



East Coast
METAL DISTRIBUTORS

Amana S Series Quick Start Guide R-32 Version

Agenda

- Equipment General Specifications
- Equipment Configurations
- Amana ATST Thermostat
- Control Wiring Layout
- Commissioning the Amana ATST
- System Verification Test
- Refrigerant Charge Mode

General Equipment Specifications

Service Valve Connections

1.5 – 2.0 TON	Liquid	3/8"
	Gas	3/4"
2.5 – 3.0 TON	Liquid	3/8"
	Gas	7/8"
3.5 – 5.0 TON	Liquid	3/8"
	Gas	7/8"

Standard Refrigerant Line Sizing*

1.5 – 2.0 TON	Liquid	3/8"
	Gas	3/4"
2.5 – 3.0 TON	Liquid	3/8"
	Gas	7/8"
3.5 – 5.0 TON	Liquid	3/8"
	Gas	1 1/8"

* Alternate sizes may be used – please refer to Installation Manual for details

General Equipment Specifications

Refrigerant Line Limits

Maximum Linear Length	100'
Maximum Equivalent Length	125'
Maximum Vertical Rise	90'
Maximum Vertical Drop	100'

General Equipment Specifications

Electrical – 208|230 – 1 – 60Hz

ODU Size	MCA	MOP
1.5 Ton	12.8 A	15 A
2.0 Ton	16.8 A	20 A
2.5 Ton	22.4 A	25 A
3.0 Ton	22.4 A	25 A
3.5 Ton	31.8 A	35 A
4.0 Ton	31.8 A	35 A
5.0 Ton	37.5 A	40 A

Control Wire Specifications

ATST to Indoor Unit	125'
Indoor Unit to Outdoor Unit	250'
Distance Between Control Wire and High Voltage Wire	2" or More
Control Wire Size	18 AWG

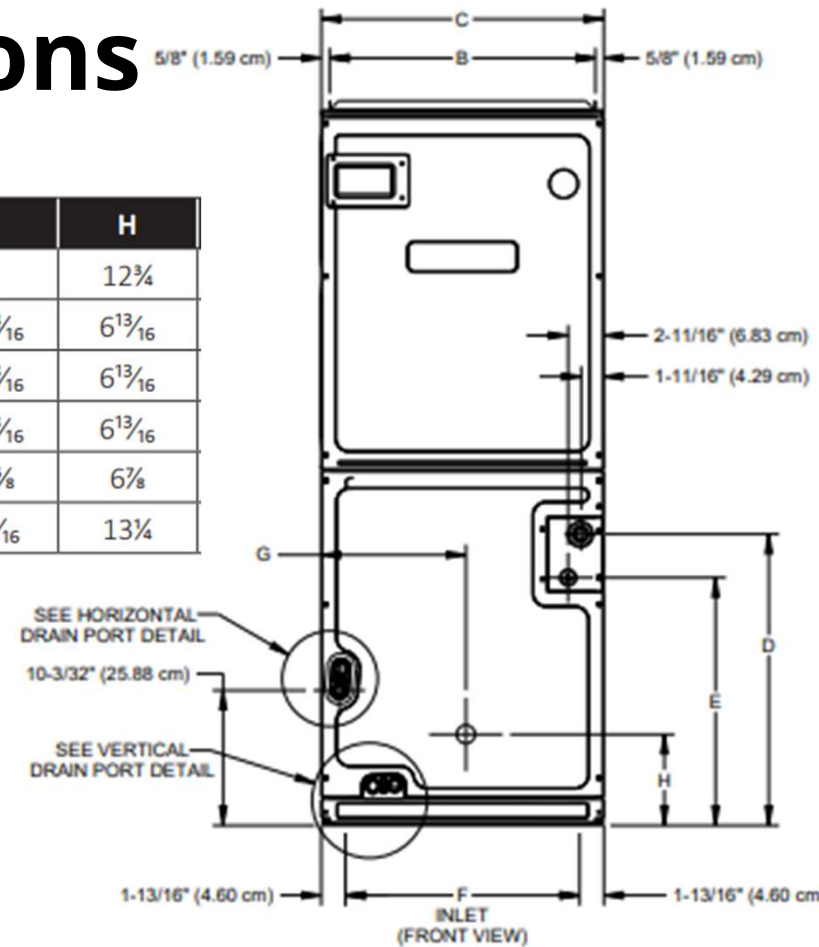
Equipment Configurations

- AHVE Air Handlers – 208|230V
- Heat Strip Kits Available
- Multi-Positional – 4 Way
- Compatible with AZV6 model Heat Pumps
- Compatible with AXV6 model Air Conditioners



Equipment Configurations

MODEL	A	B	C	D	E	F	G	H
AHVE24BP1300	45	16 $\frac{3}{8}$	17 $\frac{1}{2}$	15 $\frac{5}{8}$	12	14 $\frac{1}{8}$	9	12 $\frac{3}{4}$
AHVE36CP1300	53 $\frac{7}{16}$	19 $\frac{7}{8}$	21	21 $\frac{13}{16}$	18 $\frac{5}{8}$	17 $\frac{11}{16}$	10 $\frac{13}{16}$	6 $\frac{13}{16}$
AHVE42CP1300	53 $\frac{7}{16}$	19 $\frac{7}{8}$	21	21 $\frac{13}{16}$	18 $\frac{5}{8}$	17 $\frac{11}{16}$	10 $\frac{13}{16}$	6 $\frac{13}{16}$
AHVE48CP1300	58	19 $\frac{13}{16}$	21	26 $\frac{3}{16}$	22 $\frac{15}{16}$	14 $\frac{10}{16}$	10 $\frac{13}{16}$	6 $\frac{13}{16}$
AHVE48DP1300	53 $\frac{7}{16}$	23 $\frac{5}{16}$	24 $\frac{1}{2}$	21 $\frac{1}{2}$	18 $\frac{5}{16}$	21 $\frac{3}{16}$	12 $\frac{5}{8}$	6 $\frac{7}{8}$
AHVE60DP1300	58	23 $\frac{5}{16}$	24 $\frac{1}{2}$	26 $\frac{1}{8}$	22 $\frac{7}{8}$	21 $\frac{3}{16}$	12 $\frac{5}{16}$	13 $\frac{1}{4}$



Equipment Configurations

- Cased Coils - Horizontal
- CHPEA model series
- All Aluminum Evaporator Coil

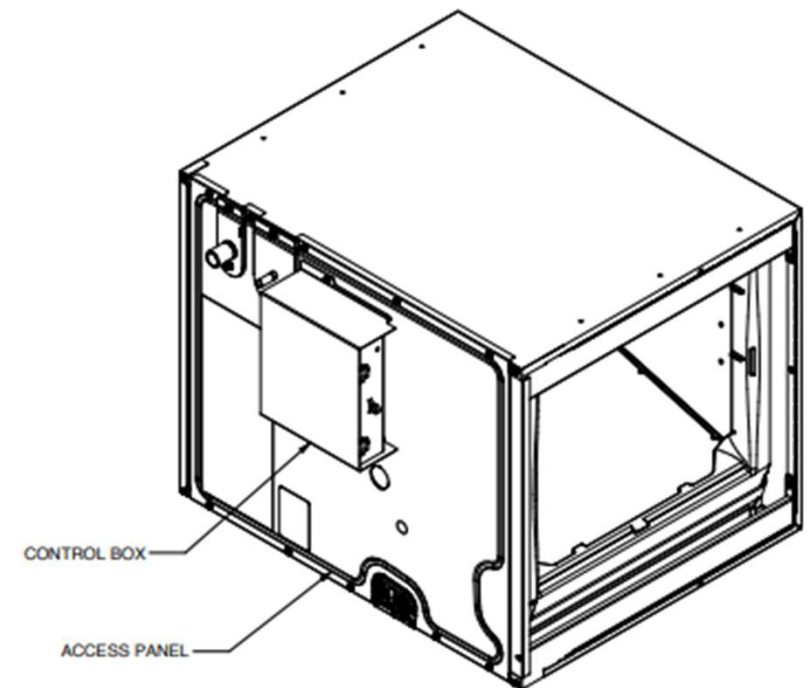
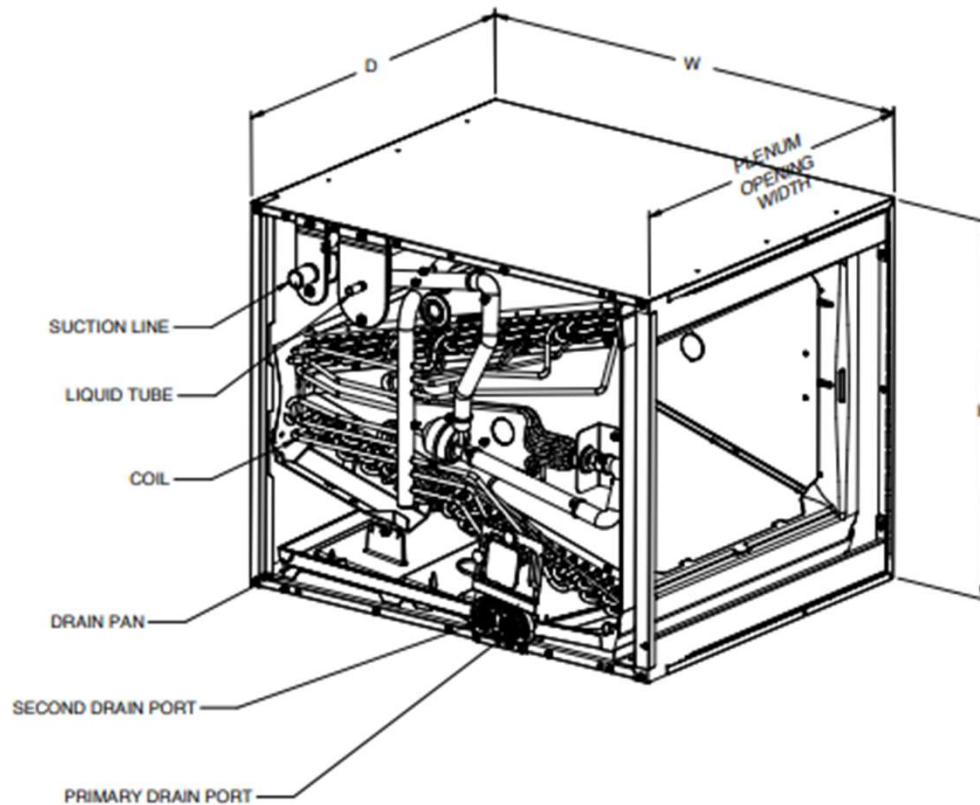


Equipment Configurations

SPECIFICATIONS

MODEL	CABINET DIMENSIONS			NOMINAL TONS	CONNECTION		SHIP WEIGHT (LBS)
	W	D	H		LIQUID	SUCTION	
CHPEA2422B3	22"	21"	17½"	2	$\frac{5}{16}$ " or $\frac{3}{8}$ "	$\frac{5}{8}$ " or $\frac{3}{4}$ "	56
CHPEA3026B3	26"	21"	17½"	2½	$\frac{5}{16}$ " or $\frac{3}{8}$ "	$\frac{3}{4}$ " or $\frac{7}{8}$ "	63
CHPEA3026C3	26"	21"	21"	2½	$\frac{5}{16}$ " or $\frac{3}{8}$ "	$\frac{3}{4}$ " or $\frac{7}{8}$ "	67
CHPEA3626B3	26"	21"	17½"	3	$\frac{5}{16}$ " or $\frac{3}{8}$ "	$\frac{3}{4}$ " or $\frac{7}{8}$ "	68
CHPEA3626C3	26"	21"	21"	3	$\frac{5}{16}$ " or $\frac{3}{8}$ "	$\frac{3}{4}$ " or $\frac{7}{8}$ "	70
CHPEA4830C3	30"	21"	21"	4	$\frac{3}{8}$ "	$\frac{7}{8}$ " or $1\frac{1}{8}$ "	76
CHPEA4830D3	30"	21"	24½"	4	$\frac{3}{8}$ "	$\frac{7}{8}$ " or $1\frac{1}{8}$ "	78
CHPEA6030C3	30"	21"	21"	5	$\frac{3}{8}$ "	$\frac{7}{8}$ " or $1\frac{1}{8}$ "	76
CHPEA6030D3	30"	21"	24½"	5	$\frac{3}{8}$ "	$\frac{7}{8}$ " or $1\frac{1}{8}$ "	78

Equipment Configurations



Equipment Configurations

- Cased Coils - Vertical
- CAPEA model series
- All Aluminum Evaporator Coil

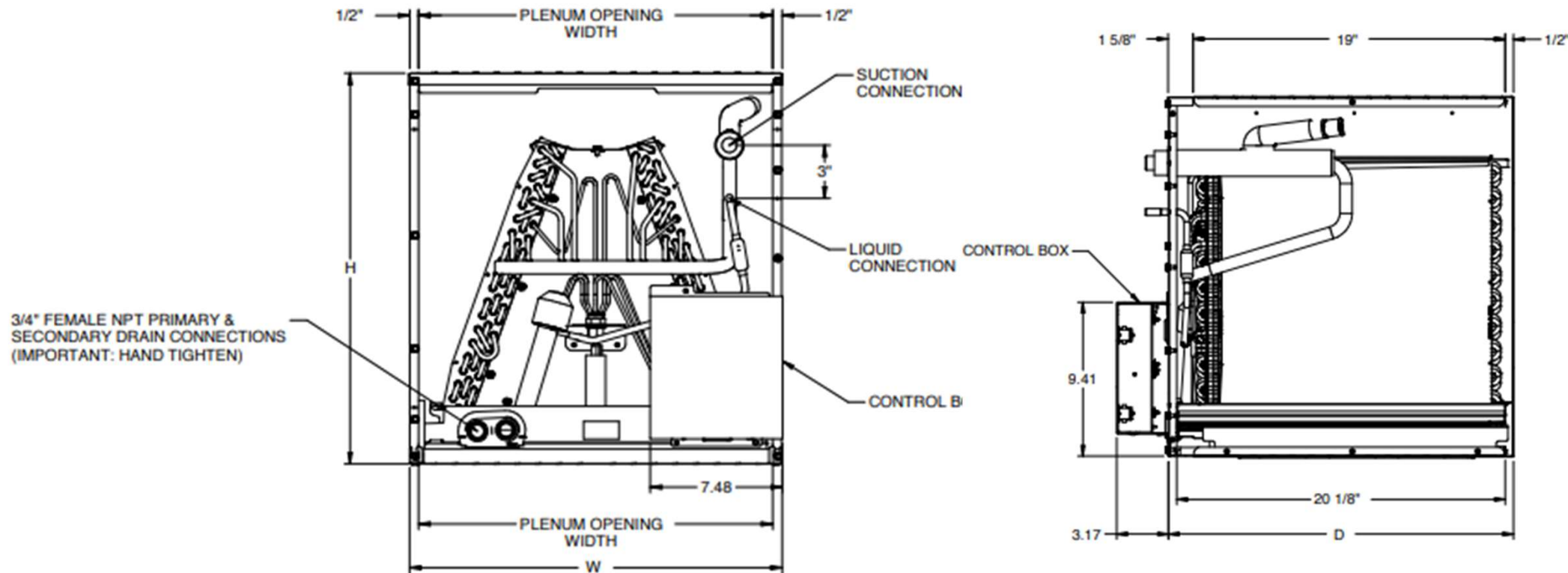


Equipment Configurations

SPECIFICATIONS

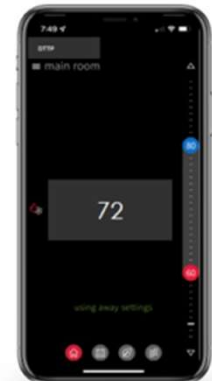
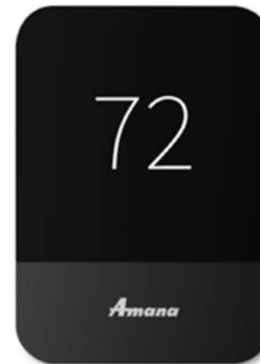
MODEL	CABINET DIMENSIONS			NOMINAL TONS	CONNECTION		SHIP WEIGHT (LBS)
	W	D	H		LIQUID	SUCTION	
CAPEA2418B3	17½"	21	18	2	5/16" or 3/8"	5/8" or ¾"	43
CAPEA2418C3	21	21	18	2	5/16" or 3/8"	5/8" or ¾"	45
CAPEA3022B3	17½"	21	22	2½	5/16" or 3/8"	¾" or 7/8"	48
CAPEA3022C3	21	21	22	2½	5/16" or 3/8"	¾" or 7/8"	51
CAPEA3626B3	17½"	21	26	3	5/16" or 3/8"	¾" or 7/8"	54
CAPEA3626C3	21	21	26	3	5/16" or 3/8"	¾" or 7/8"	57
CAPEA3626D3	24½"	21	26	3	5/16" or 3/8"	¾" or 7/8"	62
CAPEA4830C3	21	21	30	4	3/8"	7/8" or 1½"	68
CAPEA4830D3	24½"	21	30	4	3/8"	7/8" or 1½"	70
CAPEA6030C3	21	21	30	5	3/8"	7/8" or 1½"	75
CAPEA6030D3	24½"	21	30	5	3/8"	7/8" or 1½"	78

Equipment Configurations



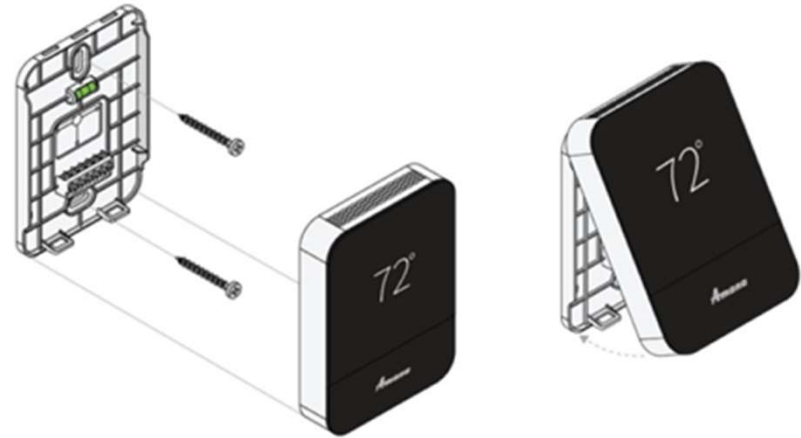
Amana ATST Thermostat

- Compatible with all Amana S Model units
- Sleek, modern design
- Wi-Fi enabled for use with the Amana Home app for remote user control
- Voice Control by Amazon Alexa and Google Assistant



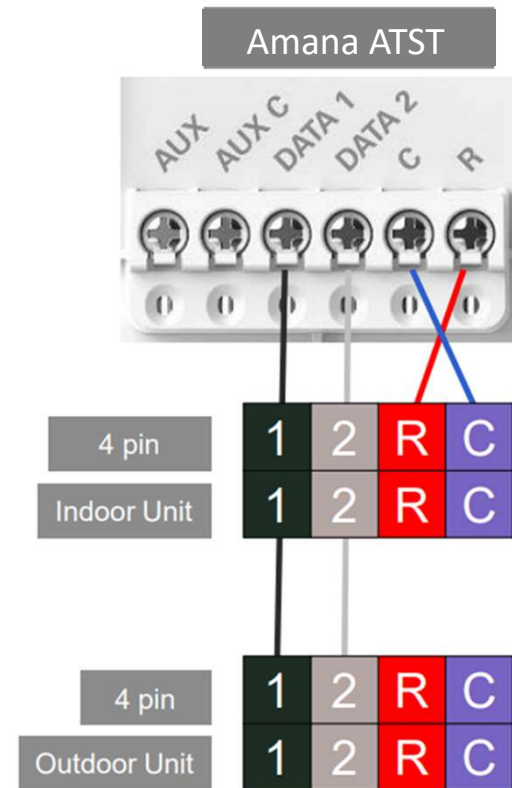
Amana ATST Thermostat

- ATST Thermostat comes with a backplate level
- Install approximately 5' from the floor
- Optional Trim Plate available
- Need a minimum of 4-wire control wire to install a Amana S – 18ga solid or stranded thermostat wire is acceptable

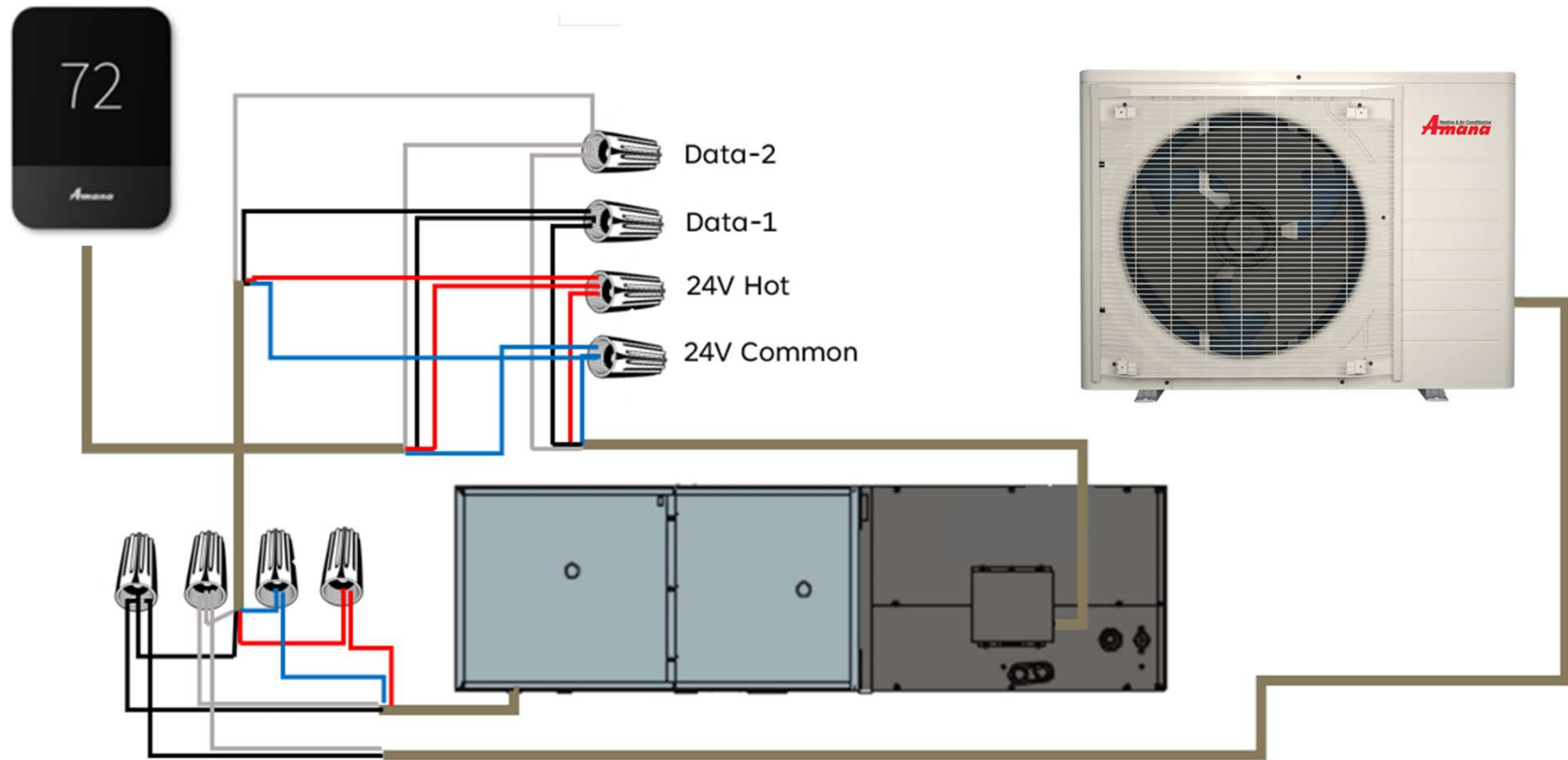


Control Wiring Layout

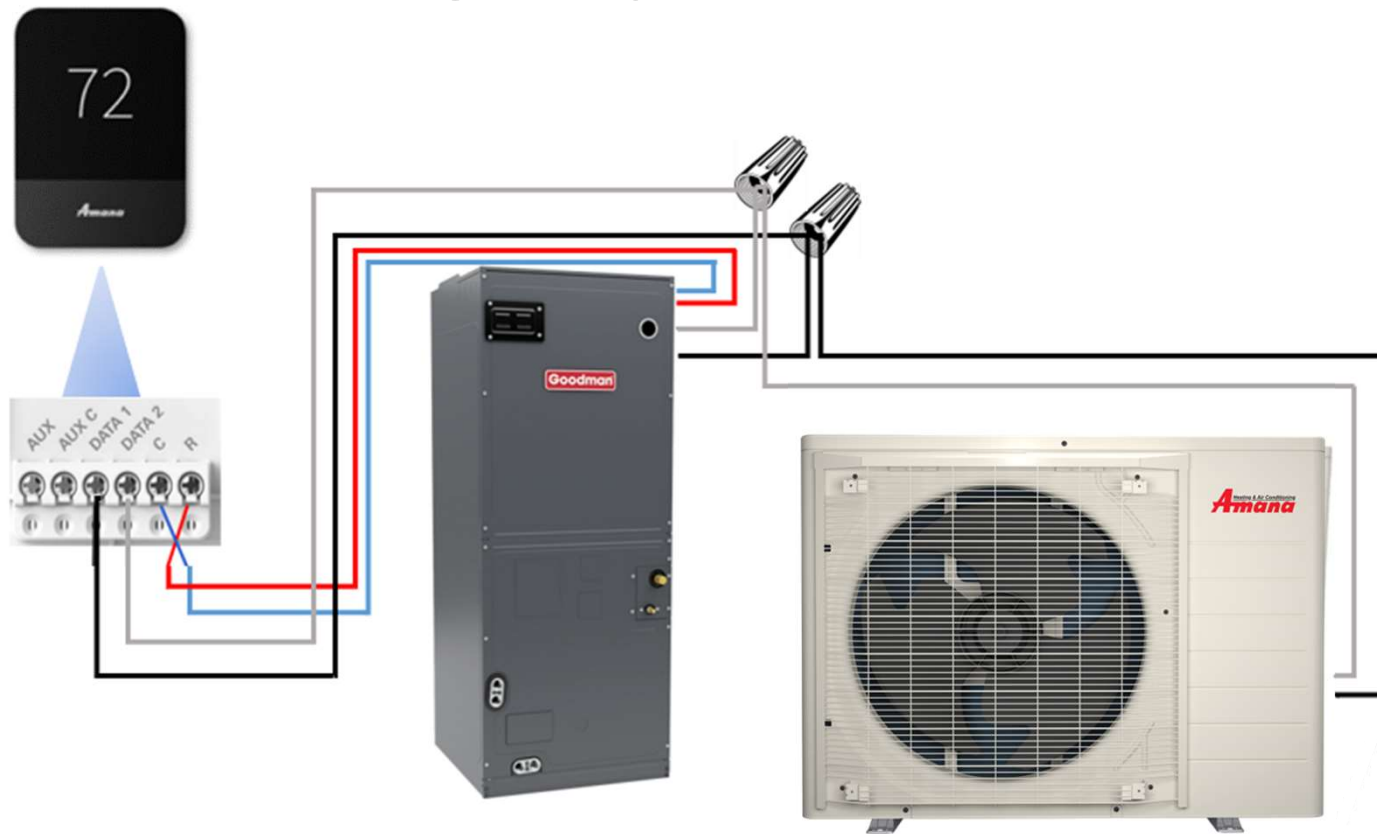
- The basic architecture of the control wiring is Data-1 and Data-2 transmitting information back/forth from the Thermostat to the Indoor unit and Outdoor unit
- Data-1 and Data-2 are polarity sensitive and must maintain the correct connections throughout the system
- 24VAC is only needed for the Thermostat and is not used for the Outdoor unit



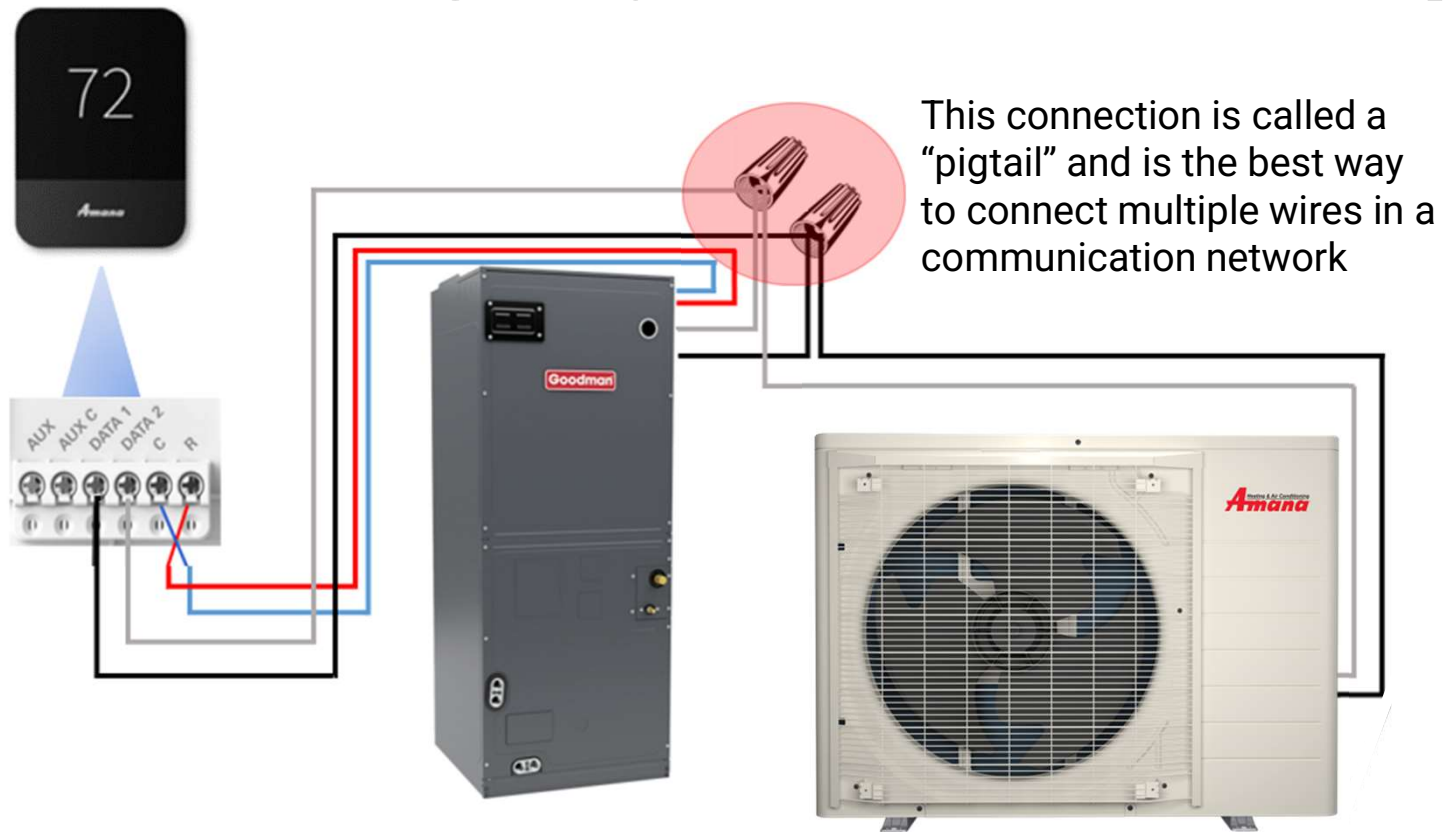
Control Wiring Layout – AC/Furnace



Control Wiring Layout – Heat Pump



Control Wiring Layout – Heat Pump



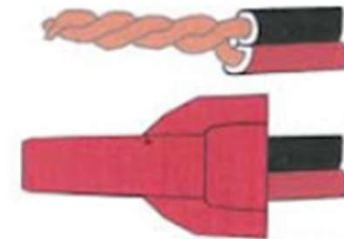
Control Wiring Layout – Wire Connections

- Tight wire connections lead to a better pathway for electricity
- In communicating networks, we are not just passing electricity, but also data
- For data to accurately and reliably flow we need a good pathway that can be accomplished by ensuring any junctions of wire are done in the best way possible

Bad Connection

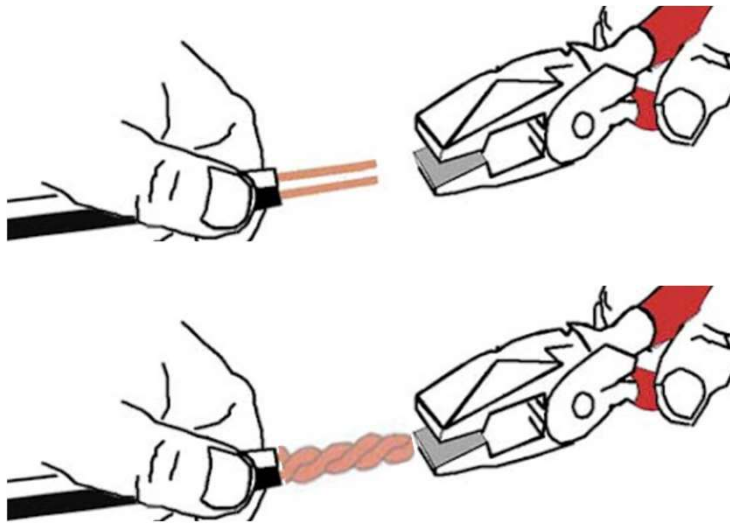


Good Connection



Control Wiring Layout – Wire Connections

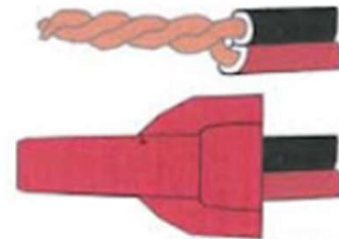
- When making connections with wire nuts, the wires should be twisted together prior to placing the wire nut over them



Bad Connection

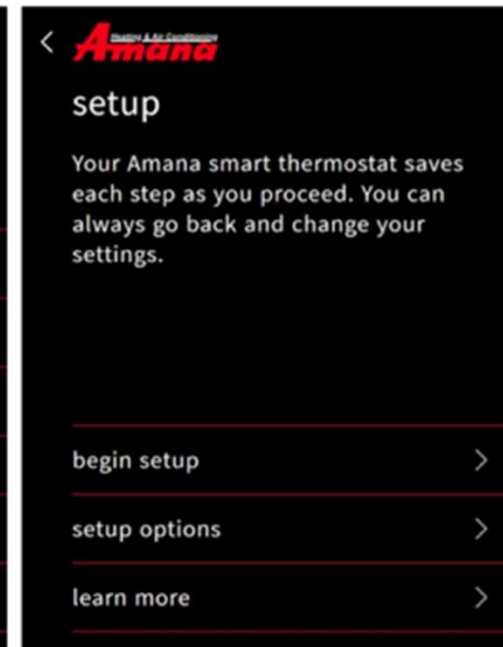
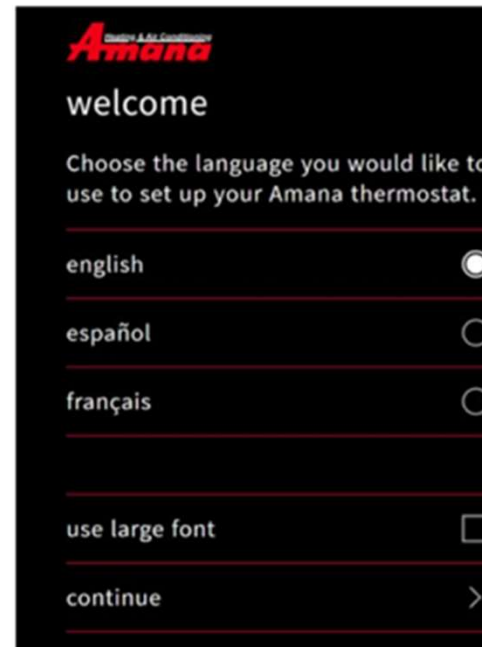


Good Connection



Commissioning the Amana ATST

- The welcome screen is displayed upon system power up
- Language may be chosen as well as the ability to use a large font to make navigating the setup easier
- Continue will allow for access to the setup screen where you may press “begin setup” to enter the full setup menu to begin commissioning



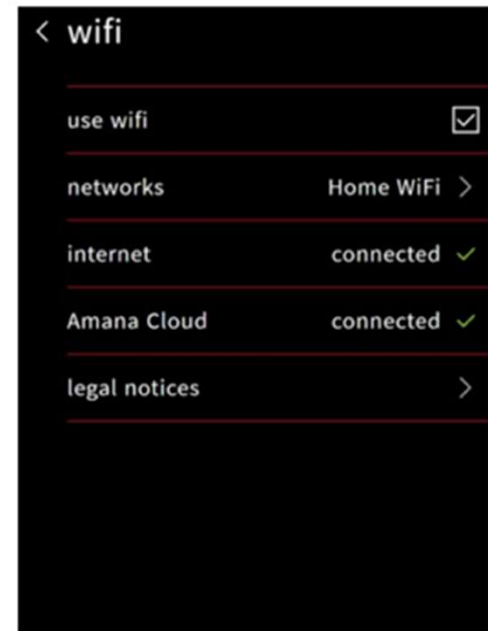
Commissioning the Amana ATST

- The setup menu features a 5-step setup process
 - Communication – allows connection to home Wi-Fi
 - Personalization – allows date/time configuration & naming
 - Equipment Setup – allows fine tuning of operational settings
 - System Optimization – Allows testing/diagnostics
 - Preferences – Allows further customization of settings
- All steps must be completed and reviewed before completing setup
 - As steps are completed, a green check mark will appear next to them



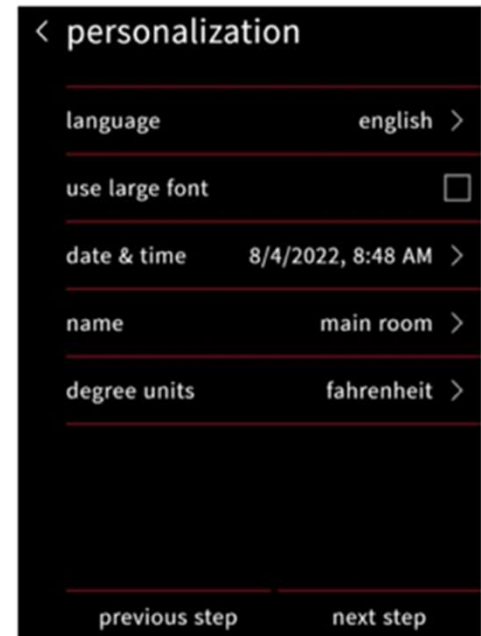
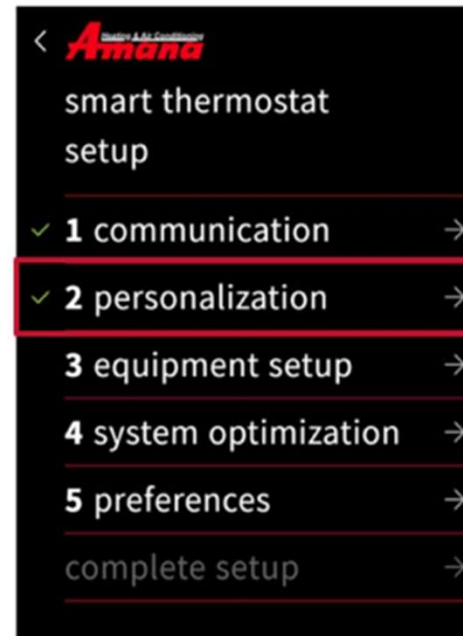
Commissioning the Amana ATST

- Select “Use Wi-Fi” to allow the thermostat to look for available networks
- With Wi-Fi configured, the system can check for software updates and allow for remote user access via the Amana Home Mobile App
- Wi-Fi connection is not required for system operation



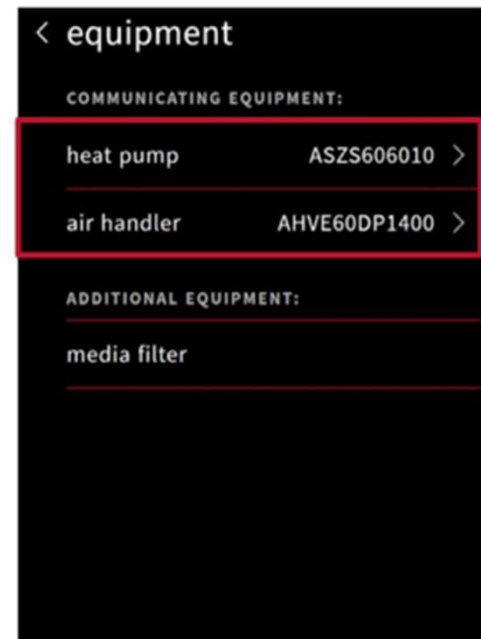
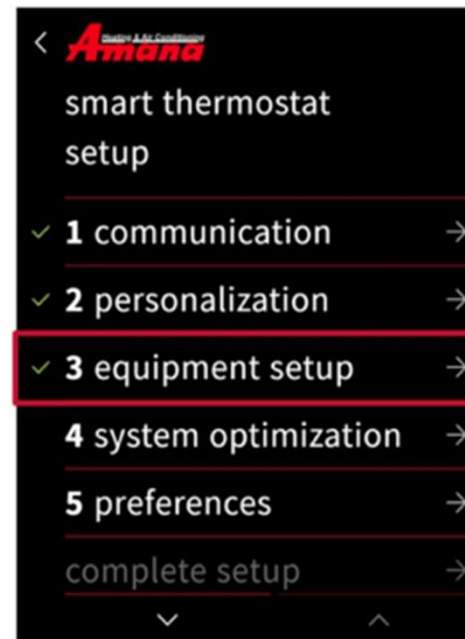
Commissioning the Amana ATST

- Personalization displays
 - Language
 - Large font selection
 - Date & Time
 - With Wi-Fi connection, the date & time are set automatically
 - Thermostat name
 - Shows up on the main home screen as well as via the Amana Home App
 - Degree units



Commissioning the Amana ATST

- Displays equipment found by searching the communication network
- The unit that is identified determines the list of configurations that will be displayed
 - Cool settings
 - Heat settings
 - Heat Pump settings
 - Aux alarm
 - Heater kit

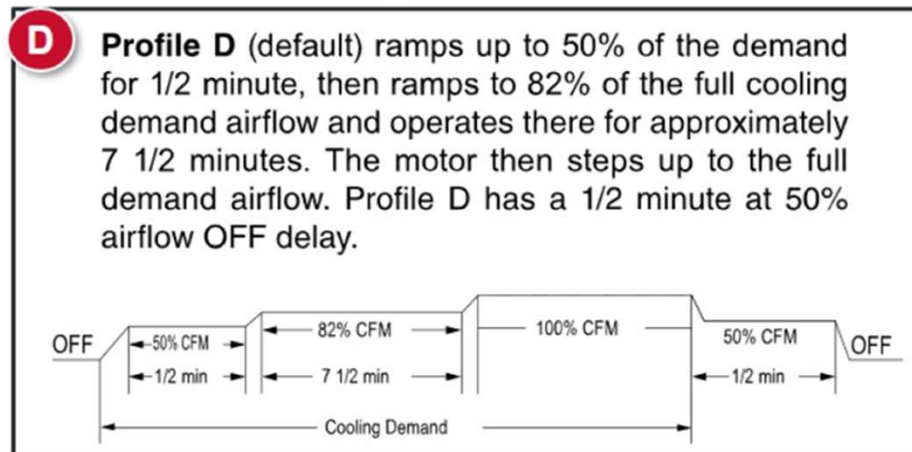


Common Settings to Adjust

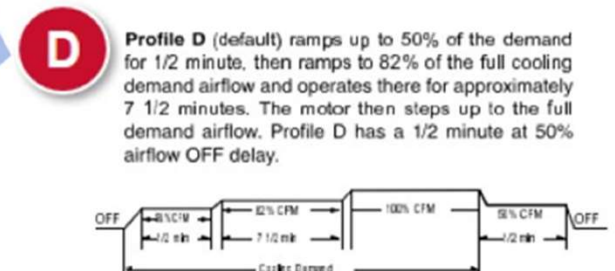
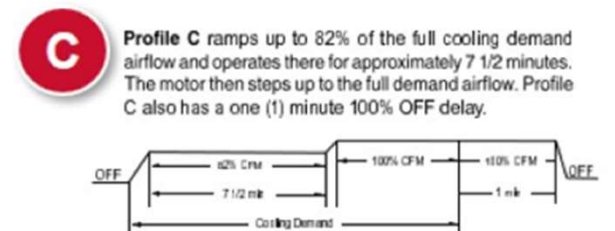
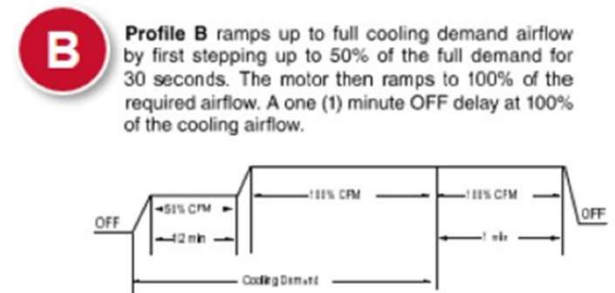
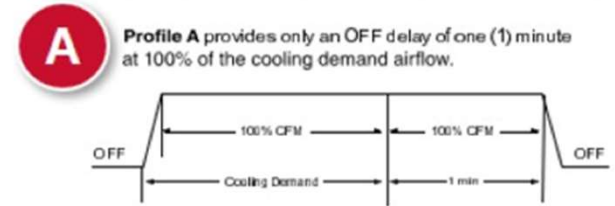
- Cool profile
- Several custom ramping profiles for the ECM blower motor are offered for cooling
- These profiles are designed to potentially enhance cooling performance and increase comfort level
- 4 profiles are available: A | B | C | D
 - Profile D is the default

Common Settings to Adjust

- **NOTE:** Please be mindful that reducing airflow to “super-cool” and evaporator may lead to cooling the cabinet of the equipment itself. If this happens in a humid environment, such as a crawl space, it may result in cabinet sweating

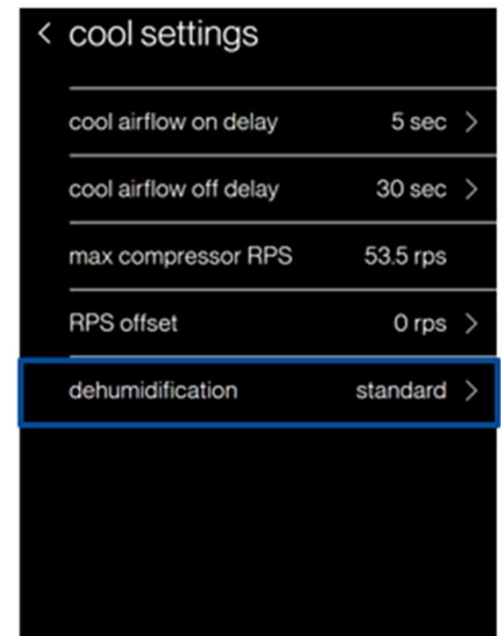


- **ECMD Recommendation – Profile A**



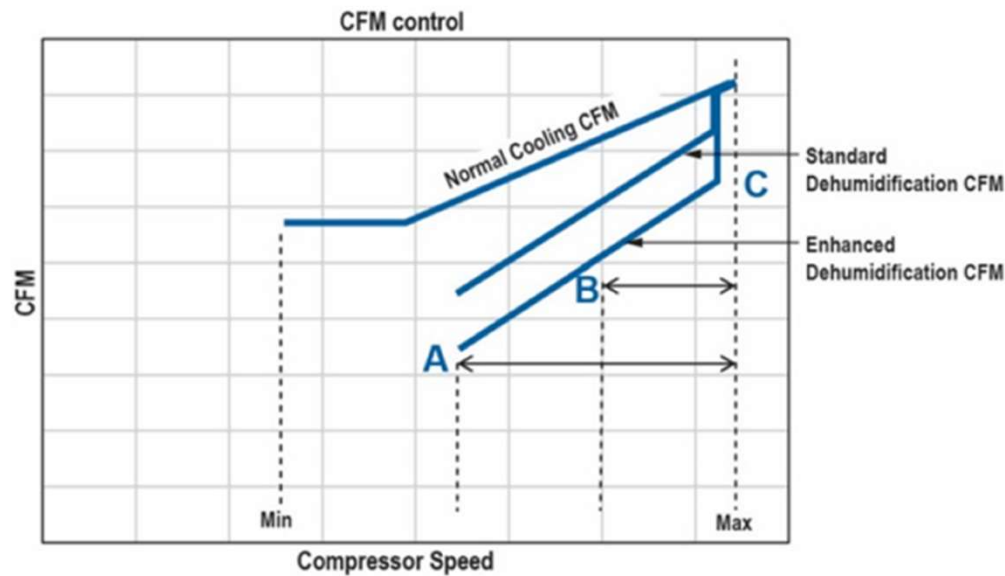
Common Settings to Adjust

- Dehumidification Settings
- Dehumidification is engaged whenever a cooling demand is present, and humidity levels are above the target level
- The dehumidification mode may be adjusted between 4 profiles that control the speed of the compressor in conjunction with the speed of the indoor blower
- If the room temperature is 2°F higher than the set temperature, the priority will switch from dehumidification to room temperature control



< cool settings	
cool airflow on delay	5 sec >
cool airflow off delay	30 sec >
max compressor RPS	53.5 rps
RPS offset	0 rps >
dehumidification	standard >

Common Settings to Adjust



Dehumidification Levels			
STANDARD	A	B	C
Improves dehum by lowering airflow	Max dehum with wide compressor and airflow range	Moderate dehum with reduced compressor and airflow range	Min dehum, compressor fixed at 100%, airflow @70%

< dehumidification

Select from the settings below based on the expected dehumidification of the system.

off ☐

standard ☐

A ☐

B ☐

C (maximum) ☒

Common Settings to Adjust

Intelligent Defrost



- Defrost Settings

- Defrost heat – You can select the outdoor temperature for backup heat strips to activate during defrost (at or below 30°F – 65°F or Always ON / Always OFF)
- If backup strips are locked out, the indoor blower will cycle to 0-cfm during defrost to prevent any cold blow of airflow
- Defrost interval – Every 30, 60, 90, or 120 minutes
- This initial time interval selection will work in conjunction with Intelligent Defrost that continually monitors the length of each defrost cycle and shortens/lengthen the time interval for the next defrost cycle based on whether the previous cycle was +/- 5 minutes in duration

< heat settings		
heat airflow trim	-6% -8% -10%	>
heat airflow on delay	15 sec	>
heat airflow off delay	30 sec	>
defrost heat	30°F	>
defrost interval	60 min	>
max compressor RPS	111.5 rps	
max RPS offset	15.5 rps	>

Common Settings to Adjust

- Heat Pump Settings
- Backup sources of heat (gas or electric strip) may be locked out based on outdoor temperature
- Backup heat may only engage above the lockout temperature if the space temperature is approximately 4°F lower than the setpoint or if the demand for heat is between 110%-200%
- For Dual Fuel operation only, you may select to prioritize efficiency which will create a hard lockout for furnace operation above the balance point

< balance point

45

50 °F

55

Aux (electric strip heat) and/or gas heat won't run above this outdoor temperature.

Common Settings to Adjust

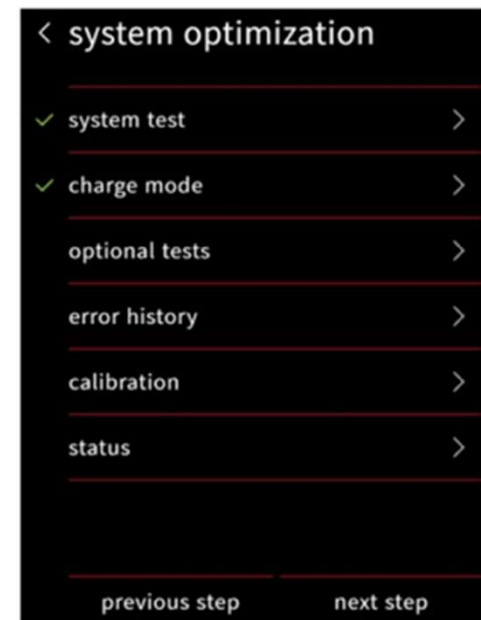
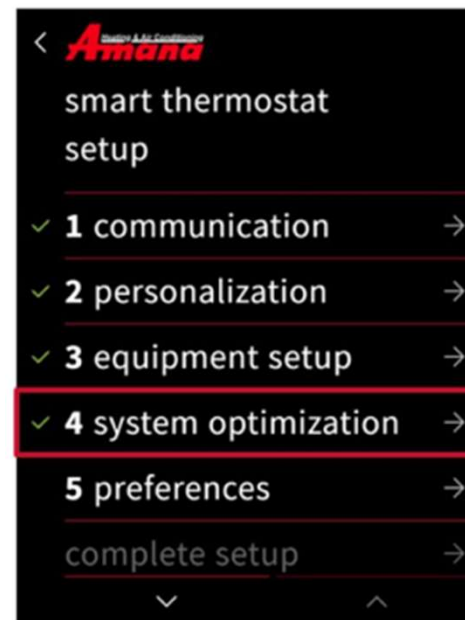
- **Heater Kit**
- It is important to set the capacity of the electric heater at two locations:
- The Amana ATST
 - In the Air Handler Menu
- The AHVE air handler dip switches

		DIP Switch Settings			
Function	Function	Switch 9 (S9)	Switch 10 (S10)	Switch 11 (S11)	Switch 12 (S12)
Heater Kit Selection	NO Heater Kit	OFF*	OFF*	OFF*	OFF*
	First Valid Heater Kit	ON	ON	ON	ON
	Second Valid Heater Kit	ON	ON	ON	OFF
	Third Valid Heater Kit	ON	ON	OFF	ON
	Fourth Valid Heater Kit	ON	ON	OFF	OFF
	Fifth Valid Heater Kit	ON	OFF	ON	ON
	Sixth Valid Heater Kit	ON	OFF	ON	OFF
	Seventh Valid Heater Kit	ON	OFF	OFF	ON

		Model			
DIP Switch Setting	AHVE24BP1400	AHVE36CP1400	AHVE42CP1400	AHVE48DP1400	AHVE60DP1400
First Valid Heater Kit	3	3/5	3/5	3/5	3/5
Second Valid Heater Kit	5	6	6	6	6
Third Valid Heater Kit	6	8	8	8	8
Fourth Valid Heater Kit	8	10	10	10	10
Fifth Valid Heater Kit	10	15	15	15	15
Sixth Valid Heater Kit		19	19	20	20
Seventh Valid Heater Kit					25

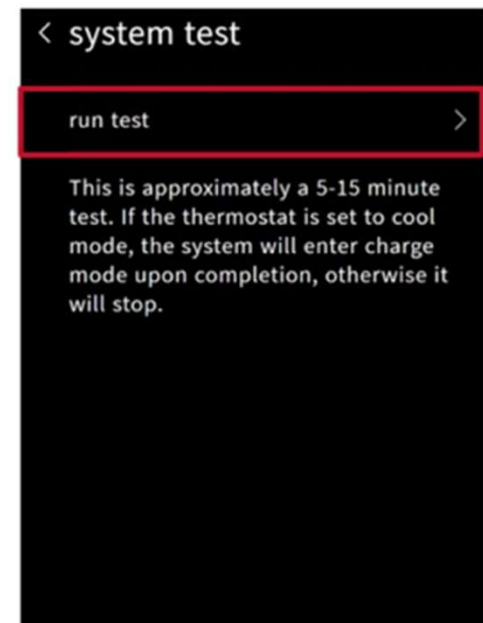
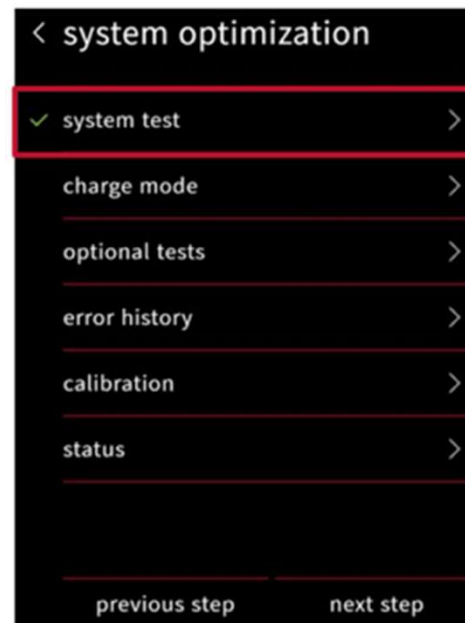
Commissioning the Amana ATST

- System optimization allows for the running of the “system verification test” required for initial start-up of inverters
- Charge mode may be triggered through this setup menu
- Optional operation tests
- Error history
- Temperature/Humidity calibration



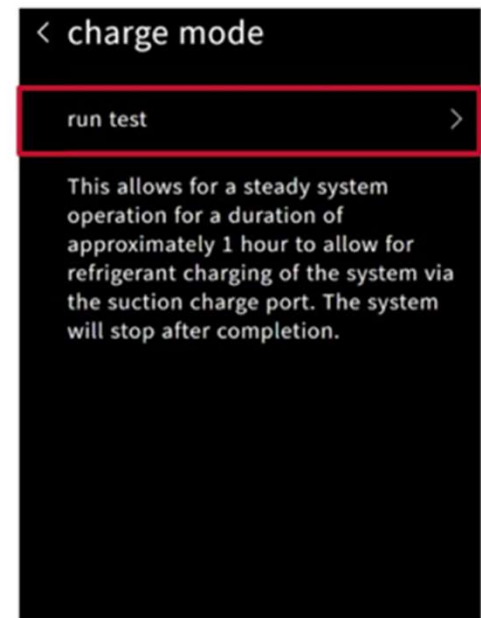
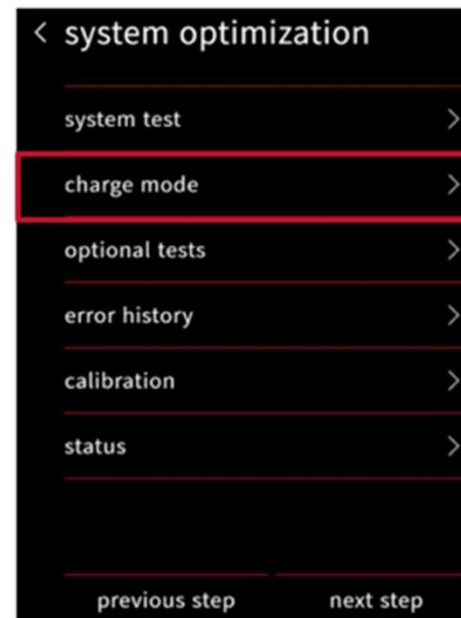
Commissioning the Amana ATST

- Running system test is required for inverter units before setup may be completed
 - You cannot stop this test once it has begun
- To proceed through the set-up process, the system test needs to be completed without any errors
- When the tests are completed, the run test screen is displayed
 - E11 status code will be cleared from the outdoor PCB once the test has completed



Commissioning the Amana ATST

- Selecting charge mode allows for a steady system operation to allow for refrigerant charging of the system via the suction charge port
- The system will stop when the “stop test” button is pressed or once the test is complete (2 hours)



Refrigerant Charge Verification

- Calculating Refrigerant Charge
- The outdoor unit is shipped with a predetermined factory charge level
- For the best charging calculation, the new or existing line set length and diameter must be measured
- Charging tables are provided in the I/O based on indoor coil, line set length, and diameter

Refrigerant Charge Verification

- I/O Charging Chart Example

- Column A = Total Refrigerant Charge

- Column C = Additional Refrigerant Charge to be added

- Bold = Factory Charge

AC	Total/Additional refrigerant (oz.)																			
	1.5 ton										2.0 ton									
Indoor Unit type	CAPEA, AHVE																			
Liquid Pipe Diameter(inch)	1/4"				5/16"				3/8"				5/16"				3/8"			
Suction Pipe Diameter(inch)	5/8"		3/4"		5/8"		3/4"		5/8"		3/4"		5/8"		3/4"		5/8"		3/4"	
Actual Line Set Length(ft.)	(A)	(C)	(A)	(C)	(A)	(C)	(A)	(C)	(A)	(C)	(A)	(C)	(A)	(C)	(A)	(C)	(A)	(C)	(A)	(C)
15 or less	n/a		n/a		n/a		n/a		n/a		76	0	n/a		n/a		n/a		76	0
20					76		0	77	1	79	3			78		2	77	1	79	3
25			77	1	76	0	78	2	80	4	82	6	78	2	80	4	80	4	82	6
30			78	2	77	1	80	4	83	7	85	9	79	3	82	6	83	7	85	9
35			79	3	79	3	82	6	85	9	88	12	81	5	84	8	85	9	88	12
40	77	1	81	5	80	4	84	8	88	12	92	16	82	6	86	10	88	12	92	16
45	78	2	82	6	82	6	86	10	91	15	95	19	84	8	88	12	91	15	95	19
50	78	2	83	7	83	7	88	12	93	17	98	22	85	9	89	13	93	17	98	22
55	79	3	84	8	85	9	89	13	96	20	101	25	87	11	91	15	96	20	101	25
60	80	4	85	9	86	10	91	15	99	23	104	28	88	12	93	17	99	23	104	28
65	81	5	86	10	88	12	93	17	101	25	107	31	90	14	95	19	101	25	107	31
70	81	5	87	11	89	13	95	19	104	28	110	34	91	15	97	21	104	28	110	34
75	82	6	88	12	91	15	97	21	107	31	113	37	n/a	n/a			107	31	113	37
80	83	7	90	14	92	16	99	23	109	33	116	40					109	33	116	40
85	83	7	91	15	94	18	101	25	112	36	119	43					112	36	119	43
90	84	8	92	16	95	19	103	27	115	39	123	47					115	39	123	47
95	85	9	93	17	97	21	105	29	117	41	126	50					117	41	126	50
100	85	9	94	18	98	22	107	31	120	44	129	53					120	44	129	53

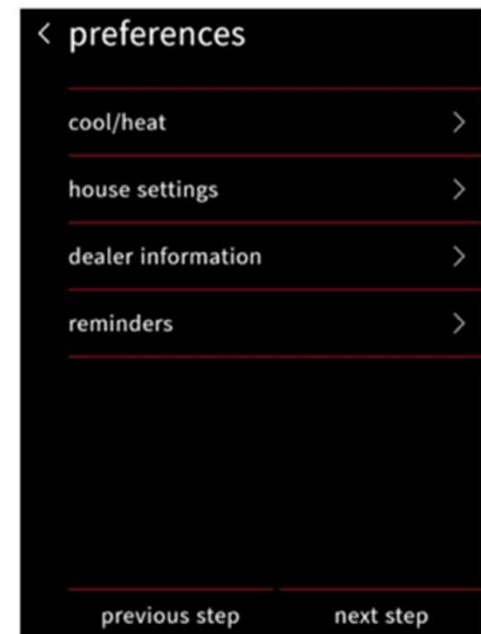
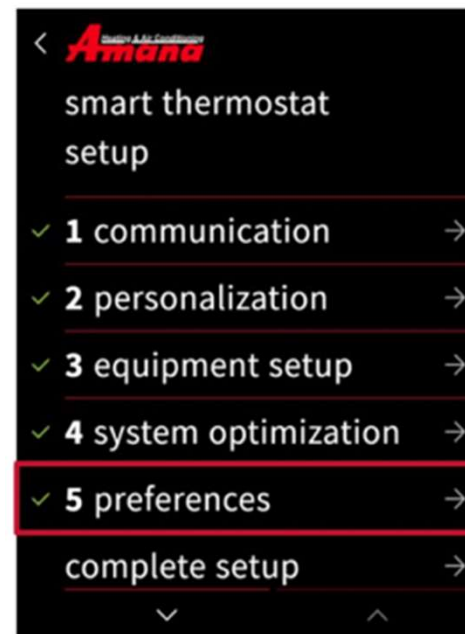
Refrigerant Charge Verification

- In Charge Verification mode the system will run at 50% capacity for up to 2-hours.
- The unit must be allowed to run for 15-20 minutes to stabilize at which point the outdoor 7-segment display will show "CHA" followed by the sub-cooling reading.
- If the unit is not in a stable state of operation, the outdoor 7-segment display will just flash "CHA" indicating the unit is not operating stable yet.
- If the outdoor ambient is between 65°F and 105°F the chart shown will provide the correct sub-cooling values | Target Superheat is 9°F in cooling mode

Model	AXV6SS	AZV6SA
1.5 Ton	10 ± 1°F	10 ± 1°F
2.0 Ton	12 ± 1°F	12 ± 1°F
2.5 Ton	14 ± 1°F	14 ± 1°F
3.0 Ton	15 ± 1°F	15 ± 1°F
3.5 Ton	8 ± 1°F	8 ± 1°F
4.0 Ton	9 ± 1°F	9 ± 1°F
5.0 Ton	9 ± 1°F	9 ± 1°F

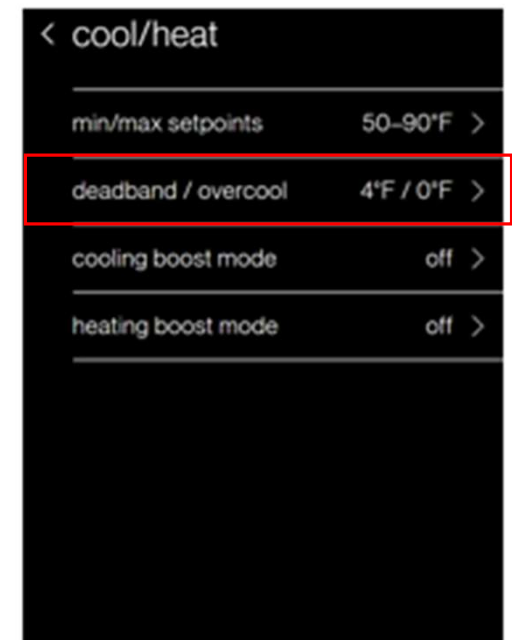
Commissioning the Amana ATST

- Preferences allows for the control of the deadband between heating and cooling set temperatures
- Dealers may also enter contact information as well as program reminders into the ATST controller



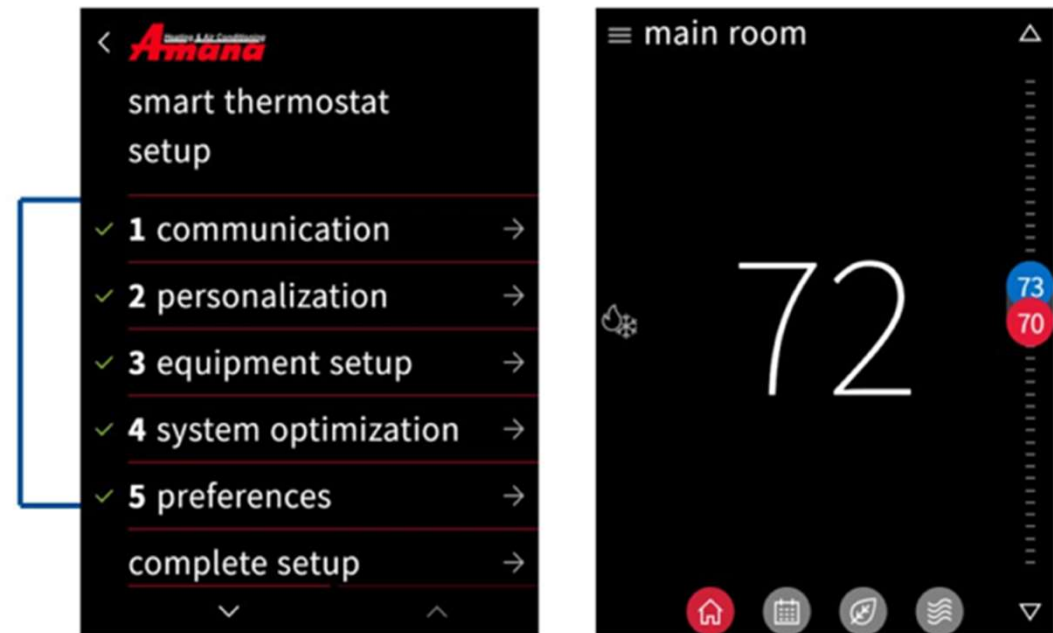
Common Settings to Adjust

- Deadband/Overcool
- Deadband is the difference allowed between a cooling setpoint and a heating setpoint when in the AUTO mode
- ECMD recommendation is a Deadband of 2°F
- Overcool is a feature that allows for the unit to cool below the setpoint if there is a demand for dehumidification; this feature only works in conjunction with a target humidity setting
- The Overcool value may be set at 0°F – 3°F

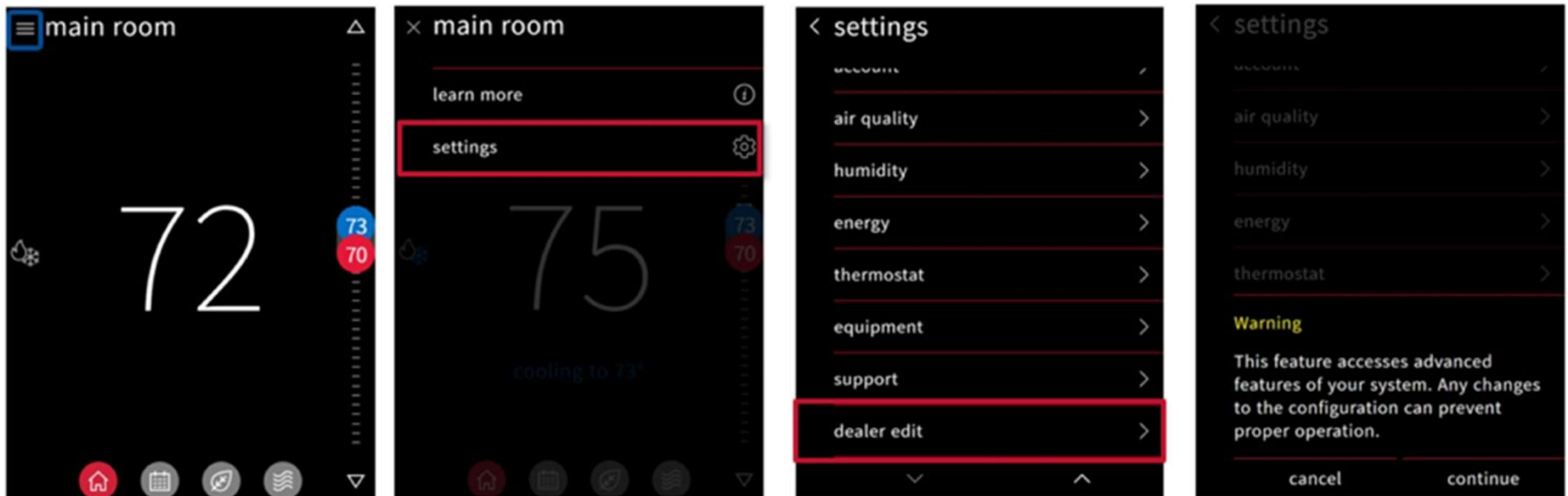


Commissioning the Amana ATST

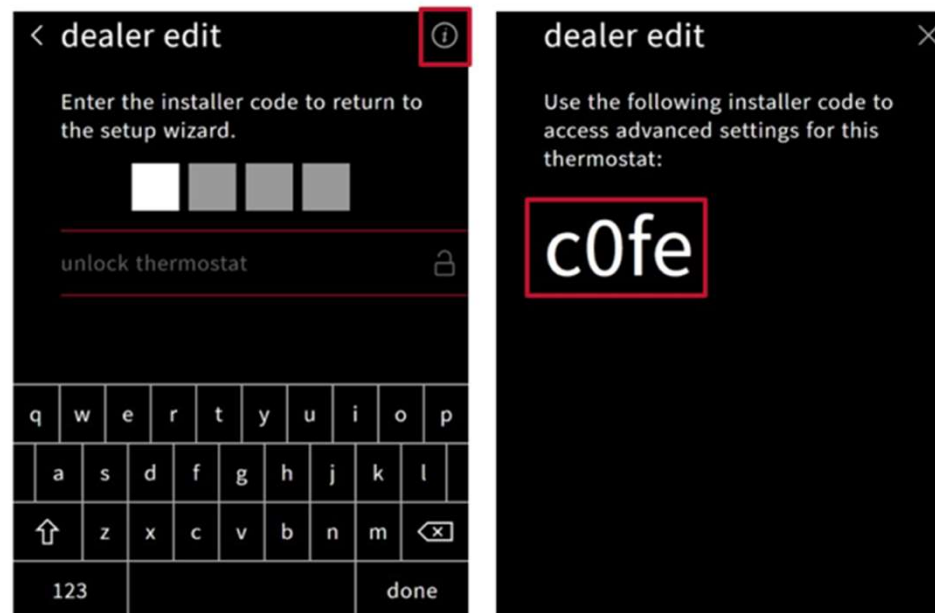
- Selecting complete set-up will conclude the full set-up of the thermostat and display normal mode for you to navigate and verify settings



Navigating back to the set-up menu



Navigating back to the set-up menu



East Coast
METAL DISTRIBUTORS