor speed adjustment.	Compressor slower speed	[Default] Faster Compressor
SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
		Temperature differential to activate		

SW3-3: Control compressor speed when heat pump and W2 are energized simultaneously.
ON: Slower compressor speed, (energy conservation)
OFF: Faster compressor speed, Default.

S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

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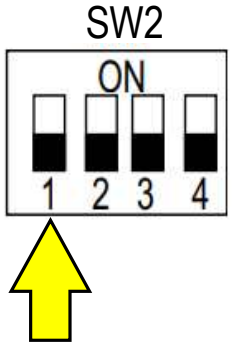
Control Scenario

Scenario 1 - 24V + RS485

Scenario 2 - RS485

Scenario 3 - 24V Thermostat



SW2-1: Temperature differential, (Ts - T1), for first stage auxiliary heating, (HP + aux heat).

ON: 2°F.

OFF: 4°F, Default.

SW2-1	1	(Demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW2-1	2	Temperature differential to activate first stage auxiliary heat (the GAP of T1 and Ts) Wire controller demand with heat pump + Electric heat working together	2°F	[Default] 4°F
SW2-2	2	Electric heat on delay	YES	[Default] NO
SW2-3	2	Electric auxiliary heating delay to start time	30 minutes	[Default] 15 minutes
SW2-4	2	Compressor/Auxiliary heat outdoor ambient lockout	The compressor will not operate if the outdoor temperature is lower than the temperature represented by S3	[Default] The heater will not operate if the outdoor temperature is greater than the temperature represented by S3
Rotary Switch S3	2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	0 means that the temperature protection is not turned on, the dial range is 1 through F, 1 equals -4°F	

SW2-2: Electric heat on delay

ON: Yes.

OFF: No, Default.

SW2-3: Electric heat delay with SW2-2

ON: 30 minutes.

OFF: 15 minutes, Default.

			the corresponding CFM adjustment	
S4-1	1,3	Default ON	[Default] For single stage supplemental heat, W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.
S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

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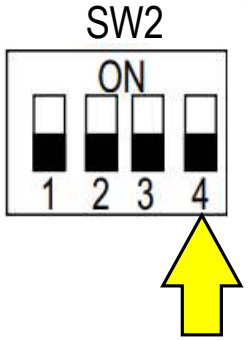
Control Scenario

SW2-4: Outdoor temperature ambient lockout.
ON: Compressor lockout below temperature set on S3.
OFF: Electric heat lockout above temp on S3, Default.

Scenario 2 - RS485



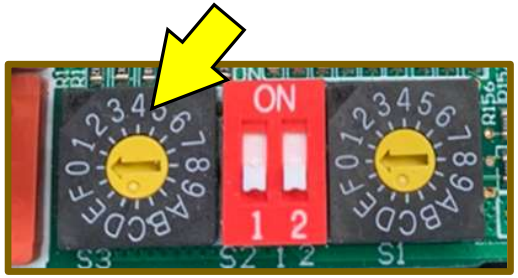


Table 11 — Dip Switch Definitions

Dial Code	Control Scenario	Function	ON	OFF
SW2-1	1	Compressor Running Compensation (Demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW2-1	2	Temperature differential to activate first stage auxiliary heat (the GAP of T1 and Ts) Wire controller demand with heat pump + Electric heat working together	2°F	] 4°F
SW2-2	2	Electric heat on delay	YES	] NO
SW2-3	2	Electric auxiliary heating delay to start time	30 minut	] 15 minutes
SW2-4	2	Compressor/Auxiliary heat outdoor ambient lockout	The com outdoor t temperat	] The heater will not operate if the temperature is greater than the ature represented by S3
Rotary Switch S3	2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	0 means protectio range is and it inc	
SW3-1	1	Maximum continuous runtime allowed before system automatically stages up capacity to satisfy set point. This adds 1 to 5°F to the user set point in the calculated control point to increase capacity and satisfy user set point	30 minut	] 90 minutes
SW3-2	1	Cooling and heating Y/Y2 compressor speed adjustment.	Compres	] Faster Compressor
SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compres	] Faster Compressor
SW3-3	2	Temperature differential to activate second stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump+ Electric heat working together	4°F	] 6°F
SW3-4	1,3	Fan speed of the COOLING mode when 24V thermostat is applied for.	Turbo	
SW4	1,2,3	Electric heat nominal CFM adjustment	Available 011. Eac individua example SW4 -3 (the corre	
S4-1	1,3	Default ON	[Default] supplem connecte	l stage supplemental heat, W1 and controlled independently.
S4-2	1,3	DH function selection	[Default] control n	dification feature is enabled thermostat

S3	S3 (°F)
0	OFF
1	-4
2	0
3	3
4	7
5	10
6	14
7	18
8	21
9	25
A	28
B	32
C	36
D	39
E	43

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Control Scenario

Scenario 2 - RS485

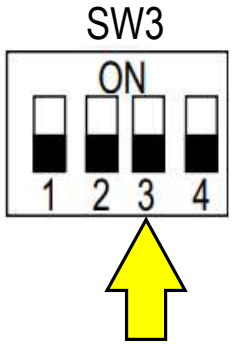

Table 11 — Dip Switch Definitions

Dial Code	Control Scenario	Function	ON	OFF
SW1-1*	OFF for 2 ON for 1 and 3 **Please note:** SW 1-4 needs to be ON as well for Scenario 3	Control Function	24 V Communication	[Default] Auto Detect or RS485 S1-S2 Communication
SW1-2	1,2	Anti-cold blow protection option	NO	[Default] YES
SW1-3	1,2,3	Single cooling / heating and cooling options	Cooling	[Default] Cooling & Heating
SW1-4*	OFF for 1 and 2 ON for 3 Please note: only active for scenario 3 when used with SW 1-1 ON	Control Function	Scenario 3	[Default] Auto Detect or Scenario 1
SW2-1	1	Compressor Running Compensation (Demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW2-1	2	Temperature differential to activate first stage auxiliary heat (the GAP of T1 and Ts) Wire controller demand with heat pump + Electric heat working together	2°F	[Default] 4°F
SW2-2	2	Electric heat on delay	YES	[Default] NO
SW2-3	2	Electric auxiliary heating delay to start time	30 minutes	[Default] 15 minutes
SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor
SW3-3	2	Temperature differential to activate second stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump+ Electric heat working together	4°F	[Default] 6°F
SW3-4	1,3	Fan speed of the COOLING mode when 24V thermostat is applied for.	Turbo	Off
SW4	1,2,3	Electric heat nominal CFM adjustment	Available settings are 000/001/010/011. Each digit corresponds an individual switch position. For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010. See table 11 for the corresponding CFM adjustment	
S4-1	1,3	Default ON	[Default] For single stage supplemental heat, W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.
S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat

SW3-3: Temperature differential, (Ts - T1), for second stage auxiliary heating, (HP + aux heat).
ON: 4^{o}F.
OFF: 6^{o}F, Default.

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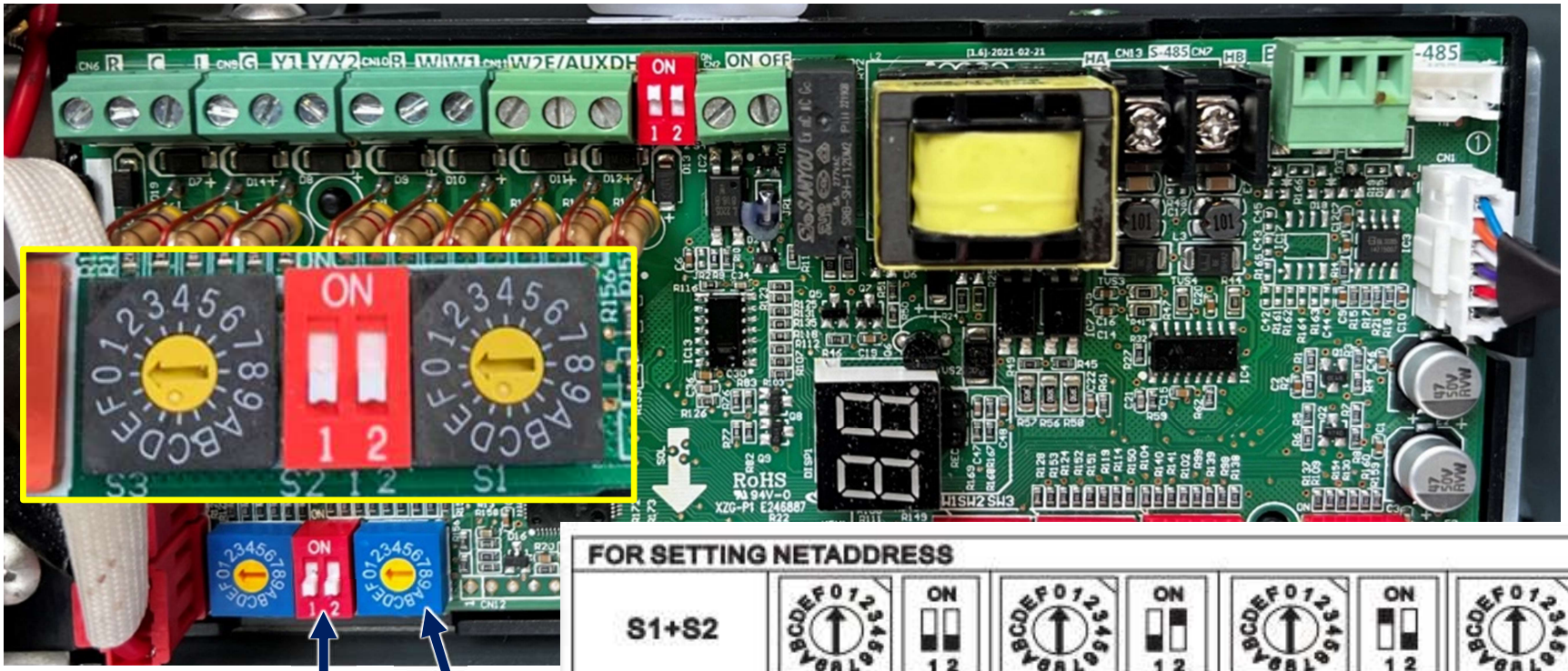

FOR SETTING NETADDRESS				
S1+S2				
CODE	0~F	0~F	0~F	0~F
NETADDRESS	0~15	16~31	32~47	48~63
FACTORY SETTING	✓			

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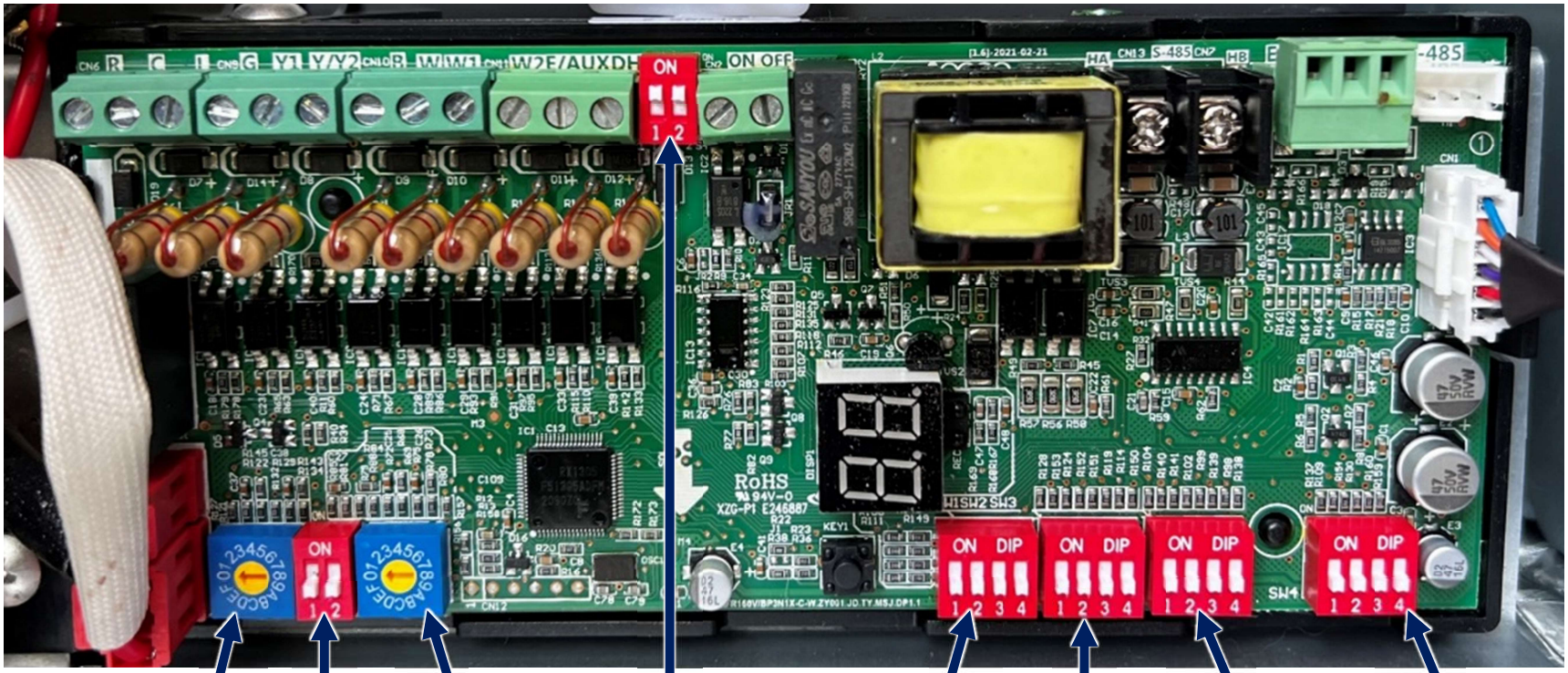

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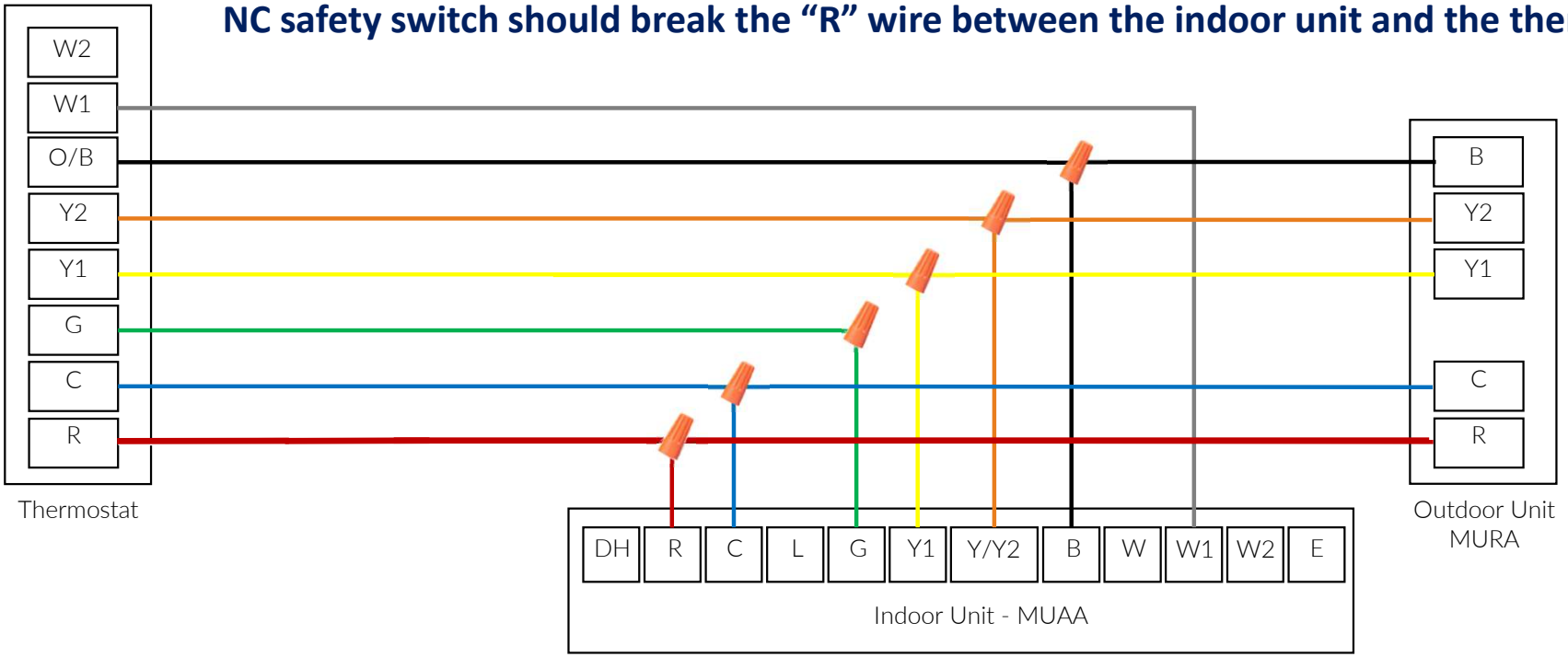
Float Switch Connections (24 Vac controls)

NC safety switch should break the “R” wire between the indoor unit and the thermostat.



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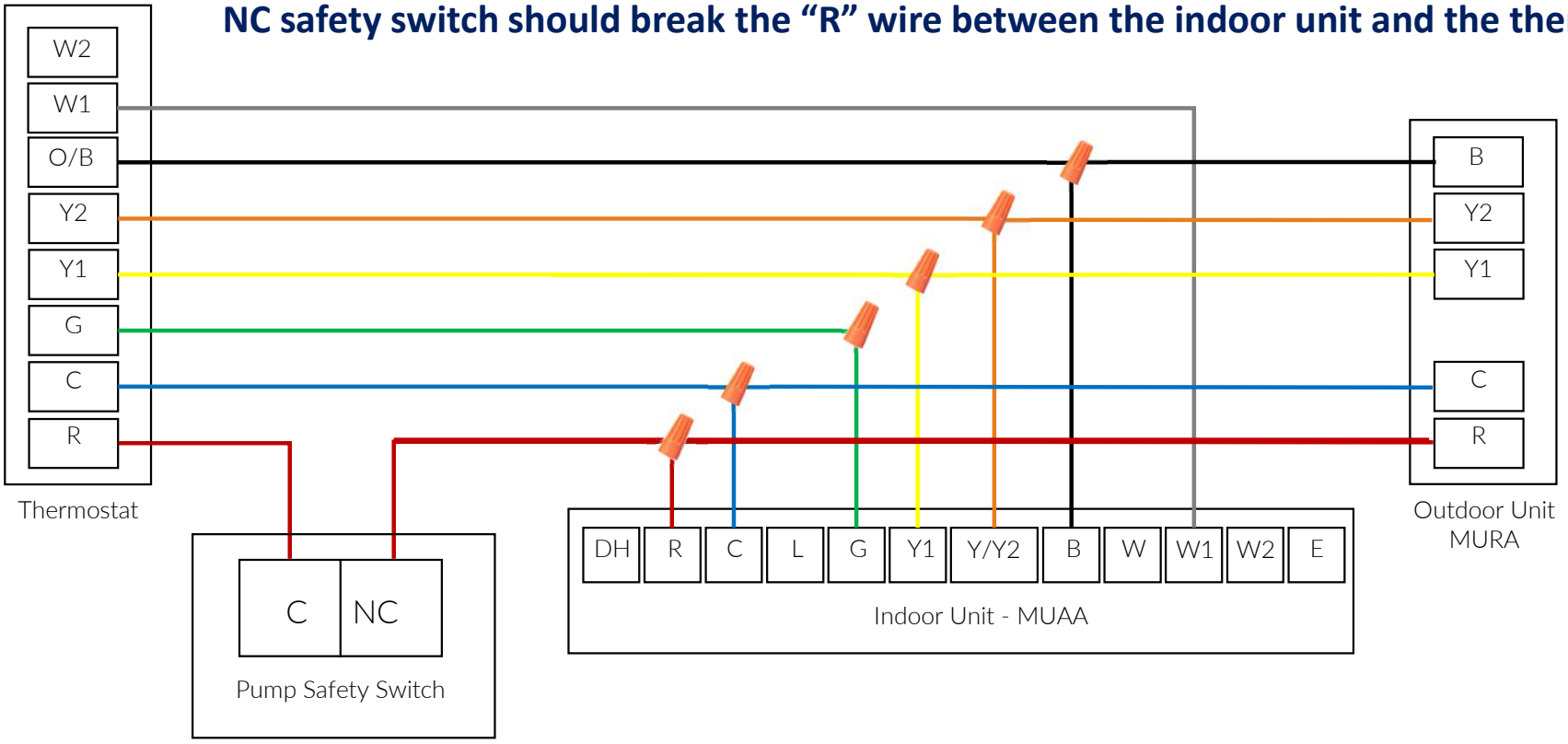
Float Switch Connections (24 Vac controls)

NC safety switch should break the “R” wire between the indoor unit and the thermostat.



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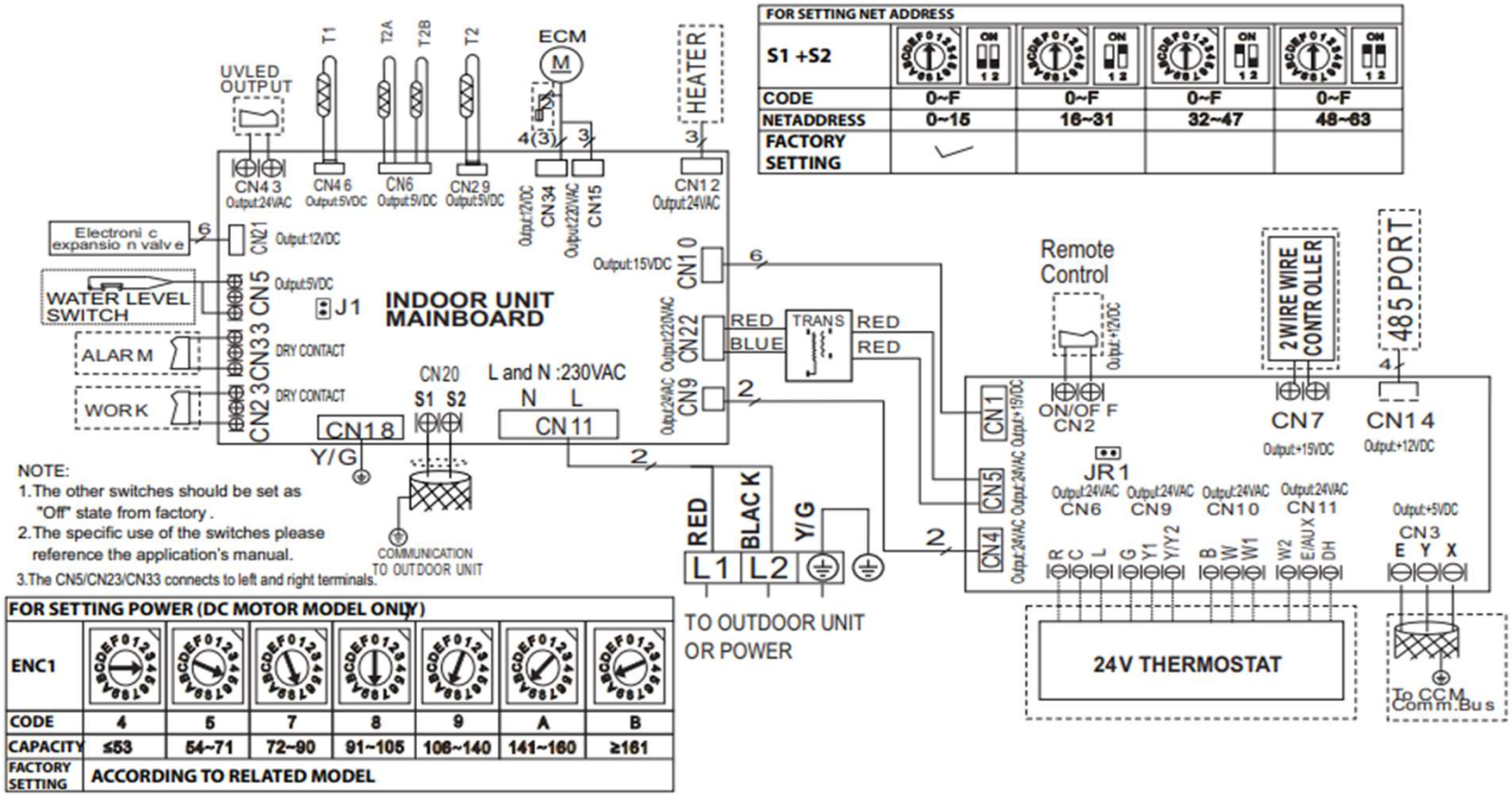


Table 4 — Wiring Diagram - All Models

CODE	CODE2	INDOOR UNIT MAINBOARD CONNECTION
CN5	5	output: 0-5VDC for water level switch connection
CN6	6	output: 5VDC for T2A, T2B (Temperature sensor)
CN9	9	output: 24VAC for 24V Interface
CN10	10	communication: 15VDC for 24V Interface
CN11	11	input: 230VAC High voltage
CN12	12	output: 24VAC for Heaters
CN15	15	output: 220VAC for ECM motor (fan)
CN18	18	output: 0V connection to ground
CN20	20	communication: 0-24VDC Low High voltage
CN22	22	output: 220VAC High voltage to transformer
CN29	29	output: 5VDC for T2 (Temperature sensor)
CN33	33	output: Normally open dry contact
CN34	34	output: 12VDC for ECM motor control
CN46	46	output: 5VDC for T1 (Temperature sensor)
CN43	43	output: 24VAC UVLED
CN23	23	output: Normally open dry contact - work

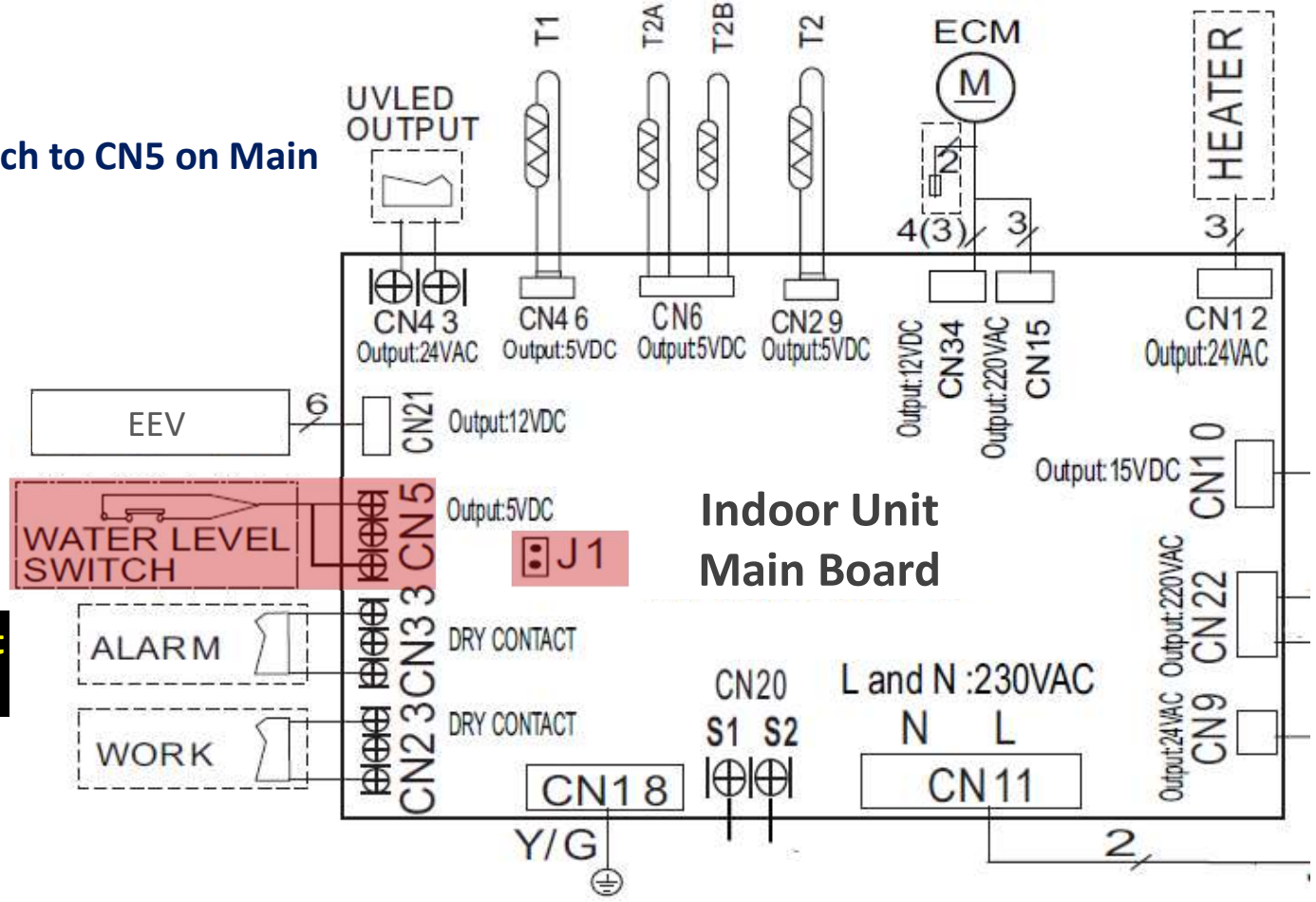
40MUAA FAN COIL

Float Switch Connections (Wired Remote – Scenario 2)

- Connect NC safety switch to CN5 on Main Board.
- Remove J1
- 5 Vdc output
- Trip displays EHOE

Two digits – pause – two digits

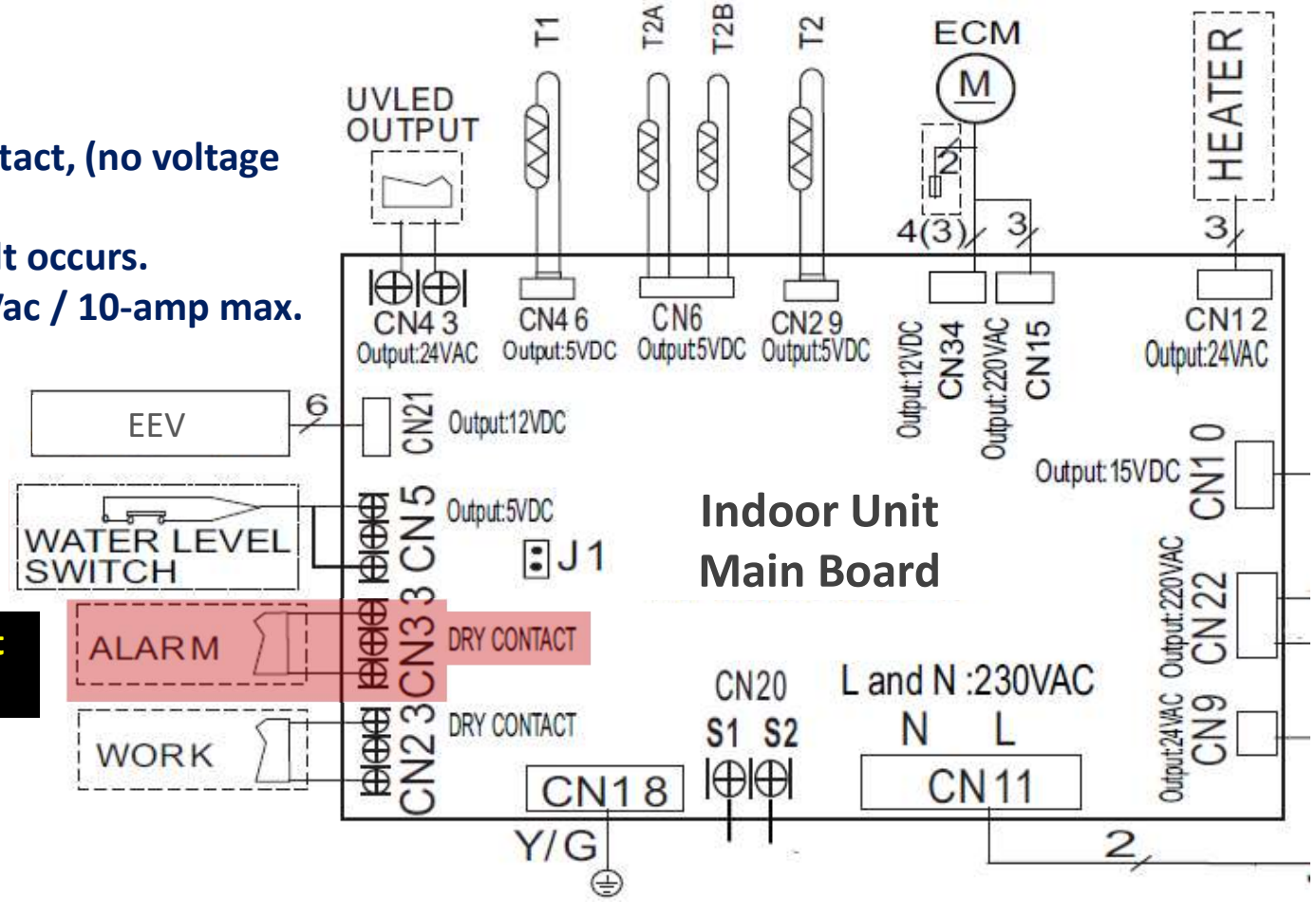
The CN5/CN23/CN33 do not use middle terminal.



40MUAA FAN COIL

Alarm CN33 (Main Board)

- Normally open dry contact, (no voltage output).
- Closes when a unit fault occurs.
- Contacts rated at 250 Vac / 10-amp max.

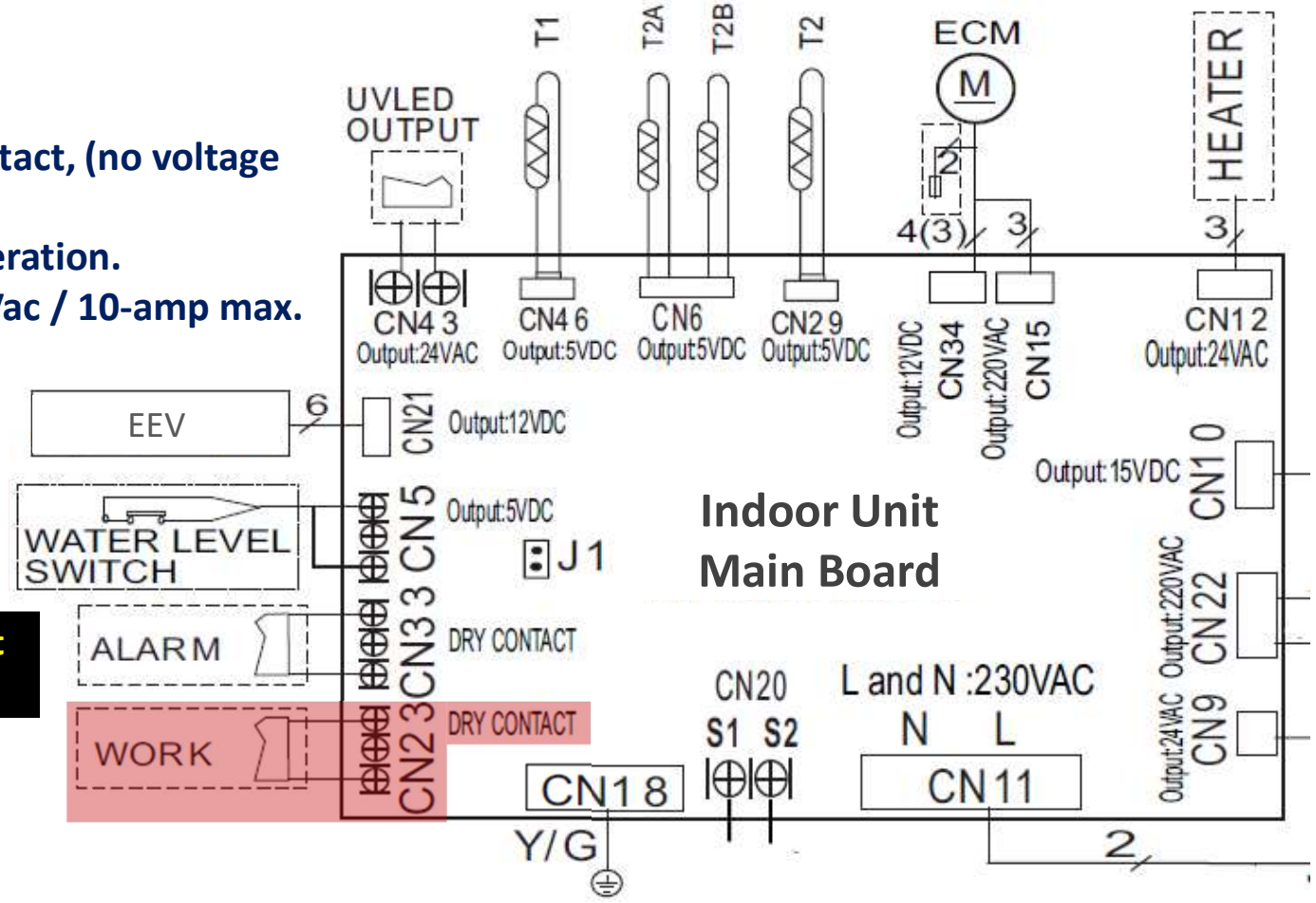


The CN5/CN23/CN33 do not use middle terminal.

40MUAA FAN COIL

Work CN23 (Main Board)

- Normally open dry contact, (no voltage output).
- Closes with blower operation.
- Contacts rated at 250 Vac / 10-amp max.

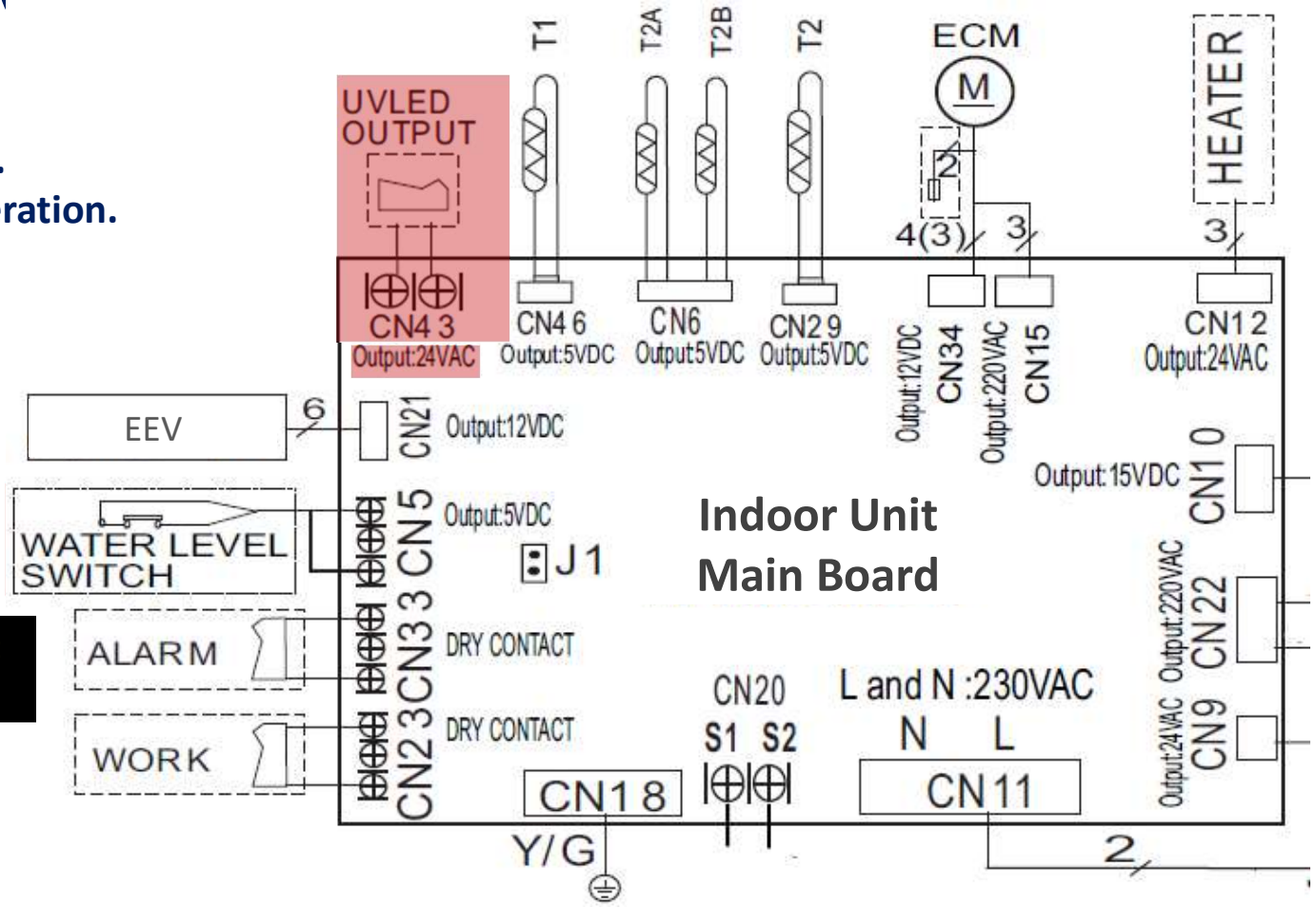


The CN5/CN23/CN33 do not use middle terminal.

40MUAA FAN COIL

UV LED CN43 (Main Board)

- Normally open contact.
- Closes with blower operation.
- 24 Vac output.

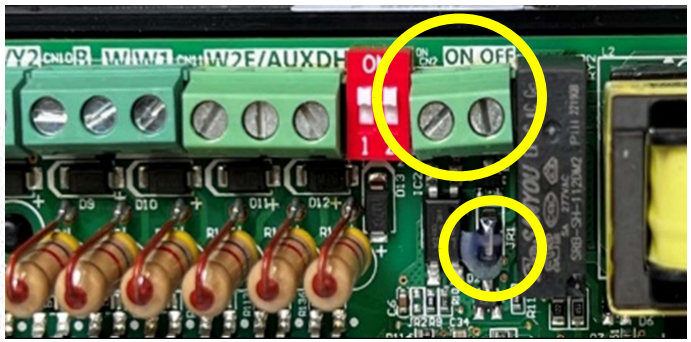


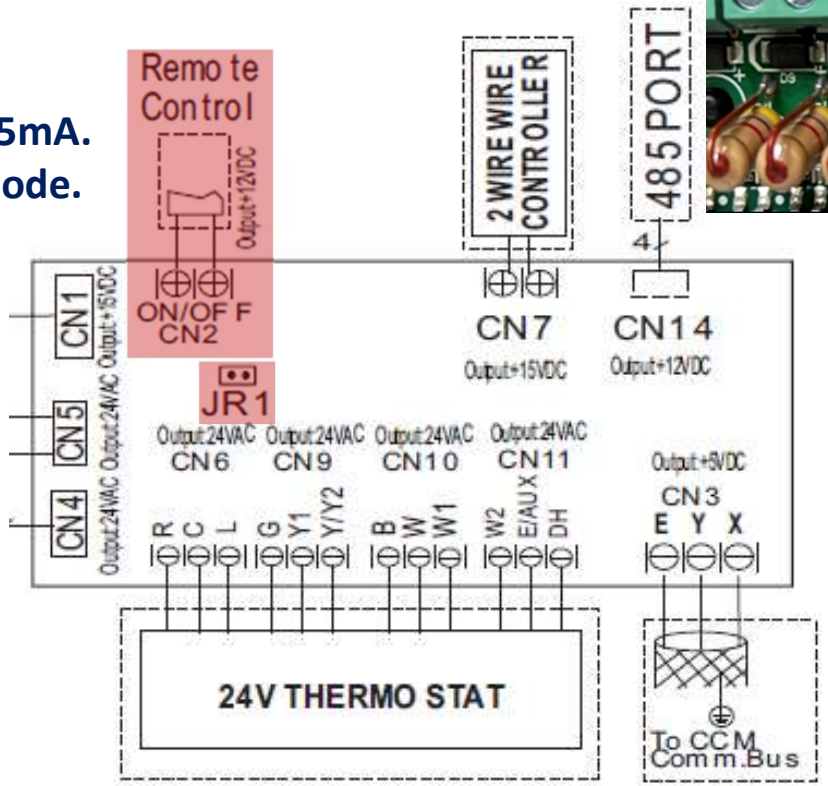
The CN5/CN23/CN33 do not use middle terminal.

40MUAA FAN COIL

On-Off CN2 (Interface Board)

- Remote Shutdown.
- Circuit in parallel with JR1
- 12 Vdc output, max. current is 5mA.
- Open circuit displays CP error code.

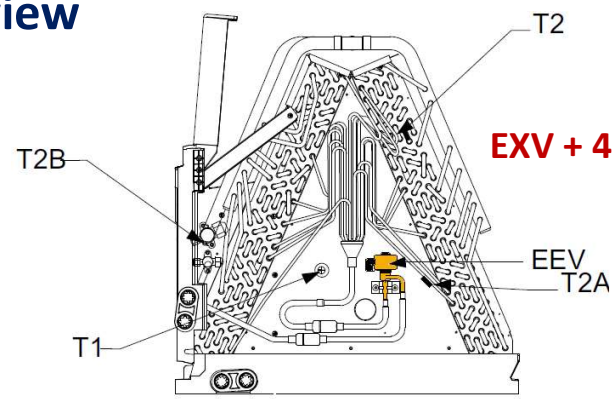




40MUAA FAN COIL

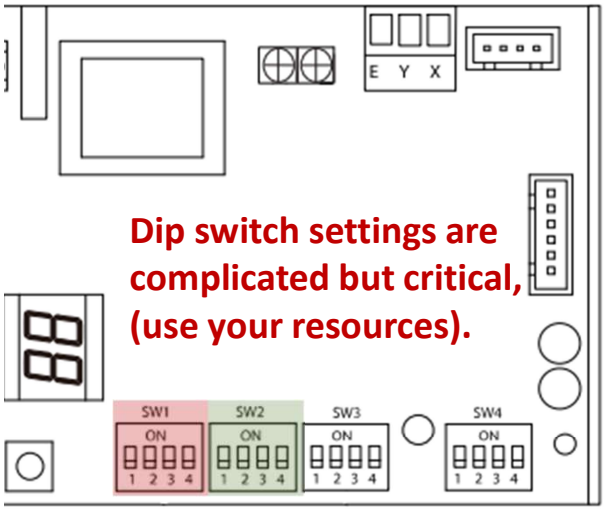
Key Points for the 40MUAA Fan Coil

review



EXV + 4 Sensors

Questions ?



Dip switch settings are complicated but critical, (use your resources).

Full Indoor Diagnostics display available ONLY with outdoor RS-485.

DISPLAY	ERROR INFORMATION
EH00	Indoor EEPROM Malfunction
EL01	Communication malfunction between the indoor and outdoor units
EH03	Indoor fan speed malfunction
EC51	Outdoor EEPROM malfunction
EC52	Condenser coil temperature sensor (T3) malfunction
EC53	Outdoor ambient temperature sensor (T4) malfunction
EC54	Outdoor unit exhaust temperature sensor error
EH60	Indoor Room Temperature Sensor T1 Error
EH61	Indoor Evaporator Coil Temperature Sensor T2 Error
EH62	Air inlet temperature sensor error
EC07	Outdoor DC fan speed malfunction
EH0b	Indoor PCB and display board communication error
EL0C	Refrigerant leakage detection
EH0E	Indoor water level warning error
FL09	New and old platform match malfunction
PC00	Inverter module (IPM) protection
PC01	Over high voltage or over low voltage protection
PC02	High temperature protection of compressor top/IPM temperature protection
PC04	Inverter compressor drive error
PC03	Low pressure protection
PC0L	Low temperature protection of outdoor unit
----	Indoor units mode conflict

NOTE: If the LED display shows DF (Defrost) or FC (Forced Cooling), these are operational codes and, not fault or protection.

Two digits – pause – two digits

Only valid when using RS485

Five minute break

Training will resume in:

05:00

Carrier Enterprise

38MURA HEAT PUMP

Crossover Unit

Energy Efficiency
- 14.7 - 18 SEER2 / 8.2 - 12.4 EER2 / 8.2 - 9.8 HSPF2

Sound
- Levels as low as 54 dBA

Design Features
- Small Footprint
- Integrated 24V and RS-485 communications

OPERATING RANGE MIN/MAX °F / °C

High Heat Units:
- Cooling: -22/130 (-30/55)
- Heating: -22/86 (-30/30)

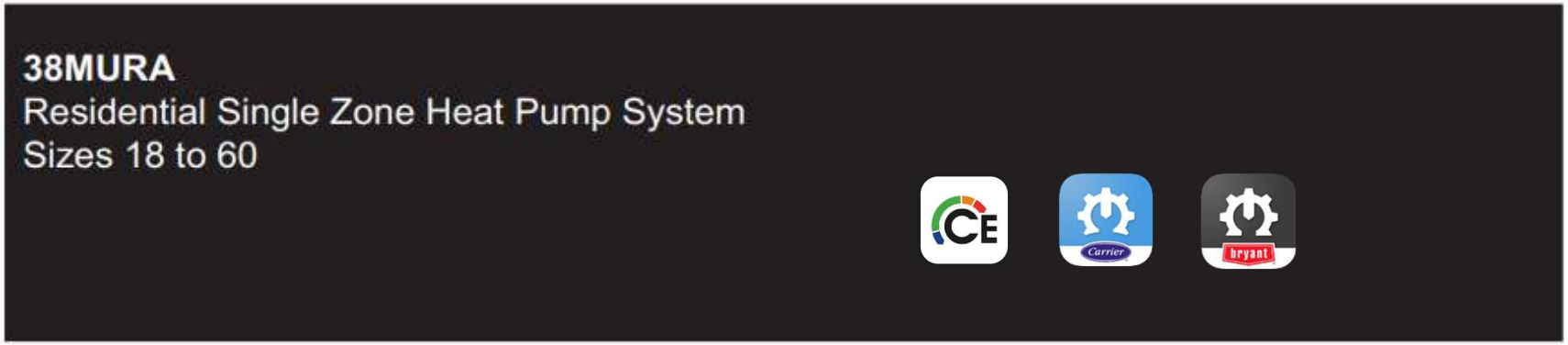
Regular Heat Units:
- Cooling: 5/130 (-15/55)
- Heating: -5/86 (-20/30)

CE

Consult Product Data for more information.

38MURA HEAT PUMP

Service Manual



Service Manual

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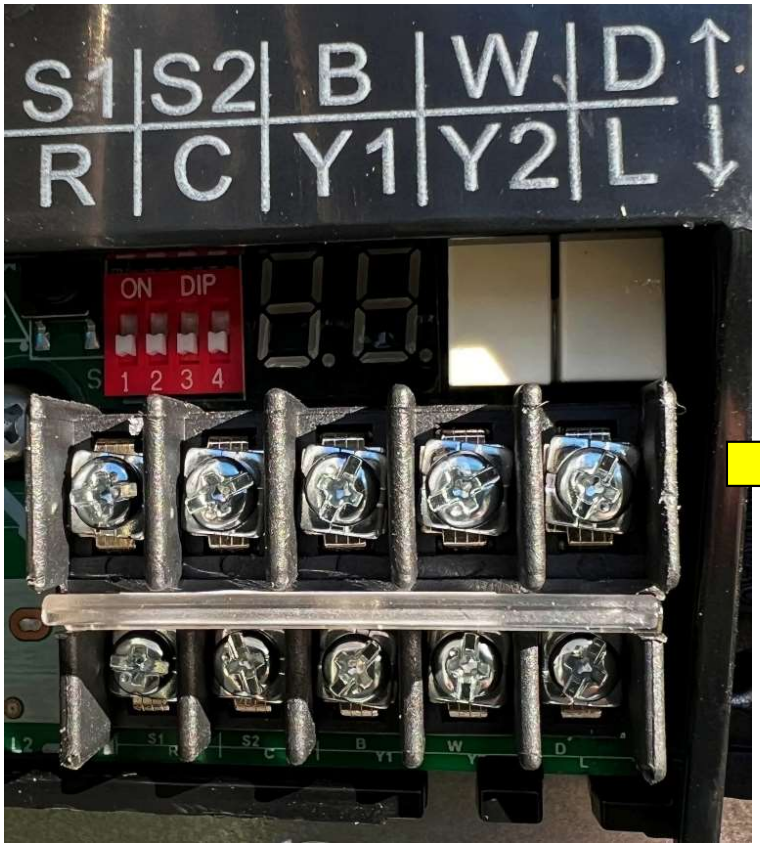
⚠ WARNING

ELECTRICAL SHOCK HAZARD
Failure to follow this warning could result in personal injury

38MURA HEAT PUMP

Control Teminals



Terminal Function	
R	24V Power Connection
C	Common
Y1	Low Demand
Y2	High Demand
B	Heating Reversing Valve
W	Heating Control
D	Defrost **NEVER attach to a gas furnace!**
L	System Fault - (24V output signal)

Terminal D will be energized when the outdoor unit goes into defrost mode and can be used to enable electric heat.
Only available with scenario 3, (full 24 Vac operation).

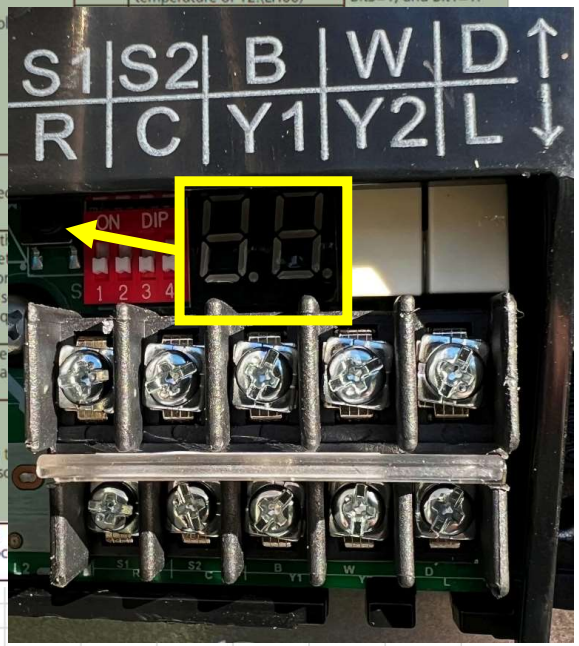
38MURA HEAT PUMP

Point Check Function

Number of Presses	Display	Remark
00	Normal display	Displays running frequency, running state, or malfunction code
01	Indoor unit capacity demand code	Actual data*HP*10 If capacity demand code is higher than 99, the digital display tube will show single digit and tens digit. (For example, the digital display tube show "5.0",it means the capacity demand is 15. the digital display tube show "60",it means the capacity
02	capacity requirement adapter	
03	Room temperature (T1)	If the temp. is lower than 0 degree, the digital display tube will show "0".If the temp. is higher than 70 degree, the digital display tube will show "70".
04	Indoor unit evaporator temperature (T2)	If the temp. is lower than -9 degree, the digital display tube will show "-9".If the temp. is higher than 70 degree, the digital display tube will show "70". If the indoor unit is not connected, the digital display tube will show: "--"
05	Condenser pipe temp.(T3)	
06	Outdoor ambient temp.(T4)	
07	Compressor discharge temp. (TP)	The display value is between 0~199 degree. If the temp. is lower than 0 degree, the digital display tube will show "0". If the temp. is higher than 99 degree, the digital display tube will show single digit and tens digit. (For example, the digital display tube show "0.5",it means the compressor discharge temp. is 105 degree. the digital display tube show "1.6",it means the compressor discharge temp. is 116 degree)
08	AD value of current	The display value is a hex number. For example, the digital display tube shows "Cd", it means AD value is 205.
09	AD value of voltage	
10	Indoor unit running mode code	Standby:0,Cooling:1, Heating:2, Fan only 3, Drying:4, Forced cooling:6, Defrost:7
11	Outdoor unit running mode code	
12	EXV open angle	Actual data/4. If the value is higher than 99, the digital display tube will show single digit and tens digit. For example, the digital display tube show "2.0",it means the EXV open angle is 120×4=480p.)

Indoor information not available with scenario 3 (24 Vac) -- on display.

13	Frequency limit symbol	Bit7	Frequency limit caused by IGBT radiator	The display value is a hexidecimal number. For example, the digital display show 2A, then Bit5=1, Bit3=1, and Bit1=1.
		Bit6	Reserved	
		Bit5	Reserved	
		Bit4	Frequency limit caused by low temperature of T2.(LH00)	
14	Outdoor unit fan speed			
15	The average value of t temperature values de by the high and low pr sensors in the last 10 s of the compressor freq calculation period			
16	The temperature value detected by the high a pressure sensor			
17	AD value detected by t and low pressure sens			
18	The currently running communication protoc version			



38MURA HEAT PUMP

Error Codes

Two digits – pause – two digits

DISPLAY	ERROR INFORMATION	DISPLAY	ERROR INFORMATION
EC5C	High pressure sensor failure	PC0F	PFC module protection
EC57	Refrigerant pipe temperature sensor error	PC0L	Low temperature protection of outdoor unit
EL01	Communication malfunction between indoor and outdoor units	PC10	Outdoor unit low AC voltage protection
EC50	Outdoor temperature sensor error	PC11	Outdoor unit main control board DC bus high voltage protection
EC51	Outdoor EEPROM error	PC12	Outdoor unit main control board DC bus high voltage protection /341 MCE error
EC52	Condenser coil temperature sensor (T3) malfunction	PC30	System high pressure protection
EC53	Outdoor ambient temperature sensor (T4) malfunction	PC31	System low pressure protection
EC54	Compressor discharge temperature sensor TP has an open or short circuit	PC40	Communication error between outdoor main chip and compressor driven chip
EC07	Outdoor DC fan motor malfunction/fan speed out of control	PC42	Compressor start failure of outdoor unit
EC71	Over current failure of outdoor DC fan motor	PC43	Outdoor compressor lack phase protection
EC72	Lack phase failure of outdoor DC fan motor	PC44	Outdoor unit zero speed protection
EL16	Communication malfunction between outdoor unit main board and outdoor transit board	PC45	Outdoor unit IR chip drive failure
PC00	Inverter module (IPM) protection	PC46	Compressor speed has been out of control
PC02	Top temperature protection of compressor	PC49	Compressor overcurrent failure
PC06	Discharge temperature protection of compressor	PH90	High temperature protection of Evaporator
PC08	Outdoor overcurrent protection	PH91	Low temperature protection of Evaporator
PC0A	High temperature protection of condenser	LC06	High temperature protection of Inverter module (IPM)

38MURA HEAT PUMP

Error Codes

DISPLAY	MALFUNCTION OR PROTECTION	PAGE #
EC 51	Outdoor EEPROM malfunction	25
EL 03	Indoor / outdoor units communication error	26
EL 16	Communication malfunction between adapter board and outdoor main board	49
PC 00	IPM module protection	32
PC 02	Top temperature protection of compressor or High temperature protection of IPM mod	34
PC 06	Temperature protection of compressor discharge	37
PC 08	Outdoor overcurrent protection	38
PC 0A	High temperature protection of condenser	44
PC 0F	PFC module protection	45
PC 10	Outdoor unit low AC voltage protection	33
PC 11	Outdoor unit main control board DC bus high voltage protection	--
PC 12	Outdoor unit main control board DC bus high voltage protection /341 MCE error	33
PC 30	High pressure protection	39
PC 31	Low pressure protection	35
PC 40	Communication malfunction between IPM board and outdoor main board	40
PC 41	Outdoor compressor current sampling circuit failure	41
PC 43	Outdoor compressor lack phase protection	42
PC 44	Outdoor unit zero speed protection	38
PC 45	Outdoor unit IR chip drive failure	43
PC 46	Compressor speed has been out of control	38
PC 49	Compressor overcurrent failure	38
EC 52	Condenser coil temperature sensor T3 is in open circuit or has short circuited	29
EC 53	Outdoor room temperature sensor T4 is in open circuit or has short circuited	29
EC 54	Compressor discharge temperature sensor TP is in open circuit or has short circuited	29
EC 57	Refrigerant pipe temperature sensor error	29
EC 5C	High pressure sensor is in open circuit or has short circuited	29
EC 71	Over current failure of outdoor DC fan motor	27
EC 72	Lack phase failure of outdoor DC fan motor	47
EC 73	Zero-speed failure of outdoor DC fan motor	--
EC 07	Outdoor fan speed has been out of control	27
PC 0L	Low ambient temperature protection	43
LC 06	High temperature protection of IPM module	34

DIAGNOSIS AND SOLUTION

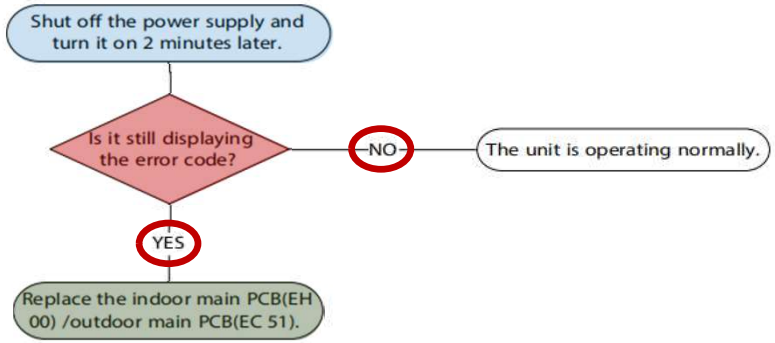
EH 00 / EC 51 (EEPROM Parameter Error Diagnosis and Solution)

Description: Indoor or outdoor PCB main chip does not receive feedback from EEPROM chip.

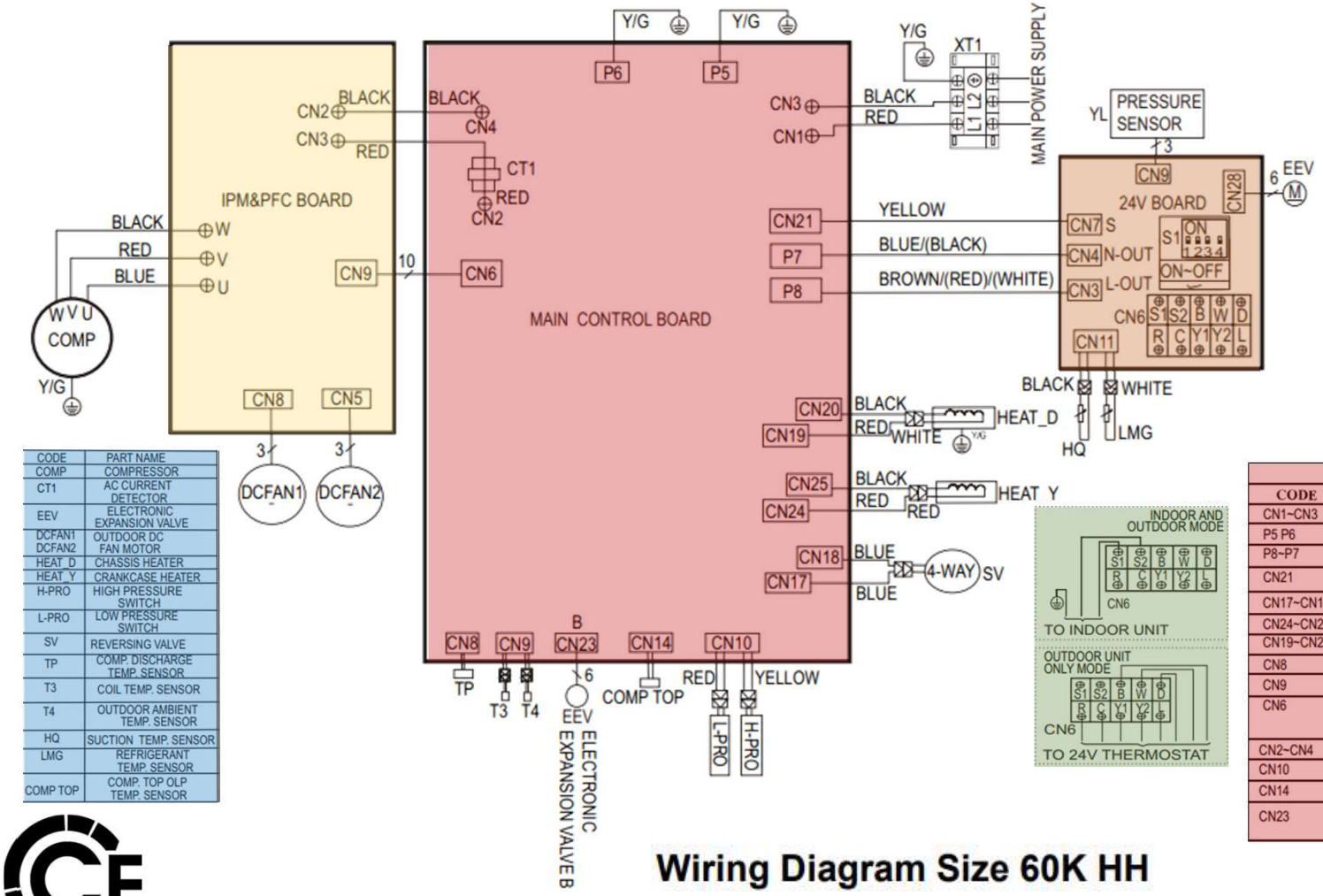
Recommended parts to repair:

- **Indoor PCB**
- **Outdoor PCB**

Troubleshooting



38MURA HEAT PUMP



CODE	PART NAME
COMP	COMPRESSOR
CT1	AC CURRENT DETECTOR
EEV	ELECTRONIC EXPANSION VALVE
DCFAN1 DCFAN2	OUTDOOR DC FAN MOTOR
HEAT_D	CHASSIS HEATER
HEAT_Y	CRANKCASE HEATER
H-PRO	HIGH PRESSURE SWITCH
L-PRO	LOW PRESSURE SWITCH
SV	REVERSING VALVE
TP	COMP. DISCHARGE TEMP. SENSOR
T3	COIL TEMP. SENSOR
T4	OUTDOOR AMBIENT TEMP. SENSOR
HQ	SUCTION TEMP. SENSOR
LMG	REFRIGERANT TEMP. SENSOR
COMP TOP	COMP. TOP OLP TEMP. SENSOR

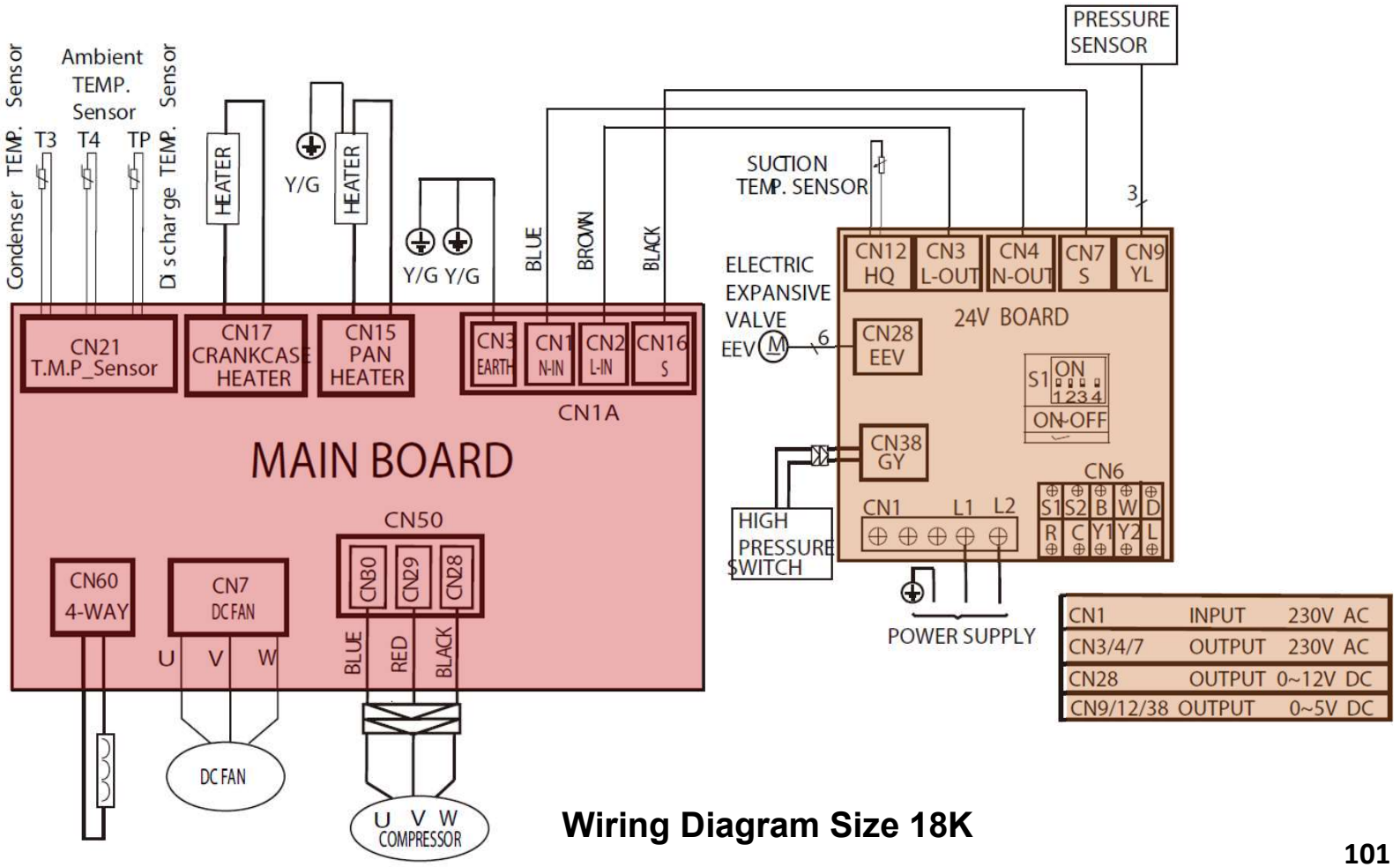
OUTDOOR UNIT IPM&PFC BOARD	
CODE	PART NAME
CN2~CN3	Input:230VAC High voltage
CN9	Communication:Pin1-Pin2 Pulse waveform(0-5VDC),Pin7, Pin9(0VDC),Pin10(5VDC)--to outdoor main control board
U~V~W	Connect to compressor voltage among phases 0~250VAC
CN8 CN5	Connect to DCFAN voltage among phases 0~200VAC

24V BOARD	
CODE	PART NAME
CN3~CN4	Input:230VAC High voltage
CN7	(Connection of the high voltage)"S"
CN9	Input:Pin1(5VDC),Pin2(0-5VDC),Pin3(0VDC)--PRESSURE SENSOR
CN28	Output:Pin1-Pin4 Pulse waveform(0-12VDC), Pin5 Pin6(12VDC) to EEV
CN11	Input:Pin1 Pin3(5VDC),Pin2 Pin4(0-5VDC)

OUTDOOR UNIT MAIN CONTROL BOARD	
CODE	PART NAME
CN1~CN3	Input:230VAC High voltage
P5 P6	Connection to the earth
P8~P7	Output:230VAC High voltage to 24V BOARD
CN21	Output:Pin1(Connection of the high voltage)"S"
CN17~CN18	Output:230VAC High voltage----REVERSING VALVE
CN24~CN25	Output:230VAC High voltage----CRANKCASE HEATER
CN19~CN20	Output:230VAC High voltage----CHASSIS HEATER
CN8	Input:Pin1(0-5VDC),Pin2(5VDC)
CN9	Input:Pin3 Pin4(5VDC),Pin2(0VDC),Pin1 Pin5(0-5VDC)
CN6	Communication:Pin1-Pin6 Pulse waveform(0-5VDC),Pin7, Pin9(0VDC),Pin8(0-5VDC),Pin10(5VDC)--to IPM&PFC BOARD
CN2~CN4	Output:230VAC High voltage to IPM&PFC BOARD
CN10	Input:Pin2 Pin4(0VDC),Pin1 Pin3(0-5VDC)--H/L Pressure switch
CN14	Input:Pin1(5VDC),Pin2(0-5VDC)--COMP. TOP OLP TEMP.SENSOR
CN23	Output:Pin1-Pin4 Pulse waveform(0-12VDC), Pin5 Pin6(12VDC) to EEV

Wiring Diagram Size 60K HH

38MURA HEAT PUMP



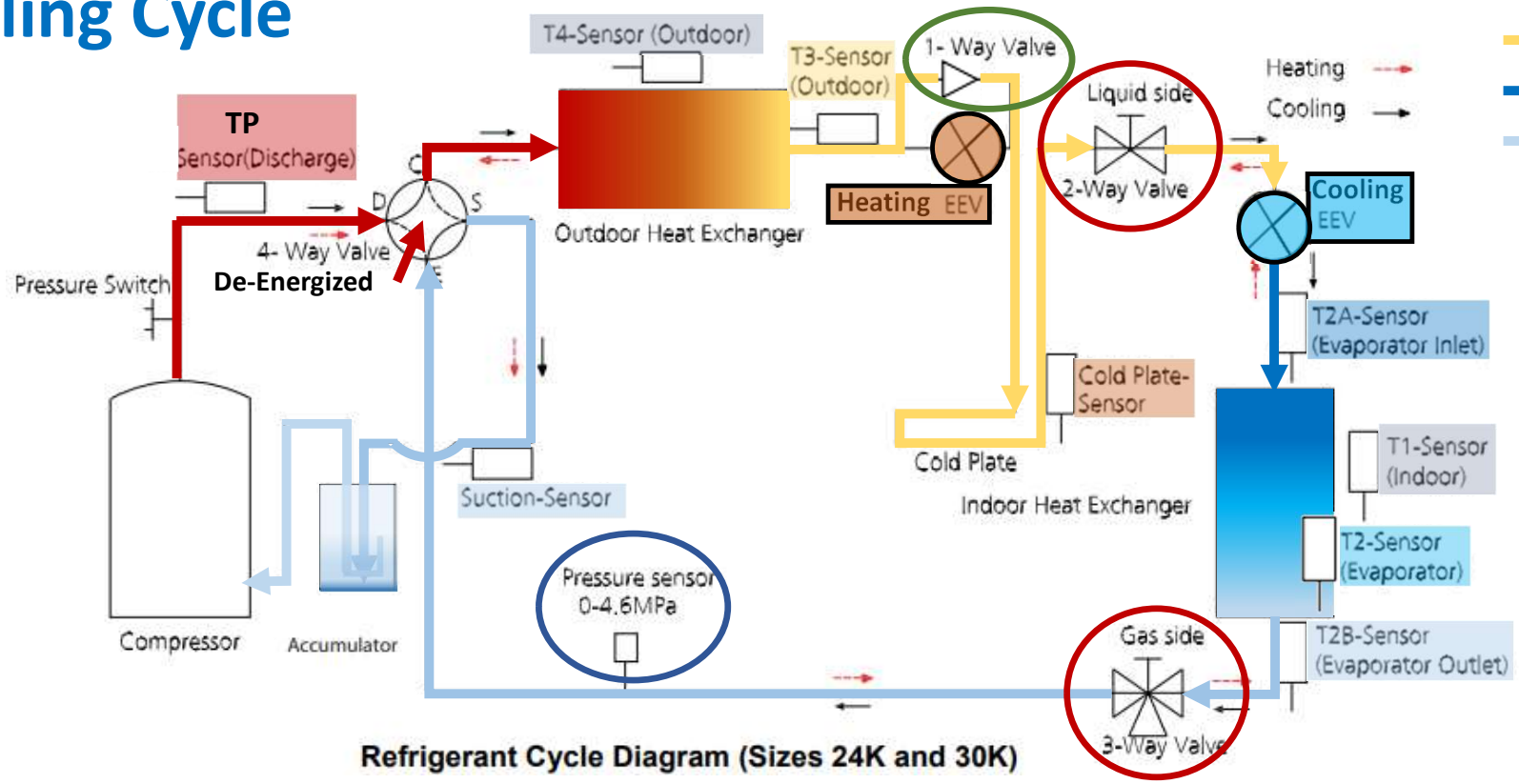
CN1A	INPUT	230V AC
CN7	OUTPUT	0~310V AC
CN60	OUTPUT	230V AC
CN21	OUTPUT	0~5V DC
CN15	OUTPUT	230V AC
CN17	OUTPUT	230V AC
CN50	OUTPUT	0~310V AC

CN1	INPUT	230V AC
CN3/4/7	OUTPUT	230V AC
CN28	OUTPUT	0~12V DC
CN9/12/38	OUTPUT	0~5V DC

Wiring Diagram Size 18K

38MURA HEAT PUMP

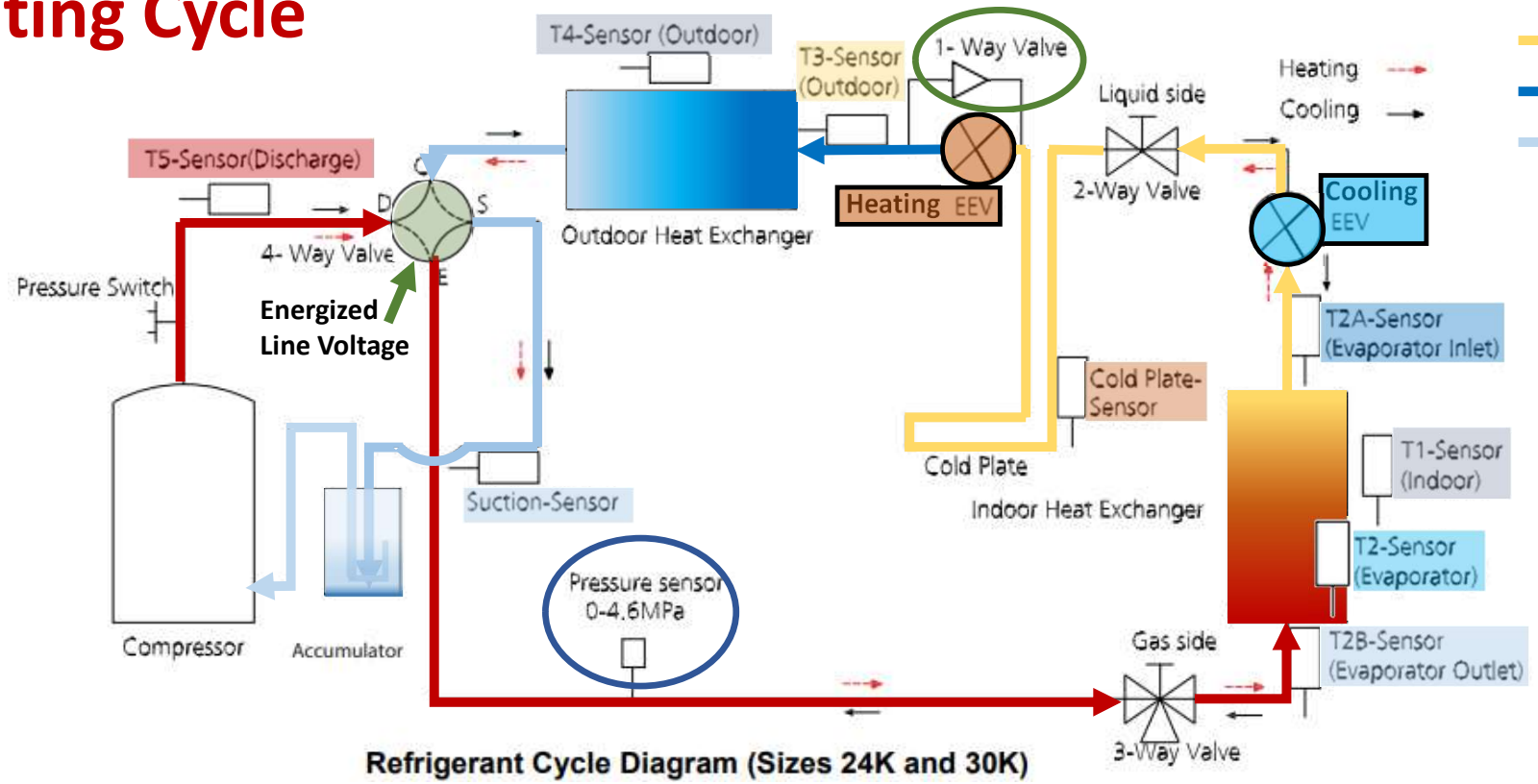
Cooling Cycle



Refrigerant Cycle Diagram (Sizes 24K and 30K)

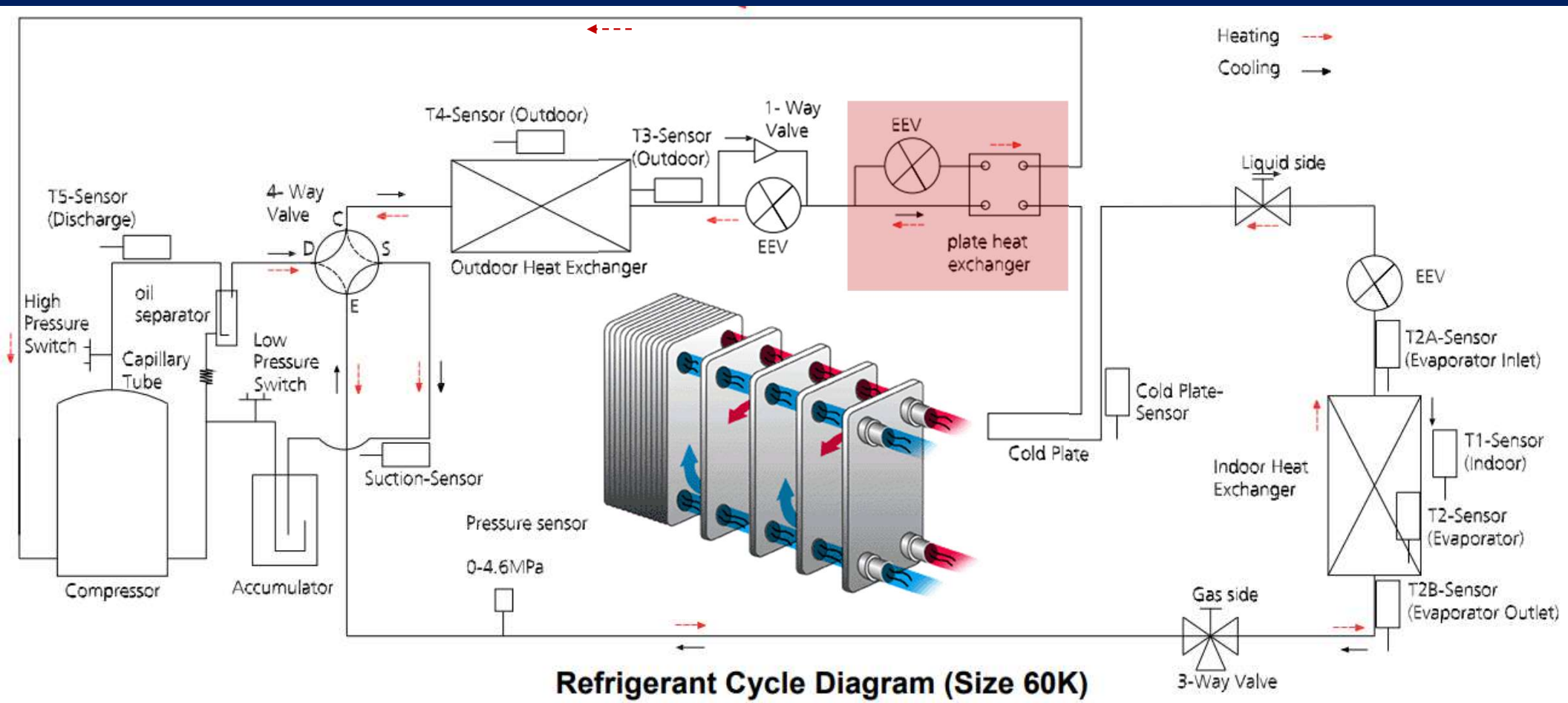
38MURA HEAT PUMP

Heating Cycle



Refrigerant Cycle Diagram (Sizes 24K and 30K)

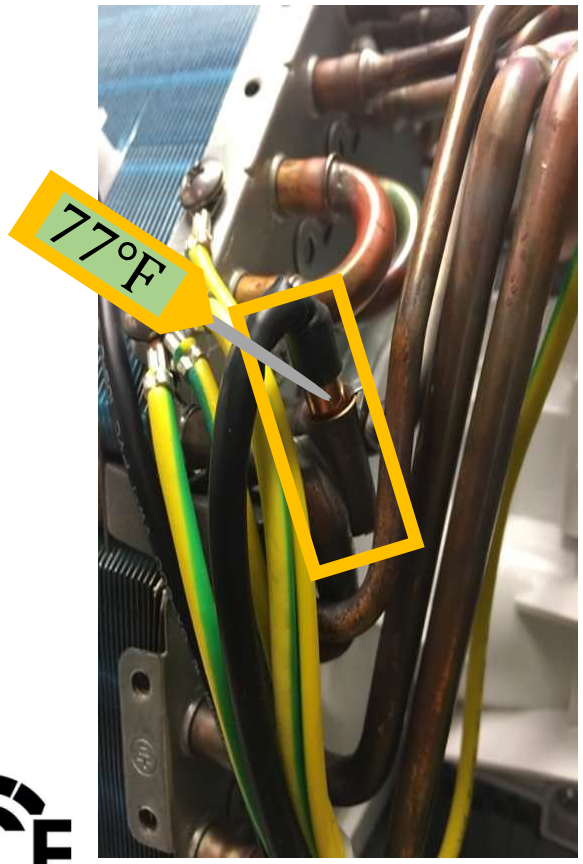
38MURA HEAT PUMP

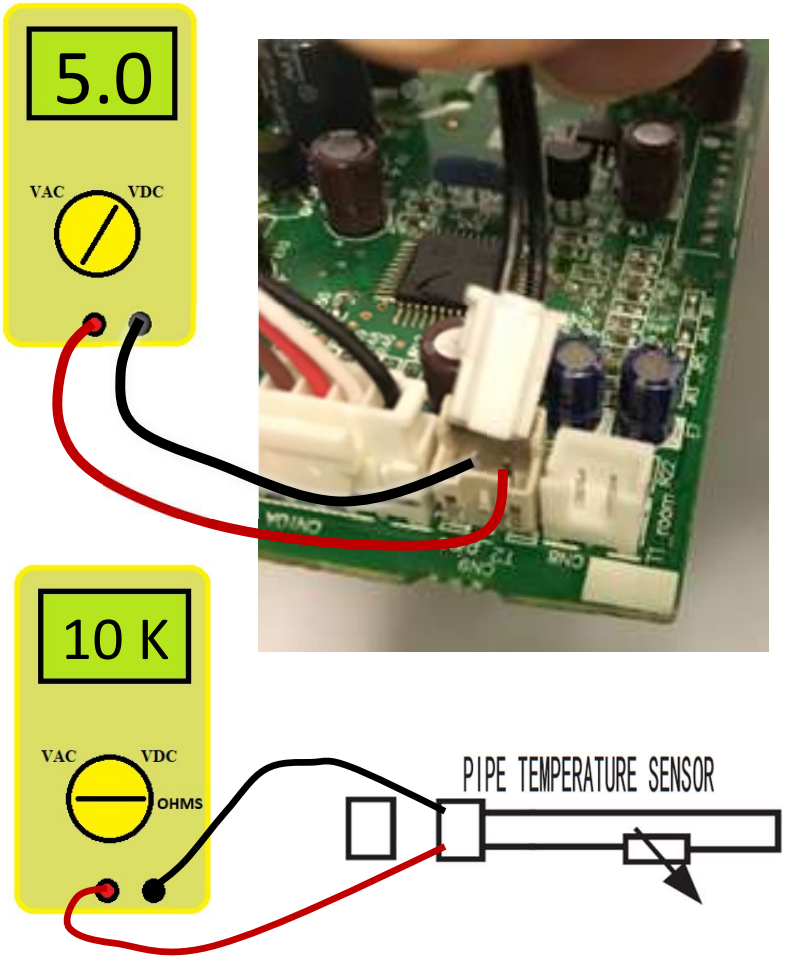


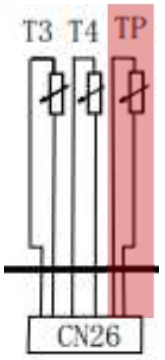
Refrigerant Cycle Diagram (Size 60K)

38MURA HEAT PUMP

Thermistors







50 k Ohm

38MURA HEAT PUMP

Appendix 2

Table 31 — Temperature Sensor Resistance Value Table for T5 (° C- -K)

°C	°F	K Ohm	°C	°F	K Ohm	°C	°F	K Ohm	°C	°F	K Ohm
-20	-4	542.7	20	68	68.66	60	140	13.59	100	212	3.702
-19	-2	511.9	21	70	65.62	61	142	13.11	101	214	3.595
-18	0	483	22	72	62.73	62	144	12.65	102	216	3.492
-17	1	455.9	23	73	59.98	63	145	12.21	103	217	3.392
-16	3	430.5	24	75	57.37	64	147	11.79	104	219	3.296
-15	5	406.7	25	77	54.89	65	149	11.38	105	221	3.203
-14	7	384.3	26	79	52.53	66	151	10.99	106	223	3.113
-13	9	363.3	27	81	50.28	67	153	10.61	107	225	3.025
-12	10	343.6	28	82	48.14	68	154	10.25	108	226	2.941
-11	12	325.1	29	84	46.11	69	156	9.902	109	228	2.86
-10	14	307.7	30	86	44.17	70	158	9.569	110	230	2.781
-9	16	291.3	31	88	42.33	71	160	9.248	111	232	2.704
-8	18	275.9	32	90	40.57	72	162	8.94	112	234	2.63
-7	19	261.4	33	91	38.89	73	163	8.643	113	235	2.559

38 MURA HEAT PUMP

System Components

4-Way Valve (Reversing Valve)

What it does:

Reverses the refrigerant flow to change modes.
Energizes in the heat mode.

How to check it:

Resistance of the solenoid coil.
Check voltage output from board.

Findings:

1.8 to 2.5 KΩ
PCB output is Line voltage ***

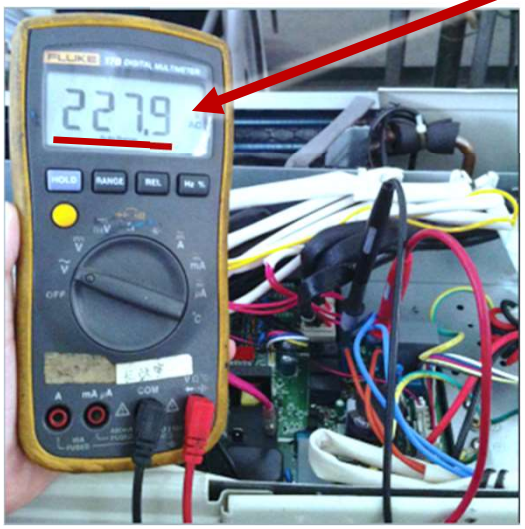
38MURA HEAT PUMP

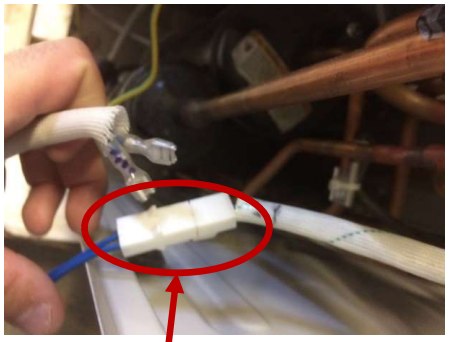
4-Way Valve (reversing valve)

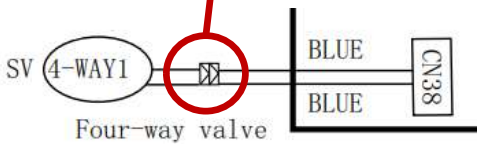
Line Voltage Solenoid

Cooling Mode De-energized

Heating Mode Energized



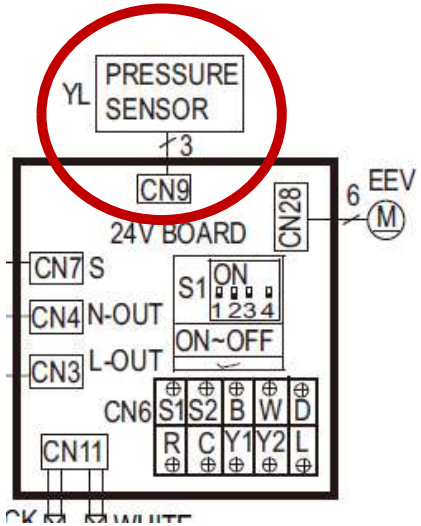




38MURA HEAT PUMP

Superheat

Pressure Transducer



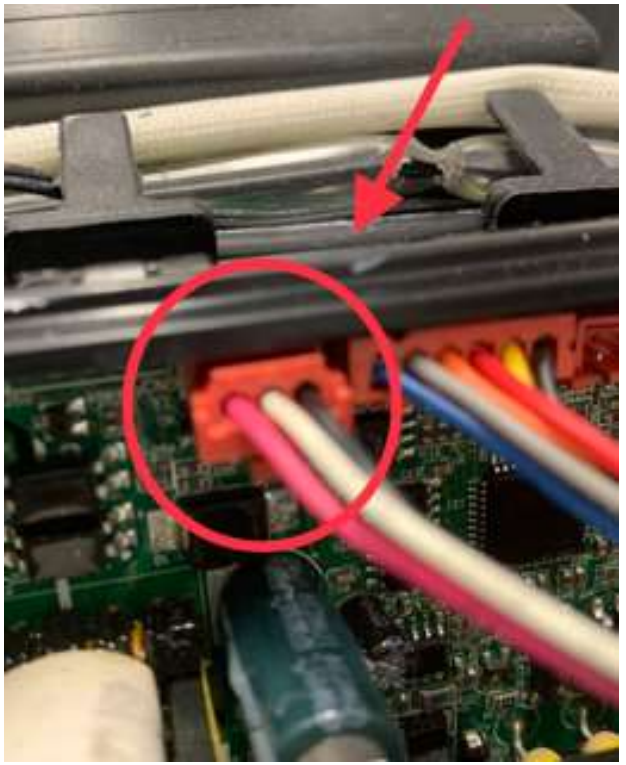
Voltage

Black to Red = 5vdc

Voltage from board

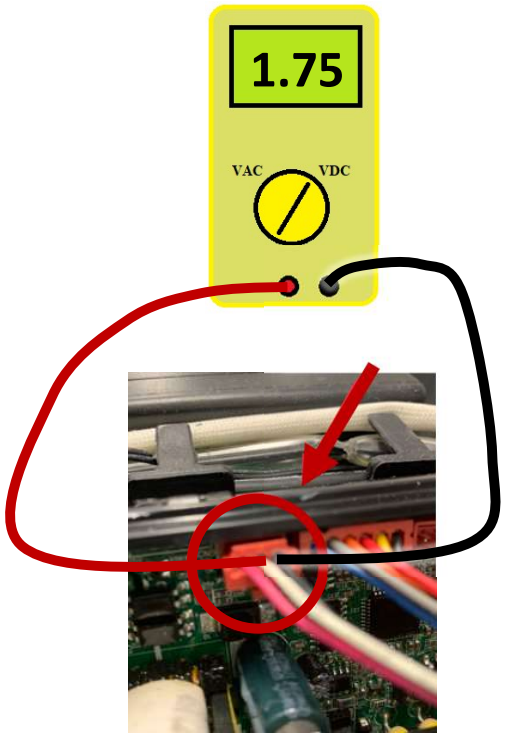
Black to White = 0-5 Vdc

CN9

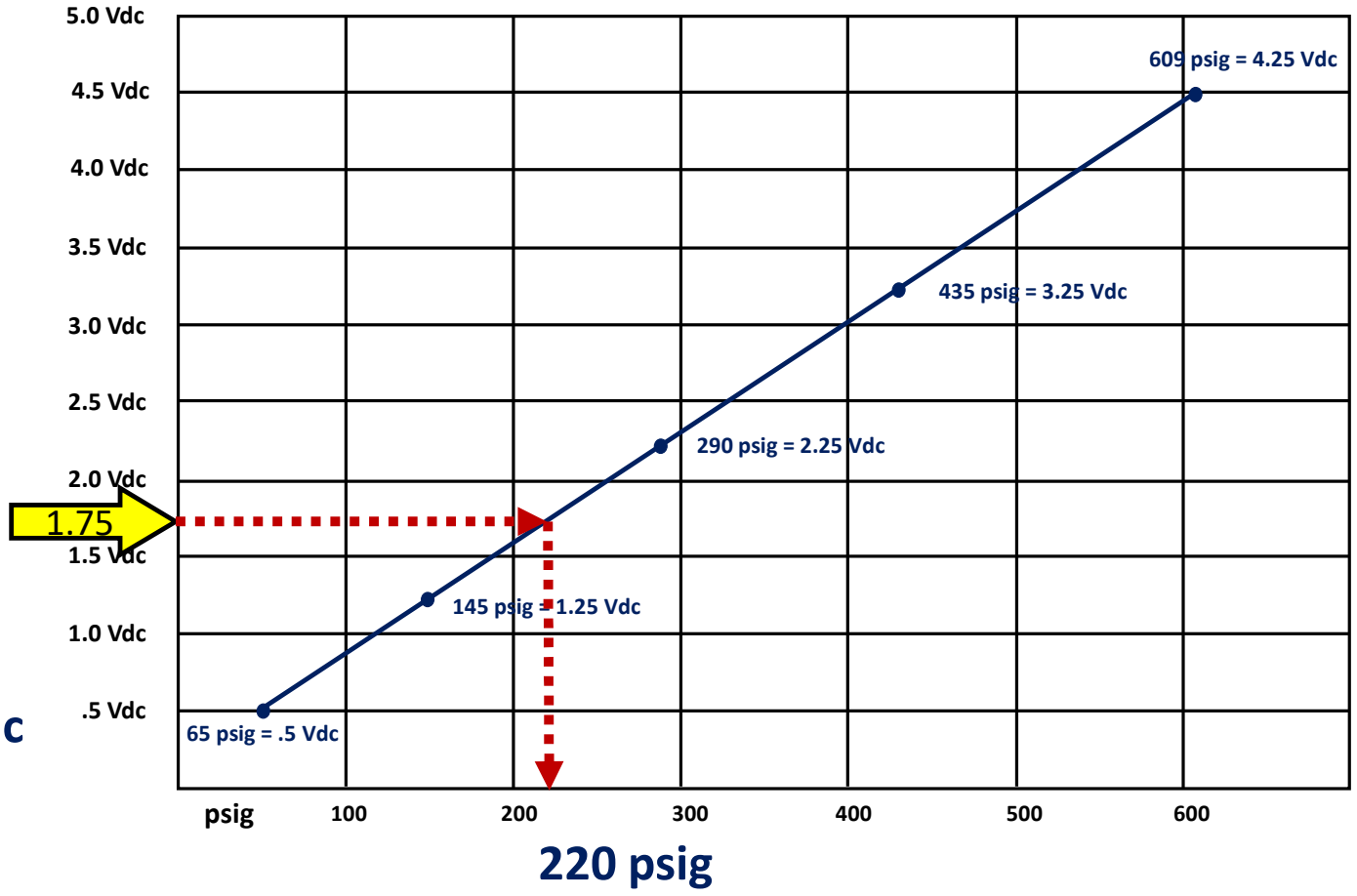


24V Board

38MURA HEAT PUMP



Black to White = 0-5 Vdc



220 psig

38MURA HEAT PUMP

Superheat

MVP of the system!

Pressure Transducer

Used to calculate demand,
(compressor/fan speed and EEV position).

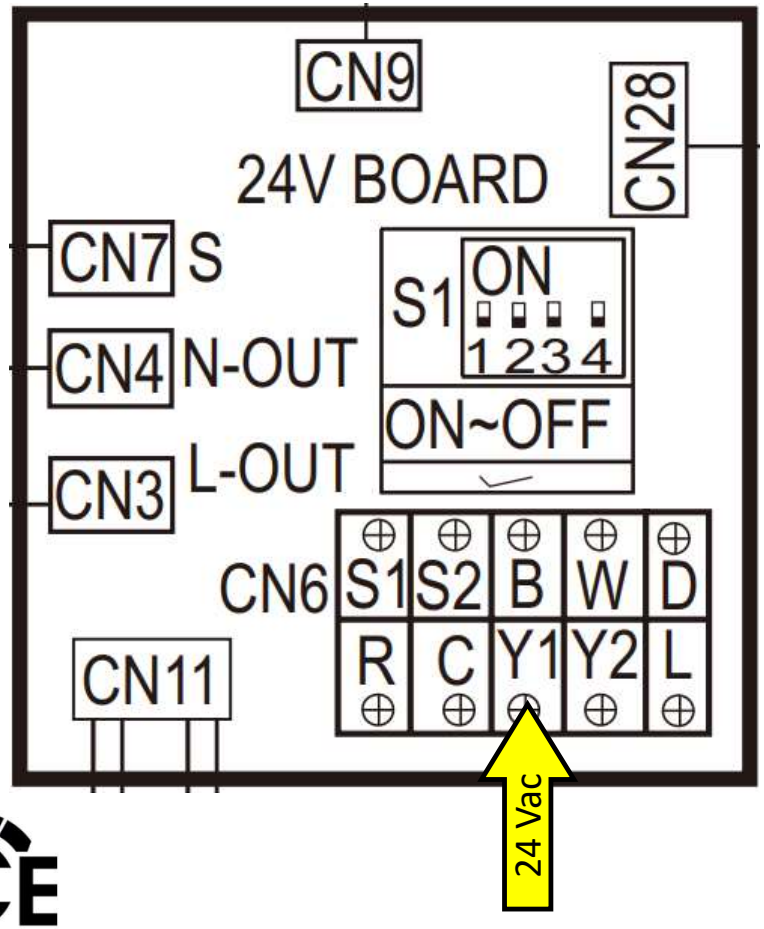
No longer so dependent on T1 to set target frequencies.

Y1 = lower demand = slower ramp up
Y2 = higher demand = faster ramp up

Suction Temp Sensor

38MURA HEAT PUMP

Understanding Y1 / Y2



Call for Y1:

1. Compressor will start at lower frequency.
2. Compressor will ramp up slower.
3. Takes longer to reach maximum capacity.
4. Controlled by superheat from SPT and OST

Call for Y2:

1. Compressor will start at higher frequency.
2. Compressor will ramp up faster.
3. Will reach maximum capacity quicker.
4. Controlled by superheat from SPT and OST

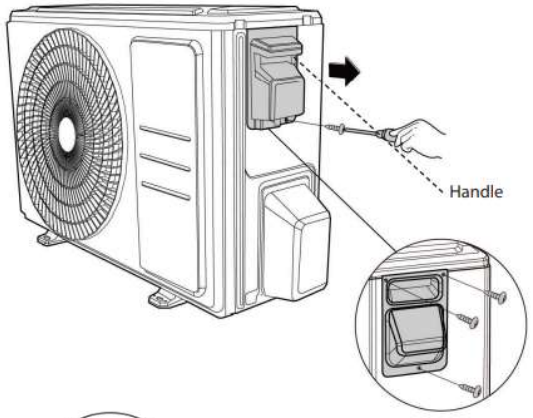
Both calls, (Y1/Y2) will reach maximum operation!

38MURA HEAT PUMP

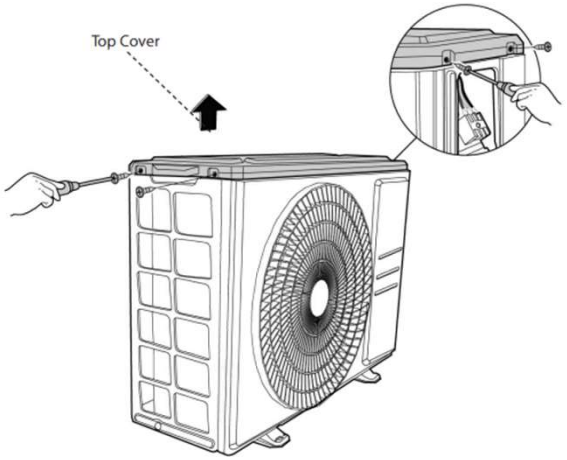
Disassembly Instructions

Panel Plate Size 18K Standard Heat

1. ✓ Turn off the air conditioner and the power breaker.
2. ✓ Remove the handle screw (1) and then remove the handle.



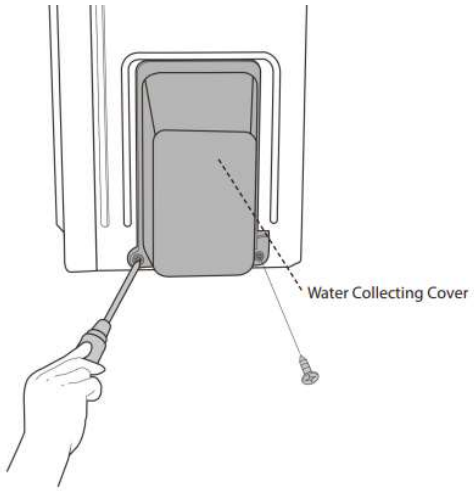
3. ✓ Remove the top cover screws (4) and then remove the top cover.
   One of the screws is located under the handle.



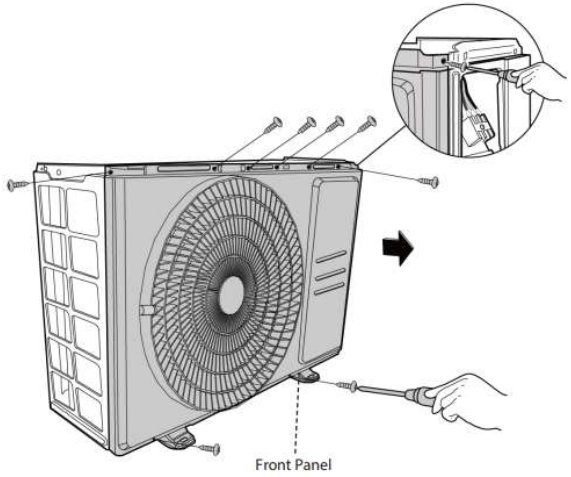
38MURA HEAT PUMP

Disassembly Instructions

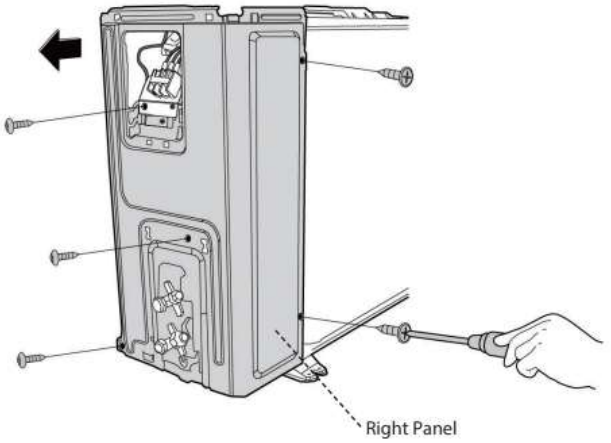
4. ✓ Remove the water collecting cover screws (2) and then remove the cover.



5. ✓ Remove the front panel screws (7 screws (on all models) or 9 screws (some models) and then remove the front panel.



6. ✓ Remove the right panel screws (5) and then remove the right panel.



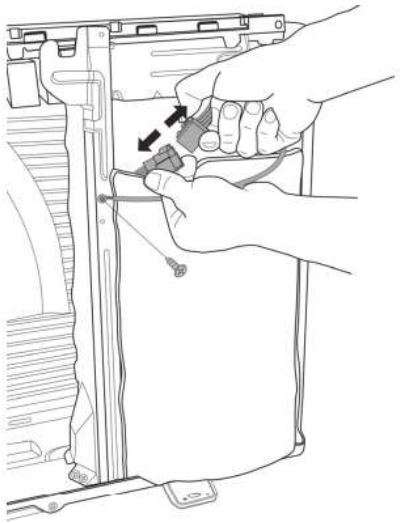
Follow the instructions Step-by-Step!

38MURA HEAT PUMP

Disassembly Instructions

Remove the Electrical Parts 18K Standard Heat (Main PCB)

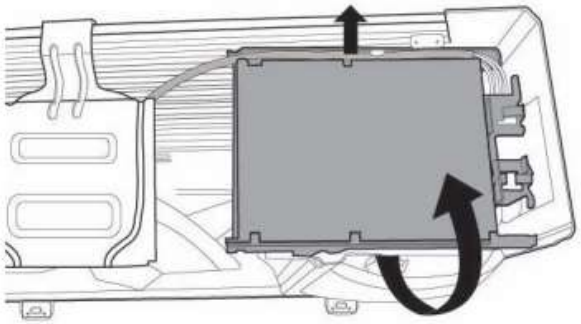
1. Disconnect the compressor connector and release the ground wire (1 screw).



36K Standard Heat and below.

18K, 24K, 30K, 36K *AA3

2. Remove the electronic control box subassembly.

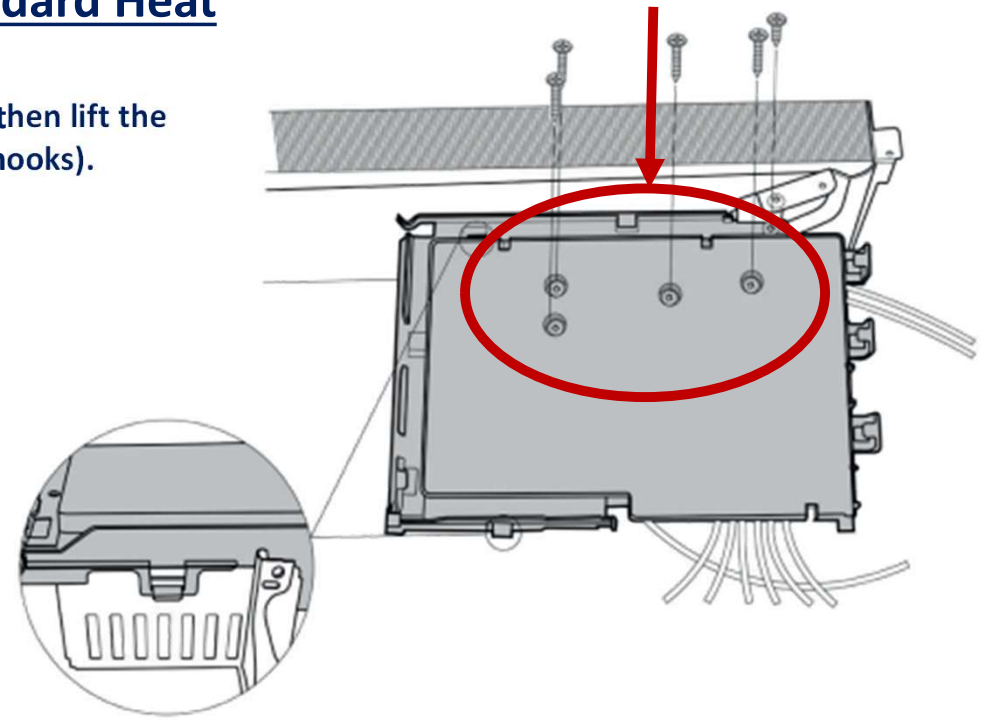


Note: The electric control box cover cannot be removed, so the voltage between P and N cannot be measured.

38MURA HEAT PUMP

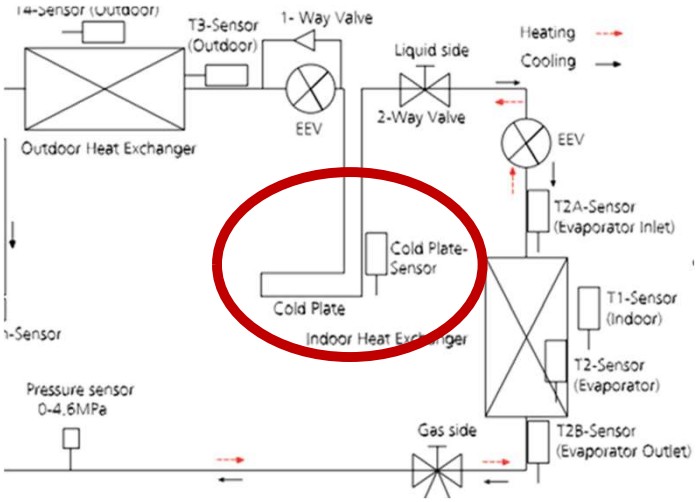
Disassembly Instructions

Screws can be covered by wiring diagram.



Remove the Electrical Parts 18K HH, 24K Standard Heat (Main PCB)

1. Remove the screws, loosen the hooks, then lift the electronic control box (5 screws and 2 hooks).



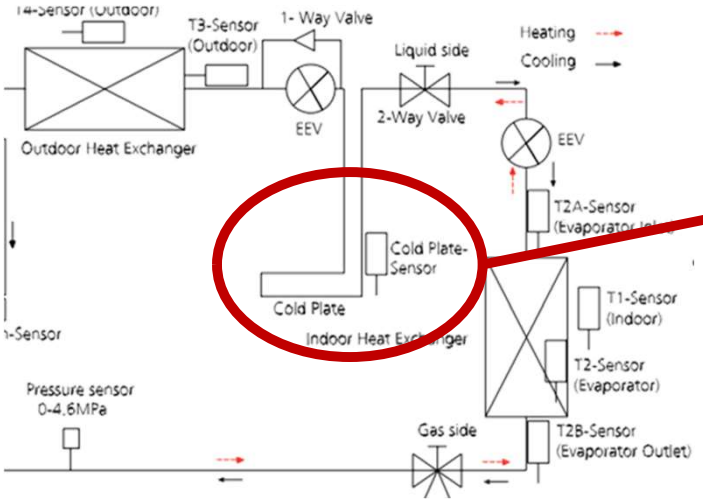
Note: The electric control box cover cannot be removed, so the voltage between P and N cannot be measured.

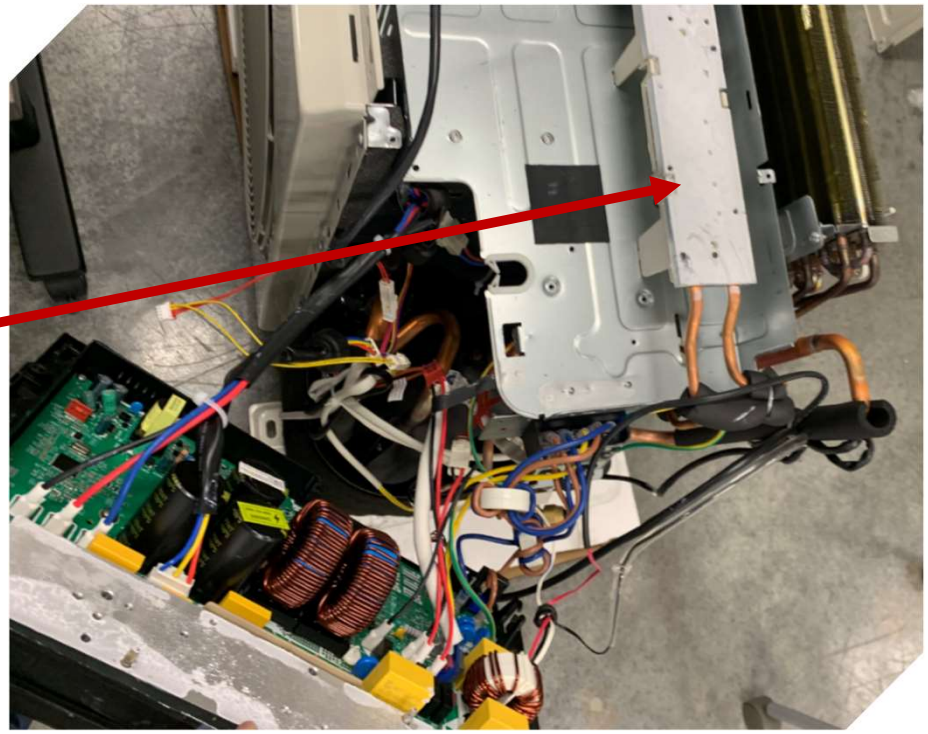
38MURA HEAT PUMP

Disassembly Instructions

Remove the Electrical Parts 18K HH, 24K Standard Heat (Main PCB)

2. Raise board, disconnect wiring and remove PCB



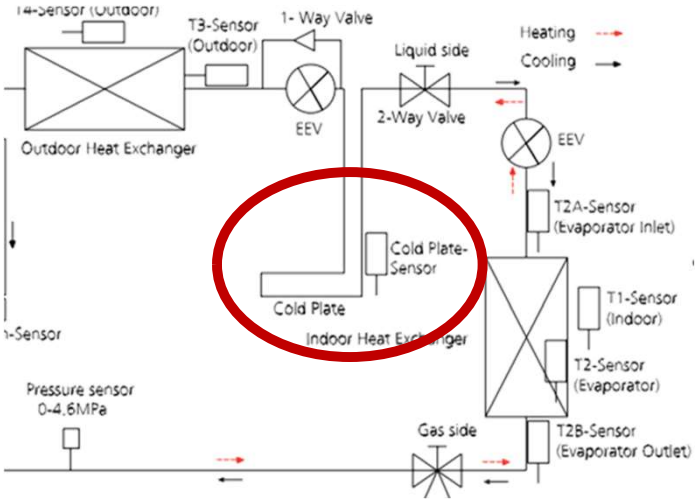


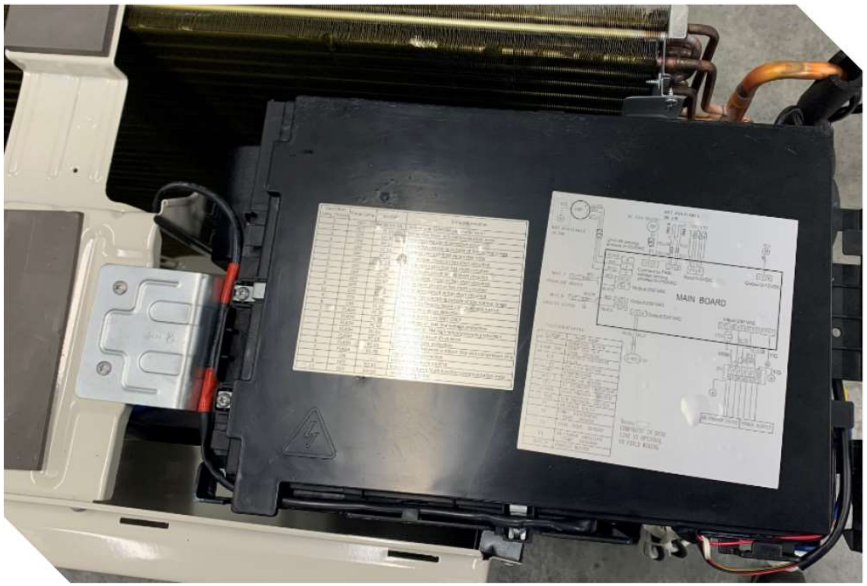
38MURA HEAT PUMP

Disassembly Instructions

Remove the Electrical Parts 24K HH – 36K Standard Heat (Main PCB)

1. **Loosen the hooks (4) then open the plastic control box cover.**



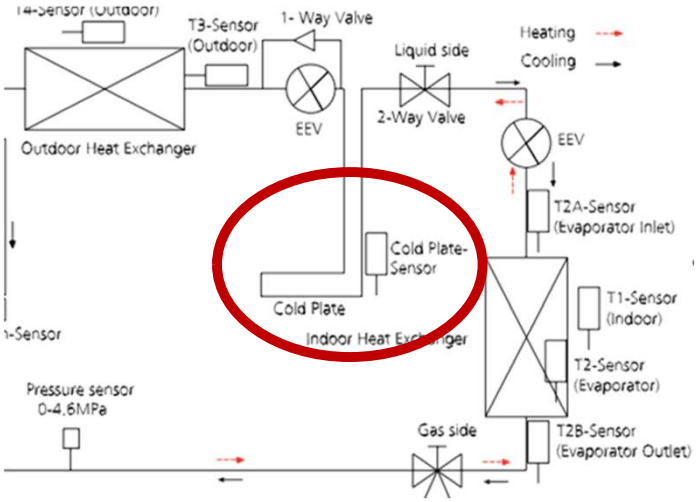


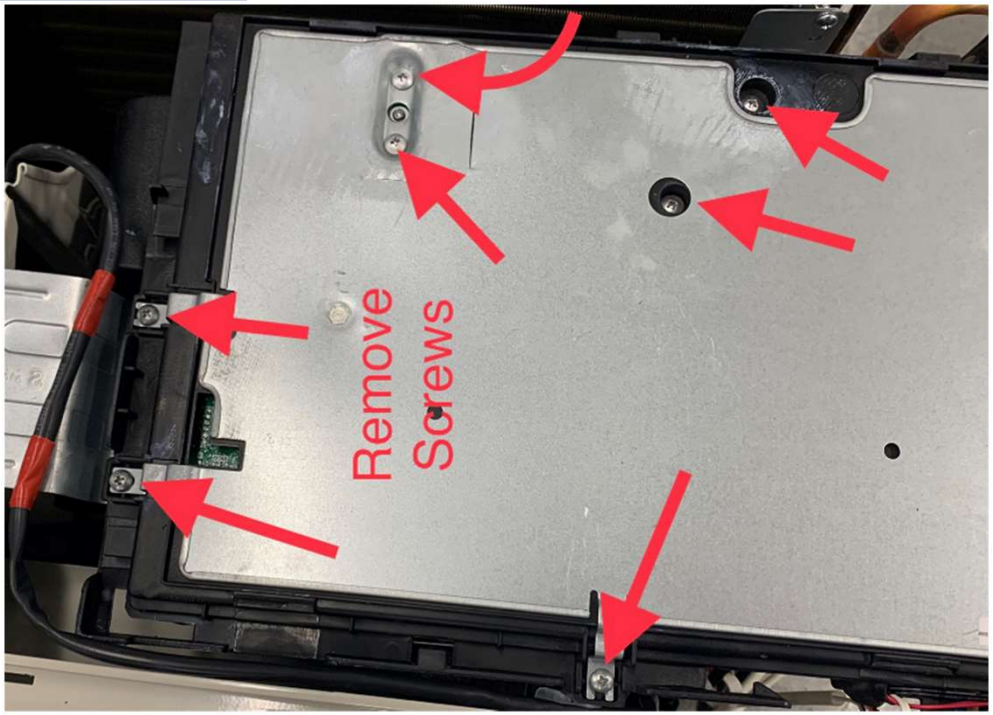
38MURA HEAT PUMP

Disassembly Instructions

Remove the Electrical Parts 24K HH – 36K Standard Heat (Main PCB)

2. **Remove screws on the electronic control board to remove the control box subassembly.**





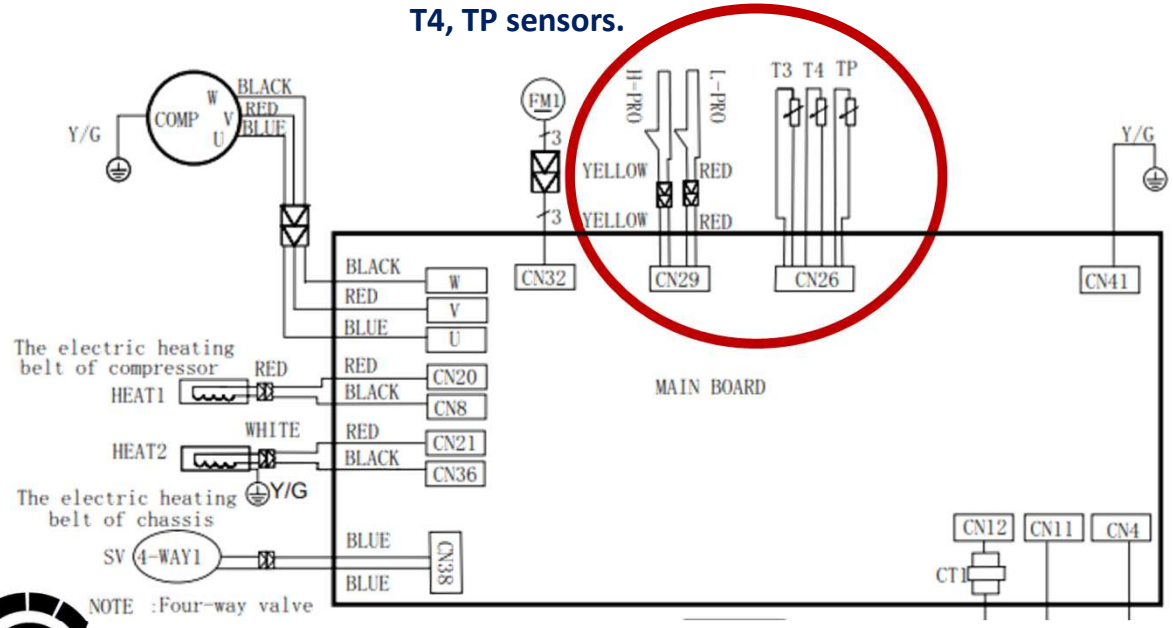
Note: The electric control box cannot be opened, so the voltage between P and N cannot be measured.

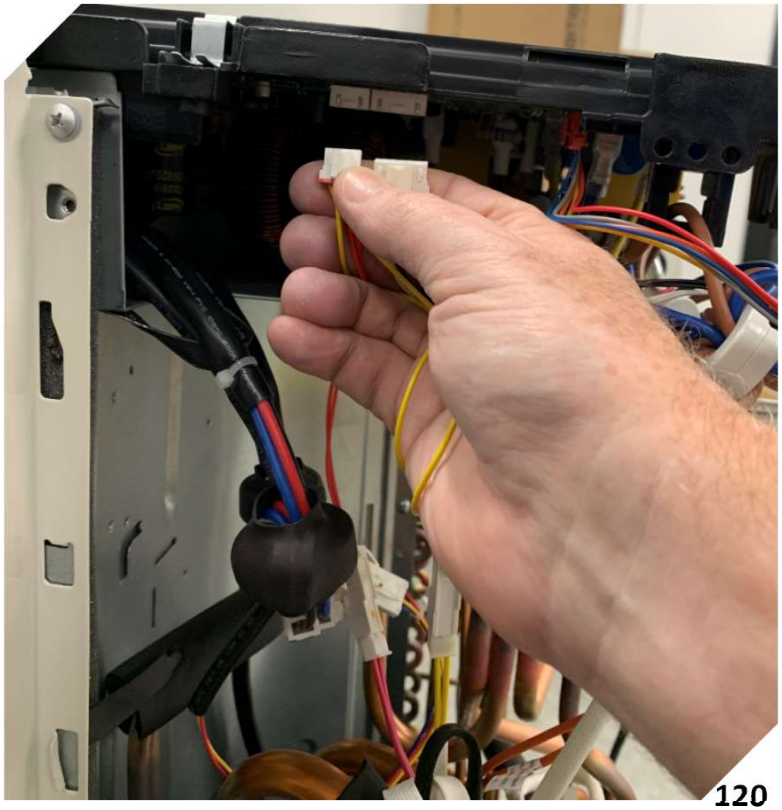
38MURA HEAT PUMP

Disassembly Instructions

Remove the Electrical Parts 24K HH – 36K Standard Heat (Main PCB)

3. **Disconnect pressure switches and T3, T4, TP sensors.**



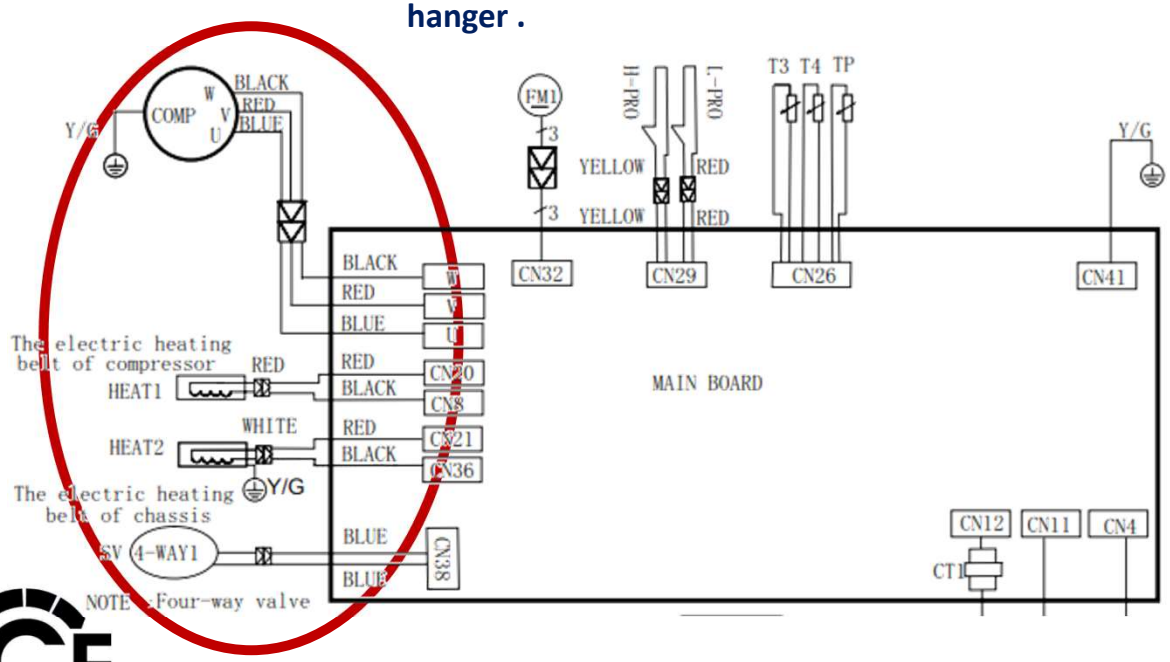


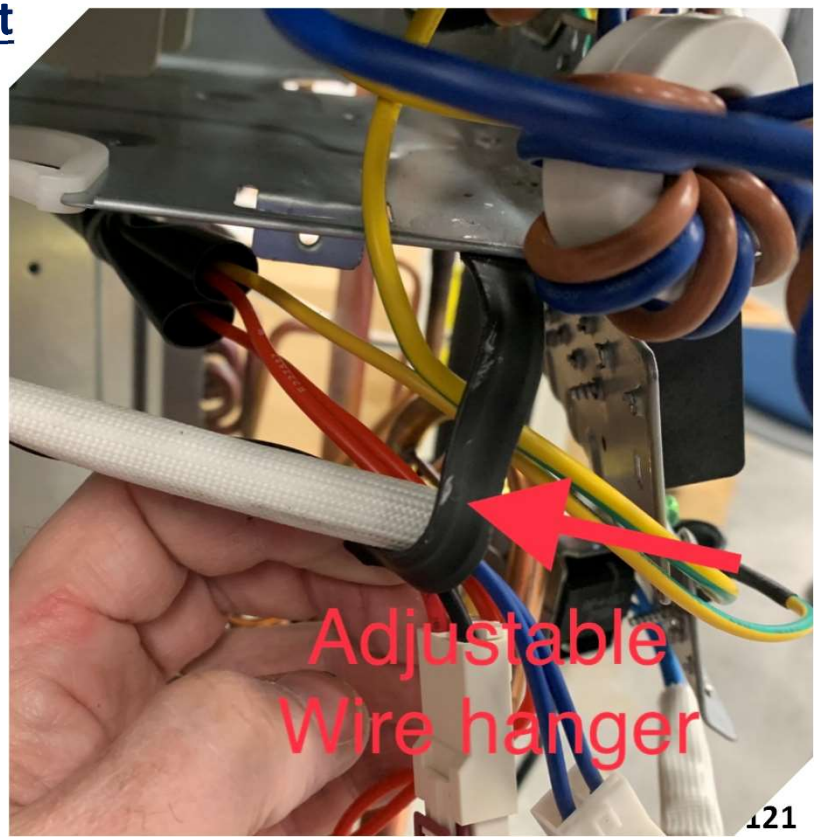
38MURA HEAT PUMP

Disassembly Instructions

Remove the Electrical Parts 24K HH – 36K Standard Heat (Main PCB)

4. **Remove wires from the adjustable hanger .**



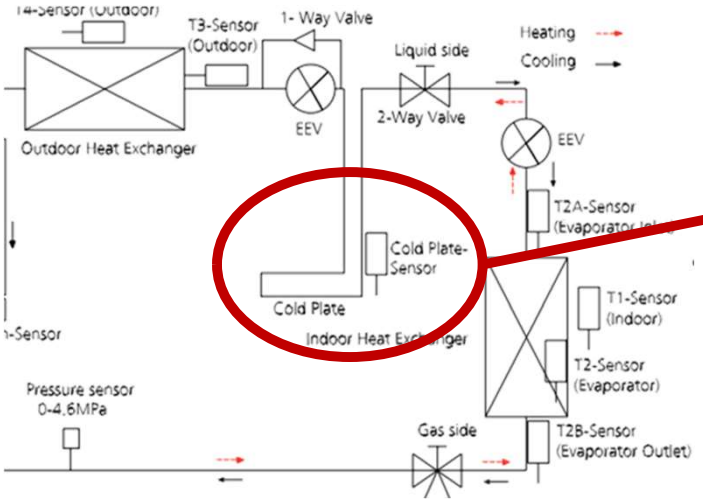


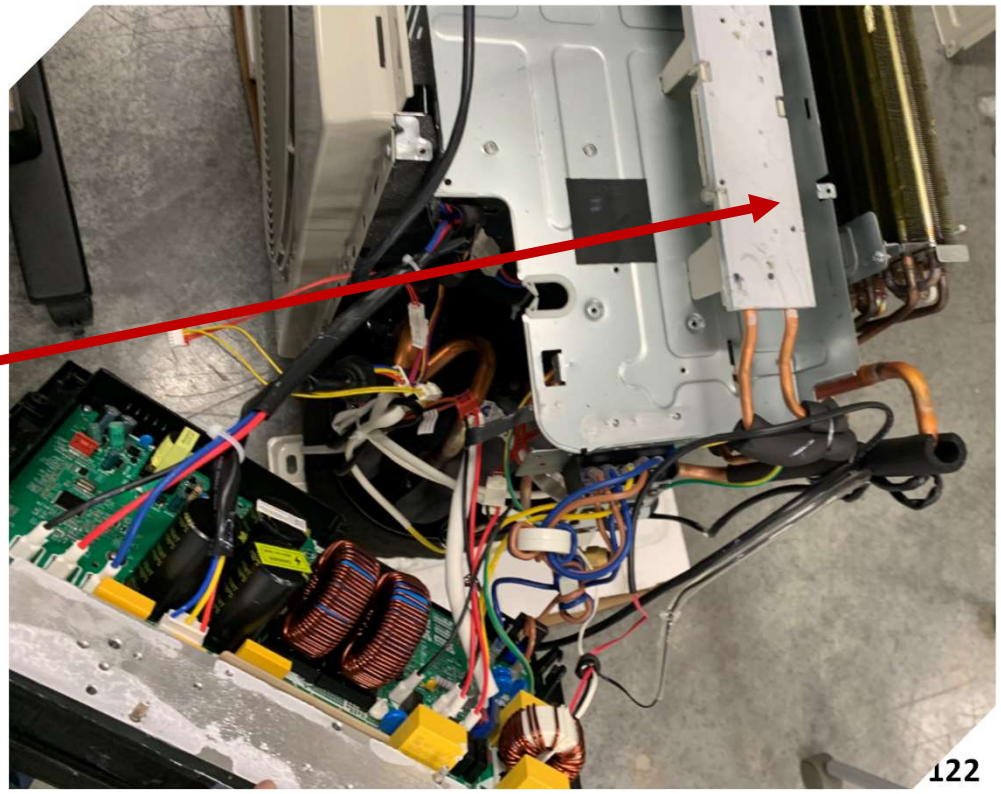
38MURA HEAT PUMP

Disassembly Instructions

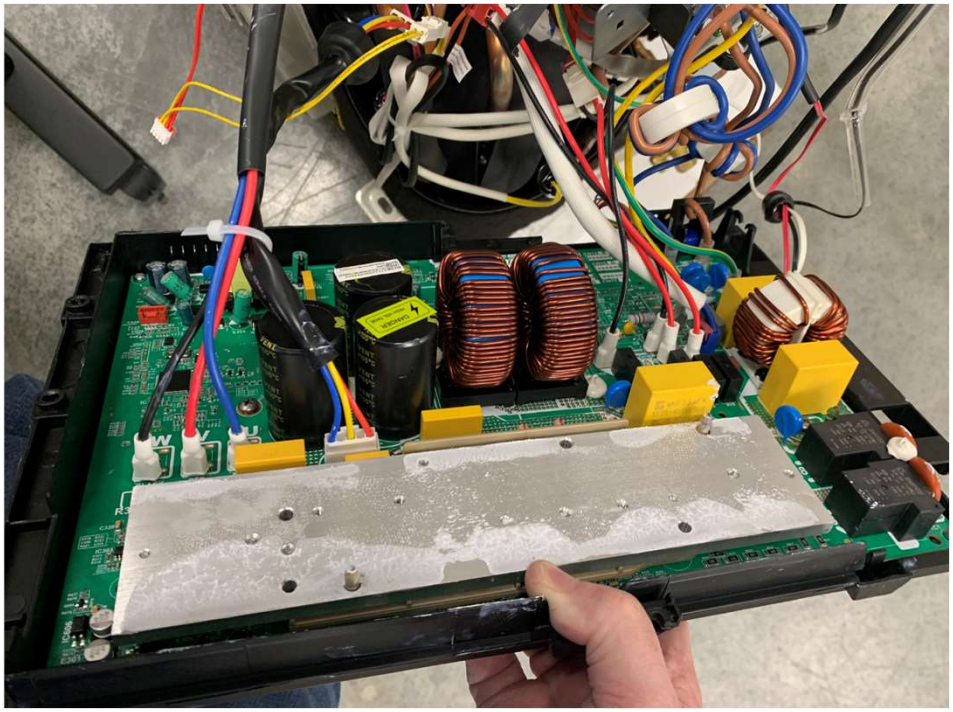
Remove the Electrical Parts 24K HH – 36K Standard Heat (Main PCB)

5. **Raise board, disconnect wiring, and remove old PCB.**





38MURA HEAT PUMP



Factory Authorized Parts™ - 38AQ680001 Grease Conductive

Item: 38AQ680001 MFR: 38AQ680001

Availability

Sign in for real-time inventory at branches near you.

Comes in kit with replacement board.

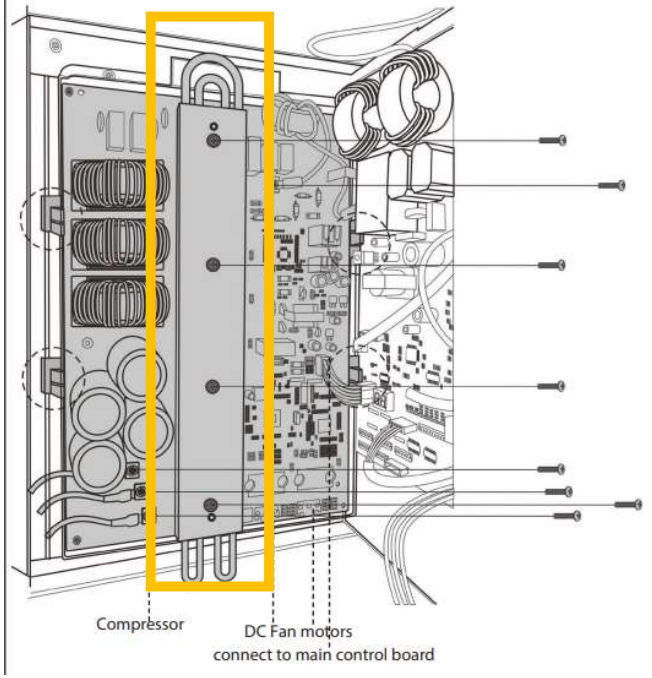
38MURA HEAT PUMP

Disassembly Instructions

Remove the Electrical Parts 36K HH – 60K HH
(Main PCB)

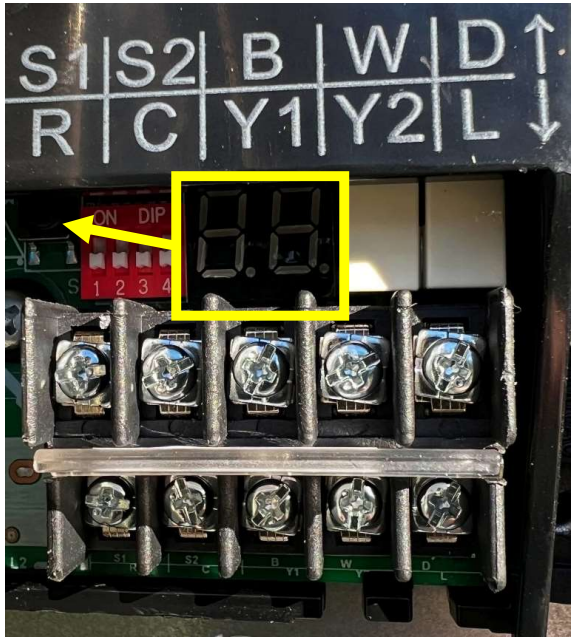
36K *AB3, 48K, 60K

PCB Board 8

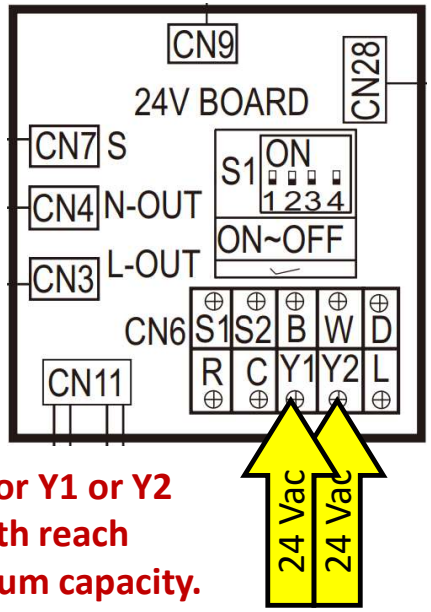
Procedure	Illustration
1) Remove 2 screws to disconnect the power supply wires. 2) Remove 3 screws to disconnect the wires connected to the compressor. 3) Remove 4 screws to remove the radiator. 4) Disconnect the wires between the IPM module board and the main control board. 5) Remove the 4 screws and loosen the 4 hooks then remove the IPM module board.	

38MURA HEAT PUMP

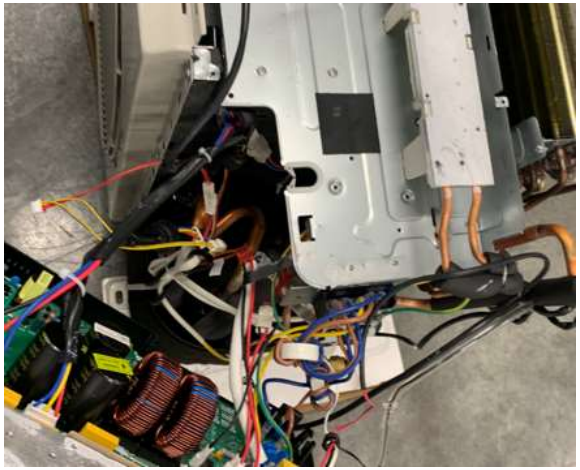
Key Points for the 38MURA



Point Check Diagnostics



A call for Y1 or Y2 will both reach maximum capacity.



Follow “Disassembly Instructions” for PCB removal.

Training will resume in:

05:00

Carrier Enterprise

Five minute break

Crossover Applications

Matchups

38MURA

Fan Coils	Furnaces
FV4CN(B,F)	58S(B,C) / 81(0,1)SA
FZ4ANP	58SP(0,1) / 82(0,1)SA
FJ4DN	58SU0 / 830SA
FB4CN	58TP(0,1) / 82(0,1)TA
FX4DN	59SC2 / 912SD
PF4MN	59SC5 / 915SB
FMA4(P,X)	59SP6/ 926SA
FM(C,U)	59TP6 / 926TB
	59SU5 / 935SA
	OVLAAB
	OVMAAB

MyCarrierRatings.com or MyBryantRatings.com to access compatible combinations and performance information.

Crossover Applications

bryant®
Heating & Cooling Systems

AHRI Ratings

○ AC ◉ HP ○ Ductless AC ○ Ductless HP ○ Furnace
○ Res_Pkg AC ○ Res_Pkg HP ○ Geo Water to Air ○ Geo Water to Water

Click on SEER to see units with 2022 SEER ratings.

◉ SEER2 ○ SEER

AHRI Reference #	
Tonnage	All
Phase	1
Outdoor Model Family	38MURA
Outdoor Model	38MURAQ36AB3*
Indoor Coil Family	CNPV*

"All" may return a large number of results.

Indoor Coil Model	CNPV*3617AL*
Furnace Family	All
Furnace Model	All
Minimum SEER2	0
Minimum EER2	0
Minimum HSPF2	0

Display Ratings | Exit
Export Data to Excel
Export all "Active" and "Production Stopped" Bryant HP to Excel

AHRI Directory of Certified Product Performance

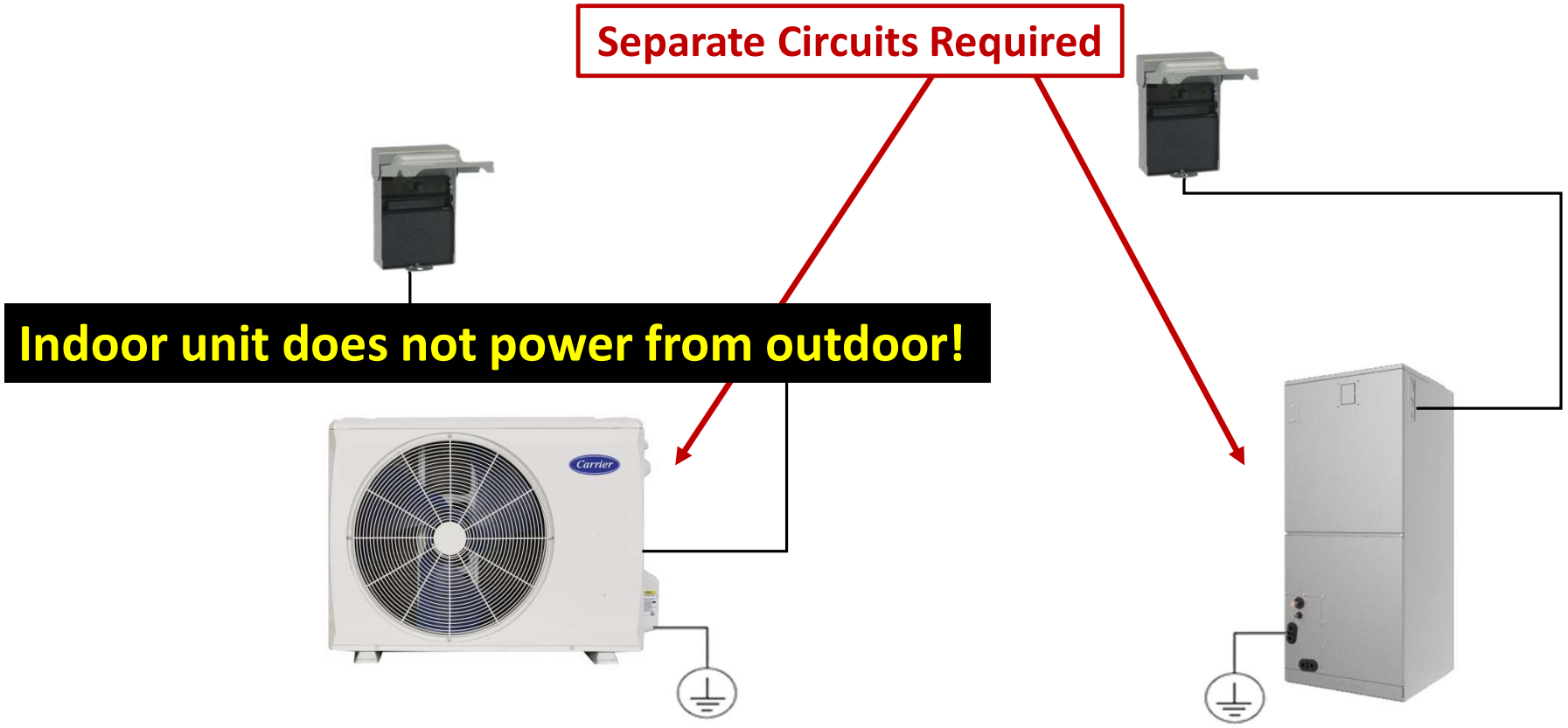
To obtain an AHRI Certificate
1. Copy Reference Number
2. Press button below to go to the AHRI website
3. Paste Reference Number in "Enter AHRI Certified Reference Number" box and press *"Search" button*
4. Click "Select" on rating line.
5. Click on the Refererence Number to print Certificate .

AHRI Website Search

Data was current with AHRI as of Friday, April 14, 2023. Values are subject to change without notice.

		AHRI Ref #	Status	Outdoor Model	Indoor Model	Furnace	M1 CAP	M1 Cap 47°	SEER2	EER2	HSPF2	M1 Cap 17°	Cap 5°	COP 5°	M1 17°/47°Cap Ratio	M1 5°/47°Cap Ratio°	CEE 1 North	CEE 1 South	Energy Star 6.1
Print	Copy	210450254	Active	38MURAQ36AB3*	CNPV*3617AL*	926TB36060V14***	33600	41000	14.3	9	7.5	31000	0	0	75.6%	0.0%	No	No	No
Print	Copy	210450253	Active	38MURAQ36AB3*	CNPV*3617AL*	926TB48080V17***	33400	40500	15	9	7.5	30800	0	0	76.0%	0.0%	No	No	No

Crossover Applications



Crossover Applications

Gas Furnace MUST use Dual Fuel Thermostat!

ecobee | SmartThermostat Pro
with voice control

One easy install can make all the difference.

5-year limited warranty with professional installation, Alexa built-in, and state-of-the-art SmartSensor included.

*Requires professional installation. Product must be returned to installing contractor. See warranty certificate for complete details and restrictions.

COMPATIBLE
Works with gas, oil, electric, and dual fuel systems. Supports conventional (2H/2C) and heat pump (4H/2C) systems; humidifier and dehumidifier accessories.

Carrier
Turn to the experts

bryant
Heating & Cooling Systems

Crossover Applications

KSAIC03: Installation Instructions

TXV REPLACEMENT PROCESS FOR PIPING ADAPTER FOR CAP**/CNPV* SERIES EVAPORATOR COILS

1. Gain access to the built-in TXV inside the fan coil cabinet.
2. Double-wrench the TXV mechanical connector and disassemble.
3. Cut the bleed line from the TXV to the suction line and braze closed the equalizer.

NOTE: If the factory txv has a mechanical equalizer fitting, cap off with a field supplied sealed brass cap.

5. Assemble the line set to the piping adapter kit (40MD000003). Obtain through RCD.
   a. Refer to "APPENDIX 1 - PIPING ADAPTER BUSHINGS/ REDUCERS" on page 16 for Bushing/Reducer sizing.
   b. Adapt (where needed) and braze the liquid line to the piping adapter.
6. Place the Teflon gasket on the brass tip of the Piping Adapter and insert into the aluminum distributor head.

Thread the piping adapter brass nut onto the distributor line and tighten - finger tight + 1/2 turn.

DO NOT REMOVE INDOOR METERING DEVICE!

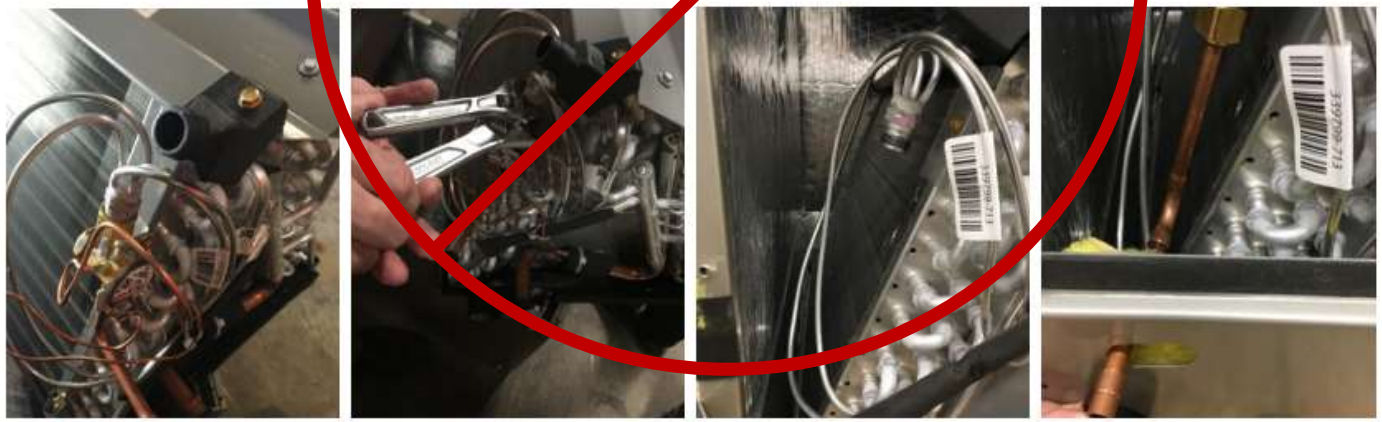
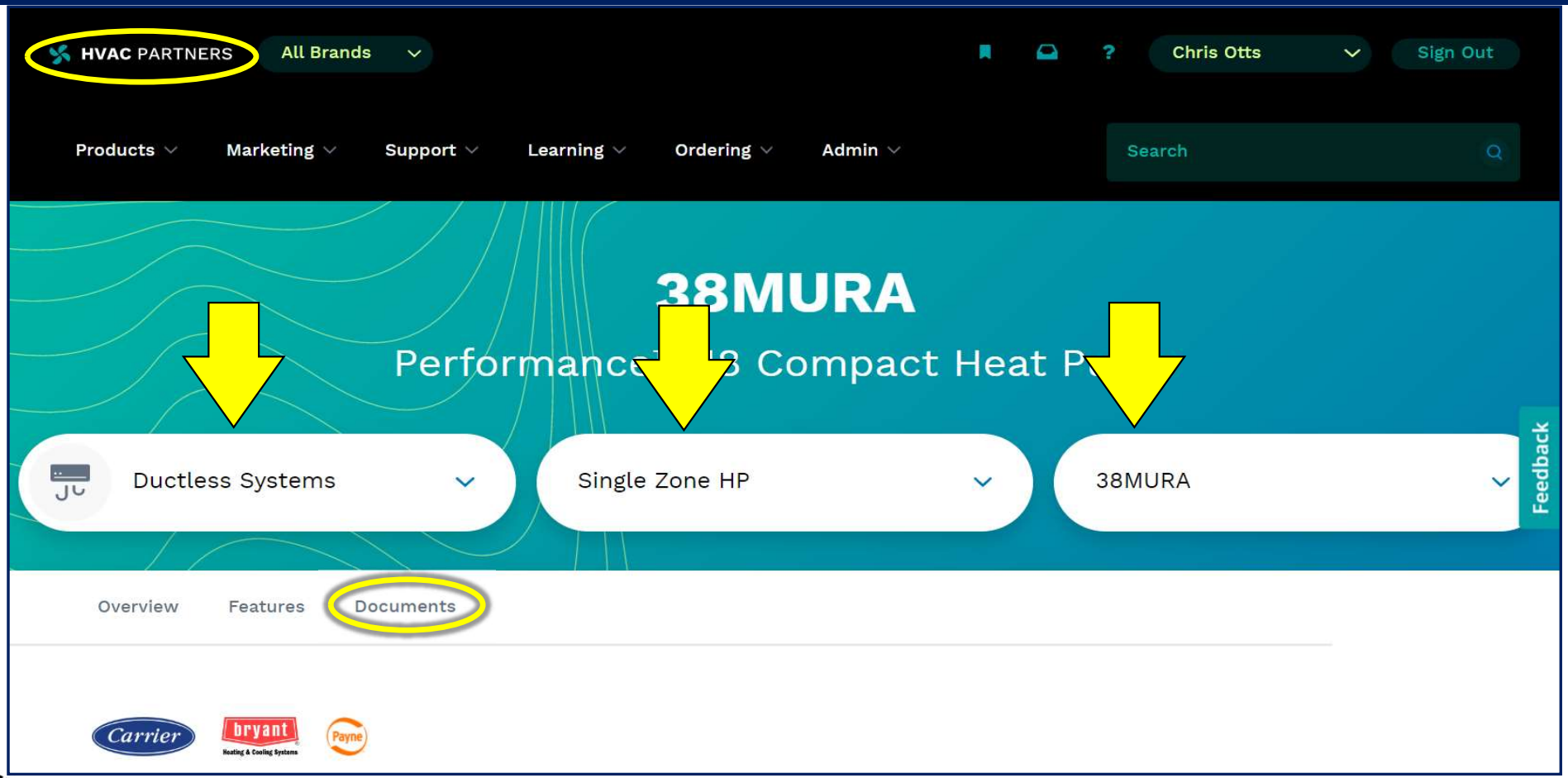
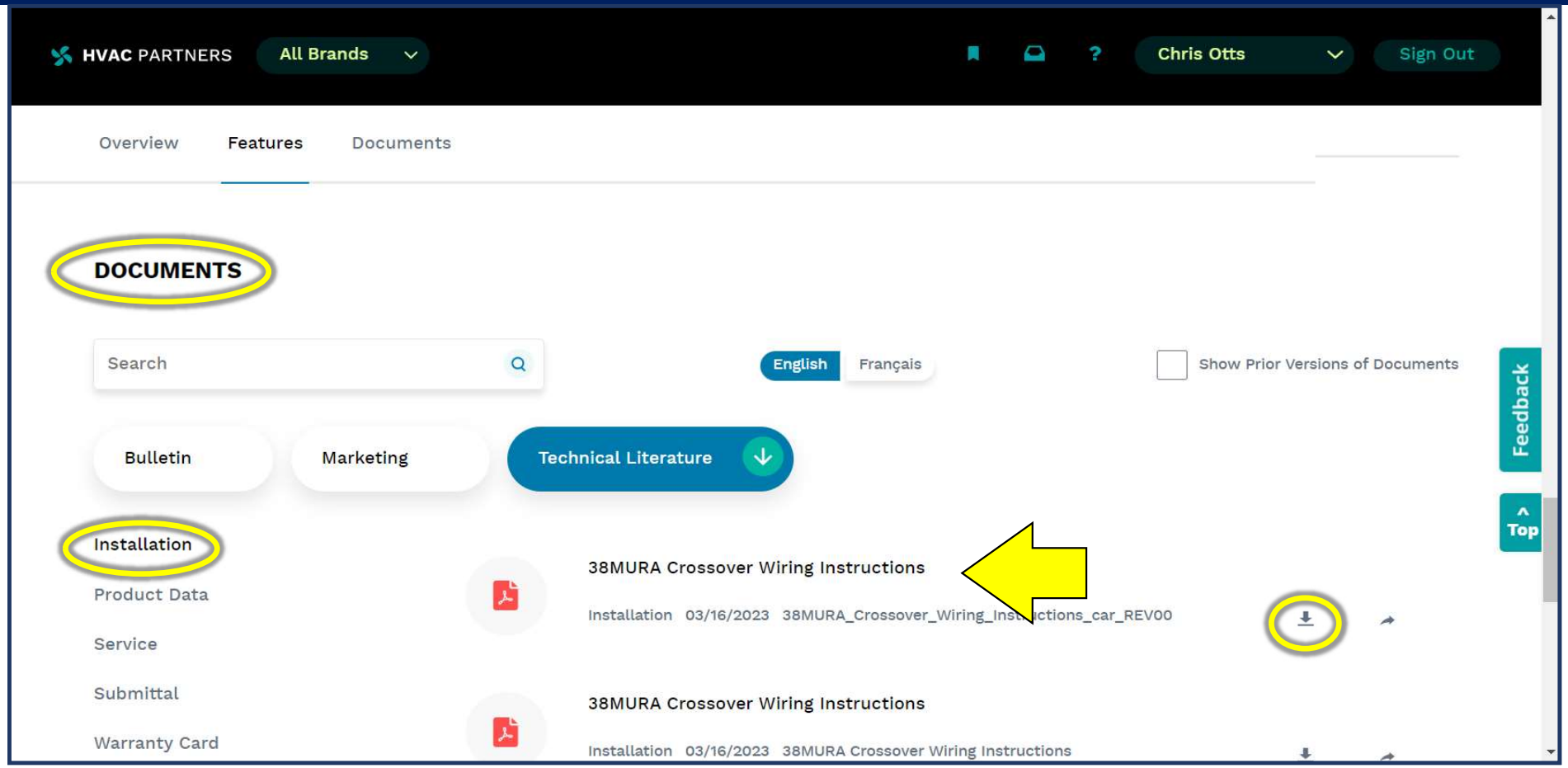


Fig. 14 — Piping Adapter Replacement

Crossover Applications



Crossover Applications



Crossover Applications

38MURA CROSSOVER WIRING INSTRUCTIONS

REV 00

IMPORTANT

- **Please reference 38MURA Installation Instructions for complete instruction. This document provides additional wiring scenarios based on the indoor unit.**
- **Please read the entire instructions manual before starting the installation.**

Crossover Applications

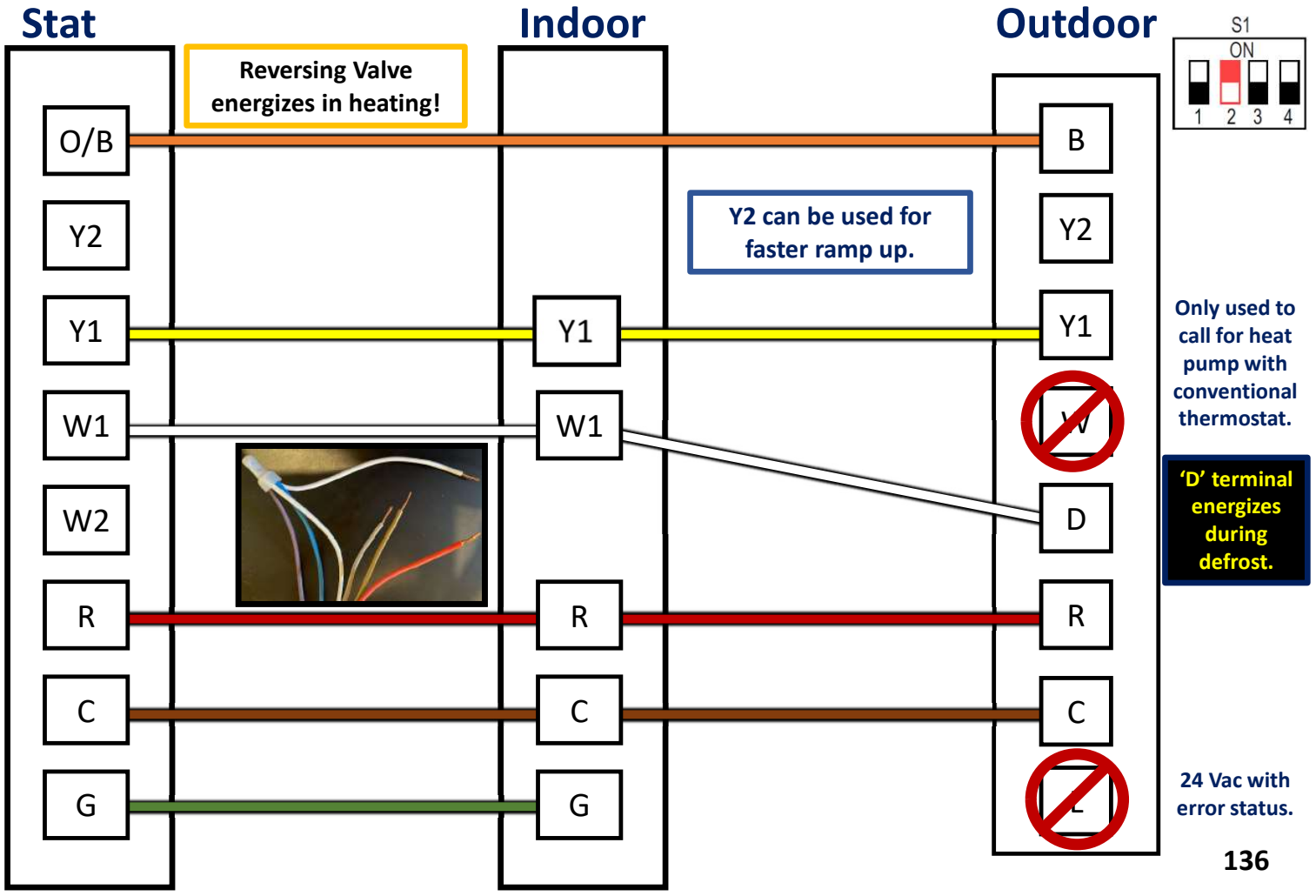
Single-Speed Fan Coil

FJ4 / FB4 / FX4 / PF4

ecobee

2 Stage Heat & 1 Stage Cool

1 Stage Heat Pump
1 Stage Electric Heat



Indoor Fan and Electric Heat will operate during Defrost.

Crossover Applications

2-Speed Fan Coil

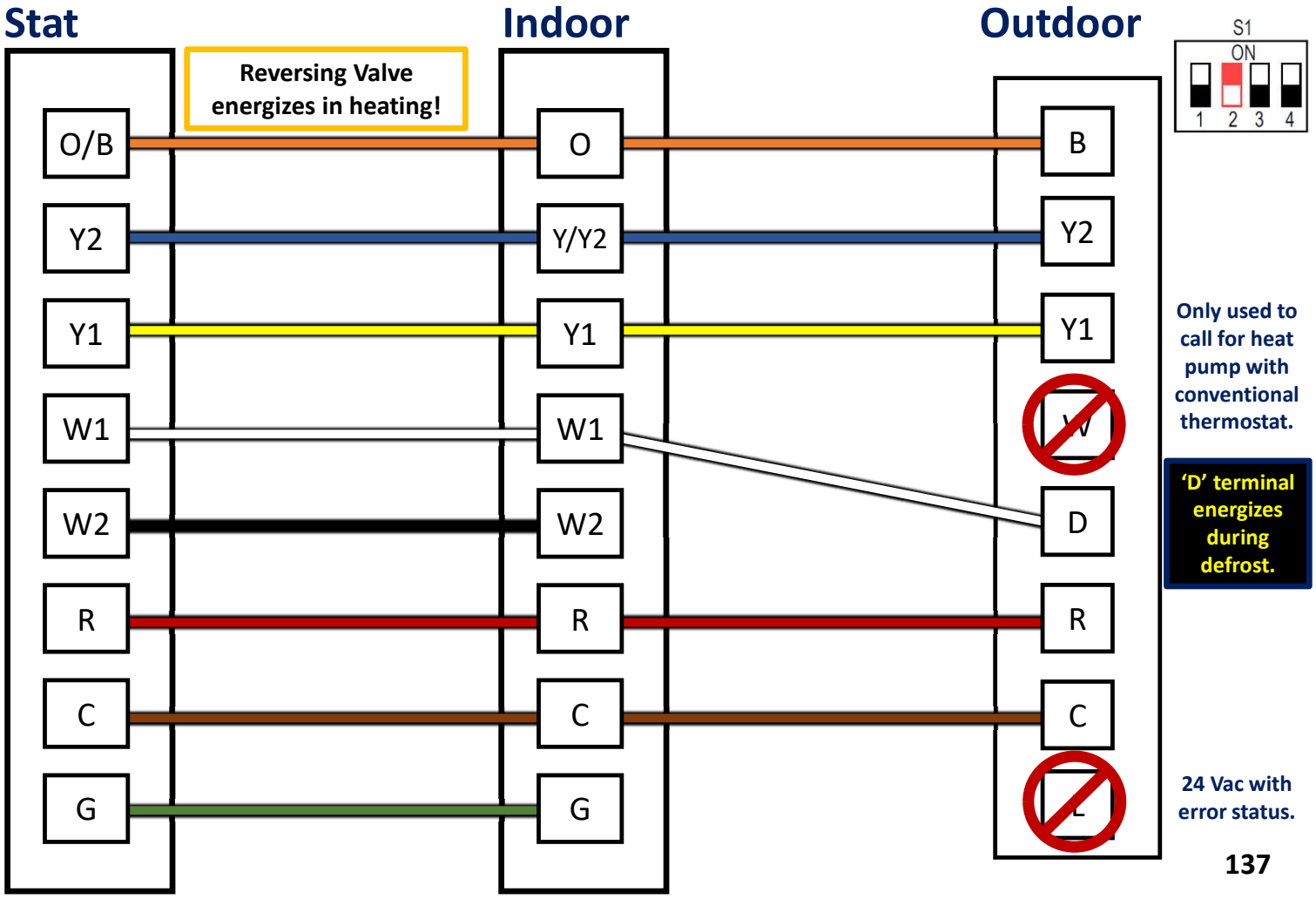
FV4 / FZ4

ecobee

4 Stage Heat & 2 Stage Cool

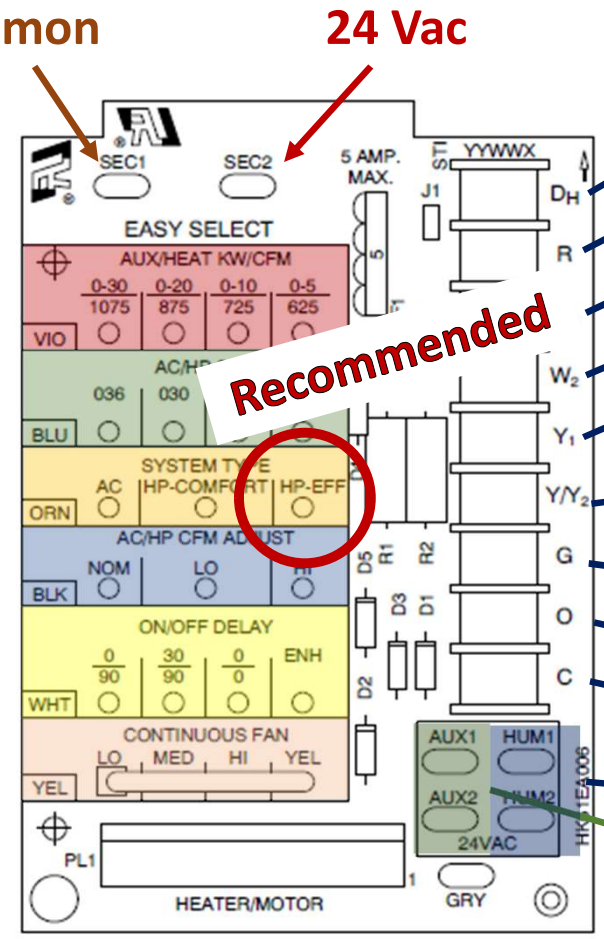
2 Stage Heat Pump
2 Stage Electric Heat

Indoor Fan and Electric Heat will operate during Defrost.



Crossover Applications

FV



DH – Dehumidification (J1)

R - 24 VAC

W1 - 1st stage Electric Heat (Blower runs)

W2 - 2nd stage Electric Heat (J2) (Blower runs)

Y1 - 1st stage Compressor (Blower runs)

***airflow @ continuous fan setting**

Y/Y2 - 2nd stage Compressor (Blower runs)
or single speed compressor

G - Fan * (Blower runs)

O - Reversing Valve in Cooling

C - Common

HUM - Humidifier (24VAC)

AUX - Auxiliary (24VAC) EAC

See Table 5 and 6 for airflow delivery and minimum CFM.

Factory default is maximum, Set per outdoor unit size.

HP-COMFORT changes heat pump airflow to 315 CFM/ton.

LO = -10%
HI = +15%

Active in heat pump heating and cooling modes only.

Continuous fan and low stage blower speed. LO = 50%, MED = 80%, HI = 100%

Crossover Applications

Single-Stage Furnace

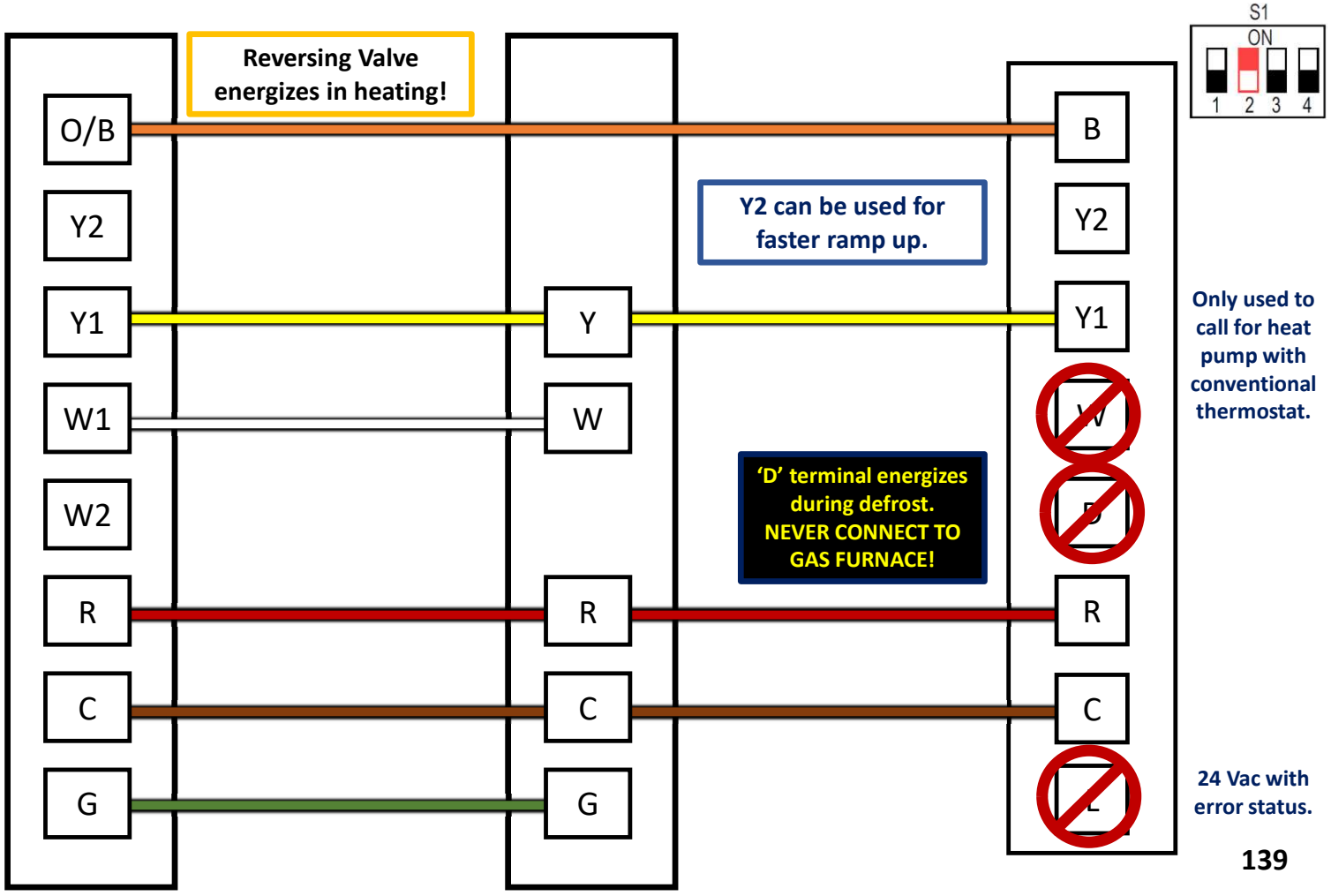
Dual Fuel Configuration only

Disable simultaneous operation of furnace and heat pump. Ecobee setup steps 11 & 12.

ecobee

2 Stage Heat & 1 Stage Cool

1 Stage Heat Pump
1 Stage Gas Furnace



Indoor Fan ON during defrost. Gas Heat will NOT operate during Defrost.

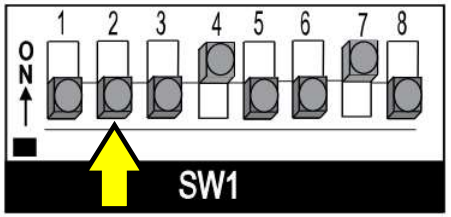
Crossover Applications

Two Stage-Furnace

Dual Fuel Configuration only

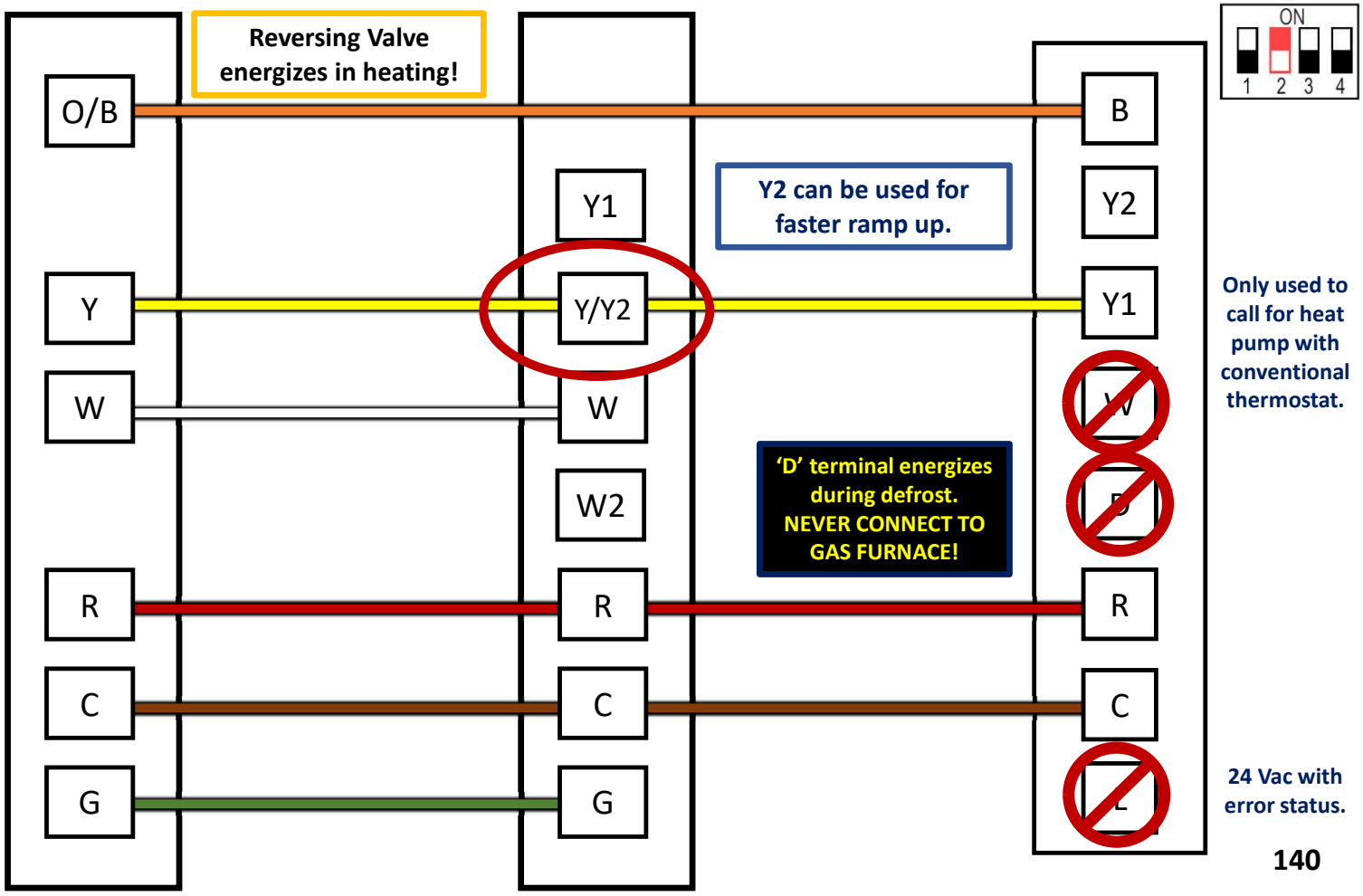
Adaptive mode

Two-Stage Heating with Single-Stage Thermostat



SW1-2 Low Heat Only
(effects the call for W/W1).
When 'ON' W/W1 will allow "Low Heat Only"
When 'Off' (Adaptive Heating Mode)

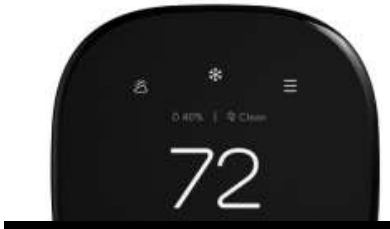
W/W1 will stage between low and high heating as needed.



Crossover Applications

Single-Stage Furnace

Dual Fuel Configuration only



Disable simultaneous operation of furnace and heat pump. Ecobee setup steps 11 & 12.

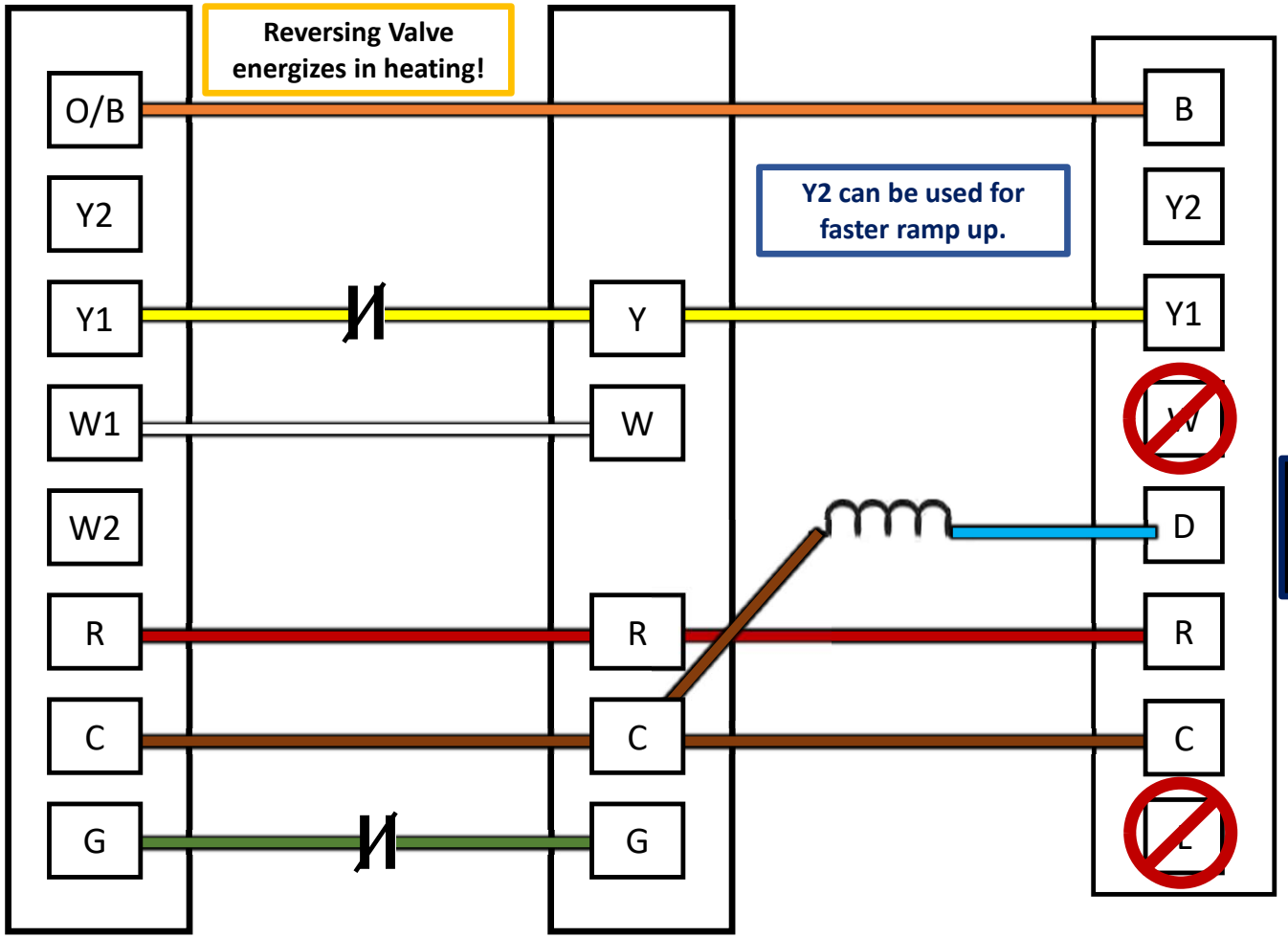
ecobee

2 Stage Heat & 1 Stage Cool

1 Stage Heat Pump
1 Stage Gas Furnace

Relay can turn indoor Fan OFF during defrost.

Gas Heat will NOT operate during Defrost.



Crossover Applications

2-Stage Furnace

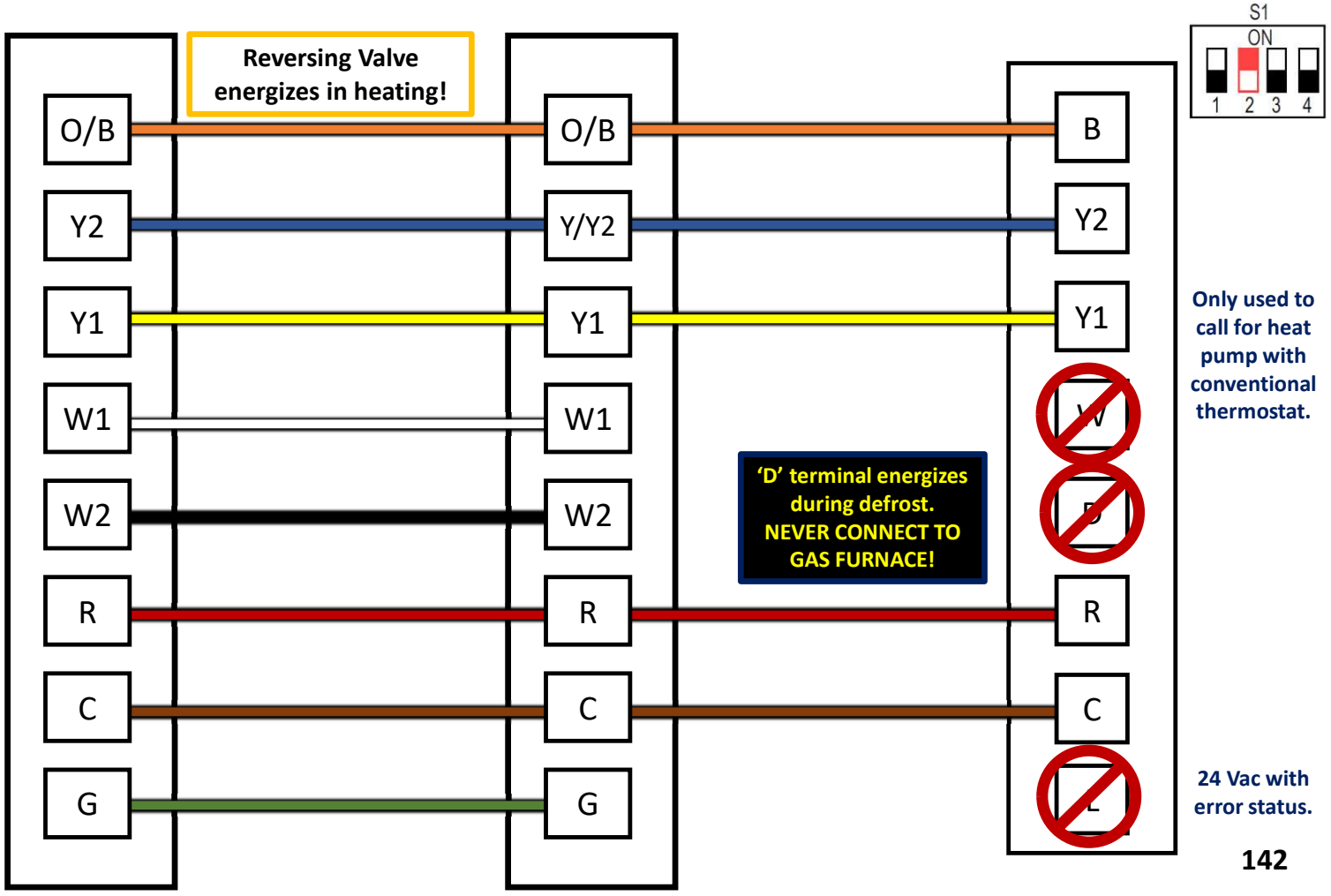
Dual Fuel Configuration only

Disable simultaneous operation of furnace and heat pump. Ecobee setup steps 11 & 12.

ecobee

4 Stage Heat & 2 Stage Cool

2 Stage Heat Pump
2 Stage Gas Furnace



Indoor Fan ON during defrost. Gas Heat will NOT operate during Defrost.

Crossover Applications

2-Stage Furnace

Dual Fuel Configuration only

Disable simultaneous operation of furnace and heat pump. Ecobee setup steps 11 & 12.

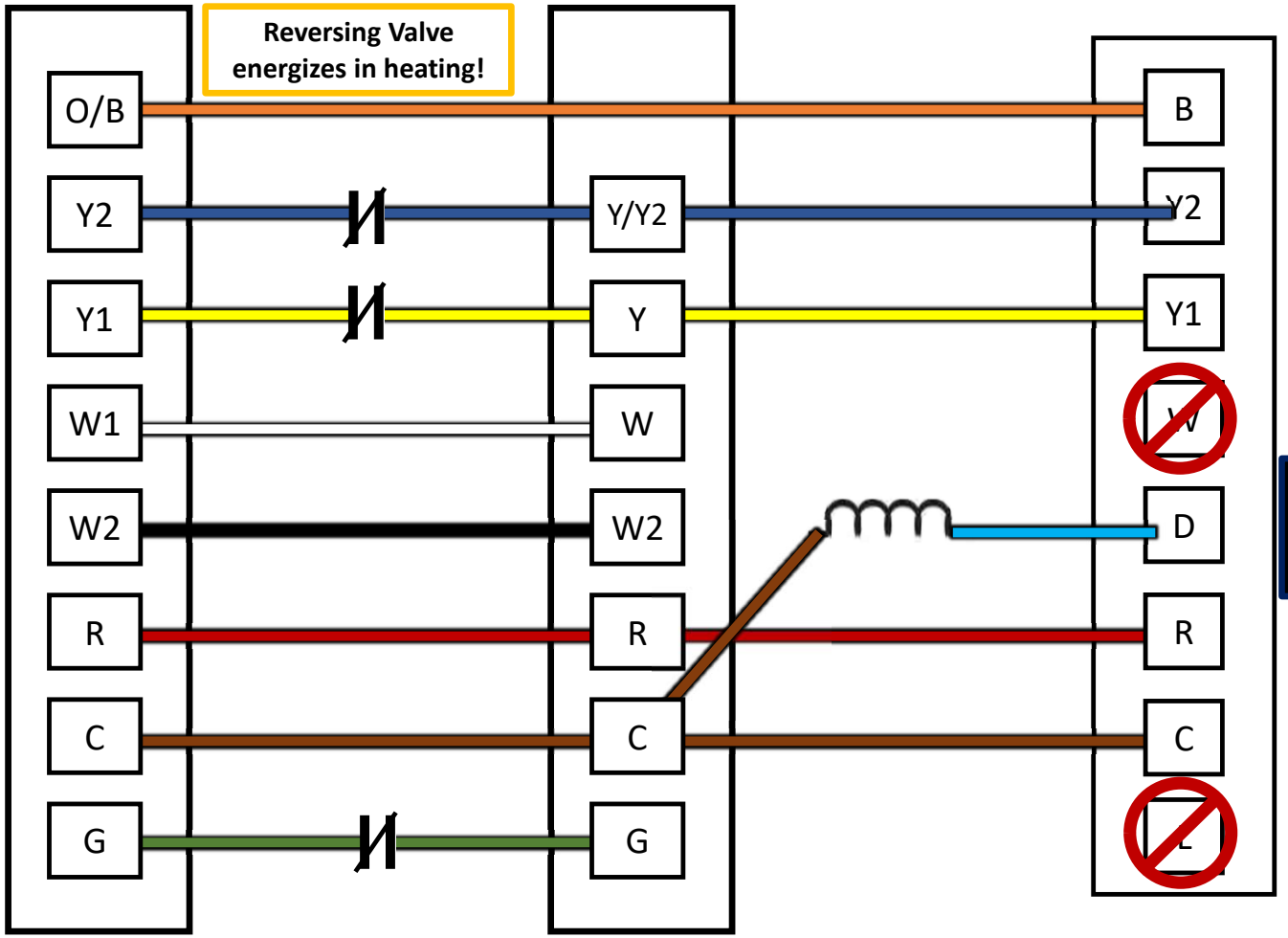
ecobee

4 Stage Heat & 2 Stage Cool

2 Stage Heat Pump
2 Stage Gas Furnace

Relay can turn indoor Fan OFF during defrost.

Gas Heat will NOT operate during Defrost.



Only used to call for heat pump with conventional thermostat.

'D' terminal energizes during defrost.

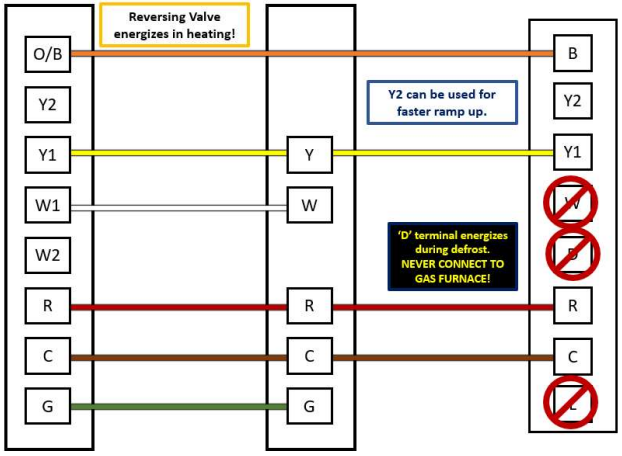
24 Vac with error status.

Crossover Applications

Key Points for Crossover Applications

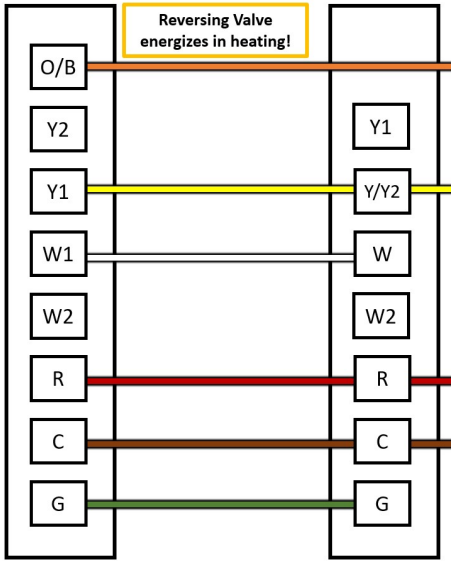
Gas Furnace MUST use a dual fuel thermostat and never allow simultaneous operation!

NEVER wire 'D' Terminal from the 38MURA to Gas Furnace!



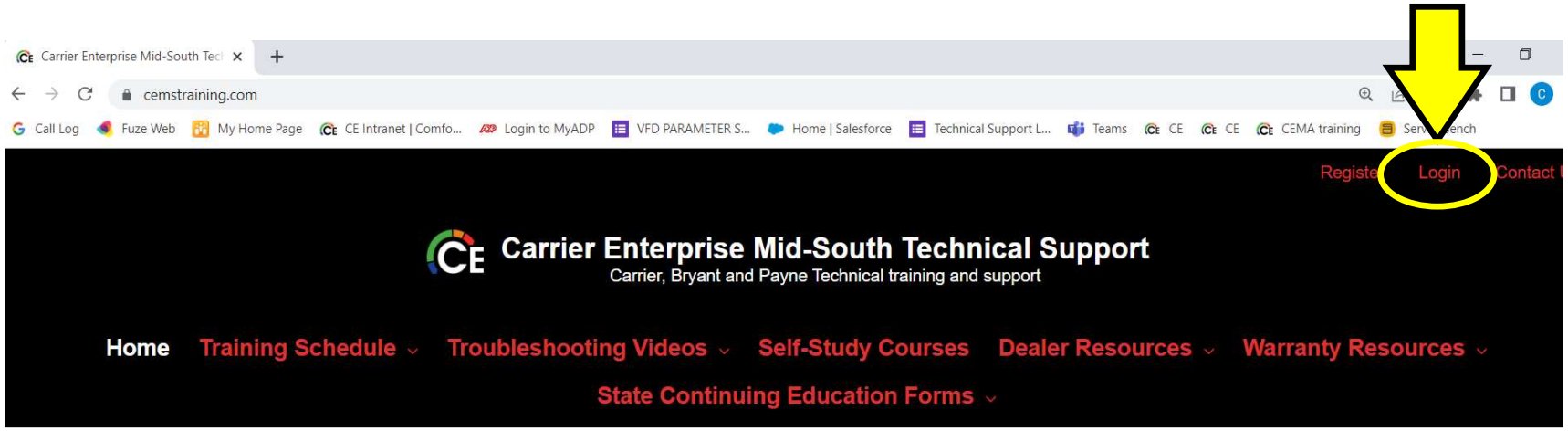
With single-stage tstat should call for high-stage blower!

Adaptive mode




The End

QUIZ TIME: Go to cemstraining.com



WELCOME TO THE CARRIER ENTERPRISE MIDSOUTH TECHNICAL SUPPORT SITE

IMPORTANT INFORMATION ABOUT OUR NEW TRAINING POLICY

All attendees will be required to login to their cemstraining.com account during class to take a quiz. Passing the quiz is the only way to receive class credit.

Only those who have received a confirmation email will be allowed to attend. **No walk-ins, student change, or last-minute admittance.**

Meet the MidSouth Team

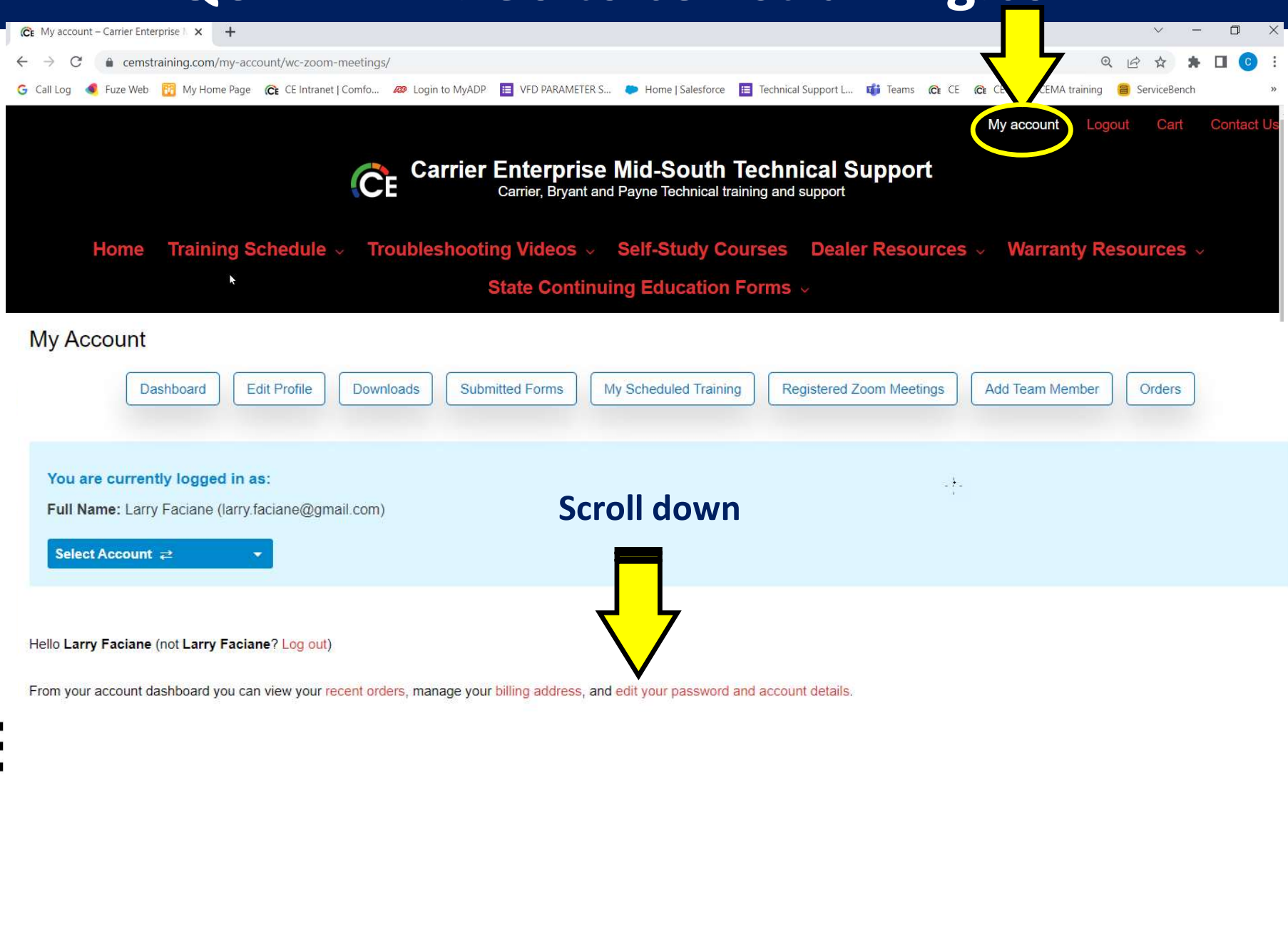
Need a Carrier Manual

Need a Bryant Manual?

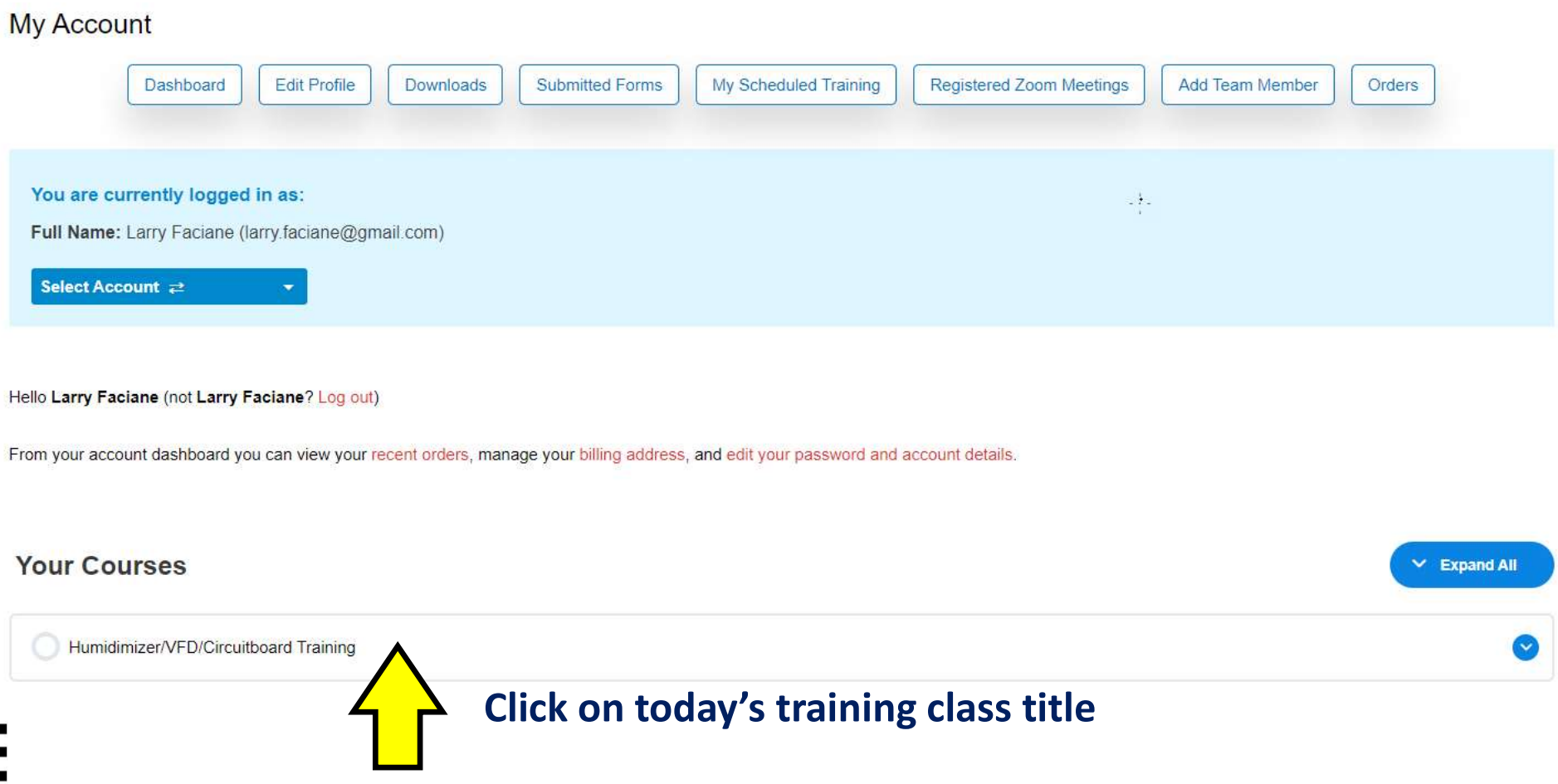
The Carrier Enterprise MidSouth Technical site, built by HVAC tech's for HVAC tech's.

Our goal is to help todays HVAC Technician gain a better understanding

QUIZ TIME: Go to cemstraining.com

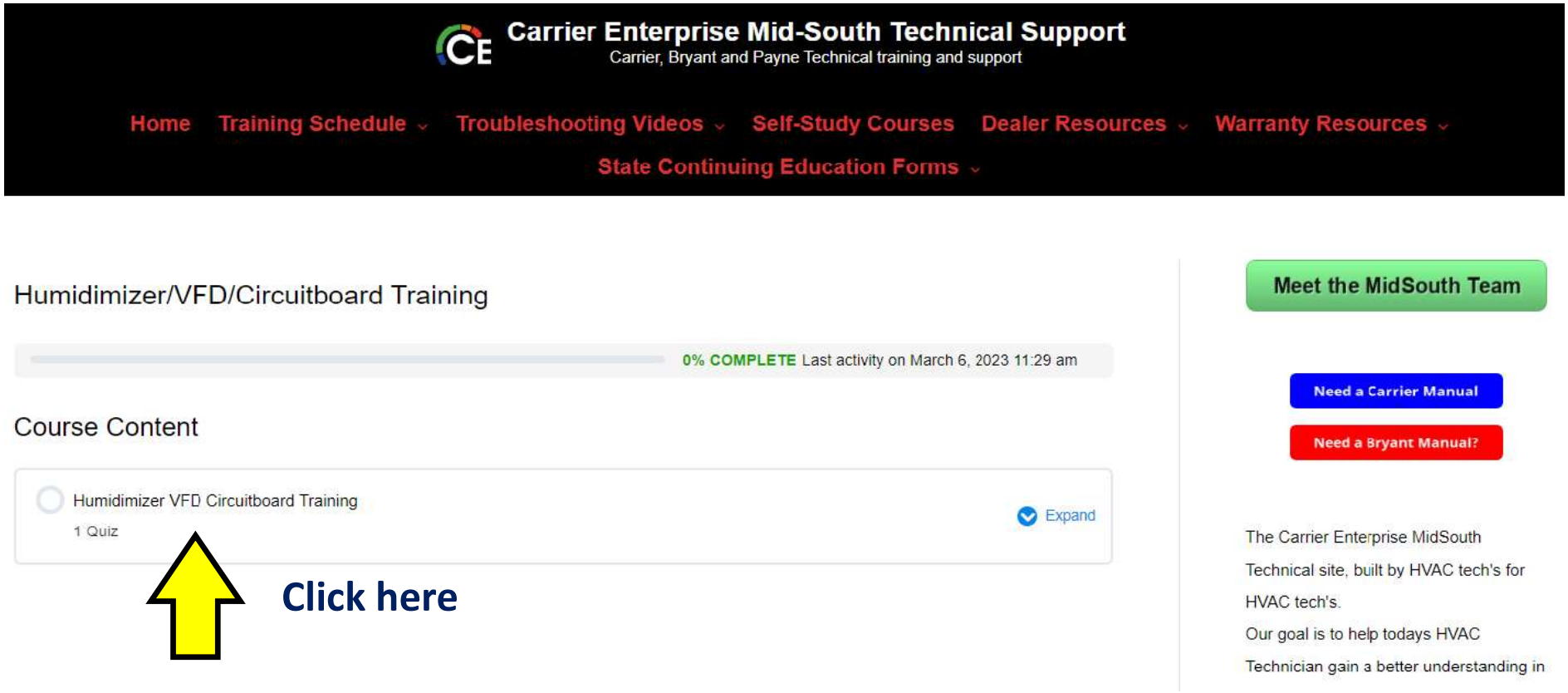


QUIZ TIME: Go to cemstraining.com

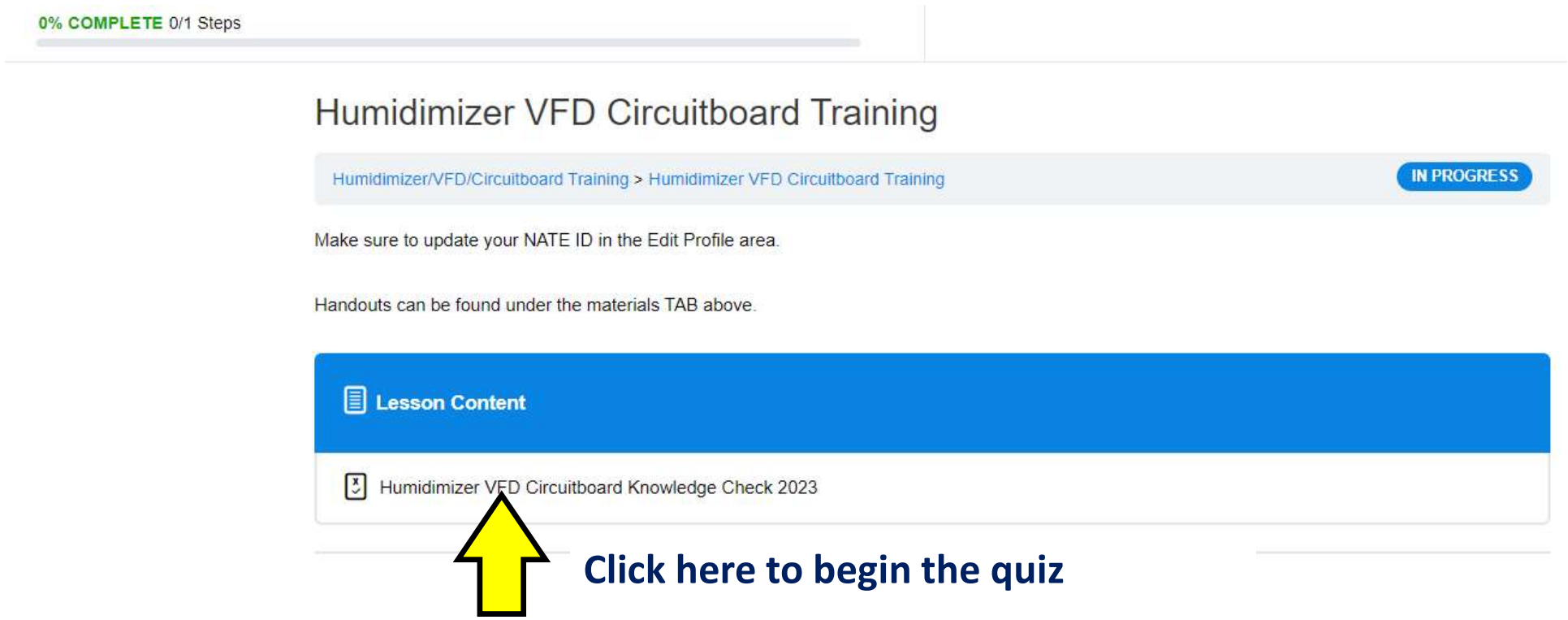


Click on today's training class title

QUIZ TIME: Go to cemstraining.com



QUIZ TIME: Go to cemstraining.com



Ask for clarification as needed!

Thanks for attending!

After you complete the quiz, you are free to go. Three strikes and your out!

Training will end in:

05:00

Carrier Enterprise