



BASIC TECHNICAL INFORMATION FOR:

SAMSUNG MAX MINI-SPLIT UNITS

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Samsung MAX 12,000 BTU Mini-Split

Indoor Unit: #700550 (AQN12VFUAGM)

Outdoor Unit: #700552 (AQX12VFUAGM)

POWER VOLTAGE:

Power Voltage:	208/230V - 1 Ph - 60 Hz
Control Voltage:	DDC Fuzzy Logic
Main Breaker Size:	15 A

LINE SIZES:

"Liquid" (expanded gas) line:	1/4"
Suction:	3/8"

BOTH LINES MUST BE INSULATED SEPARATELY

INTERCONNECT LENGTH:

Maximum/Minimum Length:	50 feet / 10 feet
Vertical Lift:	26 feet

Note: Condenser can be above or below evaporator

CHARGING:

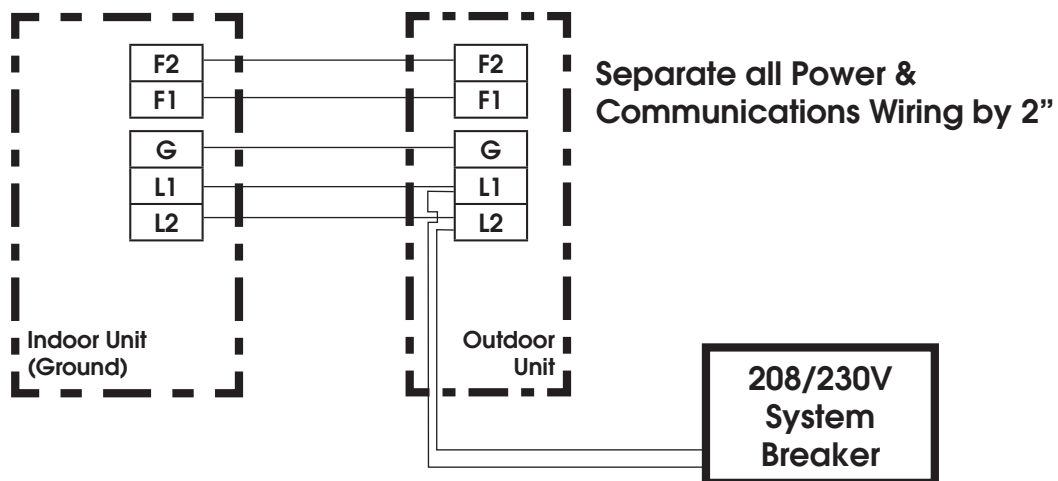
Unit is charged for:	25 ft. (Factory Charge 31.7oz. R410A)
Additional Charge of R410A:	0.16 oz./ft. over 25 ft.

CHARGE FOR LINE RUN LENGTHS:

Length:	25	35	45	50
Added Charge (oz.):	0	1.6	3.3	4.0

INTERCONNECTING WIRING:

Gauge:	14 AWG Power & 16 AWG Shielded Communication
Number of Interconnecting Wires:	3x14 AWG Power & 2x16 AWG Control = 5 Total





Samsung MAX 24,000 BTU Mini-Split

Indoor Unit: #700554 (AQN24VFUAGM)

Outdoor Unit: #700556 (AQX24VFUAGM)

POWER VOLTAGE:

Power Voltage:	208/230V - 1 Ph - 60 Hz
Control Voltage:	DDC Fuzzy Logic
Main Breaker Size:	20 A

LINE SIZES:

"Liquid" (expanded gas) line:	1/4"
Suction:	5/8"

BOTH LINES MUST BE INSULATED SEPARATELY

INTERCONNECT LENGTH:

Maximum/Minimum Length:	98 feet / 10 feet
Vertical Lift:	50 feet (Trap required at 26 ft.)

Note: Condenser can be above or below evaporator

CHARGING:

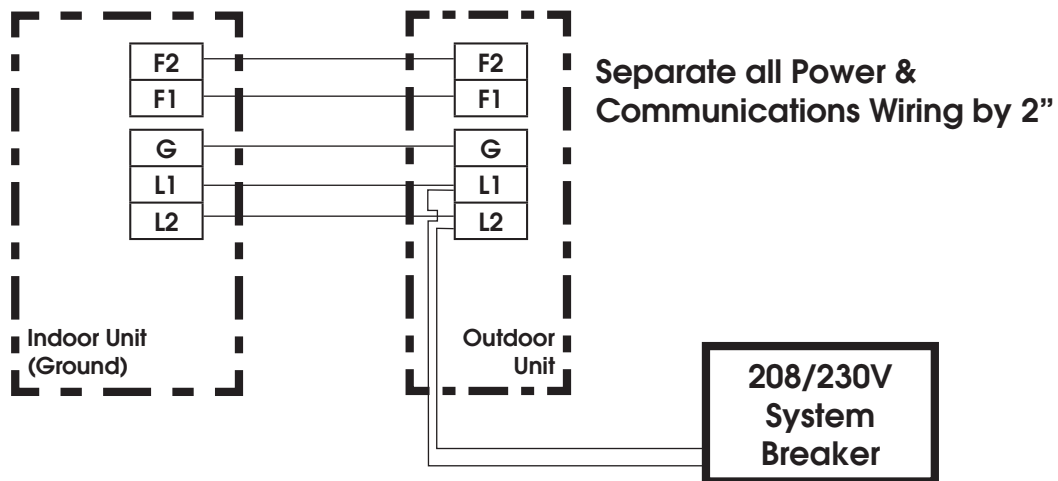
Unit is charged for:	25 ft. (Factory Charge 58.1 oz. R410A)
Additional Charge of R410A:	0.16 oz./ft. over 25 ft.

CHARGE FOR LINE RUN LENGTHS:

Length:	25	35	45	55	65	75	85	95	98
Added Charge (oz.):	0	1.6	3.2	4.8	6.4	8.0	9.6	11.2	11.68

INTERCONNECTING WIRING:

Gauge:	14 AWG Power & 16 AWG Shielded Communication
Number of Interconnecting Wires:	3x14 AWG Power & 2x16 AWG Control = 5 Total



Samsung MAX 36,000 BTU Mini-Split

Indoor Unit: #700558 (AQN36VFUAGM)

Outdoor Unit: #700560 (AQX36VFUAGM)

POWER VOLTAGE:

Power Voltage:	208/230V - 1 Ph - 60 Hz
Control Voltage:	DDC Fuzzy Logic
Main Breaker Size:	30 A

LINE SIZES:

"Liquid" (expanded gas) line:	1/4"
Suction:	5/8"

BOTH LINES MUST BE INSULATED SEPARATELY

INTERCONNECT LENGTH:

Maximum/Minimum Length:	164 feet / 10 feet
Vertical Lift:	98 feet (Trap required at 26 ft.)

Note: Condenser can be above or below evaporator

CHARGING:

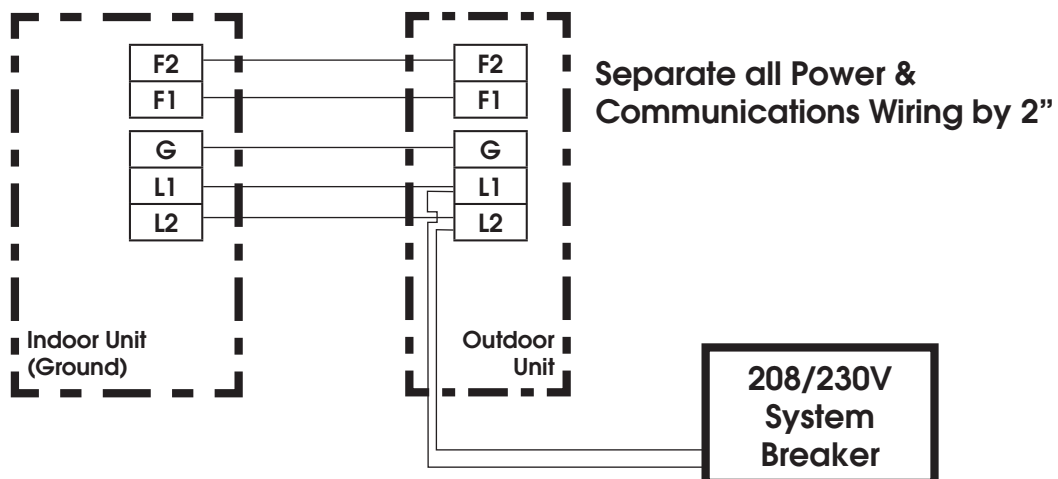
Unit is charged for:	25 ft. (Factory Charge 88.1oz. R410A)
Additional Charge of R410A:	0.43 oz./ft. over 25 ft.

CHARGE FOR LINE RUN LENGTHS:

Length:	25	35	45	55	65	75	85	95	98
Added Charge (oz.):	0	4.3	8.6	12.9	17.2	21.5	25.8	30.1	32.25

INTERCONNECTING WIRING:

Gauge:	14 AWG Power & 16 AWG Shielded Communication
Number of Interconnecting Wires:	3x14 AWG Power & 2x16 AWG Control = 5 Total

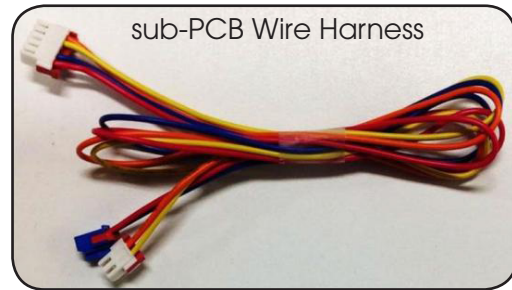
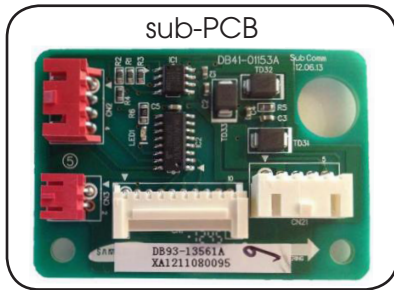


Samsung MAX Wired Controller (optional)

Part: #700574

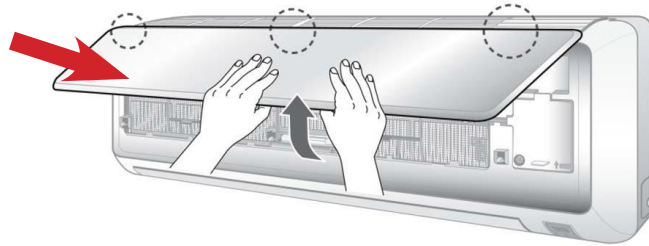
sub-PCB INSTALLATION INSTRUCTIONS

- The sub-PCB installs inside a single MAX indoor unit (Part #700550, #700554 or #700558). It is required to connect and control an indoor unit with the Samsung wired controller (part #700578).
- Provides 12V DC to the Samsung wired controller (part #700578).
- Required to control MAX models with Samsung central control options (upper level control).
- Includes sub-PCB, 4 crimp wire connectors, wire harness and sub-PCB cover.

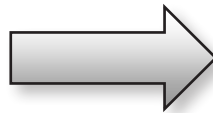


INSTALLATION NOTES:

- Make sure the power is turned off to the outdoor unit before opening the indoor unit PCB cover or cabinet.
- The front panel of the MAX indoor unit is easily removed to make installation easier and to prevent damage to the panel.



1. With the power off, open the front panel of the MAX indoor unit. Remove the main PCB cover by removing the screw in the bottom corner.



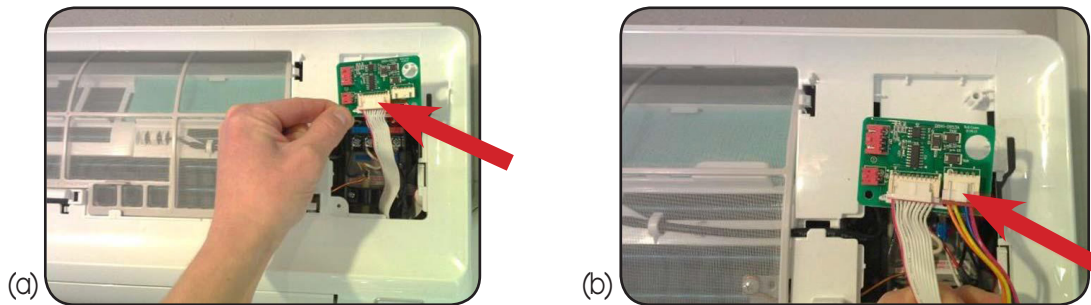
sub-PCB INSTALLATION INSTRUCTIONS (continued...)

2. Inside the unit, towards the bottom of the cabinet you will find a PCB wire harness. Gently pull this wire upward and out of the unit.

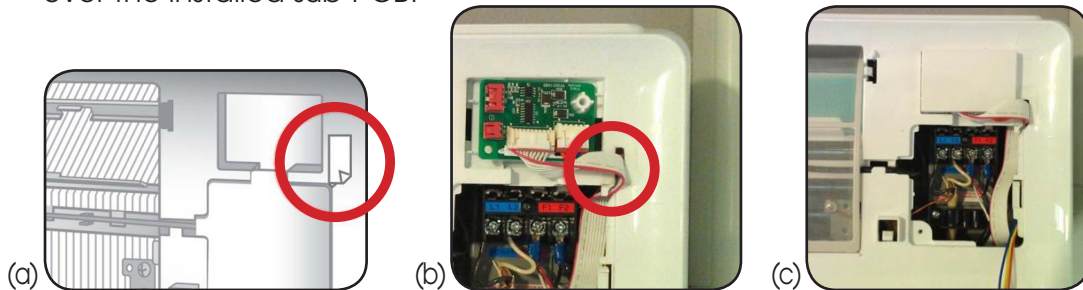


3. Connect the PCB to the PCB wire harness (a) and to the sub-PCB wire harness (b).

NOTE: the sub-PCB wire harness is included with the wired controller.



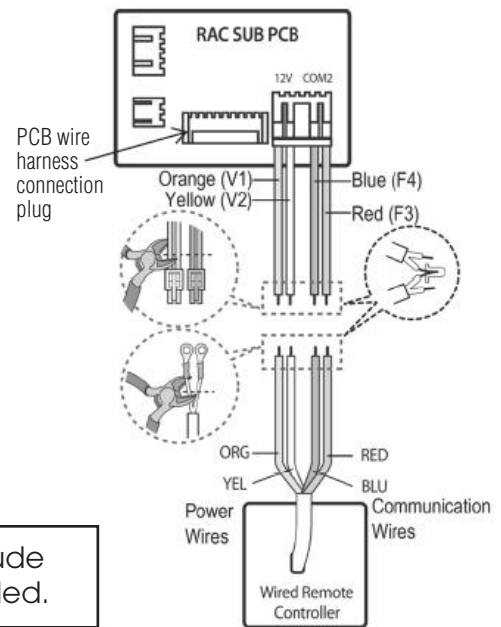
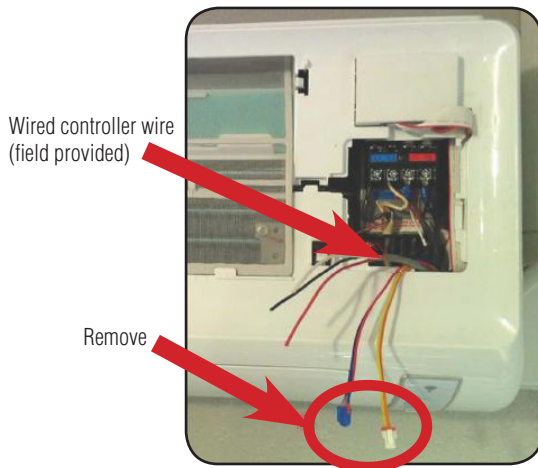
4. Remove the protective tape (a) and slide all connected wires into the groove beside the sub-PCB mounting location (b). Snap the sub-PCB cover over the installed sub-PCB.



sub-PCB INSTALLATION INSTRUCTIONS (continued...)

- With the wired controller wires already installed, pull the wires through the front of the indoor unit. Cut the 2 small plastic connectors off the ends of the sub-PCB wire harness (the ends of the red/blue and yellow/orange wires). Connect F3/F4 and V1/V2 between the indoor unit and the wired controller as pictured below.

RED = F3 **BLUE = F4** **ORANGE = V1** **YELLOW = V2**



NOTE: The wired controller does not include a connection wire. This wire field is provided.

- Tuck the connected wires into the unit cabinet and replace the main PCB cover and front panel (if removed). Apply power and proceed with programming your controller (temperature sensing location, time, Fahrenheit, etc.)



BASIC INSTALLATION TIPS

SIZING

Computer/Data Rooms:

Basic sizing is 200-250 sq. ft. per 12,000 BTU/h.

Commercial/Retail:

Basic sizing is 400-450 sq. ft. per 12,000 BTU/h.

Residential:

Basic sizing is 550-600 sq. ft. per 12,000 BTU/h.

LOW AMBIENT COOLING

Computer/Data Rooms and Commercial:

As standard, these units have a low ambient cooling capability down to 10°F outdoor temperature.

THESE UNITS CANNOT OPERATE IN COOLING BELOW 10°F AMBIENT TEMPERATURE UNLESS EQUIPPED WITH AN APPROVED WIND BAFFLE TO PROTECT THE OUTDOOR UNIT. SHOULD A WIND BAFFLE BE INSTALLED, UNIT PERFORMANCE CAN BE EXPECTED DOWN TO 0°F OUTDOOR TEMPERATURE. PLEASE NOTE THAT IF A PROLONGED OFF CYCLE IS EXPERIENCED IN OUTDOOR TEMPERATURES BELOW 10°F, THE UNIT MAY NOT RESTART UNTIL THE TEMPERATURE RISES ABOVE 14°F.

R410A REFRIGERANT

Higher pressures (close to double) than R22, but the operating temperatures are very similar to those with R22.

For example:

R410A:

A saturated suction temperature of 45°F = Suction Pressure of 130 psig

R22:

A saturated suction temperature of 45°F = Suction Pressure of 76 psig

- Minimize the time that the system is open to the atmosphere.
- Ensure that a deep vacuum is pulled on the system - 200 microns or less.
- Do not install any sight glasses or filter driers in the line set.

NOTE: It is not necessary to remove refrigerant for line sets shorter than the specified length of the factory charge.



BASIC INSTALLATION TIPS (continued...)

R410A REFRIGERANT (continued...)

The gauge connection on the Samsung units is a 5/16" male, so an adapter is required to connect a standard North American set of R410A gauges to the Samsung unit.

UNIT LOCATION

Indoor Unit:

High Wall units should be located a minimum of 4ft from the ground. Also, some of the indoor unit clearances listed in the specific unit installation manuals can be decreased to a minimum clearance of 2 inches from the ceiling to the top of the unit, while still maintaining unit performance and efficiency levels.

Ensure that no obstacles are directly in front of the unit for a minimum distance of 10-12ft on the MAX and Vivace 12,000 BTU units, 20-25ft on the MAX and Vivace 24,000 BTU units and 25-30ft on the MAX 36,000 BTU unit. This will prevent bounce back of the conditioned air and will ensure adequate airflow is maintained, keeping the indoor coil warm and allowing the system to run to full capacity when necessary.

If any system is prevented from running at full capacity regularly, whether it is from impeded airflow or over sizing, it will have an adverse affect on the system's ability to properly return oil to the compressor. Over time this will cause inconsistent performance, error codes, and premature failure of components. Ceiling Cassette units must have a Minimum Distance of 5ft from the louver opening to any wall or other obstacle for the same reasons as listed above.

Outdoor Unit:

Ensure line set runs are adhered to, it is required that a minimum line set length of 10 ft. be maintained. Exceeding the published maximum line set length is not permitted, under any circumstance.

Also, keep in mind that since the expansion valve is located in the outdoor unit, the line set is merely an extension of the indoor coil and, although insulated, the longer the line set run is, the more likely there will noticeable loss of capacity.

Minimum clearances of 6" behind and 24" in front of the outdoor unit must also be maintained. Enough clearance must be maintained from the sides to accommodate service of the unit.

Since these units are heat pumps, you should raise the outdoor unit 4-6" from the pad/ground to help drain the unit after a defrost cycle. Also, ensure the unit is capable of operating in desired ambient temperatures. As previously stated, if the outdoor coil temperature is allowed to drop below 10°F, the system will lock out, not restarting until that temperature rises above 14°F.



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