TOSHIBA

E17-344

Engineering Data Book

ESTIA

Air to Water Heat Pump

Hydro Unit

HWS-455XWHM3-E
HWS-805XWHM3-E
HWS-805XWHT6-E
HWS-805XWHT9-E
HWS-1405XWHM3-E
HWS-1405XWHT6-E
HWS-1405XWHT9-E
HWS-P805XWHM3-E
HWS-P805XWHT6-E
HWS-P805XWHT9-E
HWS-P1105XWHM3-E
HWS-P1105XWHT6-E
HWS-P1105XWHT9-E

4.5 kw *8 kw* *11/14/16 kW*

Outdoor Unit

HWS-455H-E
HWS-805H-E
HWS-1105H-E
HWS-1405H-E
HWS-1105H8-E
HWS-1405H8-E
HWS-1605H8-E
HWS-1105H8R-E
HWS-1405H8R-E
HWS-1605H8R-E
HWS-P805HR-E
HWS-P1105HR-E
HWS-P805H8R-E
HWS-P1105H8R-E
HWS-P1405H8R-E

Hot Water Cylinder

HWS-1501CSHM3-E
HWS-2101CSHM3-E
HWS-3001CSHM3-E

Contents

1. INTRODUCTION


TOSHIBA AIRCONDITIONING
Advancing the eco-evolution
Air to water
Heat Pump System
World-leading energy efficiency — COP of 4.77*
Comfortable heating and hot water supply
Versatile installation and operation
* 11 kW model
Welcome Estía to your home!
Air-to-water Heat Pump System
Introducing Toshiba's super-efficient space heating and hot water supply system for homes and businesses. Estia represents breakthrough thinking in intelligent heat pump and inverter technologies, by efficiently transferring ambient thermal heat from outside air to heat water indoors. Based on Toshiba's proven light commercial air conditioning system, the Super Digital Inverter, this innovative unit features DC twin rotary compressor, DC inverter and R410A refrigerant, providing the highest coefficient of performance (COP) in its class. This means more power from less energy consumption, and the ideal ecological and economical solution for your home.
Hot water cylinder
Hydro unit
Outdoor unit
ESTIA
4.5 kw
8 kw
11/14/16 kW
Outdoor unit
Hot water cylinder
Hydro unit

Advantages

World-leading energy efficiency - COP of 4.88*

With its best in class COP performance, Estía air to water heat pump system delivers more heating power with less energy consumption.
Estía uses high quality components and material which contribute to the overall savings in energy consumption.
With the Toshiba advanced inverter, Estía air to water heat pump system only delivers the heating capacity required; thus consuming only the necessary electricity.
The hot water temperature is also optimized thanks to Toshiba advanced control depending on the outside air temperature. The milder outside, the air-to-water systems automatically produces lower water temperature to anticipate decreased needs of space heating. The same control logic allows to anticipate as well increasing heating needs when weather conditions become extreme; this overall temperature management gives the best conditions of comfort.
All this saving has a positive impact on the personal electricity bill and the whole community by reducing the CO_2 emissions in the atmosphere.

*11kW model

Easy to install

Quick and easy to install. The hydro module unit can be placed safely in the most suitable place within the house.
There's no need for chimney or underground captors which require additional works on site.
The compact outdoor unit can be placed anywhere outside the house or on a balcony, thanks to extensive piping options.

Environment conscious

The use of Toshiba Estía heat pump contribute to the reduction of global CO_2 emissions in the atmosphere and limit the use of fossil fuels or other non-renewable energy primary sources.
Whenever required for maintenance purpose, all the R410A refrigerant (non ozone depleting) can be completely sucked back to the outdoor unit through the powerful embedded Toshiba "pump down" operation.

One system, multiple solutions

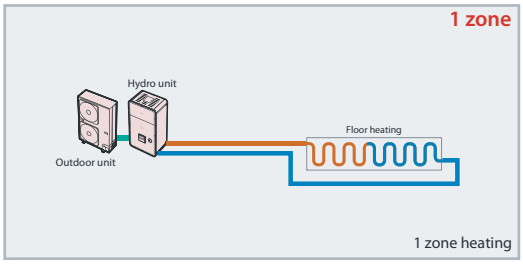
Estía heat pump systems can be used in combination with different types of emitters: existing heating low temperature radiators, floor heating or fan coil units.

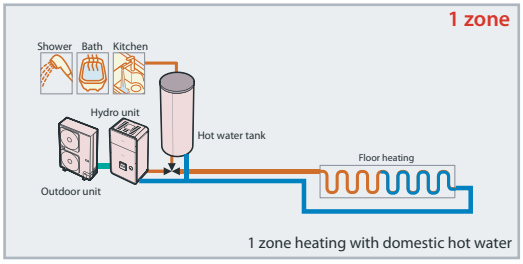
The right temperature at the right time

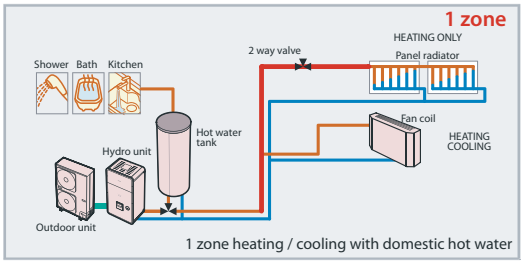
It can produce water at different temperatures for several applications simultaneously.
Toshiba Estía air to water heat pump system operates smoothly both with low outdoor air temperature down to -20 °C in winter and up to 43 °C in the summer season. The system has a unique anti-ice build-up protection embedded.

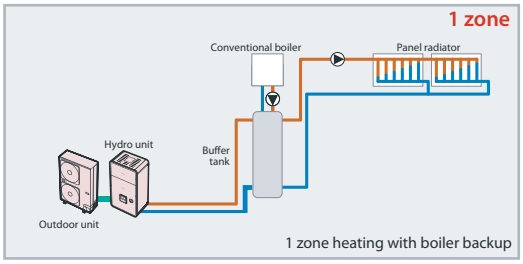
One system, full combination flexibility

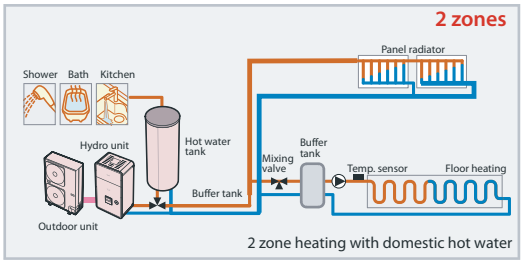
For new houses or refurbishment Estía heat pump offers a variety of combinations, some examples are shown below:

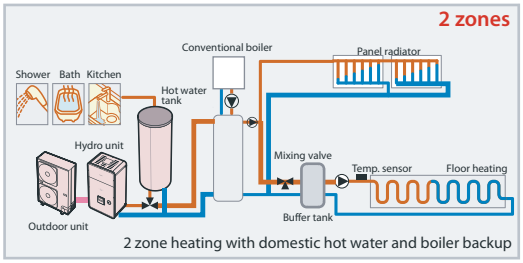












In existing dwellings already equipped with traditional gas or fuel boilers, Toshiba Estía air to water heat pump system can be combined with the existing heating system to cover exclusively and in an optimized way all the heating needs, all year round. Then, the boiler is only used as a back-up source during some extreme weather days of the winter.

The intelligent Toshiba control balances the energy source in the most efficient way.

2. SYSTEM OVERVIEW

2-1. System Combination

Combination

Standard type

	Outdoor Unit										
Hydro Unit	**HWS-455H-E**	**HWS-805H-E**	**HWS-1105H-E**	**HWS-1405H-E**	**HWS-1105H8-E**	**HWS-1405H8-E**	**HWS-1605H8-E**	**HWS-1105H8R-E**	**HWS-1405H8R-E**	**HWS-1605H8R-E**	**Backup heater**
HWS-455XWHM3-E	○	–	–	–	–	–	–	–	–	–	~, 3 kW
HWS-805XWHM3-E	–	○	–	–	–	–	–	–	–	–	~, 3 kW
HWS-805XWHT6-E	–	○	–	–	–	–	–	–	–	–	3N ~, 6 kW
HWS-805XWHT9-E	–	○	–	–		–	–	–	–	–	3N~, 9 kW
HWS-1405XWHM3-E	–	–	○	○	○	○	○	○	○	○	~, 3 kW
HWS-1405XWHT6-E	–	–	○	○	○	○	○	○	○	○	3N~, 6 kW
HWS-1405XWHT9-E	–	–	○	○	○	○	○	○	○	○	3N~, 9 kW
	220-230 V model				3 phase model			3 phase with Cord Heater			

		Hot water cylinder		
		HWS-1501 CSHM3-E	**HWS-2101 CSHM3-E**	**HWS-3001 CSHM3-E**
Hydro unit	HWS-455XWHM3-E	●		
	HWS-805XWHM3-E			
	HWS-805XWHT6-E			
	HWS-805XWHT9-E			
	HWS-1405XWHM3-E			
	HWS-1405XWHT6-E			
	HWS-1405XWHT9-E			

Powerful type

	Outdoor Unit					
Hydro Unit	**HWS-P805HR-E**	**HWS-P1105HR-E**	**HWS-P805H8R-E**	**HWS-1105H8R-E**	**HWS-1405H8R-E**	**Backup heater**
HWS-P805XWHM3-E	●	–	●	–	–	~, 3 kW
HWS-P805XWHT6-E	●	–	●	–	–	3N ~, 6 kW
HWS-P805XWHT9-E	●	–	●	–	–	3N ~, 9 kW
HWS-P1105XWHM3-E	–	●	–	●	●	~, 3 kW
HWS-P1105XWHT6-E	–	●	–	●	●	3N ~, 6 kW
HWS-P1105XWHT9-E	–	●	–	●	●	3N ~, 9 kW
	Single phase model		3 phase model			

		Hot water cylinder		
		HWS-1501 CSHM3-E	**HWS-2101 CSHM3-E**	**HWS-3001 CSHM3-E**
Hydro unit	HWS-P805XWHM3-E	●		
	HWS-P805XWHT6-E			
	HWS-P805XWHT9-E			
	HWS-P1105XWHM3-E			
	HWS-P1105XWHT6-E			
	HWS-P1105XWHT9-E			

2-2. Hydro Unit

Standard type

4.5 kW model

Hydro Unit			HWS-455XWHM3-E
Back up heater capacity		(kW)	3.0
Power supply	for back up heater		220-230 V ~ 50 Hz
	for hot water cylinder heater (option)		220-230 V ~ 50 Hz
Leaving water temperature	Heating	(°C)	20-55
	Cooling	(°C)	7-25

8 kW model

Hydro Unit			HWS-805XWHM3-E	HWS-805XWHT6-E	HWS-805XWHT9-E
Back up heater capacity		(kW)	3.0	6.0	9.0
Power supply	for back up heater		220-230 V ~ 50 Hz	380-400 V 3N~ 50 Hz	380-400 V 3N~ 50 Hz
	for hot water cylinder heater (option)		220-230 V ~ 50 Hz		
Leaving water temperature	Heating	(°C)	20-55		
	Cooling	(°C)	7-25		

11 kW, 14 kW, 16 kW model

Hydro Unit			HWS-1405XWHM3-E	HWS-1405XWHT6-E	HWS-1405XWHT9-E
Back up heater capacity		(kW)	3.0	6.0	9.0
Power supply	for back up heater		220-230 V ~ 50 Hz	380-400 V 3N~ 50 Hz	380-400 V 3N~ 50 Hz
	for hot water cylinder heater (option)		220-230 V ~ 50 Hz		
Leaving water temperature	Heating	(°C)	20-55		
	Cooling	(°C)	7-25		

Powerful type

80 kW model

Hydro Unit			HWS-P805XWHM3-E	HWS-P805XWHT6-E	HWS-P805XWHT9-E
Back up heater capacity		(kW)	3.0	6.0	9.0
Power supply	for back up heater		220-230 V ~ 50 Hz	380-400 V 3N~ 50 Hz	380-400 V 3N~ 50 Hz
	for hot water cylinder heater (option)		220-230 V ~ 50 Hz		
Leaving water temperature	Heating	(°C)	20-60		
	Cooling	(°C)	7-25		

112 kW model

Hydro Unit			HWS-P1105XWHM3-E	HWS-P1105XWHT6-E	HWS-P1105XWHT9-E
Back up heater capacity		(kW)	3.0	6.0	9.0
Power supply	for back up heater		220-230 V ~ 50 Hz	380-400 V 3N~ 50 Hz	380-400 V 3N~ 50 Hz
	for hot water cylinder heater (option)		220-230 V ~ 50 Hz		
Leaving water temperature	Heating	(°C)	20-60		
	Cooling	(°C)	7-25		

2-3. Outdoor Unit

Standard type

Single Phase model

Outdoor unit			HWS-455H-E	HWS-805H-E	HWS-1105H-E	HWS-1405H-E
Power supply			220-230 V ~ 50 Hz			
Type			INVERTER			
Function			Heating & Cooling			
Heating	Capacity	(kW)	4.5	8.0	11.2	14.0
	Input	(kW)	0.92	1.79	2.30	3.11
	COP	(W/W)	4.90	4.46	4.88	4.50
Cooling	Capacity	(kW)	4.5	6.0	10.0	11.0
	Input	(kW)	1.46	1.94	3.26	3.81
	EER	(W/W)	3.08	3.10	3.07	2.89
Refrigerant			R410A			
Dimension	HxWxD	(mm)	630x800x300	890x900x320	1,340x900x320	

3 Phase model

Outdoor unit						with Cord heater		
			HWS-1105H8-E	HWS-1405H8-E	HWS-1605H8-E	HWS-1105H8R-E	HWS-1405H8R-E	HWS-1605H8R-E
Power supply			380-400 V 3N~ 50 Hz					
Type			INVERTER					
Function			Heating & Cooling					
Heating	Capacity	(kW)	11.2	14.0	16.0	11.2	14.0	16.0
	Input	(kW)	2.34	3.16	3.72	2.34	3.16	3.72
	COP		4.80	4.44	4.30	4.80	4.44	4.30
Cooling	Capacity	(kW)	10.0	11.0	13.0	10.0	11.0	13.0
	Input	(kW)	3.26	3.81	4.80	3.26	3.81	4.80
	EER		3.07	2.89	2.71	3.07	2.89	2.71
Refrigerant			R410A					
Dimension	HxWxD	(mm)	1,340x900x320					
Cord heater		(W)	–			75		

Powerful type

Single Phase model

Outdoor unit			HWS-P805HR-E	HWS-P1105HR-E
Power supply			220-230 V ~ 50 Hz	
Type			INVERTER	
Function			Heating & Cooling	
Heating	Capacity	(kW)	8.0	11.2
	Input	(kW)	1.68	2.30
	COP	(W/W)	4.76	4.88
Cooling	Capacity	(kW)	6.0	10.0
	Input	(kW)	1.64	3.33
	EER	(W/W)	3.66	3.00
Refrigerant			R410A	
Dimension	HxWxD	(mm)	1,340x900x320	

3 Phase model

Outdoor unit			HWS-P805H8R-E	HWS-P1105H8R-E	HWS-P1405H8R-E
Power supply			380-400V 3N~ 50Hz		
Type			INVERTER		
Function			Heating & Cooling		
Heating	Capacity	(kW)	8.0	11.2	14.0
	Input	(kW)	1.71	2.34	3.16
	COP	(W/W)	4.68	4.80	4.44
Cooling	Capacity	(kW)	6.0	10.0	11.0
	Input	(kW)	1.64	3.33	3.9
	EER	(W/W)	3.66	3.00	2.82
Refrigerant			R410A		
Dimension	HxWxD	(mm)	1,340x900x320		

2-4. Hot Water Cylinder

Hot water cylinder (option)		HWS-1501CSHM3-E	HWS-2101CSHM3-E	HWS-3001CSHM3-E
Water volume	litres	150	210	300
Max water temperature	(°C)	75		
Electric heater	(kW)	2.75 (230 V ~)		
Height	(mm)	1,090	1,474	2,040
Diameter	(mm)	550		
Material		Stainless steel		

2-5. Options

No.	Part name	Model name	Application	Remarks
1	External output board	TCB-PCIN3E	Boiler-linked output, Alarm output	Up to two boards (according to applications)
			Defrost signal output, compressor operation signal output	
2	External input board	TCB-PCMO3E	Cooling/heating thermostat input	Up to two boards (according to applications)
			Forced-stop signal input	
3	Second Remote Controller	HWS-AMS54E	Wired Remote Controller for Room air temperature control	

3. SYSTEM SPECIFICATION

Standard type

Outdoor unit			HWS-455H-E	HWS-805H-E	HWS-1105H-E	HWS-1405H-E
Hydro unit			HWS-455XWH**-E	HWS-805XWH**-E	HWS-1405XWH**-E	HWS-1405XWH**-E
Rated Heating condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	4.5	8.0	11.2	14.0
	Input	kW	0.92	1.79	2.30	3.11
	COP	W/W	4.90	4.46	4.88	4.50
	Rated water flow rate	ℓ/min	12.90	22.90	32.10	40.10
Rated Cooling condition LWT=7°C dT=5deg TO=35°C	Capacity	kW	4.5	6.0	10.0	11.0
	Input	kW	1.46	1.94	3.26	3.81
	EER	W/W	3.08	3.10	3.07	2.89
	Rated water flow rate	ℓ/min	12.90	17.20	28.90	31.50
Power supply			1~ 230V 50Hz			
Maximum current		A	11.10	19.20	22.80	22.80

Outdoor unit			HWS-1105H8-E	HWS-1405H8-E	HWS-1605H8-E
Hydro unit			HWS-1405XWH**-E	HWS-1405XWH**-E	HWS-1405XWH**-E
Rated Heating condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	11.2	14.0	16.0
	Input	kW	2.34	3.16	3.72
	COP	W/W	4.80	4.44	4.30
	Rated water flow rate	ℓ/min	32.10	40.10	45.80
Rated Cooling condition LWT=7°C dT=5deg TO=35°C	Capacity	kW	10.0	11.0	13.0
	Input	kW	3.26	3.81	4.80
	EER	W/W	3.07	2.89	2.71
	Rated water flow rate	ℓ/min	28.90	31.50	37.30
Power supply			3N~ 380-400V 50Hz		
Maximum current		A	14.60	14.60	14.60

* Rated condition capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature (Heating)
Return water temperature - Leaving water temperature (Cooling)

Powerful type

Outdoor unit			HWS-P805HR-E	HWS-P1105HR-E
Hydro unit			HWS-P805XWH**-E	HWS-P1105XWH**-E
Rated Heating condition 1 LWT=35°C dT=5deg	Capacity	kW	8.0	11.20
	Power input	kW	1.79	2.30
	COP	W/W	4.46	4.88
	Rated water flow	ℓ/min	22.90	32.10
Rated Cooling condition 1 LWT=7°C dT=5deg	Capacity	kW	6.0	10.0
	Power input	kW	1.94	3.26
	EER	W/W	3.10	3.07
	Rated water flow rate	ℓ/min	17.20	28.90
Power supply			1~ 230V 50Hz	
Maximum current		A	22.80	22.80

Outdoor unit			HWS-P805HR-E	HWS-P1105HR-E	HWS-P1105HR-E
Hydro unit			HWS-P805XWH**-E	HWS-P1105XWH**-E	HWS-P1105XWH**-E
Rated Heating condition 1 LWT=35°C dT=5deg	Capacity	kW	8.0	11.20	14.0
	Input	kW	1.71	2.34	3.16
	COP	W/W	4.68	4.80	4.44
	Rated water flow	ℓ/min	23.20	32.00	40.07
Rated Cooling condition 1 LWT=7°C dT=5deg	Capacity	kW	6.0	10.0	11.0
	Input	kW	1.64	3.33	3.90
	EER	W/W	3.66	3.00	2.82
	Rated water flow rate	ℓ/min	17.20	28.90	31.50
Power supply			3N~ 380-400V 50Hz		
Maximum current		A	14.60	14.60	14.60

* Rated condition capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Capacity and power input are measured in accordance with EN14511.

LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature -Return water temperature (Heating)
Return water temperature - Leaving water temperature (Cooling)

4. HYDRO UNIT

4-1. Specification

4-1-1. Hydro unit specifications

Standard type

Hydro unit			HWS-455XWHM3-E	HWS-805XWHM3-E	HWS-805XWHT6-E	HWS-805XWHT9-E
Back up heater	back up heater	kW	3.0	3.0	6.0	9.0
	Power supply		1 ~ 220-230V 50Hz	1 ~ 220-230V 50Hz	3N~ 380-400V 50Hz	3N~ 380-400V 50Hz
	Maximum current	A	13.00	13	13 (13A*2P)	13 (13A*3P)
Hot water cylinder heater*	Power supply		1 ~ 220-230V 50Hz			
	Maximum current	A	12.0			
Appearance	Color		Silky shade (Muncel 1Y8.5-0.5)			
	Material		PCM			
Outer dimension	Height	mm	925			
	Width	mm	525			
	Depth	mm	355			
Unit weight		kg	49			
Packing dimension	Height	mm	1070			
	Width	mm	608			
	Depth	mm	436			
Total weight	Unit and packing	kg	54			
Heat exchanger	Type		Brazed plate			
	Water volume	litres	0.67			
	Minimum flow rate	ℓ/min	13.0			
Water pump	Power input	W	48			
	Delivery head	m	6.3			
Expansion vessel	Volume	litres	12			
	Initial pressure	MPa (bar)	0.1 (1)			
Pressure relief valve	Operating pressure	MPa (bar)	0.3 (3)			
Sound pressure level (Cooling/Heating)	Max	dBA	29/29			
	Rated	dBA	29/29			
	Low noise	dBA	29/29			
Sound power level (Cooling/Heating)	Max	dBA	41/41			
	Rated	dBA	41/41			
	Low noise	dBA	41/41			
Operation water temp.	Heating	°C	20~55			
	Cooling	°C	7~25			
Water pipe	Outlet	mm	34.92			
	Inlet	mm	34.92			
Refrigerant pipe	Gas	mm	12.7	15.9		
	Liquid	mm	6.4	9.5		
Drain port		mm	16.0 inner diameter for drain hose			
Note			* The electric heater, incorporated in the hot water cylinder, requires separate supply to hydro unit.			

Hydro unit			HWS-1405XWHM3-E	HWS-1405XWHT6-E	HWS-1405XWHT9-E
Back up heater	back up heater	kW	3.0	6.0	9.0
	Power supply		1 ~ 220-230V 50Hz	3N~ 380-400V 50Hz	3N~ 380-400V 50Hz
	Maximum current	A	13	13 (13A*2P)	13 (13A*3P)
Hot water cylinder heater*	Power supply		1 ~ 220-230V 50Hz		
	Maximum current	A	12.0		
Appearance	Color		Silky shade (Muncel 1Y8.5-0.5)		
	Material		PCM		
Outer dimension	Height	mm	925		
	Width	mm	525		
	Depth	mm	355		
Unit weight		kg	54		
Packing dimension	Height	mm	1070		
	Width	mm	608		
	Depth	mm	436		
Total weight	Unit and packing	kg	58		
Heat exchanger	Type		Brazed plate		
	Water volume	litres	1.18		
	Minimum flow rate	ℓ/min	17.5		
Water pump	Power input	W	87		
	Delivery head	m	8.8		
Expansion vessel	Volume	litres	12		
	Initial pressure	MPa (bar)	0.1 (1)		
Pressure relief valve	Operating pressure	MPa (bar)	0.3 (3)		
Sound pressure level (Cooling/Heating)	Max	dBA	32/32		
	Rated	dBA	32/32		
	Low noise	dBA	32/32		
Sound power level (Cooling/Heating)	Max	dBA	43/43		
	Rated	dBA	43/43		
	Low noise	dBA	43/43		
Operation water temp.	Heating	°C	20~55		
	Cooling	°C	7~25		
Water pipe	Outlet	mm	34.92		
	Inlet	mm	34.92		
Refrigerant pipe	Gas	mm	15.9		
	Liquid	mm	9.5		
Drain port		mm	16.0 inner diameter for drain hose		
Note			* The electric heater, incorporated in the hot water cylinder, requires separate supply to hydro unit.		

Powerful type

Hydro unit			HWS-P805XWHM3-E	HWS-P805XWHT6-E	HWS-P805XWHT9-E
Back up heater	back up heater	kW	3.0	6.0	9.0
	Power supply		1 ~ 220-230V 50Hz	3N~ 380-400V 50Hz	3N~ 380-400V 50Hz
	Maximum current	A	13	13 (13A*2P)	13 (13A*3P)
Hot water cylinder heater*	Power supply		1 ~ 220-230V 50Hz		
	Maximum current	A	12.0		
Appearance	Color		Silky shade (Muncel 1Y8.5-0.5)		
	Material		PCM		
Outer dimension	Height	mm	925		
	Width	mm	525		
	Depth	mm	355		
Unit weight		kg	49		
Packing dimension	Height	mm	1070		
	Width	mm	608		
	Depth	mm	436		
Total weight	Unit and packing	kg	53		
Heat exchanger	Type		Brazed plate		
	Water volume	litres	0.67		
	Minimum flow rate	ℓ/min	13		
Water pump	Power input	W	48		
	Delivery head	m	6.3		
Expansion vessel	Volume	litres	12		
	Initial pressure	MPa(bar)	0.1 (1)		
Pressure relief valve	Operating pressure	MPa(bar)	0.3 (3)		
Sound pressure level (Cooling/Heating)	Max	dBA	29/29		
	Rated	dBA	29/29		
	Low noise	dBA	29/29		
Sound power level (Cooling/Heating)	Max	dBA	41/41		
	Rated	dBA	41/41		
	Low noise	dBA	41/41		
Operation water temp.	Heating	°C	20~60		
	Cooling	°C	7~25		
Water pipe	Outlet	mm	34.92		
	Inlet	mm	34.92		
Refrigerant pipe	Gas	mm	15.9		
	Liquid	mm	9.5		
Drain port		mm	16.0 inner diameter for drain hose		
Note			* The electric heater, incorporated in the hot water cylinder, requires separate supply to hydro unit.		

Hydro unit			HWS-P1105XWHM3-E	HWS-P1105XWHT6-E	HWS-P1105XWHT9-E
Back up heater	back up heater	kW	3.0	6.0	9.0
	Power supply		1 ~ 220-230V 50Hz	3N~ 380-400V 50Hz	3N~ 380-400V 50Hz
	Maximum current	A	13	13 (13A*2P)	13 (13A*3P)
Hot water cylinder heater*	Power supply		1 ~ 220-230V 50Hz		
	Maximum current	A	12.0		
Appearance	Color		Silky shade (Muncel 1Y8.5-0.5)		
	Material		PCM		
Outer dimension	Height	mm	925		
	Width	mm	525		
	Depth	mm	355		
Unit weight		kg	52		
Packing dimension	Height	mm	1070		
	Width	mm	608		
	Depth	mm	436		
Total weight	Unit and packing	kg	56		
Heat exchanger	Type		Brazed plate		
	Water volume	litres	1.18		
	Minimum flow rate	ℓ/min	17.5		
Water pump	Power input	W	87		
	Delivery head	m	8.8		
Expansion vessel	Volume	litres	12		
	Initial pressure	MPa(bar)	0.1 (1)		
Pressure relief valve	Operating pressure	MPa(bar)	0.3 (3)		
Sound pressure level (Cooling/Heating)	Max	dBA	32/32		
	Rated	dBA	32/32		
	Low noise	dBA	32/32		
Sound power level (Cooling/Heating)	Max	dBA	43/43		
	Rated	dBA	43/43		
	Low noise	dBA	43/43		
Operation water temp.	Heating	°C	20~60		
	Cooling	°C	7~25		
Water pipe	Outlet	mm	34.92		
	Inlet	mm	34.92		
Refrigerant pipe	Gas	mm	15.9		
	Liquid	mm	9.5		
Drain port		mm	16.0 inner diameter for drain hose		
Note			* The electric heater, incorporated in the hot water cylinder, requires separate supply to hydro unit.		

4-1-2. Power Wiring specifications

Standard type

Description		Model name HWS-	POWER SUPPLY	Maximum current	Installation fuse rating	Power Cable	Connection destination	
Outdoor unit power	Power input	1405H-E	220-230 V ~ 50 Hz	22.8A	25A	2.5 mm² or more	Ⓛ, Ⓝ	—
		1105H-E	220-230 V ~ 50 Hz	22.8A	25A	2.5 mm² or more		
		805H-E	220-230 V ~ 50 Hz	19.2A	20A	2.5 mm² or more		
		455H-E	220-230 V ~ 50 Hz	11.1A	15A	2.5 mm² or more		
		1605H8-E 1605H8R-E	380-400V 3N~ 50Hz	14.6A	16A	2.5 mm² or more	Ⓛ1, Ⓛ2, Ⓛ3, Ⓝ	—
		1405H8-E 1405H8R-E	380-400V 3N~ 50Hz	14.6A	16A	2.5 mm² or more		
		1105H8-E 1105H8R-E	380-400V 3N~ 50Hz	13A	16A	2.5 mm² or more		
Hydro inlet heater power	Power input for backup heater	1405XWHM3-E	220-230V ~ 50Hz	13A	16A	1.5 mm² or more	Ⓛ, Ⓝ	TB02
		1405XWHT6-E	380-400V 3N~ 50Hz	13A(13A x 2P)	16A	1.5 mm² or more	Ⓛ1, Ⓛ2, Ⓛ3, Ⓝ	
		1405XWHT9-E	380-400V 3N~ 50Hz	13A(13A x 3P)	16A	1.5 mm² or more		
		805XWHM3-E	220-230V ~ 50Hz	13A	16A	1.5 mm² or more	Ⓛ, Ⓝ	
		805XWHT6-E	380-400V 3N~ 50Hz	13A(13A x 2P)	16A	1.5 mm² or more	Ⓛ1, Ⓛ2, Ⓛ3, Ⓝ	
		805XWHT9-E	380-400V 3N~ 50Hz	13A(13A x 3P)	16A	1.5 mm² or more		
		455XWHM3-E	220-230V ~ 50Hz	13A	16A	1.5 mm² or more	Ⓛ, Ⓝ	
Appearance	Power input for cylinder heater		220-230V ~ 50Hz	12A	16A	1.5 mm² or more	Ⓛ, Ⓝ	TB03
Outdoor-Hydro unit		Connection	—	—	—	1.5 mm² or more	①, ②, ③	TB01
Hydro -Cylinder		Connection	—	—	—	1.5 mm² or more	①, ②	TB03

Powerful type

Description		Model name HWS-	POWER SUPPLY	Maximum current	Installation fuse rating	Power wire	Connection destination	
Outdoor unit power	Power input	P1105HR-E	220-230 V ~ 50 Hz	22.8 A	25 A	4 mm² or more	Ⓛ, Ⓝ	—
		P805HR-E	220-230 V ~ 50 Hz	22.8 A	25 A	4 mm² or more		
		P1405H8R-E	380-400 V 3N~ 50 Hz	14.6 A	16 A	2.5 mm² or more	Ⓛ1, Ⓛ2, Ⓛ3, Ⓝ	
		P1105H8R-E	380-400 V 3N~ 50 Hz	14.6 A	16 A	2.5 mm² or more		
		P805H8R-E	380-400 V 3N~ 50 Hz	14.6 A	16 A	2.5 mm² or more		
Hydro inlet heater power	Power input for backup heater	P1105XWHM3-E	220-230 V ~ 50 Hz	13 A	16 A	1.5 mm² or more	Ⓛ, Ⓝ	TB02
		P1105XWHT6-E	380-400 V 3N~ 50 Hz	13 A(13 A x 2P)	16 A	1.5 mm² or more	Ⓛ1, Ⓛ2, Ⓛ3, Ⓝ	
		P1105XWHT9-E	380-400 V 3N~ 50 Hz	13 A(13 A x 3P)	16 A	1.5 mm² or more		
		P805XWHM3-E	220-230 V ~ 50 Hz	13 A	16 A	1.5 mm² or more	Ⓛ, Ⓝ	
		P805XWHT6-E	380-400 V 3N~ 50 Hz	13 A(13 A x 2P)	16 A	1.5 mm² or more	Ⓛ1, Ⓛ2, Ⓛ3, Ⓝ	
		P805XWHT9-E	380-400 V 3N~ 50 Hz	13 A(13 A x 3P)	16 A	1.5 mm² or more		
	Power input for cylinder heater		220-230 V ~ 50 Hz	12 A	16 A	1.5 mm² or more	Ⓛ, Ⓝ	TB03
Outdoor-Hydro unit		Connection	—	—	—	1.5 mm² or more	①, ②, ③	TB01
Hydro -Cylinder		Connection	—	—	—	1.5 mm² or more	①, ②	TB03

4-1-3. External Device specifications

	Power	Maximum current	Type
Motorized 3-way valve (for hot water)	AC 230 V	100 mA	Spring return type Note: 3-wire SPST and SPDT type can be used by changing the DPSW 13-1.
Motorized 2-way valve (for cooling)	AC 230 V	100 mA	Spring return type (normally open)
Motorized mixing valve type 1 (for 2-zone)	AC 230 V	100 mA	60 sec 90º. SPDT type Note: 3 wire SPST or SPDT valves, with drive times between 30 and 240 seconds, can be used. Valve drive time can be changed using function code 0C.

4-1-4. External Device Wiring specifications

Description	Line spec	Maximum current	Maximum length	Cable size	Connection destination
3-way valve control	2 line or 3 line	100 mA	12 m	1.0 mm² or more	⑦, ⑧, ⑨ (TB05)
2-way valve control	2 line	100 mA	12 m	1.0 mm² or more	③, ④ (TB05)
Mixing valve control	3 line	100 mA	12 m	1.0 mm² or more	①, ②, ③ or ②, ③, ④ (TB04)
2-zone thermo sensor	2 line	100 mA	5 m	1.0 mm² or more	Ⓒ, Ⓓ (TB06)
Cylinder thermo sensor	2+GND(shield wire)	100 mA	5 m	1.0 mm² or more	Ⓐ, Ⓑ (TB06)
Second remote controller		50 mA	50 m	1.0 mm² or more	①, ② (TB07)
Group control (total)		50 mA	50 m	1.0 mm² or more	①, ② (TB07)
Open protocol interface		50 mA	50 m	1.0 mm² or more	①, ② (TB07)

4-1-5. External Output specifications

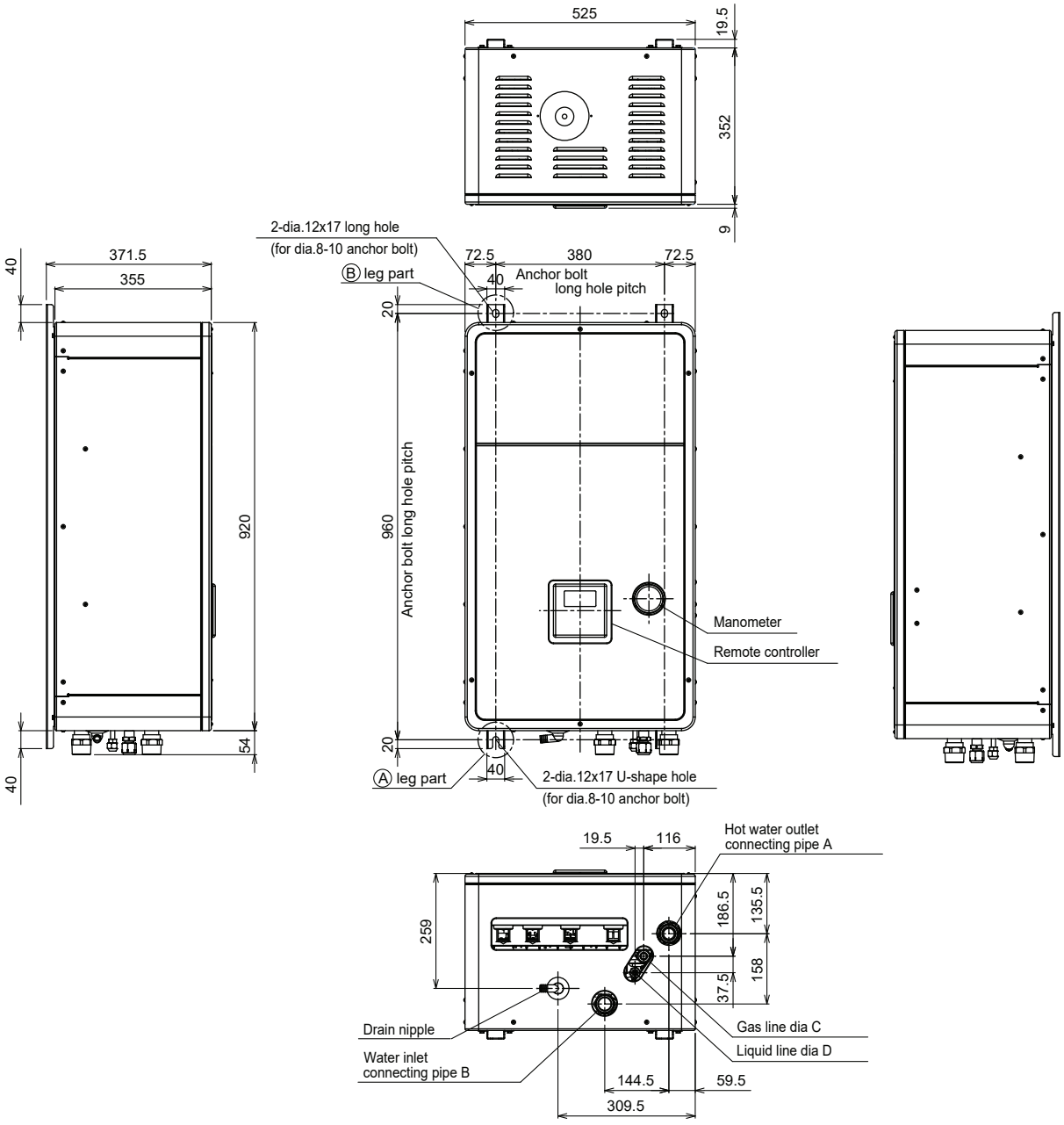
Description	Output	Maximum current	Max voltage	Maximum length	Connection
External pump	AC230V	1 A	–	12 m	
External boost heater	AC230V	1 A	–	12 m	Output as required when outdoor air temperature is -20°C or less
Boiler control	Non-voltage contacts	0.5 A	AC230 V	12 m	Output as required when outdoor air temperature is -10°C or less (output trigger temperature can be changed using FC23)
		1 A	DC24 V	12 m	
ALARM Output	Non-voltage contacts	0.5 A	AC230 V	12 m	
		1 A	DC24 V	12 m	
Compressor Operation Output	Non-voltage contacts	0.5 A	AC230 V	12 m	
		1 A	DC24 V	12 m	
Defrost Output	Non-voltage contacts	0.5 A	AC230 V	12 m	
		1 A	DC24 V	12 m	

4-1-6. External Input specifications

Description	Input	Maximum length
Emergency stop control	Non-voltage	12 m
Cooling thermostat input	Non-voltage	12 m
Heating thermostat input	Non-voltage	12 m

4-2. Dimension

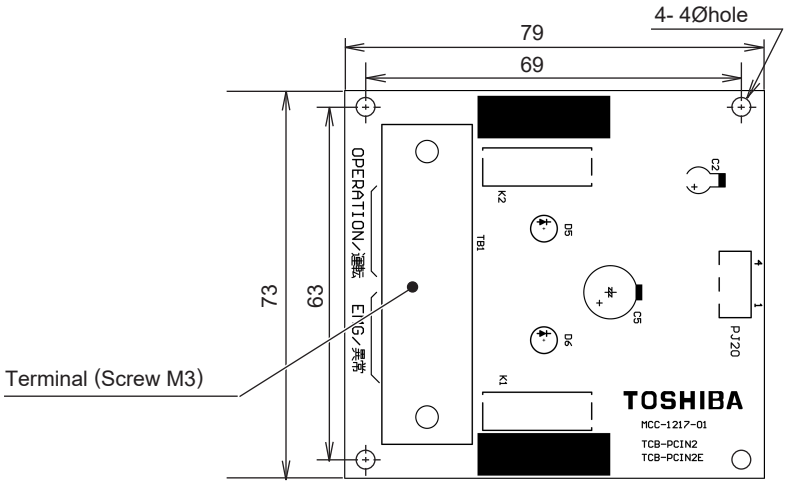
▼Hydro unit



	HWS-455XWHM3-E	HWS-805XWHM3-E/HWS-805XWHT*-E HWS-1405XWHM3-E/HWS-1405XWHT*-E	HWS-P805XWHM3-E/HWS-P805XWHT*-E HWS-P1105XWHM3-E/HWS-P1105XWHT*-E
A	1	1 1/4"	1 1/4"
B	1	1 1/4"	1 1/4"
C	12.7	15.88	15.88
D	6.35	9.52	9.52

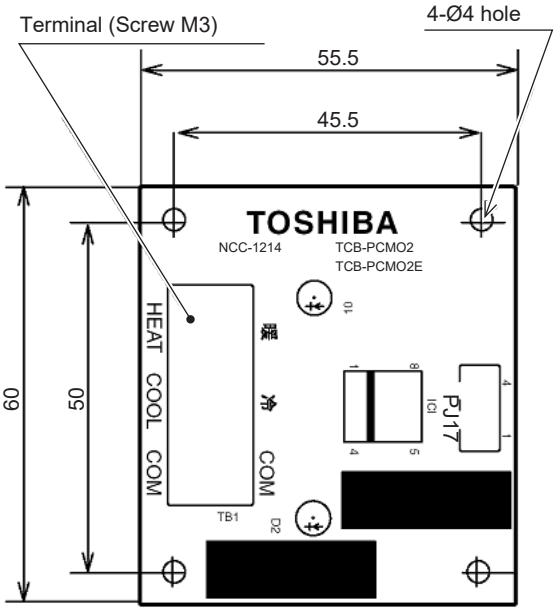
▼External output board (TCB-PCIN3E)

Size (mm) : H22 x L73 x W79
Weight (g) : 57



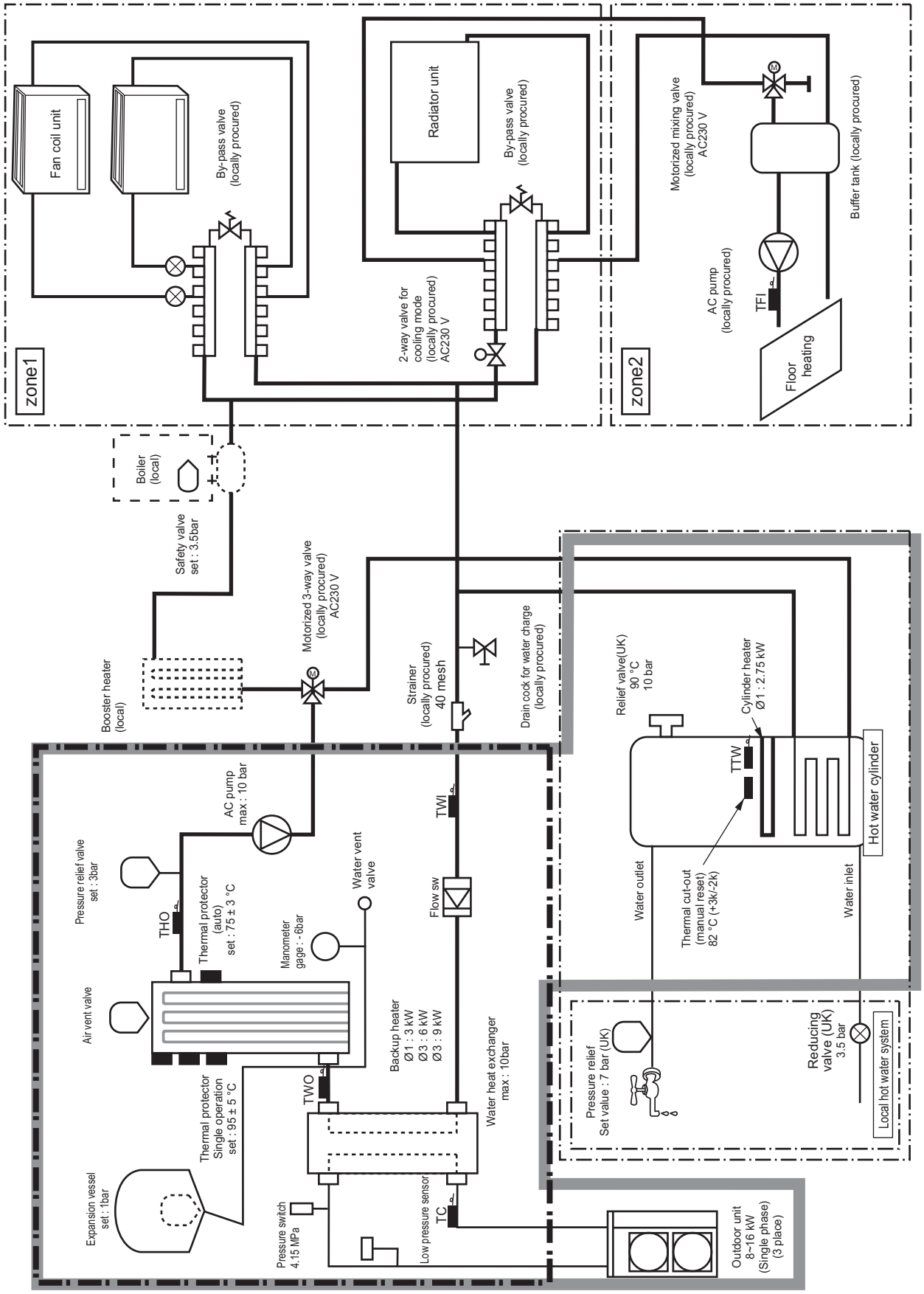
▼External input board (TCB-PCMO3E)

Size (mm) : H18 x L55.5 x W60
Weight (g) : 20

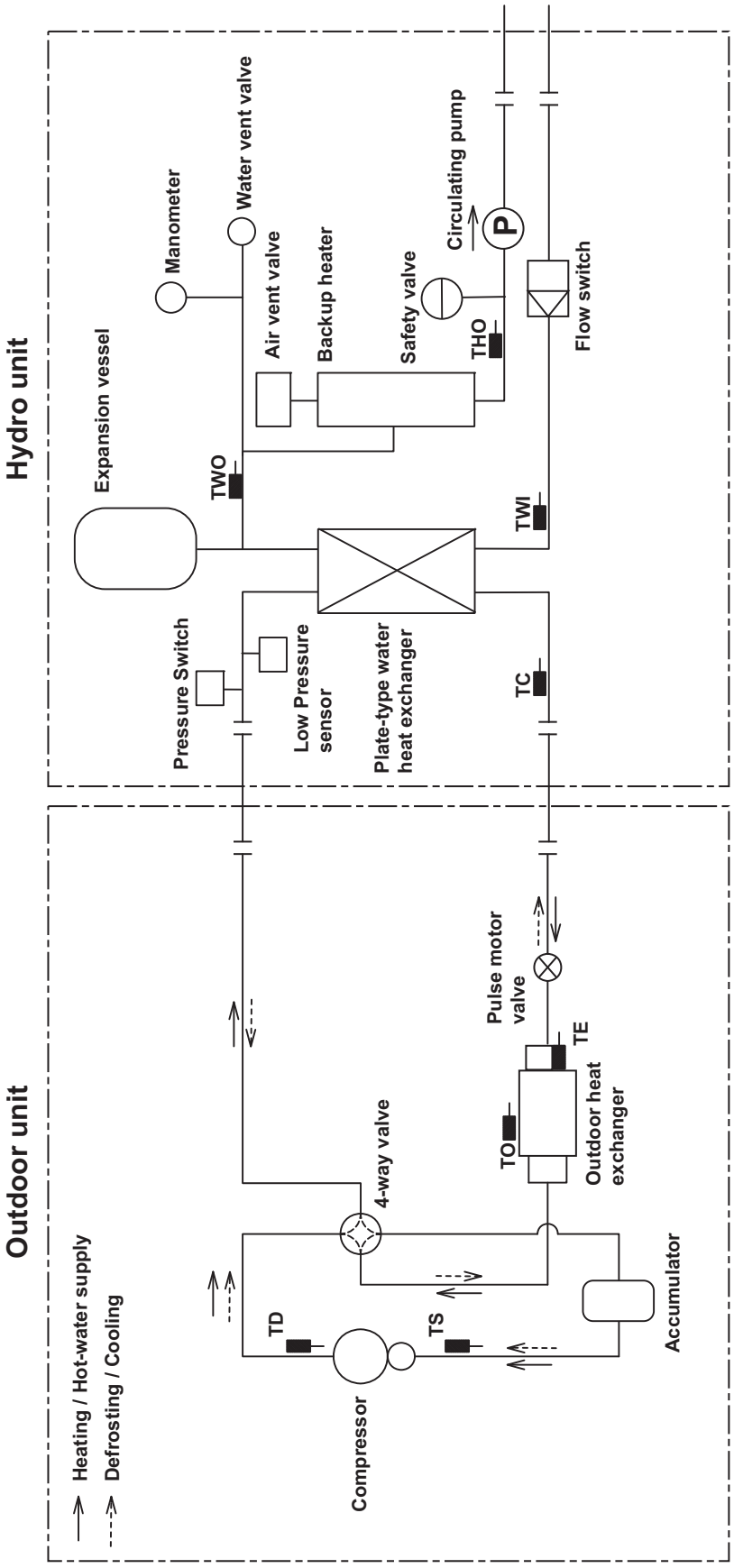


4-3. Piping Diagram

Water system diagram

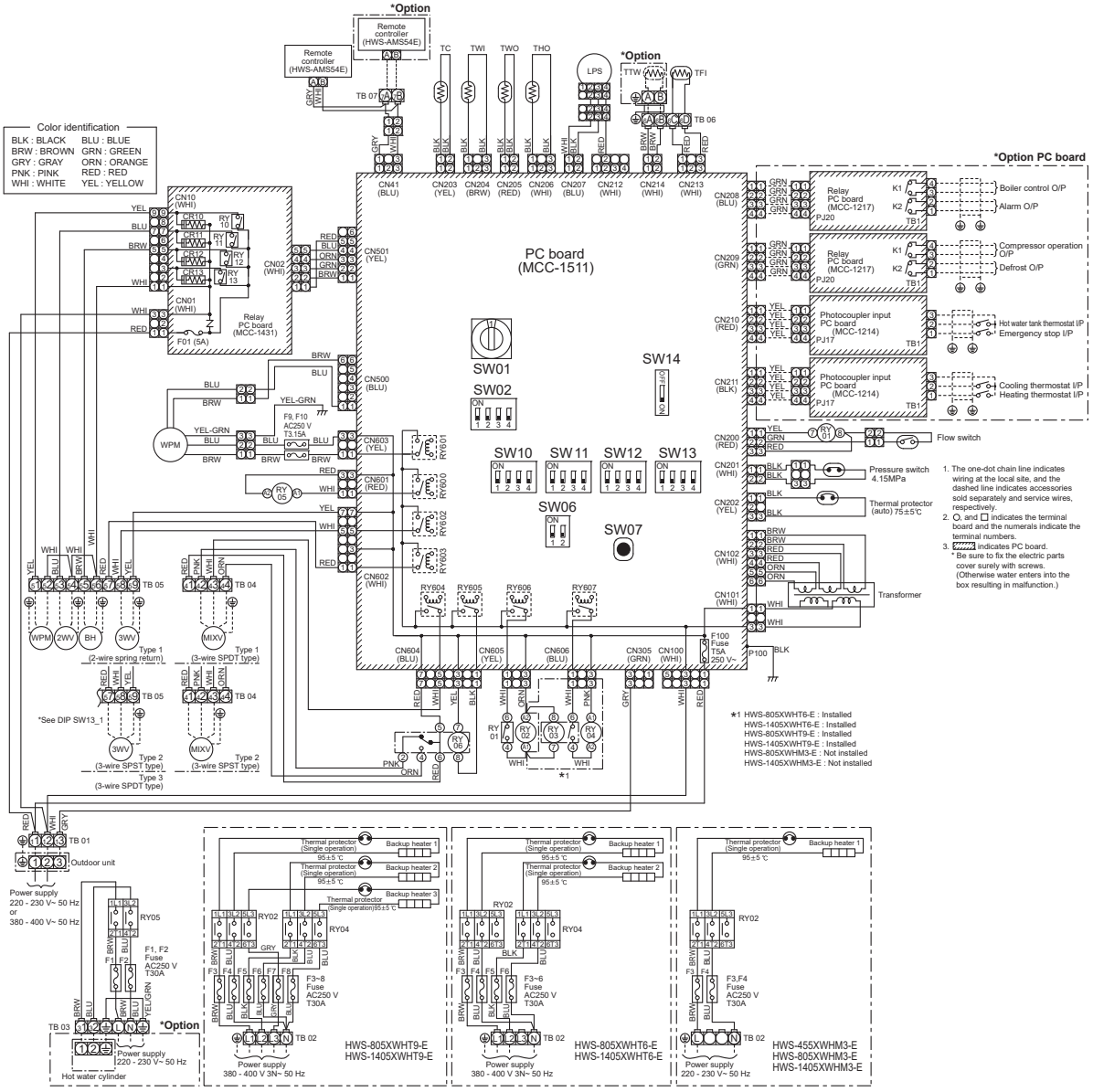


Refrigeration cycle system diagram



4-4. Wiring Diagram

4-4-1. Hydro unit



Symbol	Parts name	Symbol	Parts name
WPM	Water pump motor	TC	Water heat exchanger temperature sensor
3WV	3-way valve (locally procured)	TWI	Water inlet temperature sensor
2WV	2-way valve (locally procured)	TWO	Water outlet temperature sensor
MIXV	Mixing valve (locally procured)	THO	Heater outlet temperature sensor
BH	Booster heater	TTW	Hot water cylinder temperature sensor
RY01~RY06	Relay01~Relay06	TFI	Floor heating inlet temperature sensor
LPS	Low pressure sensor	TB	Terminal block
Backup heater1, 2, 3	Heater AC230V, 3kW		

1. The one-dot chain line indicates wiring at the local site, and the dashed line indicates accessories sold separately and service wires, respectively.
2. ○, and □ indicates the terminal board and the numbers indicate the terminal numbers.
3. ▨ indicates P.C. board.

* Be sure to fix the electric parts cover surely with screws. (Otherwise water enters into the box resulting in malfunction.)

⚠ WARNING

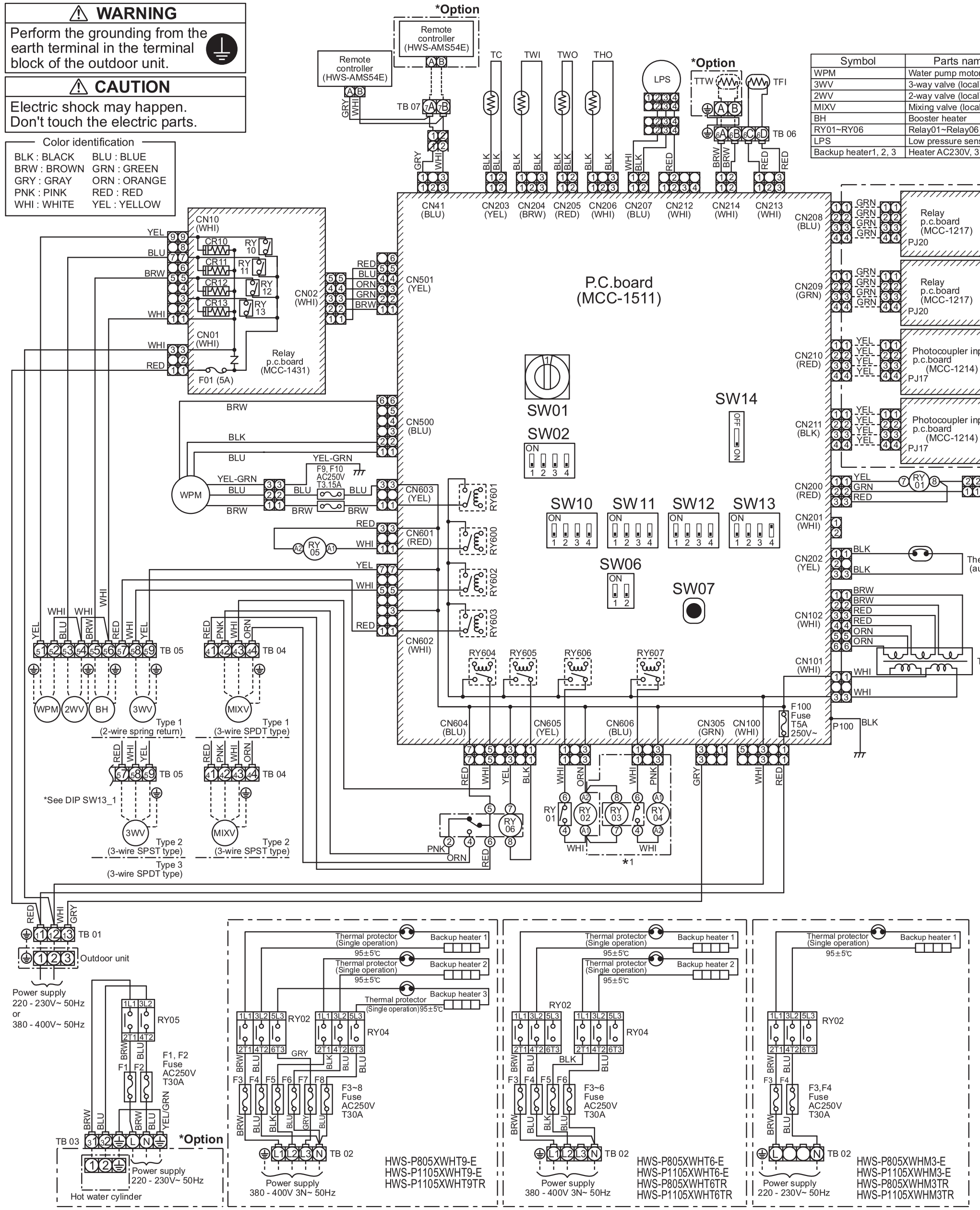
Perform the grounding from the earth terminal in the terminal block of the outdoor unit.

⚠ CAUTION

Electric shock may happen. Don't touch the electric parts.

Color identification

BLK : BLACK	BLU : BLUE
BRW : BROWN	GRN : GREEN
GRY : GRAY	ORN : ORANGE
PNK : PINK	RED : RED
WHI : WHITE	YEL : YELLOW



Symbol	Parts name	Symbol	Parts name
WPM	Water pump motor	TC	Water heat exchanger temperature sensor
3WV	3-way valve (local)	TWI	Water heat exchanger inlet temperature sensor
2WV	2-way valve (local)	TWO	Water heat exchanger outlet temperature sensor
MIXV	Mixing valve (local)	THO	Backup heater outlet temperature sensor
BH	Booster heater	TTW	Hot water cylinder temperature sensor
RY01~RY06	Relay01~Relay06	TFI	Floor heating inlet temperature sensor
LPS	Low pressure sensor	TB	Terminal block
Backup heater1, 2, 3	Heater AC230V, 3kW		

1. The one-dot chain line indicates wiring at the local site, and the dashed line indicates accessories sold separately and service wires, respectively.
2. ○ , and □ indicates the terminal board and the numbers indicate the terminal numbers.
3. ▨ indicates P.C. board.
   * Be sure to fix the electric parts cover surely with screws. (Otherwise water enters into the box resulting in malfunction.)

Self-diagnosis by remote controller

Block	Check code	Cause	Supposed defective parts
Outdoor unit	F04	Disconnection or short circuit	TD sensor
	F06	Disconnection or short circuit	TE sensor
	F07	Disconnection or short circuit	TL sensor
	F08	Disconnection or short circuit	TO sensor
	F12	Disconnection or short circuit	TS sensor
	F13	Disconnection or short circuit	TH sensor
	F15	Mistake the connectionsensor	TE, TS sensor
	F24	Disconnection or short circuit	PD sensor
	H01	Comp break down	Power voltage, installation condition
	H02	Comp doesn't operate	Comp or comp wiring
	H03	Over current error	P.C.board
	H04	Over heating error	Compressor case thermo
	L10	None capacity setting in outdoor unit	———
	L15	Wrong combination of hydro unit	Check the model name
	L29	Other cause	Outdoor unit
	P03	Overheat of discharge temp.	TD sensor
	P04	High pressure error	Comp, PMV
	P05	Voltage error	Voltage (230V ±10%)
	P07	Over heating error	IGBT on the inverter
	P15	Detect gas leak	Low gas amount
	P19	4WV is not changing direction	4WV
	P20	High pressure protection	PMV
	P22	Outdoor fan drive system error	P.C.board or fan motor
	P26	Over current error	Over current error
	P29	Comp starting failure	Comp winding short
Hydro unit	A01	Pump, flow error	Low water flow or mach water flow
	A02	Over heating error for room heating	TWO, THO sensor
	A03	Over heating error for hot water supply	TTW sensor
	A04	Water frozen error1	TC, TWO sensor detect low temp.
	A05	Water frozen error2	TWI, TWO, THO sensor detect low temp.
	A07	High pressure error	High pressure sensor
	A08	Low pressure error	Low pressure sensor
	A09	Backup heater error	Thermal protector
	A10	Water frozen error3	TC,TWO sensor detect low temp. (cooling only)
	A11	Release error	TWO sensor
	A12	Heater error	No activate heater
	A13	Pump, flow error	Pump, Flow switch
	E03	No return signal from RC	Remote controller
	E04	No return signal between hydro and outdoor unit	Connection cable
	F03	Disconnection or short circuit	TC sensor
	F10	Disconnection or short circuit	TWI sensor
	F11	Disconnection or short circuit	TWO sensor
	F18	Disconnection or short circuit	THO sensor
	F19	Get out THO sensor from piping	THO sensor
	F20	Get out TFI sensor from piping	TFI sensor
	F23	Detect low amount error	Low pressure sensor
	L02	Wrong combination of outdoor unit	Check the model name
	L09	None capacity setting in hydro unit	Check function code 01
	L16	Zone2 is setting without no zone1 setting	DP-SW12_2,3 setting
Hot water cylinder	F14	Disconnection or short circuit	TTW sensor
	F17	Disconnection or short circuit	TFI sensor

DIP Switch Setting

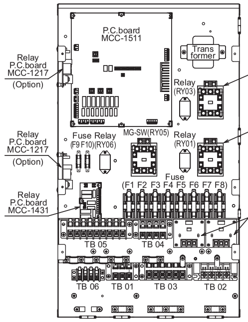
Switch		Description	Switch mode: Default setting			
SW10	1	P1 pump operation for hot water	HP synchronized	OFF	ON	Continuous run
	2	P1 pump operation for heating	Normally run	OFF	ON	Stopped at over 20°C
	3	Interlocking of P2 with internal pump	Independent of the internal pump	OFF	ON	Interlocked with the internal pump
	4	P1 pump interval running	Stopping	OFF	ON	Interval running
SW11	1	Energizing internal heater	Energized	OFF	ON	Not energized
	2	Energizing hot water cylinder heater	Energized	OFF	ON	Not energized
	3	Energizing booster heater	Energized	OFF	ON	Not energized
	4	———	———	OFF	—	———
SW12	1	Hot water supply operation	Provided	OFF	ON	Not provided
	2	Zone 1 operation	Provided	OFF	ON	Not provided
	3	Zone 2 operation	Not provided	OFF	ON	Provided
	4	———	———	OFF	—	———
SW13	1	3-wire 3WV type setting	SPST Type, spring returning	OFF	ON	SPDT Type
	2	Interlocking with boiler	Not provided	OFF	ON	Provided
	3	Backup for power interruption	Provided	OFF	ON	Not provided
	4	———	———	ON	—	———

Switch		Description	Switch mode: Default setting			
SW02	1	Boiler install location	Heating side after 2 WV	OFF	ON	Before 3 WV
	2	———	———	OFF	—	———
	3	External thermostat for tank	Not provided	OFF	ON	Provided
	4	External thermostat for indoor unit	Not provided	OFF	ON	Provided

*1 HWS-P805XWHT6-E : Installed
HWS-P1105XWHT6-E : Installed
HWS-P805XWHT9-E : Installed
HWS-P1105XWHT9-E : Installed
HWS-P805XWHM3-E : Not installed
HWS-P1105XWHM3-E : Not installed

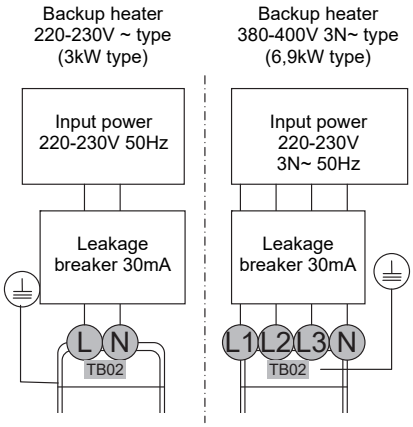
*1 HWS-P805XWHT6TR : Installed
HWS-P1105XWHT6TR : Installed
HWS-P1105XWHT9TR : Installed
HWS-P805XWHM3TR : Not installed
HWS-P1105XWHM3TR : Not installed

Parts layout

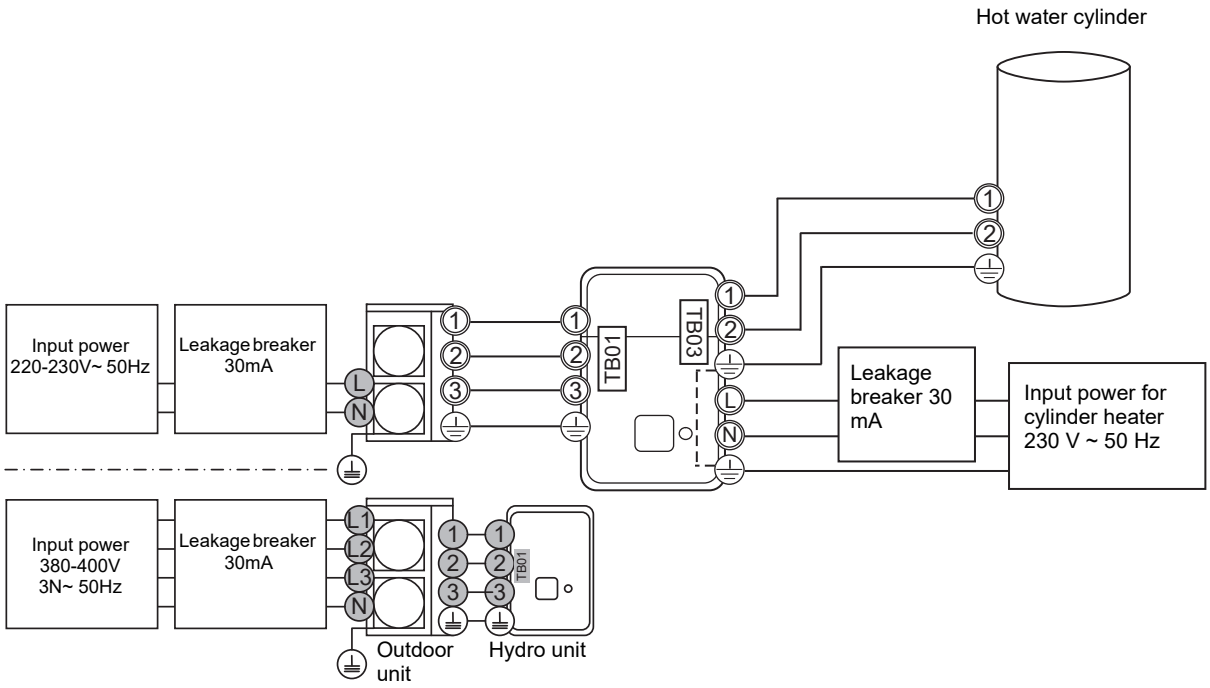


4-4-2. Power line

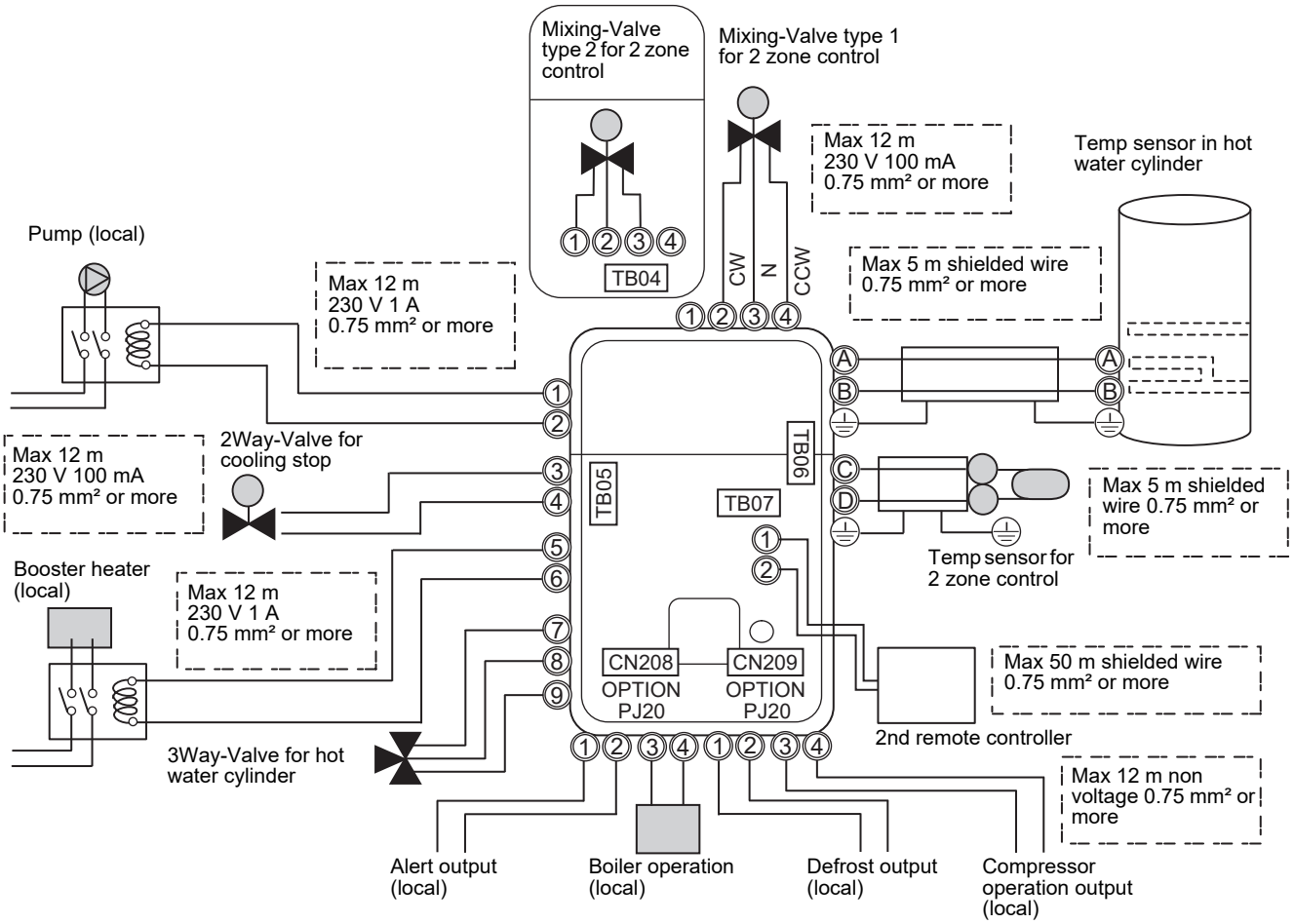
Electrical connection to hydro unit

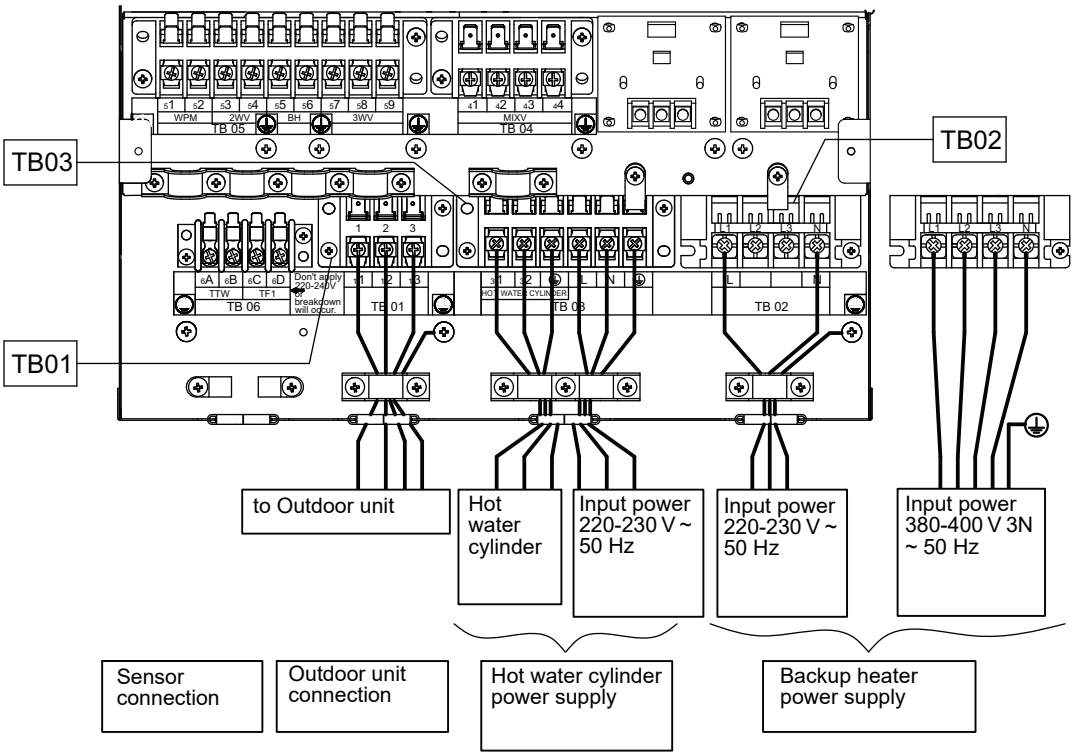


Outdoor unit to hydro unit electrical connection



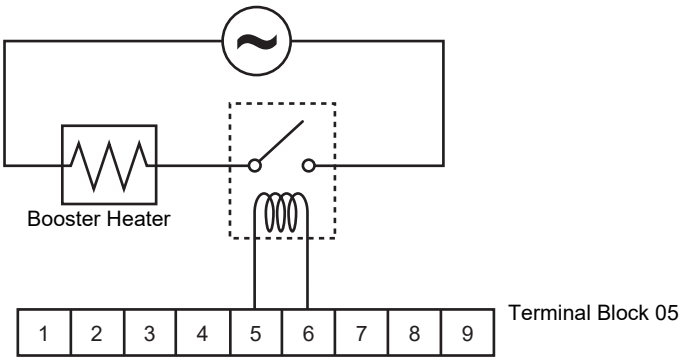
4-4-3. Control line



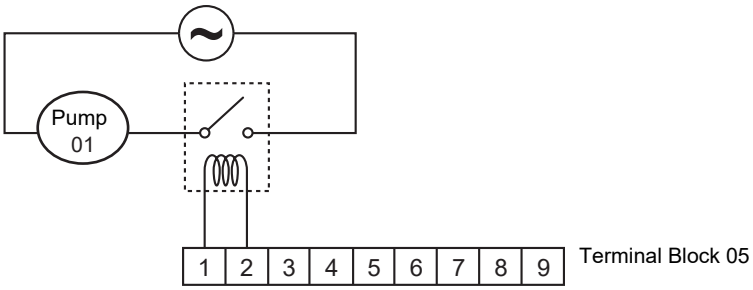


4-4-4. External Device

Electrical connection for external booster heater



Electrical connection for external additional pumps



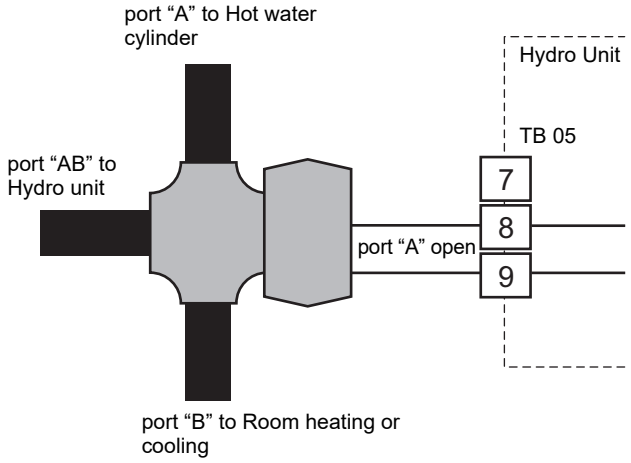
3-way valve (diverter) connection

Required Valve Specification:

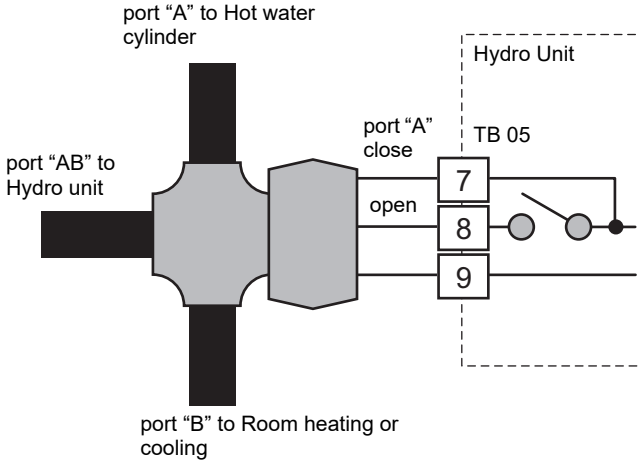
Electrical Specification: 230 V; 50 Hz; <100 mA
Valve Diameters: Port A, Port B: Ø 1 1/4"
Return Mechanism: 3 types of 3-way valve (diverter) can be used.
Set the 3-way valve in use with the DIP switch SW13-1 on the Hydro Unit board.

		SW13-1
Type 1	2-wire spring return	OFF
Type 2	3-wire SPST	OFF
Type 3	3-wire SPDT	ON

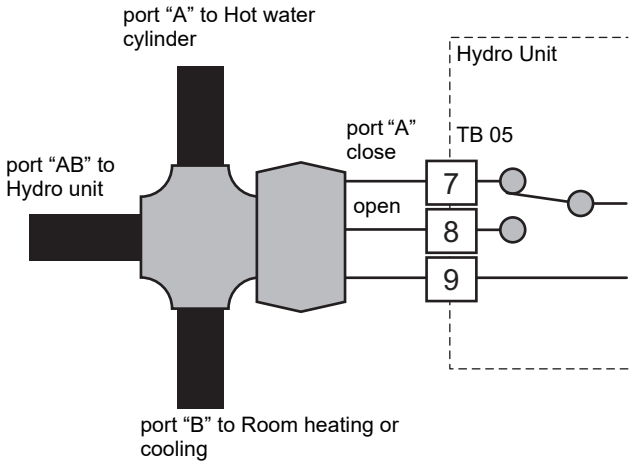
Type 1: SPRING RETURN



Type 2: SPST



Type 3: SPDT



3-way mixing valve connection

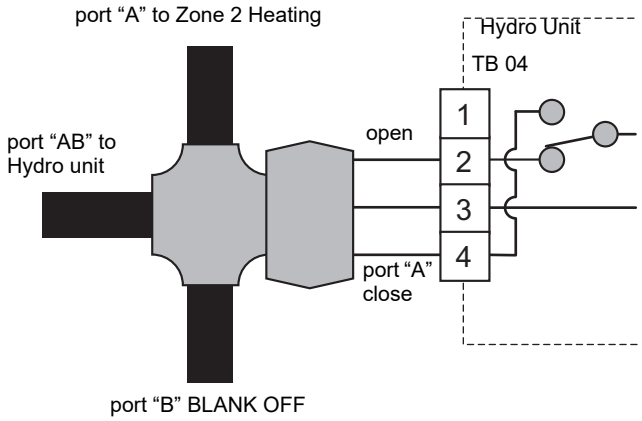
Required Actuator Specification

Electrical Specification:230 V; 50 Hz; <100 mA

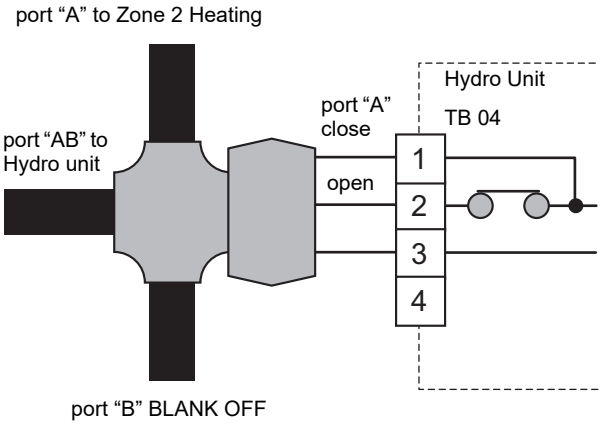
The 3-way mixing valve is used to achieve the temperature differential needed in a 2-zone heating system.

- Connect the 3-way mixing valve to terminals 2, 3 and 4 on Terminal Block 04 (for Type 1 mixing valve) or on terminals 1, 2 and 3 on Terminal Block 04 (for Type 2 mixing valve).
- Connect the 3-way mixing valve in accordance with the diagrams below:-

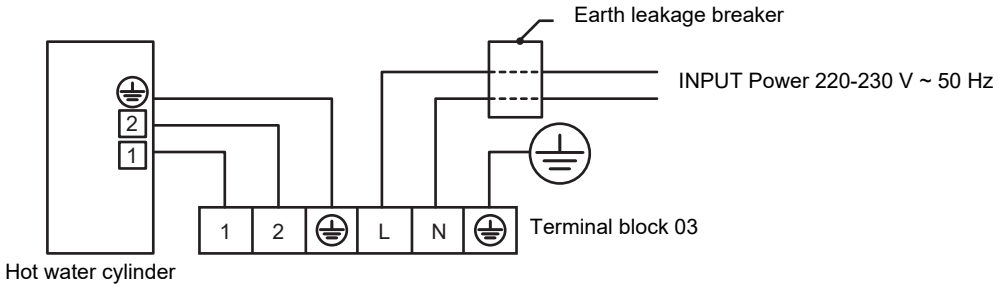
Type 1: SPDT



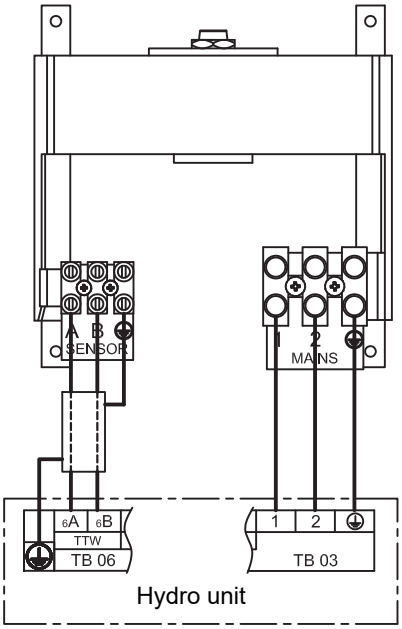
Type 2: SPST



Hot water cylinder connection (optional)



Hot water cylinder electrical box connections



4-5. Capacity Tables

▼Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Rated heating capacity and power input

Rated condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	4.5
	Power input	kW	0.92
	COP	W/W	4.90
	Rated water flow rate	ℓ/min	12.9

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	1.60	1.63	—	—	—	—
	-15	3.10	3.14	3.18	—	—	—
	-7	4.12	4.18	4.24	4.29	4.24	—
	-2	4.40	4.62	4.84	5.05	4.85	4.69
	2	4.63	4.97	5.31	5.66	5.34	5.09
	7	6.75	6.83	6.62	6.42	6.33	6.25
	10	7.82	7.40	7.15	6.89	6.74	6.36
	12	8.13	7.78	7.49	7.21	7.15	6.75
	15	8.59	8.36	8.02	7.86	7.57	7.14
	20	9.57	9.53	8.99	8.90	8.38	7.56

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	0.74	0.84	—	—	—	—
	-15	1.12	1.28	1.44	—	—	—
	-7	1.22	1.39	1.56	1.73	1.89	—
	-2	1.21	1.40	1.59	1.78	1.94	2.10
	2	1.21	1.41	1.62	1.82	1.95	2.09
	7	1.45	1.56	1.79	1.87	2.04	2.21
	10	1.43	1.55	1.78	1.91	2.14	2.22
	12	1.42	1.55	1.78	1.94	2.17	2.22
	15	1.40	1.55	1.78	1.99	2.18	2.22
	20	1.38	1.54	1.78	1.99	2.05	2.05

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.16	1.94	—	—	—	—
	-15	2.77	2.45	2.21	—	—	—
	-7	3.38	3.01	2.72	2.48	2.24	—
	-2	3.64	3.30	3.04	2.84	2.50	2.23
	2	3.83	3.52	3.28	3.11	2.74	2.44
	7	4.66	4.38	3.70	3.43	3.10	2.83
	10	5.47	4.77	4.02	3.61	3.15	2.86
	12	5.73	5.02	4.21	3.72	3.29	3.04
	15	6.14	5.39	4.51	3.95	3.47	3.22
	20	6.93	6.19	5.05	4.47	4.09	3.69

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	1.97	1.94	—	—	—	—
	-15	3.66	3.61	3.56	—	—	—
	-7	4.54	4.48	4.42	4.37	4.31	—
	-2	5.60	5.43	5.26	5.10	4.93	4.77
	2	6.45	6.19	5.94	5.68	5.43	5.18
	7	7.36	6.83	6.62	6.42	6.33	6.25
	10	7.82	7.40	7.15	6.89	6.74	6.36
	12	8.13	7.78	7.49	7.21	7.15	6.75
	15	8.59	8.36	8.02	7.86	7.57	7.14
	20	9.57	9.53	8.99	8.90	8.38	7.56

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	0.76	0.85	—	—	—	—
	-15	1.21	1.35	1.50	—	—	—
	-7	1.28	1.43	1.58	1.74	1.89	—
	-2	1.31	1.47	1.63	1.78	1.94	2.10
	2	1.42	1.55	1.69	1.82	1.96	2.09
	7	1.44	1.56	1.79	1.87	2.04	2.21
	10	1.43	1.55	1.78	1.91	2.14	2.22
	12	1.42	1.55	1.78	1.94	2.17	2.22
	15	1.40	1.55	1.78	1.99	2.18	2.22
	20	1.38	1.54	1.78	1.99	2.05	2.05

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.59	2.28	—	—	—	—
	-15	3.02	2.67	2.37	—	—	—
	-7	3.55	3.13	2.80	2.51	2.28	—
	-2	4.27	3.69	3.23	2.87	2.54	2.27
	2	4.54	3.99	3.51	3.12	2.77	2.48
	7	5.11	4.38	3.70	3.43	3.10	2.83
	10	5.47	4.77	4.02	3.61	3.15	2.86
	12	5.73	5.02	4.21	3.72	3.29	3.04
	15	6.14	5.39	4.51	3.95	3.47	3.22
	20	6.93	6.19	5.05	4.47	4.09	3.69

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

▼Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Rated cooling capacity and power input

Rated condition 1 LWT=7°C dT=5deg TO=35°C	Capacity	kW	4.5
	Power input	kW	1.46
	EER	W/W	4.90
	Rated water flow rate	ℓ/min	12.9

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	5.98	6.43	7.09	7.26	7.55
	27	5.61	6.01	6.53	6.73	7.06
	30	5.45	5.83	6.29	6.51	6.84
	35	5.18	5.54	5.89	6.13	6.49
	40	3.83	4.19	4.55	4.79	5.15
	43	3.27	3.79	4.13	4.39	4.78

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	1.43	1.47	1.52	1.53	1.56
	27	1.59	1.62	1.66	1.67	1.70
	30	1.66	1.69	1.72	1.74	1.76
	35	1.78	1.80	1.82	1.84	1.86
	40	1.49	1.48	1.46	1.46	1.44
	43	1.44	1.45	1.44	1.46	1.48

COP		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	4.18	4.37	4.66	4.75	4.84
	27	3.53	3.71	3.93	4.03	4.15
	30	3.28	3.45	3.66	3.74	3.89
	35	2.91	3.08	3.24	3.33	3.49
	40	2.57	2.83	3.12	3.28	3.58
	43	2.27	2.61	2.87	3.01	3.23

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

▼Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Rated heating capacity and power input

Rated condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	8.0
	Power input	kW	1.79
	COP	W/W	4.46
	Rated water flow rate	ℓ/min	22.9

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	3.71	3.39	3.35	—	—	—
	-15	4.40	4.02	3.97	3.88	—	—
	-7	5.15	5.00	4.77	4.53	4.44	—
	-2	5.88	5.76	5.69	5.63	5.56	5.43
	2	6.48	6.37	6.16	5.95	5.94	5.86
	7	8.75	8.00	7.81	7.63	7.45	7.23
	10	9.28	9.01	8.76	8.50	8.24	8.11
	12	9.81	9.52	9.25	8.99	8.72	8.67
	15	10.33	10.01	9.73	9.46	9.18	9.03
	20	11.73	10.63	10.36	10.09	9.82	9.60

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	1.42	1.43	1.65	—	—	—
	-15	1.49	1.50	1.74	1.99	—	—
	-7	1.73	1.85	2.08	2.30	2.58	—
	-2	1.76	1.89	2.20	2.51	2.82	3.10
	2	1.77	1.91	2.15	2.38	2.68	2.94
	7	1.82	1.89	2.08	2.27	2.46	2.64
	10	1.79	1.97	2.17	2.38	2.58	2.82
	12	1.78	1.96	2.16	2.36	2.56	2.83
	15	1.76	1.94	2.19	2.43	2.68	2.97
	20	1.75	1.81	2.04	2.27	2.50	2.82

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.61	2.37	2.03	—	—	—
	-15	2.95	2.68	2.29	1.95	—	—
	-7	2.98	2.70	2.28	1.97	1.72	—
	-2	3.35	3.04	2.59	2.24	1.97	1.75
	2	3.67	3.34	2.86	2.50	2.22	2.00
	7	4.81	4.24	3.76	3.36	3.03	2.74
	10	5.18	4.57	4.03	3.58	3.20	2.87
	12	5.50	4.85	4.28	3.80	3.40	3.06
	15	5.88	5.16	4.45	3.88	3.42	3.04
	20	6.71	5.87	5.08	4.45	3.93	3.41

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	3.88	3.78	3.74	—	—	—
	-15	4.59	4.47	4.41	4.31	—	—
	-7	5.89	5.74	5.65	5.55	5.29	—
	-2	6.81	6.60	6.48	6.35	6.23	5.84
	2	7.70	7.46	7.34	7.23	7.01	6.77
	7	8.75	8.00	7.81	7.63	7.45	7.23
	10	9.28	9.01	8.76	8.50	8.24	8.11
	12	9.81	9.52	9.25	8.99	8.72	8.67
	15	10.33	10.01	9.73	9.46	9.18	9.03
	20	11.73	10.63	10.36	10.09	9.82	9.60

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	1.44	1.55	1.89	—	—	—
	-15	1.53	1.65	2.01	2.28	—	—
	-7	1.55	1.68	2.04	2.41	2.56	—
	-2	1.57	1.71	2.06	2.42	2.62	2.74
	2	1.56	1.71	2.05	2.38	2.62	2.76
	7	1.82	1.89	2.08	2.27	2.46	2.64
	10	1.79	1.97	2.17	2.38	2.58	2.82
	12	1.78	1.96	2.16	2.36	2.56	2.83
	15	1.76	1.94	2.19	2.43	2.68	2.97
	20	1.75	1.81	2.04	2.27	2.50	2.82

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.68	2.44	1.98	—	—	—
	-15	3.00	2.71	2.20	1.89	—	—
	-7	3.79	3.41	2.76	2.30	2.07	—
	-2	4.34	3.86	3.15	2.63	2.38	2.13
	2	4.94	4.37	3.59	3.03	2.68	2.45
	7	4.81	4.24	3.76	3.36	3.03	2.74
	10	5.18	4.57	4.03	3.58	3.20	2.87
	12	5.50	4.85	4.28	3.80	3.40	3.06
	15	5.88	5.16	4.45	3.88	3.42	3.04
	20	6.71	5.87	5.08	4.45	3.93	3.41

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

▼Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Rated cooling capacity and power input

Rated condition LWT=7°C dT=5deg TO=35°C	Capacity	kW	6.0
	Power input	kW	2
	EER	W/W	3.10
	Rated water flow rate	ℓ/min	17.2

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	7.34	7.91	8.49	8.95	9.64
	27	7.18	7.74	8.30	8.75	9.43
	30	7.11	7.67	8.23	8.67	9.34
	35	7.00	7.55	8.10	8.53	9.19
	40	6.41	6.91	7.42	7.82	8.42
	43	5.39	5.75	6.13	6.43	6.85

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	1.65	1.68	1.71	1.73	1.77
	27	2.01	2.04	2.08	2.11	2.15
	30	2.16	2.20	2.24	2.27	2.32
	35	2.42	2.46	2.51	2.54	2.59
	40	2.62	2.66	2.71	2.74	2.80
	43	2.37	2.38	2.38	2.38	2.40

COP		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	4.45	4.71	4.97	5.17	5.46
	27	3.57	3.79	3.99	4.15	4.38
	30	3.29	3.48	3.67	3.82	4.03
	35	2.89	3.06	3.23	3.36	3.55
	40	2.45	2.60	2.74	2.85	3.01
	43	2.27	2.42	2.58	2.71	2.85

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Rated heating capacity and power input

Rated condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	11.2
	Power input	kW	2.30
	COP	W/W	4.88
	Rated water flow rate	ℓ/min	32.1

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	5.42	4.93	4.79	4.64	—	—
	-15	6.79	6.17	5.99	5.81	—	—
	-7	8.31	8.04	7.58	7.12	6.90	—
	-2	9.79	9.48	9.21	8.39	8.14	7.16
	2	10.44	10.10	9.53	8.95	8.68	7.62
	7	15.12	13.74	13.26	12.79	12.31	10.31
	10	16.03	15.51	14.97	14.43	13.89	11.64
	12	16.95	16.24	15.68	15.12	14.55	12.19
	15	18.30	17.20	16.13	15.07	14.00	11.72
	20	21.09	18.25	17.13	15.99	14.86	12.45

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.34	2.37	2.73	3.11	—	—
	-15	2.44	2.47	2.85	3.23	—	—
	-7	2.68	2.89	3.23	3.56	3.97	—
	-2	2.64	2.84	3.29	3.50	3.92	3.88
	2	2.60	2.80	3.13	3.46	3.86	3.82
	7	3.00	3.04	3.29	3.53	3.77	3.75
	10	2.99	3.22	3.48	3.74	4.00	3.96
	12	2.98	3.20	3.47	3.73	3.99	3.95
	15	2.93	3.16	3.33	3.50	3.67	3.64
	20	2.91	2.94	3.11	3.26	3.43	3.39

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.31	2.08	1.75	1.49	—	—
	-15	2.78	2.50	2.10	1.80	—	—
	-7	3.10	2.78	2.34	2.00	1.74	—
	-2	3.71	3.33	2.80	2.40	2.08	1.85
	2	4.01	3.60	3.03	2.59	2.25	1.99
	7	5.03	4.52	4.04	3.62	3.26	2.75
	10	5.37	4.82	4.31	3.86	3.48	2.94
	12	5.70	5.07	4.52	4.06	3.65	3.09
	15	6.24	5.45	4.85	4.31	3.82	3.22
	20	7.25	6.20	5.51	4.90	4.34	3.67

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	6.36	6.20	6.08	5.84	—	—
	-15	7.72	7.52	7.36	7.12	—	—
	-7	9.95	9.67	9.44	9.16	8.83	—
	-2	11.52	11.18	10.89	10.57	10.26	8.60
	2	12.84	12.42	12.07	11.72	11.38	9.53
	7	15.12	13.74	13.26	12.79	12.31	10.31
	10	16.03	15.51	14.97	14.43	13.89	11.64
	12	16.95	16.24	15.68	15.12	14.55	12.19
	15	18.30	17.20	16.13	15.07	14.00	11.72
	20	21.09	18.25	17.13	15.99	14.86	12.45

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.23	2.36	2.75	3.11	—	—
	-15	2.39	2.53	2.95	3.34	—	—
	-7	2.47	2.64	3.06	3.48	3.89	—
	-2	2.51	2.69	3.12	3.54	3.97	3.92
	2	2.51	2.71	3.13	3.56	3.98	3.95
	7	3.00	3.04	3.29	3.53	3.77	3.75
	10	2.99	3.22	3.48	3.74	4.00	3.96
	12	2.98	3.20	3.47	3.73	3.99	3.95
	15	2.93	3.16	3.33	3.50	3.67	3.64
	20	2.91	2.94	3.11	3.26	3.43	3.39

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.85	2.63	2.21	1.88	—	—
	-15	3.24	2.97	2.49	2.13	—	—
	-7	4.03	3.66	3.09	2.63	2.27	—
	-2	4.59	4.15	3.49	2.98	2.59	2.19
	2	5.11	4.59	3.86	3.29	2.86	2.42
	7	5.03	4.52	4.04	3.62	3.26	2.75
	10	5.37	4.82	4.31	3.86	3.48	2.94
	12	5.70	5.07	4.52	4.06	3.65	3.09
	15	6.24	5.45	4.85	4.31	3.82	3.22
	20	7.25	6.20	5.51	4.90	4.34	3.67

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Rated cooling capacity and power input

Rated condition 1 LWT=7°C dT=5deg TO=35°C	Capacity	kW	10.0
	Power input	kW	3.26
	EER	W/W	3.07
	Rated water flow rate	ℓ/min	28.7

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	11.14	12.04	12.95	13.67	14.75
	27	10.72	11.62	12.52	13.24	14.32
	30	10.54	11.44	12.34	13.05	14.13
	35	10.24	11.14	12.03	12.75	13.82
	40	9.18	9.98	10.78	11.42	12.38
	43	7.06	7.67	8.29	8.78	9.53

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	2.15	2.16	2.17	2.17	2.19
	27	2.68	2.71	2.74	2.76	2.79
	30	2.91	2.95	2.98	3.01	3.05
	35	3.29	3.34	3.39	3.43	3.49
	40	3.57	3.57	3.58	3.62	3.69
	43	3.06	3.05	3.05	3.07	3.10

COP		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	5.18	5.58	5.97	6.29	6.75
	27	4.00	4.29	4.57	4.80	5.12
	30	3.62	3.88	4.14	4.34	4.63
	35	3.11	3.33	3.55	3.72	3.96
	40	2.57	2.79	3.01	3.16	3.36
	43	2.30	2.51	2.72	2.86	3.07

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Rated heating capacity and power input

Rated condition 1 LWT=35°C dT=5deg TO=7°C	Capacity	kW	14.0
	Power input	kW	3.11
	COP	W/W	4.50
	Rated water flow rate	ℓ/min	40.1

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	5.92	5.34	5.03	4.72	—	—
	-15	7.61	6.86	6.47	6.08	—	—
	-7	8.98	8.63	7.90	7.17	6.70	—
	-2	10.47	10.07	9.49	8.37	7.82	7.36
	2	11.08	10.65	9.75	8.85	8.27	7.79
	7	17.42	15.72	14.55	13.39	12.23	10.96
	10	18.29	17.58	16.28	14.97	13.67	12.26
	12	19.53	18.58	17.21	15.83	14.45	12.96
	15	20.96	19.56	17.68	15.80	13.92	12.48
	20	23.26	19.99	18.07	16.15	14.23	12.75

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.60	2.64	2.88	3.12	—	—
	-15	2.74	2.78	3.23	3.28	—	—
	-7	3.05	3.29	3.48	3.66	3.93	—
	-2	3.01	3.25	3.54	3.61	3.88	3.91
	2	2.96	3.20	3.38	3.56	3.82	3.85
	7	3.65	3.71	3.73	3.76	3.78	3.81
	10	3.66	3.95	3.97	4.00	4.03	4.06
	12	3.64	3.93	3.93	3.94	3.95	3.98
	15	3.62	3.90	3.89	3.88	3.87	3.89
	20	3.42	3.46	3.45	3.43	3.42	3.44

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.27	2.02	1.75	1.52	—	—
	-15	2.77	2.47	2.13	1.85	—	—
	-7	2.94	2.62	2.26	1.96	1.70	—
	-2	3.48	3.10	2.68	2.32	2.02	1.88
	2	3.74	3.33	2.88	2.49	2.16	2.02
	7	4.77	4.24	3.90	3.56	3.23	2.87
	10	5.00	4.45	4.09	3.74	3.39	3.02
	12	5.36	4.73	4.38	4.02	3.66	3.26
	15	5.79	5.01	4.54	4.07	3.60	3.21
	20	6.80	5.78	5.25	4.71	4.17	3.71

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	6.56	6.36	6.04	5.64	—	—
	-15	8.62	8.34	7.90	7.37	—	—
	-7	11.19	10.79	10.21	9.59	8.93	—
	-2	12.98	12.50	11.80	11.09	10.37	8.88
	2	14.14	13.59	12.81	12.02	11.26	9.63
	7	17.42	15.72	14.55	13.39	12.23	10.96
	10	18.29	17.58	16.28	14.97	13.67	12.26
	12	19.53	18.58	17.21	15.83	14.45	12.96
	15	20.96	19.56	17.68	15.80	13.92	12.48
	20	23.26	19.99	18.07	16.15	14.23	12.75

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.51	2.65	2.92	3.15	—	—
	-15	2.66	2.83	3.11	3.36	—	—
	-7	2.83	3.03	3.32	3.59	3.87	—
	-2	2.89	3.11	3.40	3.69	3.98	4.00
	2	2.89	3.11	3.40	3.68	3.98	4.01
	7	3.65	3.71	3.73	3.76	3.78	3.81
	10	3.66	3.95	3.97	4.00	4.03	4.06
	12	3.64	3.93	3.93	3.94	3.95	3.98
	15	3.62	3.90	3.89	3.88	3.87	3.89
	20	3.42	3.46	3.45	3.43	3.42	3.44

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.62	2.39	2.07	1.79	—	—
	-15	3.24	2.95	2.54	2.19	—	—
	-7	3.96	3.56	3.08	2.67	2.31	—
	-2	4.49	4.02	3.47	3.01	2.61	2.22
	2	4.89	4.36	3.77	3.27	2.83	2.40
	7	4.77	4.24	3.90	3.56	3.23	2.87
	10	5.00	4.45	4.09	3.74	3.39	3.02
	12	5.36	4.73	4.38	4.02	3.66	3.26
	15	5.79	5.01	4.54	4.07	3.60	3.21
	20	6.80	5.78	5.25	4.71	4.17	3.71

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Rated cooling capacity and power input

Rated condition 1 LWT=7°C dT=5deg LWT=35°C	Capacity	kW	11.0
	Power input	kW	3.81
	EER	W/W	2.89
	Rated water flow rate	ℓ/min	31.5

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	13.29	14.40	15.50	16.38	17.71
	27	12.59	13.55	14.52	15.29	16.45
	30	12.28	13.19	14.09	14.82	15.90
	35	11.78	12.59	13.39	14.03	15.00
	40	9.46	10.10	10.75	11.26	12.05
	43	7.29	7.79	8.28	8.69	8.90

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	2.88	2.88	2.88	2.88	2.88
	27	3.44	3.44	3.44	3.44	3.44
	30	3.67	3.67	3.67	3.67	3.67
	35	4.07	4.07	4.07	4.07	4.07
	40	3.83	3.76	3.70	3.71	3.68
	43	3.24	3.15	3.11	3.08	3.05

EER		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	4.61	5.00	5.38	5.69	6.15
	27	3.66	3.94	4.23	4.45	4.79
	30	3.34	3.59	3.84	4.03	4.33
	35	2.89	3.09	3.29	3.45	3.69
	40	2.47	2.69	2.90	3.04	3.27
	43	2.25	2.47	2.67	2.82	2.91

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Rated heating capacity and power input

Rated condition 1 LWT=35°C dT=5deg TO=7°C	Capacity	kW	11.2
	Power input	kW	2.34
	COP	W/W	4.80
	Rated water flow rate	ℓ/min	32.1

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	5.39	4.88	4.82	4.75	—	—
	-15	7.05	6.38	6.30	6.21	—	—
	-7	8.35	8.04	7.69	7.33	7.23	—
	-2	9.51	9.13	8.98	8.30	8.16	7.63
	2	11.15	10.46	9.84	9.21	8.90	8.32
	7	15.32	13.83	13.46	13.08	12.70	11.79
	10	16.36	15.73	15.37	15.02	14.66	13.85
	12	17.05	16.39	16.02	15.64	15.26	14.57
	15	17.90	17.21	16.76	16.30	15.85	15.03
	20	20.04	18.09	17.68	17.26	16.85	15.82

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.15	2.17	2.43	2.70	—	—
	-15	2.40	2.43	2.73	3.41	—	—
	-7	2.68	2.88	3.15	3.41	3.77	—
	-2	2.64	2.84	3.22	3.37	3.73	3.92
	2	2.70	2.90	3.14	3.37	3.69	3.88
	7	2.92	2.95	3.24	3.53	3.83	4.09
	10	2.92	3.14	3.46	3.79	4.12	4.43
	12	2.91	3.13	3.47	3.81	4.15	4.48
	15	2.90	3.11	3.47	3.82	4.17	4.48
	20	2.88	2.91	3.25	3.60	3.94	4.27

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.51	2.25	1.98	1.76	—	—
	-15	2.94	2.63	2.31	2.04	—	—
	-7	3.11	2.79	2.43	2.15	1.92	—
	-2	3.60	3.21	2.79	2.46	2.19	1.95
	2	4.13	3.61	3.12	2.73	2.41	2.14
	7	5.24	4.69	4.15	3.70	3.32	2.88
	10	5.61	5.02	4.44	3.96	3.56	3.13
	12	5.85	5.23	4.61	4.10	3.68	3.25
	15	6.18	5.53	4.83	4.27	3.80	3.36
	20	6.96	6.22	5.44	4.80	4.28	3.70

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	6.38	6.12	6.01	5.90	—	—
	-15	7.60	7.29	7.16	7.03	—	—
	-7	9.90	9.50	9.33	9.17	8.92	—
	-2	11.30	10.86	10.69	10.52	10.22	9.44
	2	12.99	12.49	12.13	11.78	11.26	10.40
	7	15.32	13.83	13.46	13.08	12.70	11.79
	10	16.36	15.73	15.37	15.02	14.66	13.85
	12	17.05	16.39	16.02	15.64	15.26	14.57
	15	17.90	17.21	16.76	16.30	15.85	15.03
	20	20.04	18.09	17.68	17.26	16.85	15.82

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	1.91	2.06	2.37	2.69	—	—
	-15	2.21	2.38	2.74	3.11	—	—
	-7	2.37	2.55	2.94	3.34	3.73	—
	-2	2.42	2.60	3.00	3.42	3.82	4.06
	2	2.54	2.74	3.12	3.52	3.90	4.14
	7	2.92	2.95	3.24	3.53	3.83	4.09
	10	2.92	3.14	3.46	3.79	4.12	4.43
	12	2.91	3.13	3.47	3.81	4.15	4.48
	15	2.90	3.11	3.47	3.82	4.17	4.48
	20	2.88	2.91	3.25	3.60	3.94	4.27

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	3.34	2.97	2.54	2.19	—	—
	-15	3.44	3.07	2.61	2.26	—	—
	-7	4.18	3.73	3.18	2.75	2.39	—
	-2	4.68	4.17	3.56	3.07	2.67	2.33
	2	5.12	4.56	3.89	3.35	2.89	2.51
	7	5.24	4.69	4.15	3.70	3.32	2.88
	10	5.61	5.02	4.44	3.96	3.56	3.13
	12	5.85	5.23	4.61	4.10	3.68	3.25
	15	6.18	5.53	4.83	4.27	3.80	3.36
	20	6.96	6.22	5.44	4.80	4.28	3.70

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Rated cooling capacity and power input

Rated condition 1 LWT=7°C dT=5deg TO=35°C	Capacity	kW	10.0
	Power input	kW	3.26
	EER	W/W	3.07
	Rated water flow rate	ℓ/min	28.7

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	11.15	11.95	12.75	13.38	14.34
	27	10.69	11.46	12.24	12.86	13.78
	30	10.49	11.25	12.02	12.63	13.55
	35	10.16	10.91	11.66	12.25	13.15
	40	9.39	10.09	10.78	11.33	12.01
	43	8.93	9.59	10.25	10.78	11.33

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	2.10	2.11	2.12	2.13	2.14
	27	2.60	2.62	2.65	2.67	2.70
	30	2.81	2.84	2.87	2.90	2.94
	35	3.17	3.21	3.25	3.29	3.34
	40	3.50	3.55	3.59	3.63	3.67
	43	3.70	3.75	3.80	3.84	3.87

COP		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	5.32	5.67	6.02	6.29	6.70
	27	4.12	4.37	4.62	4.82	5.11
	30	3.73	3.96	4.18	4.36	4.61
	35	3.21	3.40	3.58	3.73	3.94
	40	2.68	2.84	3.00	3.12	3.27
	43	2.41	2.56	2.70	2.81	2.93

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Rated heating capacity and power input

Rated condition 1 LWT=35°C dT=5deg TO=7°C	Capacity	kW	14.0
	Power input	kW	3.16
	COP	W/W	4.44
	Rated water flow rate	ℓ/min	40.1

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	5.79	5.25	5.15	5.03	—	—
	-15	7.58	6.85	6.71	6.57	—	—
	-7	8.98	8.64	8.21	7.77	7.60	—
	-2	10.22	9.81	9.59	8.79	8.57	8.01
	2	11.74	11.01	10.35	9.68	9.35	8.73
	7	16.35	14.81	14.48	14.15	13.82	12.81
	10	17.61	17.14	16.74	16.35	15.95	15.04
	12	18.37	17.86	17.50	17.14	16.77	15.81
	15	19.39	18.86	18.31	17.77	17.22	17.21
	20	21.41	19.62	19.13	18.62	18.12	17.61

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.39	2.36	2.64	2.92	—	—
	-15	2.66	2.63	2.96	3.29	—	—
	-7	2.97	3.14	3.41	3.68	4.06	—
	-2	2.92	3.09	3.48	3.64	4.01	4.22
	2	3.03	3.21	3.43	3.65	3.97	4.18
	7	3.29	3.33	3.65	3.97	4.30	4.56
	10	3.29	3.55	3.91	4.27	4.63	4.93
	12	3.29	3.55	3.91	4.29	4.67	4.98
	15	3.31	3.55	3.93	4.31	4.68	5.09
	20	3.34	3.36	3.73	4.09	4.46	4.86

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.42	2.23	1.95	1.73	—	—
	-15	2.84	2.60	2.27	2.00	—	—
	-7	3.02	2.76	2.39	2.11	1.87	—
	-2	3.50	3.18	2.75	2.41	2.14	1.90
	2	3.88	3.44	3.00	2.65	2.35	2.09
	7	4.98	4.44	3.96	3.56	3.21	2.81
	10	5.36	4.83	4.29	3.83	3.44	3.05
	12	5.59	5.03	4.47	3.99	3.59	3.17
	15	5.86	5.31	4.66	4.13	3.68	3.38
	20	6.41	5.83	5.13	4.55	4.06	3.62

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	7.15	6.85	6.68	6.50	—	—
	-15	8.51	8.16	7.96	7.75	—	—
	-7	11.08	10.64	10.38	10.12	9.76	—
	-2	12.66	12.16	11.88	11.61	11.19	10.33
	2	14.25	13.70	13.30	12.90	12.33	11.39
	7	16.35	14.81	14.48	14.15	13.82	12.81
	10	17.61	17.14	16.74	16.35	15.95	15.04
	12	18.37	17.86	17.50	17.14	16.77	15.81
	15	19.39	18.86	18.31	17.77	17.22	17.21
	20	21.41	19.62	19.13	18.62	18.12	17.61

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.24	2.41	2.76	3.13	—	—
	-15	2.59	2.78	3.19	3.62	—	—
	-7	2.77	2.98	3.42	3.88	4.32	—
	-2	2.83	3.05	3.50	3.98	4.43	4.71
	2	3.01	3.25	3.67	4.11	4.52	4.80
	7	3.29	3.33	3.65	3.97	4.30	4.56
	10	3.29	3.55	3.91	4.27	4.63	4.93
	12	3.29	3.55	3.91	4.29	4.67	4.98
	15	3.31	3.55	3.93	4.31	4.68	5.09
	20	3.34	3.36	3.73	4.09	4.46	4.86

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	3.19	2.85	2.42	—	—	—
	-15	3.29	2.94	2.49	2.14	—	—
	-7	4.00	3.57	3.03	2.61	2.26	—
	-2	4.48	3.99	3.39	2.92	2.53	2.20
	2	4.73	4.21	3.62	3.14	2.73	2.37
	7	4.98	4.44	3.96	3.56	3.21	2.81
	10	5.36	4.83	4.29	3.83	3.44	3.05
	12	5.59	5.03	4.47	4.00	3.59	3.17
	15	5.86	5.31	4.66	4.13	3.68	3.38
	20	6.41	5.83	5.13	4.55	4.06	3.62

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Rated cooling capacity and power input

Rated condition 1 LWT=7°C dT=5deg TO=35°C	Capacity	kW	11.0
	Power input	kW	3.81
	EER	W/W	2.89
	Rated water flow rate	ℓ/min	31.5

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	13.27	14.18	15.10	15.83	16.92
	27	12.69	13.57	14.46	15.17	16.23
	30	12.44	13.31	14.19	14.88	15.93
	35	12.02	12.88	13.73	14.41	15.44
	40	11.27	12.07	12.87	13.38	14.18
	43	10.82	11.59	12.36	12.75	13.43

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	2.82	2.82	2.82	2.82	2.82
	27	3.43	3.46	3.49	3.52	3.55
	30	3.70	3.74	3.78	3.82	3.87
	35	4.13	4.20	4.26	4.31	4.39
	40	4.58	4.65	4.72	4.75	4.80
	43	4.84	4.92	5.00	5.00	5.04

COP		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	4.70	5.02	5.35	5.61	6.00
	27	3.69	3.92	4.14	4.31	4.57
	30	3.37	3.56	3.75	3.90	4.12
	35	2.91	3.07	3.22	3.34	3.52
	40	2.46	2.60	2.73	2.82	2.96
	43	2.23	2.35	2.47	2.55	2.67

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Rated heating capacity and power input

Rated condition 1 LWT=35°C dT=5deg TO=7°C	Capacity	kW	16.0
	Power input	kW	3.72
	COP	W/W	4.30
	Rated water flow rate	ℓ/min	45.7

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	6.07	5.49	5.37	5.24	—	—
	-15	7.94	7.18	7.01	6.89	—	—
	-7	9.40	9.05	8.57	8.08	7.88	—
	-2	10.71	10.28	10.01	9.15	8.89	8.31
	2	12.38	11.61	10.86	10.10	9.70	9.06
	7	17.43	15.74	15.27	14.80	14.35	13.26
	10	18.63	17.92	17.47	17.01	16.56	15.57
	12	19.41	18.68	18.23	17.78	17.32	16.53
	15	20.63	19.82	19.30	18.78	18.27	17.23
	20	23.10	20.73	20.23	19.73	19.22	17.96

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.59	2.55	2.84	3.12	—	—
	-15	2.88	2.85	3.18	3.53	—	—
	-7	3.21	3.39	3.67	3.94	4.32	—
	-2	3.16	3.34	3.74	3.90	4.27	4.49
	2	3.27	3.46	3.68	3.90	4.23	4.45
	7	3.61	3.65	3.98	4.30	4.63	4.90
	10	3.61	3.89	4.25	4.62	4.98	5.30
	12	3.61	3.89	4.26	4.64	5.02	5.35
	15	3.63	3.90	4.30	4.70	5.10	5.46
	20	3.66	3.69	4.08	4.46	4.85	5.21

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.35	2.15	1.89	1.68	—	—
	-15	2.75	2.52	2.21	1.95	—	—
	-7	2.93	2.67	2.33	2.05	1.82	—
	-2	3.39	3.08	2.67	2.35	2.08	1.85
	2	3.79	3.36	2.94	2.59	2.29	2.04
	7	4.83	4.30	3.84	3.44	3.10	2.70
	10	5.17	4.61	4.11	3.69	3.32	2.94
	12	5.38	4.80	4.28	3.83	3.45	3.09
	15	5.69	5.09	4.49	4.00	3.58	3.16
	20	6.31	5.62	4.96	4.42	3.96	3.45

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	7.56	7.25	7.04	6.84	—	—
	-15	9.00	8.63	8.39	8.15	—	—
	-7	11.73	11.25	10.94	10.64	10.22	—
	-2	13.39	12.87	12.53	12.20	11.72	10.82
	2	15.17	14.59	14.09	13.60	12.91	11.93
	7	17.43	15.74	15.27	14.80	14.35	13.26
	10	18.63	17.92	17.47	17.01	16.56	15.57
	12	19.41	18.68	18.23	17.78	17.32	16.53
	15	20.63	19.82	19.30	18.78	18.27	17.23
	20	23.10	20.73	20.23	19.73	19.22	17.96

Power input (kW)		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	2.45	2.63	3.00	3.38	—	—
	-15	2.83	3.04	3.46	3.91	—	—
	-7	3.03	3.26	3.71	4.19	4.64	—
	-2	3.09	3.33	3.80	4.29	4.76	5.06
	2	3.28	3.54	3.98	4.43	4.86	5.16
	7	3.61	3.65	3.98	4.30	4.63	4.90
	10	3.61	3.89	4.25	4.62	4.98	5.30
	12	3.61	3.89	4.26	4.64	5.02	5.35
	15	3.63	3.90	4.30	4.70	5.10	5.46
	20	3.66	3.69	4.08	4.46	4.85	5.21

COP		LWT (°C)					
		30	35	40	45	50	55
TO (°C)	-20	3.09	2.76	2.35	2.02	—	—
	-15	3.19	2.84	2.42	2.09	—	—
	-7	3.87	3.46	2.95	2.54	2.20	—
	-2	4.34	3.87	3.30	2.84	2.46	2.14
	2	4.62	4.12	3.54	3.07	2.66	2.31
	7	4.83	4.30	3.84	3.44	3.10	2.70
	10	5.17	4.61	4.11	3.69	3.33	2.94
	12	5.38	4.80	4.28	3.83	3.45	3.09
	15	5.69	5.09	4.49	4.00	3.58	3.16
	20	6.31	5.62	4.96	4.42	3.96	3.45

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Rated cooling capacity and power input

Rated condition 1 LWT=7°C dT=5deg TO=35°C	Capacity	kW	13.0
	Power input	kW	4.80
	EER	W/W	2.71
	Rated water flow rate	ℓ/min	37.3

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	14.39	15.37	16.34	17.12	18.29
	27	13.67	14.60	15.54	16.28	17.40
	30	13.36	14.27	15.19	15.92	17.02
	35	12.84	13.73	14.62	15.33	16.39
	40	11.53	12.32	13.29	14.12	14.92
	43	10.72	11.53	12.49	13.33	14.24

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	3.25	3.26	3.27	3.28	3.29
	27	3.89	3.94	3.99	4.02	4.08
	30	4.17	4.23	4.29	4.34	4.42
	35	4.63	4.72	4.81	4.88	4.98
	40	4.95	5.05	5.15	5.24	5.35
	43	5.16	5.28	5.42	5.51	5.68

EER		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	4.43	4.71	5.00	5.22	5.56
	27	3.51	3.71	3.90	4.05	4.27
	30	3.20	3.37	3.54	3.67	3.85
	35	2.78	2.91	3.04	3.14	3.29
	40	2.33	2.44	2.58	2.69	2.79
	43	2.08	2.18	2.31	2.42	2.50

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-HWS-P805HR-E
Hydro unit HWS-HWS-P805XWH**-E

Rated heating capacity and power input

Rated condition 1 LWT=35°C dT=5deg TO=7°C	Capacity	kW	8.0
	Power input	kW	1.68
	COP	W/W	4.76
	Rated water flow rate	ℓ/min	22.90

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	4.71	4.62	4.19	—	—	—	—
	-20	6.04	5.94	5.49	5.04	—	—	—
	-15	7.37	7.26	6.79	6.31	5.84	—	—
	-7	9.50	9.38	8.87	8.36	7.84	7.33	—
	-2	10.97	10.69	10.03	9.36	8.70	8.04	7.37
	2	12.14	11.74	10.96	10.17	9.39	8.60	7.82
	7	15.20	13.87	15.46	14.00	12.54	11.08	9.62
	10	19.69	18.21	16.60	15.00	13.39	11.79	10.18
	12	20.61	19.06	17.36	15.66	13.96	12.26	—
	15	21.99	20.35	18.50	16.66	14.81	12.97	—
	20	24.29	22.49	20.41	18.32	16.24	14.15	—

Power input (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	2.82	2.94	3.06	—	—	—	—
	-20	3.06	3.17	3.29	3.44	—	—	—
	-15	3.23	3.33	3.45	3.59	3.77	—	—
	-7	3.43	3.52	3.62	3.75	3.90	4.09	—
	-2	3.43	3.54	3.62	3.70	3.81	3.95	4.11
	2	3.43	3.56	3.61	3.68	3.75	3.85	3.96
	7	3.64	3.74	4.22	4.20	4.17	4.13	4.08
	10	4.06	4.09	4.07	4.05	4.02	3.98	3.94
	12	3.97	4.00	3.98	3.96	3.93	3.90	—
	15	3.86	3.89	3.87	3.85	3.82	3.79	—
	20	3.71	3.74	3.73	3.70	3.68	3.65	—

COP		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	1.67	1.57	1.37	—	—	—	—
	-20	1.98	1.88	1.67	1.46	—	—	—
	-15	2.28	2.18	1.97	1.76	1.55	—	—
	-7	2.77	2.67	2.45	2.23	2.01	1.79	—
	-2	3.20	3.02	2.77	2.53	2.28	2.04	1.79
	2	3.54	3.30	3.03	2.77	2.50	2.24	1.97
	7	4.18	3.70	3.66	3.33	3.01	2.68	2.36
	10	4.85	4.45	4.08	3.71	3.33	2.96	2.59
	12	5.19	4.76	4.36	3.95	3.55	3.14	—
	15	5.70	5.23	4.78	4.33	3.87	3.42	—
	20	6.55	6.01	5.48	4.95	4.41	3.88	—

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	6.81	6.18	5.79	—	—	—	—
	-20	8.35	7.77	7.25	6.72	—	—	—
	-15	9.89	9.37	8.71	8.04	7.38	—	—
	-7	12.35	11.92	11.04	10.16	9.28	8.40	—
	-2	14.45	13.74	12.65	11.56	10.48	9.39	8.30
	2	16.14	15.19	13.94	12.69	11.43	10.18	8.93
	7	18.31	16.92	15.46	14.00	12.54	11.08	9.62
	10	19.69	18.21	16.60	15.00	13.39	11.79	10.18
	12	20.61	19.06	17.36	15.66	13.96	12.26	—
	15	21.99	20.35	18.50	16.66	14.81	12.97	—
	20	24.29	22.49	20.41	18.32	16.24	14.15	—

Power input (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	3.43	3.40	3.53	—	—	—	—
	-20	3.68	3.66	3.76	3.88	—	—	—
	-15	3.87	3.85	3.93	4.02	4.13	—	—
	-7	4.11	4.08	4.12	4.17	4.23	4.32	—
	-2	4.16	4.22	4.22	4.23	4.24	4.26	4.28
	2	4.19	4.31	4.29	4.27	4.25	4.23	4.20
	7	4.22	4.25	4.22	4.20	4.17	4.13	4.08
	10	4.06	4.09	4.07	4.05	4.02	3.98	3.94
	12	3.97	4.00	3.98	3.96	3.93	3.90	—
	15	3.86	3.89	3.87	3.85	3.82	3.79	—
	20	3.71	3.74	3.73	3.70	3.68	3.65	—

COP		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	1.98	1.82	1.64	—	—	—	—
	-20	2.27	2.13	1.93	1.73	—	—	—
	-15	2.55	2.43	2.22	2.00	1.79	—	—
	-7	3.01	2.92	2.68	2.44	2.19	1.95	—
	-2	3.48	3.26	2.99	2.73	2.47	2.21	1.94
	2	3.85	3.53	3.25	2.97	2.69	2.41	2.13
	7	4.34	3.98	3.66	3.33	3.01	2.68	2.36
	10	4.85	4.45	4.08	3.71	3.33	2.96	2.59
	12	5.19	4.76	4.36	3.95	3.55	3.14	—
	15	5.70	5.23	4.78	4.33	3.87	3.42	—
	20	6.55	6.01	5.48	4.95	4.41	3.88	—

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Rated cooling capacity and power input

Rated condition 1 LWT=7°C dT=5deg TO=35°C	Capacity	kW	6.0
	Power input	kW	1.64
	EER	W/W	3.66
	Rated water flow rate	ℓ/min	17.20

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	7.82	8.41	8.99	8.99	8.99
	27	7.53	8.01	8.50	8.82	9.30
	30	7.41	7.96	8.51	8.88	9.43
	35	7.20	7.91	8.62	9.03	9.65
	40	6.50	7.14	7.77	8.20	8.84
	43	6.08	6.69	7.31	7.72	8.35

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	1.30	1.30	1.29	1.29	1.29
	27	1.67	1.67	1.67	1.67	1.67
	30	1.83	1.83	1.83	1.83	1.83
	35	2.09	2.10	2.11	2.10	2.10
	40	2.31	2.33	2.35	2.36	2.37
	43	2.44	2.48	2.51	2.52	2.54

EER		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	6.00	6.49	6.97	6.97	6.97
	27	4.81	5.09	5.38	5.57	5.86
	30	4.29	4.59	4.89	5.09	5.38
	35	3.44	3.77	4.09	4.29	4.59
	40	2.84	3.10	3.35	3.52	3.78
	43	2.49	2.70	2.91	3.06	3.29

* Cooling capacity and power input are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Rated heating capacity and power input

Rated condition 1 LWT=35°C dT=5deg TO=7°C	Capacity	kW	11.2
	Power input	kW	2.30
	COP	W/W	4.88
	Rated water flow rate	ℓ/min	32.10

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	6.23	5.95	5.11	—	—	—	—
	-20	7.21	7.00	6.24	5.47	—	—	—
	-15	8.20	8.06	7.36	6.67	5.98	—	—
	-7	9.77	9.74	9.16	8.59	8.01	7.44	—
	-2	11.13	10.97	10.34	9.71	9.08	8.45	7.82
	2	12.22	11.96	11.28	10.61	9.93	9.26	7.79
	7	14.87	14.32	16.39	14.74	13.08	11.43	9.77
	10	20.38	18.94	17.22	15.50	13.78	12.06	10.34
	12	21.21	19.54	17.78	16.01	14.25	12.49	—
	15	22.44	20.43	18.61	16.78	14.95	13.12	—
	20	24.50	21.92	19.99	18.05	16.12	14.18	—

Power input (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	3.61	3.68	3.62	—	—	—	—
	-20	3.63	3.69	3.68	3.67	—	—	—
	-15	3.64	3.69	3.72	3.75	3.80	—	—
	-7	3.66	3.69	3.76	3.84	3.94	4.06	—
	-2	3.62	3.65	3.72	3.80	3.89	4.01	4.15
	2	3.59	3.62	3.69	3.76	3.86	3.97	3.94
	7	3.50	3.72	4.26	4.23	4.18	4.12	4.05
	10	4.18	4.12	4.09	4.06	4.02	3.98	3.92
	12	4.07	4.01	3.99	3.97	3.94	3.90	—
	15	3.93	3.88	3.86	3.84	3.82	3.79	—
	20	3.74	3.70	3.69	3.67	3.66	3.64	—

COP		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	1.72	1.62	1.41	—	—	—	—
	-20	1.99	1.90	1.70	1.49	—	—	—
	-15	2.25	2.18	1.98	1.78	1.57	—	—
	-7	2.67	2.64	2.44	2.23	2.03	1.83	—
	-2	3.08	3.01	2.78	2.56	2.33	2.11	1.88
	2	3.40	3.30	3.06	2.82	2.57	2.33	1.98
	7	4.25	3.85	3.85	3.49	3.13	2.77	2.42
	10	4.88	4.60	4.21	3.82	3.42	3.03	2.64
	12	5.21	4.87	4.45	4.04	3.62	3.21	—
	15	5.71	5.27	4.82	4.37	3.92	3.47	—
	20	6.55	5.93	5.42	4.91	4.41	3.90	—

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	8.36	7.81	7.15	—	—	—	—
	-20	9.82	9.19	8.42	7.64	—	—	—
	-15	12.78	11.23	9.68	8.13	6.58	—	—
	-7	13.62	12.79	11.70	10.61	9.51	8.42	—
	-2	15.41	14.39	13.17	11.95	10.73	9.51	8.29
	2	16.85	15.67	14.35	13.03	11.70	10.38	9.25
	7	19.15	18.05	16.39	14.74	13.08	11.43	9.77
	10	20.38	18.94	17.22	15.50	13.78	12.06	10.34
	12	21.21	19.54	17.78	16.01	14.25	12.49	—
	15	22.44	20.43	18.61	16.78	14.95	13.12	—
	20	24.50	21.92	19.99	18.05	16.12	14.18	—

Power input (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	4.30	4.32	4.31	—	—	—	—
	-20	4.34	4.33	4.32	4.31	—	—	—
	-15	4.34	4.34	4.33	4.32	4.31	—	—
	-7	4.40	4.35	4.34	4.33	4.31	4.30	—
	-2	4.37	4.35	4.33	4.31	4.29	4.26	4.23
	2	4.35	4.35	4.33	4.30	4.28	4.25	4.19
	7	4.37	4.29	4.26	4.23	4.18	4.12	4.05
	10	4.18	4.12	4.09	4.06	4.02	3.98	3.92
	12	4.07	4.01	3.99	3.97	3.94	3.90	—
	15	3.93	3.88	3.86	3.84	3.82	3.79	—
	20	3.74	3.70	3.69	3.67	3.66	3.64	—

COP		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	1.94	1.81	1.66	—	—	—	—
	-20	2.26	2.12	1.95	1.77	—	—	—
	-15	2.94	2.59	2.24	1.88	1.53	—	—
	-7	3.10	2.94	2.70	2.45	2.21	1.96	—
	-2	3.53	3.31	3.04	2.77	2.50	2.23	1.96
	2	3.87	3.61	3.32	3.03	2.74	2.45	2.21
	7	4.38	4.20	3.85	3.49	3.13	2.77	2.42
	10	4.88	4.60	4.21	3.82	3.42	3.03	2.64
	12	5.21	4.87	4.45	4.04	3.62	3.21	—
	15	5.71	5.27	4.82	4.37	3.92	3.47	—
	20	6.55	5.93	5.42	4.91	4.41	3.90	—

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Rated cooling capacity and power input

Rated condition 1 LWT=7°C dT=5deg TO=35°C	Capacity	kW	10.0
	Power input	kW	3.33
	EER	W/W	3.00
	Rated water flow rate	ℓ/min	28.90

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature (deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	11.21	12.05	12.89	13.38	14.12
	27	10.67	11.45	12.22	12.74	13.51
	30	10.44	11.21	11.97	12.48	13.25
	35	10.06	10.86	11.66	12.12	12.81
	40	8.75	9.23	9.70	10.01	10.49
	43	7.97	8.57	9.16	9.14	9.09

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	2.07	2.07	2.08	2.07	2.07
	27	2.63	2.65	2.67	2.68	2.70
	30	2.87	2.89	2.92	2.94	2.97
	35	3.27	3.31	3.36	3.38	3.42
	40	3.49	3.40	3.31	3.25	3.16
	43	3.62	3.60	3.58	3.35	3.01

EER		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	5.42	5.81	6.20	6.45	6.83
	27	4.33	4.62	4.91	5.10	5.40
	30	3.86	4.11	4.36	4.53	4.78
	35	3.08	3.27	3.47	3.58	3.75
	40	2.53	2.74	2.95	3.09	3.30
	43	2.20	2.38	2.56	2.75	3.02

* Cooling capacity and power input are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Rated heating capacity and power input

Rated condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	8.0
	Power input	kW	1.71
	COP	W/W	4.68
	Rated water flow rate	ℓ/min	23.20

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)

LWT : Leaving water temperature (°C)

dT : Delta temperature(deg)

Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	4.71	4.62	4.19	—	—	—	—
	-20	6.48	6.20	5.92	5.65	—	—	—
	-15	8.24	7.77	7.30	6.83	5.78	—	—
	-7	9.64	9.46	9.27	9.08	8.65	8.22	—
	-2	11.13	10.94	10.75	10.54	10.23	9.92	8.56
	2	12.87	12.13	11.92	11.71	11.50	11.29	9.73
	7	15.05	14.68	17.19	16.32	15.68	15.04	13.76
	10	19.58	18.75	17.92	17.09	16.26	15.44	14.61
	12	20.44	19.49	18.54	17.59	16.64	15.70	—
	15	22.05	21.17	20.30	19.43	18.56	17.68	—
	20	24.73	23.98	23.24	22.49	21.74	21.00	—

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	2.85	2.97	3.09	—	—	—	—
	-20	3.07	3.19	3.29	3.41	—	—	—
	-15	3.22	3.33	3.47	3.65	3.17	—	—
	-7	3.12	3.35	3.64	4.00	4.26	4.59	—
	-2	3.18	3.40	3.68	4.00	4.34	4.77	4.98
	2	3.36	3.44	3.70	4.01	4.39	4.88	5.10
	7	3.84	3.98	4.58	4.60	4.91	5.30	5.63
	10	4.36	4.50	4.66	4.85	5.08	5.35	5.70
	12	4.30	4.44	4.61	4.82	5.07	5.39	—
	15	4.01	4.20	4.42	4.70	5.04	5.48	—
	20	3.67	3.90	4.19	4.55	5.00	5.61	—

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	1.65	1.55	1.36	—	—	—	—
	-20	2.11	1.94	1.80	1.66	—	—	—
	-15	2.56	2.33	2.10	1.87	1.82	—	—
	-7	3.09	2.82	2.55	2.27	2.03	1.79	—
	-2	3.50	3.21	2.92	2.63	2.36	2.08	1.72
	2	3.83	3.53	3.23	2.92	2.62	2.31	1.91
	7	3.92	3.69	3.75	3.55	3.19	2.84	2.44
	10	4.49	4.17	3.85	3.52	3.20	2.88	2.56
	12	4.76	4.39	4.02	3.65	3.28	2.91	—
	15	5.50	5.05	4.59	4.13	3.68	3.22	—
	20	6.74	6.14	5.54	4.94	4.34	3.75	—

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%

LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	6.81	6.18	5.79	—	—	—	—
	-20	7.78	7.18	6.58	5.98	—	—	—
	-15	8.69	8.18	7.67	7.16	6.47	—	—
	-7	11.54	10.82	10.44	10.40	9.90	9.41	—
	-2	14.00	13.47	12.93	12.40	11.75	11.09	10.43
	2	15.90	15.58	14.79	14.01	13.22	12.43	12.35
	7	18.29	18.06	17.19	16.32	15.68	15.04	13.76
	10	19.58	18.75	17.92	17.09	16.26	15.44	14.61
	12	20.44	19.49	18.54	17.59	16.64	15.70	—
	15	22.05	21.17	20.30	19.43	18.56	17.68	—
	20	24.73	23.98	23.24	22.49	21.74	21.00	—

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	3.47	3.43	3.57	—	—	—	—
	-20	3.48	3.52	3.56	3.61	—	—	—
	-15	3.55	3.59	3.64	3.69	3.26	—	—
	-7	3.60	3.72	3.94	4.26	4.50	4.87	—
	-2	3.70	3.89	4.11	4.38	4.67	5.05	5.56
	2	4.06	3.98	4.19	4.45	4.78	5.22	5.50
	7	4.48	4.56	4.58	4.60	4.91	5.30	5.63
	10	4.36	4.50	4.66	4.85	5.08	5.35	5.70
	12	4.30	4.44	4.61	4.82	5.07	5.39	—
	15	4.01	4.20	4.42	4.70	5.04	5.48	—
	20	3.67	3.90	4.19	4.55	5.00	5.61	—

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	1.96	1.80	1.62	—	—	—	—
	-20	2.23	2.04	1.85	1.66	—	—	—
	-15	2.45	2.28	2.11	1.94	1.98	—	—
	-7	3.20	2.91	2.65	2.44	2.20	1.93	—
	-2	3.78	3.47	3.15	2.83	2.51	2.19	1.88
	2	3.92	3.91	3.53	3.15	2.76	2.38	2.24
	7	4.08	3.96	3.75	3.55	3.19	2.84	2.44
	10	4.49	4.17	3.85	3.52	3.20	2.88	2.56
	12	4.76	4.39	4.02	3.65	3.28	2.91	—
	15	5.50	5.05	4.59	4.13	3.68	3.22	—
	20	6.74	6.14	5.54	4.94	4.34	3.75	—

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Rated cooling capacity and power input

Rated condition LWT=7°C dT=5deg TO=35°C	Capacity	kW	6.00
	Power input	kW	1.64
	COP	W/W	3.66
	Rated water flow rate	ℓ/min	17.20

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)

LWT : Leaving water temperature (°C)

dT : Delta temperature(deg)

Return water temperature -Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	7.82	8.41	8.99	8.99	8.99
	27	7.53	8.01	8.50	8.82	9.30
	30	7.41	7.96	8.51	8.88	9.43
	35	7.20	7.91	8.62	9.03	9.65
	40	6.50	7.14	7.77	8.20	8.84
	43	6.08	6.69	7.31	7.72	8.35

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	1.32	1.31	1.30	1.30	1.30
	27	1.69	1.69	1.69	1.69	1.69
	30	1.85	1.85	1.85	1.85	1.85
	35	2.11	2.12	2.13	2.13	2.12
	40	2.34	2.35	2.37	2.38	2.40
	43	2.47	2.50	2.53	2.55	2.56

COP		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	5.94	6.42	6.90	6.90	6.90
	27	4.46	4.75	5.04	5.23	5.52
	30	4.01	4.30	4.60	4.80	5.10
	35	3.40	3.73	4.05	4.25	4.54
	40	2.78	3.03	3.28	3.44	3.68
	43	2.46	2.68	2.88	3.03	3.26

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Rated heating capacity and power input

Rated condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	11.20
	Power input	kW	2.34
	COP	W/W	4.80
	Rated water flow rate	ℓ/min	32.00

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature(deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	6.10	5.70	5.20	—	—	—	—
	-20	7.68	7.22	6.60	5.98	—	—	—
	-15	9.27	8.75	8.23	7.72	7.18	—	—
	-7	11.02	10.59	10.16	10.02	9.87	9.05	—
	-2	11.98	11.74	11.49	11.25	11.01	10.76	10.52
	2	13.07	12.88	12.70	12.51	12.32	12.13	11.94
	7	14.44	14.95	17.43	16.85	16.27	15.70	13.46
	10	21.46	20.70	19.94	19.17	18.41	17.64	16.86
	12	23.38	22.49	21.61	20.72	19.84	18.93	—
	15	24.97	24.10	23.24	22.38	21.51	20.61	—
	20	27.61	26.78	25.96	25.13	24.30	23.42	—

Power input (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	3.24	3.29	3.34	—	—	—	—
	-20	3.67	3.74	3.69	3.64	—	—	—
	-15	3.86	3.95	4.09	4.18	4.28	—	—
	-7	3.91	4.08	4.27	4.62	5.05	5.18	—
	-2	3.90	4.17	4.30	4.61	4.98	5.45	6.03
	2	3.84	4.08	4.37	4.71	5.11	5.62	6.25
	7	3.78	4.10	4.88	5.39	5.79	6.30	6.36
	10	4.66	4.95	5.30	5.75	6.22	6.57	6.99
	12	4.96	5.23	5.56	5.97	6.49	6.73	—
	15	5.03	5.31	5.65	6.06	6.58	6.87	—
	20	5.13	5.42	5.77	6.19	6.72	7.06	—

COP		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	1.88	1.73	1.56	—	—	—	—
	-20	2.09	1.93	1.79	1.64	—	—	—
	-15	2.40	2.22	2.02	1.84	1.68	—	—
	-7	2.82	2.59	2.38	2.17	1.96	1.75	—
	-2	3.07	2.82	2.67	2.44	2.21	1.98	1.74
	2	3.41	3.16	2.91	2.66	2.41	2.16	1.91
	7	3.82	3.65	3.57	3.13	2.81	2.49	2.12
	10	4.61	4.18	3.76	3.33	2.96	2.69	2.41
	12	4.71	4.30	3.88	3.47	3.06	2.81	—
	15	4.96	4.54	4.12	3.69	3.27	3.00	—
	20	5.39	4.94	4.50	4.06	3.62	3.32	—

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%

LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	7.63	7.00	6.59	—	—	—	—
	-20	8.29	8.13	7.97	7.80	—	—	—
	-15	9.59	9.26	8.92	8.59	8.25	—	—
	-7	11.97	11.63	11.00	10.52	10.03	10.93	—
	-2	14.74	14.32	13.90	13.48	13.07	12.65	12.23
	2	17.10	16.48	15.86	15.25	14.63	14.02	13.40
	7	18.58	18.00	17.43	16.85	16.27	15.70	13.46
	10	21.46	20.70	19.94	19.17	18.41	17.64	16.86
	12	23.38	22.49	21.61	20.72	19.84	18.93	—
	15	24.97	24.10	23.24	22.38	21.51	20.61	—
	20	27.61	26.78	25.96	25.13	24.30	23.42	—

Power input (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	3.71	3.81	3.91	—	—	—	—
	-20	3.67	4.02	4.47	5.06	—	—	—
	-15	3.92	4.10	4.30	4.55	4.85	—	—
	-7	4.06	4.23	4.32	4.48	4.68	5.62	—
	-2	4.24	4.55	4.78	5.15	5.60	6.18	6.95
	2	4.50	4.76	5.07	5.45	5.94	6.59	7.47
	7	4.17	4.49	4.88	5.39	5.79	6.30	6.36
	10	4.66	4.95	5.30	5.75	6.22	6.57	6.99
	12	4.96	5.23	5.56	5.97	6.49	6.73	—
	15	5.03	5.31	5.65	6.06	6.58	6.87	—
	20	5.13	5.42	5.77	6.19	6.72	7.06	—

COP		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	2.06	1.84	1.68		—	—	—
	-20	2.26	2.02	1.78	1.54	—	—	—
	-15	2.45	2.26	2.07	1.89	1.70	—	—
	-7	2.95	2.75	2.55	2.35	2.15	1.94	—
	-2	3.48	3.15	2.91	2.62	2.33	2.05	1.76
	2	3.80	3.46	3.13	2.80	2.46	2.13	1.79
	7	4.46	4.01	3.57	3.13	2.81	2.49	2.12
	10	4.61	4.18	3.76	3.33	2.96	2.69	2.41
	12	4.71	4.30	3.88	3.47	3.06	2.81	—
	15	4.96	4.54	4.12	3.69	3.27	3.00	—
	20	5.39	4.94	4.50	4.06	3.62	3.32	—

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Rated cooling capacity and power input

Rated condition LWT=7°C dT=5deg TO=35°C	Capacity	kW	10.00
	Power input	kW	3.33
	COP	W/W	3.00
	Rated water flow rate	ℓ/min	28.90

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature(deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	11.21	12.05	12.89	13.38	14.12
	27	10.67	11.45	12.22	12.74	13.51
	30	10.44	11.21	11.97	12.48	13.25
	35	10.06	10.86	11.66	12.12	12.81
	40	8.75	9.57	10.39	10.93	11.75
	43	7.97	8.83	9.69	10.26	11.12

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	2.09	2.09	2.10	2.10	2.09
	27	2.65	2.67	2.69	2.70	2.72
	30	2.90	2.92	2.95	2.97	3.00
	35	3.30	3.35	3.39	3.42	3.45
	40	3.52	3.60	3.67	3.71	3.76
	43	3.66	3.77	3.87	3.93	4.02

COP		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	5.37	5.75	6.14	6.39	6.77
	27	4.02	4.28	4.54	4.71	4.96
	30	3.60	3.83	4.06	4.20	4.42
	35	3.05	3.24	3.44	3.55	3.71
	40	2.48	2.66	2.83	2.95	3.12
	43	2.18	2.34	2.50	2.61	2.77

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Heating capacity and input specifications

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Rated heating capacity and power input

Rated condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	14.00
	Power input	kW	3.16
	COP	W/W	4.44
	Rated water flow rate	ℓ/min	40.07

* Rated heating capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature(deg)
Leaving water temperature - Return water temperature

Average heating capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	6.83	6.38	5.83	—	—	—	—
	-20	8.11	7.65	6.98	6.31	—	—	—
	-15	9.39	8.92	8.44	7.96	7.47	—	—
	-7	12.60	12.21	11.82	11.43	10.28	9.83	—
	-2	14.11	13.54	12.97	12.40	11.83	11.25	10.68
	2	15.16	14.60	14.05	13.50	12.95	12.39	10.96
	7	16.46	15.14	20.07	19.04	18.01	16.98	13.46
	10	24.55	23.55	22.54	21.53	20.53	18.83	17.13
	12	26.17	25.18	24.19	23.20	22.21	20.06	—
	15	28.02	26.98	25.95	24.91	23.88	21.65	—
	20	31.09	29.98	28.88	27.77	26.66	24.29	—

Power input (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	3.67	3.91	3.78	—	—	—	—
	-20	4.02	4.19	4.28	4.40	—	—	—
	-15	4.33	4.41	4.51	4.62	4.63	—	—
	-7	4.61	4.83	5.08	5.38	5.29	5.77	—
	-2	4.66	4.84	5.05	5.30	5.60	5.98	6.46
	2	4.65	4.85	5.08	5.35	5.69	6.11	6.15
	7	4.63	4.60	5.94	6.28	6.55	6.89	6.36
	10	5.55	5.82	6.16	6.57	7.04	7.08	7.14
	12	5.61	5.92	6.29	6.75	7.33	7.20	—
	15	5.70	6.00	6.37	6.82	7.38	7.28	—
	20	5.83	6.13	6.48	6.91	7.45	7.40	—

COP		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	1.86	1.63	1.54	—	—	—	—
	-20	2.02	1.83	1.63	1.43	—	—	—
	-15	2.17	2.02	1.87	1.72	1.61	—	—
	-7	2.73	2.53	2.33	2.13	1.94	1.70	—
	-2	3.03	2.80	2.57	2.34	2.11	1.88	1.65
	2	3.26	3.01	2.77	2.52	2.27	2.03	1.78
	7	3.55	3.29	3.38	3.03	2.75	2.47	2.12
	10	4.43	4.04	3.66	3.28	2.92	2.66	2.40
	12	4.66	4.26	3.85	3.44	3.03	2.79	—
	15	4.91	4.49	4.08	3.66	3.24	2.97	—
	20	5.33	4.89	4.46	4.02	3.58	3.28	—

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%

LWT : Leaving water temperature (°C)

Heating peak capacity and power input

Capacity (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	8.54	7.84	7.37	—	—	—	—
	-20	9.88	9.27	8.66	8.05	—	—	—
	-15	11.86	10.70	9.54	8.39	7.23	—	—
	-7	13.71	13.44	13.17	12.90	12.64	12.37	—
	-2	16.77	16.07	15.37	14.68	13.98	13.28	12.59
	2	19.21	18.17	17.13	16.09	15.05	14.02	12.98
	7	22.13	21.10	20.07	19.04	18.01	16.98	13.46
	10	24.55	23.55	22.54	21.53	20.53	18.83	17.13
	12	26.17	25.18	24.19	23.20	22.21	20.06	—
	15	28.02	26.98	25.95	24.91	23.88	21.65	—
	20	31.09	29.98	28.88	27.77	26.66	24.29	—

Power input (kW)		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	4.20	4.44	4.42	—	—	—	—
	-20	4.33	4.68	5.16	5.84	—	—	—
	-15	4.91	4.87	4.82	4.76	4.69	—	—
	-7	4.71	5.19	5.23	5.56	5.95	6.33	—
	-2	5.29	5.46	5.65	5.88	6.15	6.48	6.89
	2	5.49	5.63	5.80	6.01	6.27	6.59	7.01
	7	5.19	5.67	5.94	6.28	6.55	6.89	6.36
	10	5.55	5.82	6.16	6.57	7.04	7.08	7.14
	12	5.61	5.92	6.29	6.75	7.33	7.20	—
	15	5.70	6.00	6.37	6.82	7.38	7.28	—
	20	5.83	6.13	6.48	6.91	7.45	7.40	—

COP		LWT (°C)						
		30	35	40	45	50	55	60
TO (°C)	-25	2.04	1.76	1.67	—	—	—	—
	-20	2.28	1.98	1.68	1.38	—	—	—
	-15	2.41	2.20	1.98	1.76	1.54	—	—
	-7	2.91	2.59	2.52	2.32	2.12	1.95	—
	-2	3.17	2.94	2.72	2.50	2.27	2.05	1.83
	2	3.50	3.23	2.95	2.68	2.40	2.13	1.85
	7	4.26	3.72	3.38	3.03	2.75	2.47	2.12
	10	4.43	4.04	3.66	3.28	2.92	2.66	2.40
	12	4.66	4.26	3.85	3.44	3.03	2.79	—
	15	4.91	4.49	4.08	3.66	3.24	2.97	—
	20	5.33	4.89	4.46	4.02	3.58	3.28	—

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Cooling capacity and input specifications

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Rated cooling capacity and power input

Rated condition LWT=35°C dT=5deg TO=7°C	Capacity	kW	11.00
	Power input	kW	3.90
	COP	W/W	2.82
	Rated water flow rate	ℓ/min	31.50

* Rated cooling capacity and power input are the data at rated compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)
dT : Delta temperature(deg)
Return water temperature - Leaving water temperature

Cooling capacity and power input

Capacity (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	12.56	13.58	14.59	15.27	16.29
	27	13.69	14.49	15.30	15.83	16.63
	30	12.76	13.63	14.49	15.07	15.94
	35	11.22	12.19	13.16	13.81	14.78
	40	9.68	10.75	11.82	12.54	13.62
	43	8.75	9.89	11.02	11.78	12.92

Power input (kW)		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	2.82	2.87	2.92	2.94	2.98
	27	3.91	3.90	4.01	4.08	4.18
	30	4.01	4.03	4.14	4.21	4.31
	35	4.21	4.33	4.43	4.50	4.58
	40	4.51	4.65	4.78	4.85	4.95
	43	4.77	4.93	5.06	5.14	5.25

COP		LWT (°C)				
		7	10	13	15	18
TO (°C)	20	4.45	4.73	5.01	5.19	5.47
	27	3.50	3.72	3.82	3.88	3.98
	30	3.19	3.38	3.50	3.58	3.70
	35	2.67	2.82	2.97	3.07	3.22
	40	2.15	2.31	2.47	2.58	2.75
	43	1.83	2.01	2.18	2.29	2.46

* Cooling capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

4-6. Part Load Tables

Specifications part load heating capacity and input(peak)LWT(°C) = 35°C

Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	1.94	1.75	1.55	1.36	1.16	0.97	0.78	0.58	0.55	0.55
	-15	3.61	3.25	2.89	2.53	2.17	1.81	1.44	1.08	1.02	1.02
	-7	4.48	4.03	3.58	3.14	2.69	2.24	1.79	1.34	1.26	1.26
	-2	5.43	4.89	4.35	3.80	3.26	2.72	2.17	1.63	1.53	1.53
	2	6.19	5.57	4.95	4.33	3.72	3.10	2.48	1.86	1.31	1.31
	7	6.83	6.14	5.46	4.78	4.10	3.41	2.73	2.05	1.37	1.03
	10	7.40	6.66	5.92	5.18	4.44	3.70	2.96	2.22	1.48	1.16
	12	7.78	7.01	6.23	5.45	4.67	3.89	3.11	2.34	1.56	1.25
	15	8.36	7.52	6.69	5.85	5.02	4.18	3.34	2.51	1.67	1.38
	20	9.32	8.39	7.45	6.52	5.59	4.66	3.73	2.80	1.86	1.60

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	0.85	0.77	0.68	0.60	0.51	0.43	0.34	0.29	0.29	0.29
	-15	1.35	1.22	1.08	0.95	0.81	0.68	0.54	0.46	0.46	0.46
	-7	1.43	1.29	1.14	1.00	0.86	0.72	0.57	0.49	0.49	0.49
	-2	1.47	1.32	1.18	1.03	0.88	0.73	0.59	0.50	0.50	0.50
	2	1.55	1.40	1.24	1.09	0.93	0.78	0.62	0.47	0.40	0.40
	7	1.56	1.40	1.24	1.09	0.93	0.78	0.62	0.47	0.31	0.28
	10	1.55	1.40	1.24	1.09	0.93	0.78	0.62	0.47	0.31	0.27
	12	1.55	1.40	1.24	1.09	0.93	0.78	0.62	0.47	0.31	0.26
	15	1.55	1.39	1.24	1.08	0.93	0.77	0.62	0.46	0.31	0.24
	20	1.54	1.39	1.23	1.08	0.93	0.77	0.62	0.46	0.31	0.22

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.00	1.88	1.88
	-15	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.34	2.20	2.20
	-7	3.13	3.13	3.13	3.13	3.13	3.13	3.13	2.74	2.58	2.58
	-2	3.69	3.70	3.70	3.70	3.70	3.70	3.70	3.24	3.05	3.05
	2	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.24	3.24
	7	4.38	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	3.67
	10	4.77	4.77	4.77	4.77	4.77	4.77	4.77	4.77	4.77	4.35
	12	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	5.02	4.85
	15	5.39	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.65
	20	6.05	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	7.22

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input(peak)LWT(°C) = 45°C

Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	4.37	3.93	3.49	3.06	2.62	2.18	1.75	1.31	1.11	1.11
	-2	5.10	4.59	4.08	3.57	3.06	2.55	2.04	1.53	1.30	1.30
	2	5.68	5.12	4.55	3.98	3.41	2.84	2.27	1.71	1.44	1.44
	7	6.42	5.77	5.13	4.49	3.85	3.21	2.57	1.92	1.63	1.63
	10	6.89	6.20	5.51	4.82	4.13	3.44	2.76	2.07	1.95	1.95
	12	7.21	6.48	5.76	5.04	4.32	3.60	2.88	2.16	2.16	2.16
	15	7.68	6.91	6.14	5.38	4.61	3.84	3.07	2.48	2.48	2.48
	20	8.70	7.83	6.96	6.09	5.22	4.35	3.48	3.02	3.02	3.02

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	1.74	1.56	1.39	1.22	1.04	0.87	0.69	0.58	0.58	0.58
	-2	1.78	1.61	1.43	1.25	1.07	0.89	0.71	0.54	0.36	0.59
	2	1.82	1.64	1.46	1.28	1.09	0.91	0.73	0.60	0.60	0.60
	7	1.87	1.68	1.50	1.31	1.12	0.93	0.75	0.62	0.62	0.62
	10	1.91	1.72	1.53	1.34	1.15	0.96	0.77	0.61	0.61	0.61
	12	1.94	1.75	1.55	1.36	1.17	0.97	0.78	0.60	0.60	0.60
	15	1.99	1.79	1.59	1.39	1.19	0.99	0.79	0.60	0.59	0.59
	20	1.99	1.79	1.59	1.39	1.19	0.99	0.80	0.60	0.58	0.58

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.27	1.93	1.93
	-2	2.87	2.86	2.86	2.86	2.86	2.86	2.86	2.86	3.63	2.19
	2	3.12	3.12	3.12	3.12	3.12	3.12	3.12	2.82	2.39	2.39
	7	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.10	2.63	2.63
	10	3.61	3.60	3.60	3.60	3.60	3.60	3.60	3.39	3.20	3.20
	12	3.72	3.71	3.71	3.71	3.71	3.71	3.71	3.58	3.59	3.59
	15	3.86	3.87	3.87	3.87	3.87	3.87	3.87	4.17	4.19	4.19
	20	4.37	4.37	4.37	4.37	4.37	4.37	4.37	5.05	5.24	5.24

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input(peak)LWT(°C) = 55°C

Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	4.77	—	—	—	—	—	—	—	—	—
	2	5.18	4.60	—	—	—	—	—	—	—	—
	7	6.25	5.62	5.00	4.62	4.62	4.62	4.62	4.62	4.62	4.62
	10	6.22	5.60	4.97	4.60	4.60	4.60	4.60	4.60	4.60	4.60
	12	6.60	5.94	5.28	4.88	4.88	4.88	4.88	4.88	4.88	4.88
	15	6.98	6.28	5.58	4.94	4.94	4.94	4.94	4.94	4.94	4.94
	20	7.39	6.66	5.92	5.18	4.97	4.97	4.97	4.97	4.97	4.97

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	2.10	—	—	—	—	—	—	—	—	—
	2	2.09	2.05	—	—	—	—	—	—	—	—
	7	2.21	1.99	1.77	1.63	1.63	1.63	1.63	1.63	1.63	1.63
	10	2.22	1.99	1.77	1.63	1.63	1.63	1.63	1.63	1.63	1.63
	12	2.22	2.00	1.78	1.64	1.64	1.64	1.64	1.64	1.64	1.64
	15	2.22	2.00	1.78	1.56	1.51	1.51	1.51	1.51	1.51	1.51
	20	2.05	1.85	1.64	1.44	1.30	1.30	1.30	1.30	1.30	1.30

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	2.27	—	—	—	—	—	—	—	—	—
	2	2.48	2.24	—	—	—	—	—	—	—	—
	7	2.83	2.83	2.83	2.84	2.84	2.84	2.84	2.84	2.84	2.84
	10	2.80	2.81	2.81	2.82	2.82	2.82	2.82	2.82	2.82	2.82
	12	2.97	2.97	2.97	2.98	2.98	2.98	2.98	2.98	2.98	2.98
	15	3.14	3.14	3.14	3.17	3.26	3.26	3.26	3.26	3.26	3.26
	20	3.60	3.60	3.60	3.60	3.82	3.82	3.82	3.82	3.82	3.82

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 60.6Hz

Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	1.38	—	—
	-15	2.57	—	—
	-7	3.19	3.16	—
	-2	3.87	3.69	—
	2	4.41	4.12	—
	7	4.86	4.65	—
	10	5.27	4.99	—
	12	5.54	5.22	4.95
	15	5.95	5.56	5.29
	20	6.63	6.30	5.87

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	0.59	—	—
	-15	0.93	—	—
	-7	0.99	1.18	—
	-2	1.01	1.21	—
	2	1.07	1.24	—
	7	1.07	1.27	—
	10	1.07	1.30	—
	12	1.07	1.32	1.64
	15	1.07	1.35	1.65
	20	1.06	1.35	1.65

COP		LWT (°C)		
		35	45	55
TO (°C)	-20	2.34	—	—
	-15	2.76	—	—
	-7	3.22	2.68	—
	-2	3.83	3.05	—
	2	4.12	3.32	—
	7	4.54	3.66	—
	10	4.93	3.84	—
	12	5.18	3.95	3.02
	15	5.56	4.12	3.21
	20	6.25	4.67	3.56

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.98	5.39	4.79	4.19	3.59	2.99	2.39	1.80	1.20	1.08
	27	5.61	5.05	4.49	3.93	3.36	2.80	2.24	1.68	1.12	1.11
	30	5.45	4.90	4.36	3.81	3.27	2.72	2.18	1.63	1.12	1.12
	35	5.18	4.66	4.14	3.62	3.11	2.59	2.07	1.55	1.04	0.90
	40	3.83	3.45	3.06	2.68	2.30	1.91	1.53	1.15	0.77	0.67
	43	3.27	2.94	2.62	2.29	1.96	1.63	1.31	0.98	0.65	0.54

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.43	1.28	1.14	1.00	0.86	0.71	0.57	0.43	0.29	0.14
	27	1.59	1.43	1.27	1.11	0.95	0.79	0.64	0.48	0.32	0.25
	30	1.66	1.49	1.33	1.16	1.00	0.83	0.66	0.50	0.33	0.30
	35	1.78	1.60	1.42	1.24	1.07	0.89	0.71	0.53	0.36	0.36
	40	1.49	1.34	1.19	1.04	0.89	0.75	0.60	0.45	0.42	0.42
	43	1.44	1.30	1.16	1.01	0.87	0.72	0.58	0.46	0.46	0.46

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	7.47
	27	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	4.39
	30	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.37	3.73
	35	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.49
	40	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	1.82	1.60
	43	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.15	1.43	1.18

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	7.09	6.38	5.67	4.96	4.25	3.54	2.84	2.13	1.42	0.71
	27	6.53	5.88	5.23	4.57	3.92	3.27	2.61	1.96	1.31	1.20
	30	6.29	5.66	5.03	4.41	3.78	3.15	2.52	1.89	1.49	1.49
	35	5.89	5.31	4.72	4.13	3.54	2.95	2.36	1.77	1.26	1.26
	40	4.55	4.10	3.64	3.19	2.73	2.28	1.82	1.37	1.03	1.03
	43	4.13	3.72	3.30	2.89	2.48	2.07	1.65	1.24	0.87	0.87

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.52	1.37	1.22	1.06	0.91	0.76	0.61	0.46	0.30	0.15
	27	1.66	1.50	1.33	1.16	1.00	0.83	0.66	0.50	0.33	0.22
	30	1.72	1.55	1.38	1.21	1.03	0.86	0.69	0.52	0.34	0.27
	35	1.82	1.64	1.46	1.28	1.09	0.91	0.73	0.55	0.34	0.34
	40	1.46	1.32	1.17	1.03	0.88	0.73	0.59	0.44	0.40	0.40
	43	1.44	1.30	1.15	1.01	0.86	0.72	0.58	0.44	0.44	0.44

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66
	27	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93	3.93	5.57
	30	3.66	3.65	3.65	3.65	3.65	3.65	3.65	3.65	4.32	5.50
	35	3.24	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.74	3.74
	40	3.12	3.11	3.11	3.11	3.11	3.11	3.11	3.11	2.56	2.56
	43	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.80	1.96	1.96

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	7.55	6.79	6.04	5.28	4.53	3.77	3.02	2.26	1.51	1.03
	27	7.06	6.35	5.64	4.94	4.23	3.53	2.82	2.12	1.51	1.51
	30	6.84	6.16	5.48	4.79	4.11	3.42	2.74	2.05	1.72	1.72
	35	6.49	5.84	5.19	4.54	3.90	3.25	2.60	1.95	1.51	1.51
	40	5.15	4.64	4.12	3.61	3.09	2.58	2.06	1.55	1.31	1.31
	43	4.78	4.30	3.82	3.34	2.87	2.39	1.91	1.43	1.18	1.18

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.56	1.40	1.25	1.09	0.94	0.78	0.62	0.47	0.31	0.16
	27	1.70	1.53	1.36	1.19	1.02	0.85	0.68	0.51	0.34	0.18
	30	1.76	1.58	1.41	1.23	1.06	0.88	0.70	0.53	0.35	0.24
	35	1.86	1.67	1.49	1.30	1.12	0.93	0.74	0.56	0.37	0.31
	40	1.44	1.30	1.15	1.01	0.87	0.72	0.58	0.43	0.38	0.38
	43	1.48	1.33	1.18	1.03	0.89	0.74	0.59	0.44	0.42	0.42

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	6.58
	27	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.44	8.16
	30	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	4.87	7.23
	35	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	4.06	4.89
	40	3.58	3.57	3.57	3.57	3.57	3.57	3.57	3.57	3.43	3.43
	43	3.23	3.23	3.23	3.23	3.23	3.23	3.23	3.23	2.79	2.79

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 50.4Hz

Outdoor unit HWS-455H-E
Hydro unit HWS-455XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	4.07	4.82	5.45
	27	3.71	4.49	5.14
	30	3.55	4.35	5.01
	35	3.29	4.11	4.79
	40	—	—	—
	43	—	—	—

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	0.70	0.68	0.67
	27	0.82	0.82	0.82
	30	0.88	0.88	0.89
	35	0.97	0.98	0.99
	40	—	—	—
	43	—	—	—

COP		LWT (°C)		
		7	13	18
TO (°C)	20	5.81	7.09	8.13
	27	4.52	5.48	6.27
	30	4.03	4.94	5.63
	35	3.39	4.19	4.84
	40	—	—	—
	43	—	—	—

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 35°C

Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	3.61	3.25	2.89	2.53	2.17	1.81	1.57	1.57	1.57	1.57
	-15	4.28	3.86	3.42	3.00	2.57	2.14	1.86	1.86	1.86	1.86
	-7	5.00	4.50	4.00	3.50	3.00	2.50	2.17	2.17	2.17	2.17
	-2	5.76	5.18	4.61	4.03	3.46	2.88	2.50	2.50	2.50	2.50
	2	6.37	5.74	5.09	4.46	3.82	3.19	2.55	2.22	2.22	2.22
	7	8.52	7.67	6.81	5.97	5.11	4.26	3.41	2.55	1.71	1.32
	10	9.01	8.11	7.21	6.31	5.41	4.51	3.61	2.71	1.80	1.39
	12	9.52	8.57	7.62	6.67	5.72	4.76	3.80	2.85	1.90	1.47
	15	10.01	9.01	8.01	7.01	6.00	5.00	4.00	3.00	2.00	1.55
	20	11.32	10.19	9.05	7.92	6.79	5.66	4.53	3.40	2.27	1.75

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	1.52	1.36	1.20	1.04	0.88	0.72	0.60	0.60	0.60	0.60
	-15	1.60	1.43	1.26	1.09	0.92	0.76	0.64	0.64	0.64	0.64
	-7	1.85	1.66	1.46	1.26	1.07	0.87	0.74	0.74	0.74	0.74
	-2	1.89	1.69	1.49	1.29	1.09	0.90	0.75	0.75	0.75	0.75
	2	1.91	1.71	1.51	1.31	1.11	0.90	0.69	0.59	0.59	0.59
	7	2.01	1.80	1.58	1.37	1.17	0.95	0.74	0.52	0.31	0.21
	10	1.97	1.77	1.56	1.35	1.14	0.93	0.72	0.52	0.30	0.20
	12	1.96	1.76	1.55	1.34	1.14	0.92	0.72	0.52	0.30	0.20
	15	1.94	1.74	1.53	1.33	1.12	0.91	0.71	0.51	0.30	0.20
	20	1.93	1.73	1.53	1.32	1.11	0.91	0.71	0.50	0.30	0.20

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.37	2.39	2.40	2.44	2.47	2.52	2.60	2.60	2.60	2.60
	-15	2.68	2.70	2.72	2.75	2.78	2.83	2.91	2.91	2.91	2.91
	-7	2.70	2.71	2.75	2.77	2.80	2.87	2.95	2.95	2.95	2.95
	-2	3.04	3.07	3.09	3.13	3.18	3.22	3.32	3.32	3.32	3.32
	2	3.34	3.36	3.38	3.42	3.46	3.53	3.67	3.78	3.78	3.78
	7	4.24	4.27	4.30	4.36	4.39	4.48	4.62	4.87	5.50	6.18
	10	4.57	4.58	4.63	4.67	4.75	4.83	5.02	5.25	5.99	6.80
	12	4.85	4.87	4.93	4.97	5.02	5.16	5.29	5.54	6.31	7.18
	15	5.16	5.18	5.24	5.29	5.34	5.49	5.63	5.90	6.72	7.68
	20	5.87	5.89	5.93	6.02	6.09	6.21	6.38	6.81	7.61	8.66

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 45°C

Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	4.13	3.71	3.30	2.89	2.47	2.07	1.75	1.75	1.75	1.75
	-7	4.82	4.34	3.86	3.37	2.89	2.42	2.05	2.05	2.05	2.05
	-2	5.63	5.07	4.50	3.94	3.37	2.81	2.39	2.39	2.39	2.39
	2	6.34	5.71	5.08	4.43	3.80	3.17	2.54	2.15	2.15	2.15
	7	8.13	7.32	6.50	5.69	4.87	4.06	3.25	2.75	2.75	2.75
	10	8.50	7.65	6.79	5.95	5.09	4.25	3.40	2.87	2.87	2.87
	12	8.99	8.09	7.19	6.30	5.39	4.50	3.60	3.04	3.04	3.04
	15	9.46	8.51	7.56	6.62	5.68	4.73	3.78	3.20	3.20	3.20
	20	10.75	9.67	8.60	7.52	6.45	5.37	4.30	3.64	3.64	3.64

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	2.12	1.90	1.69	1.47	1.25	1.04	0.87	0.87	0.87	0.87
	-7	2.45	2.20	1.96	1.71	1.45	1.20	1.01	1.01	1.01	1.01
	-2	2.51	2.26	2.00	1.75	1.49	1.24	1.04	1.04	1.04	1.04
	2	2.53	2.28	2.02	1.76	1.50	1.25	0.98	0.83	0.83	0.83
	7	2.42	2.17	1.93	1.68	1.43	1.19	0.94	0.79	0.79	0.79
	10	2.38	2.13	1.89	1.65	1.40	1.17	0.92	0.78	0.78	0.78
	12	2.36	2.12	1.88	1.64	1.40	1.16	0.92	0.78	0.78	0.78
	15	2.43	2.18	1.94	1.69	1.44	1.19	0.95	0.80	0.80	0.80
	20	2.42	2.17	1.92	1.67	1.44	1.19	0.94	0.79	0.79	0.79

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	1.95	1.96	1.96	1.97	1.98	1.98	2.00	2.00	2.00	2.00
	-7	1.97	1.97	1.97	1.97	1.99	2.01	2.02	2.02	2.02	2.02
	-2	2.24	2.25	2.25	2.26	2.26	2.28	2.30	2.30	2.30	2.30
	2	2.50	2.50	2.52	2.52	2.53	2.54	2.58	2.60	2.60	2.60
	7	3.36	3.37	3.38	3.39	3.40	3.42	3.45	3.50	3.50	3.50
	10	3.58	3.59	3.59	3.61	3.63	3.64	3.69	3.70	3.70	3.70
	12	3.80	3.82	3.82	3.84	3.84	3.89	3.90	3.92	3.92	3.92
	15	3.88	3.90	3.90	3.92	3.93	3.97	3.98	4.01	4.01	4.01
	20	4.45	4.46	4.47	4.49	4.49	4.52	4.57	4.59	4.59	4.59

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 55°C

Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	5.43	4.89	4.34	3.80	3.26	2.98	2.98	2.98	2.98	2.98
	2	6.24	5.61	4.99	4.37	3.74	3.43	3.43	3.43	3.43	3.43
	7	7.70	6.92	6.16	5.39	4.62	4.23	4.23	4.23	4.23	4.23
	10	8.11	7.29	6.48	5.67	4.86	4.46	4.46	4.46	4.46	4.46
	12	8.67	7.80	6.94	6.07	5.20	4.77	4.77	4.77	4.77	4.77
	15	9.03	8.13	7.23	6.32	5.41	4.97	4.97	4.97	4.97	4.97
	20	10.22	9.20	8.17	7.16	6.14	5.62	5.62	5.62	5.62	5.62

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	3.10	2.80	2.50	2.20	1.91	1.75	1.75	1.75	1.75	1.75
	2	3.13	2.82	2.52	2.22	1.91	1.76	1.76	1.76	1.76	1.76
	7	2.81	2.54	2.27	1.99	1.73	1.59	1.59	1.59	1.59	1.59
	10	2.82	2.55	2.28	2.00	1.73	1.60	1.60	1.60	1.60	1.60
	12	2.83	2.56	2.28	2.01	1.74	1.60	1.60	1.60	1.60	1.60
	15	2.97	2.68	2.39	2.10	1.83	1.68	1.68	1.68	1.68	1.68
	20	3.00	2.71	2.42	2.14	1.84	1.69	1.69	1.69	1.69	1.69

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	1.75	1.74	1.74	1.73	1.71	1.71	1.71	1.71	1.71	1.71
	2	2.00	1.99	1.98	1.97	1.96	1.94	1.94	1.94	1.94	1.94
	7	2.74	2.73	2.71	2.70	2.67	2.66	2.66	2.66	2.66	2.66
	10	2.87	2.87	2.84	2.83	2.81	2.79	2.79	2.79	2.79	2.79
	12	3.06	3.05	3.05	3.02	3.00	2.99	2.99	2.99	2.99	2.99
	15	3.04	3.03	3.02	3.00	2.97	2.95	2.95	2.95	2.95	2.95
	20	3.41	3.39	3.37	3.35	3.34	3.32	3.32	3.32	3.32	3.32

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	2.08	—	—
	-15	2.47	2.36	—
	-7	2.89	2.75	—
	-2	3.33	3.21	2.99
	2	3.67	3.62	3.44
	7	4.92	4.64	4.24
	10	5.20	4.85	4.48
	12	5.49	5.13	4.79
	15	5.78	5.40	4.99
	20	6.53	6.14	5.64

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	0.84	—	—
	-15	0.88	1.19	—
	-7	1.02	1.38	—
	-2	1.05	1.41	1.76
	2	1.05	1.42	1.77
	7	1.11	1.36	1.60
	10	1.09	1.34	1.60
	12	1.09	1.33	1.61
	15	1.08	1.37	1.68
	20	1.07	1.36	1.70

COP		LWT (°C)		
		35	45	55
TO (°C)	-20	2.47	—	—
	-15	2.80	1.98	—
	-7	2.83	2.00	—
	-2	3.18	2.27	1.70
	2	3.48	2.54	1.94
	7	4.44	3.42	2.65
	10	4.78	3.63	2.80
	12	5.04	3.85	2.98
	15	5.37	3.93	2.97
	20	6.13	4.52	3.31

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	7.34	6.60	5.87	5.14	4.41	3.67	2.93	2.20	1.47	0.92
	27	7.18	6.46	5.75	5.02	4.31	3.59	2.90	2.90	2.90	2.90
	30	7.11	6.40	5.69	4.98	4.27	3.56	2.86	2.86	2.86	2.86
	35	7.00	6.30	5.60	4.90	4.20	3.50	2.82	2.82	2.82	2.82
	40	6.41	5.77	5.13	4.49	3.85	3.21	2.98	2.98	2.98	2.98
	43	5.39	4.85	4.32	3.77	3.23	2.70	2.51	2.51	2.51	2.51

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.65	1.50	1.34	1.20	1.04	0.89	0.73	0.58	0.43	0.32
	27	2.01	1.82	1.64	1.45	1.27	1.08	0.90	0.90	0.90	0.90
	30	2.16	1.96	1.76	1.56	1.37	1.16	0.97	0.97	0.97	0.97
	35	2.42	2.19	1.98	1.75	1.52	1.30	1.08	1.08	1.08	1.08
	40	2.62	2.38	2.13	1.89	1.65	1.41	1.32	1.32	1.32	1.32
	43	2.37	2.16	1.93	1.71	1.50	1.27	1.20	1.20	1.20	1.20

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.45	4.42	4.38	4.29	4.23	4.14	4.00	3.82	3.38	2.87
	27	3.57	3.54	3.51	3.46	3.40	3.32	3.24	3.24	3.24	3.24
	30	3.29	3.27	3.23	3.19	3.13	3.06	2.96	2.96	2.96	2.96
	35	2.89	2.87	2.83	2.80	2.76	2.70	2.62	2.62	2.62	2.62
	40	2.45	2.43	2.41	2.38	2.33	2.27	2.26	2.26	2.26	2.26
	43	2.27	2.25	2.24	2.20	2.16	2.12	2.09	2.09	2.09	2.09

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	8.49	7.64	6.79	5.94	5.10	4.25	3.39	2.54	2.28	2.28
	27	8.30	7.47	6.64	5.81	4.98	4.16	4.16	4.16	4.16	4.16
	30	8.23	7.41	6.58	5.76	4.94	4.12	4.12	4.12	4.12	4.12
	35	8.10	7.28	6.47	5.67	4.86	4.06	4.06	4.06	4.06	4.06
	40	7.42	6.67	5.93	5.20	4.45	4.10	4.10	4.10	4.10	4.10
	43	6.13	5.52	4.90	4.29	3.67	3.39	3.39	3.39	3.39	3.39

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.71	1.52	1.34	1.16	0.98	0.79	0.61	0.42	0.37	0.37
	27	2.08	1.86	1.63	1.41	1.19	0.96	0.96	0.96	0.96	0.96
	30	2.24	2.00	1.76	1.52	1.28	1.05	1.05	1.05	1.05	1.05
	35	2.51	2.23	1.97	1.70	1.43	1.16	1.16	1.16	1.16	1.16
	40	2.71	2.41	2.13	1.83	1.55	1.41	1.41	1.41	1.41	1.41
	43	2.38	2.13	1.86	1.61	1.35	1.24	1.24	1.24	1.24	1.24

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.97	5.02	5.08	5.11	5.21	5.36	5.59	6.03	6.16	6.16
	27	3.99	4.02	4.07	4.11	4.17	4.32	4.32	4.32	4.32	4.32
	30	3.67	3.70	3.73	3.78	3.84	3.94	3.94	3.94	3.94	3.94
	35	3.23	3.26	3.29	3.34	3.39	3.49	3.49	3.49	3.49	3.49
	40	2.74	2.77	2.79	2.84	2.88	2.91	2.91	2.91	2.91	2.91
	43	2.58	2.60	2.63	2.66	2.71	2.74	2.74	2.74	2.74	2.74

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	9.64	8.68	7.71	6.74	5.78	4.82	3.85	3.45	3.45	3.45
	27	9.43	8.49	7.54	6.60	5.66	5.30	5.30	5.30	5.30	5.30
	30	9.34	8.40	7.47	6.54	5.60	5.25	5.25	5.25	5.25	5.25
	35	9.19	8.27	7.35	6.44	5.52	5.17	5.17	5.17	5.17	5.17
	40	8.42	7.58	6.73	5.89	5.11	5.11	5.11	5.11	5.11	5.11
	43	6.85	6.16	5.48	4.79	4.16	4.16	4.16	4.16	4.16	4.16

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.77	1.63	1.41	1.19	0.98	0.75	0.53	0.44	0.44	0.44
	27	2.15	1.90	1.64	1.38	1.12	1.04	1.04	1.04	1.04	1.04
	30	2.32	2.04	1.77	1.49	1.21	1.11	1.11	1.11	1.11	1.11
	35	2.59	2.28	1.97	1.66	1.36	1.24	1.24	1.24	1.24	1.24
	40	2.80	2.47	2.13	1.80	1.49	1.49	1.49	1.49	1.49	1.49
	43	2.40	2.11	1.83	1.54	1.27	1.27	1.27	1.27	1.27	1.27

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.46	5.32	5.45	5.65	5.92	6.45	7.27	7.91	7.91	7.91
	27	4.38	4.47	4.59	4.79	5.03	5.12	5.12	5.12	5.12	5.12
	30	4.03	4.12	4.23	4.39	4.61	4.72	4.72	4.72	4.72	4.72
	35	3.55	3.63	3.73	3.87	4.04	4.18	4.18	4.18	4.18	4.18
	40	3.01	3.07	3.15	3.27	3.43	3.43	3.43	3.43	3.43	3.43
	43	2.85	2.92	3.00	3.11	3.26	3.26	3.26	3.26	3.26	3.26

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-805H-E
Hydro unit HWS-805XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	4.70	5.93	7.09
	27	4.60	5.80	6.94
	30	4.55	5.75	6.88
	35	4.48	5.66	6.76
	40	4.10	5.18	6.19
	43	3.45	4.28	5.04

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	1.10	1.15	1.27
	27	1.34	1.41	1.48
	30	1.45	1.51	1.59
	35	1.61	1.70	1.78
	40	1.74	1.83	1.92
	43	1.58	1.60	1.64

COP		LWT (°C)		
		7	13	18
TO (°C)	20	4.26	5.15	5.59
	27	3.42	4.11	4.70
	30	3.14	3.80	4.32
	35	2.78	3.34	3.81
	40	2.36	2.83	3.23
	43	2.19	2.67	3.07

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 35°C

Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.25	4.72	4.19	3.68	3.15	2.67	2.67	2.67	2.67	2.67
	-15	6.57	5.91	5.25	4.59	3.94	3.34	3.34	3.34	3.34	3.34
	-7	8.04	7.24	6.43	5.63	4.82	4.09	4.09	4.09	4.09	4.09
	-2	9.48	8.53	7.58	6.63	5.69	4.82	4.82	4.82	4.82	4.82
	2	10.10	9.09	8.08	7.07	6.06	5.05	4.54	4.54	4.54	4.54
	7	14.63	13.16	11.71	10.24	8.78	7.32	5.85	4.39	2.92	2.68
	10	15.51	13.95	12.41	10.86	9.30	7.76	6.21	4.65	3.10	2.84
	12	16.24	14.62	13.00	11.37	9.74	8.12	6.50	4.88	3.24	2.97
	15	17.20	15.48	13.76	12.04	10.32	8.60	6.88	5.16	3.44	3.15
	20	19.44	17.50	15.55	13.61	11.67	9.72	7.77	5.83	3.89	3.57

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.52	2.26	2.00	1.73	1.47	1.23	1.23	1.23	1.23	1.23
	-15	2.62	2.35	2.08	1.81	1.53	1.28	1.28	1.28	1.28	1.28
	-7	2.89	2.59	2.28	1.99	1.68	1.41	1.41	1.41	1.41	1.41
	-2	2.84	2.55	2.25	1.95	1.66	1.39	1.39	1.39	1.39	1.39
	2	2.80	2.51	2.22	1.93	1.64	1.34	1.20	1.20	1.20	1.20
	7	3.24	2.89	2.56	2.22	1.89	1.55	1.21	0.88	0.54	0.48
	10	3.22	2.89	2.54	2.21	1.87	1.54	1.21	0.87	0.54	0.48
	12	3.20	2.87	2.53	2.20	1.87	1.53	1.20	0.87	0.54	0.48
	15	3.16	2.83	2.50	2.17	1.84	1.51	1.19	0.86	0.52	0.48
	20	3.14	2.81	2.48	2.16	1.83	1.50	1.18	0.85	0.52	0.48

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.08	2.09	2.10	2.12	2.14	2.17	2.17	2.17	2.17	2.17
	-15	2.50	2.51	2.53	2.54	2.58	2.61	2.61	2.61	2.61	2.61
	-7	2.78	2.79	2.82	2.83	2.87	2.90	2.90	2.90	2.90	2.90
	-2	3.33	3.35	3.37	3.40	3.42	3.46	3.46	3.46	3.46	3.46
	2	3.60	3.62	3.65	3.67	3.70	3.77	3.79	3.79	3.79	3.79
	7	4.52	4.55	4.57	4.61	4.64	4.72	4.83	4.98	5.40	5.57
	10	4.82	4.84	4.88	4.90	4.97	5.03	5.12	5.34	5.73	5.91
	12	5.07	5.09	5.13	5.16	5.20	5.30	5.41	5.60	6.00	6.18
	15	5.45	5.47	5.49	5.55	5.61	5.68	5.79	5.99	6.56	6.63
	20	6.20	6.23	6.26	6.31	6.37	6.47	6.60	6.85	7.41	7.51

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 45°C

Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	4.94	4.45	3.95	3.46	2.97	2.49	2.49	2.49	2.49	2.49
	-15	6.19	5.58	4.95	4.34	3.71	3.12	3.12	3.12	3.12	3.12
	-7	7.58	6.83	6.07	5.30	4.55	3.81	3.81	3.81	3.81	3.81
	-2	8.94	8.04	7.15	6.26	5.37	4.50	4.50	4.50	4.50	4.50
	2	9.53	8.57	7.62	6.67	5.72	4.76	4.21	4.21	4.21	4.21
	7	13.62	12.26	10.89	9.53	8.17	6.81	6.02	6.02	6.02	6.02
	10	14.43	12.99	11.55	10.10	8.66	7.22	6.38	6.38	6.38	6.38
	12	15.12	13.60	12.09	10.59	9.07	7.56	6.68	6.68	6.68	6.68
	15	15.07	13.56	12.06	10.55	9.04	7.54	6.66	6.66	6.66	6.66
	20	17.03	15.33	13.63	11.93	10.22	8.52	7.53	7.53	7.53	7.53

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	3.31	2.97	2.64	2.31	1.97	1.63	1.63	1.63	1.63	1.63
	-15	3.44	3.10	2.74	2.40	2.05	1.70	1.70	1.70	1.70	1.70
	-7	3.79	3.40	3.02	2.63	2.25	1.87	1.87	1.87	1.87	1.87
	-2	3.73	3.35	2.98	2.60	2.23	1.85	1.85	1.85	1.85	1.85
	2	3.67	3.30	2.93	2.56	2.19	1.82	1.60	1.60	1.60	1.60
	7	3.76	3.38	3.00	2.63	2.24	1.86	1.63	1.63	1.63	1.63
	10	3.74	3.36	2.98	2.60	2.23	1.85	1.62	1.62	1.62	1.62
	12	3.73	3.35	2.97	2.60	2.22	1.84	1.61	1.61	1.61	1.61
	15	3.50	3.14	2.80	2.44	2.08	1.74	1.52	1.52	1.52	1.52
	20	3.48	3.13	2.77	2.43	2.07	1.72	1.51	1.51	1.51	1.51

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	1.49	1.50	1.50	1.50	1.50	1.52	1.52	1.52	1.52	1.52
	-15	1.80	1.80	1.80	1.81	1.81	1.84	1.84	1.84	1.84	1.84
	-7	2.00	2.00	2.01	2.01	2.02	2.03	2.03	2.03	2.03	2.03
	-2	2.40	2.40	2.40	2.41	2.41	2.44	2.44	2.44	2.44	2.44
	2	2.59	2.59	2.60	2.60	2.61	2.62	2.64	2.64	2.64	2.64
	7	3.62	3.62	3.63	3.63	3.65	3.66	3.70	3.70	3.70	3.70
	10	3.86	3.87	3.87	3.88	3.89	3.90	3.95	3.95	3.95	3.95
	12	4.06	4.06	4.07	4.07	4.08	4.10	4.15	4.15	4.15	4.15
	15	4.31	4.32	4.31	4.32	4.34	4.34	4.39	4.39	4.39	4.39
	20	4.90	4.90	4.91	4.91	4.94	4.94	5.00	5.00	5.00	5.00

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 55°C

Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	7.62	6.86	6.10	5.34	4.57	4.15	4.15	4.15	4.15	4.15
	2	8.12	7.31	6.50	5.68	4.87	4.43	4.43	4.43	4.43	4.43
	7	10.98	9.88	8.78	7.69	6.59	5.49	5.29	5.29	5.29	5.29
	10	11.64	10.47	9.31	8.15	6.98	5.82	5.60	5.60	5.60	5.60
	12	12.19	10.97	9.75	8.54	7.31	6.10	5.87	5.87	5.87	5.87
	15	11.72	10.55	9.38	8.21	7.03	5.87	5.64	5.64	5.64	5.64
	20	13.26	11.93	10.60	9.28	7.95	6.63	6.38	6.38	6.38	6.38

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	4.13	3.72	3.31	2.90	2.49	2.27	2.27	2.27	2.27	2.27
	2	4.07	3.67	3.26	2.86	2.46	2.24	2.24	2.24	2.24	2.24
	7	3.99	3.59	3.19	2.80	2.41	2.01	1.94	1.94	1.94	1.94
	10	3.96	3.57	3.18	2.78	2.39	2.00	1.92	1.92	1.92	1.92
	12	3.95	3.56	3.16	2.77	2.38	1.99	1.92	1.92	1.92	1.92
	15	3.64	3.27	2.91	2.55	2.20	1.84	1.77	1.77	1.77	1.77
	20	3.61	3.25	2.90	2.53	2.18	1.82	1.76	1.76	1.76	1.76

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	1.85	1.84	1.84	1.84	1.83	1.83	1.83	1.83	1.83	1.83
	2	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98
	7	2.75	2.75	2.75	2.75	2.74	2.73	2.73	2.73	2.73	2.73
	10	2.94	2.93	2.93	2.93	2.92	2.91	2.91	2.91	2.91	2.91
	12	3.09	3.09	3.08	3.08	3.07	3.07	3.05	3.05	3.05	3.05
	15	3.22	3.22	3.22	3.22	3.20	3.19	3.20	3.20	3.20	3.20
	20	3.67	3.67	3.66	3.66	3.65	3.65	3.63	3.63	3.63	3.63

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	3.54	3.35	—
	-15	4.44	4.19	—
	-7	5.44	5.12	—
	-2	6.40	6.04	5.53
	2	6.82	6.44	5.89
	7	9.89	9.21	7.96
	10	10.49	9.76	8.43
	12	10.98	10.21	8.83
	15	11.63	10.18	8.50
	20	13.14	11.52	9.61

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	1.67	2.22	—
	-15	1.74	2.32	—
	-7	1.91	2.55	—
	-2	1.89	2.51	3.00
	2	1.86	2.48	2.96
	7	2.14	2.53	2.90
	10	2.13	2.52	2.88
	12	2.12	2.50	2.87
	15	2.09	2.36	2.65
	20	2.08	2.34	2.62

COP		LWT (°C)		
		35	45	55
TO (°C)	-20	2.12	1.50	—
	-15	2.55	1.81	—
	-7	2.85	2.01	—
	-2	3.40	2.40	1.84
	2	3.67	2.60	1.99
	7	4.61	3.64	2.75
	10	4.91	3.88	2.93
	12	5.17	4.08	3.08
	15	5.57	4.32	3.21
	20	6.33	4.93	3.66

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	11.14	10.02	8.91	7.80	6.69	5.57	4.45	3.34	2.23	1.91
	27	10.72	9.65	8.58	7.50	6.43	5.36	5.17	5.17	5.17	5.17
	30	10.54	9.49	8.43	7.38	6.33	5.27	5.08	5.08	5.08	5.08
	35	10.24	9.22	8.19	7.17	6.14	5.12	4.94	4.94	4.94	4.94
	40	9.18	8.25	7.34	6.42	5.51	5.06	5.06	5.06	5.06	5.06
	43	7.06	6.35	5.64	4.94	4.23	3.89	3.89	3.89	3.89	3.89

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.15	1.90	1.65	1.43	1.21	1.01	0.82	0.64	0.49	0.44
	27	2.68	2.36	2.06	1.78	1.51	1.26	1.22	1.22	1.22	1.22
	30	2.91	2.57	2.24	1.93	1.64	1.37	1.32	1.32	1.32	1.32
	35	3.29	2.90	2.53	2.18	1.85	1.54	1.50	1.50	1.50	1.50
	40	3.57	3.15	2.75	2.36	2.01	1.84	1.84	1.84	1.84	1.84
	43	3.06	2.70	2.35	2.04	1.73	1.59	1.59	1.59	1.59	1.59

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.18	5.28	5.39	5.47	5.51	5.52	5.42	5.19	4.57	4.34
	27	4.00	4.08	4.15	4.21	4.26	4.25	4.24	4.24	4.24	4.24
	30	3.62	3.70	3.76	3.83	3.86	3.85	3.84	3.84	3.84	3.84
	35	3.11	3.18	3.24	3.29	3.32	3.32	3.30	3.30	3.30	3.30
	40	2.57	2.62	2.67	2.72	2.74	2.75	2.75	2.75	2.75	2.75
	43	2.30	2.35	2.40	2.42	2.45	2.45	2.45	2.45	2.45	2.45

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	12.95	11.65	10.35	9.06	7.76	6.48	5.18	3.89	3.80	3.80
	27	12.52	11.27	10.02	8.77	7.51	6.99	6.99	6.99	6.99	6.99
	30	12.34	11.11	9.87	8.64	7.40	6.89	6.89	6.89	6.89	6.89
	35	12.03	10.83	9.62	8.42	7.22	6.72	6.72	6.72	6.72	6.72
	40	10.78	9.70	8.63	7.55	6.66	6.66	6.66	6.66	6.66	6.66
	43	8.29	7.46	6.63	5.80	5.12	5.12	5.12	5.12	5.12	5.12

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.17	1.94	1.65	1.39	1.15	0.93	0.72	0.53	0.52	0.52
	27	2.74	2.37	2.03	1.71	1.41	1.29	1.29	1.29	1.29	1.29
	30	2.98	2.58	2.21	1.86	1.54	1.41	1.41	1.41	1.41	1.41
	35	3.39	2.93	2.52	2.12	1.75	1.61	1.61	1.61	1.61	1.61
	40	3.58	3.11	2.66	2.24	1.91	1.91	1.91	1.91	1.91	1.91
	43	3.05	2.64	2.26	1.90	1.62	1.62	1.62	1.62	1.62	1.62

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.97	6.01	6.26	6.51	6.72	7.00	7.20	7.33	7.28	7.28
	27	4.57	4.75	4.94	5.14	5.32	5.42	5.42	5.42	5.42	5.42
	30	4.14	4.30	4.47	4.64	4.80	4.90	4.90	4.90	4.90	4.90
	35	3.55	3.69	3.82	3.98	4.14	4.18	4.18	4.18	4.18	4.18
	40	3.01	3.12	3.25	3.37	3.48	3.48	3.48	3.48	3.48	3.48
	43	2.72	2.83	2.94	3.05	3.15	3.15	3.15	3.15	3.15	3.15

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	14.75	13.27	11.80	10.33	8.85	7.38	5.90	5.55	5.55	5.55
	27	14.32	12.89	11.46	10.02	8.74	8.74	8.74	8.74	8.74	8.74
	30	14.13	12.71	11.31	9.89	8.63	8.63	8.63	8.63	8.63	8.63
	35	13.82	12.44	11.05	9.67	8.43	8.43	8.43	8.43	8.43	8.43
	40	12.38	11.15	9.91	8.67	8.20	8.20	8.20	8.20	8.20	8.20
	43	9.53	8.57	7.62	6.67	6.31	6.31	6.31	6.31	6.31	6.31

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.19	1.96	1.63	1.34	1.08	0.83	0.61	0.56	0.56	0.56
	27	2.79	2.38	1.99	1.63	1.34	1.34	1.34	1.34	1.34	1.34
	30	3.05	2.61	2.18	1.79	1.46	1.46	1.46	1.46	1.46	1.46
	35	3.49	2.97	2.49	2.05	1.68	1.68	1.68	1.68	1.68	1.68
	40	3.69	3.14	2.63	2.16	1.99	1.99	1.99	1.99	1.99	1.99
	43	3.10	2.64	2.22	1.82	1.68	1.68	1.68	1.68	1.68	1.68

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.75	6.78	7.22	7.68	8.22	8.85	9.75	9.95	9.95	9.95
	27	5.12	5.41	5.76	6.14	6.50	6.50	6.50	6.50	6.50	6.50
	30	4.63	4.88	5.18	5.53	5.89	5.89	5.89	5.89	5.89	5.89
	35	3.96	4.19	4.44	4.73	5.02	5.02	5.02	5.02	5.02	5.02
	40	3.36	3.55	3.77	4.02	4.12	4.12	4.12	4.12	4.12	4.12
	43	3.07	3.25	3.44	3.66	3.76	3.76	3.76	3.76	3.76	3.76

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1105H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	8.31	10.17	11.94
	27	7.99	9.84	11.60
	30	7.86	9.69	11.44
	35	7.64	9.46	11.19
	40	6.84	8.47	10.03
	43	5.26	6.51	7.72

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	1.53	1.62	1.67
	27	1.91	1.98	2.03
	30	2.07	2.16	2.22
	35	2.34	2.46	2.54
	40	2.54	2.60	2.68
	43	2.18	2.21	2.25

COP		LWT (°C)		
		7	13	18
TO (°C)	20	5.43	6.27	7.17
	27	4.20	4.96	5.70
	30	3.80	4.48	5.16
	35	3.27	3.84	4.41
	40	2.69	3.26	3.75
	43	2.42	2.95	3.42

* Cooling capacity and power input in low noise operation are the data at low noise operation frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 35°C

Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.69	5.12	4.55	3.99	3.42	2.85	2.54	2.54	2.54	2.54
	-15	7.31	6.59	5.85	5.12	4.38	3.66	3.27	3.27	3.27	3.27
	-7	8.63	7.76	6.91	6.04	5.18	4.32	3.86	3.86	3.86	3.86
	-2	10.07	9.06	8.05	7.05	6.04	5.04	4.50	4.50	4.50	4.50
	2	10.65	9.58	8.52	7.45	6.39	5.32	4.26	4.23	4.23	4.23
	7	16.74	15.06	13.39	11.72	10.05	8.37	6.69	5.02	3.35	2.92
	10	17.58	15.82	14.06	12.30	10.55	8.79	7.03	5.27	3.52	3.07
	12	18.58	16.72	14.87	13.01	11.15	9.29	7.43	5.58	3.71	3.24
	15	19.56	17.60	15.64	13.69	11.73	9.78	7.83	5.87	3.91	3.42
	20	21.29	19.16	17.04	14.90	12.77	10.65	8.52	6.39	4.25	3.72

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.81	2.51	2.22	1.92	1.62	1.33	1.16	1.16	1.16	1.16
	-15	2.96	2.65	2.34	2.02	1.71	1.40	1.23	1.23	1.23	1.23
	-7	3.29	2.95	2.59	2.25	1.90	1.55	1.37	1.37	1.37	1.37
	-2	3.25	2.90	2.56	2.22	1.87	1.53	1.35	1.35	1.35	1.35
	2	3.20	2.86	2.52	2.19	1.85	1.51	1.17	1.17	1.17	1.17
	7	3.94	3.52	3.11	2.69	2.28	1.86	1.44	1.03	0.61	0.50
	10	3.95	3.53	3.12	2.70	2.28	1.86	1.44	1.03	0.61	0.50
	12	3.96	3.54	3.13	2.70	2.28	1.86	1.45	1.03	0.61	0.51
	15	3.90	3.49	3.08	2.67	2.25	1.84	1.43	1.02	0.61	0.50
	20	3.68	3.29	2.91	2.51	2.13	1.74	1.35	0.96	0.57	0.47

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.02	2.04	2.05	2.08	2.11	2.15	2.18	2.18	2.18	2.18
	-15	2.47	2.49	2.50	2.53	2.56	2.62	2.66	2.66	2.66	2.66
	-7	2.62	2.63	2.66	2.69	2.72	2.79	2.83	2.83	2.83	2.83
	-2	3.10	3.13	3.14	3.18	3.23	3.28	3.34	3.34	3.34	3.34
	2	3.33	3.35	3.38	3.41	3.46	3.53	3.63	3.63	3.63	3.63
	7	4.24	4.28	4.30	4.35	4.40	4.50	4.64	4.87	5.49	5.84
	10	4.45	4.49	4.51	4.56	4.62	4.72	4.87	5.11	5.76	6.12
	12	4.70	4.73	4.76	4.81	4.88	4.99	5.11	5.40	6.08	6.35
	15	5.01	5.04	5.08	5.13	5.20	5.31	5.47	5.76	6.44	6.83
	20	5.78	5.82	5.86	5.93	5.99	6.12	6.33	6.63	7.47	7.89

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 45°C

Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.03	4.53	4.02	3.52	3.02	2.52	2.38	2.38	2.38	2.38
	-15	6.47	5.82	5.17	4.53	3.88	3.23	3.06	3.06	3.06	3.06
	-7	7.64	6.88	6.11	5.35	4.58	3.82	3.61	3.61	3.61	3.61
	-2	8.91	8.02	7.13	6.24	5.35	4.46	4.22	4.22	4.22	4.22
	2	9.43	8.48	7.54	6.60	5.65	4.72	3.92	3.92	3.92	3.92
	7	14.26	12.84	11.41	9.98	8.55	7.13	5.93	5.93	5.93	5.93
	10	14.97	13.47	11.98	10.48	8.98	7.49	6.23	6.23	6.23	6.23
	12	15.83	14.24	12.67	11.08	9.50	7.92	6.58	6.58	6.58	6.58
	15	15.80	14.21	12.64	11.06	9.48	7.90	6.57	6.57	6.57	6.57
	20	17.20	15.48	13.75	12.04	10.32	8.60	7.15	7.15	7.15	7.15

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	3.32	2.98	2.62	2.28	1.94	1.59	1.47	1.47	1.47	1.47
	-15	3.51	3.14	2.77	2.40	2.04	1.67	1.55	1.55	1.55	1.55
	-7	3.89	3.49	3.08	2.68	2.27	1.87	1.72	1.72	1.72	1.72
	-2	3.84	3.44	3.04	2.64	2.24	1.84	1.70	1.70	1.70	1.70
	2	3.78	3.38	3.00	2.60	2.20	1.81	1.45	1.45	1.45	1.45
	7	4.00	3.59	3.16	2.75	2.34	1.91	1.54	1.54	1.54	1.54
	10	4.00	3.59	3.16	2.75	2.33	1.91	1.53	1.53	1.53	1.53
	12	4.02	3.60	3.18	2.76	2.34	1.92	1.54	1.54	1.54	1.54
	15	3.88	3.47	3.07	2.66	2.26	1.86	1.49	1.49	1.49	1.49
	20	3.65	3.27	2.90	2.51	2.13	1.75	1.40	1.40	1.40	1.40

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	1.52	1.52	1.53	1.54	1.56	1.59	1.62	1.62	1.62	1.62
	-15	1.85	1.86	1.86	1.89	1.90	1.93	1.97	1.97	1.97	1.97
	-7	1.96	1.97	1.98	2.00	2.01	2.05	2.10	2.10	2.10	2.10
	-2	2.32	2.33	2.35	2.36	2.39	2.42	2.48	2.48	2.48	2.48
	2	2.49	2.51	2.52	2.54	2.57	2.61	2.70	2.70	2.70	2.70
	7	3.56	3.58	3.61	3.63	3.66	3.73	3.87	3.87	3.87	3.87
	10	3.74	3.76	3.79	3.81	3.85	3.92	4.06	4.06	4.06	4.06
	12	3.94	3.96	3.99	4.01	4.06	4.12	4.28	4.28	4.28	4.28
	15	4.07	4.09	4.12	4.16	4.19	4.25	4.42	4.42	4.42	4.42
	20	4.71	4.73	4.75	4.80	4.85	4.92	5.12	5.12	5.12	5.12

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 55°C

Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	7.84	7.06	6.27	5.49	4.71	4.09	4.09	4.09	4.09	4.09
	2	8.30	7.47	6.64	5.80	4.98	4.32	4.32	4.32	4.32	4.32
	7	11.67	10.51	9.33	8.17	7.01	5.84	5.26	5.26	5.26	5.26
	10	12.26	11.03	9.80	8.58	7.35	6.13	5.53	5.53	5.53	5.53
	12	12.96	11.66	10.37	9.07	7.77	6.48	5.85	5.85	5.85	5.85
	15	12.48	11.23	9.99	8.73	7.48	6.24	5.63	5.63	5.63	5.63
	20	13.58	12.23	10.86	9.51	8.15	6.80	6.13	6.13	6.13	6.13

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	4.16	3.77	3.36	2.96	2.57	2.18	2.18	2.18	2.18	2.18
	2	4.10	3.70	3.32	2.92	2.52	2.15	2.15	2.15	2.15	2.15
	7	4.06	3.67	3.28	2.89	2.50	2.12	1.85	1.85	1.85	1.85
	10	4.06	3.68	3.28	2.89	2.50	2.12	1.85	1.85	1.85	1.85
	12	4.07	3.68	3.28	2.90	2.50	2.11	1.85	1.85	1.85	1.85
	15	3.89	3.51	3.14	2.77	2.39	2.02	1.77	1.77	1.77	1.77
	20	3.66	3.31	2.96	2.61	2.26	1.90	1.67	1.67	1.67	1.67

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	1.88	1.87	1.87	1.85	1.83	1.87	1.87	1.87	1.87	1.87
	2	2.02	2.02	2.00	1.99	1.97	2.01	2.01	2.01	2.01	2.01
	7	2.87	2.86	2.85	2.83	2.80	2.76	2.84	2.84	2.84	2.84
	10	3.02	3.00	2.99	2.97	2.93	2.89	2.99	2.99	2.99	2.99
	12	3.19	3.17	3.16	3.13	3.11	3.07	3.16	3.16	3.16	3.16
	15	3.21	3.20	3.18	3.15	3.13	3.09	3.18	3.18	3.18	3.18
	20	3.71	3.69	3.67	3.64	3.61	3.57	3.67	3.67	3.67	3.67

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	3.34	3.20	—
	-15	4.29	4.11	—
	-7	5.07	4.85	—
	-2	5.91	5.66	5.65
	2	6.26	5.99	5.98
	7	9.83	9.06	8.40
	10	10.31	9.50	8.82
	12	10.91	10.06	9.33
	15	11.48	10.03	8.98
	20	12.50	10.92	9.78

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	1.58	2.05	—
	-15	1.67	2.17	—
	-7	1.86	2.41	—
	-2	1.83	2.38	2.97
	2	1.80	2.34	2.93
	7	2.22	2.48	2.90
	10	2.22	2.48	2.90
	12	2.23	2.49	2.90
	15	2.20	2.40	2.78
	20	2.08	2.26	2.62

COP		LWT (°C)		
		35	45	55
TO (°C)	-20	2.11	1.56	—
	-15	2.57	1.90	—
	-7	2.73	2.01	—
	-2	3.23	2.38	1.90
	2	3.48	2.55	2.04
	7	4.42	3.66	2.90
	10	4.64	3.84	3.04
	12	4.88	4.04	3.21
	15	5.23	4.18	3.23
	20	6.00	4.82	3.74

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	13.29	11.97	10.63	9.31	7.97	6.65	5.32	3.99	2.66	1.89
	27	12.59	11.33	10.07	8.81	7.55	6.29	5.34	5.34	5.34	5.34
	30	12.28	11.06	9.83	8.60	7.37	6.15	5.22	5.22	5.22	5.22
	35	11.78	10.60	9.42	8.25	7.07	5.89	5.00	5.00	5.00	5.00
	40	9.46	8.51	7.56	6.62	5.68	4.73	4.60	4.60	4.60	4.60
	43	7.29	6.56	5.84	5.11	4.38	3.65	3.56	3.56	3.56	3.56

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.88	2.54	2.21	1.91	1.62	1.36	1.11	0.87	0.66	0.55
	27	3.44	3.03	2.64	2.28	1.93	1.62	1.39	1.39	1.39	1.39
	30	3.67	3.23	2.83	2.44	2.07	1.72	1.49	1.49	1.49	1.49
	35	4.07	3.59	3.13	2.69	2.29	1.92	1.65	1.65	1.65	1.65
	40	3.83	3.37	2.94	2.54	2.15	1.81	1.76	1.76	1.76	1.76
	43	3.24	2.85	2.49	2.14	1.83	1.53	1.49	1.49	1.49	1.49

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.61	4.71	4.81	4.88	4.91	4.90	4.79	4.58	4.02	3.43
	27	3.66	3.74	3.82	3.86	3.90	3.89	3.86	3.86	3.86	3.86
	30	3.34	3.42	3.48	3.53	3.57	3.56	3.50	3.50	3.50	3.50
	35	2.89	2.95	3.01	3.06	3.08	3.08	3.04	3.04	3.04	3.04
	40	2.47	2.53	2.57	2.60	2.63	2.62	2.62	2.62	2.62	2.62
	43	2.25	2.30	2.34	2.38	2.40	2.39	2.39	2.39	2.39	2.39

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	15.50	13.94	12.40	10.84	9.29	7.75	6.20	4.65	4.48	4.48
	27	14.52	13.06	11.61	10.16	8.71	7.59	7.59	7.59	7.59	7.59
	30	14.09	12.68	11.27	9.86	8.45	7.37	7.37	7.37	7.37	7.37
	35	13.39	12.05	10.72	9.37	8.03	7.00	7.00	7.00	7.00	7.00
	40	10.75	9.68	8.60	7.53	6.45	6.18	6.18	6.18	6.18	6.18
	43	8.28	7.46	6.63	5.80	4.97	4.76	4.76	4.76	4.76	4.76

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.88	2.48	2.11	1.77	1.45	1.16	0.89	0.65	0.63	0.63
	27	3.44	2.96	2.53	2.11	1.74	1.47	1.47	1.47	1.47	1.47
	30	3.67	3.17	2.70	2.25	1.85	1.56	1.56	1.56	1.56	1.56
	35	4.07	3.51	2.99	2.50	2.05	1.73	1.73	1.73	1.73	1.73
	40	3.70	3.19	2.72	2.28	1.87	1.77	1.77	1.77	1.77	1.77
	43	3.11	2.68	2.28	1.91	1.57	1.49	1.49	1.49	1.49	1.49

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.38	5.62	5.87	6.14	6.41	6.69	6.95	7.11	7.14	7.14
	27	4.23	4.41	4.60	4.82	5.01	5.17	5.17	5.17	5.17	5.17
	30	3.84	4.01	4.18	4.37	4.57	4.73	4.73	4.73	4.73	4.73
	35	3.29	3.43	3.58	3.75	3.92	4.04	4.04	4.04	4.04	4.04
	40	2.90	3.03	3.16	3.30	3.45	3.49	3.49	3.49	3.49	3.49
	43	2.67	2.78	2.91	3.03	3.17	3.19	3.19	3.19	3.19	3.19

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	17.71	15.94	14.17	12.40	10.62	8.86	7.09	6.16	6.16	6.16
	27	16.45	14.80	13.16	11.51	9.87	9.26	9.26	9.26	9.26	9.26
	30	15.90	14.31	12.72	11.13	9.54	8.95	8.95	8.95	8.95	8.95
	35	15.00	13.50	12.00	10.50	9.00	8.44	8.44	8.44	8.44	8.44
	40	12.05	10.84	9.64	8.43	7.35	7.35	7.35	7.35	7.35	7.35
	43	8.90	8.36	7.42	6.50	5.66	5.66	5.66	5.66	5.66	5.66

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.88	2.57	2.16	1.78	1.43	1.12	0.83	0.70	0.70	0.70
	27	3.44	2.93	2.46	2.03	1.63	1.49	1.49	1.49	1.49	1.49
	30	3.67	3.13	2.63	2.17	1.74	1.59	1.59	1.59	1.59	1.59
	35	4.07	3.47	2.91	2.40	1.93	1.76	1.76	1.76	1.76	1.76
	40	3.68	3.14	2.64	2.17	1.78	1.78	1.78	1.78	1.78	1.78
	43	3.05	2.61	2.19	1.80	1.48	1.48	1.48	1.48	1.48	1.48

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.15	6.19	6.55	6.96	7.42	7.93	8.55	8.82	8.82	8.82
	27	4.79	5.05	5.35	5.67	6.07	6.21	6.21	6.21	6.21	6.21
	30	4.33	4.58	4.84	5.14	5.49	5.62	5.62	5.62	5.62	5.62
	35	3.69	3.89	4.12	4.37	4.67	4.78	4.78	4.78	4.78	4.78
	40	3.27	3.45	3.66	3.88	4.12	4.12	4.12	4.12	4.12	4.12
	43	2.91	3.20	3.39	3.61	3.82	3.82	3.82	3.82	3.82	3.82

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1405H-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	8.84	11.20	13.19
	27	8.37	10.49	12.25
	30	8.17	10.19	11.85
	35	7.84	9.68	11.17
	40	6.29	7.77	8.98
	43	4.85	5.99	6.91

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	1.81	1.85	1.95
	27	2.16	2.20	2.22
	30	2.30	2.36	2.37
	35	2.55	2.61	2.63
	40	2.40	2.38	2.37
	43	2.04	1.99	1.97

COP		LWT (°C)		
		7	13	18
TO (°C)	20	4.89	6.07	6.78
	27	3.88	4.77	5.52
	30	3.55	4.32	5.00
	35	3.07	3.71	4.25
	40	2.61	3.27	3.78
	43	2.38	3.01	3.50

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 35°C

Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.20	4.68	4.16	3.64	3.12	2.62	2.62	2.62	2.62	2.62
	-15	6.79	6.12	5.44	4.75	4.07	3.43	3.43	3.43	3.43	3.43
	-7	8.04	7.24	6.43	5.63	4.83	4.06	4.06	4.06	4.06	4.06
	-2	9.13	8.22	7.31	6.39	5.48	4.61	4.61	4.61	4.61	4.61
	2	10.46	9.41	8.37	7.32	6.27	5.23	4.67	4.67	4.67	4.67
	7	14.73	13.26	11.79	10.31	8.84	7.37	5.89	4.42	2.94	2.69
	10	15.73	14.16	12.59	11.00	9.43	7.86	6.29	4.72	3.14	2.88
	12	16.39	14.75	13.11	11.47	9.83	8.20	6.56	4.92	3.28	3.00
	15	17.21	15.49	13.77	12.05	10.33	8.61	6.88	5.16	3.44	3.15
	20	19.27	17.34	15.41	13.49	11.56	9.64	7.71	5.78	3.86	3.53

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.31	2.07	1.83	1.58	1.34	1.10	1.10	1.10	1.10	1.10
	-15	2.58	2.31	2.04	1.77	1.49	1.24	1.24	1.24	1.24	1.24
	-7	2.88	2.58	2.28	1.98	1.67	1.38	1.38	1.38	1.38	1.38
	-2	2.84	2.54	2.24	1.94	1.65	1.36	1.36	1.36	1.36	1.36
	2	2.90	2.59	2.29	1.98	1.68	1.37	1.21	1.21	1.21	1.21
	7	3.14	2.81	2.48	2.15	1.82	1.49	1.16	0.83	0.49	0.45
	10	3.14	2.81	2.48	2.15	1.82	1.49	1.16	0.83	0.50	0.44
	12	3.13	2.80	2.47	2.14	1.81	1.48	1.15	0.82	0.49	0.44
	15	3.07	2.75	2.43	2.10	1.78	1.46	1.14	0.81	0.48	0.44
	20	3.10	2.77	2.44	2.12	1.79	1.47	1.15	0.81	0.49	0.44

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.25	2.26	2.28	2.31	2.33	2.37	2.37	2.37	2.37	2.37
	-15	2.63	2.65	2.67	2.69	2.73	2.77	2.77	2.77	2.77	2.77
	-7	2.79	2.80	2.82	2.84	2.89	2.94	2.94	2.94	2.94	2.94
	-2	3.21	3.23	3.26	3.29	3.33	3.38	3.38	3.38	3.38	3.38
	2	3.61	3.63	3.65	3.69	3.73	3.81	3.86	3.86	3.86	3.86
	7	4.69	4.71	4.75	4.79	4.85	4.93	5.06	5.30	5.95	6.04
	10	5.02	5.05	5.08	5.13	5.20	5.29	5.45	5.72	6.35	6.60
	12	5.23	5.27	5.30	5.35	5.42	5.53	5.69	5.97	6.63	6.88
	15	5.61	5.64	5.68	5.73	5.80	5.90	6.05	6.33	7.12	7.24
	20	6.22	6.25	6.31	6.36	6.46	6.57	6.73	7.10	7.83	8.10

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 45°C

Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.06	4.55	4.05	3.55	3.04	2.54	2.54	2.54	2.54	2.54
	-15	6.61	5.95	5.29	4.63	3.97	3.32	3.32	3.32	3.32	3.32
	-7	7.81	7.03	6.25	5.47	4.68	3.92	3.92	3.92	3.92	3.92
	-2	8.84	7.96	7.07	6.19	5.30	4.43	4.43	4.43	4.43	4.43
	2	9.81	8.83	7.85	6.87	5.88	4.91	4.33	4.33	4.33	4.33
	7	13.93	12.53	11.15	9.75	8.36	6.97	6.15	6.15	6.15	6.15
	10	15.02	13.51	12.01	10.52	9.01	7.51	6.63	6.63	6.63	6.63
	12	15.64	14.07	12.51	10.94	9.38	7.82	6.91	6.91	6.91	6.91
	15	16.30	14.67	13.05	11.41	9.78	8.15	7.20	7.20	7.20	7.20
	20	18.38	16.54	14.71	12.87	11.03	9.20	8.12	8.12	8.12	8.12

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.88	2.59	2.30	2.01	1.72	1.45	1.45	1.45	1.45	1.45
	-15	3.23	2.91	2.58	2.25	1.93	1.64	1.64	1.64	1.64	1.64
	-7	3.64	3.27	2.90	2.53	2.17	1.83	1.83	1.83	1.83	1.83
	-2	3.59	3.23	2.86	2.50	2.14	1.81	1.81	1.81	1.81	1.81
	2	3.59	3.23	2.86	2.50	2.14	1.78	1.59	1.59	1.59	1.59
	7	3.76	3.39	3.01	2.62	2.24	1.86	1.67	1.67	1.67	1.67
	10	3.79	3.41	3.03	2.65	2.26	1.88	1.68	1.68	1.68	1.68
	12	3.81	3.42	3.04	2.65	2.27	1.89	1.68	1.68	1.68	1.68
	15	3.78	3.40	3.02	2.64	2.26	1.88	1.68	1.68	1.68	1.68
	20	3.83	3.44	3.06	2.67	2.29	1.90	1.70	1.70	1.70	1.70

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	1.76	1.76	1.76	1.77	1.77	1.76	1.76	1.76	1.76	1.76
	-15	2.04	2.05	2.05	2.05	2.06	2.03	2.03	2.03	2.03	2.03
	-7	2.15	2.15	2.16	2.16	2.16	2.14	2.14	2.14	2.14	2.14
	-2	2.46	2.47	2.47	2.47	2.48	2.45	2.45	2.45	2.45	2.45
	2	2.73	2.73	2.74	2.74	2.75	2.76	2.72	2.72	2.72	2.72
	7	3.70	3.70	3.71	3.72	3.73	3.74	3.68	3.68	3.68	3.68
	10	3.96	3.96	3.97	3.97	3.99	3.99	3.95	3.95	3.95	3.95
	12	4.10	4.11	4.11	4.12	4.12	4.15	4.11	4.11	4.11	4.11
	15	4.31	4.32	4.32	4.33	4.33	4.35	4.30	4.30	4.30	4.30
	20	4.80	4.81	4.81	4.82	4.82	4.85	4.79	4.79	4.79	4.79

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 55°C

Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	8.13	7.31	6.50	5.69	4.87	4.07	4.00	4.00	4.00	4.00
	2	8.86	7.98	7.08	6.20	5.31	4.43	4.35	4.35	4.35	4.35
	7	12.56	11.31	10.05	8.79	7.54	6.28	5.41	5.41	5.41	5.41
	10	13.85	12.47	11.08	9.70	8.31	6.93	5.97	5.97	5.97	5.97
	12	14.57	13.11	11.66	10.20	8.74	7.29	6.27	6.27	6.27	6.27
	15	15.03	13.52	12.03	10.52	9.02	7.52	6.48	6.48	6.48	6.48
	20	16.85	15.16	13.48	11.80	10.11	8.43	7.26	7.26	7.26	7.26

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	4.17	3.76	3.36	2.95	2.55	2.15	2.11	2.11	2.11	2.11
	2	4.13	3.73	3.33	2.93	2.53	2.13	2.09	2.09	2.09	2.09
	7	4.36	3.94	3.51	3.10	2.67	2.25	1.95	1.95	1.95	1.95
	10	4.43	4.00	3.57	3.14	2.71	2.28	1.99	1.99	1.99	1.99
	12	4.48	4.04	3.61	3.17	2.74	2.31	2.01	2.01	2.01	2.01
	15	4.48	4.04	3.60	3.18	2.74	2.30	2.00	2.00	2.00	2.00
	20	4.55	4.10	3.67	3.22	2.79	2.34	2.04	2.04	2.04	2.04

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	1.95	1.94	1.94	1.93	1.91	1.89	1.89	1.89	1.89	1.89
	2	2.14	2.14	2.13	2.11	2.10	2.08	2.08	2.08	2.08	2.08
	7	2.88	2.87	2.86	2.84	2.82	2.79	2.77	2.77	2.77	2.77
	10	3.13	3.12	3.10	3.09	3.06	3.04	3.00	3.00	3.00	3.00
	12	3.25	3.24	3.23	3.21	3.19	3.16	3.12	3.12	3.12	3.12
	15	3.36	3.35	3.34	3.31	3.29	3.26	3.24	3.24	3.24	3.24
	20	3.70	3.69	3.68	3.66	3.63	3.60	3.56	3.56	3.56	3.56

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	3.51	3.42	—
	-15	4.59	4.47	—
	-7	5.44	5.28	—
	-2	6.17	5.97	5.89
	2	7.07	6.63	6.42
	7	9.96	9.41	9.10
	10	10.63	10.15	10.04
	12	11.08	10.58	10.56
	15	11.64	11.03	10.90
	20	13.03	12.43	12.22

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	1.51	1.93	—
	-15	1.68	2.18	—
	-7	1.89	2.45	—
	-2	1.85	2.42	2.82
	2	1.90	2.41	2.79
	7	2.06	2.53	2.94
	10	2.05	2.55	2.99
	12	2.05	2.57	3.02
	15	2.01	2.54	3.03
	20	2.03	2.57	3.07

COP		LWT (°C)		
		35	45	55
TO (°C)	-20	2.32	1.77	—
	-15	2.73	2.05	—
	-7	2.88	2.16	—
	-2	3.33	2.47	2.09
	2	3.73	2.75	2.30
	7	4.84	3.72	3.09
	10	5.19	3.98	3.36
	12	5.42	4.12	3.50
	15	5.79	4.34	3.60
	20	6.43	4.83	3.98

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	11.15	10.03	8.92	7.80	6.69	5.58	4.46	3.35	2.23	2.04
	27	10.69	9.62	8.55	7.48	6.41	5.34	5.50	5.50	5.50	5.50
	30	10.49	9.44	8.40	7.34	6.29	5.25	5.40	5.40	5.40	5.40
	35	10.16	9.14	8.13	7.11	6.09	5.09	5.23	5.23	5.23	5.23
	40	9.39	8.45	7.52	6.57	5.64	5.52	5.52	5.52	5.52	5.52
	43	8.93	8.05	7.15	6.26	5.36	5.26	5.26	5.26	5.26	5.26

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.10	1.85	1.61	1.39	1.18	0.99	0.80	0.63	0.47	0.50
	27	2.60	2.29	1.99	1.72	1.46	1.22	1.38	1.38	1.38	1.38
	30	2.81	2.48	2.16	1.87	1.59	1.33	1.50	1.50	1.50	1.50
	35	3.17	2.79	2.44	2.10	1.79	1.49	1.69	1.69	1.69	1.69
	40	3.50	3.09	2.69	2.32	1.97	2.12	2.12	2.12	2.12	2.12
	43	3.70	3.26	2.85	2.46	2.09	2.25	2.25	2.25	2.25	2.25

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.32	5.43	5.53	5.63	5.66	5.66	5.57	5.34	4.73	4.06
	27	4.12	4.21	4.29	4.35	4.40	4.40	3.98	3.98	3.98	3.98
	30	3.73	3.81	3.89	3.93	3.97	3.96	3.61	3.61	3.61	3.61
	35	3.21	3.28	3.33	3.38	3.41	3.41	3.09	3.09	3.09	3.09
	40	2.68	2.73	2.79	2.83	2.86	2.60	2.60	2.60	2.60	2.60
	43	2.41	2.47	2.51	2.54	2.56	2.34	2.34	2.34	2.34	2.34

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	12.75	11.47	10.19	8.92	7.65	6.38	5.10	3.82	3.29	3.29
	27	12.24	11.01	9.79	8.57	7.34	6.56	6.56	6.56	6.56	6.56
	30	12.02	10.82	9.61	8.42	7.21	6.45	6.45	6.45	6.45	6.45
	35	11.66	10.49	9.33	8.16	6.99	6.25	6.25	6.25	6.25	6.25
	40	10.78	9.70	8.62	7.54	6.47	6.45	6.45	6.45	6.45	6.45
	43	10.25	9.23	8.20	7.17	6.15	6.13	6.13	6.13	6.13	6.13

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.12	1.87	1.65	1.44	1.23	1.02	0.83	0.62	0.56	0.56
	27	2.65	2.33	2.07	1.80	1.54	1.44	1.44	1.44	1.44	1.44
	30	2.87	2.52	2.25	1.96	1.67	1.57	1.57	1.57	1.57	1.57
	35	3.25	2.86	2.54	2.21	1.89	1.77	1.77	1.77	1.77	1.77
	40	3.59	3.16	2.81	2.45	2.08	2.23	2.23	2.23	2.23	2.23
	43	3.80	3.35	2.96	2.58	2.20	2.35	2.35	2.35	2.35	2.35

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.02	6.15	6.16	6.19	6.22	6.26	6.16	6.22	5.84	5.84
	27	4.62	4.73	4.73	4.76	4.77	4.54	4.54	4.54	4.54	4.54
	30	4.18	4.29	4.28	4.30	4.33	4.11	4.11	4.11	4.11	4.11
	35	3.58	3.66	3.67	3.69	3.70	3.52	3.52	3.52	3.52	3.52
	40	3.00	3.07	3.07	3.08	3.11	2.89	2.89	2.89	2.89	2.89
	43	2.70	2.76	2.77	2.78	2.79	2.61	2.61	2.61	2.61	2.61

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	14.34	12.91	11.47	10.04	8.61	7.18	5.73	4.96	4.96	4.96
	27	13.78	12.41	11.03	9.65	8.27	8.14	8.14	8.14	8.14	8.14
	30	13.55	12.20	10.84	9.48	8.12	8.00	8.00	8.00	8.00	8.00
	35	13.15	11.83	10.52	9.20	7.89	7.77	7.77	7.77	7.77	7.77
	40	12.01	10.81	9.62	8.41	7.76	7.76	7.76	7.76	7.76	7.76
	43	11.33	10.20	9.07	7.94	7.31	7.31	7.31	7.31	7.31	7.31

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.14	1.92	1.70	1.47	1.24	1.08	0.85	0.55	0.55	0.55
	27	2.70	2.30	2.04	1.76	1.48	1.41	1.41	1.41	1.41	1.41
	30	2.94	2.51	2.23	1.92	1.62	1.54	1.54	1.54	1.54	1.54
	35	3.34	2.85	2.53	2.18	1.84	1.74	1.74	1.74	1.74	1.74
	40	3.67	3.13	2.78	2.40	2.18	2.18	2.18	2.18	2.18	2.18
	43	3.87	3.30	2.94	2.53	2.30	2.30	2.30	2.30	2.30	2.30

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.70	6.72	6.75	6.83	6.94	6.64	6.75	9.01	9.01	9.01
	27	5.11	5.39	5.40	5.48	5.57	5.79	5.79	5.79	5.79	5.79
	30	4.61	4.86	4.86	4.95	5.02	5.20	5.20	5.20	5.20	5.20
	35	3.94	4.15	4.16	4.22	4.29	4.47	4.47	4.47	4.47	4.47
	40	3.27	3.45	3.46	3.50	3.56	3.56	3.56	3.56	3.56	3.56
	43	2.93	3.09	3.08	3.14	3.19	3.19	3.19	3.19	3.19	3.19

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1105H8-E, HWS-1105H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	8.32	10.02	11.62
	27	7.97	9.62	11.17
	30	7.82	9.44	10.98
	35	7.58	9.16	10.65
	40	7.01	8.47	9.73
	43	6.67	8.06	9.18

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	1.49	1.53	1.52
	27	1.85	1.92	1.83
	30	2.00	2.09	1.99
	35	2.25	2.36	2.27
	40	2.49	2.61	2.49
	43	2.64	2.75	2.62

COP		LWT (°C)		
		7	13	18
TO (°C)	20	5.59	6.54	7.64
	27	4.32	5.02	6.10
	30	3.91	4.53	5.52
	35	3.37	3.88	4.70
	40	2.81	3.25	3.91
	43	2.53	2.93	3.50

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 35°C

Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.59	5.03	4.47	3.91	3.35	2.80	2.63	2.63	2.63	2.63
	-15	7.30	6.57	5.84	5.11	4.38	3.66	3.44	3.44	3.44	3.44
	-7	8.64	7.78	6.91	6.05	5.18	4.32	4.06	4.06	4.06	4.06
	-2	9.81	8.83	7.85	6.87	5.88	4.91	4.62	4.62	4.62	4.62
	2	11.01	9.91	8.81	7.71	6.61	5.51	4.62	4.62	4.62	4.62
	7	13.45	12.11	10.76	9.41	8.07	6.73	5.38	4.04	2.69	2.48
	10	17.14	15.42	13.70	12.00	10.28	8.57	6.85	5.14	3.43	3.16
	12	17.86	16.08	14.29	12.50	10.71	8.93	7.15	5.36	3.57	3.29
	15	18.86	16.98	15.08	13.20	11.32	9.43	7.54	5.66	3.78	3.47
	20	20.90	18.81	16.72	14.63	12.54	10.45	8.36	6.27	4.18	3.85

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.51	2.24	1.97	1.70	1.43	1.17	1.08	1.08	1.08	1.08
	-15	2.80	2.50	2.20	1.90	1.60	1.30	1.21	1.21	1.21	1.21
	-7	3.14	2.80	2.46	2.13	1.79	1.45	1.35	1.35	1.35	1.35
	-2	3.09	2.75	2.43	2.10	1.76	1.44	1.34	1.34	1.34	1.34
	2	3.21	2.86	2.52	2.17	1.83	1.49	1.20	1.20	1.20	1.20
	7	3.37	3.01	2.64	2.29	1.92	1.56	1.21	0.84	0.48	0.46
	10	3.54	3.16	2.78	2.40	2.02	1.64	1.26	0.89	0.51	0.49
	12	3.54	3.16	2.78	2.40	2.02	1.64	1.26	0.89	0.50	0.49
	15	3.55	3.17	2.79	2.41	2.02	1.65	1.27	0.89	0.51	0.49
	20	3.58	3.20	2.82	2.43	2.05	1.66	1.28	0.90	0.51	0.49

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.23	2.24	2.27	2.30	2.33	2.40	2.43	2.43	2.43	2.43
	-15	2.60	2.63	2.65	2.69	2.73	2.81	2.84	2.84	2.84	2.84
	-7	2.76	2.78	2.81	2.84	2.89	2.98	3.01	3.01	3.01	3.01
	-2	3.18	3.21	3.23	3.28	3.34	3.42	3.46	3.46	3.46	3.46
	2	3.44	3.46	3.49	3.55	3.61	3.70	3.85	3.85	3.85	3.85
	7	3.99	4.02	4.07	4.12	4.20	4.30	4.46	4.81	5.57	5.34
	10	4.84	4.87	4.93	5.00	5.08	5.23	5.43	5.80	6.75	6.44
	12	5.05	5.09	5.14	5.22	5.31	5.44	5.65	6.05	7.14	6.71
	15	5.31	5.35	5.41	5.48	5.59	5.72	5.93	6.39	7.42	7.09
	20	5.83	5.89	5.93	6.02	6.13	6.30	6.52	7.00	8.21	7.86

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 45°C

Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.36	4.82	4.29	3.75	3.22	2.68	2.41	2.41	2.41	2.41
	-15	7.00	6.30	5.60	4.90	4.20	3.50	3.15	3.15	3.15	3.15
	-7	8.27	7.45	6.61	5.79	4.96	4.14	3.73	3.73	3.73	3.73
	-2	9.36	8.42	7.48	6.55	5.62	4.68	4.22	4.22	4.22	4.22
	2	10.31	9.28	8.25	7.22	6.19	5.16	4.08	4.08	4.08	4.08
	7	14.30	12.87	11.44	10.01	8.57	7.15	5.66	5.66	5.66	5.66
	10	16.35	14.71	13.08	11.44	9.81	8.17	6.47	6.47	6.47	6.47
	12	17.14	15.43	13.71	12.00	10.28	8.57	6.78	6.78	6.78	6.78
	15	17.77	15.99	14.21	12.44	10.66	8.88	7.03	7.03	7.03	7.03
	20	19.83	17.85	15.87	13.88	11.90	9.92	7.85	7.85	7.85	7.85

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	3.11	2.77	2.43	2.11	1.77	1.44	1.29	1.29	1.29	1.29
	-15	3.49	3.12	2.75	2.37	1.99	1.62	1.45	1.45	1.45	1.45
	-7	3.93	3.51	3.08	2.66	2.24	1.82	1.63	1.63	1.63	1.63
	-2	3.88	3.46	3.05	2.63	2.21	1.80	1.61	1.61	1.61	1.61
	2	3.89	3.47	3.06	2.63	2.22	1.80	1.38	1.38	1.38	1.38
	7	4.18	3.73	3.28	2.84	2.38	1.94	1.48	1.48	1.48	1.48
	10	4.27	3.81	3.35	2.90	2.44	1.98	1.52	1.52	1.52	1.52
	12	4.29	3.83	3.37	2.91	2.45	1.99	1.53	1.53	1.53	1.53
	15	4.31	3.84	3.38	2.92	2.46	1.99	1.53	1.53	1.53	1.53
	20	4.36	3.90	3.43	2.95	2.49	2.02	1.55	1.55	1.55	1.55

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	1.73	1.74	1.76	1.78	1.81	1.87	1.87	1.87	1.87	1.87
	-15	2.00	2.02	2.04	2.06	2.11	2.17	2.18	2.18	2.18	2.18
	-7	2.11	2.12	2.14	2.17	2.21	2.27	2.29	2.29	2.29	2.29
	-2	2.41	2.44	2.45	2.49	2.54	2.60	2.61	2.61	2.61	2.61
	2	2.65	2.67	2.70	2.74	2.79	2.86	2.96	2.96	2.96	2.96
	7	3.42	3.45	3.49	3.53	3.60	3.69	3.81	3.81	3.81	3.81
	10	3.83	3.86	3.91	3.95	4.02	4.14	4.27	4.27	4.27	4.27
	12	3.99	4.03	4.07	4.13	4.20	4.31	4.44	4.44	4.44	4.44
	15	4.13	4.17	4.20	4.27	4.34	4.46	4.59	4.59	4.59	4.59
	20	4.55	4.58	4.63	4.70	4.79	4.91	5.06	5.06	5.06	5.06

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 55°C

Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	8.53	7.68	6.83	5.97	5.12	4.27	3.90	3.90	3.90	3.90
	2	9.30	8.38	7.44	6.52	5.58	4.65	4.25	4.25	4.25	4.25
	7	13.64	12.28	10.91	9.55	8.19	6.83	5.45	5.40	5.40	5.40
	10	15.04	13.54	12.03	10.53	9.02	7.53	6.02	5.95	5.95	5.95
	12	15.81	14.24	12.65	11.07	9.48	7.91	6.33	6.26	6.26	6.26
	15	17.21	15.49	13.77	12.05	10.33	8.61	6.88	6.81	6.81	6.81
	20	18.75	16.87	15.00	13.13	11.25	9.38	7.50	7.41	7.41	7.41

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	4.49	3.95	3.53	3.11	2.68	2.26	2.01	2.01	2.01	2.01
	2	4.45	3.91	3.50	3.08	2.66	2.24	1.98	1.98	1.98	1.98
	7	4.86	4.27	3.82	3.36	2.90	2.44	1.99	1.88	1.88	1.88
	10	4.93	4.33	3.87	3.41	2.95	2.48	2.02	1.92	1.92	1.92
	12	4.98	4.38	3.91	3.44	2.98	2.51	2.04	1.93	1.93	1.93
	15	5.09	4.48	4.00	3.52	3.05	2.56	2.09	1.97	1.97	1.97
	20	5.18	4.55	4.07	3.58	3.09	2.61	2.13	2.01	2.01	2.01

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	1.90	1.94	1.94	1.92	1.91	1.89	1.94	1.94	1.94	1.94
	2	2.09	2.14	2.13	2.11	2.10	2.07	2.14	2.14	2.14	2.14
	7	2.81	2.88	2.86	2.84	2.82	2.79	2.74	2.86	2.86	2.86
	10	3.05	3.12	3.11	3.09	3.06	3.03	2.97	3.10	3.10	3.10
	12	3.17	3.25	3.23	3.22	3.18	3.15	3.10	3.24	3.24	3.24
	15	3.38	3.46	3.44	3.43	3.39	3.36	3.30	3.45	3.45	3.45
	20	3.62	3.71	3.69	3.66	3.64	3.60	3.53	3.69	3.69	3.69

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	3.28	3.40	—
	-15	4.28	4.44	—
	-7	5.08	5.26	—
	-2	5.76	5.94	6.15
	2	6.47	6.55	6.70
	7	7.89	9.08	9.82
	10	10.06	10.38	10.83
	12	10.49	10.88	11.39
	15	11.07	11.28	12.40
	20	12.26	12.60	13.50

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	1.42	1.92	—
	-15	1.59	2.17	—
	-7	1.77	2.43	—
	-2	1.74	2.41	3.20
	2	1.80	2.41	3.18
	7	1.90	2.59	3.47
	10	2.00	2.64	3.53
	12	2.00	2.66	3.56
	15	2.01	2.67	3.63
	20	2.02	2.71	3.70

COP		LWT (°C)		
		35	45	55
TO (°C)	-20	2.31	1.77	—
	-15	2.70	2.05	—
	-7	2.87	2.16	—
	-2	3.30	2.47	1.92
	2	3.58	2.72	2.11
	7	4.15	3.51	2.83
	10	5.04	3.93	3.07
	12	5.25	4.09	3.20
	15	5.52	4.23	3.41
	20	6.08	4.66	3.65

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	13.27	11.94	10.62	9.29	7.96	6.64	5.31	3.98	2.65	1.33
	27	12.69	11.42	10.15	8.88	7.61	6.34	5.08	4.53	4.53	4.53
	30	12.44	11.20	9.96	8.70	7.46	6.22	4.98	4.45	4.45	4.45
	35	12.02	10.82	9.61	8.41	7.21	6.02	4.81	4.30	4.30	4.30
	40	11.27	10.14	9.01	7.88	6.76	5.64	4.77	4.77	4.77	4.77
	43	10.82	9.74	8.65	7.57	6.49	5.41	4.58	4.58	4.58	4.58

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.82	2.47	2.14	1.83	1.54	1.25	0.99	0.76	0.53	0.32
	27	3.43	3.00	2.60	2.22	1.86	1.52	1.20	1.20	1.20	1.20
	30	3.70	3.24	2.80	2.39	2.00	1.64	1.30	1.29	1.29	1.29
	35	4.13	3.62	3.13	2.67	2.24	1.83	1.45	1.44	1.44	1.44
	40	4.58	4.01	3.47	2.96	2.48	2.03	1.89	1.89	1.89	1.89
	43	4.84	4.25	3.68	3.14	2.63	2.15	2.01	2.01	2.01	2.01

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.70	4.83	4.96	5.07	5.18	5.29	5.34	5.26	4.99	4.16
	27	3.69	3.81	3.90	4.01	4.08	4.17	4.22	3.77	3.77	3.77
	30	3.37	3.46	3.56	3.64	3.72	3.79	3.82	3.44	3.44	3.44
	35	2.91	2.99	3.07	3.15	3.22	3.29	3.32	2.99	2.99	2.99
	40	2.46	2.53	2.60	2.66	2.73	2.78	2.52	2.52	2.52	2.52
	43	2.23	2.29	2.35	2.41	2.46	2.52	2.29	2.29	2.29	2.29

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	15.10	13.59	12.08	10.57	9.06	7.55	6.04	4.53	3.02	2.51
	27	14.46	13.01	11.56	10.12	8.67	7.23	6.03	6.03	6.03	6.03
	30	14.19	12.77	11.35	9.93	8.51	7.10	5.91	5.91	5.91	5.91
	35	13.73	12.36	10.98	9.61	8.24	6.87	5.72	5.72	5.72	5.72
	40	12.87	11.59	10.30	9.02	7.72	6.44	6.08	6.08	6.08	6.08
	43	12.36	11.12	9.88	8.65	7.41	6.18	5.83	5.83	5.83	5.83

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.82	2.48	2.20	1.92	1.64	1.35	1.10	0.82	0.53	0.39
	27	3.49	3.07	2.73	2.37	2.03	1.68	1.06	1.06	1.06	1.06
	30	3.78	3.32	2.95	2.58	2.20	1.82	1.14	1.14	1.14	1.14
	35	4.26	3.75	3.33	2.90	2.47	2.05	1.29	1.29	1.29	1.29
	40	4.72	4.16	3.68	3.21	2.74	2.26	1.31	1.31	1.31	1.31
	43	5.00	4.40	3.90	3.39	2.90	2.40	1.38	1.38	1.38	1.38

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.35	5.48	5.50	5.50	5.53	5.58	5.47	5.53	5.64	6.50
	27	4.14	4.23	4.24	4.26	4.28	4.30	5.70	5.70	5.70	5.70
	30	3.75	3.84	3.85	3.85	3.87	3.90	5.20	5.20	5.20	5.20
	35	3.22	3.30	3.30	3.31	3.34	3.35	4.44	4.44	4.44	4.44
	40	2.73	2.79	2.80	2.81	2.82	2.85	4.63	4.63	4.63	4.63
	43	2.47	2.53	2.54	2.55	2.55	2.58	4.22	4.22	4.22	4.22

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	16.92	15.23	13.53	11.84	10.15	8.47	6.77	5.08	4.47	4.47
	27	16.23	14.61	12.99	11.36	9.74	8.12	7.87	7.87	7.87	7.87
	30	15.93	14.35	12.75	11.16	9.56	7.97	7.72	7.72	7.72	7.72
	35	15.44	13.89	12.36	10.81	9.26	7.73	7.48	7.48	7.48	7.48
	40	14.18	12.77	11.34	9.93	8.51	7.57	7.57	7.57	7.57	7.57
	43	13.43	12.09	10.74	9.40	8.05	7.17	7.17	7.17	7.17	7.17

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.82	2.61	2.31	1.98	1.69	1.39	1.10	0.80	0.55	0.55
	27	3.55	3.13	2.77	2.38	2.02	1.67	1.19	1.19	1.19	1.19
	30	3.87	3.40	3.01	2.59	2.20	1.82	1.29	1.29	1.29	1.29
	35	4.39	3.86	3.43	2.95	2.50	2.07	1.47	1.47	1.47	1.47
	40	4.80	4.22	3.74	3.21	2.74	1.80	1.80	1.80	1.80	1.80
	43	5.04	4.44	3.94	3.37	2.88	1.89	1.89	1.89	1.89	1.89

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.00	5.83	5.85	5.98	6.00	6.07	6.18	6.38	8.07	8.07
	27	4.57	4.67	4.68	4.78	4.81	4.86	6.62	6.62	6.62	6.62
	30	4.12	4.22	4.23	4.31	4.34	4.37	5.99	5.99	5.99	5.99
	35	3.52	3.60	3.60	3.67	3.70	3.74	5.10	5.10	5.10	5.10
	40	2.96	3.03	3.03	3.09	3.11	4.21	4.21	4.21	4.21	4.21
	43	2.67	2.72	2.73	2.79	2.80	3.79	3.79	3.79	3.79	3.79

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1405H8-E, HWS-1405H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	8.82	10.92	12.60
	27	8.43	10.45	12.09
	30	8.27	10.26	11.87
	35	8.00	9.93	11.50
	40	7.49	9.30	10.56
	43	7.20	8.93	10.01

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	1.77	1.81	1.91
	27	2.15	2.24	2.29
	30	2.31	2.42	2.49
	35	2.58	2.73	2.83
	40	2.87	3.02	3.09
	43	3.04	3.21	3.25

COP		LWT (°C)		
		7	13	18
TO (°C)	20	4.97	6.03	6.58
	27	3.92	4.66	5.28
	30	3.58	4.24	4.77
	35	3.10	3.64	4.06
	40	2.61	3.08	3.42
	43	2.36	2.79	3.08

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 35°C

Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.85	5.27	4.68	4.10	3.51	2.93	2.63	2.63	2.63	2.63
	-15	7.65	6.88	6.12	5.35	4.59	3.83	3.43	3.43	3.43	3.43
	-7	9.05	8.15	7.24	6.34	5.43	4.53	4.05	4.05	4.05	4.05
	-2	10.28	9.26	8.22	7.20	6.17	5.14	4.60	4.60	4.60	4.60
	2	11.61	10.45	9.29	8.13	6.97	5.81	4.64	4.62	4.62	4.62
	7	14.30	12.87	11.44	10.01	8.58	7.15	5.72	4.29	2.86	2.52
	10	17.92	16.13	14.33	12.55	10.76	8.96	7.17	5.37	3.59	3.15
	12	18.68	16.82	14.94	13.08	11.21	9.34	7.47	5.61	3.74	3.29
	15	19.82	17.84	15.86	13.88	11.90	9.92	7.93	5.94	3.96	3.49
	20	22.08	19.87	17.66	15.46	13.25	11.04	8.83	6.62	4.42	3.89

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.72	2.43	2.13	1.84	1.55	1.26	1.09	1.09	1.09	1.09
	-15	3.03	2.71	2.38	2.06	1.73	1.41	1.23	1.23	1.23	1.23
	-7	3.39	3.03	2.66	2.30	1.93	1.57	1.37	1.37	1.37	1.37
	-2	3.34	2.99	2.62	2.26	1.91	1.55	1.35	1.35	1.35	1.35
	2	3.46	3.08	2.72	2.35	1.97	1.60	1.24	1.22	1.22	1.22
	7	3.65	3.26	2.86	2.48	2.08	1.69	1.30	0.95	0.62	0.54
	10	3.89	3.47	3.05	2.64	2.22	1.80	1.38	1.01	0.66	0.58
	12	3.88	3.47	3.04	2.63	2.22	1.80	1.38	1.01	0.66	0.58
	15	3.90	3.47	3.06	2.64	2.23	1.80	1.39	1.02	0.66	0.58
	20	3.93	3.51	3.08	2.66	2.24	1.83	1.40	1.02	0.67	0.59

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	2.15	2.17	2.20	2.23	2.26	2.33	2.40	2.40	2.40	2.40
	-15	2.52	2.54	2.57	2.60	2.65	2.72	2.79	2.79	2.79	2.79
	-7	2.67	2.69	2.72	2.76	2.81	2.88	2.95	2.95	2.95	2.95
	-2	3.08	3.10	3.14	3.18	3.23	3.31	3.41	3.41	3.41	3.41
	2	3.36	3.39	3.42	3.47	3.53	3.63	3.76	3.80	3.80	3.80
	7	3.92	3.95	3.99	4.04	4.13	4.23	4.41	4.54	4.61	4.66
	10	4.61	4.64	4.70	4.76	4.85	4.97	5.19	5.33	5.42	5.48
	12	4.81	4.85	4.91	4.97	5.05	5.20	5.40	5.56	5.64	5.71
	15	5.09	5.14	5.18	5.26	5.34	5.50	5.70	5.84	5.99	6.06
	20	5.62	5.67	5.73	5.81	5.92	6.05	6.30	6.50	6.57	6.64

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 45°C

Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	5.58	5.02	4.46	3.91	3.35	2.79	2.46	2.46	2.46	2.46
	-15	7.28	6.55	5.82	5.10	4.37	3.64	3.21	3.21	3.21	3.21
	-7	8.61	7.75	6.89	6.02	5.16	4.30	3.79	3.79	3.79	3.79
	-2	9.74	8.76	7.79	6.81	5.85	4.87	4.29	4.29	4.29	4.29
	2	10.76	9.68	8.61	7.53	6.45	5.38	4.30	4.08	4.08	4.08
	7	14.95	13.46	11.96	10.47	8.98	7.48	5.98	5.68	5.68	5.68
	10	17.01	15.31	13.61	11.91	10.20	8.51	6.81	6.46	6.46	6.46
	12	17.78	16.00	14.22	12.44	10.67	8.89	7.11	6.75	6.75	6.75
	15	18.78	16.90	15.03	13.15	11.27	9.40	7.52	7.14	7.14	7.14
	20	21.01	18.91	16.81	14.70	12.60	10.50	8.40	7.98	7.98	7.98

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	3.32	2.95	2.59	2.22	1.86	1.49	1.31	1.31	1.31	1.31
	-15	3.73	3.32	2.91	2.50	2.08	1.67	1.47	1.47	1.47	1.47
	-7	4.20	3.74	3.27	2.81	2.34	1.88	1.66	1.66	1.66	1.66
	-2	4.15	3.69	3.23	2.77	2.32	1.86	1.64	1.64	1.64	1.64
	2	4.16	3.70	3.24	2.78	2.32	1.86	1.40	1.35	1.35	1.35
	7	4.50	4.00	3.51	3.01	2.51	2.01	1.52	1.47	1.47	1.47
	10	4.62	4.11	3.59	3.08	2.58	2.07	1.56	1.50	1.50	1.50
	12	4.64	4.13	3.62	3.11	2.59	2.08	1.57	1.51	1.51	1.51
	15	4.70	4.17	3.66	3.14	2.63	2.11	1.58	1.54	1.54	1.54
	20	4.76	4.24	3.71	3.18	2.65	2.13	1.61	1.55	1.55	1.55

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	1.68	1.70	1.72	1.76	1.80	1.87	1.87	1.87	1.87	1.87
	-15	1.95	1.97	2.00	2.04	2.10	2.18	2.18	2.18	2.18	2.18
	-7	2.05	2.07	2.11	2.14	2.20	2.29	2.29	2.29	2.29	2.29
	-2	2.35	2.38	2.41	2.46	2.52	2.61	2.62	2.62	2.62	2.62
	2	2.59	2.61	2.66	2.71	2.78	2.89	3.07	3.02	3.02	3.02
	7	3.32	3.37	3.41	3.48	3.57	3.72	3.93	3.88	3.88	3.88
	10	3.69	3.73	3.79	3.86	3.95	4.11	4.36	4.30	4.30	4.30
	12	3.83	3.88	3.93	4.01	4.11	4.27	4.52	4.46	4.46	4.46
	15	4.00	4.05	4.10	4.19	4.29	4.46	4.74	4.65	4.65	4.65
	20	4.42	4.46	4.53	4.62	4.75	4.92	5.21	5.13	5.13	5.13

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 55°C

Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	8.85	7.97	7.08	6.20	5.31	4.43	3.87	3.87	3.87	3.87
	2	9.65	8.68	7.72	6.76	5.79	4.83	4.22	4.22	4.22	4.22
	7	14.12	12.71	11.29	9.88	8.47	7.06	5.65	5.35	5.35	5.35
	10	15.57	14.01	12.46	10.89	9.34	7.78	6.23	5.90	5.90	5.90
	12	16.53	14.88	13.23	11.57	9.92	8.27	6.61	6.27	6.27	6.27
	15	17.23	15.51	13.78	12.06	10.34	8.62	6.89	6.53	6.53	6.53
	20	19.13	17.22	15.30	13.39	11.48	9.56	7.65	7.25	7.25	7.25

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	4.78	4.19	3.75	3.30	2.85	2.40	1.99	1.99	1.99	1.99
	2	4.74	4.16	3.72	3.27	2.82	2.38	1.97	1.97	1.97	1.97
	7	5.22	4.59	4.10	3.61	3.12	2.63	2.13	1.88	1.88	1.88
	10	5.30	4.66	4.16	3.66	3.17	2.67	2.16	1.91	1.91	1.91
	12	5.35	4.70	4.20	3.70	3.19	2.69	2.19	1.93	1.93	1.93
	15	5.46	4.80	4.29	3.77	3.26	2.74	2.23	1.96	1.96	1.96
	20	5.55	4.88	4.36	3.83	3.31	2.79	2.27	2.00	2.00	2.00

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	—	—	—	—	—	—	—	—	—	—
	-2	1.85	1.90	1.89	1.88	1.87	1.84	1.95	1.95	1.95	1.95
	2	2.04	2.09	2.08	2.06	2.05	2.03	2.14	2.14	2.14	2.14
	7	2.70	2.77	2.76	2.74	2.72	2.69	2.65	2.84	2.84	2.84
	10	2.94	3.01	3.00	2.98	2.95	2.92	2.88	3.08	3.08	3.08
	12	3.09	3.16	3.15	3.13	3.11	3.07	3.01	3.24	3.24	3.24
	15	3.16	3.23	3.22	3.20	3.18	3.14	3.08	3.32	3.32	3.32
	20	3.45	3.53	3.51	3.50	3.47	3.43	3.37	3.62	3.62	3.62

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	3.43	3.54	—
	-15	4.49	4.63	—
	-7	5.31	5.47	—
	-2	6.03	6.18	6.38
	2	6.81	6.83	6.95
	7	8.40	9.50	10.17
	10	10.52	10.80	11.20
	12	10.96	11.29	11.91
	15	11.63	11.93	12.41
	20	12.96	13.34	13.78

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-20	1.53	2.05	—
	-15	1.71	2.31	—
	-7	1.92	2.60	—
	-2	1.88	2.56	3.41
	2	1.95	2.57	3.38
	7	2.05	2.79	3.73
	10	2.19	2.86	3.78
	12	2.19	2.87	3.83
	15	2.20	2.91	3.90
	20	2.22	2.94	3.96

COP		LWT (°C)		
		35	45	55
TO (°C)	-20	2.25	1.73	—
	-15	2.62	2.01	—
	-7	2.77	2.11	—
	-2	3.20	2.41	1.87
	2	3.50	2.65	2.06
	7	4.09	3.41	2.73
	10	4.81	3.78	2.96
	12	5.01	3.93	3.11
	15	5.29	4.10	3.18
	20	5.84	4.53	3.48

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	14.39	12.95	11.51	10.08	8.64	7.20	5.75	4.31	2.88	1.78
	27	13.67	12.30	10.93	9.57	8.20	6.83	5.47	5.19	5.19	5.19
	30	13.36	12.03	10.69	9.35	8.01	6.68	5.34	5.07	5.07	5.07
	35	12.84	11.56	10.27	8.99	7.71	6.43	5.13	4.88	4.88	4.88
	40	11.53	10.37	9.22	8.07	6.91	5.77	5.04	5.04	5.04	5.04
	43	10.72	9.65	8.58	7.51	6.44	5.37	4.69	4.69	4.69	4.69

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	3.25	2.82	2.43	2.05	1.70	1.38	1.07	0.79	0.54	0.38
	27	3.89	3.39	2.90	2.46	2.03	1.64	1.28	1.22	1.22	1.22
	30	4.17	3.62	3.11	2.63	2.18	1.76	1.38	1.31	1.31	1.31
	35	4.63	4.02	3.45	2.91	2.42	1.95	1.52	1.46	1.46	1.46
	40	4.95	4.30	3.69	3.12	2.58	2.09	1.81	1.81	1.81	1.81
	43	5.16	4.48	3.85	3.25	2.69	2.18	1.87	1.87	1.87	1.87

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.43	4.59	4.74	4.91	5.08	5.23	5.36	5.45	5.32	4.74
	27	3.51	3.63	3.77	3.89	4.04	4.16	4.28	4.26	4.26	4.26
	30	3.20	3.32	3.44	3.56	3.68	3.80	3.88	3.89	3.89	3.89
	35	2.78	2.88	2.97	3.09	3.19	3.30	3.38	3.35	3.35	3.35
	40	2.33	2.41	2.50	2.58	2.68	2.76	2.79	2.79	2.79	2.79
	43	2.08	2.15	2.23	2.31	2.39	2.47	2.50	2.50	2.50	2.50

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	16.34	14.70	13.07	11.43	9.80	8.18	6.54	4.91	3.27	3.26
	27	15.54	13.98	12.43	10.87	9.32	7.77	6.46	6.46	6.46	6.46
	30	15.19	13.67	12.15	10.64	9.12	7.60	6.32	6.32	6.32	6.32
	35	14.62	13.15	11.69	10.23	8.77	7.31	6.08	6.08	6.08	6.08
	40	13.29	11.96	10.63	9.31	7.98	6.65	6.17	6.17	6.17	6.17
	43	12.49	11.24	9.99	8.74	7.49	6.25	5.79	5.79	5.79	5.79

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	3.27	2.88	2.52	2.19	1.83	1.51	1.18	0.85	0.56	0.46
	27	3.99	3.50	3.07	2.67	2.23	1.83	1.06	1.06	1.06	1.06
	30	4.29	3.78	3.30	2.88	2.40	1.97	1.14	1.14	1.14	1.14
	35	4.81	4.23	3.70	3.22	2.69	2.21	1.28	1.28	1.28	1.28
	40	5.15	4.53	3.96	3.46	2.89	2.37	1.61	1.61	1.61	1.61
	43	5.42	4.77	4.17	3.63	3.03	2.49	1.70	1.70	1.70	1.70

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.00	5.10	5.18	5.21	5.34	5.43	5.56	5.79	5.86	7.11
	27	3.90	3.99	4.05	4.07	4.18	4.24	6.09	6.09	6.09	6.09
	30	3.54	3.62	3.68	3.70	3.80	3.85	5.54	5.54	5.54	5.54
	35	3.04	3.11	3.16	3.17	3.26	3.30	4.74	4.74	4.74	4.74
	40	2.58	2.64	2.68	2.69	2.76	2.80	3.82	3.82	3.82	3.82
	43	2.31	2.36	2.40	2.41	2.47	2.51	3.42	3.42	3.42	3.42

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	18.29	16.46	14.63	12.81	10.98	9.15	7.31	5.48	4.45	4.45
	27	17.40	15.67	13.92	12.19	10.44	8.71	7.57	7.57	7.57	7.57
	30	17.02	15.32	13.62	11.92	10.21	8.52	7.41	7.41	7.41	7.41
	35	16.39	14.75	13.11	11.47	9.83	8.20	7.12	7.12	7.12	7.12
	40	14.92	13.44	11.94	10.45	8.95	7.12	7.12	7.12	7.12	7.12
	43	14.24	12.81	11.39	9.97	8.54	6.80	6.80	6.80	6.80	6.80

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	3.29	3.04	2.69	2.32	1.96	1.62	1.28	0.93	0.58	0.58
	27	4.08	3.59	3.18	2.74	2.33	1.92	1.06	1.06	1.06	1.06
	30	4.42	3.89	3.45	2.96	2.52	2.08	1.15	1.15	1.15	1.15
	35	4.98	4.38	3.88	3.34	2.84	2.35	1.30	1.30	1.30	1.30
	40	5.35	4.71	4.17	3.59	3.05	1.57	1.57	1.57	1.57	1.57
	43	5.68	5.00	4.44	3.80	3.24	1.66	1.66	1.66	1.66	1.66

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.56	5.41	5.44	5.53	5.59	5.65	5.73	5.88	7.68	7.68
	27	4.27	4.37	4.38	4.46	4.48	4.53	7.14	7.14	7.14	7.14
	30	3.85	3.94	3.95	4.03	4.06	4.10	6.46	6.46	6.46	6.46
	35	3.29	3.37	3.38	3.43	3.46	3.49	5.49	5.49	5.49	5.49
	40	2.79	2.85	2.86	2.91	2.94	4.55	4.55	4.55	4.55	4.55
	43	2.50	2.56	2.57	2.62	2.63	4.09	4.09	4.09	4.09	4.09

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-1605H8-E, HWS-1605H8R-E
Hydro unit HWS-1405XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	9.57	11.81	13.62
	27	9.09	11.23	12.97
	30	8.88	10.98	12.68
	35	8.54	10.57	12.21
	40	7.67	9.61	11.12
	43	7.13	9.03	10.60

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	2.04	2.09	2.23
	27	2.44	2.56	2.63
	30	2.61	2.76	2.85
	35	2.90	3.08	3.22
	40	3.10	3.30	3.45
	43	3.23	3.47	3.67

COP		LWT (°C)		
		7	13	18
TO (°C)	20	4.69	5.64	6.11
	27	3.73	4.39	4.93
	30	3.40	3.98	4.45
	35	2.94	3.43	3.79
	40	2.47	2.91	3.22
	43	2.20	2.60	2.89

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 35°C

Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	6.18	5.56	4.94	4.33	3.71	3.09	2.15	2.15	2.15	2.24
	-20	7.77	7.00	6.22	5.44	4.66	3.89	2.70	2.70	2.70	2.82
	-15	9.37	8.43	7.50	6.56	5.62	4.68	3.25	3.25	3.25	3.40
	-7	11.92	10.73	9.54	8.34	7.15	5.96	4.14	4.14	4.14	4.32
	-2	13.74	12.36	10.99	9.62	8.24	6.87	4.77	4.77	4.77	4.98
	2	15.19	13.67	12.15	10.63	9.11	7.60	5.27	5.27	5.27	5.50
	7	16.92	15.23	13.54	11.84	10.15	8.46	6.77	5.08	3.38	2.07
	10	18.21	16.38	14.56	12.74	10.92	9.10	7.28	5.46	3.64	2.34
	12	19.06	17.16	15.25	13.34	11.44	9.53	7.62	5.72	3.81	2.52
	15	20.35	18.31	16.28	14.24	12.21	10.17	8.14	6.10	4.07	2.79
	20	22.49	20.24	17.99	15.74	13.49	11.25	9.00	6.75	4.50	3.24

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	3.40	2.99	2.58	2.17	1.76	1.49	0.99	0.99	0.99	1.11
	-20	3.66	3.22	2.78	2.33	1.89	1.60	1.07	1.07	1.07	1.20
	-15	3.85	3.39	2.92	2.46	2.00	1.69	1.13	1.13	1.13	1.26
	-7	4.08	3.59	3.10	2.60	2.11	1.78	1.19	1.19	1.19	1.33
	-2	4.22	3.71	3.20	2.69	2.18	1.84	1.23	1.23	1.23	1.38
	2	4.31	3.79	3.27	2.75	2.23	1.88	1.26	1.26	1.26	1.41
	7	4.25	3.68	3.11	2.54	2.19	1.85	1.50	1.15	0.80	0.53
	10	4.09	3.60	3.10	2.61	2.11	1.77	1.43	1.09	0.75	0.51
	12	4.00	3.52	3.04	2.56	2.08	1.74	1.40	1.06	0.73	0.50
	15	3.89	3.43	2.96	2.50	2.03	1.70	1.36	1.03	0.69	0.48
	20	3.74	3.30	2.86	2.42	1.98	1.65	1.31	0.97	0.64	0.45

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	1.82	1.86	1.92	1.99	2.11	2.08	2.16	2.16	2.16	2.02
	-20	2.13	2.18	2.24	2.33	2.46	2.43	2.52	2.52	2.52	2.36
	-15	2.43	2.49	2.56	2.67	2.82	2.78	2.88	2.88	2.88	2.70
	-7	2.92	2.99	3.08	3.20	3.39	3.34	3.47	3.47	3.47	3.24
	-2	3.26	3.33	3.43	3.57	3.78	3.72	3.87	3.87	3.87	3.61
	2	3.53	3.61	3.72	3.87	4.09	4.03	4.19	4.19	4.19	3.91
	7	3.98	4.14	4.35	4.66	4.63	4.58	4.52	4.42	4.24	3.92
	10	4.45	4.56	4.70	4.89	5.17	5.14	5.08	5.00	4.84	4.59
	12	4.76	4.87	5.02	5.22	5.51	5.48	5.44	5.37	5.25	5.07
	15	5.23	5.35	5.50	5.70	6.00	5.99	5.98	5.95	5.89	5.82
	20	6.01	6.13	6.29	6.50	6.81	6.83	6.87	6.93	7.06	7.21

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 45°C

Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	6.72	6.05	5.38	4.71	4.03	2.73	2.73	2.73	2.73	2.96
	-15	8.04	7.24	6.44	5.63	4.83	3.42	3.42	3.42	3.42	3.54
	-7	10.16	9.14	8.13	7.11	6.10	4.52	4.52	4.52	4.52	4.48
	-2	11.56	10.41	9.25	8.09	6.94	5.07	5.07	5.07	5.07	5.10
	2	12.69	11.42	10.15	8.88	7.61	5.50	5.50	5.50	5.50	5.59
	7	14.00	12.60	11.20	9.80	8.40	7.00	5.67	5.67	5.67	5.67
	10	15.00	13.50	12.00	10.50	9.00	7.50	6.28	6.28	6.28	6.28
	12	15.66	14.10	12.53	10.96	9.40	7.83	6.69	6.69	6.69	6.69
	15	16.66	14.99	13.33	11.66	10.00	8.33	7.30	7.30	7.30	7.30
	20	18.32	16.49	14.66	12.82	10.99	9.16	8.31	8.31	8.31	8.31

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	3.88	3.47	3.06	2.65	2.24	1.65	1.65	1.65	1.65	1.62
	-15	4.02	3.59	3.17	2.75	2.32	1.72	1.72	1.72	1.72	1.68
	-7	4.17	3.73	3.29	2.85	2.41	1.79	1.79	1.79	1.79	1.75
	-2	4.23	3.79	3.34	2.89	2.45	1.77	1.77	1.77	1.77	1.77
	2	4.27	3.82	3.37	2.92	2.47	1.76	1.76	1.76	1.76	1.79
	7	4.20	3.75	3.30	2.85	2.39	1.98	1.59	1.59	1.59	1.59
	10	4.05	3.61	3.17	2.73	2.29	1.89	1.57	1.57	1.57	1.57
	12	3.96	3.53	3.10	2.67	2.24	1.84	1.56	1.56	1.56	1.56
	15	3.85	3.41	2.97	2.53	2.15	1.77	1.54	1.54	1.54	1.54
	20	3.70	3.27	2.84	2.41	2.04	1.68	1.51	1.51	1.51	1.51

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	1.73	1.74	1.76	1.77	1.80	1.66	1.66	1.66	1.66	1.82
	-15	2.00	2.01	2.03	2.05	2.08	1.99	1.99	1.99	1.99	2.11
	-7	2.44	2.45	2.47	2.49	2.53	2.52	2.52	2.52	2.52	2.56
	-2	2.73	2.75	2.77	2.80	2.84	2.86	2.86	2.86	2.86	2.88
	2	2.97	2.99	3.01	3.04	3.08	3.13	3.13	3.13	3.13	3.13
	7	3.33	3.36	3.40	3.44	3.51	3.54	3.58	3.58	3.58	3.58
	10	3.71	3.74	3.78	3.84	3.92	3.96	4.01	4.01	4.01	4.01
	12	3.95	3.99	4.04	4.11	4.20	4.25	4.30	4.30	4.30	4.30
	15	4.33	4.40	4.49	4.62	4.65	4.70	4.74	4.74	4.74	4.74
	20	4.95	5.04	5.16	5.32	5.38	5.46	5.51	5.51	5.51	5.51

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 55°C

Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	8.40	7.56	6.72	5.88	5.04	4.09	4.09	4.09	4.09	4.18
	-2	9.39	8.45	7.51	6.57	5.63	4.48	4.48	4.48	4.48	4.67
	2	10.18	9.16	8.15	7.13	6.11	4.80	4.80	4.80	4.80	5.06
	7	11.08	9.97	8.86	7.76	6.65	5.54	5.20	5.20	5.20	5.20
	10	11.79	10.61	9.43	8.25	7.07	5.89	5.75	5.75	5.75	5.75
	12	12.26	11.03	9.81	8.58	7.36	6.13	6.11	6.11	6.11	6.11
	15	12.97	11.67	10.38	9.08	7.78	6.66	6.66	6.66	6.66	6.66
	20	14.15	12.74	11.32	9.91	8.49	7.58	7.58	7.58	7.58	7.58

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	4.32	3.89	3.46	3.03	2.61	2.21	2.21	2.21	2.21	2.18
	-2	4.26	3.83	3.41	2.99	2.57	2.13	2.13	2.13	2.13	2.15
	2	4.23	3.80	3.38	2.96	2.56	2.08	2.08	2.08	2.08	2.14
	7	4.13	3.72	3.31	2.90	2.50	2.10	1.97	1.97	1.97	1.97
	10	3.98	3.59	3.19	2.80	2.41	2.02	1.97	1.97	1.97	1.97
	12	3.90	3.51	3.13	2.74	2.36	1.97	1.97	1.97	1.97	1.97
	15	3.79	3.42	3.05	2.67	2.29	1.97	1.97	1.97	1.97	1.97
	20	3.65	3.30	2.95	2.58	2.20	1.96	1.96	1.96	1.96	1.96

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	1.95	1.94	1.94	1.94	1.93	1.85	1.85	1.85	1.85	1.91
	-2	2.21	2.20	2.20	2.20	2.19	2.10	2.10	2.10	2.10	2.17
	2	2.41	2.41	2.41	2.40	2.39	2.31	2.31	2.31	2.31	2.37
	7	2.68	2.68	2.68	2.67	2.66	2.64	2.63	2.63	2.63	2.63
	10	2.96	2.96	2.95	2.95	2.94	2.92	2.92	2.92	2.92	2.92
	12	3.14	3.14	3.14	3.13	3.12	3.11	3.11	3.11	3.11	3.11
	15	3.42	3.41	3.40	3.40	3.39	3.39	3.39	3.39	3.39	3.39
	20	3.88	3.86	3.84	3.85	3.86	3.87	3.87	3.87	3.87	3.87

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	3.38	—	—
	-20	4.25	4.07	—
	-15	5.12	4.87	—
	-7	6.52	6.15	5.79
	-2	7.51	7.00	6.47
	2	8.31	7.68	7.01
	7	8.96	8.47	7.69
	10	10.06	9.44	8.59
	12	10.79	10.09	9.19
	15	11.89	11.05	10.09
	20	13.73	12.66	11.58

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	1.60	—	—
	-20	1.73	2.26	—
	-15	1.82	2.34	—
	-7	1.92	2.43	2.98
	-2	1.99	2.47	2.94
	2	2.03	2.49	2.92
	7	1.92	2.41	2.88
	10	1.95	2.41	2.91
	12	1.96	2.40	2.93
	15	1.98	2.39	2.97
	20	2.02	2.38	3.02

COP		LWT (°C)		
		35	45	55
TO (°C)	-25	2.11	—	—
	-20	2.46	1.80	—
	-15	2.82	2.08	—
	-7	3.39	2.53	1.94
	-2	3.78	2.84	2.20
	2	4.09	3.08	2.40
	7	4.66	3.51	2.67
	10	5.17	3.92	2.95
	12	5.51	4.20	3.13
	15	6.00	4.62	3.40
	20	6.81	5.32	3.84

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input in low noise operation are the data at low noise operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	7.82	7.04	6.26	5.48	4.70	3.91	3.13	2.35	1.56	0.98
	27	7.53	6.77	6.03	5.27	4.52	3.77	3.04	3.04	3.04	3.04
	30	7.41	6.66	5.93	5.18	4.45	3.70	2.98	2.98	2.98	2.98
	35	7.20	6.48	5.76	5.04	4.32	3.60	2.90	2.90	2.90	2.90
	40	6.50	5.85	5.20	4.55	3.90	3.25	3.02	3.02	3.02	3.02
	43	6.08	5.47	4.87	4.25	3.64	3.04	2.83	2.83	2.83	2.83

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.30	1.18	1.06	0.94	0.82	0.70	0.58	0.46	0.34	0.25
	27	1.67	1.52	1.36	1.21	1.05	0.90	0.74	0.74	0.74	0.74
	30	1.83	1.66	1.49	1.32	1.16	0.98	0.82	0.82	0.82	0.82
	35	2.09	1.90	1.71	1.51	1.32	1.12	0.93	0.93	0.93	0.93
	40	2.31	2.10	1.88	1.67	1.46	1.25	1.17	1.17	1.17	1.17
	43	2.44	2.22	1.99	1.77	1.54	1.31	1.24	1.24	1.24	1.24

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.00	5.96	5.91	5.80	5.71	5.59	5.41	5.15	4.57	3.87
	27	4.51	4.47	4.42	4.36	4.29	4.19	4.08	4.08	4.08	4.08
	30	4.05	4.02	3.97	3.93	3.85	3.77	3.64	3.64	3.64	3.64
	35	3.44	3.42	3.37	3.33	3.28	3.21	3.11	3.11	3.11	3.11
	40	2.81	2.78	2.76	2.72	2.67	2.61	2.59	2.59	2.59	2.59
	43	2.49	2.46	2.45	2.41	2.36	2.32	2.28	2.28	2.28	2.28

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	8.99	8.10	7.20	6.30	5.40	4.50	3.59	2.70	2.42	2.42
	27	8.50	7.65	6.79	5.94	5.09	4.25	4.25	4.25	4.25	4.25
	30	8.51	7.66	6.80	5.96	5.11	4.26	4.26	4.26	4.26	4.26
	35	8.62	7.75	6.89	6.04	5.17	4.32	4.32	4.32	4.32	4.32
	40	7.77	6.99	6.21	5.45	4.67	4.30	4.30	4.30	4.30	4.30
	43	7.31	6.58	5.84	5.12	4.38	4.04	4.04	4.04	4.04	4.04

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.29	1.15	1.01	0.88	0.74	0.60	0.46	0.32	0.28	0.28
	27	1.67	1.49	1.31	1.13	0.96	0.77	0.77	0.77	0.77	0.77
	30	1.83	1.64	1.44	1.25	1.05	0.85	0.85	0.85	0.85	0.85
	35	2.11	1.88	1.66	1.43	1.21	0.98	0.98	0.98	0.98	0.98
	40	2.35	2.09	1.84	1.59	1.34	1.22	1.22	1.22	1.22	1.22
	43	2.51	2.24	1.97	1.70	1.43	1.31	1.31	1.31	1.31	1.31

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.97	7.04	7.13	7.17	7.32	7.53	7.84	8.46	8.65	8.65
	27	5.09	5.12	5.19	5.24	5.32	5.50	5.50	5.50	5.50	5.50
	30	4.65	4.68	4.72	4.78	4.86	4.98	4.98	4.98	4.98	4.98
	35	4.09	4.13	4.16	4.23	4.29	4.42	4.42	4.42	4.42	4.42
	40	3.31	3.35	3.37	3.43	3.48	3.52	3.52	3.52	3.52	3.52
	43	2.91	2.93	2.97	3.00	3.07	3.09	3.09	3.09	3.09	3.09

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	8.99	8.10	7.19	6.30	5.40	4.50	3.60	3.22	3.22	3.22
	27	9.30	8.37	7.44	6.51	5.58	5.23	5.23	5.23	5.23	5.23
	30	9.43	8.49	7.54	6.60	5.66	5.30	5.30	5.30	5.30	5.30
	35	9.65	8.68	7.71	6.76	5.79	5.43	5.43	5.43	5.43	5.43
	40	8.84	7.95	7.07	6.18	5.37	5.37	5.37	5.37	5.37	5.37
	43	8.35	7.51	6.68	5.84	5.07	5.07	5.07	5.07	5.07	5.07

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.29	1.19	1.03	0.87	0.71	0.55	0.39	0.32	0.32	0.32
	27	1.67	1.47	1.28	1.07	0.87	0.80	0.80	0.80	0.80	0.80
	30	1.83	1.61	1.40	1.18	0.96	0.88	0.88	0.88	0.88	0.88
	35	2.10	1.85	1.60	1.35	1.11	1.00	1.00	1.00	1.00	1.00
	40	2.37	2.09	1.81	1.53	1.27	1.27	1.27	1.27	1.27	1.27
	43	2.54	2.23	1.93	1.63	1.35	1.35	1.35	1.35	1.35	1.35

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.97	6.80	6.97	7.22	7.57	8.24	9.29	10.10	10.10	10.10
	27	5.57	5.68	5.83	6.09	6.39	6.50	6.50	6.50	6.50	6.50
	30	5.15	5.26	5.40	5.60	5.89	6.03	6.03	6.03	6.03	6.03
	35	4.59	4.69	4.82	5.01	5.23	5.40	5.40	5.40	5.40	5.40
	40	3.72	3.80	3.90	4.05	4.24	4.24	4.24	4.24	4.24	4.24
	43	3.29	3.36	3.46	3.59	3.76	3.76	3.76	3.76	3.76	3.76

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-P805HR-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	5.01	6.29	6.62
	27	4.82	5.93	6.85
	30	4.73	5.94	6.94
	35	4.61	6.02	7.10
	40	4.16	5.43	6.50
	43	3.89	5.11	6.14

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	0.87	0.87	0.93
	27	1.12	1.13	1.15
	30	1.22	1.24	1.26
	35	1.40	1.43	1.44
	40	1.54	1.59	1.63
	43	1.63	1.69	1.74

COP		LWT (°C)		
		7	13	18
TO (°C)	20	5.75	7.23	7.15
	27	4.32	5.23	5.97
	30	3.87	4.81	5.51
	35	3.30	4.22	4.92
	40	2.70	3.42	4.00
	43	2.39	3.02	3.54

* Cooling capacity and power input in low noise operation are the data at low noise operation frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 35°C

Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	7.81	7.03	6.25	5.46	4.68	3.90	2.83	2.83	2.83	2.83
	-20	9.19	8.27	7.35	6.43	5.52	4.60	3.33	3.33	3.33	3.33
	-15	11.23	10.11	8.98	7.86	6.74	5.62	4.07	4.07	4.07	4.07
	-7	12.79	11.51	10.23	8.96	7.68	6.40	4.64	4.64	4.64	4.64
	-2	14.39	12.95	11.52	10.08	8.64	7.20	5.22	5.22	5.22	5.22
	2	15.67	14.11	12.54	10.97	9.40	7.84	5.68	5.68	5.68	5.68
	7	18.05	16.24	14.44	12.63	10.83	9.02	7.22	5.41	3.61	2.21
	10	18.94	17.05	15.15	13.26	11.37	9.47	7.58	5.68	3.79	2.43
	12	19.54	17.59	15.63	13.68	11.72	9.77	7.82	5.86	3.91	2.58
	15	20.43	18.39	16.35	14.30	12.26	10.22	8.17	6.13	4.09	2.79
	20	21.92	19.73	17.54	15.35	13.15	10.96	8.77	6.58	4.38	3.16

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	4.32	3.80	3.28	2.76	2.24	1.89	1.41	1.41	1.41	1.41
	-20	4.33	3.81	3.29	2.76	2.24	1.89	1.42	1.42	1.42	1.42
	-15	4.34	3.81	3.29	2.77	2.24	1.90	1.42	1.42	1.42	1.42
	-7	4.35	3.82	3.30	2.78	2.25	1.90	1.42	1.42	1.42	1.42
	-2	4.35	3.82	3.30	2.77	2.25	1.90	1.42	1.42	1.42	1.42
	2	4.35	3.82	3.30	2.77	2.25	1.90	1.42	1.42	1.42	1.42
	7	4.29	3.72	3.15	2.57	2.22	1.87	1.51	1.16	0.81	0.53
	10	4.12	3.62	3.12	2.63	2.13	1.79	1.44	1.10	0.76	0.51
	12	4.01	3.53	3.05	2.57	2.09	1.75	1.41	1.07	0.73	0.50
	15	3.88	3.42	2.96	2.49	2.03	1.70	1.36	1.03	0.69	0.48
	20	3.70	3.26	2.83	2.39	1.96	1.63	1.29	0.96	0.63	0.44

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	1.81	1.85	1.91	1.98	2.10	2.07	2.00	2.00	2.00	2.00
	-20	2.12	2.17	2.24	2.33	2.46	2.43	2.35	2.35	2.35	2.35
	-15	2.59	2.65	2.73	2.84	3.00	2.96	2.87	2.87	2.87	2.87
	-7	2.94	3.01	3.10	3.23	3.41	3.36	3.26	3.26	3.26	3.26
	-2	3.31	3.39	3.49	3.63	3.84	3.79	3.67	3.67	3.67	3.67
	2	3.61	3.69	3.80	3.96	4.18	4.12	4.00	4.00	4.00	4.00
	7	4.20	4.37	4.59	4.91	4.88	4.84	4.77	4.67	4.47	4.14
	10	4.60	4.71	4.85	5.05	5.34	5.30	5.25	5.16	4.99	4.73
	12	4.87	4.98	5.12	5.32	5.62	5.59	5.55	5.48	5.35	5.16
	15	5.27	5.38	5.53	5.73	6.03	6.02	6.00	5.97	5.92	5.84
	20	5.93	6.05	6.20	6.41	6.71	6.74	6.78	6.84	6.96	7.12

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 45°C

Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	7.64	6.88	6.11	5.35	4.58	3.37	3.37	3.37	3.37	3.37
	-15	8.13	7.32	6.50	5.69	4.88	3.58	3.58	3.58	3.58	3.58
	-7	10.61	9.55	8.49	7.42	6.36	4.67	4.67	4.67	4.67	4.67
	-2	11.95	10.76	9.56	8.37	7.17	5.27	5.27	5.27	5.27	5.27
	2	13.03	11.72	10.42	9.12	7.82	5.74	5.74	5.74	5.74	5.74
	7	14.74	13.26	11.79	10.32	8.84	7.37	5.97	5.97	5.97	5.97
	10	15.50	13.95	12.40	10.85	9.30	7.75	6.48	6.48	6.48	6.48
	12	16.01	14.41	12.81	11.21	9.61	8.01	6.82	6.82	6.82	6.82
	15	16.78	15.10	13.42	11.74	10.07	8.39	7.34	7.34	7.34	7.34
	20	18.05	16.25	14.44	12.64	10.83	9.03	8.19	8.19	8.19	8.19

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	4.31	3.86	3.40	2.95	2.49	1.80	1.80	1.80	1.80	1.80
	-15	4.32	3.86	3.41	2.95	2.50	1.81	1.81	1.81	1.81	1.81
	-7	4.33	3.87	3.41	2.96	2.50	1.81	1.81	1.81	1.81	1.81
	-2	4.31	3.86	3.40	2.95	2.49	1.80	1.80	1.80	1.80	1.80
	2	4.30	3.85	3.40	2.94	2.49	1.80	1.80	1.80	1.80	1.80
	7	4.23	3.77	3.32	2.86	2.41	1.99	1.60	1.60	1.60	1.60
	10	4.06	3.62	3.18	2.74	2.31	1.90	1.57	1.57	1.57	1.57
	12	3.97	3.54	3.11	2.67	2.24	1.85	1.56	1.56	1.56	1.56
	15	3.84	3.40	2.96	2.52	2.15	1.77	1.53	1.53	1.53	1.53
	20	3.67	3.25	2.82	2.39	2.03	1.66	1.50	1.50	1.50	1.50

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	1.77	1.78	1.80	1.82	1.84	1.87	1.87	1.87	1.87	1.87
	-15	1.88	1.89	1.91	1.93	1.95	1.98	1.98	1.98	1.98	1.98
	-7	2.45	2.47	2.49	2.51	2.55	2.58	2.58	2.58	2.58	2.58
	-2	2.77	2.79	2.81	2.84	2.88	2.92	2.92	2.92	2.92	2.92
	2	3.03	3.05	3.07	3.10	3.14	3.19	3.19	3.19	3.19	3.19
	7	3.49	3.52	3.55	3.60	3.67	3.70	3.74	3.74	3.74	3.74
	10	3.82	3.85	3.90	3.95	4.04	4.07	4.12	4.12	4.12	4.12
	12	4.04	4.08	4.13	4.19	4.28	4.33	4.38	4.38	4.38	4.38
	15	4.37	4.44	4.53	4.65	4.69	4.74	4.78	4.78	4.78	4.78
	20	4.91	5.01	5.12	5.29	5.34	5.43	5.48	5.48	5.48	5.48

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input LWT(°C) = 55°C

Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	8.42	7.58	6.74	5.89	5.05	4.19	4.19	4.19	4.19	4.19
	-2	9.51	8.56	7.61	6.66	5.71	4.73	4.73	4.73	4.73	4.73
	2	10.38	9.34	8.30	7.27	6.23	5.16	5.16	5.16	5.16	5.16
	7	11.43	10.28	9.14	8.00	6.86	5.71	5.36	5.36	5.36	5.36
	10	12.06	10.86	9.65	8.44	7.24	6.03	5.88	5.88	5.88	5.88
	12	12.49	11.24	9.99	8.74	7.49	6.24	6.22	6.22	6.22	6.22
	15	13.12	11.81	10.50	9.19	7.87	6.74	6.74	6.74	6.74	6.74
	20	14.18	12.76	11.35	9.93	8.51	7.60	7.60	7.60	7.60	7.60

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	4.30	3.87	3.44	3.02	2.60	2.17	2.17	2.17	2.17	2.17
	-2	4.26	3.84	3.42	2.99	2.58	2.16	2.16	2.16	2.16	2.16
	2	4.25	3.82	3.40	2.98	2.57	2.15	2.15	2.15	2.15	2.15
	7	4.12	3.71	3.31	2.90	2.50	2.10	1.97	1.97	1.97	1.97
	10	3.98	3.58	3.19	2.80	2.41	2.02	1.97	1.97	1.97	1.97
	12	3.90	3.51	3.13	2.74	2.36	1.97	1.96	1.96	1.96	1.96
	15	3.79	3.42	3.05	2.67	2.29	1.96	1.96	1.96	1.96	1.96
	20	3.64	3.29	2.94	2.57	2.19	1.96	1.96	1.96	1.96	1.96

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	1.96	1.96	1.96	1.95	1.94	1.93	1.93	1.93	1.93	1.93
	-2	2.23	2.23	2.23	2.23	2.21	2.19	2.19	2.19	2.19	2.19
	2	2.45	2.44	2.44	2.44	2.43	2.41	2.41	2.41	2.41	2.41
	7	2.77	2.77	2.76	2.76	2.74	2.73	2.72	2.72	2.72	2.72
	10	3.03	3.03	3.03	3.02	3.01	2.99	2.99	2.99	2.99	2.99
	12	3.21	3.20	3.19	3.19	3.18	3.17	3.17	3.17	3.17	3.17
	15	3.47	3.46	3.45	3.44	3.44	3.44	3.44	3.44	3.44	3.44
	20	3.90	3.88	3.86	3.87	3.88	3.89	3.89	3.89	3.89	3.89

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	4.27	—	—
	-20	5.03	4.63	—
	-15	6.14	4.92	—
	-7	6.99	6.42	5.80
	-2	7.87	7.24	6.55
	2	8.57	7.89	7.15
	7	9.56	8.92	7.93
	10	10.44	9.74	8.78
	12	11.03	10.29	9.35
	15	11.91	11.11	10.19
	20	13.38	12.48	11.61

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	2.04	—	—
	-20	2.04	2.51	—
	-15	2.05	2.52	—
	-7	2.05	2.52	2.97
	-2	2.05	2.52	2.94
	2	2.05	2.51	2.93
	7	1.95	2.43	2.88
	10	1.96	2.41	2.91
	12	1.96	2.40	2.93
	15	1.97	2.39	2.96
	20	1.99	2.36	3.01

COP		LWT (°C)		
		35	45	55
TO (°C)	-25	2.10	—	—
	-20	2.46	1.84	—
	-15	3.00	1.95	—
	-7	3.41	2.55	1.95
	-2	3.84	2.88	2.23
	2	4.18	3.14	2.44
	7	4.91	3.67	2.76
	10	5.34	4.04	3.02
	12	5.62	4.28	3.19
	15	6.03	4.65	3.45
	20	6.71	5.29	3.86

* Heating capacity and power input are include defrost cycle data.
* Heating capacity and power input in low noise operation are the data at low noise operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 7°C

Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	11.21	10.09	8.97	7.85	6.73	5.61	4.48	3.36	2.25	1.92
	27	10.67	9.61	8.54	7.47	6.40	5.34	5.14	5.14	5.14	5.14
	30	10.44	9.40	8.35	7.31	6.27	5.23	5.04	5.04	5.04	5.04
	35	10.06	9.05	8.05	7.04	6.04	5.03	4.85	4.85	4.85	4.85
	40	8.75	7.87	7.00	6.12	5.26	4.83	4.83	4.83	4.83	4.83
	43	7.97	7.17	6.37	5.57	4.78	4.39	4.39	4.39	4.39	4.39

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.07	1.83	1.59	1.37	1.17	0.97	0.79	0.62	0.47	0.42
	27	2.63	2.32	2.02	1.75	1.48	1.24	1.19	1.19	1.19	1.19
	30	2.87	2.53	2.21	1.90	1.62	1.35	1.31	1.31	1.31	1.31
	35	3.27	2.88	2.52	2.16	1.84	1.53	1.49	1.49	1.49	1.49
	40	3.49	3.08	2.69	2.31	1.96	1.80	1.80	1.80	1.80	1.80
	43	3.62	3.19	2.78	2.41	2.04	1.88	1.88	1.88	1.88	1.88

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.42	5.53	5.64	5.73	5.76	5.77	5.67	5.43	4.78	4.54
	27	4.06	4.15	4.22	4.28	4.33	4.32	4.31	4.31	4.31	4.31
	30	3.64	3.72	3.78	3.85	3.88	3.87	3.86	3.86	3.86	3.86
	35	3.08	3.15	3.20	3.25	3.28	3.28	3.26	3.26	3.26	3.26
	40	2.51	2.56	2.61	2.65	2.68	2.68	2.68	2.68	2.68	2.68
	43	2.20	2.25	2.29	2.32	2.34	2.34	2.34	2.34	2.34	2.34

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 13°C

Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	12.89	11.60	10.31	9.02	7.73	6.45	5.16	3.87	3.78	3.78
	27	12.22	11.00	9.78	8.56	7.34	6.82	6.82	6.82	6.82	6.82
	30	11.97	10.78	9.58	8.38	7.18	6.69	6.69	6.69	6.69	6.69
	35	11.66	10.50	9.33	8.16	7.00	6.51	6.51	6.51	6.51	6.51
	40	9.70	8.73	7.76	6.79	5.99	5.99	5.99	5.99	5.99	5.99
	43	9.16	8.25	7.33	6.42	5.66	5.66	5.66	5.66	5.66	5.66

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.08	1.86	1.59	1.34	1.11	0.89	0.69	0.51	0.50	0.50
	27	2.67	2.31	1.97	1.66	1.37	1.26	1.26	1.26	1.26	1.26
	30	2.92	2.53	2.16	1.82	1.51	1.38	1.38	1.38	1.38	1.38
	35	3.36	2.91	2.49	2.10	1.73	1.59	1.59	1.59	1.59	1.59
	40	3.31	2.87	2.45	2.07	1.77	1.77	1.77	1.77	1.77	1.77
	43	3.58	3.10	2.65	2.24	1.91	1.91	1.91	1.91	1.91	1.91

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.20	6.24	6.50	6.75	6.98	7.26	7.47	7.61	7.55	7.55
	27	4.59	4.76	4.95	5.15	5.34	5.43	5.43	5.43	5.43	5.43
	30	4.10	4.26	4.43	4.60	4.76	4.86	4.86	4.86	4.86	4.86
	35	3.47	3.61	3.74	3.89	4.04	4.09	4.09	4.09	4.09	4.09
	40	2.93	3.04	3.16	3.29	3.39	3.39	3.39	3.39	3.39	3.39
	43	2.56	2.66	2.77	2.87	2.97	2.97	2.97	2.97	2.97	2.97

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) = 18°C

Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	14.12	12.71	11.30	9.89	8.48	7.06	5.65	5.31	5.31	5.31
	27	13.51	12.16	10.81	9.45	8.24	8.24	8.24	8.24	8.24	8.24
	30	13.25	11.92	10.60	9.27	8.09	8.09	8.09	8.09	8.09	8.09
	35	12.81	11.53	10.25	8.96	7.82	7.82	7.82	7.82	7.82	7.82
	40	10.49	9.44	8.39	7.34	6.95	6.95	6.95	6.95	6.95	6.95
	43	9.09	8.18	7.28	6.36	6.03	6.03	6.03	6.03	6.03	6.03

Power input (kW)		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.07	1.85	1.55	1.27	1.02	0.79	0.57	0.53	0.53	0.53
	27	2.70	2.30	1.92	1.58	1.30	1.30	1.30	1.30	1.30	1.30
	30	2.97	2.53	2.12	1.74	1.42	1.42	1.42	1.42	1.42	1.42
	35	3.42	2.91	2.44	2.00	1.64	1.64	1.64	1.64	1.64	1.64
	40	3.16	2.69	2.26	1.85	1.71	1.71	1.71	1.71	1.71	1.71
	43	3.01	2.56	2.15	1.76	1.63	1.63	1.63	1.63	1.63	1.63

COP		Load(%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.83	6.87	7.30	7.78	8.32	8.96	9.87	10.07	10.07	10.07
	27	5.01	5.29	5.63	6.00	6.35	6.35	6.35	6.35	6.35	6.35
	30	4.47	4.71	5.00	5.34	5.69	5.69	5.69	5.69	5.69	5.69
	35	3.75	3.97	4.20	4.48	4.76	4.76	4.76	4.76	4.76	4.76
	40	3.32	3.51	3.72	3.97	4.07	4.07	4.07	4.07	4.07	4.07
	43	3.02	3.20	3.39	3.61	3.70	3.70	3.70	3.70	3.70	3.70

* Cooling capacity and power input at 100% load are the data at rated compressor operating frequency of rated condition 1.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

Outdoor unit HWS-P1105HR-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	8.36	10.13	11.44
	27	7.96	9.61	10.94
	30	7.79	9.41	10.73
	35	7.50	9.17	10.37
	40	6.53	7.62	8.50
	43	5.94	7.20	7.37

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	1.47	1.56	1.58
	27	1.87	1.93	1.96
	30	2.04	2.12	2.15
	35	2.32	2.44	2.48
	40	2.48	2.40	2.30
	43	2.57	2.59	2.18

COP		LWT (°C)		
		7	13	18
TO (°C)	20	5.68	6.51	7.26
	27	4.26	4.97	5.57
	30	3.82	4.44	4.98
	35	3.23	3.76	4.18
	40	2.63	3.17	3.70
	43	2.31	2.78	3.37

* Cooling capacity and power input in low noise operation are the data at low noise operation frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input (peak) LWT (°C) = 35°C

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	6.18	5.56	4.94	4.33	3.71	3.09	2.47	2.15	2.15	2.15
	-20	7.18	6.46	5.74	5.03	4.31	3.59	2.87	2.70	2.70	2.70
	-15	8.18	7.36	6.54	5.73	4.91	4.09	3.27	3.25	3.25	3.25
	-7	10.82	9.74	8.66	7.58	6.49	5.41	4.33	4.14	4.14	4.14
	-2	13.47	12.12	10.77	9.43	8.08	6.73	5.39	4.77	4.77	4.77
	2	15.58	14.02	12.46	10.91	9.35	7.79	6.23	5.27	5.27	5.27
	7	18.06	16.26	14.45	12.65	10.84	9.03	7.23	5.42	3.61	2.07
	10	18.75	16.87	15.00	13.12	11.25	9.37	7.50	5.62	3.75	2.34
	12	19.49	17.54	15.59	13.64	11.69	9.74	7.80	5.85	3.90	2.52
	15	21.17	19.06	16.94	14.82	12.70	10.59	8.47	6.35	4.23	2.79
	20	23.98	21.58	19.19	16.79	14.39	11.99	9.59	7.19	4.80	3.24

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	3.43	3.01	2.60	2.22	1.86	1.51	1.18	1.00	1.00	1.00
	-20	3.52	3.06	2.63	2.23	1.86	1.50	1.17	1.08	1.08	1.08
	-15	3.59	3.10	2.66	2.24	1.85	1.49	1.16	1.14	1.14	1.14
	-7	3.72	3.26	2.82	2.40	2.01	1.63	1.27	1.21	1.21	1.21
	-2	3.89	3.44	3.01	2.60	2.19	1.80	1.42	1.25	1.25	1.25
	2	3.98	3.55	3.13	2.72	2.31	1.91	1.51	1.27	1.27	1.27
	7	4.56	4.11	3.66	3.21	2.76	2.31	1.85	1.39	0.93	0.53
	10	4.50	4.01	3.53	3.06	2.59	2.14	1.69	1.26	0.83	0.52
	12	4.44	3.93	3.44	2.96	2.50	2.05	1.62	1.20	0.79	0.50
	15	4.20	3.72	3.25	2.80	2.36	1.94	1.53	1.13	0.74	0.48
	20	3.90	3.45	3.01	2.59	2.18	1.79	1.40	1.04	0.68	0.45

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	1.80	1.85	1.90	1.95	2.00	2.04	2.09	2.13	2.13	2.13
	-20	2.04	2.11	2.18	2.25	2.32	2.39	2.46	2.50	2.50	2.50
	-15	2.28	2.37	2.46	2.56	2.65	2.74	2.83	2.86	2.86	2.86
	-7	2.91	2.99	3.07	3.15	3.23	3.32	3.40	3.43	3.43	3.43
	-2	3.47	3.52	3.58	3.63	3.68	3.74	3.79	3.83	3.83	3.83
	2	3.91	3.95	3.98	4.02	4.05	4.08	4.12	4.14	4.14	4.14
	7	3.96	3.95	3.95	3.94	3.93	3.92	3.91	3.90	3.89	3.88
	10	4.17	4.21	4.25	4.30	4.34	4.38	4.43	4.47	4.51	4.55
	12	4.39	4.46	4.53	4.60	4.67	4.74	4.82	4.89	4.96	5.01
	15	5.05	5.13	5.21	5.29	5.37	5.46	5.54	5.62	5.70	5.76
	20	6.14	6.26	6.37	6.49	6.60	6.72	6.83	6.95	7.06	7.14

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input (peak) LWT (°C) = 45°C

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	5.98	5.38	4.78	4.19	3.59	2.99	2.73	2.73	2.73	2.73
	-15	7.16	6.44	5.73	5.01	4.29	3.58	3.42	3.42	3.42	3.42
	-7	10.40	9.36	8.32	7.28	6.24	5.20	4.52	4.52	4.52	4.52
	-2	12.40	11.16	9.92	8.68	7.44	6.20	5.07	5.07	5.07	5.07
	2	14.01	12.61	11.20	9.80	8.40	7.00	5.60	5.50	5.50	5.50
	7	16.32	14.69	13.06	11.43	9.79	8.16	6.53	5.67	5.67	5.67
	10	17.09	15.38	13.67	11.96	10.26	8.55	6.84	6.28	6.28	6.28
	12	17.59	15.83	14.07	12.31	10.56	8.80	7.04	6.69	6.69	6.69
	15	19.43	17.49	15.54	13.60	11.66	9.71	7.77	7.30	7.30	7.30
	20	22.49	20.24	17.99	15.74	13.49	11.24	9.00	8.31	8.31	8.31

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	3.61	3.26	2.90	2.54	2.18	1.82	1.66	1.66	1.66	1.66
	-15	3.69	3.37	2.98	2.59	2.20	1.82	1.73	1.73	1.73	1.73
	-7	4.26	3.82	3.38	2.95	2.51	2.09	1.81	1.81	1.81	1.81
	-2	4.38	3.94	3.50	3.07	2.63	2.19	1.79	1.79	1.79	1.79
	2	4.45	4.02	3.58	3.14	2.70	2.25	1.81	1.78	1.78	1.78
	7	4.60	4.14	3.68	3.22	2.76	2.30	1.84	1.60	1.60	1.60
	10	4.85	4.28	3.73	3.20	2.70	2.21	1.73	1.58	1.58	1.58
	12	4.82	4.23	3.66	3.12	2.61	2.13	1.66	1.57	1.57	1.57
	15	4.70	4.14	3.60	3.09	2.59	2.12	1.66	1.55	1.55	1.55
	20	4.55	4.03	3.52	3.03	2.56	2.10	1.66	1.52	1.52	1.52

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	1.66	1.65	1.65	1.65	1.64	1.64	1.64	1.64	1.64	1.64
	-15	1.94	1.91	1.92	1.94	1.95	1.97	1.97	1.97	1.97	1.97
	-7	2.44	2.45	2.46	2.47	2.48	2.49	2.50	2.50	2.50	2.50
	-2	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83
	2	3.15	3.14	3.13	3.12	3.11	3.11	3.10	3.10	3.10	3.10
	7	3.55	3.55	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54
	10	3.52	3.59	3.66	3.73	3.80	3.87	3.94	3.97	3.97	3.97
	12	3.65	3.75	3.84	3.94	4.04	4.14	4.23	4.25	4.25	4.25
	15	4.13	4.22	4.31	4.40	4.49	4.58	4.67	4.70	4.70	4.70
	20	4.94	5.03	5.11	5.19	5.27	5.35	5.43	5.46	5.46	5.46

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input (peak) LWT (°C) = 55°C

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	9.41	8.47	7.53	6.59	5.65	4.71	4.09	4.09	4.09	4.09
	-2	11.09	9.98	8.87	7.76	6.65	5.54	4.48	4.48	4.48	4.48
	2	12.43	11.19	9.95	8.70	7.46	6.22	4.97	4.80	4.80	4.80
	7	15.04	13.54	12.04	10.53	9.03	7.52	6.02	5.20	5.20	5.20
	10	15.44	13.89	12.35	10.81	9.26	7.72	6.17	5.75	5.75	5.75
	12	15.70	14.13	12.56	10.99	9.42	7.85	6.28	6.11	6.11	6.11
	15	17.68	15.92	14.15	12.38	10.61	8.84	7.07	6.66	6.66	6.66
	20	21.00	18.90	16.80	14.70	12.60	10.50	8.40	7.58	7.58	7.58

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	4.87	4.34	3.90	3.45	2.99	2.53	2.23	2.23	2.23	2.23
	-2	5.05	4.51	4.05	3.58	3.11	2.62	2.15	2.15	2.15	2.15
	2	5.22	4.63	4.16	3.67	3.18	2.68	2.15	2.10	2.10	2.10
	7	5.30	5.05	4.50	3.96	3.41	2.85	2.28	1.99	1.99	1.99
	10	5.35	4.70	4.19	3.68	3.16	2.64	2.12	1.99	1.99	1.99
	12	5.39	4.50	4.01	3.52	3.02	2.53	2.02	1.99	1.99	1.99
	15	5.48	4.67	4.15	3.64	3.13	2.61	2.09	1.99	1.99	1.99
	20	5.61	4.90	4.35	3.81	3.26	2.72	2.17	1.98	1.98	1.98

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	1.93	1.95	1.93	1.91	1.89	1.86	1.83	1.83	1.83	1.83
	-2	2.19	2.21	2.19	2.17	2.14	2.11	2.08	2.08	2.08	2.08
	2	2.38	2.42	2.39	2.37	2.35	2.32	2.32	2.28	2.28	2.28
	7	2.84	2.68	2.67	2.66	2.65	2.64	2.64	2.61	2.61	2.61
	10	2.88	2.96	2.95	2.94	2.93	2.92	2.92	2.89	2.89	2.89
	12	2.91	3.14	3.13	3.12	3.12	3.11	3.11	3.07	3.07	3.07
	15	3.22	3.41	3.41	3.40	3.39	3.39	3.39	3.36	3.36	3.36
	20	3.75	3.86	3.86	3.86	3.86	3.86	3.86	3.83	3.83	3.83

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	3.38	—	—
	-20	4.25	4.07	—
	-15	5.12	4.87	—
	-7	6.52	6.15	5.79
	-2	7.51	7.00	6.47
	2	8.31	7.68	7.01
	7	8.96	8.47	7.69
	10	10.06	9.44	8.59
	12	10.79	10.09	9.19
	15	11.89	11.05	10.09
	20	13.73	12.66	11.58

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	1.62	—	—
	-20	1.74	2.29	—
	-15	1.84	2.37	—
	-7	1.94	2.46	3.01
	-2	2.01	2.49	2.97
	2	2.05	2.52	2.95
	7	1.94	2.44	2.91
	10	1.97	2.43	2.94
	12	1.98	2.43	2.96
	15	2.00	2.42	3.00
	20	2.04	2.41	3.05

COP		LWT (°C)		
		35	45	55
TO (°C)	-25	2.09	—	—
	-20	2.44	1.78	—
	-15	2.79	2.06	—
	-7	3.35	2.50	1.92
	-2	3.74	2.81	2.18
	2	4.05	3.05	2.38
	7	4.61	3.47	2.64
	10	5.12	3.88	2.92
	12	5.45	4.16	3.10
	15	5.94	4.57	3.37
	20	6.74	5.27	3.80

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT (°C) =7°C

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	7.82	7.04	6.26	5.48	4.70	3.91	3.13	2.35	1.56	0.98
	27	7.53	6.77	6.03	5.27	4.52	3.77	3.04	3.04	3.04	3.04
	30	7.41	6.66	5.93	5.18	4.45	3.70	2.98	2.98	2.98	2.98
	35	7.20	6.48	5.76	5.04	4.32	3.60	2.90	2.90	2.90	2.90
	40	6.50	5.85	5.20	4.55	3.90	3.25	3.02	3.02	3.02	3.02
	43	6.08	5.47	4.87	4.25	3.64	3.04	2.83	2.83	2.83	2.83

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.32	1.19	1.07	0.95	0.83	0.71	0.58	0.46	0.35	0.26
	27	1.69	1.53	1.38	1.22	1.06	0.91	0.75	0.75	0.75	0.75
	30	1.85	1.67	1.51	1.33	1.17	0.99	0.83	0.83	0.83	0.83
	35	2.11	1.92	1.73	1.53	1.33	1.13	0.94	0.94	0.94	0.94
	40	2.34	2.12	1.90	1.69	1.47	1.26	1.18	1.18	1.18	1.18
	43	2.47	2.25	2.01	1.78	1.56	1.32	1.25	1.25	1.25	1.25

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.94	5.90	5.86	5.74	5.66	5.53	5.35	5.10	4.52	3.84
	27	4.46	4.42	4.38	4.32	4.25	4.15	4.04	4.04	4.04	4.04
	30	4.01	3.98	3.93	3.89	3.81	3.73	3.61	3.61	3.61	3.61
	35	3.40	3.38	3.33	3.30	3.25	3.18	3.08	3.08	3.08	3.08
	40	2.78	2.75	2.74	2.70	2.65	2.58	2.57	2.57	2.57	2.57
	43	2.46	2.44	2.42	2.38	2.34	2.30	2.26	2.26	2.26	2.26

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT (°C) =13°C

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	8.99	8.10	7.20	6.30	5.40	4.50	3.59	2.70	2.42	2.42
	27	8.50	7.65	6.79	5.94	5.09	4.25	4.25	4.25	4.25	4.25
	30	8.51	7.66	6.80	5.96	5.11	4.26	4.26	4.26	4.26	4.26
	35	8.62	7.75	6.89	6.04	5.17	4.32	4.32	4.32	4.32	4.32
	40	7.77	6.99	6.21	5.45	4.67	4.30	4.30	4.30	4.30	4.30
	43	7.31	6.58	5.84	5.12	4.38	4.04	4.04	4.04	4.04	4.04

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.30	1.16	1.02	0.89	0.75	0.60	0.46	0.32	0.28	0.28
	27	1.69	1.51	1.32	1.15	0.97	0.78	0.78	0.78	0.78	0.78
	30	1.85	1.65	1.46	1.26	1.06	0.86	0.86	0.86	0.86	0.86
	35	2.13	1.90	1.67	1.44	1.22	0.99	0.99	0.99	0.99	0.99
	40	2.37	2.11	1.86	1.60	1.35	1.23	1.23	1.23	1.23	1.23
	43	2.53	2.27	1.99	1.72	1.44	1.32	1.32	1.32	1.32	1.32

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.90	6.97	7.05	7.10	7.24	7.45	7.76	8.38	8.56	8.56
	27	5.04	5.06	5.14	5.19	5.26	5.44	5.44	5.44	5.44	5.44
	30	4.60	4.64	4.68	4.73	4.82	4.93	4.93	4.93	4.93	4.93
	35	4.05	4.09	4.12	4.19	4.25	4.38	4.38	4.38	4.38	4.38
	40	3.28	3.31	3.34	3.40	3.45	3.48	3.48	3.48	3.48	3.48
	43	2.88	2.90	2.94	2.97	3.04	3.06	3.06	3.06	3.06	3.06

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT (°C) =18°C

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	8.99	8.10	7.19	6.30	5.40	4.50	3.60	3.22	3.22	3.22
	27	9.30	8.37	7.44	6.51	5.58	5.23	5.23	5.23	5.23	5.23
	30	9.43	8.49	7.54	6.60	5.66	5.30	5.30	5.30	5.30	5.30
	35	9.65	8.68	7.71	6.76	5.79	5.43	5.43	5.43	5.43	5.43
	40	8.84	7.95	7.07	6.18	5.37	5.37	5.37	5.37	5.37	5.37
	43	8.35	7.51	6.68	5.84	5.07	5.07	5.07	5.07	5.07	5.07

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	1.30	1.20	1.04	0.88	0.72	0.55	0.39	0.32	0.32	0.32
	27	1.69	1.49	1.29	1.08	0.88	0.81	0.81	0.81	0.81	0.81
	30	1.85	1.63	1.41	1.19	0.97	0.89	0.89	0.89	0.89	0.89
	35	2.12	1.87	1.62	1.36	1.12	1.02	1.02	1.02	1.02	1.02
	40	2.40	2.11	1.83	1.54	1.28	1.28	1.28	1.28	1.28	1.28
	43	2.56	2.26	1.95	1.64	1.36	1.36	1.36	1.36	1.36	1.36

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.90	6.73	6.90	7.14	7.49	8.16	9.20	10.00	10.00	10.00
	27	5.52	5.63	5.78	6.03	6.33	6.43	6.43	6.43	6.43	6.43
	30	5.10	5.20	5.35	5.54	5.83	5.97	5.97	5.97	5.97	5.97
	35	4.54	4.64	4.77	4.96	5.18	5.34	5.34	5.34	5.34	5.34
	40	3.68	3.76	3.87	4.01	4.20	4.20	4.20	4.20	4.20	4.20
	43	3.26	3.33	3.42	3.55	3.73	3.73	3.73	3.73	3.73	3.73

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

▼Outdoor unit HWS-P805H8R-E
Hydro unit HWS-P805XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	5.01	6.29	6.62
	27	4.82	5.93	6.85
	30	4.73	5.94	6.94
	35	4.61	6.02	7.10
	40	4.16	5.43	6.50
	43	3.89	5.11	6.14

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	0.88	0.88	0.93
	27	1.13	1.15	1.16
	30	1.24	1.25	1.27
	35	1.41	1.44	1.46
	40	1.55	1.60	1.64
	43	1.64	1.71	1.75

COP		LWT (°C)		
		7	13	18
TO (°C)	20	5.69	7.15	7.08
	27	4.27	5.18	5.91
	30	3.83	4.76	5.45
	35	3.27	4.18	4.87
	40	2.68	3.39	3.96
	43	2.37	2.99	3.50

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input(peak)LWT(°C) = 35°C

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	7.00	6.30	5.60	4.90	4.20	3.50	2.83	2.83	2.83	2.83
	-20	8.13	7.32	6.50	5.69	4.88	4.07	3.33	3.33	3.33	3.33
	-15	9.26	8.33	7.41	6.48	5.55	4.63	4.07	4.07	4.07	4.07
	-7	11.63	10.46	9.30	8.14	6.98	5.81	4.64	4.64	4.64	4.64
	-2	14.32	12.89	11.46	10.03	8.59	7.16	5.22	5.22	5.22	5.22
	2	16.48	14.83	13.19	11.54	9.89	8.24	5.68	5.68	5.68	5.68
	7	18.00	16.20	14.40	12.60	10.80	9.00	7.20	5.40	3.60	2.21
	10	20.70	18.63	16.56	14.49	12.42	10.35	8.28	6.21	4.14	2.43
	12	22.49	20.24	18.00	15.75	13.50	11.25	9.00	6.75	4.50	2.58
	15	24.10	21.69	19.28	16.87	14.46	12.05	9.64	7.23	4.82	2.79
	20	26.78	24.11	21.43	18.75	16.07	13.39	10.71	8.04	5.36	3.16

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	3.81	3.37	2.94	2.52	2.12	1.74	1.38	1.38	1.38	1.38
	-20	4.02	3.53	3.06	2.61	2.19	1.78	1.43	1.43	1.43	1.43
	-15	4.10	3.52	3.00	2.52	2.08	1.66	1.43	1.43	1.43	1.43
	-7	4.23	3.70	3.20	2.72	2.27	1.85	1.44	1.44	1.44	1.44
	-2	4.55	3.95	3.44	2.95	2.48	2.02	1.43	1.43	1.43	1.43
	2	4.76	4.11	3.59	3.09	2.60	2.13	1.43	1.43	1.43	1.43
	7	4.49	4.03	3.57	3.12	2.67	2.22	1.77	1.32	0.88	0.54
	10	4.95	4.39	3.85	3.33	2.82	2.32	1.83	1.36	0.89	0.52
	12	5.23	4.61	4.02	3.44	2.89	2.37	1.86	1.37	0.89	0.50
	15	5.31	4.64	4.00	3.40	2.83	2.30	1.79	1.31	0.85	0.48
	20	5.42	4.65	3.95	3.31	2.73	2.18	1.68	1.22	0.78	0.45

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	1.84	1.87	1.91	1.94	1.98	2.01	2.05	2.05	2.05	2.05
	-20	2.02	2.07	2.13	2.18	2.23	2.28	2.33	2.33	2.33	2.33
	-15	2.26	2.36	2.47	2.57	2.68	2.78	2.84	2.84	2.84	2.84
	-7	2.75	2.83	2.91	2.99	3.07	3.15	3.23	3.23	3.23	3.23
	-2	3.15	3.26	3.33	3.40	3.47	3.54	3.64	3.64	3.64	3.64
	2	3.46	3.61	3.67	3.74	3.80	3.86	3.96	3.96	3.96	3.96
	7	4.01	4.02	4.03	4.04	4.05	4.06	4.07	4.08	4.09	4.10
	10	4.18	4.24	4.30	4.35	4.41	4.47	4.52	4.58	4.64	4.69
	12	4.30	4.39	4.48	4.57	4.66	4.75	4.85	4.94	5.03	5.11
	15	4.54	4.68	4.82	4.96	5.10	5.24	5.38	5.52	5.66	5.78
	20	4.94	5.18	5.42	5.66	5.90	6.14	6.37	6.61	6.85	7.05

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input (peak) LWT (°C) = 45°C

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	7.80	7.02	6.24	5.46	4.68	3.90	3.37	3.37	3.37	3.37
	-15	8.59	7.73	6.87	6.01	5.15	4.29	3.58	3.58	3.58	3.58
	-7	10.52	9.47	8.41	7.36	6.31	5.26	4.67	4.67	4.67	4.67
	-2	13.48	12.14	10.79	9.44	8.09	6.74	5.39	5.27	5.27	5.27
	2	15.25	13.72	12.20	10.67	9.15	7.62	6.10	5.74	5.74	5.74
	7	16.85	15.17	13.48	11.80	10.11	8.43	6.74	5.97	5.97	5.97
	10	19.17	17.26	15.34	13.42	11.50	9.59	7.67	6.48	6.48	6.48
	12	20.72	18.65	16.58	14.51	12.43	10.36	8.29	6.82	6.82	6.82
	15	22.38	20.14	17.90	15.66	13.43	11.19	8.95	7.34	7.34	7.34
	20	25.13	22.62	20.36	18.32	16.49	14.84	13.36	12.02	10.82	9.74

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	5.06	4.40	3.79	3.21	2.66	2.15	1.82	1.82	1.82	1.82
	-15	4.55	4.07	3.59	3.12	2.66	2.20	1.83	1.83	1.83	1.83
	-7	4.48	4.03	3.52	3.02	2.54	2.08	1.83	1.83	1.83	1.83
	-2	5.15	4.56	3.98	3.43	2.89	2.37	1.87	1.82	1.82	1.82
	2	5.45	4.75	4.15	3.57	3.01	2.47	1.94	1.82	1.82	1.82
	7	5.39	4.72	4.08	3.48	2.90	2.36	1.84	1.61	1.61	1.61
	10	5.75	5.01	4.31	3.66	3.04	2.46	1.91	1.59	1.59	1.59
	12	5.97	5.18	4.44	3.76	3.12	2.52	1.95	1.57	1.57	1.57
	15	6.06	5.23	4.47	3.77	3.11	2.50	1.94	1.55	1.55	1.55
	20	6.19	5.31	4.58	3.98	3.47	3.04	2.67	2.35	2.08	1.84

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	1.54	1.59	1.65	1.70	1.76	1.81	1.85	1.85	1.85	1.85
	-15	1.89	1.90	1.91	1.93	1.94	1.95	1.96	1.96	1.96	1.96
	-7	2.35	2.35	2.39	2.44	2.48	2.53	2.56	2.56	2.56	2.56
	-2	2.62	2.66	2.71	2.75	2.80	2.84	2.88	2.89	2.89	2.89
	2	2.80	2.89	2.94	2.99	3.04	3.09	3.14	3.16	3.16	3.16
	7	3.13	3.22	3.30	3.39	3.48	3.57	3.66	3.70	3.70	3.70
	10	3.33	3.45	3.56	3.67	3.78	3.90	4.01	4.08	4.08	4.08
	12	3.47	3.60	3.73	3.86	3.99	4.12	4.25	4.34	4.34	4.34
	15	3.69	3.85	4.00	4.16	4.31	4.47	4.62	4.74	4.74	4.74
	20	4.06	4.26	4.44	4.61	4.76	4.89	5.01	5.12	5.21	5.30

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input(peak)LWT(°C) = 55°C

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	10.93	9.84	8.75	7.65	6.56	5.47	4.37	4.19	4.19	4.19
	-2	12.65	11.38	10.12	8.85	7.59	6.32	5.06	4.73	4.73	4.73
	2	14.02	12.61	11.21	9.81	8.41	7.01	5.61	5.16	5.16	5.16
	7	15.70	14.13	12.56	10.99	9.42	7.85	6.28	5.36	5.36	5.36
	10	17.64	15.87	14.11	12.35	10.58	8.82	7.06	5.88	5.88	5.88
	12	18.93	17.04	15.14	13.25	11.36	9.46	7.57	6.22	6.22	6.22
	15	20.61	18.55	16.49	14.43	12.37	10.31	8.25	6.74	6.74	6.74
	20	23.42	21.08	18.74	16.39	14.05	11.71	9.37	7.60	7.60	7.60

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	5.62	5.08	4.53	3.97	3.42	2.86	2.29	2.19	2.19	2.19
	-2	6.18	5.51	4.85	4.20	3.57	2.95	2.34	2.18	2.18	2.18
	2	6.59	5.82	5.08	4.36	3.68	3.01	2.37	2.17	2.17	2.17
	7	6.30	5.60	4.92	4.25	3.60	2.97	2.35	1.99	1.99	1.99
	10	6.57	5.82	5.10	4.40	3.71	3.05	2.41	1.99	1.99	1.99
	12	6.73	5.95	5.20	4.48	3.78	3.10	2.44	1.98	1.98	1.98
	15	6.87	6.06	5.28	4.54	3.82	3.12	2.46	1.98	1.98	1.98
	20	7.06	6.21	5.39	4.61	3.87	3.16	2.47	1.97	1.97	1.97

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	1.94	1.94	1.93	1.93	1.92	1.91	1.91	1.91	1.91	1.91
	-2	2.05	2.07	2.09	2.11	2.13	2.15	2.17	2.17	2.17	2.17
	2	2.13	2.17	2.21	2.25	2.29	2.33	2.37	2.38	2.38	2.38
	7	2.49	2.52	2.55	2.58	2.61	2.64	2.67	2.69	2.69	2.69
	10	2.69	2.73	2.77	2.81	2.85	2.89	2.93	2.96	2.96	2.96
	12	2.81	2.86	2.91	2.96	3.01	3.05	3.10	3.13	3.13	3.13
	15	3.00	3.06	3.12	3.18	3.24	3.30	3.36	3.40	3.40	3.40
	20	3.32	3.40	3.47	3.55	3.63	3.71	3.79	3.85	3.85	3.85

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	4.27	—	—
	-20	5.03	4.63	—
	-15	6.14	4.92	—
	-7	6.99	6.42	5.80
	-2	7.87	7.24	6.55
	2	8.57	7.89	7.15
	7	9.56	8.92	7.93
	10	10.44	9.74	8.78
	12	11.03	10.29	9.35
	15	11.91	11.11	10.19
	20	13.38	12.48	11.61

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	2.06	—	—
	-20	2.06	2.54	—
	-15	2.07	2.55	—
	-7	2.07	2.55	3.00
	-2	2.07	2.54	2.97
	2	2.07	2.54	2.96
	7	1.97	2.45	2.90
	10	1.98	2.44	2.94
	12	1.98	2.43	2.96
	15	1.99	2.41	2.99
	20	2.01	2.38	3.04

COP		LWT (°C)		
		35	45	55
TO (°C)	-25	2.07	—	—
	-20	2.44	1.82	—
	-15	2.97	1.93	—
	-7	3.37	2.52	1.93
	-2	3.80	2.85	2.20
	2	4.14	3.11	2.42
	7	4.86	3.63	2.73
	10	5.28	3.99	2.99
	12	5.56	4.24	3.16
	15	5.97	4.61	3.41
	20	6.65	5.23	3.82

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT (°C) =7°C

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	11.21	10.09	8.97	7.85	6.73	5.61	4.48	3.36	2.25	1.92
	27	10.67	9.61	8.54	7.47	6.40	5.34	5.14	5.14	5.14	5.14
	30	10.44	9.40	8.35	7.31	6.27	5.23	5.04	5.04	5.04	5.04
	35	10.06	9.05	8.05	7.04	6.04	5.03	4.85	4.85	4.85	4.85
	40	8.75	7.87	7.00	6.12	5.26	4.83	4.83	4.83	4.83	4.83
	43	7.97	7.17	6.37	5.57	4.78	4.39	4.39	4.39	4.39	4.39

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.09	1.84	1.61	1.38	1.18	0.98	0.80	0.63	0.47	0.43
	27	2.65	2.34	2.04	1.76	1.49	1.25	1.21	1.21	1.21	1.21
	30	2.90	2.56	2.23	1.92	1.63	1.36	1.32	1.32	1.32	1.32
	35	3.30	2.91	2.54	2.19	1.86	1.55	1.50	1.50	1.50	1.50
	40	3.52	3.11	2.71	2.33	1.98	1.82	1.82	1.82	1.82	1.82
	43	3.66	3.22	2.81	2.43	2.06	1.90	1.90	1.90	1.90	1.90

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.37	5.47	5.58	5.67	5.71	5.71	5.61	5.37	4.73	4.50
	27	4.02	4.10	4.18	4.24	4.29	4.27	4.27	4.27	4.27	4.27
	30	3.60	3.68	3.74	3.81	3.84	3.83	3.82	3.82	3.82	3.82
	35	3.05	3.11	3.17	3.22	3.25	3.25	3.23	3.23	3.23	3.23
	40	2.48	2.53	2.58	2.62	2.65	2.66	2.66	2.66	2.66	2.66
	43	2.18	2.23	2.27	2.29	2.32	2.32	2.32	2.32	2.32	2.32

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT (°C) =13°C

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	12.89	11.60	10.31	9.02	7.73	6.45	5.16	3.87	3.78	3.78
	27	12.22	11.00	9.78	8.56	7.34	6.82	6.82	6.82	6.82	6.82
	30	11.97	10.78	9.58	8.38	7.18	6.69	6.69	6.69	6.69	6.69
	35	11.66	10.50	9.33	8.16	7.00	6.51	6.51	6.51	6.51	6.51
	40	10.39	9.35	8.31	7.27	6.23	5.99	5.99	5.99	5.99	5.99
	43	9.69	8.72	7.75	6.78	5.81	5.66	5.66	5.66	5.66	5.66

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.10	1.88	1.60	1.35	1.12	0.90	0.70	0.51	0.51	0.51
	27	2.69	2.33	1.99	1.68	1.39	1.27	1.27	1.27	1.27	1.27
	30	2.95	2.55	2.18	1.84	1.52	1.39	1.39	1.39	1.39	1.39
	35	3.39	2.94	2.52	2.12	1.75	1.61	1.61	1.61	1.61	1.61
	40	3.67	3.16	2.70	2.27	1.87	1.78	1.78	1.78	1.78	1.78
	43	3.87	3.35	2.86	2.41	1.99	1.93	1.93	1.93	1.93	1.93

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.14	6.18	6.44	6.69	6.91	7.19	7.40	7.53	7.48	7.48
	27	4.54	4.71	4.91	5.10	5.28	5.38	5.38	5.38	5.38	5.38
	30	4.06	4.22	4.38	4.55	4.71	4.81	4.81	4.81	4.81	4.81
	35	3.44	3.57	3.70	3.85	4.00	4.05	4.05	4.05	4.05	4.05
	40	2.83	2.96	3.08	3.20	3.33	3.36	3.36	3.36	3.36	3.36
	43	2.50	2.61	2.71	2.82	2.92	2.94	2.94	2.94	2.94	2.94

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT (°C) =18°C

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	14.12	12.71	11.30	9.89	8.48	7.06	5.65	5.31	5.31	5.31
	27	13.51	12.16	10.81	9.45	8.24	8.24	8.24	8.24	8.24	8.24
	30	13.25	11.92	10.60	9.27	8.09	8.09	8.09	8.09	8.09	8.09
	35	12.81	11.53	10.25	8.96	7.82	7.82	7.82	7.82	7.82	7.82
	40	11.75	10.58	9.40	8.23	7.05	6.95	6.95	6.95	6.95	6.95
	43	11.12	10.01	8.89	7.78	6.67	6.03	6.03	6.03	6.03	6.03

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.09	1.87	1.56	1.28	1.03	0.80	0.58	0.53	0.53	0.53
	27	2.72	2.32	1.94	1.59	1.31	1.31	1.31	1.31	1.31	1.31
	30	3.00	2.56	2.14	1.75	1.44	1.44	1.44	1.44	1.44	1.44
	35	3.45	2.94	2.46	2.02	1.66	1.66	1.66	1.66	1.66	1.66
	40	3.76	3.16	2.64	2.17	1.76	1.72	1.72	1.72	1.72	1.72
	43	4.02	3.38	2.81	2.32	1.88	1.64	1.64	1.64	1.64	1.64

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	6.77	6.80	7.23	7.70	8.24	8.87	9.77	9.97	9.97	9.97
	27	4.96	5.23	5.57	5.94	6.29	6.29	6.29	6.29	6.29	6.29
	30	4.42	4.66	4.95	5.29	5.63	5.63	5.63	5.63	5.63	5.63
	35	3.71	3.93	4.16	4.43	4.71	4.71	4.71	4.71	4.71	4.71
	40	3.12	3.35	3.57	3.79	4.01	4.03	4.03	4.03	4.03	4.03
	43	2.77	2.96	3.16	3.36	3.55	3.67	3.67	3.67	3.67	3.67

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

▼Outdoor unit HWS-P1105H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	8.36	10.13	11.44
	27	7.96	9.61	10.94
	30	7.79	9.41	10.73
	35	7.50	9.17	10.37
	40	6.53	7.62	8.50
	43	5.94	7.20	7.37

Power input (kW)		Load (%)		
		100	90	80
TO (°C)	20	1.49	1.57	1.59
	27	1.89	1.95	1.98
	30	2.06	2.14	2.18
	35	2.34	2.46	2.51
	40	2.51	2.43	2.32
	43	2.60	2.62	2.21

COP		Load (%)		
		100	90	80
TO (°C)	20	5.62	6.45	7.18
	27	4.22	4.92	5.52
	30	3.78	4.40	4.93
	35	3.20	3.72	4.14
	40	2.60	3.14	3.66
	43	2.29	2.75	3.34

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input (peak) LWT (°C) =35°C

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	7.84	7.06	6.27	5.49	4.70	3.92	3.14	2.83	2.83	2.83
	-20	9.27	8.34	7.42	6.49	5.56	4.63	3.71	3.33	3.33	3.33
	-15	10.70	9.63	8.56	7.49	6.42	5.35	4.28	4.07	4.07	4.07
	-7	13.44	12.10	10.75	9.41	8.07	6.72	5.38	4.64	4.64	4.64
	-2	16.07	14.46	12.86	11.25	9.64	8.04	6.43	5.22	5.22	5.22
	2	18.17	16.36	14.54	12.72	10.90	9.09	7.27	5.68	5.68	5.68
	7	21.10	18.99	16.88	14.77	12.66	10.55	8.44	6.33	4.22	2.21
	10	23.55	21.19	18.84	16.48	14.13	11.77	9.42	7.06	4.71	2.43
	12	25.18	22.66	20.14	17.63	15.11	12.59	10.07	7.55	5.04	2.58
	15	26.98	24.28	21.58	18.89	16.19	13.49	10.79	8.09	5.40	2.79
	20	29.98	26.98	23.99	20.99	17.99	14.99	11.99	8.99	6.00	3.16

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	4.44	3.92	3.42	2.94	2.47	2.02	1.59	1.43	1.43	1.43
	-20	4.68	4.10	3.55	3.03	2.53	2.06	1.61	1.43	1.43	1.43
	-15	4.87	4.19	3.56	2.99	2.46	1.97	1.52	1.43	1.43	1.43
	-7	5.19	4.50	3.86	3.27	2.71	2.18	1.69	1.44	1.44	1.44
	-2	5.46	4.75	4.08	3.46	2.88	2.33	1.81	1.43	1.43	1.43
	2	5.63	4.91	4.23	3.59	2.98	2.42	1.88	1.43	1.43	1.43
	7	5.67	5.04	4.43	3.84	3.25	2.68	2.12	1.58	1.04	0.54
	10	5.82	5.15	4.50	3.87	3.26	2.68	2.11	1.55	1.02	0.52
	12	5.92	5.21	4.53	3.88	3.26	2.66	2.09	1.54	1.00	0.50
	15	6.00	5.24	4.51	3.83	3.19	2.59	2.02	1.47	0.96	0.48
	20	6.13	5.25	4.46	3.74	3.07	2.46	1.89	1.37	0.88	0.45

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	1.76	1.80	1.83	1.87	1.90	1.94	1.97	1.98	1.98	1.98
	-20	1.98	2.03	2.09	2.14	2.20	2.25	2.31	2.33	2.33	2.33
	-15	2.20	2.30	2.40	2.51	2.61	2.72	2.82	2.84	2.84	2.84
	-7	2.59	2.69	2.78	2.88	2.98	3.08	3.18	3.23	3.23	3.23
	-2	2.94	3.05	3.15	3.25	3.35	3.46	3.56	3.64	3.64	3.64
	2	3.23	3.33	3.44	3.55	3.65	3.76	3.87	3.96	3.96	3.96
	7	3.72	3.77	3.81	3.85	3.89	3.93	3.97	4.02	4.06	4.10
	10	4.04	4.11	4.19	4.26	4.33	4.40	4.47	4.54	4.62	4.69
	12	4.26	4.35	4.44	4.54	4.63	4.73	4.82	4.92	5.01	5.11
	15	4.49	4.64	4.78	4.93	5.07	5.21	5.36	5.50	5.64	5.78
	20	4.89	5.14	5.38	5.62	5.86	6.10	6.34	6.58	6.82	7.05

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input (peak) LWT (°C) =45°C

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	8.05	7.25	6.44	5.64	4.83	4.03	3.37	3.37	3.37	3.37
	-15	8.39	7.55	6.71	5.87	5.03	4.19	3.58	3.58	3.58	3.58
	-7	12.90	11.61	10.32	9.03	7.74	6.45	5.16	4.67	4.67	4.67
	-2	14.68	13.21	11.74	10.27	8.81	7.34	5.87	5.27	5.27	5.27
	2	16.09	14.49	12.88	11.27	9.66	8.05	6.44	5.74	5.74	5.74
	7	19.04	17.13	15.23	13.33	11.42	9.52	7.62	5.97	5.97	5.97
	10	21.53	19.38	17.23	15.07	12.92	10.77	8.61	6.48	6.48	6.48
	12	23.20	20.88	18.56	16.24	13.92	11.60	9.28	6.96	6.82	6.82
	15	24.91	22.42	19.93	17.44	14.95	12.46	9.96	7.47	7.34	7.34
	20	27.77	24.99	22.49	20.24	18.22	16.40	14.76	13.28	11.95	10.76

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	5.84	4.97	4.18	3.48	2.84	2.26	1.82	1.82	1.82	1.82
	-15	4.76	4.20	3.66	3.15	2.65	2.17	1.83	1.83	1.83	1.83
	-7	5.56	4.93	4.31	3.72	3.14	2.58	2.03	1.83	1.83	1.83
	-2	5.88	5.16	4.48	3.83	3.21	2.62	2.05	1.82	1.82	1.82
	2	6.01	5.26	4.56	3.88	3.25	2.64	2.06	1.82	1.82	1.82
	7	6.28	5.47	4.72	4.01	3.34	2.70	2.10	1.61	1.61	1.61
	10	6.57	5.72	4.91	4.16	3.46	2.80	2.17	1.59	1.59	1.59
	12	6.75	5.86	5.03	4.25	3.53	2.85	2.21	1.61	1.57	1.57
	15	6.82	5.89	5.03	4.24	3.50	2.82	2.18	1.58	1.55	1.55
	20	6.91	5.92	5.11	4.44	3.87	3.39	2.98	2.63	2.32	2.05

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	1.38	1.46	1.54	1.62	1.70	1.78	1.85	1.85	1.85	1.85
	-15	1.76	1.80	1.83	1.87	1.90	1.94	1.96	1.96	1.96	1.96
	-7	2.32	2.36	2.39	2.43	2.47	2.50	2.54	2.56	2.56	2.56
	-2	2.50	2.56	2.62	2.68	2.74	2.80	2.86	2.89	2.89	2.89
	2	2.68	2.75	2.83	2.90	2.97	3.05	3.12	3.16	3.16	3.16
	7	3.03	3.13	3.23	3.33	3.42	3.52	3.62	3.70	3.70	3.70
	10	3.28	3.39	3.51	3.62	3.74	3.85	3.97	4.08	4.08	4.08
	12	3.44	3.56	3.69	3.82	3.95	4.08	4.20	4.33	4.34	4.34
	15	3.66	3.81	3.96	4.11	4.27	4.42	4.57	4.73	4.74	4.74
	20	4.02	4.22	4.40	4.56	4.70	4.83	4.95	5.06	5.15	5.24

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency.
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications part load heating capacity and input (peak) LWT (°C) =55°C

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	12.37	11.13	9.89	8.66	7.42	6.18	4.95	4.19	4.19	4.19
	-2	13.28	11.95	10.63	9.30	7.97	6.64	5.31	4.73	4.73	4.73
	2	14.02	12.61	11.21	9.81	8.41	7.01	5.61	5.16	5.16	5.16
	7	16.98	15.28	13.58	11.88	10.19	8.49	6.79	5.36	5.36	5.36
	10	18.83	16.94	15.06	13.18	11.30	9.41	7.53	5.88	5.88	5.88
	12	20.06	18.05	16.05	14.04	12.04	10.03	8.02	6.22	6.22	6.22
	15	21.65	19.48	17.32	15.15	12.99	10.82	8.66	6.74	6.74	6.74
	20	24.29	21.86	19.43	17.01	14.58	12.15	9.72	7.60	7.60	7.60

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	6.33	5.68	5.07	4.45	3.83	3.21	2.56	2.19	2.19	2.19
	-2	6.48	5.36	4.78	4.20	3.61	3.02	2.42	2.18	2.18	2.18
	2	6.59	5.16	4.60	4.04	3.48	2.91	2.33	2.17	2.17	2.17
	7	6.89	5.51	4.92	4.32	3.72	3.11	2.49	1.99	1.99	1.99
	10	7.08	5.59	4.99	4.38	3.76	3.15	2.52	1.99	1.99	1.99
	12	7.20	5.64	5.03	4.41	3.79	3.17	2.53	1.98	1.98	1.98
	15	7.28	5.64	5.02	4.40	3.78	3.15	2.52	1.98	1.98	1.98
	20	7.40	5.64	5.01	4.38	3.75	3.13	2.50	1.97	1.97	1.97

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	-25	—	—	—	—	—	—	—	—	—	—
	-20	—	—	—	—	—	—	—	—	—	—
	-15	—	—	—	—	—	—	—	—	—	—
	-7	1.95	1.96	1.95	1.94	1.94	1.93	1.93	1.91	1.91	1.91
	-2	2.05	2.23	2.22	2.21	2.20	2.20	2.20	2.17	2.17	2.17
	2	2.13	2.45	2.44	2.43	2.42	2.41	2.41	2.38	2.38	2.38
	7	2.47	2.77	2.76	2.75	2.74	2.73	2.72	2.96	2.96	2.69
	10	2.66	3.03	3.02	3.01	3.00	2.99	2.99	2.96	2.96	2.96
	12	2.79	3.20	3.19	3.18	3.18	3.17	3.17	3.13	3.13	3.13
	15	2.97	3.46	3.45	3.45	3.44	3.44	3.44	3.40	3.40	3.40
	20	3.28	3.88	3.88	3.88	3.88	3.88	3.88	3.85	3.85	3.85

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input are shown at maximum compressor operating frequency..
* Power input does not include water pump power.

TO : Outdoor temperature (DB°C) RH85%
LWT : Leaving water temperature (°C)

Specifications Low noise operation 40.2Hz

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	4.27	—	—
	-20	5.03	4.63	—
	-15	6.14	4.92	—
	-7	6.99	6.42	5.80
	-2	7.87	7.24	6.55
	2	8.57	7.89	7.15
	7	9.56	8.92	7.93
	10	10.44	9.74	8.78
	12	11.03	10.29	9.35
	15	11.91	11.11	10.19
	20	13.38	12.48	11.61

Power input (kW)		LWT (°C)		
		35	45	55
TO (°C)	-25	—	—	—
	-20	2.06	2.54	—
	-15	2.06	2.55	—
	-7	2.07	2.55	3.00
	-2	2.07	2.54	2.97
	2	2.07	2.54	2.96
	7	1.97	2.45	2.90
	10	1.98	2.44	2.94
	12	1.98	2.43	2.96
	15	1.99	2.41	2.99
	20	2.01	2.38	3.04

COP		LWT (°C)		
		35	45	55
TO (°C)	-25	2.07	—	—
	-20	2.44	1.82	—
	-15	2.97	1.93	—
	-7	3.37	2.52	1.93
	-2	3.80	2.85	2.20
	2	4.14	3.11	2.42
	7	4.86	3.63	2.73
	10	5.28	3.99	2.99
	12	5.56	4.24	3.16
	15	5.97	4.61	3.41
	20	6.65	5.23	3.82

* Heating capacity and power input are shown peak value during operation.
* Heating capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Heating capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT (°C) =7°C

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	12.56	11.31	10.05	8.79	7.54	6.28	5.03	3.77	2.51	1.92
	27	13.69	12.32	10.95	9.58	8.21	6.85	5.48	5.14	5.04	5.14
	30	12.76	11.49	10.21	8.94	7.66	6.38	5.11	5.04	5.04	5.04
	35	11.22	10.10	8.98	7.85	6.73	5.61	4.85	4.85	4.85	4.85
	40	9.68	8.71	7.74	6.77	5.81	4.84	4.83	4.83	4.83	4.83
	43	8.75	7.87	7.00	6.12	5.25	4.39	4.39	4.39	4.39	4.39

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.82	2.54	2.25	1.97	1.69	1.40	1.12	0.84	0.56	0.43
	27	3.91	3.40	2.92	2.48	2.06	1.66	1.29	1.21	1.21	1.21
	30	4.01	3.49	3.01	2.55	2.12	1.72	1.34	1.32	1.32	1.32
	35	4.21	3.65	3.13	2.65	2.20	1.77	1.50	1.50	1.50	1.50
	40	4.51	3.87	3.30	2.76	2.27	1.82	1.82	1.82	1.82	1.82
	43	4.77	4.08	3.45	2.88	2.36	1.90	1.90	1.90	1.90	1.90

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	4.45	4.46	4.46	4.47	4.47	4.48	4.48	4.49	4.49	4.50
	27	3.50	3.62	3.75	3.87	3.99	4.12	4.24	4.27	4.27	4.27
	30	3.19	3.29	3.40	3.50	3.61	3.71	3.81	3.82	3.82	3.82
	35	2.67	2.77	2.87	2.96	3.06	3.16	3.23	3.23	3.23	3.23
	40	2.15	2.25	2.35	2.45	2.55	2.65	2.66	2.66	2.66	2.66
	43	1.83	1.93	2.03	2.13	2.22	2.32	2.32	2.32	2.32	2.32

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) =13°C

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	14.59	13.13	11.68	10.22	8.76	7.30	5.84	4.38	3.78	3.78
	27	15.30	13.77	12.24	10.71	9.18	7.65	6.82	6.82	6.82	6.82
	30	14.49	13.05	11.60	10.15	8.70	7.25	6.69	6.69	6.69	6.69
	35	13.16	11.84	10.53	9.21	7.90	6.58	6.51	6.51	6.51	6.51
	40	11.82	10.64	9.46	8.28	7.09	5.99	5.99	5.99	5.99	5.99
	43	11.02	9.92	8.82	7.72	6.61	5.66	5.66	5.66	5.66	5.66

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.92	2.46	2.06	1.70	1.38	1.09	0.83	0.60	0.51	0.51
	27	4.01	3.36	2.79	2.30	1.86	1.46	1.27	1.27	1.27	1.27
	30	4.14	3.49	2.91	2.40	1.95	1.54	1.39	1.39	1.39	1.39
	35	4.43	3.72	3.10	2.55	2.06	1.63	1.61	1.61	1.61	1.61
	40	4.78	4.01	3.34	2.75	2.22	1.78	1.78	1.78	1.78	1.78
	43	5.06	4.25	3.54	2.92	2.36	1.93	1.93	1.93	1.93	1.93

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.01	5.34	5.67	6.01	6.34	6.67	7.01	7.34	7.48	7.48
	27	3.82	4.10	4.38	4.66	4.94	5.22	5.38	5.38	5.38	5.38
	30	3.50	3.74	3.99	4.23	4.47	4.71	4.81	4.81	4.81	4.81
	35	2.97	3.18	3.40	3.61	3.82	4.04	4.05	4.05	4.05	4.05
	40	2.47	2.65	2.83	3.01	3.19	3.36	3.36	3.36	3.36	3.36
	43	2.18	2.33	2.49	2.65	2.80	2.94	2.94	2.94	2.94	2.94

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

Specifications part load cooling capacity and input LWT(°C) =18°C

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	16.29	14.66	13.03	11.40	9.77	8.14	6.51	5.31	5.31	5.31
	27	16.63	14.97	13.31	11.64	9.98	8.32	8.24	8.24	8.24	8.24
	30	15.94	14.34	12.75	11.16	9.56	8.09	8.09	8.09	8.09	8.09
	35	14.78	13.30	11.82	10.34	8.87	7.82	7.82	7.82	7.82	7.82
	40	13.62	12.25	10.89	9.53	8.17	6.95	6.95	6.95	6.95	6.95
	43	12.92	11.63	10.34	9.04	7.75	6.46	6.03	6.03	6.03	6.03

Power input (kW)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	2.98	2.39	1.92	1.53	1.20	0.92	0.69	0.53	0.53	0.53
	27	4.18	3.37	2.72	2.17	1.72	1.33	1.31	1.31	1.31	1.31
	30	4.31	3.51	2.84	2.29	1.81	1.44	1.44	1.44	1.44	1.44
	35	4.58	3.76	3.07	2.48	1.98	1.66	1.66	1.66	1.66	1.66
	40	4.95	4.07	3.33	2.70	2.15	1.72	1.72	1.72	1.72	1.72
	43	5.25	4.33	3.55	2.88	2.30	1.80	1.64	1.64	1.64	1.64

COP		Load (%)									
		100	90	80	70	60	50	40	30	20	10
TO (°C)	20	5.47	6.13	6.80	7.47	8.14	8.81	9.48	9.97	9.97	9.97
	27	3.98	4.44	4.90	5.36	5.81	6.27	6.29	6.29	6.29	6.29
	30	3.70	4.09	4.48	4.88	5.27	5.63	5.63	5.63	5.63	5.63
	35	3.22	3.54	3.85	4.17	4.49	4.71	4.71	4.71	4.71	4.71
	40	2.75	3.01	3.27	3.53	3.80	4.03	4.03	4.03	4.03	4.03
	43	2.46	2.69	2.91	3.14	3.36	3.59	3.67	3.67	3.67	3.67

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

40.2Hz

▼Outdoor unit HWS-P1405H8R-E
Hydro unit HWS-P1105XWH**-E

Capacity (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	8.36	10.13	11.44
	27	7.96	9.61	10.94
	30	7.79	9.41	10.73
	35	7.50	9.17	10.37
	40	6.53	7.62	8.50
	43	5.94	7.20	7.37

Power input (kW)		LWT (°C)		
		7	13	18
TO (°C)	20	1.49	1.57	1.59
	27	1.89	1.95	1.98
	30	2.06	2.14	2.18
	35	2.34	2.46	2.51
	40	2.51	2.43	2.32
	43	2.60	2.62	2.21

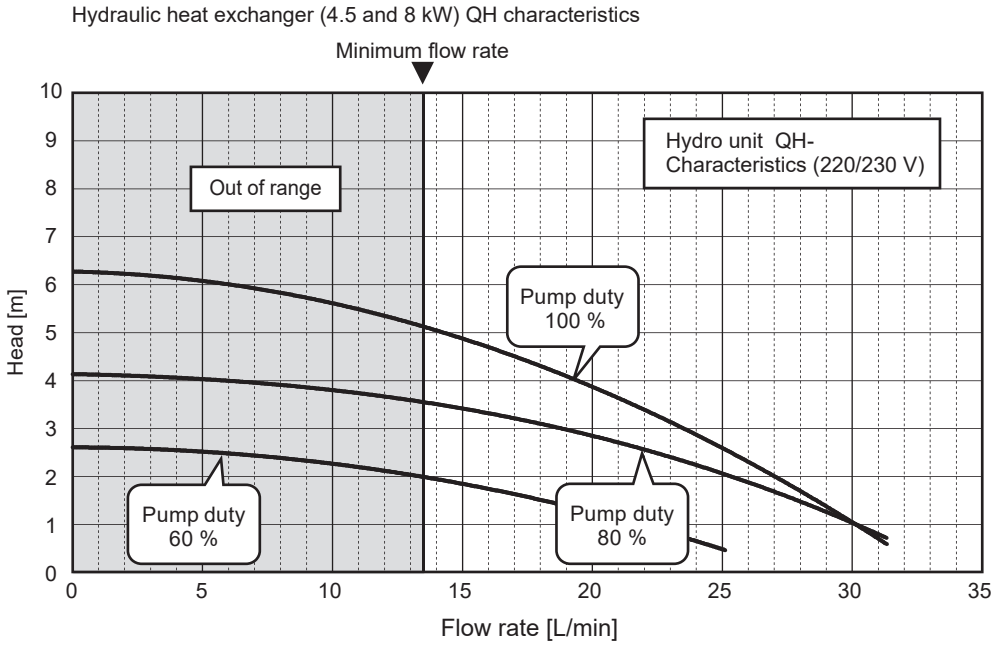
COP		LWT (°C)		
		7	13	18
TO (°C)	20	5.62	6.45	7.18
	27	4.22	4.92	5.52
	30	3.78	4.40	4.93
	35	3.20	3.72	4.14
	40	2.60	3.14	3.66
	43	2.29	2.75	3.34

* Cooling capacity and power input at 100% load are shown at maximum compressor operating frequency.
* Power input does not include water pump power.
* Cooling capacity and power input at 100% load are measured in accordance with EN14511.

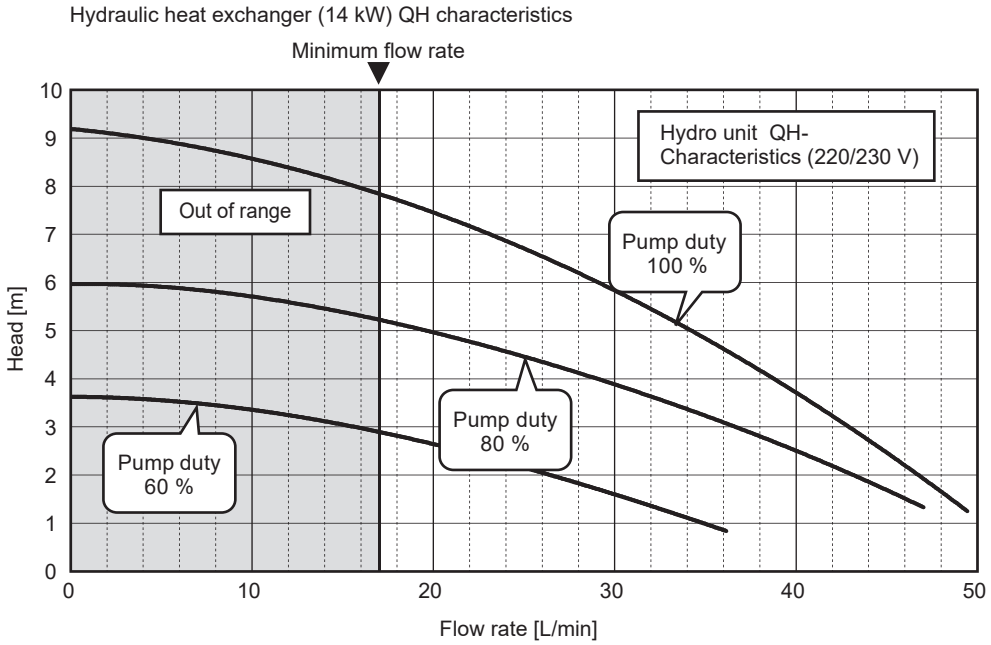
TO : Outdoor temperature (DB°C)
LWT : Leaving water temperature (°C)

4-7. Q-H characteristics of hydro unit

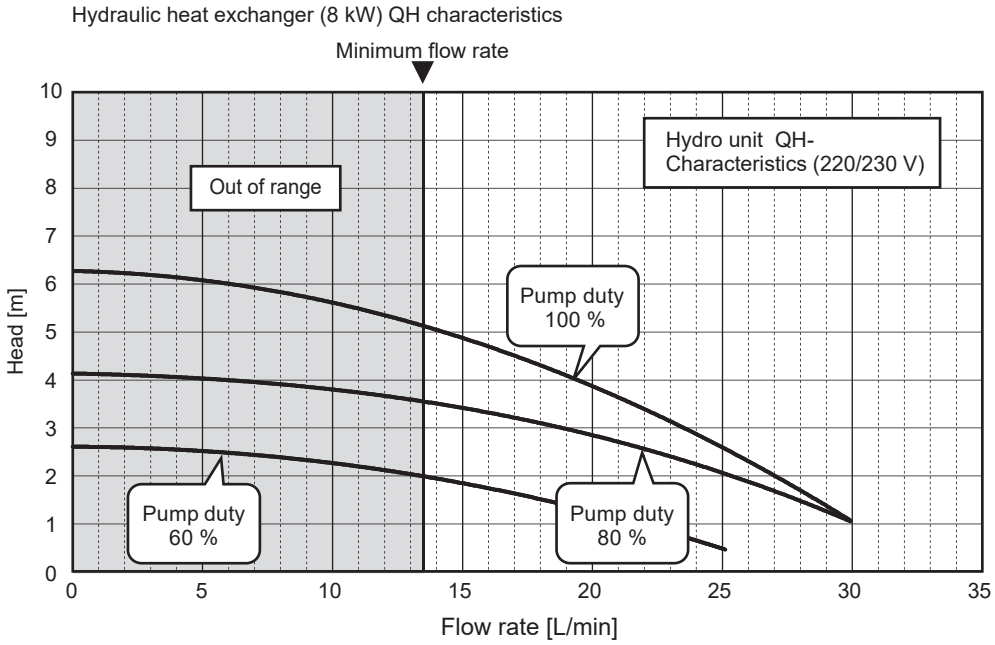
4-7-1. HWS-455XWHM3-E / HWS-805XWHM3-E, T6-E, T9-E



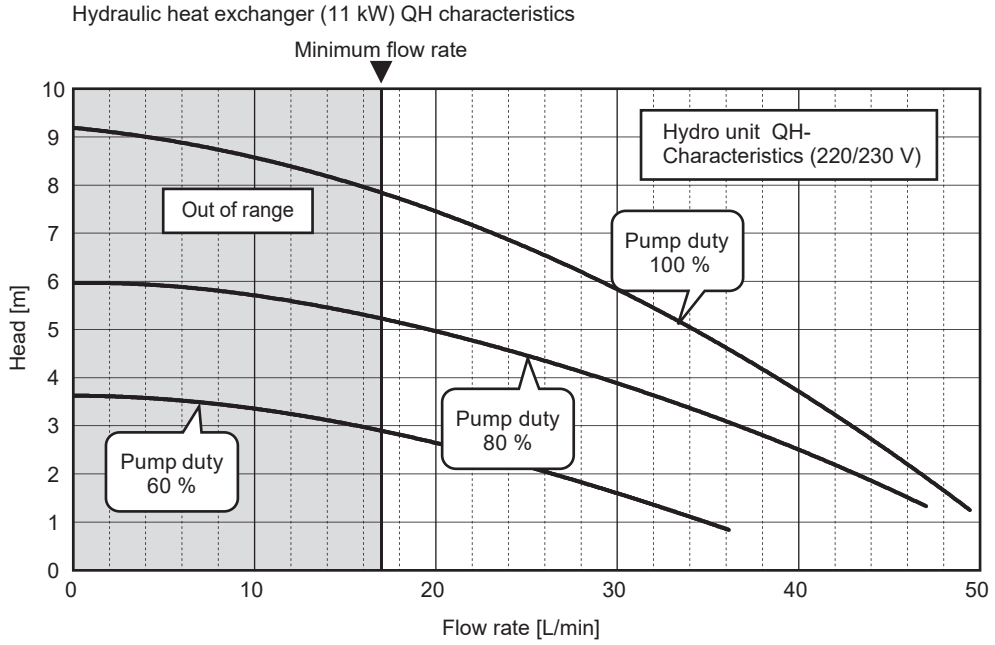
4-7-2. HWS-1405XWHM3-E, T6-E, T9-E



4-7-3. HWS-P805XWHM3-E, T6-E, T9-E



4-7-4. HWS-P1105XWHM3-E, T6-E, T9-E



4-8. Options

Optional parts

No.	Part name	Model name	Application	Remarks
1	External output board	TCB-PCIN3E	Boiler-linked output, Alarm output	Up to two boards (according to applications)
			Defrost signal output, Compressor operation signal output	
2	External input board	TCB-PCMO3E	Cooling/heating thermostat input	Up to two boards (according to applications)
			Forced-stop signal input	

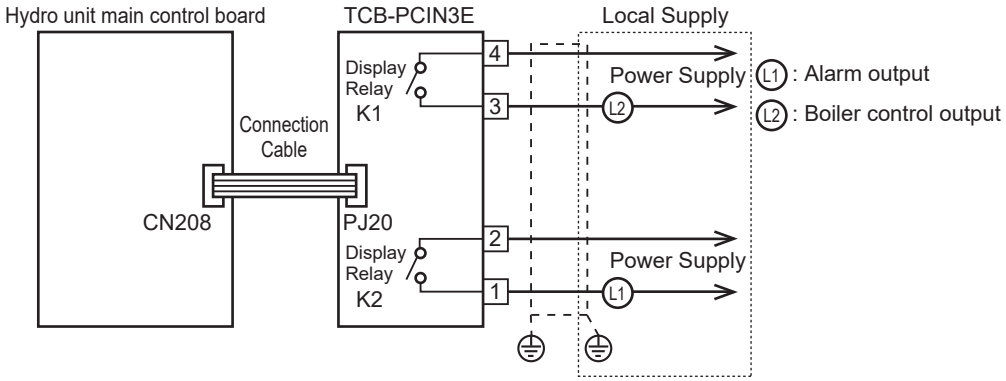
▼External output board

Feature

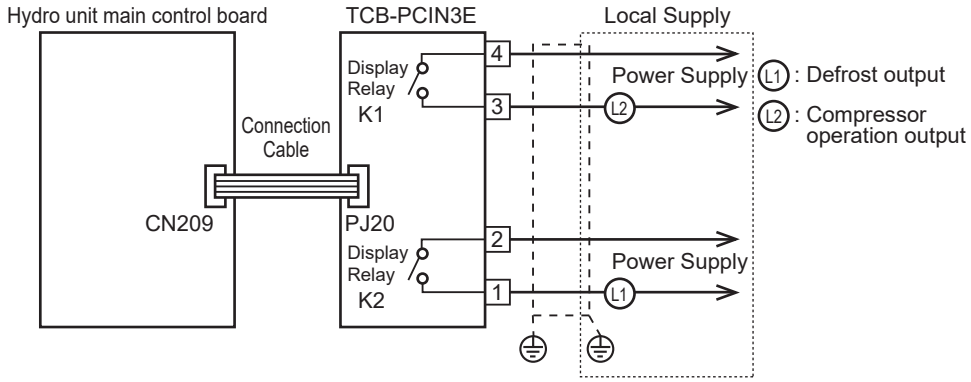
Operation and Error monitoring is possible by using Error output control board “TCB-PCIN3E“

Function / Electric wiring diagram

Alarm output : Output enabled when the system is in alarm / fault condition.
Boiler control output : Output enabled when outdoor ambient temperature <-10 °C



Operation output : Display relay is ON with outdoor unit compressor operation.
Defrost output : Display relay is ON when the system in defrost.



⚠ CAUTION

- Be sure to prepare a non-voltage point for each terminal.
- Display Relay capacity of "ALERM" and "BOILER", "OPERATION" and "DEFROST"
  Below AC230V 0.5A (COS Ø =100%). when connecting load such as relay coil to "L1,L2" load, insert the noise surge absorber.
  Below DC24V 1A (Non-inductive load). when connecting load such as relay coil to "L1,L2" load, insert the bypass circuit.

▼External input board

Feature

* “TCB-PCMO3E“ is used for the following external master controls.

1. Room thermostat input
2. Emergency shutdown input

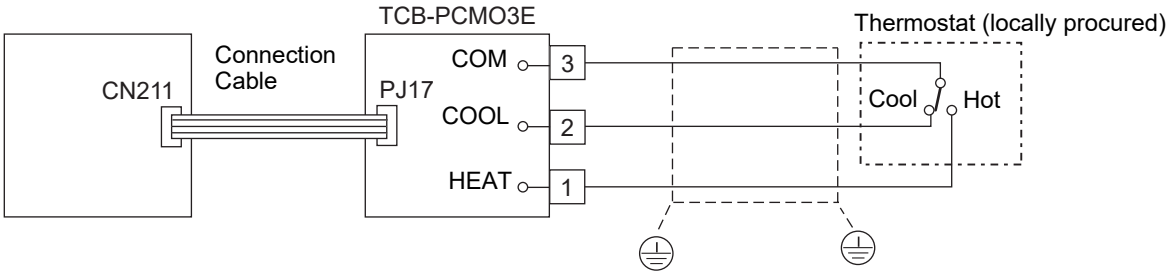
Refer to “Function/Electric wiring diagram“ for feature of each control because connection is different according to the control.

Function / Electric wiring diagram

Room thermostat input

2-3 : Room thermostat input for cooling mode
1-3 : Room thermostat input for heating mode

- Output enabled when either heating or cooling mode selected on room thermostat. (locally procured)
- Volt free details :
- Connection details :
  Cooling connection :Terminals 3 (COM) and 2 (COOL) on TCB-PCMO3E (See Schematic below)
  Heating connection :Terminals 3 (COM) and 1 (HEAT) on TCB-PCMO3E (See Schematic below)



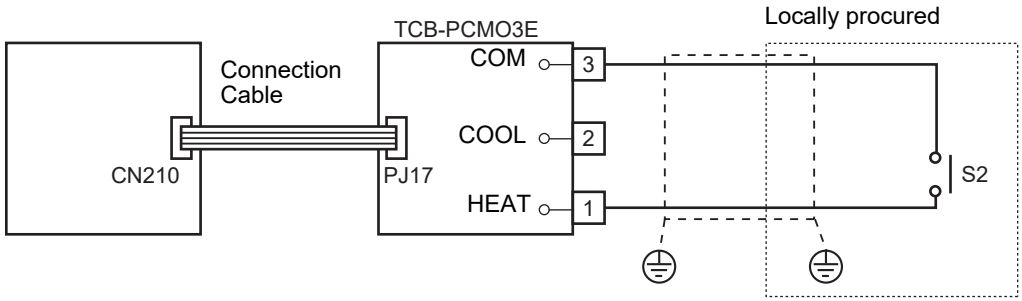
Thermostat operation

	Cooling		Heating	
	on	off	on	off
2 - 3	open	close	–	–
1 - 3	–	–	close	open

Emergency shutdown input

S2 : Emergency stop input

- Non-voltage contacts
- Connection details :
  Emergency stop :Terminals 3 (COM) and 1 (HEAT) on TCB-PCMO3E (See Schematic below)

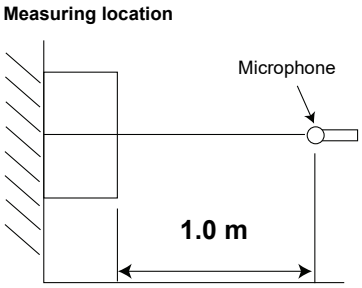


⚠ CAUTION

- Be sure to prepare non voltage continuous point of contact for each terminal.
- Supplementary Insulation must be added to user touched to user touchable part of switches.

4-9. Sound Data

4-9-1. Sound pressure level measurement



Condition		
Cooling	A35	W12_7
Heating	A7	W30_35

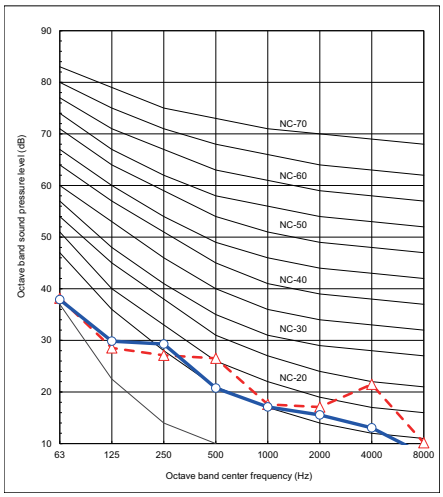
4-9-2. Sound Characteristics (NC Curve)

▼HWS-455XWHM3-E (4.5 kW)

- Maximum/Rated/Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	29	29

△– – △Heating
○——○Cooling

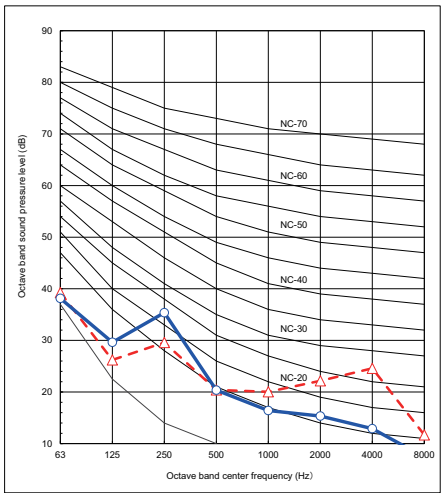


▼HWS-805XWH (M3,T6,T9)-E (8 kW)
HWS-P805XWH (M3,T6,T9)-E (8 kW)

- Maximum/Rated/Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	29	29

△– – △Heating
○——○Cooling

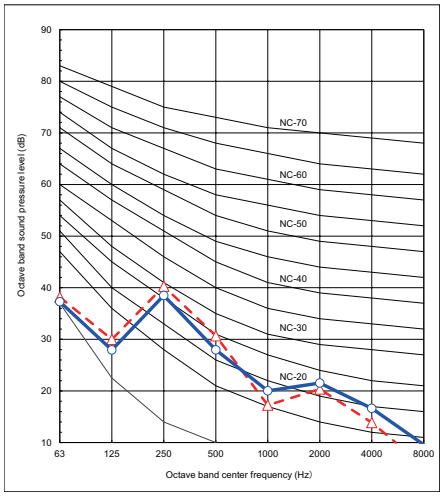


▼HWS-1405XWH(M3,T6,T9)-E (14k W)
HWS-P1105XWH(M3,T6,T9)-E (11 kW)

- Maximum/Rated/Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	32	32

△– – △Heating
○——○Cooling



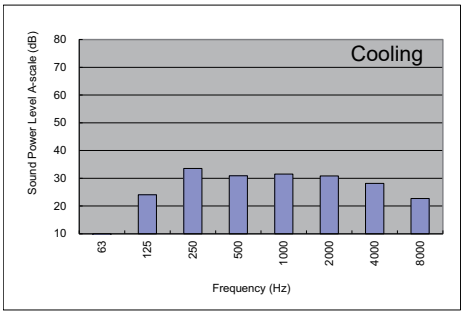
4-9-3. Sound Power Level

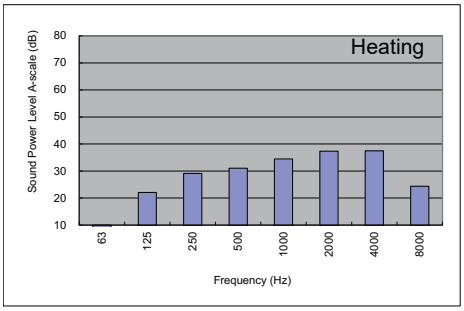
▼HWS-455XWHM3-E (4.5 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum/Rated/Silent operation

Sound power level (dB(A))	Cooling	Heating
	41	41



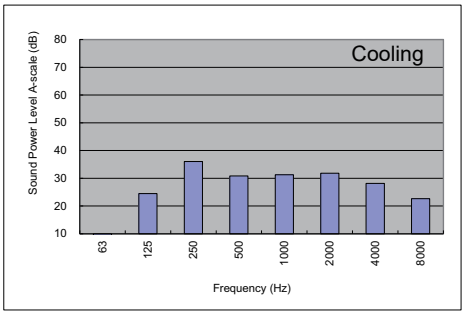


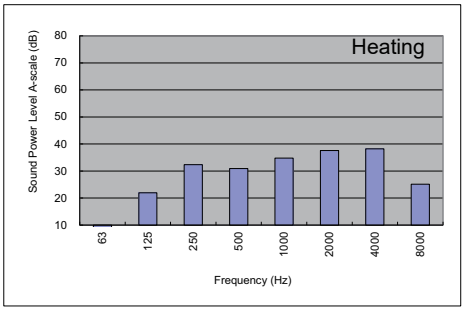
▼HWS-805XWH(M3,T6,T9)-E (8 kW)
HWS-P805XWH(M3,T6,T9)-E

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum/Rated/Silent operation

Sound power level (dB(A))	Cooling	Heating
	41	41



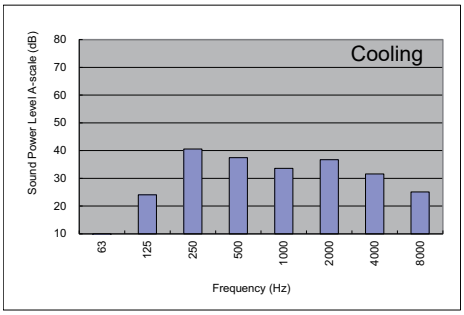


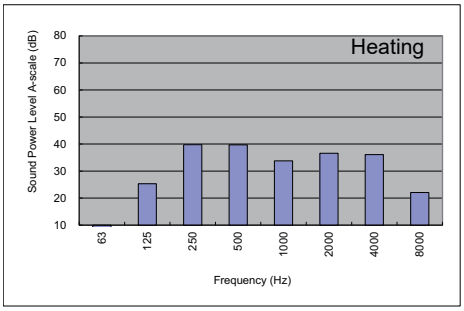
▼HWS-1405XWH (M3,T6,T9)-E (14 kW)
HWS-P1105XWH (M3,T6,T9)-E (11 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum/Rated/Silent operation

Sound power level (dB(A))	Cooling	Heating
	43	43





5. OUTDOOR UNIT

5-1. Specification

5-1-1. Outdoor unit specifications

Unit name	Hydro unit		HWS-455XWHM3-E	
	Outdoor unit		HWS-455H-E	
Heating capacity *1 (kW)			4.5	
Cooling capacity *2 (kW)			4.5	
Variable range of compressor frequency			10 - 70 Hz	
Power source			Single phase 50 Hz 220-230 V	
Operation mode			Heating	Cooling
Electric characteristic *1 *2	Hydro unit	Current (A)	0.44	0.44
		Power (kW)	0.06	0.06
		Power factor (%)	59.3	59.3
	Outdoor unit	Current (A)	4.56	6.76
		Power (kW)	0.86	1.40
		Power factor (%)	82	90
	Total	Starting current (A)	5.00	7.20
Operating noise sound pressure level	Outdoor unit (dB(A))	Max	49	48
		Rated	48	48
		Low noise	47	47
Operating noise sound power level	Outdoor unit (dB(A))	Max	65	64
		Rated	64	64
		Low noise	63	62
Coefficient of performance *1 *2			4.90	3.08
Hydro unit	Outer dimension	Height (mm)	925	
		Width (mm)	525	
		Depth (mm)	355	
	Net weight (kg)		47	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Remote controller Outer dimension *3	Height (mm)	120	
		Width (mm)	120	
		Depth (mm)	20	
	Circulating pump	Motor output (W)	125 (MAX)	
		Flow rate (L/min)	12.9	12.9
		Type	Non-self-suction centrifugal pump	
	Heat exchanger		Plate-type heat exchange	
Outdoor unit	Outer dimension	Height (mm)	630	
		Width (mm)	800	
		Depth (mm)	300	
	Net weight (kg)		42	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Compressor	Motor output (W)	1100	
		Type	Twin rotary type with DC-inverter variable speed control	
		Model	DA150A1T-21F	
	Fan motor	Standard air capacity (m^3/min)	40	
		Motor output (W)	43	
Refrigerant piping	Connection method		Flare connection	
	Hydro unit	Liquid	Ø6.35	
		Gas	Ø12.7	
	Outdoor unit	Liquid	Ø6.35	
		Gas	Ø12.7	
	Maximum length (m)		15	
	Maximum chargeless length (m)		15	
	Maximum height difference (m)		±10	
	Minimum length (m)		5	
Refrigerant	Refrigerant name		R410A	
	Charge amount (kg)		1.15	
Water piping	Pipe diameter		R1	
	Maximum length (m)		None (Need the flow rate 13ℓ/min or more)	
	Maximum height difference (m)		±7	
	Maximum working water pressure (kPa) *4		300	
Operating temperature range	Hydro unit (°C) *5 (Cooling/Heating/Hot water)		5-32 / 5-32 / 5-32	
	Outdoor unit (°C) (Cooling/Heating/Hot water)		10-43 / -20-25 / -20-43	
Operating humidity range	Hydro unit (%)		15-85	
	Outdoor unit (%)		15-100	
Wiring connection	Power wiring		3 wires: including earth wire (Outdoor unit)	
	Connecting line		4 wires: including earth wire	

*1 Heating performance measurement conditions: outside air temperature 7 °C, water supply temperature 30 °C, outlet temperature 35 °C, refrigerant piping length 7.5 m (no height difference).
*2 Cooling performance measurement conditions: outside air temperature 35 °C, water supply temperature 12 °C, outlet temperature 7 °C, refrigerant piping length 7.5 m (no height difference).
*3 • The remote controller should be shipped with the hydro unit.
• Use two 1.5-meter wires to connect the hydro unit with the remote controller.
*4 Check the water piping for leakage under the maximum operating pressure.
*5 Do not leave the hydro unit at 5 °C or below.

Unit name	Hydro unit		HWS-805XWHM3-E, 805XWHT6-E, 805XWHT9-E	
	Outdoor unit		HWS-805H-E	
Heating capacity *1 (kW)			8.0	
Cooling capacity *2 (kW)			6.0	
Variable range of compressor frequency			10 - 70 Hz	
Power source			Single phase 50 Hz 220-230 V	
Operation mode			Heating	Cooling
Electric characteristic *1 *2	Hydro unit	Current (A)	0.44	0.44
		Power (kW)	0.06	0.06
		Power factor (%)	59.3	59.3
	Outdoor unit	Current (A)	79.7	8.50
		Power (kW)	1.73	1.88
		Power factor (%)	94.4	96.2
	Total	Starting current (A)	8.41	8.94
Operating noise sound pressure level	Outdoor unit (dB(A))	Max	50	49
		Rated	49	49
		Low noise	47	47
Operating noise sound power level	Outdoor unit (dB(A))	Max	66	65
		Rated	65	63
		Low noise	63	62
Coefficient of performance *1 *2			4.46	3.10
Hydro unit	Outer dimension	Height (mm)	925	
		Width (mm)	525	
		Depth (mm)	355	
	Net weight (kg)		49	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Remote controller Outer dimension *3	Height (mm)	120	
		Width (mm)	120	
		Depth (mm)	16	
	Circulating pump	Motor output (W)	125 (MAX)	
		Flow rate (L/min)	22.9	17.2
		Type	Non-self-suction centrifugal pump	
	Heat exchanger		Plate-type heat exchange	
Outdoor unit	Outer dimension	Height (mm)	890	
		Width (mm)	900	
		Depth (mm)	320	
	Net weight (kg)		63	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Compressor	Motor output (W)	1400	
		Type	Twin rotary type with DC-inverter variable speed control	
		Model	DA220A2F-22L	
	Fan motor	Standard air capacity (m^3/min)	50.0	
		Motor output (W)	60	
Refrigerant piping	Connection method		Flare connection	
	Hydro unit	Liquid	Ø9.52	
		Gas	Ø15.9	
	Outdoor unit	Liquid	Ø9.52	
		Gas	Ø15.9	
	Maximum length (m)		30	
	Maximum chargeless length (m)		30	
	Maximum height difference (m)		±30	
	Minimum length (m)		5	
Refrigerant	Refrigerant name		R410A	
	Charge amount (kg)		1.8	
Water piping	Pipe diameter		R1 1/4	
	Maximum length (m)		None (Need the flow rate 13ℓ/min or more)	
	Maximum height difference (m)		±7	
	Maximum working water pressure (kPa) *4		300	
Operating temperature range	Hydro unit (°C) *5		5-32	
	Outdoor unit (°C)		-20-43	
Operating humidity range	Hydro unit (%)		15-85	
	Outdoor unit (%)		15-100	
Wiring connection	Power wiring		3 wires: including earth wire (Outdoor unit)	
	Connecting line		4 wires: including earth wire	

*1 Heating performance measurement conditions: outside air temperature 7 °C, water supply temperature 30 °C, outlet temperature 35 °C, refrigerant piping length 7.5 m (no height difference).
*2 Cooling performance measurement conditions: outside air temperature 35 °C, water supply temperature 12 °C, outlet temperature 7 °C, refrigerant piping length 7.5 m (no height difference).
*3 • The remote controller should be shipped with the hydro unit.
• Use two 1.5-meter wires to connect the hydro unit with the remote controller.
*4 Check the water piping for leakage under the maximum operating pressure.
*5 Do not leave the hydro unit at 5 °C or below.

Unit name	Hydro unit		HWS-1405XWHM3-E, 1405XWHT6-E, 1405XWHT9-E			
	Outdoor unit		HWS-1105H-E		HWS-1405H-E	
Heating capacity *1 (kW)			11.2		14.0	
Cooling capacity *2 (kW)			10.0		11.0	
Variable range of compressor frequency			10 - 60 Hz		10 - 70 Hz	
Power source			Single phase 50 Hz 220-230 V			
Operation mode			Heating	Cooling	Heating	Cooling
Electric characteristic *1 *2	Hydro unit	Current (A)	0.66	0.66	0.66	0.66
		Power (kW)	0.09	0.09	0.09	0.09
		Power factor (%)	59.2	59.2	59.2	59.2
	Outdoor unit	Current (A)	10.08	14.71	13.74	17.19
		Power (kW)	2.21	3.17	3.02	3.72
		Power factor (%)	95.3	93.7	95.6	94.1
	Total	Starting current (A)	10.74	15.37	14.40	17.85
Operating noise sound pressure level	Outdoor unit (dB(A))	Max	51	51	52	52
		Rated	51	51	52	52
		Low noise	46	46	46	46
Operating noise sound power level	Outdoor unit (dB(A))	Max	66	66	68	68
		Rated	64	66	68	68
		Low noise	61	60	61	60
Coefficient of performance *1 *2			4.88	3.07	4.50	2.89
Hydro unit	Outer dimension	Height (mm)	925			
		Width (mm)	525			
		Depth (mm)	355			
	Net weight (kg)		52			
	Color		Silky shade (Munsell 1Y8.5/0.5)			
	Remote controller Outer dimension *3	Height (mm)	120			
		Width (mm)	120			
		Depth (mm)	16			
	Circulating pump	Motor output (W)	190 (MAX)			
		Flow rate (L/min)	32.1	28.9	40.1	31.5
		Type	Non-self-suction centrifugal pump			
	Heat exchanger		Plate-type heat exchange			
Outdoor unit	Outer dimension	Height (mm)	1340			
		Width (mm)	900			
		Depth (mm)	320			
	Net weight (kg)		92			
	Color		Silky shade (Munsell 1Y8.5/0.5)			
	Compressor	Motor output (W)	2500			
		Type	Twin rotary type with DC-inverter variable speed control			
		Model	DA422A3F-26M			
	Fan motor	Standard air capacity (m^3/min)	103.0			
		Motor output (W)	100 × 2			
Refrigerant piping	Connection method		Flare connection			
	Hydro unit	Liquid	Ø9.52			
		Gas	Ø15.9			
	Outdoor unit	Liquid	Ø9.52			
		Gas	Ø15.9			
	Maximum length (m)		30			
	Maximum chargeless length (m)		30			
	Maximum height difference (m)		±30			
	Minimum length (m)		5			
Refrigerant	Refrigerant name		R410A			
	Charge amount (kg)		2.7			
Water piping	Pipe diameter		R1 1/4			
	Maximum length (m)		None (Need the flow rate 17.5ℓ/min or more)			
	Maximum height difference (m)		±7			
	Maximum working water pressure (kPa) *4		300			
Operating temperature range	Hydro unit (°C) *5		5-32			
	Outdoor unit (°C)		-20-43			
Operating humidity range	Hydro unit (%)		15-85			
	Outdoor unit (%)		15-100			
Wiring connection	Power wiring		3 wires: including earth wire (Outdoor unit)			
	Connecting line		4 wires: including earth wire			

*1 Heating performance measurement conditions: outside air temperature 7 °C, water supply temperature 30 °C, outlet temperature 35 °C, refrigerant piping length 7.5 m (no height difference).
*2 Cooling performance measurement conditions: outside air temperature 35 °C, water supply temperature 12 °C, outlet temperature 7 °C, refrigerant piping length 7.5 m (no height difference).
*3 • The remote controller should be shipped with the hydro unit.
• Use two 1.5-meter wires to connect the hydro unit with the remote controller.
*4 Check the water piping for leakage under the maximum operating pressure.
*5 Do not leave the hydro unit at 5 °C or below.

Unit name	Hydro unit		HWS-1405XWHM3-E, 1405XWHT6-E, 1405XWHT9-E					
	Outdoor unit		HWS-1105H8(R)-E		HWS-1405H8(R)-E		HWS-1605H8(R)-E	
Heating capacity *1 (kW)			11.2		14.0		16.0	
Cooling capacity *2 (kW)			10.0		11.0		13.0	
Variable range of compressor frequency			10 - 60 Hz		10 - 66 Hz		10 - 70 Hz	
Power source			3 phase 50 Hz 380-400 V					
Operation mode			Heating	Cooling	Heating	Cooling	Heating	Cooling
Electric characteristic *1 *2	Hydro unit	Current (A)	0.66	0.66	0.66	0.66	0.66	0.66
		Power (kW)	0.09	0.09	0.09	0.09	0.09	0.09
		Power factor (%)	59.2	59.2	59.2	59.2	59.2	59.2
	Outdoor unit	Current (A)	3.73	5.08	5.01	5.71	5.94	7.51
		Power (kW)	2.25	3.17	3.07	3.72	3.63	4.71
		Power factor (%)	87.4	90.4	88.5	94.4	88.6	90.9
	Total	Starting current (A)	4.39	5.74	5.67	6.37	6.60	7.60
Operating noise sound pressure level	Outdoor unit (dB(A))	Max	51	51	52	52	53	53
		Rated	51	51	52	52	53	53
		Low noise	46	46	46	46	46	46
Operating noise sound power level	Outdoor unit (dB(A))	Max	66	66	68	68	69	69
		Rated	64	66	68	68	69	69
		Low noise	61	60	61	60	61	60
Coefficient of performance *1 *2			4.80	3.07	4.44	2.89	4.30	2.71
Hydro unit	Outer dimension	Height (mm)	925					
		Width (mm)	525					
		Depth (mm)	355					
	Net weight (kg)		52					
	Color		Silky shade (Munsell 1Y8.5/0.5)					
	Remote controller Outer dimension *3	Height (mm)	120					
		Width (mm)	120					
		Depth (mm)	16					
	Circulating pump	Motor output (W)	190 (MAX)					
		Flow rate (L/min)	32.1	28.9	40.1	31.5	45.8	37.3
		Type	Non-self-suction centrifugal pump					
	Heat exchanger		Plate-type heat exchange					
Outdoor unit	Outer dimension	Height (mm)	1340					
		Width (mm)	900					
		Depth (mm)	320					
	Net weight (kg)		93					
	Color		Silky shade (Munsell 1Y8.5/0.5)					
	Compressor	Motor output (W)	2500					
		Type	Twin rotary type with DC-inverter variable speed control					
		Model	DA422A3F-27M					
	Fan motor	Standard air capacity (m^3/min)	103.0					
		Motor output (W)	100 × 2					
Refrigerant piping	Connection method		Flare connection					
	Hydro unit	Liquid	Ø9.52					
		Gas	Ø15.9					
	Outdoor unit	Liquid	Ø9.52					
		Gas	Ø15.9					
	Maximum length (m)		30					
	Maximum chargeless length (m)		30					
	Maximum height difference (m)		±30					
	Minimum length (m)		5					
Refrigerant	Refrigerant name		R410A					
	Charge amount (kg)		2.7					
Water piping	Pipe diameter		R1 1/4					
	Maximum length (m)		None (Need the flow rate 17.5ℓ/min or more)					
	Maximum height difference (m)		±7					
	Maximum working water pressure (kPa) *4		300					
Operating temperature range	Hydro unit (°C) *5		5-32					
	Outdoor unit (°C)		-20-43					
Operating humidity range	Hydro unit (%)		15-85					
	Outdoor unit (%)		15-100					
Wiring connection	Power wiring		5 wires: including earth wire (Outdoor unit)					
	Connecting line		4 wires: including earth wire					

*1 Heating performance measurement conditions: outside air temperature 7 °C, water supply temperature 30 °C, outlet temperature 35 °C, refrigerant piping length 7.5 m (no height difference).
*2 Cooling performance measurement conditions: outside air temperature 35 °C, water supply temperature 12 °C, outlet temperature 7 °C, refrigerant piping length 7.5 m (no height difference).
*3 • The remote controller should be shipped with the hydro unit.
• Use two 1.5-meter wires to connect the hydro unit with the remote controller.
*4 Check the water piping for leakage under the maximum operating pressure.
*5 Do not leave the hydro unit at 5 °C or below.

Unit name	Hydro unit		HWS-P805XWHM3-E, P805XWHT6-E, P805XWHT9-E	
	Outdoor unit		HWS-P805HR-E	
Heating capacity *1 (kW)			8.0	
Cooling capacity *2 (kW)			6.0	
Variable range of compressor frequency			10 - 70 Hz	
Power source			Single phase 50 Hz 220-230 V	
Operation mode			Heating	Cooling
Electric characteristic *1 *2	Hydro unit	Current (A)	0.44	0.44
		Power (kW)	0.06	0.06
		Power factor (%)	59.3	59.3
	Outdoor unit	Current (A)	7.57	7.39
		Power (kW)	1.62	1.58
		Power factor (%)	93	93
	Total	Running current (A)	8.01	7.83
Operating noise sound pressure level	Outdoor unit (dB(A))	Max	51	50
		Rated	49	49
		Low noise	46	46
Operating noise sound power level	Outdoor unit (dB(A))	Max	66	65
		Rated	64	64
		Low noise	61	60
Coefficient of performance *1 *2			4.76	3.66
Hydro unit	Outer dimension	Height (mm)	925	
		Width (mm)	525	
		Depth (mm)	355	
	Net weight (kg)		49	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Remote controller Outer dimension *3	Height (mm)	120	
		Width (mm)	120	
		Depth (mm)	16	
	Circulating pump	Motor output (W)	125 (MAX)	
		Flow rate (L/min)	22.9	17.2
		Type	Non-self-suction centrifugal pump	
	Heat exchanger		Plate-type heat exchange	
Outdoor unit	Outer dimension	Current (A)	1340	
		Power (kW)	900	
		Power factor (%)	320	
	Net weight (kg)		92	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Compressor	Current (A)	2500	
		Power (kW)	Twin rotary type with DC-inverter variable speed control	
		Power factor (%)	DA422A3F-26M	
	Fan motor	Standard air capacity (m^3/min)	103.0	
		Motor output (W)	100 x 2	
Refrigerant piping	Connection method		Flare connection	
	Hydro unit	Liquid	Ø9.52	
		Gas	Ø15.9	
	Outdoor unit	Liquid	Ø9.52	
		Gas	Ø15.9	
	Maximum length (m)		30	
	Maximum chargeless length (m)		30	
	Maximum height difference (m)		±30	
	Minimum length (m)		5	
Refrigerant	Refrigerant name		R410A	
	Charge amount (kg)		2.7	
Water piping	Pipe diameter		R1 1/4	
	Maximum length (m)		None (Need the flow rate 13ℓ /min or more)	
	Maximum height difference (m)		±7	
	Maximum working water pressure (kPa) *4		300	
Operating temperature range	Hydro unit (°C) *5		5-32	
	Outdoor unit (°C)		-25-43	
Operating humidity range	Hydro unit (%)		15-85	
	Outdoor unit (%)		15-100	
Wiring connection	Power wiring		3 wires: including earth wire (Outdoor unit)	
	Connecting line		4 wires: including earth wire	

*1 Heating performance measurement conditions: outside air temperature 7 °C, water supply temperature 30 °C, outlet temperature 35 °C, refrigerant piping length 7.5 m (no height difference).
*2 Cooling performance measurement conditions: outside air temperature 35 °C, water supply temperature 12 °C, outlet temperature 7 °C, refrigerant piping length 7.5 m (no height difference).
*3 • The remote controller should be shipped with the hydro unit.
• Use two 1.5-meter wires to connect the hydro unit with the remote controller.
*4 Check the water piping for leakage under the maximum operating pressure.
*5 Do not leave the hydro unit at 5 °C or below.

Unit name	Hydro unit		HWS-P1105XWHM3-E, P1105XWHT6-E, P1105XWHT9-E	
	Outdoor unit		HWS-P1105HR-E	
Heating capacity *1 (kW)			11.2	
Cooling capacity *2 (kW)			10.0	
Variable range of compressor frequency			10 - 90 Hz	
Power source			Single phase 50 Hz 220-230 V	
Operation mode			Heating	Cooling
Electric characteristic *1 *2	Hydro unit	Current (A)	0.66	0.66
		Power (kW)	0.09	0.09
		Power factor (%)	59.2	59.2
	Outdoor unit	Current (A)	10.33	14.99
		Power (kW)	2.21	3.24
		Power factor (%)	93	94
	Total	Running current (A)	10.99	15.65
Operating noise sound pressure level	Outdoor unit (dB(A))	Max	51	51
		Rated	51	51
		Low noise	46	46
Operating noise sound power level	Outdoor unit (dB(A))	Max	66	66
		Rated	64	66
		Low noise	61	60
Coefficient of performance *1 *2			4.88	3.00
Hydro unit	Outer dimension	Height (mm)	925	
		Width (mm)	525	
		Depth (mm)	355	
	Net weight (kg)		52	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Remote controller Outer dimension *3	Height (mm)	120	
		Width (mm)	120	
		Depth (mm)	16	
	Circulating pump	Motor output (W)	190 (MAX)	
		Flow rate (L/min)	32.1	28.9
		Type	Non-self-suction centrifugal pump	
	Heat exchanger		Plate-type heat exchange	
Outdoor unit	Outer dimension	Current (A)	1340	
		Power (kW)	900	
		Power factor (%)	320	
	Net weight (kg)		92	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Compressor	Current (A)	2500	
		Power (kW)	Twin rotary type with DC-inverter variable speed control	
		Power factor (%)	DA422A3F-26M	
	Fan motor	Standard air capacity (m^3/min)	103.0	
		Motor output (W)	100 x 2	
Refrigerant piping	Connection method		Flare connection	
	Hydro unit	Liquid	Ø9.52	
		Gas	Ø15.9	
	Outdoor unit	Liquid	Ø9.52	
		Gas	Ø15.9	
	Maximum length (m)		30	
	Maximum chargeless length (m)		30	
	Maximum height difference (m)		±30	
	Minimum length (m)		5	
Refrigerant	Refrigerant name		R410A	
	Charge amount (kg)		2.7	
Water piping	Pipe diameter		R1 1/4	
	Maximum length (m)		None (Need the flow rate 13 ℓ/min or more)	
	Maximum height difference (m)		±7	
	Maximum working water pressure (kPa) *4		300	
Operating temperature range	Hydro unit (°C) *5		5-32	
	Outdoor unit (°C)		-23-43	
Operating humidity range	Hydro unit (%)		15-85	
	Outdoor unit (%)		15-100	
Wiring connection	Power wiring		3 wires: including earth wire (Outdoor unit)	
	Connecting line		4 wires: including earth wire	

*1 Heating performance measurement conditions: outside air temperature 7 °C, water supply temperature 30 °C, outlet temperature 35 °C, refrigerant piping length 7.5 m (no height difference).
*2 Cooling performance measurement conditions: outside air temperature 35 °C, water supply temperature 12 °C, outlet temperature 7 °C, refrigerant piping length 7.5 m (no height difference).
*3 • The remote controller should be shipped with the hydro unit.
• Use two 1.5-meter wires to connect the hydro unit with the remote controller.
*4 Check the water piping for leakage under the maximum operating pressure.
*5 Do not leave the hydro unit at 5 °C or below.

Unit name	Hydro unit		HWS-P805XWHM3-E, P805XWHT6-E, P805XWHT9-E	
	Outdoor unit		HWS-P805H8R-E	
Heating capacity *1 (kW)			8.0	
Cooling capacity *2 (kW)			6.0	
Variable range of compressor frequency			10 - 70 Hz	
Power source			3 phase 50 Hz 380-400 V	
Operation mode			Heating	Cooling
Electric characteristic *1 *2	Hydro unit	Current (A)	0.44	0.44
		Power (kW)	0.06	0.06
		Power factor (%)	59.3	59.3
	Outdoor unit	Current (A)	3.13	3.09
		Power (kW)	1.65	1.58
		Power factor (%)	76	74
	Total	Running current (A)	3.28	3.24
Operating noise sound power level ①	Hydro unit (dB (A))		41	41
	Outdoor unit (dB (A))		66	65
Coefficient of performance *1 *2			4.76	3.66
Hydro unit	Outer dimension	Height (mm)	925	
		Width (mm)	525	
		Depth (mm)	355	
	Net weight (kg)		46	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Remote controller Outer dimension *3	Height (mm)	120	
		Width (mm)	120	
		Depth (mm)	16	
	Circulation pump	Motor output (W)	125 (MAX)	
		Flow rate (L/min)	22.9	17.2
		Type	Non-self-suction centrifugal pump	
	Heat exchanger		Plate-type heat exchange	
Outdoor unit	Outer dimension	Height (mm)	1340	
		Width (mm)	900	
		Depth (mm)	320	
	Net weight (kg)		92	
	Color		Silky shade (Munsell 1Y8.5/0.5)	
	Compressor	Motor output (W)	2500	
		Type	Twin rotary type with DC-inverter variable speed control	
		Model	DA422A3F-27M	
	Fan motor	Standard air capacity (m^3/min)	103.0	
		Motor output (W)	100 × 2	
Refrigerant piping	Connection method		Flare connection	
	Hydro unit	Liquid	Ø9.52	
		Gas	Ø15.9	
	Outdoor unit	Liquid	Ø9.52	
		Gas	Ø15.9	
	Maximum length (m)		30	
	Maximum chargeless length (m)		30	
	Maximum height difference (m)		±30	
	Minimum length (m)		5	
Refrigerant	Refrigerant name		R410A	
	Charge amount (kg)		2.7	
Water piping	Pipe diameter		R1 1/4	
	Maximum length (m)		None (Need the flow rate 13ℓ/min or more)	
	Maximum height difference (m)		±7	
	Maximum working water pressure (kPa) *4		430	
Operating temperature range	Hydro unit (°C) *5 (Cooling / Heating / Hot water)		5-32 / 5-32 / 5-32	
	Outdoor unit (°C) (Cooling / Heating / Hot water)		10-43 / -25-25 / -25-43	
Operating humidity range	Hydro unit (%)		15-85	
	Outdoor unit (%)		15-100	
Wiring connection	Power wiring		5 wires: including earth wire (Outdoor unit)	
	Connecting line		4 wires: including earth wire	

*1 Heating performance measurement conditions: outside air tempe rature 7 °C, water supply temper rature 7 °C, water supply temper rature 35 °C, refrigerant piping length 7.5 m (no height difference).
*2 Cooling performance measurement conditions: outside air tempe rature 35 °C, water supply temper ature 12 °C, outlet water temp erature 7 °C, refrigerant piping length 7.5 m (no height difference).
*3 • The remote controller should be shipped with the hydro unit.
• Use two 1.5-meter wires to connect the hydro unit with the remote controller.
*4 Check the water piping for leakage under the maximum operatin g pressure.
*5 Do not leave the hydro unit at 5 °C or below.
① Max operation
Heating: outside air temperature 7°C, water supply temperature 47°C, outlet water temperature 55°C.
Cooling: outside air temperature 35°C, water supply tempera ture 12°C, outlet water temperature 7°C.

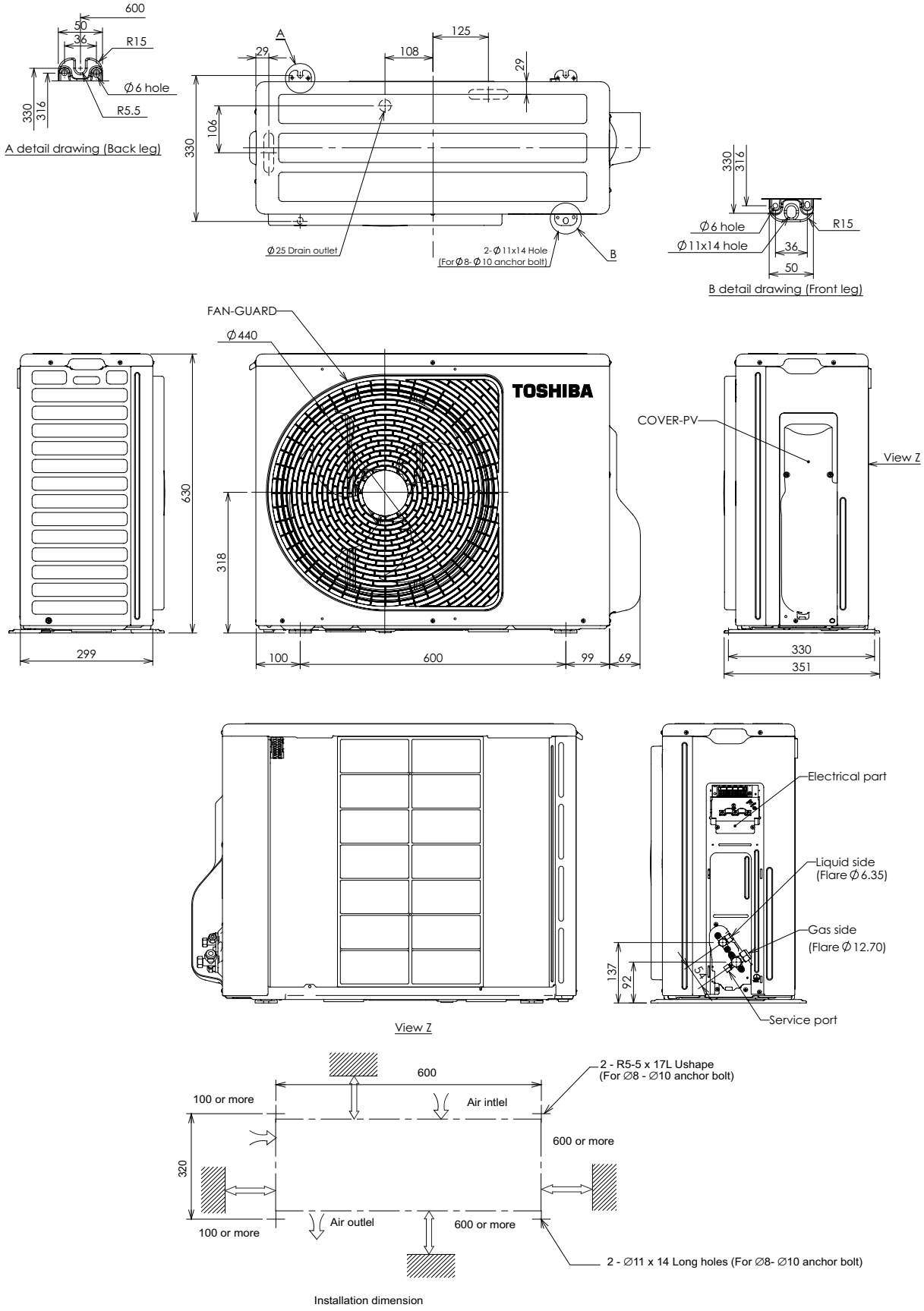
Unit name	Hydro unit		HWS-P1105XWHM3-E, P1105XWHT6-E, P1105XWHT9-E			
	Outdoor unit		HWS-P1105H8R-E		HWS-P1405H8R-E	
Heating capacity *1 (kW)			11.2		14.0	
Cooling capacity *2 (kW)			10.0		11.0	
Variable range of compressor frequency			10 - 80 Hz		10 - 90 Hz	
Power source			3 phase 50 Hz 380-400 V			
Operation mode			Heating	Cooling	Heating	Cooling
Electric characteristic *1 *2	Hydro unit	Current (A)	0.66	0.66	0.66	0.66
		Power (kW)	0.09	0.09	0.09	0.09
		Power factor (%)	59.2	59.2	59.2	59.2
	Outdoor unit	Current (A)	4.23	5.55	5.47	6.34
		Power (kW)	2.25	3.24	3.07	3.81
		Power factor (%)	77	85	81	87
	Total	Starting current (A)	4.45	5.77	5.69	6.56
Operating noise sound power level ①	Hydro unit (dB (A))		43	43	43	43
	Outdoor unit (dB (A))		67	66	68	68
Coefficient of performance *1 *2			4.88		3.00	
Hydro unit	Outer dimension	Height (mm)	925			
		Width (mm)	525			
		Depth (mm)	355			
	Net weight (kg)		49			
	Color		Silky shade (Munsell 1Y8.5/0.5)			
	Remote controller Outer dimension *3	Height (mm)	120			
		Width (mm)	120			
		Depth (mm)	16			
	Circulating pump	Motor output (W)	190(MAX)			
		Flow rate (L/min)	32.1	28.9	40.1	31.5
		Type	Non-self-suction centrifugal pump			
	Heat exchanger		Plate-type heat exchange			
Outdoor unit	Outer dimension	Height (mm)	1340			
		Width (mm)	900			
		Depth (mm)	320			
	Net weight (kg)		92			
	Color		Silky shade (Munsell 1Y8.5/0.5)			
	Compressor	Motor output (W)	2500			
		Type	Twin rotary type with DC-inverter variable speed control			
		Model	DA422A3F-27M			
	Fan motor	Standard air capacity (m3/min)	103.0			
		Motor output (W)	100 x 2			
Refrigerant piping	Connection method		Flare connection			
	Hydro unit	Liquid	Ø9.52			
		Gas	Ø15.9			
	Outdoor unit	Liquid	Ø9.52			
		Gas	Ø15.9			
	Maximum length (m)		30			
	Maximum chargeless length (m)		30			
	Maximum height difference (m)		±30			
	Minimum length (m)		5			
Refrigerant	Refrigerant name		R410A			
	Charge amount (kg)		2.7			
Water piping	Pipe diameter		R1 1/4			
	Maximum length (m)		None (Need the flow rate 18 ℓ/min or more)			
	Maximum height difference (m)		±7			
	Maximum working water pressure (kPa) *4		430			
Operating temperature range	Hydro unit (°C) *5	(Cooling/Heating/Hot water)	5-32/5-32/5-32			
	Outdoor unit (°C)	(Cooling/Heating/Hot water)	10-43/-20-25/-20-43			
Operating humidity range	Hydro unit (%)		15-85			
	Outdoor unit (%)		15-100			
Wiring connection	Power wiring		5 wires: including earth wire (Outdoor unit)			
	Connecting line		4 wires: including earth wire			

*1 Heating performance measurement conditions: outside air temperature 7 °C, water supply temperature 30 °C, outlet temperature 35 °C, refrigerant piping length 7.5 m (no height difference).
*2 Cooling performance measurement conditions: outside air temperature 35 °C, water supply temperature 12 °C, outlet temperature 7 °C, refrigerant piping length 7.5 m (no height difference).
*3 • The remote controller should be shipped with the hydro unit.
• Use two 1.5-meter wires to connect the hydro unit with the remote controller.
*4 Check the water piping for leakage under the maximum operating pressure.
*5 Do not leave the hydro unit at 5 °C or below.
① Max operation
Heating: outside air temperature 7°C, water supply temperature 47°C, outlet water temperature 55°C.
Cooling: outside air temperature 35°C, water supply temperature 12°C, outlet water temperature 7°C.

5-2. Dimension

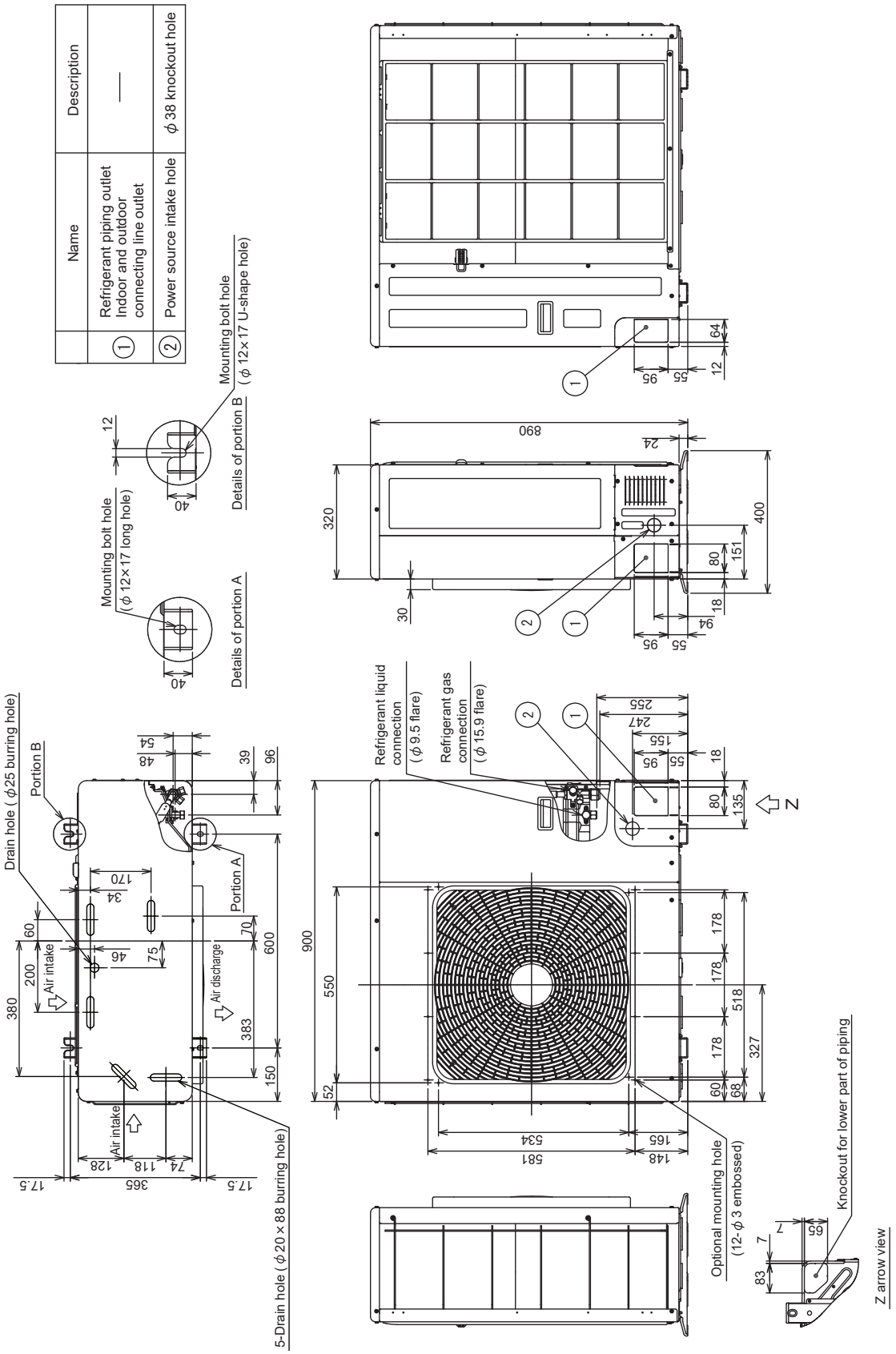
5-2-1. HWS-455H-E

Unit: mm



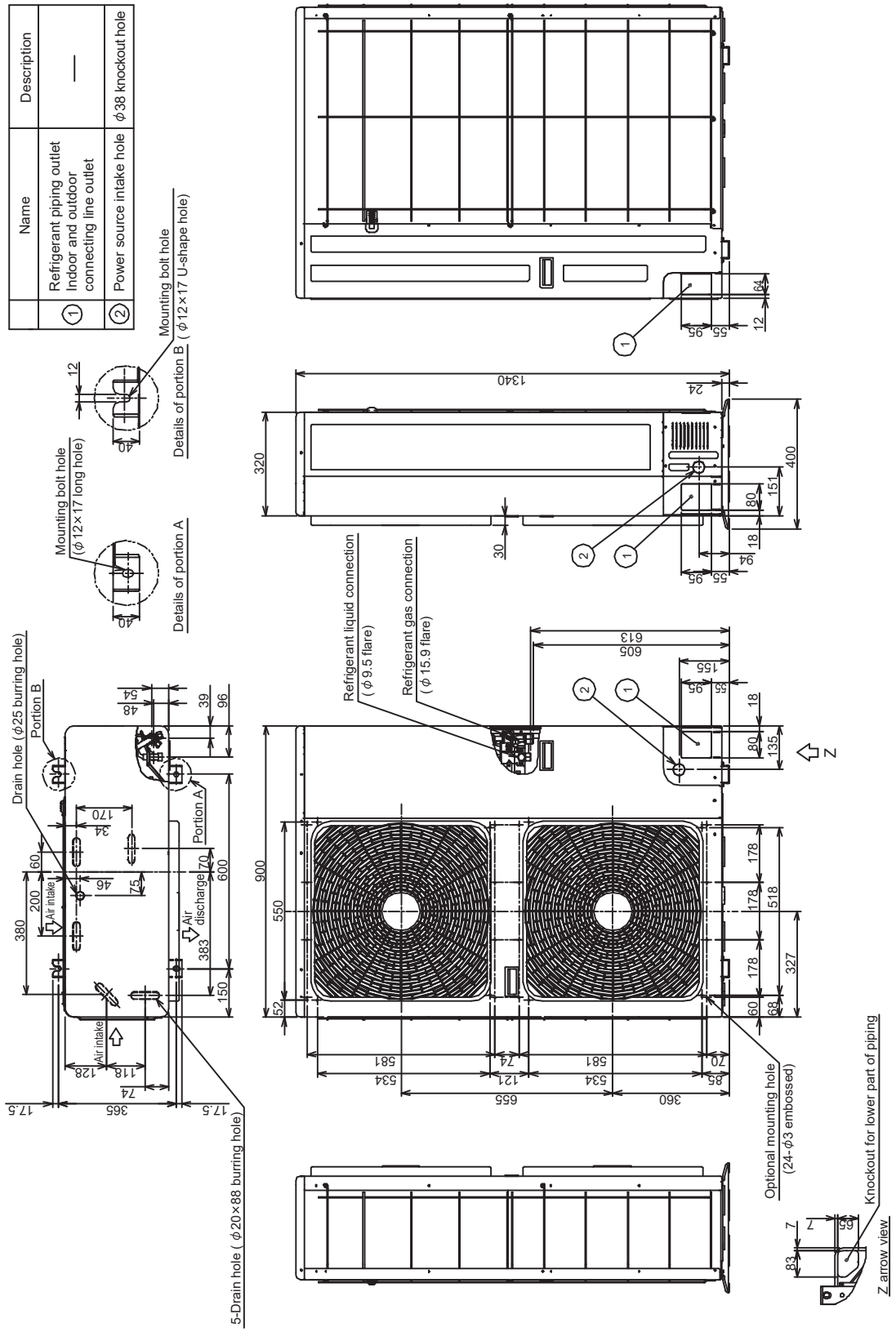
5-2-2. HWS-805H-E

Unit: mm



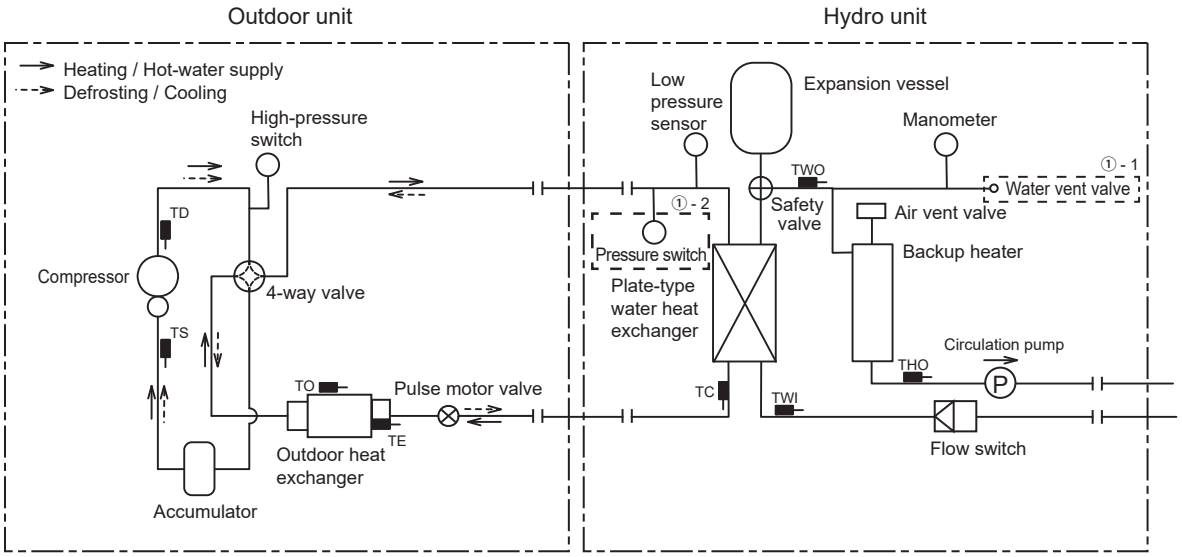
5-2-3. HWS-1105H-E, HWS-1405H-E, HWS-1105H8(R)-E, HWS-1405H8(R)-E, HWS-1605H8(R)-E HWS-P805HR-E, HWS-P1105HR-E, HWS-P805H8R-E HWS-P1105H8R-E, HWS-P1405H8R-E

Unit: mm

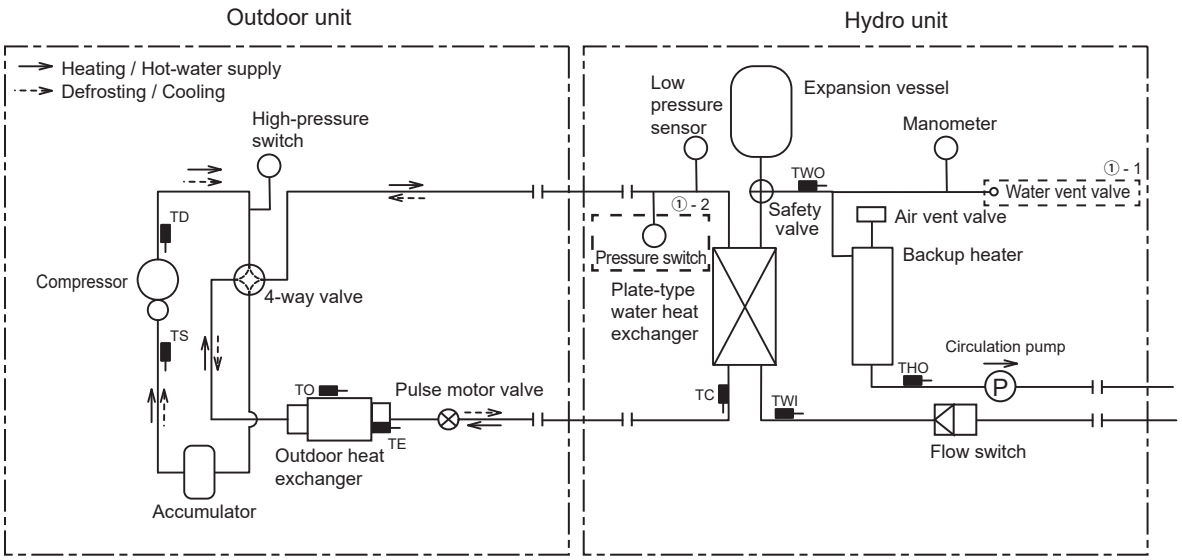


5-3. Piping Diagram

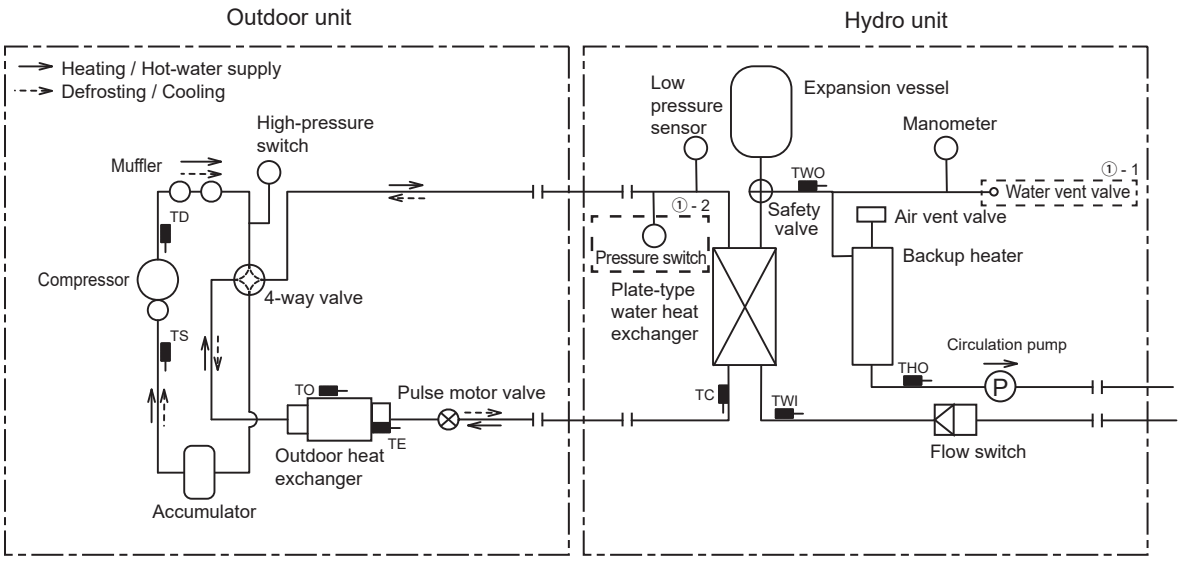
HWS-805XWHM3-E, HWS-805XWHT6-E, HWS-805XWHT9-E / HWS-805H-E



HWS-1405XWHM3-E, HWS-1405XWHT6-E, HWS-1405XWHT9-E / HWS-1105H-E, HWS-1405H-E

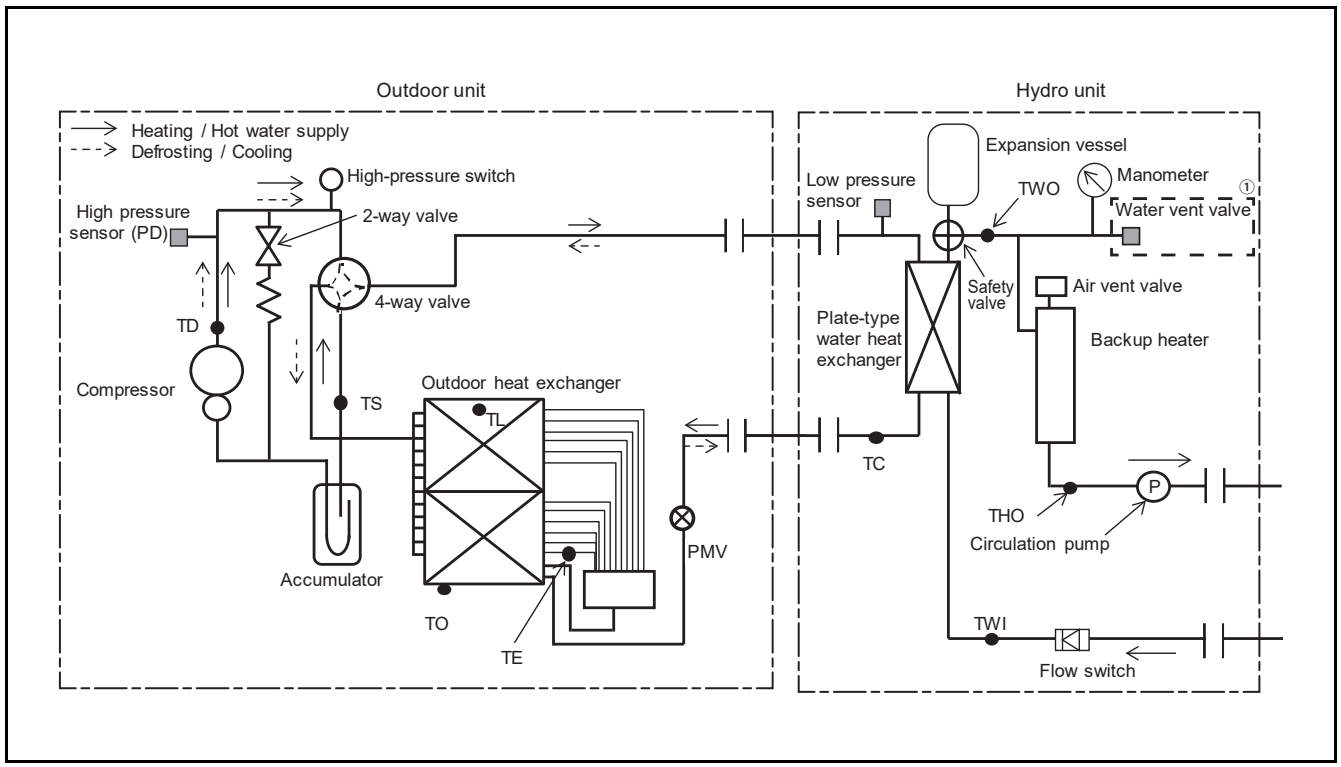


HWS-1405XWHM3-E, HWS-1405XWHT6-E, HWS-1405XWHT9-E / HWS-1105H8(R)-E, HWS-1405H8(R)-E, HWS-1605H8(R)-E



① - 1 Abolition of “Water vent valve” since May 2018.
① - 2 Abolition of “Pressure switch” since July 2018.

HWS-P805XWHM3-E, HWS-P805XWHT6-E, HWS-P805XWHT9-E, HWS-P1105XWHM3-E, HWS-P1105XWHT6-E, HWS-P1105XWHT9-E / HWS-P805HR-E, HWS-P1105, HWS-P805H8R-E, HWS-P1105H8R-E, HWS-P1405H8R-E



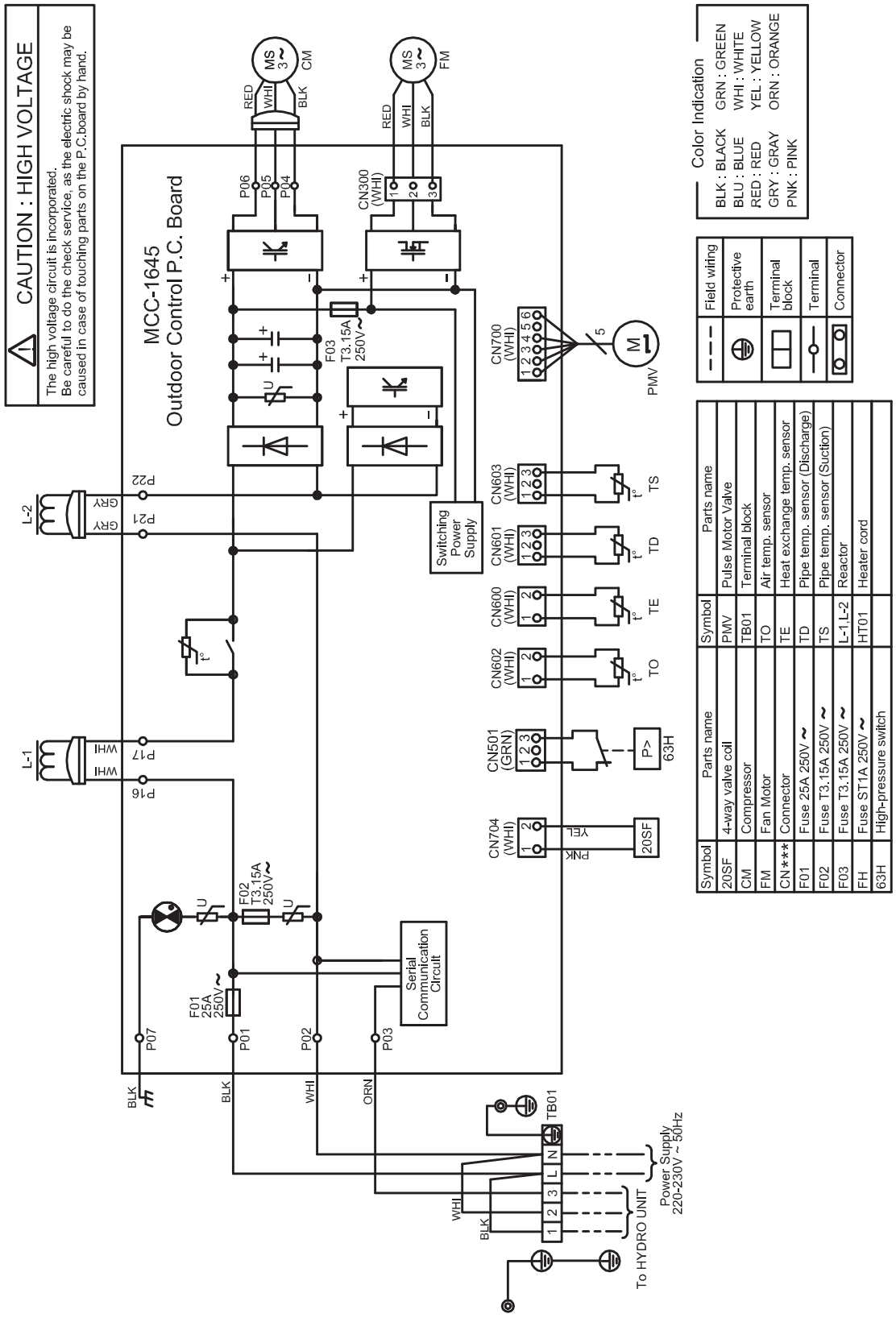
① Abolition of “Water vent valve” since May 2018.

5

5-4. Wiring Diagram

5-4-1. Outdoor Unit (Single phase type)

▼HWS-455H-E

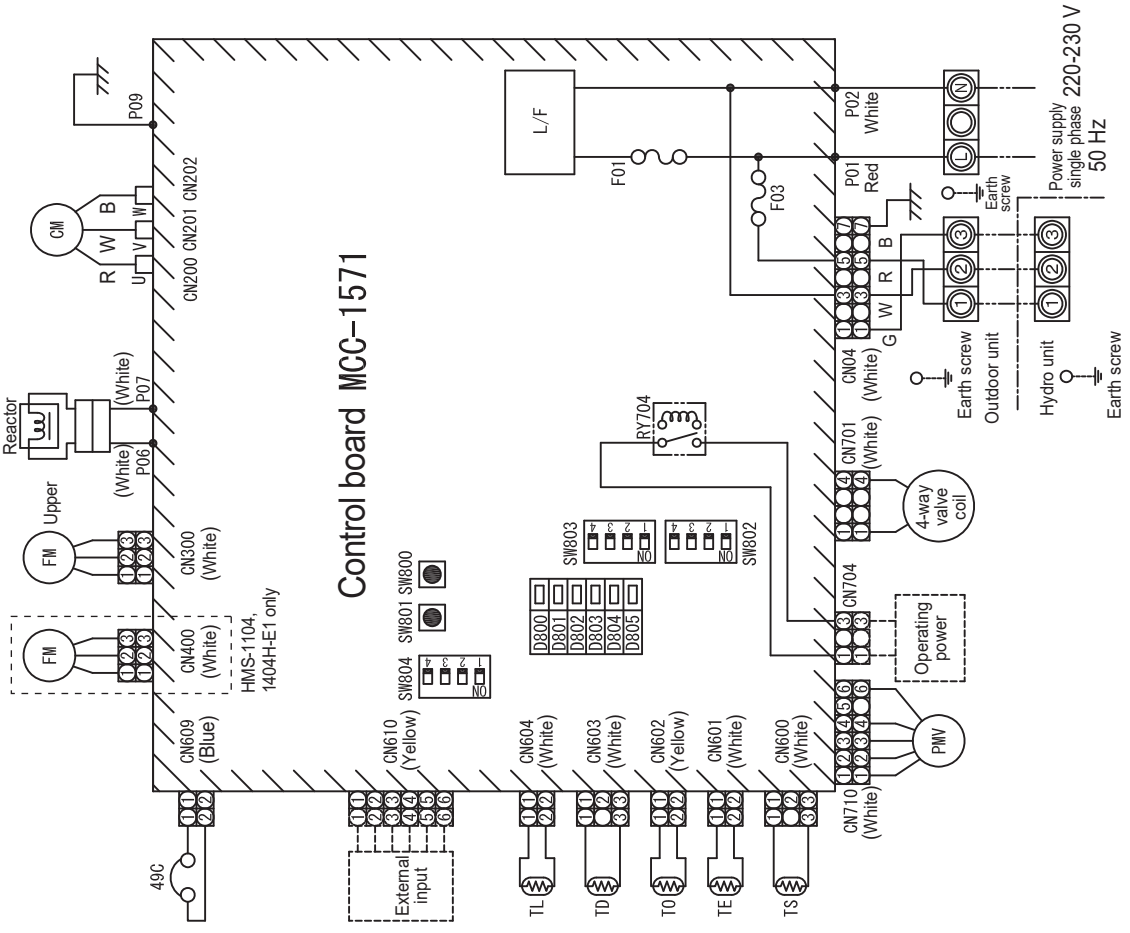


Symbol	Parts name	Symbol	Parts name
20SF	4-way valve coil	PMV	Pulse Motor Valve
CM	Compressor	TB01	Terminal block
FM	Fan Motor	TO	Air temp. sensor
CN***	Connector	TE	Heat exchange temp. sensor
F01	Fuse 25A 250V ~	TD	Pipe temp. sensor (Discharge)
F02	Fuse T3.15A 250V ~	TS	Pipe temp. sensor (Suction)
F03	Fuse T3.15A 250V ~	L-1,L-2	Reactor
FH	Fuse ST1A 250V ~	HT01	Heater cord
63H	High-pressure switch		

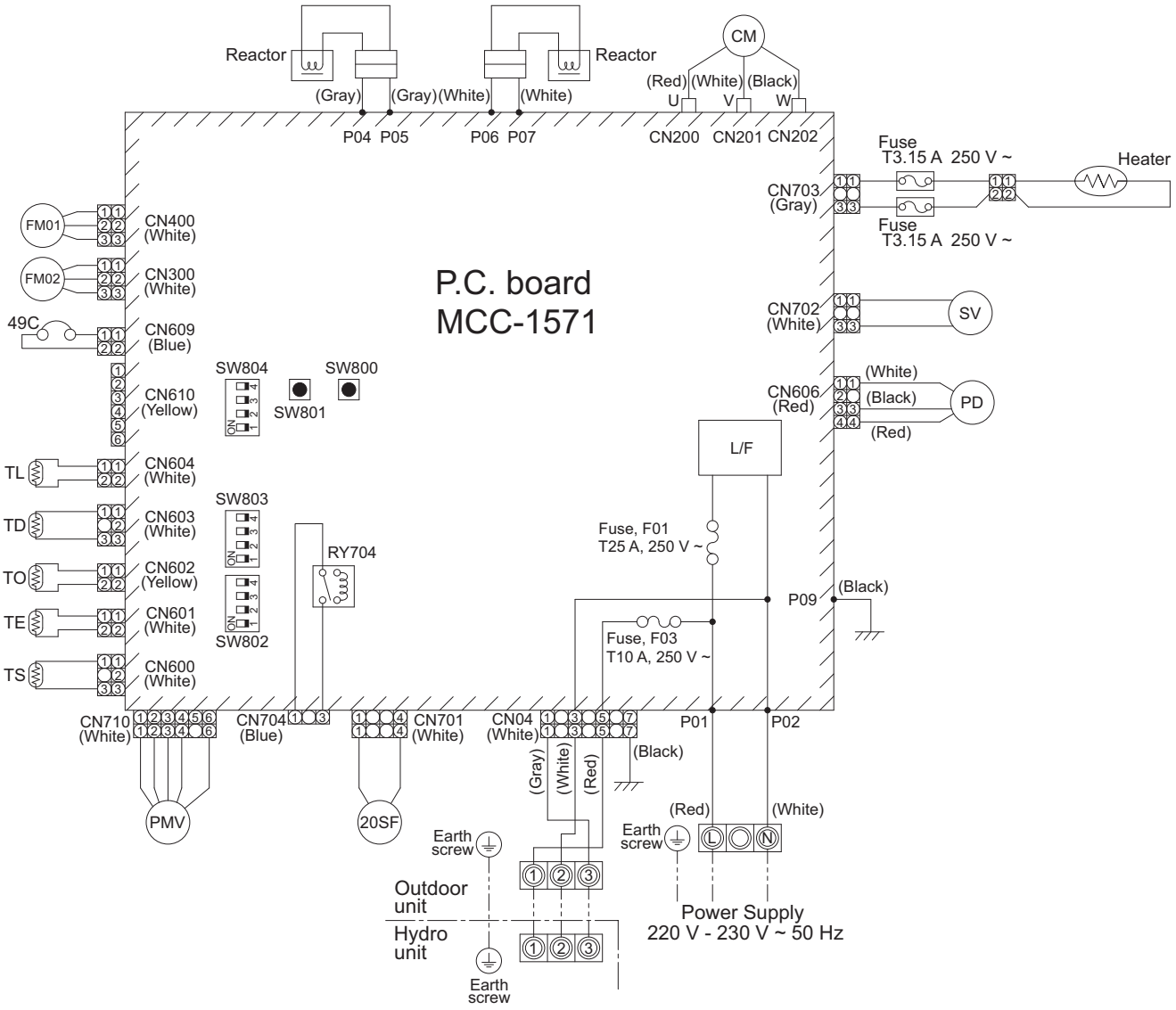
▼HWS-805H-E, HWS-1105H-E, HWS-1405H-E

Symbol	Item name
CM	Compressor
FM	Fan motor
PMV	Pulse motor valve coil
TD	Discharge temperature sensor
TS	Suction temperature sensor
TE	Heat exchange sensor 1
TL	Heat exchange sensor 2
T0	Outdoor temperature sensor
4F	Linefilter
20SF	4-way valve coil
49C	Compressor case thermostat
F01	Fuse 25 A, 250 VAC
F03	Fuse 10 A, 250 VAC

1. ◎ indicates a terminal plate. The number inside indicates the terminal number.
2. The double-dashed line indicates a local wiring while the dashed line indicates an optional accessory or service wiring.
3. ▨ indicates a printed board.
4. For the hydro unit circuit, see the hydro unit wiring diagram.



▼HWS-P805HR-E, HWS-P1105HR-E

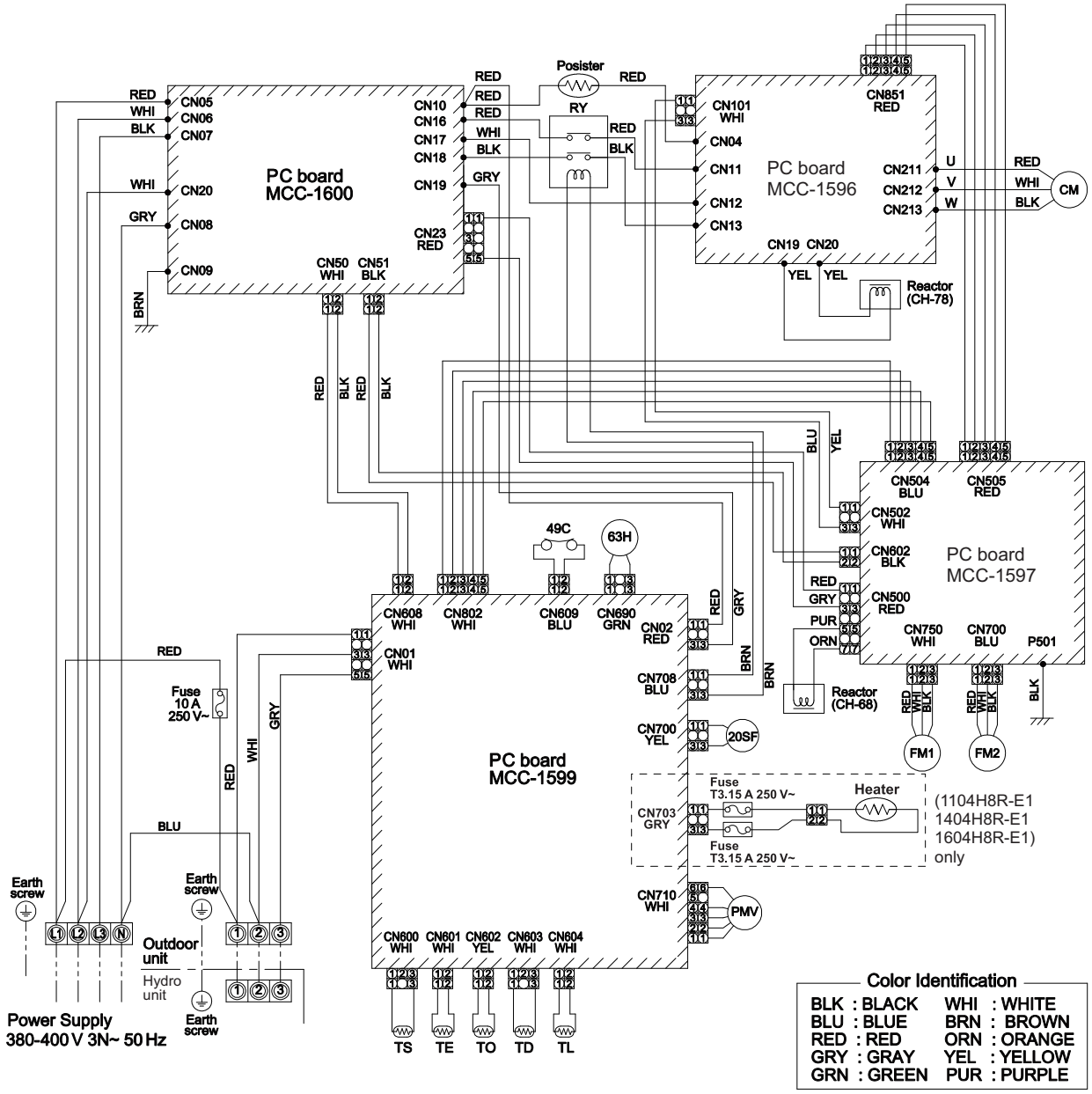


Symbol	Part name
CM	Compressor
FM01	Fan motor
FM02	
PMV	Pulse motor valve
TD	Pipe temperature sensor(Discharge)
TS	Pipe temperature sensor(Suction)
TE	Heat exchanger sensor 1
TL	Heat exchanger sensor 2
TO	Outside temperature sensor
20SF	4-way valve coil
SV	2-way valve coil
PD	Pressure sensor
49C	Compressor case thermostat
RY	Relay
L/F	Line Filter

1.◎ indicates the terminal block. Alphanumeric characters in the cycle indicate the terminal No.
2.The two-dot chain line indicates the wiring procured locally.
3. ▨ indicates the P.C. board.
4.For the hydro unit circuit, refer to the wiring diagram of the hydro unit.

5-4-2. Outdoor unit (3 phase type)

▼HWS-1105H8(R)-E, -1405H8(R)-E, -1605H8(R)-E

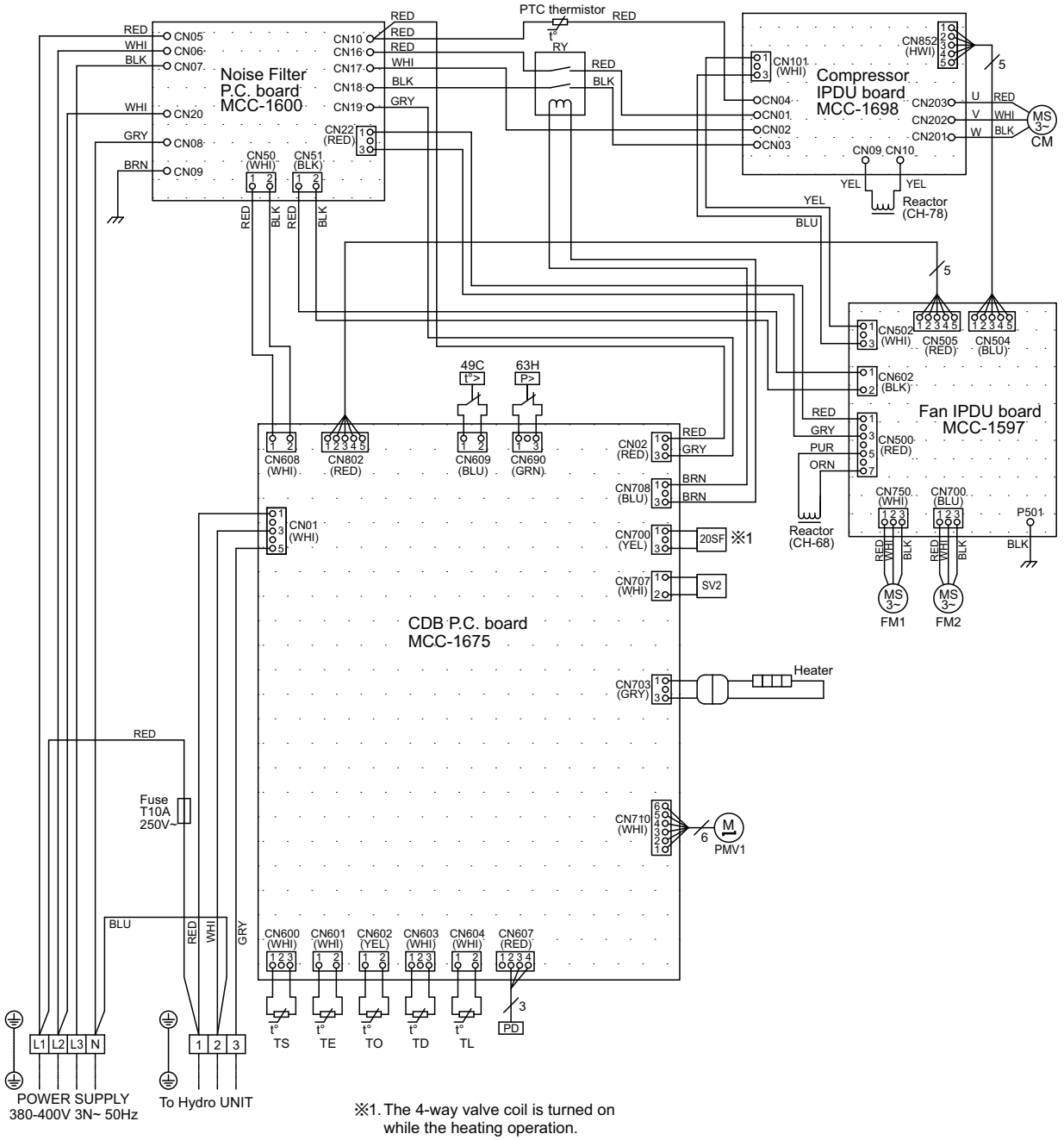


Symbol	Part name
CM	Compressor
FM1,2	Fan motor
PMV	Pulse motor valve
TD	Pipe temperature sensor (Discharge)
TS	Pipe temperature sensor (Suction)
TE	Heat exchanger sensor 1
TL	Heat exchanger sensor 2
TO	Outside temperature sensor
20SF	4-way valve coil
49C	Compressor case thermostat
63H	High-pressure switch
RY	Relay

1. ◎ indicates the terminal block. Alphanumeric characters in the cycle indicate terminal No.
2. The two-dot chain line indicates the wiring procured locally.
3. ▨ indicates the PC board.
4. For the hydro unit circuit, refer to the wiring diagram of the indoor unit.

5

▼HWS-P805H8R-E, HWS-P1105H8R-E, HWS-P1405H8R-E



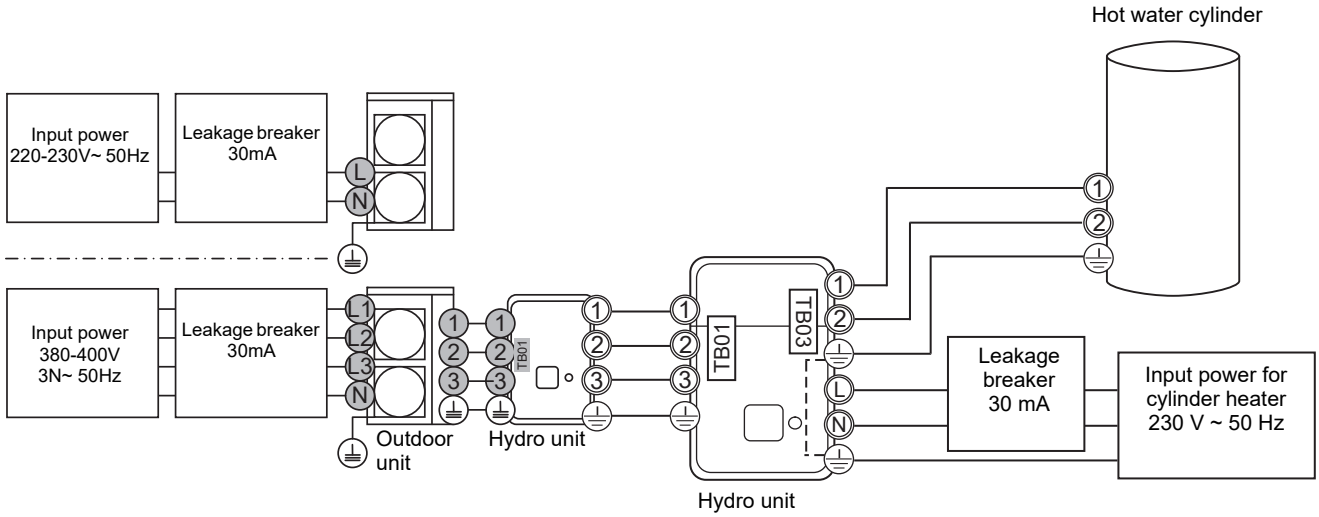
Symbol	Part name
CM	Compressor
FM1,2	Fan motor
PMV1	Pulse motor valve
PD	High-pressure sensor
RY	Relay
SV2	2-way valve coil
TD	Pipe temperature sensor(Discharge)
TS	Pipe temperature sensor(Suction)
TE	Heat exchanger sensor 1
TL	Heat exchanger sensor 2
TO	Outside temperature sensor
20SF	4-way valve coil
49C	Compressor case thermostat
63H	High-pressure switch

———	Field wiring
⏚	Protective earth
▭	Terminal block
—○—	Terminal
○ ○	Connector
·····	P.C.board

Color Indication

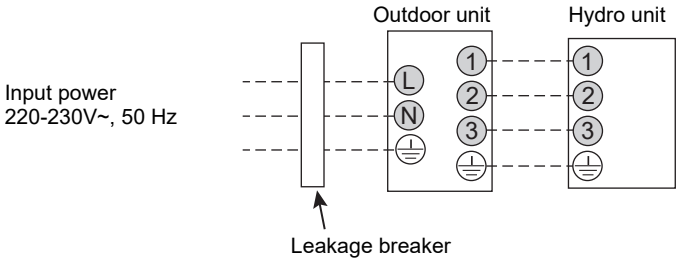
BLK : BLACK	GRY : GRAY
BLU : BLUE	BRN : BROWN
RED : RED	PUR : PURPLE
YEL : YELLOW	ORN : ORANGE
WHI : WHITE	GRN : GREEN

5-4-3. Power line

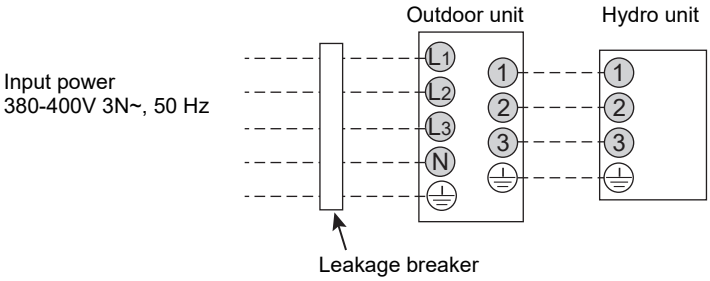


5-4-4. Wiring between Hydro Unit and Outdoor Unit

▼ HWS-455H-E, HWS-805H-E, HWS-1105H-E, HWS-1405H-E
HWS-P805HR-E, HWS-P1105HR-E

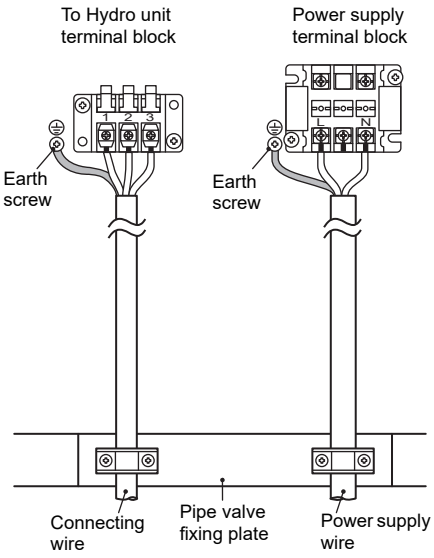


▼ HWS-1105H8-E, H8R-E
HWS-1405H8-E, H8R-E
HWS-1605H8-E, H8R-E
HWS-P805H8R-E
HWS-P1105H8R-E
HWS-P1405H8R-E

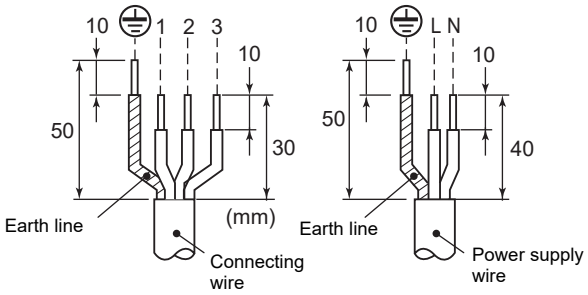


5

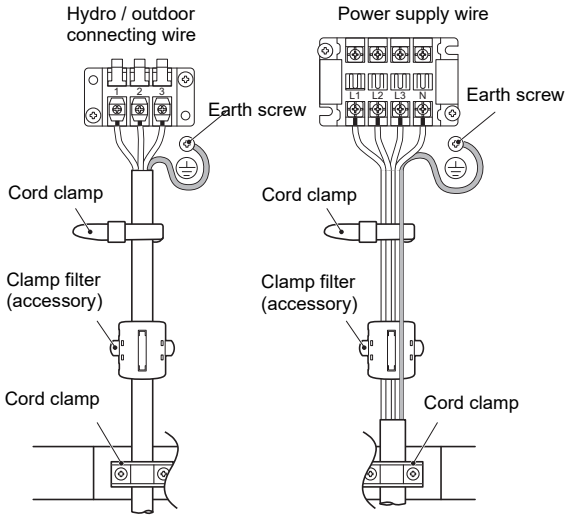
▼ HWS-805H-E, HWS-1105H-E, HWS-1405H-E
HWS-P805HR-E, HWS-P1105HR-E



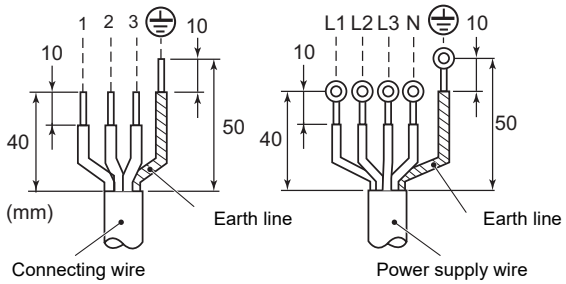
Stripping length power cord and connecting wire



▼ HWS-1105H8-E, H8R-E
HWS-1405H8-E, H8R-E
HWS-1605H8-E, H8R-E
HWS-P805H8R-E
HWS-P1105H8R-E
HWS-P1405H8R-E



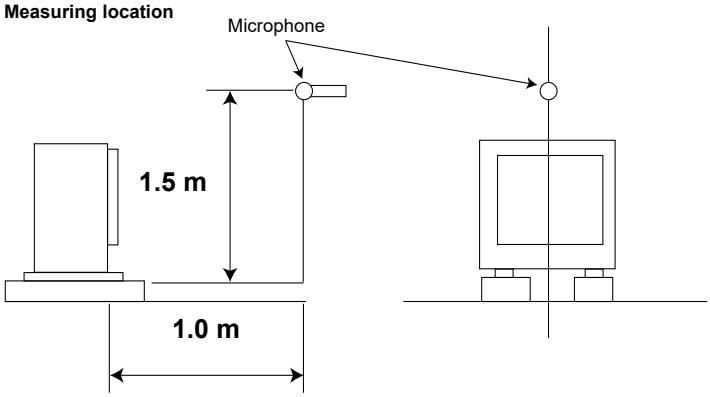
Stripping length power cord and connecting wire



5-5. Sound Data

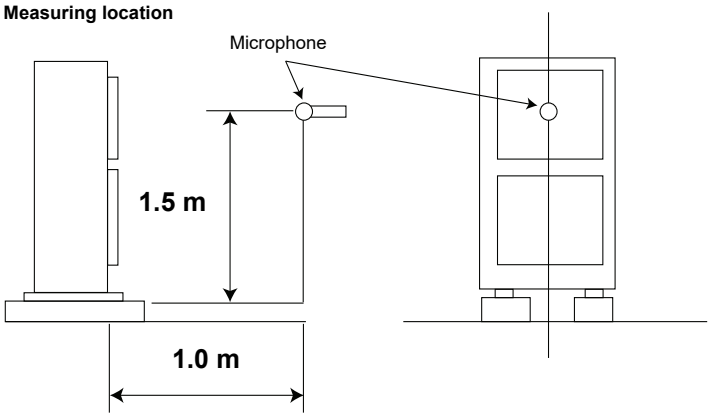
5-5-1. Sound pressure level measurement

▼HWS-455H-E, HWS-805H-E



Condition		
Cooling	A35	W12_7
Heating	A7	W30_35

▼HWS-1105H-E, HWS-1405H-E, HWS-1105H8(R)-E, HWS-1405H8(R)-E, HWS-1605H8(R)-E HWS-P805HR-E, HWS-P1105HR-E HWS-P805H8R-E, HWS-P1105H8R-E, HWS-P1405H8R-E



Condition		
Cooling	A35	W12_7
Heating	A7	W30_35

5

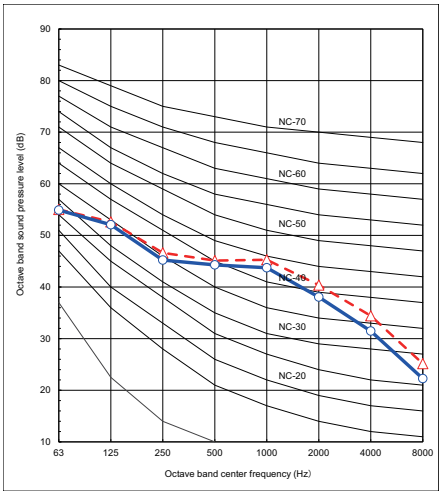
5-5-2. Sound Characteristics (NC Curve)

▼HWS-455H-E (4.5 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	48	49

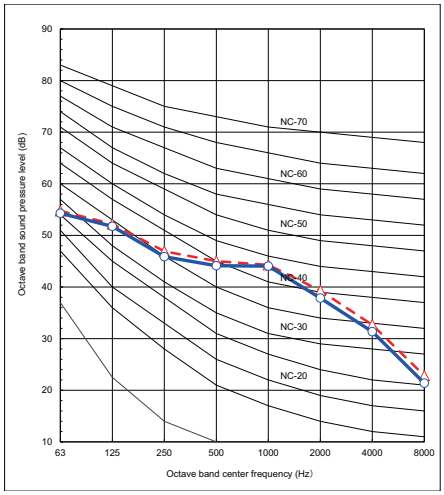
△– – △Heating
○——○Cooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	48	48

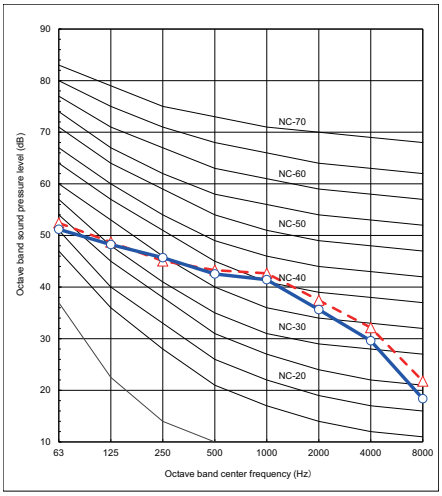
△– – △Heating
○——○Cooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	47	47

△– – △Heating
○——○Cooling

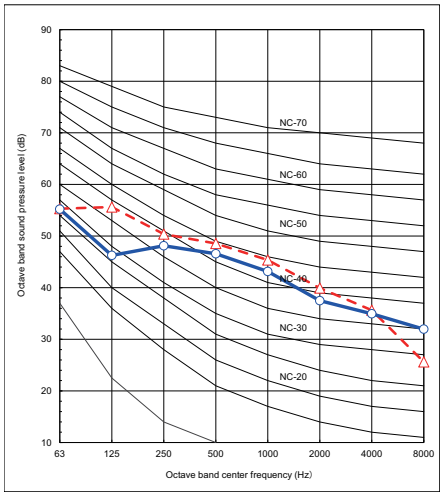


▼HWS-805H-E (8.0 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	49	50

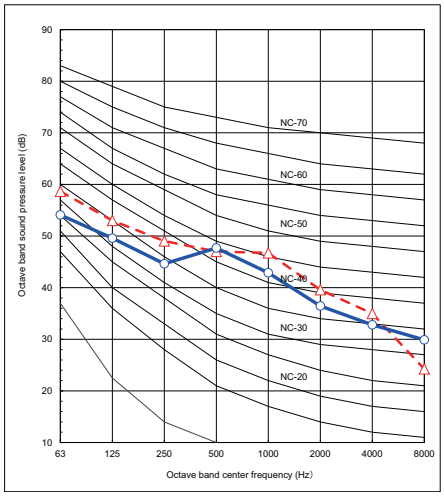
Δ– – ΔHeating
O——OCooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	49	49

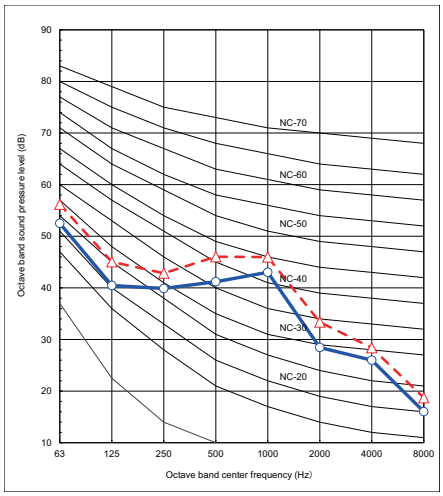
Δ– – ΔHeating
O——OCooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	47	47

Δ– – ΔHeating
O——OCooling

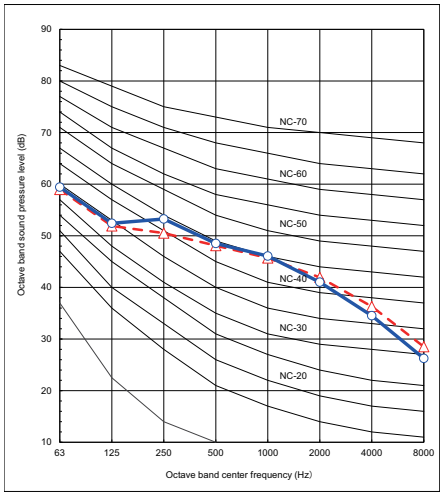


▼HWS-1105H-E, 1105H8(R)-E (11 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	51	51

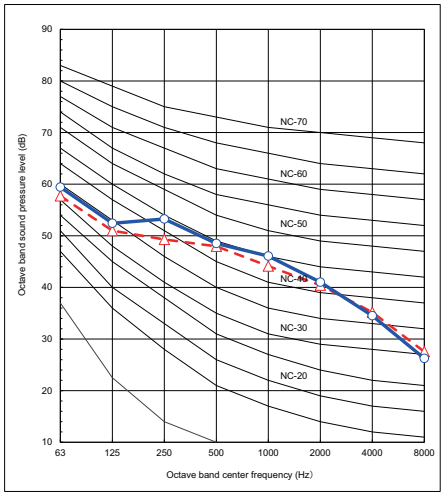
Δ– – ΔHeating
O——OCooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	51	51

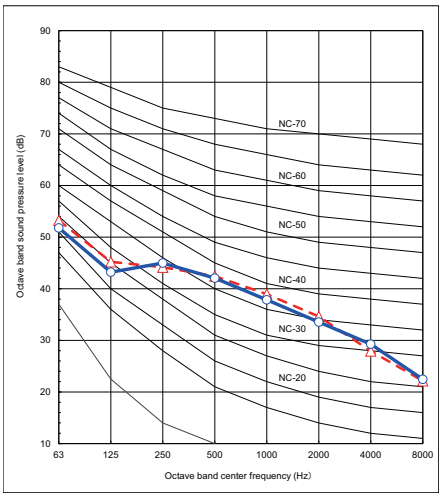
Δ– – ΔHeating
O——OCooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	46	46

△– – △Heating
○——○Cooling

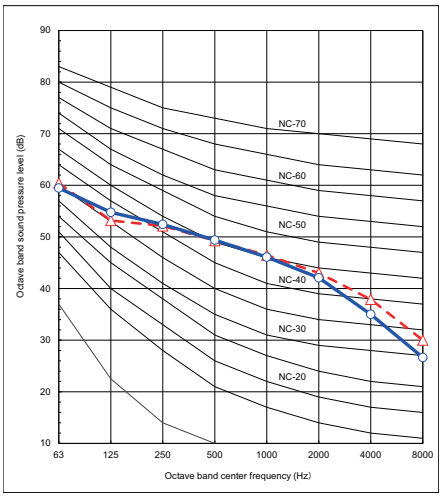


▼HWS-1405H-E, 1405H8(R)-E (14 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	52	52

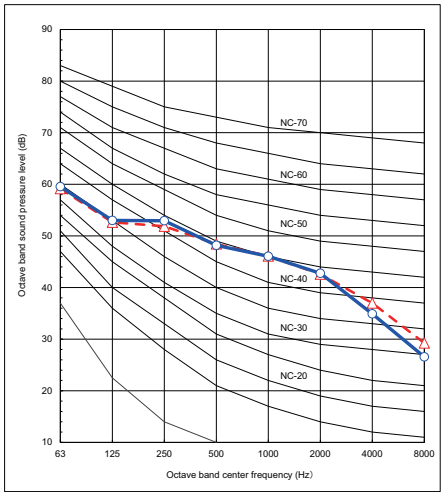
△– – △Heating
○——○Cooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	52	52

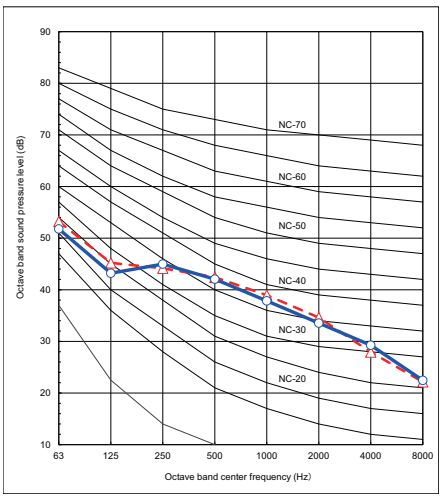
△– – △Heating
○——○Cooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	46	46

△– – △Heating
○——○Cooling

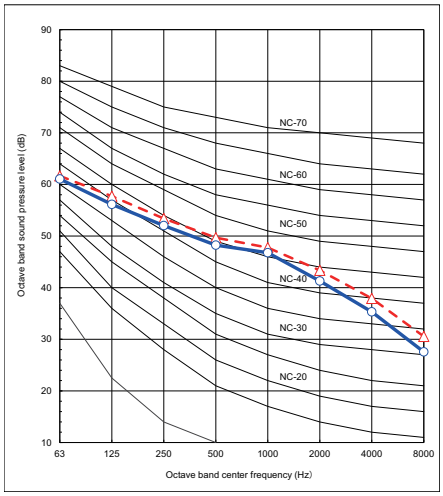


▼HWS-1605H8(R)-E (16 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	53	53

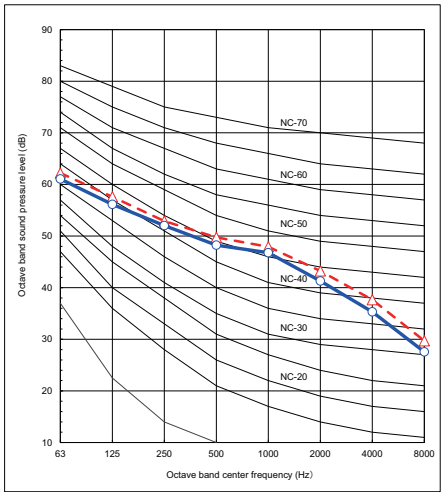
△– – △Heating
○——○Cooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	53	53

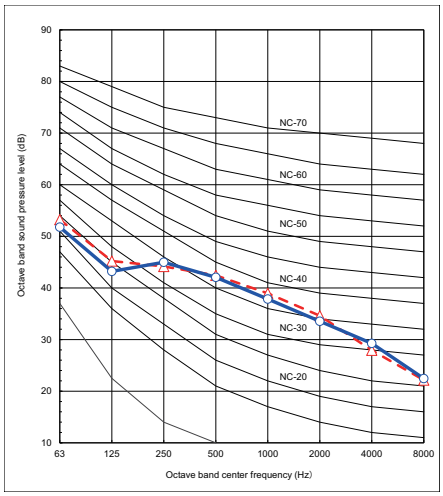
△– – △Heating
○——○Cooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	46	46

△– – △Heating
○——○Cooling

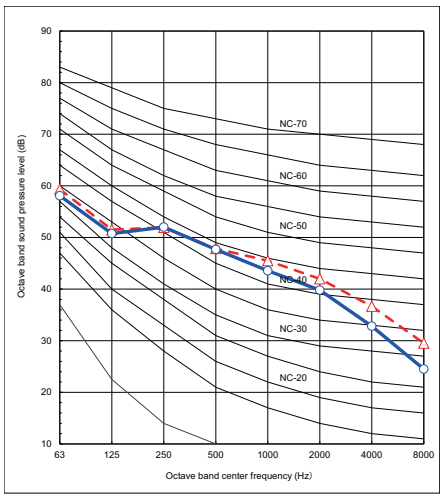


▼HWS-P805HR-E (8 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	50	51

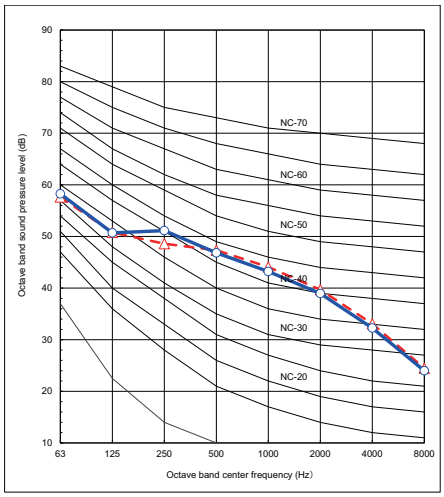
△– – △Heating
○——○Cooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	49	49

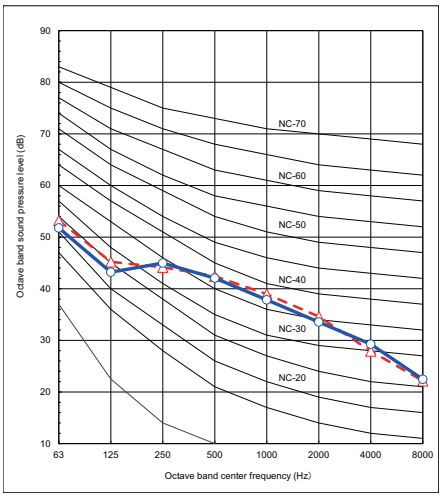
△– – △Heating
○——○Cooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	46	46

△– – △Heating
○——○Cooling

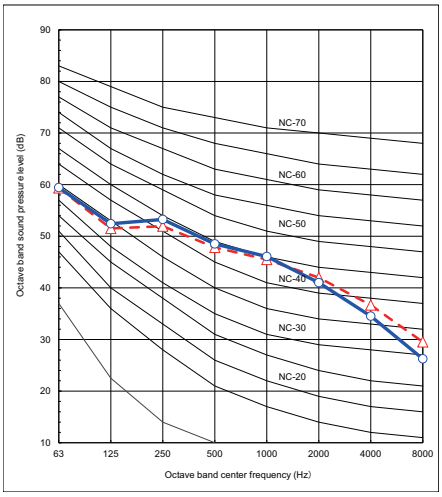


▼HWS-P1105HR-E (11 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	51	51

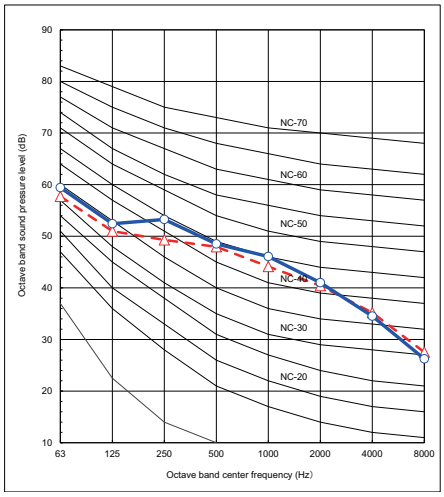
△– – △Heating
○——○Cooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	51	51

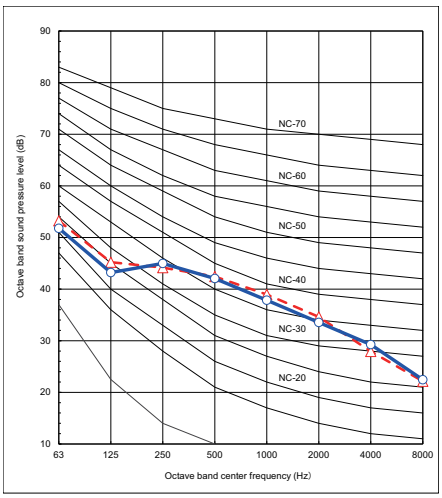
△– – △Heating
○——○Cooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	46	46

△– – △Heating
○——○Cooling

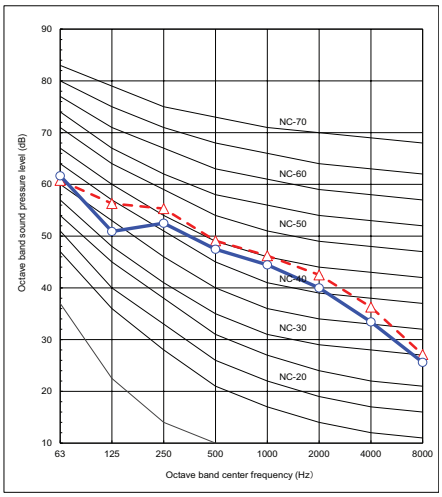


▼HWS-P805H8R-E (8.0 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	50	52

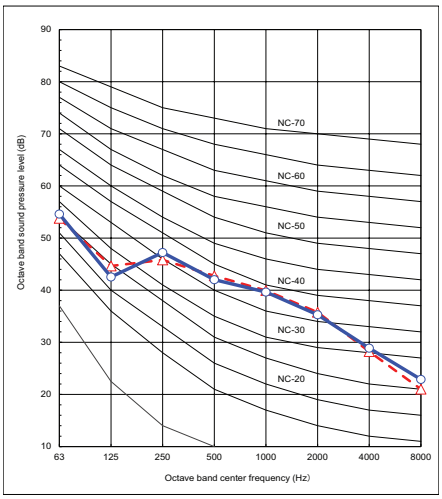
△– – △Heating
○——○Cooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	46	46

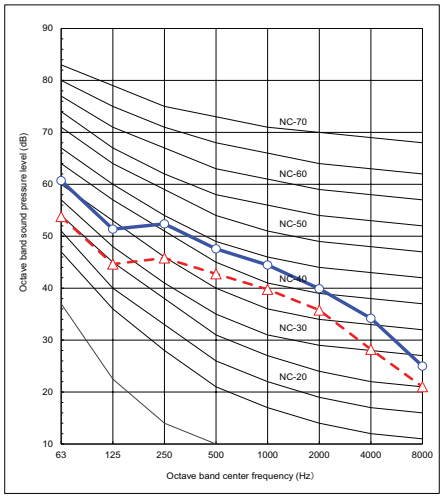
△– – △Heating
○——○Cooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	49	49

△– – △Heating
○——○Cooling

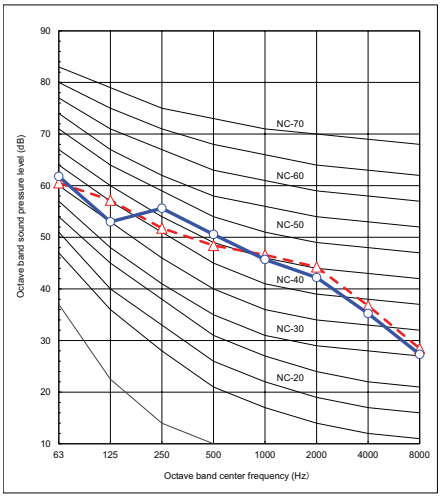


▼HWS-P1105H8R-E (11kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	52	52

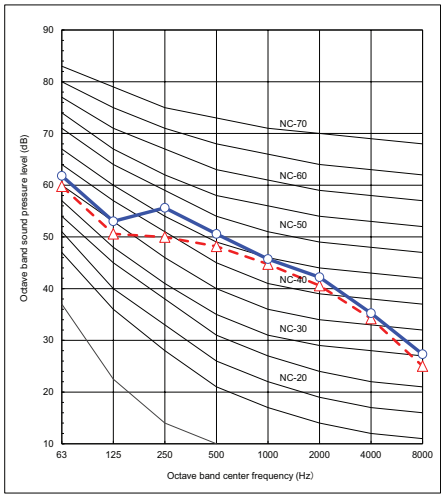
△– – △Heating
○——○Cooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	51	50

△– – △Heating
○——○Cooling

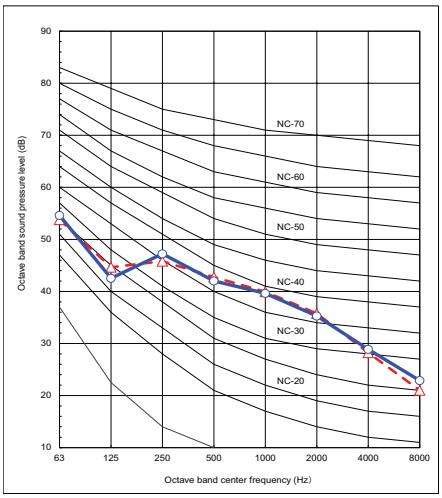


5

- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	46	46

△– – △Heating
○——○Cooling

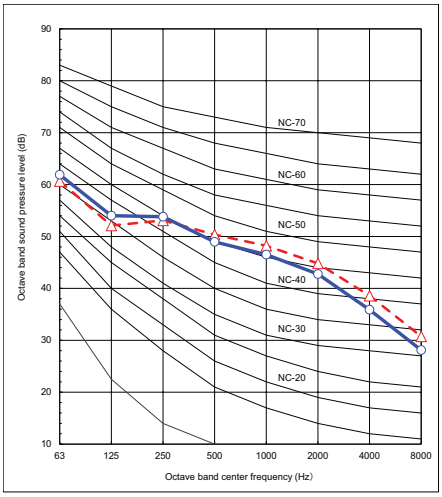


▼HWS-P1405H8R-E (14 kW)

- Maximum operation

Sound pressure level (dB(A))	Cooling	Heating
	52	53

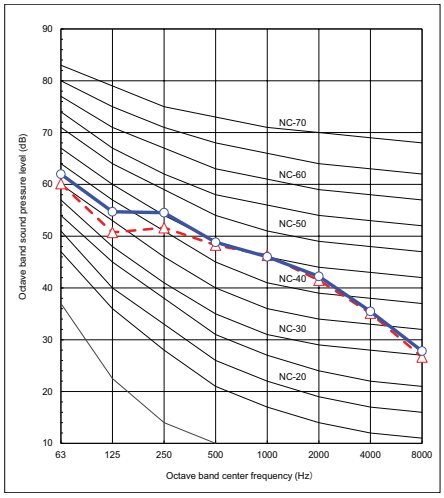
△– – △Heating
○——○Cooling



- Rated operation

Sound pressure level (dB(A))	Cooling	Heating
	52	51

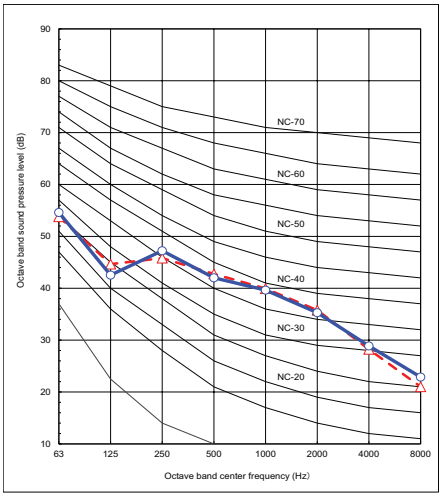
△– – △Heating
○——○Cooling



- Silent operation

Sound pressure level (dB(A))	Cooling	Heating
	46	46

△– – △Heating
○——○Cooling



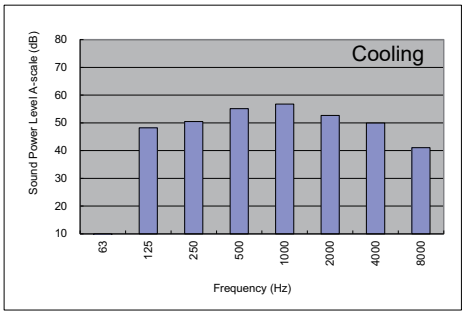
5-5-3. Sound Power Level

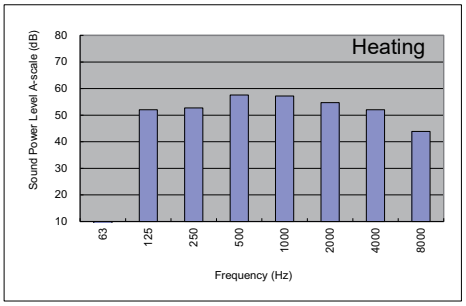
▼HWS-455H-E (4.5 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

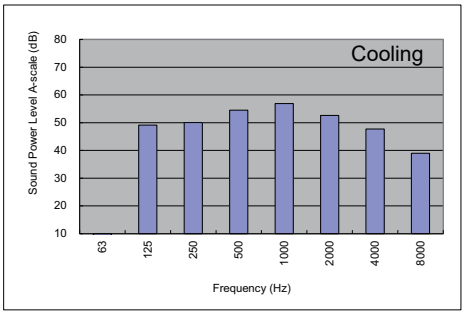
Sound power level (dB(A))	Cooling	Heating
	64	65

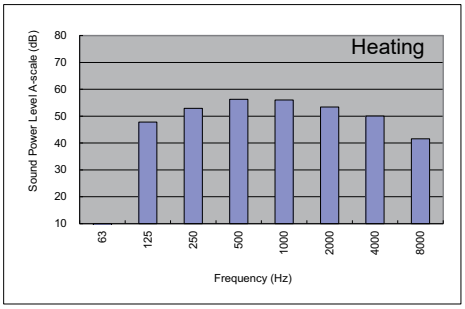




- Rated operation

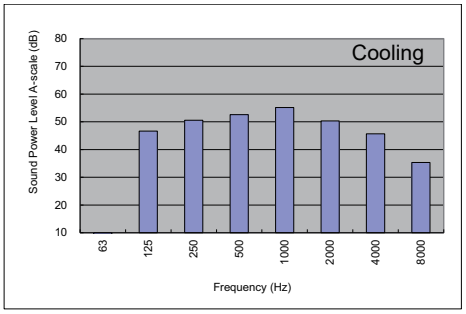
Sound power level (dB(A))	Cooling	Heating
	64	64

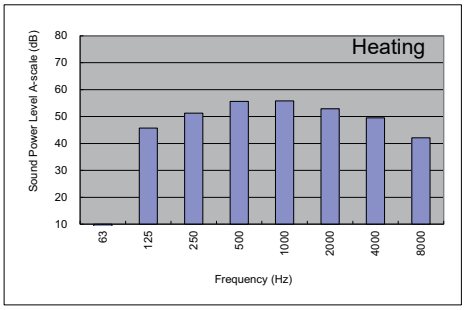




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	62	63



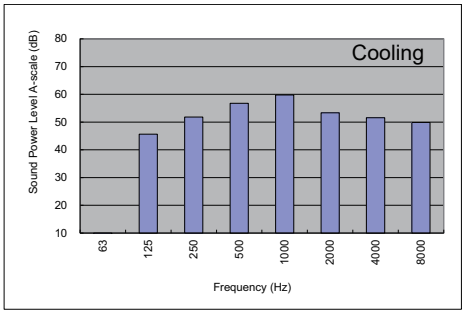


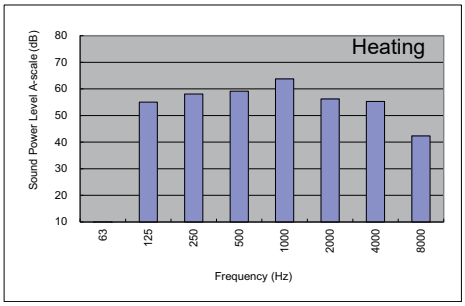
▼HWS-805H-E (8kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

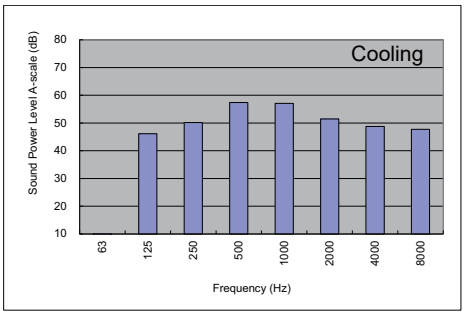
Sound power level (dB(A))	Cooling	Heating
	65	66

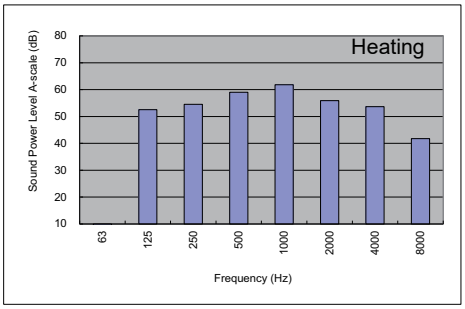




- Rated operation

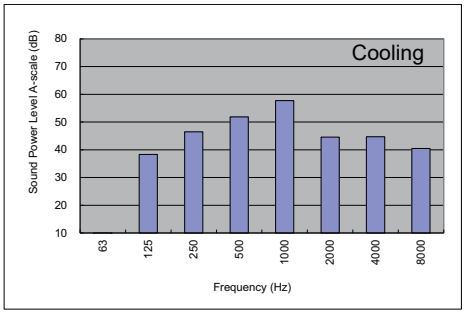
Sound power level (dB(A))	Cooling	Heating
	63	65

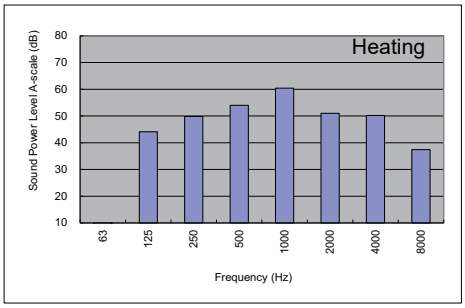




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	62	63



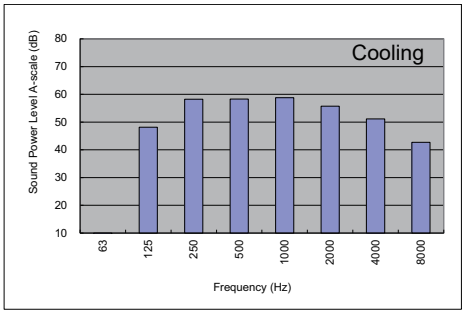


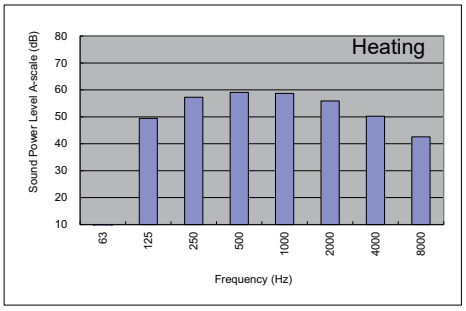
▼HWS-1105H-E, P1105HR-E (11 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

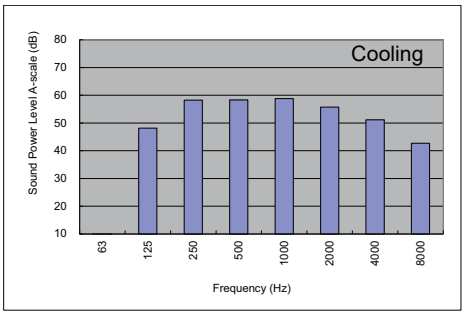
Sound power level (dB(A))	Cooling	Heating
	66	66

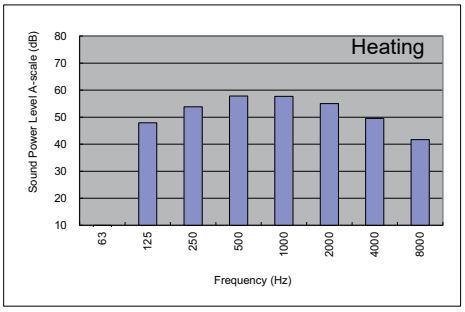




- Rated operation

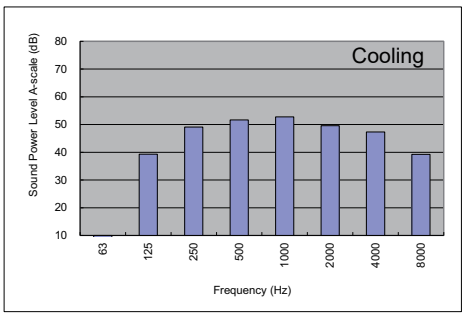
Sound power level (dB(A))	Cooling	Heating
	66	64

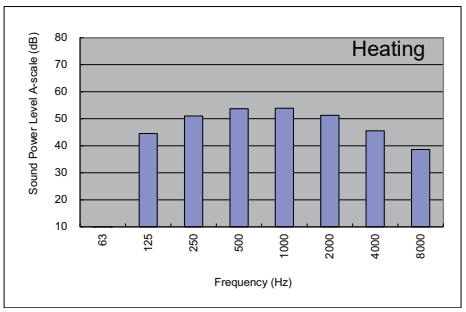




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



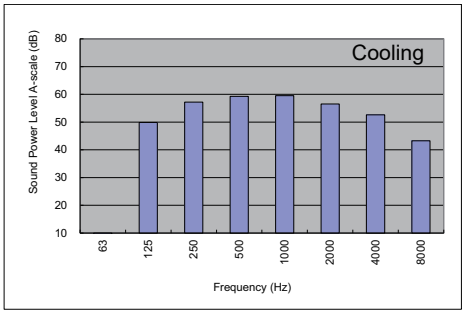


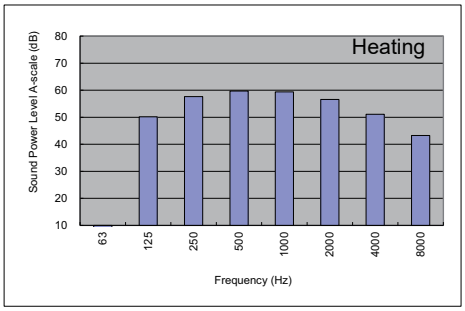
▼HWS-1405H-E (14 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

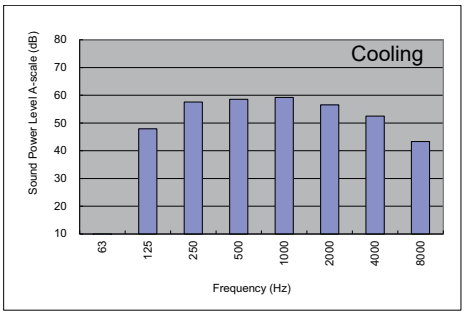
Sound power level (dB(A))	Cooling	Heating
	68	68

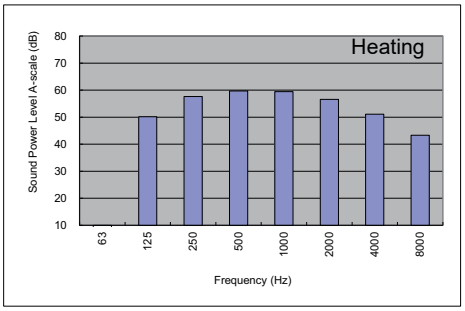




- Rated operation

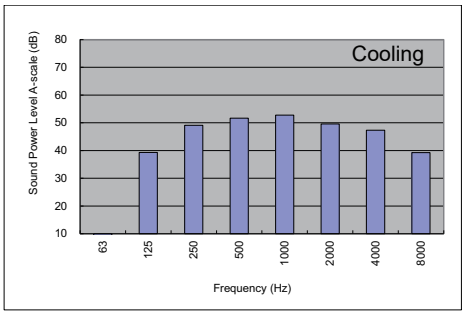
Sound power level (dB(A))	Cooling	Heating
	68	68

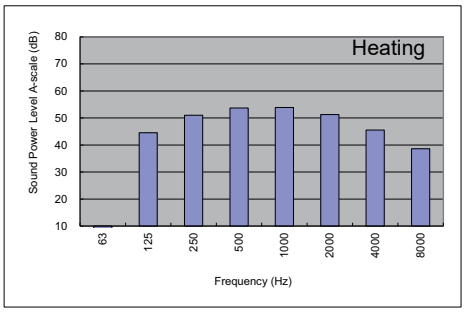




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



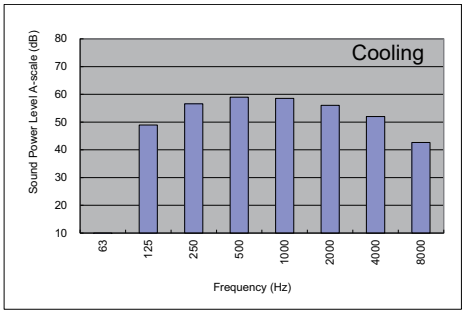


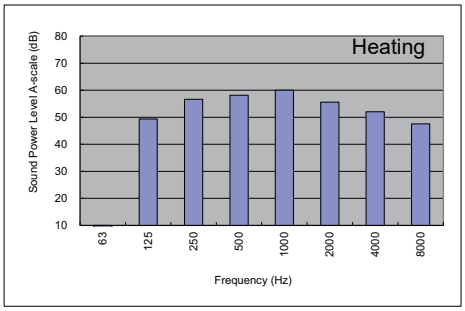
▼HWS-1105H8-E, P1105HR-E (11 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

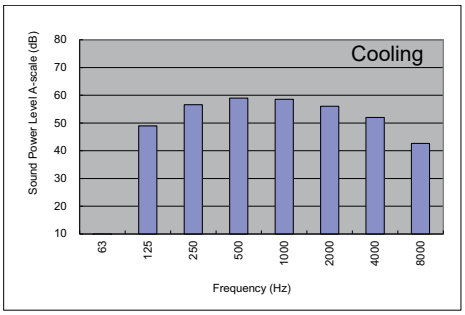
Sound power level (dB(A))	Cooling	Heating
	66	66

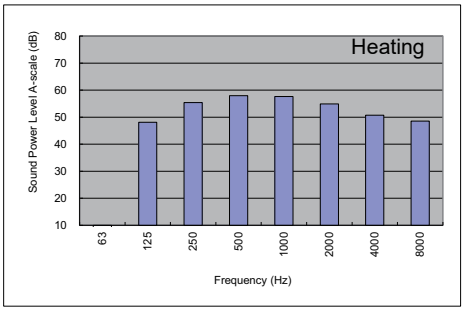




- Rated operation

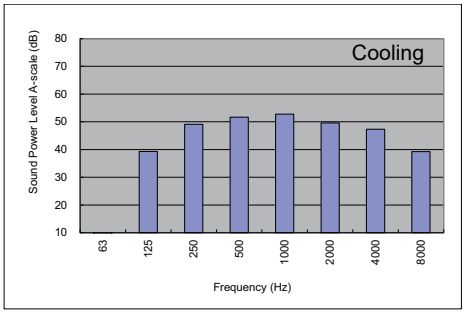
Sound power level (dB(A))	Cooling	Heating
	66	64

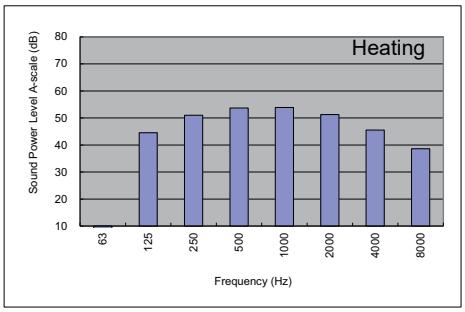




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



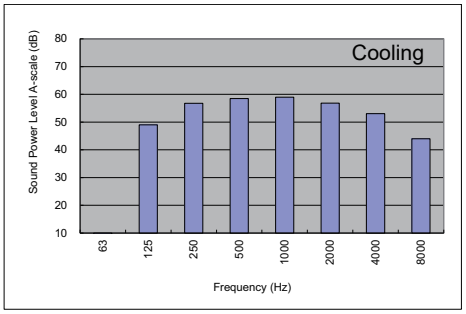


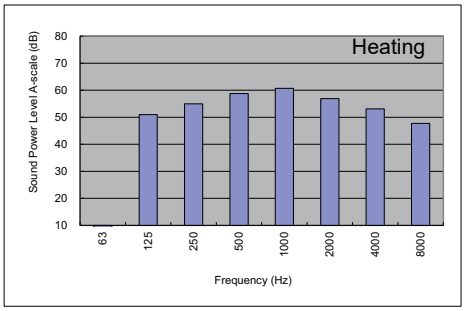
▼HWS-1405H8-E (14 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

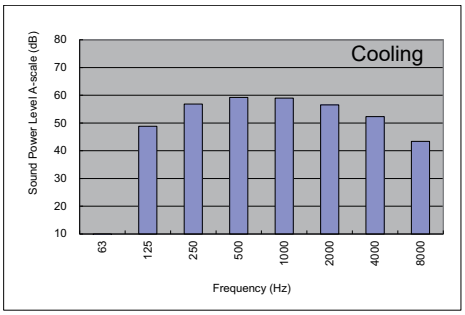
Sound power level (dB(A))	Cooling	Heating
	68	68

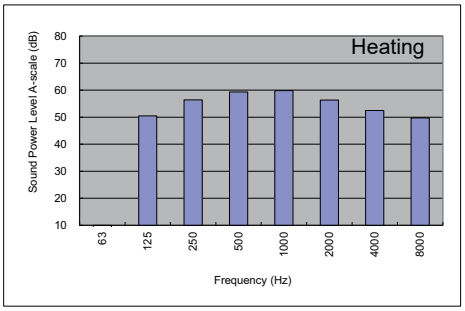




- Rated operation

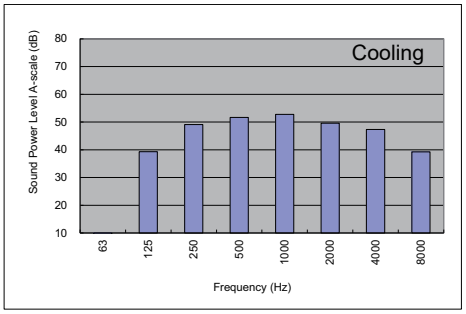
Sound power level (dB(A))	Cooling	Heating
	68	68

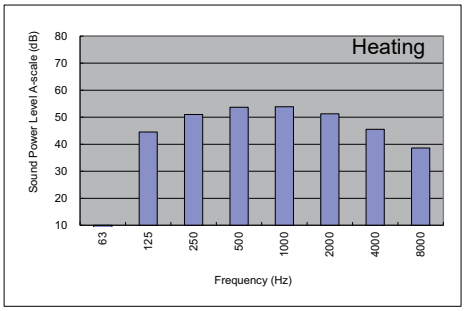




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



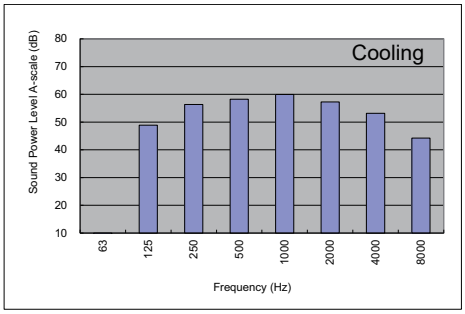


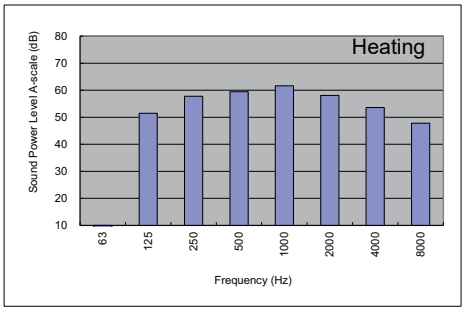
▼HWS-1605H8-E (16 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

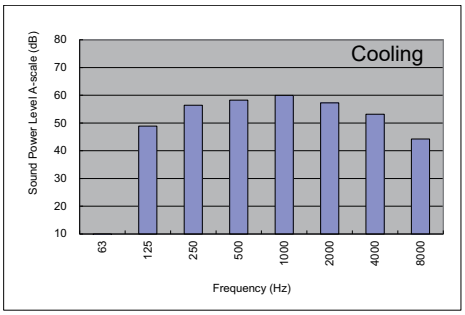
Sound power level (dB(A))	Cooling	Heating
	69	69

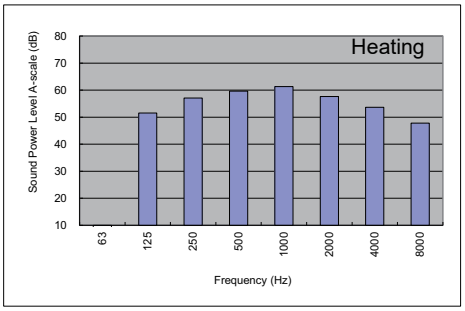




- Rated operation

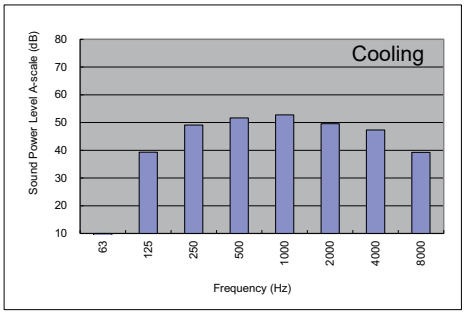
Sound power level (dB(A))	Cooling	Heating
	69	69

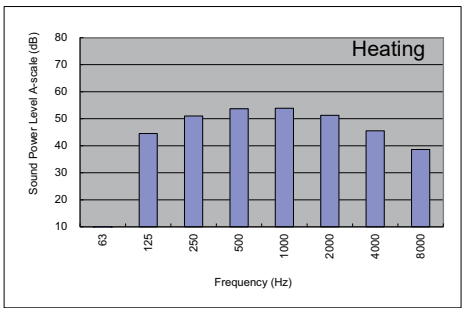




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



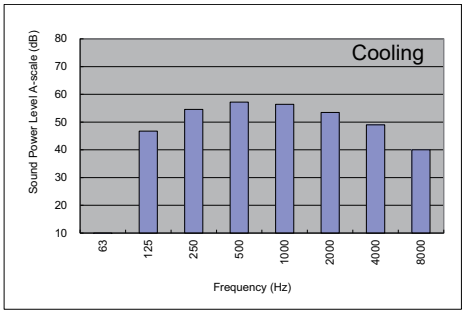


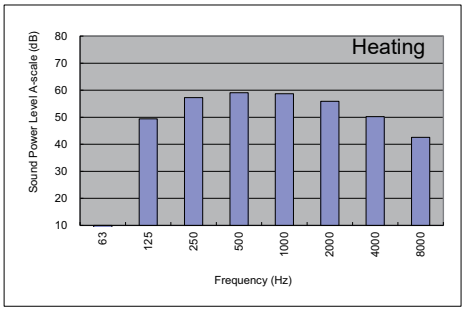
▼HWS-P805HR-E (8 kW)

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

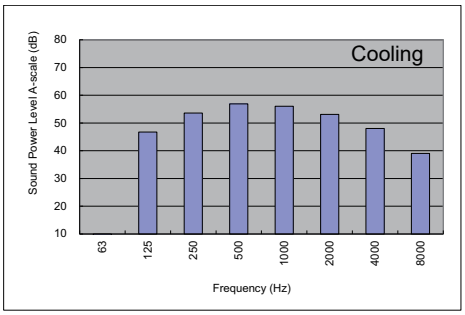
Sound power level (dB(A))	Cooling	Heating
	65	66

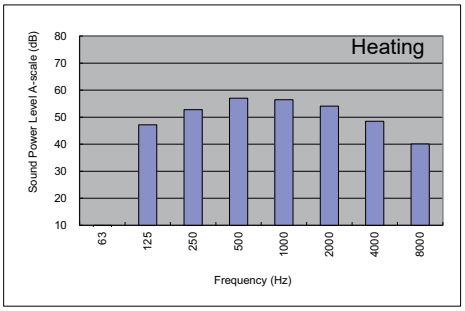




- Rated operation

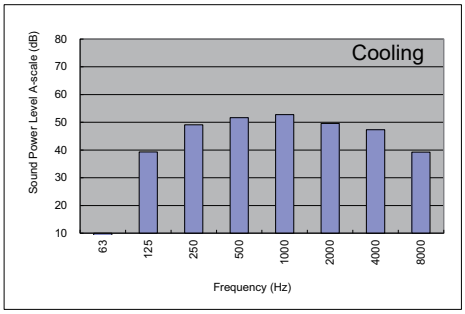
Sound power level (dB(A))	Cooling	Heating
	64	64

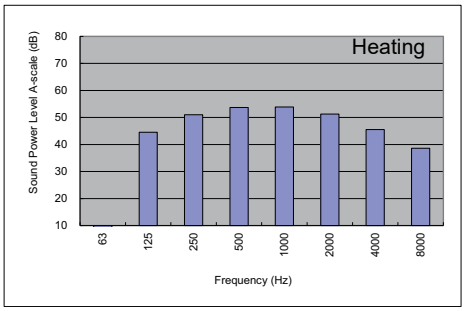




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



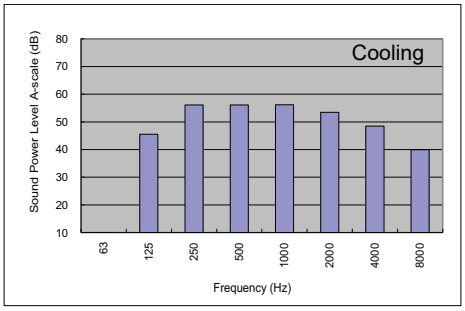


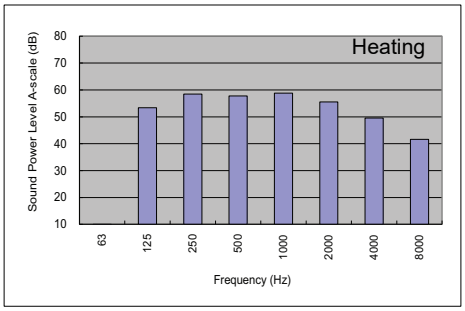
▼HWS-P805H8R-E

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

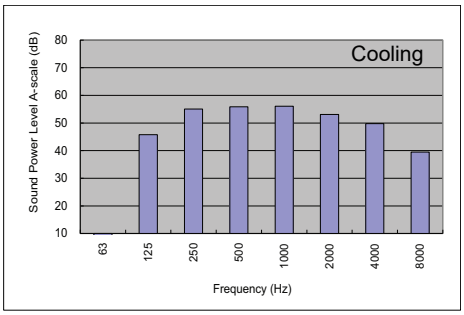
Sound power level (dB(A))	Cooling	Heating
	65	66

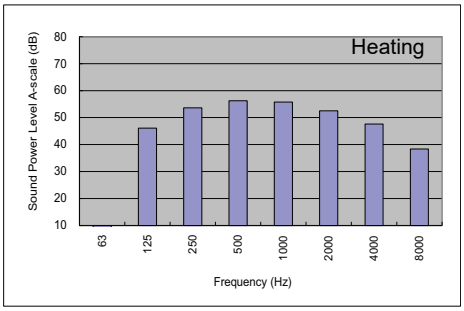




- Rated operation

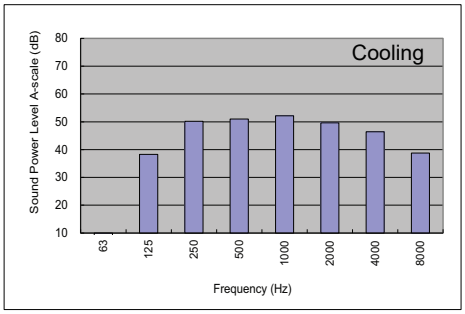
Sound power level (dB(A))	Cooling	Heating
	64	64

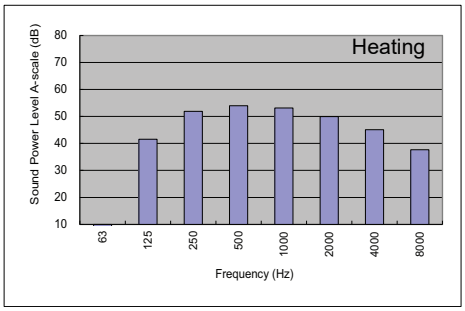




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



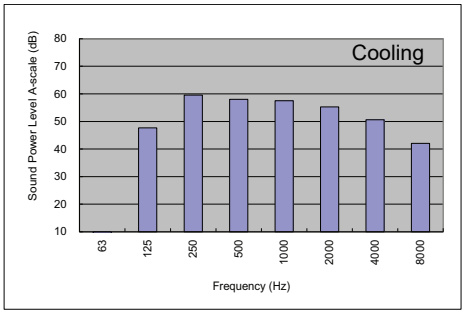


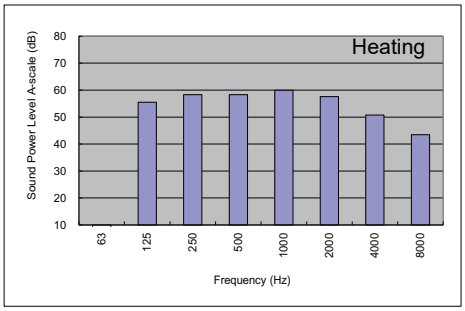
▼HWS-P1105H8R-E

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

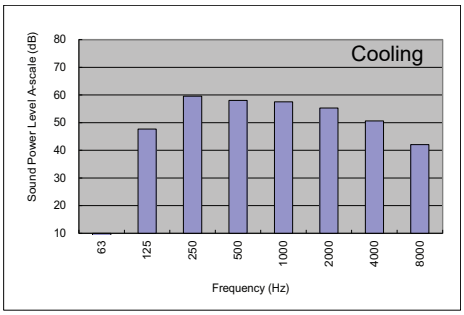
Sound power level (dB(A))	Cooling	Heating
	66	67

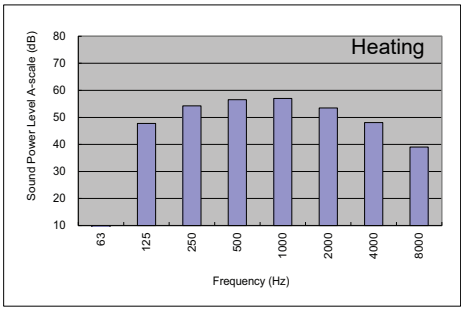




- Rated operation

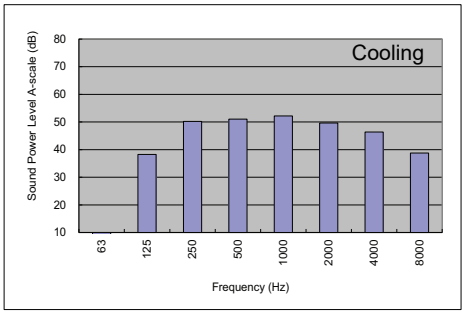
Sound power level (dB(A))	Cooling	Heating
	66	64

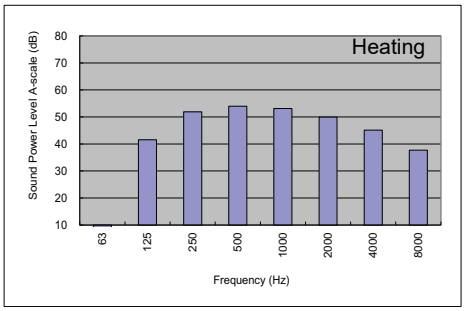




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



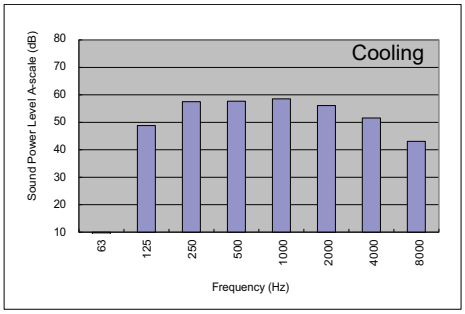


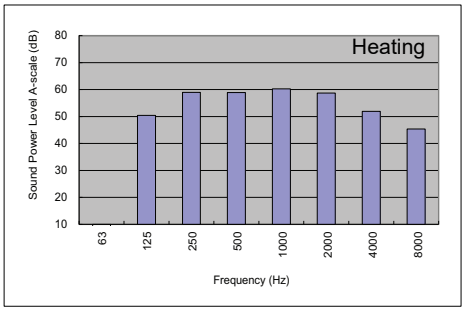
▼HWS-P1405H8R-E

Condition		
Cooling	A35	W12_7
Heating	A7	W47_55

- Maximum operation

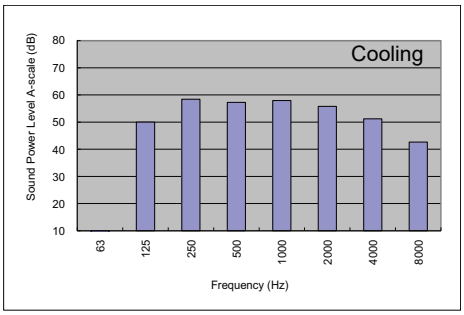
Sound power level (dB(A))	Cooling	Heating
	68	68

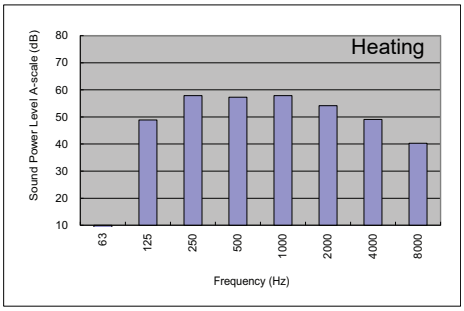




- Rated operation

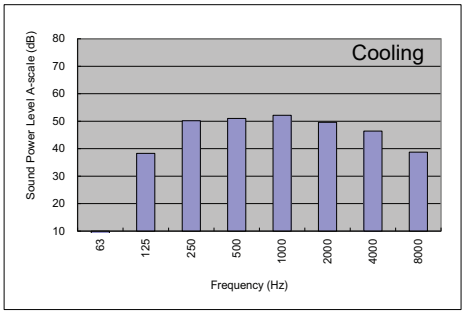
Sound power level (dB(A))	Cooling	Heating
	67	66

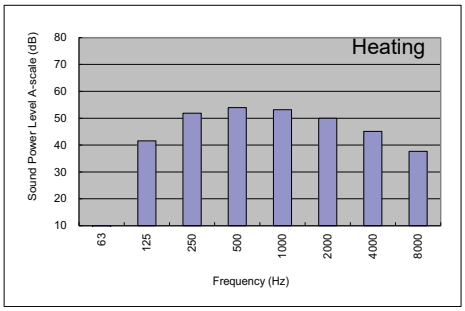




- Silent operation

Sound power level (dB(A))	Cooling	Heating
	60	61



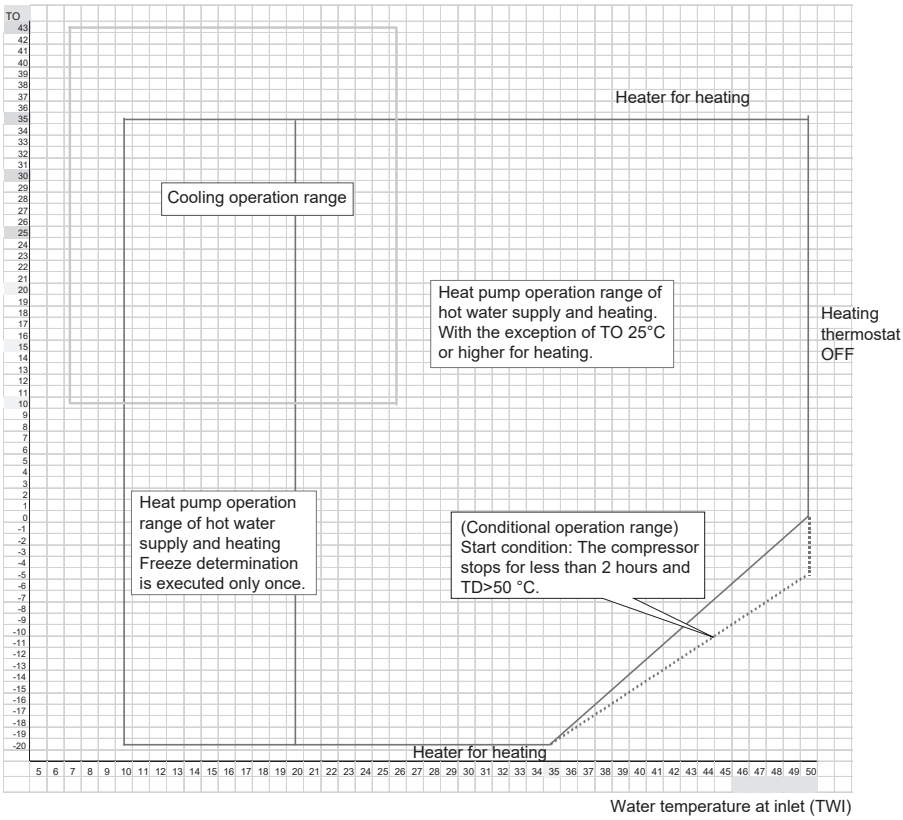


5-6. Operation Range

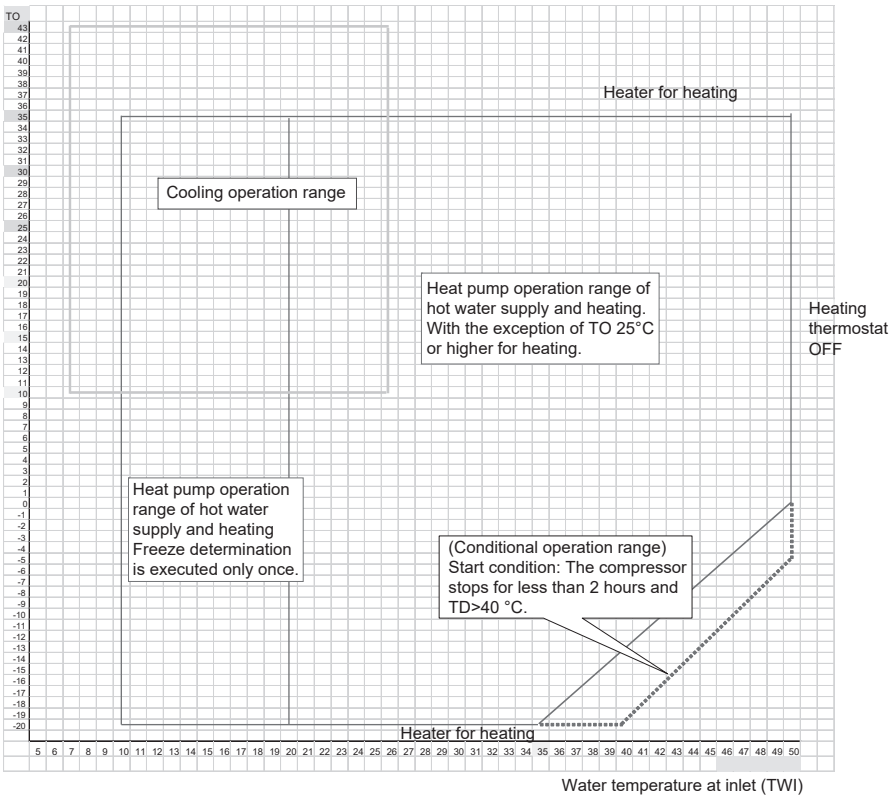
Standard type

4.5 kW, 8 kW class

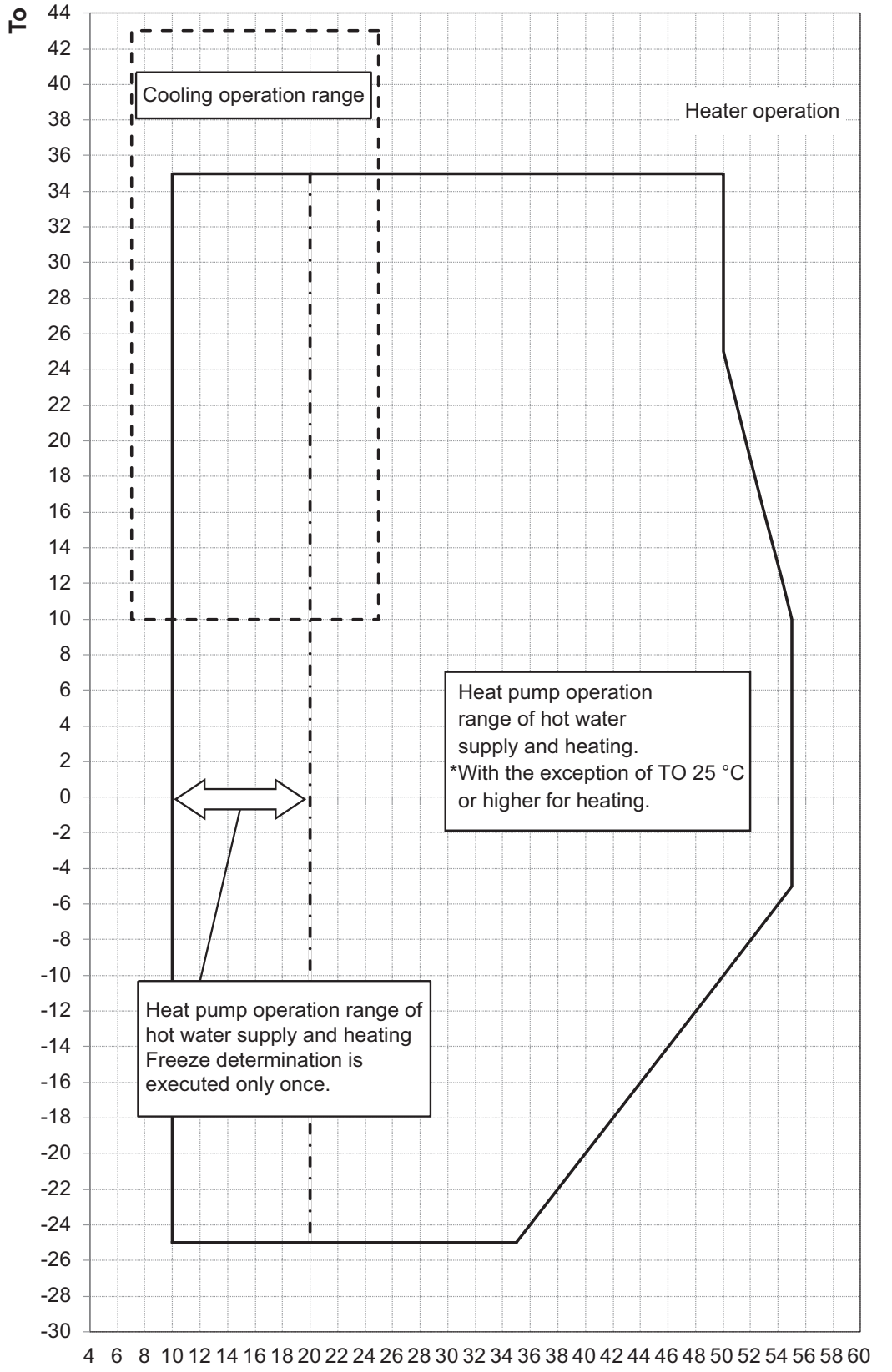
Cooling operation



11, 14, 16 kW class



Powerful type
HWS-P805HR-E, HWS-P1105HR-E, HWS-P805H8R-E,
HWS-P1105H8R-E, HWS-P1405H8R-E



6. HOT WATER CYLINDER

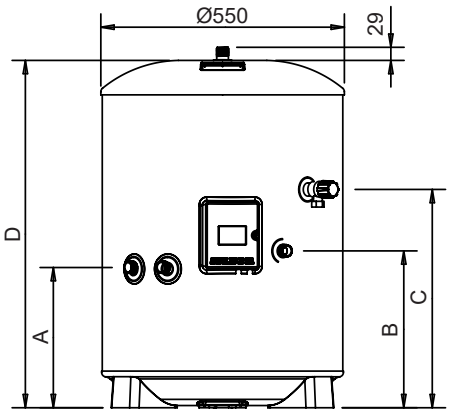
6-1. Specification

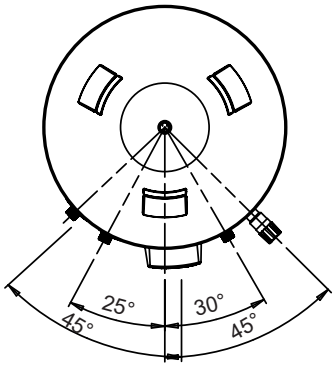
Hot water cylinder specifications

Hot water cylinder			HWS-1501 CSHM3-E	HWS-2101 CSHM3-E	HWS-3001 CSHM3-E
Water volume		litres	150	210	300
Appearance	Color		White		
	Material		Plastic coated steel		
Cylinder	Material		Stainless steel		
Insulation	Material		Flame retardant expanded polyurethane foam		
	Thickness	mm	50		
Heat exchanger	Material		Stainless steel tube		
Immersion heater	Type		Single straight, Alloy 825 sheathed		
	Capacity	kW	2.75		
Outer dimension	Height	mm	1,090	1,474	2,040
	Diameter	mm	550		
Unit weight		kg	31	41	59
Packing dimension	Height	mm	1,213	1,781	2,118
	Width	mm	576		
	Depth	mm	640		
Total weight	unit and packing	kg	37	44	59
Maximum water temperature		°C	75		
Maximum water pressure		bar	10		
Water pipe Hydro-cylinder	Inlet	mm	22		
	Outlet	mm	22		
Water pipe Domestic water-cylinder	Inlet	mm	22		
	Outlet	mm	22		
Standard accessories	Expansion Vessel	litres	Not included		
			Installation manual		
			Safety group NF7bar		
			Compression nuts and olives		
			Cylinder heater key spanner		

6-2. Dimension

General dimensions and performance

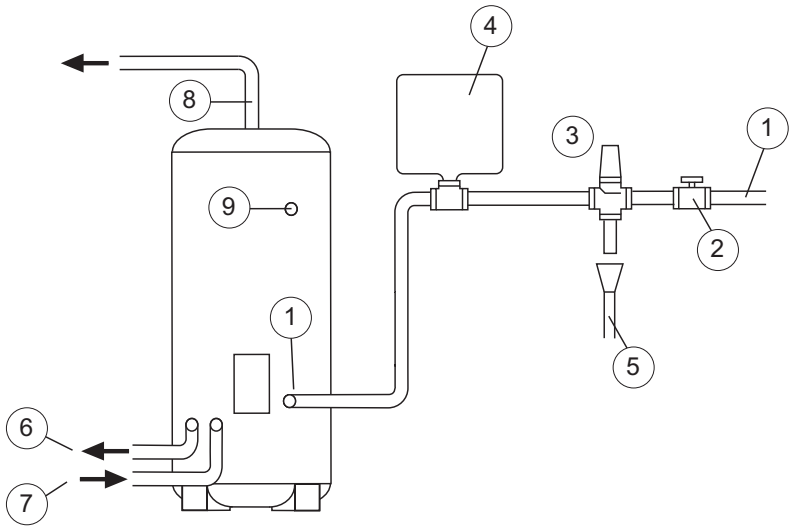




MODEL	HWS-1501CSHM3-E	HWS-2101CSHM3-E	HWS-3001CSHM3-E
NOMINAL CAPACITY (litres)	150	210	300
A (mm)	315	315	315
B (mm)	354	354	354
C (mm)	800	1184	1474
D (mm)	1090	1474	2040
SURFACE AREA (sq.m)	0.65	0.79	0.79
HOT WATER OUTPUT AT 60ºC (litres)	102	163	254
MIXED HOT WATER OUTPUT AT 40ºC (litres)	243	329.5	476
HEATLOSS (kWh/24h)	1.45	1.91	2.52
HEATING TIME 15ºC TO 60ºC - USING ELECTRIC CYLINDER HEATER ONLY (mins)	123	188	262
CAPACITY HEATED USING ELECTRIC CYLINDER HEATER ONLY (litres)	102	163	254

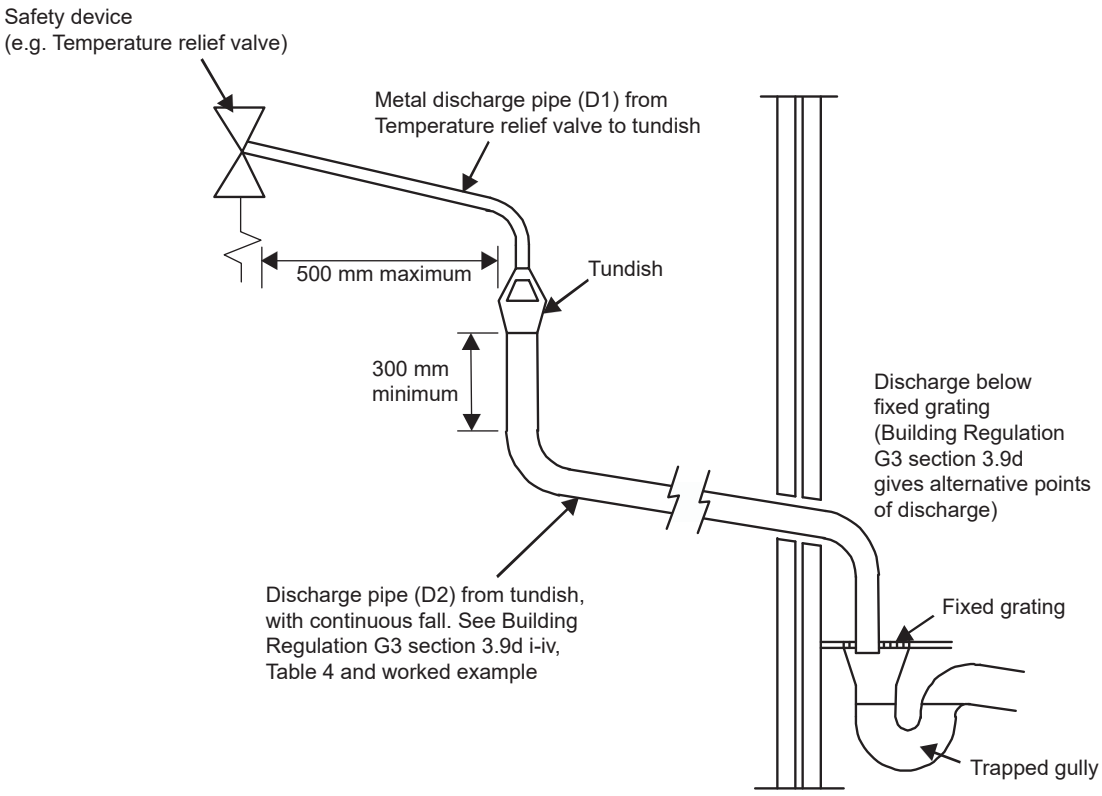
6-3. Piping Diagram

▼HWS-1501CSHM3-E, HWS-2101CSHM3-E, HWS-3001CAHM3-E



1. COLD WATER INLET
2. ISOLATING VALVE
3. SAFETY GROUP NF7 BAR
4. SANITARY WATER EXPANSION VESSEL
5. DISCHARGE PIPE
6. PRIMARY CIRCUIT RETURN
7. PRIMARY CIRCUIT FLOW
8. HOT WATER OUTLET
9. SANITARY WATERRE-CIRCULATION CONNECTION

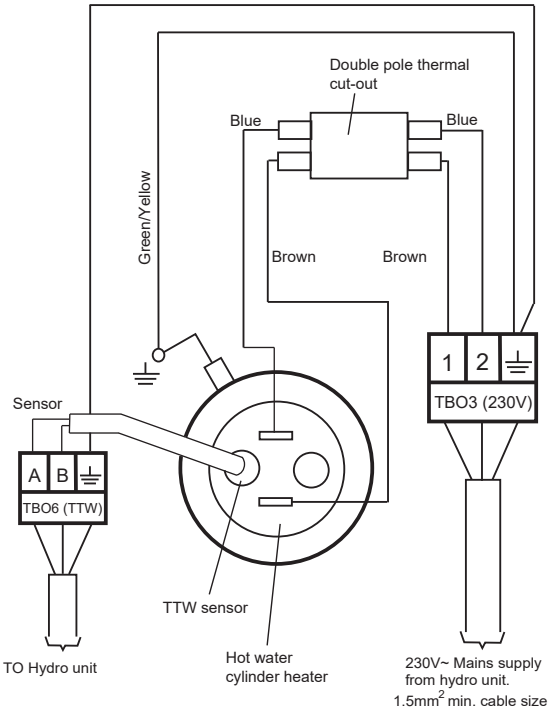
Typical discharge pipe arrangement (extract from Building Regulation G3 Guidance section 3.9)



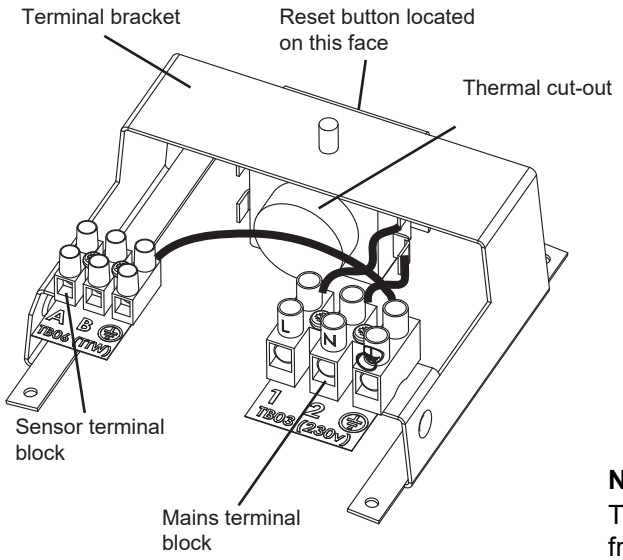
6-4. Wiring Diagram

▼HWS-1501CSHM3-E, HWS-2101CSH3-E, HWS-3001CSHM3-E

Electrical Connections (Schematic)



Thermal cut-out



NOTE:
The cover and element assembly have been removed from this view for clarity

MEMO

Air to Water Heat Pump
Engineering Data Book

April 2019

Model name:

HWS-455H-E	HWS-1405H8R-E	HWS-455XWHM3-E	HWS-P805XWHM3-E	HWS-1501CSHM3-E
HWS-805H-E	HWS-1605H8-E	HWS-805XWHM3-E	HWS-P805XWHT6-E	HWS-2101CSHM3-E
HWS-1105H-E	HWS-1605H8R-E	HWS-805XWHT6-E	HWS-P805XWHT9-E	HWS-3001CSHM3-E
HWS-1405H-E	HWS-P805HR-E	HWS-805XWHT9-E	HWS-P1105XWHM3-E	
HWS-1105H8-E	HWS-P1105HR-E	HWS-1405XWHM3-E	HWS-P1105XWHT6-E	
HWS-1105H8R-E	HWS-P805H8R-E	HWS-1405XWHT6-E	HWS-P1105XWHT9-E	
HWS-1405H8-E	HWS-P1105H8R-E	HWS-1405XWHT9-E		
	HWS-P1405H8R-E			

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