AIRSTAGE

AIR TO WATER

High Power series

FUJITSU

REFRIGERANT R32 INVERTER

DESIGN & TECHNICAL MANUAL

Split type

OUTDOOR UNIT

WOYG100MQL
WOYG121MQL
WOYG140MQL

WOYK121MQL
WOYK140MQL

HYDRAULIC UNIT

WSEG140MQ6

WSEK140MQ9

GENERAL Inc.

DA_HP005ES_03
2026.02.10

Notices:
- Product specifications and design are subject to change without notice for future improvement.
- For further details, please check with our authorized dealer.

Trademarks

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REFRIGERANT R32
INVERTER

1. OUTDOOR UNIT

2026.02.10
DA_CH01_HP005ES_03

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1. OUTDOOR UNIT

OUTDOOR UNIT

1. Specifications

1-1. Nominal capacity and nominal input

Model name					WOYG100MQL	WOYG121MQL	WOYG140MQL
Power supply					1 Ø 230 V ~ 50 Hz		
Heating	Air: +7°C Water: +35°C	Capacity	Minimum	kW	—	—	—
			Nominal		10.08	12.55	14.47
			Maximum		15.30	16.19	17.82
		Input power	Nominal	kW	2.18	2.69	3.36
		COP	Nominal		4.62	4.67	4.31
	Air: +7°C Water: +55°C	Capacity	Nominal	kW	8.24	9.16	10.09
		Input power	Nominal	kW	2.79	3.06	3.36
		COP	Nominal		2.95	2.99	3.00
	Air: -7°C Water: +35°C	Capacity	Nominal	kW	7.70	9.20	10.70
		Input power	Nominal	kW	2.37	2.91	3.39
		COP	Nominal		3.25	3.16	3.16
	Air: -7°C Water: +55°C	Capacity	Nominal	kW	7.10	8.63	10.28
		Input power	Nominal	kW	3.30	4.03	4.74
		COP	Nominal		2.15	2.14	2.17

NOTE: Test conditions are complied with EN14511:2022

Model name					WOYK121MQL	WOYK140MQL
Power supply					3 Ø 400 V ~ 50 Hz	
Heating	Air: +7°C Water: +35°C	Capacity	Minimum	kW	—	—
			Nominal		12.55	14.47
			Maximum		16.19	17.82
		Input power	Nominal	kW	2.69	3.36
		COP	Nominal		4.67	4.31
	Air: +7°C Water: +55°C	Capacity	Nominal	kW	9.16	10.09
		Input power	Nominal	kW	3.06	3.36
		COP	Nominal		2.99	3.00
	Air: -7°C Water: +35°C	Capacity	Nominal	kW	9.20	10.70
		Input power	Nominal	kW	2.91	3.39
		COP	Nominal		3.16	3.16
	Air: -7°C Water: +55°C	Capacity	Nominal	kW	8.63	10.28
		Input power	Nominal	kW	4.03	4.74
		COP	Nominal		2.14	2.17

NOTE: Test conditions are complied with EN14511:2022

OUTDOOR UNIT

1-2. Technical specifications

Model name					WOYG100MQL	WOYG121MQL WOYK121MQL	WOYG140MQL WOYK140MQL
Enclosure		Material			Steel sheet		
		Color			Dark gray Approximate color of Munsell N 3.30/0.0 Stone gray Approximate color of Munsell 6.0Y 6.10/0.5		
Dimensions (H × W × D)	Net			mm	1,008 × 1,080 × 480		
	Gross				1,196 × 1,174 × 600		
Weight	Net			kg	96		102
	Gross				113		120
Heat exchanger		Dimensions (H × W × D)		mm	966 × 1,193 × 36.38		966 × 1,185 × 54.57
		Fin pitch			1.45		
		Rows × Stages			2 × 46		3 × 46
		Pipe type			Copper tube		
		Fin type	Type (Material)		Corrugate (Aluminum)		
			Surface treatment		Corrosion resistance (Blue fin)		
Fan	Airflow rate	Heating		m^3/h	3,590	4,510	5,100
	Type × Qty				Propeller fan × 1		
	Discharge direction				Horizontal		
	Motor quantity				1		
	Motor output			W	111		
Compressor	Type				DC twin rotary		
	Motor output			W	2,550		
Operation range	Ambient temperature	Heating	Minimum	°CDB	-25		
			Maximum		35		
	Water temperature	Heating	Minimum	°C	17		
			Maximum		60		
Refrigerant		Type (Global Warming Potential)			R32 (675)		
		Charge		g	1,400		1,630
		Control			Expansion valve (electric type)		
		Number of circuits			1		
Refrigerant oil		Type			RmM68AF		
		Charged volume		l	0.8		
Defrost method					Reverse cycle		
Defrost control					Heat pump side exchanger temperature sensor		
Capacity control method					Inverter control		

1-3. Electrical specifications

Model name				WOYG100MQL	WOYG121MQL	WOYG140MQL
Available voltage range				198—264 V		
Power supply		Voltage	V	1 Ø 230		
		Frequency	Hz	50		
Maximum operating current	Heating		A	14.6	19.1	20.6
	Main fuse (circuit breaker) current			32		
Wiring specifications*1	Power cable		mm^2	4.0 or more		
	Transmission cable			1.5 or more		
Wiring connection quantity*2	For power supply		N°	2.0 to 3.0		
	For connection with indoor			1.2 to 1.8		

NOTES:

- *1: Wiring specification is selected based on Japan Electrotechnical Standard and Codes Committee E0005.
- *2: Earth wiring is included.

Model name				WOYK121MQL	WOYK140MQL
Available voltage range				342—456 V	
Power supply		Voltage	V	3 Ø 400	
		Frequency	Hz	50	
Maximum operating current	Heating		A	20.6	
	Main fuse (circuit breaker) current			16	
Wiring specifications*1	Power cable		mm^2	2.5 or more	
	Transmission cable			1.5 or more	
Wiring connection quantity*2	For power supply		N°	2.0 to 3.0	
	For connection with indoor			1.2 to 1.8	

NOTES:

- *1: Wiring specification is selected based on Japan Electrotechnical Standard and Codes Committee E0005.
- *2: Earth wiring is included.

OUTDOOR UNIT

1-4. Product information

Model name				WOYG100MQL		WOYG121MQL WOYK121MQL		WOYG140MQL WOYK140MQL	
Air-to-water heat pump				Yes					
Water-to-water heat pump				No					
Brine-to-water heat pump				No					
Low-temperature heat pump				No					
Equipped with a supplementary heater				Yes					
Heat pump combination heater				No*1*1					
Temperature application			°C	55	35	55	35	55	35
Rated heat output*2		P_{rated}	kW	8	9	10	10	11	12
Seasonal space heating energy efficiency		ηs	%	131	183	135	183	137	185
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j									
T_j = –7°C		P_{dh}	kW	7.3	7.5	8.7	8.9	10.1	10.4
T_j = +2°C		P_{dh}	kW	4.4	4.6	5.3	5.4	6.1	6.3
T_j = +7°C		P_{dh}	kW	4.1	4.4	4.1	4.4	4.3	4.5
T_j = +12°C		P_{dh}	kW	4.9	5.0	4.9	5.0	4.9	5.1
T_j = Bivalent temperature		P_{dh}	kW	7.3	7.5	8.7	8.9	10.1	10.4
T_j = Operation limit temperature		P_{dh}	kW	6.7	7.2	8.1	8.5	9.5	10.0
T_j = –15°C (if TOL < –20°C)		P_{dh}	kW	—					
Bivalent temperature		T_{biv}	°C	-7					
Cycling interval capacity for heating		P_{cych}	kW	Not applicable					
Degradation co-efficient*3		C_{dh}		0.90					
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j									
T_j = –7°C		COP_d		2.30	3.18	2.29	3.09	2.32	3.09
T_j = +2°C		COP_d		3.26	4.66	3.38	4.62	3.41	4.61
T_j = +7°C		COP_d		4.26	5.92	4.37	6.06	4.50	6.24
T_j = +12°C		COP_d		5.76	7.52	5.87	7.57	5.97	7.67
T_j = Bivalent temperature		COP_d		2.30	3.18	2.29	3.09	2.32	3.09
T_j = Operation limit temperature		COP_d		2.01	2.93	2.01	2.86	2.06	2.82
T_j = –15°C (if TOL < –20°C)		COP_d		—					
Operation limit temperature		TOL	°C	-10					
Cycling interval efficiency		COP_{cyc}		Not applicable					
Heating water operating limit temperature		WTOL	°C	60					
Power consumption in modes other than active mode									
Off mode		P_{OFF}	kW	0.014					
Thermostat-off mode		P_{TO}	kW	0.018	0.021	0.018	0.021	0.018	0.021
Standby mode		P_{SB}	kW	0.014					
Crankcase heater mode		P_{CK}	kW	0.000					
Supplementary heater									
Rated heat output*2		P_{SUP}	kW	6		6		9	
Type of energy input				Electric					
Other items									
Capacity control				Variable					
Sound power level	Indoor unit	L_{WA}	dB	36	—	36	—	36	—
	Outdoor unit	L_{WA}	dB	56	—	56	—	58	—
Annual energy consumption		Q_{HE}	kWh	5,060	3,771	5,879	4,476	6,717	5,132
Emissions of nitrogen oxides		NO_x	mg/kWh	Not applicable					
Rated airflow rate			m^3/h	3,590	3,590	3,590	4,510	4,110	5,100
Daily fuel consumption		Q_{fuel}	kWh	Not applicable					
Contact details				FUJITSU GENERAL (EURO) GmbH Fritz-Vomfelde-Strasse 26-32 40547 Düsseldorf, Germany					

NOTES:

- Product information according to Commission Delegated Regulation (EU) 813/2013
- Product information is based on the average climate condition.
- *1: Possible with using an optional component.
- *2: For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating sup (T_j).
- *3: If C_{dh} is not determined by measurement then the default degradation coefficient is C_{dh} = 0.9.

OUTDOOR UNIT

■ Product fiche

Model name			WSEG140MQ6					
			WOYG100MQL		WOYG121MQL		WOYG140MQL	
Temperature application		°C	55	35	55	35	55	35
Declared load profile			—	—	—	—	—	—
Seasonal space heating energy efficiency class			A++	A+++	A++	A+++	A++	A+++
Water heating energy efficiency class			—	—	—	—	—	—
Rated heat output		kW	8	9	10		11	12
Supplementary heater		kW	6					
Annual energy consumption		kWh	5,060	3,771	5,879	4,476	6,717	5,132
Annual electricity consumption		kWh	—	—	—	—	—	—
Annual fuel consumption		GJ	Not applicable					
Seasonal space heating energy efficiency		%	131	183	135	183	137	185
Water heating energy efficiency		%	—	—	—	—	—	—
Sound power level	Indoor unit	dB	36					
Work only during off-peak hours			Not applicable					
Specific precautions in assembled, installed, or maintained			Refer to the installation and operating manuals.					
Rated heat output	Colder climate	kW	6	8	6	9	6	11
	Warmer climate	kW	8			9	10	11
Annual energy consumption	Colder climate	kWh	4,220	4,473	4,220	5,264	4,220	6,303
	Warmer climate	kWh	2,958	2,104	3,025	2,294	3,492	2,842
Annual electricity consumption	Colder climate	kWh	—	—	—	—	—	—
	Warmer climate	kWh	—	—	—	—	—	—
Seasonal space heating energy efficiency	Colder climate	%	137	166	137	173	137	169
	Warmer climate	%	141	210	143	211	145	209
Water heating energy efficiency	Colder climate	%	—	—	—	—	—	—
	Warmer climate	%	—	—	—	—	—	—
Sound power level	Outdoor unit	dB	56	—	56	—	58	—

NOTES:

- Product fiche according to Commission Delegated Regulation (EU) 811/2013
- Acoustic noise information:
  - The maximum sound power level is less than 70 dB (A) for outdoor unit.
  - According to IEC 704-1 and ISO 3744.
- If the air to water heat pump is operated under higher temperature conditions than those listed, the built-in protection circuit may operate to prevent internal circuit damage. Also, during cooling modes, if the unit is used under conditions of lower temperatures than those listed above, the heat exchanger may freeze, leading to water leakage and other damage.
- Do not use this unit for any purposes other than the Heating and Cooling.

Model name			WSEK140MQ9			
			WOYK121MQL		WOYK140MQL	
Temperature application		°C	55	35	55	35
Declared load profile			—	—	—	—
Seasonal space heating energy efficiency class			A++	A+++	A++	A+++
Water heating energy efficiency class			—	—	—	—
Rated heat output		kW	10		11	12
Supplementary heater		kW	9			
Annual energy consumption		kWh	5,879	4,476	6,717	5,132
Annual electricity consumption		kWh	—	—	—	—
Annual fuel consumption		GJ	Not applicable			
Seasonal space heating energy efficiency		%	135	183	137	185
Water heating energy efficiency		%	—	—	—	—
Sound power level	Indoor unit	dB	36			
Work only during off-peak hours			Not applicable			
Specific precautions in assembled, installed, or maintained			Refer to the installation and operating manuals.			
Rated heat output	Colder climate	kW	9			11
	Warmer climate	kW	8	9	10	11
Annual energy consumption	Colder climate	kWh	6,534	5,264	6,499	6,303
	Warmer climate	kWh	3,025	2,294	3,492	2,842
Annual electricity consumption	Colder climate	kWh	—	—	—	—
	Warmer climate	kWh	—	—	—	—
Seasonal space heating energy efficiency	Colder climate	%	132	173	133	169
	Warmer climate	%	143	211	145	209
Water heating energy efficiency	Colder climate	%	—	—	—	—
	Warmer climate	%	—	—	—	—
Sound power level	Outdoor unit	dB	56	—	58	—

NOTES:

- Product fiche according to Commission Delegated Regulation (EU) 811/2013
- Acoustic noise information:
  - The maximum sound power level is less than 70 dB (A) for outdoor unit.
  - According to IEC 704-1 and ISO 3744.
- If the air to water heat pump is operated under higher temperature conditions than those listed, the built-in protection circuit may operate to prevent internal circuit damage. Also, during cooling modes, if the unit is used under conditions of lower temperatures than those listed above, the heat exchanger may freeze, leading to water leakage and other damage.
- Do not use this unit for any purposes other than the Heating and Cooling.

OUTDOOR UNIT

■ Energy efficiency value

Application: 35°C											
Model name		**WOYG100MQL**		**WOYG121MQL**		**WOYG140MQL**		**WOYK121MQL**		**WOYK140MQL**	
Seasonal energy efficiency of heat pump for space heating	%	183		183		183		183		183	
Type of temperature control	-										
Outdoor sensor	-	II	—	II	—	II	—	II	—	II	—
Outdoor sensor + Room thermostat	-	—	VI	—	VI	—	VI	—	VI	—	VI
Bonus	%	2	4	2	4	2	4	2	4	2	4
in average	%	185	187	185	187	187	189	185	187	187	189
in warmer	%	212	214	213	215	211	213	213	215	211	213
in colder	%	168	170	175	177	171	173	175	177	171	173

Application: 55°C											
Model name		**WOYG100MQL**		**WOYG121MQL**		**WOYG140MQL**		**WOYK121MQL**		**WOYK140MQL**	
Seasonal energy efficiency of heat pump for space heating	%	131		135		137		135		137	
Type of temperature control	-										
Outdoor sensor	-	II	—	II	—	II	—	II	—	II	—
Outdoor sensor + Room thermostat	-	—	VI	—	VI	—	VI	—	VI	—	VI
Bonus	%	2	4	2	4	2	4	2	4	2	4
in average	%	133	135	137	139	139	141	137	139	139	141
in warmer	%	143	145	145	147	147	149	145	147	147	149
in colder	%	139	141	139	141	139	141	135	137	136	138

■ Class of temperature controller

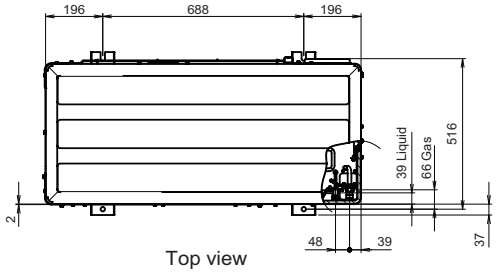
Controller class		II	VI
Contribution to energy efficiency	%	2	4

OUTDOOR UNIT

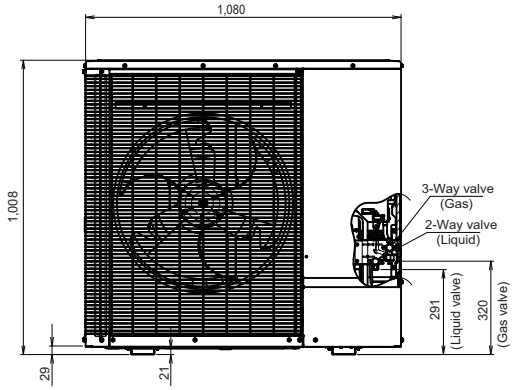
2. Dimensions

2-1. Models: WOYG100MQL, WOYG121MQL, WOYG140MQL, WOYK121MQL, and WOYK140MQL

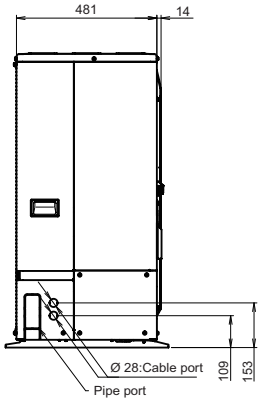
Unit: mm

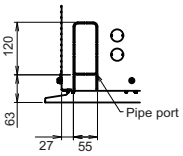


Top view

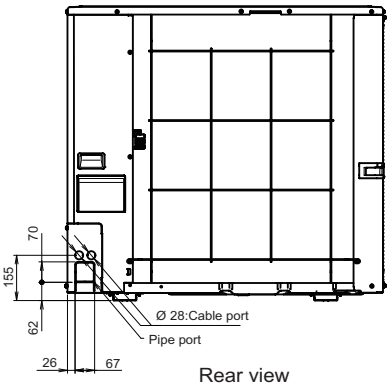


Front view

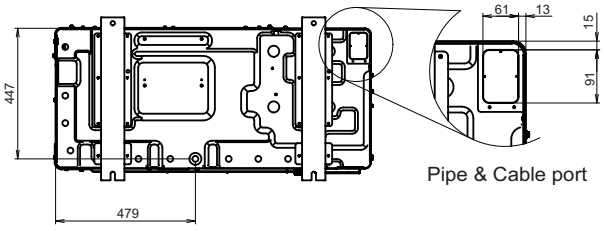




Side view



Rear view



Pipe & Cable port

Bottom view

OUTDOOR UNIT

3. Installation space

3-1. Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

Keep the space shown in the installation examples.

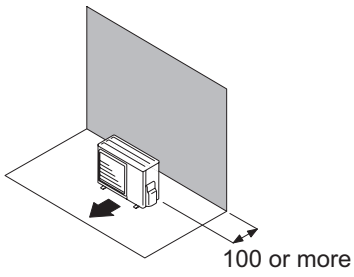
If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.

● Single outdoor unit installation

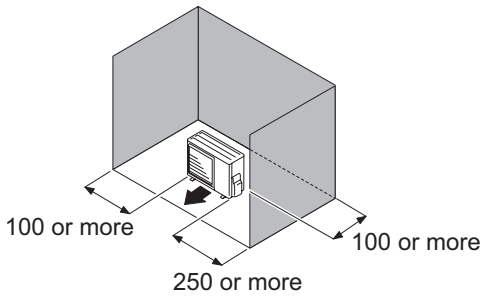
- **When the upper space is open:**

Unit: mm

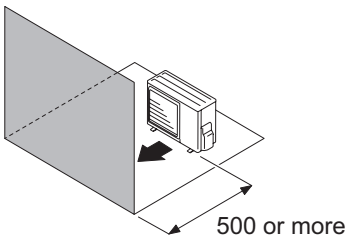
When there are obstacles at the rear only.



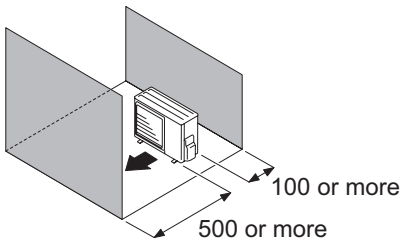
When there are obstacles at the rear and sides.



When there are obstacles at the front only.



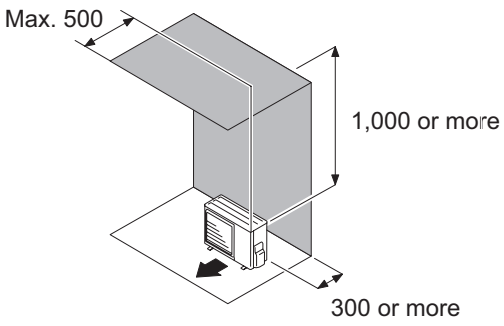
When there are obstacles at the front and rear.



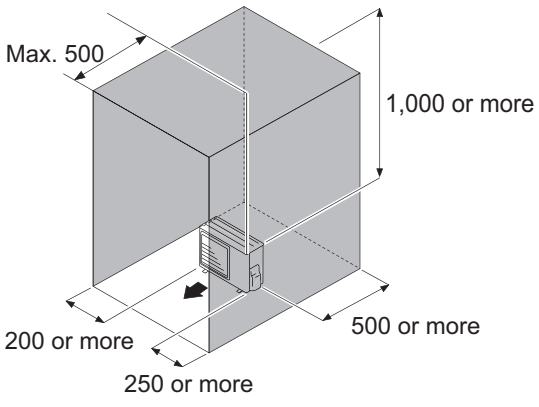
- **When an obstruction in the upper space:**

Unit: mm

When there are obstacles at the rear and above.



When there are obstacles at the rear, sides, and above.



OUTDOOR UNIT

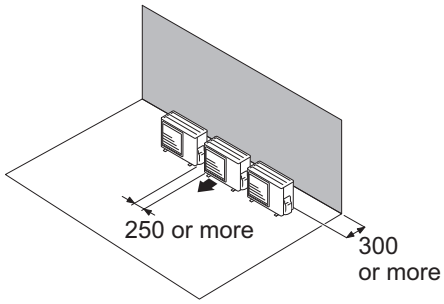
● Multiple outdoor unit installation

- Provide at least 250 mm of space between the outdoor units if multiple units are installed.
- When routing the piping from the side of an outdoor unit, provide space for piping.
- No more than 3 units must be installed side by side.
  When 4 units or more are arranged in a line, provide the space as shown in the following example "**When an obstruction in the upper space:**".

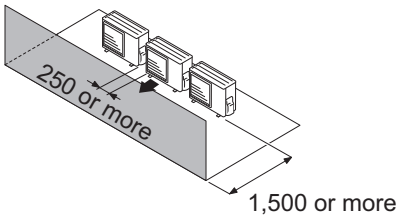
- **When the upper space is open:**

Unit: mm

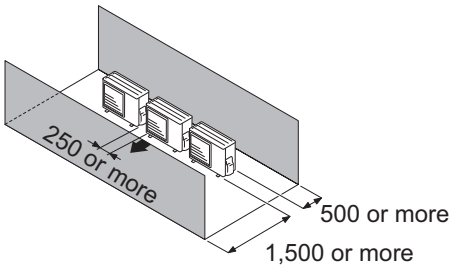
When there are obstacles at the rear only.



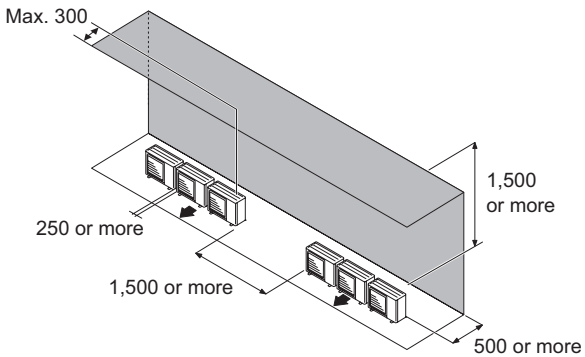
When there are obstacles at the front only.



When there are obstacles at the front and rear.



When there are obstacles at the rear and above.



● Outdoor unit position

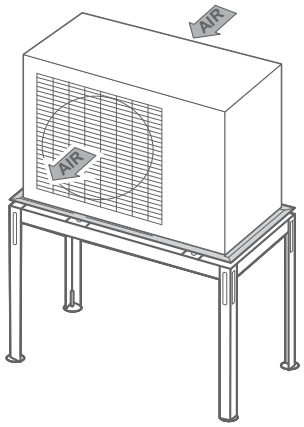
- The outdoor unit must be raised by at least 50 mm from the ground.
  In snowy regions, the height must be increased but must not exceed 1.5 m.
- Fasten the outdoor unit using screws and elastic tightening or toothed lock washers to prevent them from coming lose.

⚠ CAUTION

In regions with heavy snowfall, if the outdoor unit's entrance and exit are blocked by snow it may be difficult to heat up and may cause breakdown.

OUTDOOR UNIT

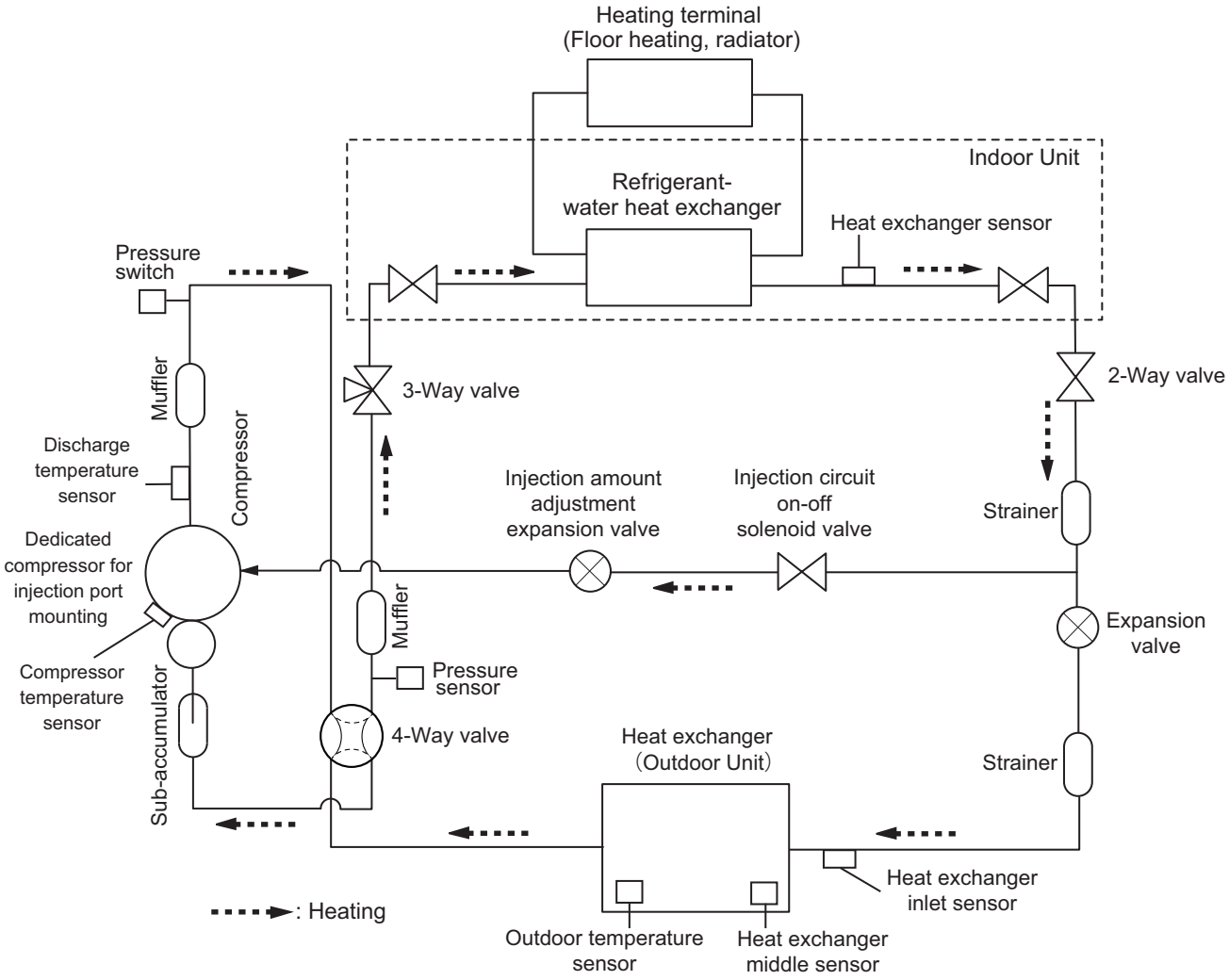
- Build a canopy or position the unit on a high stand (locally purchased).
  - Put the appliance on a solid support to minimize impact and vibration.
  - Do not set the unit directly on the ground as this may generate disruptions.



OUTDOOR UNIT

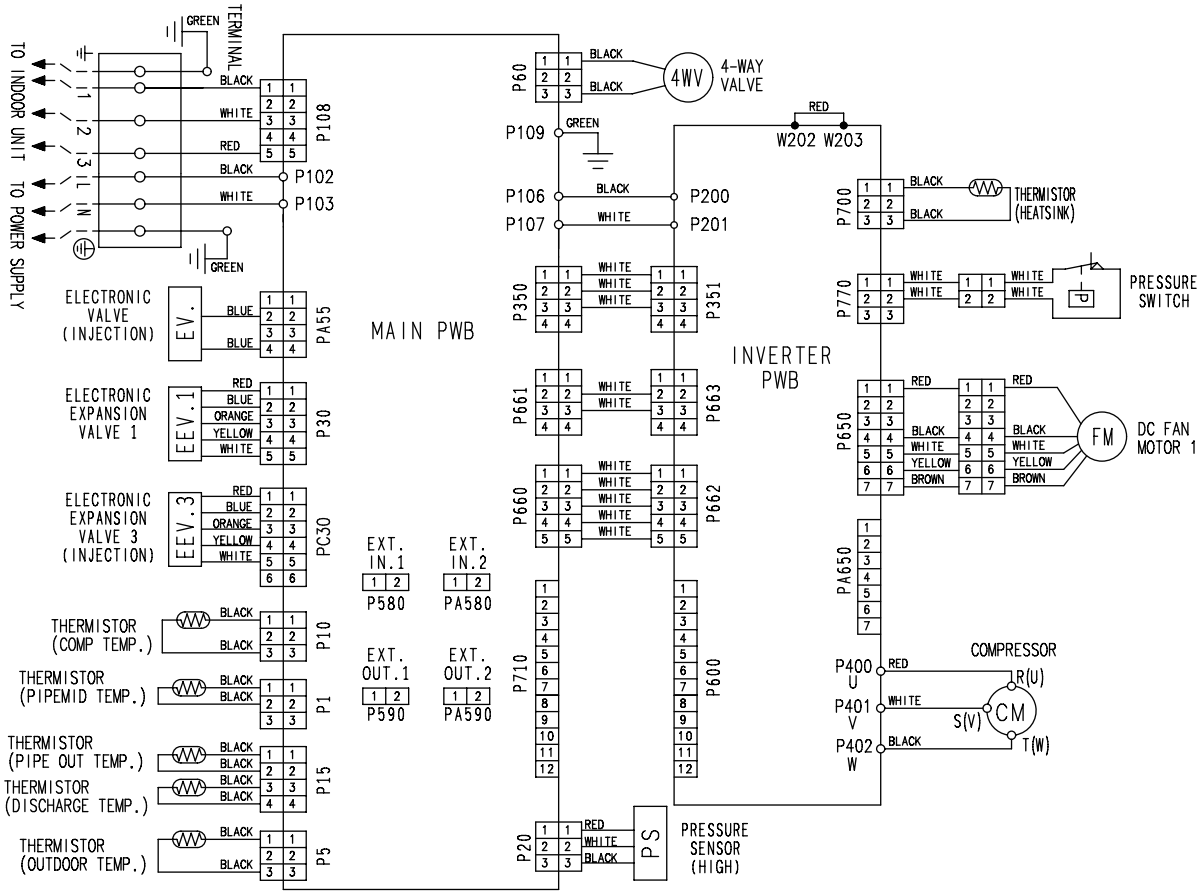
4. Piping diagrams

4-1. Models: WOYG100MQL, WOYG121MQL, WOYG140MQL, WOYK121MQL, and WOYK140MQL



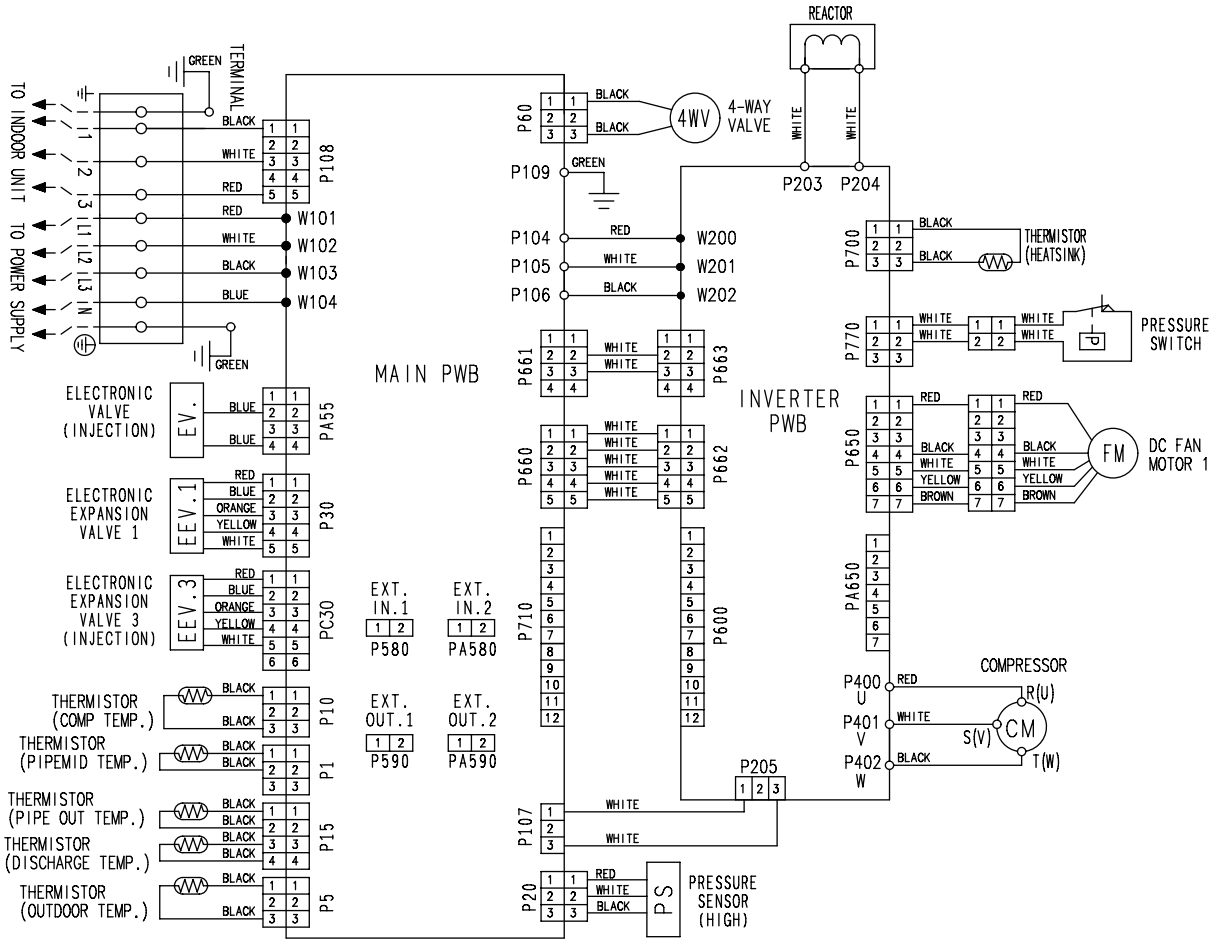
5. Wiring diagrams

5-1. Models: WOYG100MQL, WOYG121MQL, and WOYG140MQL



OUTDOOR UNIT

5-2. Models: WOYK121MQL and WOYK140MQL



OUTDOOR UNIT

6. External input and output

With using external input and output functions, this product can be operated inter-connectedly with an external device.

Function		Connector	Remarks
Input	Low noise mode	P580	See external input/output settings for details.
	Peak cut mode	PA580	
Output	Base heater control	P590	
	Compressor status	PA590	

6-1. External input

With using external input function, on/off status of “Low noise mode” and “Peak cut mode” can be specified by the external signal.

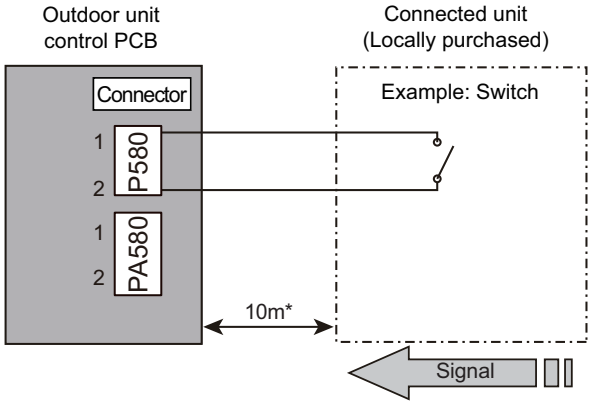
■ Low noise mode

In following condition, the operating noise of the outdoor unit reduces comparing from the one in normal operating condition:

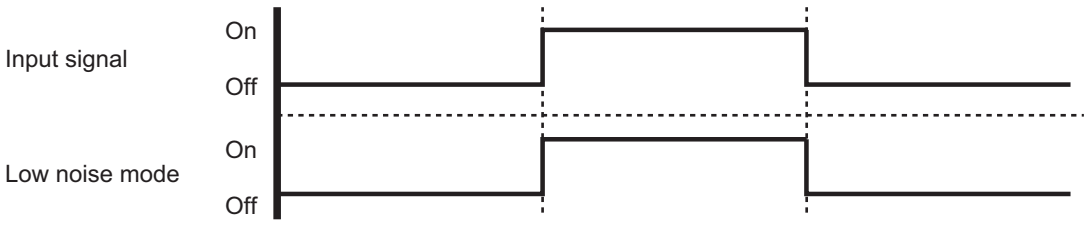
The outdoor unit is set to the “Low noise mode” when closing the contact input of a commercial timer or on/off switch to a connector on the control PCB of the outdoor unit.

NOTE: Product performance may drop depending on some conditions such as the outdoor temperature.

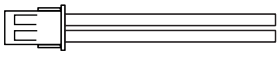
- **Circuit diagram example**



- Contact capacity: DC 24 V or more, 10 mA or more.
- *: Make the distance from the PCB to the connected unit within 10 m.
- Construct a circuit as shown in this figure with using optional parts mentioned below.
- Input signal: On in “Low noise mode”
- Input signal: Off in normal operation
- To set the level of “Low noise mode,” refer to "Low noise mode" on page 01-19 (under “Local setting procedure”.)



- **Optional part**

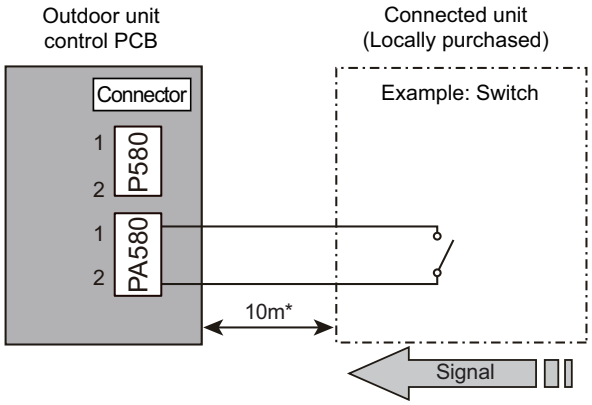
Part name	Model name	Exterior
External Connect Kit	UTY-XWZXZ3	External input wire 

OUTDOOR UNIT

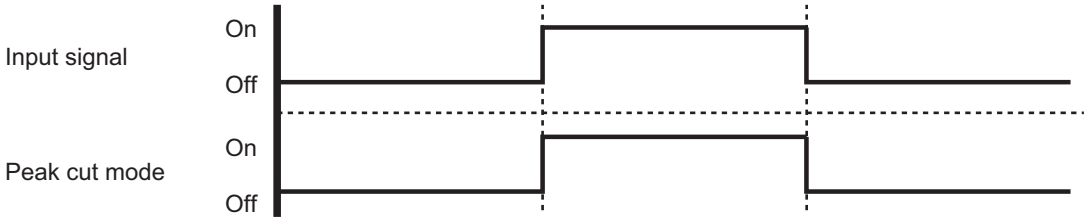
■ Peak cut mode

By performing following on-site work, operation that suppresses the current value can be enabled:
The outdoor unit is set to the “Peak cut mode” when closing the contact input of a commercial timer or on/off switch to a connector on the control PCB of the outdoor unit.

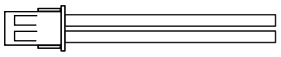
- **Circuit diagram example**



- Contact capacity: DC 24 V or more, 10 mA or more.
- *: Make the distance from the PCB to the connected unit within 10 m.
- Construct a circuit as shown in this figure with using optional parts mentioned below.
- Input signal: On in “Peak cut mode”
- Input signal: Off in normal operation
- To set the level of “Peak cut mode,” refer to "Peak cut mode" on page 01-20 (under “Local setting procedure”.)



- **Optional part**

Part name	Model name	Exterior
External Connect Kit	UTY-XWZXZ3	External input wire 

OUTDOOR UNIT

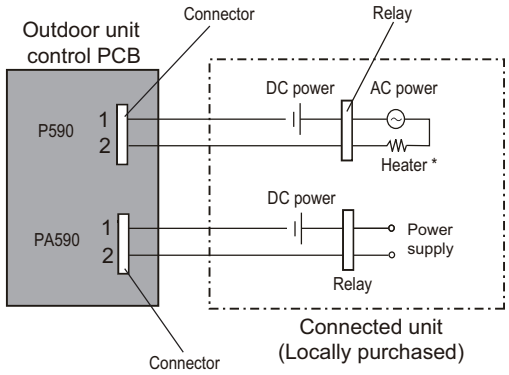
6-2. External output

With using external output function, some status signals are transmitted to the control PCB, and the related LED lamp indicates the status of this product.

■ Base pan heater control output

Signal on base pan heater operation is generated to run it.

- **Circuit diagram example**

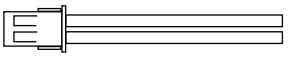


*: The allowable current is 1A or less

– Input voltage from external power supply: DC 24 V or less and 500 mA or less
– *1: Make the distance from the PCB to the connected unit within 10 m.
– *2: The connector depends on the model as follows.
  • 050 model: P800
  • 080-100 model: P590

This is the output signal for the base pan heater. The output signal is on, when the outdoor temperature drops below 2°C, and signal is off when it rises to 5°C.

- **Optional part**

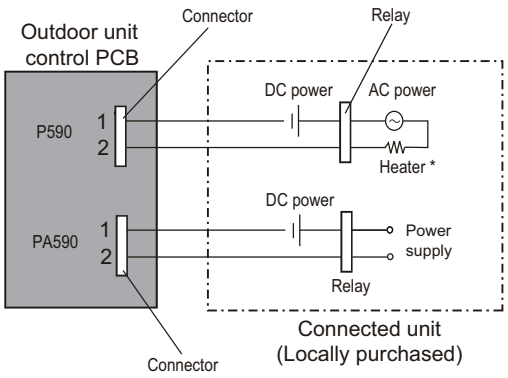
Part name	Model name	Exterior
External Connect Kit	UTY-XWZXZ3	External output wire 

OUTDOOR UNIT

■ Compressor status output

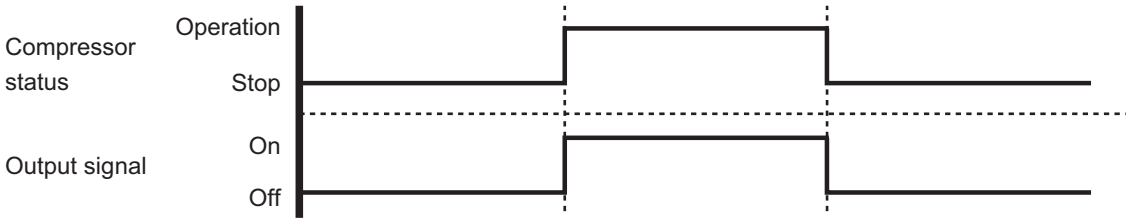
Signal on compressor operation status is generated when the compressor is running.

- **Circuit diagram example**

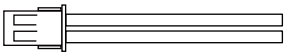


- Input voltage from external power supply: DC 24 V or less and 50 mA or less
- *: Make the distance from the PCB to the connected unit within 10 m.

*: The allowable current is 1A or less



- **Optional part**

Part name	Model name	Exterior
External Connect Kit	UTY-XWZXZ3	External output wire 

OUTDOOR UNIT

7. Function settings

Perform appropriate function setting locally according to the installation environment.

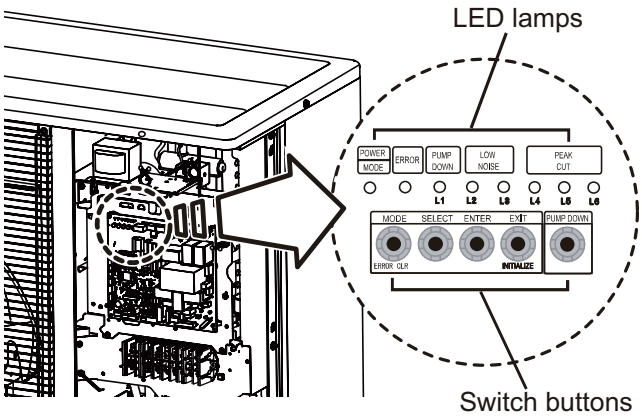
NOTE: Incorrect settings can cause a product malfunction.

⚠ CAUTION

- Before setting up the switch buttons, discharge the static electricity from your body.
- Never touch the terminals or the patterns on the parts that are mounted on the PCB.

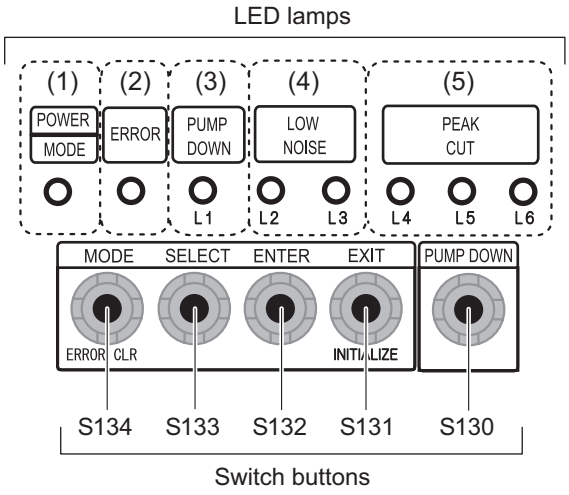
7-1. Control PCB and switch buttons location

Control PCB of the outdoor unit is located as shown in the following figure.



OUTDOOR UNIT

■ Switch buttons and the functions



LED lamp			Function or operation method
(1)	POWER/MODE	Green	Lights on while power on. Blinks to show the local setting on the outdoor unit or the error code.
(2)	ERROR	Red	Blinks during error operation.
(3)	PUMP DOWN (L1)	Orange	Lights on during pump down operation.
(4)	LOW NOISE MODE (L2 and L3)	Orange	Lights on during “Low noise mode” when local setting is activated. (Light pattern of L2 and L3 indicates the low noise level.)
(5)	PEAK CUT MODE (L4, L5, and L6)	Orange	Lights on during “Peak cut mode” when local setting is activated. (Light pattern of L4, L5, and L6 indicates the peak cut level.)

Switch button		Function or operation method
S134	MODE	Switches between “Local setting” and “Error code display”.
S133	SELECT	Switches between the individual “Local settings” and the “Error code displays”.
S132	ENTER	Switches between the individual “Local settings” and the “Error code displays”.
S131	EXIT	Returns to “Operation status display”.
S130	PUMP DOWN	Starts the pump down operation.

OUTDOOR UNIT

7-2. Local setting procedure

NOTE: Before performing the function setting, be sure to stop the operation of the heat pump.

■ Low noise mode

1. Press the MODE switch button (S134) for 3 seconds or more to switch to “Local setting mode”.
2. After confirming the LED lamp of POWER/MODE blinks 9 times, press the ENTER switch button (S132).

POWER / MODE	ERROR	PUMP DOWN (L1)	LOW NOISE (L2)	LOW NOISE (L3)	PEAK CUT (L4)	PEAK CUT (L5)	PEAK CUT (L6)
Blinks (9 times)	○	○	○	○	○	○	○

Sign “ ○ ”: Lights off

3. Press the SELECT switch button (S133), and adjust the LED lamp as shown below. Then the LED lamp indicates the current setting.

	LOW NOISE (L2)	LOW NOISE (L3)
LOW NOISE MODE	○	Blink

4. Press the ENTER switch button (S132).

	LOW NOISE (L2)	LOW NOISE (L3)
LOW NOISE MODE	○	●

Sign “ ● ”: Lights on

5. Press the SELECT switch button (S133), and adjust the LED lamps as shown below.

	PEAK CUT (L4)	PEAK CUT (L5)	PEAK CUT (L6)
MODE 1: Low	○	○	Blink
MODE 2: Lower	○	Blink	○

6. Press the ENTER switch button (S132) and fix it.

	PEAK CUT (L4)	PEAK CUT (L5)	PEAK CUT (L6)
MODE 1: Low	○	○	●
MODE 2: Lower	○	●	○

7. To return to “Operating status display (Normal operation)”, press the EXIT switch button (S131).

In case of missing how many times you pressed the SELECT and ENTER switch buttons:

1. To return to “Operation status display (Normal operation)”, press the EXIT switch button once.
2. Restart from the beginning of setting procedure.

OUTDOOR UNIT

■ Peak cut mode

1. Press the MODE switch button (S134) for 3 seconds or more to switch to “Local setting mode”.
2. After confirming the LED lamp of POWER/MODE blinks 9 times, press the ENTER switch button (S132).

POWER / MODE	ERROR	PUMP DOWN (L1)	LOW NOISE (L2)	LOW NOISE (L3)	PEAK CUT (L4)	PEAK CUT (L5)	PEAK CUT (L6)
Blinks (9 times)	○	○	○	○	○	○	○

Sign “ ○ ”: Lights off

3. Press the SELECT switch button (S133), and adjust the LED lamp as shown below. Then the LED lamp indicates the current setting.

	LOW NOISE (L2)	LOW NOISE (L3)
PEAK CUT MODE	Blink	○

4. Press the ENTER switch button (S132).

	LOW NOISE (L2)	LOW NOISE (L3)
PEAK CUT MODE	●	○

Sign “ ● ”: Lights on

5. Press the SELECT switch button (S133), and adjust the LED lamps as shown below.

	PEAK CUT (L4)	PEAK CUT (L5)	PEAK CUT (L6)
0 % of rated input ratio	○	○	Blink
50 % of rated input ratio	○	Blink	○
75 % of rated input ratio	○	Blink	Blink
100 % of rated input ratio	Blink	○	○

6. Press the ENTER switch button (S132) and fix it.

	PEAK CUT (L4)	PEAK CUT (L5)	PEAK CUT (L6)
0 % of rated input ratio	○	○	●
50 % of rated input ratio	○	●	○
75 % of rated input ratio	○	●	●
100 % of rated input ratio	●	○	○

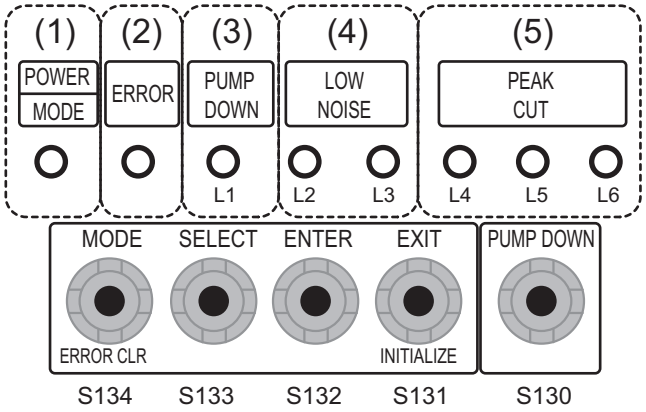
7. To return to “Operating status display (Normal operation)”, press the EXIT switch button (S131).

NOTE: When pressed number is lost during setting, you must redo the setting procedure. Return to “Operation status display (Normal operation)” by pressing the EXIT switch button once, and restart from the beginning of the setting procedure.

OUTDOOR UNIT

8. Error codes

- **Outdoor unit**



– Check that the LED of ERROR blinks, and then press shortly the switch of ENTER.
– The LED of ERROR will blink several time. For details, refer to the table below.○: LED off, ●: LED on

Error number	Outdoor unit board						Error contents
	L1	L2	L3	L4	L5	L6	
11	1	1	○	○	●	●	Serial communication error after operation
	1	1	○	●	○	○	Serial communication error during operation
23	2	3	○	○	○	●	Different combinations used by indoor and outdoor units
	2	3	○	○	●	○	Outdoor unit PCB model information error
62	6	2	○	○	○	●	Outdoor unit Main PCB error (model information error)
	6	2	○	○	●	○	Outdoor unit Main PCB error (communication error)
63	6	3	○	○	○	●	Inverter error
65	6	5	○	○	●	●	Outdoor unit IPM error
	6	5	○	○	○	●	IPM board temperature error
71	7	1	○	○	○	●	Discharge thermistor error
72	7	2	○	○	○	●	Compressor thermistor error
73	7	3	○	○	●	○	Heat exchanger thermistor (intermediate) error
	7	3	○	○	●	●	Heat exchanger thermistor (outlet) error
74	7	4	○	○	○	●	Outdoor thermistor error
77	7	7	○	○	○	●	Outdoor unit heat sink temperature thermistor error
78	7	8	○	○	○	●	Expansion valve thermistor error
84	8	4	○	○	○	●	Current sensor error
86	8	6	○	●	○	○	Pressure switch error
	8	6	○	●	●	○	Pressure sensor error
94	9	4	○	○	○	●	Trigger detection
95	9	5	○	○	○	●	Detection of compressor position error Compressor start up error
97	9	7	○	○	●	○	Outdoor unit fan1 motor error
A1	10	1	○	○	○	●	Discharge temperature protection
A3	10	3	○	○	○	●	Compressor temperature protection
A5	10	5	○	○	○	●	Low pressure abnormal
AC	10	11	○	○	●	●	Outdoor unit heat sink temperature error

9. Heating capacity table

- HC: Heating capacity
- IP: Input power
- COP: Coefficient Of Performance
- Usage environment, such as operation of the heating equipment, room temperature, and control adjustments may cause disparities between practically determined and measured values.
- Values mentioned in the table are calculated based on the maximum capacity without defrost.

9-1. Model: WOYG100MQL

Outdoor temperature		Water temperature[°C]																					
		30			35			40			45			50			55			60		
°CDB	°CWB	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
		kW		—	kW		—	kW		—	kW		—	kW		—	kW		—	kW		—
-25	-26	5.74	2.50	2.30	5.61	2.70	2.08	5.18	2.70	1.92	5.08	2.92	1.74	4.97	3.13	1.59	—	—	—	—	—	—
-20	-21	6.80	2.64	2.58	6.66	2.86	2.33	6.16	2.87	2.15	6.05	3.11	1.95	5.93	3.33	1.78	5.82	3.61	1.62	—	—	—
-15	-16	7.96	2.76	2.88	7.83	3.00	2.61	7.76	3.26	2.38	7.65	3.55	2.16	7.53	3.81	1.98	7.42	4.14	1.79	6.75	4.14	1.63
-10	-11	9.32	2.88	3.23	9.17	3.15	2.91	9.05	3.43	2.64	8.93	3.74	2.39	8.77	4.01	2.19	8.44	4.26	1.98	7.75	4.26	1.82
-7	-8	10.27	2.96	3.47	10.10	3.24	3.12	9.95	3.53	2.82	9.81	3.86	2.54	9.63	4.13	2.33	9.13	4.26	2.14	8.35	4.26	1.96
-5	-7	10.55	2.98	3.54	10.41	3.26	3.19	10.28	3.57	2.88	10.16	3.90	2.60	10.00	4.18	2.39	9.35	4.26	2.19	8.61	4.26	2.02
0	-2	12.35	3.11	3.97	12.14	3.41	3.56	11.90	3.72	3.20	11.88	4.07	2.92	11.23	4.15	2.71	10.24	4.15	2.47	9.27	4.15	2.23
5	3	14.27	3.19	4.47	14.04	3.52	3.99	13.90	3.87	3.59	13.48	4.15	3.25	12.59	4.15	3.04	11.45	4.15	2.76	10.33	4.15	2.49
7	6	15.53	3.19	4.87	15.30	3.54	4.33	15.11	3.91	3.86	14.44	4.15	3.48	13.52	4.15	3.26	12.29	4.15	2.96	11.08	4.15	2.67
10	8	16.41	3.18	5.16	16.18	3.54	4.57	15.96	3.93	4.06	15.14	4.15	3.65	14.20	4.15	3.42	12.89	4.15	3.11	11.58	4.15	2.79
15	10	16.96	3.14	5.40	16.05	3.34	4.80	14.55	3.34	4.35	13.12	3.34	3.92	12.33	3.34	3.69	11.20	3.34	3.35	9.86	3.34	2.95
20	15	17.93	3.10	5.79	17.26	3.34	5.16	15.74	3.34	4.71	14.18	3.34	4.24	13.34	3.34	3.99	12.03	3.34	3.60	10.63	3.34	3.18
25	19	18.93	3.07	6.18	17.96	3.23	5.56	16.41	3.23	5.08	14.82	3.23	4.59	13.92	3.23	4.31	12.40	3.23	3.84	11.10	3.23	3.44
30	22	20.58	3.01	6.83	19.69	3.23	6.10	18.00	3.23	5.57	16.25	3.23	5.03	15.06	3.23	4.66	13.35	3.23	4.14	11.90	3.23	3.69
35	24	21.78	2.98	7.32	20.98	3.23	6.50	19.10	3.23	5.92	17.24	3.23	5.34	15.83	3.23	4.90	14.02	3.23	4.34	12.47	3.23	3.86

9-2. Models: WOYG121MQL and WOYK121MQL

Outdoor temperature		Water temperature[°C]																					
		30			35			40			45			50			55			60		
°CDB	°CWB	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
		kW		—	kW		—	kW		—	kW		—	kW		—	kW		—	kW		—
-25	-26	6.13	2.68	2.28	6.01	2.90	2.07	5.18	2.70	1.92	5.08	2.92	1.74	4.97	3.13	1.59	—	—	—	—	—	—
-20	-21	7.23	2.84	2.55	7.11	3.08	2.31	6.16	2.87	2.15	6.05	3.11	1.95	5.93	3.33	1.78	5.82	3.61	1.62	—	—	—
-15	-16	8.45	2.97	2.85	8.33	3.23	2.58	8.29	3.51	2.36	8.20	3.83	2.14	8.09	4.11	1.97	8.00	4.48	1.79	6.75	4.14	1.63
-10	-11	9.92	3.11	3.19	9.76	3.39	2.88	9.66	3.70	2.61	9.56	4.04	2.37	9.41	4.33	2.17	9.29	4.72	1.97	7.93	4.37	1.82
-7	-8	10.90	3.19	3.42	10.74	3.49	3.08	10.62	3.81	2.78	10.49	4.17	2.52	10.32	4.47	2.31	10.24	4.84	2.12	8.82	4.51	1.96
-5	-7	11.92	3.28	3.63	11.03	3.52	3.14	10.93	3.85	2.84	10.83	4.22	2.57	10.69	4.52	2.37	10.46	4.84	2.16	9.21	4.58	2.01
0	-2	13.08	3.36	3.89	12.89	3.69	3.49	12.68	4.04	3.14	12.67	4.42	2.87	12.48	4.70	2.66	11.52	4.72	2.44	10.50	4.72	2.22
5	3	15.07	3.43	4.39	14.86	3.79	3.92	14.76	4.17	3.54	14.64	4.60	3.18	14.03	4.72	2.97	12.84	4.72	2.72	11.71	4.72	2.48
7	6	16.40	3.43	4.78	16.19	3.80	4.25	16.02	4.21	3.80	15.88	4.66	3.41	15.01	4.72	3.18	13.74	4.72	2.91	12.52	4.72	2.65
10	8	17.32	3.42	5.06	17.05	3.80	4.48	16.91	4.23	4.00	16.77	4.69	3.57	15.74	4.72	3.33	14.39	4.72	3.05	13.07	4.72	2.77
15	10	17.88	3.39	5.27	17.61	3.77	4.67	16.87	4.03	4.18	15.37	4.03	3.81	14.42	4.03	3.57	13.05	4.03	3.24	11.92	4.03	2.95
20	15	18.84	3.36	5.61	18.59	3.75	4.96	17.98	4.03	4.46	16.46	4.03	4.08	15.44	4.03	3.83	14.05	4.03	3.48	12.72	4.03	3.15
25	19	19.50	3.23	6.04	17.96	3.23	5.56	16.41	3.23	5.08	14.82	3.23	4.59	13.92	3.23	4.31	12.40	3.23	3.84	11.10	3.23	3.44
30	22	21.40	3.23	6.63	19.69	3.23	6.10	18.00	3.23	5.57	16.25	3.23	5.03	15.06	3.23	4.66	13.35	3.23	4.14	11.90	3.23	3.69
35	24	22.79	3.23	7.06	20.99	3.23	6.50	19.10	3.23	5.92	17.24	3.23	5.34	15.83	3.23	4.90	14.02	3.23	4.34	12.47	3.23	3.86

9-3. Models: WOYG140MQL and WOYK140MQL

Outdoor temperature		Water temperature[°C]																					
		30			35			40			45			50			55			60		
°CDB	°CWB	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP	HC	IP	COP
		kW		—	kW		—	kW		—	kW		—	kW		—	kW		—	kW		—
-25	-26	6.38	2.79	2.28	6.24	3.02	2.07	6.16	3.25	1.89	6.07	3.52	1.73	5.93	3.77	1.58	—	—	—	—	—	—
-20	-21	7.55	2.95	2.56	7.41	3.19	2.32	7.30	3.45	2.12	7.23	3.74	1.93	7.08	4.00	1.77	7.03	4.34	1.62	—	—	—
-15	-16	9.36	3.31	2.83	9.23	3.60	2.56	9.15	3.91	2.34	9.13	4.24	2.15	8.36	4.22	1.98	8.25	4.59	1.80	8.14	4.99	1.63
-10	-11	10.95	3.44	3.18	10.80	3.76	2.87	10.71	4.09	2.62	10.59	4.47	2.37	9.71	4.44	2.19	9.58	4.84	1.98	9.45	5.27	1.79
-7	-8	12.05	3.55	3.39	11.89	3.88	3.07	11.75	4.23	2.78	11.61	4.62	2.52	10.66	4.57	2.33	10.51	4.99	2.11	10.34	5.43	1.90
-5	-7	12.43	3.58	3.47	12.30	3.92	3.14	12.18	4.29	2.84	12.08	4.69	2.57	11.13	4.63	2.40	11.00	5.06	2.17	10.86	5.53	1.97
0	-2	14.40	3.72	3.87	14.22	4.08	3.48	14.03	4.48	3.13	13.89	4.91	2.83	12.72	4.81	2.64	12.56	5.27	2.38	11.73	5.41	2.17
5	3	16.58	3.76	4.41	16.35	4.15	3.94	16.11	4.58	3.52	16.03	5.04	3.18	14.79	4.96	2.98	14.54	5.41	2.69	13.25	5.41	2.45
7	6	18.05	3.75	4.81	17.82	4.16	4.28	17.60	4.60	3.82	17.47	5.10	3.43	16.11	5.06	3.18	15.54	5.41	2.87	14.17	5.41	2.62
10	8	19.10	3.74	5.10	18.86	4.16	4.54	18.62	4.62	4.03	18.45	5.12	3.60	17.03	5.11	3.33	16.29	5.41	3.01	14.85	5.41	2.74
15	10	19.68	3.69	5.33	19.46	4.11	4.74	19.21	4.57	4.20	17.56	4.61	3.81	16.33	4.61	3.54	14.93	4.61	3.24	13.64	4.61	2.96
20	15	20.22	3.66	5.52	19.98	4.09	4.88	19.71	4.55	4.33	18.26	4.61	3.96	17.15	4.61	3.72	15.74	4.61	3.41	14.32	4.61	3.11
25	19	20.46	3.66	5.59	19.14	3.69	5.19	17.60	3.69	4.77	16.12	3.69	4.37	15.14	3.69	4.10	13.75	3.69	3.73	12.42	3.69	3.37
30	22	22.36	3.62	6.18	20.95	3.69	5.68	19.30	3.69	5.23	17.71	3.69	4.80	16.44	3.69	4.46	14.94	3.69	4.05	13.49	3.69	3.66
35	24	23.82	3.59	6.64	22.40	3.69	6.07	20.59	3.69	5.58	18.82	3.69	5.10	17.45	3.69	4.73	15.81	3.69	4.29	14.02	3.69	3.80

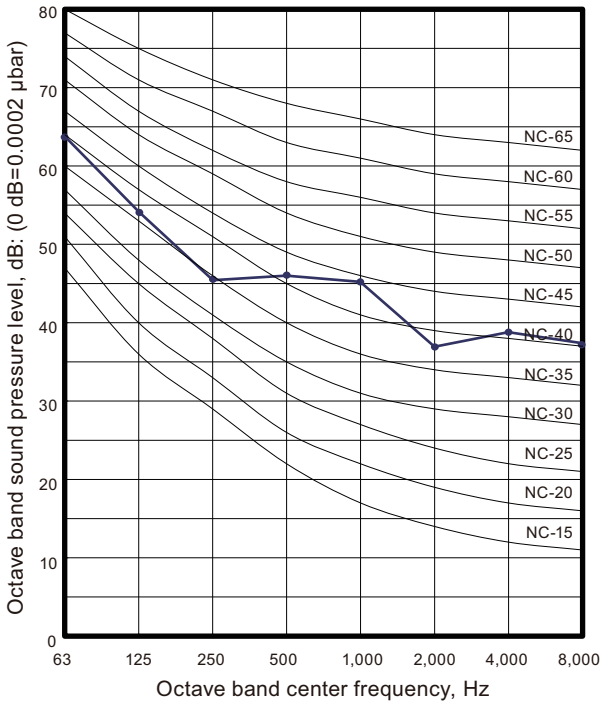
OUTDOOR UNIT

10. Operation noise (sound pressure)

10-1. Noise level curve

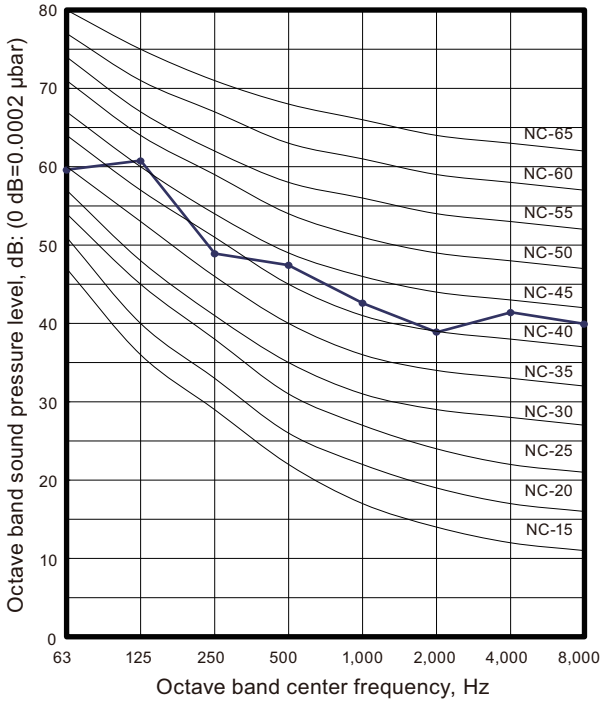
■ Model: WOYG100MQL

● Heating



■ Model: WOYG121MQL

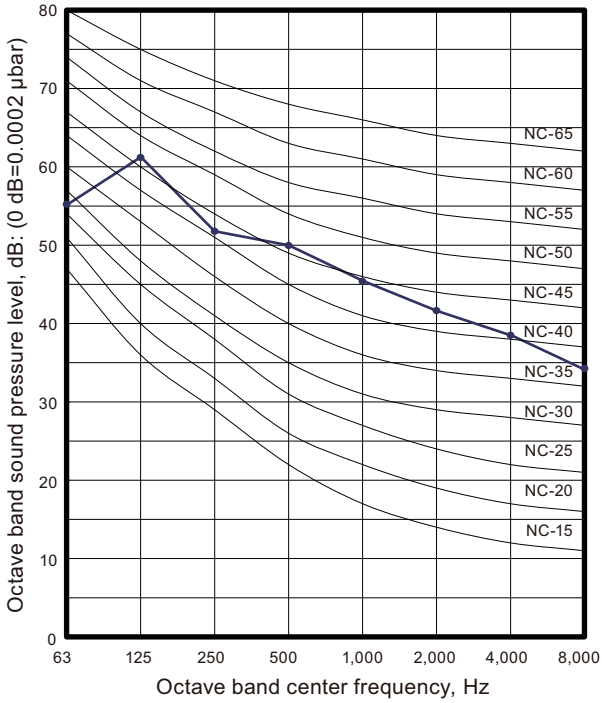
● Heating



OUTDOOR UNIT

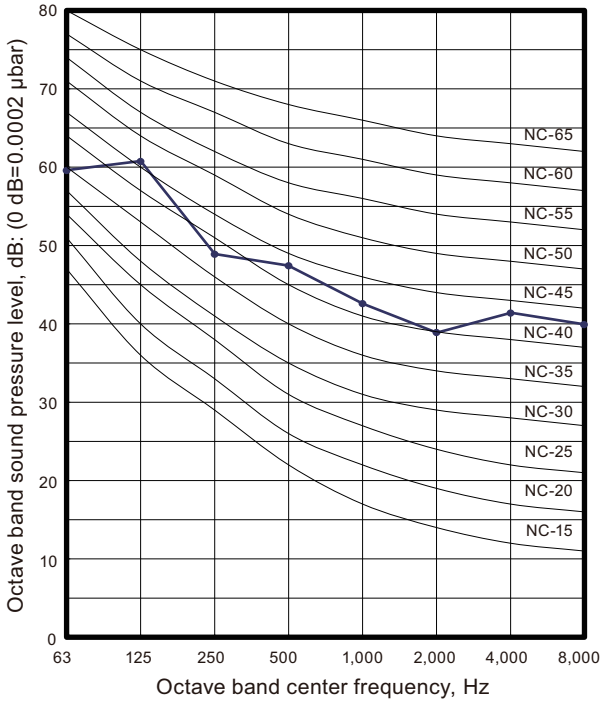
■ Model: WOYG140MQL

● Heating



■ Model: WOYK121MQL

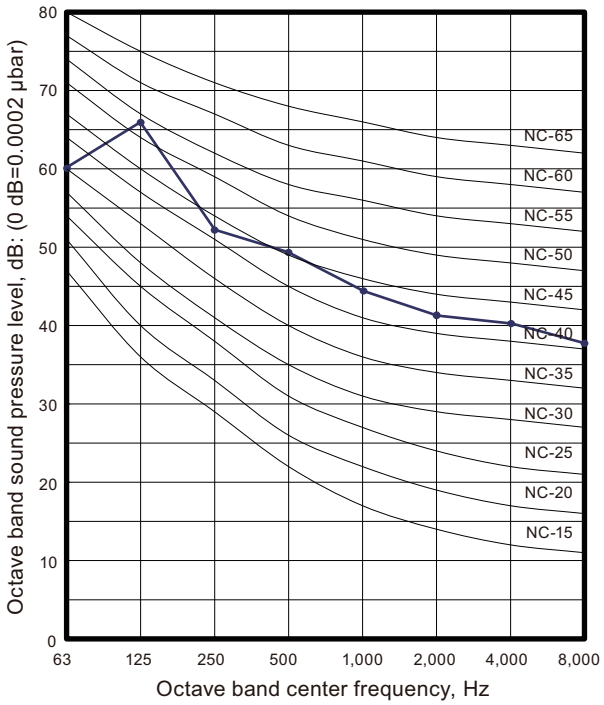
● Heating



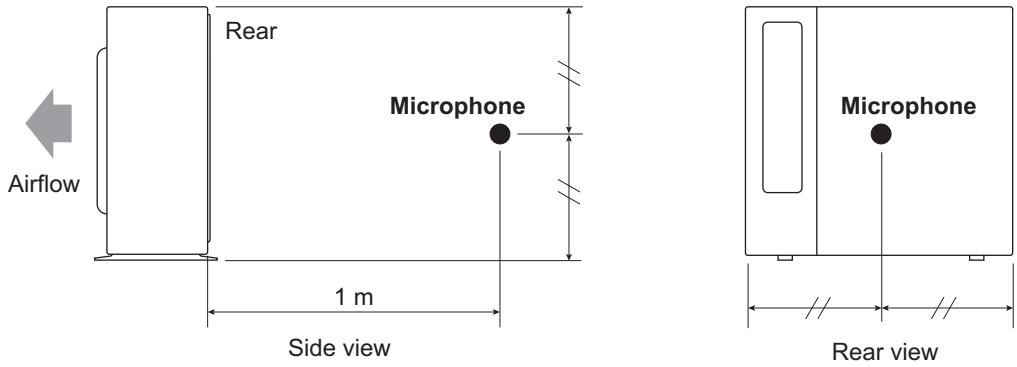
OUTDOOR UNIT

■ Model: WOYK140MQL

● Heating



10-2. Sound level check point



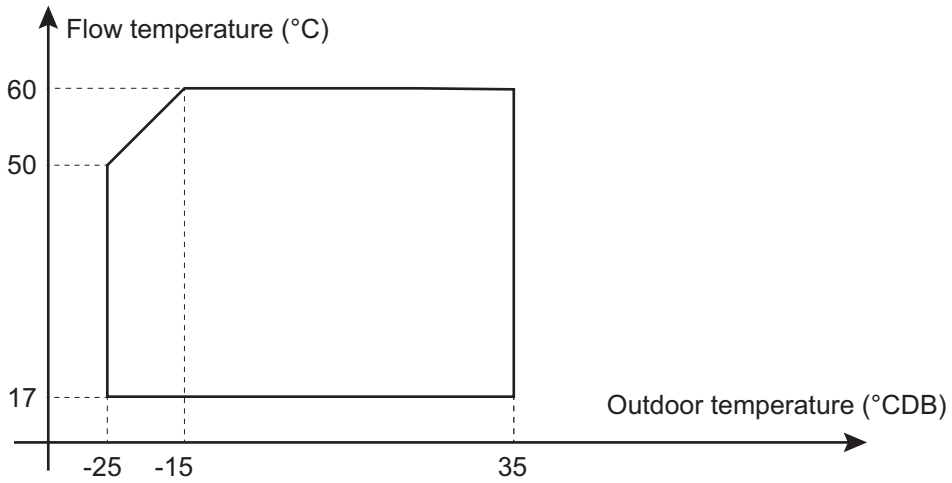
NOTE: Detailed shape of the actual outdoor unit might be slightly different from the one illustrated above.

OUTDOOR UNIT

11. Operation range

11-1. Models: WOYG100MQL, WOYG121MQL, WOYG140MQL, WOYK121MQL, and WOYK140MQL

- **Operating mode: Heating, Domestic hot water**



OUTDOOR UNIT

12. Safety devices

Type of protection	Protection form		Model	
			WOYG100MQL WOYG121MQL WOYG140MQL	WOYK121MQL WOYK140MQL
Circuit protection	Current fuse (PCB)		AC250 V, 50 A AC250 V, 10 A AC250 V, 3.15 A	AC500 V, 30 A AC250 V, 10 A
Fan motor protection	Thermal protection	Activate	115 ±15°C Fan motor stop	
		Reset	70°C Fan motor restart	
Compressor protector	Thermal protection program (Compressor temp.)	Activate	108°C Compressor stop	
		Reset	After 3 minutes and 80°C or less Compressor restart	
	Thermal protection program (Discharge temp.)	Activate	110°C Compressor stop	
		Reset	After 7 minutes Compressor restart	
High pressure protection	Pressure switch	Activate	$4.2\ ^{+0}_{-0.15}$ MPa Compressor stop	
		Reset	After 3 minutes and 3.2 ±0.15 MPa Compressor restart	
	Pressure sensor	Activate	4.2 MPa Compressor stop	
		Reset	After 3 minutes and 3.0 MPa Compressor restart	

OUTDOOR UNIT

13. Accessories

13-1. Models: WOYG100MQL, WOYG121MQL, WOYG140MQL, WOYK121MQL, and WOYK140MQL

Name and shape	Qty
 Installation manual	1
 Drain pipe	1
 Drain cap	9
 One-touch bush	2

REFRIGERANT R32
INVERTER

2. HYDRAULIC UNIT

CONTENTS

2. HYDRAULIC UNIT

1. Specifications

1-1. Technical specifications

Model name		Hydraulic unit		WSEG140MQ6			WSEK140MQ9	
		Outdoor unit		WOYG100MQL	WOYG121MQL	WOYG140MQL	WOYK121MQL	WOYK121MQL
Input power	Heating	Rated	kW	0.16			0.16	
		Maximum*1		6			9	
Enclosure		Material		Front Panel 8/10 mm DC01 + EZ (5μ)			Front Panel 8/10 mm DC01 + EZ (5μ)	
		Color		White			White	
Dimensions(H × W × D)	Net		mm	750 × 448 × 469			750 × 448 × 469	
	Gross			540 × 600 × 1,000			540 × 600 × 1,000	
Weight	Net (Empty / Full of water)		kg	46 / 62			46 / 62	
	Gross			48			48	
Water capacity			l	15			15	
Main components	Pump	Type		Water cooled			Water cooled	
		Speed setting		Variable speed			Variable speed	
		Input power*3	W	75			75	
		Pump rank		A			A	
	Buffer tank	Qty		1			1	
		Volume	l	15			15	
	Expansion vessel	Volume	l	12			12	
		Max. water pressure	bar	8			8	
		Pre-pressure		1			1	
	Safety valve		bar	3			3	
	Manometer			Yes			Yes	
	Drain valve/Fill valve			Yes			Yes	
	Air purge valve			Yes			Yes	
Water circuit	Connection pipe diameter	Flow	mm (in)	Ø19.05 (3/4)			Ø19.05 (3/4)	
		Return		Ø19.05 (3/4)			Ø19.05 (3/4)	
Refrigerant circuit	Connection method	Liquid		Flare			Flare	
		Gas		Flare			Flare	
	Connection pipe diameter	Liquid	mm (in)	Ø9.53 (3/8)			Ø9.53 (3/8)	
		Gas		Ø15.88 (5/8)			Ø15.88 (5/8)	
Operation range	Water side	Heating	°C	17 to 60			17 to 60	

NOTES:

- *1: With electric backup heater
- *2: The value is at full speed and full flow.

1-2. Electrical specifications

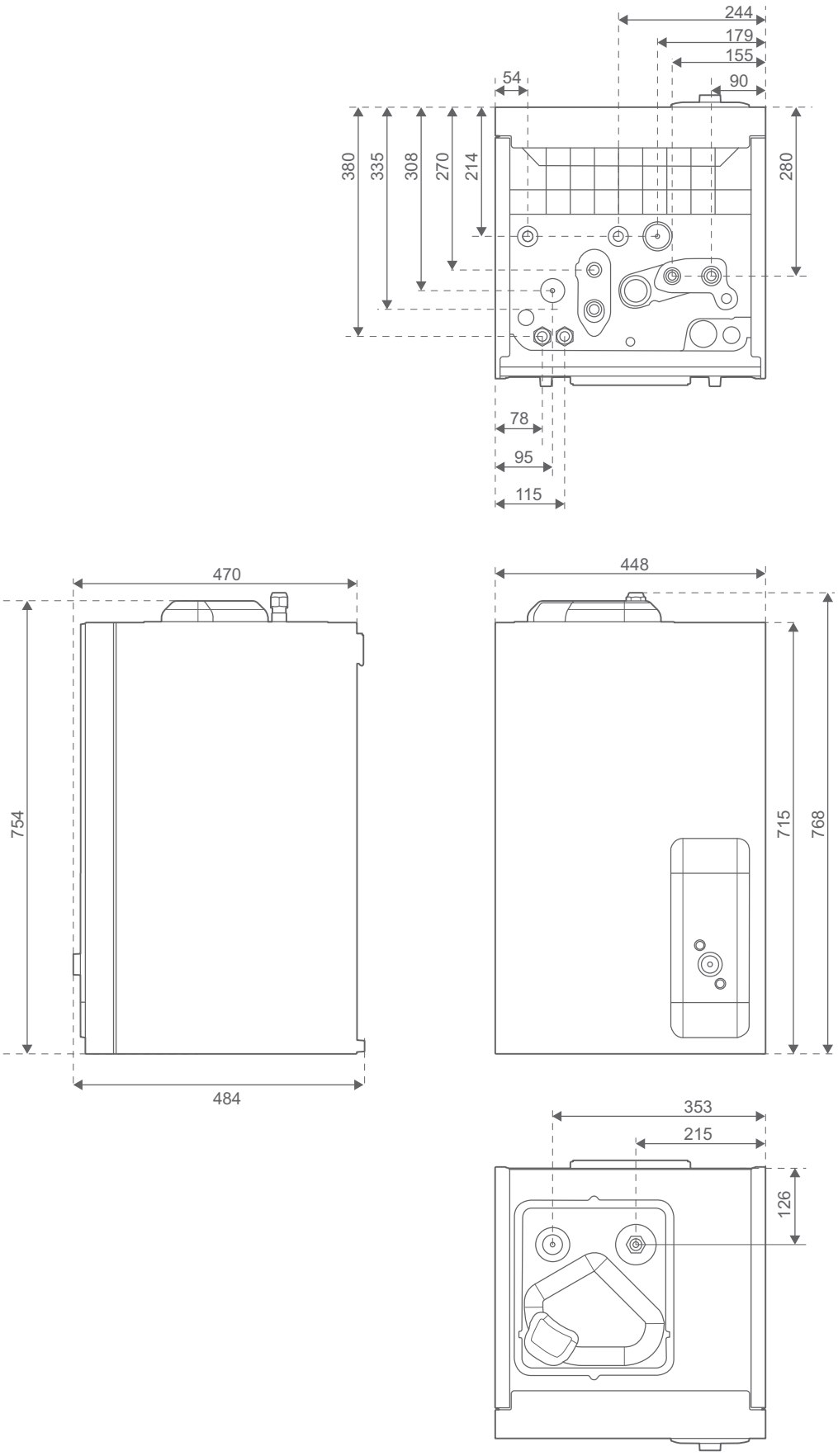
Model name		Hydraulic unit		WSEG140MQ6			WSEK140MQ9	
		Outdoor unit		WOYG100MQL	WOYG121MQL	WOYG140MQL	WOYK121MQL	WOYK121MQL
Electrical heater	Type			—			—	
	Input power	Maximum	kW	6			9	
	Power supply	Phase		1			3	
		Frequency	Hz	50			50	
		Voltage	V	230			400	
	Current	Running current	A	26.1			26.1	
Wiring spec.	Backup heater power supply	Main fuse (circuit breaker) current	A	32			20	
		Connection cable	mm^2	6 × 3			2.5 × 4	
	Hydraulic unit to outdoor unit	Connection cable	mm^2	1.5 × 4			1.5 × 4	
		Limited wiring length	m	Not available			Not available	

HYDRAULIC UNIT

2. Dimensions

2-1. Models: WSEG140MQ6 and WSEK140MQ9

Unit: mm

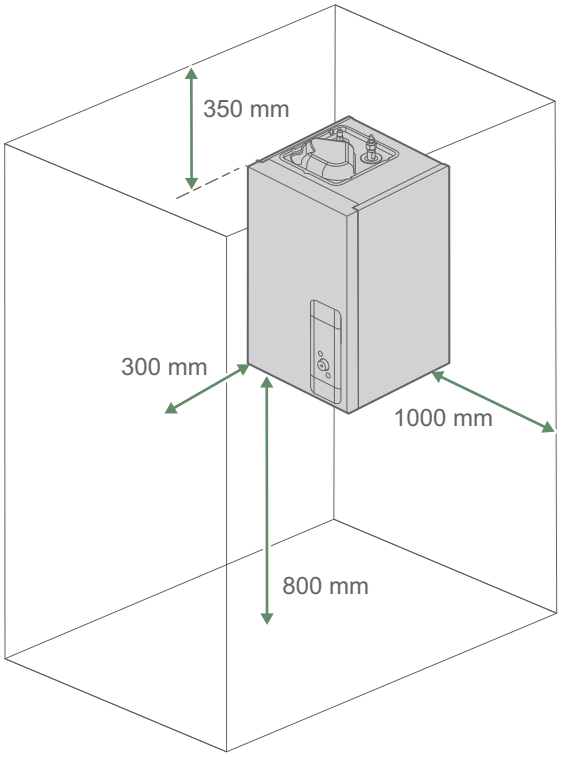


HYDRAULIC UNIT

3. Installation space

3-1. Models: WSEG140MQ6 and WSEK140MQ9

Unit: mm



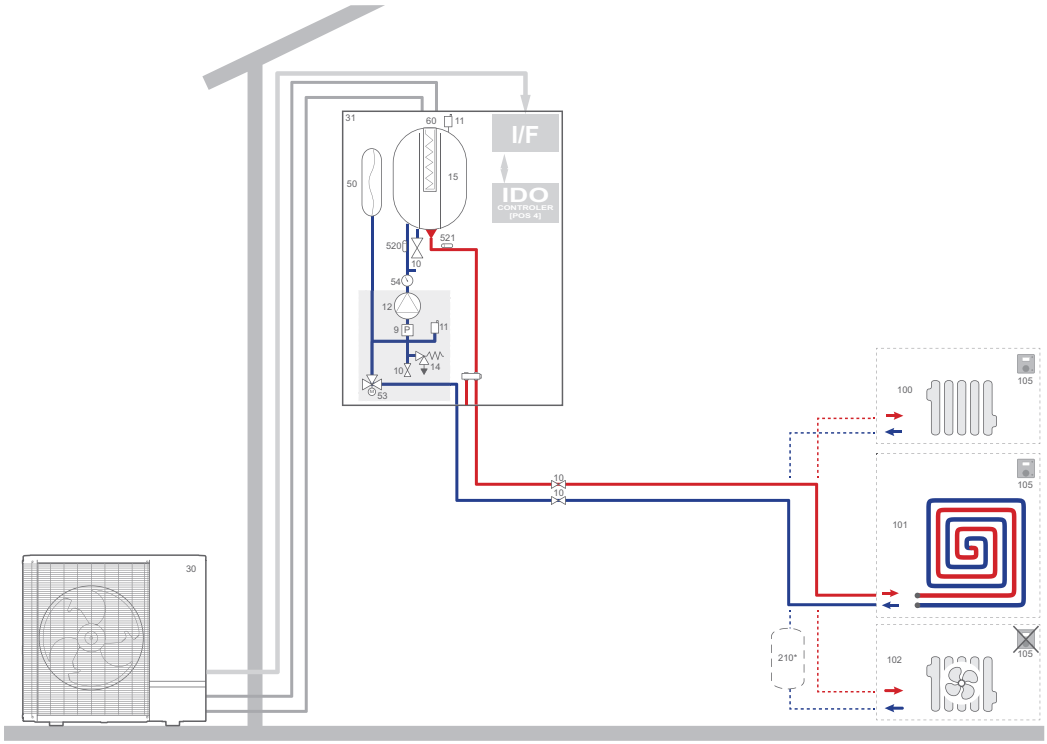
- Choose the location of the appliance after discussion with the client.
- The installation space should comply with the current regulations.
- To facilitate maintenance and allow access to the various parts, we recommend that you provide sufficient space all the way around the hydraulic unit.

HYDRAULIC UNIT

4. Piping diagrams

4-1. Models: WSEG140MQ6 and WSEK140MQ9

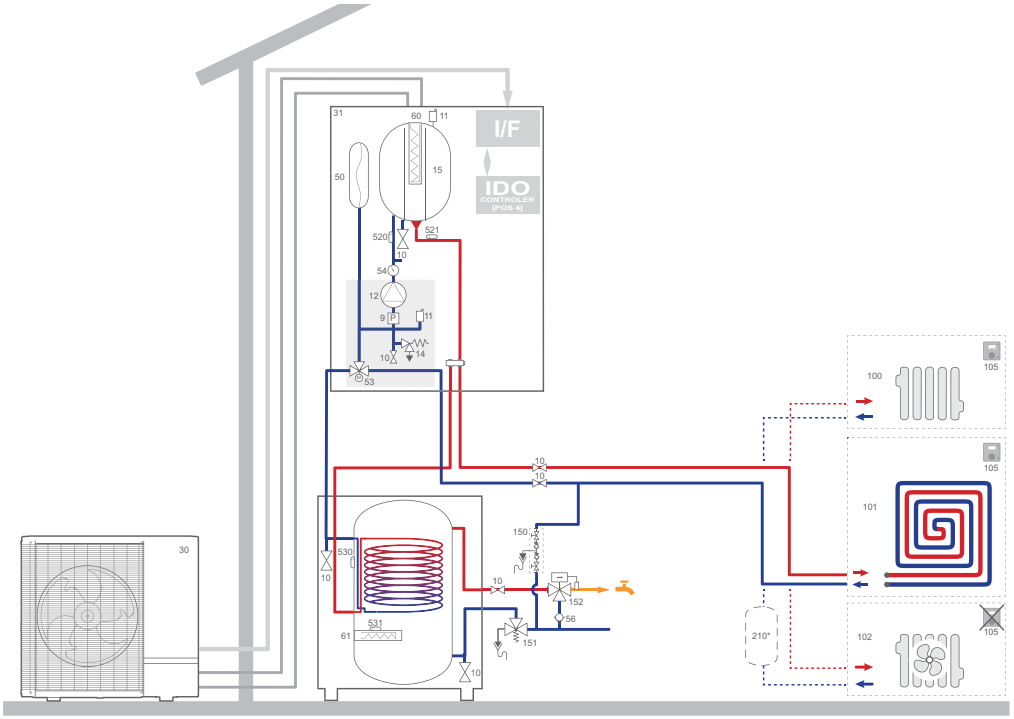
- **1 heating circuit**



9 - Pressure sensor (Value)
10 - Valve
11 - Drain valve
12 - Circulation pump
13 - Flowmeter
14 - Safety valve
32 - Heating-only hydraulic unit
50 - Expansion vessel
53 - Directional valve
56 - Non-return valve
60 - Electrical heating backup
100 - Radiator
101 - Underfloor heating system
102 - Dynamic radiator (fan convector)
105 - Thermostat or room sensor (zone 1)
210 - Buffer tank
520 - Return temperature sensor (heating circuit)
521 - Flow temperature sensor (heating circuit)
531 - DHW electrical backup safety thermostat

HYDRAULIC UNIT

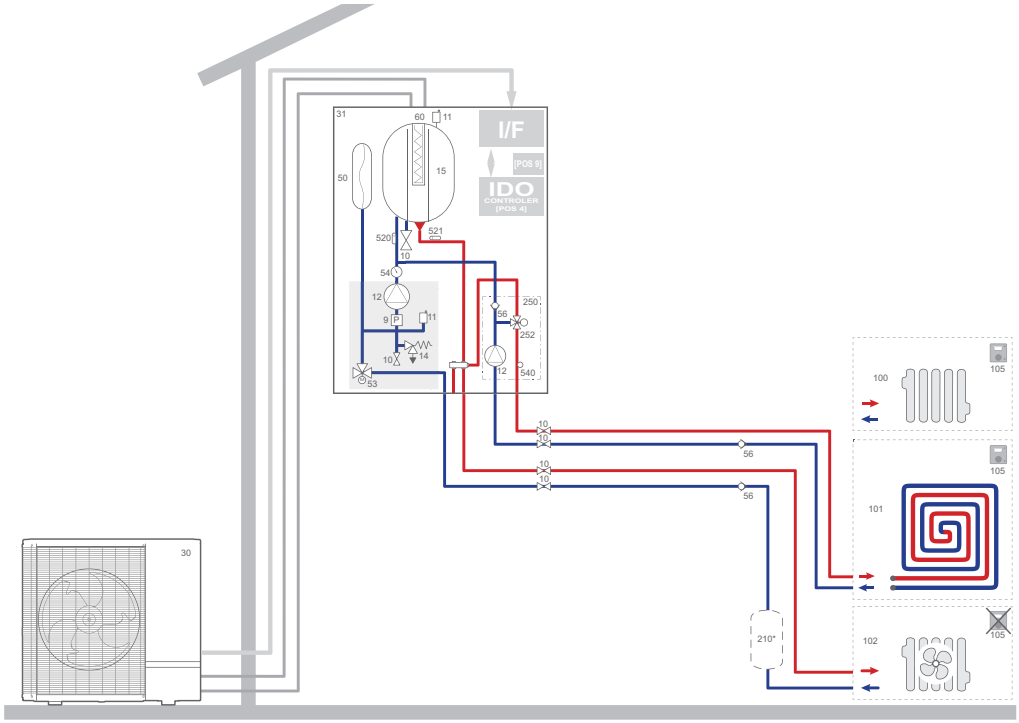
- **1 heating circuit with DHW**



9 - Pressure sensor (Value)
10 - Valve
11 - Drain valve
12 - Circulation pump
13 - Flowmeter
14 - Safety valve
32 - Heating-only hydraulic unit
50 - Expansion vessel
53 - Directional valve
56 - Non-return valve
60 - Electrical heating backup
61 - Electrical DHW backup
100 - Radiator
101 - Under floor heating system
102 - Dynamic radiator (fan convector)
105 - Thermostat or room sensor (zone 1)
150 - Backflow preventer
151 - Safety group
152 - Thermostatic mixer
210 - Buffer tank
520 - Return temperature sensor (heating circuit)
521 - Flow temperature sensor (heating circuit)
530 - DHW temperature sensor
531 - DHW electrical backup safety thermostat

HYDRAULIC UNIT

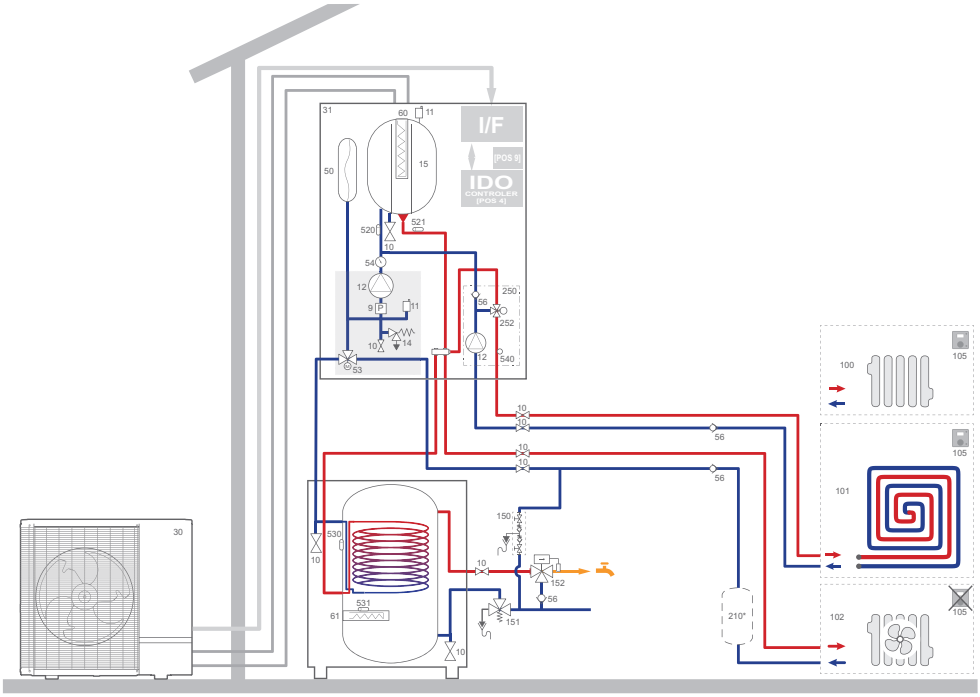
- **2 heating circuits**



9 - Pressure sensor (Value)	**50 -** Expansion vessel	**210 -** Buffer tank
10 - Valve	**53 -** Directional valve	**250 -** 2-circuit kit
11 - Drain valve	**56 -** Non-return valve	**251 -** Combination circuit kit
12 - Circulation pump	**60 -** Electrical heating backup	**252 -** Mixing valve
13 - Flowmeter	**100 -** Radiator	**520 -** Return temperature sensor (heating circuit)
14 - Safety valve	**101 -** Underfloor heating system	**521 -** Flow temperature sensor (heating circuit)
15 - Exchanger	**102 -** Dynamic radiator (fan convector)	**531 -** DHW electrical backup safety thermostat
32 - Heating-only hydraulic unit	**105 -** Thermostat or room sensor (zone 1)	**540 -** Flow temperature sensor (combination circuit)

HYDRAULIC UNIT

- **2 heating circuits with DHW**

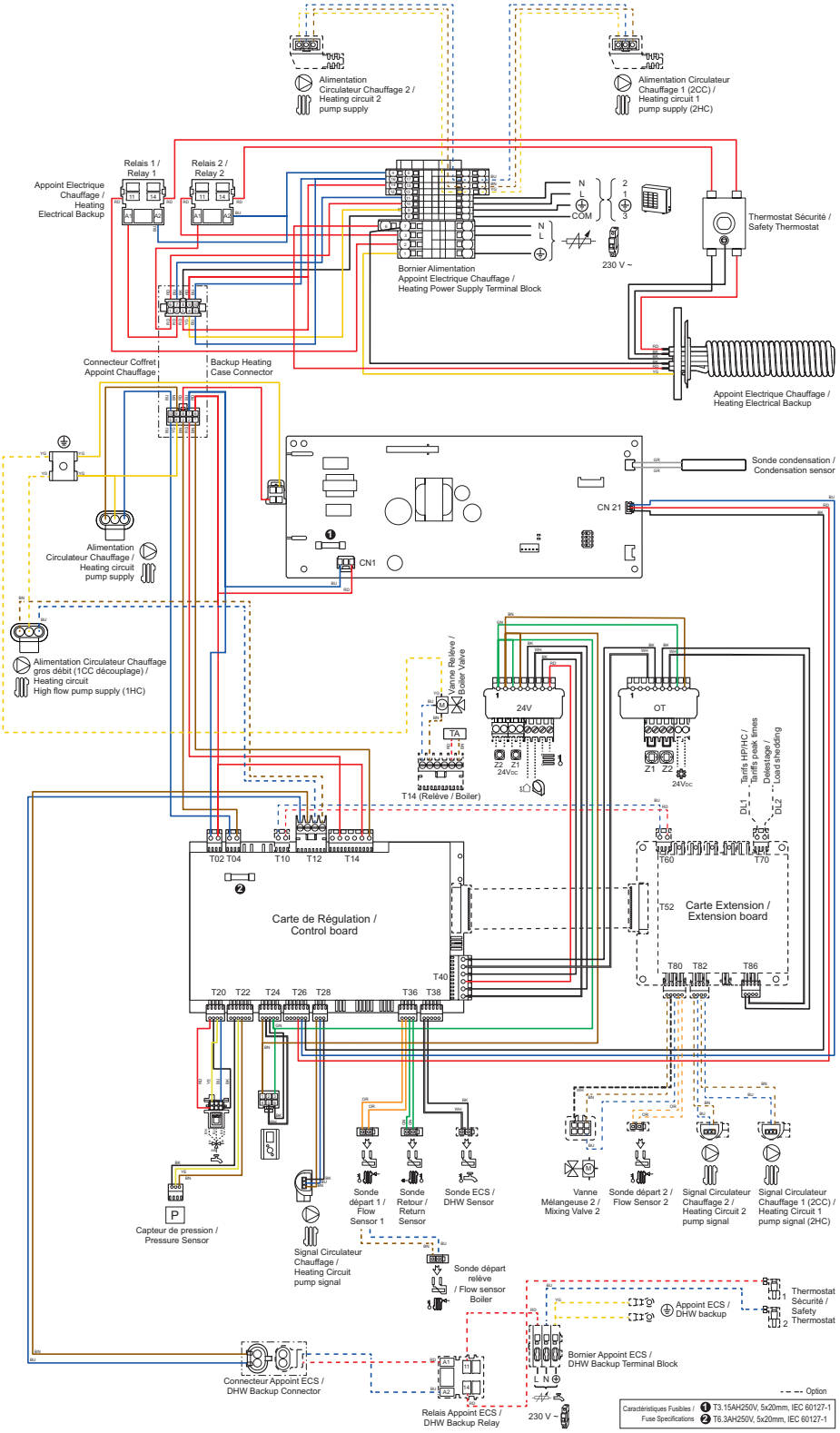


9 - Pressure sensor (Value)
10 - Valve
11 - Drain valve
12 - Circulation pump
13 - Flowmeter
14 - Safety valve
15 - Exchanger
32 - Heating-only hydraulic unit
50 - Expansion vessel
53 - Directional valve
56 - Non-return valve
60 - Electrical backup
61 - Electrical DHW backup
100 - Radiator
101 - Underfloor heating system
102 - Dynamic radiator (fan convector)
105 - Thermostat or room sensor (zone 1)
150 - Backflow preventer
151 - Safety group
152 - Thermostatic mixer
210 - Buffer tank
250 - 2-circuit kit
251 - Combination circuit kit
252 - Mixing valve
520 - Return temperature sensor (heating circuit)
521 - Flow temperature sensor (heating circuit)
530 - DHW temperature sensor
531 - DHW electrical backup safety thermostat
540 - Flow temperature sensor (combination circuit)

HYDRAULIC UNIT

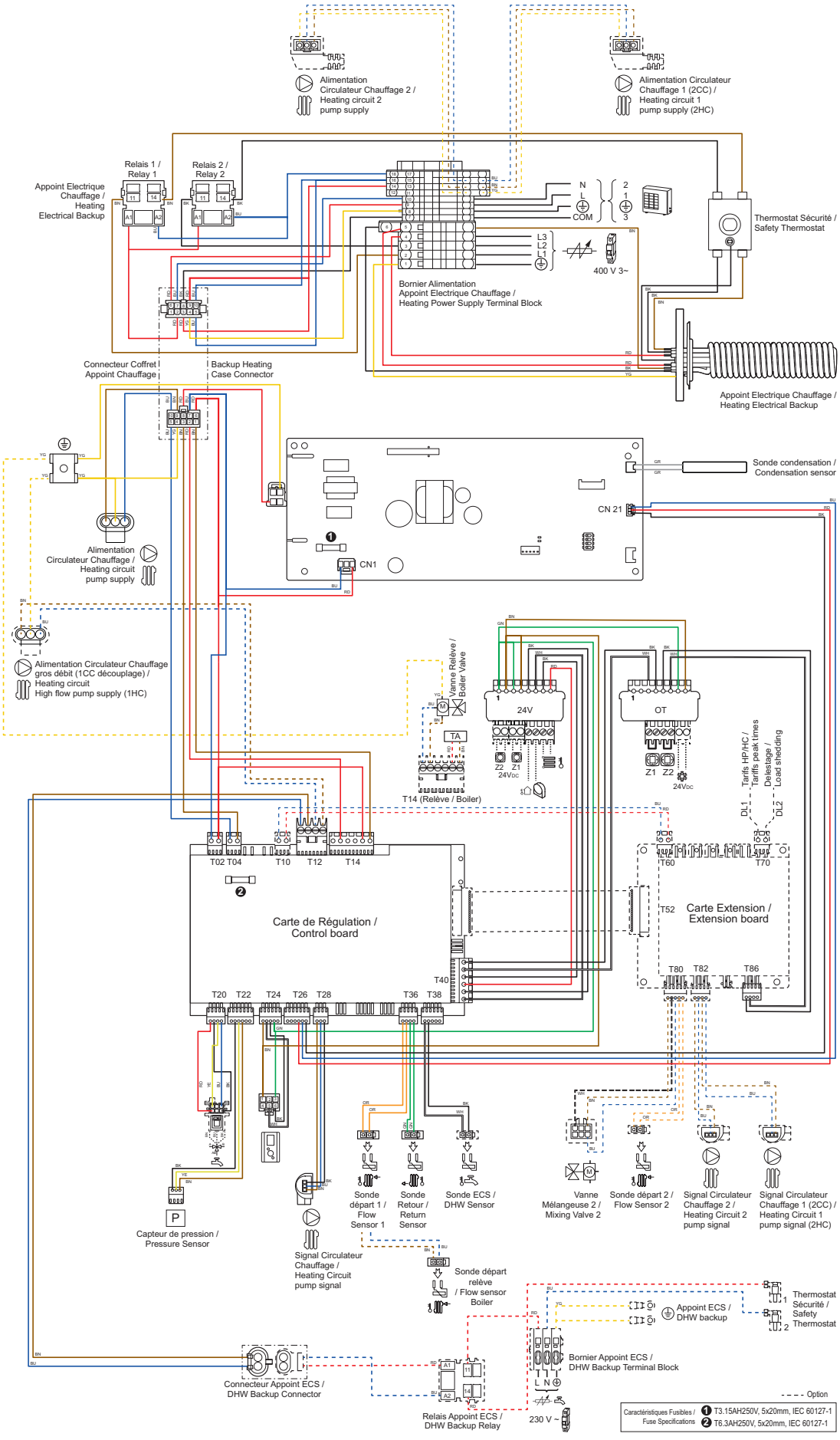
5. Wiring diagrams

5-1. Model: WSEG140MQ6



HYDRAULIC UNIT

5-2. Model: WSEK140MQ9



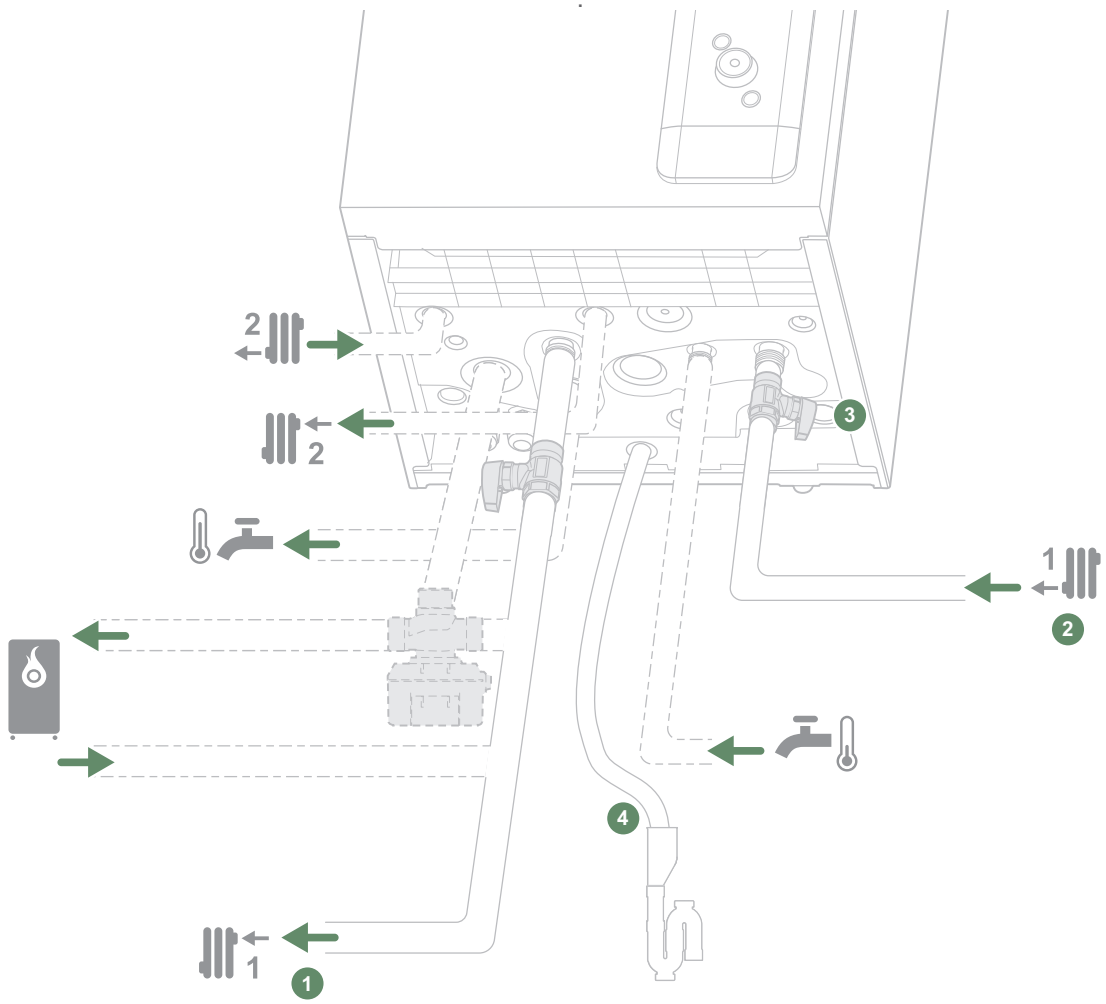
HYDRAULIC UNIT

6. Pipe connections

6-1. Hydraulic connections

⚠ CAUTION

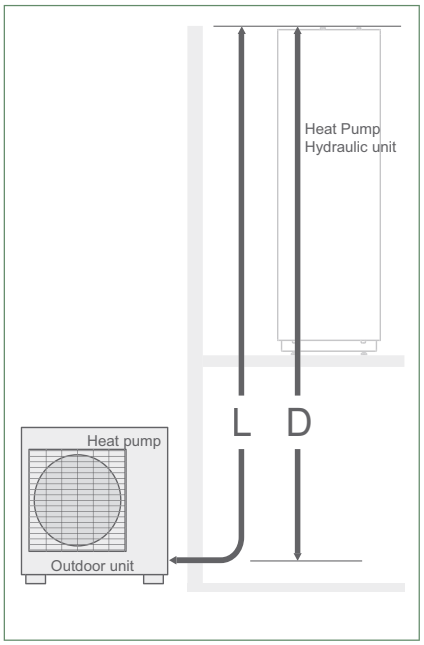
- Install a sediment trap (supplied) on the heating return circuit in the manner suggested.
- Install antifreeze valves (optional/not supplied) on the hydraulic circuit in the recommended direction. If the antifreeze valves are triggered, check the electrical backup safety thermostat before restarting.

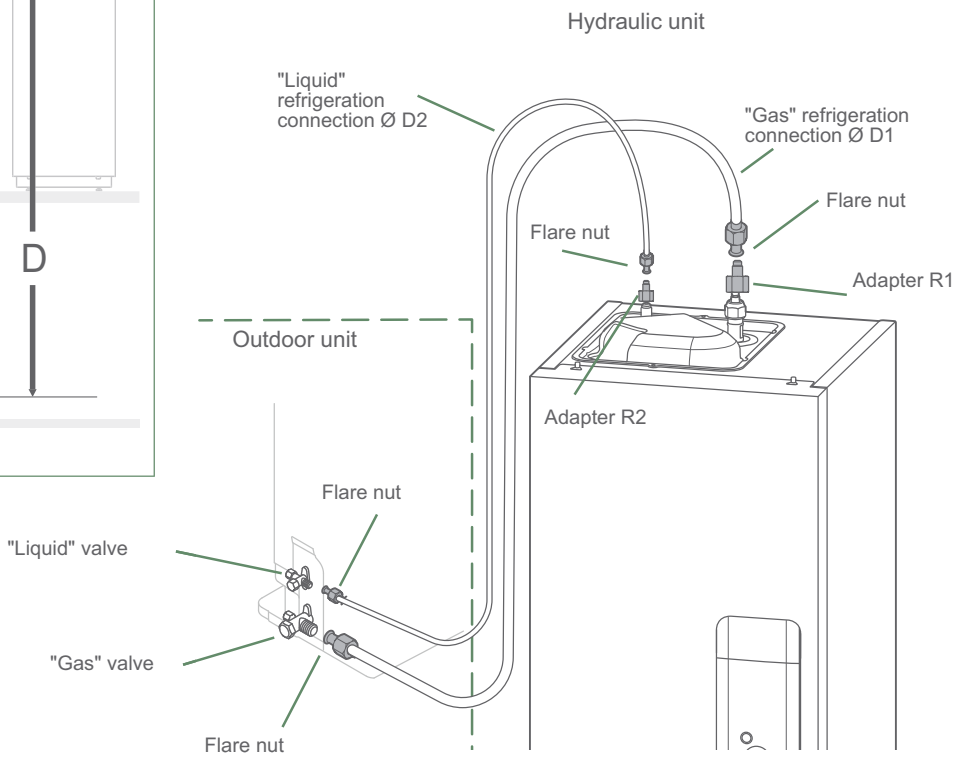


1 - Heating low (1 circuit)
2 - Heating return (1 circuit).
3 - Shut-off valve (not supplied).
4 - Drain pipe (to sewer).

6-2. Refrigeration connections

- **Length and diameters of hydraulic pipes**
  Maximum pipe length: 25 m





Outdoor unit fittings		Gas	Liquid
Refrigeration connections	Diameter	1/2	1/4
	Minimum length (L)	5 m	
	Maximum length* (L)	15 m	
	Maximum length** (L)	25 m	
	Maximum drop** (D)	20 m	
Adapter (reducer) male-female		1/2 - 5/8	1/4 - 3/8
Hydraulic unit fittings		5/8	3/8

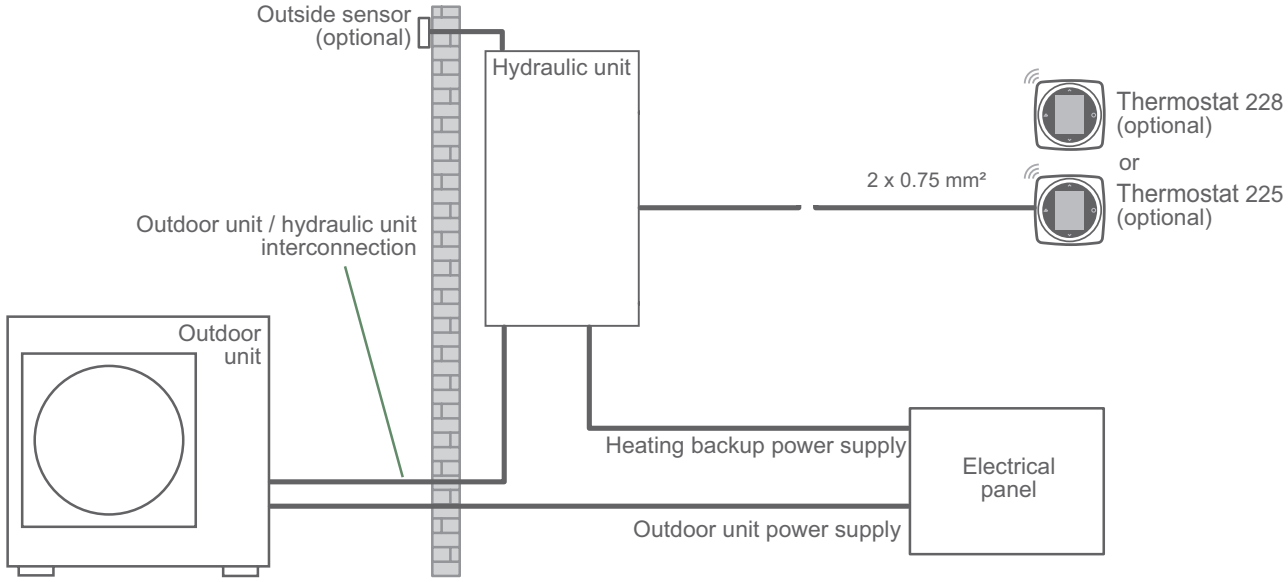
*: Without additional filling.

**: Taking into account the potential additional filling.

HYDRAULIC UNIT

7. Electrical connections

7-1. Overview

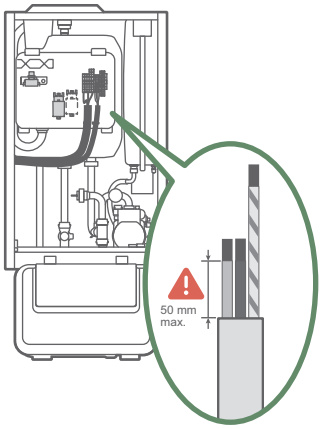


HYDRAULIC UNIT

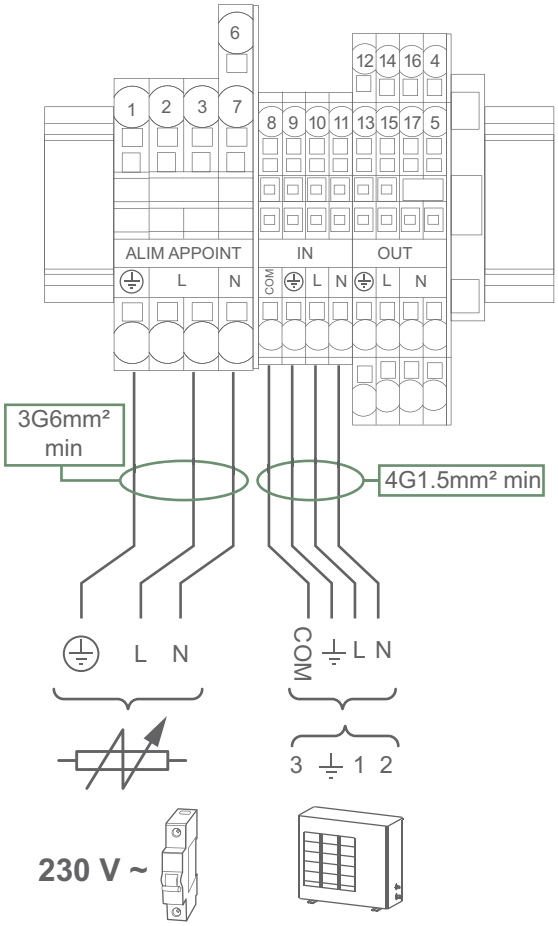
7-2. Cable dimensions and protection rating

Follow the correspondence between the terminal block markers on the hydraulic unit and the outdoor unit when connecting the interconnection cables.

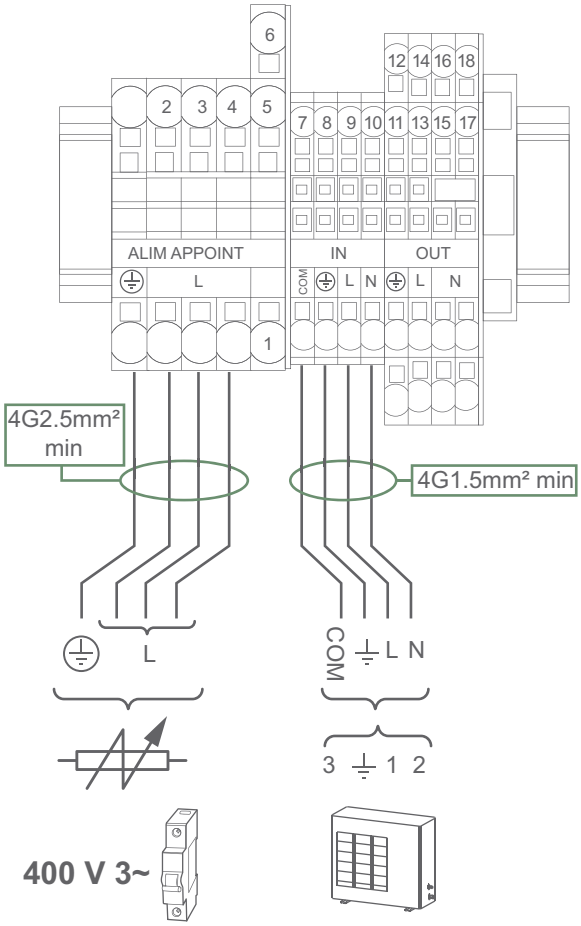
- **Electrical heating backup**
  Connect the power supply to the backup.
  6 kW backup
  3G6 mm² cable minimum (phase, neutral, earth) up to the electrical panel. Protected by circuit-breaker [type C].
  9 kW backup
  4G2.5 mm² cable minimum (3 phases, earth) up to the electrical panel. Protected by circuit breaker [type C].



■ **Electrical heating backup cabinet terminal Single-phase models**



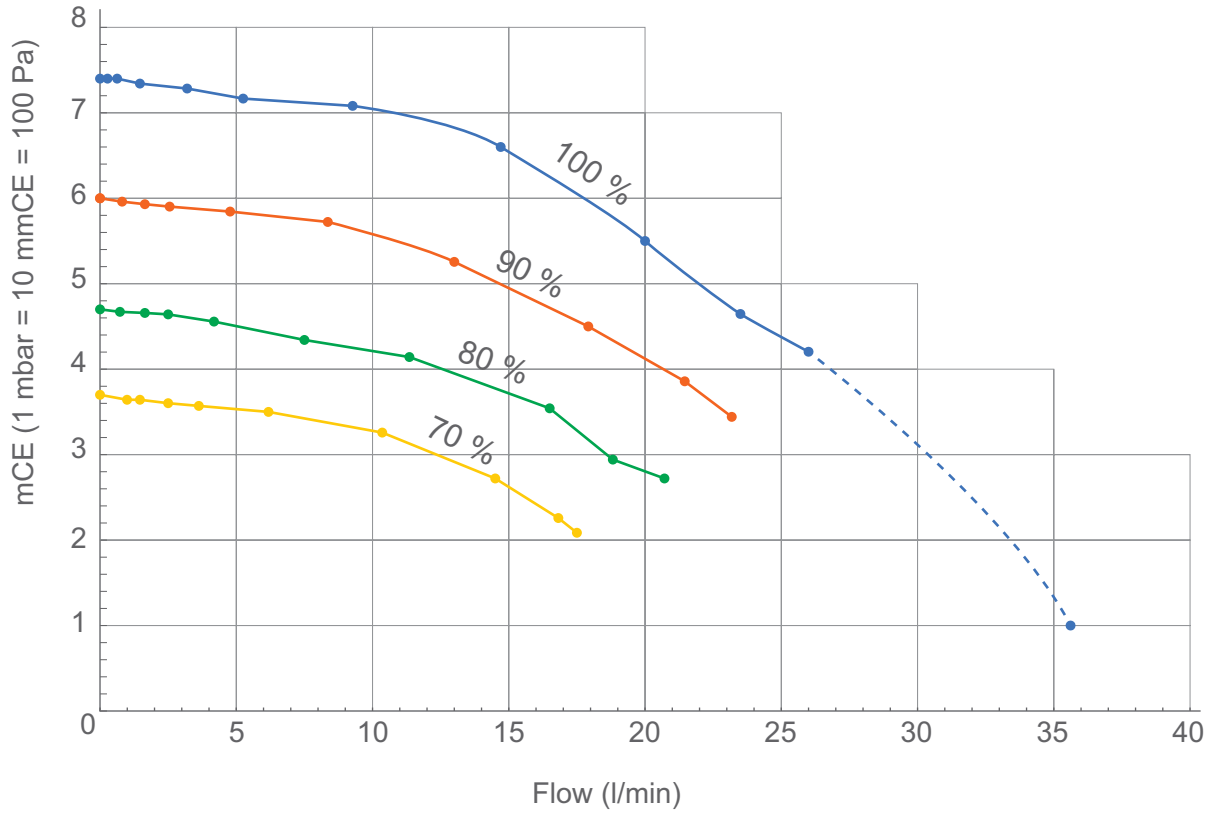
■ **Electrical heating backup cabinet terminal Three-phase models**



HYDRAULIC UNIT

8. Hydraulic performance

8-1. Models: WSEG140MQ6 and WSEK140MQ9



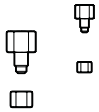
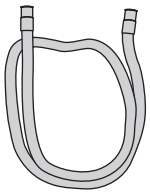
9. Safety devices

Type of protection	Protection form		Model
			WSEG140MQ6 and WSEK140MQ9
Circuit protection	Current fuse (PCB)		250 V, 3.15 A
			250 V, 6.3 A
High pressure protection	Safety valve	Activate	3 bar or more Safety valve open
		Reset	—

HYDRAULIC UNIT

HYDRAULIC UNIT

10. Accessories

Shape	Name
	1/2"- 5/8" and/or 1/4"- 3/8" adapter, 1/2" and/or 1/4" nut
	Elbow
	Plugs X 9
	Drain pipe
	One contact gasket x2
	Rating label
	Packaging label
	Installation manual
	Quick installation manual
	FICHE
	Operation manual

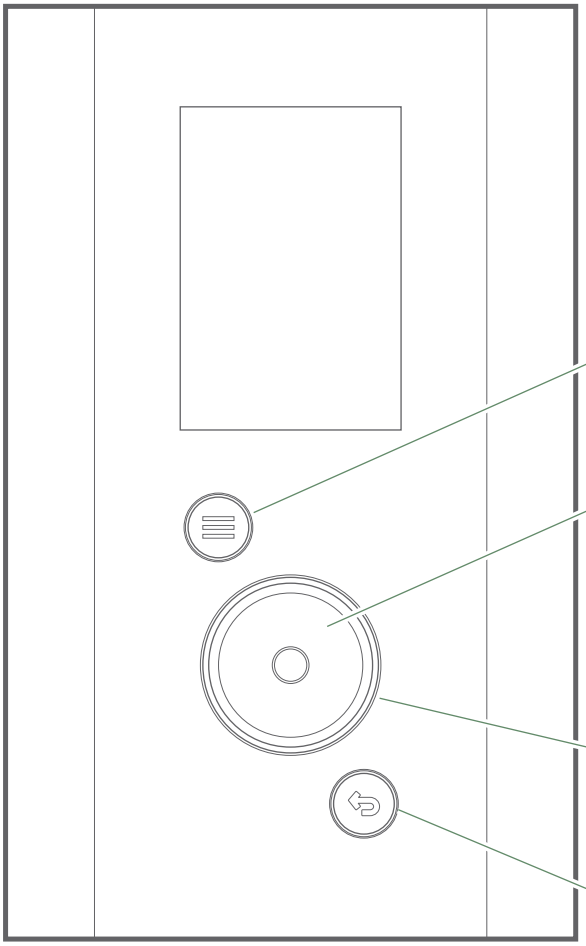
REFRIGERANT R32
INVERTER

3. CONTROL SYSTEM

CONTENTS

3. CONTROL SYSTEM

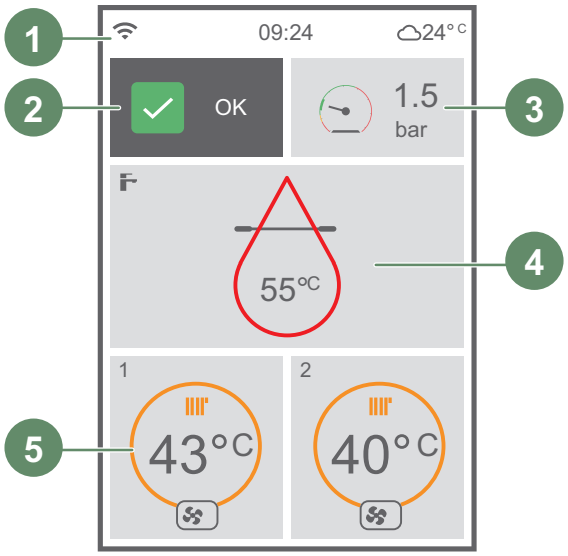
1. User interface



CONTROL SYSTEM

CONTROL SYSTEM

- **Display description**



1. Connectivity
   - Attenuation mode
   - Programmed away mode
   - Emergency mode
   - Outdoor temperature
   - Installer menu

2. Normal operation
   - Caution
   - Error

3. Pressure indicator

4. 55°C DHW setpoint

   Quantity of hot water remaining

   DHW activated

   Heating in progress

   (Grey) Off / Frost protection

5. 43°C Flow temperature setpoint

Operation:
- (Orange) Heating
- (Grey) Off / Frost protection

Mode:
- Heating
- Away Mode
- Floor drying mode

Produced by:
- Heat pump
- Electrical backup
- Heat pump + Electrical backup
- Heat Pump + Backup Boiler
- Backup Boiler

2. Function table

There are 2 access levels:

- U: End user level
- I: Commissioning level (installer start-up)

2-1. Flow setpoint

▶ WITH a room thermostat

The heat pump operation is controlled by room thermostat.

The heating circuit water temperature setpoint is calculated by the thermostat and communicated to the heat pump.

Thermostat settings
• Heating settings
- Mode selection.
- Setting of room setpoints.
- Setting of time slots.

▶ WITHOUT a room thermostat

The heat pump operation is subject to temperature control.

The heating circuit water temperature setpoint is adjusted according to the outside temperature.

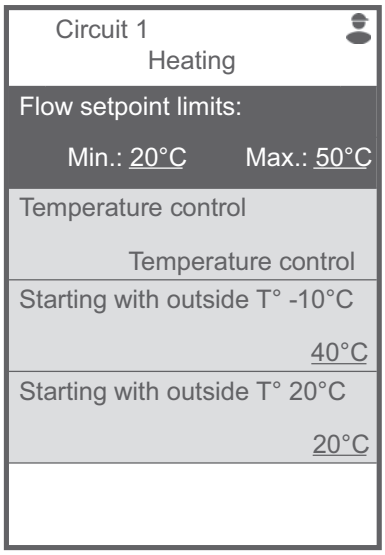
If the installation includes thermostatic valves, they must be open wide or set higher than the normal setpoint ambient temperature.

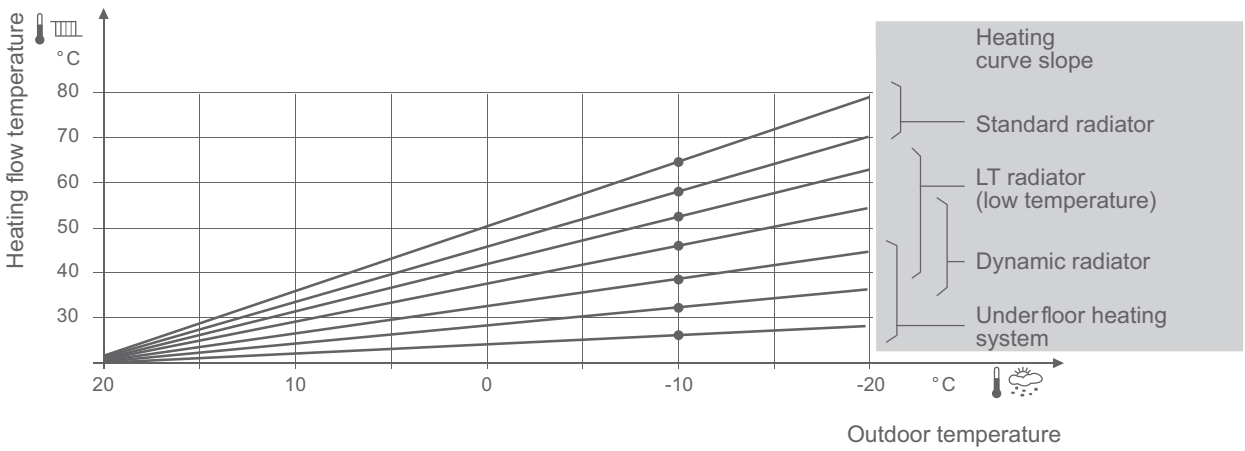
▼ Setting

Setting the heating flow setpoint

Setting is done directly via the interface.

Heating | Circuit 1 | Heating





2-2. User menu

Access	Function		Setting range or Display	Setting increment	Factory setting
U	Active functions	Domestic hot water	On / Off	---	off
U		Circuit 1/2	On / Off	---	off
U		Emergency mode	Enabled / Inactive	---	inactive
U	Domestic hot water	Heating mode	comfort / eco	---	comfort
U		Temperature	45°C... 65°C	1	55
U	Away mode	Start	Start / End	---	---
U	Energy monitoring	Energy Consumed	For heating / For hot water / Total	---	0
U		Energy Produced	For heating / For hot water / Total	---	0
U	Language		---	---	---
U	Date/Time		---	---	---
U	Circuit names		---	---	---
U	Wi-Fi		---	---	---
U	Software version		---	---	---

- **Emergency mode**
  If the heat pump is not operating properly, an emergency operation can be maintained. The emergency operation enables the installation to be run with the available heaters (flow, DHW tank). In this case, the compressor will remain off.

- **Away mode**
  It will set heating and DHW mode to the frost protection* during the selected period:
  – If you activate away mode on HMI:
    You can choose start and end time/date
  – If you activate away mode on Room thermostat (option):
    You can choose start and end time/date, as well as room setpoint during away period.

  *: The protection mode automatically prevents an excessively sharp drop in room temperature.

2-3. Installed options

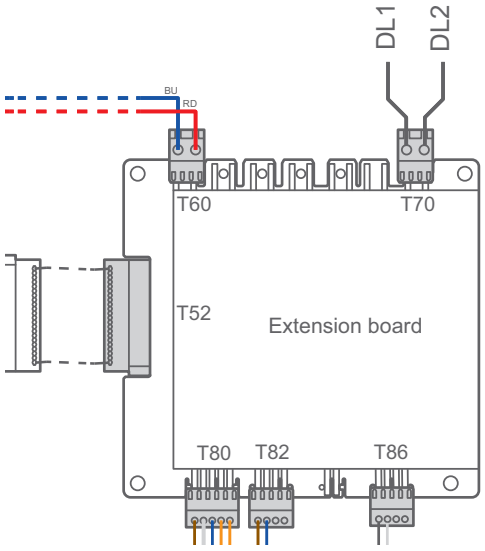
Access	Function		Setting range or Display	Setting increment	Factory setting
I	Installed Options	Outdoor Unit Model	-- kW ... 10 kW Single-phase... 12 kW Single-phase... 14 kW Single-Phase (single-phase unit) OR '-- kW ... 12 kW Three-phase... 14 kW Three-Phase (three-phase unit)	-	-- kW
I		Hot Water Option	Yes/No	-	No
I		DHW electrical heater	None / 0.0 kW.. 1.2 kW ... 10 kW	-	No
I		Electrical heater	None / 3 kW + 3 kW / 9 kW/ Backup boiler	-	3kW + 3kW (single-phase) 9kW (three-phase)
I		Number of circuits	1/2	-	1
I		Circuit X: Name	Circuit 1 / Day / Night / Ground floor / Upper floor / Living areas / Bedrooms	-	Circuit 1
I		Circuit X: Emitter Type	Radiators / Floor / Ceiling / Fan convector	-	Radiators
I		Decoupling	Yes/No	-	No
I		Outdoor temperature	From Outdoor unit / From remote sensor	-	Depending on sensor connection
I		Safety input	Normally Open / Normally Closed	-	Normally open
I		Ext. inlet 1: Type of features	None / Off -peak hours / PhotoVoltaics / Smart Grid	-	None
I		Ext. inlet 2: Type of features	None / Power limitation	-	None
I		Save	-	-	-

- **Outside temperature**
  If UTW-KESXQ (option) is connected to indoor unit, ‘From remote sensor’ can be activated.UTW-KESXQ (option) is used in case the outside temperature from the outdoor unit is not representative. For example, The outside temperature can not be detected as current temperature because there is outdoor unit in a sunny spot.

CONTROL SYSTEM

- **Extension control board**
  Refer to the instructions supplied with the extension control board.
  It is possible to link the operating of the heat pump to specific contracts, in order to produce domestic hot water (DHW) during the cheapest hours:

  – **Component location**



  – **Function**
    - **Off-peak hours**
      Connect the “Energy supplier” contact to the DL1 inlet of the T70 connector.
      – In the Installed Options menu, set the line “Ext. inlet 1: Type of features” to “Off -peak hours.
      – By default: 230 V on DL1 = information “Off -peak hours” activated ”.
      – the production of DHW is done at the comfort setpoint.

    - **PhotoVoltaics**
      Connect the “Energy supplier” contact to the DL1 inlet of the T70 connector.
      – In the Installed Options menu, set the line “Ext. inlet 1: Type of features” to “PhotoVoltaics”.
      – By default: 230 V on DL1 = information “Photovoltaics” activated”.
      – the hot water tank electrical backup is activated up to 65°C.

    - **Power limitation or EJP (Peak tariff days)**
      – Connect the power balancer to the DL2 input of the T70 connector.
      – In the Installed Options menu, set the line “Ext. inlet 2: Type of features” to “Power limitation”.
      – By default: 230 V on DL2 = power limitation in progress the heat pump backups and DHW electrical heater are off . The heat pump is authorised or stopped according to the setting “If instruction for Erasure/Power limitation”.

    - **Smart Grid**
      – Connect the 2 power contacts “Power suppliers” to inputs DL1 and DL2 of connector T70.
      – Set the “External input 1: Type of functions” to “Smart Grid” in the menu “Installed Options”.
      – By default: Smart grid operation is as follows.

DL1	DL2	Behavior
0 V	0 V	Normal
230 V	0 V	Same as Power limitation
0 V	230 V	Same as Off -peak hours
230 V	230 V	Activation of DHW boost

2-4. Domestic Hot Water

Access	Function		Setting range or Display	Setting increment	Factory setting
I	On a daily basis	Heating mode	Permanent comfort / Schedule (+ Off -peak hours)	-	Schedule (+ Off -peak hours)
I		Comfort temperature	40°C... 55°C ... 65°C	1	55
I		Eco temperature	15°C... 40°C ... 55°C	1	40
I		Eco/Comfort schedule	View	-	-
I		Max. temperature	Comfort temperature... 65°C	-	65
I		Hysteresis	1°C... 7°C ...15°C	1	7
I	Antilegionella	Weekly protection	Enabled / Inactive	-	Inactive
I		Time of cycle	Set day and time	-	Friday at 3am
I		Temperature	45°C... 60°C ... 65°C	1	60

CONTROL SYSTEM

- **Anti-Legionella**
  The indoor unit has a legionella function designed for protection against legionella in the storage tank and the pipes.
  The legionella function can be activated on a fixed day of the week.
  With this setting, heating up to the legionella setpoint occurs on the scheduled day of the week, regardless of the storage tank temperatures during the previous period.

2-5. Heating

Access	Function		Setting range or Display	Setting increment	Factory setting
I	Heating Circuit 1	Flow setpoint limits	Min.: 20°C... 30°C Max.: 30°C... 80°C	1	Depending on emitter type
I		Temperature control	Temperature control	-	Temperature control If Navilink thermostat : Smart Adapt
I		Starting with outside T° -10°C	Starting with outside T° 20°C... 65°C... 80°C	1	Depending on emitter type
I		Starting with outside T° 20°C	10°C... 20°C... Starting with outside T° -10°C	1	Depending on emitter type
I	Heating Circuit 2	Flow setpoint limits	Min.: 20°C... 30°C Max.: 30°C... 80°C	1	Depending on emitter type
I		Temperature control	Temperature control	-	Temperature control If Navilink thermostat : Smart Adapt
I		Starting with outside T° -10°C	Starting with outside T° 20°C ... 35°C... 80°C	1	Depending on emitter type
I		Starting with outside T° 20°C	10°C ... 20°C... Starting with outside T° -10°C	1	Depending on emitter type
I		Mixing valve correction	0°C ... 20°C	1	0

- **Starting with outside T° -10°C, Starting with outside T° 20°C**
  Heating curve slope in weather compensation will be affected by setting these parameters.
  It is calculated with a linear function between two points (-10°C and 20°C).

CONTROL SYSTEM

2-6. Heat pump

Access	Function		Setting range or Display	Setting increment	Factory setting
I	Compressor	Minimum off time	3 min. ... 8 min. ... 20 min.	1	8
I		Overrun	10 s ... 30 s ... 600 s	10	30
I	DHW production	Max. DHW charging time	90 min. ... 120 min. ... 180 min.	10	120
I		Heating / Cold return	10 min. ... 90 min. ...180 min.	10	90
I	Electrical heater	Allowed if outside T° <	Always allowed / -15°C ... 2°C ... 10°C	1	2
I		Switching threshold	0°C min. ... 100°C min. ... 500°C min.	10	100
I	Heat pump / boiler switch	Minimum time HP	5 min … 30 min …. 60 min	5	30
I		HP forbidden if outside T° <	-15°C… -2°C… 10°C / Always allowed	1	-2
I		Boiler allowed if outside T° >	-15°C… 2°C… 10°C / Always allowed	1	Always allowed
I		Switching threshold	0°C min. ... 100°C min. ... 500°C min.	10	100
I	Circulation pumps	System pump speed	30% ... 100%	10	100
I		Circulation pump speed Circuit 2	50% ... 100%	10	100

- **Compressor**
  - **Minimum off time**
    The compressor remains switched off for the minimum period of time set here. Switch-off temperature maximum if the flow or the return temperature exceeds the maximum switch-off temperature, the compressor will be switched off. The heat pump is switched on again when the temperature at both sensors has dropped by the “Switching difference return temperature” below the maximum switch-off temperature and the minimum off time has elapsed.
  - **Overrun**
    Overrun time is about all the pumps keep running this overtime after compressor stops.

- **DHW production**
  - **Max. DHW charging time**
    During charging, the room heating may be stopped or insufficient. Therefore it is often advisable to limit the charging process timewise to enable heating. If “---” has been selected the charging time limitation will be deactivated. The DHW will be heated to the nominal setpoint, even if the room heating has not received enough power in the meantime. If a value between 90 and 180 is selected, charging will be suspended after the time period set in minutes, and will remain suspended over that time before resuming. The generator power remains available in the meantime to heat the room. This cycle is repeated until the DHW nominal setpoint has been reached.

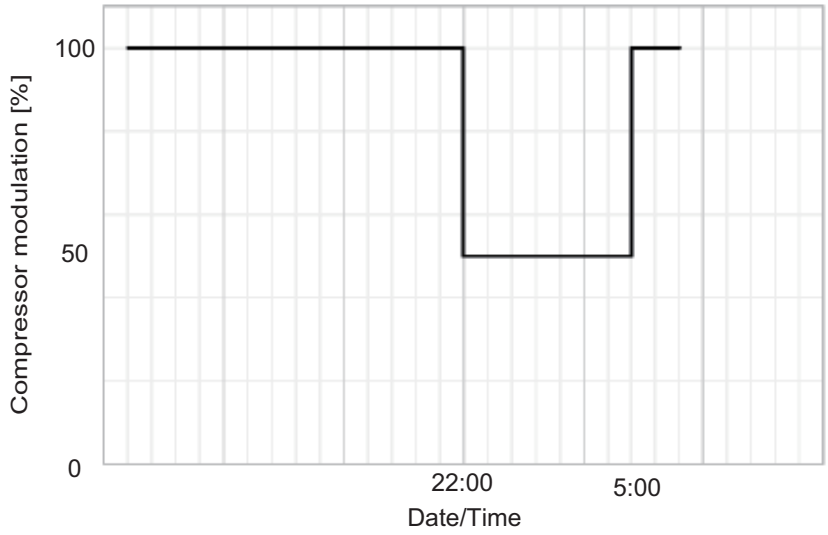
    NOTE: When the room heating is stopped (summer mode, economy function, etc.), DHW charging remains active, regardless of the setting.

  - **Heating/Cold return**
    If “Back to Heating/Cooling“ time has elapsed, then DHW operation is resumed.

2-7. Additional functions

Access	Function		Setting range or Display	Setting increment	Factory setting
I	Attenuation mode	Compressor limitation	Enabled / Inactive	-	Active
I		Max. allowed speed	10% ... 60% ... 95%	5	60
I		Active as	Outside T°>-15°C ... 5°C ... 10°C	1	5
I		Period 1	-- … 00h00 … 23h45	0:15	00h00 - 12h00
I		Period 2		0:15	12h00 - 00h00
I		Period 3		0:15	--
I	Air purge cycle		-	-	-
I	Floor drying mode Circuit 1 / 2	Drying	Off/Manual for 25 days / Progressive 18d + Shock 7d / Shock 7d + Progressive 18d / Progressive 18d / Shock 7d	-	Off
I		Flow temperature	20°C... 25°C ... 55°C	1	25

- **Attenuation mode**
  This function can limit compressor modulation for low noise.
  Example:
  – Compressor limitation: Enabled
  – Max allowed speed: 50%
  – Active as: Outdoor > -5°C (current outdoor temp = 0°C)
  – Period 1: from 22:00 to 5:00



CONTROL SYSTEM

- **Air purge cycle**

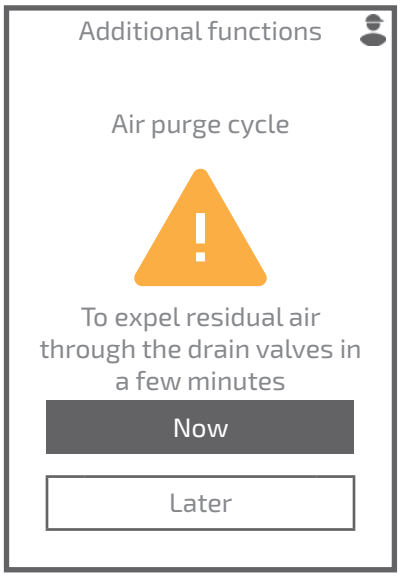
  The air purge cycle takes approximately 4 minutes.

  Never interrupt this cycle.

  (During the purge cycle, the circulator alternates between operating and stopping phases lasting 5 seconds (5 s on, 5 s off...).

  The valve alternates every 30 seconds between the heating and sanitary circuits.)

  Open all system drains to evacuate air from the pipes.

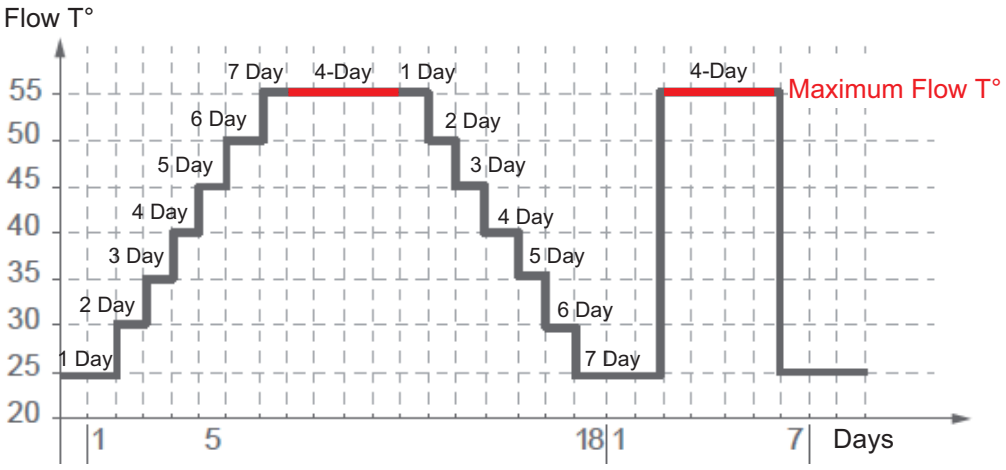


- **Floor drying circuit 1**

  Observe the building manufacturer's standards and instructions. Correct operation of this function is only possible with a correctly installed system (Hydraulics, Electricity, and Settings).

  The function can be interrupted early by setting to Off.

NOTE: This function is only usable with an underfloor heating system.



- A 28-day cycle is initiated for the floor drying process.
- 18 Days progressive.
- The water temperature will incrementally rise by 5°C each day, reaching 50°C on day 7.
- The temperature is maintained at 55°C for 4 days.
- Subsequently, there will be a gradual decrease of 5°C per day for 7 days, reaching 25°C.
- A new 7-day cycle will commence.
- The temperature will be raised to 55°C in a single step.
- This temperature will be maintained for 4 days.
- Subsequently, the temperature will return to 25°C.
- Progressive for 18 days, followed by a 7-day intensive treatment.

2-8. Radio network

Access	Function		Setting range or Display	Setting increment	Factory setting
I	Add Thermostat		---	---	---
I	Add Repeater		---	---	---
I	Advanced Commands	Zigbee code	---	---	---
I		Features	---	---	---
I		Add another device	---	---	---
I	Reset Network		---	---	---

CONTROL SYSTEM

- **Add thermostat**
  For details, refer to the thermostat manuals for the following optional parts.
  – UTW-C225XQ
  – UTW-C228XQ

- **Add Repeater**
  Install a radio repeater halfway between this control box and the thermostat.

NOTE: For the radio repeater, use the ATLANTIC product (Model: 139117) or equivalent (Locally purchased).

- **Advanced Controls: Features**
  Provides status and the technical information on the radio network.

2-9. Diagnosis

Access	Function		Setting range or Display	Setting increment	Factory setting
I	Error history			-	-
I	Indoor unit			-	-
I	Outdoor unit			-	-
I	Outdoor unit test	Compressor modulation	Off / 7% ...100%	1	Off
I		Directional valve	Heating position / Middle position / DHW position	-	Heating position
I		System pump	Off / 30% ... 100%	-	Off
I		System pump flow	---	-	-
I		Flow temperature		-	-
I		Return temperature		-	-
I		Exchanger temperature		-	-
I		Tank temperature		-	-
I		Flow temperature Circuit 2		-	-
I	Actuators test	System pump	Off / 30% ...100%	10	Off
I		System pump flow	---	-	-
I		Electrical heater	Off / On	-	Off
I		Flow temperature		-	-
I		Return temperature		-	-
I		Circulation pump speed Circuit 2	Off / 10% ...100%	10	Off
I		Mixing valve Circuit 2	Closed / 10% ...100%	10	Closed
I		Flow temperature Circuit 2		-	-
I		DHW electrical heater	Off / On	-	Off
I		Directional valve	Heating / Middle position / Domestic Hot Water	-	Heating
I		Tank temperature		-	-
I	Operation counters			-	-
I	Serial numbers			-	-
I	Factory reset		-	-	-

- **Actuator test**
  These parameters are set to OFF the moment you leave the page or after 30 min without any action on the HMI.