

THERMA V.

Air-to-Water Heat Pump / Split Type / Indoor unit R410A/50Hz 5BPU0-01C(Replaces 5BPU0-01B)

TOTALHVAC SOLUTION PROVIDER ENGINEERING PRODUCT DATA BOOK



P/No.: MFL66101123



General Information Indoor Unit Hydro Box Unit



General Information

- 1.Model Line Up
- 2. Nomenclature

1. Model line up

1.1 Indoor Units

			Back up	Model Name	
Category	Туре	External Appearance	heater Capacity	Heating Capacity class* (kW)	Features
			[kW]	16.0	
AWHP Split Type	Hydro Box Type	*	6.0	AHNW16606A4 [HN1616M NK5]	 Providing eco-friendly heating High energy efficiency Easy installation Space heating, cooling, and Domestic Hot
1 71	, ,,	PROGRAMA V		AHNW16806A4 [HN1636M NK5]	Water heating

1.2 Combination of Outdoor Units

				Model	l Name		
C	Category			Heating Ca	pacity (kW)		
		12	2.0	14	4.0	10	3.0
	nase Model 0-240 V, 50 Hz	AHUW126A3 [HU121 U33]	AHUW126A4 [HU121MA U33]	AHUW146A3 [HU141 U33]	AHUW146A4 [HU141MA U33]	AHUW166A3 [HU161 U33]	AHUW166A4 [HU161MA U33]
Combination	AHNW16606A4 [HN1616M NK5]	0	0	0	0	0	0
3 Phase Model 3 Ø, 380-415 V, 50 Hz		AHUW128A3 [HU123 U33]	AHUW128A4 [HU123MA U33]	AHUW148A3 [HU143 U33]	AHUW148A4 [HU143MA U33]	AHUW168A3 [HU163 U33]	AHUW168A4 [HU163MA U33]
Combination	AHNW16806A4 [HN1636M NK5]	0	0	0	0	0	0
External Appearance					LG PPERMAN		

Note
*: Actual system capacity would be different accordance with combination of outdoor unit.

2. Nomenclature

■ Factory Model Name

Model Name	АН	N	W	16	6	06	Α	4
No.	1	2	3	4	5	6	7	8

No.	Signification
1	Air-to-Water Heat Pump for R410A
	Classification
2	N : Indoor unit of Split type U : Outdoor unit of Split type B : Monobloc type
	Model Type
3	W : Inverter Heat Pump H : Heat Pump
4	Heating Capacity (kW) (for Hydro Box Type)
4	Ex) $9kW \rightarrow '09'$
	Heater Electrical ratings
5	6 : 1Ø, 220-240V, 50 Hz 8 : 3Ø, 380-415V, 50Hz A : 3Ø, 220V, 50Hz
	Heater Capacity (kW)
6	06 : 6kW Heater 09 : 9kW Heater
	Function
7	A : General heating heat pump H : Domestic Hot heating only T : High temperature heating heat pump
	B : DHW tank integrated model
8	Serial number

2. Nomenclature

■ Buyer Model Name

Model Name	н	N	16	1	6	M	N	K	5
No.	1	2	3	4	5	6*	7	8	9

No.	Signification
1	Air-to-Water Heat Pump for R410A
	Classification
2	N : Indoor unit of Split type U : Outdoor unit of Split type M : Monobloc type
3	Heating Capacity (kW)
3	Ex) 9kW → '09', 12kW → '12'
	Heater Electrical ratings
4	1 : 1Ø, 220-240V, 50 Hz 2 : 3Ø, 220V, 50Hz 3 : 3Ø, 380-415V, 50Hz
	Nominal Heater Capacity (kW)
5	00 : None Heater 06 : 6kW heater
	Functions
6*	H : High Temperature heating model M : Mid Temperature (* In case of Hydro Box Low temperature type, here is blank.)
	Classification
7	N : Indoor unit of Split type U : Outdoor unit of Split type M : Monobloc type
8	Platform (Chassis code)
0	K : K2,K3 Chassis
9	Serial number



Indoor Unit

Hydro Box Unit



Hydro Box Unit

- 1.List of Functions
- 2. Specification
- 3. Dimensions
- 4. Wiring Diagram
- **5.Piping Diagram**
- **6. Hydraulic Performance**
- 7. Sound Levels

1. List of Functions

■ Basic functions of Unit

Category	Function	AHNW16606A4 [HN1616M NK5] AHNW16806A4 [HN1636M NK5]	
Installation	Back up heater (Operation)	0	
Reliability	Self diagnosis	0	
	Auto Restart	0	
	Child lock	0	
Convenience	Sleep mode	0	
Convenience	Timer (on/off)	0	
	Timer (weekly)	0	
	Two thermistor control	X	
Maharanis franchisco	Network solution(LGAP)	0	
Network function	Modbus connectivity (without gateway)	0	
	Anti-condensation on floor (cooling)	0	
	Digital output for external pump	0	
	Current flow rate monitoring	0	
	Thermostat interface (230V AC)	0	
	Thermostat interface (24V AC)	Х	
	Solar thermal system	O (Accessory)	
	DHW(Domestic Hot Water) heating	O (Accessory)	
	PHEX anti-freezing control	0	
	Water pump anti-stuck function	0	
	Weather compensation for heating and cooling (Auto mode)	0	
	Low noise operation	0	
	Anti-overheating of water pipe	0	
Air to Water Heat Pump Functions	Emergency operation	0	
unctions	Weather Dependent Operation with Thermostat	0	
	Scheduler (DHW Tank Heater)	0	
	Timer (Domestic Hot Water Tank Heater)	0	
	Quick Domestic Hot Water Tank Heating	0	
	Screed Drying Mode	0	
	Base Pan Heating	0	
	External input and output control(CN-EXT)	0	
	Water flow control	0	
	Water pressure monitoring	0	
	Digital input for energy saving (ESS)	0	
	Energy Monitoring	0	
	DHW Recirculation	0	

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.

1. List of Functions

■ Accessory Compatibility List

	Category	Product	Remark	AHNW16606A4 [HN1616M NK5] AHNW16806A4 [HN1636M NK5]
Wired RemoteContr oller	Standard	PREMTW101	New standard (White)	0
	Simple Contact	PDRYCB000	Simple Dry Contact	0
D O		PDRYCB400	2 Points Dry Contact (For Setback)	X
Dry Contact	Communication Type	PDRYCB320	For 3rd party Thermostat	0
		PDRZCB500	Dry Contact for Modbus	X
	Remote temperature sensor	PQRSTA0	-	0
	Group control wire	PZCWRCG3	0.25 m	X
	2-Remo Control Wire	PZCWRC2	0.25 m	0
	Extension wire	PZCWRC1	10 m	0
-		D14/51/D D 000	USB Cable : 0.6 m	
	Wi-Fi controller *	PWFMDD200	Extension cable : 0.5 m	0
	Wi-Fi Extension cable	PWYREW000	USB Extension cable : 10 m	0
	Meter Interface Module***	PENKTH000	Interface between IDU and Meter	0
	2 Zone Valve Controller	PZNVVB200	-	0
		OSHW-200F	200 L	0
	DHW tanks (Single coil)	OSHW-300F	300 L	0
		OSHW-500F	500 L	0
	DHW tanks (Double coil)	OSHW-300FD	300 L	0
	,	PHLTA	For Split (1Φ)	0
	DHW tank kit	PHLTB	For Monobloc	X
		PHLTC	For Split (3Φ)	0
	DHW sensor	PHRSTA0	included in PHLTA kit	0
		OSHA-MV	3/4" DN20	0
	Mixing Valve	OSHA-MV1	1" DN25	0
Accessory Kit	3way valve	OSHA-3V	-	0
for AWHP	Solar thermal kit	PHLLA	For hydro box unit	X
	2nd Circuit Thermistor	PRSTAT5K10	-	0
		AHEH036A [HA031M E1]	220-240 V, 1Φ, For monobloc	Х
	Backup heater	AHEH066A [HA061M E1]	220-240 V, 1Ф, For monobloc	X
		AHEH068A [HA063M E1]	380-415 V, 3Ф, For monobloc	Х
	Drain Pan	PHDPC	For hydro box unit	0
	Cover plate	PDC-HK10	For Split, IWT	0
	Buffer Tank (40ℓ)	OSHB-40KT	For IWT(integrable)	X
	DHW expansion vessel (81)	OSHE-12KT	For IWT (integrable)	X

- 1. O: Possible, X: Impossible, -: Not applicable, Embedded: Included with product.
- 2. *: Some advanced functions controlled by individual controller cannot be operated.
 3. **: It could not be operated some functions.
 4. *** Meter interface cannot be connected at the same time with 3rd-party controller.

- 5. If you need more detail, please refer to the **BECON** PDB or the manual of product. (http://partner.lge.com/global: Home> Doc.Library> Product > Control(BECON))

2. Specifications

		Indoor Units			AHNW16606A4 [HN1616M NK5]	AHNW16806A4 [HN1636M NK5]
	Cooling	For Fan Coil Unit	Min. ~ Max.	°C	5 ~ 27	5 ~ 27
Operation	Cooling	For under floor	Min. ~ Max.	°C	16 ~ 27	16 ~ 27
Range (Leaving	Heating	For Fan Coil Unit / Radiator	Min. ~ Max.	°C	15 ~ 57	15 ~ 57
Water)		For under floor	Min. ~ Max.	°C	15 ~ 57	15 ~ 57
	DHW(Domes	stic Hot Water)*	Min. ~ Max.	°C	15 ~ 80	15 ~ 80
	Туре			-	Canned type for h	ot water circulation
Water Pump	Motor type			-	BLDC	BLDC
vvater Pump	Number of R	evolution (setting rai	nge)	-	Variable capac	ty 10% to 100%
	Power input		Rated	W	140	140
	Туре			-	Brazed Plate HEX	Brazed Plate HEX
Heat Exchanger	Quantity			-	1	1
Lxcrianger	Number of P	ate		EA	76	76
	Туре			-	Vortex	Vortex
	Model			-	SIKA VVX20	SIKA VVX20
Flow Sensor	Measuring R	ange	Min. ~ Max.	ℓ/min	5 ~ 80	5 ~ 80
	Flow (Trigger		Min.	ℓ/min	7	7
Water	Model	pot/		-	Sensata OFM (2HMP)	Sensata OFM (2HMP)
Pressure Sensor	Measuring R	ange	Min. ~ Max.	bar(G)	0 ~ 20	0 ~ 20
	Volume			l	8.0	8.0
Expansion	Water Pressu	ıre	Max.	bar	3	3
Vessel	Water Pressure Pre-charged			bar	1	1
	Mesh size			-	30 mesh	30 mesh
Strainer	Material			-	Stainless Steel	Stainless Steel
Safety Valve	Pressure Lim	nit	Upper Limit	bar	3	3
	Water	Inlet	Inner Dia.	mm(inch)	Male PT 25.4(1)	Male PT 25.4(1)
Piping	Circuit	Outlet	Inner Dia.	mm(inch)	Male PT 25.4(1)	Male PT 25.4(1)
Connections	Refrigerant	Gas	Outer Dia.	mm(inch)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
	Circuit	Liquid	Outer Dia.	mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
Sound Power Level	Heating		Rated	dB(A)	44	44
Dimensions	Unit		WxHxD	mm	490 x 850 x 315	490 x 850 x 315
Dimensions	Packed Unit		WxHxD	mm	563 x 1,082 x 375	563 x 1,082 x 375
Weight	Unit		•	kg	40.0	41.0
(Without water)	Packed Unit			kg	46.0	47.0
	Color			-	Noble White	Noble White
Exterior	RAL Code			-	RAL 9016	RAL 9016
Wiring Connections	Power and C	ommunication Cable	e (H07RN-F)	mm² x cores	0.75 x 4C	0.75 x 4C
	Туре	,		-	Indirect heating (+Booster heater)	Indirect heating (+Booster heater)
	Heater Capa	city	Max.	kW	3	3
	Power Suppl	•	1	V/Ø/Hz	230 / 1 / 50	230 / 1 / 50
	Power Suppl	,		_	Separated power source	Separated power source
DHW Tank**	Thermal Prot		Max.	°C	90	90
(Field Supply)	Relay Contac		1	_	Needed	Needed
	ELCB			Α	40	40
	Sensor Adap	tor Diameter		mm(inch)	12.7 (1/2)	12.7 (1/2)
					·=·· (· · =)	
		t Model Name***		_	PHLTA (LG Supply)	PHLTC (LG Supply)

Note

 $^{^{\}star}$: DHW 50 \sim 80 °C Operating is available only when the booster heater is operating.

^{**:} This information is given as a guideline about the connection of DHW tank.

^{***:} This Accessory Kit is required only when you want to use the Booster heater function at DHW tank. If not, it's not necessary.

Therma V indoor unit itself already has Backup heater function.

2. Specifications

	Indoor Units		AHNW16606A4 [HN1616M NK5]	AHNW16806A4 [HN1636M NK5]
	Туре	-	Sheath	Sheath
	Number of Heating Coil	EA	2	3
	Capacity Combination	kW	3.0 + 3.0	2.0 + 2.0 + 2.0
	Operation	-	Automatic	Automatic
Backup heater	Heating Steps	Step	2	2
	Power Supply	V, Ø, Hz	1, 220-240, 50	3, 380-415, 50
	Rated Current	Α	25.0	8.7
	Power Cable (H07RN-F) (Included Earth)	mm² x cores	4.0 x 3C	2.5 x 4C

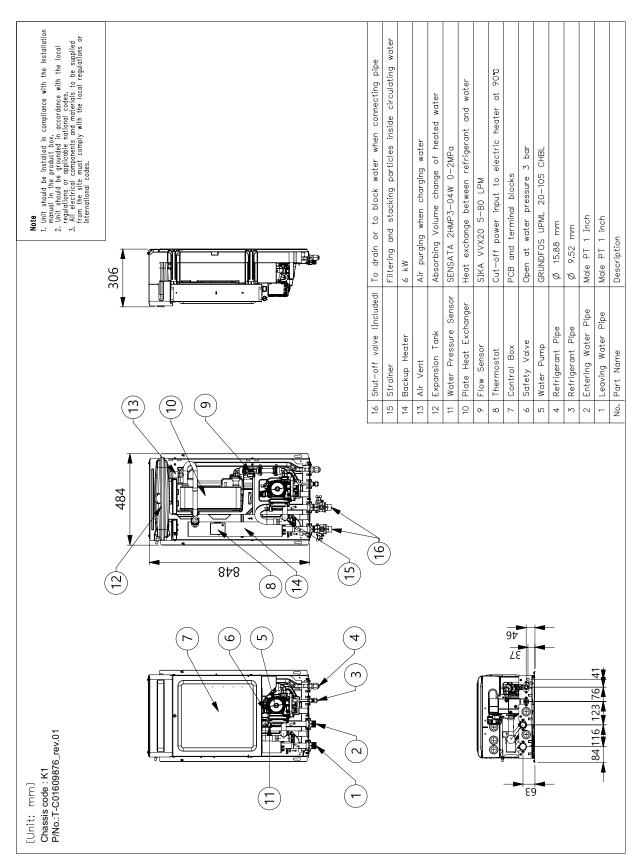
Note

- 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.

3. Dimensions

3.1 Internal

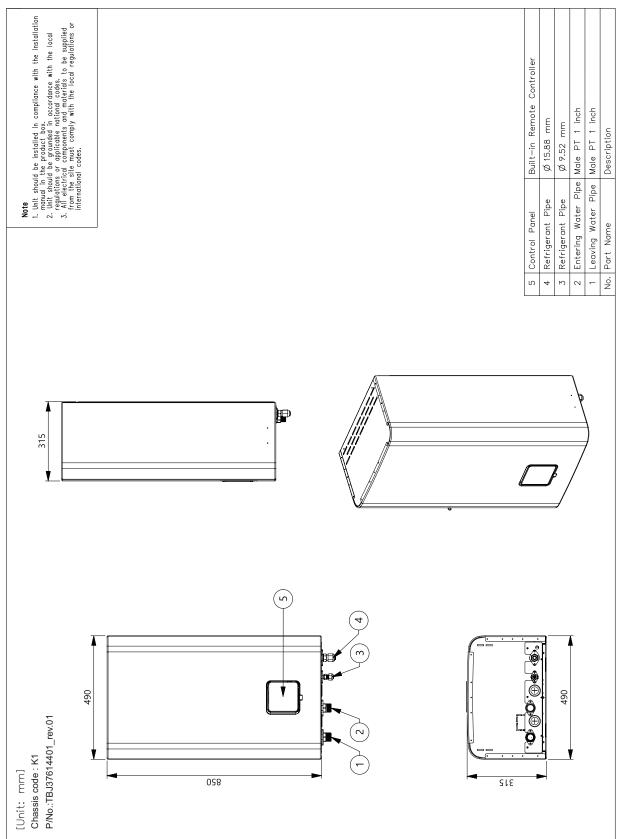
◆ AHNW16606A4 [HN1616M NK5], AHNW16806A4 [HN1636M NK5]



3. Dimensions

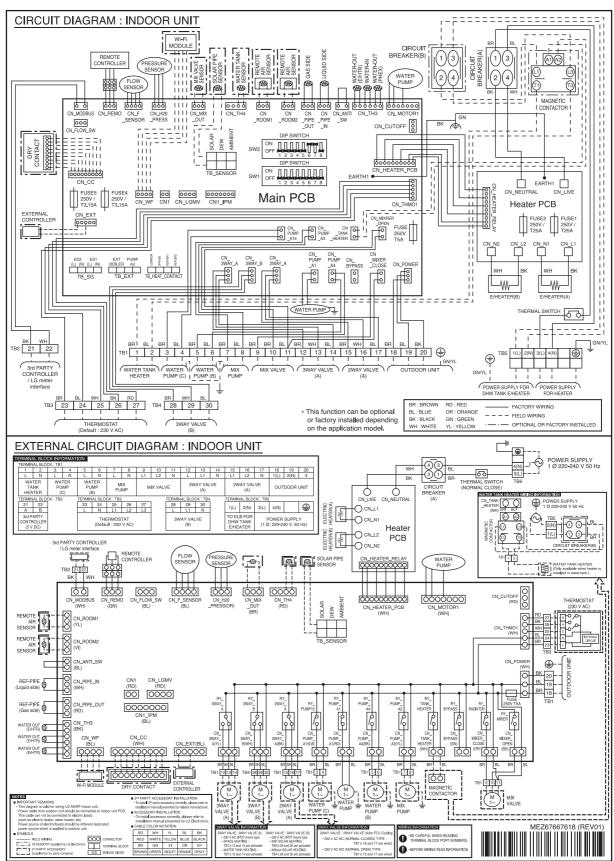
3.2 External

◆ AHNW16606A4 [HN1616M NK5], AHNW16806A4 [HN1636M NK5]



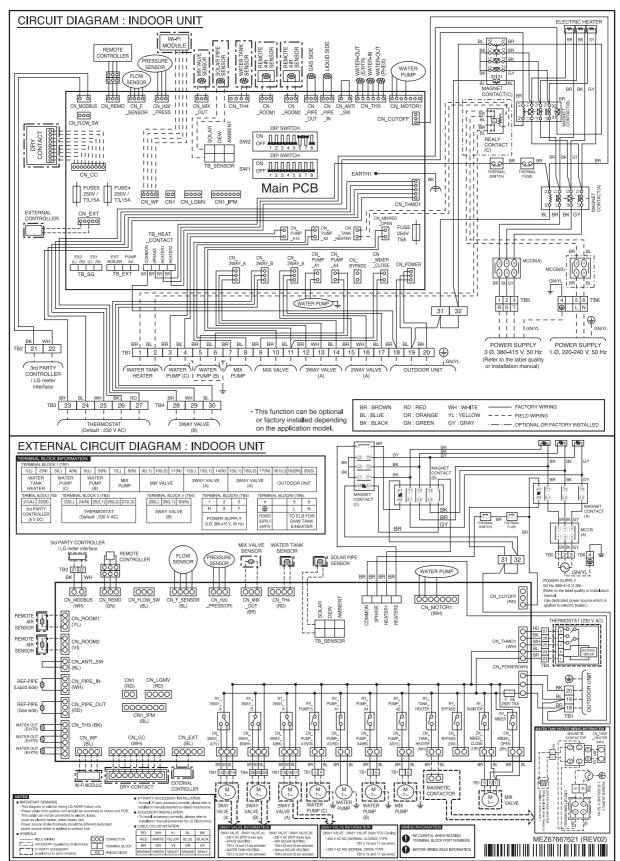
4. Wiring Diagrams

■ AHNW16606A4 [HN1616M NK5]



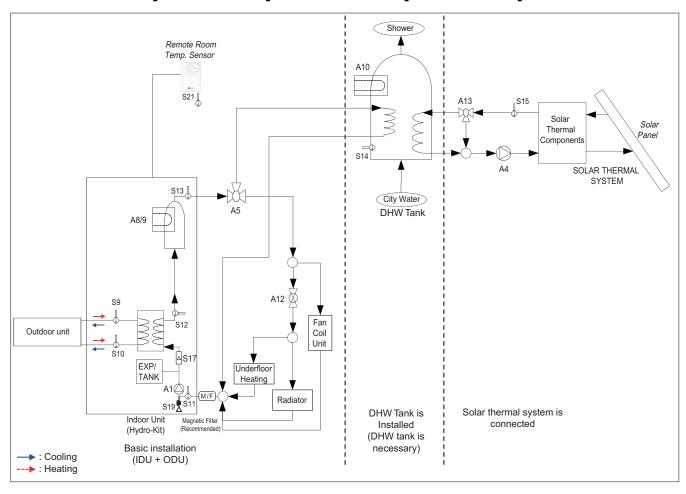
4. Wiring Diagrams

■ AHNW16806A4 [HN1636M NK5]



5. Piping Diagram

■ AHNW16606A4 [HN1616M NK5] / AHNW16806A4 [HN1636M NK5]



5. Piping Diagram

Category	Symbol	Meaning	PCB Connector	Remarks	
	S9	Refrigerant temperature sensor (Gas side)	CN_PIPE_OUT	- NTC5kOhm	
	S10	Refrigerant temperature sensor (Liquid side)	CN_PIPE_IN	- NTC5kOhm	
	S11	Entering water temperature sensor	CN_TH3 (WATER IN)		
	S12	Leaving water temperature sensor	CN_TH3 (PHEX OUT)	- NTC5kOhm - S11,S12 and S13 are connected at 6-pin-type connector CN TH3	
	S13	Electric heater outlet temperature sensor	CN_TH3 (HEATER OUT)		
	S17	Flow Sensor	CN_F_SENSOR	- to monitor water flow rate	
	S19	Entering Water Pressure sensor	CN_H2O_PRESS	- to monitor water pressure	
	S20	Reserved	TB SENSOR (AMBIENT)		
	S21	Remote room air sensor (Direct circuit)	CN_ROOM1	- Accessory: PQRSTA0 - NTC10kOhm	
Indoor unit / Main circuit	A1	Internal water pump	CN_PUMP_A1 CN_MOTOR1	- Power is supplied via CN_PUMP_A1 - PWM signal is supplied via CN_MOTOR1	
Great	A2	External pump	TB_EXT (PUMP A2)	voltage-free contact External water pump if head of internal pump is not sufficient or if parallel buffer tank is used	
	A8 / A9	Backup heater (2 steps)	Coil 1: CN_L1, CN_N1 Coil 2: CN_L2, CN_N2 on HEATER-PCB	- Operating power(230 V AC 50 Hz) is supplied by external power source via Terminal block	
	A12	2-way valve to block underfloor circuit from cooling water	CN_2WAY_A	3rd party accessory and Field installation (sold separately) - 2-wire NO- or NC-type 2-way valve is supported.	
	EXP/TANK	Expansion vessel	-	- Absorbs volume change of heating water	
	CTR/PNL	Control panel / Remote controller	CN_REMO		
	M/F	Magnetic filter	-	3rd party accessory and Field installation (sold separately) It is strongly recommended to install an additional filter on the heating water circuit.	
	S14	DHW tank temperature	CN_TH4 (BOOST)	- S14 is connected at 4-pin-type connector CN_TH4 - Accessory: PHRSTA0 - S14 is a part of DHW tank kit (Model: PHLTA,PHLTC)	
	A5	3-way valve for changing between heating(cooling) and DHW tank	CN_3WAY_A	3rd party accessory and Field installation (sold separately) SPDT type 3way valve is supported.	
Domestic hot water circuit	A10	DHW boost heater	CN_TANK_HEATER	- 3rd party accessory and Field installation (sold separately) - Operating power (230 V AC 50 Hz) is supplied by external power source via Terminal block - Accessory: PHLTA (Relay, harness and DHW sensor)	
	W/TANK	Domestic hot water tank	-	- Accessory (OSHW-series) or third-party tank suitable for heat pumps	
	A15	Reserved	CN_PUMP A15		
	S23	Reserved	CN_RECIRC		
	S15	Solar collector sensor	TB_SENSOR (SOLAR)	- 3rd party accessory and Field installation (sold separately) - PT1000	
	S16	Reserved	CN_TH4 (SOLAR)	-for solar collector sensor use S15	
Solarthermal	A4	Solar collector pump	CN_PUMP_A4	- 3rd party accessory and Field installation (sold separately)	
circuit	A13	3way-valve Solar	CN_3WAY_B	- 3rd party accessory and Field installation (sold separately) - SPDT type 3way valve is supported.	
	Solarthermal system	Solarthermal equipment such as collector, solar pump, PT1000 sensor, solar heat-exchanger	-	- 3rd party accessory and Field installation (sold separately)	

6. Hydraulic Performance

6.1 Water Pump Capacity

The water pump is variable type which is capable to change flow rate, so it may be required to change default water pump capacity in case of noise by water flow. In most case, however, it is strongly recommended to set capacity as maximum.

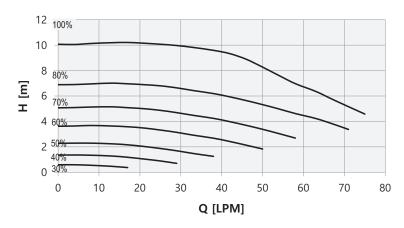
■ Pressure Drop

Capacity [kW]	Rated flow-rate [LPM]	Pump Head [m] (at rated flow- rate)	Product pressure drop [m] (Plate heat exchanger)	Serviceable Head [m]	Min. flow-rate [LPM] (Recommend)
16	46.00	9.0	1.4	7.6	
14	40.25	9.3	1.1	8.2	20
12	34.50	9.8	0.8	9.0	

Note

- To secure enough water flow rate, do not set water pump capacity as Minimum.
 It can lead unexpected flow rate error CH14.
- When installing the product, install additional pump in consideration of the pressure loss and pump performance.
- · If flow-rate is low, overloading of product can occur.

Q-H Chart



Note

Performance test based on standard ISO 9906 with pre-pressure 2.0bar and liquid temperature 20°C.

7. Sound levels

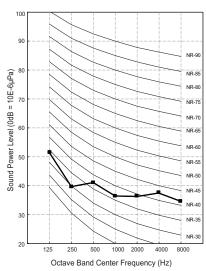
Sound Power Level

Note

- 1. Data is valid at diffuse field condition.
- 2. Reference acoustic intensity 0dB = 10E-6µW/m²
- 3. Sound power level is measured on the rated condition in the reverberation rooms. Refer to the Model Specifications for nominal conditions(Power source and Ambient temperature, etc)
- 4. Sound levels can be increased in accordance with installation and operating conditions.
- 5. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular installed place in which the equipment in installed.
- 6. Sound power level is measured on the rated condition in accordance with ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

Model	Sound Power Level [dB(A)]
AHNW16606A4 [HN1616M NK5]	44
AHNW16806A4 [HN1636M NK5]	44

AHNW16606A4 [HN1616M NK5] AHNW16806A4 [HN1636M NK5]





Design and installation

- 1. Select the Best Location
- 2.Installation Space
- 3.Water Control
- 4. Dip Switch Setting

1. Select the Best Location

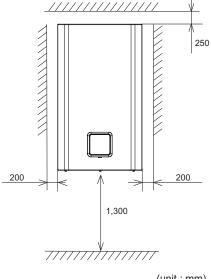
Select space for installing unit, which will meet the following conditions:

- · The place where the unit shall be installed inside.
- The place shall easily bear a load exceeding four times of the unit weight.
- The place where the unit shall be leveled.
- · The place shall allow easy water drainage.
- The place where the unit shall be connected to the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where there should not be any heat source or steam near the unit.

2. Installation Space

2.1 General considerations

- The following values are the least space for installation. If any service area is needed for service according to field circumstance, obtain enough service space.
- · Ensure that the spaces indicated by arrows around bottom, side, and top
- · Wider spaces are preferred for easy maintenance and piping.
- · If minimum service space is not secured, air circulation can be troubled and internal parts of the indoor unit can be damaged by overheating.



(unit: mm)

Note

· The default setting of the product is for heating only. To use the cooling system together, DIP S/W 4 should be turned ON and additional drain pan accessory should be installed.

3. Water Control

3.1 Water quality

Water quality should be complied with EN 98/83 EC Directives.

Λ

CAUTION

- If the product is installed at existing hydraulic water loop, it is important to clean hydraulic pipes to remove sludge and scale.
- Installing sludge strainer in the water loop is very important to prevent performance degrade.
- · Chemical treatment to prevent rust should be performed by installer.
- It is strongly recommended to install an additional filter on the heating water circuit. Especially to remove metallic
 particles from the heating piping, it is advised to use a magnetic or cyclone filter, which can remove small
 particles. Small particles may damage the unit and will NOT be removed by the standard filter of the heat pump
 system.
- Water quality check should be implemented before completing the installation of system.
 Detailed guide can be found in the table as below.

Water contents	Value			
pH	7.5~9.0			
Conductivity	10~500 uS/cm			
TDS (Total dissolved solids)	8~400 ppm			
Alkalinity (HCO ₃ -)	60~300 (mg/L)			
Total hardness	4 ~ 8.5 °dH			
Total Haralloo		71.4 ~ 15	51.7 (mg/L)	
Iron (Fe)	≤ 0.2 (mg/L)			
Sulphate (SO ₄ ²⁻)	≤ 100 (mg/L)			
Nitrite (NO ₃ ⁻)	≤ 100 (mg/L)			
Free chlorine (Cl ₂)	≤ 1 (mg/L)			
	i	opm	STS316	STS304
		15℃	3,000	180
	n117	40℃	500	50
	pH7	60℃	200	30
Chlorides (Cl ⁻)		80℃	125	20
		15℃	18,000	700
	pH9	40℃	2,600	250
	рпэ	60℃	1,000	170
		80℃	550	130

3. Water Control

3.2 Frost protection

In areas of the country where entering water temperatures drop below 0 °C, the water pipe must be protected by using an approved antifreeze solution. Consult your heat pump unit supplier for locally approved solutions in your area.

Calculate the approximate volume of water in the system. And add the water volume contained in the heat pump to this total volume.

Antifranza tuna		Ar	tifreeze mixing	ratio (by volun	ne)	
Antifreeze type	0°C	-5°C	-10°C	-15°C	-20°C	-25°C
Methanol	0%	6%	12%	16%	24%	30%
Ethylene glycol	0%	12%	20%	30%	-	-
Propylene glycol	0%	17%	25%	33%	-	-

CAUTION

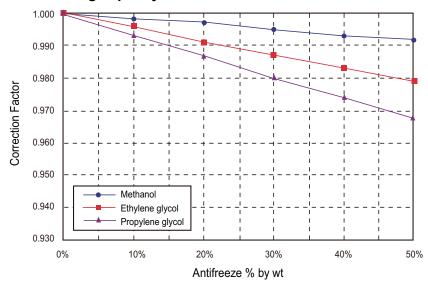
- Use only one of the above antifreeze.
- If a antifreeze is used, pressure drop and capability degradation of the system can be occurred.
- If one of antifreezes is used, corrosion can be occurred. So please add corrosion inhibitor.
- Please check the concentration of the antifreeze periodically to keep same concentration.
- When the antifreeze is used (for installation or operation), take care to ensure that antifreeze must not be touched.
- Ensure to respect all laws and norms of your country about antifreeze usage.

3. Water Control

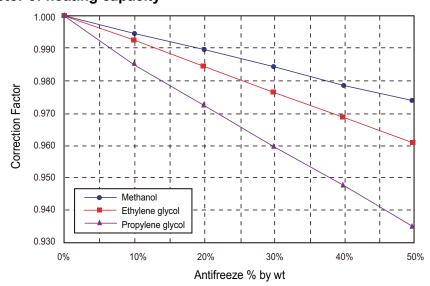
3.3 Capacity correction factor by antifreeze

Antifreeze Type	ltem -	Antifreeze % by wt				
		10%	20%	30%	40%	50%
Methanol	Cooling	0.998	0.997	0.995	0.993	0.992
	Heating	0.995	0.990	0.985	0.979	0.974
	Pressure Drop	1.023	1.057	1.091	1.122	1.160
Ethylene glycol	Cooling	0.996	0.991	0.987	0.983	0.979
	Heating	0.993	0.985	0.977	0.969	0.961
	Pressure Drop	1.024	1.068	1.124	1.188	1.263
Propylene glycol	Cooling	0.993	0.987	0.980	0.974	0.968
	Heating	0.966	0.973	0.960	0.948	0.935
	Pressure Drop	1.040	1.098	1.174	1.273	1.405

◆ Correction factor of cooling capacity



◆ Correction factor of heating capacity



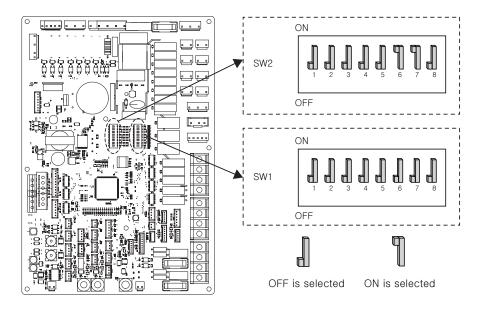
4. Dip Switch Setting

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.

■ Indoor PCB





♦ Dip switch SW1

Description		Setting	Default
MODBUS Communication Type	1 📗	As Master (LG extension modules)	, N
	1 🖣	As Slave (3rd party controller)	ं स
MODBUS Function	2	REGINE	2 1
	2 ¶	Unified Open Protocol	2 📗
ANTIFREEZE .	8 📗	Antifreeze agent is not used	8 🗐
	8 ¶	Antifreeze agent in used*	~ d l

Note

*Possibility to allow colder water temperature by setting.

Bridge at CN_ANTI_SW on Hydro_PCB must be dis-connected to enable setting.

♦ Dip switch SW2

Description		Default	
Group control	1 📗	As Master	
Group control	1 ¶	As Slave	1 📗
Accessory installation information	2 3	Heat pump is installed (Heating(Cooling) circuit only)	
	2 3	Heat pump + DHW tank is installed	2 🗐
	2 3	Heat pump + DHW tank + Solar thermal system is installed	2 .] 3 .]
	1 1 2 3	Unused	
Cycle	4	Heating Only	4
C , c.c	4 ¶	Heating & Cooling	4 dl
Room Air Sensor	5 📗	Room Air Sensor is not installed	5 🖟
	5 ¶	Room Air Sensor is installed	ु बा
Selecting Backup Heater capacity	1 1 6 7	Electric Heater is not used	
	¶	Half capacity is used	6 ¶
	J 1 6 7	Unused	7 ¶
	¶ ¶ 6 7	Full capacity is used	
Thermostat installation	8 🌡	Thermostat is NOT installed	n
information	8 ¶	Thermostat is installed	8 🖟





Air Solution

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