

1. Models Line Up

1.1 Indoor Unit

Category	Picture	Chassis	Nominal Capacity (kBtu/h)	Model Name
Artcool		S1	12	AA09SP.NS1 (S3NM091LRC0.EC6GEEU)

1. Models Line Up

1.2 Outdoor Unit

Power Supply	Picture	Chassis	Nominal Capacity (kBtu/h)	Model Name
1 Ø , 220 ~ 240 V , 50 Hz		U18A	12	AA09SP.U18 (S3UM091LRC0.EC6GEEU)

3. Specifications

Buyer Model				AA09SP.SS1 (AA09SP.NS1 / AA09SP.U18)		
Factory Model	Set (Indoor / Outdoor)		Unit	S3-M091LRC0.EC6GEEU (S3NM091LRC0.EC6GEEU / S3UM091LRC0.EC6GEEU)		
Capacity	Cooling	Min ~ Rated ~ Max	kW	0.890	2.500	4.000
			Btu/h	3,038	8,536	13,657
	Cooling (T3)	Min ~ Rated ~ Max	kJ/h	-	-	-
			kW	-	-	-
	Heating	Min ~ Rated ~ Max	Btu/h	-	-	-
			kW	0.650	3.200	5.500
Power Input	Cooling	Min ~ Rated ~ Max	Btu/h	2,219	10,926	18,779
			kJ/h	-	-	-
	Cooling (T3)	Min ~ Rated ~ Max	kW	-	3.600	-
			W	160	510	1,400
	Heating	Min ~ Rated ~ Max	W	-	-	-
			W	160	640	1,600
Running Current	Cooling	Min ~ Rated ~ Max	A	1.30	3.10	6.00
	Cooling (T3)	Min ~ Rated ~ Max	A	-	-	-
	Heating	Min ~ Rated ~ Max	A	1.30	3.20	7.00
EER			WW	4.90		
			(Btu/h)W	16.74		
			(kJ/h)W	-		
EER (T3)			WW	-		
			(Btu/h)W	-		
SEER			-	9.7		
			WW	5.00		
COP			(Btu/h)W	17.07		
			(kJ/h)W	-		
SCOP			-	5.1		
P design C / P design H			kW	2.5 / 2.8		
Energy Label Grade		Cooling / Heating	-	A+++ / A+++		
Annual Energy Consumption		Cooling / Heating	kWh/year	90 / 769		
Weighted EER			(Btu/h)W	-		
			WW	-		
Power Supply			Ø, V, Hz	1, 220 ~ 240, 50		
Available Voltage Range			V	187 ~ 276		
Power Factor		Cooling / Heating	%	97.0 / 97.0		
Moisture Removal			l/h	1.15		
Indoor	Air Flow Rate	Cooling, SH / H / M / L	m³/min	13.6 / 10.5 / 8.1 / 5.7		
		Heating, SH / H / M / L	m³/min	14.2 / 10.5 / 8.1 / 5.7		
	Sound Pressure Level	Cooling, SH / H / M / L / SL	dB(A)	47 / 40 / 35 / 27 / 19		
		Heating, SH / H / M / L	dB(A)	48 / 40 / 35 / 27		
	Sound Power Level		dB(A)	65		
			dB(A)	60		
	Dimensions (W × H × D)	Net	mm	935 x 307 x 235		
		Shipping	mm	1007 x 383 x 296		
Weight	Net	kg	13.7			
	Shipping	kg	16.6			
Exterior Color Code			-	Munsell 5b 2/1 (RAL 000 25 00)		
Outdoor	Air Flow Rate	Max	m³/min	27.0		
		Cooling, Min ~ Max	rpm	200 ~ 840		
	Fan Motor Speed	Heating, Min ~ Max	rpm	400 ~ 800		
		Cooling, Rated	dB(A)	49		
	Sound Pressure Level	Heating, Rated	dB(A)	51		
			dB(A)	60		
	Sound Power Level		dB(A)	770 x 545 x 288		
			mm	919 x 599 x 392		
	Dimensions (W × H × D)	Net	mm	29.9		
		Shipping	mm	32		
Weight	Net	kg	15			
	Shipping	kg	Munsell 9.54Y 8.34/1.31 (RAL 9001)			
Max. Fuse Size		A	-15 ~ 48			
		A	-15 ~ 24			
		A	-15 ~ 18			
Circuit Breaker			A	15		
Power Supply to Unit			-	Outdoor		
Power and Communication Cable			No. × mm²	4 × 1		
Piping	Size	Liquid	mm	ø 6.35		
		Gas	mm	ø 9.52		
Connections Method		Indoor / Outdoor	-	Flared / Flared		
Drain Hose Size		O.D. I.D	mm	21.5, 16		
Between Indoor & Outdoor	Piping Length	Min / Standard / Max	m	3 / 7.5 / 20		
		No Charge	m	12.5		
	Max. Elevation Difference		m	10		
		Piping Connection Heat Insulation	-	Both liquid and gas pipes		
Note						
• - : No Relation						
• All power supply and communication cables and circuit breaker must comply with applicable local and national codes.						
• Exterior color code is approximate value.						
• It is difficult to measure air flow rate of sleep because of small values.						
• Maximum heating capacity is for heating operation without any frost.						
• Fan motor speed could vary ±20 rpm according to the operating conditions.						
• It may cause reliability, performance, noise, and vibration problem, unless meeting the range of connecting pipe length. Keep the minimum piping length by making loops, although indoor unit and outdoor unit are close.						
• This product contains fluorinated greenhouse gases.						
• Some specifications may be changed without notifications due to our policy of innovation.						
• Test conditions are based on EN 14511 and EN 14825.						

3. Specifications

Buyer Model	Set (Indoor / Outdoor)		Unit	AA09SP.SS1 (AA09SP.NS1 / AA09SP.U18) S3-M091LRC0.EC6GEEU (S3NM091LRC0.EC6GEEU / S3UM091LRC0.EC6GEEU)
Factory Model				
Refrigerant	Type		-	R32
	Pre Charge		kg	0.900
	Additional Charge		g/m	20
	Control		-	Electronic Expansion Valve
	Global Warming Potential		-	675
	t-CO ₂ eq		-	0.608
Defrost Method			-	Reverse Cycle
Tool Code (Chassis)		Indoor / Outdoor	-	S1 / U18A
Compressor	Type		-	Twin Rotary
	Model		-	DST128MCA
	Motor Type		-	BLDC
	Oil Type / Maker		-	PVE (FW68D) / IDEMITSU
	Oil Charge		cc	330
	O.L.P. Name		-	-
	Manufacturer / Country of Origin		-	LG Electronics / China
Fan (Indoor)	Type		-	Cross Flow Fan
	Motor Output		W	30
Fan (Outdoor)	Type		-	Propeller Fan
	Motor Type		-	BLDC
	Motor Output		W	43
	Motor Insulation		-	Class E
	Motor Enclosure / Ingress Protection		-	TEAO / IPX4
Heat Exchanger	Evaporator	Material, Tube / Fin	-	Cu / Al
		(ø x Row x Column x FPI x L) x Qty.	#1	(ø7 x 2 x 16 x 20 x 686.6) x 1
		(ø x Row x Column x FPI x L) x Qty.	#2	-
		(ø x Row x Column x FPI x L) x Qty.	#3	-
		(ø x Row x Column x FPI x L) x Qty.	#4	-
		Corrosion Protection	-	PCM
	Condenser	Fin Type	-	Slit
		Material, Tube / Fin	-	Cu / Al
		(ø x Row x Column x FPI x L) x Qty.	#1	(ø7 x 2 x 24 x 18 x 814) x 1
		(ø x Row x Column x FPI x L) x Qty.	#2	-
		Corrosion Protection	-	Gold
Fin Type		-	Corrugate	

Note

- - : No Relation
- All power supply and communication cables and circuit breaker must comply with applicable local and national codes.
- Exterior color code is approximate value.
- It is difficult to measure air flow rate of sleep because of small values.
- Maximum heating capacity is for heating operation without any frost.
- Fan motor speed could vary ±20 rpm according to the operating conditions.
- It may cause reliability, performance, noise, and vibration problem, unless meeting the range of connecting pipe length. Keep the minimum piping length by making loops, although indoor unit and outdoor unit are close.
- This product contains fluorinated greenhouse gases.
- Some specifications may be changed without notifications due to our policy of innovation.
- Test conditions are based on EN 14511 and EN 14825.

4. Function List

Category	Function	Description
Air Flow	Air Supply Outlet	The number of air outlet from the indoor unit
	Airflow Direction Control (Left & Right)	Controlling a left-right direction of the indoor air flow
	Airflow Direction Control (Up & Down)	Controlling a up-down direction of the indoor air flow
	Auto Swing (Left & Right)	Auto swing air flow right and left for quick-cooling & Heating
	Auto Swing (Up & Down)	Auto swing air flow up and down for quick-cooling & Heating
	Fan Speed Steps (Fan / Cool / Heat)	Step adjustable wind strength at each mode
	Natural Wind (Auto Wind)	Wind strength changes at regular intervals automatically
	Jet Cool / Jet Heat (Power Wind)	Wind strength is set to the maximum for 30 minutes
	Comfort Air	Set the vane to a preset position in order to make an indirect wind
	Soft Air	Stay comfortably cool with no chilly drafts
Air Purifying	AI Air	Operate automatically by detecting the surrounding environment and user characteristics.
	Prefilter (Washable)	Capture dust particles over 10µm in size(Basic Filter)
	Fine Dust Filter(Micro Dust Filter)	Capture dust particles over 0.3µm in size(Optional Filter)
	Ultra Fine Dust Filter(Ion Diffuser)	Capture dust particles over 1.0µm in size(Optional Filter+Ion Diffuser)
	Allergy Filter	Capture all allergy-causing substances such as house dust and mites floating in the air
Installation	Plasmaster Ionizer	Reduce harmful microscopic particles and odor
	Drain Pump	Water drain pump for indoor unit
Reliability	Hot Start	In the heating mode, the hot wind from the beginning
	Self Diagnosis	Self-diagnostic for product protection
	De-ice Control (Defrost)	In the heating mode, de-icing of the outdoor heat exchanger automatically
	Dry (Dehumidification) Operation	Prevent the growth of mold by removing excess moisture from an area with high humidity
Convenience	Auto Changeover	Change the operation mode(cooling & heating) automatically to maintain the set temperature
	Auto Operation (Artificial Intelligence)	The fan and setting temperature adjust automatically, base on room temperature
	Auto Cleaning (Coil Dry)	Prevent the formation of bacteria and mold on the heat exchanger
	Auto Restart Operation	If power is resupplied after blackout, product restart automatically
	Child Lock ¹	Only for wired-remote controller. Lock the buttons to prevent children control
	Forced Operation	Use the forced switch of the indoor unit to operate the air conditioner when the remote control is unavailable
	Group Control ¹	Only for wired-remote controller. Control multiple indoor units at the same time
	Sleep Mode	Set the off timer and fan speed is decreasing to make quiet environment for comfort sleep
	Timer 24hr (On/Off) / 7hr (Off)	Set the on/off timer
	Timer (Weekly) ¹	Only for wired-remote controller. Set the on/off timer
	Two Thermistor Control ¹	If there is a temperature difference between room temperature and desired temperature, you can use this function in other to prevent insufficient cooling and insufficient heating
	Low Ambient Operation	The cooling operation is possible even in conditions of extreme cold
	Overheating Protection	If there is a temperature difference between room temperature and desired temperature, you can use this function in other to prevent over-heating
	Low Heating	Using less energy helps keep the room warm when going out
	Voice Control	Customer can control the aircon by voice without wireless remote controller
	Outdoor Silent Mode	The overall sound level of the outdoor unit drops by up to 3dB
	Mosquito Away	An ultrasonic sound that mosquitoes detest is emitted to drives away mosquitoes
	Indoor Unit Display Type	-
	Indoor Unit Display Light	Set the brightness of the display on the indoor unit
	Energy Display	Show the power consumption
Energy Saving	Air Quality Indicator (Dust Sensor)	Sense microscopic dusts in the room and let the air purifying system work without additional maneuver
	Human Detecting Sensor	By detecting human provides comfy airflow control and auto power-savings.
	Freeze Cleaning	Freeze and thaw the heat exchanger to wash away contaminants.
	Window Open Detecting	When a window opening is detected, Energy saving mode starts automatically.
	Energy Saving	Control the optimal desired temperature to save energy
	Energy Control	The customer can control the power consumption or current directly to save energy
	Gen Mode	In areas where electricity is limited, customer can continue to use household appliances with the air-conditioner by reducing power consumption
	Wired Remote Controller ²	-
	Handheld Wireless Controller	-
	General Central Controller (Non LGAP)	-
CAC Network Function	Network Solution (LGAP)	-
	Dry Contact ²	-
	PDI (Power Distribution Indicator) ²	-
	Outdoor Unit PI 485 ²	-
	Wi-Fi ²	Easily access and control an air conditioner's functions from anywhere
Special Function Kit	Water Level Sensor Connection ²	Detect the water level in drain pan
	Wind Baffle Kit ²	With wind baffle installed, the minimum temperature will be -18 °C (0 °F) D.B. in cooling
	Sump Heater	Prevent the accumulation of freezing on the outdoor-heat-exchanger during winter (Flexible Type)
	Sheath Heater ²	Prevent the accumulation of freezing on the outdoor-heat-exchanger during winter (Hard Type)
	Crank Case Heater	Pre-heating the compressor during winter
	Smart Inverter Monitoring System (SIMs) ²	Help you to easily monitor, diagnose the air conditioner and get a quick resolution
Others	Mode Lock	Set up the unit available to use only cooling or heating mode in the heat pump model
	DRED (Demand Response Enabling Device)	-

Note

- These functions must be applied according to the model. Please refer to the following function list for each model.
- ¹: This function can be operated only when the wired remote controller is connected. The applicability of each function depends on the above table.
- ²: Optional accessories must be purchased separately. If shown as "Embedded", this function is included in product.
- The function Wi-Fi is only compatible with 2.4 GHz band. (802.11 b/g/n)
- Some specifications may be changed without notifications due to our policy of innovation.

4. Function List

Category	Function	AA09SP.SS1 S3-M091LRC0.EC6GEFU
Air Flow	Air Supply Outlet	2
	Airflow Direction Control (Left & Right)	5 Steps
	Airflow Direction Control (Up & Down)	6 Steps
	Auto Swing (Left & Right)	O
	Auto Swing (Up & Down)	O
	Fan Speed Steps (Fan / Cool / Heat)	6 / 6 / 6
	Natural Wind (Auto Wind)	O
	Jet Cool / Jet Heat (Power Wind)	O / O
	Comfort Air	X
	Soft Air	O
	Vane Type	Dual Vane
Air Purifying	AI Air	O
	Prefilter (Washable)	O
	Fine Dust Filter (Micro Dust Filter)	X
	Ultra Fine Dust Filter / PM 1.0 Sensor	X
	Allergy Filter	O
Installation	Plasmaster Ionizer	O
	Drain Pump	X
Reliability	Hot Start	O
	Self Diagnosis	O
	De-ice Control (Defrost)	O
Convenience	Dry (Dehumidification) Operation	O
	Auto Changeover	O
	Auto Operation (Artificial Intelligence)	X
	Auto Cleaning (Coil Dry)	O (Auto clean+)
	Auto Restart Operation	O
	Child Lock ¹	O
	Forced Operation	O
	Group Control ¹	X
	Sleep Mode	12hr
	Timer 24hr (On/Off) / 7hr (Off)	O / X
	Timer (Weekly) ¹	O
	Two Thermistor Control ¹	O
	Low Ambient Operation	O
	Overheating Protection	O
	Low Heating	O
	Voice Control	X
	Outdoor Silent Mode	O
	Mosquito Away	X
	Smart Diagnosis	O
	Indoor Unit Display Type	Number Display
	Indoor Unit Display Light	On/Off
	Energy Display	O (ThinQ only)
	Air Quality Indicator (Dust Sensor)	X
	Human Detecting Sensor	O
	Freeze Cleaning	O
	Window Open Detecting	O (ThinQ only)
Energy Saving	Energy Saving	X
	Energy Control	Active Energy Control
	Gen Mode	X
Individual Control	Wired Remote Controller (Premium) ²	X
	Wired Remote Controller (Standard) ²	PQRCVSL0(QW) / PREMTB(0/B)01
	Wired Remote Controller (Simple with Mode Selection) ²	PQRCVCL0Q(W)
	Wired Remote Controller (Simple without Mode Selection) ²	PQRCHCA0Q(W)
	Handheld Wireless Controller (See Remote Controller Section)	AKB76044811
	Setting Temperature Range (Cooling)	18~30 °C (64~86 °F)
CAC Network Function	Setting Temperature Range (Heating)	16~30 °C (60~86 °F)
	General Central Controller (Non LGAP)	X
	Network Solution (LGAP)	O
	Dry Contact ²	PDRYCB000, PDRYCB100, PDRYCB400, PDRYCB500
	PDI (Power Distribution Indicator) ²	X
Special Function Kit	Outdoor Unit PI 485 ²	O
	Wi-Fi ²	Embedded
	Water Level Sensor Connection ²	X
	Wind Baffle Kit ²	X
	Sump Heater	X
	Sheath Heater ²	X
Others	Crank Case Heater	X
	Mode Lock	Cooling Only or Heating Only
	DRED (Demand Response Enabling Device)	X

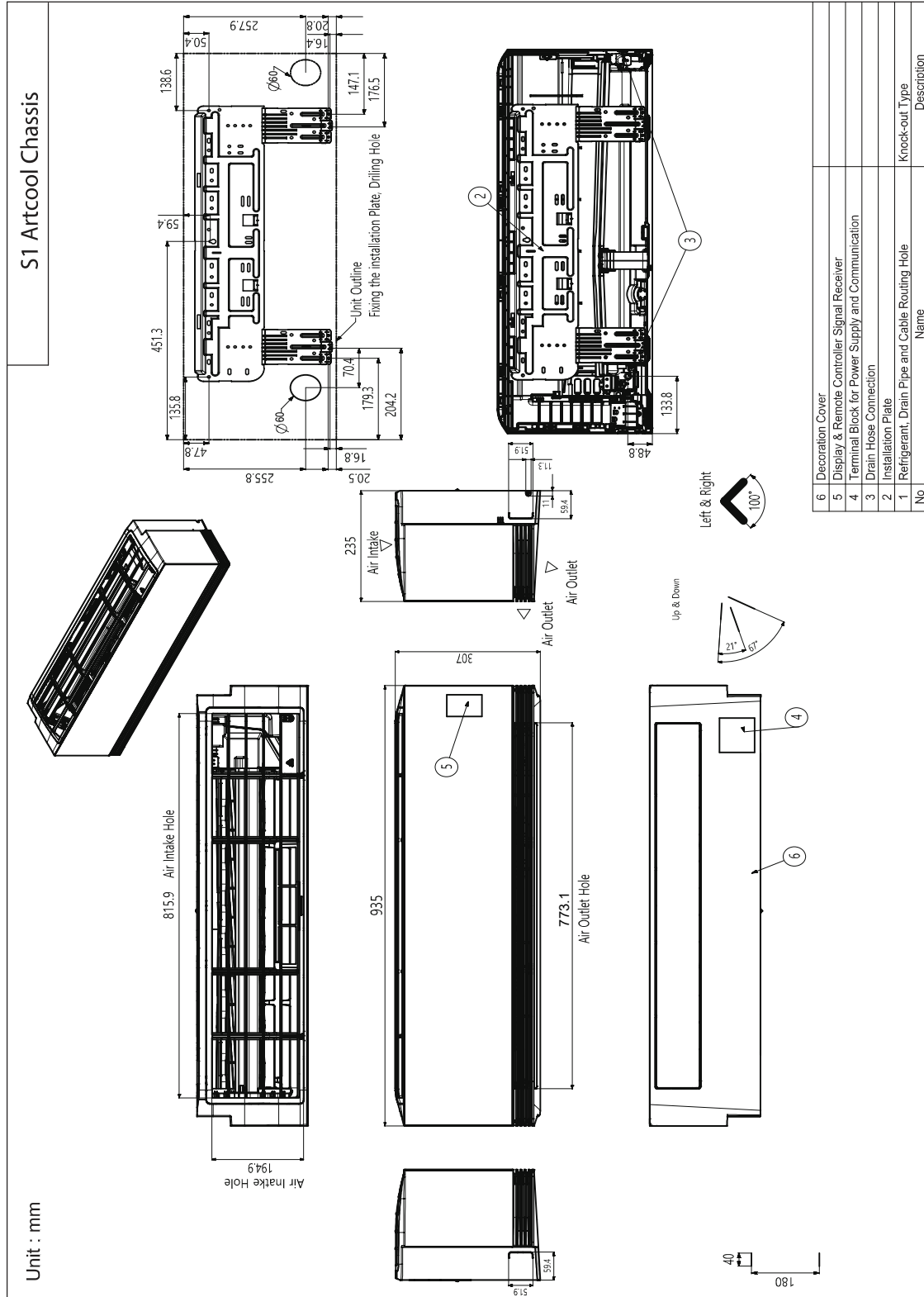
Note

- O : Applied, X : Not applied
- Filters are optional in some specific areas.
- ¹ : This function can be operated only when the wired remote controller is connected. The applicability of each function depends on the above table.
- ² : Optional accessories must be purchased separately. If shown as "Embedded", this function is included in product.
- The function Wi-Fi is only compatible with 2.4 GHz band. (802.11 b/g/n)
- Some specifications may be changed without notifications due to our policy of innovation.

5. Dimensional Drawings

5.1 Indoor Unit

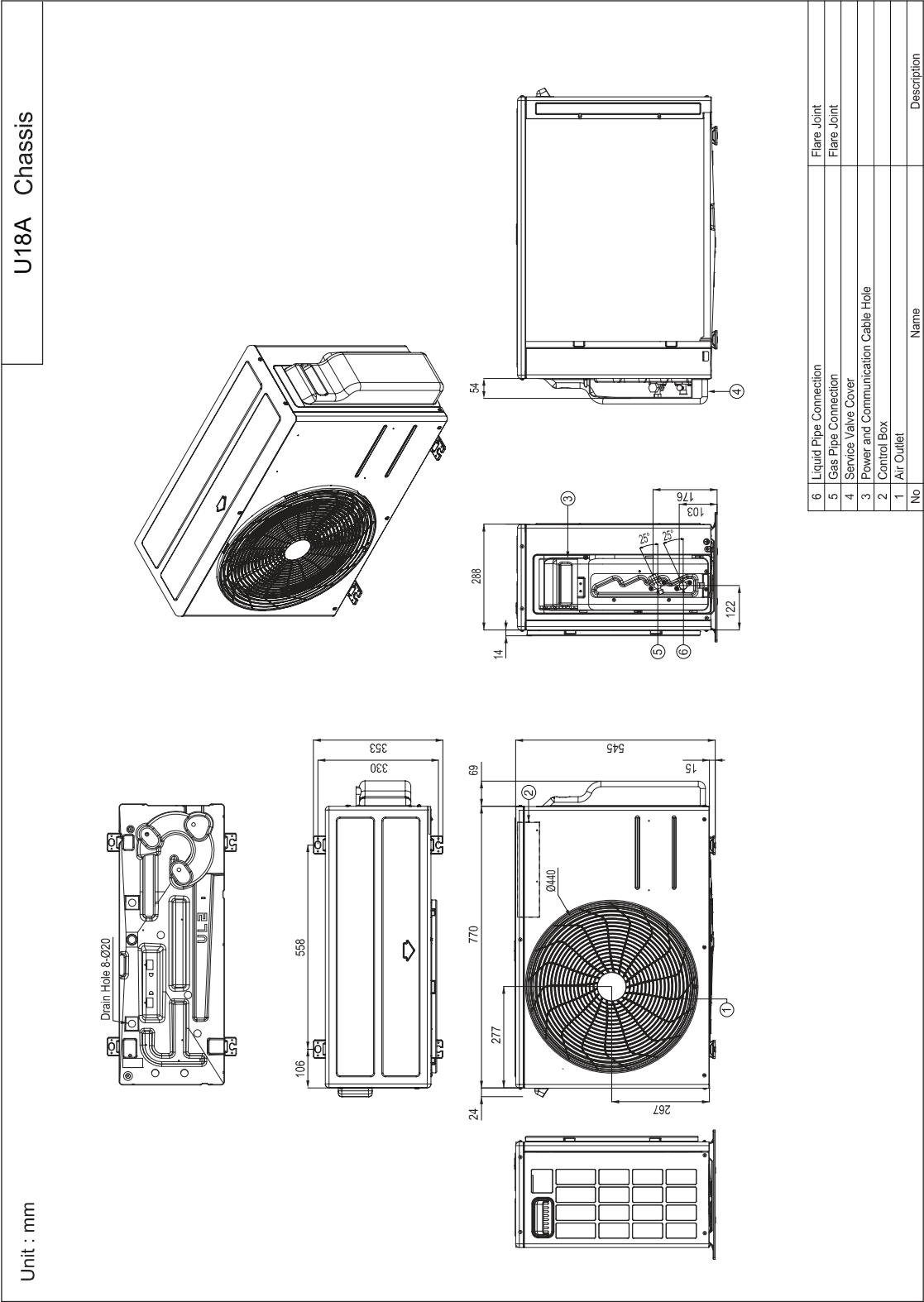
AA09SP.NS1 (S3NM091LRC0.EC6GEEU)



5. Dimensional Drawings

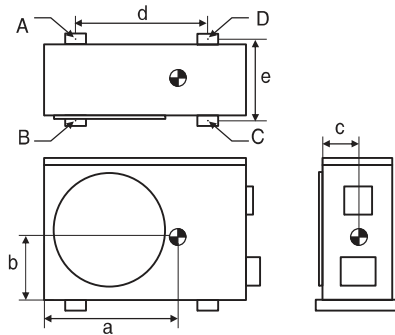
5.2 Outdoor Unit

AA09SP.U18 (S3UM091LRC0.EC6GEEU)



5. Dimensional Drawings

5.3 Corner Weight and Center of Gravity Dimension for Outdoor Unit



Model	Tool	Weight (kg)		Center of Gravity (mm)			Leg (mm)		Corner Weight (kg)			
		Shipping	Net	a	b	c	d	e	A	B	C	D
AA09SP.U18	U18A	32.0	29.9	507	237	143	558	330	4.1	4.3	10.8	10.6

Model	Tool	Weight (lb.)		Center of Gravity (in.)			Leg (in.)		Corner Weight (lb.)			
		Shipping	Net	a	b	c	d	e	A	B	C	D
AA09SP.U18	U18A	70.5	65.9	19-31/32	9-11/32	5-5/8	21-31/32	13	9.1	9.5	23.9	23.5

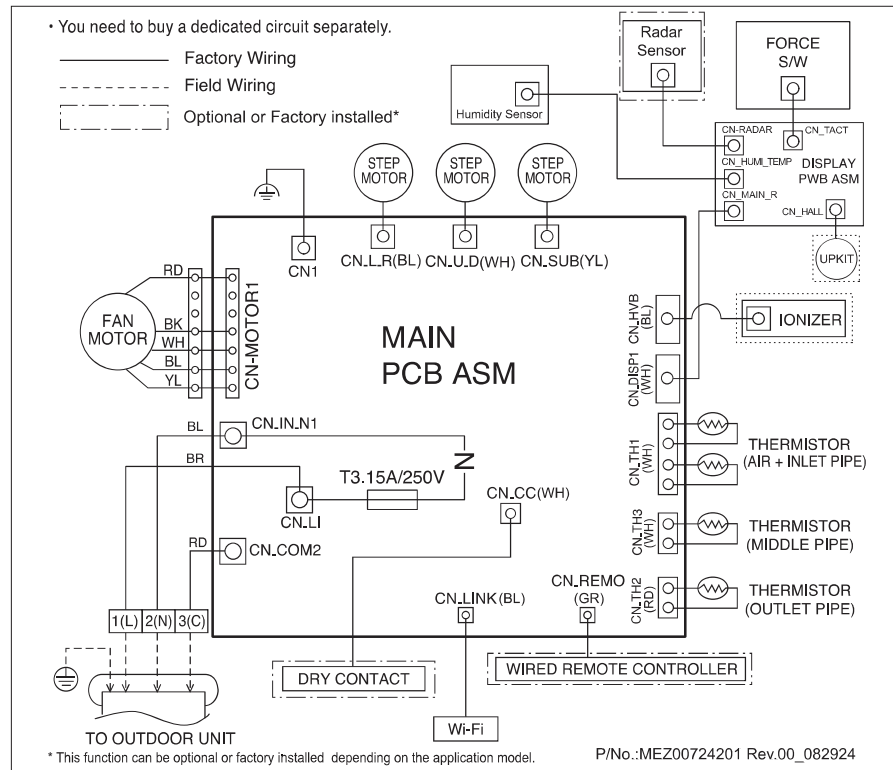
Note

- Design features and information of indoor and outdoor unit may be changed without notifications due to our policy of innovation.
- The center of gravity and corner weight may be different from the actual values because these are simulation results.

6. Wiring Diagrams

6.1 Indoor Unit

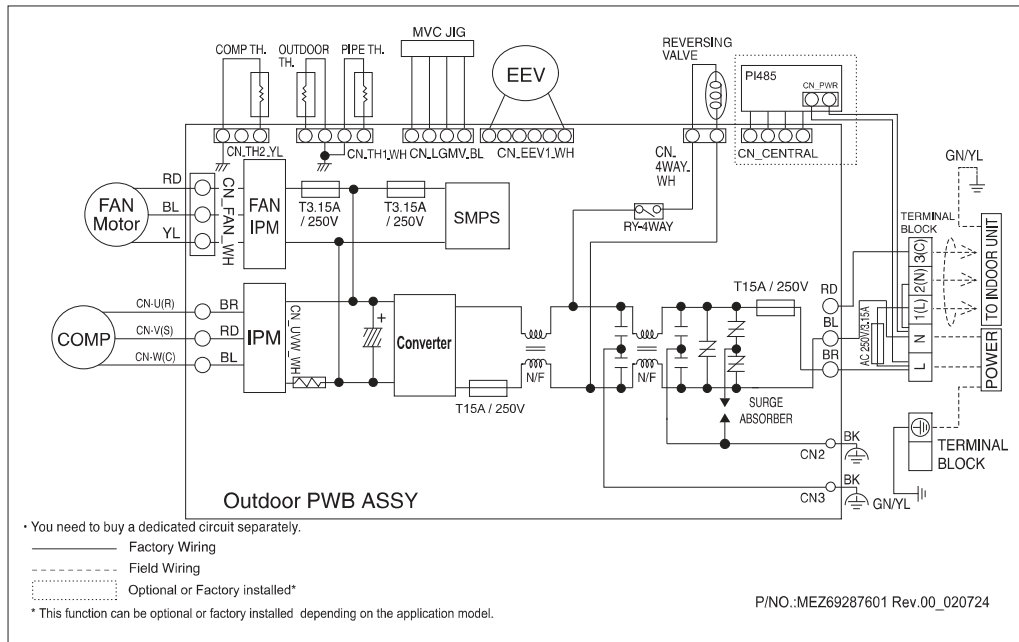
AA09SP.NS1 (S3NM091LRC0.EC6GEEU)



6. Wiring Diagrams

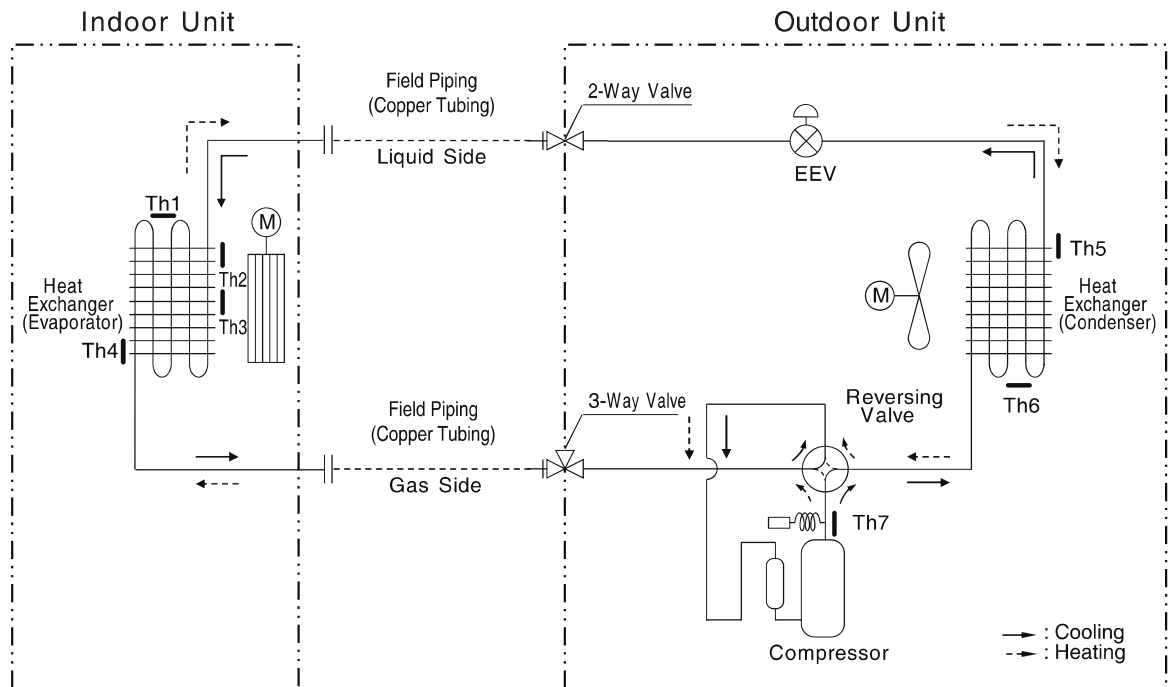
6.2 Outdoor Unit

AA09SP.U18 (S3UM091LRC0.EC6GEEU)



7. Refrigerant Cycle Diagrams

AA09SP.SS1 (S3-M091LRC0.EC6GEEU)



Loc.	Description	PCB Connector
Th1	Thermistor for indoor air temperature	CN-TH1 (Indoor)
Th2	Thermistor for evaporator inlet temperature	CN-TH1 (Indoor)
Th3	Thermistor for evaporator middle temperature	CN-TH3 (Indoor)
Th4	Thermistor for evaporator outlet temperature	CN-TH2 (Indoor)
Th5	Thermistor for outdoor air temperature	CN-TH1 (Outdoor)
Th6	Thermistor for condenser temperature	CN-TH1 (Outdoor)
Th7	Thermistor for discharge pipe temperature	CN-TH2 (Outdoor)

◆ Refrigerant Pipe Connection Port Diameters

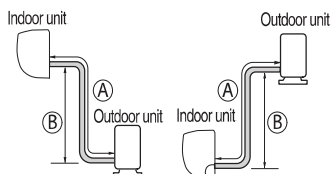
Model	Gas		Liquid		Capillary Tube
	mm	inch	mm	inch	
AA09SP.SS1	ø 9.52	ø 3/8	ø 6.35	ø 1/4	-

Appendix	Heat Exchanger	Propeller Fan	Cross Flow Fan	Compressor	Accumulator	Reversing Valve (4 Way Valve)
	EEV (Electronic Expansion Valve)	Capillary Tube	2-Way Valve 3-Way Valve	Temperature Sensor	Pressure Sensor	Pressure Switch
	Check Valve	Flare Joint	Muffler	Strainer		

9. Capacity Coefficient Factor

9.2 Pipe Size, Length and Elevation

Model	Pipe Size				Standard Pipe Length [m (ft.)]	Min. / Max. Pipe Length A [m (ft.)]	Max. Elevation B [m (ft.)]	Additional Refrigerant [g/m (oz./ft.)]	No Charge Pipe Length [m (ft.)]
	Gas		Liquid						
	mm	inch	mm	inch					
AA09SP.SS1 (S3-M091LRC0.EC6GEEU)	ø 9.52	ø 3/8	ø 6.35	ø 1/4	7.5 (24.6)	3 / 20 (9.8 / 65.6)	10 (32.8)	20 (0.22)	12.5 (41)

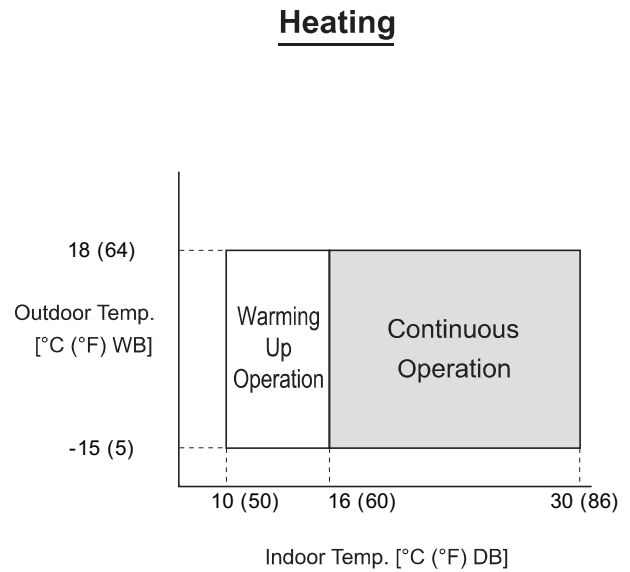
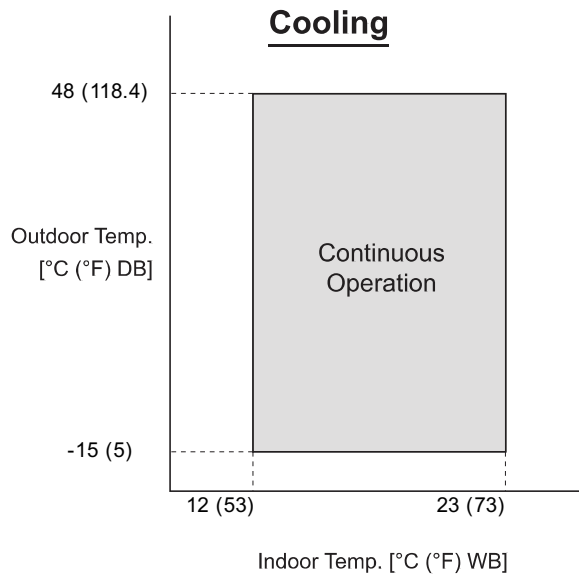


WARNING

- It may cause reliability, performance, noise, and vibration problem, if piping limitations are not met. Keep minimum piping length by making loops, although indoor unit and outdoor unit are close.

10. Operation Range

AA09SP.SS1 (S3-M091LRC0.EC6GEEU)



Note

The figures are based on the following conditions :

- Equivalent Piping Length : 7.5 m (24.6 ft.)
- Level Difference : 0 m (0 ft.)

14. Installation

14.8 Outdoor Unit Max External Static Pressure

Model	Tool	Air Flow Rate		Static Pressure	
		CMM	CFM	N / m ²	inWG
AA09SP.U18	U18A	27	954	9.2296	0.0371