LG

THERMA V™

Air-to-Water Heat Pump / Split Type
R410A/50Hz
5BPU0-02C (Replaces 5BPU0-02B)

LG TOTAL HVAC SOLUTION PROVIDER

ENGINEERING PRODUCT DATA BOOK

LG
Life's Good

P/No. : MFL66101118

THERMA V™

Split Type

General Information

Outdoor unit

THERMA V™

Split Type

General Information

1. Model Line Up
2. Nomenclature

1. Model line up

1.1 Outdoor Units

Category		Model Name		
		Heating Capacity (kW)		
Power Supply	**Combination Indoor Unit**	**12.0**	**14.0**	**16.0**
1 Ø, 220-240 V, 50 Hz	AHNW16606A3 [HN1616 NK3]	AHUW126A4 [HU121MA U33]	AHUW146A4 [HU141MA U33]	AHUW166A4 [HU161MA U33]
	AHNW16606A4 [HN1616M NK5]			
3 Ø, 380-415 V, 50 Hz	AHNW16809A3 [HN1639 NK3]	AHUW128A4 [HU123MA U33]	AHUW148A4 [HU143MA U33]	AHUW168A4 [HU163MA U33]
	AHNW16806A4 [HN1636M NK5]			
External Appearance				

2. Nomenclature

2.1 Outdoor Unit

■ Global Name

Model Name	AH	U	W	12	6	A	4
No.	1	2	3	4	5	6	7

No.	Signification
1	**Air-to-Water Heat Pump for R410A**
2	**Classification** U : Outdoor unit
3	**Model Type** W : Inverter Heat Pump
4	**Heating Capacity (kW)** Ex) 12kW : ‘12’, 16kW : '16'
5	**Electrical ratings** 6 : 1Ø, 220-240V 50 Hz 8 : 3Ø, 380-415V 50 Hz
6	**Function** A : General heating heat pump
7	**Series number**

2. Nomenclature

■ European Name

Model Name	H	U	12	1	M	A	.	U3	3
No.	1	2	3	4	5	6		7	8

No.	Signification
1	**H : Air-to-Water Heat Pump for R410A**
2	**Classification** U : Outdoor unit
3	**Heating Capacity (kW)** Ex) 12kW : ‘12’, 16kW : '16'
4	**Electrical ratings** 1 : 1Ø, 220-240V 50Hz 3 : 3Ø, 380-415V 50Hz
5	**Leaving Water Combination** M : Mid Temperature
6	**Refrigerant** A : R410A
7	**Platform (Chassis code)** U3 : U60A Chassis
8	**Product type** 3 : Split type

THERMA V™

Split Type

Outdoor unit

1. List of functions

■ Basic functions of Unit

Category		AHUW126A4 [HU121MA U33] AHUW146A4 [HU141MA U33] AHUW166A4 [HU161MA U33] AHUW128A4 [HU123MA U33] AHUW148A4 [HU143MA U33] AHUW168A4 [HU163MA U33]
Reliability	Defrost / Deicing	O
	High pressure switch	X
	Low pressure switch	X
	Phase protection	X
	Restart delay (3-minutes)	O
	Self diagnosis	O
	Soft start	X
Convenience	Test function	X
	Wiring Error Check	X
	Peak Control	O
	Mode Lock	O
	Low Noise Operation	O
	Forced Cooling Operation (Outdoor Unit)	X
	Base Pan Heater	O
Network function	Network solution (LGAP)	O

Note

1. O : Applied, X : Not applied
   Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.
   Accessory line-ups varies by region, so check your local catalogue or local sales material.

■ Accessory Compatibility List

Category		Product	Remark	AHUW126A4 [HU121MA U33] AHUW146A4 [HU141MA U33] AHUW166A4 [HU161MA U33] AHUW128A4 [HU123MA U33] AHUW148A4 [HU143MA U33] AHUW168A4 [HU163MA U33]
Central Controller	AC EZ	PQCSZ250S0	AC EZ	X
	AC Ez Touch	PACEZA000	AC Ez Touch	O
	AC Smart	PACS4B000	AC Smart IV	O
		PACS5A000	AC Smart 5	O
	ACP	PACP4B000	ACP IV	O
		PACP5A000	ACP 5	O
	AC Manager **	PACM4B000	AC Manager IV	O
		PACM5A000	AC Manager 5	O
	Cloud Gateway	PWFMDB200	Cloud Gateway	O
Gateway	ODU PI485 ***	PP485A00T	PI 485 Gateway	O
	BACnet	PQNFB17C0	ACP BACnet	O
	Lonworks	PLNWKB000	ACP Lonworks	O
ETC	PDI	PPWRDB000	PDI Standard	O
		PQNUD1S40	PDI Premium	O
	ACS IO Module	PEXPMB000	-	X

Note

1. O: Possible, X: Impossible, - : Not applicable
2. * : Some advanced functions controlled by individual controller cannot be operated.
3. ** : ACP or AC Smart is needed.
4. If you need more detail, please refer to the manual of product.
   (http://partner.lge.com/global : Home> Doc.Library> Product > Control(BECON))

*** : Gateway is mandatory to use LG central controller.

2. Specifications

Outdoor Units			AHUW126A4 [HU121MA U33]	AHUW146A4 [HU141MA U33]	AHUW166A4 [HU161MA U33]
Indoor Unit			AHNW16606A3 [HN1616 NK3]	AHNW16606A3 [HN1616 NK3]	AHNW16606A3 [HN1616 NK3]
			AHNW16606A4 [HN1616M NK5]	AHNW16606A4 [HN1616M NK5]	AHNW16606A4 [HN1616M NK5]
Power Supply	-	V, Φ, Hz	220-230-240, 1, 50	220-230-240, 1, 50	220-230-240, 1, 50
	Limit Range of Voltage	V	187~276	187~276	187~276
Cooling Capacity	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 18ºC	kW	10.40	12.00	13.00
	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 7ºC	kW	7.94	8.50	8.92
Heating Capacity	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 35ºC	kW	12.00	14.00	16.00
	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 55ºC	kW	11.00	11.50	12.00
	Outdoor 2ºC(DB)/ 1ºC(WB), Leaving Water 35ºC	kW	11.00	12.00	13.80
Cooling Power Input	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 18ºC	kW	2.60	3.08	3.60
	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 7ºC	kW	2.66	3.02	2.53
Heating Power Input	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 35ºC	kW	2.64	3.17	3.76
	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 55ºC	kW	4.31	4.51	4.71
	Outdoor 2ºC(DB)/ 1ºC(WB), Leaving Water 35ºC	kW	3.04	3.32	3.83
EER	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 18ºC	W/W	4.00	3.90	3.61
	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 7ºC	W/W	2.98	2.81	3.53
COP	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 35ºC	W/W	4.55	4.41	4.26
	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 55ºC	W/W	2.55	2.55	2.55
	Outdoor 2ºC(DB)/ 1ºC(WB), Leaving Water 35ºC	W/W	3.62	3.61	3.60
SCOP*	Low temp. Average	W/W	4.65	4.61	4.56
	High temp. Average	W/W	3.36	3.37	3.32
Peak Control Running Current	Cooling	A	21.0	22.0	23.0
	Heating	A	21.0	22.0	23.0
Running Current	Cooling(Rated)	A	11.3	13.4	15.7
	Heating(Rated)	A	11.5	13.8	16.3
Circuit breaker		A	40	40	40
Fan	Type	-	Propeller	Propeller	Propeller
	Air Flow Rate(Rated)	㎥/min x No.	55 x 2	55 x 2	55 x 2
Fan Motor	Type	-	BLDC	BLDC	BLDC
	Output	W x No.	124 x 2	124 x 2	124 x 2
Compressor	Type	-	Hermetic Motor	Hermetic Motor	Hermetic Motor
	Model x No.	-	RJA036MAA	RJA036MAA	RJA036MAA
	Piston Displacement	cm³/rev	31.6	31.6	31.6
	Motor Type	-	BLDC Motor	BLDC Motor	BLDC Motor
	Motor Output	W x No.	3,198 x 1	3,198 x 1	3,198 x 1
	Oil Type	-	FVC68D	FVC68D	FVC68D
	Oil Charging amount	cc x No.	1,100 x 1	1,100 x 1	1,100 x 1
Heat Exchanger	Rows x Columns x FPI	No.	(2 x 32 x 14) x 2	(2 x 32 x 14) x 2	(2 x 32 x 14) x 2
Water Flow Rate	Heating(Rated)	ℓ / min	34.50	40.25	46.00
Dimensions	Net(W x H x D)	mm	950 x 1,380 x 330	950 x 1,380 x 330	950 x 1,380 x 330
	Shipping(W x H x D)	mm	1,140 x 1,462 x 461	1,140 x 1,462 x 461	1,140 x 1,462 x 461
Weight	Net	kg	84.8	84.8	84.8
	Shipping	kg	97.0	97.0	97.0
Exterior	Color	-	Warm Gray	Warm Gray	Warm Gray
	RAL Code	-	RAL 7044	RAL 7044	RAL 7044
Refrigerant	Type	-	R410A	R410A	R410A
	Precharged Amount	kg	2.5	2.5	2.5
	Additional Charging amount	g/m	40	40	40
	GWP(Global Warming Potential)	-	2,088	2,088	2,088
	t-CO_2 eq.	-	5.219	5.219	5.219
	Chargeless-Pipe Length	m	7.5	7.5	7.5
	Control Type	-	Electronic Expansion Valve		
Piping Connection	Liquid	mm(inch)	Φ9.52 (3/8)	Φ9.52 (3/8)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)	Φ15.88 (5/8)	Φ15.88 (5/8)
Piping Length	Rated / Max	m	7.5 / 50	7.5 / 50	7.5 / 50
Maximum Height Difference	IDU - ODU(Max)	m	30	30	30

Note

1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes. And “Electric characteristics” chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.
4. Performances are based on the following conditions (It is according to EN14511) :
   - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.
5. This product contains Fluorinated greenhouse gases.

* : This values are accordance with EN14825.

2. Specifications

Outdoor Units			AHUW126A4 [HU121MA U33]	AHUW146A4 [HU141MA U33]	AHUW166A4 [HU161MA U33]
Indoor Unit			AHNW16606A3 [HN1616 NK3]	AHNW16606A3 [HN1616 NK3]	AHNW16606A3 [HN1616 NK3]
			AHNW16606A4 [HN1616M NK5]	AHNW16606A4 [HN1616M NK5]	AHNW16606A4 [HN1616M NK5]
Sound Power Level	Heating(Rated)	dB(A)	63	64	65
	Heating (Low noise)	dB(A)	61	62	63
Connecting Cable	Power Supply Cable(H07RN-F)	mm² × cores	6 x 3C	6 x 3C	6 x 3C
Operation Range(Outdoor Temperature)	Cooling(Min ~ Max)	℃(DB)	5 ~ 48	5 ~ 48	5 ~ 48
	Heating(Min ~ Max)	℃(DB)	-25 ~ 35	-25 ~ 35	-25 ~ 35
	Domestic Hot water(Min ~ Max)	℃(DB)	-	-	-

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2. Specifications

Outdoor Units			AHUW128A4 [HU123MA U33]	AHUW148A4 [HU143MA U33]	AHUW168A4 [HU163MA U33]
Indoor Unit			AHNW16809A3 [HN1639 NK3] AHNW16806A4 [HN1636M NK5]	AHNW16809A3 [HN1639 NK3] AHNW16806A4 [HN1636M NK5]	AHNW16809A3 [HN1639 NK3] AHNW16806A4 [HN1636M NK5]
Power Supply	-	V, Φ, Hz	380-400-415, 3, 50	380-400-415, 3, 50	380-400-415, 3, 50
	Limit Range of Voltage	V	342~456	342~456	342~456
Cooling Capacity	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 18ºC	kW	10.40	12.00	13.00
	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 7ºC	kW	7.94	8.50	8.92
Heating Capacity	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 35ºC	kW	12.00	14.00	16.00
	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 55ºC	kW	11.00	11.50	12.00
	Outdoor 2ºC(DB)/ 1ºC(WB), Leaving Water 35ºC	kW	11.00	12.00	13.50
Cooling Power Input	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 18ºC	kW	2.60	3.08	3.60
	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 7ºC	kW	2.66	3.02	2.53
Heating Power Input	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 35ºC	kW	2.64	3.17	3.76
	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 55ºC	kW	4.31	4.51	4.71
	Outdoor 2ºC(DB)/ 1ºC(WB), Leaving Water 35ºC	kW	3.04	3.32	3.83
EER	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 18ºC	W/W	4.00	3.90	3.61
	Outdoor 35ºC(DB)/ 24ºC(WB), Leaving Water 7ºC	W/W	2.98	2.81	3.53
COP	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 35ºC	W/W	4.55	4.41	4.26
	Outdoor 7ºC(DB)/ 6ºC(WB), Leaving Water 55ºC	W/W	2.55	2.55	2.55
	Outdoor 2ºC(DB)/ 1ºC(WB), Leaving Water 35ºC	W/W	3.62	3.61	3.60
SCOP*	Low temp. Average	W/W	4.65	4.61	4.56
	High temp. Average	W/W	3.36	3.37	3.32
Peak Control Running Current	Cooling	A	7.0	8.0	9.0
	Heating	A	7.0	8.0	9.0
Running Current	Cooling(Rated)	A	6.5	7.7	9.0
	Heating(Rated)	A	6.6	8.0	9.4
Circuit breaker		A	20	20	20
Fan	Type	-	Propeller	Propeller	Propeller
	Air Flow Rate(Rated)	㎥/min x No.	55 x 2	55 x 2	55 x 2
Fan Motor	Type	-	BLDC	BLDC	BLDC
	Output	W x No.	124 x 2	124 x 2	124 x 2
Compressor	Type	-	Hermetic Motor	Hermetic Motor	Hermetic Motor
	Model x No.	-	RJA036MAA	RJA036MAA	RJA036MAA
	Piston Displacement	cm³/rev	31.6	31.6	31.6
	Motor Type	-	BLDC Motor	BLDC Motor	BLDC Motor
	Motor Output	W x No.	3,198 x 1	3,198 x 1	3,198 x 1
	Oil Type	-	FVC68D	FVC68D	FVC68D
	Oil Charging amount	cc x No.	1,100 x 1	1,100 x 1	1,100 x 1
Heat Exchanger	Rows x Columns x FPI	No.	(2 x 32 x 14) x 2	(2 x 32 x 14) x 2	(2 x 32 x 14) x 2
Water Flow Rate	Heating(Rated)	ℓ / min	34.50	40.25	46.00
Dimensions	Net(W x H x D)	mm	950 x 1,380 x 330	950 x 1,380 x 330	950 x 1,380 x 330
	Shipping(W x H x D)	mm	1,140 x 1,462 x 461	1,140 x 1,462 x 461	1,140 x 1,462 x 461
Weight	Net	kg	85.4	85.4	85.4
	Shipping	kg	97.6	97.6	97.6
Exterior	Color	-	Warm Gray	Warm Gray	Warm Gray
	RAL Code	-	RAL 7044	RAL 7044	RAL 7044
Refrigerant	Type	-	R410A	R410A	R410A
	Precharged Amount	kg	2.5	2.5	2.5
	Additional Charging amount	g/m	40	40	40
	GWP(Global Warming Potential)	-	2,088	2,088	2,088
	t-CO_2 eq.	-	5.219	5.219	5.219
	Chargeless-Pipe Length	m	7.5	7.5	7.5
	Control Type	-	Electronic Expansion Valve		
Piping Connection	Liquid	mm(inch)	Φ9.52 (3/8)	Φ9.52 (3/8)	Φ9.52 (3/8)
	Gas	mm(inch)	Φ15.88 (5/8)	Φ15.88 (5/8)	Φ15.88 (5/8)
Piping Length	Rated / Max	m	7.5 / 50	7.5 / 50	7.5 / 50
Maximum Height Difference	IDU - ODU(Max)	m	30	30	30

Note

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3. Sound power level is measured on the rated condition in according with ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.
4. Performances are based on the following conditions (It is according to EN14511) :
   - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.
5. This product contains Fluorinated greenhouse gases.

* : This values are accordance with EN14825.

2. Specifications

Outdoor Units			AHUW128A4 [HU123MA U33]	AHUW148A4 [HU143MA U33]	AHUW168A4 [HU163MA U33]
Indoor Unit			AHNW16809A3 [HN1639 NK3]	AHNW16809A3 [HN1639 NK3]	AHNW16809A3 [HN1639 NK3]
			AHNW16806A4 [HN1636M NK5]	AHNW16806A4 [HN1636M NK5]	AHNW16806A4 [HN1636M NK5]
Sound Power Level	Heating(Rated)	dB(A)	63	64	65
	Heating(Low noise)	dB(A)	61	62	63
Connecting Cable	Power Supply Cable(H07RN-F)	mm² × cores	2.5 × 5C	2.5 × 5C	2.5 × 5C
Operation Range(Outdoor Temperature)	Cooling(Min ~ Max)	℃(DB)	5 ~ 48	5~48	5 ~ 48
	Heating(Min ~ Max)	℃(DB)	-25 ~ 35	-25~35	-25 ~ 35
	Domestic Hot water(Min ~ Max)	℃(DB)	-	-	-

Note

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3. Sound power level is measured on the rated condition in according with ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.
4. Performances are based on the following conditions (It is according to EN14511) :
   - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.
5. This product contains Fluorinated greenhouse gases.

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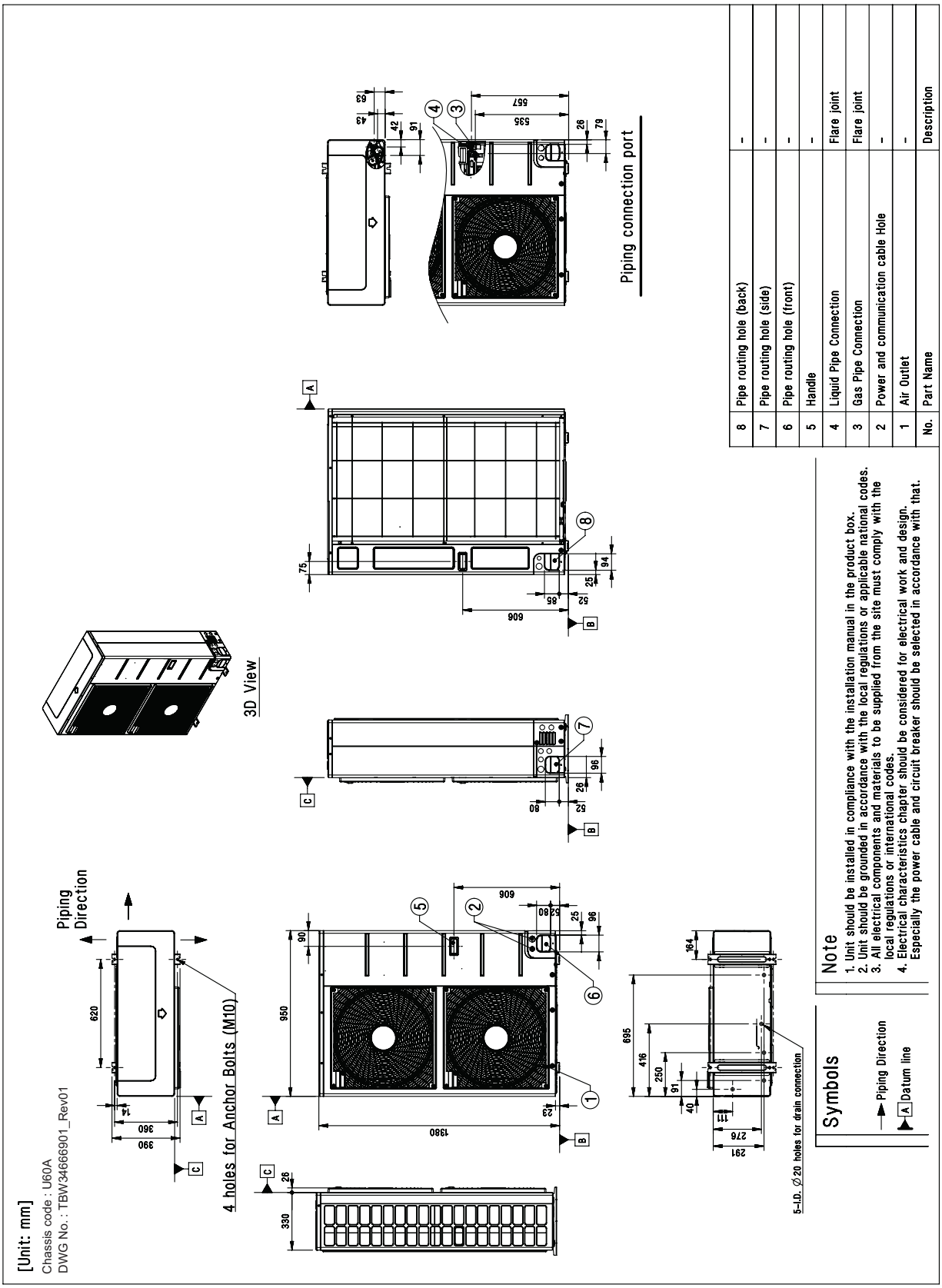
3. Dimensions

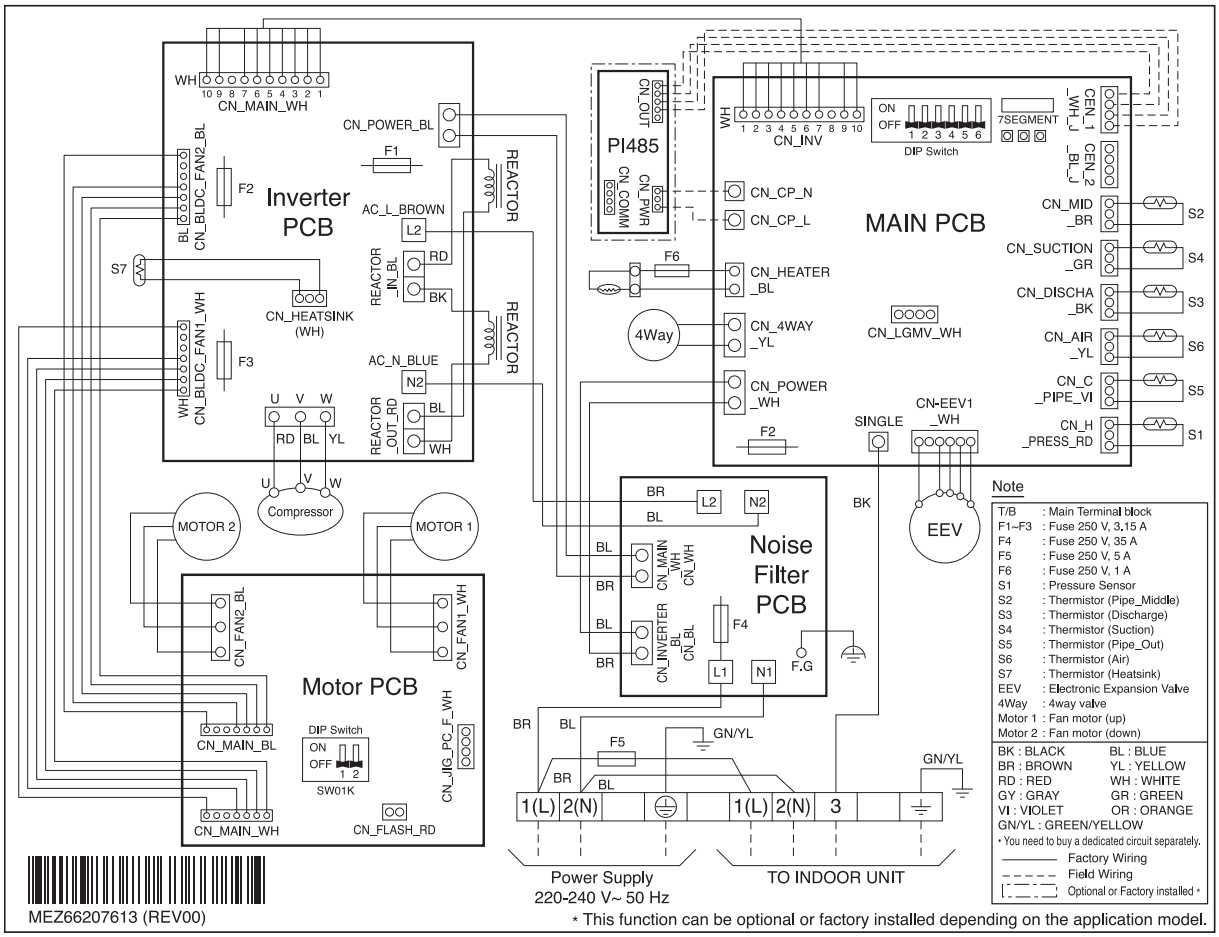
AHUW126A4 [HU121MA U33], AHUW146A4 [HU141MA U33], AHUW166A4 [HU161MA U33]
AHUW128A4 [HU123MA U33], AHUW148A4 [HU143MA U33], AHUW168A4 [HU163MA U33]



No.	Part Name	Description
8	Pipe routing hole (back)	-
7	Pipe routing hole (side)	-
6	Pipe routing hole (front)	-
5	Handle	-
4	Liquid Pipe Connection	Flare joint
3	Gas Pipe Connection	Flare joint
2	Power and communication cable Hole	-
1	Air Outlet	-

4. Wiring Diagrams

■ AHUW126A4 [HU121MA U33], AHUW146A4 [HU141MA U33], AHUW166A4 [HU161MA U33]



Note

T/B	: Main Terminal block
F1~F3	: Fuse 250 V, 3.15 A
F4	: Fuse 250 V, 35 A
F5	: Fuse 250 V, 5 A
F6	: Fuse 250 V, 1 A
S1	: Pressure Sensor
S2	: Thermistor (Pipe_Middle)
S3	: Thermistor (Discharge)
S4	: Thermistor (Suction)
S5	: Thermistor (Pipe_Out)
S6	: Thermistor (Air)
S7	: Thermistor (Heatsink)
EEV	: Electronic Expansion Valve
4Way	: 4way valve
Motor 1	: Fan motor (up)
Motor 2	: Fan motor (down)

BK : BLACK	BL : BLUE
BR : BROWN	YL : YELLOW
RD : RED	WH : WHITE
GY : GRAY	GR : GREEN
VI : VIOLET	OR : ORANGE

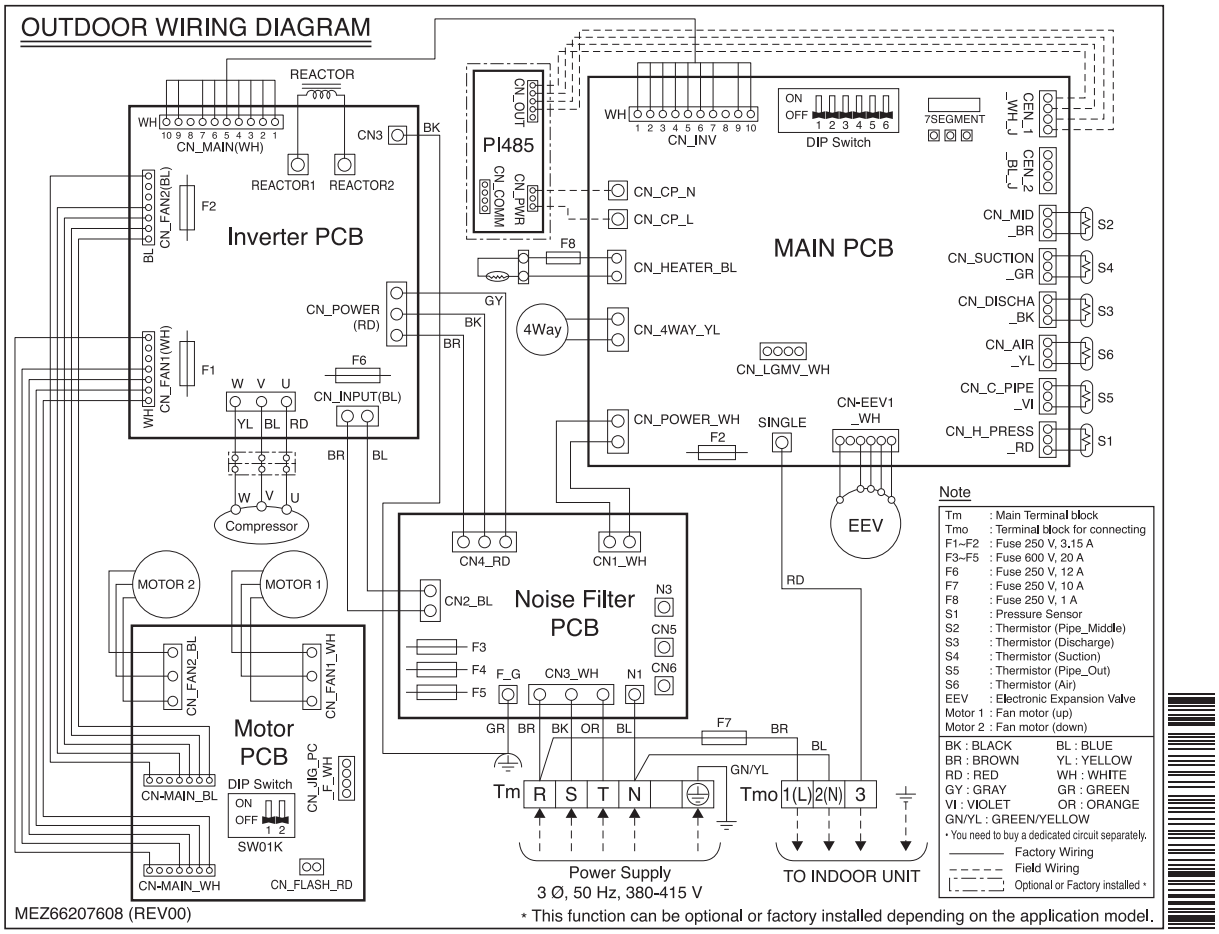
GN/YL : GREEN/YELLOW

* You need to buy a dedicated circuit separately.

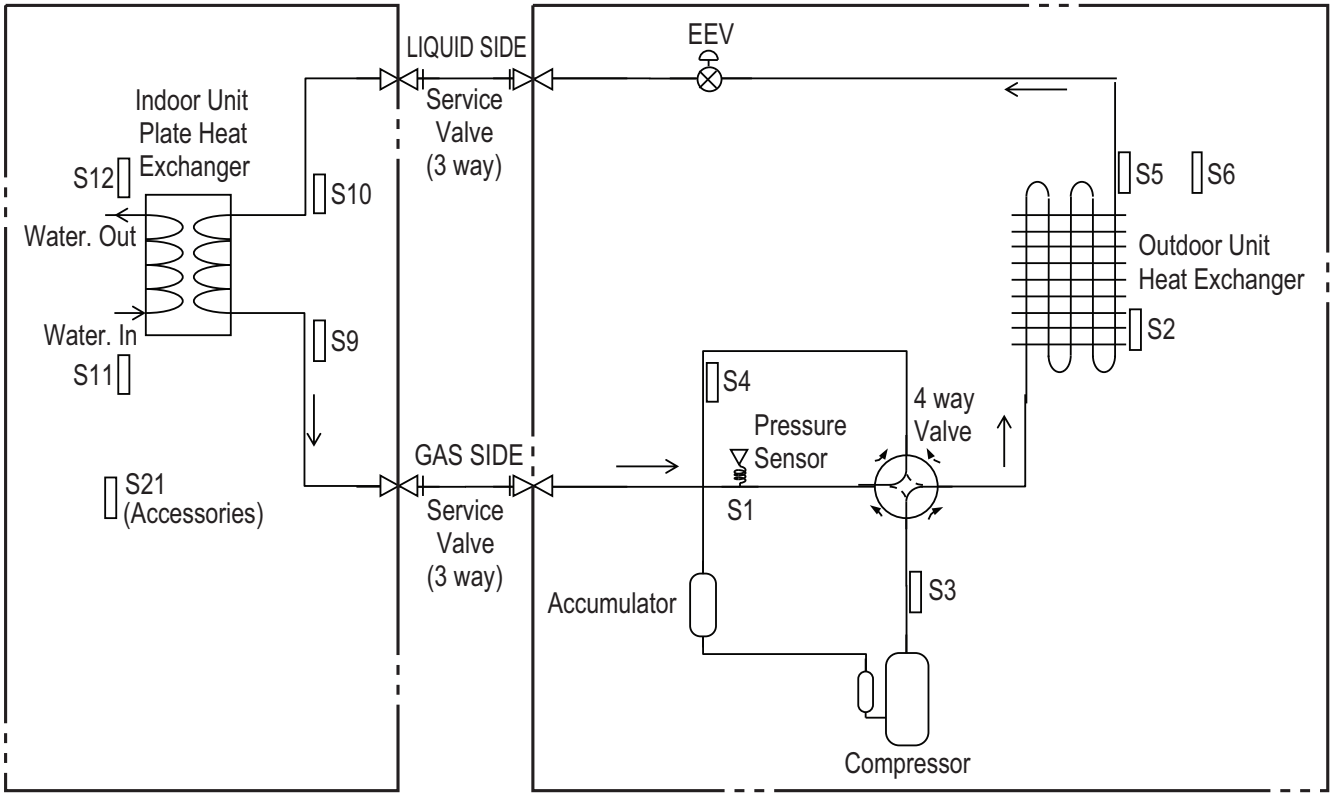
Factory Wiring
Field Wiring
Optional or Factory installed *

4. Wiring Diagrams

■ AHUW128A4 [HU123MA U33], AHUW148A4 [HU143MA U33], AHUW168A4 [HU163MA U33]



5. Piping Diagram



◆ Description

Category	Symbol	Meaning	PCBConnector	Remarks
Outdoor Unit	S1	Pressure sensor	CN_H_PRESS	-
	S2	Condenser middle temperature sensor	CN_MID	-
	S3	Compressor-discharge pipe temperature sensor	CN_DISCHA	-
	S4	Compressor-suction pipe temperature sensor	CN_SUCTION	-
	S5	Condenser temperature sensor	CN_C_PIPE	- Description is expressed based on Cooling mode.
	S6	Outdoor air temperature sensor	CN_AIR	-
	EEV	Electronic Expansion Valve	CN_EEV1_WH	-
Indoor Unit	S9	Refrigerant temperature sensor (Gas side)	CN_PIPE_OUT	- Meaning is expressed based on Cooling mode.
	S10	Refrigerant temperature sensor (Liquid side)	CN_PIPE_IN	
	S11	Entering water temperature sensor	CN_TH3	-
	S12	Leaving water temperature sensor		
	S13	Backup heater outlet temperature sensor		
	S21	Remote room air sensor	CN_ROOM	- Optional accessory (being sold separately) - Not shown in diagram

6. Performance Data

6.1 Cooling Operation

■ Maximum Cooling Capacity

◆ **AHUW126A4 [HU121MA U33] + AHNW16606A3 [HN1616 NK3]**
◆ **AHUW126A4 [HU121MA U33] + AHNW16606A4 [HN1616M NK5]**
◆ **AHUW128A4 [HU123MA U33] + AHNW16809A3 [HN1639 NK3]**
◆ **AHUW128A4 [HU123MA U33] + AHNW16806A4 [HN1636M NK5]**

Outdoor Temperature [℃ DB]	Water flow rate 34.50 LPM													
	LWT 7°C		LWT 10°C		LWT 13°C		LWT 15°C		LWT 18°C		LWT 20°C		LWT 22°C	
	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER
20	7.60	4.78	8.55	5.03	9.51	5.23	10.33	5.32	11.19	5.46	11.98	5.52	-	-
30	8.62	3.50	9.05	3.62	9.78	3.62	10.67	4.10	10.90	4.24	11.37	4.49	-	-
35	7.94	2.98	8.66	3.15	9.33	3.33	10.10	3.58	10.40	4.00	10.75	3.87	11.16	3.88
40	7.56	2.55	8.02	2.65	8.81	2.82	9.36	2.96	9.54	3.32	9.89	3.38	10.28	3.44
45	6.38	2.01	7.08	2.20	7.79	2.38	8.44	2.53	9.14	2.70	9.44	2.83	9.78	2.96

◆ **AHUW146A4 [HU141MA U33] + AHNW16606A3 [HN1616 NK3]**
◆ **AHUW146A4 [HU141MA U33] + AHNW16606A4 [HN1616M NK5]**
◆ **AHUW148A4 [HU143MA U33] + AHNW16809A3 [HN1639 NK3]**
◆ **AHUW148A4 [HU143MA U33] + AHNW16806A4 [HN1636M NK5]**

Outdoor Temperature [℃ DB]	Water flow rate 40.25 LPM													
	LWT 7°C		LWT 10°C		LWT 13°C		LWT 15°C		LWT 18°C		LWT 20°C		LWT 22°C	
	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER
20	8.13	4.52	9.87	4.89	10.97	5.08	11.92	5.21	12.91	5.29	13.82	5.38	-	-
30	9.24	3.29	10.44	3.52	11.29	3.52	12.31	4.00	12.58	4.14	13.12	4.39	-	-
35	8.50	2.81	9.99	3.07	10.76	3.24	11.65	3.48	12.00	3.90	12.40	3.77	12.88	3.78
40	8.10	2.40	9.25	2.58	10.17	2.76	10.80	2.90	11.01	3.24	11.42	3.29	11.86	3.36
45	7.17	2.21	8.17	2.14	8.99	2.31	9.73	2.46	10.55	2.62	10.89	2.75	11.23	2.87

◆ **AHUW166A4 [HU161MA U33] + AHNW16606A3 [HN1616 NK3]**
◆ **AHUW166A4 [HU161MA U33] + AHNW16606A4 [HN1616M NK5]**
◆ **AHUW168A4 [HU163MA U33] + AHNW16809A3 [HN1639 NK3]**
◆ **AHUW168A4 [HU163MA U33] + AHNW16806A4 [HN1636M NK5]**

Outdoor Temperature [℃ DB]	Water flow rate 46.00 LPM													
	LWT 7°C		LWT 10°C		LWT 13°C		LWT 15°C		LWT 18°C		LWT 20°C		LWT 22°C	
	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER	TC	EER
20	8.54	4.34	10.69	4.53	11.89	4.72	12.91	4.82	13.98	4.91	14.97	4.97	-	-
30	9.70	3.16	11.31	3.26	12.22	3.26	13.34	3.71	13.63	3.84	14.21	4.06	-	-
35	8.92	2.70	10.82	2.84	11.66	3.01	12.63	3.23	13.00	3.61	13.43	3.49	13.96	3.51
40	8.51	2.32	10.03	2.39	11.02	2.56	11.70	2.68	11.93	3.01	12.37	3.05	12.85	3.11
45	7.52	2.12	8.85	1.98	9.73	2.14	10.55	2.28	11.42	2.43	11.80	2.54	12.16	2.66

Note

1. DB : Dry bulb temperature(℃), LWT : Leaving water temperature(℃), LPM : Liter per minute (ℓ/min)
2. TC : Total capacity(kW), EER: Energy efficiency ratio(kW/kW), COP : Coefficient of performance (kW/kW)
3. Direct interpolation is permissible. Do not extrapolate.
4. Measuring procedure follows EN14511.
   - Rated values are based on standard conditions, and it can be found on specifications.
   - Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   - In accordance with the test standard(or nations), the results may vary.
5. The Shaded areas are not guaranteed continuous operation.

6. Performance Data

6.2 Heating Operation

■ Maximum Heating Capacity (Include defrost effect)

◆ **AHUW126A4 [HU121MA U33] + AHNW16606A3 [HN1616 NK3]**
◆ **AHUW126A4 [HU121MA U33] + AHNW16606A4 [HN1616M NK5]**
◆ **AHUW128A4 [HU123MA U33] + AHNW16809A3 [HN1639 NK3]**
◆ **AHUW128A4 [HU123MA U33] + AHNW16806A4 [HN1636M NK5]**

Outdoor Temperature [°C DB]	Water flow rate 34.50 LPM								Water flow rate 19.77 LPM			
	LWT 30 °C		LWT 35 °C		LWT 40 °C		LWT 45 °C		LWT 50 °C		LWT 55 °C	
	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP
-25	11.25	2.34	10.95	2.21	10.22	2.05	9.85	1.88	-	-	-	-
-20	12.00	3.20	11.32	3.01	10.90	2.85	10.32	2.33	-	-	-	-
-15	12.00	3.60	11.66	3.27	11.45	2.98	11.16	2.48	11.13	2.09	-	-
-7	12.00	3.99	12.00	3.52	12.00	3.10	12.00	2.64	12.00	2.31	11.24	2.02
-4	12.00	4.06	12.00	3.56	12.00	3.13	12.00	2.70	12.00	2.37	11.98	2.12
2	12.00	4.54	12.00	3.85	12.00	3.34	12.00	2.87	12.00	2.50	12.00	2.31
7	12.00	6.20	12.00	4.55	12.00	4.59	12.00	3.55	12.00	3.11	12.00	2.74
10	12.00	7.24	12.00	5.41	12.00	4.41	12.00	3.95	12.00	3.47	12.00	2.92
15	12.00	9.58	12.00	7.91	12.00	5.74	12.00	4.89	12.00	4.57	12.00	4.12
18	12.00	10.48	12.00	8.41	12.00	6.90	12.00	6.05	12.00	5.66	12.00	4.58
20	12.00	11.79	12.00	9.05	12.00	7.81	12.00	6.65	12.00	6.10	12.00	4.92
35	12.00	14.16	12.00	12.00	12.00	10.55	12.00	9.13	12.00	8.44	12.00	7.44

◆ **AHUW146A4 [HU141MA U33] + AHNW16606A3 [HN1616 NK3]**
◆ **AHUW146A4 [HU141MA U33] + AHNW16606A4 [HN1616M NK5]**
◆ **AHUW148A4 [HU143MA U33] + AHNW16809A3 [HN1639 NK3]**
◆ **AHUW148A4 [HU143MA U33] + AHNW16806A4 [HN1636M NK5]**

Outdoor Temperature [°C DB]	Water flow rate 40.25 LPM								Water flow rate 20.66 LPM			
	LWT 30 °C		LWT 35 °C		LWT 40 °C		LWT 45 °C		LWT 50 °C		LWT 55 °C	
	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP
-25	11.25	2.34	11.17	2.02	10.79	1.91	10.32	1.78	-	-	-	-
-20	12.11	3.14	11.98	2.71	11.54	2.45	10.90	2.11	-	-	-	-
-15	13.06	3.45	12.99	3.01	12.77	3.43	12.27	2.71	12.42	2.05	-	-
-7	14.00	3.75	14.00	3.30	14.00	2.93	13.64	2.68	13.09	2.30	11.67	1.98
-4	14.00	3.86	14.00	3.36	14.00	2.96	14.00	2.63	14.00	2.29	12.67	1.97
2	14.00	4.18	14.00	3.78	14.00	3.12	14.00	2.74	14.00	2.41	13.98	2.13
7	14.00	5.94	14.00	4.41	14.00	4.44	14.00	3.46	14.00	3.01	14.00	2.64
10	14.00	6.59	14.00	5.42	14.00	4.48	14.00	3.98	14.00	3.47	14.00	2.89
15	14.00	7.71	14.00	6.37	14.00	5.73	14.00	4.88	14.00	4.51	14.00	3.68
18	14.00	9.16	14.00	7.60	14.00	6.20	14.00	5.36	14.00	4.99	14.00	4.14
20	14.00	9.53	14.00	7.92	14.00	6.45	14.00	5.44	14.00	5.16	14.00	4.37
35	14.00	13.17	14.00	11.16	14.00	9.65	14.00	8.21	14.00	7.48	14.00	5.91

Note

1. DB : Dry bulb temperature(℃), LWT : Leaving water temperature(℃), LPM : Liter per minute (ℓ/min)
2. TC : Total capacity(kW), EER: Energy efficiency ratio(kW/kW), COP : Coefficient of performance (kW/kW)
3. Direct interpolation is permissible. Do not extrapolate.
4. Measuring procedure follows EN14511.
   - Rated values are based on standard conditions, and it can be found on specifications.
   - Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   - In accordance with the test standard(or nations), the results may vary.
5. The Shaded areas are not guaranteed continuous operation.

6. Performance Data

◆ AHUW166A4 [HU161MA U33] + AHNW16606A3 [HN1616 NK3]
◆ AHUW166A4 [HU161MA U33] + AHNW16606A4 [HN1616M NK5]
◆ AHUW168A4 [HU163MA U33] + AHNW16809A3 [HN1639 NK3]
◆ AHUW168A4 [HU163MA U33] + AHNW16806A4 [HN1636M NK5]

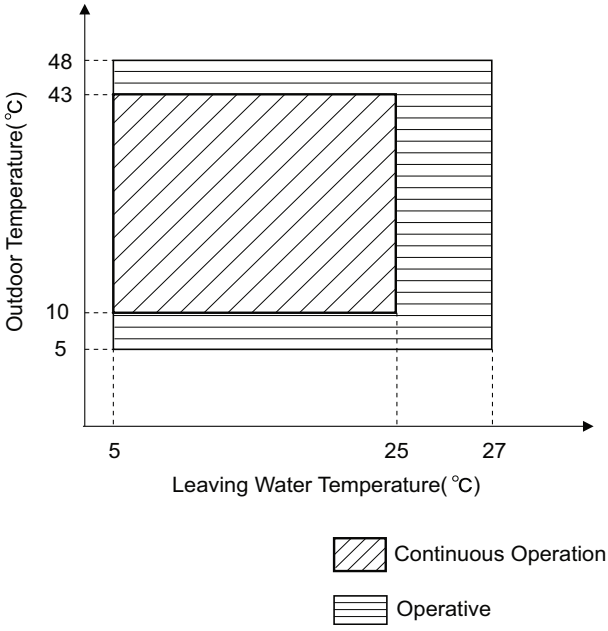
Outdoor Temperature [°C DB]	Water flow rate 46.00 LPM								Water flow rate 21.60 LPM			
	LWT 30 °C		LWT 35 °C		LWT 40 °C		LWT 45 °C		LWT 50 °C		LWT 55 °C	
	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP	TC	COP
-25	12.27	2.03	12.01	1.88	11.48	1.81	10.86	1.68	-	-	-	-
-20	13.11	2.91	12.90	2.41	12.62	2.30	12.30	1.87	-	-	-	-
-15	13.73	3.15	13.70	2.72	13.46	2.60	13.16	2.30	12.42	2.05	-	-
-7	14.36	3.38	14.50	3.02	14.30	2.85	14.01	2.40	13.40	2.10	12.50	1.89
-4	15.20	3.54	14.80	3.10	14.50	2.90	14.25	2.45	14.00	2.29	13.50	1.87
2	16.00	3.87	16.00	3.38	16.00	2.99	16.00	2.64	16.00	2.35	14.51	2.09
7	16.00	5.79	16.00	4.26	16.00	4.29	16.00	3.32	16.00	2.91	16.00	2.56
10	16.00	6.33	16.00	5.20	16.00	4.24	16.00	3.79	16.00	3.34	16.00	2.80
15	16.00	7.29	16.00	6.02	16.00	4.92	16.00	4.20	16.00	3.92	16.00	3.24
18	16.00	7.90	16.00	6.55	16.00	5.37	16.00	4.71	16.00	4.41	16.00	3.57
20	16.00	8.32	16.00	6.92	16.00	5.97	16.00	5.09	16.00	4.66	16.00	3.76
35	16.00	11.90	16.00	10.09	16.00	8.87	16.00	7.67	16.00	7.10	16.00	5.68

Note

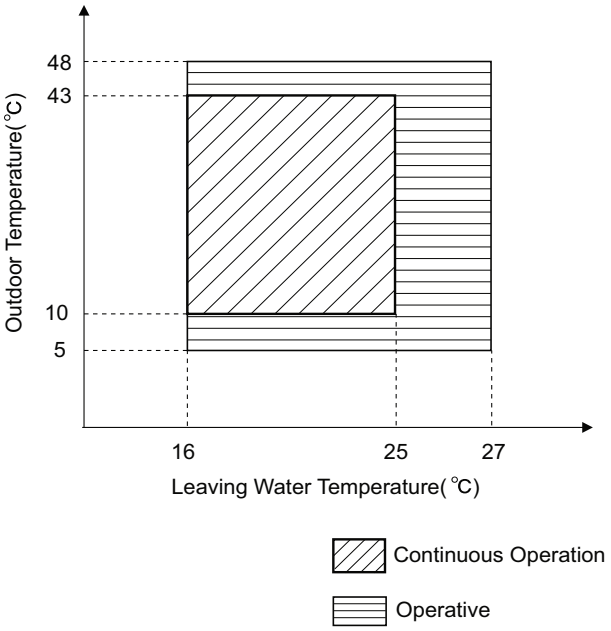
1. DB : Dry bulb temperature(℃), LWT : Leaving water temperature(℃), LPM : Liter per minute (ℓ/min)
2. TC : Total capacity(kW), EER: Energy efficiency ratio(kW/kW), COP : Coefficient of performance (kW/kW)
3. Direct interpolation is permissible. Do not extrapolate.
4. Measuring procedure follows EN14511.
   - Rated values are based on standard conditions, and it can be found on specifications.
   - Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   - In accordance with the test standard(or nations), the results may vary.
5. The Shaded areas are not guaranteed continuous operation.

7. Operation Range

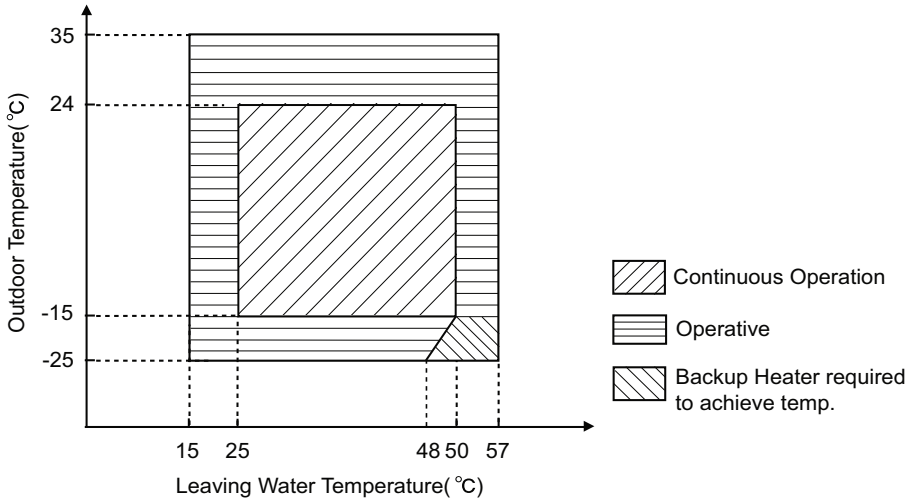
Cooling
(Fan coil unit)



Cooling
(Under floor)



Heating



8. Electric characteristics

■ Wiring of Main Power Supply and Equipment Capacity

1. Use a separate power supply for the Outdoor Unit and Indoor Unit.
2. Bear in mind ambient conditions (ambient temperature,direct sunlight, rain liquid,etc.) when proceeding with the wiring and connections
3. The wire size is the minimum value for metal conduit wiring. The power cord size should be 1 rank thicker taking into account the line voltage drops. Make sure the power-supply voltage does not drop more than 10%.
4. Specific wiring requirements should adhere to the wiring regulations of the region.
5. Power supply cords of parts of appliances for outdoor use should not be lighter than polychloroprene sheathed flexible cord (design 60245 IEC57).
6. Don't install an individual switch or electrical outlet to disconnect each of indoor unit separately from the power supply.

⚠ WARNING

- **Follow ordinance of local regulation for technical standard related to electrical equipment, wiring regulations and guidance of each electric power company.**
- **Make sure to use specified wires for connections so that no external force is imparted to terminal connections. If connections are not fixed firmly, it may cause heating or fire.**
- **Make sure to use the appropriate type of overcurrent protection switch. Note that generated overcurrent may include some amount of direct current.**
- **All Installation site must require attachment of an earth leakage breaker. If no earth leakage breaker is installed, it may cause an electric shock.**

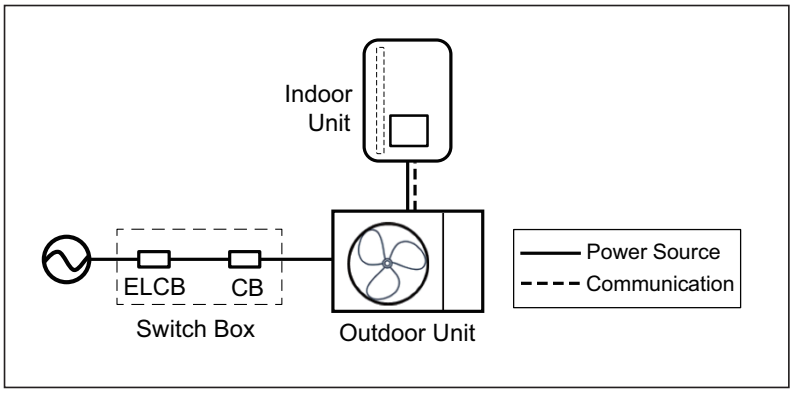
⚠ CAUTION

- **Do not use anything other than breaker and fuse with correct capacity. Using fuse and wire or copper wire with too large capacity may cause a malfunction of unit or fire.**

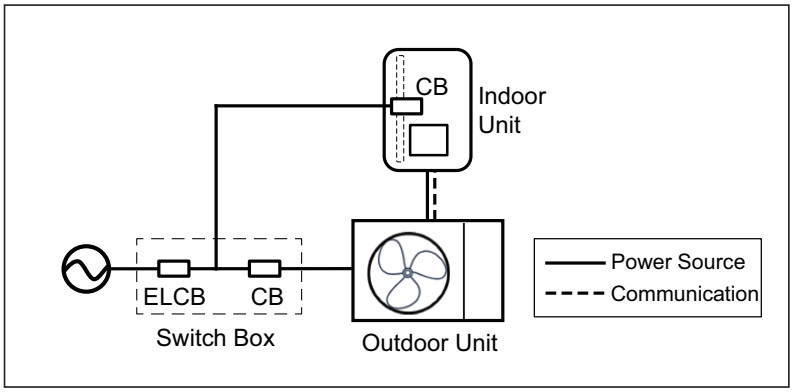
8. Electric characteristics

Model			Back up Heater	
Indoor Unit	**Outdoor Unit**	**Phase / Volts / Hz**	**Capacity (kW)**	**Power Supply**
AHNW16606A3 AHNW16606A4	AHUW126A4 AHUW146A4 AHUW166A4	1 / 220-240V / 50Hz	3+3	1 / 220-240V / 50Hz
AHNW16809A3 AHNW16806A4	AHUW128A4 AHUW148A4 AHUW168A4	3 / 380-415V /50Hz	3+3+3 2+2+2	3 / 380-415V /50Hz

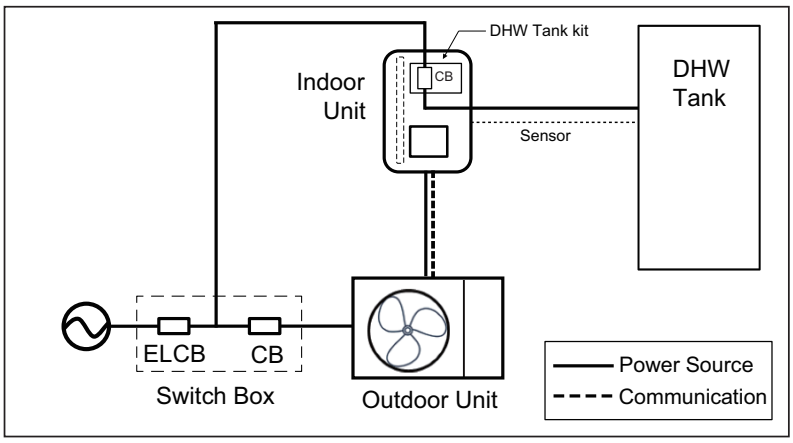
[Power Supply for Heat Pump]



[Power Supply for Backup heater]



[Power Supply for DHW Booster Heater]



Note

1.Voltage supplied to the unit terminals should be within the minimum and maximum range.

2.Maximum allowable voltage unbalance between phase is 2%.

3.All installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].

9. Sound Levels

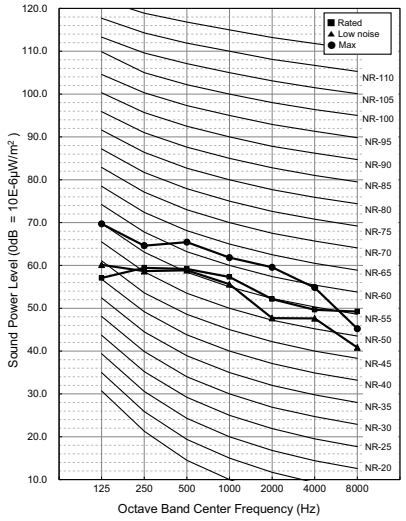
Note

1. Data is valid at diffuse field condition.
2. Data is valid at nominal operation condition.
   Refer to the Model Specifications for nominal conditions(Power source and Ambient temperature, etc)
3. Sound level can be increased in static pressure mode or used air guide.
4. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient).
5. Reference acoustic intensity 0dB = 10E-6μW/m^2
6. Sound power level is measured on the rated condition in the reverberation rooms by ISO 3741 standard.
   Therefore, these values can be increased owing to ambient conditions during operation.

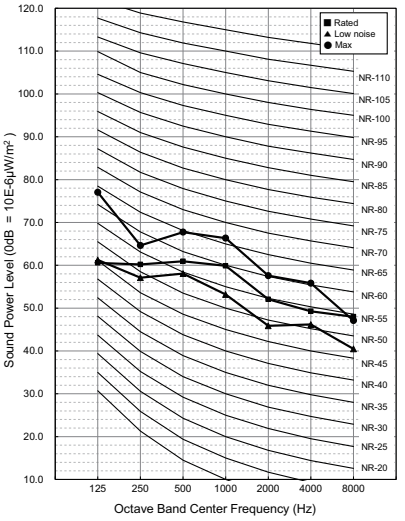
■ Sound Power Level

Model	Heating [dB(A)]	
	Rated	Low Noise
AHUW126A4 [HU121MA U33] AHUW128A4 [HU123MA U33]	63	61
AHUW146A4 [HU141MA U33] AHUW148A4 [HU143MA U33]	64	62
AHUW166A4 [HU161MA U33] AHUW168A4 [HU163MA U33]	65	63

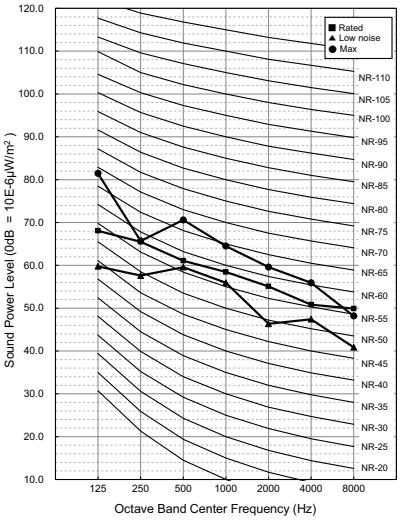
AHUW126A4 [HU121MA U33]
AHUW128A4 [HU123MA U33]



AHUW146A4 [HU141MA U33]
AHUW148A4 [HU143MA U33]



AHUW166A4 [HU161MA U33]
AHUW168A4 [HU163MA U33]



THERMA V™

Outdoor unit

Design and installation

1. Alternative Refrigerant R410A
2. Select the Best Location
3. Installation Space
4. Dip Switch Setting

1. Alternative Refrigerant R410A

- The refrigerant R410A has the property of higher operating pressure in comparison with R22.
  Therefore, all materials have the characteristics of higher resisting pressure than R22 ones and this characteristic should be also considered during the installation.R410A is an azeotrope of R32 and R125 mixed at 50:50, so the ozone depletion potential (ODP) of R410A is 0.

⚠ CAUTION

- **The wall thickness of the piping should comply with the relevant local and national regulations for the designed pressure 3.8MPa**
- **Since R410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in its gaseous state, its composition changes and the system will not work properly.**
- **Do not place the refrigerant container under the direct rays of the sun to prevent it from exploding.**
- **For high-pressure refrigerant, any unapproved pipe must not be used.**
- **Do not heat pipes more than necessary to prevent them from softening.**
- **Be careful not to install wrongly to minimize economic loss because it is expensive in comparison with R22.**

2. Select the Best Location

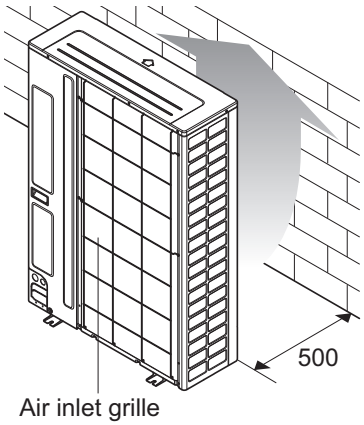
Select space for installing unit, which will meet the following conditions:

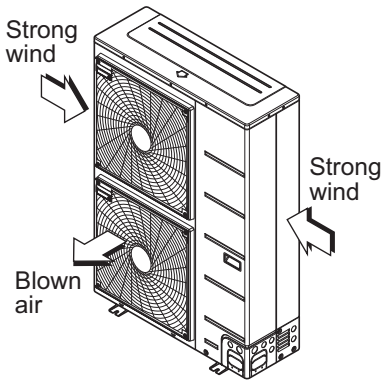
- No direct thermal radiation from other heat sources
- No possibility of annoying neighbors by noise from unit
- No exposition to strong wind
- With strength which bears weight of unit
- With space for air passage and service work shown next
- Because of the possibility of fire, do not install unit to the space where generation, inflow, stagnation, and leakage of combustible gas is expected.
- Avoid unit installation in a place where acidic solution and spray (sulfur) are often used.
- Do not use unit under any special environment where oil, steam and sulfuric gas exist.
- It is recommended to fence round the unit in order to prevent any person or animal from accessing the unit.
- If installation site is area of heavy snowfall, then the following directions should be observed.
  - Make the foundation as high as possible.
  - Fit a snow protection hood.
- Select installation location considering following conditions to avoid bad condition when additionally performing defrost operation.
  1. Install the unit at a place well ventilated and having a lot of sunshine in case of installing the product at a place with a high humidity in winter (near beach, coast, lake, etc).
  2. Performance of heating will be reduced and pre-heat time of the unit may be lengthened in case of installing the unit in winter at following location:
     1) Shade position with a narrow space
     2) Location with much humidity around.
     3) Location where liquid gathers since the floor is not even.
- When installing the unit in a place that is constantly exposed to a strong wind like a coast or on a high story of a building, secure a normal fan operation by using a duct or a wind shield.
  1. Install the unit so that its discharge port faces to the wall of the building. Keep a distance 300 mm or more between the unit and the wall surface.
  2. Supposing the wind direction during the operation season of the unit, install the unit so that the discharge port is set at right angle to the wind direction.

3. Installation Space

3.1 General considerations

- Install the unit so that its discharge port faces to the wall of the building. Keep a distance 500 mm or more between the unit and the wall surface.
- Supposing the wind direction during the operation season of the air conditioner, install the unit so that the discharge port is set at right angle to the wind direction.





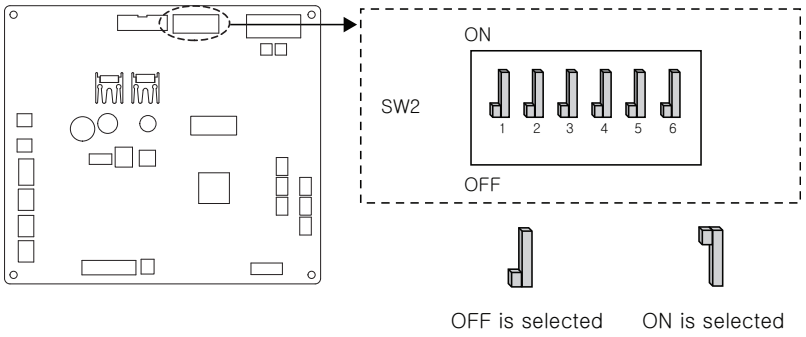
4. Dip Switch Setting

4.1 Information

Turn off electric power supply before setting DIP switch

- Whenever adjusting DIP switch, turn off electric power supply to avoid electric shock.

■ Outdoor PCB



◆ Dip switch Information

Description	Setting			Default
Low Noise Mode	2	OFF	Always Mode : Maintain Low noise mode for target temperature	OFF
		ON	Partial Mode : Escape Low noise mode for target temperature	
Peak Control	3	OFF	Max Mode	
		ON	Peak Control : To limit maximum current (Power saving)	

- Only Dip-switch no. 2 and no. 3 has a function. Others have no function.
- When setting the Partial Mode, mode can be exited to secure capacity after operating for a certain time.

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The air conditioners manufactured by LG have received ISO9001 certificate for quality assurance and ISO14001 certificate for environmental management system.
The specifications, designs, and information in this brochure are subject to change without notice.