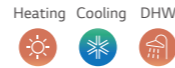


PRODUCT SPECIFICATION

R32 Hydrosplit IWT (Integrated Water Tank)



Indoor Unit

HN1616Y NB1

Outdoor Unit

HU121MRB U30 / HU123MRB U30

HU141MRB U30 / HU143MRB U30

HU161MRB U30 / HU163MRB U30



Features

- Water pipes connects IDU & ODU
- SCOP up to 4.60 (Average climate / Low temp. application): A+++
SCOP up to 3.50 (Average climate / Mid temp. application): A++
SCOP_{DHW} 2.74 (water heating efficiency 120%, profile L): A+
- COP up to 5.04 (Outdoor air 7°C / Leaving water 35°C)
- DHW tank (200l) & hydronic component integration
- Integrable buffer tank (40l) & expansion tank for DHW circuit (8l) (optional)
- 100% heating capacity at -7 °C OAT (@ LWT 35°C)
- Wide operation range (ambient: -25 ~ 35°C / water side: 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA (for Germany, Austria) / EUROVENT certification

* Only the outdoor units are registered in EHPA certification.

Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 – 240V, 1Ø, 50Hz	Outdoor Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30
	Indoor Unit	HN1616Y NB1		
3 Phase Model 380 – 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1616Y NB1		

Seasonal Energy

Description		Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)		
			HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)		
		Indoor Unit	HN1616Y NB1				
Space Heating (According to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.60	4.57	4.55	
		Seasonal Space Heating Efficiency (η _s)	%	181	180	179	
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++	
	Average Climate Water Outlet 55°C	SCOP	-	3.50	3.47	3.45	
		Seasonal Space Heating Efficiency (η _s)	%	137	136	135	
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++	
Domestic Hot Water Efficiency (According to EN16147)	Average Climate	Declared Load Profile	-	L	L	L	
		Water Heating Efficiency (η _{DHW})	%	120	120	120	
		SCOP _{DHW}	-	2.74	2.74	2.74	
		Water Heating Eff. Class	-	A+	A+	A+	
		Warmer Climate	Declared Load Profile	-	L	L	L
			Water Heating Efficiency (η _{DHW})	%	151	151	151
	SCOP _{DHW}		-	3.43	3.43	3.43	
	Colder Climate	Declared Load Profile	-	L	L	L	
		Water Heating Efficiency (η _{DHW})	%	101	101	101	
		SCOP _{DHW}	-	2.34	2.34	2.34	

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)
					HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)
				Indoor Unit	HN1616Y NB1		
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		11.00	11.50	12.00
		2°C	35°C		11.00	12.00	13.80
	Cooling	35°C	18°C		12.00	14.00	16.00
		35°C	7°C		12.00	14.00	16.00
					2.38	2.86	3.33
Nominal Power Input	Heating	7°C	35°C	kW	3.79	4.04	4.29
		7°C	55°C		3.01	3.31	3.83
		2°C	35°C		2.53	3.26	4.00
	Cooling	35°C	18°C		4.44	5.38	6.40
		35°C	7°C		5.04	4.89	4.80
					2.90	2.85	2.80
COP	Heating	7°C	35°C	W/W	3.65	3.63	3.60
		7°C	55°C		4.75	4.30	4.00
		2°C	35°C		2.70	2.60	2.50
EER	Cooling	35°C	18°C	W/W			
		35°C	7°C				

PRODUCT SPECIFICATION

R32 Hydrosplit IWT (Integrated Water Tank)

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30	HU123MRB U30	HU143MRB U30	HU163MRB U30	
Operation Range (outdoor temp.)	Heating	Min. - Max.	°C DB	-25 - 35						
	Cooling									5 - 48
Compressor	Quantity	EA								
	Type	Hermetic Sealed Scroll								
Refrigerant	Type	R32								
	GWP (global warming potential)	675								
	Precharged Amount	g								
	t-CO ₂ eq	1.418								
Piping Connections	Water Circuit	Inlet	mm(inch) Male PT 1" according to ISO 7-1 (tapered pipe threads)							
		Outlet	mm(inch) Male PT 1" according to ISO 7-1 (tapered pipe threads)							
Rated Water Flow Rate (at LWT 35°C)			LPM	34.5	40.3	46.0	34.5	40.3	46.0	
Sound Power Level	Heating	Rated	dB(A)	61	62	63	61	62	63	
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	53	54	55	53	54	55	
Dimensions	Unit	W x H x D	mm							
Weight	Unit	kg								
Exterior	Color / RAL Code	Warm Gray / RAL 7044								
Power Supply	Voltage, Phase, Frequency		V, ∅, Hz	220-240, 1, 50				380-415, 3, 50		
	Rated	Heating	A	10.6	12.7	14.8	3.5	4.2	4.9	
	Running Current	Cooling	A	11.2	14.4	17.7	3.7	4.8	5.9	
	Recommended Circuit Breaker	A								
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm ² x cores	6.0 x 3C				2.5 x 5C		

Product Specification (Indoor Unit)

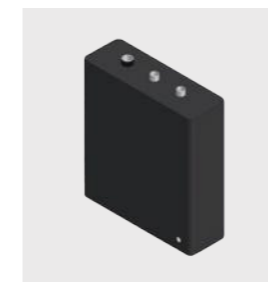
Technical Specification			Unit	HN1616Y NB1					
Operation Range (Leaving Water Temperature)	Heating	Min. - Max.	°C DB	15 - 65					
	Cooling			5 - 27 (16 - 27) ¹⁾					
	DHW			15 - 80 ²⁾					
Domestic Hot Water Tank	Volume	ℓ							
	Internal Thermal Protect Limit	°C							
Flow Sensor	Measuring Range	Min. - Max.	LPM	5 - 80					
	Water Pressure Sensor	Measuring Range	bar(G)	0 - 20					
Expansion Vessel (Heating Circuit)	Volume	ℓ							
Safety Valve	Heating Circuit	Upper Limit	bar	3					
	DHW Circuit	Upper Limit	bar	10					
Electric Heater (Case 1 / Case 2 / Case 3) ³⁾	Type	Sheath							
	Number of Heating Coil	EA							
	Capacity combination	kW							
	Heating Step	Step							
	Power Supply	V, ∅, Hz							
	Power Supply Cable (Included Earth, H07RN-F)	mm ² x cores							
	Rated Running Current	A							
Piping Connections	Water Circuit	Inlet	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)					
		Outlet	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)					
		Inlet from Outdoor Unit	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)					
	DHW Tank Water Circuit	Outlet to Outdoor Unit	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)					
		Cold Inlet	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)					
		Hot Outlet	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)					
Recirculation	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)							
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm ² x cores	0.75 x 4C					
Sound Power Level	Heating	Rated	dB(A)	43					
Dimensions	Unit	W x H x D	mm						
Weight	Unit	kg							
Exterior	Color / RAL Code	White / RAL 9002							

1) When fan coil unit not used.
 2) DHW 58-80°C Operating is available only when the booster heater is operating.
 3) The capacity of electric heater can be adjusted by wiring.

- Note
- Due to our policy of innovation some specifications may be changed without notification.
 - Wiring cable size must comply with the applicable local and national codes. Especially the power cable and circuit breaker should be selected in accordance with that.
 - Sound power level is measured on the rated condition in accordance with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
 - 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.
 - This product contains Fluorinated greenhouse gases.

Accessory Parts (Optional Accessory)

Buffer Tank for Space Heating



As an optional accessory, the installer can install a standard 40ℓ buffer tank for space heating. Fitting seamlessly into the main casing, it can be attached on the backside of the indoor unit.

Buffer tank for space heating		Unit	OSHB-40KT.AEU
Water Volume		ℓ	40
Dimensions (W x H x D)		mm	518 x 560 x 175
Weight (w/o water)	Product	kg	24

Expansion Vessel for DHW



As an optional accessory, the installer can install a standard 8ℓ DHW expansion vessel that conveniently fits inside the indoor unit. It is provided with an accessory kit that includes a flexible connection tube.

Expansion vessel for DHW		Unit	OSHE-12KT.AEU
Expansion Volume		ℓ	8
Connection		inch	3/4
Max. Pressure		bar	10
Pre-charge		bar	3
Dimensions (W x H x D)		mm	416 x 238 x 502
Weight (w/o water)	Product	kg	2.5

Accessory Parts (Separately Provided)

Shut-off valve (1EA)



Shut-off valve with strainer (1EA)



Strainer



Technical Specification		Details
Material	Body	Brass
	Mesh	Stainless steel (STS304)
Mesh	Mesh No.	30
	Max. Particle Size	0.6mm
Piping Connection	Female G 1" according to ISO 228-1	

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU121MRB U30 / HU123MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	9.66	8.85	8.42	8.29	-	-	-	-
-20°C DB	10.13	10.00	9.88	9.75	9.63	-	-	-
-15°C DB	11.50	11.50	11.50	11.50	11.50	11.50	-	-
-7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	-
-4°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
-2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
15°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
18°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00

HU141MRB U30 / HU143MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.04	9.21	8.76	8.62	-	-	-	-
-20°C DB	11.82	11.25	10.95	10.67	10.59	-	-	-
-15°C DB	12.52	12.90	13.26	12.88	12.81	12.63	-	-
-7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	-
-4°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
-2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
15°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
18°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00

HU161MRB U30 / HU163MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.98	10.00	9.50	9.33	-	-	-	-
-20°C DB	13.43	12.54	12.03	11.78	11.47	-	-	-
-15°C DB	14.23	14.39	14.50	13.95	13.86	13.12	-	-
-7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	-
-4°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
-2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
15°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
18°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Note

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (l/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
 - 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 rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HU121MRB U30 / HU123MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
30°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
40°C DB	11.75	12.00	12.00	12.00	12.00	12.00	12.00
45°C DB	11.50	12.00	12.00	12.00	12.00	12.00	12.00

HU141MRB U30 / HU143MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
30°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
40°C DB	13.75	14.00	14.00	14.00	14.00	14.00	14.00
45°C DB	13.50	14.00	14.00	14.00	14.00	14.00	14.00

HU161MRB U30 / HU163MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
30°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
40°C DB	15.75	16.00	16.00	16.00	16.00	16.00	16.00
45°C DB	15.50	16.00	16.00	16.00	16.00	16.00	16.00

Note

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (l/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
 - 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 rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

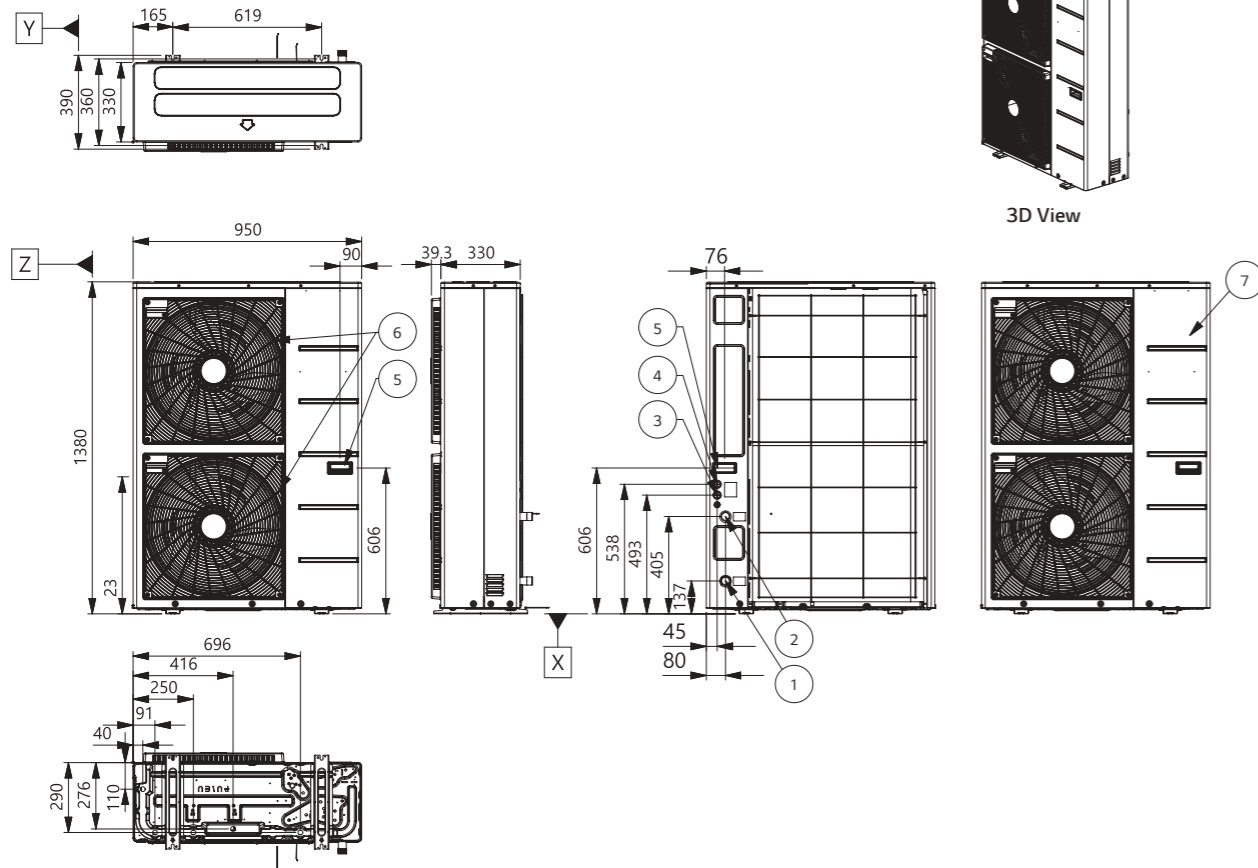
PRODUCT SPECIFICATION

Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 - 240V, 1Ø, 50Hz	Outdoor Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30
	Indoor Unit		HN1616Y NB1	
3 Phase Model 380 - 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit		HN1616Y NB1	

HU121MRB U30 / HU141MRB U30 / HU161MRB U30
HU123MRB U30 / HU143MRB U30 / HU163MRB U30

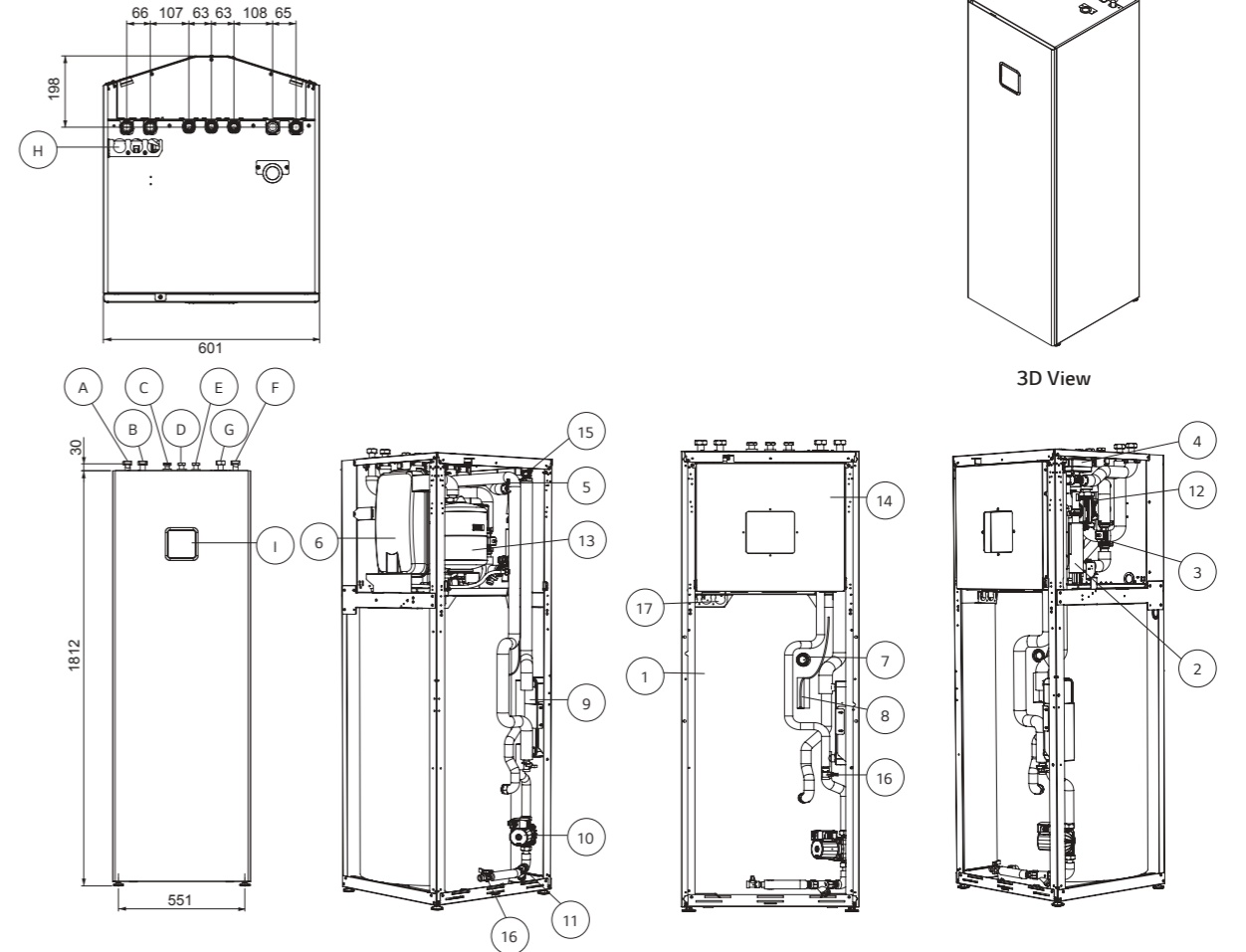
[Unit : mm]



No.	Part Name	Description
1	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Unit Power	Power cable hole
4	Low Voltage	Communication cable hole
5	Handle	-
6	Air Outlet	-
7	Side Panel	-

HN1616Y NB1

[Unit : mm]



No.	Part Name	Description
1	Domestic hot water tank	200 L
2	Electric heater	Max 6 kW
3	Flow Sensor	SIKA VVX20 5-80 LPM
4	3 Way valve	Heating / DHW circuit
5	Water pressure sensor	SENSATA 2HMP
6	Expansion vessel	12 L for heating circuit
7	Magnesium anode	To prevent corrosion
8	DHW tank sensor	Temperature sensor
9	Plate heat exchanger	Heat exchange (Water / DHW tank)
10	DHW water pump	WILO ZRS 15/6-3
11	Strainer For DHW tank	Filtering and stacking particles
12	Main water pump	GRUNDFOS UPML 25-105 130 PWM A
13	Expansion vessel	8 L For DHW circuit (Accessory)
14	Control box	PCB and terminal blocks
15	Air vent	Air purging when charging water
16	Drain cock	Valve for water draining
17	Electrical conduits	For electric wiring

No.	Part Name	Part Name
A	Inlet pipe from outdoor unit	Female G1"
B	Outlet pipe to outdoor unit	Female G1"
C	Domestic hot water outlet pipe	Female G3/4"
D	Domestic cold water inlet pipe	Female G3/4"
E	Domestic re-circulation pipe	Female G3/4"
F	Heating circuit inlet pipe	Female G1"
G	Heating circuit outlet pipe	Female G1"
H	Electrical conduits	For electric wiring
I	Control panel	Built-in remote controller