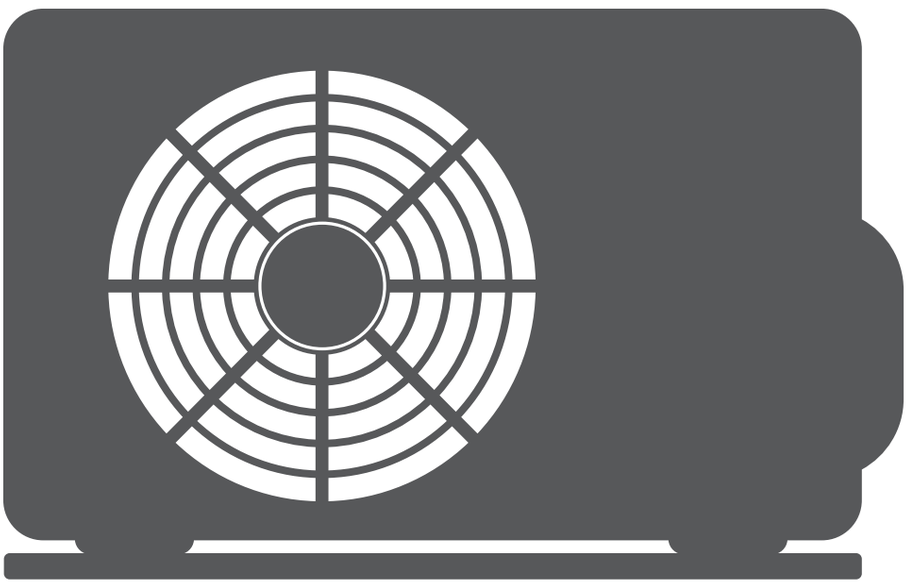
AIR CONDITIONING SYSTEMS

AIR TO WATER HEAT PUMPS - MONOBLOCK

- **ENGINEERING DATABOOK**



MODELS:

XFMH04S3
XFMH06S3
XFMH08S3
XFMH10S3
XFMH12S3
XFMH14S3
XFMH16S3
XFMH12T9
XFMH14T9
XFMH16T9

ENGLISH

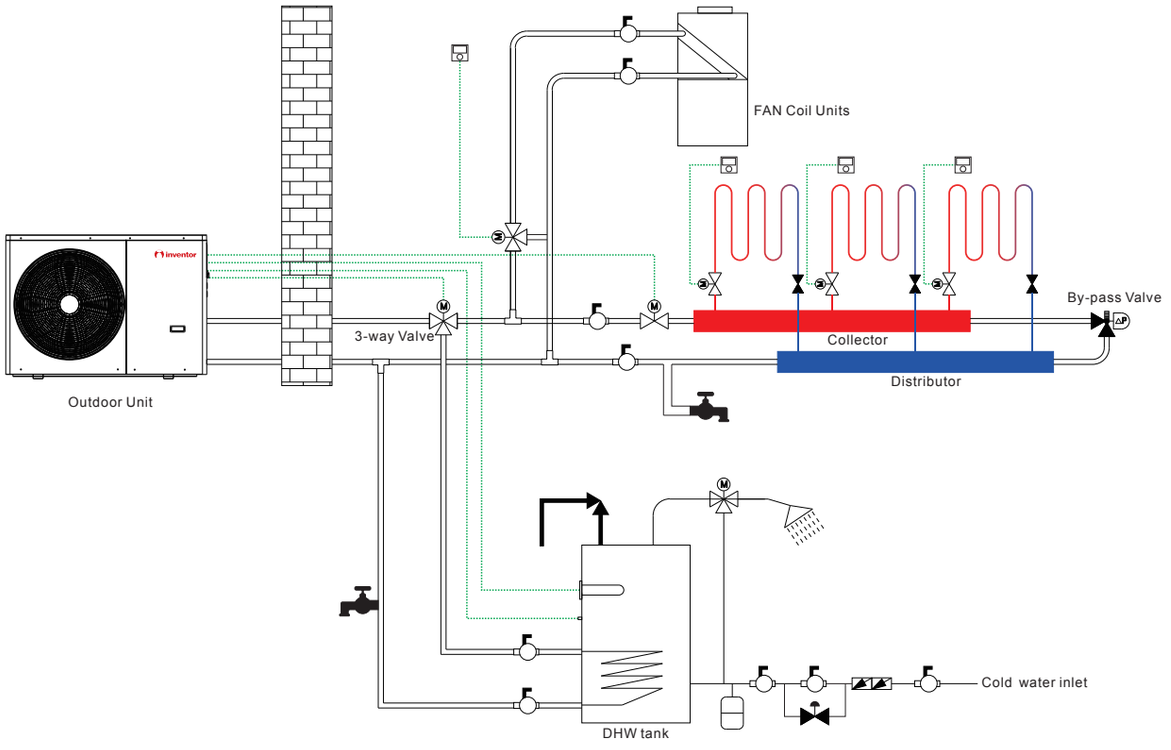
CONTENTS

Part 1
General Information

1. Mono System

1.1: System Schematic

Figure 1-1.1: System schematic



MONOBLOC Inverter is an integrated air-to-water space heating, space cooling and domestic hot water heat pump system. The outdoor heat pump system extracts heat from the outdoor air and transfers this heat through refrigerant piping to the plate heat exchanger in the hydraulic system. The heated water in the hydraulic system circulates to low temperature heat emitters (floor heating loops or low temperature radiators) to provide space heating, and to the domestic hot water tank to provide domestic hot water. The 4-way valve in the outdoor unit can reverse the refrigerant cycle so that the hydraulic system can provide chilled water for cooling using fan coil units.

The heating capacity of heat pumps decreases with ambient temperature. MONOBLOC Inverter can be equipped with a backup electric heater to provide additional heating capacity for use during extremely cold weather when the heat pump capacity is insufficient. The backup electric heater also serves as a backup in case of heat pump malfunction and for anti-freeze protection of the outside water piping in winter.

1.2: System Configurations

Mono can be configured to run with the electric heater either enabled or disabled and can also be used in conjunction with an auxiliary heat source such as a boiler.

The chosen configuration affects the size of heat pump that is required. Three typical configurations are describ -ed below.

Refer to Figure 1-1.2.

Configuration 1: Heat pump only

- The heat pump covers the required capacity and no extra heating capacity is necessary.
- Requires selection of larger capacity heat pump and implies higher initial investment.
- Ideal for new construction in projects where energy efficiency is paramount.

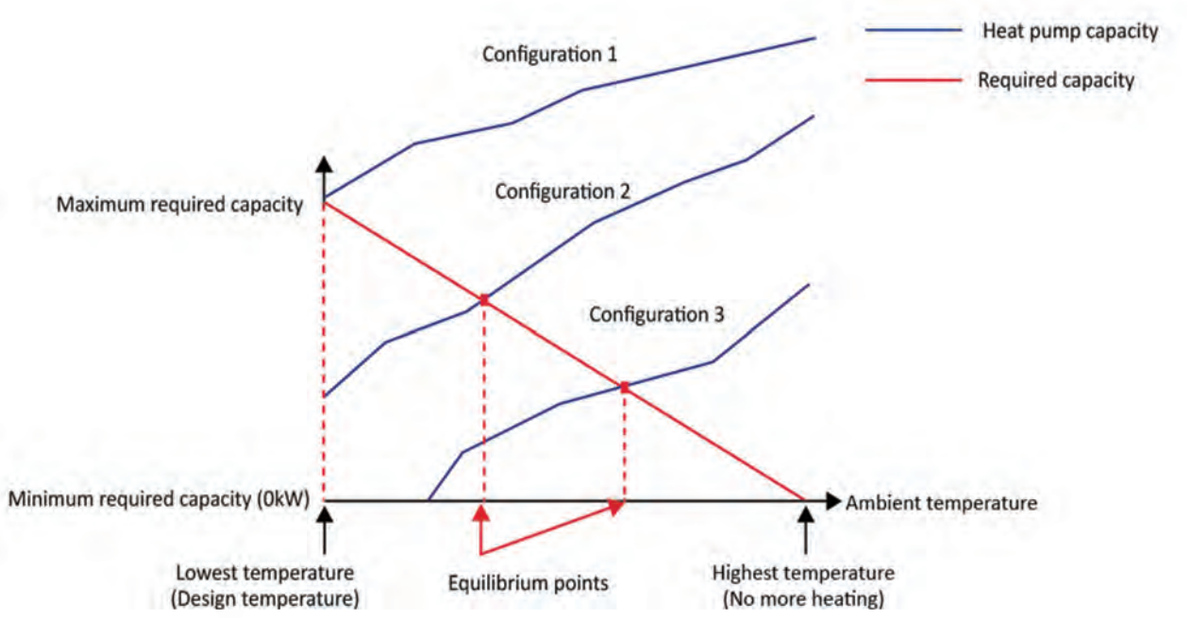
Configuration 2: Heat pump and backup electric heater

- Heat pump covers the required capacity until the ambient temperature drops below the point at which the heat pump is able to provide sufficient capacity. When the ambient temperature is below this equilibrium point (as shown in Figure 1-1.2), the backup electric heater supplies the required additional heating capacity.
- Best balance between initial investment and running costs, results in lowest lifecycle cost.
- Ideal for new construction.

Configuration 3: Heat pump with auxiliary heat source

- Heat pump covers the required capacity until the ambient temperature drops below the point at which the heat pump is able to provide sufficient capacity. When the ambient temperature is below this equilibrium point (as shown in Figure 1-1.2), depending on the system settings, either the auxiliary heat source supplies the required additional heating capacity or the heat pump does not run and the auxiliary heat source covers the required capacity.
- Enables selection of lower capacity heat pump.
- Ideal for refurbishments and upgrades.

Figure 1-1.2: System configurations



2. Unit Capacities

Table 1-2.1: Mono unit capacity range and unit appearances

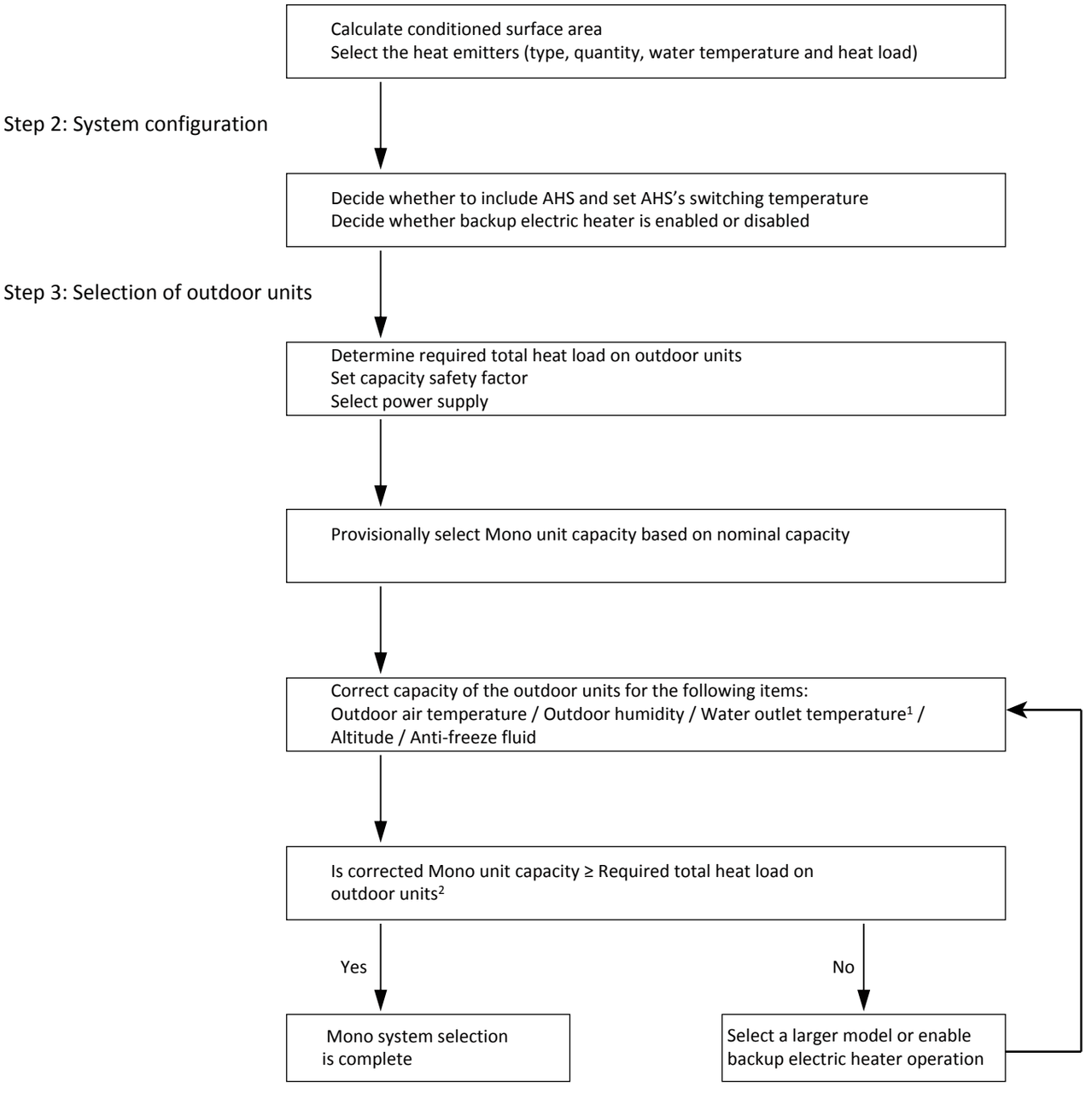
Capacity	4/6/8kW	10/12kW	14/16kW
Model	**XFMH04S3** **XFMH06S3** **XFMH08S3**	**XFMH10S3** **XFMH12S3** **XFMH12T9**	**XFMH14S3** **XFMH16S3** **XFMH14T9** **XFMH16T9**
Appearance			

Notes:
The presence or omission of the letter S in the model names indicates the unit's power supply:
3-phase, 380-415V, 50Hz; Omitted: 1-phase, 220-240V, 50Hz.

3. System and Design Unit Selection

3.1 Selection Procedure

Step 1: Total heat load calculation



Notes:

1. If the required water temperatures of the heat emitters are not all the same, the Mono's outlet water temperature setting should be set at the highest of the heat emitter required water temperatures. If the water outlet design temperature falls between two temperatures listed in the outdoor unit's capacity table, calculate the corrected capacity by interpolation.
2. If the outdoor unit selection is to be based on total heating load and total cooling load, select Mono units which satisfies not only the total heating load requirements but also the total cooling load requirements.

3.2: Leaving Water Temperature (LWT) Selection

The recommended design LTW ranges for different types of heat emitter are:

- For floor heating: 30 to 35ºC
- For fan coil units: 30 to 45ºC
- For low temperature radiators: 40 to 50ºC

3.3: Optimizing System Design

To get the most comfort with the lowest energy consumption with Mono, it is important to take into account of the following considerations:

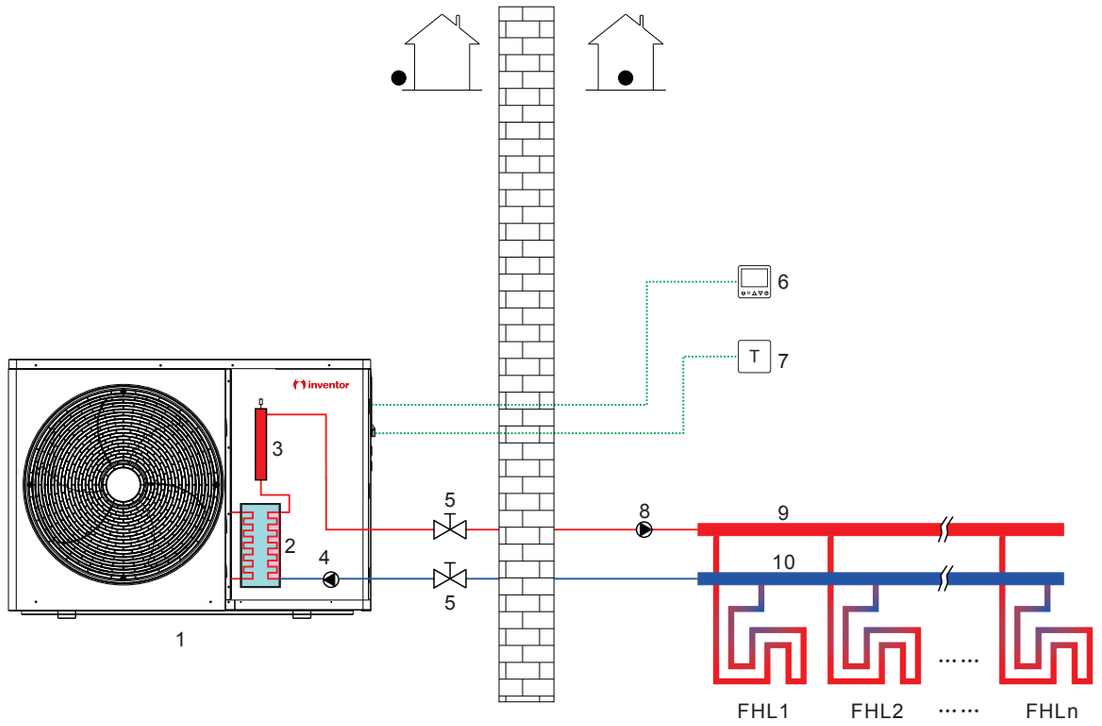
- Choose heat emitters that allow the heat pump system to operate at as low a hot water temperature as possible whilst providing sufficient heating.
- Make sure the correct weather dependency curve is selected to match the installation environment (buil -ding structure, climate) as well as ender user's demands.
- Connecting room thermostats (field supplied) to the hydraulic system helps prevent excessive space heating by stopping the outdoor unit and circulator pump when the room temperature is above the thermostat set point.

4 .Typical Applications

4.1: Space Heating Only

The room thermostat is used as a switch. When there is a heating request from the room thermostat, the Mono unit operates to achieve the target water temperature set on the user interface. When the room temperature reaches the thermostat's set temperature, the unit stops.

Figure 1-4.1: Space heating



Item	Description	Item	Description
1	Outdoor unit	7	Room thermostat (field supplied)
2	Plate heat exchanger	8	External circulator pump (field supplied)
3	Backup electric heater (customized)	9	Distributor (field supplied)
4	Internal circulator pump	10	Collector (field supplied)
5	Stop valve (field supplied)	FHL 1...n	Floor heating loops (field supplied)
6	User interface		

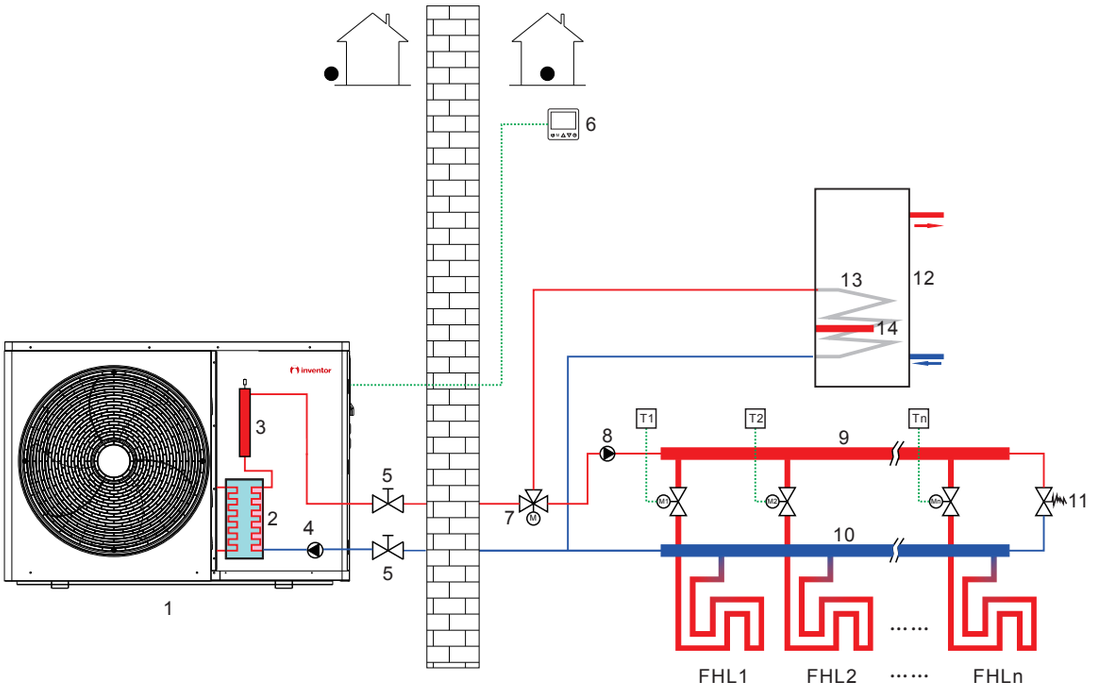
Notes:

The example is just for application illustration; please confirm the exact installation method according to the installation manual.

4.2: Space Heating and Domestic Hot Water

The room thermostats are not connected to the Mono unit but to a motorized valve. Each room's temperature is regulated by the motorized valve on its water circuit. Domestic hot water is supplied from the domestic hot water tank connected to the Mono unit. A bypass valve is required.

Figure 1-4.2: Space heating and domestic hot water



Item	Description	Item	Description
1	Outdoor unit	10	Collector (field supplied)
2	Plate heat exchanger	11	Bypass valve (field supplied)
3	Backup electric heater (customized)	12	Domestic water tank (field supplied)
4	Internal circulator pump	13	Heat exchanger coil
5	Stop valve (field supplied)	14	Immersion heater
6	User interface	FHL 1...n	Floor heating loops (field supplied)
7	Motorized 3-way valve (field supplied)	M1...n	Motorized valves (field supplied)
8	External circulator pump (field supplied)	T1…n	Room thermostats (field supplied)
9	Distributor (field supplied)		

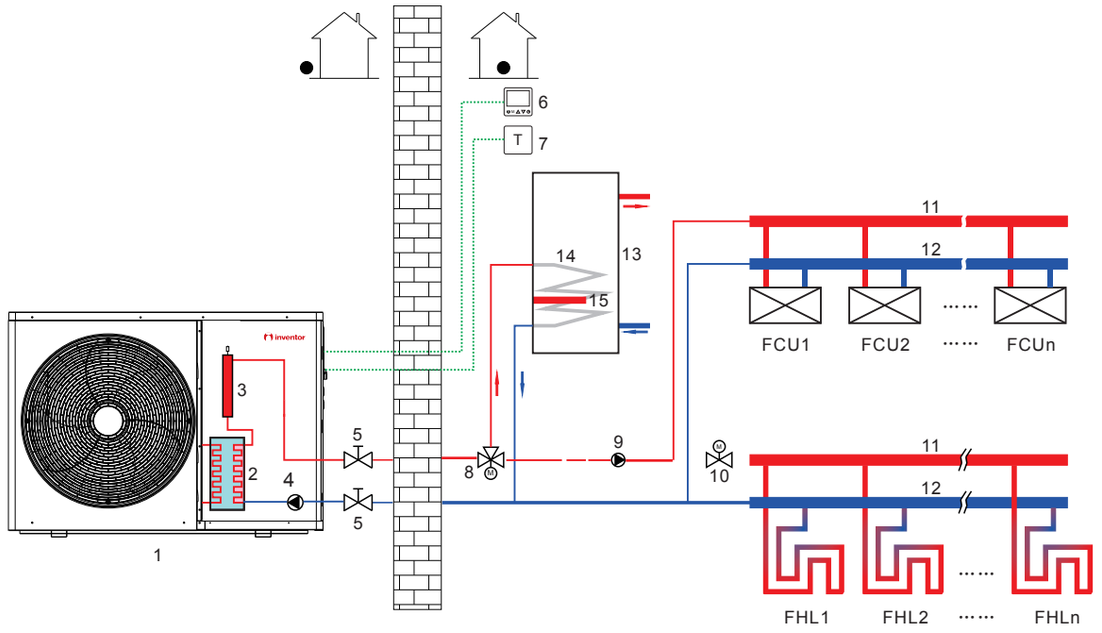
Notes:

The example is just for application illustration; please confirm the exact installation method according to the installation manual.

4.3: Space Heating, Space Cooling and Domestic Hot Water

Floor heating loops and fan coil units are used for space heating and fan coil units are used for space cooling. Domestic hot water is supplied from the domestic hot water tank connected to the Mono unit. The unit switches to heating or cooling mode according to the temperature detected by the room thermostat. In space cooling mode, the 2-way valve is closed to prevent cold water from entering the floor heating loops.

Figure 1-4.3: Space heating, space cooling and domestic hot water



Item	Description	Item	Description
1	Outdoor unit	10	Two-way valve (field supplied)
2	Plate heat exchanger	11	Dstributor (field supplied)
3	Backup electric heater (customized)	12	Collector (field supplied)
4	Internal circulator pump	13	Domestic water tank (field supplied)
5	Stop valve (field supplied)	14	Heat exchanger coil
6	User interface	15	Immersion heater
7	Room thermostat (field supplied)	FHL 1...n	Floor heating loops (field supplied)
8	Motorized 3-way valve (field supplied)	FCU 1...n	Fan coil units (field supplied)
9	External circulator pump (field supplied)		

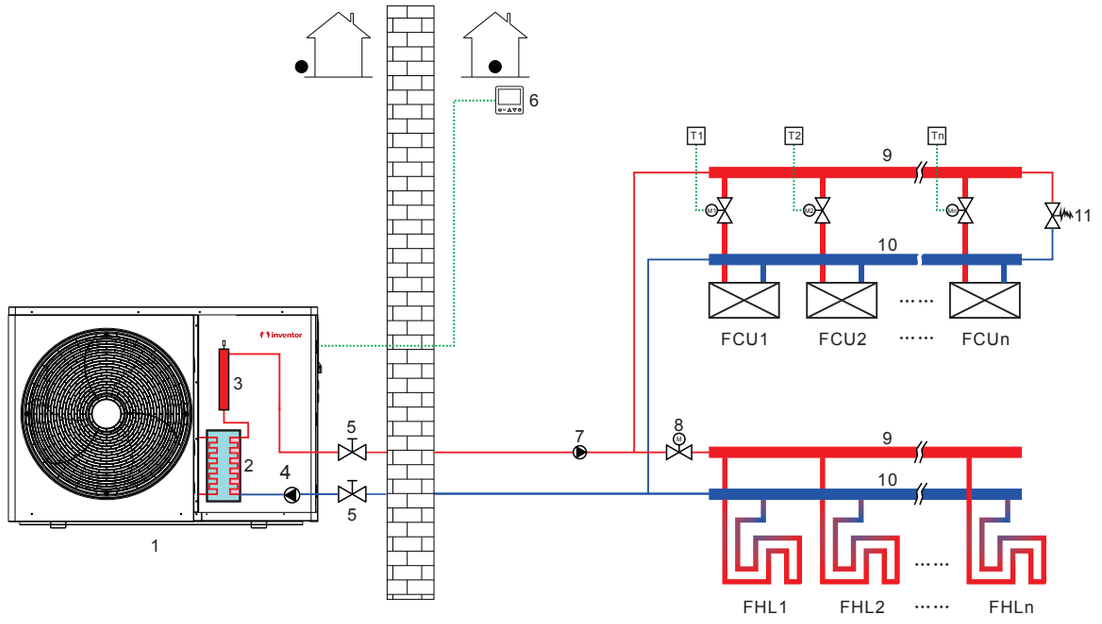
Notes:

The example is just for application illustration; please confirm the exact installation method according to the installation manual.

4.4: Space Heating and Space Cooling

Floor heating loops and fan coil units are used for space heating and fan coil units are used for space cooling. The room thermostats are not connected to the Mono unit but are connected to the fan coil units.

Figure 1-4.4: Space heating and space cooling



Item	Description	Item	Description
1	Outdoor unit	9	Distributor (field supplied)
2	Plate heat exchanger	10	Collector (field supplied)
3	Backup electric heater (customized)	11	Bypass valve (field supplied)
4	Internal circulator pump	FHL 1...n	Floor heating loops (field supplied)
5	Stop valve (field supplied)	FCU 1...n	Fan coil units (field supplied)
6	User interface	M1...n	Motorized valves (field supplied)
7	External circulator pump (field supplied)	T1...n	Room thermostats (field supplied)
8	Motorized 2-way valve (field supplied)		

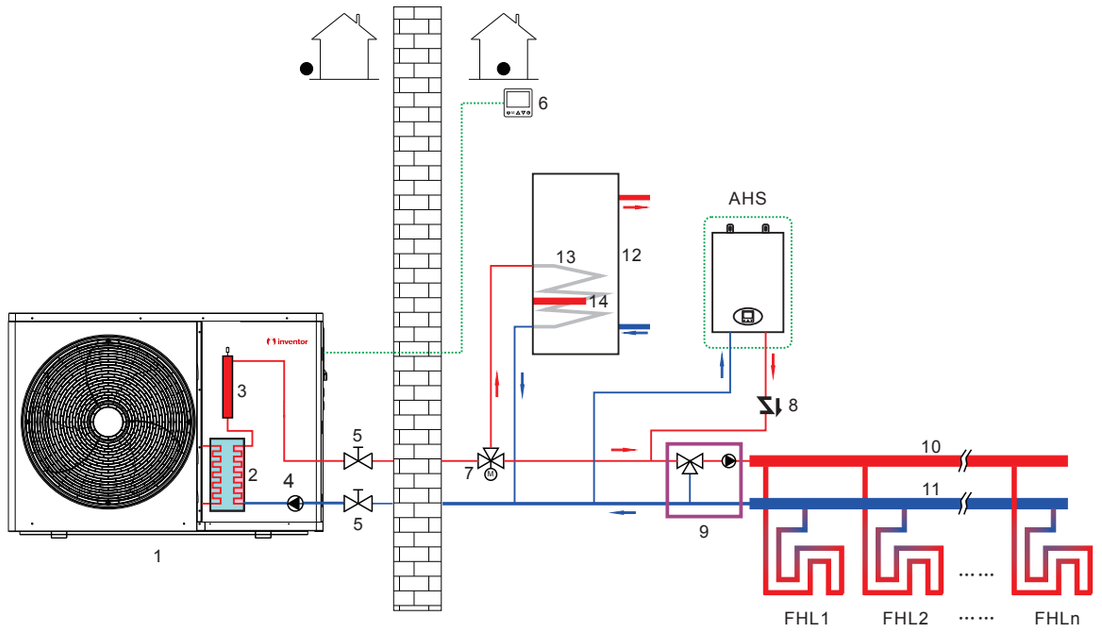
Notes:

The example is just for application illustration; please confirm the exact installation method according to the installation manual.

4.5 :Space Heating and Domestic Hot Water (Bivalent)

4.5.1: Auxiliary heat source provides space heating only

Figure 1-4.5: Space heating and domestic hot water with auxiliary heat source providing space heating only



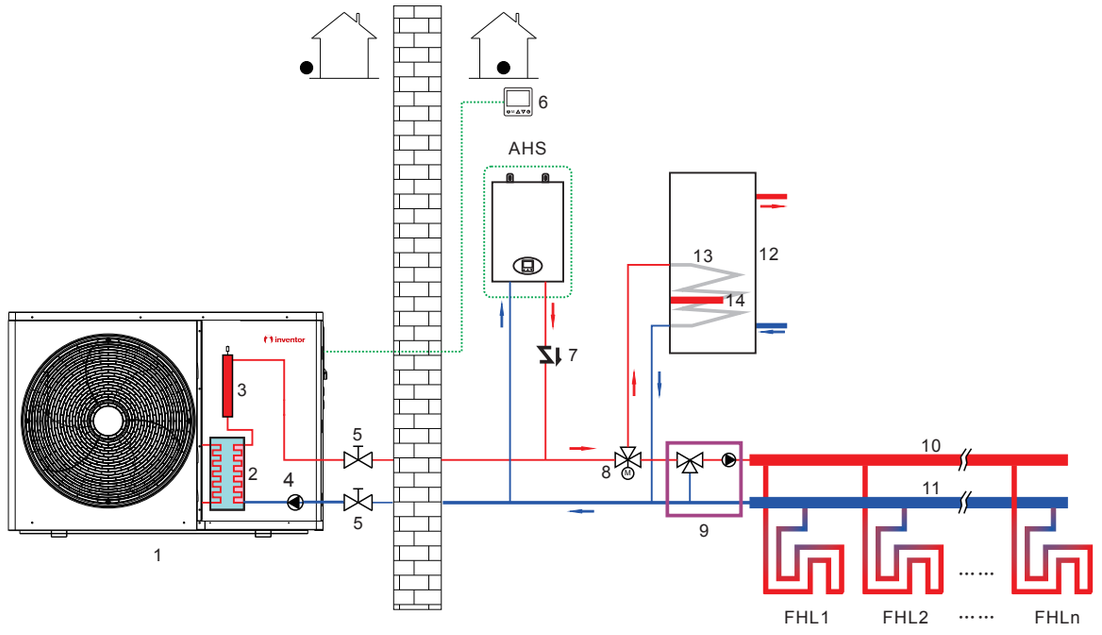
Item	Description	Item	Description
1	Outdoor unit	9	Mixing station (field supplied)
2	Plate heat exchanger	10	Distributor (field supplied)
3	Backup electric heater (customized)	11	Collector (field supplied)
4	Internal circulator pump	12	Domestic water tank (field supplied)
5	Stop valve (field supplied)	13	Heat exchanger coil
6	User interface	14	Immersion heater
7	Motorized 3-way valve (field supplied)	FHL 1...n	Floor heating loops (field supplied)
8	Non-return valve (field supplied)	AHS	Auxiliary heating source (field supplied)

Notes:

The example is just for application illustration; please confirm the exact installation method according to the installation manual.

4.5.2: Auxiliary heat source provides space heating and domestic hot water

Figure 1-4.6: Space heating and domestic hot water with auxiliary heat source providing space heating and domestic hot water



Item	Description	Item	Description
1	Outdoor unit	9	Mixing station (field supplied)
2	Plate heat exchanger	10	Distributor (field supplied)
3	Backup electric heater (customized)	11	Collector (field supplied)
4	Internal circulator pump	12	Domestic water tank (field supplied)
5	Stop valve (field supplied)	13	Heat exchanger coil
6	User interface	14	Immersion heater
7	Non-return valve (field supplied)	FHL 1...n	Floor heating loops (field supplied)
8	Motorized 3-way valve (field supplied)	AHS	Auxiliary heating source (field supplied)

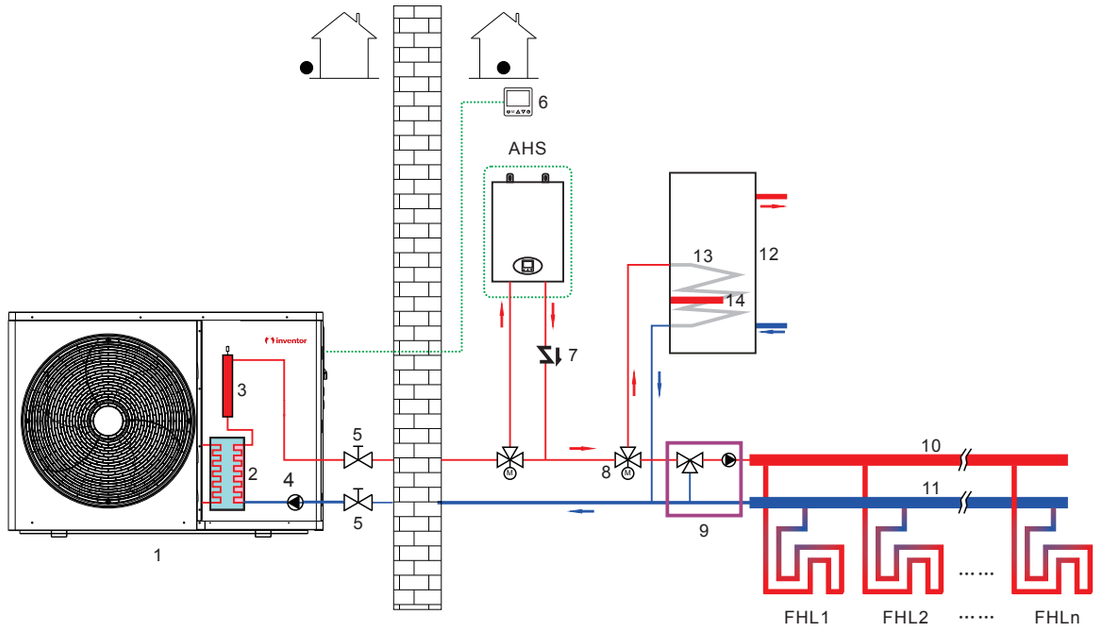
Notes:

The example is just for application illustration; please confirm the exact installation method according to the installation manual.

4.5.3:Auxiliary heat source provides additional heating

If the Mono unit's outlet temperature is too low, the auxiliary heat source provides additional heating to raise the water temperature to the set temperature. An additional 3-way valve is required. When the Mono unit's outlet temperature is too low, the 3-way valve is open and the water flows through the auxiliary heat source. When the Mono unit's outlet temperature is high enough, the 3-way valve is closed.

Figure 1-4.7: Space heating and domestic hot water with auxiliary heat source providing additional heating



Item	Description	Item	Description
1	Outdoor unit	9	Mixing station (field supplied)
2	Plate heat exchanger	10	Distributor (field supplied)
3	Backup electric heater (customized)	11	Collector (field supplied)
4	Internal circulator pump	12	Domestic water tank (field supplied)
5	Stop valve (field supplied)	13	Heat exchanger coil
6	User interface	14	Immersion heater
7	Non-return valve (field supplied)	FHL 1...n	Floor heating loops (field supplied)
8	Motorized 3-way valve (field supplied)	AHS	Auxiliary heating source (field supplied)

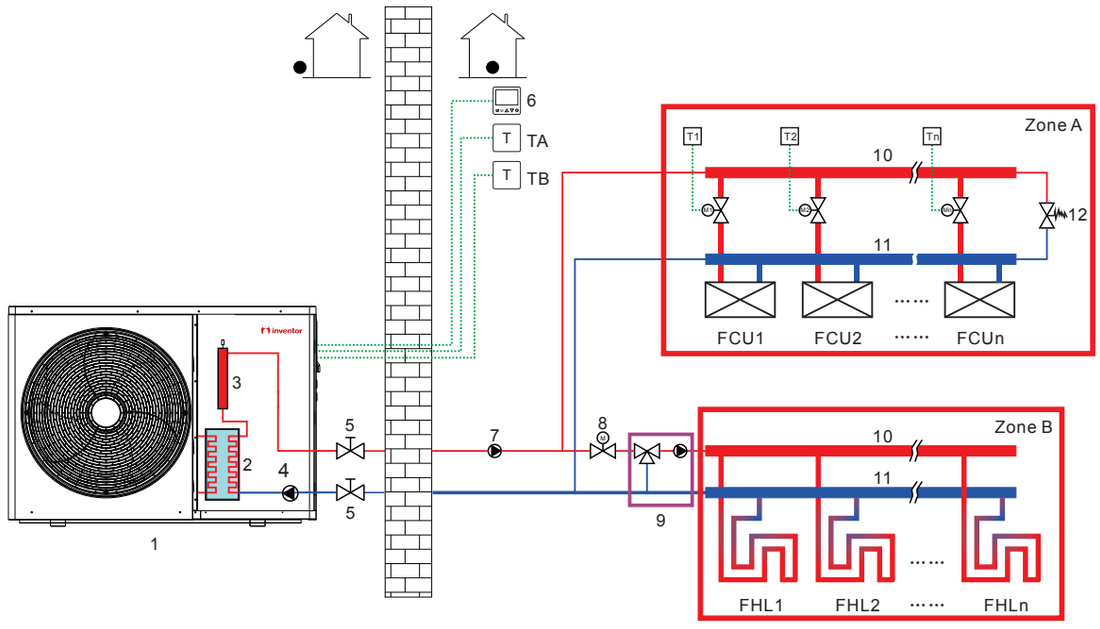
Notes:

The example is just for application illustration; please confirm the exact installation method according to the installation manual.

4.6: Space Heating Through Floor Heating Loops and Fan Coil Units

Dual setpoint function application with or without two thermostats connect to the outdoor unit. The floor heating loops and fan coil units require different operating water temperatures. To achieve these two set points, a mixing station is required. Room thermostats for each zone are optional.

Figure 1-4.8: Space heating through floor heating loops and fan coil units



Item	Description	Item	Description
1	Outdoor unit	10	Distributor (field supplied)
2	Plate heat exchanger	11	Collector (field supplied)
3	Backup electric heater (customized)	12	Bypass valve (field supplied)
4	Internal circulator pump	FHL 1...n	Floor heating loops (field supplied)
5	Stop valve (field supplied)	FCU 1...n	Fan coil units (field supplied)
6	User interface	M1...n	Motorized valves (field supplied)
7	External circulator pump (field supplied)	T1...n	Room thermostats (field supplied)
8	Motorized 2-way valve (field supplied)	TA	Zone A thermostat (field supplied)
9	Mixing station (field supplied)	TB	Zone B thermostat (field supplied)

Notes:

The example is just for application illustration; please confirm the exact installation method according to the installation manual.

Part 2
Engineering Data

1. Specifications

Table 2-1.1: XFMH04S3 / XFMH06S3 / XFMH08S3 specifications

Model name			**XFMH04S3**	**XFMH06S3**	**XFMH08S3**
Power supply		**V / Ph / H**	220-240 / 1 / 50		
Heating[1]	**Capacity**	kW	4.0	6.0	7.9
	Rated input	kW	0.75	1.17	1.76
	COP		5.25	5.13	4.50
Heating[2]	Capacity	kW	4.2	6.0	8.3
	Rated input	kW	1.11	1.63	2.61
	COP		3.77	3.70	3.18
Heating[3]	Capacity	kW	4.1	6.1	7.7
	Rated input	kW	1.46	2.13	2.98
	COP		2.84	2.86	2.58
Cooling[4]	Capacity	kW	4.0	6.2	8.2
	Rated input	kW	0.77	1.26	1.75
	EER		5.19	4.91	4.65
Cooling[5]	Capacity	kW	4.3	6.3	7.6
	Rated input	kW	1.32	1.99	2.55
	EER		3.24	3.14	2.97
SCOP	LWT at 35℃		A+++	A+++	A+++
	LWT at 55℃		A++	A++	A++
Refrigerant	Type		R32	R32	R32
	Charged	kg	1.03	1.03	1.3
Compressor	Type		Twin rotary DC inverter		
Outdoor fan	Motor type		Brushless DC motor		
	Number of fans		1	1	1
Air side heat exchanger			Finned tube		
Sound power level		dB	56	58	59
Net/Gross weight	Net/Gross	kg	76/91	78/93	80/93.5
Dimension (L×W×H)	Net	mm	1125×370×680	1125×370×680	1125×370×680
	Packing	mm	1200×425×865	1200×425×865	1200×425×865
Outdoor air temperature range	Cooling	℃	-5 to 43		
	Heating	℃	-25 to 35		
	DHW	℃	-25 to 43		
Water side heat exchanger			Plate type		
Water side connection			G1"	G1"	G1"
Water outlet temperature range	Cooling	℃	5 to 30		
	Heating	℃	12 to 65		
	DHW (tank)	℃	10 to 60		

Abbreviations:

DHW:Domestic hot water.

Notes:

1. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; QJ 2014/C 207/02.
2. Seasonal space heating energy efficiency class tests in average climate conditions.
3. Sound power test condition: EN12102-1.

Table 2-1.2: XFMH10S3 / XFMH12S3 specifications

Model name			**XFMH10S3**	**XFMH12S3**
Power supply		**V / Ph / H**	220-240 / 1 / 50	
Heating[1]	Capacity	kW	10.2	12.1
	Rated input	kW	2.04	2.57
	COP		5.01	4.70
Heating[2]	Capacity	kW	10.2	12.1
	Rated input	kW	2.79	3.36
	COP		3.65	3.60
Heating[3]	Capacity	kW	9.6	12.3
	Rated input	kW	3.22	4.44
	COP		2.98	2.77
Cooling[4]	Capacity	kW	10.1	11.9
	Rated input	kW	2.42	2.72
	EER		4.14	4.36
Cooling[5]	Capacity	kW	8.8	11.6
	Rated input	kW	2.97	4.14
	EER		2.96	2.80
SCOP	LWT at 35℃		A+++	A+++
	LWT at 55℃		A++	A++
Refrigerant	Type		R32	R32
	Charged	kg	1.50	1.75
Compressor	Type		Twin rotary DC inverter	
Outdoor fan	Motor type		Brushless DC motor	
	Number of fans		1	1
Air side heat exchanger			Finned tube	
Sound power level		dB	60	64
Net/Gross weight	Net/Gross	kg	93/108	97/117
Dimension (L×W×H)	Net	mm	1135×396×803	1135×396×803
	Packing	mm	1260×488×982	1260×488×982
Outdoor air temperature range	Cooling	℃	-5 to 43	
	Heating	℃	-25 to 35	
	DHW	℃	-25 to 43	
Water side heat exchanger			Plate type	
Water side connection			G1"	G1"
Water outlet temperature range	Cooling	℃	5 to 30	
	Heating	℃	12 to 65	
	DHW (tank)	℃	10 to 60	

Abbreviations:

DHW:Domestic hot water.

Notes:

1. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; QJ 2014/C 207/02.
2. Seasonal space heating energy efficiency class tests in average climate conditions.
3. Sound power test condition: EN12102-1.

Table 2-1.3: XFMH14S3 / XFMH16S3 specifications

Model name			**XFMH14S3**	**XFMH16S3**
Power supply		**V / Ph / H**	220-240 / 1 / 50	
Heating[1]	Capacity	kW	14.5	15.9
	Rated input	kW	2.99	3.42
	COP		4.84	4.65
Heating[2]	Capacity	kW	14.5	15.9
	Rated input	kW	3.89	4.63
	COP		3.72	3.43
Heating[3]	Capacity	kW	13.8	15.8
	Rated input	kW	4.42	6.12
	COP		3.12	2.58
Cooling[4]	Capacity	kW	14.1	15.7
	Rated input	kW	3.10	4.03
	EER		4.56	3.90
Cooling[5]	Capacity	kW	14.3	16.0
	Rated input	kW	5.11	6.12
	EER		2.80	2.61
SCOP	LWT at 35℃		A+++	A+++
	LWT at 55℃		A++	A++
Refrigerant	Type		R32	R32
	Charged	kg	2.1	2.1
Compressor	Type		Twin rotary DC inverter	
Outdoor fan	Motor type		Brushless DC motor	
	Number of fans		1	1
Air side heat exchanger			Finned tube	
Sound power level		dB	65	68
Net/Gross weight	Net/Gross	kg	117/136	117/136
Dimension (L×W×H)	Net	mm	1203×481×860	1203×481×860
	Packing	mm	1285×495×1040	1285×495×1040
Outdoor air temperature range	Cooling	℃	-5 to 43	
	Heating	℃	-25 to 35	
	DHW	℃	-25 to 43	
Water side heat exchanger			Plate type	
Water side connection			G1"	G1"
Water outlet temperature range	Cooling	℃	5 to 30	
	Heating	℃	12 to 65	
	DHW (tank)	℃	10 to 60	

Abbreviations:

DHW:Domestic hot water.

Notes:

1. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; QJ 2014/C 207/02.
2. Seasonal space heating energy efficiency class tests in average climate conditions.
3. Sound power test condition: EN12102-1.

Table 2-1.4:XFMH12T9 / XFMH14T9 / XFMH16T9 specifications

Model name			**XFMH12T9**	**XFMH14T9**	**XFMH16T9**
Power supply		V / Ph / H	380-415 / 3 / 50		
Heating[1]	Capacity	kW	12.1	14.5	15.9
	Rated input	kW	2.57	2.99	3.42
	COP		4.70	4.84	4.65
Heating[2]	Capacity	kW	12.1	14.5	15.9
	Rated input	kW	3.36	3.89	4.63
	COP		3.60	3.72	3.43
Heating[3]	Capacity	kW	12.3	13.8	15.8
	Rated input	kW	4.44	4.42	6.12
	COP		2.77	3.12	2.58
Cooling[4]	Capacity	kW	11.9	14.1	15.7
	Rated input	kW	2.72	3.10	4.03
	EER		4.36	4.56	3.90
Cooling[5]	Capacity	kW	11.6	14.3	16.0
	Rated input	kW	4.14	5.11	6.12
	EER		2.80	2.80	2.61
SCOP	LWT at 35℃		A+++	A+++	A+++
	LWT at 55℃		A++	A++	A++
Refrigerant	Type		R32	R32	R32
	Charged	kg	1.75	2.1	2.1
Compressor	Type		Twin rotary DC inverter		
Outdoor fan	Motor type		Brushless DC motor		
	Number of fans		1	1	1
Air side heat exchanger			Finned tube		
Sound power level		dB	64	65	68
Net/Gross weight	Net/Gross	kg	97/117	117/136	117/136
Dimension (L×W×H)	Net	mm	1135×396×803	1203×481×860	1203×481×860
	Packing	mm	1260×488×982	1285×495×1040	1285×495×1040
Outdoor air temperature range	Cooling	℃	-5 to 43		
	Heating	℃	-25 to 35		
	DHW	℃	-25 to 43		
Water side heat exchanger			Plate type		
Water side connection			G1"	G1"	G1"
Water outlet temperature range	Cooling	℃	5 to 30		
	Heating	℃	12 to 65		
	DHW (tank)	℃	10 to 60		

Abbreviations:

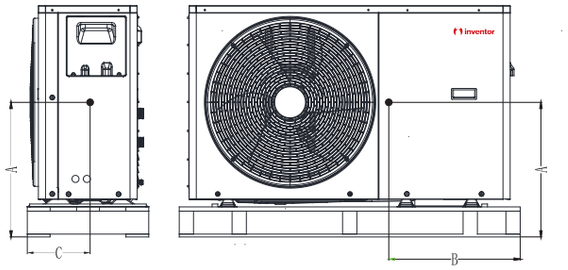
DHW:Domestic hot water.

Notes:

1. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; QJ 2014/C 207/02.
2. Seasonal space heating energy efficiency class tests in average climate conditions.
3. Sound power test condition: EN12102-1.

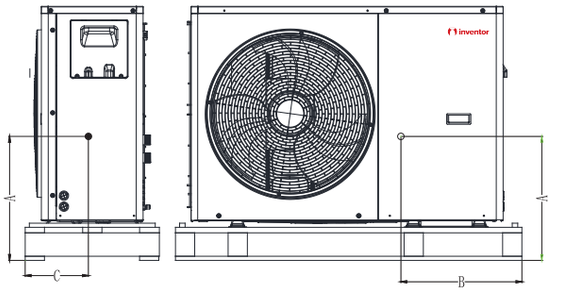
2 Equipment Overview

Figure 2-2.1: XFMH04S3 / XFMH06S3 / XFMH08S3 dimensions and center of gravity (unit: mm)



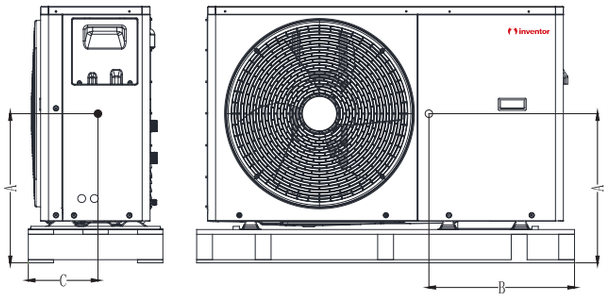
4/6/8 kW (unit:mm)

Figure 2-2.2: XFMH10S3 / XFMH12S3 / XFMH12T9 dimensions and center of gravity (unit: mm)



10/12 kW (unit:mm)

Figure 2-2.3: XFMH14S3 / XFMH16S3 / XFMH14T9 / XFMH16T9 dimensions and center of gravity (unit: mm)

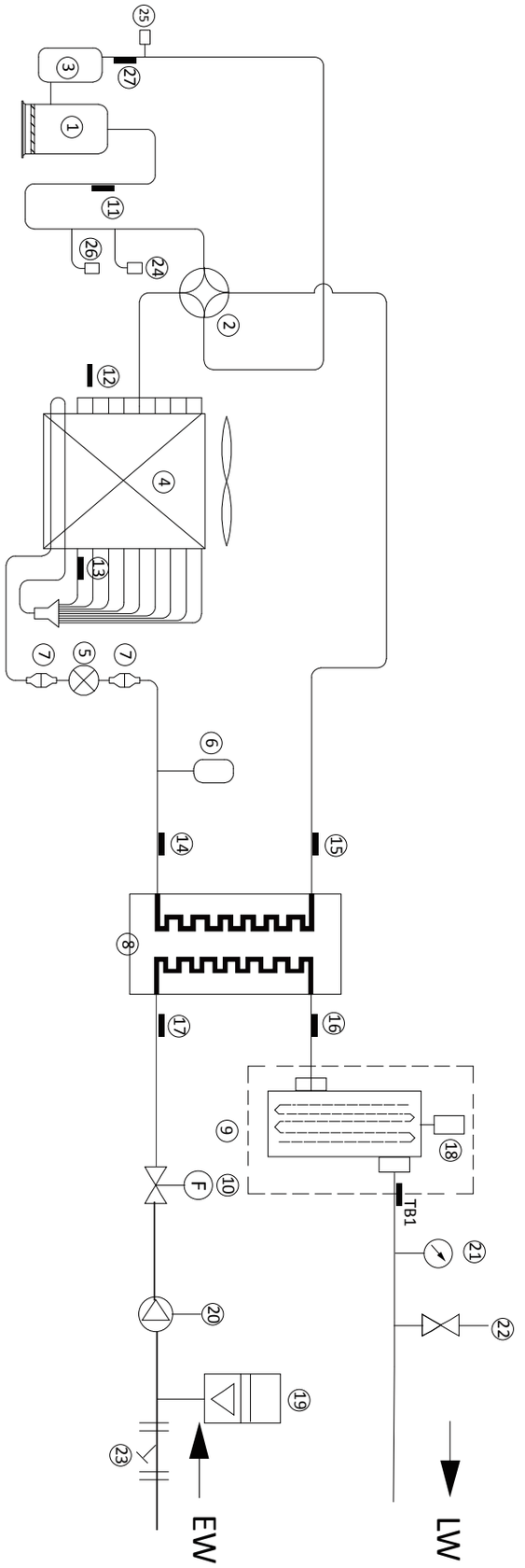


14/16 kW (unit:mm)

Model	A	B	C
1 phase 4/6/8kW	470	460	220
1 phase 10/12kW	450	440	230
1 phase 14/16kW	500	490	235
3 phase 12kW	450	440	230
3 phase 14/16kW	500	490	235

3 Piping Diagrams

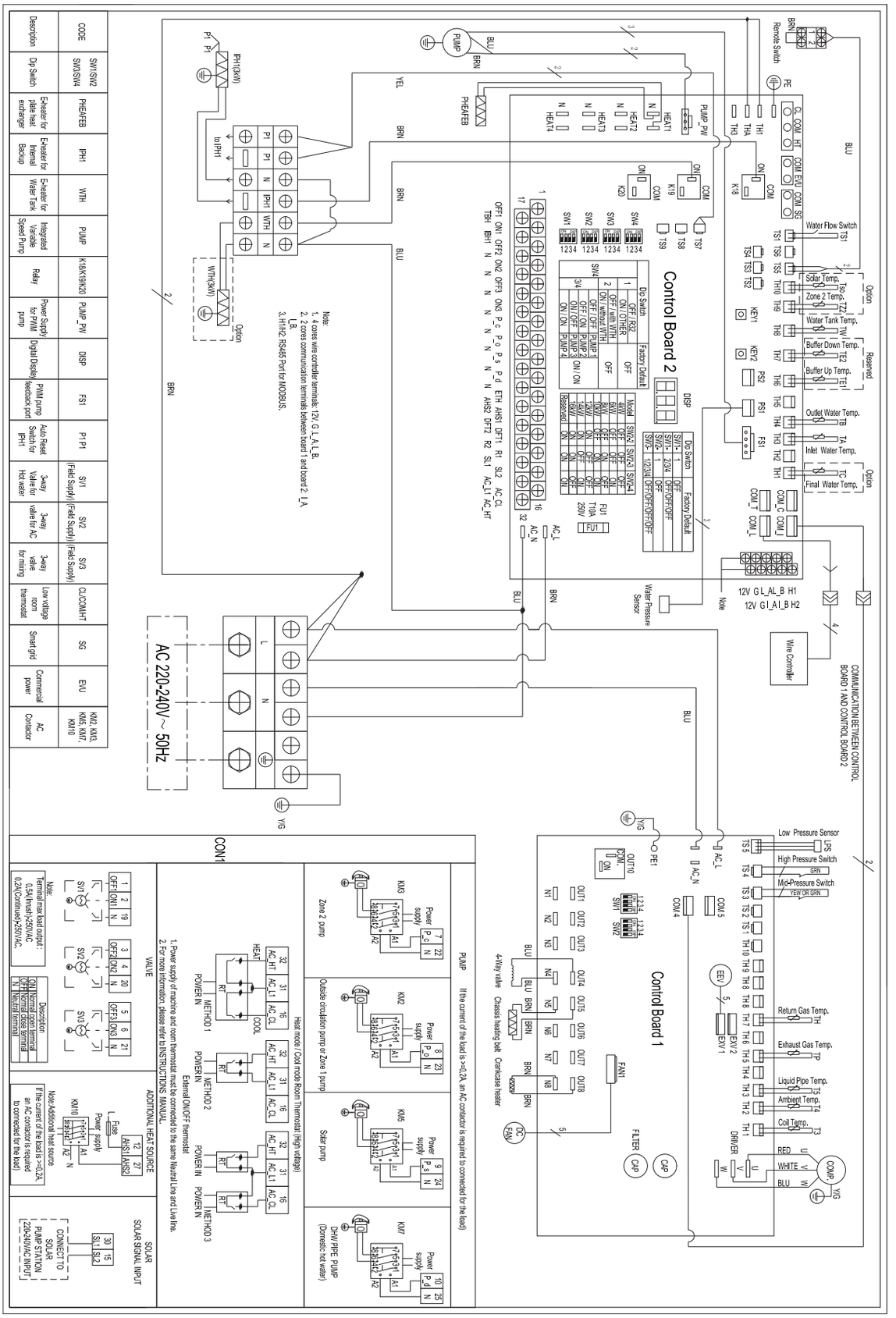
piping diagram

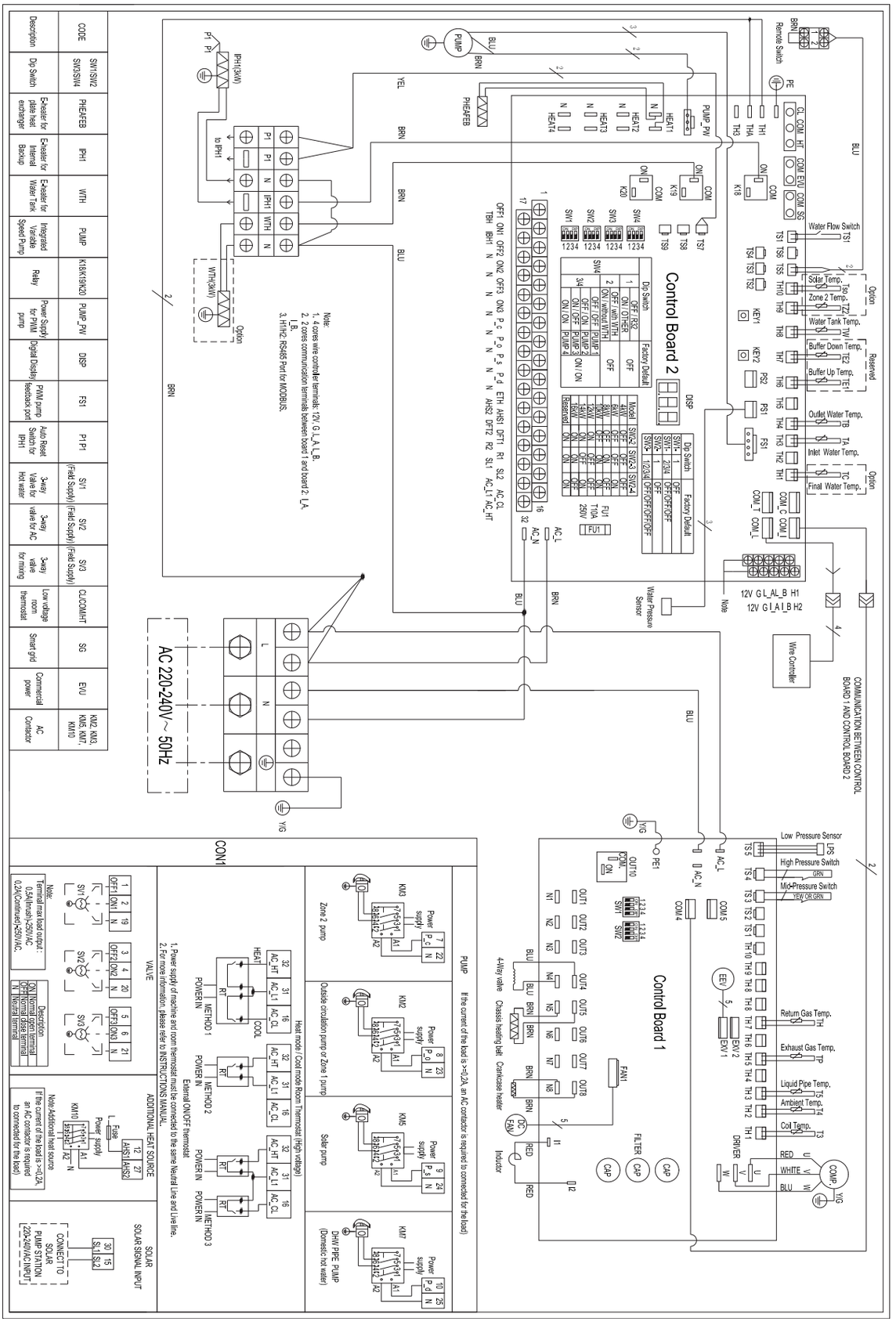


NO.	Description
1	Compressor
2	4-Way valve
3	Gas-liquid separator with compressor
4	Air side heat exchanger
5	Electronic expansion valve
6	Liquid Tank
7	Strainer
8	Water side heat exchanger (Plate Heat Exchanger)
9	Backup heater(Optional)
10	Flow switch
11	Discharge gas temp. sensor
12	Outdoor temp. sensor
13	Evaporation sensor (Condenser sensor in cooling)
14	Refrigerant inlet (liquid pipe))temp. sensor
15	Refrigerant outlet (gas pipe) temp. sensor
16	Water outlet temp. sensor
17	Water inlet temp. sensor
18	Air purge valve
19	Expansion vessell
20	Circulating pump
21	Water pressure sensor
22	Safety valve
23	Y-shape filter
24	High pressure switch
25	Low pressure sensor
26	Mid pressure switch
27	Suction gas temp. sensor

4 Wiring Diagrams

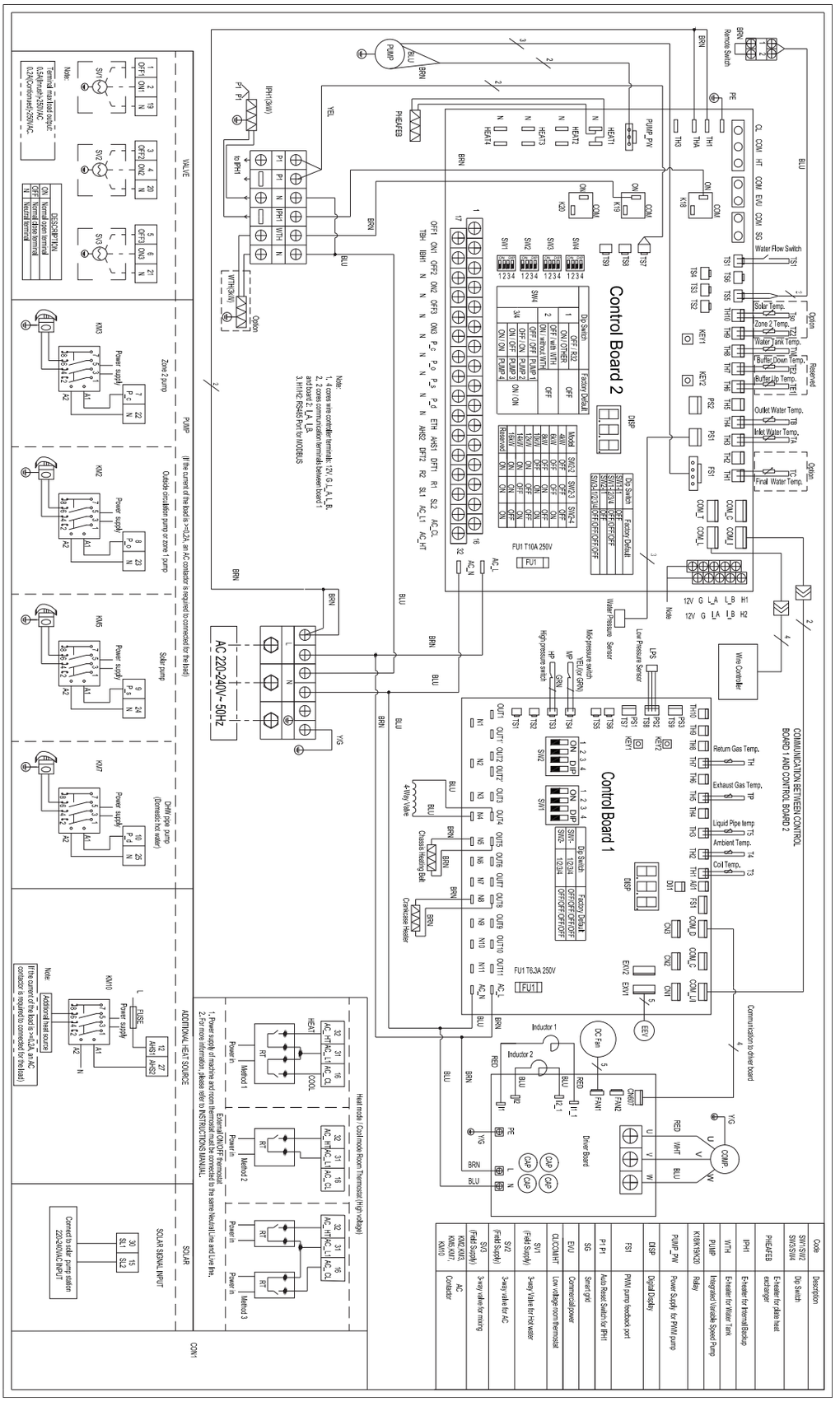
XFMH04S3 / XFMH06S3



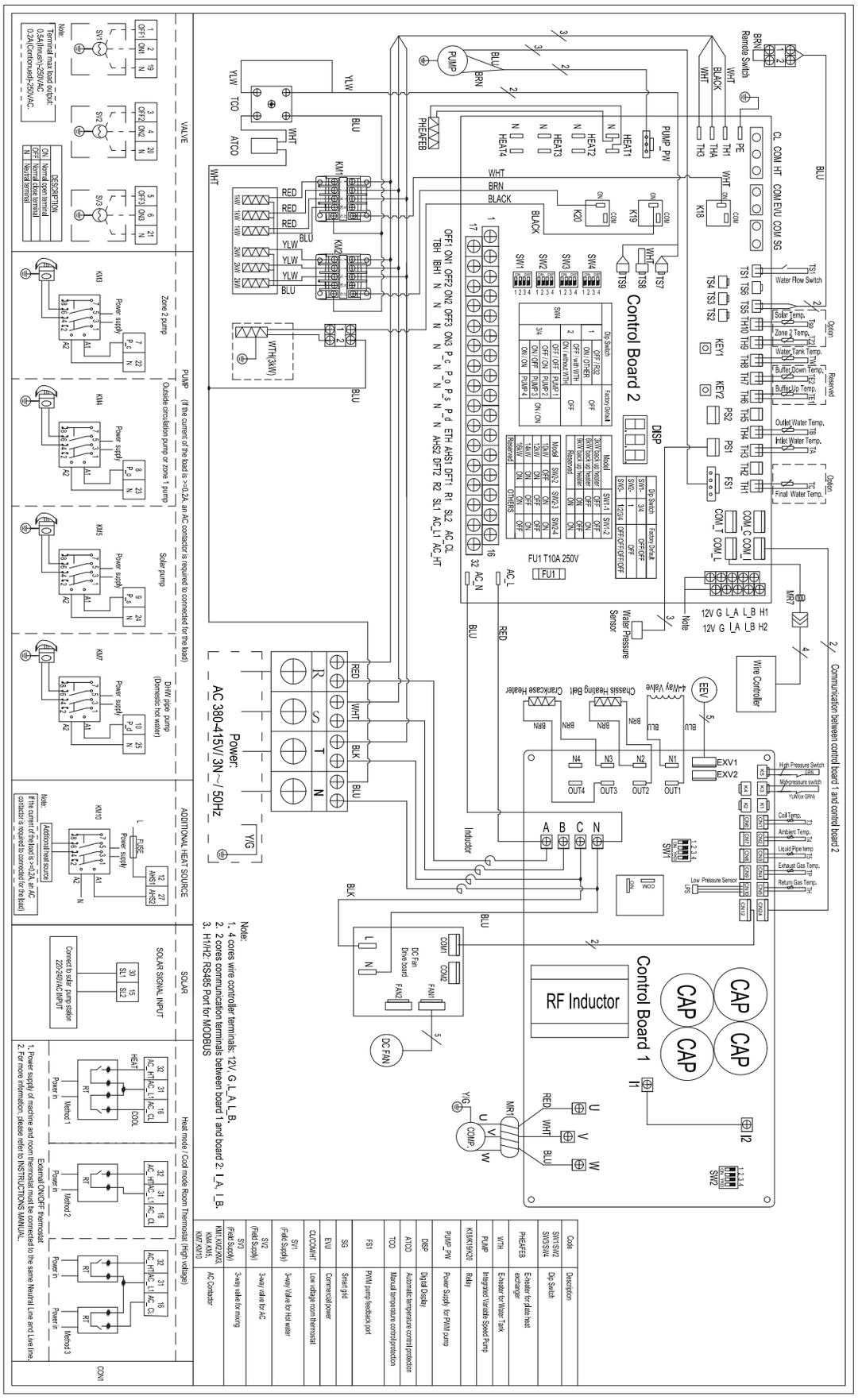


CODE	SW1/SW2	PHEAFEB	IPH1	WTH	PUMP	K18/K19/K20	PUMP_PW	DISP	FS1	P1P1	SV1	SV2	SV3	CLCOM/HT	SG	EVU	KM2, KM3, KM5, KM7, KM10
Description	Dip Switch	E-heater for plate heat exchanger	E-heater for Internal Backup	E-heater for Water Tank	Integrated Variable Speed Pump	Relay	Power Supply for PWM pump	Digital Display	PWM pump feedback port	Auto Reset Switch for IPH1	3-way Valve for Hot water	2-way valve for AC	3-way valve for mixing	Low voltage room thermostat	Smart grid	Commercial power	AC Contactor

XFMH14S3 / XFMH16S3



Code	Description
SW1/SW2 SW3/SW4	Dip Switch
PHEAFEB	Exhaust for plate heat exchanger
IPH	Exhaust for Internal Backup
WTH	Exhaust for Water Tank
PUMP	Integrated Variable Speed Pump
K5/K15/K20	Relay
PUMP_PW	Power Supply for PWM pump
DISP	Digital Display
FS1	PWM pump feedback port
P1 P1	Auto Reset Switch for IPH1
SG	Smart grid
EVU	Commercial power
CL/COM/HT	Low voltage room thermostat
SV1 (Field Supply)	3-way Valve for Hot water
SV2 (Field Supply)	3-way valve for AC
SV3 (Field Supply)	3-way valve for mixing
KM2,KM3, KM5,KM7, KM10	AC Contactor



Code	Description
SW1/SW2 SW3/SW4	Dip Switch
PHEAFEB	Ehaster for plate heat exchanger
WTH	Ehaster for Water Tank
PUMP	Integrated Variable Speed Pump
K18/K19/K20	Relay
PUMP_PW	Power Supply for PWM pump
DISP	Digital Display
ATCO	Automatic temperature control protection
TCO	Manual temperature control protection
FS1	PWM pump feedback port
SG	Smart grid
EVU	Commercial Power
CLOCMHT	Low voltage room thermostat
SV1 (Field Supply)	3-way Valve for Hot water
SV2 (Field Supply)	3-way valve for AC
SV3 (Field Supply)	3-way valve for mixing
KM1,KM2,KM3, KM4,KM5, KMF,KM10	AC Contactor

5.Capacity Tables

5.1: Heating Capacity Tables

Table 2-5.1.1: XFMH04S3 heating capacity-peak values

DB (℃)	Maximum																									
	LWT(℃)																									
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	2.02	1.18	1.71	1.77	1.22	1.45	1.74	1.32	1.32	1.5	1.30	1.15	1.34	1.25	1.07	/	/	/	/	/	/	/	/	/	/	/	/
-20	3.06	1.31	2.33	2.81	1.52	1.85	2.41	1.64	1.47	2.14	1.77	1.21	1.95	1.74	1.12	1.85	1.71	1.08	1.59	1.57	1.01	/	/	/	/	/	/
-15	3.63	1.19	3.06	3.35	1.22	2.75	3.22	1.35	2.39	2.9	1.49	1.94	2.47	1.61	1.53	2.21	1.21	1.83	1.81	1.57	1.15	1.72	1.70	1.01	/	/	/
-10	4.14	1.23	3.37	4.46	1.39	3.22	4.31	1.53	2.82	4.05	1.65	2.46	3.56	1.79	1.99	3.28	1.77	1.85	2.61	1.71	1.53	2.84	1.79	1.59	/	/	/
-7	4.95	1.33	3.72	5.11	1.46	3.49	4.96	1.61	3.08	4.64	1.74	2.67	4.51	2.00	2.26	4.42	2.16	2.05	4.25	2.35	1.81	3.59	1.92	1.87	/	/	/
-5	4.96	1.24	4.01	5.15	1.40	3.69	4.99	1.54	3.24	4.71	1.69	2.79	4.61	1.90	2.42	4.56	2.04	2.23	4.44	2.24	1.98	3.86	1.98	1.95	/	/	/
0	5.38	1.07	5.03	5.31	1.22	4.37	5.03	1.33	3.77	4.95	1.54	3.21	5.01	1.75	2.86	5.02	2.06	2.44	5.16	2.13	2.42	4.37	2.12	2.06	/	/	/
5	5.96	1.03	5.81	5.72	1.19	4.82	5.65	1.30	4.36	5.56	1.48	3.76	5.57	1.72	3.24	5.51	2.00	2.75	5.57	2.06	2.71	4.87	2.10	2.32	4.01	2.18	1.84
7	6.55	0.99	6.64	6.25	1.15	5.43	6.23	1.26	4.93	6.19	1.41	4.38	5.93	1.63	3.64	5.69	1.77	3.21	5.77	1.89	3.06	5.44	2.06	2.64	4.24	2.11	2.01
10	6.41	0.96	6.71	6.06	1.17	5.19	6.11	1.26	4.85	6.28	1.36	4.61	6.02	1.57	3.83	5.81	1.80	3.23	5.73	1.80	3.19	5.24	1.97	2.66	4.53	2.01	2.25
15	6.06	0.90	6.74	5.69	1.20	4.75	5.78	1.25	4.62	6.37	1.27	5.01	6.17	1.47	4.19	5.44	1.51	3.61	5.61	1.66	3.38	5.01	1.76	2.84	4.84	1.91	2.53
20	5.83	0.81	7.21	5.71	1.00	5.72	5.72	1.11	5.16	6.13	1.12	5.45	6.09	1.32	4.63	5.62	1.42	3.96	5.55	1.50	3.71	4.74	1.56	3.03	/	/	/
25	5.67	0.72	7.88	5.74	0.80	7.19	5.57	0.96	5.82	5.94	0.98	6.09	6.02	1.15	5.22	5.71	1.33	4.29	5.45	1.35	4.05	4.47	1.37	3.27	/	/	/
30	5.75	0.69	8.38	5.81	0.78	7.45	5.75	0.89	6.48	5.86	0.92	6.36	6.05	1.07	5.65	5.67	1.23	4.61	5.54	1.28	4.34	4.58	1.32	3.48	/	/	/
35	5.85	0.66	8.93	5.87	0.76	7.74	5.94	0.82	7.24	5.83	0.86	6.74	5.96	0.99	6.02	5.58	1.14	4.91	5.64	1.21	4.65	/	/	/	/	/	/
40	6.27	0.58	10.77	6.35	0.67	9.48	6.33	0.74	8.54	6.32	0.81	7.85	6.35	0.93	6.85	5.98	1.16	5.15	/	/	/	/	/	/	/	/	/
43	6.54	0.54	12.17	6.64	0.62	10.77	6.62	0.69	9.53	6.59	0.77	8.61	6.58	0.89	7.36	6.23	1.16	5.39	/	/	/	/	/	/	/	/	/

DB (℃)	Normal																									
	LWT(℃)																									
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	1.93	1.07	1.81	1.62	1.09	1.49	1.59	1.19	1.34	1.45	1.18	1.23	1.31	1.17	1.12	/	/	/	/	/	/	/	/	/	/	/	/
-20	2.79	1.15	2.42	2.61	1.43	1.83	2.17	1.50	1.45	1.95	1.59	1.23	1.8	1.62	1.11	1.7	1.63	1.04	1.53	1.50	1.02	/	/	/	/	/	/
-15	3.23	1.03	3.14	3.11	1.07	2.91	2.93	1.17	2.51	2.63	1.32	1.99	2.19	1.40	1.56	1.93	1.47	1.31	1.66	1.32	1.26	1.58	1.56	1.01	/	/	/
-10	3.76	1.04	3.63	4.03	1.17	3.43	3.85	1.29	2.98	3.63	1.44	2.52	3.23	1.60	2.02	2.96	1.64	1.81	2.37	1.53	1.55	2.56	1.62	1.58	/	/	/
-7	4.56	1.19	3.82	4.61	1.27	3.62	4.67	1.52	3.07	4.29	1.51	2.84	4.27	1.84	2.32	4.09	1.92	2.13	3.97	2.07	1.92	3.12	1.70	1.84	/	/	/
-5	4.46	1.05	4.23	4.55	1.03	4.43	4.34	1.28	3.38	4.18	1.43	2.93	3.98	1.58	2.52	4.07	1.72	2.36	3.91	2.08	1.88	3.39	1.77	1.92	/	/	/
0	4.96	0.96	5.16	4.83	1.08	4.49	4.63	1.20	3.85	4.5	1.38	3.25	4.43	1.49	2.97	4.38	1.76	2.49	4.4	1.79	2.46	3.84	1.86	2.06	/	/	/
5	5.51	1.10	5.01	5.19	1.03	5.03	5.03	1.13	4.46	5.11	1.32	3.86	4.85	1.55	3.12	4.5	1.59	2.83	4.53	1.67	2.72	4.25	1.82	2.34	3.27	1.69	1.93
7	4.53	0.75	6.01	4.39	0.79	5.58	4.30	0.91	4.72	4.35	0.94	4.61	4.30	1.17	3.68	4.51	1.46	3.09	4.41	1.40	3.16	4.24	1.62	2.62	3.51	1.65	2.13
10	5.76	0.80	7.16	5.25	0.98	5.38	5.33	1.11	4.81	5.61	1.17	4.81	5.45	1.40	3.88	4.19	1.28	3.28	4.93	1.54	3.21	4.81	1.77	2.72	3.72	1.56	2.38
15	5.51	0.75	7.35	5.03	0.98	5.11	5.11	1.06	4.84	5.75	1.07	5.35	5.64	1.30	4.34	5.08	1.33	3.81	4.99	1.40	3.56	4.65	1.58	2.94	4.01	1.46	2.74
20	5.33	0.67	7.93	5.08	0.85	5.99	5.14	0.95	5.43	5.62	0.95	5.92	5.61	1.16	4.85	5.3	1.24	4.26	4.92	1.27	3.87	4.42	1.45	3.04	/	/	/
25	5.03	0.58	8.72	5.27	0.67	7.82	5.15	0.82	6.27	5.51	0.84	6.58	5.64	1.02	5.51	5.53	1.17	4.71	4.92	1.16	4.25	4.25	1.28	3.32	/	/	/
30	5.21	0.55	9.42	5.32	0.65	8.17	5.26	0.75	7.01	5.51	0.79	7.01	5.64	0.95	5.94	5.48	1.09	5.01	5.04	1.10	4.59	4.38	1.24	3.54	/	/	/
35	5.32	0.53	10.13	8.41	0.99	8.53	5.57	0.70	7.92	5.53	0.74	7.46	5.67	0.88	6.44	5.39	1.02	5.27	5.17	1.04	4.95	/	/	/	/	/	/
40	5.81	0.48	12.23	5.74	0.54	10.57	5.79	0.61	9.42	5.81	0.67	8.73	5.86	0.79	7.41	5.63	1.00	5.64	/	/	/	/	/	/	/	/	/
43	6.11	0.44	13.93	6.12	0.51	12.07	5.97	0.57	10.47	6.12	0.64	9.63	6.12	0.77	7.98	5.97	1.01	5.93	/	/	/	/	/	/	/	/	/

DB (℃)	Minimum																									
	LWT(℃)																									
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	1.21	0.68	1.77	1.09	0.72	1.52	1.21	0.89	1.36	1.06	0.91	1.17	0.83	0.78	1.07	/	/	/	/	/	/	/	/	/	/	/	/
-20	1.72	0.70	2.47	1.51	0.81	1.87	1.39	0.94	1.48	1.36	1.08	1.26	1.21	1.08	1.12	1.25	1.19	1.05	1.17	1.14	1.03	/	/	/	/	/	/
-15	1.65	0.51	3.22	1.62	0.55	2.93	1.52	0.61	2.51	1.67	0.79	2.11	1.63	0.99	1.64	1.49	1.12	1.33	1.22	1.00	1.22	1.21	1.19	1.02	/	/	/
-10	1.62	0.44	3.67	1.78	0.50	3.53	1.68	0.56	3.01	2.06	0.81	2.53	2.14	1.04	2.06	2.2	1.19	1.85	1.79	1.14	1.57	2.05	1.27	1.61	/	/	/
-7	1.19	0.29	4.04	1.15	0.31	3.73	1.22	0.37	3.31	2.09	0.71	2.96	2.11	0.86	2.45	2.08	0.97	2.15	1.85	0.98	1.88	2.19	1.16	1.88	/	/	/
-5	1.39	0.32	4.35	1.33	0.34	3.95	1.39	0.40	3.48	2.09	0.67	3.11	2.13	0.83	2.57	2.06	0.92	2.24	1.96	0.98	2.01	2.26	1.15	1.96	/	/	/
0	1.48	0.27	5.42	1.48	0.32	4.58	1.38	0.35	3.95	2.15	0.65	3.31	2.19	0.72	3.04	2.21	0.90	2.45	2.18	1.00	2.18	2.58	1.21	2.13	/	/	/
5	2.01	0.32	6.31	1.96	0.38	5.21	1.89	0.41	4.63	2.53	0.64	3.98	2.56	0.73	3.49	2.55	0.91	2.81	2.76	1.05	2.63	3.08	1.25	2.47	2.32	1.15	2.01
7	2.32	0.32	7.25	2.31	0.39	5.86	2.34	0.44	5.36	2.98	0.62	4.81	3.19	0.82	3.88	3.25	1.00	3.26	3.65	1.15	3.18	3.59	1.29	2.78	2.68	1.20	2.23
10	1.92	0.26	7.43	1.74	0.31	5.64	1.95	0.37	5.23	2.87	0.56	5.09	3.24	0.80	4.03	3.16	0.93	3.41	3.57	1.08	3.32	3.56	1.24	2.88	2.84	1.18	2.41
15	2.39	0.31	7.69	2.23	0.41	5.39	2.28	0.44	5.15	2.93	0.52	5.65	3.42	0.75	4.55	3.34	0.84	3.98	4.08	1.09	3.73	3.71	1.25	2.97	3.04	1.06	2.87
20	2.61	0.31	8.38	2.78	0.42	6.55	3.04	0.52	5.81	3.85	0.62	6.21	3.77	0.74	5.09	3.62	0.82	4.41	3.73	0.92	4.07	3.19	0.99	3.23	/	/	/
25	3.17	0.34	9.28	3.37	0.41	8.27	3.55	0.53	6.66	4.28	0.62	6.91	4.32	0.75	5.78	4.28	0.88	4.89	3.92	0.88	4.47	3.25	0.93	3.49	/	/	/
30	3.35	0.34	9.93	3.56	0.41	8.65	3.82	0.51	7.47	4.01	0.55	7.34	4.39	0.70	6.24	4.36	0.84	5.19	4.13	0.86	4.82	3.45	0.92	3.73	/	/	/
35	3.95	0.36	10.9	4.04	0.44	9.11	3.94	0.47	8.39	4.01	0.51	7.84	4.41	0.65	6.77	4.43	0.80	5.54	3.41	0.65	5.21	/	/	/	/	/	/
40	4.28	0.33	12.9	4.24	0.38	11.17	4.54	0.46	9.96	4.53	0.49	9.19	4.82	0.62	7.73	4.89	0.82	5.99	/	/	/	/	/	/	/	/	/
43	4.51	0.31	14.4	4.51	0.35	12.77	4.78	0.43	11.13	4.82	0.47	10.17	5.12	0.61	8.39	5.22	0.84	6.23	/	/	/	/	/	/	/	/	/

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

HC:Total heating capacity(kW)

PI:Power input(kW)

Table 2-5.1.2: XFMH06S3 heating capacity-peak values

DB (℃)	Maximum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	2.54	1.48	1.72	2.23	1.53	1.46	2.12	1.66	1.28	1.89	1.62	1.17	1.69	1.55	1.09	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	3.71	1.57	2.36	3.41	1.87	1.82	2.94	2.05	1.43	2.61	2.10	1.24	2.38	2.10	1.13	2.23	2.07	1.08	1.88	1.88	1.00	/	/	/	/	/	/	/
-15	4.30	1.48	2.91	4.06	1.52	2.68	3.88	1.69	2.29	3.50	1.85	1.89	2.99	1.99	1.50	2.62	1.99	1.31	2.19	1.86	1.18	2.07	2.01	1.03	/	/	/	/
-10	5.87	1.70	3.44	5.61	1.86	3.02	5.21	2.01	2.60	4.93	2.20	2.24	4.73	2.26	2.09	4.21	2.42	1.74	3.88	2.27	1.71	3.39	2.33	1.45	/	/	/	/
-7	6.42	1.75	3.67	6.17	1.90	3.25	6.09	2.15	2.83	5.67	2.29	2.48	5.46	2.35	2.33	5.18	2.61	1.99	5.12	2.64	1.94	4.48	2.59	1.73	/	/	/	/
-5	6.61	1.63	4.06	6.38	1.78	3.59	6.20	1.97	3.15	6.03	2.16	2.79	5.90	2.28	2.59	5.49	2.42	2.27	5.36	2.62	2.05	4.78	2.56	1.87	/	/	/	/
0	6.30	1.32	4.75	6.18	1.46	4.22	6.16	1.66	3.71	6.60	1.97	3.35	6.64	2.23	2.98	5.70	2.35	2.43	5.26	2.57	2.05	4.91	2.52	1.95	/	/	/	/
5	6.97	1.32	5.26	6.64	1.51	4.39	6.81	1.64	4.17	6.89	1.91	3.62	6.92	2.15	3.22	6.31	2.29	2.75	6.05	2.49	2.43	5.68	2.55	2.22	4.87	2.70	1.80	
7	7.73	1.30	5.96	7.20	1.48	4.86	7.56	1.57	4.81	7.27	1.80	4.03	7.27	2.01	3.62	7.01	2.19	3.20	7.04	2.39	2.94	6.55	2.54	2.58	5.36	2.62	2.04	
10	7.21	1.20	6.00	6.90	1.34	5.14	7.13	1.45	4.92	7.15	1.73	4.13	7.10	1.92	3.70	6.80	2.07	3.28	6.72	2.26	2.98	6.08	2.39	2.55	5.40	2.49	2.17	
15	7.24	1.12	6.48	7.27	1.22	5.94	7.33	1.36	5.39	7.86	1.67	4.70	7.71	1.82	4.24	7.31	1.95	3.74	7.05	2.09	3.37	6.07	2.20	2.75	6.16	2.36	2.61	
20	7.00	0.98	7.15	7.04	1.12	6.28	7.05	1.19	5.91	7.28	1.55	4.70	7.49	1.70	4.42	7.35	1.83	4.02	6.88	1.91	3.60	6.04	1.97	3.06	/	/	/	
25	6.49	0.80	8.15	6.54	0.93	7.02	6.50	1.05	6.18	6.45	1.29	5.01	6.99	1.51	4.65	7.11	1.64	4.34	6.43	1.64	3.92	5.76	1.66	3.48	/	/	/	
30	6.61	0.71	9.24	6.69	0.86	7.78	6.69	0.95	7.05	6.43	1.10	5.83	6.91	1.41	4.90	6.77	1.42	4.77	6.47	1.58	4.08	5.89	1.59	3.72	/	/	/	
35	6.93	0.65	10.61	7.07	0.73	9.71	7.10	0.84	8.42	6.60	0.93	7.08	7.03	1.26	5.58	6.62	1.23	5.37	6.70	1.46	4.58	/	/	/	/	/	/	
40	7.33	0.63	11.63	7.44	0.72	10.40	7.35	0.80	9.20	7.19	0.96	7.49	7.41	1.19	6.24	7.00	1.21	5.79	/	/	/	/	/	/	/	/	/	
43	7.69	0.63	12.12	7.79	0.71	11.01	7.63	0.77	9.97	7.66	0.92	8.35	7.76	1.09	7.09	7.33	1.22	6.02	/	/	/	/	/	/	/	/	/	

DB (℃)	Normal																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	2.39	1.33	1.80	2.09	1.36	1.54	1.97	1.49	1.33	1.79	1.50	1.19	1.63	1.48	1.10	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	3.30	1.15	2.86	3.01	0.81	3.70	2.57	0.88	2.92	2.32	0.93	2.50	2.14	0.95	2.26	2.02	0.94	2.16	1.75	0.88	2.00	/	/	/	/	/	/	/
-15	4.09	1.30	3.14	3.85	1.35	2.86	3.64	1.48	2.45	3.34	1.67	2.00	2.78	1.77	1.58	2.46	1.78	1.38	2.12	1.72	1.23	2.02	1.90	1.06	/	/	/	/
-10	5.20	1.41	3.68	4.94	1.55	3.18	4.56	1.68	2.71	4.37	1.89	2.32	4.25	1.99	2.14	3.80	2.13	1.79	3.49	2.00	1.74	3.09	2.10	1.47	/	/	/	/
-7	6.43	1.63	3.94	6.23	1.82	3.43	6.18	2.02	3.06	5.78	2.23	2.59	5.56	2.27	2.45	5.22	2.47	2.11	5.30	2.60	2.04	4.41	2.41	1.83	/	/	/	/
-5	5.83	1.42	4.12	5.58	1.56	3.59	5.21	1.66	3.15	5.21	1.83	2.84	5.05	1.95	2.59	4.27	1.89	2.25	4.24	2.09	2.03	3.90	2.14	1.82	/	/	/	/
0	5.93	1.19	4.98	5.74	1.32	4.36	5.68	1.46	3.88	6.20	1.87	3.32	6.00	1.97	3.05	5.31	2.07	2.56	4.70	2.11	2.23	4.42	2.23	1.98	/	/	/	/
5	6.30	1.17	5.39	5.94	1.32	4.50	6.04	1.41	4.29	6.23	1.70	3.67	6.01	1.80	3.35	5.64	2.01	2.80	5.29	2.15	2.46	4.91	2.21	2.22	3.95	2.11	1.87	
7	6.55	1.08	6.06	6.11	1.20	5.11	6.20	1.32	4.68	6.25	1.54	4.06	6.30	1.74	3.63	5.95	1.84	3.22	6.30	2.03	3.11	5.47	2.15	2.55	4.27	2.04	2.10	
10	6.75	1.01	6.65	6.28	1.12	5.60	6.55	1.24	5.27	6.66	1.49	4.48	6.69	1.71	3.91	6.53	1.86	3.51	6.10	1.92	3.17	5.82	2.15	2.70	4.59	1.92	2.39	
15	6.32	0.93	6.79	6.18	1.01	6.12	6.29	1.15	5.46	6.82	1.41	4.82	6.77	1.60	4.23	6.56	1.73	3.78	5.97	1.78	3.35	5.42	1.98	2.73	4.89	1.80	2.71	
20	6.28	0.80	7.85	6.14	0.90	6.79	6.21	0.99	6.28	6.48	1.28	5.05	6.75	1.46	4.62	6.77	1.59	4.25	5.97	1.59	3.76	5.52	1.80	3.07	/	/	/	
25	5.85	0.65	8.93	6.00	0.79	7.56	6.01	0.92	6.55	6.03	1.12	5.36	6.62	1.37	4.84	6.87	1.50	4.58	5.87	1.44	4.07	5.54	1.59	3.48	/	/	/	
30	6.10	0.56	10.81	6.30	0.70	8.97	6.35	0.79	8.00	6.16	0.92	6.68	6.71	1.23	5.46	6.71	1.25	5.39	6.06	1.33	4.55	5.81	1.46	3.99	/	/	/	
35	5.96	0.52	11.48	6.19	0.60	10.30	6.27	0.71	8.78	5.89	0.79	7.46	6.35	1.11	5.73	6.10	1.09	5.57	5.84	1.24	4.70	/	/	/	/	/	/	
40	6.79	0.51	13.29	6.80	0.58	11.64	6.70	0.66	10.16	6.62	0.79	8.35	6.92	1.02	6.79	6.66	1.04	6.38	/	/	/	/	/	/	/	/	/	
43	7.04	0.50	13.97	7.05	0.57	12.44	6.87	0.62	11.12	6.98	0.74	9.38	7.16	0.92	7.76	6.91	1.04	6.67	/	/	/	/	/	/	/	/	/	

DB (℃)	Minimum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	1.52	0.87	1.74	1.38	0.92	1.50	1.47	1.13	1.29	1.35	1.15	1.17	1.07	1.00	1.07	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	2.00	0.82	2.45	1.76	0.95	1.86	1.64	1.11	1.48	1.61	1.27	1.27	1.42	1.26	1.13	1.48	1.37	1.08	1.31	1.31	1.00	/	/	/	/	/	/	/
-15	2.05	0.64	3.18	2.01	0.69	2.90	1.88	0.76	2.49	2.00	0.99	2.03	1.95	1.23	1.58	1.84	1.32	1.39	1.51	1.22	1.24	1.49	1.40	1.07	/	/	/	/
-10	2.21	0.61	3.64	2.08	0.66	3.15	1.96	0.73	2.69	2.43	1.06	2.29	2.73	1.30	2.10	2.72	1.56	1.74	2.55	1.50	1.71	2.31	1.60	1.44	/	/	/	/
-7	1.60	0.39	4.15	1.48	0.41	3.61	1.51	0.48	3.15	2.54	0.91	2.80	2.72	1.07	2.55	2.62	1.21	2.17	2.69	1.30	2.07	2.73	1.46	1.87	/	/	/	/
-5	1.80	0.41	4.41	1.68	0.44	3.84	1.72	0.51	3.37	2.62	0.86	3.04	2.85	1.04	2.74	2.62	1.09	2.40	2.84	1.32	2.15	2.75	1.42	1.94	/	/	/	/
0	1.71	0.33	5.10	1.78	0.40	4.44	1.73	0.44	3.98	2.87	0.81	3.55	2.96	0.93	3.20	2.93	1.14	2.56	2.79	1.30	2.15	2.94	1.46	2.02	/	/	/	/
5	2.24	0.40	5.61	2.25	0.48	4.68	2.26	0.51	4.45	3.11	0.82	3.81	3.19	0.93	3.43	3.33	1.15	2.89	3.36	1.32	2.54	3.47	1.52	2.29	2.76	1.42	1.95	
7	2.63	0.42	6.31	2.57	0.49	5.26	2.65	0.51	5.21	3.26	0.77	4.23	3.73	0.98	3.80	4.13	1.24	3.34	4.25	1.40	3.04	4.10	1.56	2.64	3.23	1.47	2.20	
10	2.25	0.33	6.76	2.06	0.36	5.69	2.30	0.43	5.37	3.29	0.72	4.55	3.92	0.99	3.95	4.18	1.18	3.53	4.33	1.35	3.20	4.16	1.53	2.72	3.51	1.46	2.41	
15	2.87	0.39	7.38	2.89	0.43	6.66	2.90	0.49	5.95	3.67	0.70	5.25	4.30	0.94	4.58	4.55	1.11	4.09	5.13	1.42	3.62	4.48	1.57	2.85	3.92	1.34	2.93	
20	3.06	0.38	8.05	3.34	0.48	6.96	3.63	0.56	6.45	4.45	0.86	5.18	4.51	0.96	4.71	4.64	1.07	4.33	4.47	1.17	3.83	3.92	1.25	3.13	/	/	/	
25	3.79	0.38	9.92	4.09	0.49	8.40	4.35	0.60	7.29	5.00	0.84	5.97	5.35	1.00	5.34	5.67	1.12	5.06	4.90	1.09	4.50	4.47	1.16	3.86	/	/	/	
30	3.84	0.35	10.98	4.16	0.46	9.11	4.43	0.54	8.13	4.45	0.65	6.80	5.13	0.93	5.52	5.30	0.97	5.44	4.86	1.06	4.60	4.49	1.12	4.03	/	/	/	
35	4.46	0.37	12.18	4.62	0.42	10.89	4.48	0.48	9.31	4.37	0.55	7.91	5.00	0.83	6.03	5.09	0.87	5.86	5.03	1.02	4.94	/	/	/	/	/	/	
40	5.03	0.37	13.74	5.04	0.42	12.02	5.27	0.50	10.50	5.22	0.60	8.68	5.69	0.81	6.99	5.72	0.87	6.57	/	/	/	/	/	/	/	/	/	
43	5.25	0.36	14.40	5.25	0.40	13.00	5.44	0.47	11.50	5.53	0.57	9.75	5.99	0.75	8.00	6.03	0.88	6.87	/	/	/	/	/	/	/	/	/	

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

HC:Total heating capacity(kW)

PI:Power input(kW)

Table 2-5.1.3: XFMH08S3 heating capacity-peak values

DB (℃)	Maximum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	4.44	2.04	2.18	3.96	2.13	1.86	3.51	2.22	1.58	3.21	2.23	1.44	2.71	2.30	1.18	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	5.62	2.07	2.72	5.06	2.33	2.17	4.65	2.27	2.05	4.22	2.53	1.67	3.59	2.38	1.51	3.12	2.36	1.32	2.52	2.07	1.22	/	/	/	/	/	/	/
-15	6.87	2.15	3.19	6.39	2.32	2.76	6.01	2.58	2.33	5.44	2.52	2.16	5.18	2.70	1.92	4.57	2.70	1.69	4.86	2.98	1.63	3.89	2.97	1.31	/	/	/
-10	7.35	2.09	3.51	7.25	2.24	3.23	7.01	2.30	3.05	6.77	2.69	2.52	6.65	2.81	2.37	6.19	2.92	2.12	6.01	3.18	1.89	5.08	2.95	1.72	/	/	/
-7	7.61	2.14	3.56	7.44	2.25	3.31	7.15	2.30	3.11	7.01	2.63	2.67	6.82	2.80	2.44	6.35	3.00	2.12	6.12	3.14	1.95	5.21	2.96	1.76	/	/	/
-5	8.02	2.07	3.87	7.87	2.19	3.59	7.52	2.41	3.12	7.36	2.62	2.81	7.36	2.84	2.59	7.28	3.14	2.32	6.36	3.01	2.11	5.95	3.04	1.96	/	/	/
0	8.21	1.80	4.57	8.51	2.06	4.13	8.39	2.29	3.67	8.32	2.58	3.22	8.01	2.85	2.81	8.01	3.02	2.65	7.01	3.07	2.28	6.75	3.26	2.07	/	/	/
5	8.82	1.51	5.85	8.89	1.81	4.91	9.01	2.03	4.44	8.68	2.33	3.72	8.62	2.63	3.28	8.12	2.78	2.92	7.44	2.81	2.65	7.02	2.97	2.36	3.81	3.40	1.12
7	9.51	1.48	6.44	9.16	1.75	5.22	9.11	1.84	4.96	8.75	2.14	4.08	8.89	2.40	3.71	8.33	2.71	3.07	7.69	2.55	3.02	7.13	2.73	2.61	4.04	3.21	1.26
10	9.86	1.35	7.32	9.22	1.59	5.81	8.86	1.70	5.22	8.61	2.06	4.18	8.66	2.28	3.79	8.18	2.46	3.32	8.09	2.52	3.21	7.38	2.77	2.66	5.52	2.73	2.02
15	9.76	1.13	8.65	9.39	1.34	7.02	9.01	1.51	5.97	9.01	1.79	5.02	8.81	2.06	4.28	8.35	2.34	3.57	8.19	2.38	3.44	7.58	2.52	3.01	5.69	2.52	2.26
20	9.55	0.97	9.8	9.51	1.14	8.32	9.23	1.32	6.98	9.35	1.61	5.81	9.01	1.84	4.91	8.44	2.05	4.12	8.33	2.16	3.86	7.72	2.30	3.35	/	/	/
25	9.32	0.92	10.1	8.99	1.03	8.72	8.69	1.16	7.52	9.06	1.46	6.21	8.93	1.57	5.68	8.51	1.89	4.51	8.01	1.94	4.12	7.35	2.04	3.61	/	/	/
30	9.11	0.86	10.6	8.44	0.93	9.11	8.07	1.05	7.68	8.72	1.30	6.72	8.82	1.44	6.11	8.58	1.77	4.86	7.72	1.74	4.44	6.99	1.82	3.85	/	/	/
35	9.35	0.84	11.1	8.83	0.93	9.45	8.44	1.07	7.92	9.11	1.31	6.96	9.21	1.48	6.23	8.92	1.75	5.11	8.05	1.75	4.61	/	/	/	/	/	/
40	10.0	0.89	11.2	9.25	0.93	9.97	8.85	1.05	8.39	9.56	1.33	7.21	9.63	1.52	6.35	9.37	1.75	5.35	/	/	/	/	/	/	/	/	/
43	10.1	0.83	12.1	9.51	0.85	11.2	9.11	1.01	9.01	9.85	1.28	7.72	9.98	1.49	6.71	9.56	1.59	6.01	/	/	/	/	/	/	/	/	/

DB (℃)	Normal																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	4.05	1.87	2.17	3.61	1.88	1.92	3.27	2.08	1.57	3.01	1.99	1.51	2.52	2.08	1.21	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	5.09	1.83	2.78	4.53	1.95	2.32	4.27	2.07	2.06	3.85	2.24	1.72	3.22	2.12	1.52	2.86	2.17	1.32	2.52	2.19	1.15	/	/	/	/	/	/	/
-15	6.12	1.81	3.39	5.71	1.98	2.88	5.33	2.18	2.44	5.01	2.25	2.23	4.59	2.35	1.95	4.12	2.50	1.65	4.55	2.83	1.61	3.62	2.74	1.32	/	/	/
-10	6.52	1.72	3.78	6.44	1.90	3.39	6.12	1.94	3.15	6.05	2.34	2.58	6.03	2.56	2.36	5.66	2.66	2.13	5.51	2.87	1.92	4.68	2.72	1.72	/	/	/
-7	7.17	1.86	3.86	7.01	2.04	3.44	6.92	2.23	3.11	6.61	2.52	2.62	6.51	2.67	2.44	6.05	2.74	2.21	6.08	3.12	1.95	5.01	2.80	1.79	/	/	/
-5	7.15	1.72	4.15	7.02	1.89	3.72	6.59	2.04	3.23	6.44	2.14	3.01	6.38	2.38	2.68	6.16	2.52	2.44	5.51	2.55	2.16	5.29	2.63	2.01	/	/	/
0	7.51	1.57	4.78	7.72	1.82	4.25	7.57	2.00	3.78	7.62	2.34	3.25	7.06	2.42	2.92	7.28	2.71	2.69	6.19	2.67	2.32	6.01	2.89	2.08	/	/	/
5	8.01	1.32	6.07	8.01	1.59	5.05	8.08	1.83	4.42	8.01	2.10	3.81	7.51	2.43	3.09	7.36	2.45	3.01	6.58	2.80	2.35	6.11	2.57	2.38	3.22	2.88	1.12
7	8.51	1.27	6.72	8.16	1.50	5.44	7.90	1.75	4.51	7.91	1.88	4.21	8.30	2.61	3.18	7.44	2.34	3.18	7.60	2.96	2.57	6.16	2.32	2.65	3.31	2.57	1.29
10	8.92	1.14	7.81	8.02	1.33	6.02	7.78	1.45	5.38	7.67	1.76	4.35	7.82	2.03	3.86	7.55	2.23	3.39	7.03	2.16	3.26	6.78	2.50	2.71	4.82	2.35	2.05
15	8.82	0.93	9.51	8.28	1.10	7.51	8.02	1.28	6.25	8.06	1.52	5.32	8.03	1.81	4.44	7.72	2.02	3.82	7.21	2.03	3.56	7.02	2.28	3.08	5.08	2.18	2.33
20	8.71	0.80	10.9	8.36	0.94	8.91	8.27	1.14	7.25	8.39	1.34	6.25	8.26	1.60	5.15	7.92	1.82	4.35	7.36	1.83	4.03	7.28	2.17	3.36	/	/	/
25	8.29	0.72	11.5	8.17	0.87	9.42	7.91	0.98	8.08	8.27	1.23	6.72	8.32	1.38	6.01	8.12	1.69	4.81	7.21	1.66	4.35	7.02	1.92	3.65	/	/	/
30	8.11	0.66	12.2	7.75	0.78	9.9	7.32	0.88	8.29	8.16	1.11	7.35	8.35	1.28	6.51	8.25	1.57	5.26	7.02	1.50	4.69	6.63	1.68	3.95	/	/	/
35	8.52	0.68	12.5	8.13	0.79	10.3	7.79	0.90	8.61	8.52	1.12	7.62	8.72	1.32	6.62	8.66	1.57	5.52	7.38	1.50	4.92	/	/	/	/	/	/
40	9.09	0.70	12.9	8.29	0.75	11.0	7.92	0.86	9.16	8.72	1.09	8.01	8.93	1.31	6.82	8.82	1.52	5.82	/	/	/	/	/	/	/	/	/
43	9.44	0.68	13.8	8.68	0.69	12.5	8.26	0.83	9.93	9.06	1.05	8.62	9.26	1.27	7.28	9.16	1.41	6.51	/	/	/	/	/	/	/	/	/

DB (℃)	Minimum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	2.56	1.16	2.21	2.38	1.18	2.01	2.38	1.50	1.59	2.36	1.49	1.58	1.72	1.40	1.23	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	3.06	1.10	2.78	2.66	1.12	2.38	2.65	1.25	2.12	2.72	1.53	1.78	2.22	1.41	1.58	2.09	1.58	1.32	1.81	1.53	1.18	/	/	/	/	/	/	/
-15	3.12	0.89	3.51	3.03	1.00	3.02	2.82	1.12	2.52	3.02	1.34	2.25	3.28	1.67	1.96	3.12	1.86	1.68	3.26	1.86	1.75	2.72	2.06	1.32	/	/	/
-10	2.85	0.73	3.91	2.73	0.78	3.51	2.71	0.82	3.32	3.51	1.36	2.59	4.01	1.64	2.44	4.18	1.92	2.18	4.12	2.01	2.05	3.62	2.09	1.73	/	/	/
-7	1.72	0.43	3.98	2.72	0.79	3.44	2.72	0.81	3.36	3.02	1.07	2.81	3.31	1.29	2.56	3.29	1.48	2.23	3.51	1.65	2.13	3.36	1.86	1.81	/	/	/
-5	2.08	0.49	4.25	2.01	0.53	3.82	2.77	0.78	3.53	3.15	1.01	3.11	3.49	1.28	2.73	3.67	1.46	2.51	3.56	1.55	2.30	3.62	1.80	2.01	/	/	/
0	2.12	0.43	4.95	2.32	0.53	4.38	2.87	0.72	4.01	3.51	1.04	3.39	3.51	1.13	3.11	4.06	1.48	2.75	3.75	1.52	2.47	3.95	1.86	2.12	/	/	/
5	2.79	0.44	6.28	3.01	0.58	5.23	3.06	0.64	4.81	4.01	1.00	4.02	4.01	1.14	3.52	4.36	1.40	3.11	4.28	1.47	2.91	4.32	1.81	2.39	2.36	2.03	1.16
7	3.28	0.47	7.02	3.36	0.59	5.71	3.36	0.62	5.39	4.04	0.91	4.44	4.72	1.17	4.04	5.15	1.57	3.28	4.85	1.50	3.23	4.65	1.67	2.78	2.58	1.97	1.31
10	2.97	0.36	8.18	2.62	0.41	6.32	3.83	0.67	5.75	3.83	0.82	4.65	4.62	1.15	4.01	4.85	1.38	3.51	5.07	1.47	3.44	4.92	1.75	2.81	3.69	1.74	2.12
15	3.75	0.38	9.92	3.58	0.45	7.92	3.55	0.54	6.62	4.09	0.72	5.66	4.82	1.04	4.65	5.11	1.26	4.05	5.89	1.57	3.76	5.51	1.77	3.12	3.72	1.58	2.35
20	4.23	0.36	11.71	4.56	0.48	9.44	4.94	0.63	7.88	5.75	0.87	6.62	5.52	1.03	5.38	5.39	1.18	4.56	5.55	1.31	4.25	5.15	1.45	3.55	/	/	/
25	5.08	0.42	12.11	5.21	0.53	9.91	5.51	0.64	8.56	6.52	0.91	7.19	6.39	1.01	6.31	6.36	1.26	5.05	5.71	1.25	4.56	5.35	1.39	3.85	/	/	/
30	5.18	0.40	12.92	5.22	0.50	10.53	5.35	0.61	8.78	5.95	0.76	7.79	6.51	0.95	6.86	6.62	1.20	5.51	5.72	1.16	4.92	5.28	1.23	4.28	/	/	/
35	6.31	0.47	13.32	5.93	0.54	10.92	5.58	0.61	9.15	6.25	0.77	8.08	6.75	0.96	7.05	7.12	1.22	5.82	6.26	1.21	5.18	/	/	/	/	/	/
40	6.72	0.49	13.71	6.11	0.52	11.72	6.34	0.65	9.72	6.84	0.81	8.44	7.32	1.02	7.21	7.58	1.23	6.16	/	/	/	/	/	/	/	/	/
43	7.05	0.48	14.61	6.38	0.48	13.36	6.62	0.63	10.52	7.16	0.78	9.15	7.72	1.01	7.68	8.01	1.16	6.92	/	/	/	/	/	/	/	/	/

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

HC:Total heating capacity(kW)

PI:Power input(kW)

Table 2-5.1.4: XFMH10S3 heating capacity-peak values

DB (℃)	Maximum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	4.97	2.21	2.25	4.07	2.05	1.99	3.55	2.13	1.67	3.45	2.16	1.60	2.94	2.26	1.30	/	/	/	/	/	/	/	/	/	/	/	/	
-20	5.88	2.08	2.83	5.23	2.19	2.39	4.91	2.32	2.12	4.82	2.66	1.81	4.02	2.42	1.66	3.61	2.58	1.40	2.78	2.16	1.29	/	/	/	/	/	/	
-15	7.29	2.15	3.39	6.61	2.26	2.92	6.67	2.68	2.49	5.78	2.56	2.26	5.31	2.66	2.00	5.18	2.93	1.77	5.49	3.19	1.72	3.99	2.85	1.40	/	/	/	
-10	8.58	2.40	3.57	8.06	2.50	3.22	7.77	2.60	2.99	7.76	2.87	2.70	7.39	3.07	2.41	7.11	3.37	2.11	6.42	3.51	1.83	5.64	3.34	1.69	/	/	/	
-7	8.83	2.31	3.83	8.71	2.56	3.40	8.52	2.71	3.14	8.14	2.87	2.84	7.75	3.06	2.53	7.61	3.37	2.26	7.29	3.65	2.00	5.41	2.99	1.81	/	/	/	
-5	9.02	2.17	4.15	8.73	2.43	3.60	9.03	2.70	3.35	8.17	2.87	2.85	7.96	3.04	2.62	8.21	3.30	2.49	7.38	3.29	2.24	6.02	3.06	1.97	/	/	/	
0	9.19	1.87	4.92	9.49	2.34	4.06	9.72	2.57	3.78	9.08	2.86	3.17	8.86	3.08	2.88	9.01	3.32	2.71	8.35	3.34	2.50	6.99	3.33	2.10	/	/	/	
5	10.03	1.74	5.77	9.96	2.07	4.81	10.1	2.24	4.51	9.91	2.59	3.83	9.63	2.86	3.37	9.24	3.05	3.03	9.14	3.26	2.80	7.97	3.24	2.46	4.31	3.19	1.35	
7	10.41	1.76	5.91	10.51	2.03	5.19	10.27	2.09	4.91	10.35	2.48	4.17	10.26	2.74	3.74	9.71	3.01	3.23	10.01	3.30	3.03	8.34	3.00	2.78	5.15	3.24	1.59	
10	11.40	1.61	7.06	10.15	1.81	5.61	10.11	1.96	5.16	10.18	2.45	4.16	9.8	2.66	3.69	9.55	2.89	3.31	9.28	3.02	3.07	8.53	3.14	2.72	6.61	3.13	2.11	
15	11.51	1.42	8.11	10.71	1.64	6.52	9.98	1.70	5.87	9.91	2.07	4.78	10.23	2.44	4.20	9.97	2.61	3.82	9.73	2.73	3.57	8.29	2.62	3.16	6.55	2.71	2.42	
20	10.71	1.19	9.03	10.82	1.36	7.96	10.73	1.59	6.74	10.55	1.86	5.68	10.16	2.10	4.84	10.28	2.44	4.22	9.79	2.54	3.86	8.69	2.50	3.48	/	/	/	
25	10.01	1.04	9.62	9.81	1.16	8.45	9.74	1.36	7.15	9.82	1.64	5.97	9.72	1.88	5.17	9.22	2.05	4.49	9.07	2.19	4.14	8.31	2.25	3.70	/	/	/	
30	9.82	0.96	10.19	8.96	1.02	8.76	8.88	1.11	7.97	8.81	1.31	6.75	9.72	1.58	6.16	9.02	1.82	4.96	8.83	1.83	4.83	7.51	1.95	3.85	/	/	/	
35	10.05	0.94	10.72	9.51	1.04	9.13	9.13	1.10	8.30	9.01	1.29	6.99	10.15	1.58	6.41	9.85	1.90	5.19	9.67	1.96	4.93	/	/	/	/	/	/	
40	10.68	0.93	11.50	9.69	0.98	9.84	9.84	1.16	8.45	9.97	1.35	7.36	10.91	1.60	6.82	10.31	1.85	5.56	/	/	/	/	/	/	/	/	/	
43	10.73	0.90	11.98	10.38	0.98	10.60	9.87	1.07	9.26	9.88	1.22	8.08	10.92	1.44	7.58	10.51	1.68	6.24	/	/	/	/	/	/	/	/	/	

DB (℃)	Normal																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	4.47	1.92	2.33	3.76	1.84	2.04	3.47	2.10	1.65	3.05	1.91	1.60	2.96	2.33	1.27	/	/	/	/	/	/	/	/	/	/	/	/	
-20	5.27	1.82	2.90	5.04	2.07	2.43	4.61	2.09	2.21	4.07	2.25	1.81	3.82	2.36	1.62	3.17	2.23	1.42	2.67	2.09	1.28	/	/	/	/	/	/	
-15	6.83	1.92	3.55	6.05	2.00	3.02	5.89	2.31	2.55	5.02	2.12	2.37	4.87	2.35	2.07	4.09	2.26	1.81	5.06	2.88	1.76	3.95	2.84	1.39	/	/	/	
-10	7.68	2.01	3.83	7.09	2.12	3.34	6.73	2.20	3.06	6.65	2.41	2.76	6.73	2.78	2.42	6.12	2.85	2.15	5.88	3.08	1.91	5.01	2.93	1.71	/	/	/	
-7	8.44	2.17	3.89	8.41	2.40	3.50	8.08	2.68	3.02	7.16	2.44	2.94	7.28	2.82	2.58	6.9	2.99	2.31	6.56	3.23	2.03	5.31	2.85	1.86	/	/	/	
-5	8.08	1.86	4.34	7.92	2.11	3.76	7.50	2.14	3.50	7.21	2.39	3.02	7.03	2.53	2.78	7.11	2.83	2.51	6.67	2.86	2.33	5.31	2.66	2.00	/	/	/	
0	8.63	1.70	5.08	8.43	2.04	4.14	8.59	2.24	3.83	8.37	2.62	3.20	8.05	2.71	2.97	8.03	2.92	2.75	7.58	2.98	2.54	6.41	3.05	2.10	/	/	/	
5	8.81	1.48	5.97	8.81	1.76	5.00	9.09	1.95	4.67	9.14	2.31	3.95	8.41	2.37	3.55	8.79	2.82	3.12	8.31	3.06	2.72	6.59	2.66	2.48	3.68	2.65	1.39	
7	10.22	1.68	6.08	9.85	1.83	5.37	10.20	2.04	5.01	9.80	2.27	4.32	10.20	2.79	3.65	9.28	2.85	3.26	9.6	3.37	2.85	8.01	2.85	2.81	4.51	2.78	1.62	
10	10.08	1.35	7.48	9.36	1.59	5.88	8.88	1.68	5.29	8.61	1.97	4.37	8.99	2.43	3.70	8.71	2.55	3.42	8.08	2.59	3.12	7.31	2.66	2.75	5.63	2.64	2.13	
15	10.04	1.14	8.80	9.28	1.34	6.93	9.20	1.47	6.25	9.32	1.82	5.11	9.29	2.13	4.37	8.94	2.25	3.97	8.84	2.42	3.65	7.54	2.32	3.25	5.68	2.26	2.51	
20	10.06	1.01	9.92	9.51	1.10	8.61	9.30	1.31	7.11	9.76	1.61	6.05	9.28	1.82	5.11	9.42	2.10	4.49	8.97	2.23	4.02	8.28	2.37	3.50	/	/	/	
25	9.15	0.87	10.57	9.01	0.98	9.20	9.11	1.19	7.63	8.96	1.39	6.46	8.80	1.62	5.42	8.99	1.88	4.79	8.23	1.91	4.30	8.06	2.14	3.76	/	/	/	
30	8.53	0.75	11.32	8.26	0.86	9.63	8.26	0.97	8.55	8.05	1.10	7.33	9.65	1.48	6.52	8.93	1.68	5.32	8.03	1.58	5.08	7.39	1.89	3.92	/	/	/	
35	9.37	0.78	11.99	8.61	0.85	10.09	8.83	0.98	8.98	8.70	1.14	7.66	10.10	1.47	6.86	9.38	1.68	5.58	8.84	1.67	5.30	/	/	/	/	/	/	
40	9.85	0.76	13.03	8.82	0.81	10.91	8.80	0.95	9.28	8.95	1.10	8.11	10.30	1.41	7.33	9.44	1.57	6.01	/	/	/	/	/	/	/	/	/	
43	10.02	0.73	13.71	9.38	0.79	11.89	8.86	0.87	10.18	9.34	1.04	8.95	10.18	1.24	8.21	9.77	1.43	6.82	/	/	/	/	/	/	/	/	/	

DB (℃)	Minimum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	3.01	1.26	2.38	2.91	1.41	2.06	2.68	1.54	1.74	2.26	1.43	1.58	1.81	1.37	1.32	/	/	/	/	/	/	/	/	/	/	/	/	
-20	3.32	1.10	3.02	2.86	1.13	2.52	2.67	1.18	2.27	2.64	1.45	1.82	2.35	1.44	1.63	2.51	1.77	1.42	1.99	1.57	1.27	/	/	/	/	/	/	
-15	3.18	0.87	3.64	3.59	1.17	3.06	2.96	1.14	2.59	3.55	1.47	2.42	3.71	1.78	2.09	3.43	1.90	1.81	3.36	1.94	1.73	3.09	2.12	1.46	/	/	/	
-10	3.02	0.78	3.88	3.11	0.90	3.45	3.11	0.99	3.14	3.98	1.41	2.83	4.34	1.77	2.45	4.68	2.14	2.19	4.62	2.43	1.90	3.61	2.04	1.77	/	/	/	
-7	2.03	0.49	4.12	1.71	0.47	3.66	2.31	0.68	3.38	3.78	1.24	3.05	3.61	1.34	2.69	3.96	1.66	2.39	3.92	1.89	2.07	3.76	2.02	1.86	/	/	/	
-5	2.54	0.57	4.49	2.31	0.60	3.85	2.62	0.73	3.58	3.61	1.14	3.16	3.72	1.33	2.80	3.96	1.55	2.55	4.51	1.91	2.36	3.85	1.88	2.05	/	/	/	
0	2.45	0.47	5.23	2.79	0.65	4.28	2.63	0.66	4.00	4.01	1.22	3.30	4.08	1.35	3.03	4.65	1.63	2.85	4.32	1.64	2.64	4.06	1.90	2.14	/	/	/	
5	3.48	0.57	6.15	3.68	0.71	5.17	3.68	0.75	4.89	4.42	1.09	4.05	4.55	1.24	3.66	5.05	1.60	3.15	5.21	1.80	2.89	4.72	1.87	2.52	2.68	1.85	1.45	
7	4.02	0.62	6.45	4.15	0.73	5.66	3.62	0.68	5.36	4.65	1.02	4.54	5.27	1.28	4.11	6.38	1.83	3.48	6.01	1.84	3.27	5.46	1.88	2.91	3.37	2.03	1.66	
10	3.15	0.40	7.85	3.02	0.49	6.19	3.02	0.54	5.57	4.41	0.97	4.53	5.26	1.35	3.89	5.75	1.62	3.54	6.02	1.83	3.29	5.37	1.85	2.91	4.11	1.83	2.25	
15	4.31	0.46	9.30	4.46	0.61	7.35	3.98	0.61	6.55	4.81	0.90	5.37	5.47	1.18	4.62	5.98	1.43	4.17	6.92	1.80	3.84	6.32	1.94	3.26	4.59	1.81	2.53	
20	4.61	0.44	10.51	5.35	0.59	9.13	5.59	0.74	7.57	6.79	1.05	6.46	6.46	1.21	5.35	6.78	1.46	4.65	6.87	1.61	4.27	5.88	1.60	3.67	/	/		
25	4.62	0.41	11.21	5.89	0.61	9.73	6.17	0.76	8.09	7.05	1.03	6.85	6.64	1.17	5.67	6.83	1.37	4.97	6.61	1.45	4.55	6.21	1.57	3.95	/	/	/	
30	4.62	0.39	11.98	5.63	0.55	10.22	5.54	0.61	9.11	5.77	0.74	7.78	7.54	1.10	6.86	7.27	1.31	5.57	6.91	1.29	5.35	5.52	1.34	4.12	/	/	/	
35	4.61	0.36	12.72	6.41	0.60	10.73	6.1	0.64	9.58	6.12	0.76	8.07	7.59	1.06	7.18	7.78	1.32	5.89	7.49		5.58	/	/	/	/	/	/	
40	4.59	0.33	13.81	6.81	0.59	11.50	6.84	0.70	9.78	6.66	0.78	8.59	8.14	1.06	7.71	8.37	1.32	6.32	/	/	/	/	/	/	/	/	/	
43	4.62	0.32	14.53	7.21	0.57	12.63	7.03	0.65	10.83	7.52	0.79	9.48	8.81	1.02	8.65	8.67	1.21	7.19	/	/	/	/	/	/	/	/	/	

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

HC:Total heating capacity(kW)

PI:Power input(kW)

Table 2-5.1.5: XFMH12S3 / XFMH12T9 heating capacity-peak values

DB (℃)	Maximum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	5.95	2.87	2.07	6.16	2.92	2.11	5.01	3.04	1.65	4.44	3.19	1.39	4.16	3.44	1.21	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	7.55	3.09	2.44	7.58	3.21	2.36	7.11	3.45	2.06	6.28	4.94	1.27	6.01	3.71	1.62	5.26	3.65	1.44	5.01	3.71	1.35	/	/	/	/	/	/	/
-15	8.82	3.20	2.76	8.75	3.47	2.52	8.76	3.71	2.36	7.83	3.71	2.11	7.32	4.09	1.79	6.62	4.16	1.59	6.28	4.36	1.44	5.81	4.72	1.23	/	/	/	/
-10	10.8	3.46	3.12	9.96	3.72	2.68	9.96	4.00	2.49	9.69	4.38	2.21	9.32	4.64	2.01	8.86	4.87	1.82	8.52	4.95	1.72	6.61	5.20	1.27	/	/	/	/
-7	12.1	3.57	3.39	10.8	3.58	3.02	10.8	3.93	2.75	10.4	4.41	2.36	10.3	4.52	2.28	10.5	4.86	2.16	10.5	5.38	1.95	8.01	5.13	1.56	/	/	/	/
-5	12.3	3.40	3.62	11.2	3.60	3.11	11.2	3.93	2.85	10.9	4.34	2.51	10.9	4.70	2.32	10.7	4.89	2.19	10.5	5.22	2.01	8.12	5.21	1.56	/	/	/	/
0	12.4	2.87	4.32	11.9	3.23	3.68	11.9	3.51	3.39	12.3	4.09	3.01	12.3	4.51	2.73	10.9	4.72	2.31	10.7	4.84	2.21	8.51	4.95	1.72	/	/	/	/
5	14.5	2.69	5.39	13.5	2.99	4.51	13.5	3.31	4.08	13.8	3.78	3.65	13.6	4.26	3.19	12.7	4.50	2.82	12.7	4.79	2.65	11.5	5.20	2.21	9.82	5.31	1.85	
7	15.5	2.62	5.92	14.2	2.83	5.01	14.5	3.18	4.56	14.8	3.59	4.12	14.5	4.07	3.56	13.8	4.44	3.11	13.8	4.83	2.86	12.5	5.02	2.49	11.5	5.40	2.13	
10	14.9	2.43	6.12	14.4	2.68	5.38	14.2	2.83	5.01	14.6	3.42	4.27	14.4	3.97	3.63	13.5	4.19	3.22	13.1	4.38	2.99	12.7	4.79	2.65	11.6	4.92	2.36	
15	15.1	1.97	7.67	14.6	2.24	6.52	14.3	2.68	5.33	14.9	3.20	4.66	14.6	3.60	4.05	13.4	3.76	3.56	12.1	3.99	3.03	12.3	4.32	2.85	11.6	4.53	2.56	
20	14.3	1.65	8.66	14.3	1.89	7.55	14.1	2.21	6.37	14.8	2.78	5.33	14.8	3.21	4.61	13.7	3.37	4.06	12.1	3.57	3.39	10.8	3.70	2.92	/	/	/	
25	14.4	1.56	9.25	14.2	1.73	8.21	14.1	1.93	7.31	14.6	2.35	6.22	14.6	2.74	5.32	13.9	3.00	4.63	12.1	3.15	3.84	10.1	3.38	2.99	/	/	/	
30	14.6	1.45	10.1	14.1	1.63	8.65	14.4	1.88	7.66	14.6	2.21	6.61	14.6	2.64	5.52	13.9	2.81	4.95	12.6	2.94	4.28	10.2	3.39	3.01	/	/	/	
35	15.1	1.40	10.8	14.8	1.61	9.19	14.6	1.81	8.06	15.1	2.19	6.91	14.5	2.53	5.73	14.2	2.71	5.24	12.9	2.79	4.62	/	/	/	/	/	/	
40	15.6	1.41	11.1	15.5	1.59	9.72	15.3	1.78	8.61	15.2	2.08	7.32	15.2	2.44	6.22	14.5	2.71	5.36	/	/	/	/	/	/	/	/	/	
43	16.2	1.37	11.8	15.6	1.49	10.5	15.8	1.74	9.08	16.5	2.11	7.81	15.8	2.32	6.81	14.8	2.57	5.75	/	/	/	/	/	/	/	/	/	

DB (℃)	Normal																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	5.11	2.27	2.25	5.26	2.40	2.19	4.21	2.41	1.75	3.86	2.59	1.49	3.56	2.83	1.26	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	6.68	2.52	2.65	6.73	2.54	2.65	6.16	2.74	2.25	5.65	3.04	1.86	5.31	3.03	1.75	4.68	3.08	1.52	4.58	3.47	1.32	/	/	/	/	/	/	/
-15	7.38	2.41	3.06	7.25	2.61	2.78	7.17	2.85	2.52	6.55	2.90	2.26	6.03	3.16	1.91	5.51	3.20	1.72	5.25	3.65	1.44	4.91	4.02	1.22	/	/	/	/
-10	9.01	2.71	3.32	8.16	2.89	2.82	8.11	3.16	2.57	7.93	3.52	2.25	7.72	3.66	2.11	7.54	3.85	1.96	7.18	3.97	1.81	5.65	4.38	1.29	/	/	/	/
-7	11.1	3.11	3.57	10.2	3.37	3.03	9.96	3.42	2.91	10.1	4.14	2.44	10.2	4.30	2.37	10.3	4.58	2.25	9.75	4.83	2.02	7.19	4.58	1.57	/	/	/	/
-5	10.2	2.54	4.01	9.22	2.80	3.29	9.02	2.99	3.02	8.79	3.28	2.68	8.78	3.48	2.52	8.47	3.67	2.31	8.32	3.94	2.11	6.72	4.17	1.61	/	/	/	/
0	9.85	2.12	4.65	9.35	2.31	4.04	9.11	2.47	3.69	9.44	2.94	3.21	9.43	3.19	2.96	8.13	3.24	2.51	7.91	3.41	2.32	6.66	3.87	1.72	/	/	/	/
5	11.7	1.95	6.01	10.8	2.22	4.86	10.5	2.36	4.44	10.8	2.67	4.04	10.6	3.02	3.51	9.75	3.22	3.03	9.78	3.43	2.85	9.18	3.91	2.35	8.15	4.05	2.01	
7	12.8	1.96	6.52	11.8	2.19	5.39	12.1	2.57	4.70	12.4	2.79	4.45	12.1	3.36	3.60	12.2	3.82	3.19	12.1	4.12	2.94	10.8	4.08	2.65	9.61	4.12	2.33	
10	11.8	1.73	6.82	11.1	1.88	5.89	10.9	1.98	5.51	11.2	2.36	4.75	10.8	2.78	3.89	10.1	2.99	3.38	11.56	3.69	3.13	9.92	3.65	2.72	9.44	3.79	2.49	
15	12.0	1.41	8.53	11.5	1.57	7.32	11.0	1.84	5.97	11.6	2.24	5.19	11.1	2.46	4.51	10.1	2.72	3.72	11.67	3.65	3.20	9.66	3.27	2.95	9.55	3.40	2.81	
20	11.5	1.17	9.82	11.1	1.32	8.39	10.8	1.50	7.18	11.3	1.88	6.01	11.1	2.22	5.01	10.1	2.34	4.32	10.21	2.83	3.61	8.37	2.74	3.06	/	/	/	
25	11.4	1.09	10.5	11.2	1.23	9.08	10.8	1.33	8.15	11.4	1.48	7.72	11.1	1.90	5.85	10.3	2.10	4.91	10.05	2.46	4.09	7.85	2.52	3.12	/	/	/	
30	11.7	1.04	11.3	11.2	1.16	9.66	11.0	1.29	8.55	11.5	1.42	8.11	11.3	1.95	5.79	10.5	2.02	5.21	10.01	2.25	4.44	8.17	2.59	3.15	/	/	/	
35	12.3	1.02	12.1	11.9	1.18	10.1	11.5	1.31	8.78	11.8	1.59	7.44	11.5	1.88	6.12	10.9	1.95	5.58	10.02	2.08	4.82	/	/	/	/	/	/	
40	13.1	1.07	12.3	12.9	1.19	10.8	12.5	1.33	9.37	12.9	1.63	7.92	12.3	1.86	6.62	11.5	2.00	5.76	/	/	/	/	/	/	/	/	/	
43	13.7	1.01	13.5	13.2	1.14	11.6	12.9	1.29	9.98	13.6	1.60	8.51	12.9	1.78	7.25	11.8	1.90	6.21	/	/	/	/	/	/	/	/	/	

DB (℃)	Minimum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	3.39	1.46	2.32	3.69	1.59	2.32	3.25	1.80	1.81	3.05	2.02	1.51	2.79	2.23	1.25	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	4.18	1.55	2.69	4.38	1.61	2.72	4.05	1.75	2.31	3.71	1.89	1.96	3.85	2.28	1.69	3.72	2.46	1.51	3.57	2.63	1.36	/	/	/	/	/	/	/
-15	4.75	1.53	3.11	4.95	1.70	2.91	4.91	1.85	2.65	4.51	1.99	2.27	4.65	2.51	1.85	4.61	2.68	1.72	4.39	3.03	1.45	4.21	3.42	1.23	/	/	/	/
-10	4.61	1.34	3.44	4.44	1.49	2.98	4.32	1.59	2.71	4.29	1.88	2.28	4.81	2.27	2.12	5.08	2.53	2.01	5.31	2.85	1.86	4.44	3.36	1.32	/	/	/	/
-7	4.55	1.18	3.86	3.81	1.15	3.32	3.95	1.27	3.11	4.15	1.55	2.68	5.36	2.14	2.51	5.69	2.45	2.32	6.01	2.80	2.15	5.21	3.16	1.65	/	/	/	/
-5	4.69	1.14	4.12	4.04	1.15	3.51	4.15	1.28	3.25	4.51	1.58	2.85	5.76	2.23	2.58	5.91	2.47	2.39	6.11	2.80	2.18	5.38	3.24	1.66	/	/	/	/
0	4.92	1.00	4.93	4.61	1.08	4.25	4.61	1.18	3.91	5.21	1.51	3.44	6.65	2.16	3.08	6.08	2.54	2.39	6.21	2.72	2.28	5.72	3.20	1.79	/	/	/	/
5	5.86	0.93	6.32	5.32	1.03	5.15	5.28	1.13	4.69	5.92	1.39	4.25	7.44	2.05	3.63	7.25	2.33	3.11	8.02	2.78	2.89	7.85	3.22	2.44	6.92	3.38	2.05	
7	6.11	0.88	6.92	5.51	0.96	5.75	5.55	1.04	5.32	6.25	1.30	4.80	7.85	1.92	4.09	7.78	2.26	3.44	8.58	2.64	3.25	8.68	3.16	2.75	8.01	3.35	2.39	
10	6.02	0.84	7.18	5.68	0.91	6.25	5.59	0.97	5.79	6.35	1.26	5.02	7.91	1.92	4.12	7.72	2.14	3.61	8.27	2.54	3.25	8.65	3.04	2.85	8.25	3.21	2.57	
15	5.88	0.66	8.92	5.72	0.75	7.61	5.58	0.90	6.22	6.82	1.25	5.44	8.05	1.73	4.66	8.25	2.09	3.95	7.79	2.35	3.31	8.71	2.85	3.06	8.57	2.98	2.88	
20	5.79	0.57	10.2	5.68	0.65	8.79	5.62	0.75	7.51	6.91	1.10	6.28	8.25	1.55	5.31	8.51	1.89	4.51	7.85	2.11	3.72	7.69	2.44	3.15	/	/	/	
25	5.89	0.54	10.9	5.81	0.61	9.52	5.75	0.68	8.51	7.02	0.96	7.33	8.35	1.36	6.12	8.79	1.71	5.15	7.96	1.89	4.21	7.26	2.23	3.25	/	/	/	
30	6.81	0.58	11.8	6.91	0.68	10.1	7.78	0.89	8.75	8.21	1.09	7.52	8.52	1.38	6.18	8.92	1.62	5.51	8.56	1.83	4.69	7.32	2.21	3.31	/	/	/	
35	7.23	0.56	12.8	7.44	0.69	10.8	8.15	0.88	9.28	8.56	1.08	7.92	8.52	1.32	6.44	9.25	1.58	5.85	8.86	1.74	5.08	/	/	/	/	/	/	
40	7.62	0.58	13.1	7.95	0.69	11.5	8.72	0.88	9.89	9.05	1.07	8.44	9.02	1.28	7.02	9.58	1.58	6.06	/	/	/	/	/	/	/	/	/	
43	8.01	0.56	14.2	8.36	0.67	12.5	9.19	0.88	10.5	9.61	1.07	9.02	9.69	1.27	7.62	9.97	1.53	6.51	/	/	/	/	/	/	/	/	/	

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

HC:Total heating capacity(kW)

PI:Power input(kW)

Table 2-5.1.6: XFMH14S3 / XFMH14T9 heating capacity - peak values

DB (℃)	Maximum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	6.67	3.10	2.15	6.81	3.21	2.12	5.42	3.17	1.71	4.85	3.37	1.44	4.45	3.48	1.28	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	8.28	3.20	2.59	8.26	3.32	2.49	7.78	3.57	2.18	6.82	3.77	1.81	6.25	3.61	1.73	5.39	3.62	1.49	5.11	3.87	1.32	/	/	/	/	/	/	/
-15	9.63	3.41	2.82	9.56	3.66	2.61	9.56	3.92	2.44	8.56	3.98	2.15	7.62	4.12	1.85	6.98	4.39	1.59	6.45	4.57	1.41	5.98	5.07	1.18	/	/	/	/
-10	11.8	3.79	3.11	11.2	4.10	2.73	10.8	4.41	2.45	10.6	4.69	2.26	9.63	4.77	2.02	9.05	5.00	1.81	8.72	5.25	1.66	6.72	5.25	1.28	/	/	/	/
-7	13.5	3.97	3.40	12.7	4.22	3.01	12.5	4.53	2.76	12.3	4.94	2.49	11.8	5.11	2.31	10.8	5.27	2.05	11.2	5.57	2.01	8.01	5.30	1.51	/	/	/	/
-5	13.9	3.81	3.65	13.2	3.87	3.41	12.6	4.26	2.96	12.5	4.60	2.72	11.9	4.94	2.41	11.2	5.26	2.13	11.1	5.31	2.09	8.25	5.06	1.63	/	/	/	/
0	14.3	3.40	4.21	13.8	3.57	3.87	12.4	3.82	3.25	12.8	4.25	3.01	12.5	4.77	2.62	11.8	4.96	2.38	11.8	5.20	2.27	9.31	5.64	1.65	/	/	/	/
5	15.5	2.95	5.26	14.9	3.30	4.51	14.4	3.65	3.94	14.2	3.93	3.61	14.4	4.63	3.11	13.8	5.02	2.75	13.8	5.19	2.66	11.2	5.21	2.15	9.75	5.36	1.82	
7	16.5	2.84	5.81	15.6	3.15	4.95	15.6	3.40	4.59	15.1	3.76	4.02	15.7	4.35	3.61	14.9	4.79	3.11	14.5	4.92	2.95	13.2	5.18	2.55	10.2	4.90	2.08	
10	15.7	2.30	6.82	15.5	2.89	5.36	14.9	3.11	4.79	15.2	3.61	4.21	15.1	4.11	3.67	15.3	4.62	3.31	14.2	4.63	3.07	13.1	4.89	2.68	11.5	5.11	2.25	
15	15.3	2.01	7.62	15.2	2.64	5.76	15.2	2.95	5.16	15.8	3.56	4.44	15.8	4.04	3.91	15.2	4.33	3.51	12.7	3.96	3.21	12.7	4.49	2.83	11.7	4.90	2.39	
20	14.9	1.78	8.35	14.6	2.17	6.72	14.2	2.54	5.59	15.2	3.03	5.01	15.2	3.44	4.42	14.9	3.84	3.88	12.7	3.62	3.51	10.8	3.71	2.91	/	/	/	
25	14.8	1.63	9.08	14.8	1.93	7.65	14.5	2.36	6.15	14.9	2.68	5.56	14.5	2.93	4.95	14.5	3.39	4.28	12.5	3.30	3.79	10.2	3.42	2.98	/	/	/	
30	15.2	1.55	9.81	14.8	1.80	8.21	14.9	2.11	7.06	15.1	2.43	6.21	14.9	2.80	5.32	14.4	3.10	4.65	12.8	2.94	4.36	10.3	3.41	3.02	/	/	/	
35	15.9	1.42	11.2	15.5	1.72	9.02	15.1	1.88	8.05	15.6	2.27	6.86	15.3	2.66	5.75	14.8	2.97	4.98	12.9	2.75	4.69	/	/	/	/	/	/	
40	16.1	1.40	11.5	16.5	1.62	10.2	16.2	1.89	8.57	16.2	2.23	7.25	15.8	2.60	6.08	14.9	2.78	5.36	/	/	/	/	/	/	/	/	/	
43	16.5	1.36	12.1	16.6	1.55	10.7	16.5	1.87	8.82	16.3	2.12	7.68	16.1	2.57	6.27	15.1	2.74	5.52	/	/	/	/	/	/	/	/	/	

DB (℃)	Normal																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	5.66	2.47	2.29	5.76	2.55	2.26	4.56	2.56	1.78	4.19	2.89	1.45	3.89	3.02	1.29	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	7.31	2.60	2.81	7.28	2.68	2.72	6.76	2.91	2.32	6.05	3.25	1.86	5.45	3.15	1.73	4.59	3.04	1.51	4.69	3.55	1.32	/	/	/	/	/	/	/
-15	8.05	2.61	3.08	7.95	2.79	2.85	7.85	3.43	2.29	7.16	3.33	2.15	6.22	3.34	1.86	5.65	3.38	1.67	5.44	3.83	1.42	5.05	4.35	1.16	/	/	/	/
-10	9.81	2.96	3.31	9.36	2.91	3.22	8.89	3.45	2.58	8.75	3.89	2.25	8.07	3.94	2.05	7.62	4.10	1.86	7.32	4.28	1.71	5.71	4.46	1.28	/	/	/	/
-7	12.9	3.60	3.58	12.3	3.98	3.09	12.1	4.25	2.85	11.8	4.52	2.61	11.8	5.09	2.32	10.6	5.02	2.11	11.1	5.41	2.05	7.38	4.86	1.52	/	/	/	/
-5	11.6	2.89	4.01	10.8	2.95	3.66	9.96	3.10	3.21	10.2	3.46	2.95	9.68	3.97	2.44	8.75	3.96	2.21	8.83	4.05	2.18	6.75	4.04	1.67	/	/	/	/
0	11.2	2.44	4.59	10.9	2.61	4.18	9.52	2.71	3.51	10.1	3.08	3.28	9.76	3.73	2.62	8.78	3.63	2.42	8.78	3.69	2.38	7.12	4.07	1.75	/	/	/	/
5	12.2	2.12	5.76	11.8	2.40	4.91	11.3	2.65	4.27	11.2	2.83	3.96	11.2	3.60	3.11	10.5	3.60	2.92	10.6	3.77	2.81	9.31	4.12	2.26	8.01	4.19	1.91	
7	15.3	2.45	6.25	14.5	2.76	5.25	14.5	3.05	4.75	14.4	3.47	4.15	14.5	3.90	3.72	13.8	4.37	3.16	13.8	4.42	3.12	12.3	4.71	2.61	9.65	4.55	2.12	
10	12.3	1.64	7.52	12.1	2.06	5.86	11.6	2.22	5.23	11.6	2.49	4.65	11.6	3.08	3.77	11.2	3.25	3.45	10.6	3.30	3.21	10.2	3.68	2.77	9.02	3.89	2.32	
15	12.2	1.43	8.51	11.8	1.85	6.37	11.7	2.06	5.67	12.3	2.51	4.91	11.9	3.06	3.89	11.5	3.12	3.69	9.81	2.87	3.42	9.81	3.36	2.92	9.58	3.76	2.55	
20	11.8	1.25	9.41	11.6	1.54	7.51	11.3	1.80	6.28	11.7	2.08	5.62	11.5	2.36	4.87	11.2	2.70	4.15	9.51	2.56	3.72	8.51	2.77	3.07	/	/	/	
25	11.8	1.16	10.2	11.7	1.37	8.56	11.5	1.68	6.83	11.5	1.66	6.91	11.3	2.07	5.46	11.3	2.46	4.59	9.36	2.32	4.04	7.95	2.54	3.13	/	/	/	
30	12.3	1.10	11.2	11.7	1.29	9.08	11.6	1.48	7.82	11.6	1.52	7.61	11.6	2.06	5.63	11.1	2.26	4.92	9.72	2.13	4.56	8.11	2.60	3.12	/	/	/	
35	13.2	1.06	12.5	12.5	1.26	9.93	11.8	1.37	8.63	12.3	1.66	7.39	12.1	1.98	6.11	11.6	2.17	5.35	10.1	2.05	4.92	/	/	/	/	/	/	
40	13.5	1.03	13.1	13.6	1.18	11.5	13.2	1.42	9.29	13.2	1.68	7.88	12.7	1.96	6.48	11.8	2.04	5.78	/	/	/	/	/	/	/	/	/	
43	14.4	1.04	13.9	14.4	1.17	12.3	13.6	1.42	9.61	13.5	1.62	8.32	13.2	1.95	6.78	12.3	2.05	6.01	/	/	/	/	/	/	/	/	/	

DB (℃)	Minimum																											
	LWT(℃)																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	3.75	1.62	2.32	3.97	1.76	2.26	3.51	1.94	1.81	3.32	2.18	1.52	2.97	2.32	1.28	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	4.56	1.63	2.79	4.69	1.72	2.72	4.38	1.89	2.32	4.02	2.00	2.01	4.05	2.30	1.76	3.75	2.42	1.55	3.65	2.77	1.32	/	/	/	/	/	/	/
-15	5.21	1.67	3.12	5.32	1.83	2.91	5.26	2.00	2.63	4.86	2.10	2.31	4.88	2.55	1.91	4.84	2.88	1.68	4.52	3.14	1.44	4.32	3.66	1.18	/	/	/	/
-10	5.05	1.47	3.44	5.08	1.68	3.02	4.77	1.79	2.66	4.81	1.99	2.42	5.02	2.33	2.15	5.17	2.74	1.89	5.36	3.06	1.75	4.51	3.42	1.32	/	/	/	/
-7	5.11	1.34	3.82	4.55	1.36	3.35	4.56	1.48	3.08	4.96	1.77	2.81	6.25	2.44	2.56	5.96	2.73	2.18	6.22	2.92	2.13	5.21	3.28	1.59	/	/	/	/
-5	5.35	1.29	4.15	4.81	1.26	3.82	4.61	1.39	3.32	5.19	1.69	3.08	6.44	2.42	2.66	6.15	2.70	2.28	6.39	2.89	2.21	5.44	3.16	1.72	/	/	/	/
0	5.73	1.20	4.79	5.36	1.23	4.35	4.81	1.32	3.65	5.57	1.62	3.44	6.92	2.38	2.91	6.61	2.67	2.48	6.86	2.81	2.44	6.15	3.40	1.81	/	/	/	/
5	6.21	1.03	6.05	5.89	1.14	5.15	5.58	1.25	4.48	6.18	1.49	4.16	7.86	2.24	3.51	7.86	2.60	3.02	8.68	2.98	2.91	7.95	3.38	2.35	6.85	3.44	1.99	
7	6.48	0.96	6.75	6.02	1.06	5.67	5.92	1.12	5.27	6.66	1.42	4.68	8.51	2.11	4.04	8.44	2.45	3.44	9.05	2.78	3.25	8.86	3.21	2.76	7.23	3.17	2.28	
10	6.32	0.80	7.92	6.18	1.00	6.16	5.81	1.05	5.51	6.67	1.36	4.92	8.28	2.00	4.15	8.72	2.39	3.65	8.96	2.67	3.36	9.02	3.10	2.91	7.95	3.26	2.44	
15	6.01	0.68	8.86	5.97	0.89	6.69	5.95	1.01	5.92	7.35	1.42	5.18	8.59	1.94	4.42	9.51	2.43	3.92	8.45	2.38	3.55	9.03	2.93	3.08	8.71	3.31	2.63	
20	5.95	0.61	9.82	5.92	0.75	7.86	5.83	0.89	6.56	7.16	1.22	5.89	8.48	1.68	5.06	9.36	2.17	4.32	8.36	2.15	3.89	7.88	2.48	3.18	/	/	/	
25	6.08	0.58	10.5	6.05	0.68	8.95	5.96	0.83	7.15	7.18	1.10	6.55	8.45	1.49	5.69	9.33	1.94	4.81	8.32	1.98	4.21	7.38	2.26	3.26	/	/	/	
30	7.11	0.62	11.5	7.26	0.77	9.44	8.11	1.01	8.03	8.43	1.19	7.06	8.71	1.46	5.95	9.37	1.81	5.18	8.66	1.80	4.81	7.32	2.20	3.33	/	/	/	
35	7.62	0.60	12.8	7.69	0.73	10.5	8.32	0.91	9.16	8.83	1.12	7.86	9.01	1.40	6.44	9.62	1.71	5.63	8.91	1.73	5.16	/	/	/	/	/	/	
40	7.89	0.57	13.8	8.35	0.69	12.1	9.18	0.93	9.86	9.11	1.09	8.35	9.36	1.36	6.86	9.89	1.63	6.08	/	/	/	/	/	/	/	/	/	
43	8.25	0.57	14.4	8.78	0.69	12.8	9.61	0.93	10.3	9.53	1.07	8.91	9.29	1.31	7.09	10.1	1.61	6.28	/	/	/	/	/	/	/	/	/	

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

HC:Total heating capacity(kW)

PI:Power input(kW)

Table 2-5.1.7: KXFMH16S3 / XFMH16T9 heating capacity - peak values

DB (℃)	Maximum																								
	LWT(℃)																								
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	7.65	4.01	1.91	7.86	4.12	1.91	6.65	4.01	1.66	5.91	4.38	1.35	4.91	4.23	1.16	/	/	/	/	/	/	/	/	/	/	/	/
-20	9.55	4.06	2.35	9.72	4.46	2.18	8.05	4.82	1.67	7.45	4.78	1.56	6.62	4.80	1.38	5.88	4.49	1.31	5.31	4.74	1.12	/	/	/	/	/	/
-15	11.8	4.35	2.71	11.5	4.67	2.46	10.7	4.95	2.16	10.1	5.26	1.92	9.05	5.36	1.69	7.53	5.30	1.42	6.91	5.23	1.32	6.45	5.47	1.18	/	/	/
-10	13.2	4.44	2.97	13.2	4.84	2.73	12.6	5.06	2.49	12.3	5.39	2.28	11.3	5.79	1.95	9.52	5.57	1.71	8.99	5.76	1.56	7.11	5.51	1.29	/	/	/
-7	14.5	4.63	3.13	14.4	4.98	2.89	13.9	5.19	2.68	13.2	5.41	2.44	13.5	6.11	2.21	12.9	6.23	2.07	12.8	6.37	2.01	8.31	6.07	1.37	/	/	/
-5	14.5	4.19	3.46	14.5	4.62	3.14	13.8	4.84	2.85	13.5	5.13	2.63	13.9	6.02	2.31	13.2	5.92	2.23	12.9	6.06	2.13	8.52	5.92	1.44	/	/	/
0	15.2	3.51	4.33	14.9	3.96	3.76	14.1	4.25	3.32	13.9	4.81	2.89	14.2	5.36	2.65	13.5	5.15	2.62	12.8	5.38	2.38	9.52	5.50	1.73	/	/	/
5	16.8	3.24	5.19	14.8	3.65	4.05	15.9	3.97	4.01	16.1	4.67	3.45	15.9	4.95	3.21	15.6	5.11	3.05	15.1	5.37	2.81	12.9	5.40	2.39	10.1	5.02	2.01
7	16.9	3.06	5.52	15.9	3.41	4.66	16.7	3.76	4.44	16.9	4.32	3.91	16.9	4.79	3.53	16.5	5.22	3.16	16.3	5.64	2.89	13.8	5.25	2.63	11.1	5.09	2.18
10	17.6	2.92	6.02	16.4	3.27	5.01	17.9	3.77	4.75	17.5	4.36	4.01	17.8	4.84	3.68	16.7	5.11	3.27	16.1	5.16	3.12	13.9	4.95	2.81	12.3	5.00	2.46
15	18.5	2.70	6.85	19.3	3.06	6.31	19.2	3.53	5.44	19.1	4.22	4.53	18.6	4.53	4.11	17.2	4.66	3.69	17.8	5.09	3.50	14.2	4.66	3.05	12.5	4.79	2.61
20	16.9	2.10	8.05	16.8	2.37	7.08	17.1	2.71	6.31	18.1	3.51	5.15	16.5	3.82	4.32	15.1	4.16	3.63	15.1	4.38	3.45	13.5	4.47	3.02	/	/	/
25	16.2	1.83	8.83	16.2	2.24	7.23	16.2	2.33	6.95	16.5	2.84	5.82	15.6	3.22	4.85	14.9	3.54	4.21	14.4	3.75	3.84	12.6	4.08	3.09	/	/	/
30	15.8	1.55	10.2	15.6	1.90	8.23	15.1	1.97	7.68	15.9	2.45	6.49	15.3	2.76	5.54	14.4	3.01	4.79	13.5	3.20	4.22	12.9	4.15	3.11	/	/	/
35	16.5	1.51	10.9	16.2	1.80	8.99	16.3	1.94	8.41	16.6	2.42	6.85	16.1	2.84	5.66	15.1	3.01	5.02	13.6	3.12	4.36	/	/	/	/	/	/
40	16.9	1.46	11.6	17.6	1.74	10.1	17.5	1.91	9.16	17.2	2.39	7.21	16.9	2.85	5.92	15.6	2.97	5.25	/	/	/	/	/	/	/	/	/
43	17.5	1.48	11.8	18.1	1.76	10.3	17.7	1.89	9.37	17.3	2.35	7.35	16.7	2.68	6.22	16.1	2.96	5.44	/	/	/	/	/	/	/	/	/

DB (℃)	Normal																								
	LWT(℃)																								
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	6.58	3.26	2.02	6.81	3.31	2.06	5.51	3.20	1.72	5.11	3.68	1.39	4.42	3.54	1.25	/	/	/	/	/	/	/	/	/	/	/	/
-20	8.32	3.26	2.55	8.51	3.59	2.37	7.11	3.84	1.85	6.63	3.88	1.71	5.69	4.28	1.33	5.18	3.84	1.35	4.91	4.27	1.15	/	/	/	/	/	/
-15	9.91	3.36	2.95	9.44	3.52	2.68	8.82	3.75	2.35	8.38	4.09	2.05	7.36	4.30	1.71	6.17	4.09	1.51	5.69	4.45	1.28	5.44	4.73	1.15	/	/	/
-10	11.2	3.54	3.16	11.2	3.78	2.96	10.5	3.99	2.63	10.5	4.41	2.38	9.31	4.41	2.11	8.02	4.56	1.76	7.55	4.81	1.57	6.01	4.66	1.29	/	/	/
-7	13.8	4.25	3.25	13.6	4.37	3.11	13.2	4.87	2.71	13.2	4.98	2.65	12.8	5.66	2.26	12.5	5.87	2.13	12.6	6.27	2.01	7.66	5.63	1.36	/	/	/
-5	12.3	3.26	3.77	11.8	3.50	3.37	11.6	3.77	3.08	11.5	3.95	2.91	10.3	4.26	2.42	10.3	4.79	2.15	10.1	4.53	2.23	7.11	4.71	1.51	/	/	/
0	12.1	2.56	4.72	11.6	2.87	4.04	11.2	3.10	3.61	10.7	3.44	3.11	10.8	3.83	2.82	10.2	4.05	2.52	9.79	3.90	2.51	7.67	4.31	1.78	/	/	/
5	13.5	2.36	5.71	11.7	2.65	4.42	12.6	2.88	4.38	12.3	3.27	3.76	12.3	3.58	3.44	11.5	3.90	2.95	11.3	3.82	2.96	10.2	4.06	2.51	8.78	4.33	2.03
7	16.9	2.86	5.91	15.6	3.05	5.11	15.9	3.45	4.61	16.1	4.07	3.96	15.9	4.64	3.43	15.8	4.92	3.21	15.8	6.12	2.58	13.2	4.84	2.73	10.3	4.66	2.21
10	14.5	2.18	6.66	13.1	2.41	5.44	13.5	2.62	5.16	13.6	3.11	4.38	13.2	3.32	3.98	12.5	3.67	3.41	12.1	3.72	3.25	11.2	3.89	2.88	9.95	3.95	2.52
15	15.2	1.99	7.65	15.3	2.22	6.89	14.4	2.42	5.96	14.2	2.85	4.98	14.2	3.20	4.44	13.6	3.46	3.93	13.2	3.64	3.63	11.6	3.65	3.18	10.1	3.80	2.66
20	13.5	1.49	9.05	13.5	1.71	7.89	13.1	1.91	6.87	13.3	2.34	5.69	12.3	2.62	4.69	11.2	2.91	3.85	11.6	3.14	3.69	10.6	3.34	3.17	/	/	/
25	12.9	1.29	9.97	12.8	1.59	8.06	12.5	1.62	7.73	13.1	1.81	7.23	12.2	2.27	5.37	11.1	2.48	4.48	10.6	2.58	4.11	9.72	3.01	3.23	/	/	/
30	12.5	1.11	11.3	12.2	1.35	9.06	11.6	1.36	8.51	12.2	1.53	7.96	12.1	2.10	5.75	10.9	2.15	5.08	10.1	2.31	4.38	10.3	3.21	3.21	/	/	/
35	13.6	1.12	12.1	13.5	1.36	9.91	13.1	1.43	9.13	13.3	1.79	7.42	12.9	2.13	6.05	11.6	2.18	5.33	10.3	2.26	4.56	/	/	/	/	/	/
40	14.1	1.10	12.8	15.1	1.35	11.2	14.2	1.43	9.95	13.8	1.76	7.85	13.2	2.09	6.31	12.3	2.19	5.62	/	/	/	/	/	/	/	/	/
43	15.1	1.14	13.2	15.5	1.34	11.6	13.9	1.38	10.1	14.1	1.74	8.11	13.9	2.08	6.67	13.1	2.24	5.86	/	/	/	/	/	/	/	/	/

DB (℃)	Minimum																								
	LWT(℃)																								
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	4.36	2.12	2.06	4.56	2.27	2.01	4.31	2.45	1.76	4.02	2.89	1.39	3.32	2.81	1.18	/	/	/	/	/	/	/	/	/	/	/	/
-20	5.33	2.04	2.61	5.58	2.33	2.39	4.55	2.45	1.86	4.36	2.60	1.68	4.25	3.10	1.37	4.12	3.10	1.33	3.79	3.38	1.12	/	/	/	/	/	/
-15	6.45	2.14	3.01	6.37	2.34	2.72	5.96	2.50	2.38	5.75	2.79	2.06	5.76	3.35	1.72	5.16	3.56	1.45	4.72	3.69	1.28	4.59	4.10	1.12	/	/	/
-10	5.72	1.75	3.27	5.86	1.95	3.01	5.52	2.05	2.69	5.61	2.33	2.41	5.72	2.83	2.02	5.33	1.77	3.01	5.51	3.53	1.56	4.69	3.72	1.26	/	/	/
-7	5.38	1.53	3.52	4.96	1.55	3.21	4.96	1.68	2.96	5.58	2.00	2.79	6.79	2.93	2.32	6.85	3.17	2.16	7.11	3.29	2.16	5.32	3.86	1.38	/	/	/
-5	5.58	1.42	3.92	5.16	1.46	3.53	5.15	1.63	3.15	5.72	1.95	2.93	7.01	2.49	2.81	7.02	3.33	2.11	7.26	3.23	2.25	5.66	3.75	1.51	/	/	/
0	6.11	1.23	4.96	5.72	1.35	4.23	5.39	1.47	3.66	5.93	1.81	3.28	7.66	2.63	2.91	7.51	2.93	2.56	7.56	2.90	2.61	6.29	3.48	1.81	/	/	/
5	6.83	1.14	6.01	5.78	1.24	4.65	6.26	1.36	4.59	6.77	1.71	3.95	8.68	2.44	3.56	8.63	2.80	3.08	9.03	3.00	3.01	8.58	3.42	2.51	7.51	3.56	2.11
7	6.96	1.08	6.45	5.66	1.06	5.36	6.38	1.26	5.08	6.97	1.56	4.46	9.02	2.28	3.96	9.02	2.58	3.49	9.89	3.16	3.13	9.39	3.38	2.78	7.88	3.40	2.32
10	7.35	1.05	7.01	6.52	1.15	5.69	6.92	1.27	5.44	7.44	1.62	4.59	9.58	2.31	4.15	9.52	2.66	3.58	10.1	3.01	3.35	9.77	3.25	3.01	8.59	3.40	2.53
15	7.40	0.93	7.98	7.57	1.05	7.23	7.39	1.18	6.26	8.42	1.62	5.21	10.3	2.22	4.64	10.8	2.69	4.02	10.9	3.00	3.63	10.5	3.15	3.33	9.09	3.42	2.66
20	6.66	0.70	9.45	6.76	0.82	8.27	6.65	0.92	7.21	8.17	1.36	6.02	9.03	1.85	4.89	9.12	2.25	4.05	9.76	2.58	3.79	9.44	2.87	3.29	/	/	/
25	6.62	0.64	10.3	6.61	0.78	8.45	6.55	0.81	8.07	7.95	1.17	6.81	8.98	1.61	5.57	9.22	1.97	4.69	9.32	2.21	4.21	9.06	2.69	3.37	/	/	/
30	7.26	0.63	11.5	7.58	0.81	9.38	8.38	0.96	8.71	8.93	1.21	7.35	8.92	1.47	6.05	9.25	1.74	5.32	8.91	1.95	4.56	9.08	2.66	3.41	/	/	/
35	7.76	0.62	12.6	8.28	0.79	10.5	9.05	0.94	9.58	9.45	1.21	7.82	9.39	1.47	6.38	9.77	1.73	5.66	9.16	1.94	4.72	/	/	/	/	/	/
40	8.26	0.60	13.8	9.06	0.75	12.1	9.75	0.93	10.5	9.89	1.19	8.33	9.68	1.46	6.65	10.1	1.72	5.86	/	/	/	/	/	/	/	/	/
43	8.67	0.61	14.2	9.51	0.75	12.6	10.2	0.94	10.8	10.6	1.23	8.61	10.6	1.51	7.02	10.6	1.73	6.12	/	/	/	/	/	/	/	/	/

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

HC:Total heating capacity(kW)

PI:Power input(kW)

5.2 :Cooling Capacity Tables

Table 2-5.2.1: XFMH04S3 cooling capacity

DB (℃)	Maximum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	4.79	0.46	10.33	5.44	0.55	9.98	6.06	0.48	12.63
0	/	/	/	/	/	/	4.57	0.57	8.06	5.22	0.65	8.05	5.84	0.56	10.4
5	/	/	/	/	/	/	4.07	0.67	6.1	4.78	0.75	6.37	5.34	0.65	8.25
10	/	/	/	/	/	/	6.03	1.06	5.68	6.41	1.01	6.37	7.14	0.85	8.4
15	/	/	/	5.02	0.85	5.88	8.06	1.46	5.52	8.11	1.27	6.4	8.82	1.05	8.4
20	4.75	1.04	4.56	6.04	1.34	4.5	8.13	1.49	5.44	8.3	1.30	6.38	8.95	1.10	8.12
25	5.84	1.29	4.54	6.94	1.84	3.77	8.2	1.53	5.36	8.49	1.33	6.37	9.15	1.15	7.93
30	5.77	1.54	3.75	6.83	1.85	3.7	7.74	1.65	4.69	8.16	1.46	5.6	8.74	1.30	6.72
35	3.77	1.17	3.21	6.67	1.86	3.58	7.28	1.77	4.12	7.84	1.58	4.95	8.4	1.45	5.81
40	3.83	1.50	2.55	5.11	1.80	2.84	5.88	1.74	3.38	6.6	1.68	3.92	7.85	1.65	4.77
43	2.61	1.15	2.27	3.83	1.51	2.54	5.05	1.56	3.23	5.85	1.58	3.71	7.52	1.60	4.7

DB (℃)	Normal														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	3.81	0.33	11.71	4.48	0.37	11.95	4.92	0.35	14.08
0	/	/	/	/	/	/	3.63	0.39	9.32	4.31	0.44	9.84	4.75	0.36	13.28
5	/	/	/	/	/	/	3.22	0.48	6.65	3.84	0.52	7.32	4.33	0.44	9.74
10	/	/	/	/	/	/	4.84	0.77	6.26	5.16	0.70	7.34	5.76	0.58	9.86
15	/	/	/	3.76	0.60	6.22	6.76	1.15	5.86	7.03	0.99	7.09	7.41	0.80	9.26
20	3.65	0.77	4.73	4.83	1.01	4.77	6.77	1.16	5.85	7.14	1.03	6.91	7.82	0.87	8.95
25	4.68	0.97	4.81	5.69	1.40	4.06	6.93	1.21	5.71	7.41	1.07	6.95	8.08	0.91	8.88
30	4.66	1.15	4.05	5.64	1.45	3.89	6.64	1.32	5.03	7.22	1.20	6.02	7.88	1.05	7.47
35	4.54	1.32	3.44	5.42	1.43	3.79	6.05	1.34	4.5	6.84	1.28	5.33	7.66	1.19	6.42
40	3.13	1.15	2.73	4.27	1.42	3.01	5.18	1.40	3.71	5.92	1.37	4.31	7.18	1.32	5.44
43	2.09	0.90	2.31	2.96	1.16	2.56	4.07	1.18	3.46	5.01	4.96	1.01	5.94	1.14	5.21

DB (℃)	Minimum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	2.45	0.19	12.57	2.84	0.23	12.35	3.24	0.20	15.86
0	/	/	/	/	/	/	2.34	0.24	9.89	2.74	0.27	10.06	3.14	0.23	13.43
5	/	/	/	/	/	/	1.77	0.24	7.38	2.03	0.26	7.73	2.32	0.23	10.14
10	/	/	/	/	/	/	2.73	0.39	7.02	2.87	0.36	7.88	3.18	0.31	10.36
15	/	/	/	2.35	0.35	6.67	3.61	0.58	6.26	3.47	0.45	7.77	4.22	0.41	10.29
20	1.83	0.37	4.98	2.1	0.42	4.97	3.35	0.54	6.2	3.92	0.54	7.29	4.41	0.47	9.47
25	2.26	0.46	4.92	2.34	0.55	4.26	3.26	0.54	6.01	3.95	0.54	7.36	4.35	0.47	9.25
30	2.2	0.54	4.07	2.3	0.56	4.08	3.09	0.59	5.27	3.76	0.59	6.35	4.28	0.55	7.75
35	2.08	0.59	3.53	2.56	0.64	4.03	2.98	0.63	4.76	3.63	0.63	5.78	4.2	0.62	6.81
40	1.43	0.53	2.72	2.04	0.65	3.15	2.49	0.66	3.79	3.15	0.70	4.47	4.04	0.74	5.48
43	0.7	0.29	2.41	0.5	0.23	2.14	2.08	0.59	3.54	2.54	0.61	4.14	3.85	0.71	5.41

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

CC:Total cooling capacity(kW)

PI:Power input(kW)

Table 2-5.2.2: XFMH06S3 cooling capacity

DB (℃)	Maximum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	5.43	0.60	9.11	6.57	0.56	11.76	6.97	0.64	10.83
0	/	/	/	/	/	/	5.15	0.70	7.35	6.28	0.66	9.48	6.68	0.75	8.94
5	/	/	/	/	/	/	4.50	0.80	5.63	5.60	0.76	7.33	5.99	0.85	7.06
10	/	/	/	/	/	/	6.26	1.12	5.61	6.83	1.00	6.83	7.38	0.94	7.88
15	/	/	/	5.95	1.09	5.44	8.17	1.44	5.66	8.22	1.25	6.57	8.94	1.04	8.60
20	5.25	1.36	3.85	6.43	1.42	4.53	7.92	1.48	5.36	8.08	1.28	6.29	8.71	1.09	7.99
25	7.02	1.78	3.94	7.22	1.75	4.13	8.07	1.51	5.34	8.35	1.32	6.34	8.94	1.14	7.82
30	6.37	1.83	3.47	7.14	1.88	3.80	7.61	1.63	4.67	8.03	1.44	5.57	8.59	1.29	6.68
35	5.90	1.88	3.13	7.29	2.01	3.62	7.38	1.74	4.23	7.95	1.56	5.08	8.51	1.43	5.96
40	3.88	1.52	2.55	5.18	1.83	2.84	6.03	1.75	3.44	6.76	1.70	3.99	8.04	1.66	4.85
43	2.66	1.16	2.28	3.91	1.53	2.56	5.23	1.57	3.33	6.06	1.59	3.81	7.78	1.61	4.82

DB (℃)	Normal														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	4.28	0.41	10.38	5.24	0.37	13.99	5.56	0.42	13.22
0	/	/	/	/	/	/	4.15	0.48	8.56	5.12	0.45	11.50	5.44	0.49	11.12
5	/	/	/	/	/	/	3.57	0.58	6.12	4.45	0.53	8.35	4.81	0.58	8.24
10	/	/	/	/	/	/	5.23	0.83	6.30	5.72	0.71	8.02	6.24	0.66	9.50
15	/	/	/	4.55	0.78	5.82	6.99	1.15	6.07	7.21	0.99	7.27	7.66	0.80	9.57
20	4.09	1.01	4.06	5.20	1.07	4.86	6.60	1.14	5.76	6.95	1.02	6.80	7.59	0.86	8.80
25	5.73	1.33	4.29	6.11	1.33	4.58	7.03	1.20	5.85	7.51	1.06	7.12	8.13	0.90	9.03
30	5.33	1.38	3.85	6.20	1.47	4.22	6.80	1.31	5.21	7.40	1.19	6.23	8.01	1.04	7.66
35	4.49	1.42	3.16	5.87	1.56	3.75	5.96	1.36	4.38	6.80	1.29	5.25	7.61	1.22	6.26
40	3.07	1.16	2.65	4.26	1.43	2.97	5.10	1.41	3.61	5.89	1.38	4.25	7.08	1.34	5.30
43	2.08	0.90	2.31	2.93	1.14	2.56	3.96	1.17	3.40	4.94	1.23	4.00	5.85	1.14	5.13

DB (℃)	Minimum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	2.67	0.25	10.70	3.25	0.23	13.97	3.46	0.27	12.91
0	/	/	/	/	/	/	2.67	0.29	9.18	3.28	0.27	11.95	3.50	0.31	11.30
5	/	/	/	/	/	/	1.92	0.28	6.74	2.41	0.27	8.89	2.59	0.30	8.57
10	/	/	/	/	/	/	2.78	0.41	6.73	3.07	0.37	8.27	3.33	0.35	9.58
15	/	/	/	2.68	0.45	5.93	3.60	0.58	6.23	3.47	0.45	7.72	4.21	0.41	10.22
20	2.07	0.49	4.21	2.28	0.45	5.07	3.28	0.54	6.11	3.83	0.53	7.17	4.31	0.46	9.31
25	2.75	0.62	4.40	2.53	0.52	4.81	3.32	0.54	6.16	3.96	0.53	7.48	4.42	0.47	9.47
30	2.53	0.64	3.92	2.54	0.57	4.43	3.18	0.58	5.46	3.87	0.59	6.57	4.31	0.54	7.95
35	2.03	0.63	3.21	2.70	0.69	3.88	2.95	0.63	4.65	3.59	0.64	5.64	4.15	0.62	6.63
40	1.37	0.52	2.64	1.97	0.64	3.06	2.47	0.66	3.74	3.12	0.71	4.41	3.99	0.74	5.40
43	0.74	0.30	2.43	1.44	0.53	2.73	2.13	0.59	3.64	2.60	0.61	4.25	3.84	0.70	5.49

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

CC:Total cooling capacity(kW)

PI:Power input(kW)

Table 2-5.2.3: XFMH08S3 cooling capacity

DB (℃)	Maximum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	6.32	0.64	9.95	8.12	0.76	10.72	8.63	0.71	12.21
0	/	/	/	/	/	/	6.11	0.71	8.59	7.16	0.74	9.65	7.69	0.70	11.01
5	/	/	/	/	/	/	5.85	0.81	7.21	6.15	0.72	8.58	6.69	0.69	9.72
10	/	/	/	/	/	/	6.22	0.74	8.45	7.81	0.83	9.36	8.21	0.79	10.44
15	/	/	/	5.88	0.87	6.75	7.21	0.99	7.25	9.02	1.15	7.85	9.65	1.12	8.62
20	5.58	1.15	4.86	7.01	1.29	5.44	8.25	1.35	6.11	10.26	1.62	6.35	11.06	1.65	6.72
25	6.37	1.50	4.25	7.75	1.63	4.75	9.21	1.69	5.45	11.26	1.93	5.83	12.68	2.03	6.25
30	7.16	1.92	3.72	8.49	2.04	4.16	10.08	2.08	4.85	12.12	2.23	5.44	14.28	2.41	5.92
35	7.32	2.28	3.21	8.66	2.33	3.72	10.11	2.33	4.33	11.65	2.42	4.81	13.51	2.53	5.33
40	6.55	2.60	2.52	7.33	2.40	3.05	8.78	2.55	3.44	10.15	2.53	4.01	12.22	2.86	4.28
43	5.01	2.27	2.21	5.56	2.21	2.52	6.63	2.13	3.12	8.06	2.20	3.66	10.01	2.49	4.02

DB (℃)	Normal														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	5.11	0.45	11.32	6.59	0.53	12.39	7.02	0.50	13.96
0	/	/	/	/	/	/	4.92	0.50	9.83	5.82	0.52	11.22	6.22	0.49	12.78
5	/	/	/	/	/	/	4.66	0.59	7.85	5.01	0.52	9.58	5.39	0.51	10.65
10	/	/	/	/	/	/	5.02	0.54	9.25	6.29	0.60	10.45	6.68	0.58	11.51
15	/	/	/	4.38	0.61	7.15	6.08	0.78	7.75	7.75	0.90	8.61	8.12	0.86	9.49
20	4.33	0.85	5.12	5.65	0.98	5.78	6.93	1.04	6.65	8.79	1.28	6.86	9.61	1.30	7.39
25	5.05	1.12	4.52	6.33	1.25	5.08	7.75	1.34	5.79	9.73	1.53	6.35	11.18	1.59	7.02
30	5.75	1.43	4.02	7.11	1.60	4.44	8.63	1.67	5.17	10.72	1.83	5.86	12.79	1.96	6.52
35	5.68	1.69	3.36	7.12	1.78	4.01	8.35	1.78	4.69	10.18	1.95	5.21	12.32	2.11	5.85
40	5.32	1.93	2.75	6.18	1.88	3.29	7.65	2.07	3.69	9.09	2.07	4.39	11.06	2.31	4.78
43	4.11	1.83	2.25	4.44	1.67	2.66	5.25	1.63	3.22	6.87	1.73	3.97	7.85	1.82	4.32

DB (℃)	Minimum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	5.11	0.45	11.32	6.62	0.53	12.44	7.02	0.50	13.96
0	/	/	/	/	/	/	4.91	0.50	9.85	5.82	0.52	11.21	6.21	0.49	12.78
5	/	/	/	/	/	/	4.69	0.60	7.87	5.01	0.52	9.58	5.44	0.51	10.68
10	/	/	/	/	/	/	5.02	0.54	9.26	6.25	0.59	10.51	6.65	0.58	11.51
15	/	/	/	4.44	0.62	7.21	6.12	0.79	7.78	7.78	0.90	8.62	8.18	0.87	9.44
20	2.21	0.43	5.15	5.68	0.98	5.79	6.95	1.05	6.62	8.77	1.28	6.86	9.62	1.30	7.39
25	2.36	0.52	4.52	6.38	1.25	5.12	7.81	1.34	5.82	9.76	1.53	6.39	11.15	1.59	7.01
30	2.69	0.67	4.02	7.09	1.57	4.51	8.65	1.65	5.25	10.72	1.83	5.86	12.75	1.96	6.52
35	2.55	0.75	3.38	7.16	1.77	4.05	8.36	1.77	4.72	10.18	1.96	5.19	12.28	2.11	5.83
40	2.39	0.88	2.72	6.25	1.87	3.35	7.68	2.05	3.75	9.09	2.05	4.44	11.06	2.31	4.78
43	1.39	0.62	2.25	4.44	1.70	2.61	5.32	1.62	3.28	6.89	1.71	4.02	7.86	1.82	4.32

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

CC:Total cooling capacity(kW)

PI:Power input(kW)

Table 2-5.2.4: XFMH10S3 cooling capacity

DB (℃)	Maximum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	6.71	0.68	9.93	8.99	0.84	10.65	9.32	0.77	12.16
0	/	/	/	/	/	/	6.35	0.74	8.56	7.55	0.78	9.62	8.25	0.76	10.85
5	/	/	/	/	/	/	6.53	0.91	7.20	6.92	0.81	8.53	7.51	0.78	9.62
10	/	/	/	/	/	/	6.35	0.73	8.74	8.07	0.79	10.19	9.09	0.89	10.22
15	/	/	/	6.57	1.12	5.87	7.82	1.06	7.35	9.69	1.16	8.37	10.42	1.18	8.86
20	6.49	1.34	4.84	7.09	1.36	5.20	8.51	1.43	5.94	10.66	1.63	6.55	12.61	1.69	7.48
25	6.99	1.64	4.26	8.28	1.82	4.55	9.98	1.90	5.26	12.21	2.12	5.77	13.68	2.13	6.42
30	8.34	2.24	3.72	9.13	2.24	4.07	11.36	2.44	4.65	13.23	2.59	5.11	15.61	2.83	5.52
35	8.09	2.61	3.10	9.42	2.51	3.75	10.78	2.57	4.19	12.71	2.68	4.74	14.32	2.84	5.05
40	6.61	2.54	2.60	7.32	2.31	3.17	9.02	2.58	3.49	10.14	2.49	4.07	12.41	2.85	4.35
43	4.85	2.17	2.24	5.92	2.31	2.56	6.47	2.06	3.14	8.14	2.15	3.78	10.14	2.53	4.01

DB (℃)	Normal														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	5.32	0.48	11.18	7.16	0.58	12.29	7.51	0.54	13.80
0	/	/	/	/	/	/	5.08	0.52	9.76	6.09	0.55	11.17	6.91	0.55	12.64
5	/	/	/	/	/	/	5.42	0.69	7.81	5.51	0.58	9.52	5.83	0.55	10.60
10	/	/	/	/	/	/	5.23	0.55	9.53	6.58	0.58	11.38	7.18	0.64	11.29
15	/	/	/	4.75	0.76	6.27	6.29	0.80	7.83	8.29	0.90	9.19	9.13	0.93	9.77
20	4.96	0.97	5.12	5.91	1.07	5.53	7.28	1.13	6.45	9.16	1.28	7.13	10.69	1.30	8.23
25	5.39	1.20	4.48	7.01	1.42	4.92	8.18	1.47	5.55	10.55	1.67	6.31	12.09	1.69	7.15
30	6.68	1.70	3.94	7.81	1.82	4.30	9.68	1.95	4.96	11.41	2.07	5.50	13.61	2.25	6.05
35	6.47	1.96	3.30	7.79	1.93	4.03	8.98	1.98	4.53	10.93	2.15	5.09	12.99	2.35	5.52
40	5.69	2.01	2.83	6.07	1.79	3.39	8.02	2.12	3.78	9.06	2.02	4.48	11.34	2.32	4.89
43	4.46	1.95	2.29	4.27	1.61	2.65	5.65	1.72	3.29	6.69	1.64	4.08	7.78	1.78	4.38

DB (℃)	Minimum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	3.37	0.29	11.66	4.29	0.34	12.68	4.56	0.31	14.51
0	/	/	/	/	/	/	3.45	0.34	10.22	3.81	0.33	11.58	4.08	0.31	13.13
5	/	/	/	/	/	/	2.56	0.30	8.41	2.68	0.26	10.14	2.88	0.25	11.42
10	/	/	/	/	/	/	2.87	0.28	10.30	3.63	0.30	12.15	3.72	0.30	12.21
15	/	/	/	2.77	0.36	7.65	3.22	0.39	8.35	3.92	0.39	10.17	4.62	0.43	10.83
20	2.54	0.48	5.28	2.38	0.40	5.98	3.59	0.53	6.83	4.86	0.65	7.50	5.51	0.64	8.67
25	2.82	0.61	4.62	2.65	0.51	5.15	3.71	0.63	5.87	5.13	0.77	6.65	6.08	0.81	7.51
30	3.3	0.82	4.04	2.95	0.66	4.50	4.02	0.78	5.16	5.62	0.97	5.80	6.87	1.09	6.29
35	2.81	0.83	3.38	3.32	0.79	4.21	4.21	0.86	4.87	5.38	0.97	5.53	6.82	1.15	5.92
40	2.18	0.77	2.82	2.91	0.84	3.46	3.72	0.95	3.91	4.89	1.05	4.65	6.33	1.27	4.97
43	1.66	0.71	2.34	2.11	0.77	2.73	2.52	0.73	3.44	3.52	0.85	4.16	5.05	1.11	4.57

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

CC:Total cooling capacity(kW)

PI:Power input(kW)

Table 2-5.2.5: XFMH12S3 / XFMH12T9 cooling capacity

DB (℃)	Maximum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	9.52	1.28	7.44	10.28	1.42	7.26	11.32	1.36	8.32
0	/	/	/	/	/	/	9.25	1.58	5.86	10.78	1.50	7.21	11.83	1.51	7.85
5	/	/	/	/	/	/	9.06	1.73	5.25	11.32	1.57	7.19	12.32	1.64	7.51
10	/	/	/	/	/	/	10.72	2.07	5.19	13.06	1.93	6.76	14.12	1.94	7.28
15	/	/	/	10.42	2.35	4.44	12.36	2.35	5.27	14.75	2.29	6.45	15.92	2.25	7.06
20	7.68	2.03	3.78	12.06	3.01	4.01	14.02	3.16	4.44	15.85	3.16	5.02	16.51	2.87	5.76
25	10.2	3.07	3.32	13.72	3.66	3.75	15.71	3.95	3.98	16.93	4.07	4.16	17.02	3.46	4.92
30	9.97	3.65	2.73	13.36	4.20	3.18	15.06	4.23	3.56	16.09	4.21	3.82	16.05	3.75	4.28
35	9.63	4.56	2.11	13.01	5.02	2.59	14.39	4.67	3.08	15.28	4.48	3.41	15.18	4.07	3.73
40	7.86	4.57	1.72	9.78	4.43	2.21	10.57	3.99	2.65	12.12	4.11	2.95	13.18	3.89	3.39
43	5.11	3.84	1.33	6.03	3.31	1.82	7.25	3.07	2.36	8.51	3.21	2.65	10.52	3.33	3.16

DB (℃)	Normal														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	7.58	0.91	8.36	8.39	0.99	8.44	9.21	0.97	9.51
0	/	/	/	/	/	/	7.44	1.12	6.67	8.76	1.04	8.39	9.65	1.05	9.17
5	/	/	/	/	/	/	7.25	1.26	5.76	9.12	1.13	8.06	10.02	1.21	8.31
10	/	/	/	/	/	/	8.61	1.52	5.68	10.51	1.38	7.63	11.51	1.43	8.06
15	/	/	/	7.79	1.63	4.78	10.38	1.81	5.73	12.75	1.74	7.32	13.38	1.67	8.01
20	6.02	1.52	3.96	9.72	2.23	4.35	11.73	2.38	4.92	13.69	2.46	5.56	14.32	2.20	6.52
25	7.93	2.31	3.44	11.26	2.75	4.09	13.33	3.06	4.36	14.78	3.16	4.68	15.02	2.67	5.63
30	8.01	2.81	2.85	11.12	3.23	3.44	13.01	3.27	3.98	14.25	3.40	4.19	14.38	2.99	4.81
35	7.62	3.39	2.25	9.98	3.62	2.76	11.92	3.40	3.51	13.32	3.49	3.82	13.82	3.28	4.21
40	6.58	3.48	1.89	8.26	3.46	2.39	9.26	3.11	2.98	10.91	3.25	3.36	11.96	2.98	4.02
43	4.22	3.04	1.39	4.72	2.51	1.88	5.78	2.23	2.59	7.25	2.48	2.92	8.36	2.31	3.62

DB (℃)	Minimum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	4.92	0.56	8.81	5.37	0.62	8.67	5.95	0.60	9.92
0	/	/	/	/	/	/	4.86	0.69	7.05	5.72	0.65	8.79	6.22	0.65	9.53
5	/	/	/	/	/	/	3.89	0.63	6.15	4.92	0.57	8.56	5.36	0.60	8.89
10	/	/	/	/	/	/	4.78	0.77	6.19	5.88	0.72	8.15	6.32	0.73	8.69
15	/	/	/	4.79	0.94	5.12	5.56	0.90	6.17	6.32	0.79	8.03	7.58	0.86	8.86
20	3.02	0.73	4.12	4.25	0.93	4.59	5.76	1.11	5.18	7.52	1.28	5.88	8.12	1.18	6.89
25	3.79	1.04	3.65	4.61	1.08	4.28	6.25	1.36	4.59	7.78	1.58	4.92	8.15	1.38	5.92
30	3.76	1.25	3.01	4.52	1.25	3.61	6.03	1.47	4.11	7.39	1.66	4.44	7.72	1.54	5.01
35	3.44	1.48	2.33	4.89	1.65	2.96	5.88	1.61	3.66	7.11	1.71	4.15	7.62	1.69	4.51
40	2.93	1.56	1.88	3.81	1.51	2.52	4.52	1.47	3.08	5.82	1.69	3.44	6.81	1.67	4.09
43	1.44	1.00	1.44	2.26	1.15	1.97	3.02	1.13	2.67	3.65	1.21	3.01	5.35	1.43	3.75

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

CC:Total cooling capacity(kW)

PI:Power input(kW)

Table 2-5.2.6: XFMH14S3 / XFMH14T9 cooling capacity

DB (℃)	Maximum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	9.81	1.31	7.51	10.6	1.42	7.44	11.6	1.38	8.39
0	/	/	/	/	/	/	9.76	1.67	5.85	11.2	1.55	7.22	12.1	1.55	7.82
5	/	/	/	/	/	/	9.56	1.76	5.44	11.7	1.59	7.38	12.6	1.63	7.71
10	/	/	/	/	/	/	11.2	2.15	5.21	12.8	1.88	6.81	14.4	1.97	7.32
15	/	/	/	10.6	2.32	4.56	13.1	2.40	5.45	15.1	2.27	6.65	16.5	2.27	7.27
20	8.15	2.17	3.76	12.2	3.03	4.02	14.9	3.34	4.46	15.8	3.12	5.06	16.6	2.84	5.85
25	10.2	3.08	3.31	14.4	3.83	3.76	16.6	4.17	3.98	16.8	3.98	4.22	17.3	3.49	4.95
30	10.5	3.60	2.92	13.8	4.51	3.06	15.8	4.53	3.49	16.2	4.20	3.86	16.2	3.76	4.31
35	10.3	4.79	2.15	13.2	5.16	2.56	15.3	4.86	3.15	15.2	4.41	3.45	15.2	4.09	3.72
40	8.12	4.56	1.78	9.85	4.36	2.26	10.6	3.91	2.71	12.1	4.02	3.01	13.2	3.76	3.51
43	5.21	3.70	1.41	6.11	3.28	1.86	7.32	3.00	2.44	8.53	3.21	2.66	11.2	3.38	3.31

DB (℃)	Normal														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	8.07	0.94	8.58	8.89	1.03	8.61	9.71	1.01	9.61
0	/	/	/	/	/	/	7.85	1.18	6.68	9.32	0.99	9.39	10.2	1.12	9.12
5	/	/	/	/	/	/	7.69	1.30	5.92	9.59	1.16	8.26	10.6	1.25	8.51
10	/	/	/	/	/	/	9.12	1.60	5.69	10.6	1.39	7.65	11.6	1.44	8.08
15	/	/	/	8.18	1.68	4.86	10.8	1.83	5.91	13.2	1.77	7.44	13.8	1.68	8.19
20	6.35	1.60	3.96	10.2	2.34	4.36	12.1	2.46	4.91	13.6	2.42	5.61	14.4	2.20	6.56
25	8.36	2.38	3.51	11.6	2.82	4.12	13.8	3.19	4.32	14.8	3.12	4.74	15.1	2.65	5.69
30	8.44	3.00	2.81	11.8	3.51	3.36	13.7	3.59	3.82	14.4	3.39	4.25	14.4	2.96	4.86
35	8.06	3.58	2.25	11.5	4.08	2.82	12.6	3.65	3.45	13.5	3.54	3.81	13.8	3.33	4.15
40	6.59	3.49	1.89	8.36	3.33	2.51	9.28	3.11	2.98	10.9	3.22	3.38	12.1	2.99	4.05
43	4.25	2.95	1.44	4.82	2.43	1.98	5.82	2.23	2.61	7.32	2.47	2.96	8.44	2.31	3.65

DB (℃)	Minimum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	5.21	0.58	8.91	5.73	0.65	8.85	6.28	0.62	10.07
0	/	/	/	/	/	/	5.12	0.73	7.01	6.02	0.69	8.75	6.65	0.70	9.51
5	/	/	/	/	/	/	4.12	0.65	6.36	5.21	0.59	8.81	5.67	0.62	9.15
10	/	/	/	/	/	/	5.06	0.82	6.15	5.91	0.72	8.21	6.39	0.73	8.76
15	/	/	/	5.01	0.96	5.21	5.88	0.93	6.32	6.69	0.81	8.25	7.86	0.87	9.08
20	3.21	0.78	4.11	4.52	0.99	4.58	6.16	1.18	5.21	7.56	1.28	5.92	8.16	1.18	6.92
25	4.03	1.12	3.59	4.92	1.14	4.32	6.65	1.46	4.56	7.85	1.58	4.97	8.19	1.37	5.96
30	4.01	1.39	2.89	4.85	1.37	3.55	6.42	1.60	4.02	7.51	1.67	4.49	7.81	1.54	5.08
35	3.67	1.58	2.32	5.23	1.77	2.95	6.31	1.71	3.69	7.12	1.73	4.12	7.68	1.73	4.44
40	2.97	1.55	1.91	3.92	1.53	2.57	4.56	1.46	3.13	5.86	1.67	3.51	6.83	1.66	4.12
43	1.46	0.98	1.49	2.28	1.13	2.01	3.05	1.12	2.73	3.72	1.22	3.05	5.39	1.41	3.81

Abbreviations:

LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃)

CC:Total cooling capacity(kW)

PI:Power input(kW)

Table 2-5.2.7: XFMH16S3 / XFMH16T9 cooling capacity

DB (℃)	Maximum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	9.91	1.32	7.52	10.2	1.38	7.38	11.6	1.38	8.41
0	/	/	/	/	/	/	9.72	1.66	5.85	10.9	1.52	7.18	12.1	1.55	7.82
5	/	/	/	/	/	/	9.51	1.75	5.44	11.5	1.56	7.38	12.6	1.63	7.71
10	/	/	/	/	/	/	11.2	2.15	5.21	12.6	1.85	6.81	13.8	1.90	7.28
15	/	/	/	10.9	2.36	4.62	13.6	2.64	5.15	15.7	2.34	6.71	16.5	2.24	7.35
20	8.91	2.43	3.67	13.8	3.49	3.95	15.9	3.40	4.68	16.1	3.03	5.31	17.2	2.99	5.75
25	11.5	3.58	3.21	15.2	4.15	3.66	16.9	3.98	4.25	17.2	3.98	4.32	17.6	3.65	4.82
30	11.2	4.36	2.57	15.3	5.07	3.02	16.7	4.61	3.62	16.9	4.66	3.63	16.8	3.99	4.21
35	11.1	5.31	2.09	15.1	6.02	2.51	16.6	5.67	2.93	16.2	4.97	3.26	15.9	4.40	3.61
40	8.87	5.13	1.73	10.8	4.89	2.21	11.6	4.38	2.65	13.1	4.60	2.85	14.5	4.35	3.33
43	5.92	4.52	1.31	7.31	4.13	1.77	9.03	3.88	2.33	10.5	4.15	2.53	11.8	3.79	3.11

DB (℃)	Normal														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	8.01	0.94	8.52	8.76	1.03	8.51	9.66	1.01	9.57
0	/	/	/	/	/	/	7.86	1.17	6.69	9.32	1.11	8.36	10.1	1.11	9.12
5	/	/	/	/	/	/	7.65	1.29	5.91	9.57	1.16	8.25	10.5	1.24	8.48
10	/	/	/	/	/	/	9.13	1.60	5.69	10.2	1.34	7.63	11.1	1.38	8.05
15	/	/	/	8.51	1.70	5.01	11.2	1.86	6.02	13.5	1.79	7.55	13.9	1.68	8.28
20	6.97	1.81	3.85	11.1	2.59	4.29	12.9	2.66	4.85	14.5	2.61	5.55	15.1	2.34	6.44
25	9.25	2.69	3.44	12.8	3.21	3.99	14.1	3.34	4.22	15.5	3.36	4.61	15.2	2.75	5.52
30	9.29	3.37	2.76	12.5	3.81	3.28	14.2	3.82	3.72	15.1	3.76	4.02	15.1	3.19	4.74
35	8.85	4.04	2.19	12.2	4.49	2.72	13.5	4.21	3.21	14.2	3.96	3.59	14.5	3.59	4.04
40	7.26	3.92	1.85	9.18	3.76	2.44	10.2	3.49	2.92	11.8	3.68	3.21	13.2	3.45	3.83
43	4.88	3.59	1.36	5.76	3.08	1.87	7.18	2.92	2.46	8.96	3.22	2.78	9.44	2.74	3.45

DB (℃)	Minimum														
	LWT(℃)														
	5			10			15			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	5.18	0.58	8.89	5.75	0.65	8.86	6.26	0.62	10.05
0	/	/	/	/	/	/	5.11	0.73	6.98	6.03	0.69	8.75	6.63	0.70	9.51
5	/	/	/	/	/	/	4.12	0.65	6.36	5.22	0.59	8.81	5.63	0.62	9.12
10	/	/	/	/	/	/	5.06	0.82	6.15	5.93	0.72	8.21	6.32	0.73	8.69
15	/	/	/	5.25	0.98	5.33	6.08	0.95	6.39	6.92	0.83	8.38	8.11	0.88	9.17
20	3.56	0.88	4.05	4.95	1.10	4.51	6.55	1.27	5.16	7.98	1.37	5.81	8.66	1.26	6.86
25	4.44	1.26	3.52	5.44	1.28	4.24	6.99	1.56	4.48	8.19	1.70	4.83	8.57	1.48	5.78
30	4.41	1.57	2.81	5.32	1.55	3.44	6.93	1.77	3.92	7.92	1.86	4.25	8.15	1.66	4.91
35	4.04	1.78	2.27	5.76	2.01	2.87	6.81	1.95	3.49	7.55	1.95	3.88	8.13	1.88	4.32
40	3.26	1.76	1.85	4.31	1.72	2.51	5.02	1.66	3.03	6.44	1.94	3.32	7.52	1.92	3.91
43	1.69	1.19	1.42	2.78	1.43	1.95	3.76	1.45	2.59	4.56	1.58	2.88	6.02	1.67	3.61

Abbreviations:

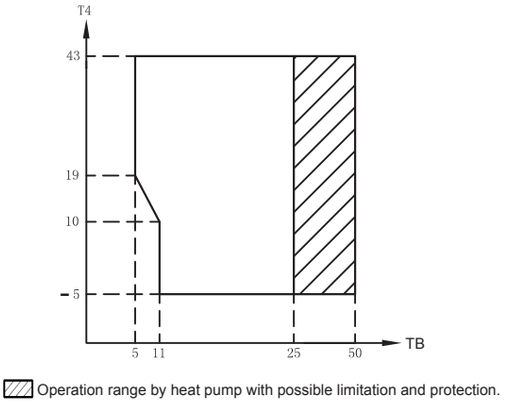
LWT:Leaving water temperature(℃)

DB:Dry-bulb temperature for Outdoor air temperature(℃) CC:Total cooling capacity(kW)

PI:Power input(kW)

6 Operating Limits

Figure 2-6.1: Cooling operating limits

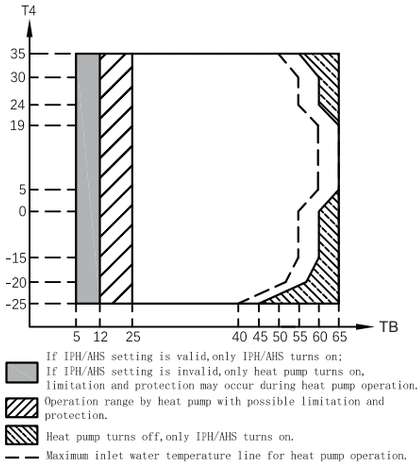


Abbreviations:

TB: Leaving water temperature (℃)

T4: Outdoor temperature (℃)

Figure 2-6.2: Heating operating limits

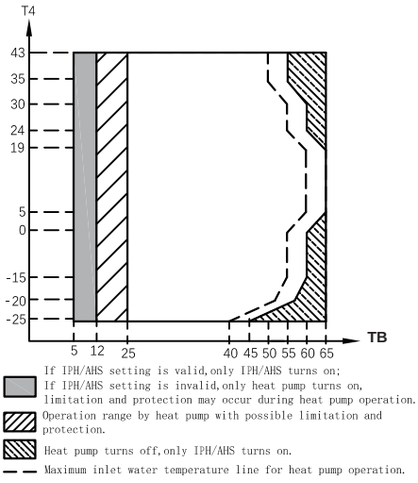


Abbreviations:

TB: Leaving water temperature (^{0}C)

T4: Outdoor temperature (^{0}C)

Figure 2-6.3: Domestic hot water operating limits



Abbreviations:

TB: Leaving water temperature (^{0}C)

T4: Outdoor temperature (^{0}C)

7 Hydraulic Performance

Figure 2-7.1: XFMH04S3 / XFMH06S3 / XFMH08S3 hydraulic performance[1]

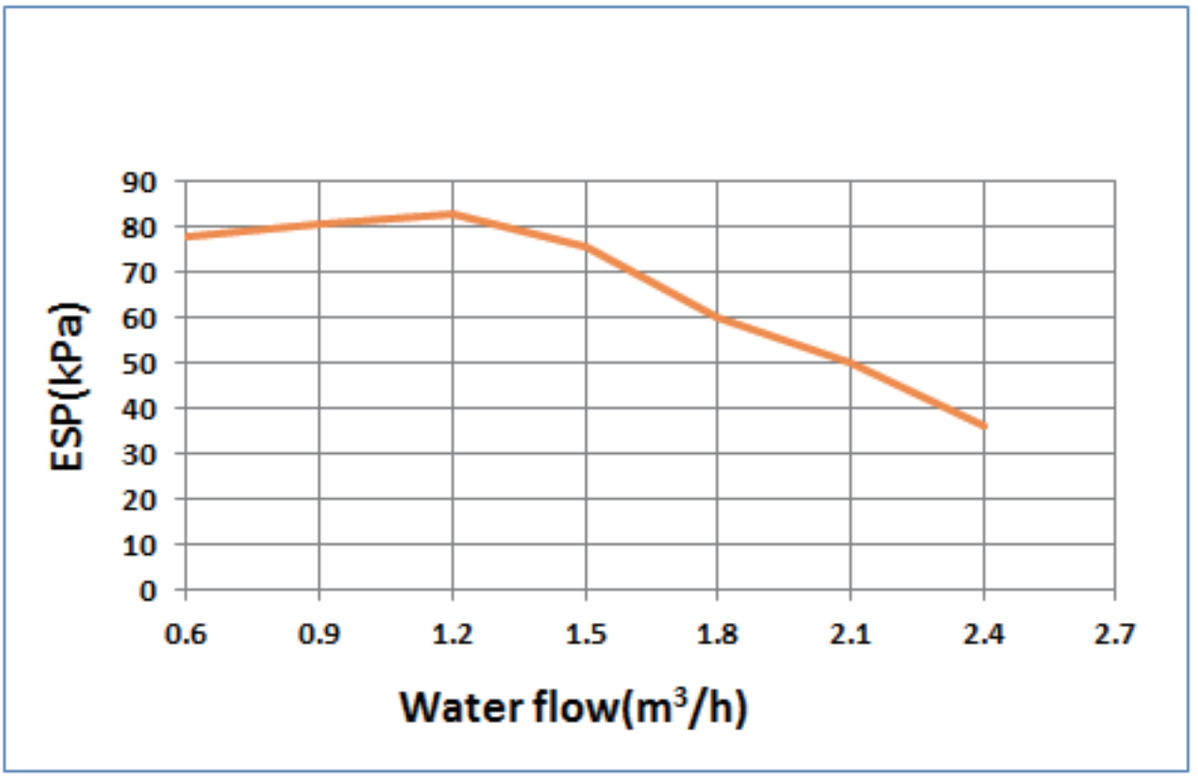


Figure 2-7.2: XFMH10S3 / XFMH12S3 / XFMH12T9 hydraulic performance[1]

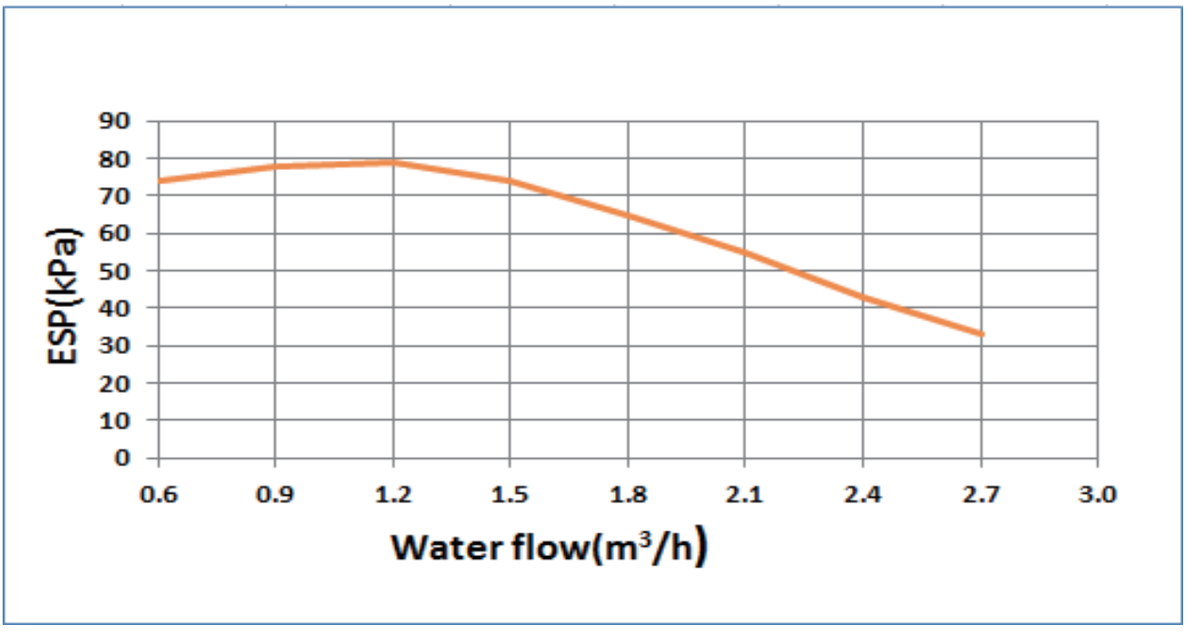
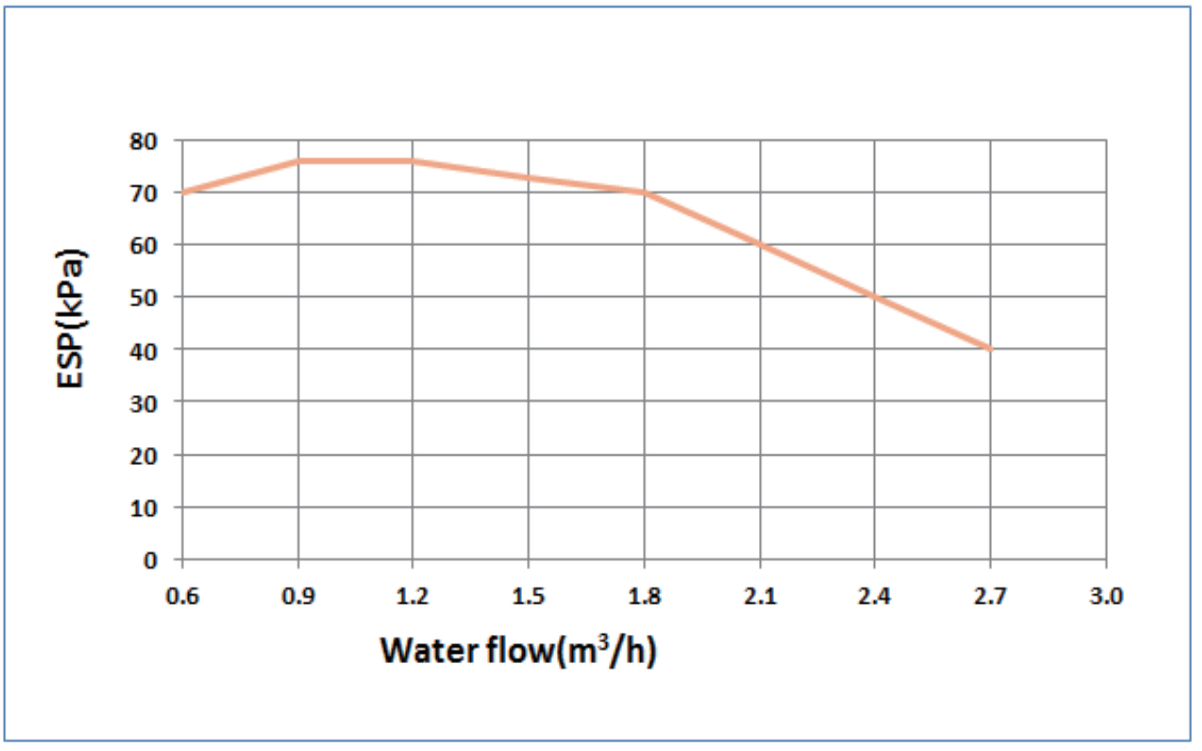


Figure 2-7.3 XFMH14S3 / XFMH16S3 / XFMH14T9 / XFMH16T9 hydraulic performance



Abbreviations:

ESP: External static pressure

8 .Sound Levels

8.1: Overall

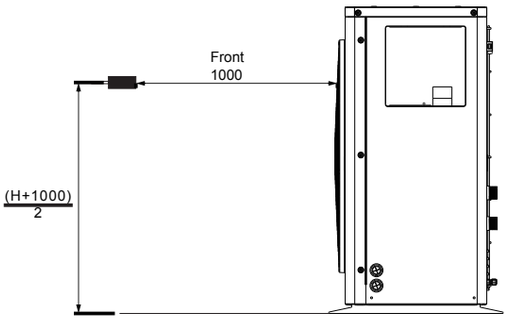
Table 2-8.1.1: Sound pressure levels[1]

Model name	dB [2]
XFMH04S3	44
XFMH06S3	45
XFMH08S3	46
XFMH10S3	46
XFMH12S3	46
XFMH14S3	50
XFMH16S3	54
XFMH12T9	46
XFMH14T9	50
XFMH16T9	54

Notes:

1. Sound pressure level is measured at a position 1m in front of the unit and (1+H)/2m (where H is the height of the unit) above the floor in a semi-anechoic chamber. During in-situ operation, sound pressure levels may be higher as a result of ambient noise.

Figure 2-8.1.2: Sound pressure level measurement (unit: mm)



2. dB(A) is the maximum value tested under the conditions below:

Outdoor air temperature 7^0C DB, 85% R.H.; EWT 30^0C, LWT 35^0C. Free compressor frequency.

Outdoor air temperature 7^0C DB, 85% R.H.; EWT 47^0C, LWT 55^0C. Free compressor frequency.

8.2 Octave Band Levels

Figure 2-8.2.1: XFMH04S3 octave band levels

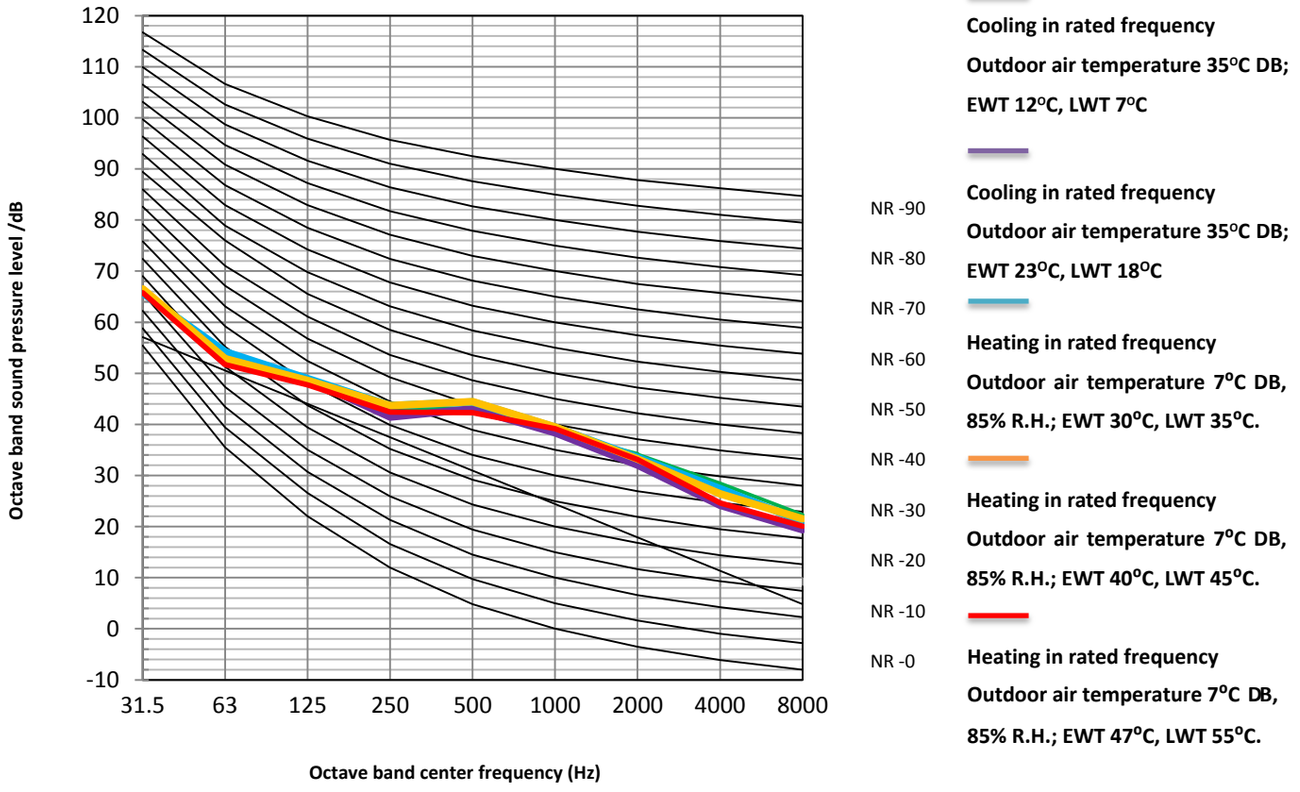


Figure 2-8.2.2: XFMH06S3 octave band levels

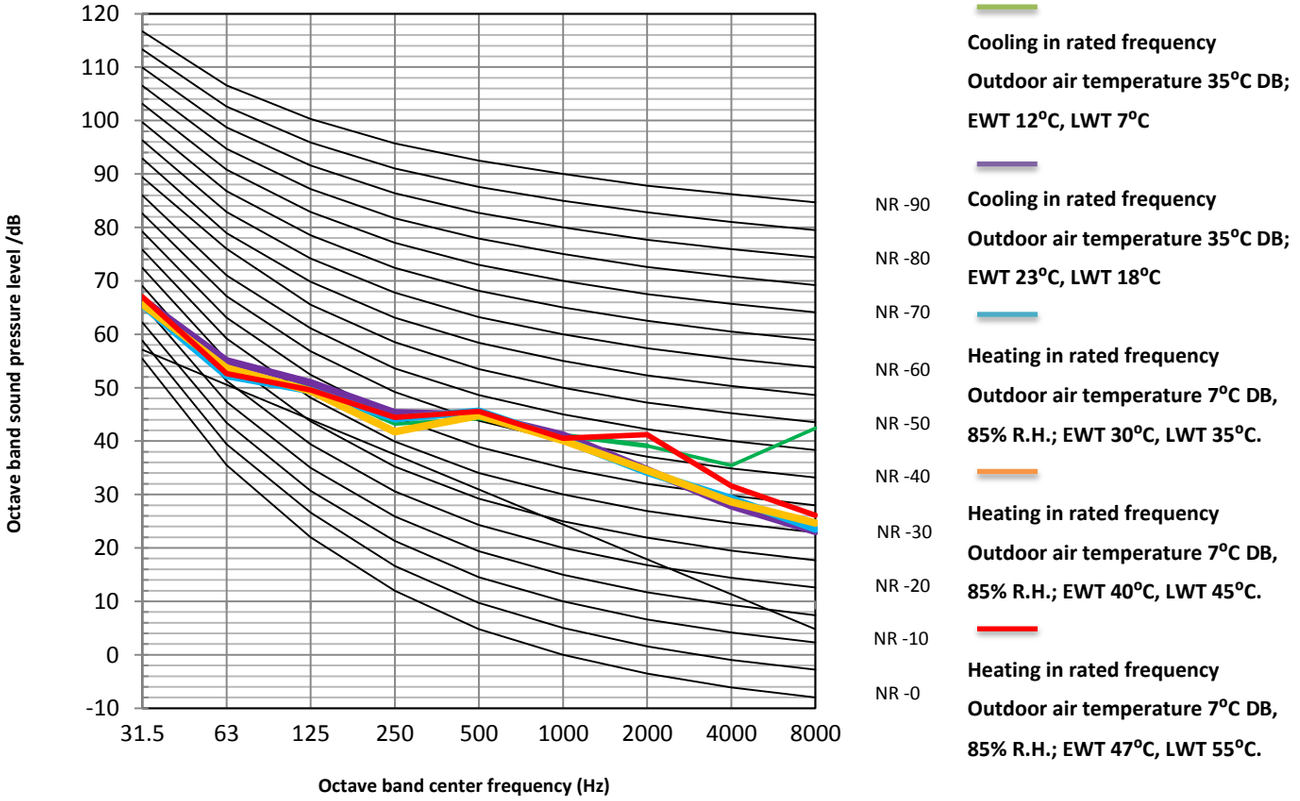


Figure 2-8.2.3: XFMH08S3 octave band levels

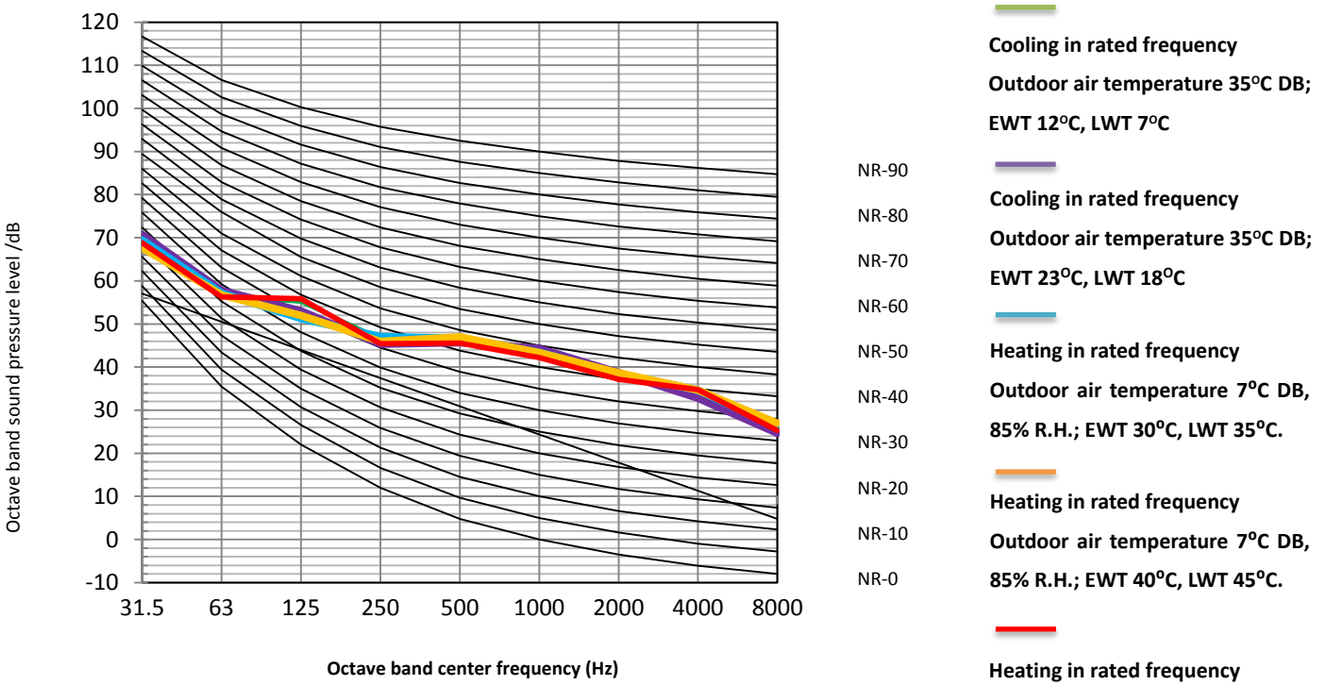


Figure 2-8.2.4: XFMH10S3 octave band levels

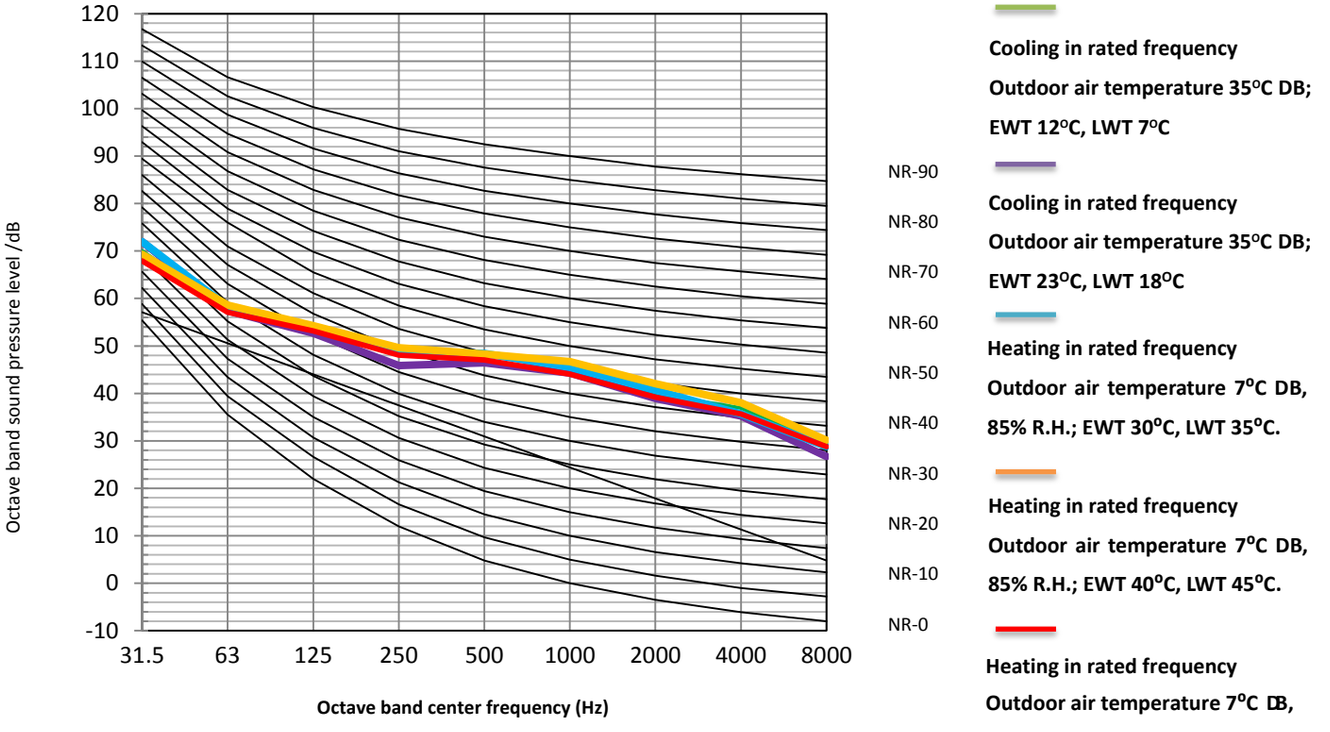


Figure 2-8.2.5: XFMH12S3 octave band levels

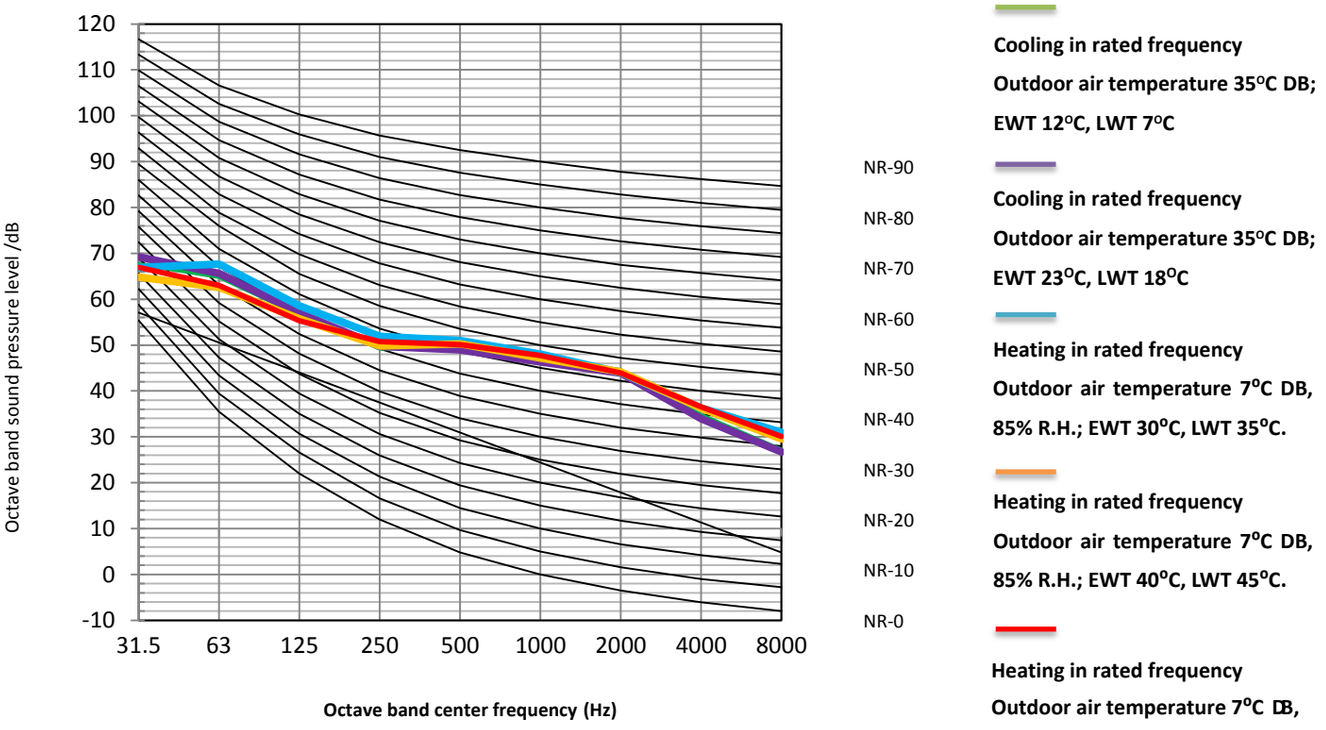


Figure 2-8.2.6: XFMH14S3 octave band levels

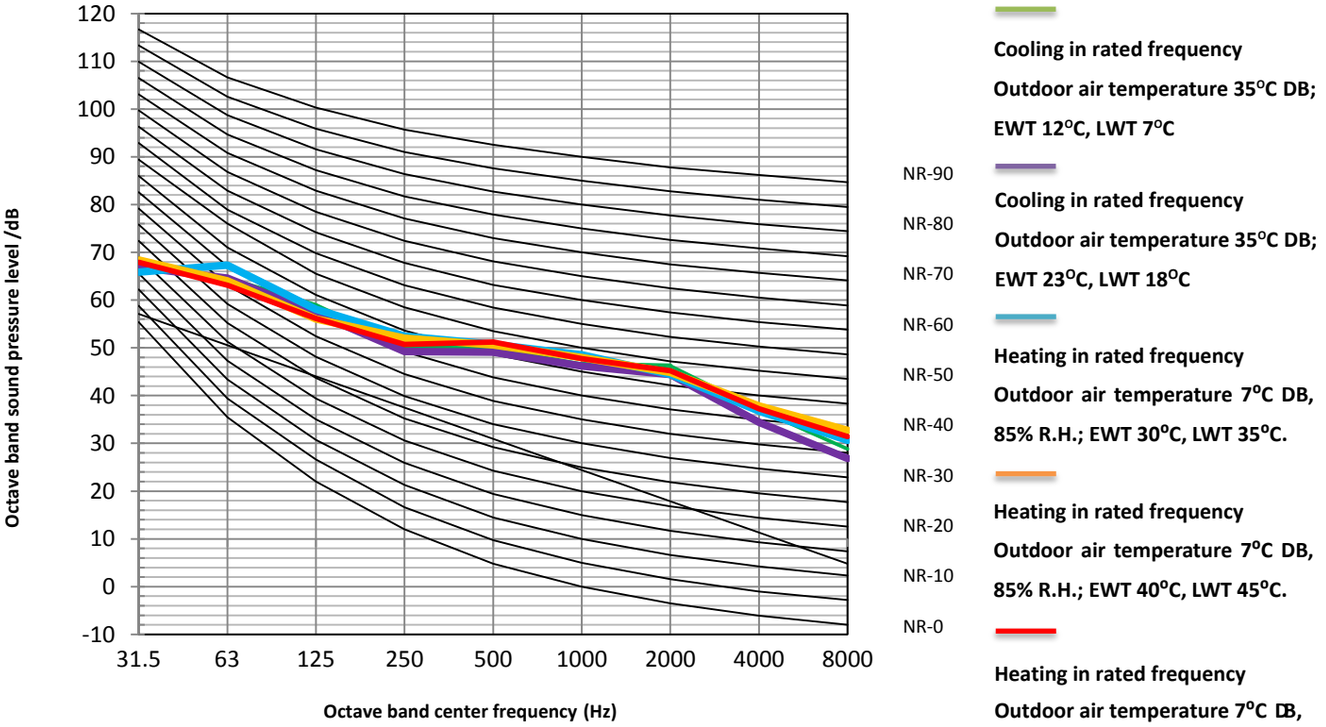


Figure 2-8.2.7: XFMH16S3 octave band levels

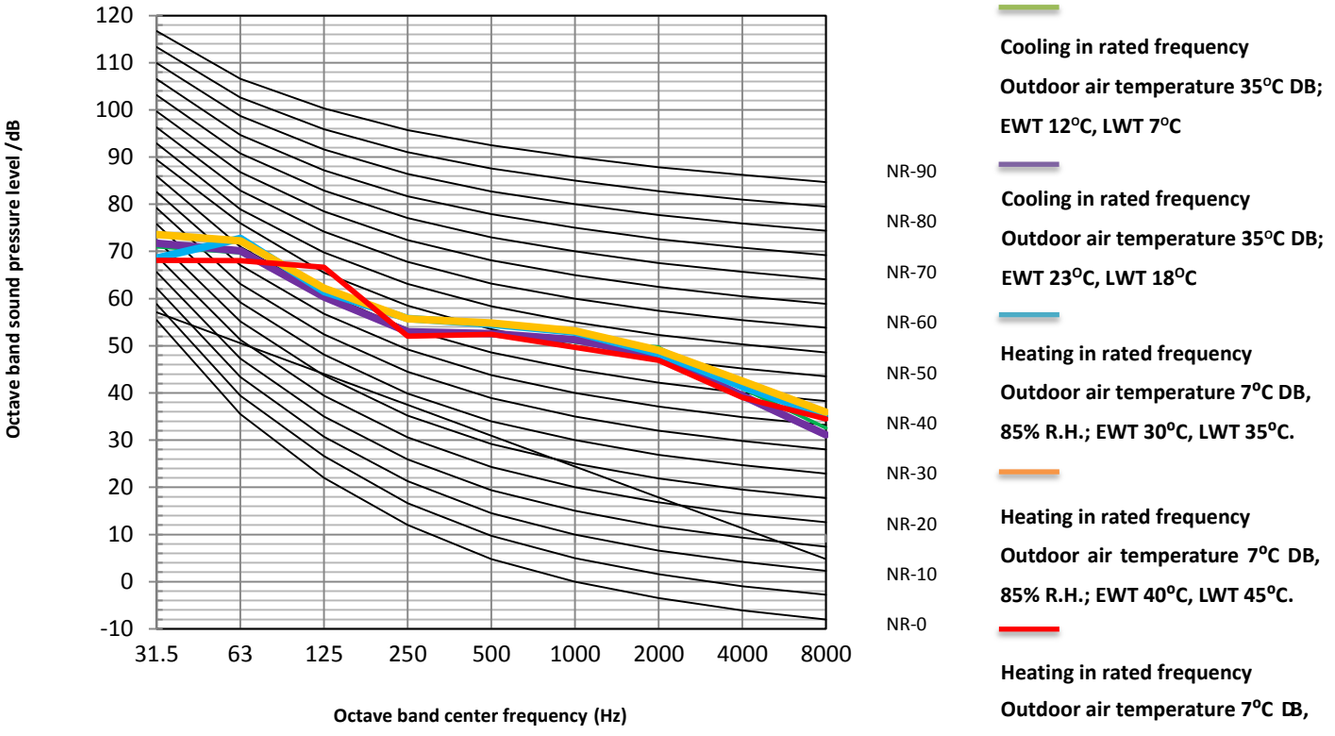


Figure 2-8.2.8: XFMH12T9 octave band levels

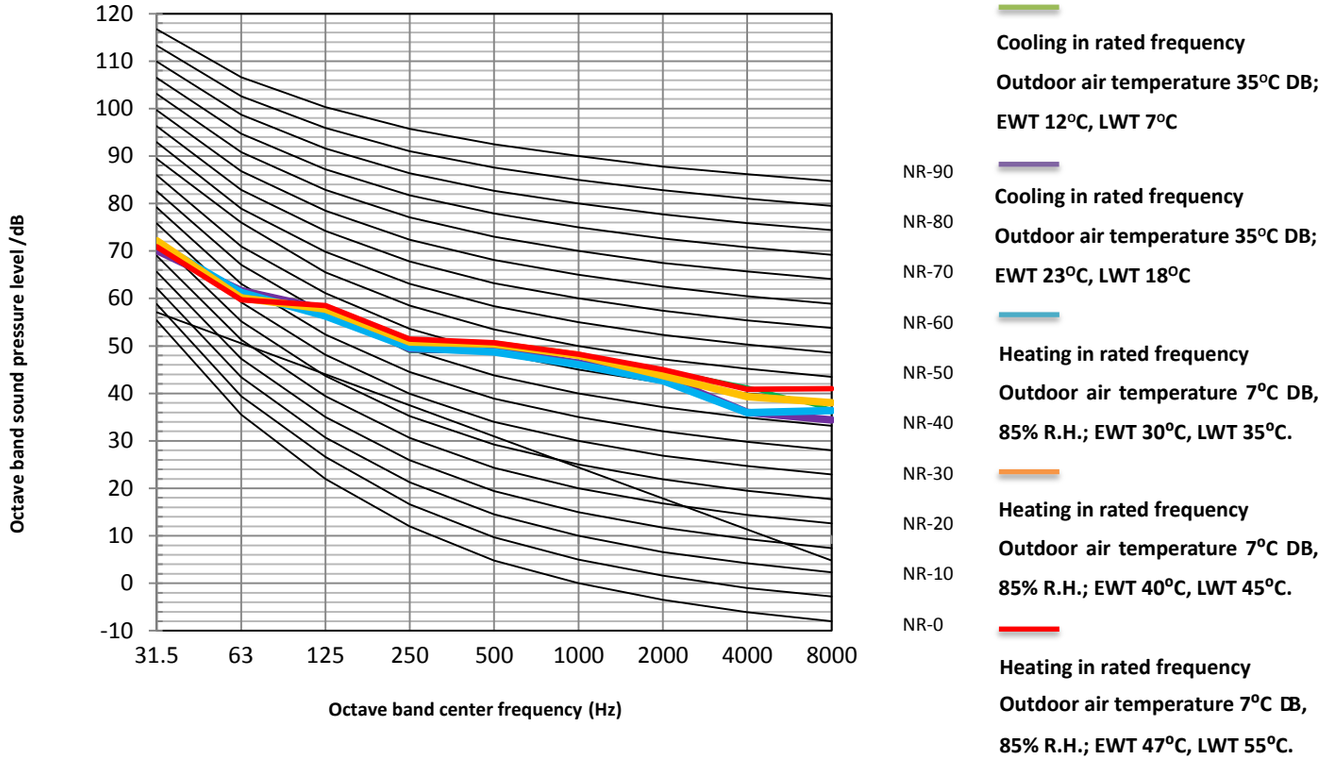
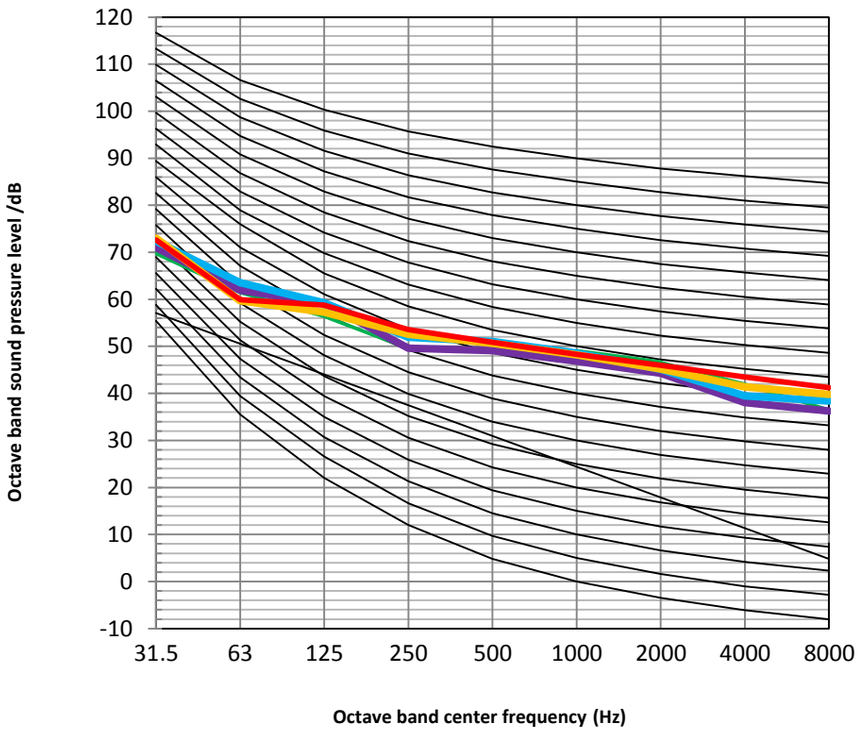


Figure 2-8.2.9: XFMH14T9 octave band levels



NR-90
NR-80
NR-70
NR-60
NR-50
NR-40
NR-30
NR-20
NR-10
NR-0

Cooling in rated frequency
Outdoor air temperature 35°C DB;
EWT 12°C, LWT 7°C

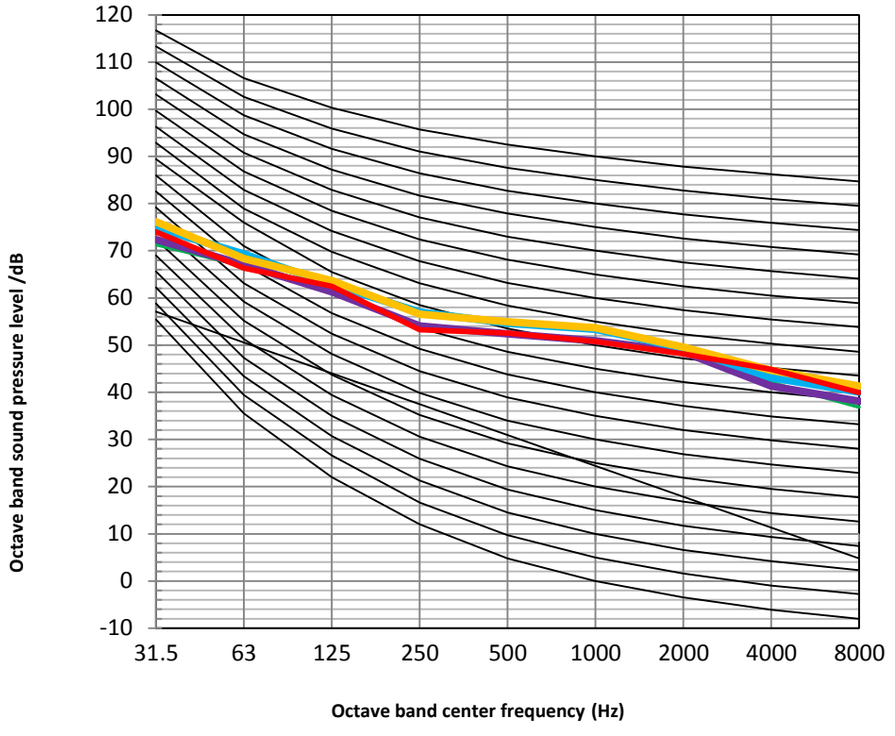
Cooling in rated frequency
Outdoor air temperature 35°C DB;
EWT 23°C, LWT 18°C

Heating in rated frequency
Outdoor air temperature 7°C DB,
85% R.H.; EWT 30°C, LWT 35°C.

Heating in rated frequency
Outdoor air temperature 7°C DB,
85% R.H.; EWT 40°C, LWT 45°C.

Heating in rated frequency
Outdoor air temperature 7°C DB,
85% R.H.; EWT 47°C, LWT 55°C.

Figure 2-8.2.10: XFMH16T9 octave band levels



NR-90
NR-80
NR-70
NR-60
NR-50
NR-40
NR-30
NR-20
NR-10
NR-0

Cooling in rated frequency
Outdoor air temperature 35°C DB;
EWT 12°C, LWT 7°C

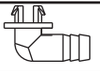
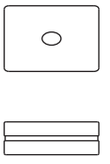
Cooling in rated frequency
Outdoor air temperature 35°C DB;
EWT 23°C, LWT 18°C

Heating in rated frequency
Outdoor air temperature 7°C DB,
85% R.H.; EWT 30°C, LWT 35°C.

Heating in rated frequency
Outdoor air temperature 7°C DB,
85% R.H.; EWT 40°C, LWT 45°C.

Heating in rated frequency
Outdoor air temperature 7°C DB,
85% R.H.; EWT 47°C, LWT 55°C.

9 Accessories
9.1 Standard accessories
Table 2-9.1.1: Standard accessories

Name	Shape	Quantity
Outdoor unit installation and owner's manual		1
User interface operation manual		1
Technical data manual		1
Y-shaped ÿlter		1
Water outlet connection pipe assembly		1
Wired controller		1
20m extension cord		1
Shockproof feet		6
Energy label		1
DHW Sensor (Length 8m)		1

9. 2 Optional accessories

Table 2-9.2: Optional accessories

Name	Shape	Quantity			
Thermistor for balance tank(TE1)		1	Reserved		
Thermistor for balance tank(TE2)		1	Reserved		
Thermistor for Zone 2 flow temp. (TZ2)		1	Length 10 m		
Thermistor for solar temp. (Tsolar)		1	Shared with tank temp. sensor, length 8m		

Part 3
Installation and Field Settings

1. Preface to Part 3

1.1 Notes for Installers Boxes

The information contained in this Engineering Data Book may primarily be of use during the system design stage of a Mono project. Additional important information which may primarily be of use during field installation has been placed in boxes, such as the example below, titled "Notes for installers".

Notes for installers

Notes for installers boxes contain important information which may primarily be of use during field installation, rather than during desk-based system design.

1.2 Definitions

In this Engineering Data Book, the term "applicable legislation" refers to all national, local and other laws, standa -rds, codes, rules, regulations and other legislation that apply in given situation.

1.3 Precautions

All system installation including installation of water piping and electrical work must only be carried out by compe -tent and suitably qualified, certified and accredited professionals and in accordance with all applicable legislation.

2. Installation

2.1 Acceptance and Unpacking

Notes for installers

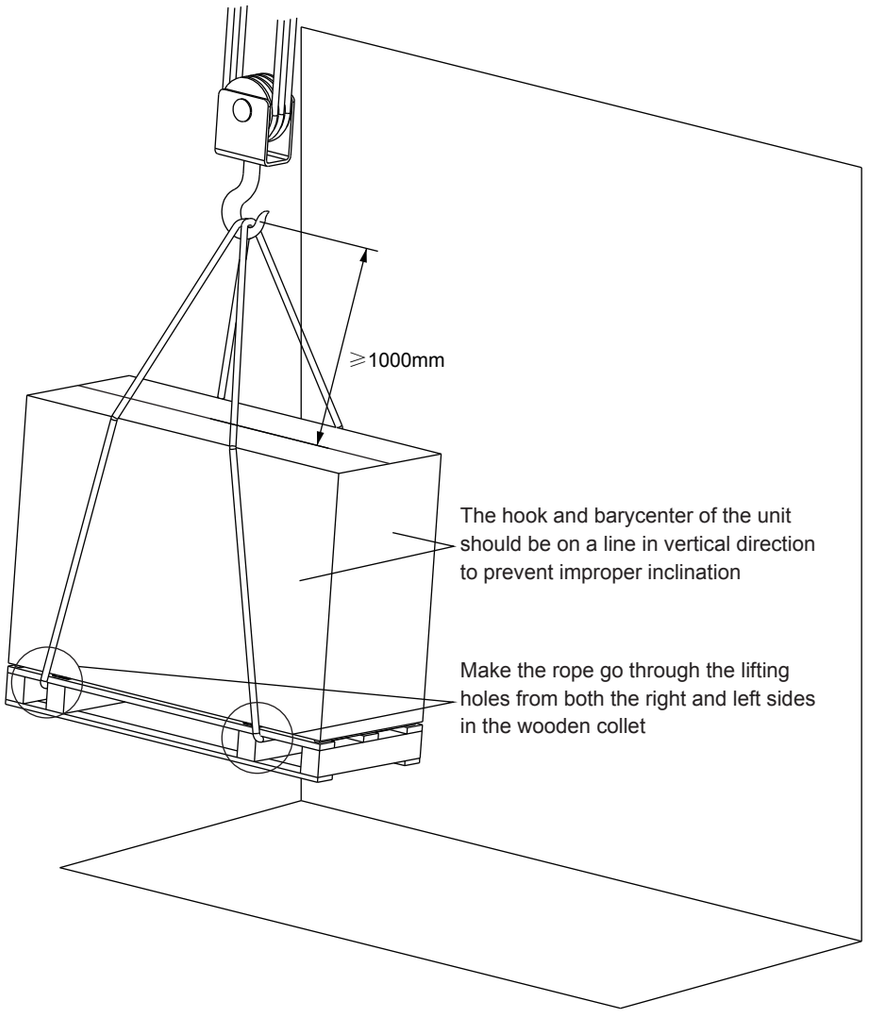
- When units are delivered check whether any damage occurred during shipment. If there is damage to the surface or outside of a unit, submit a written report to the shipping company.
- Check that the model, specifications and quantity of the units delivered are as ordered.
- Check that all accessories ordered have been included. Retain the Owner's Manual for future reference.

2.2 Hoisting

Notes for installers

- Do not remove any packaging before hoisting. If units are not packaged or if the packaging is damaged, use suitable boards or packing material to protect the units.
- Hoist one unit at a time, using two ropes to ensure stability.
- Keep units upright during hoisting, ensuring that the angle to the vertical does not exceed 30°.

Figure 3-2.1: Hoisting the unit



2.3 Placement Considerations

Placement of the outdoor unit should take account of the following considerations:

- Outdoor units should not be exposed to direct radiation from a high - temperature heat source.
- Outdoor units should not be installed in positions where dust or dirt may a□ect heat exchangers.
- Outdoor units should not be installed in locations where ex acidic or alkaline gases, may occur.osure to oil or to corrosive or harmful gases, such as acidic or alkaline gases, may occur.
- Outdoor units should not be installed in locations where exposure to salinity may occur.
- Outdoor units should be installed in well - drained, well - ventilated positions.
- Outdoor units should be installed in positions that are as close as possible to the heat emitters.
- Outdoor units should be installed in ositions that are su□ciently close to he desired position of the wired controller that the controller's wiring length limitation will not be exceeded.
- In systems that are con□gured to heat domestic hot water and/or include an external backup electric heater, outdoor units should be installed in positions that are su□ciently close to the domestic hot water tank and/or backup electric heater that the temperature sensor wiring length limitations will not be ex eeded.
- Outdoor units should be installed in locations where the noise from the un t will not disturb neighbors.

2.4 Strong Wind Installation

Wind of 5m/s or more blowing against an outdoor unit's air outlet blocks the □ow of air through the unit, leading to deterioration in unit capacity, accelerated frost accumulation when in heating mode or domestic hot water mode, and potential disruption to operation due to increased pressure in the refrigerant circuit. Exposure to very strong wind can also cause the fan to rotate excessively fast, potentially leading to damage to the fan.
In locations where exposure to high winds may occur should take account of the following considerations:

- For installation of the outdoor unit in a place where the wind direction can be foreseen. Set the outlet side at a right angle to the direction of the wind, refer to Figure 3-2.4.1.
- If turn the air outlet side toward the building's wall, fence or screen. Make sure there is enough room to do the installation

Figure 3-2.4.1: Installation room illustration

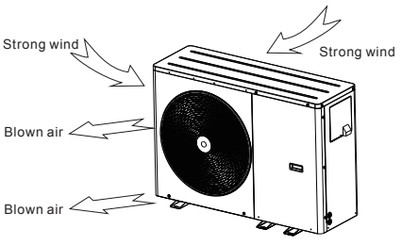


Figure 3-2.4.2: Installation room illustration

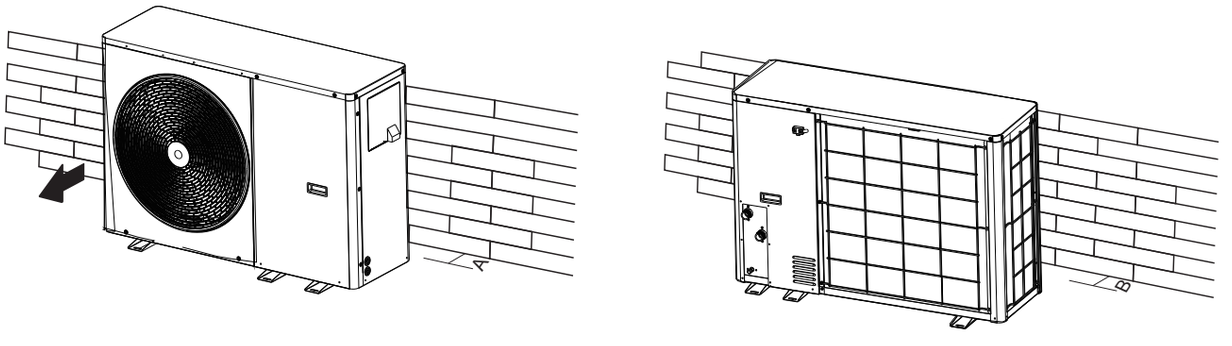


Table 3 -2.4.1: Installation room requirement(Unit: mm)

Model	A(mm)
4-16kW	≥300
Model	**B(mm)**
4-6kW	≥1000
8-16kW	≥1500

2.5 Cold Climate Installation

Figure 3-2.5.1: Snow shielding

In cold climate locations installation should take account of the following considerations:

- Never install the unit at a site where the suction side may be exposed directly to wind.
- To prevent exposure to wind, install baffle plate on the air discharge side of the unit.
- To prevent exposure to wind, install the unit with its suction side facing the wall.
- In areas of heavy snowfall, a canopy should be installed to prevent snow entering the unit. Additionally, the height of the base structure should be increased so as to raise the unit further off the ground. Refer to Figure 3-2.5.1.

2.6 Hot Climate Installation

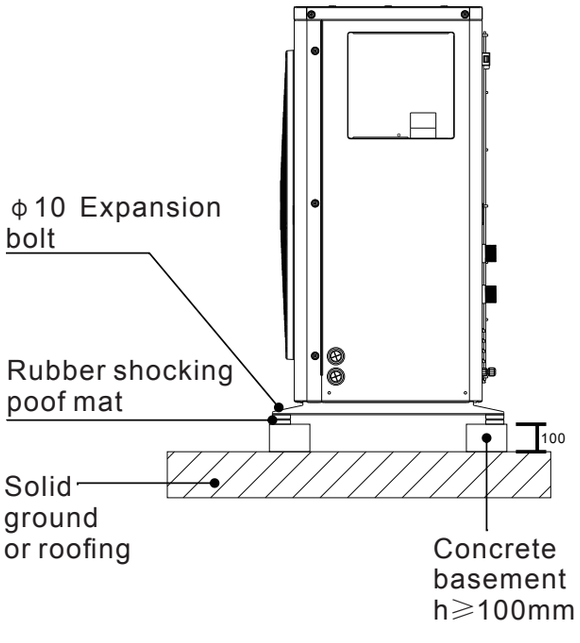
As the outdoor temperature is measured via the outdoor ambient temperature sensor, make sure to install the outdoor unit in the shade, or a canopy should be constructed to avoid direct sunlight. So that it is not influenced by the sun's heat, otherwise system protection may occur.

2.7 Base Structure

Outdoor unit base structure design should take account of the following considerations:

- A solid base prevents excess vibration and noise. Outdoor unit bases should be constructed on solid ground or on structures of sufficient strength to support the unit's weight.
- Bases should be at least 100mm high to provide sufficient drainage and to prevent water ingress into the base of the unit.
- Either steel or concrete bases may be suitable.
- Outdoor units should not be installe on supporting structures that could be damaged by water build‐in in the event of a blocked drain.
- Fix the unit securely to foundation by means of the Φ10 expansion bolt. It is best to screw in the foundation bolts until their length is 20 mm from the foundation surface.

Figure 3-2.7.1: Outdoor unit typical concrete base structure design (unit: mm)

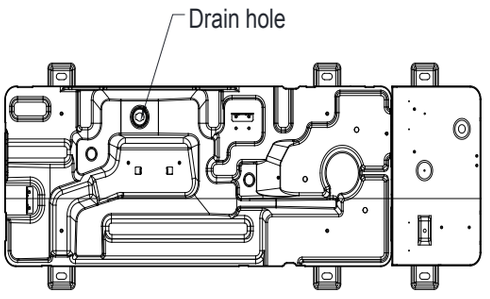


unit: mm

2.8 Drainage

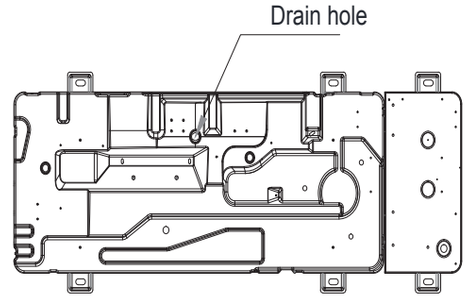
Drainage ditch should be provided to allow drainage of condensate that may form on the air side heat exchanger when the unit is running in heating mode or domestic hot water mode. he drainage should ensure that condensa -te is directed away from roadways and footpaths, especially in locations where the climate is such that condensa -te may freeze.

Figure 3-2.8.1: 4/6/8 kW models drainage hole



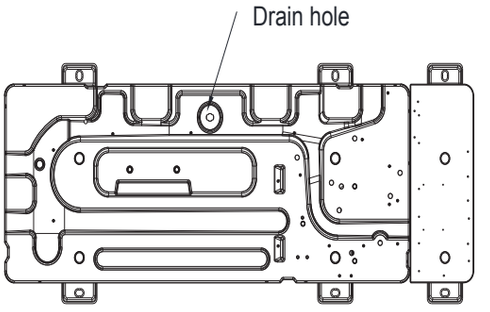
4/6/8 kW

Figure 3-2.8.2: 14/16kW models drainage hole

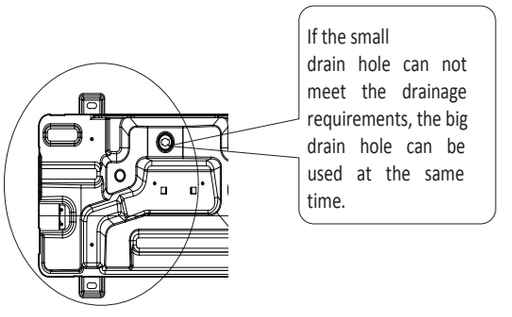


10/12 kW

Figure 3-2.8.3: 10/12 kW models drainage hole



14/16 kW



NOTE

It's necessary to install an electrical heating belt if water can't drain out in cold weather even the big drain hole has opened.

2.9 Spacing

2.9.1 Stacked installation

Outdoor units must be spaced such that sufficient air may flow through each unit. Sufficient air flow across heat exchangers is essential for outdoor units to function properly. Figures 3-2.9.1.1, 3-2.9.1.2 and Table 3-2.9.1.1 show the minimum spaces that must be allowed between units and the minimum distances from obstacles in front of and behind units.

Figure 3-2.9.1.1: Installation with obstacles in front of the unit

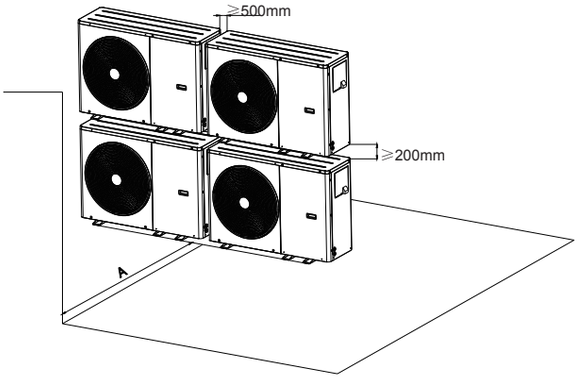


Figure 3-2.9.1.2: Installation with obstacles behind the unit

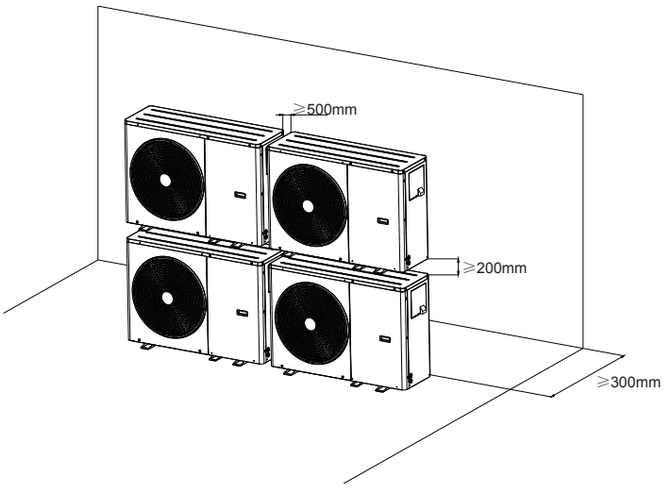


Table 3 -2.9. 1.1: Minimum spacing from obstacles in front of the unit

Model	A(mm)
4-12W	≥1000
14-16kW	≥1500

2.9.2 Installation in Rows

Figure 3-2.9.2.1: Single row installation

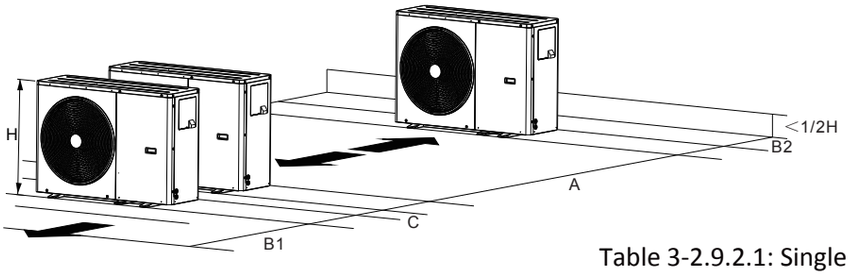


Table 3-2.9.2.1: Single row installation spacing requirements

Model	A(mm)	B1(mm)	B2 (mm)	C(mm)
4-12kW	≥1500	≥500	≥150	≥300
14-16kW	≥2000	≥1000	≥150	≥300

Figure 3-2.9.2.2: Multi-row installation

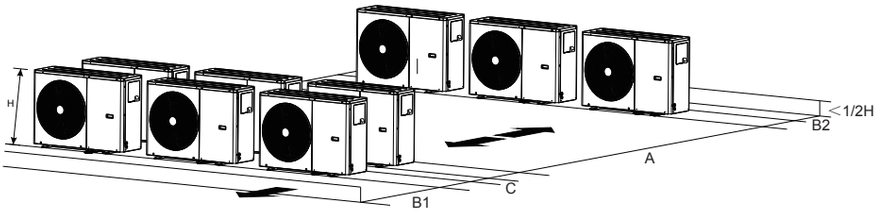


Table 3-2.9.2.4: Multiple row installation spacing requirements

Model	A(mm)	B1(mm)	B2(mm)	C(mm)
4-12kW	≥2500	≥1000	≥300	≥600
14-16kW	≥3000	≥1500	≥300	≥600

3 .Water Pipework
3.1: Water Circuit Checks

- The maximum water pressure ≤ 3 bar.
- The maximum water temperature ≤ 70°C according to the safety device setting.
  Always use materials that are compatible with the water used in the system and with the materials used in the unit.
- Ensure that components installed in the field piping can withstand the water pressure and temperature.
- Drain taps must be provided at all low points of the system to permit complete drainage of the circuit during maintenance.
- Air vents must be provided at all high points of the system. The vents should be located at points that are easily accessible for service. An automatic air purge is provided inside the unit. Check that this air purge valve is not tightened so that automatic release of air in the water circuit is possible.

Water Volume and Expansion Vessel Pre-pressure Checks

Outdoor units are equipped with an expansion vessel (4/ 6/ 8/ 10/ 12/ 14/ 16kW models: 5L) that has a default pre-pressure of 1.5 bar. To assure proper operation of the unit, the pre‑pressure of the expansion vessel might need to be adjusted. Refer to Table 3-3.1.1. The total volume of water in the system must be at least 25L(for 4/ 6/ 8kW unit, the minimum volume is 15L) and should not exceed the limits specified in Figure 3-3.1.1.

Table 3-3.1.1: Expansion vessel pre-pressure adjustment

Installation height differene[1]	Water volume ≤ X L[2]	Water volume > X L[2]
≤ 12m	No pre-pressure adjustment required	Actions required: · Pre-pressure must be decreased, calculate according to "Calculating the pre-pressure of the expansion vessel"[3] · Check if the water volume is lower than maximum allowed water volume (refer to Figure 3-3.1)
> 12m	Actions required: · Pre-pressure must be increased, calculate according to "Calculating the pre-pressure of the expansion vessel"[2] · Check if the water volume is lower than maximum allowed water volume (refer to Figure 3-3.1.1)	Expansion vessel in the outdoor unit too small for the system. An external expansion vessel (field suppied) is required.

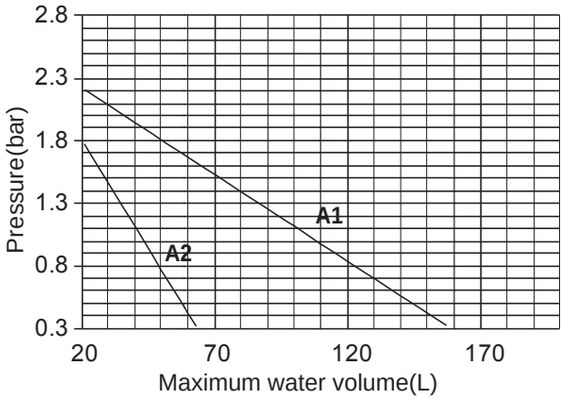
Notes:

1. Height difference is between the highest point of the water circuit and the outdoor unit's expansion tank. Unless the unit is located at the highest point of the system in which case the installation height difference is considered to be zero..
2. For 1-phase 12-16kW and 3 phase 12 -16kW units, this value is 72L, for 4 -10kW units, this value is 30L.30 L.
3. Calculating the pre-ressure of the expansion vessel:l:
   The pre-ressure (Pg) to be set depends on the maximum installation height difference (H)(and is calculated Pg(bar)=(H(m)/10 +0.3) bar.

To determine the maximum allowed water volume in the entire circuit, proceed as follows:

- Determine the calculated pre‑pressure (Pg) for the corresponding maximum water volume using the Figure 3-3.1

Figure 3-3.1: Maximum water volume



A1: System without glycol for 1-phase 10 - 16kW and 3-phase 12-16kW unit.

A2: System without glycol for the 4 ~ 8kW unit.

Check that the total water volume in the entire water circuit is lower than this value. If this is not the case, the expansion vessel inside the unit is too small for the installation.

Example

The unit(16kW) is installed at the highest point in the water circuit. The total water volume in the water circuit is 150L.

Since 150L is more than 72L, the pre‑pressure must be decreased, refer to Table 3-3.1.1.

- The required pre‑pressure is: Pg(bar) = (H(m)/10+0.3) bar = (0/10+0.3) bar = 0.3 bar.
- The corresponding maximum water volume can be read from the Figure 3-1.7 is approximately 160L.
- Since the total water volume (150L) is below the maximum water volume (160L), the expansion vessel suffices for the installation.

When it is required to change the default pre-pressure of the expansion vessel (1.5 bars), following guidelines:

- Use only dry nitrogen to set the expansion vessel pre-pressure.
- Inappropriate setting of the expansion vessel pre-pressure will lead to malfunctioning of the system. Pre-pressure should only be adjusted by a licensed installer.

If the expansion vessel of unit is too small for the installation, an additional expansion vessel is needed.

- Calculate the pre‑pressure of the expansion vessel: Pg(bar) = (H(m)/10+0.3) bar
  The expansion vessel equipped in the unit should adjust the pre‑pressure also.
- Calculate the volume needed for the additional expansion vessel: V1=0.0693*Vwater/(2.5-Pg)-V0 Vwater: the volume of water in the system V0: the volume of expansion vessel with which the unit is equipped (For 4~8kW, V0=2L; For 10~16kW, V0=5L)

3.3 Water Circuit Connection

Water connections must be made correctly in accordance with the labels on the outdoor unit, with respect to the water inlet and water outlet. If air, moisture or dust gets in the water circuit, problems may occur. Therefore, always take into account the following when connecting the water circuit:

- Use clean pipes only.
- Hold the pipe end downwards when removing burrs.
- Cover the pipe end when inserting it through a wall to prevent dust and dirt entering.
- Use a good thread sealant for sealing the connections. The sealing must be able to withstand the pressures and temperatures of the system.

- When using non-copper metallic piping, be sure to insulate the two kinds of materials from each other to prevent galvanic corrosion.
- For copper is a soft material, use appropriate tools for connecting the water circuit. Inappropriate tools will cause damage to the pipes.

3.4 Water Circuit Anti-freeze Protection

Ice formation can cause damage to the hydraulic system. As the outdoor unit may be exposed to sub-zero temperatures, care must be taken to prevent freezing of the system. All internal hydraulic parts are insulated to reduce heat loss. Insulation must also be added to the field piping.

• The software contains special functions using the heat pump to protect the entire system against freezing.
When the temperature of the water flow in the system drop to a certain value, the unit will heat the water, either using the heat pump, the electric heating tap, or the backup heater. The freeze protection function will turn off only when the temperature increases to a certain value.

. In event of a power failure, the above features would not protect the unit from freezing.
Since a power failure could happen when the unit is unattended, the supplier recommends using anti freeze fluid for the water system.

. Depending on the expected lowest outdoor temperature, make sure the water system is filled with a concentration of glycol as mentioned in the table below. When glycol is added to the system, the performance of the unit will be affected.
The correction factor of the unit capacity, flow rate and pressure drop of the system is listed in the table 3-3.4.1 and 3-3.4.2.

Table 3-3.4.1: Ethylene Glycol

Concentration of ethylene glycol (%)	Modification coefficient				Freezing point (°C)
	Cooling capacity	Power input	Water resistance	Water flow	
0	1.000	1.000	1.000	1.000	0
10	0.984	0.998	1.118	1.019	-4
20	0.973	0.995	1.268	1.051	-9
30	0.965	0.992	1.482	1.092	-16
40	0.960	0.989	1.791	1.145	-23
50	0.950	0.983	2.100	1.200	-37

Table 3-3.4.2: Propylene Glycol

Concentration of propylene glycol(%)	Modification coefficient				Freezing point (^{0}C)
	Cooling capacity	Power input	Water resistance	Water flow	
0	1.000	1.000	1.000	1.000	0
10	0.976	0.996	1.071	1.000	-3
20	0.961	0.992	1.189	1.016	-7
30	0.948	0.988	1.380	1.034	-13
40	0.938	0.984	1.728	1.078	-22
50	0.925	0.975	2.150	1.125	-35

Uninhibited glycol will turn acidic under the influence of oxygen. This process is accelerated by presence of copper and at higher temperatures. The acidic uninhibited glycol attacks metal surfaces and forms galvanic corrosion cells that cause severe damage to the system. It is of extreme importance:
. That the water treatment is correctly executed by a qualified water specialist.
. That a glycol with corrosion inhibitors is selected to counteract acids formed by the oxidation of glycols.

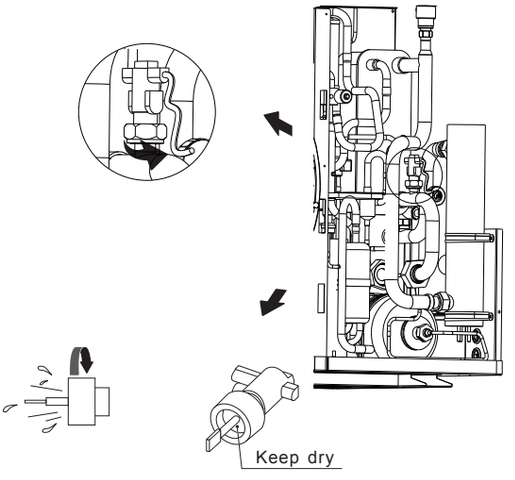
- That in case of an installation with a domestic hot water tank, only the use of propylene glycol is allowed. In other installations the use of ethylene glycol is fine.
- That no automotive glycol is used because their corrosion inhibitors have a limited lifetime and contain silicates that can foul or plug the system;
- That galvanized piping is not used in glycol systems since it may lead to the precipitation of certain elements in the glycol's corrosion inhibitor;
- To ensure that the glycol is compatible with the materials used in the system.

3.5: Water Flow Switch

Water may enter into the flow switch and cannot be drained out and may freeze when the temperature is low enough. The flow switch should be removed and dried, then can be reinstalled in the unit.

- Counterclockwise rotation, remove the water flow switch.
- Drying the water flow switch completely.

Figure 3-3.5.1: Water flow switch

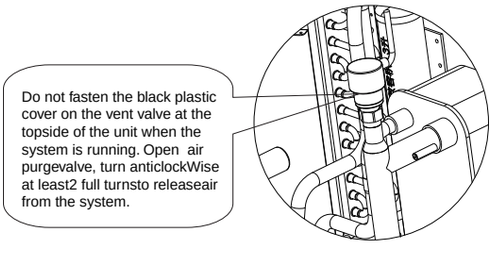


3.6: Adding Water

Water may enter into the flow switch and cannot be drained out and may freeze when the temperature is low enough. The flow switch should be removed and dried, then can be reinstalled in the unit.

- Connect the water supply to the fill valve and open the valve.
- Make sure the automatic air purge valve is open (at least 2 turns). Refer to Figure 3-3.6.1.
- Fill with water until the manometer indicates a pressure of approximately 2.0 bars. Remove air in the circuit as much as possible using the air purge valve. Air in the water circuit could malfunction of the backup electric heater.

Figure 3-3.6.1: Air purge valve



3.7: Water Piping Insulation

The complete water circuit including all piping, water piping must be insulated to prevent condensation during cooling operation and reduction of the heating and cooling capacity as well as prevention of freezing of the outsi -de water piping during winter. The insulation material should at least of B1 fire resistance rating and complies with all applicable legislation. The thickness of the sealing materials must be at least 13mm with thermal conduc -tivity 0.039W/mK in order to prevent freezing on the outside water piping. If the outdoor ambient temperature is higher than 30℃ and the humidity is higher than RH 80%, the thickness of the sealing materials should be at least 20mm in order to avoid condensation on the surface of the seal.

4 .Electrical Wiring

4.1: General

Notes for installers

Caution

- All installation and wiring must be carried out by competent and suitably qualified, certified and accredited professionals and in accordance with all applicable legislation.
- Electrical systems should be grounded in accordance with all applicable legislation.
- Overcurrent circuit breakers and esidual‐current circuit breakers (ground fault circuit interrupters) should be used in accordance with all applicable legislation.
- Wiring patterns shown in this data book are general connection guides only and are not intended for, or to include all details for, any specific installation.
- The water piping, power wiring and communication wiring are typically run in parallel. However the communic-ation wiring should not be bound together with power wiring. To prevent signal interference, the power wiring and communication wiring should not be run in the same conduit. If the power supply is less than 10A, a separation of at least 300mm between power wiring and communication wiring conduits should be maintained; if the power supply is in the range10A to 50A then a separation of at least 500mm should be maintained.

4.2 Precautions

- Fix cables so that cables do not make contact with the pipes(especially on the high pressure side).
- Secure the electrical wiring with cable ties as shown in Fingure 3-4.2.1, 3-4.2.2 and Figure 3-4.2.3. So that it does not come in contact with the piping, particularly on the high-pressure side.

Figure 3-4.2.1: Wiring hole for 4/6/8kW models

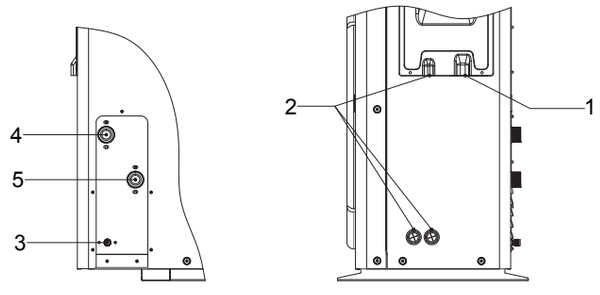


Figure 3-4.2.2: Wiring hole for 10/12kW models

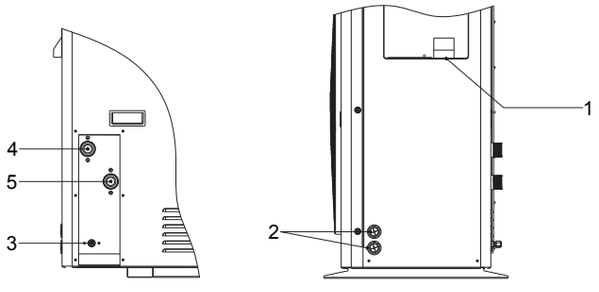
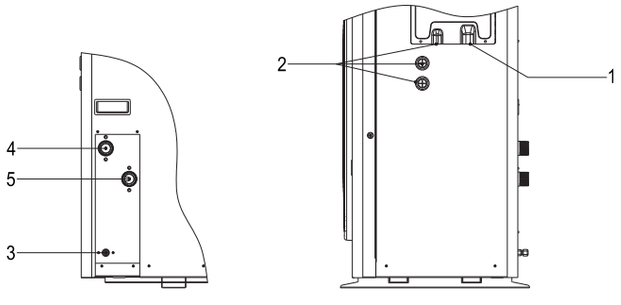


Figure 3-4.2.3: Wiring hole for 14/16kW models



Item	Description
1	High voltage wire hole
2	Low voltage wire hole
3	Drainage pipe hole Water
4	outlet
5	Water inlet

- Make sure no external pressure is applied to the terminal connectors.
- When installing the ground fault circuit interrupter make sure that it is compatible with the inverter (resistant to high frequency electrical noise) to avoid unnecessary opening of the ground fault circuit interrupter.
- This unit is equipped with an inverter. Installing a phase advancing cacitor not only reduce the power factor improvement effect, but also may cause abnormal heating of the capacitor due to high frequency waves. Never install a phase advancing capacitor as it could lead to accident.

4.3: Guideless

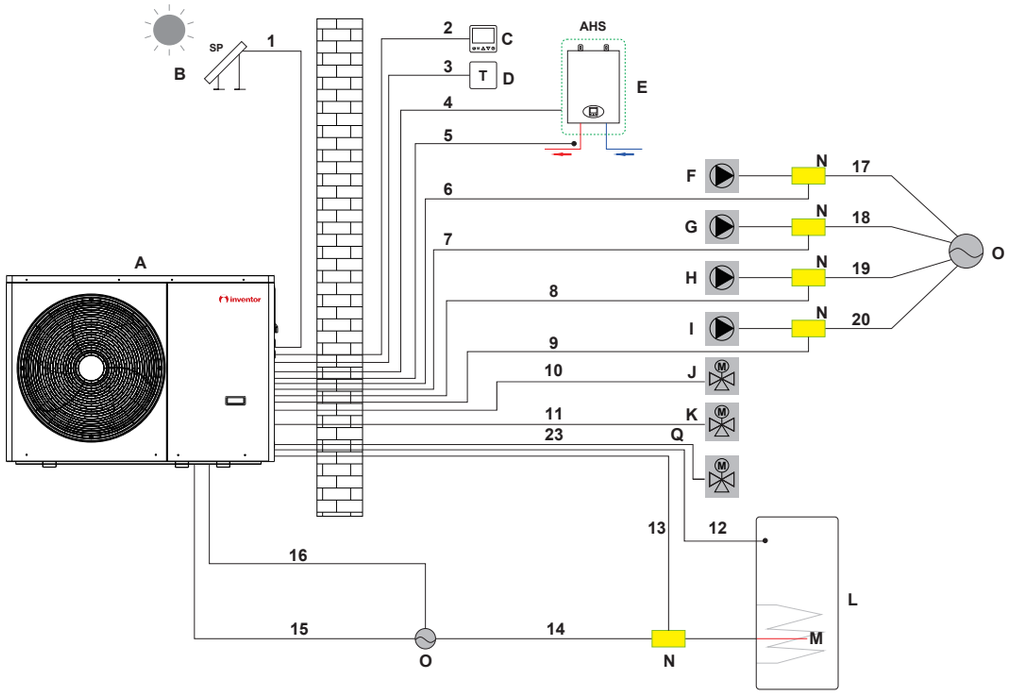
- Most field wiring on the unit is to be made on the terminal block inside the switch box. To gain access to the terminal block, remove the switch box service panel.
- Fix all cables using cable ties.
- A dedicated power circuit is required for the backup electric heater.
- Installation equipped with a domestic hot water tank (field supplied) requires a dedicated power circuit for the immersion heater.

Secure the wiring in the order shown below:

- Lay out the electrical wiring so that the front cover does not rise up when doing wiring work and attach the front cover securely.
- Follow the electrical wiring diagrams for electrical wiring works. Refer to KS-40W/EN8BP / KS-60W/EN8BP / S-80W/EN8BP and KS-100W/EN8BP / KS-120W/EN8(S)BP and KS-140W/EN8(S)BP / KS-160WEN8(S)BP in part 2.4 “Wiring Diagram”.
- Install the wires and fix the cover firmly so that the cover may be fit in properly.

4.4: Wiring Overview

Figure 3-4.4.1: Wiring overview



Item	Description	Item	Description
A	Outdoor unit	J	SV2: Motorized 3-way valve (field su pplied)
B	Solar energy kit (field supplied)	K	SV1: Motorized 3-way valve (field su pplied)
C	User interface	L	Domestic water tank (field supplied)
D	Room thermostat (field supplied)	M	Immersion heater (field supplied)
E	Auxiliary heating source (field supplied)	N	Contactor (field supplied)
F	P_s: Solar pump (field supplied)	O	Power supply
G	P_c: Mixing pump (field supplied)	Q	Zone 2 SV3(3-way valve)
H	P_o: External circulator pump (field supplied)		
I	P_d: DHW pump (field supplied)		

Table continued on next page …

Table 3-4.4.2: Wiring requirements

Item	Description	Current	Required numbe of conductors	Maximum running current	Minium wiring size
1	Solar energy kit signal wire	AC	2	200mA	0.75mm²
2	User interface wire[1]	AC	4	200mA	0.75-1.25mm²
3	Room thermostat wire	AC	2 or 3	200mA	0.75mm²
4	Auxiliary heating source control wire	/	2	200mA	0.75mm²
5	Final temperature sensor	DC	2	/	/
9	DHW pump control wire	AC	2	200mA	0.75mm²
10	Motorized 3-way valve control wire	AC	2 or 3	200mA	0.75mm²
11	Motorized 3-way valve control wire	AC	2 or 3	200mA	0.75mm²
12	Temperature sensor	DC	2	/	/
15	Power supply wire for outdoor unit	AC	2+GND(1Ph, 4～10kW) 2+GND(1Ph, 12/14/16kW) 4+GND(3Ph, 2/14/16kW)	29A(1Ph, 4～8W) 42A(1Ph, 10/12/14/16kW) 26A(3Ph, 12/14/16kW)	6mm²(1Ph, 4～8kW) 10mm²(1Ph, 10～16kW) 6mm²(3Ph, 12/14/16kW)
17	Power supply wire for solar pump[2]	AC	2	related to the pump power	related to the pump power
18	Power supply wire for mixing pump[2]	AC	2	related to the pump power	related to the pump power
19	Power supply wire for outside circulation pump[2]	AC	2	related to the pump power	related to the pump power
20	Power supply wire for DHW pump[2]	AC	2	related to the pump power	related to the pump power

Notes:

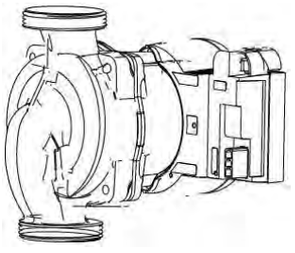
1. 4-core shielded wire is required; the standard maximum wire length is 20m.
2. If the Maximum running current is higher than 200mA, dedicated power supply is needed.

5. Dip switch Settings

Dip switch is located on the hydraulic module main control board, please reference to Par 2.4 the wiring diagrams.

6.Internal Circulation Pump

The pump is controlled via a digital low-voltage pulse-width modulation signal which means that the speed of rotation depends on the input signal. The speed changes as a function of the input profile. The relationship between external static pressure and water flow rate is described in Part 2.7 “hydraulic Performance”.



7. User Interface Field Settings

7.1 Introduction

During installation,the Mono's settings and parameters should be configured by the installer to suit the installation configuration, climate conditions and end-user preferences. The relevant settings are accessible and programmable through the menu "FUNCTION PARAMETER SET" on the Mono's user interface. The user interface menus and settings can be navigated using the user interface's touch-sensitive keys, as detailed in Table 3.7-1..1

NOTE

Temperature values displayed on the wired controller (user interface)are in ^{0}C.C.

7.2 MENU STRUCTURE

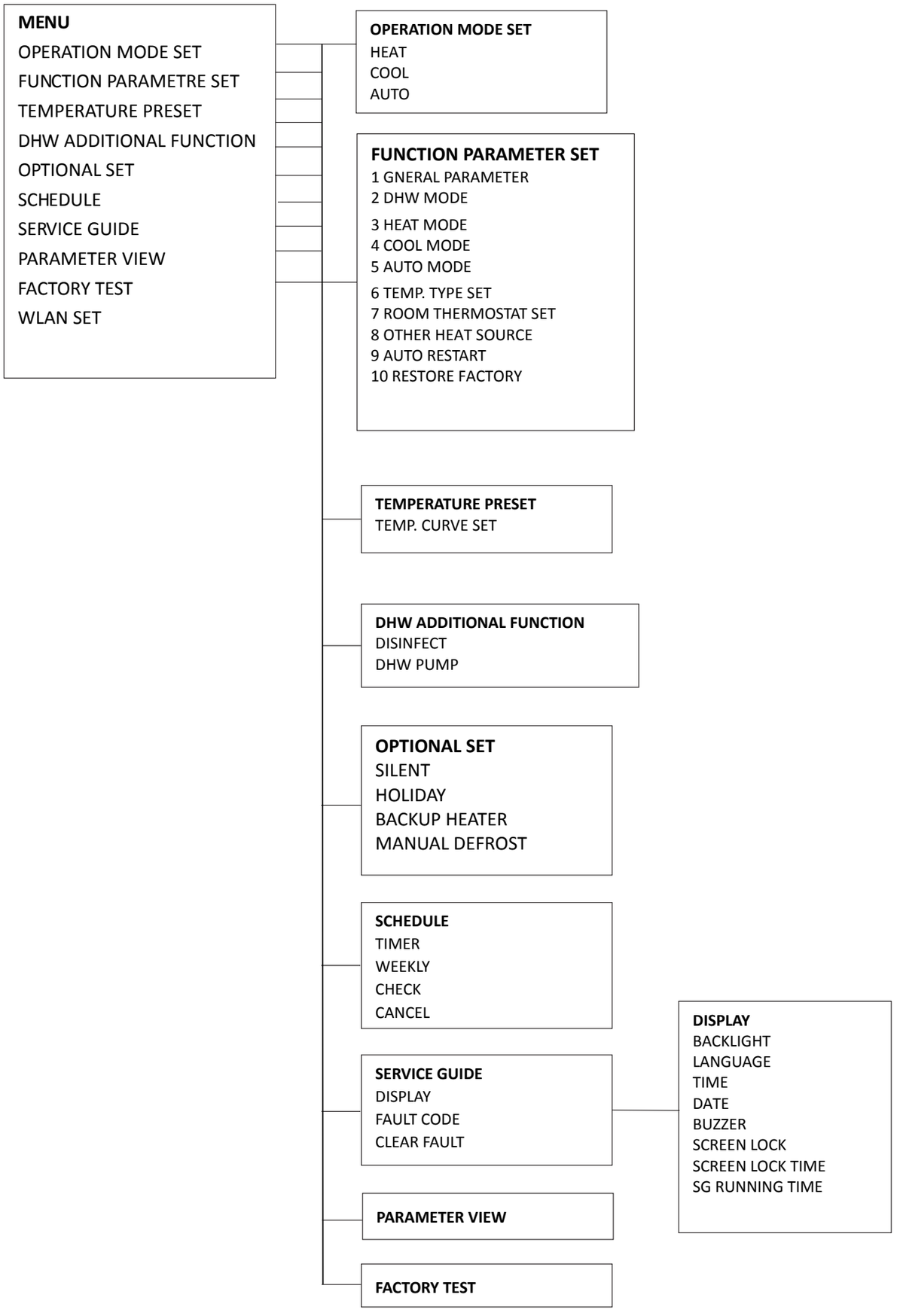


Figure 3-7.1: User interface

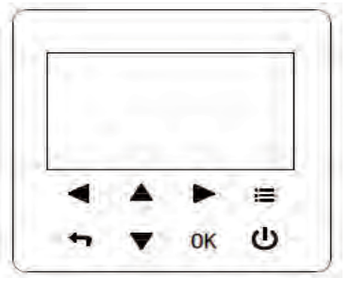


Table 3-7.1: User interface keys

Keys	Function
	• Go to the menu structure(on the home page)
◄►▼▲	• Navigate the cursor on the display • Navigate in the menu structure • Adjust settings
	• Turn on/off the space heating/cooling operation or DHW mode • Turn on/or off functions in the menu structure
	• Come back to the up level
OK	• Go to the next step when programming a schedule in the menu structure; and confirm a selection to enter in the submenu of the menu structure.

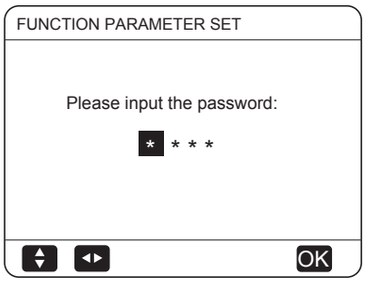
7.3 About FUNCTION PARAMETER SET

"FUNCTION PARAMETER SET" is designed for the installer to set the parameters.

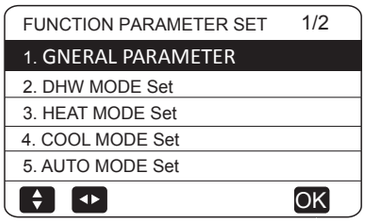
- Setting the composition of equipment.
- Setting the parameters.

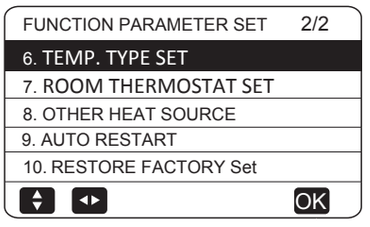
How to go to FUNCTION PARAMETER SET

Go to ☰ > FUNCTION PARAMETER SET. Press OK:



Press ◄ ► to navigate and press ▼ ▲ to adjust the numerical valve. Press OK. The password is 1212, the following pages will be displayed after putting the password:

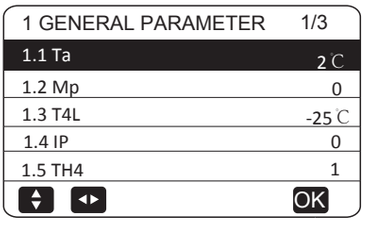


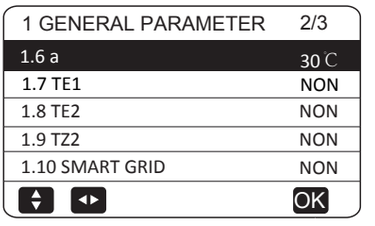


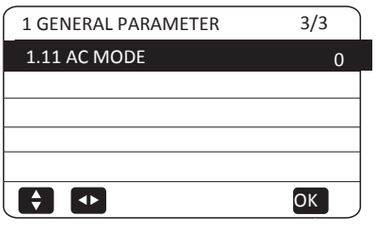
Press ▼ ▲ to scroll and use "OK" to enter submenu.

7.4 GENERAL PARAMETER

Go to ☰ > FUNCTION PARAMETER SET> 1.GENERAL PARAMETER. Press OK. The following pages will be displayed:



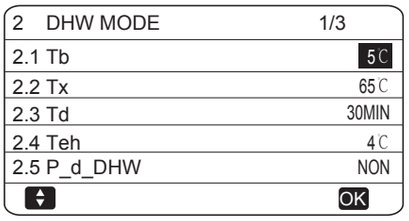


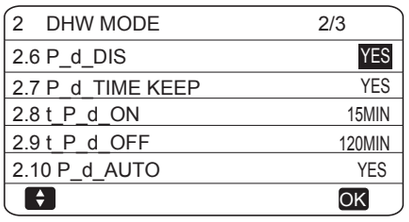


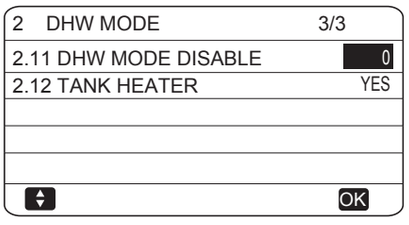
7.5 DHW MODE SET

DHW = domestic hot water

Go to ☰> FUNCTION PARAMETER SET> 2.DHW MODE. Press OK. The following pages will be displayed

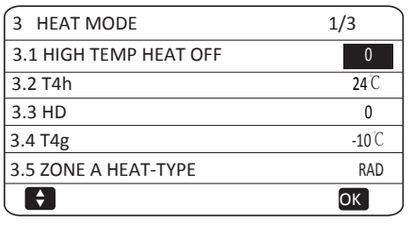


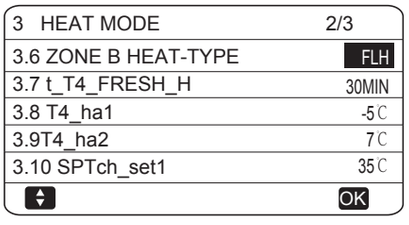


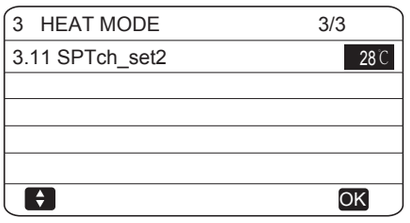


7.6 HEAT MODE

Go to ☰> FUNCTION PARAMETER SET> 3.HEAT MODE. Press OK. The following pages will be displayed

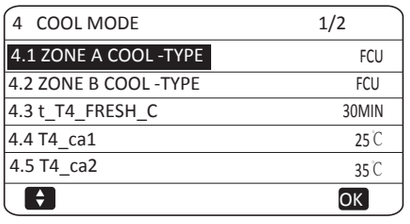


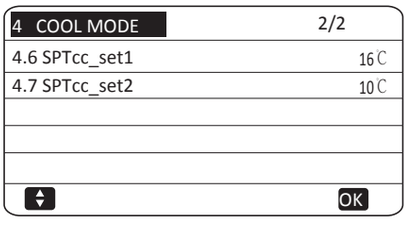




7.7 COOL MODE SET

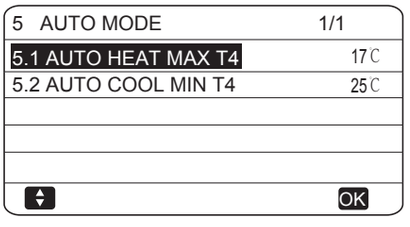
Go to ☰> FUNCTION PARAMETER SET> 4.COOL MODE. Press OK. The following pages will be displayed





7.8 AUTO MODE SET

Go to ☰> FUNCTION PARAMETER SET> 5.AUTO MODE. Press OK. The following pages will be displayed



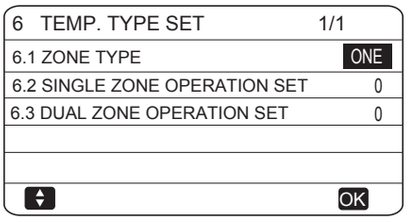
7.9 TEMP. TYPE SET

About TEMP. TYPE SETTING

The TEMP. TYPE SETTING is used for selecting whether the water flow temperature or room temperature is used to control the ON/OFF of the heat pump.

When ROOM TEMP. is enabled, the target water flow temperature will be calculated from climate-related curves.

Go to ☰> FUNCTION PARAMETER SET>6.TEMP. TYPE SET. Press OK. The following pages will be displayed



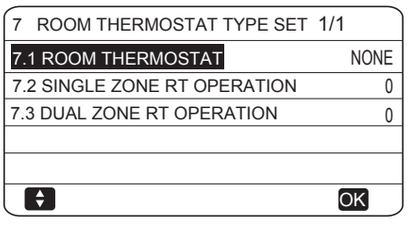
7.10 ROOM THERMOSTAT

About ROOM THERMOSTAT

The ROOM THERMOSTAT is used to set whether the room thermostat is available.

How to set the ROOM THERMOSTAT

Go to ☰> FUNCTION PARAMETER SET>7.ROOM THERMOSTATSET. Press OK. The following pages will be displayed



NOTE

ROOM THERMOSTAT = NON, no room thermostat.

ROOM THERMOSTAT = MODE SET, Room thermostat can control heating and cooling individually.

ROOM THERMOSTAT=ONE ZONE, Room thermostat provides the switch signal to unit.

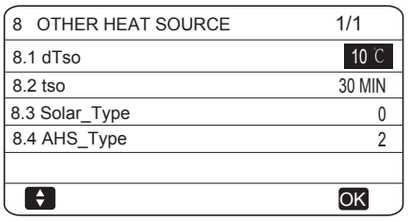
ROOM THERMOSTAT=TWO ZONES, Indoor unit is connected with two room thermostat.

7.11 OTHER HEATING SOURCE

The OTHER HEATING SOURCE is used to set the parameters of the backup heater, additional heating sources and solar energy kit.

How to enter the TEMP. TYPE SETTING

Go to ☰> FUNCTION PARAMETER SET>8.OTHER HEAT SOURCE. Press OK.The following pages will be displayed

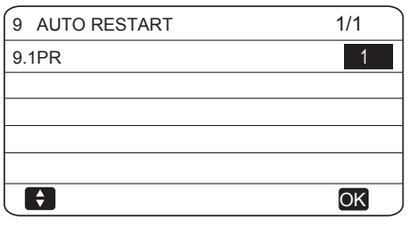


7.12 AUTO RESTART

sources and solar energy kit.

How to enter the AUTO RESTART

Go to ☰> FUNCTION PARAMETER SET>9.AUTO RESTART. Press OK.The following pages will be displayed

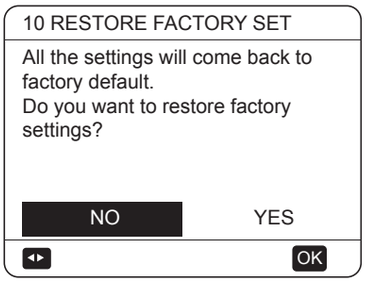


7.13 RESTORE FACTORY SET

The RESTORE FACTORY SETTING is used to restore all the parameters set in the user interface to the factory setting.

How to enter the RESTORE FACTORY SET

Go to ☰> FUNCTION PARAMETER SET>10.RESTORE FACTORY SET Press OK. The following pages will be displayed



Press ◄ ► to scroll the cursor to YES and press OK.

The parameters related to this chapter are shown in the table below.

Order number	Code	State	Default	Minimum	Maximum	Setting interval	Unit
1.1	Ta	Temperature difference between target LWT and real LWT for startup heat pump	2	1	5	1	℃
1.2	Mp	Select priority mode	0	0	2	1	/
1.3	T4L	Minimum ambient temp. of compressor operation for heating and hot water	-25	-40	-21	1	℃
1.4	IP	Address code	0	0	15	1	/
1.5	TH4	Enabel or disable chassis heater,1=Enable,0=Disable	1	0	1	1	/
1.6	a	Return difference in leaving water controller	3	1	10	1	℃
1.7	TE1	Enable or disable TE1, NON=Disable, YES=Enable	NON	NON	YES	/	/
1.8	TE2	Enable or disable TE2, NON=Disable, YES=Enable	NON	NON	YES	/	/
1.9	TZ2	Enable or disable TZ2, NON=Disable, YES=Enable	NON	NON	YES	/	/
1.10	SMART GRID	Enable or disable SG, NON=Disable, YES=Enable	NON	NON	YES	/	/
1.11	AC MODE	Select heat pump operation type	0	0	2	1	/
2.1	Tb	Temperature difference between target hot water and real tank water for startup heat pump	5	2	15	1	℃
2.2	Tx	Target disinfect temperature	65	55	75	1	℃
2.3	Td	Disinfect running time	30	20	120	1	MIN
2.4	Teh	Ambient temperature of tank heater startup	4	-10	40	1	℃
2.5	P_d_DHW	Enable or disable tank pump control, NON=Disable, YES=Enable	NON	NON	YES	/	/
2.6	P_d_DIS	Enable or disable tank pump in disinfect mode, NON=Disable, YES=Enable	YES	NON	YES	/	/
2.7	P_d_TIME KEEP	Enable or disable tank pump operation timing, NON=Disable, YES=Enable	YES	NON	YES	/	/
2.8	t_P_d_on	Tank pump ON time	15	5	120	1	MIN
2.9	t_P_d_off	Tank pump OFF time	120	5	180	1	MIN
2.10	P_d_AUTO	Enable or disable tank pump normal ON, NON=Disable, YES=Enable	YES	NON	YES	/	/
2.11	DHW MODE DISABLE	Enable or disable DHW mode,1=Disable, 0=Enable	0	0	1	1	/
2.12	TANK HEATER	Enable or disable tank heater,NON=Disable, YES=Enable	YES	NON	YES	/	/
3.1	HIGH TEMP HEAT OFF	Enable or disable high temperature shutdown, 0=Disable, 1=Enable	0	0	1	1	/
3.2	T4h	Maximum shutdown T4 temperature	24	10	30	1	℃
3.3	HD	Enable or disable IPH or AHS, 0=Enable IPH, 1=Enable AHS	0	0	1	1	/
3.4	T4g	Ambient temperature of Enabling IPH or AHS	-20	-20	20	1	℃
3.5	ZONE A HEAT-TYPE	Zone A heating terminal device type, 0=FCU,1=RAD,2=FLH	RAD	FCU	FLH	1	/
3.6	ZONE B HEAT-TYPE	Zone B heating terminal device type, 0=FCU,1=RAD,2=FLH	FLH	FCU	FLH	1	/
3.7	t_T4_FRESH_H	Refresh time of climate curve for heating	30	30	360	10	MIN
3.8	T4_ha1	Auto climate curve ambient temp. 1 for heating	-5	-25	35	1	℃
3.9	T4_ha2	Auto climate curve ambient temp. 2 for heating	7	-25	35	1	℃
3.10	SPTch_set1	Auto climate curve target temp. 1 for heating	35	25	60	1	℃
3.11	SPTch_set2	Auto climate curve target temp. 2 for heating	28	25	60	1	℃

Order number	Code	State	Default	Minimum	Maximum	Setting interval	Unit
4.1	ZONE A COOL TYPE	Zone A cooling terminal device type, 0=FCU,1=RAD,2=FLH	FCU	FCU	FLH	1	/
4.2	ZONE B COOL TYPE	Zone B cooling terminal device type, 0=FCU,1=RAD,2=FLH	FCU	FCU	FLH	1	/
4.3	t_T4_FRESH_C	Refresh time of climate curve for cooling	30	30	360	10	MIN
4.4	T4_ca1	Auto climate curve ambient temp. 1 for cooling	25	-5	46	1	℃
4.5	T4_ca2	Auto climate curve ambient temp. 2 for cooling	35	-5	46	1	℃
4.6	SPTcc_set1	Auto climate curve target temp. 1 for cooling	16	5	25	1	℃
4.7	SPTcc_set2	Auto climate curve target temp. 2 for cooling	10	5	25	1	℃
5.1	AUTO HEAT MAX T4	Maxmum ambient temp. of auto-heating mode	17	10	17	1	℃
5.2	AUTO COOL MIN T4	Minimum ambient temp. of auto-cooling mode	25	20	29	1	℃
6.1	ZONE TYPE	Two zones, ONE= single zone, TWO=duan zone	ONE	ONE	TWO	1	/
6.2	SINGLE ZONE OPERATION SET	Single zone target temperature type	0	0	3	1	/
6.3	DUAL ZONE OPERATION SET	Dual zone target temperature type (2 and 6 for reserved)	0	0	7	1	/
7.1	ROOM THERMOSTAT	Room thermostat type, 0=NON=without room thermostat, 1=MODE SET,2=ONE ZONE,3=TWO ZONES	0	0	3	1	/
7.2	SINGLE ZONE RT OPERATION	Target temperature type on ROOM THERMOSTAT = MODE SET or ONE ZONE	0	0	1	1	/
7.3	DUAL ZONE RT OPERATION	Target temperature type on ROOM THERMOSTAT = TWO ZONES	0	0	3	1	/
8.1	dTso	Temperature difference for startup solar pump	10	2	20	1	℃
8.2	tso	Solar pump running time	30	0	90	1	MIN
8.3	Solar_Type	Solar type, 0=NON,1=Solar temp. sensor, 2=SL1SL2	0	0	2	1	/
8.4	AHS_Type	1=AHS with only heating, 2=AHS both heating and DHW	2	1	2	1	/
9.1	PR	Enable or disable auto restart,1=Enable, 0=Disable	1	0	1	1	/
10.1		YES to restore factory parameter setting ,NO to exit restoring factory parameter setting					

The function description in the table below.

Previous No.	parameter	value	function
1.2	Mp	0	hot water priority
		1	space heating/cooling priority
		2	Preemtpy
1.3	T4L		if ambient temperature less than T4L, do not turn on heat pump, but can turn on backup heater or AHS
1.4	IP		heat pump address code in group controller, but the function is for reserved
1.7	TE1		to activate temperature sensor mounted on top if buffer tank in cascade mode, but the function is for reserved
1.8	TE2		to activate temperature sensor mounted on bottom if buffer tank in cascade mode, but the function is for reserved
1.9	TZ2		to activate Zone 2 inlet temperature sensor function to get a low zone 2 target water temperature
1.11	AC MODE	0	heat pump can only operate in heating mode or cooling mode
		1	heat pump can only operate in heating mode without cooling mode
		2	heat pump can only operate in cooling mode without heating mode

Previous No.	parameter	value	function
2.4	Teh		if ambient temperature is higher than Teh, heat pump turn off hot water tank heater automatically unless manually turn on tank heater
2.10	P_d_AUTO	NON	water tank pump always runs and doesn't stop unless manully turn off tank pump
		YES and P_d_TIME KEEP is NON	water tank pump runs for the time (set by t_P_d_on) and then off
		YES and P_d_TIME KEEP is YES	water tank pump runs by the cycle: on for the time (set by t_P_d_on and then off for the time (set by t_P_d_off)
3.1	HIGH TEMP HEAT OFF		enable or disable the function: turn off heat pump if ambient temperature is higher than T4h in heating mode
3.2	T4h		
3.7	t_T4_FRESH_H		the controller refresh the ambient temperature by the time interval(set by t_T4_FRESH_H when use weather temperature curve function in heating mode
4.3	t_T4_FRESH_C		the controller refresh the ambient temperature by the time interval(set by t_T4_FRESH_C)when use weather temperature curve function in cooling mode
6.2	SINGLE ZONE OPERATION SET	0=set water temp.(manually adjustment) 1=set water temp.(weather curve temp.) 2=for reserved 3=set room temp.(real weather curve temp.)	use it to set target temperature type when 6.1 ZONE TYPE=ONE(only one zone)

Previous No.	parameter	value	function
6.3	DUAL ZONE OPERATION SET	1)=0: Zone 1 and Zone 2 are both water temp.(manually adjustment) 2)=1:Zone 1 is water temp.(manually adjustment); Zone 2 is water temp.(weather curve temp.) 3)=2: for reserved 4)=3: Zone 1 is water temp.(manually adjustment);Zone 2 is room temp.(real weather curve temp.) 5)=4: Zone 1 is water temp.(real weather curve temp.); Zone 2 is water temp.(manually adjustment) 6)=5: Zone 1 and Zone 2 are both weather curve temp. 7)=6: for reserved 8)=7: Zone 1 is weather curve temp.;Zone 2 is room temp.(real weather curve temp.).	use it to set target temperature type when 6.1 ZONE TYPE=TWO(two zones)

8 OPERATION PARAMETER VIEW

This menu is for installer or service engineer reviewing the operation parameters.

At home page, go to "☰">"PARAMETER VIEW".

Press "OK". There are twelve pages for the operating parameter as following. Use ""►" 、 "◄" 、▼ "、 "▲" to scroll.

Press"►" and "◄" to check slave units' operation parameter in cascade system. The address code in the upper right corner

PARAMETER VIEW	1/12
1 COMP. FREQUENCY	55Hz
2 EEV-1 OPEN	480STEP
3 AMBIENT TMEP. T4	30℃
4 OUT WATER TMEP. TB	30℃
5 DISCHARGE TMEP. TP	60℃

PARAMETER VIEW	2/12
6 SUCTION TMEP. TH	60℃
7 COIL TMEP. T3	50℃
8 LIQUID TMEP. T5	48℃
9 PWM PUMP	OFF
10 4-WAY VALVE	OFF

PARAMETER VIEW	3/12
11 AC FAN	OFF
12 SV1 STATUS	OFF
13 SV2 STATUS	OFF
14 IPH HEATER	OFF
15 TANK HEATER	OFF

PARAMETER VIEW	4/12
16 AC CURRENT	0.0A
17 INPUT VOLTAGE	225V
18 OIL RETURN	OFF
19 HP2	OFF
20 CHASSIS HEATER	OFF

PARAMETER VIEW	5/12
21 BUS VOLTAGE	0VDC
22 COMP.CURRENT	0.0A
23 PFC TEMP.	0℃
24 IPM TEMP.	0℃
25 DC FAN SPEED 1	770RPM

PARAMETER VIEW	6/12
26 DC FAN SPEED 2	0RPM
27 ECO. IN TEMP.	0℃
28 ECO. OUT TEMP.	0℃
29 TANK TEMP.	50℃
30 IN WATER TEMP.TA	30℃

PARAMETER VIEW	7/12
31 EEV-2 OPEN	0STEP
32 I-PUMP OUTPUT	100%
33 LOW SAT. TEMP.	2℃
34 CRANKCASE HEATER	OFF
35 PLATE HEATER	OFF

PARAMETER VIEW	8/12
36 IN WATER PRE.	0.0bar
37 OUT WATER PRE.	2.0bar
38 WATER FLOW	0.0(m^3/h)
39 WATER FLOW PWM	100%
40 UNIT MODEL	4KW

PARAMETER VIEW	9/12
41 SV3	OFF
42 FINAL TEMP. TC	0℃
43 SOLAR TEMP. Tso	90℃
44 BUFFER TEMP. TE1	20℃
45 BUFFER TEMP. TE2	20℃

PARAMETER VIEW	10/12
46 MIX IN TEMP. TZ2	20℃
47 C-A CURVE TEMP.	8℃
48 H-A CURVE TEMP.	32℃
49 C-B CURVE TEMP.	10℃
50 H-B CURVE TEMP.	35℃

PARAMETER VIEW	11/12
51 AHS	OFF
52 P_d	OFF
53 P_o	OFF
54 B ZONE P_c	OFF
55 P_s	OFF

PARAMETER VIEW	12/12
56 SG	OFF
57 ROOM TEMP. Tro	31℃

NOTE

The flow rates parameters are calculated according to the pump running parameters,the deviation is different at different flow rates,the maximum of deviation is 15%.The flow parameters are calculated according to the electrical parameters of the pump operation.

9 .Climate Related Curves

The climate related curves can be selected in the user interface,
MENU > TEMPERATURE PRESET > TEMP. CURVE SET.

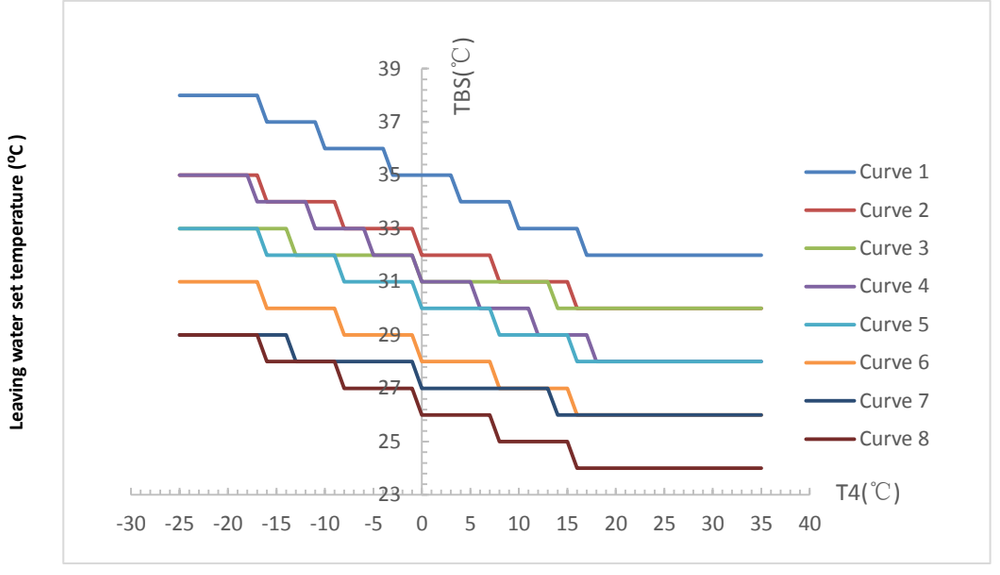
Figure 3-9.1: WEATHER TEMP. SET menu

TEMPERATURE PRESET	
TEMP. CURVE SET	
LOW TEMP. FOR ZONE-A COOL	4
HIGH TEMP. FOR ZONE-A HEAT	6
LOW TEMP. FOR ZONE-B COOL	4
LOW TEMP. FOR ZONE-B HEAT	3
▲▼	OK

The default curves of high temperature setting is curve 6 in heating mode. The default curves of low temperature setting is curve 3 in heating mode. The default curves for cooling mode is curve 4 in cooling mode. Once the curve is selected, the leaving water set temperature (TBs) is determined by the outdoor temperature. In each mode, each curve from the eight curves in the user interface can be selected. The relationship between outdoor ambient temperature (T4) and leaving water set temperature (TBs) is described as in Figure 3-9.2, Figure 3-9.3, Figure 3-9.4 and Figure 3-9.5.

The automatic setting curves are the ninth curve for cooling and heating mode, the ninth curve can be set as in Figure 3-9.6 and Figure 3-9.7.

Figure 3-9.2: Low temperature curves for heating mode[1]



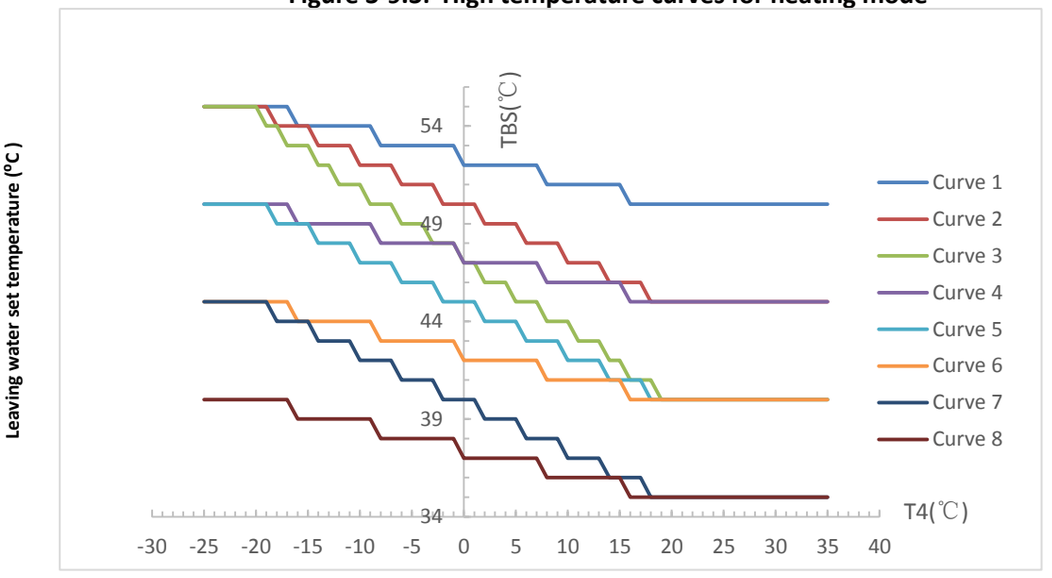
Outdoor ambient temperature (ºC)

Notes:

1.It only has the curves of the low temperature setting for heating, if the low temperature is set for heating.

2.Curve 3 is default in low temperature heating mode.

Figure 3-9.3: High temperature curves for heating mode[1]

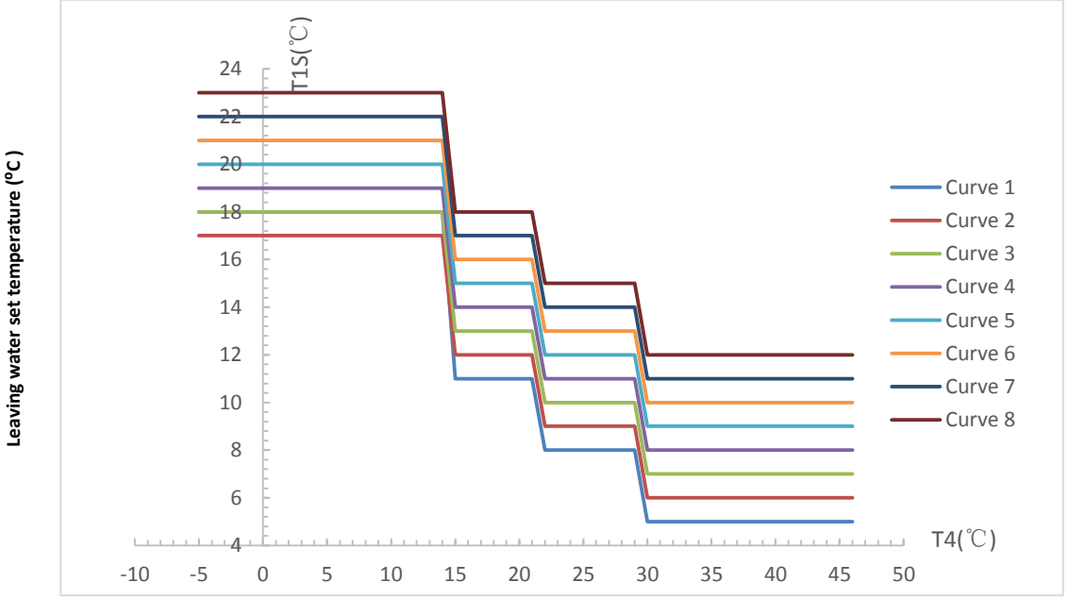


Notes:

1.It only has the curves of high temperature setting for heating, if the high temperature is set for heating.

2.Curve 6 is default in high temperature heating mode.

Figure 3-9.4: Low temperature curves for cooling mode[1]

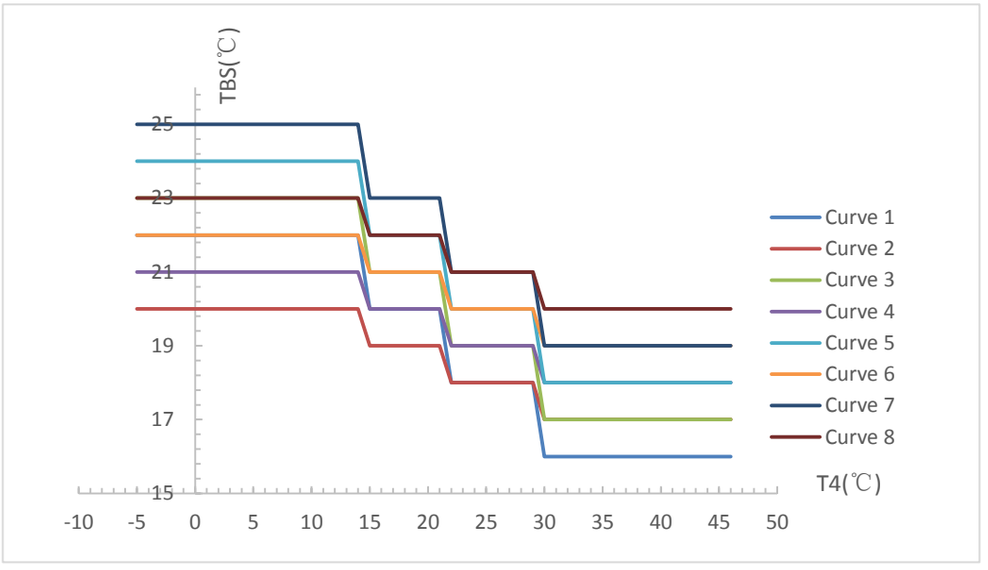


Notes:

1.It only has the curves of the low temperature setting for cooling, if the low temperature is set for cooling.

2.Curve 4 is default in low temperature cooling mode.

Figure 3-9.4: High temperature curves for cooling mode[1]



Outdoor ambient temperature (ºC)

Notes:

1.It only has the curves of the low temperature setting for cooling, if the high temperature is set for cooling.

2.Curve 4 is default in high temperature cooling mode.

Figure 3-9.6: Automatic setting curve for heating mode

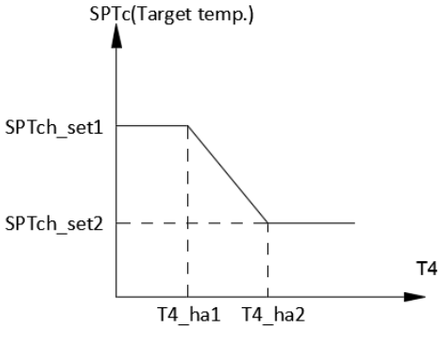
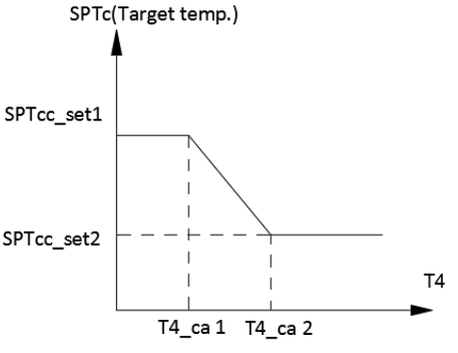


Figure 3-9.7: Automatic setting curve for cooling mode



The setting of SPTch_set1, SPTch_set2, T4_ha1, T4_ha2 refer to Part 3, 7.6" HEAT MODE SET Menu" and SPTcc_set1, SPTcc_set2, T4_ca1, T4_ca2 refer to Part 3, 7.7" COOL MODE SET Menu".

10 .Error Code Table

Fault number	Fault name	Failure analysis	Diagnosis method	Solution
P01	Water flow protection	1. Lack of water in water system. 2. Water flow switch is fault. 3. Water system is blocked.	1. Check whether the valve of water replenishing is off. 2. Check whether the water flows witch is damage. 3. Check whether the Y shape filter is blocked.	1. Open the valve. 2. Change the water flows witch. 3. Clean or change the filternet.
P02	High pressure protection	1. Water flow is over low. 2. High pressure switch is fault. 3. Refrigerant system is blocked. 4. EXV is locked.	1. Check whether there is water shortage or insufficient pump flow; 2. Check whether the high pressure switch is damage. 3. Check whether the refrigerant system is blocked. 4. Check whether there is EXV reset sound when the unit is standby, and power on or off.	1. Refill water or Add an additional water pump. 2. Change high pressure switch. 3. Change the filter of refrigerant system. 4.Change the EXV.
P03	Low pressure protection	1. Lack of refrigerant. 2. Refrigerant system is blocked 3. The unit is not running in regulations operati -ng condition.	1. Check whether the refrigerant system is leakage. 2. Check whether the filter in refrigerant system is blocked. 3. Check whether the outdoor ambient and the inlet water temperature is normal.	1. Repair the leakage point. 2. Change the filter of refrigerant system. 3. If the ambient temper -ature and water temperature is too high or low,the unit will stop.
P04	Condenser temperature (T3) over-heat protection	1. Airflow of outdoor fan is insufficient. 2. Condenser is too dirty. 3. The temperature sensor (T3) is fault.	1. Check whether there is any obstacle which is preventing the airflow. 2. Check whether the condenser is too dirty. 3. Check whether the condenser pipe temperature sensor(T3) is normal.	1. Clean the vents 2. Clean the condenser. 3. Replace the temperat -ure sensor.
P05	Discharge temperature protection	1. Lack of refrigerant. 2. Discharge temperatur -e sensor is fault.	1. Check whether the refrigerant system is leakage. 2. Check whether the discharge temperature sensor is normal.	1. Repair the leakage point. 2. Replace the temperatu -re sensor
P06	Anti-freeing protection of leaving water	1. Water flow is too low. 2. Heat-exchanger is blocked. 3. Y shape filter in water system is blocked. 4. Load is too low.	1. Check whether there is some air in water circuit system. 2. Check whether the heat-excha -nger is blocked. 3. Check whether the Y shape filter is blocked. 4. Check whether the water circuit system is reasonable.	1. If there is a problem with the drain valve, replace it with a new one; 2. Blow the plate heat exchanger with water or high-pressure gas in the opposite direction for cleaning; 3. Clean the filter; 4. The water circulation system must have a shunt.
P07	Anti-freeing protection of condenser pipe	1. Lack of refrigerant. 2. Water circuit system is blocked. 3. Refrigerant system is blocked.	1. Check for leaks in the system; 2. Check whether Y shape filter is blocked. 3. Check whether filter in refriger -ant system is blocked.	1. Repair the leakage point. 2. Clean the filter. 3. Replace the filterr

Table contin ued on next page …

Fault number	Fault name	Failure analysis	Diagnosis method	Solution
P08	Medium pressure switch protection	Medium pressure switch off	Check whether the medium pressure switch is open circuit, when turn off the unit.	Replace the medium pressure switch.
P10	Medium pressure sensor protection	1. Lack of refrigerant; 2. The refrigeration system is blocked; 3. Exceeding the scope of system work.	1. Check whether the system is leaking; 2. Check if the filter net is blocked; 3. Check whether the ambient temperature or water temperat -ure exceeds the limit.	1. Repair the leak and refill the refrigerant; 2. Replace the filter; 3. Exceed the system working limit, can't run
P11	DC fan 1 failure	1. The fan is faulty or stuck; 2. The main control board is faulty	1. Check whether the fan is stuck, or replace with a new fan; 2. Replace the main control board	1. Check if the fan is stuck, or replace with a new fan; 2. Replace the main control board
P12	4-way valve fault	1. Entering/leaving water temperature sensors are reversely inserted. 2. 4-way valve is fault. 3. PCB is fault.	1. Check whether the entering and leaving temperature sensors are reversely inserted. 2. Check whether action of 4-way valve is normal. 3. Check whether the sample temperature of motherboard is accurate	1. Correct the wrong place; 2. Try to switch repeatedly to see if it works, if not, replace it; 3. If it is wrong, replace it;
P21	DC pump is abnormal	1. The water pump is faulty or stuck; 2. The system lacks water and is blocked; 3. Main control board failure	1. Check whether the water pump is blocked, or replace with a new water pump; 2. Check whether the system is short of water, whether it is blocked, and whether the valve is closed; 3. Replace the main control board	1. Check if the water pump is blocked, or replace with a new water pump; 2. Refill water or clean or replace the filter net and open the valve; 3. Replace the main control board
P24	Reserved	/	/	/
P25	Reserved	/	/	/

Table contin ued on next page …

Fault number	Fault name	Failure analysis	Diagnosis method	Solution
E01	Communication error of controller	1. The communication cable is disconnected; 2. The wire controller is faulty; 3. The main control board is faulty;	1. Check whether the communi -cation cable is open or the plug is in poor contact; 2. Confirm whether the wire controller is normal on a normal machine; 3. Use a normal wire controller to confirm whether it is normal on the faulty machine;	1. Replace the communi -cation cable or repair; 2. Replace the line controller; 3. Replace the main control board;
E02	TP exhaust temperature sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. The main control board is faulty;	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or repla -ce the sensor; 2. Replace the mother -board;
E03	T3 coil temperature sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. Main control board failure	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or repla -ce the sensor; 2. Replace the mother -board;
E04	T4 Ambient temperature sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. Main control board failure	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or repla -ce the sensor; 2. Replace the mother -board;
E05	T5 liquid pipe temperature sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. Main control board failure	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or replace the sensor; 2. Replace the mother -board;
E06	TH return gas temperature sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. Main control board failure	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or replace the sensor; 2. Replace the mother -board;

Table contin ued on next page …

Fault number	Fault name	Failure analysis	Diagnosis method	Solution
E07	TW water tank temperature sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. Main control board failure	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or replace the sensor; 2. Replace the mother -board;
E08	T6 Inlet water temperature sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. Main control board failure	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or replace the sensor; 2. Replace the mother -board;
E09	T7 outlet water temperature sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. Main control board failure	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or repla -ce the sensor; 2. Replace the mother -board;
E10	Communication failure between main control board and drive board	1. The communication cable is disconnected; 2. The main control board is faulty; 3. The drive module is faulty;	1. Check whether the communication cable is open or the plug is in poor contact; 2. Replace the main control board and confirm whether it is normal; 3. Replace the drive board and confirm whether it is normal;	1. Replace or repair the communication cable; 2. Replace the main control board; 3. Replace the drive module;
E11	Economizer inlet temp. sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. The main control board is faulty;	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal	1. Repair the connecting wire and plug or replace the sensor; 2. Replace the mother -board;
E12	Economizer outlet sensor failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. Main control board failure	1. Use a multimeter to check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or replace the sensor; 2. Replace the mother -board;

Table contin ued on next page …

Fault number	Fault name	Failure analysis	Diagnosis method	Solution
E13	Reserved	/	/	/
E14	Low pressure sensor LPS failure	1. The sensor connection line is open or short -circuited; 2. Sensor failure; 3. The main control board is faulty;	1. Check whether the sensor and connection are abnormal; 2. Replace the faulty sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board and confirm whether it is normal;	1. Repair the connecting wire and plug or replace the sensor; 2. Replace the mother -board;
E15	DC bus voltage is too low	Wiring error or IPM module failure Check whether the wiring is wrong, reconnect the cable or replace the IPM module		
E16	DC bus voltage is too high			
E17	AC current protection (input current)			
E18	IPM module is abnormal			
E19	PFC abnormal			
E20	Compressor failed to start			
E21	Compressor phase loss			
E22	IPM Module reset			
E23	Compressor over-current			
E24	PFC module temperature is too high			
E25	Current detection circuit failure			

Table contin ued on next page …

Fault number	Fault name	Failure analysis	Diagnosis method	Solution
E26	Out of step	Wiring error or IPM module failure Check whether the wiring is wrong, reconnect the cable or replace the IPM module		
E27	PFC module temperature sensor is abnormal			
E28	communication fail			
E29	IPM module temperature is too high			
E30	IPM module temperature sensor failure			
E31	Reserved			
E32	Reserved			
E33	Reserved			
E34	AC input voltage is abnormal			
E35	Drive EEPROM fault			
E36	Power-off reset			
E37	Reserved			
E38	Reserved			
E49	TC error the final water temperature sensor			
E50	Solar temperature sensor Tso error			
E51	The built-in temperature sensor Tro of the wire controller fault			

Table continued on next page …

Fault number	Fault name	Failure analysis	Diagnosis method	Solution
E52	The built-in temperature sensor Txk of the wire controller is faulty	Wiring error or IPM module failure Check whether the wiring is wrong, reconnect the cable or replace the IPM module		
E53	TC failure of the final water temperature sensor			
E54	Zone 2 temperature sensor Tw2 failure			
E56	The temperature sensor TE1 of the upper part of the balance coupling tank is faulty			

11. Network Configuration Guidelines

The wired controller realizes intelligent control with a built-in WIFI module, which receives control signal from the APP. Before connecting the WLAN, please check for it if the router in your environment is active and make sure that the wired controller is well-connected to the wireless signal. When the product is connected to the network, please make sure that the phone is as close as possible to the product. Mono bloc only supports 2.4GHz band routers at present. Special characters (punctuation, spaces, etc.) are not recommended as part of the WLAN name. It is recommended that you connect no more than 10 devices to a single router lest home appliances are affected by weak or unstable network signal. If the password of the router or WLAN is changed, clear all settings and reset the appliance. APP interface changes from time to time as APP is updated and may change slightly vary from those in this document.

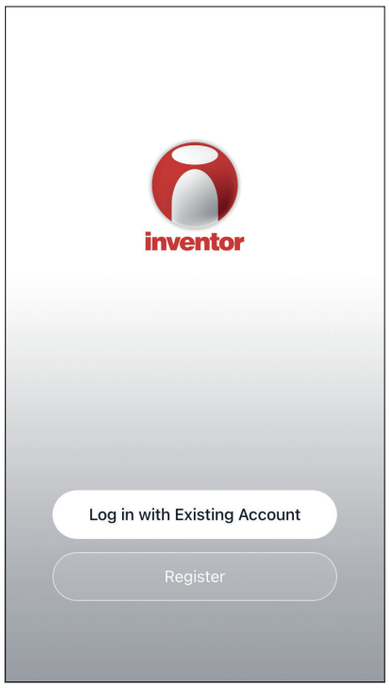
11.1 Install APP

Please research "Inventor Control" in APP STORE or GOOGLE PLAY to install the APP.

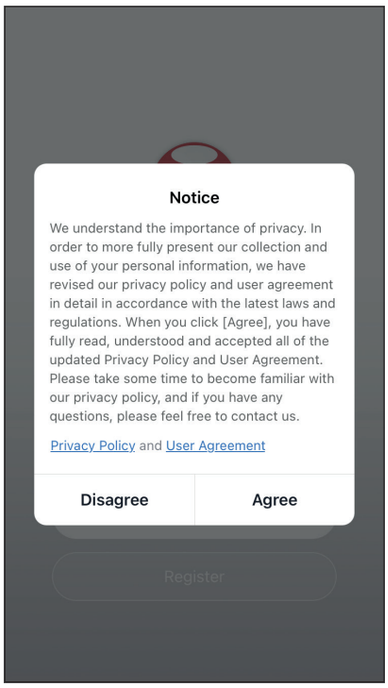
11.2 ADD DEVICE

Refer to the figures below to add the device in numerical orders:

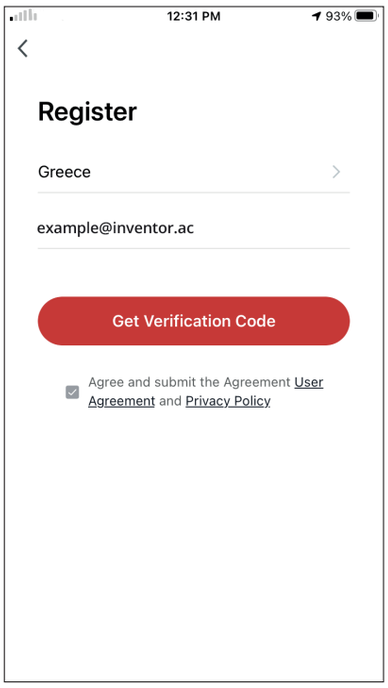
Account registration



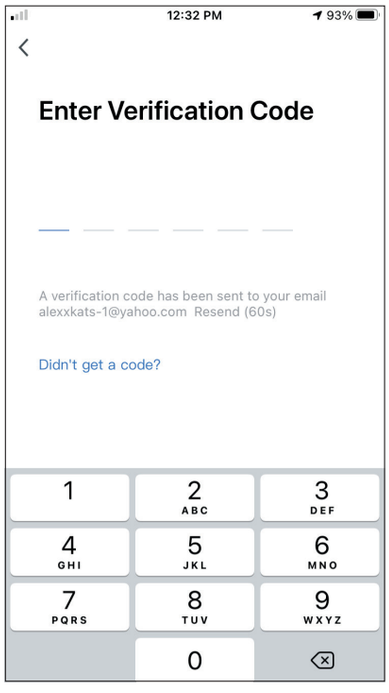
Select “Register” to register a new account.

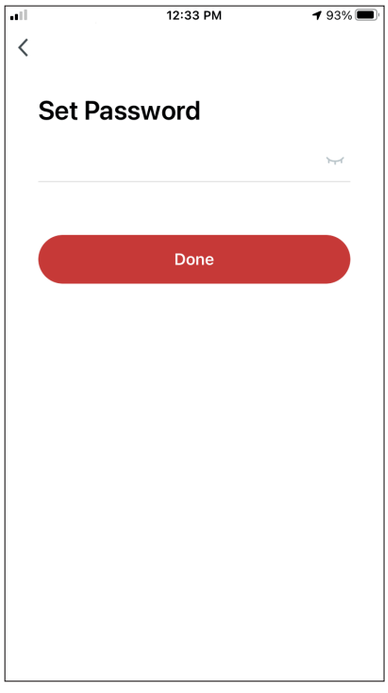


Read the Privacy Policy and User Agreement and agree to continue.



Select your Region and enter you email address or your mobile phone number to receive a verification code. Press “Get Verification Code”.

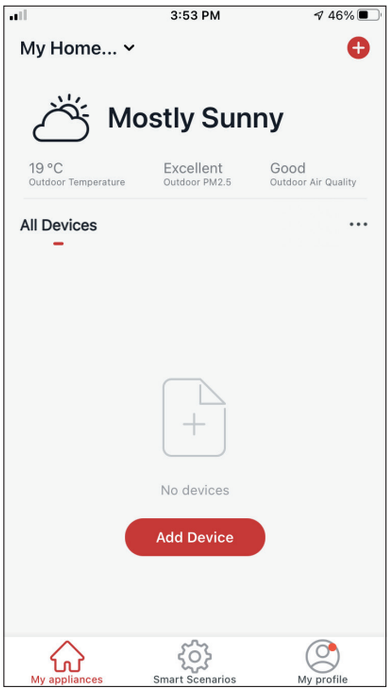




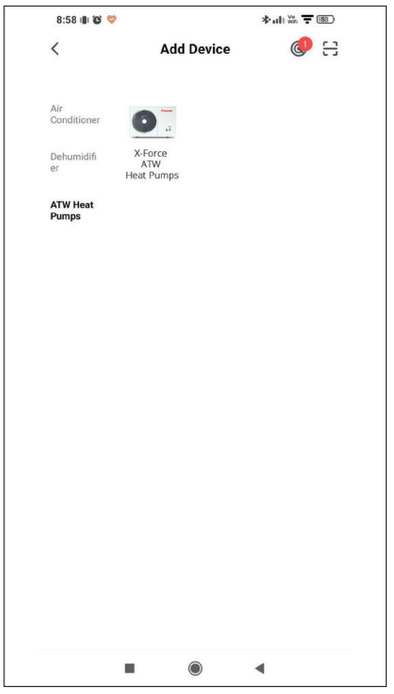
Enter the verification code and proceed to set your password.

CONNECTING YOUR ATW HEAT PUMP WITH INVENTOR CONTROL

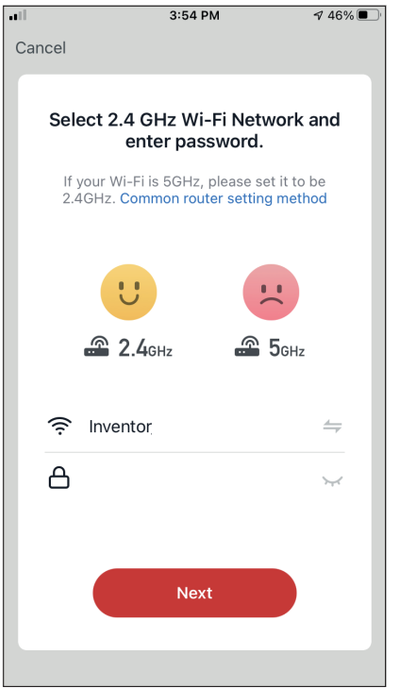
Add Manually with AP Mode



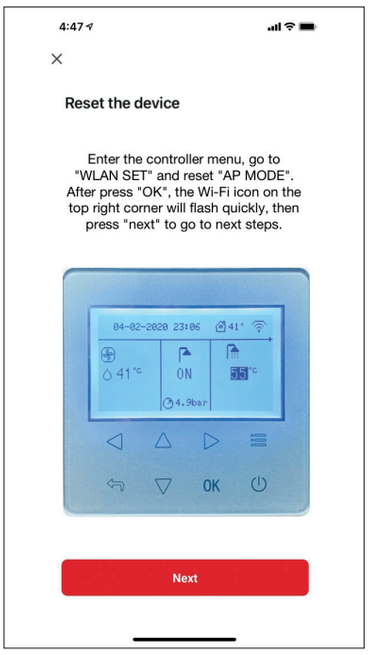
Step 1: Select "Add Device" or the "+" icon on the top right.



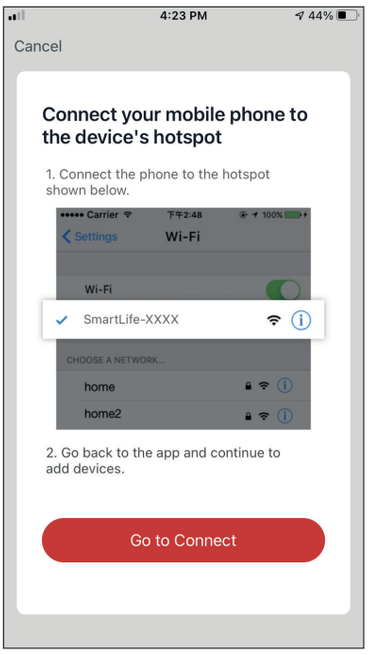
Step 2: Select "Add Manually" on the top bar, then in the left side menu, select ATW Heat Pumps and the model name.



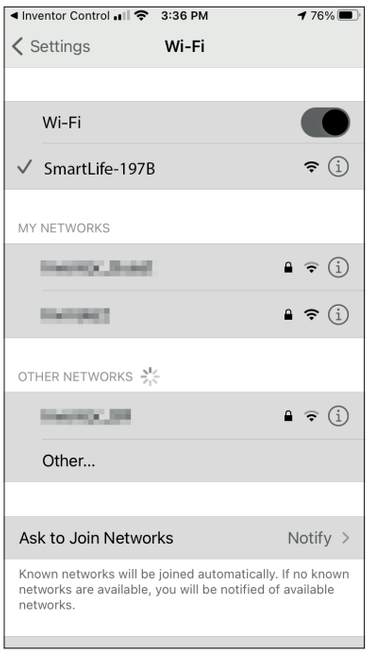
Step 3: Select your WiFi and input your password.



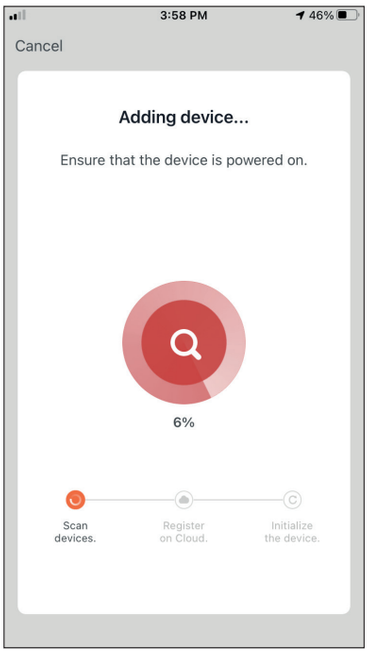
Step 4: Enter the controller menu, go to “WLAN SET” and reset “AP MODE”. After you press “OK”, the WiFi icon on the top corner will flash quickly. Press “NEXT” to proceed with the next steps



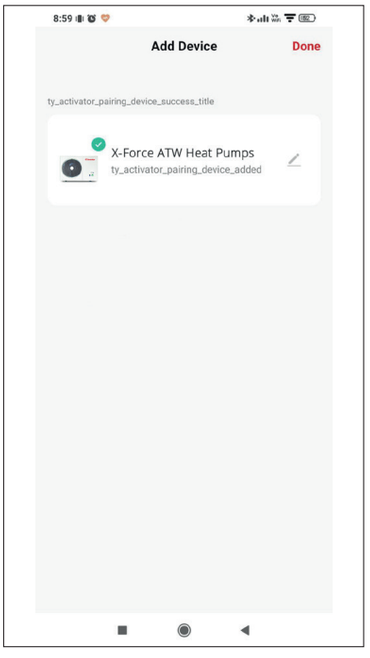
Step 5: Press “Go to Connect” to enter your device’s WiFi Networks.



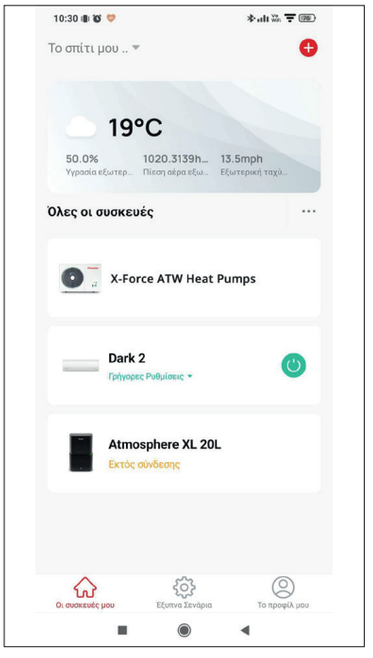
Step 6: From your mobile device settings, connect to the heat pump’s network "SmartLife-XXXX". Return to the app and press "Next".



Step 7: Allow a few moments for the pairing process to complete.



Step 8: When the pairing is completed if you wish, you may rename your device. Press "Done" when ready.



You are all set.

Reminder: The process should be completed within 3 minutes. If it is not, please repeat the process.

Specification						
Model name	Capacity	Power supply	SCOP		SEER	
		V / Ph / H	LWT at 35℃	LWT at 55℃	LWT at 7℃	LWT at 18℃
XFMH04S3	4kW	220-240 / 1 / 50	4.96	3.47	5.15	8.56
XFMH06S3	6kW		5.05	3.52	5.27	8.77
XFMH08S3	8kW		4.62	3.32	5.17	8.31
XFMH10S3	10kW		4.86	3.51	4.66	8.23
XFMH12S3	12kW		4.65	3.37	5.02	8.15
XFMH14S3	14kW		4.56	3.45	4.76	6.72
XFMH16S3	16kW		4.65	3.57	4.63	6.51
XFMH12T9	12kW	380 / 3~ / 50	4.65	3.37	5.02	8.15
XFMH14T9	14kW		4.56	3.45	4.76	6.72
XFMH16T9	16kW		4.65	3.57	4.63	6.51

11.3 Wired Controller Setting

Go to **"MENU">"WLAN SET">"AP MODE"**. Press **"OK"** to to activate the WLAN, refer to Figure 3-11. Select **YES**, press "OK" to select AP mode. Select **AP Mode** correspondingly on the mobile device and continue the follow-up settings according to the APP prompts. During the wireless distribution process, the LCD icon " " flashes to indicate that the network is being deployed. After the process is completed, the icon " " will be constantly on.

Figure 3-11.1

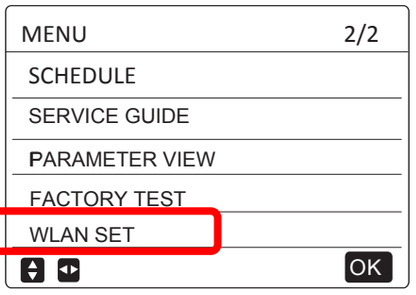


Figure 3-11.2

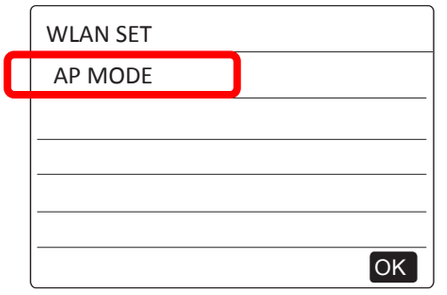


Figure 3-11.3

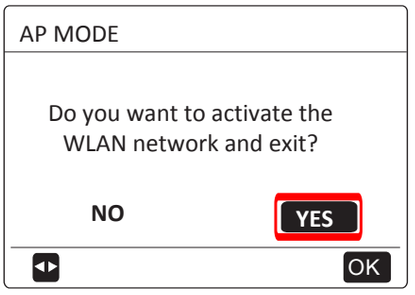
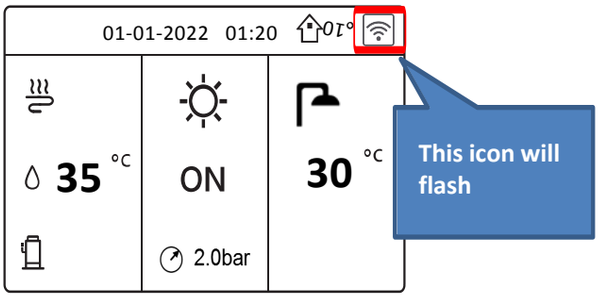


Figure 3-11.4



AIR CONDITIONING SYSTEMS

AIR TO WATER HEAT PUMPS - MONOBLOCK

V 1.0 032024

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