



#MDMFullSteamAhead

CROSSOVER SYSTEMS

SUBTITLE – ALL CAPS

Michael Hopkins Residential Sales Manager & Keith Ledford Carrier Corp. RSM

February 29th, 2024





Disclaimer: The technical statements, information and recommendations contained herein are believed to be accurate as of the date hereof, but Mingledorff's does not make representations or warranties, express or implied, as to its accuracy, its completeness, or the results to be obtained. The information is being provided for informational purposes only and is intended for use by persons having adequate skill and expertise regarding the proper selection, use and application of the products and recommendations and at their own risk and discretion.



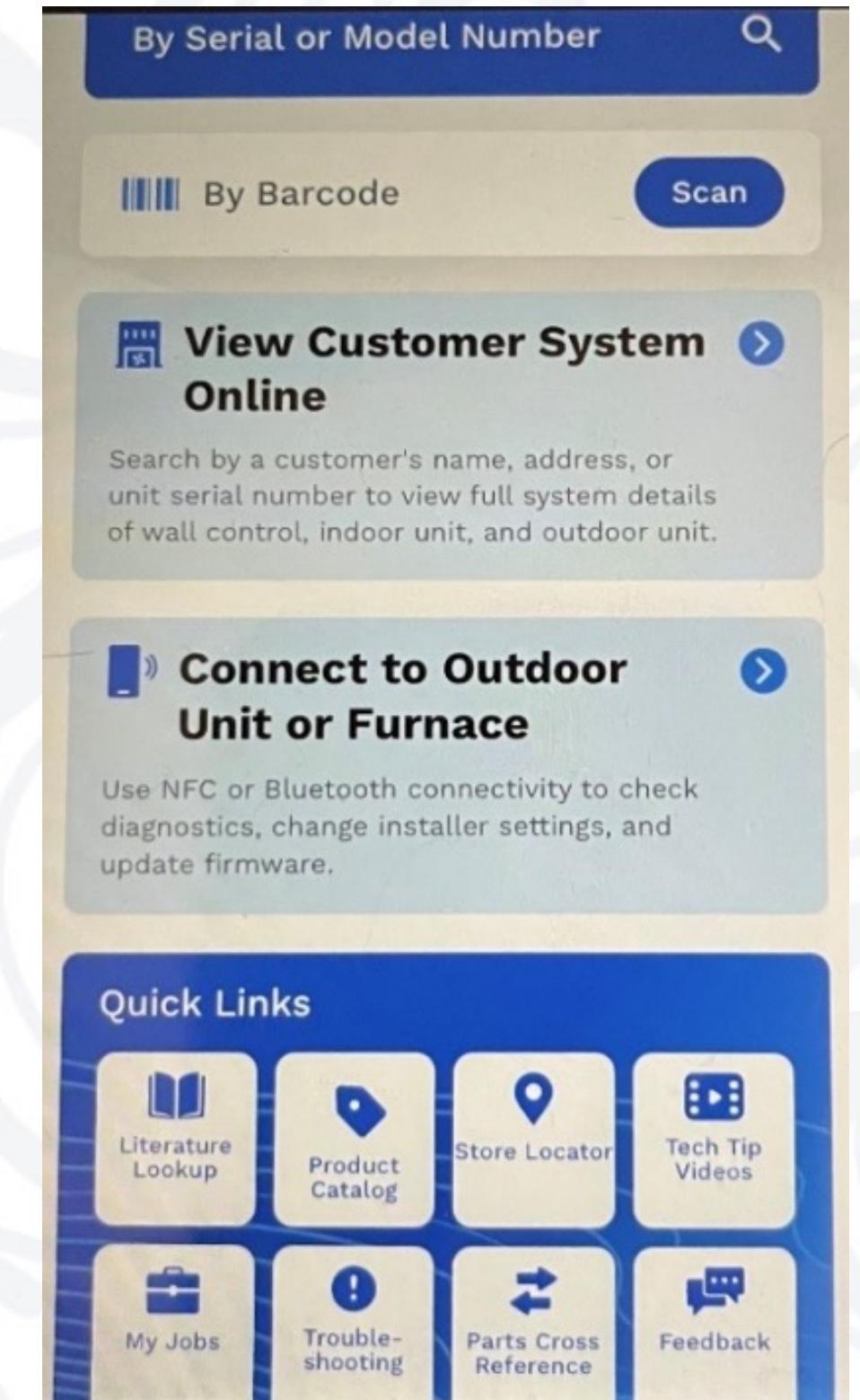
APP. STORE:

Type "Carrier Service Tech"
into the search bar & install



APP. STORE:

Type "Bryant Service Tech"
into the search bar & install



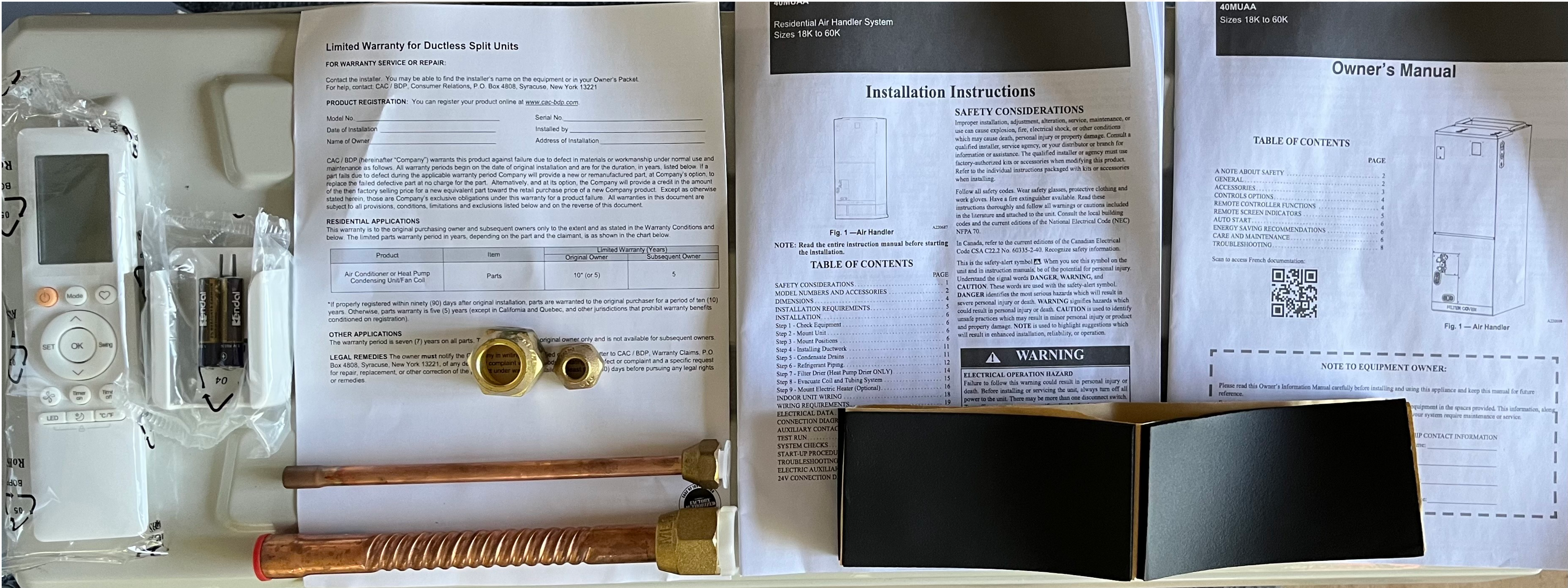
- ***40MUUA / 38MURA***
- ***Packaging Contents***
- ***Control Wiring / Terminal Designations***
- ***Advantages over Standard Product***
- ***Future of the crossover unit***

Blower Wheel Shipping Stop / Packaging Contents



The OEM manual and all other accessories are located inside of this box. Remove all items prior to discarding.

Packaging Contents:

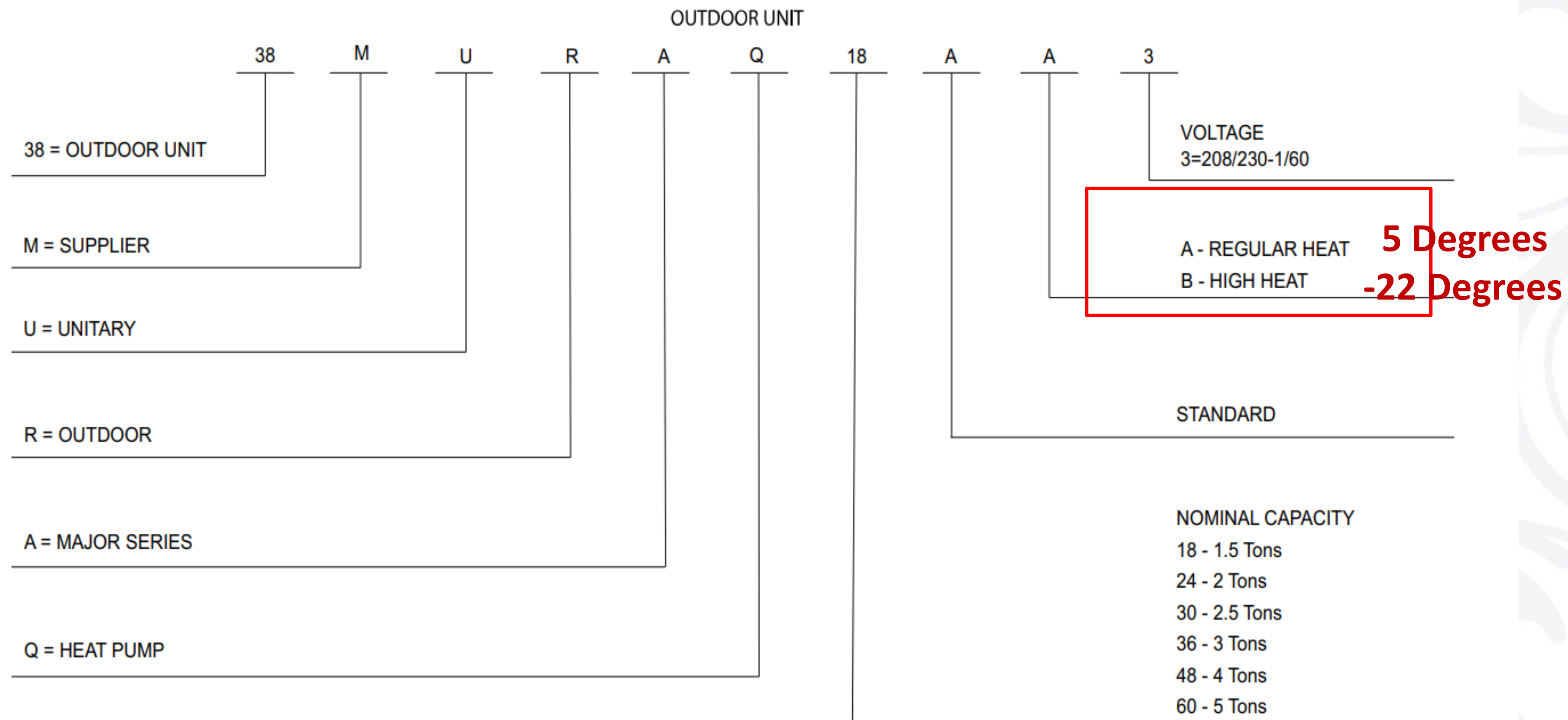


Outdoor Unit Packaging Contents:



Located inside the box with the outdoor unit

MODEL NUMBER NOMENCLATURE



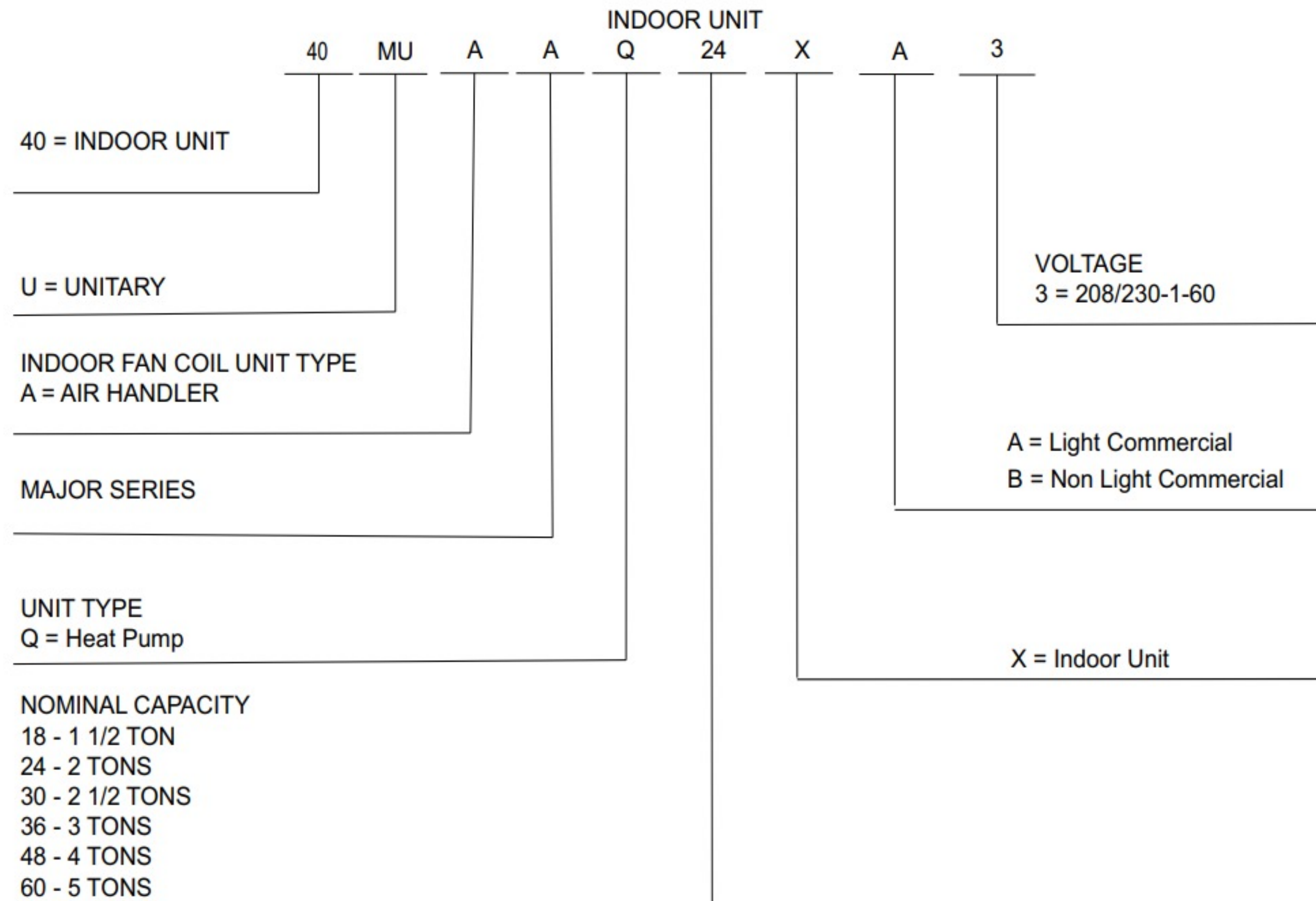
MODEL NUMBER NOMENCLATURE**Fig. 2 — Model Number Nomenclature**

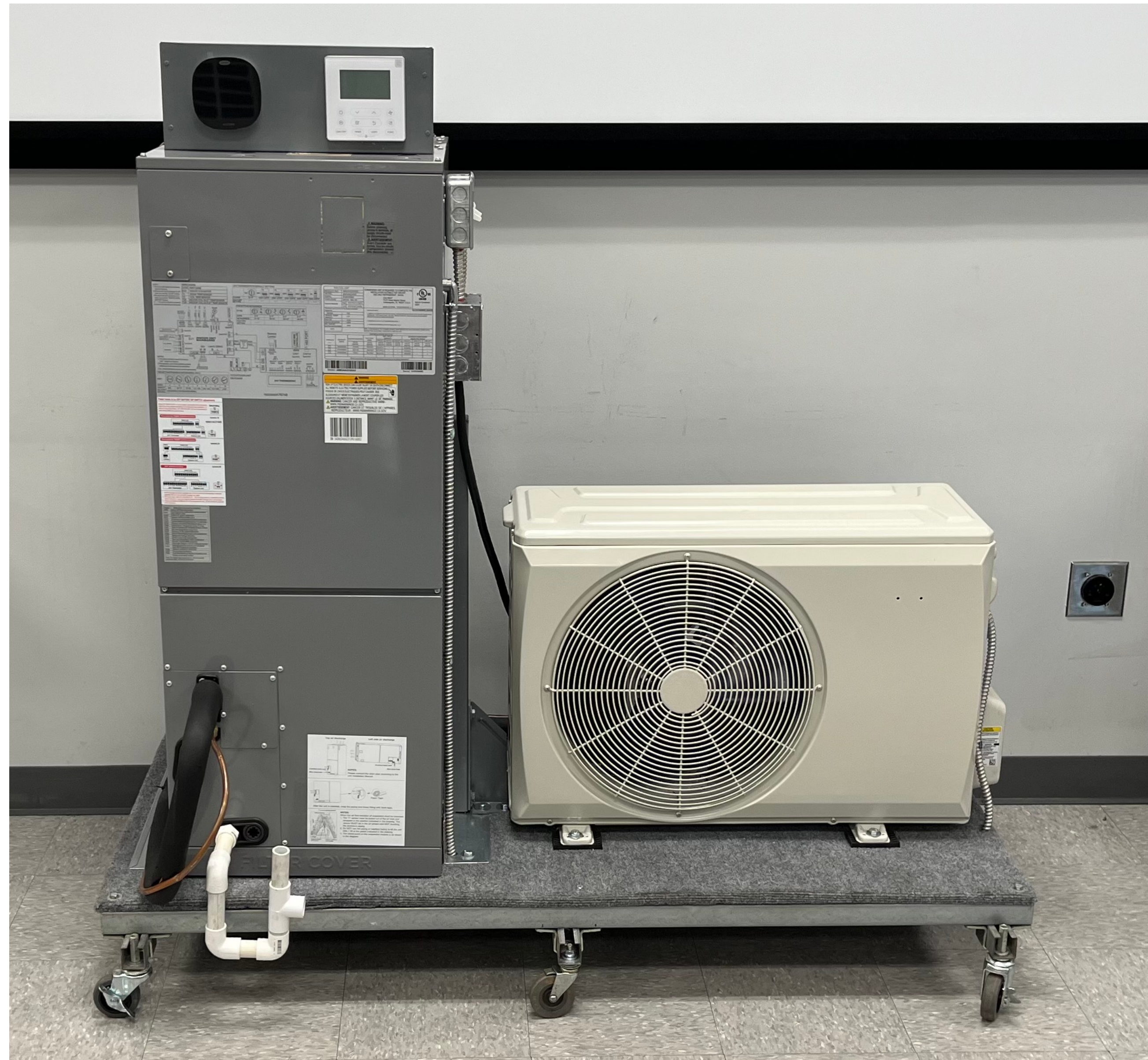
Table 5 — Piping and Refrigerant

SYSTEM SIZE		18K	24K	30K	36K	48K	60K
		(208/ 230V)	(208/ 230V)	(208/ 230V)	(208/ 230V)	(208/ 230V)	(208/ 230V)
Minimum Piping Length	ft. (m)	10 (3)	10 (3)	10 (3)	10 (3)	10 (3)	10 (3)
Standard Piping Length	ft. (m)	25 (7.5)					
Maximum outdoor-indoor height difference (OU higher than IU)	ft. (m)	65.6 (20)	82(25)	82(25)	98.4(30)	98.4(30)	98.4(30)
Maximum outdoor-indoor height difference (IU higher than OU)	ft. (m)	65.6(20)	82(25)	82(25)	98.4(30)	98.4(30)	98.4(30)
Maximum Piping Length with no additional refrigerant charge per System	ft. (m)	25 (7.5)	25 (7.5)	25 (7.5)	25 (7.5)	25 (7.5)	25 (7.5)
Total Maximum Piping Length per system	ft. (m)	98.4 (30)	164 (50)	164(50)	213(65)	213 (65)	213(65)
Additional refrigerant charge	Oz/ft (g/m)	0.69 (65)					
Suction Pipe (size - connection type)	In (mm)	Ø3/4" (19)	Ø3/4" (19)	Ø3/4" (19)	Ø3/4" (19)	Ø3/4" (19)	Ø7/8" (22)
Liquid Pipe (size - connection type)	In (mm)	Ø3/8" (9.52)	Ø3/8" (9.52)	Ø3/8" (9.52)	Ø3/8" (9.52)	Ø3/8" (9.52)	Ø3/8" (9.52)
Refrigerant Type	Type	R410A	R410A	R410A	R410A	R410A	R410A
‡ Charge Amount	lb. (kg)	3.53(1.6)	4.63(2.1)	6.72 (3.05)	8.16(3.7)	10.4(4.7)	10.8 (4.9)

NOTE: ‡ AHU compatible only

- ‡ The charge amount listed in Table 5 is for piping runs up to 25 ft. (7.6 m).
- For piping runs longer than 25 ft. (7.6 m), add the refrigerant up to the allowable length as specified in Table 5.

Mobile Trainer



40MUAA / 38MURA

#MDMFullSteamAhead

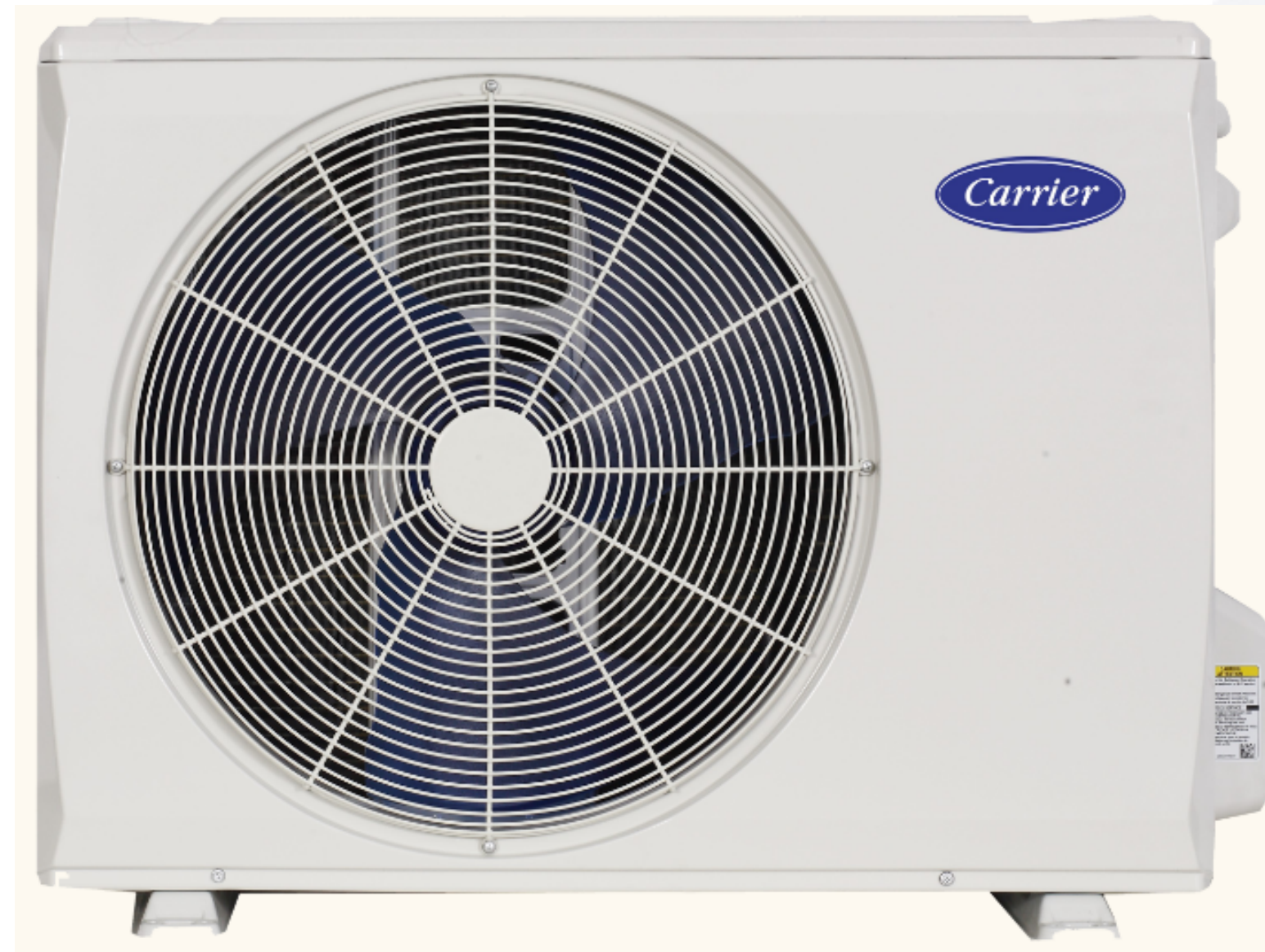
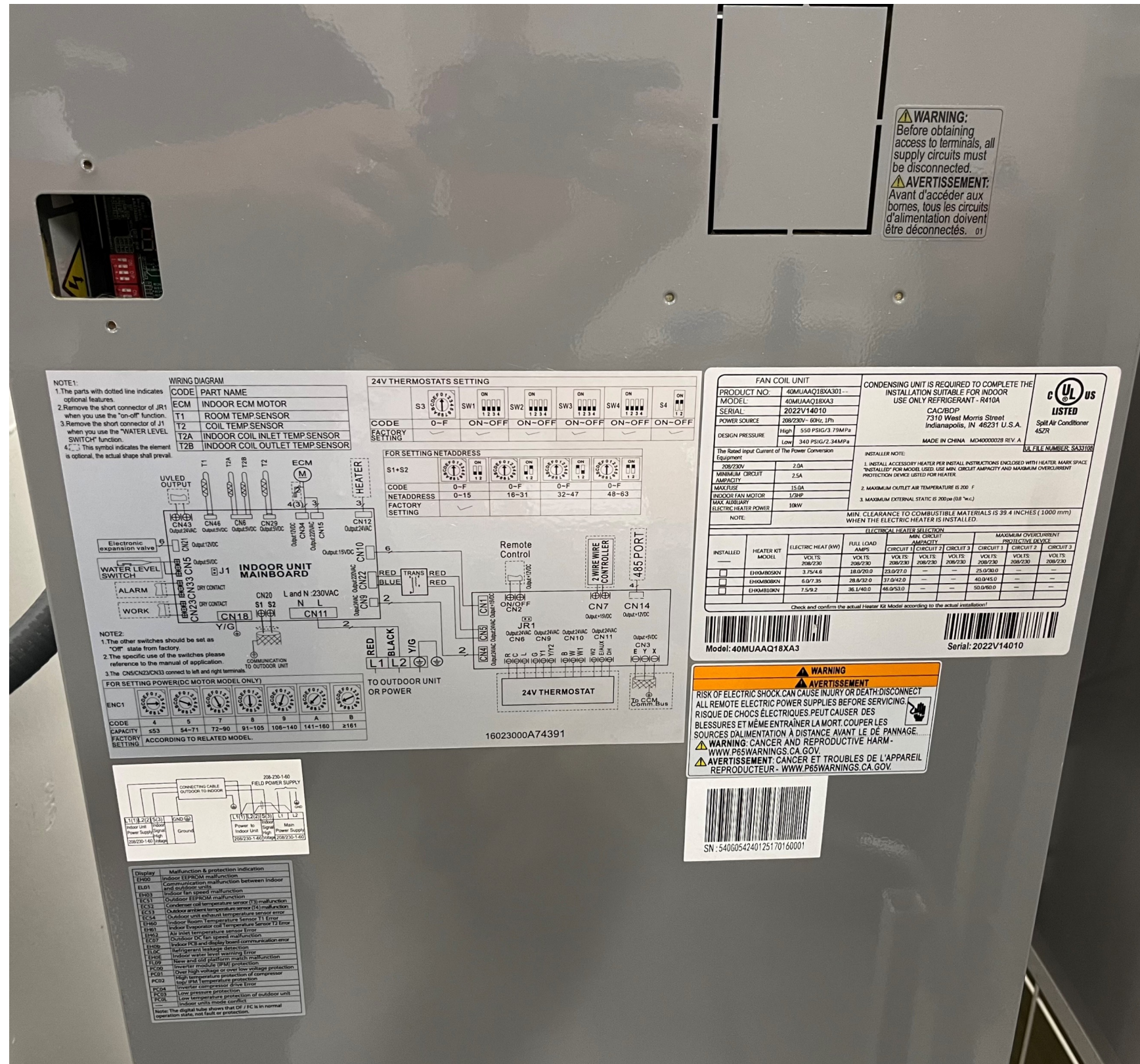


18 – 60K (Single Zone Only)

40MUUA

4 stages Heat / 2 Stages Cool

38MURA



Electrical Specifications:

ELECTRICAL DATA

Outdoor Unit		18K	18K High Heat	24K	24K High Heat	30K	30K High Heat	36K	36K High Heat	48K	48K High Heat	60K	60K High Heat
Minimum Circuit Ampacity (MCA)	A	16	16	19	20.5	20	23	24	41	34	42	34	42
Maximum Overcurrent Protection Ampacity (MOPA)	A	20	20	30	35	35	35	40	50	50	50	50	60
Voltage-Phase Frequency		208/230-1-60											
Max – Min Voltage Range*	V	253-187											
		Cooling											
Running current	(A)	7.5	6.5	9.7	9.40	12.20	12.40	15.82	14.8	21.9	24.2	23.8	26.7
Power consumption	(W)	1620	1430	2120	1920	2760	2720	3750	3300	5046	5530	5644	6110
Power factor	(%)	97.2	71.1	98.9	94.6	95.8	96.4	97.2	97.8	98	99	98.3	97.9
		Heating											
Running current range	(A)	6.7	7	9.8	9.13	12.40	12.50	16.12	14.8	23.3	21.5	20.9	21.5
Power consumption	(W)	1510	1550	2150	2040	2850	2780	3496	3400	5373	4880	4959	4940
Power factor	(%)	96.9	71.5	98.8	94.5	96.3	96.7	96.8	97.6	98.4	98.9	97.7	97.1

*Permissible limits of the voltage range at which the unit will operate satisfactorily.

Outdoor units manufactured with inverter driven compressors & variable speed condenser fan motors

Ratings on High and Low Heat

#MDMFullSteamAhead



38MURAQ18AA3	40MUAAQ18XA3		18000	10.9	17	18000	8.8	12000	2	11000
38MURAQ18AB3	40MUAAQ18XA3		18000	12.4	18	19000	9.3	13500	2.04	16500
38MURAQ24AA3	40MUAAQ24XA3		24000	10.5	17	26000	9.2	21000	2.1	19400
38MURAQ24AB3	40MUAAQ24XA3		24000	11.7	17.4	24000	10	19200	1.91	22600
38MURAQ30AA3	40MUAAQ30XA3		30000	10.6	17.3	31000	8.5	20000	1.7	17500
38MURAQ30AB3	40MUAAQ30XA3		30000	10	16.2	33000	8.9	21000	1.8	24000
38MURAQ36AA3	40MUAAQ36XA3		36000	10.1	16.9	36000	8.2	20400	1.9	21000
38MURAQ36AB3	40MUAAQ36XA3		36000	10	16	40000	9.5	30400	1.97	34400
38MURAQ48AA3	40MUAAQ48XA3		47000	8.8	15.8	55000	9.4	37000	1.95	36000
38MURAQ48AB3	40MUAAQ48XA3		47000	8.2	15.6	50000	9.4	36000	1.9	46000
38MURAQ60AA3	40MUAAQ60XA3		57000	8.8	14.9	60000	8.5	37000	1.9	34600
38MURAQ60AB3	40MUAAQ60XA3		55000	8.8	15.3	59000	9.4	42000	1.91	48500

KSACN1001AAA (Wired Remote) or 24 Vac. Thermostat:

40MUAA: Product Data

WIRED REMOTE CONTROLLER



Fig. 13 — Wired Remote Controller

Wired remote controller KSACN1001AAA sold separately.

24 VOLT INTERFACE

The indoor unit comes equipped with a 24V interface that provides further flexibility, functionality and control allowing it to be controlled by any 3rd party heat pump thermostat (field supplied).

NOTE: A conventional 5-wire thermostat is required. A 2 heat/1 cool thermostat is required for electric heat applications.

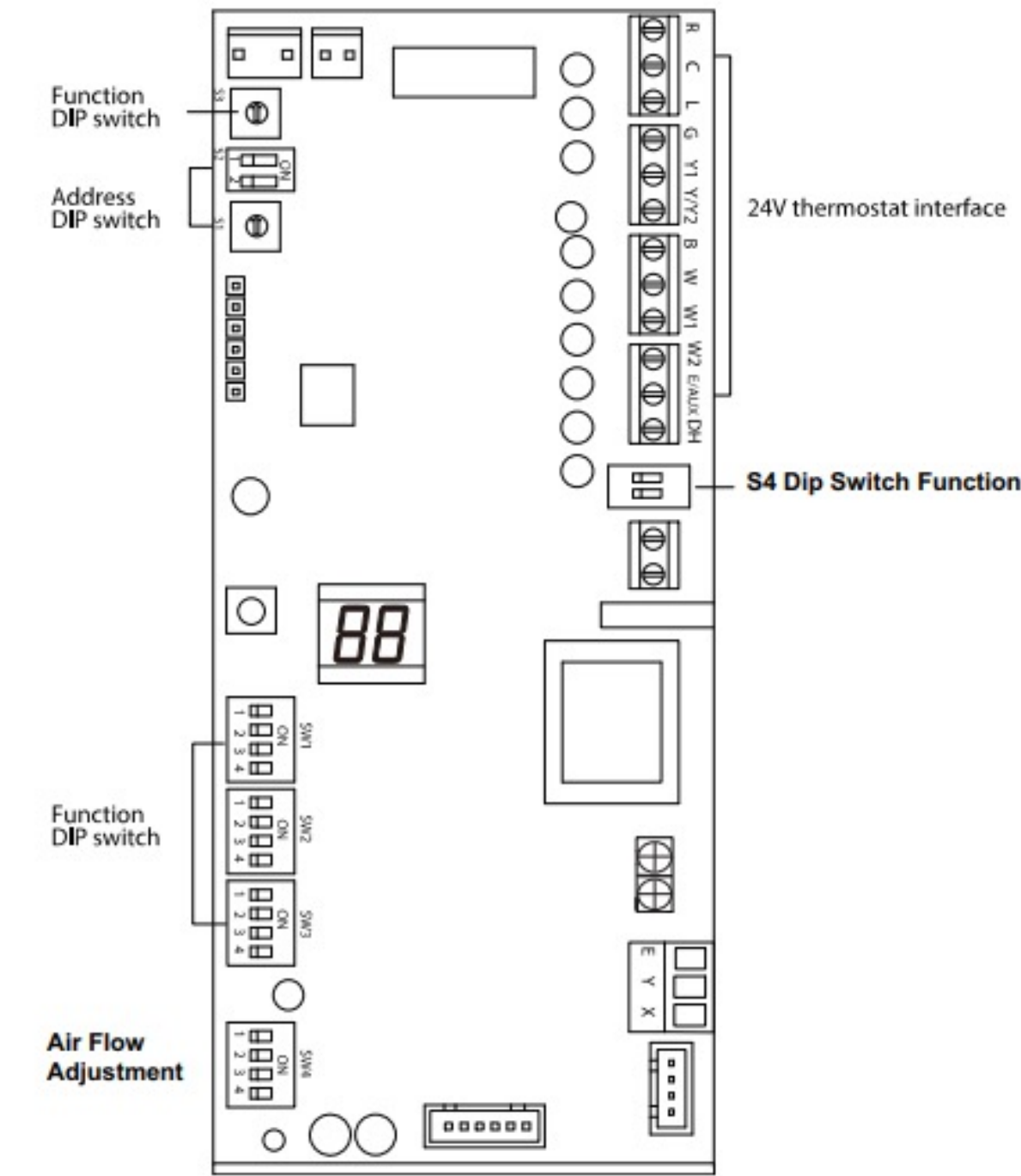


Fig. 14 — 24 Volt Interface



ECOBEE

WiFi connection can be established through a smart thermostat with WiFi capabilities if needed.

Ductless wired remote controller or 24 Vac. conventional thermostat

40MUUA/38MURA (Scenarios 1,2,3)

#MDMFullSteamAhead



Scenario #1

Scenario #2

Scenario #3

These are NOT in order as below!



Note: 24 Vac. applied to the S1 & S2 terminals will cause damage to the board circuitry.

40MUAA (18K-60K)

#MDMFullSteamAhead



WiFi CONTROLS

WiFi Accessible Thermostats:



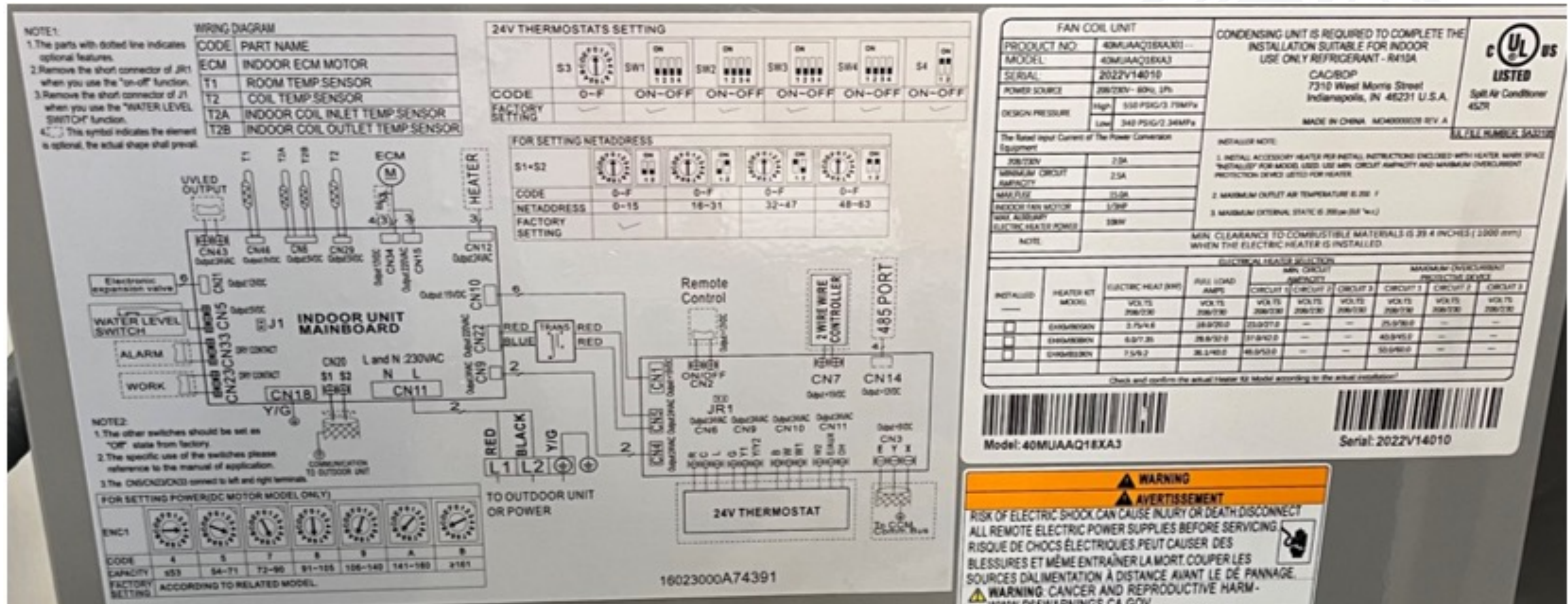
24 Vac. thermostats with built in WiFi are another option if WiFi is required

40MUAA AHU WIRING DIAGRAM

#MDMFullSteamAhead



Main Board, Control Wiring, 24 Vac. Interface & Dip Switch Settings:



MODE SHOWN ON FANCOIL



Mode of Operation (AHU LED Display):

IDLE/SHUTDOWN	00	W1 ELECTRIC HEAT	08
CONSTANT FAN	01	W2 ELECTRIC HEAT	09
COOLING Y1	02	Y1/Y2/W1/AUX HEAT	10
COOLING Y2	03	Y1/Y2/W2/AUX HEAT	11
DEHUM Y1	04	EMERGENCY HEAT	12
DEHUM Y2	05		
HEATING Y1	06		
HEATING Y2	07		



Error Code List (AHU LED Display):



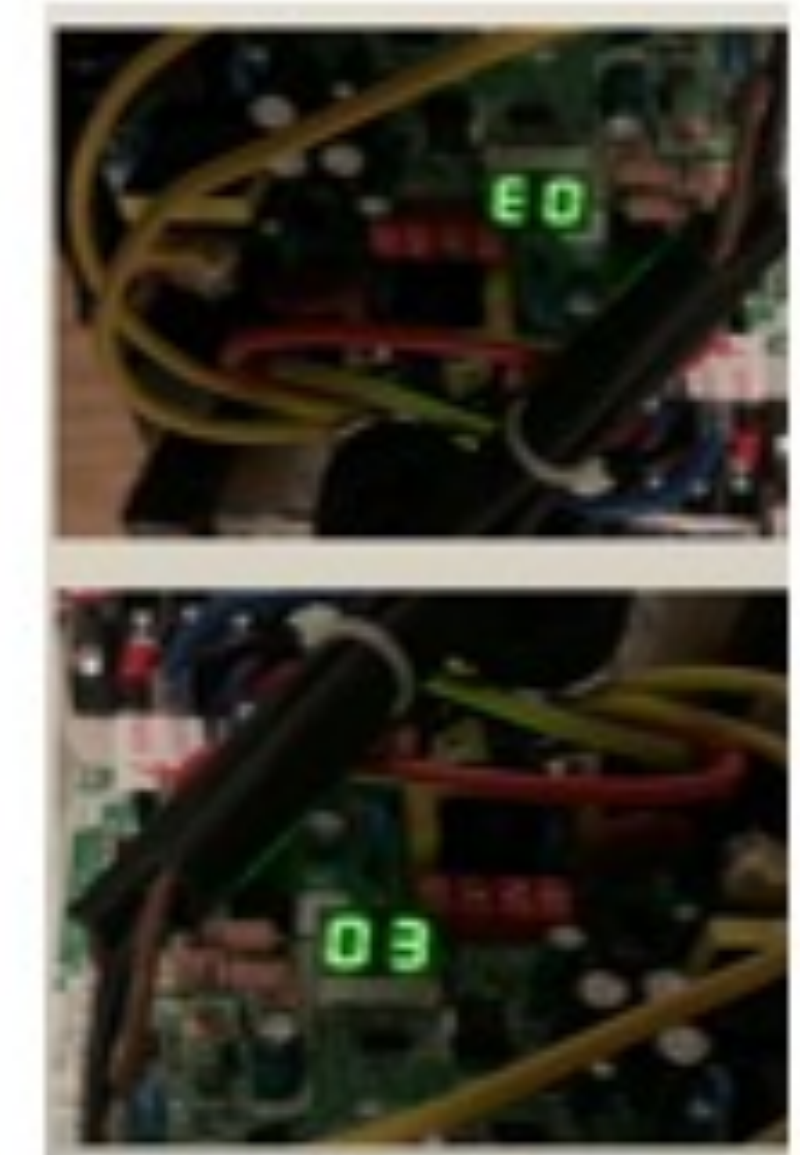
TROUBLESHOOTING

For ease of service, the systems are equipped with diagnostic code display LEDs on some outdoor units. The outdoor diagnostic display consists of two LEDs (red and green) on the outdoor unit board and is limited to a few errors. The indoor diagnostic display is a digital readout on the display panel. If possible, always check the diagnostic codes displayed on the indoor unit first before consulting a service technician. The diagnostic codes, displayed in the indoor and outdoor units, are listed in Table 14.

Table 14 — Indoor Unit Diagnostic Guides

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
EH10	Indoor Room Temperature Sensor T1 Error
EH11	Indoor Evaporator Coil Temperature Sensor T2 Error
EH12	Air inlet temperature sensor error
EC07	Outdoor DC fan speed malfunction
EH06	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
PCDL	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.



E0 or 03
Error Code?

EHb3 the dip switch SW1 Bit1 on the AHU is in the wrong position

The display window reads left to right the (2) dots next to each number are always the bottom when reading horizontally

Dehumidification :

Thermostat

AHU

ACC+ ————— DH

•**S4-2:** Use this dip switch to enable dehumidification fan operation. OFF removes the internal jumper from R to DH, meaning DH will be controlled via the thermostat. When the system is configured for dehumidification and there is a demand present, the 24V output from the thermostat drops to 0V, the refrigeration system starts the dehumidification operation, and the fan air volume drops to low fan speed.

ON creates an internal jump between R and DH, meaning no external dehumidification signal is present, DH will always receive a 24V signal and the fan will operate as normal. The default is ON.

NOTE: S4-2 operates on reverse logic. DH is energized when there is no external dehumidification control.

S4 Dip Switches Bit 2



S4-2:
Default ON: Dehumidification control not available.
OFF: Dehumidification feature is enabled through thermostat.

Once the cooling call satisfied if Dehum. is needed outdoor unit comes on with the indoor fan set to low speed. If there is a call for cooling during Dehum. the outdoor unit will shut down and after a short delay come back on in cooling mode.

Electric Heater Set Up (If Applicable):

This is the outline below for the electric heater set up utilizing the Ecobee 6 (**Model Number: EB-STATE6CR-01**):

Note: This set up is specific to Ecobee brand thermostats and will vary dependent on the thermostat manufacturer being utilized.

Models Affected: 40MUAA (18K-60K Single Split HP Models)

Available Electric Heater Kit Model Numbers: EHKMB05KN (5KW), EHKMB08KN (8KW), EHKMB10KN (10KW), EHKMB15KN (15KW), EHKMB20KN (20KW) & EHKMB25KN (25KW)

(Requires separate electrical circuit for electric heater) Installation Manual attached also available on Partners

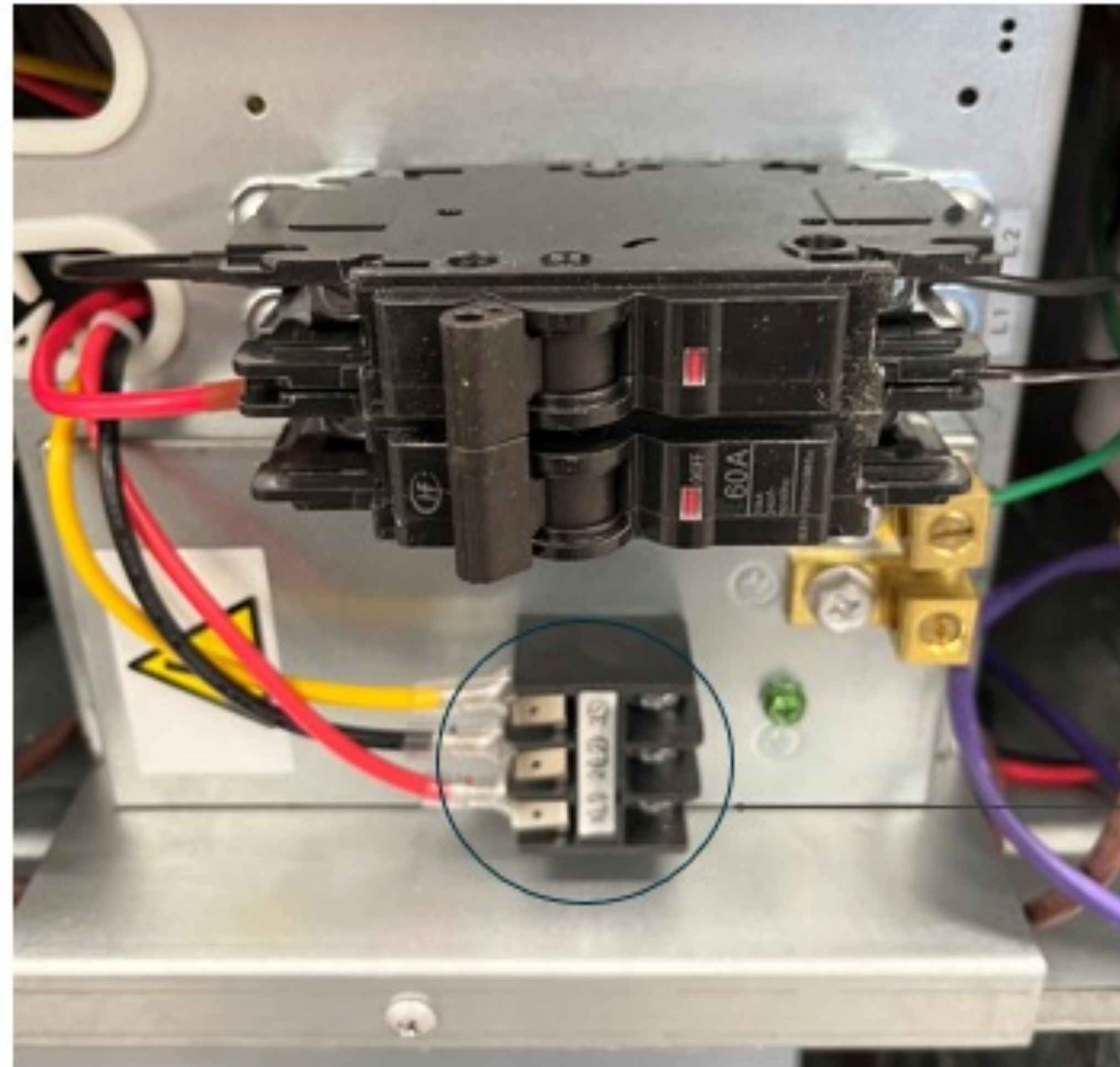
Install a wire from the thermostat W1 terminal to the AHU W1 terminal

40MUAA AHU

#MDMFullSteamAhead



Electric Heater Set Installation:



40MUAA = L1 & L2
{“S” terminal not utilized}

Note: The heater will not require a wire for the “S” terminal for the 40MUAA

- Enhanced Dehumidification
- Smaller Foot Print Zero lot lines
- Line set size 3/4 x 3/8 all sizes
- Liquid line does not require insulation (*38MURA models only*)
- Inverter Driven Unit
- Heating down to low ambient Conditions
- Better Unit than 2 Stage Competition



PROMOTIONS ON CROSSOVER

#MDMFullSteamAhead



Crossover Systems

Product Type	+	Furnace or Fan Coil or Air Handler	=	Rebate
38MAR	+	59TP6 58TP FV 40MBA	=	\$350
38MBR		40MBA		
38MUR		40MUA		
38MUR		59TP 58TP FV		

These are from COOL CASH grid and ECO HOME financing showing The crossover system is in all the same promotions you use everyday

HEAT PUMP		
INFINITY	25VNA4 25VNA8 27VNA0	27VNA1 27VNA2
PERFORMANCE	25TPA7 25SPA5 38MURA	37MURA 27TPA7 27SPA6

NEW R-454B LINEUP

Expect initial releases spring 2024
Same platforms and desired features
Select new-platform introductions

NEW HARDWARE ON NEW UNITS

A2L dissipation sensor

2025 PHASE OUT OF R-410A UNITS

Stay tuned for further details!

Puron
ADVANCE™



Ductless Nomenclature

Outdoor Units

	1	2	3	4	5	6	7	8	9	10	11	12
Title	Product	Refrigerant	Model Type		Major Series		Unit Type	Nominal Capacity		# of Indoor Units	Variation	Electrical
Product # / Letter	3	7	M	A	R	A	Q	36		A	A	3
Descriptions	3 = Horizontal Discharge	7 = Puron Advance		MAR MPR MHR MGH MGR			Q= Heat Pump C=Cooling Only	18/19 = 18,000 24/25 = 24,000 30/31 = 30,000 36/37 = 36,000 42/43 = 42,000 48/49 = 48,000 60/61 = 60,000		X = 0 A = 1 B = 2 C = 3 D = 4 E = 5		1 = 115-1-60 3 = 208/230-1-60

Indoor Units

	1	2	3	4	5	6	7	8	9	10	11	12
Title	Product	Refrigerant	Model Type		Indoor Type	Major Series	Unit Type	Nominal Capacity		# of Indoor Units	Variation	Electrical
Product # / Letter	4	5	M	A	F	A	Q	36		X	X	3
Descriptions	4 = Indoor Unit	5 = Puron Advance	MP MA MH		F=Floor Console H=Air Handler C=Cassette		Q= Heat Pump C=Cooling Only	18/19 = 18,000 24/25 = 24,000 30/31 = 30,000 36/37 = 36,000 42/43 = 42,000 48/49 = 48,000 60/61 = 60,000		X = 0		1 = 115-1-60 3 = 208/230-1-60

PURON ADVANCE LINEUP

Infinity

Single Zone



06 / 09 / 12 / 18



06 / 09 / 12 /
18 / 24 / 33

Light Commercial



36



48 / 58

Multi-zone



18 / 27



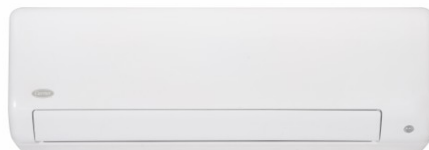
36 / 48 / 60

Crossover (ducted)



18 / 24 / 30 / 36 / 48 / 60

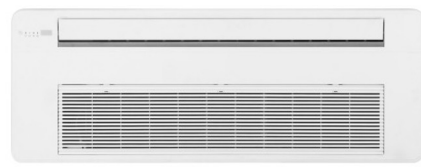
Performance



06 / 09 / 12* / 18 / 24 /
30 / 33 / 36



09 / 12 / 18 / 24
/ 36 / 48



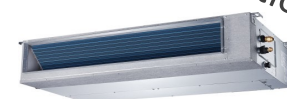
06 / 09 / 12 / 18



9 / 12 / 16



18 / 24
/ 36 / 48 / 58



06 / 09 / 12 / 18 / 24
/ 36 / 48 / 58



High Static
Option

18 / 24 / 30 / 33 / 36
/ 36 / 48 / 60

09 / 12* / 18 /
24 / 30 / 36



Light Commercial

36



48 / 58



36 / 48 / 60

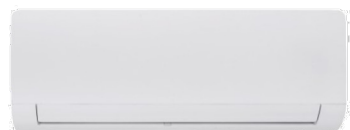
18 / 27



18 / 24 / 30 / 36 / 48 / 60

Comfort

Heat Pump



09* / 12* / 18 / 24 / 30 / 36

Multizone Compatible (208/230V Only)
Light Commercial Compatible
*115V Option Available

Ductless Puron Advance Phase-in Schedule



January 2024

Detailed product launch
schedule available on
HVAC Partners

March/April

Release of new product
specifications

May/June

Product Available

QUESTIONS?

Did everyone sign the Roster?



#MDMFullSteamAhead