AIRSTAGE

AIR TO WATER

Monobloc

FUJITSU

REFRIGERANT R32

INVERTER

DESIGN & TECHNICAL MANUAL

MONOBLOC UNIT

WPEG050KRF

WPEG080KRF
WPEG100KRF

HYDRAULIC UNIT

WGEP100KR3-19

FUJITSU GENERAL LIMITED

DA_MO005ES_05
2024.10.09

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

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REFRIGERANT R32

INVERTER

1. MONOBLOC UNIT

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MONOBLOC UNIT

1. Specifications

1-1. Nominal capacity and nominal input

Model name				WPEG050KRF	WPEG080KRF	WPEG100KRF
Power supply				1 Ø 230 V ~ 50 Hz		
Air: +7°C Water: +35°C	Heating capacity	Minimum	kW	1.92	3.35	
		Nominal		5.00	8.00	10.00
		Maximum		8.10	13.07	14.99
	Input power	Nominal	kW	1.00	1.57	2.13
	COP	Nominal		4.99	5.08	4.70
Air: +7°C Water: +55°C	Heating capacity	Nominal	kW	5.00	8.00	10.00
	Input power	Nominal	kW	1.72	2.62	3.40
	COP	Nominal		2.91	3.05	2.94
Air: -7°C Water: +35°C	Heating capacity	Nominal	kW	5.10	8.18	9.53
	Input power	Nominal	kW	1.75	2.70	3.23
	COP	Nominal		2.92	3.03	2.95
Air: -7°C Water: +55°C	Heating capacity	Nominal	kW	4.80	7.50	8.50
	Input power	Nominal	kW	2.51	3.62	4.11
	COP	Nominal		1.91	2.07	2.07

NOTE: Test conditions are complied with EN14511:2022

MONOBLOC UNIT

1-2. Technical specifications

Model name					WPEG050KRF	WPEG080KRF	WPEG100KRF
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	798 × 1,080 × 480	1,008 × 1,080 × 480	
	Gross				986 × 1,174 × 600	1,196 × 1,174 × 600	
Weight	Net			kg	85	109	
	Gross				100	123	
Main components	Pump				Wilo Para 8 m IPWM		
	Input power			W	8—75		
	Water side heat exchanger		Type × Qty		Plate heat exchanger × 1		
	Water flow rate	Minimum	Heating	l/min	8.5	14.5	
Water circuit	Piping connection			in	1		
	Piping			in	1		
	Safety valve			bar	3		
	Manometer				No		
	Air purge valve				Yes		
Heat exchanger		Dimensions (H × W × D)		mm	756 × 1,199 × 18.19 756 × 506 × 18.19	966 × 1,193 × 36.38	
		Fin pitch			1.45		
		Rows × Stages			1.5 × 36	2 × 46	
		Pipe type			Copper		
		Fin type	Type (Material)		Corrugate (Aluminum)		
			Surface treatment		Corrosion resistance (Blue fin)		
Fan	Airflow rate	Heating		m^3/h	3,060	3,590	
	Type × Qty				Propeller fan × 1		
	Discharge direction				Horizontal		
	Motor quantity				1		
	Motor output			W	100	111	
Compressor	Type				DC twin rotary		
	Motor output			W	1,200	2,180	
Operation range	Ambient temperature	Heating	Minimum	°CDB	-20		
			Maximum		35		
	Water temperature	Heating	Minimum	°C	17		
			Maximum		60		
Refrigerant	Type (Global Warming Potential)				R32 (675)		
	Charge			g	880	1,470	
	Control				Expansion valve (electric type)		
	Number of circuits				1		
Refrigerant oil	Type				RmM68 Ester		
	Charged volume			l	0.55	0.80	
Defrost method					Reverse cycle		
Defrost control					Heat pump side exchanger temperature sensor		
Capacity control method					Inverter control		

1-3. Electrical specifications

Model name				WPEG050KRF	WPEG080KRF	WPEG100KRF
Available voltage range				220—240 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			16	25	
Wiring specifications*1	Power cable		mm^2	1.5 or more	4.0 or more	
	Transmission cable			1.5 or more		
Wiring connection quantity*2	For power supply		N°	3		
	For connection with indoor			4		

NOTES:

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

MONOBLOC UNIT

1-4. Product information

Model name				WPEG050KRF		WPEG080KRF		WPEG100KRF	
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				Yes					
Temperature application			°C	55	35	55	35	55	35
Rated heat output*1		P_{rated}	kW	6	6	9	9	10	10
Seasonal space heating energy efficiency		ηs	%	133	189	139	195	141	195
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j									
T_j = –7°C		P_{dh}	kW	4.9	5.1	7.7	8.0	8.8	9.0
T_j = +2°C		P_{dh}	kW	3.0	3.1	4.7	4.8	5.3	5.5
T_j = +7°C		P_{dh}	kW	1.9	2.0	3.7	3.9	3.7	4.0
T_j = +12°C		P_{dh}	kW	2.4	2.5	4.4	4.5	4.4	4.5
T_j = Bivalent temperature		P_{dh}	kW	4.9	5.1	7.7	8.0	8.8	9.0
T_j = Operation limit temperature		P_{dh}	kW	4.7	5.0	7.4	7.9	8.0	9.0
T_j = –15°C (if TOL < –20°C)		P_{dh}	kW	—	—	—	—	—	—
Bivalent temperature		T_{biv}	°C	-7	-7	-7	-7	-7	-7
Cycling interval capacity for heating		P_{cych}	kW	Not applicable					
Degradation co-efficient*2		C_{dh}		0.94	0.92	0.97	0.96	0.96	0.96
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		2.08	3.15	2.26	3.19	2.16	3.06
T_j = +2°C		COP_d		3.46	4.80	3.40	4.90	3.53	4.92
T_j = +7°C		COP_d		4.26	6.33	4.83	6.54	4.87	6.61
T_j = +12°C		COP_d		6.23	8.19	6.45	8.45	6.74	8.30
T_j = Bivalent temperature		COP_d		2.08	3.15	2.26	3.19	2.16	3.06
T_j = Operation limit temperature		COP_d		1.84	2.74	2.01	2.79	1.94	2.71
T_j = –15°C (if TOL < –20°C)		COP_d		—	—	—	—	—	—
Operation limit temperature		TOL	°C	-10	-10	-10	-10	-10	-10
Cycling interval efficiency		COP_{cyc}		Not applicable					
Heating water operating limit temperature		WTOL	°C	60	60	60	60	60	60
Power consumption in modes other than active mode									
Off mode		P_{OFF}	kW	0.013	0.013	0.013	0.013	0.013	0.013
Thermostat-off mode		P_{TO}	kW	0.023	0.023	0.023	0.023	0.023	0.023
Standby mode		P_{SB}	kW	0.013	0.013	0.013	0.013	0.013	0.013
Crankcase heater mode		P_{CK}	kW	0.000	0.000	0.000	0.000	0.000	0.000
Supplementary heater									
Rated heat output*1		P_{SUP}	kW	0.8	0.8	1.3	1.1	1.9	1.2
Type of energy input				Electric					
Other items									
Capacity control				Variable					
Sound power level	Indoor unit	L_{WA}	dB	40	—	40	—	40	—
	Outdoor unit	L_{WA}	dB	52	—	56	—	57	—
Annual energy consumption		Q_{HE}	kWh	3,355	2,503	5,078	3,764	5,685	4,269
Emissions of nitrogen oxides		NO_x	mg/kWh	Not applicable					
Rated airflow rate			m^3/h	3,060		3,590		3,590	
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: 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).
- *2: If C_{dh} is not determined by measurement then the default degradation coefficient is C_{dh} = 0.9.

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■ Product fiche

Model name			WPEG050KRF		WPEG080KRF		WPEG100KRF	
Temperature application		°C	55	35	55	35	55	35
Rated heat output		kW	6	6	9	9	10	10
Seasonal space heating energy efficiency		%	133	189	139	195	141	195
Annual energy consumption		kWh	3,355	2,503	5,078	3,764	5,685	4,269
Annual electricity consumption		kWh	827	—	827	—	827	—
Specific precautions in assembled, installed, or maintained			Refer to the installation and operating manuals.					
Rated heat output	Colder climate	kW	—	—	—	—	—	—
	Warmer climate	kW	6	6	8	9	9	11
Annual energy consumption	Colder climate	kWh	—	—	—	—	—	—
	Warmer climate	kWh	1,889	1,316	2,462	1,984	2,783	2,317
Seasonal space heating energy efficiency	Colder climate	%	—	—	—	—	—	—
	Warmer climate	%	161	245	171	245	174	242
Sound power level		dB	52		56		57	

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.

■ Energy efficiency value

Application: 35°C										
Model name		WPEG050KRF			WPEG080KRF			WPEG100KRF		
Seasonal energy efficiency of heat pump for space heating	%	189			195			195		
Type of temperature control										
Outdoor sensor		II	—	—	II	—	—	II	—	—
Room thermostat		—	V	—	—	V	—	—	V	—
Outdoor sensor + Room thermostat		—	—	VI	—	—	VI	—	—	VI
Bonus	%	2	3	4	2	3	4	2	3	4
Seasonal space heating energy efficiency of package in average climate conditions	%	191	192	193	197	198	199	197	198	199
Seasonal space heating energy efficiency of package in warmer climate conditions	%	247	248	249	247	248	249	244	245	246
Seasonal space heating energy efficiency of package in colder climate conditions	%	—	—	—	—	—	—	—	—	—

Application: 55°C										
Model name		WPEG050KRF			WPEG080KRF			WPEG100KRF		
Seasonal energy efficiency of heat pump for space heating	%	133			139			141		
Type of temperature control										
Outdoor sensor		II	—	—	II	—	—	II	—	—
Room thermostat		—	V	—	—	V	—	—	V	—
Outdoor sensor + Room thermostat		—	—	VI	—	—	VI	—	—	VI
Bonus	%	2	3	4	2	3	4	2	3	4
Seasonal space heating energy efficiency of package in average climate conditions	%	135	136	137	141	142	143	143	144	145
Seasonal space heating energy efficiency of package in warmer climate conditions	%	163	164	165	173	174	175	176	177	178
Seasonal space heating energy efficiency of package in colder climate conditions	%	—	—	—	—	—	—	—	—	—

■ Class of temperature controller

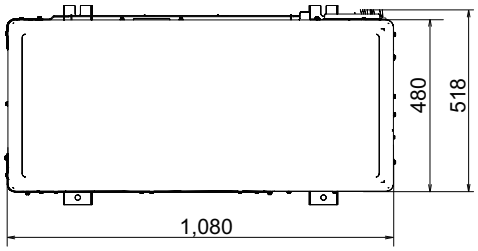
Controller class		II	V	VI
Contribution to energy efficiency	%	2	3	4

MONOBLOC UNIT

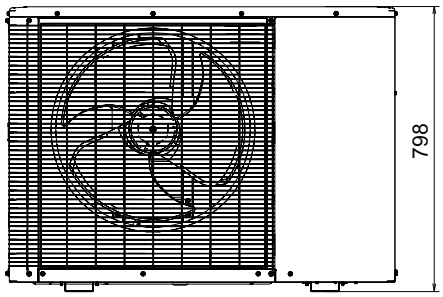
2. Dimensions

2-1. Model: WPEG050KRF

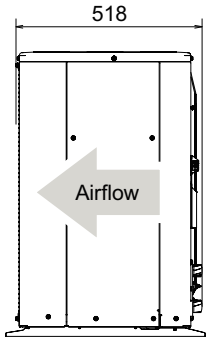
Unit: mm



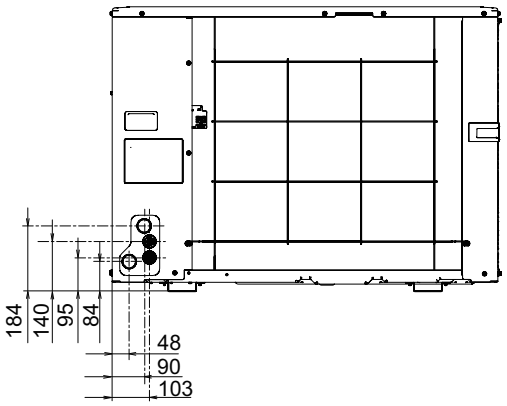
Top view



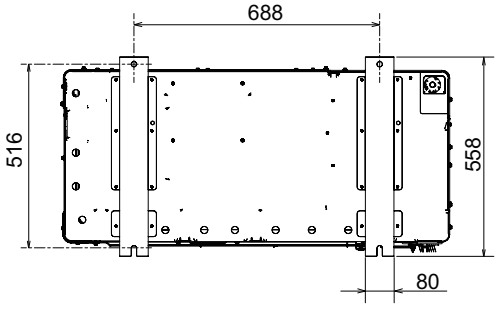
Front view



Side view (R)



Rear view

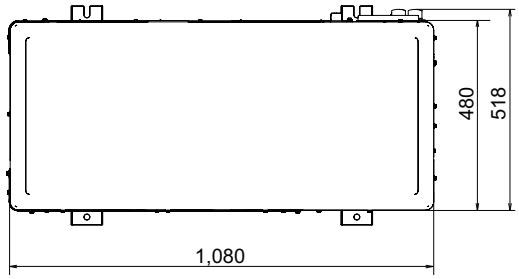


Bottom view

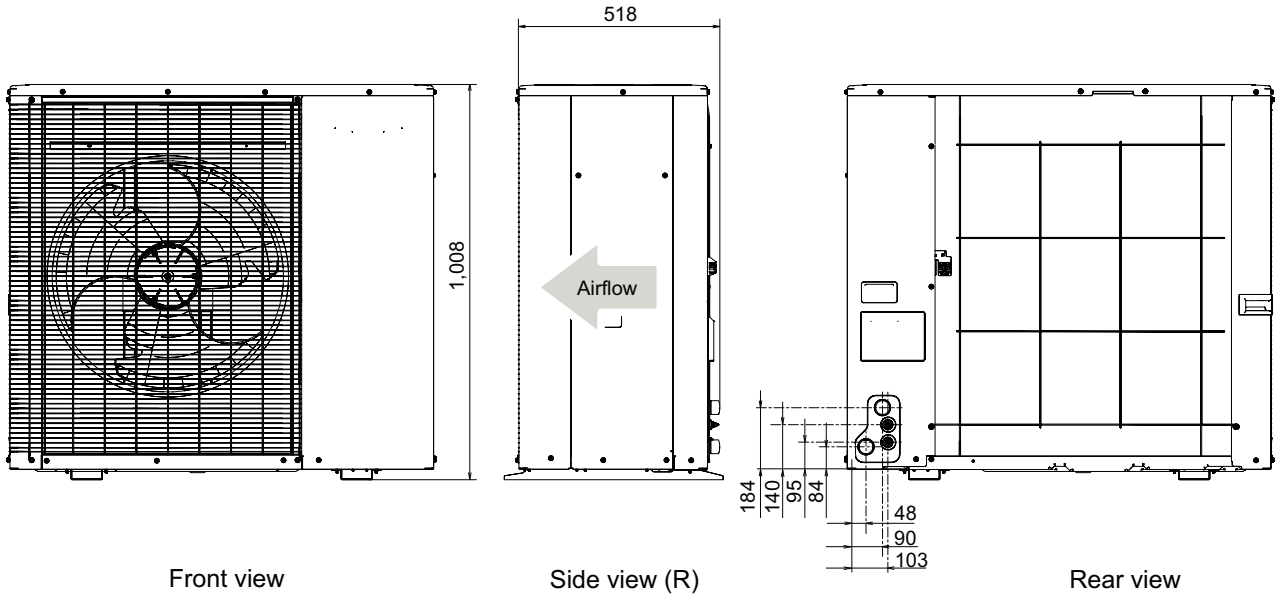
MONOBLOC UNIT

2-2. Models: WPEG080KRF and WPEG100KRF

Unit: mm



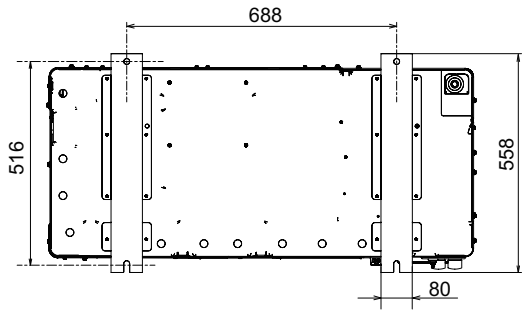
Top view



Front view

Side view (R)

Rear view



Bottom view

MONOBLOC UNIT

3. Installation space

3-1. Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

Keep the space shown in the installation examples.

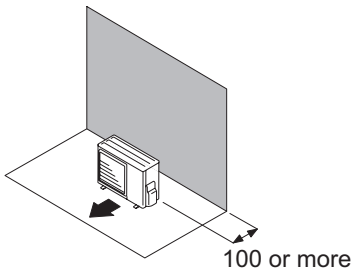
If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.

● Single outdoor unit installation

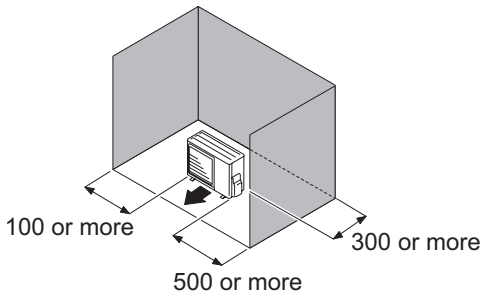
- **When the upper space is open:**

Unit: mm

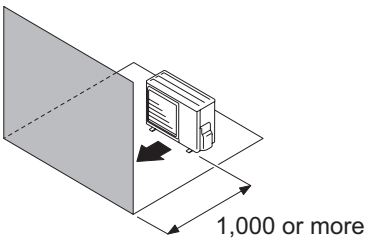
When there are obstacles at the rear only.



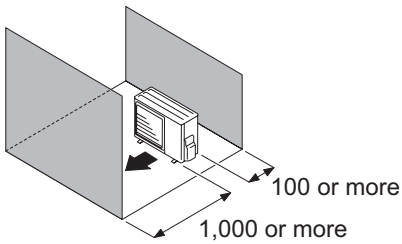
When there are obstacles at the rear and sides.



When there are obstacles at the front only.



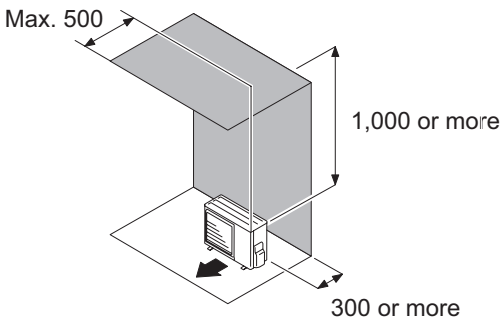
When there are obstacles at the front and rear.



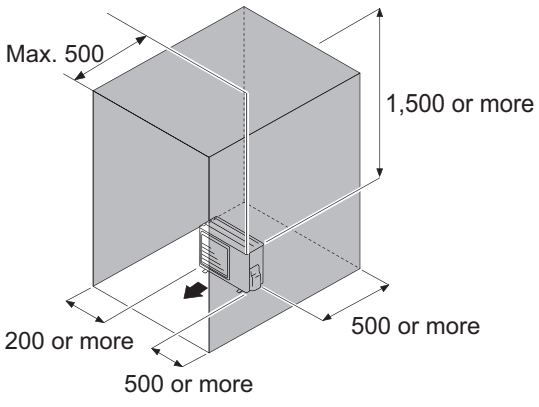
- **When an obstruction in the upper space:**

Unit: mm

When there are obstacles at the rear and above.



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



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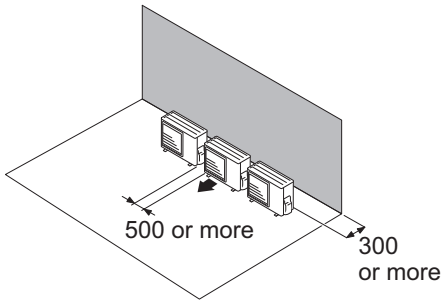
● Multiple outdoor unit installation

- 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:**".

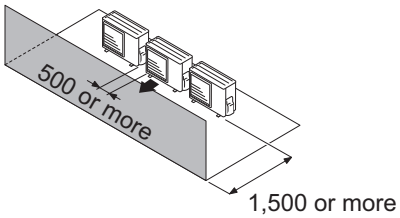
- **When the upper space is open:**

Unit: mm

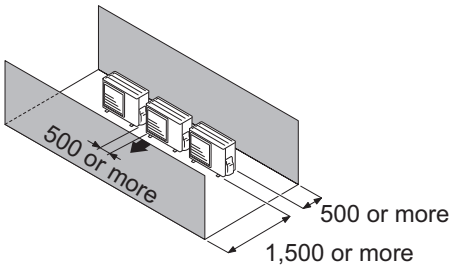
When there are obstacles at the rear only.



When there are obstacles at the front only.



When there are obstacles at the front and rear.



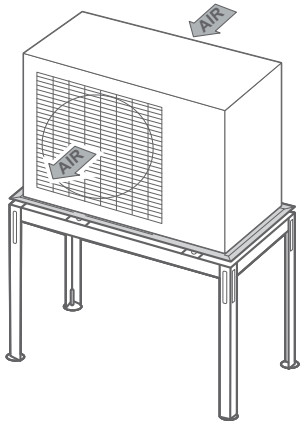
● Outdoor unit position

- 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.

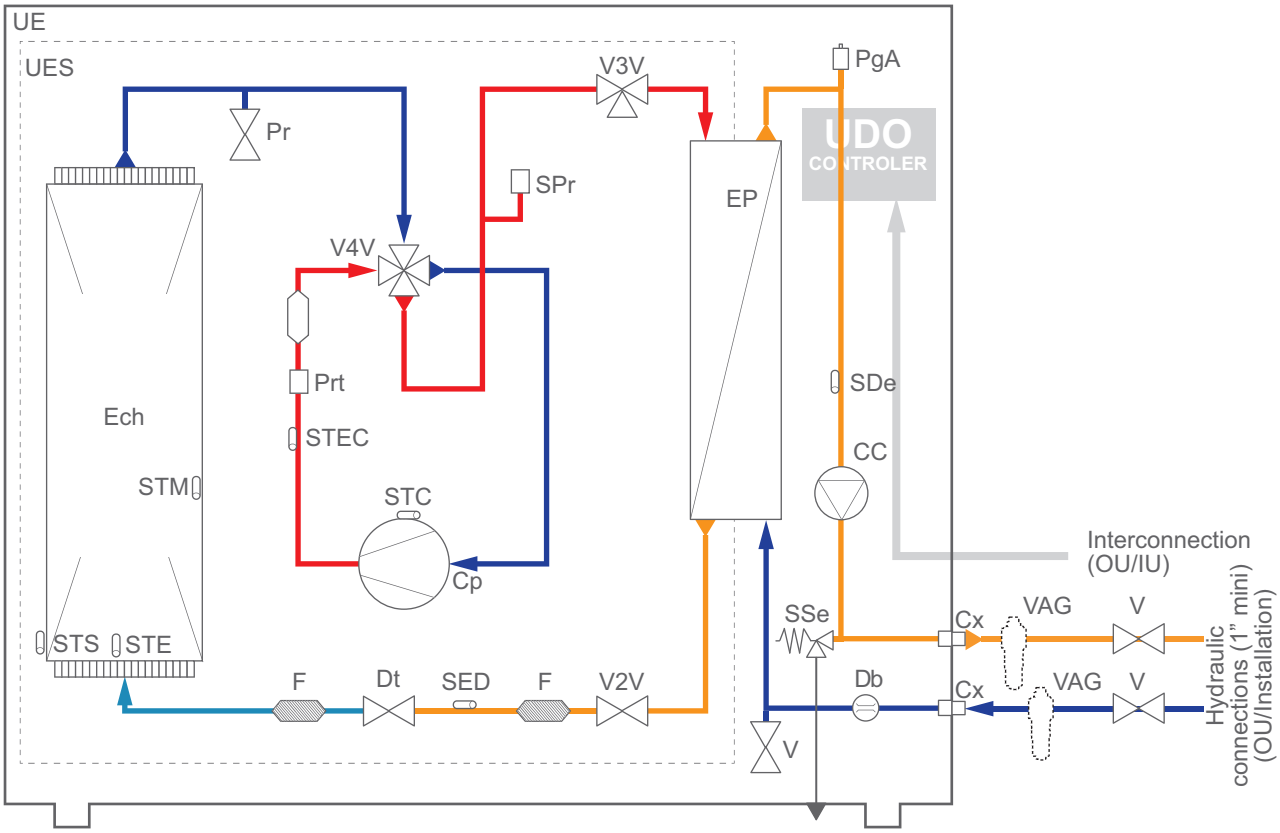
- Build a canopy or position the unit on a high stand (locally purchased).
  – Put the appliance on a solid support to minimize impact and vibration.
  – Do not set the unit directly on the ground as this may generate disruptions.



MONOBLOC UNIT

4. Piping diagrams

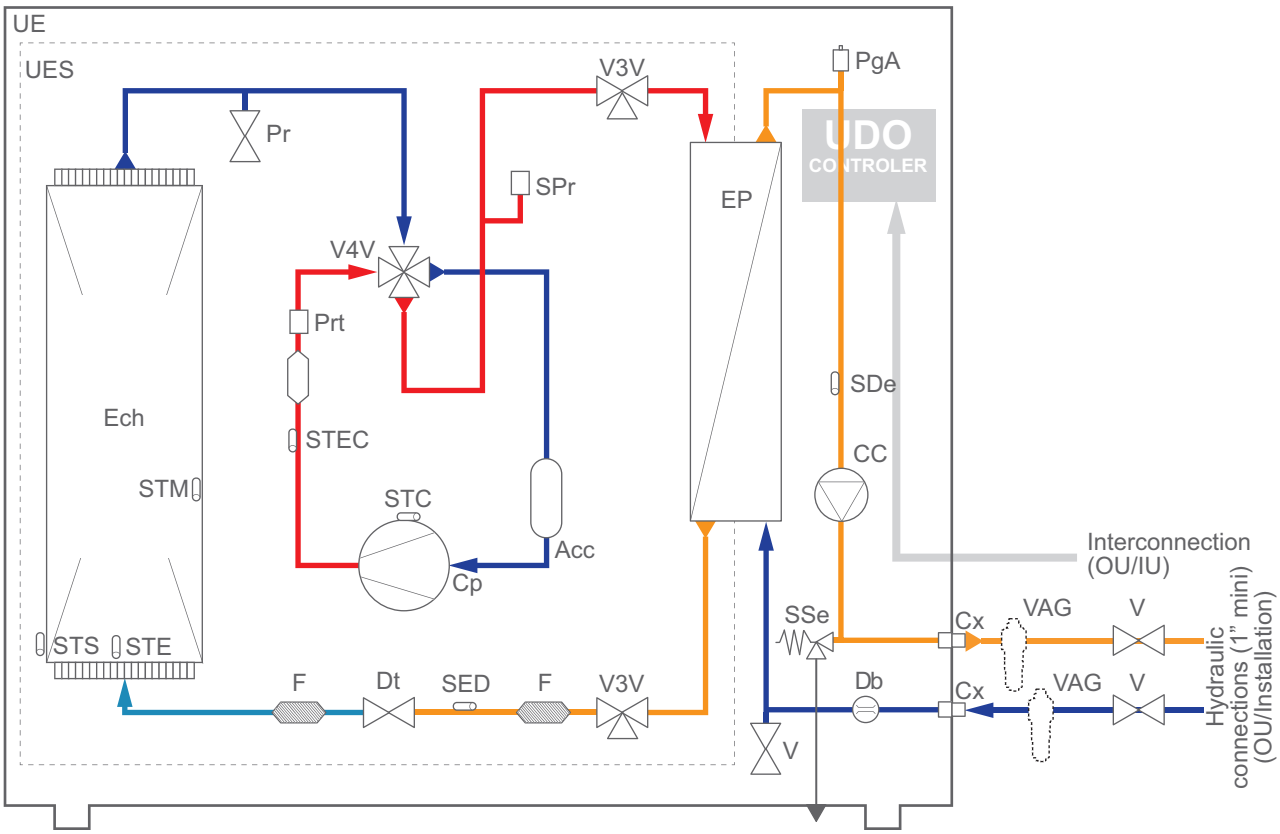
4-1. Model: WPEG050KRF



Abbreviation	Part name	Abbreviation	Part name
CC	HP circulation pump IPWM	SSe	Pressure relief valve
Cp	Compressor	STC	Compressor temp. sensor
Cx	Hydraulic connection 1"	STE	Outdoor temp. sensor
Db	Flow meter	STEC	Discharge temp. sensor
Dt	Expansion valve	STM	Heat exchanger middle temp. sensor
Ech	Air to refrigerant heat exchanger	STS	Heat exchanger liquid temp. sensor
EP	Refrigerant to water heat exchanger	UE	Outdoor unit
F	Filter	UES	Refrigerant unit
PgA	Automatic bleeder valve (Air purge valve)	V	Valve
Pr	Schrader valve	V2V	2-way valve
Prt	High pressure switch	V3V	3-way valve
SDe	Water outlet temp. sensor	V4V	4-way valve
SED	Electric expansion valve sensor	VAG	Antifreeze valve
SPr	Pressure sensor		

MONOBLOC UNIT

4-2. Models: WPEG080KRF and WPEG100KRF

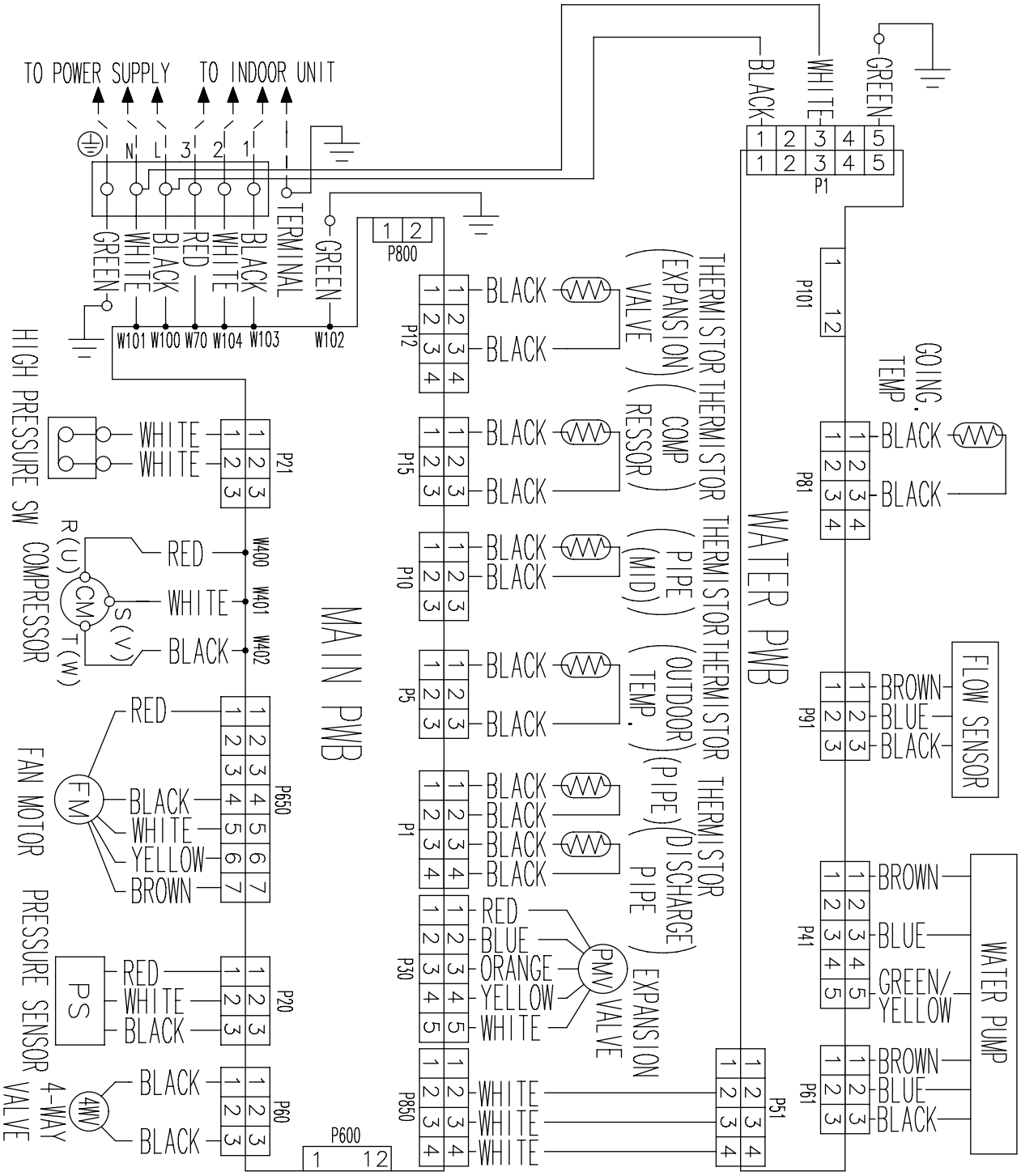


Abbreviation	Part name	Abbreviation	Part name
Acc	Accumulator	SPr	Pressure sensor
CC	HP circulation pump IPWM	SSe	Pressure relief valve
Cp	Compressor	STC	Compressor temp. sensor
Cx	Hydraulic connection 1”	STE	Outdoor temp. sensor
Db	Flow-meter	STEC	Discharge temp. sensor
Dt	Expansion valve	STM	Heat exchanger middle temp. sensor
Ech	Air to refrigerant heat exchanger	STS	Heat exchanger liquid temp. sensor
EP	Refrigerant to water heat exchanger	UE	Outdoor unit
F	Filter	UES	Refrigerant unit
PgA	Automatic bleeder valve (Air purge valve)	V	Valve
Pr	Schrader valve	V3V	3-way valve
Prt	High pressure switch	V4V	4-way valve
SDe	Water outlet temp. sensor	VAG	Antifreeze valve
SED	Electric expansion valve sensor		

MONOBLOC UNIT

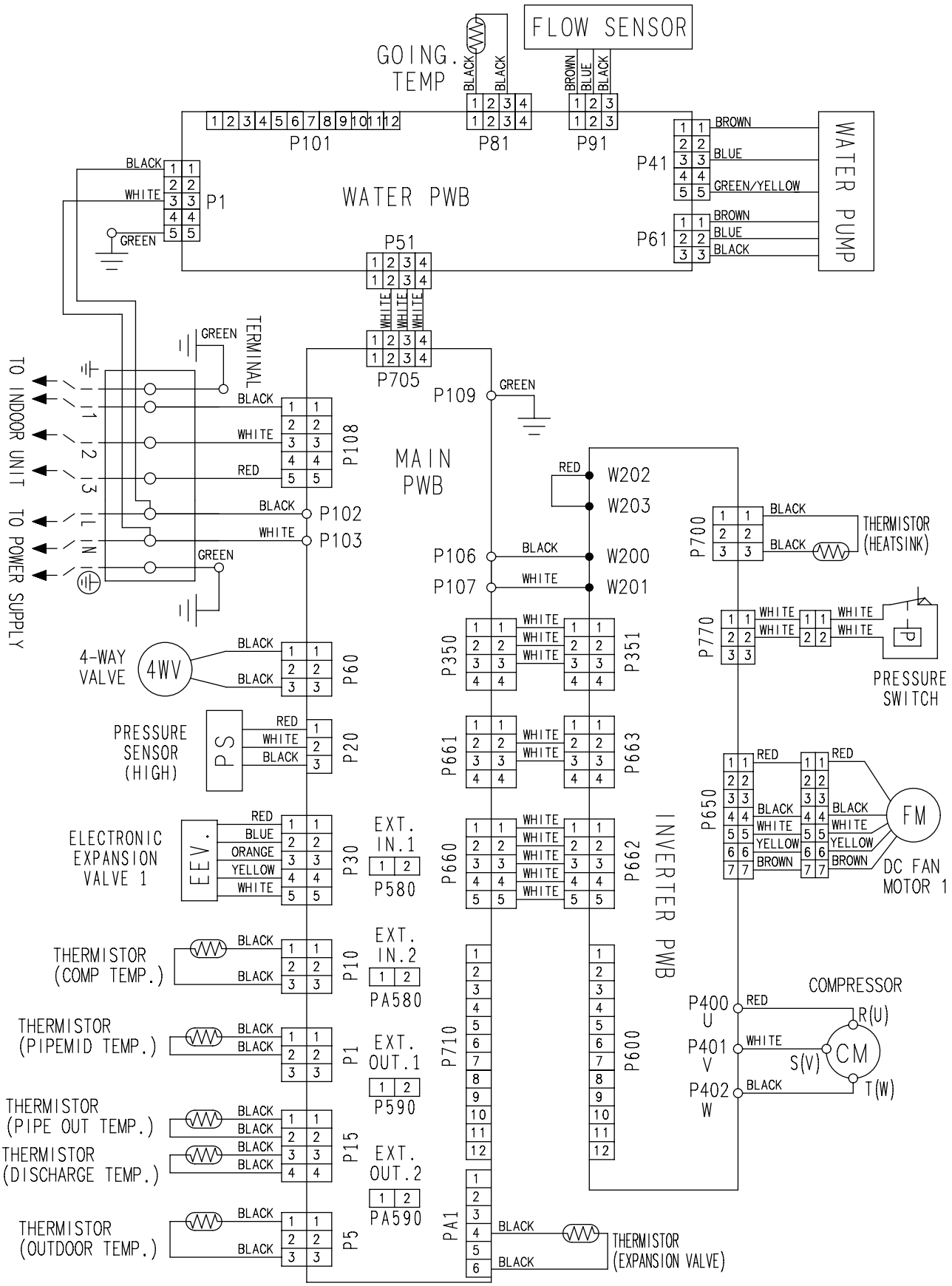
5. Wiring diagrams

5-1. Model: WPEG050KRF



MONOBLOC UNIT

5-2. Models: WPEG080KRF and WPEG100KRF



MONOBLOC 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
		WPEG050KRF	WPEG080KRF WPEG100KRF	
Input	Low noise mode	—	P580	See external input/output settings for details.
	Peak cut mode	—	PA580	
Output	Base heater control	P800	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.

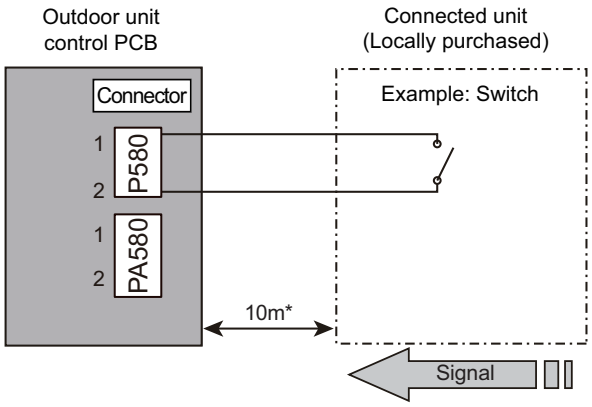
■ Low noise mode

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

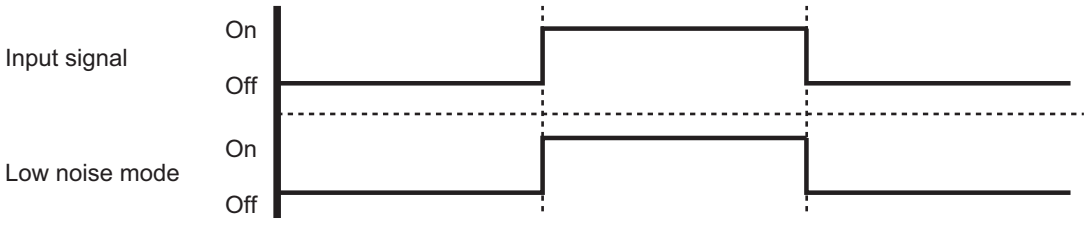
The outdoor unit is set to the “Low noise mode” when closing the contact input of a commercial timer or on/off switch to a connector on the control PCB of the outdoor unit.

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**

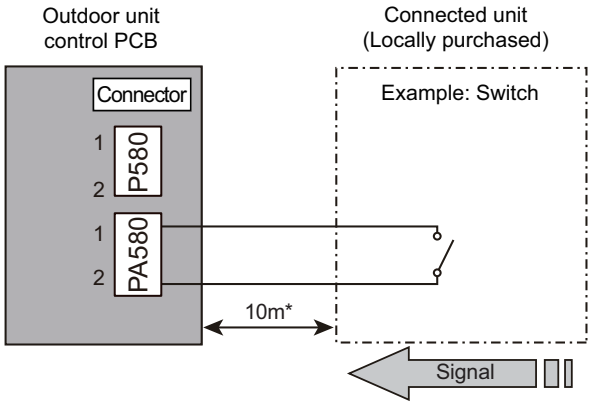
Part name	Model name	Exterior
External Connect Kit	UTY-XWZXZ3	External input wire 

MONOBLOC UNIT

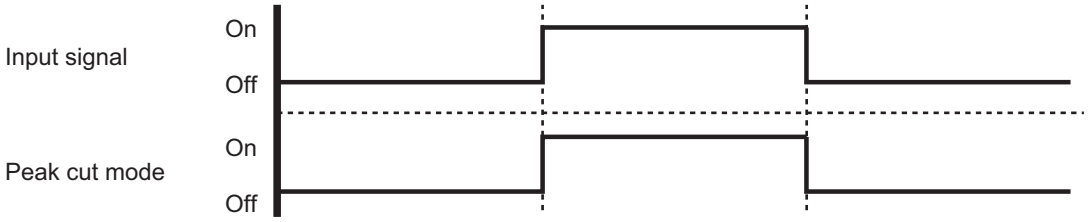
■ Peak cut mode

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.

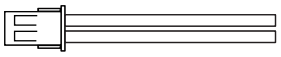
- **Circuit diagram example**



- 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 

MONOBLOC UNIT

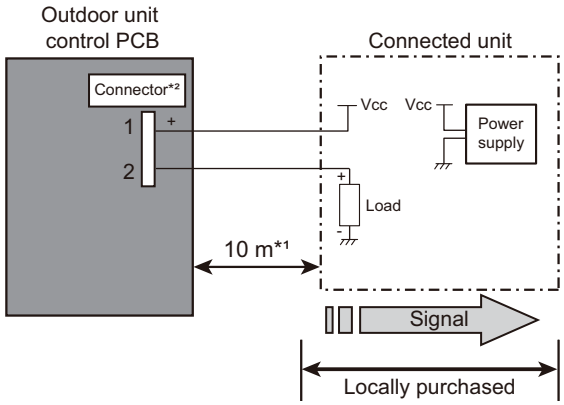
6-2. External output

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.

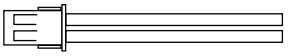
- **Circuit diagram example**



– 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**

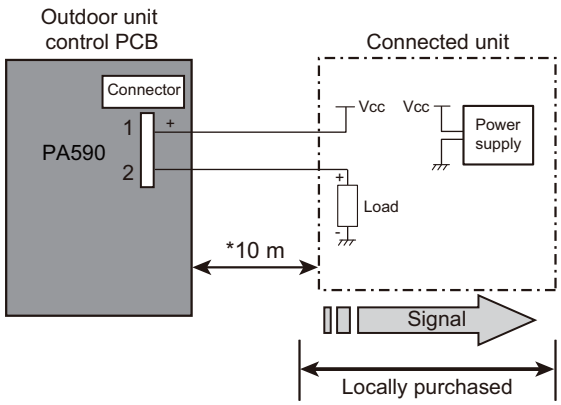
Part name	Model name	Exterior
External Connect Kit	UTY-XWZXZ3	External output wire 

MONOBLOC UNIT

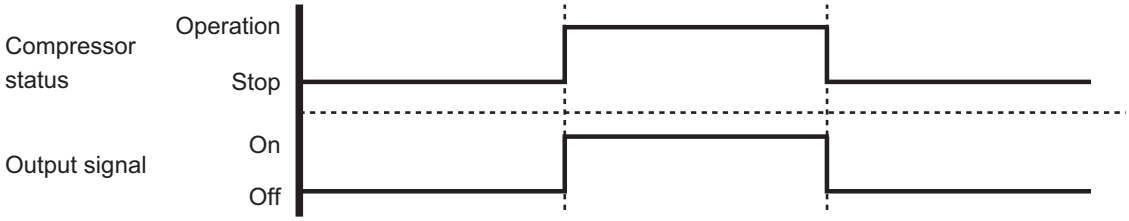
■ Compressor status output

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

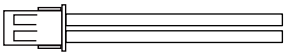
- **Circuit diagram example**



- Input voltage from external power supply: DC 24 V or less and 500 mA or less
- *: Make the distance from the PCB to the connected unit within 10 m.



- **Optional part**

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

MONOBLOC UNIT

7. Function settings (only for 080—100 models)

Perform appropriate function setting locally according to the installation environment.

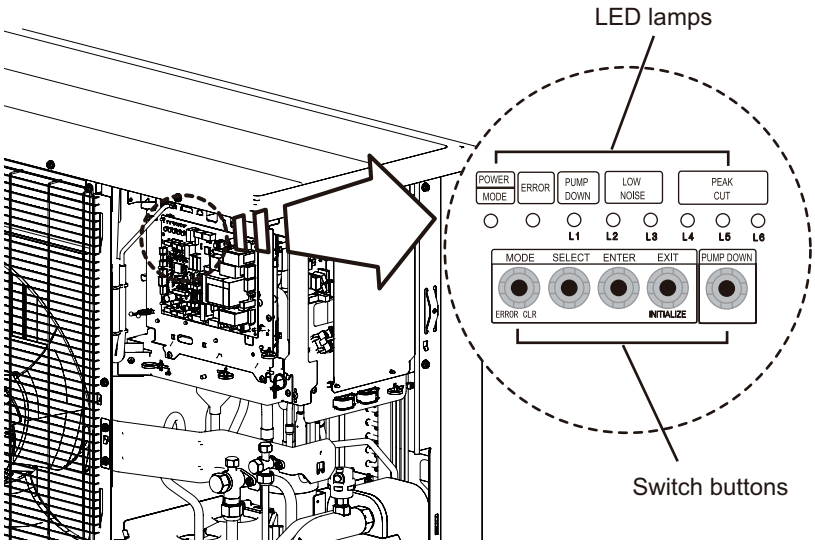
NOTE: Incorrect settings can cause a product malfunction.

⚠ 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.

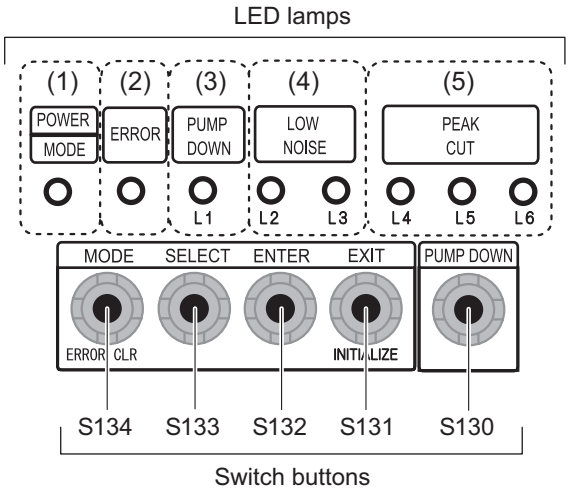
7-1. Control PCB and switch buttons location

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



MONOBLOC 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.

MONOBLOC 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.

MONOBLOC 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	●	○	○

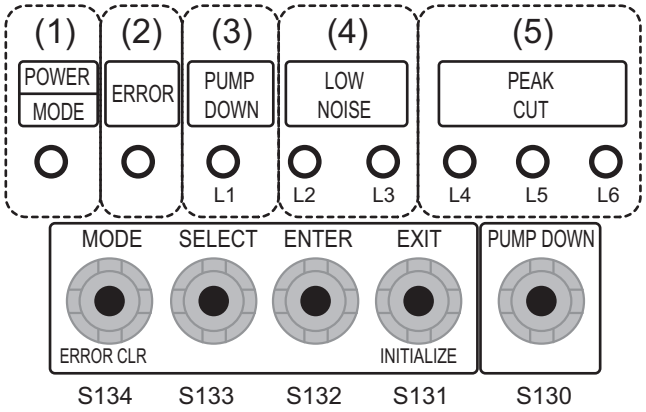
7. To return to “Operating status display (Normal operation)”, press the EXIT switch button (S131).

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.

MONOBLOC UNIT

8. Error codes

- **Outdoor unit (only for 080-100 models)**



– 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
32	5	15	○	○	○	●	Indoor unit Main PCB error (model information error)
	5	15	○	○	●	○	Indoor unit Main PCB error (communication error)
42	5	15	○	○	○	●	Indoor unit heat exchanger sensor error
5U	5	15	○	○	○	●	Indoor unit 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
79	7	9	○	○	●	●	Water outlet temperature thermistor error
84	8	4	○	○	○	●	Current sensor error
86	8	6	○	●	○	○	Pressure sensor error
	8	6	○	●	●	○	Pressure switch 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
9C	9	11	○	○	○	●	Circulation pump 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
AP	10	14	○	○	○	●	Low water flow error

MONOBLOC UNIT

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.
- The values mentioned in the table are calculated based on the maximum capacity:
  - FT < 55°C: The flow rate obtained with fixed delta T of 5°C with for units with a variable flow rate.
  - FT ≥ 55°C: The flow rate obtained with fixed delta T of 8°C with for units with a variable flow rate.

9-1. Model: WPEG050KRF

		Water temperature																					
		30			35			40			45			50			55			60		
	°CDB	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		—
Outdoor temperature	-20	3.01	1.36	2.21	3.44	1.73	1.99	3.33	1.84	1.81	3.22	1.97	1.63	—	—	—	—	—	—	—	—	—
	-15	4.25	1.69	2.51	4.14	1.82	2.28	4.02	1.95	2.06	3.91	2.09	1.87	3.78	2.24	1.69	—	—	—	—	—	—
	-10	5.05	1.76	2.87	4.92	1.91	2.58	4.78	2.05	2.33	4.66	2.21	2.11	4.51	2.36	1.91	4.38	2.55	1.72	—	—	—
	-7	5.63	1.80	3.12	5.50	1.96	2.80	5.35	2.12	2.53	5.21	2.29	2.28	5.05	2.42	2.08	4.90	2.62	1.87	—	—	—
	-5	5.82	1.80	3.23	5.70	1.96	2.92	5.57	2.12	2.62	5.44	2.29	2.38	5.30	2.44	2.18	5.17	2.64	1.96	5.04	2.83	1.78
	0	6.84	1.83	3.74	6.70	1.99	3.36	6.51	2.17	3.00	6.34	2.36	2.69	6.19	2.50	2.48	6.06	2.71	2.23	5.89	2.90	2.03
	5	7.95	1.82	4.36	7.79	2.01	3.88	7.61	2.19	3.47	7.44	2.40	3.10	7.05	2.50	2.82	6.37	2.50	2.55	5.74	2.50	2.29
	7	8.33	1.80	4.62	8.10	2.00	4.05	7.96	2.19	3.63	7.79	2.41	3.23	7.39	2.48	2.99	6.86	2.47	2.77	6.17	2.48	2.49
	10	9.20	1.78	5.18	9.03	1.98	4.56	8.82	2.18	4.04	8.64	2.40	3.61	7.98	2.45	3.26	7.21	2.45	2.95	6.46	2.45	2.64
	15	9.58	1.74	5.52	9.44	1.94	4.87	8.97	2.06	4.34	8.14	2.07	3.94	7.28	2.07	3.52	6.56	2.06	3.18	5.91	2.07	2.86
	20	10.18	1.55	6.56	9.23	1.55	5.94	7.95	1.55	5.12	7.11	1.55	4.57	6.31	1.55	4.06	5.56	1.55	3.58	4.85	1.56	3.11
	25	11.14	1.55	7.19	10.15	1.55	6.54	8.81	1.55	5.67	7.90	1.55	5.08	7.03	1.55	4.52	6.04	1.55	3.90	5.32	1.55	3.42
	30	12.35	1.55	7.97	11.27	1.55	7.27	9.77	1.55	6.30	8.77	1.55	5.65	7.80	1.55	5.02	6.69	1.55	4.33	—	—	—
	35	13.07	1.50	8.73	12.11	1.55	7.82	10.54	1.55	6.80	9.41	1.55	6.07	8.37	1.55	5.39	7.17	1.55	4.64	—	—	—

9-2. Model: WPEG080KRF

		Water temperature																					
		30			35			40			45			50			55			60		
	°CDB	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		—
Outdoor temperature	-20	5.19	2.22	2.33	5.48	2.57	2.13	5.33	2.76	1.93	5.13	3.02	1.70	—	—	—	—	—	—	—	—	—
	-15	6.67	2.53	2.63	6.56	2.73	2.40	6.42	2.93	2.19	6.20	3.21	1.93	5.97	3.42	1.75	—	—	—	—	—	—
	-10	7.90	2.66	2.98	7.79	2.87	2.71	7.64	3.09	2.47	7.40	3.39	2.18	7.12	3.64	1.96	6.90	3.85	1.79	—	—	—
	-7	8.77	2.73	3.21	8.65	2.96	2.92	8.48	3.19	2.66	8.24	3.50	2.35	7.93	3.77	2.11	7.69	3.99	1.93	—	—	—
	-5	9.08	2.73	3.32	8.97	2.97	3.02	8.85	3.21	2.76	8.62	3.53	2.44	8.35	3.79	2.20	8.12	4.03	2.02	7.31	4.03	1.81
	0	10.60	2.80	3.78	10.48	3.06	3.43	10.32	3.31	3.12	10.08	3.66	2.75	9.78	3.91	2.50	9.16	3.99	2.30	8.20	3.99	2.06
	5	12.34	2.82	4.38	12.21	3.10	3.94	12.03	3.39	3.55	11.55	3.70	3.12	10.55	3.68	2.86	9.50	3.58	2.65	8.45	3.58	2.36
	7	13.47	2.78	4.85	13.07	3.08	4.24	12.88	3.38	3.81	12.49	3.66	3.41	11.40	3.66	3.11	10.24	3.55	2.89	9.11	3.55	2.57
	10	14.27	2.74	5.21	14.14	3.05	4.63	13.93	3.36	4.15	13.18	3.63	3.64	12.00	3.63	3.31	10.73	3.51	3.05	9.58	3.51	2.73
	15	13.49	2.37	5.69	12.10	2.37	5.11	10.88	2.36	4.61	9.78	2.38	4.11	8.88	2.36	3.76	7.87	2.30	3.42	6.79	2.31	2.94
	20	15.03	2.37	6.35	13.09	2.37	5.53	11.86	2.37	5.00	10.60	2.40	4.42	9.57	2.37	4.03	8.45	2.30	3.67	7.25	2.30	3.15
	25	15.94	2.37	6.73	14.30	2.37	6.04	13.01	2.37	5.49	11.65	2.41	4.83	10.50	2.39	4.39	9.32	2.30	4.05	8.10	2.30	3.52
	30	17.78	2.37	7.51	16.24	2.37	6.86	14.44	2.37	6.10	12.93	2.41	5.36	11.64	2.41	4.82	10.33	2.30	4.48	—	—	—
	35	19.14	2.37	8.09	17.48	2.37	7.39	15.53	2.37	6.56	13.86	2.41	5.75	12.48	2.41	5.17	11.02	2.31	4.78	—	—	—

MONOBLOC UNIT

9-3. Model: WPEG100KRF

Outdoor temperature	Water temperature																				
	30			35			40			45			50			55			60		
°CDB	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		—
-20	5.19	2.25	2.31	5.95	2.80	2.12	5.75	3.00	1.92	5.55	3.27	1.70	—	—	—	—	—	—	—	—	—
-15	7.19	2.76	2.60	7.63	3.20	2.39	7.42	3.44	2.16	7.22	3.76	1.92	7.01	4.01	1.75	—	—	—	—	—	—
-10	8.60	2.90	2.97	9.12	3.37	2.71	8.89	3.63	2.45	8.67	3.99	2.17	8.41	4.27	1.97	7.60	4.20	1.81	—	—	—
-7	9.62	2.99	3.21	10.20	3.49	2.92	9.96	3.77	2.64	9.72	4.14	2.35	9.42	4.44	2.12	8.54	4.35	1.96	—	—	—
-5	9.84	2.98	3.30	10.43	3.50	2.98	10.19	3.77	2.70	10.00	4.16	2.40	9.75	4.47	2.18	8.91	4.38	2.03	8.19	4.45	1.84
0	11.41	3.07	3.71	12.10	3.59	3.37	11.80	3.89	3.03	11.57	4.31	2.69	11.06	4.52	2.45	10.07	4.41	2.28	9.07	4.41	2.06
5	13.82	3.30	4.19	13.86	3.62	3.83	13.57	3.95	3.44	12.57	4.10	3.06	11.56	4.10	2.82	10.41	3.99	2.61	9.33	3.99	2.34
7	15.05	3.31	4.55	14.99	3.65	4.11	14.78	4.00	3.69	13.55	4.10	3.30	12.43	4.10	3.03	11.20	3.99	2.81	10.05	3.99	2.52
10	15.93	3.27	4.88	15.98	3.63	4.41	15.66	3.98	3.93	14.28	4.06	3.52	13.06	4.06	3.22	11.76	3.95	2.98	10.54	3.95	2.67
15	14.86	2.75	5.41	13.71	2.75	4.99	12.23	2.75	4.45	10.96	2.79	3.93	10.02	2.77	3.62	8.98	2.69	3.34	7.98	2.69	2.97
20	15.03	2.37	6.35	13.22	2.37	5.58	11.86	2.37	5.00	10.60	2.40	4.42	9.57	2.37	4.03	8.45	2.30	3.67	7.25	2.30	3.15
25	15.94	2.37	6.73	14.44	2.37	6.10	13.01	2.37	5.49	11.65	2.41	4.83	10.50	2.39	4.39	9.32	2.30	4.05	8.10	2.30	3.52
30	17.78	2.37	7.51	16.41	2.37	6.93	14.44	2.37	6.10	12.93	2.41	5.36	11.64	2.41	4.82	10.33	2.30	4.48	—	—	—
35	19.14	2.37	8.09	17.62	2.37	7.44	15.53	2.37	6.56	13.88	2.41	5.75	12.48	2.41	5.17	11.02	2.31	4.78	—	—	—

MONOBLOC UNIT

10. Cooling capacity table

- CC: Cooling capacity (kW)
- IP: Input power (kW)
- EER: Energy Efficiency Ratio
- Usage environment, such as operation of the heating equipment, room temperature, and control adjustments may cause disparities between practically determined and measured values.
- The values mentioned in the table are calculated based on the maximum capacity:
  – The flow rate obtained with fixed delta T of 5°C with for units with a variable flow rate.

10-1. Model: WPEG050KRF

		Water temperature																	
		7°C			10°C			13°C			15°C			18°C			22°C		
Outdoor temperature	°CDB	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER
		kW		—	kW		—	kW		—	kW		—	kW		—	kW		—
	20	7.39	1.78	4.14	7.90	1.81	4.37	8.41	1.83	4.60	8.77	1.84	4.76	9.02	1.84	4.90	9.22	1.84	5.00
	25	6.93	1.85	3.75	7.36	1.85	3.99	6.94	1.84	3.76	8.11	1.84	4.40	8.29	1.84	4.49	8.47	1.84	4.60
	30	6.13	1.84	3.33	6.52	1.85	3.53	6.06	1.84	3.29	7.17	1.85	3.88	7.35	1.84	3.98	7.53	1.84	4.08
	35	5.33	1.84	2.89	5.69	1.84	3.09	6.02	1.84	3.27	6.24	1.84	3.38	6.42	1.85	3.48	6.59	1.84	3.57
	40	3.32	1.26	2.63	3.59	1.26	2.85	3.87	1.26	3.08	4.05	1.26	3.23	4.31	1.26	3.44	4.41	1.25	3.52
	46	2.61	1.27	2.06	2.83	1.27	2.23	2.97	1.26	2.35	3.12	1.26	2.47	3.33	1.26	2.64	3.59	1.26	2.85

10-2. Model: WPEG080KRF

		Water temperature																	
		7°C			10°C			13°C			15°C			18°C			22°C		
Outdoor temperature	°CDB	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER
		kW		—	kW		—	kW		—	kW		—	kW		—	kW		—
	20	9.85	2.11	4.67	12.15	2.69	4.51	12.97	2.72	4.77	13.49	2.72	4.96	14.27	2.72	5.25	14.03	2.71	5.18
	25	9.27	2.28	4.07	11.39	2.99	3.81	12.08	3.02	4.01	12.55	3.03	4.15	13.26	3.04	4.37	13.38	2.71	4.94
	30	8.73	2.55	3.42	10.60	3.26	3.25	11.28	3.33	3.39	11.68	3.34	3.50	12.29	3.34	3.68	12.44	3.34	3.73
	35	8.31	2.91	2.86	9.42	3.29	2.86	9.90	3.30	3.00	10.23	3.31	3.09	10.75	3.32	3.24	11.47	3.34	3.44
	40	5.86	2.21	2.65	6.21	2.22	2.80	6.61	2.22	2.98	6.86	2.22	3.09	7.24	2.22	3.26	7.77	2.23	3.49
	46	4.63	2.21	2.09	4.97	2.21	2.25	5.25	2.21	2.37	5.44	2.21	2.46	5.74	2.21	2.59	6.19	2.21	2.80

10-3. Model: WPEG100KRF

		Water temperature																	
		7°C			10°C			13°C			15°C			18°C			22°C		
Outdoor temperature	°CDB	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER	CC	IP	EER
		kW		—	kW		—	kW		—	kW		—	kW		—	kW		—
	20	9.85	2.11	4.67	13.43	3.28	4.10	14.24	3.31	4.30	14.79	3.33	4.44	15.59	3.34	4.68	15.60	3.33	4.68
	25	9.27	2.28	4.07	12.08	3.34	3.62	12.73	3.34	3.82	13.18	3.34	3.95	13.88	3.34	4.16	14.01	3.34	4.20
	30	8.73	2.55	3.42	10.72	3.32	3.23	11.29	3.34	3.39	11.68	3.34	3.50	12.29	3.34	3.68	12.44	3.34	3.73
	35	8.31	2.91	2.86	9.42	3.29	2.86	9.90	3.30	3.00	10.23	3.31	3.09	10.75	3.32	3.24	11.47	3.34	3.44
	40	5.86	2.21	2.65	6.21	2.22	2.80	6.61	2.22	2.98	6.86	2.22	3.09	7.24	2.22	3.26	7.77	2.23	3.49
	46	4.63	2.21	2.09	4.97	2.21	2.25	5.25	2.21	2.37	5.44	2.21	2.46	5.74	2.21	2.59	6.19	2.21	2.80

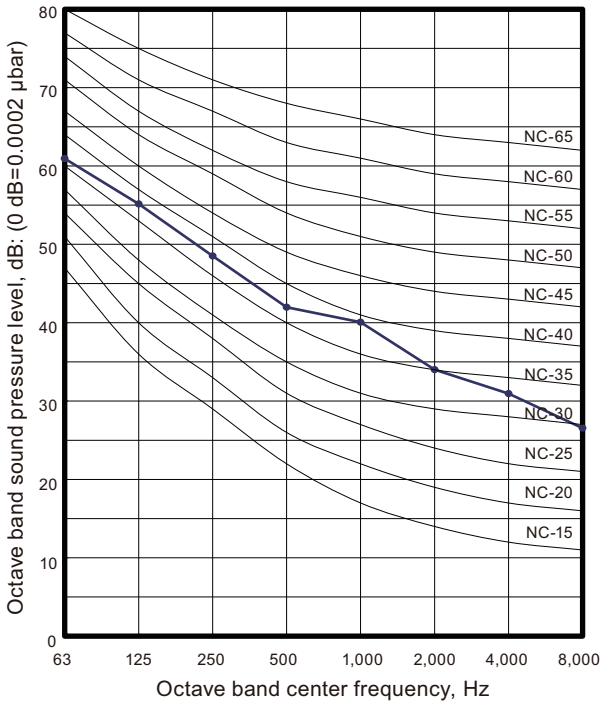
MONOBLOC UNIT

11. Operation noise (sound pressure)

11-1. Noise level curve

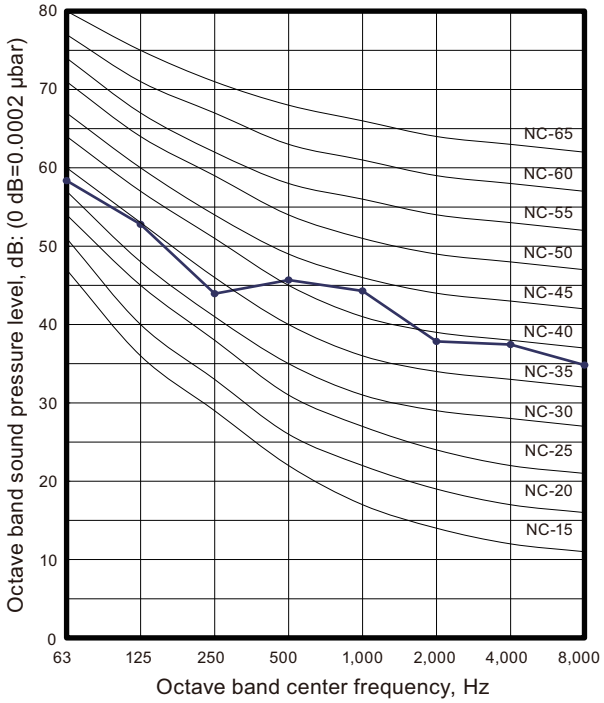
■ Model: WPEG050KRF

● Heating



■ Model: WPEG080KRF

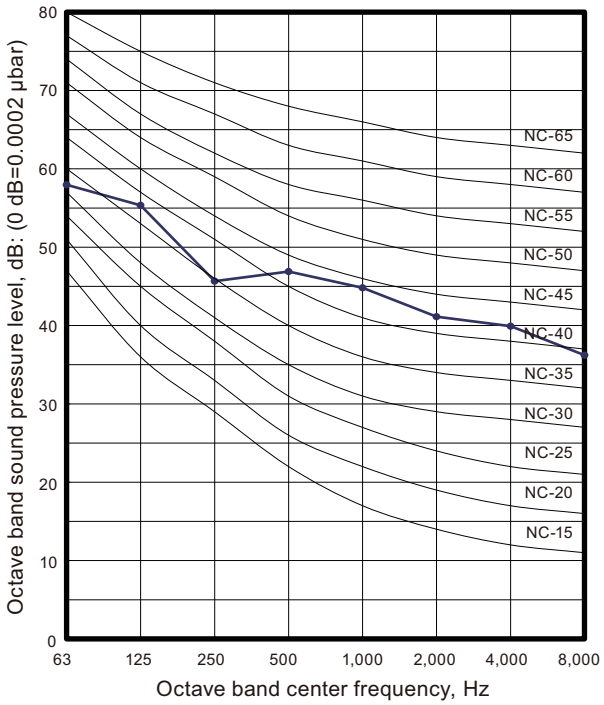
● Heating



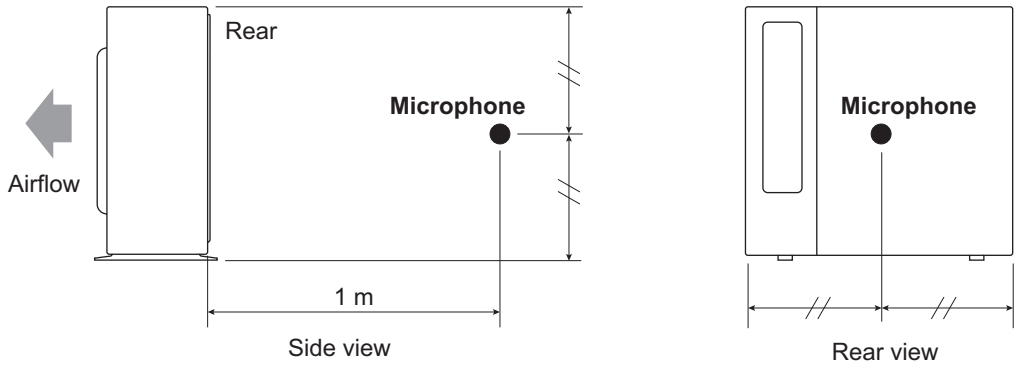
MONOBLOC UNIT

■ Model: WPEG100KRF

● Heating



11-2. Sound level check point



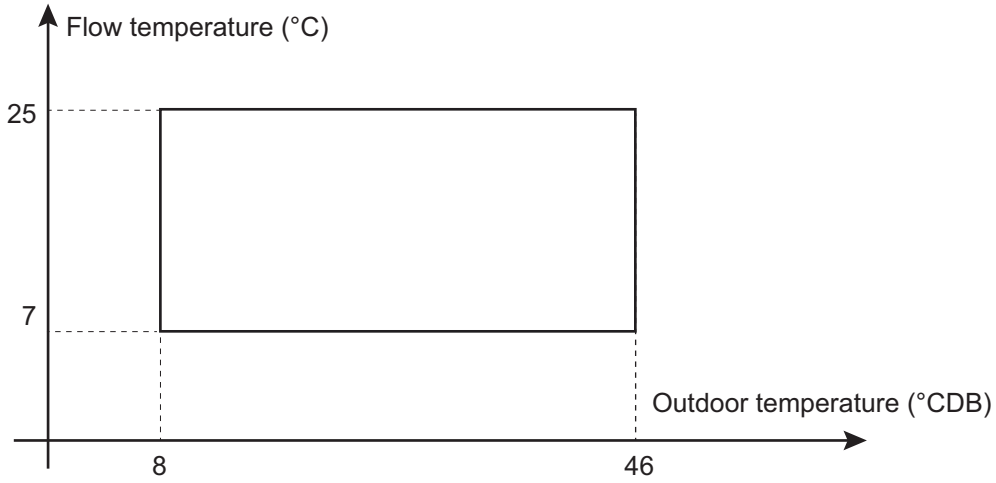
NOTE: Detailed shape of the actual outdoor unit might be slightly different from the one illustrated above.

MONOBLOC UNIT

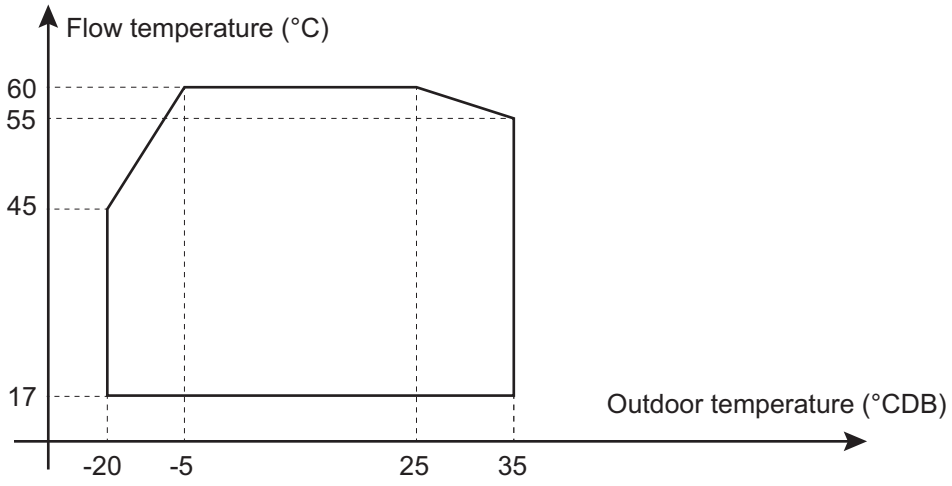
12. Operation range

12-1. Models: WPEG050KRF, WPEG080KRF, and WPEG100KRF

- **Operating mode: Cooling**



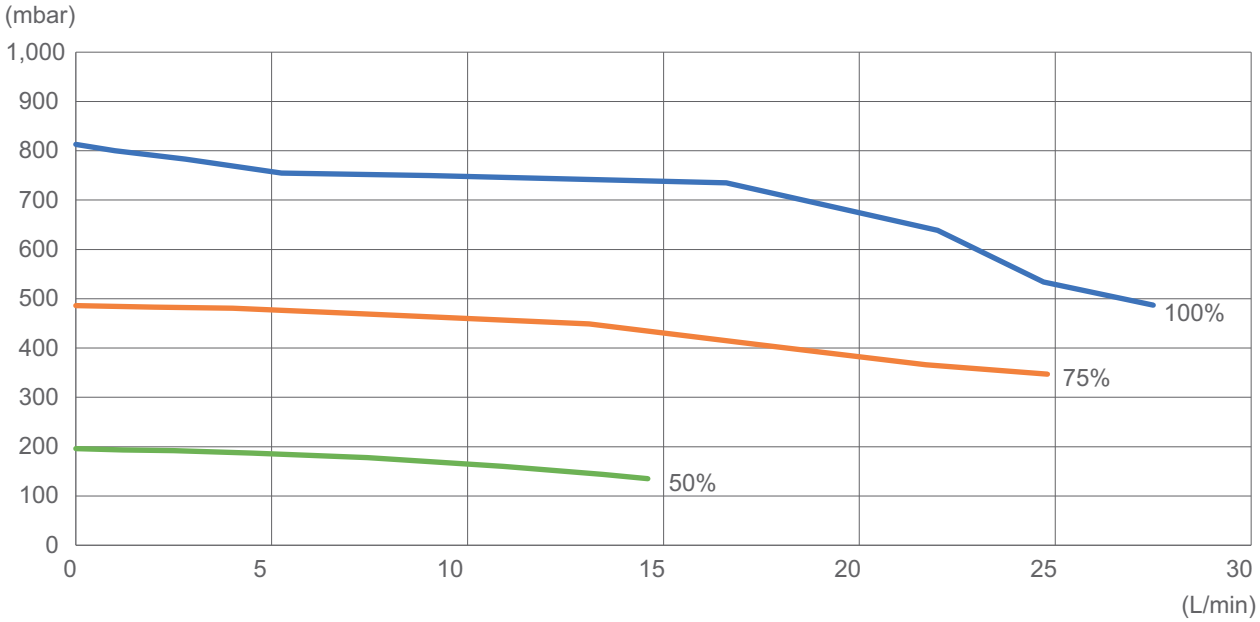
- **Operating mode: Heating, Domestic hot water**



MONOBLOC UNIT

13. Hydraulic performance

13-1. Models: WPEG050KRF, WPEG080KRF, and WPEG100KRF



MONOBLOC UNIT

14. Safety devices

Type of protection	Protection form		Model	
			WPEG050KRF	WPEG080KRF WPEG100KRF
Circuit protection	Current fuse (PCB)		AC 250 V, 25 A AC 250 V, 5 A	AC 250 V, 30 A or 35.5 A AC 250 V, 10 A AC 250 V, 5 A AC 250 V, 3.15 A
Fan motor protection	Thermal protection	Activate	113—131°C Fan motor stop	115±15°C Fan motor stop
		Reset	107—126°C Fan motor restart	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	4.1 MPa Compressor stop	
		Reset	After 3 minutes and 3.0 MPa Compressor restart	

MONOBLOC UNIT

15. Accessories

15-1. Models: WPEG050KRF, WPEG080KRF, and WPEG100KRF

Name and shape	Qty
 Installation manual	1
 Quick installation manual	1
 Product fiche	3
 Energy label	3
 Regulatory requirements of installation and maintenance	1
 Drain pipe	1
 Drain cap	9

REFRIGERANT R32
INVERTER

2. HYDRAULIC UNIT

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2. HYDRAULIC UNIT

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1. Specifications

1-1. Technical specifications

Model name		Hydraulic unit		WGEP100KR3-19		
		Outdoor unit		WPEG050KRF	WPEG080KRF	WPEG100KRF
Input power	Maximum	Heating*1		3 (Optional: 6)		
		DHW*2		1.2		
Enclosure		Material		Front Panel 8/10 mm DC01 + EZ (5μ)		
		Color		White		
Dimensions (H × W × D)	Net		mm	1,755 × 598 × 623		
	Gross			1,970 × 740 × 750		
Weight	Net (Empty/Full of water)		kg	130/340		
	Gross			140		
Water capacity			l	20/190		
Main components	Pump	Type		Water cooled		
		Speed setting		Variable speed		
		Input power*3	W	75		
	Expansion vessel	Volume	l	12		
		Max. water pressure	bar	3.0		
		Pre-pressure		1 (±0.3)		
	DHW tank	Type		Enamel coated steel		
		Water volume	l	190		
		Max. water pressure	bar	10.0		
		Anti-corrosion		Titanium anode (ACI)		
	Safety valve		bar	3		
	Manometer			Yes		
	Drain valve/Fill valve			Yes		
	Distribution valve			Yes		
	Air purge valve			Yes		
Water circuit	Connection pipe diameter	Outdoor unit	mm (in)	Ø25.4 (1)		
		Heating 1		Ø19.05 (3/4)		
		Heating 2		Ø19.05 (3/4)		
DHW connection	Connection pipe diameter		mm (in)	Ø19.05 (3/4)		
Operation range	Water side	Heating	°C	17 to 60		

NOTES:

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

1-2. Electrical specifications

HYDRAULIC UNIT

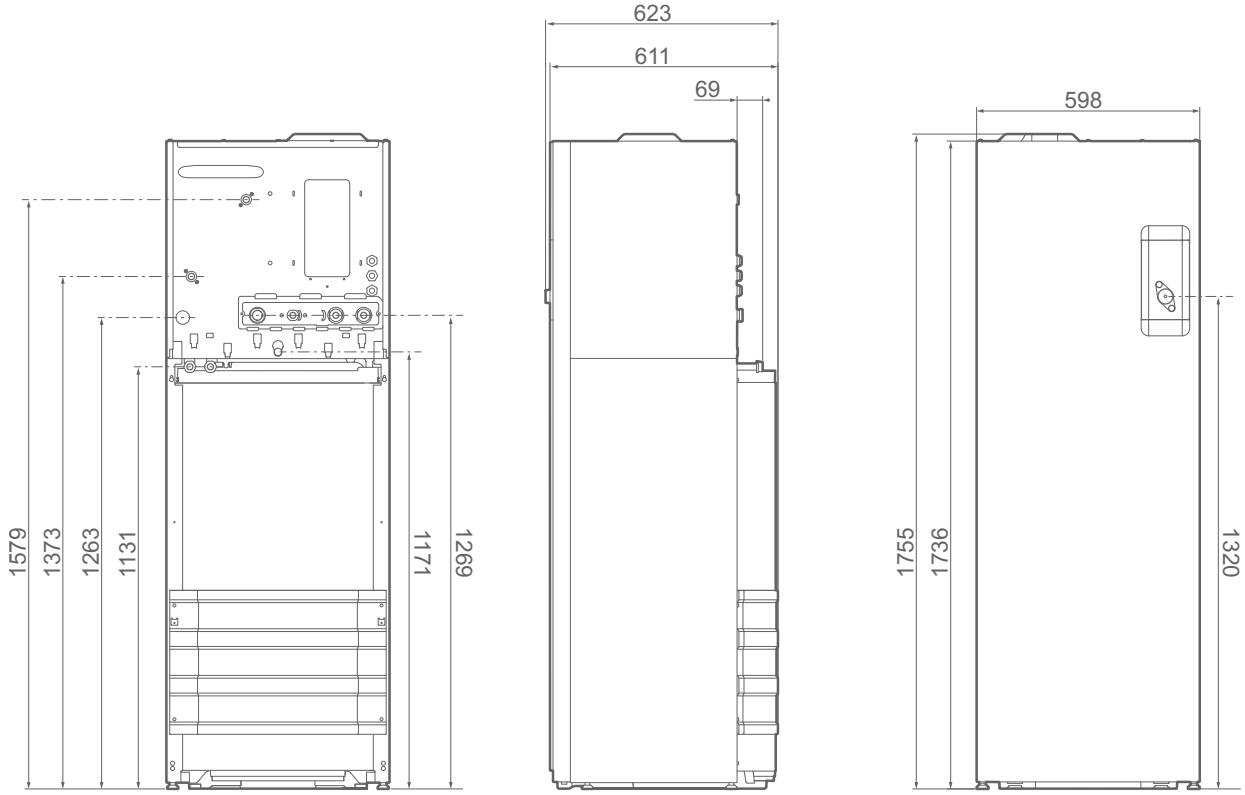
Model name		Hydraulic unit		WGEP100KR3-19		
		Outdoor unit		WPEG050KRF	WPEG080KRF	WPEG100KRF
Electrical heater (Backup heater)	Type			Copper 11.4 W/cm^2		
	Input power	Maximum	kW	3 (Optional: 6)		
	Power supply	Phase		1		
		Frequency	Hz	50		
		Voltage	V	230		
	Current	Running current	A	13.0		
	Current with 6 kW backup relay kit	Running current	A	26.1		
Electrical heater (DHW heater)	Type			Copper 5.8 W/cm^2		
	Power supply	Phase		1		
		Frequency	Hz	50		
		Voltage	V	230		
	Current	Running current	A	5.3		
Wiring spec.	Backup heater power supply	Main fuse (circuit breaker) current	A	16		
		Connection cable	mm^2	1.5 × 3		
	Backup heater power supply with 6 kW backup relay kit	Main fuse (circuit breaker) current	A	32		
		Connection cable	mm^2	6.0 × 3		
	DHW heater power supply	Main fuse (circuit breaker) current	A	16		
		Connection cable	mm^2	1.5 × 3		
	Hydraulic unit to outdoor unit	Connection cable	mm^2	1.5 × 4		
		Limited wiring length	m	Not available		

HYDRAULIC UNIT

2. Dimensions

2-1. Model: WGEP100KR3-19

Unit: mm

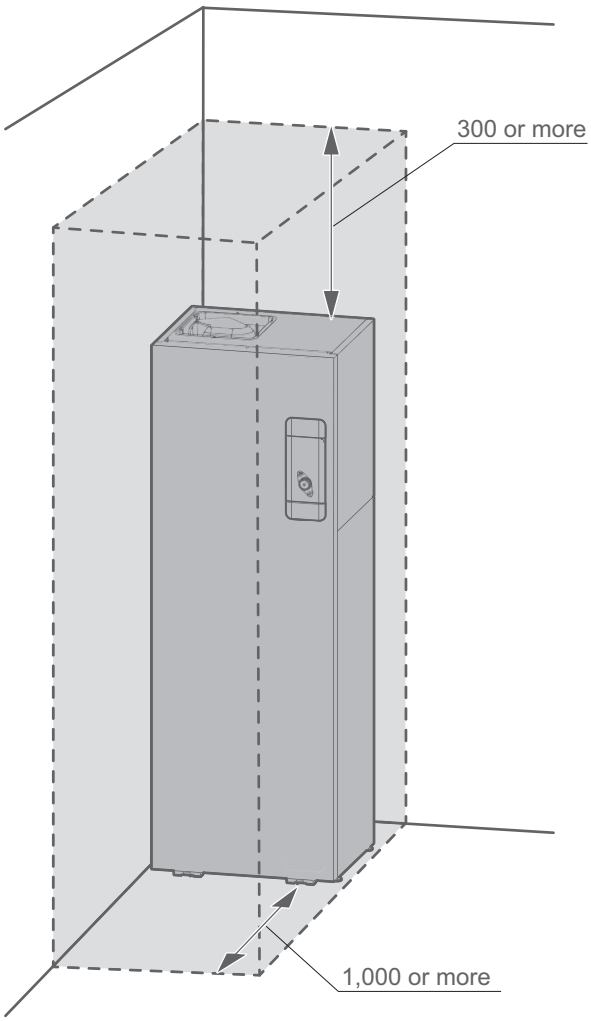


HYDRAULIC UNIT

3. Installation space

3-1. Model: WGEP100KR3-19

Unit: mm



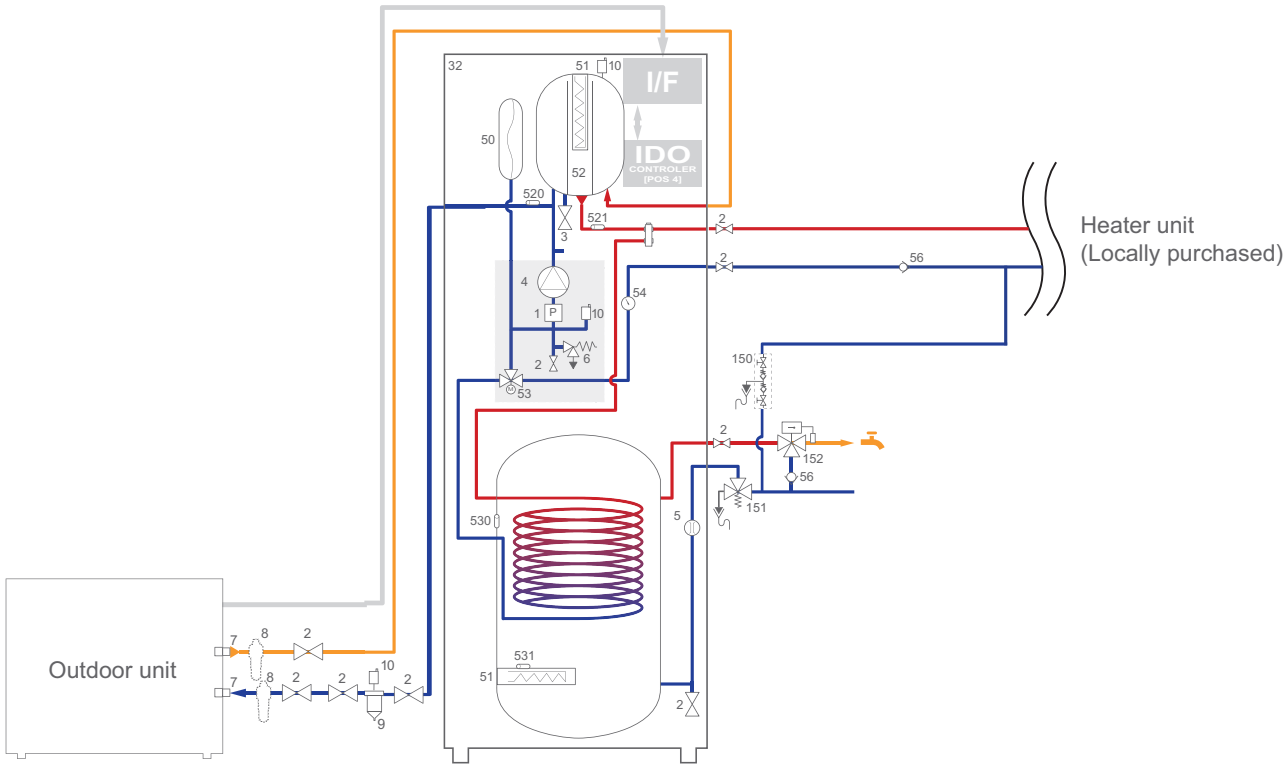
- Choose the location of the appliance after discussion with the client.
- The installation space should comply with the current regulations.
- To facilitate maintenance and allow access to the various parts, we recommend that you provide sufficient space all the way around the hydraulic unit.

HYDRAULIC UNIT

4. Piping diagrams

4-1. Model: WGEP100KR3-19

- **1 heating circuit**



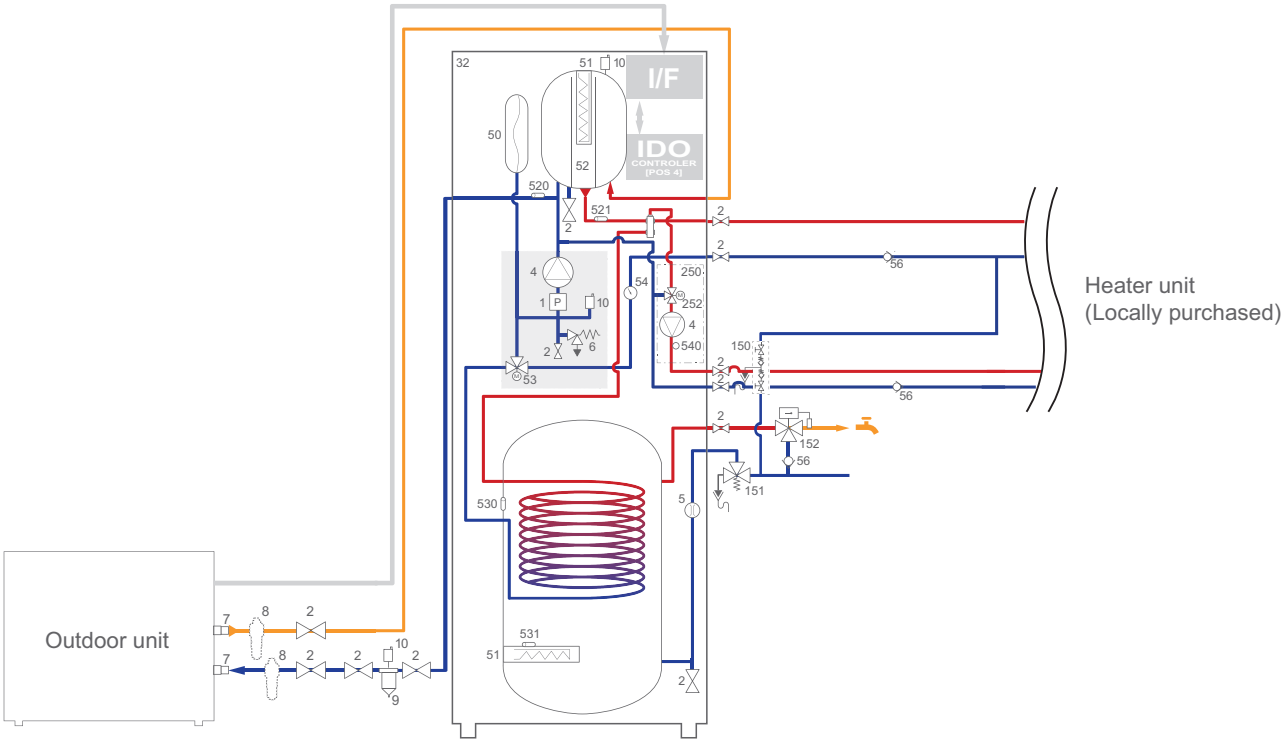
1 - Water pressure sensor (Value)
2 - Valve
3 - Drain valve
4 - System pump
5 - Flowmeter
6 - Safety valve
7 - Connection
8 - Antifreezing valve
9 - Sediment trap
10 - Air vent valve

32 - Duo hydraulic unit (2 services)
50 - Expansion vessel
51 - Electrical backup
52 - Decoupling bottle
53 - Directional valve
54 - Manometer
56 - No-return valve

150 - Disconnector
151 - Safety group
152 - Thermostatic mixing valve
520 - Return temp. sensor (heating circuit)
521 - Flow temp. sensor (heating circuit)
530 - DHW temp. sensor
531 - DHW electrical backup thermal safety

HYDRAULIC UNIT

- **2 heating circuits**



1 - Water pressure sensor (Value)
2 - Valve
3 - Drain valve
4 - System pump
5 - Flowmeter
6 - Safety valve
7 - Connection
8 - Antifreezing valve
9 - Sediment trap
10 - Air vent valve

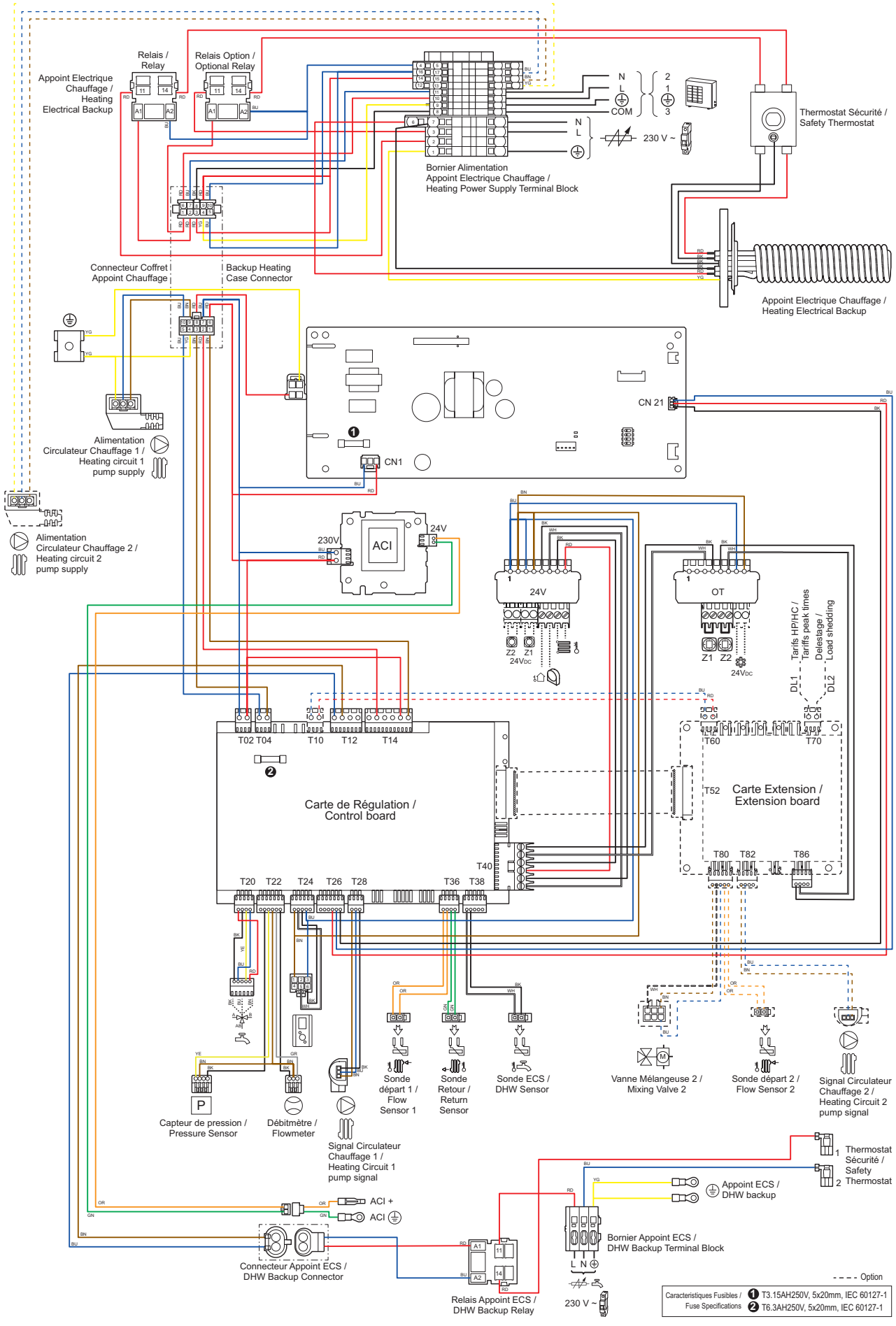
32 - Duo hydraulic unit (2 services)
50 - Expansion vessel
51 - Electrical backup
52 - Decoupling bottle
53 - Directional valve
54 - Manometer
56 - No-return valve

150 - Disconnector
151 - Safety group
152 - Thermostatic mixing valve
250 - 2 circuits kit
252 - Mixing valve
520 - Return temp. sensor (heating circuit)
521 - Flow temp. sensor (heating circuit)
530 - DHW temp. sensor
531 - DHW electrical backup thermal safety
540 - Flow temp. sensor (Mixed heating circuit)

HYDRAULIC UNIT

5. Wiring diagrams

5-1. Model: WGEP100KR3-19



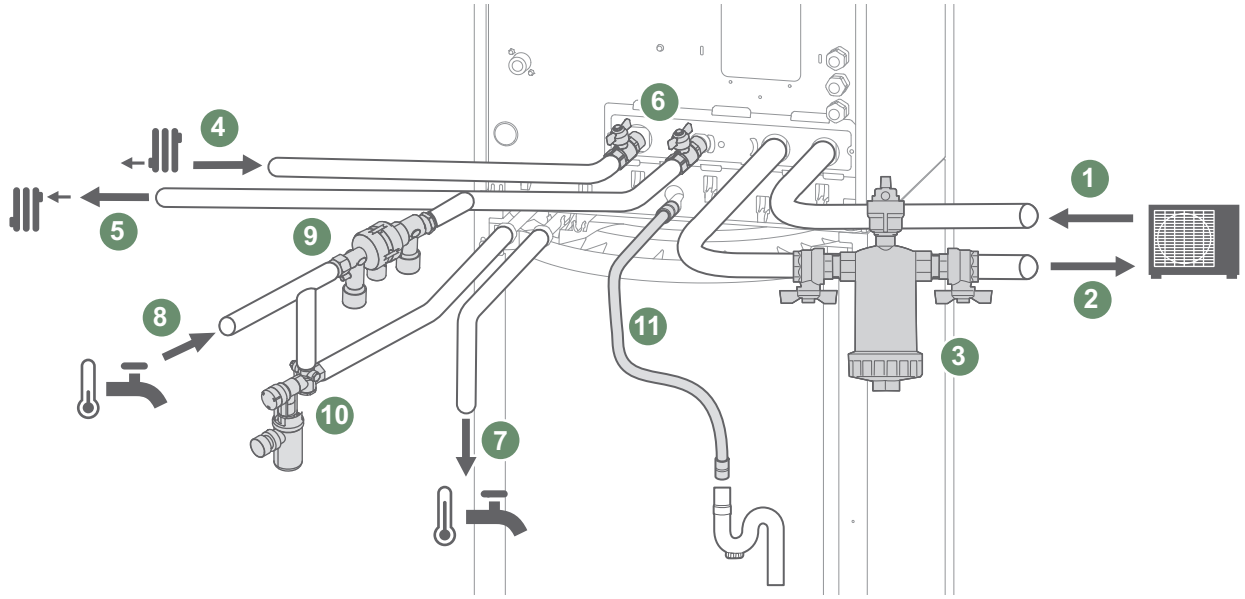
6. Hydraulic connections

6-1. Outdoor unit

Connect the pipe of the outdoor unit to the hydraulic unit respecting the direction of flow.

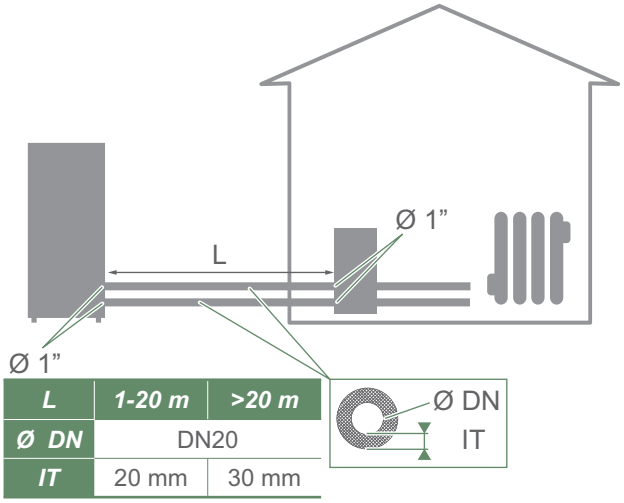
⚠ CAUTION

- 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 - Outdoor unit to indoor unit connection.
2 - Indoor unit to outdoor unit connection.
3 - Sediment trap
4 - Heating return (1 circuit).
5 - Heating flow (1 circuit).
6 - Shut-off valve (not supplied).
7 - DHW (Domestic Hot Water) outlet.
8 - DCW (Domestic Cool Water) inlet
9 - Disconnector (not supplied).
10 - Safety unit (mandatory / not supplied).
11 - Drain pipe (draining).

- **Length and diameters of hydraulic pipes**
  Maximum pipe length: 30 m



L	1-20 m	>20 m
Ø DN	DN20	
IT	20 mm	30 mm

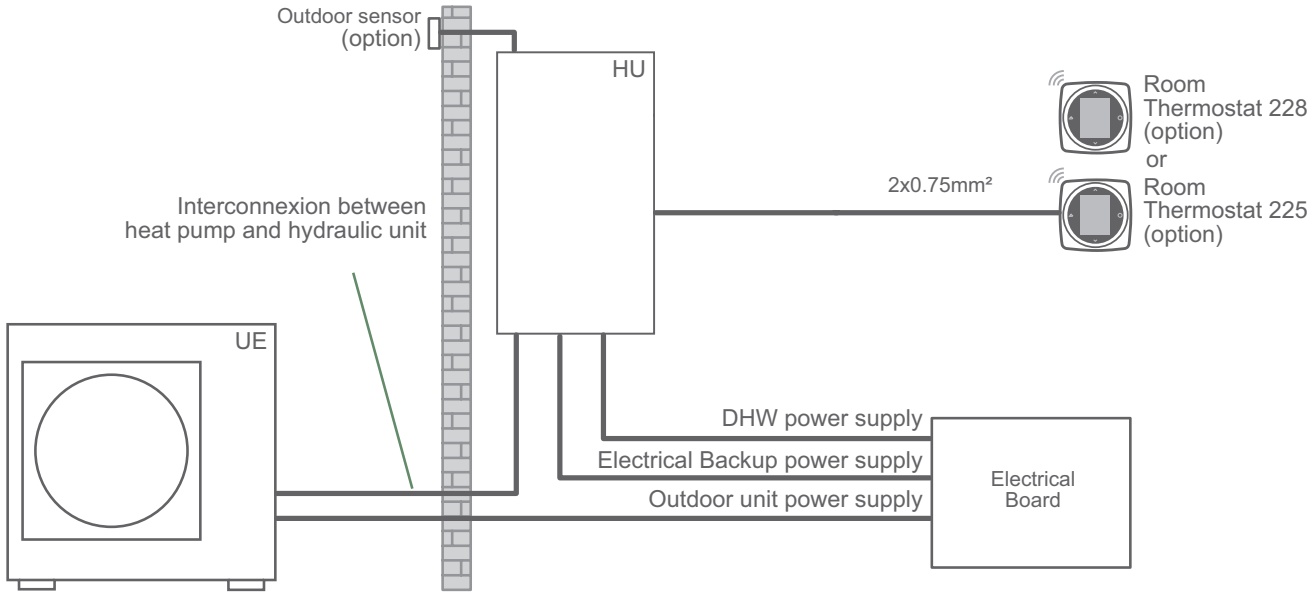
HYDRAULIC UNIT

- **DHW circuit**
  - On the cold water inlet, place a safety valve calibrated to between 7 and 10 bar maximum (depending on local regulations) and connected to a drain pipe leading to the sewer. The drain pipe must be left open to the atmosphere.
  - The drain pipe must be installed in an environment kept frost-free and in a continuous downward slope.
  - Operate the safety valve according to manufacturer's specifications.
  - The domestic hot water tank must be fed with cold water passing through a safety valve.
  - There must be no other valves between the safety valve and the tank.
  - Connect the safety valve drain to the sewer.
  - We recommend installing a thermostatic mixing valve on the hot water outlet.

HYDRAULIC UNIT

7. Electrical connections

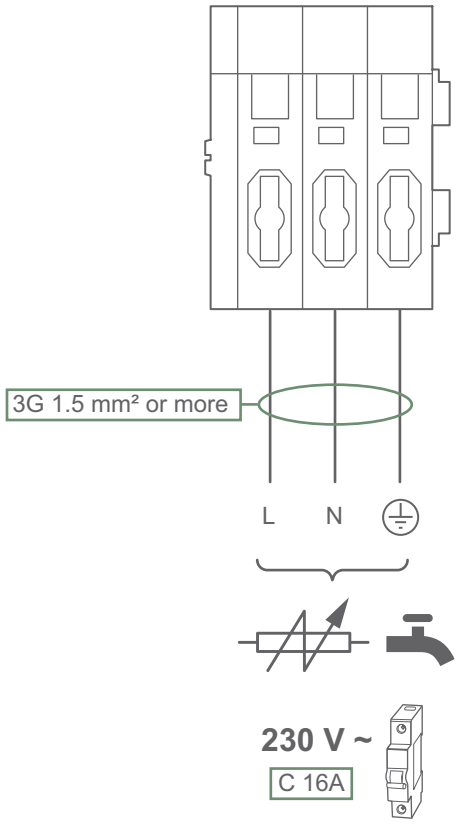
7-1. Overview



7-2. Cable dimensions and protection rating

These cable dimensions are provided for information purposes only and do not exempt the installer from checking that these dimensions match requirements and comply with current standards.

- **DHW power supply**
  The DHW section is powered directly via a 3G 1.5 mm^2 cable (phase, neutral, earth).
  Protection by rated circuit breaker [16 A, C curve].

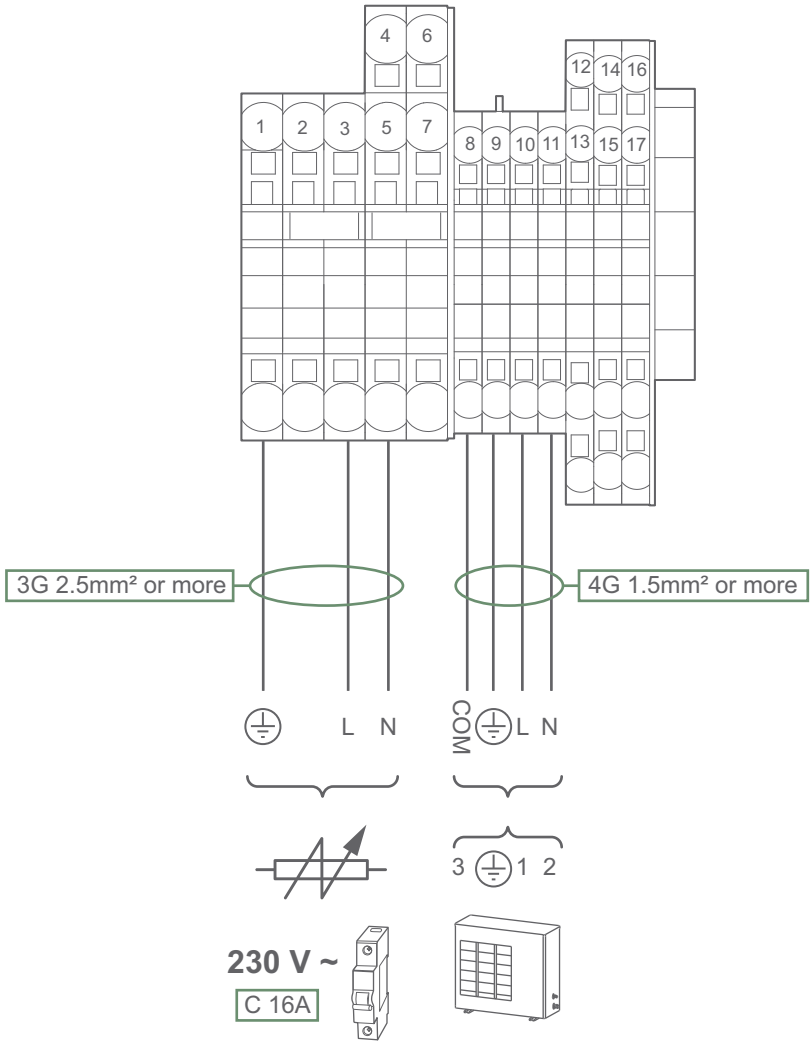


HYDRAULIC UNIT

- **Interconnection between the hydraulic unit and the outdoor unit**
  The hydraulic unit communicate with the outdoor unit via a 4G 1.5 mm^2 cable (phase, neutral, earth).

- **Electrical backup power supply**
  The hydraulic module includes an electric backup installed in the heat exchanger.

Electrical backup		Electrical backup power supply	
Power	**Normal intensity**	**Connecting cable (phase, neutral, earth)**	**Circuit breaker rating/C curve**
3 kW	13 A	3G 2.5 mm^2	16 A
2 × 3 kW (option)	26.1 A	≥ 3G 4.0 mm^2	32 A



HYDRAULIC UNIT

8. Hydraulic performance

8-1. Model: WGEP100KR3-19

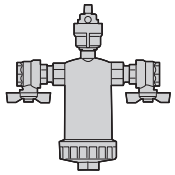
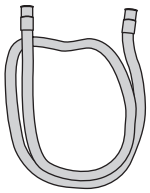
9. Safety devices

HYDRAULIC UNIT

Type of protection	Protection form		Model
			WGEP100KR3-19
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

10. Accessories

Shape	Name
	Sediment trap (800μ)
	Drain pipe
	Additional rating label (IT, DE)
	Additional rating label (NL, PL)
	Installation manual
	Quick installation manual
	Installation reference
	User guide

REFRIGERANT R32
INVERTER

3. CONTROL SYSTEM

CONTENTS

3. CONTROL SYSTEM

1. User interface 03-1

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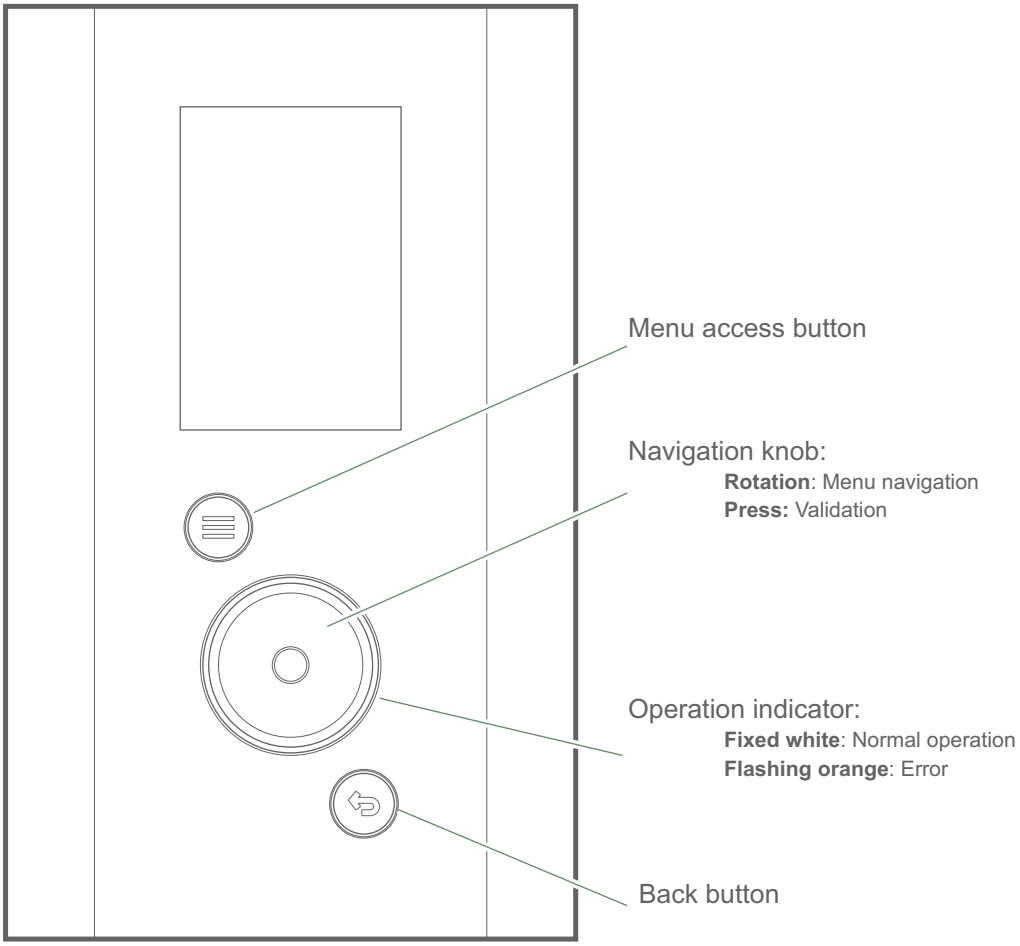
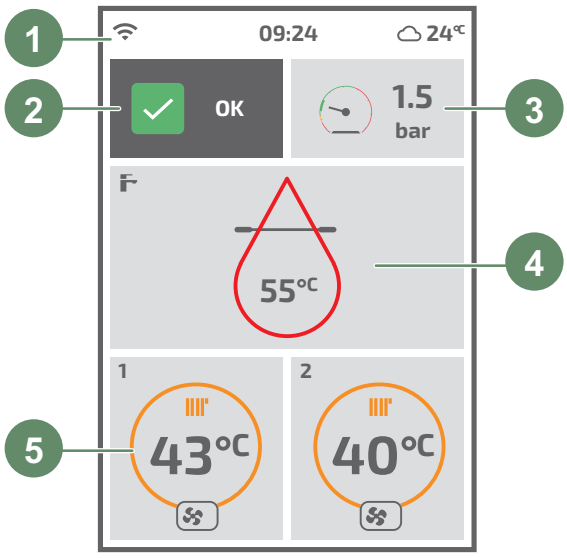
1. User interface

CONTROL SYSTEM



CONTROL SYSTEM

- **Display description**



1. Connectivity
   - Attenuation mode
   - Planned absence
   - Emergency mode
   - Outdoor temperature
   - Installer Menu
2. Normal operation
   - Warning
   - Error
3. Pressure indicator
4. 55°C DHW setpoint
   - Remaining hot water
   - DHW on
   - Heating in progress
   - (Grey) Off / Frost protection
5. 43°C Flow temperature setpoint

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

Mode :
- Heating
- Cooling
- Absence
- Floor drying

Product by :
- Heat pump
- Electric backupvcv
- Heat pump + Electric backup
- Heat pump + Boiler
- Boiler

2. Function table

There are 2 access levels:

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

2-1. Flow setpoint

▶ WITH room thermostat

Heat pump operation is controlled by the room thermostat.

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

	Settings on thermostat
	**• Heating settings**
	- Mode choice.
	- Set room setpoints.
	- Time programming setting

▶ WITHOUT room thermostat

The heat pump's operation is subject to the temperature control.

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

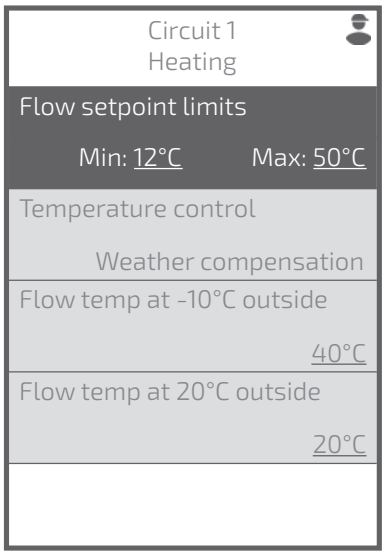
If there are thermostatic valves on the installation, these must be fully open or set higher than the normal temperature setpoint..

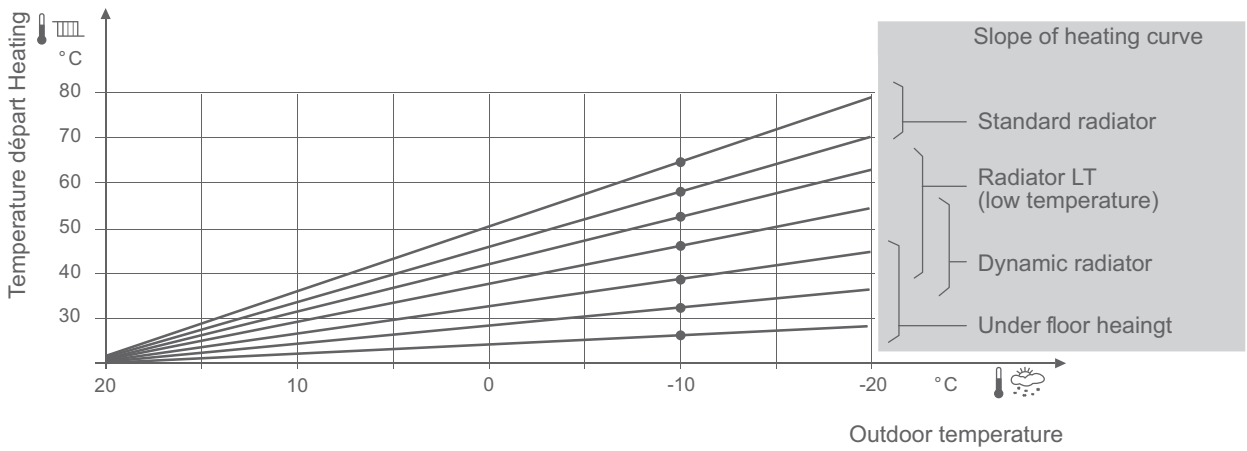
▼ Setting

Flow temperature setpoint setting

This setting is made directly via the interface.

Heating / Cool | Circuit 1 | Heating





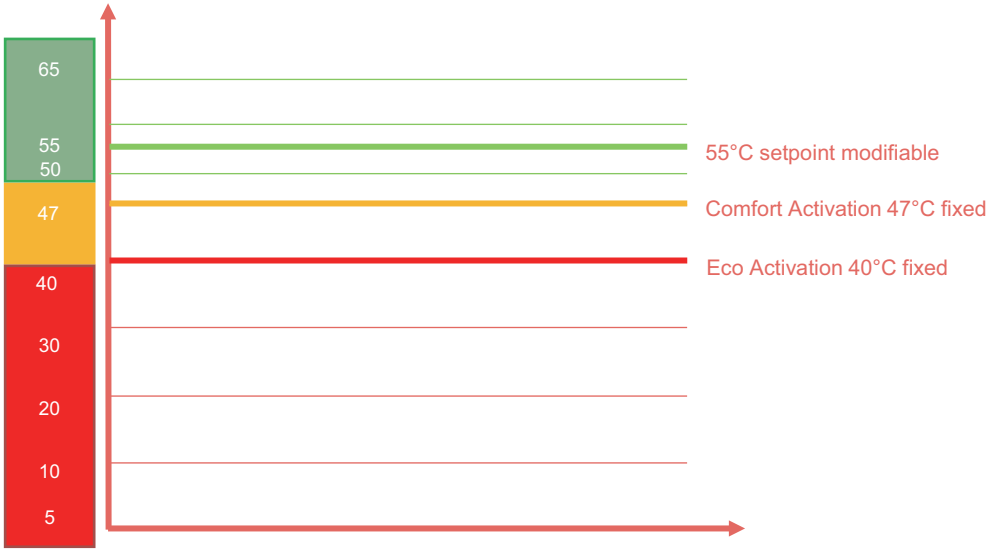
2-2. User menu

Access	Function		Setting range or Display	Setting increment	Factory setting
U	Active functions	Domestic hot water	On/Off	---	---
U		Circuit 1/2	On/Off/Heat/Cool	---	---
U		Emergency mode	Active/Inactive	---	---
U	Domestic hot water	Heating mode	Comfort/Eco	---	---
U		Temperature	45°C... 65°C	1°C	---
U	Away mode	Start of away mode (Day/Month/Time)	---	---	---
U		End of away mode (Day/Month/Time)	---	---	---
U	Energy monitoring	Consumed energy	For heating/For cooling/For hot water/ Total	---	---
U		Produced energy	For heating/For cooling/For hot water/Total	---	---
U	Language		Danish/Deutsch/Ukrainian/ English/Estonian/French/ Italian/Lithuanian/Dutch/ Polish/Romanian	---	---
U	Date/Time		---	---	---
U	Circuit names		---	---	---
U	Wi-Fi	Wi-Fi status	---	---	---
U		Wi-Fi code	---	---	---
U		Disconnect	---	---	---
U	Software version	User interface version	---	---	---
U		Wi-Fi interface version	---	---	---
U		Control board version	---	---	---

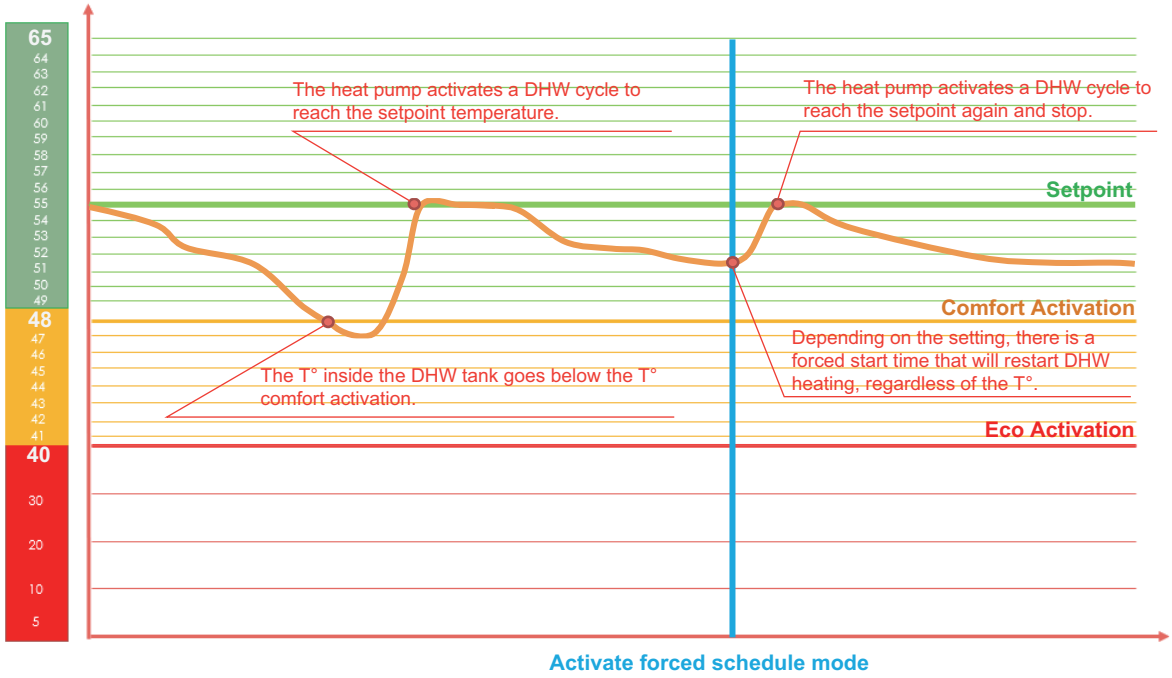
CONTROL SYSTEM

CONTROL SYSTEM

- **Domestic hot water**
  This function guarantees hot water at all time and reduces the consumption.

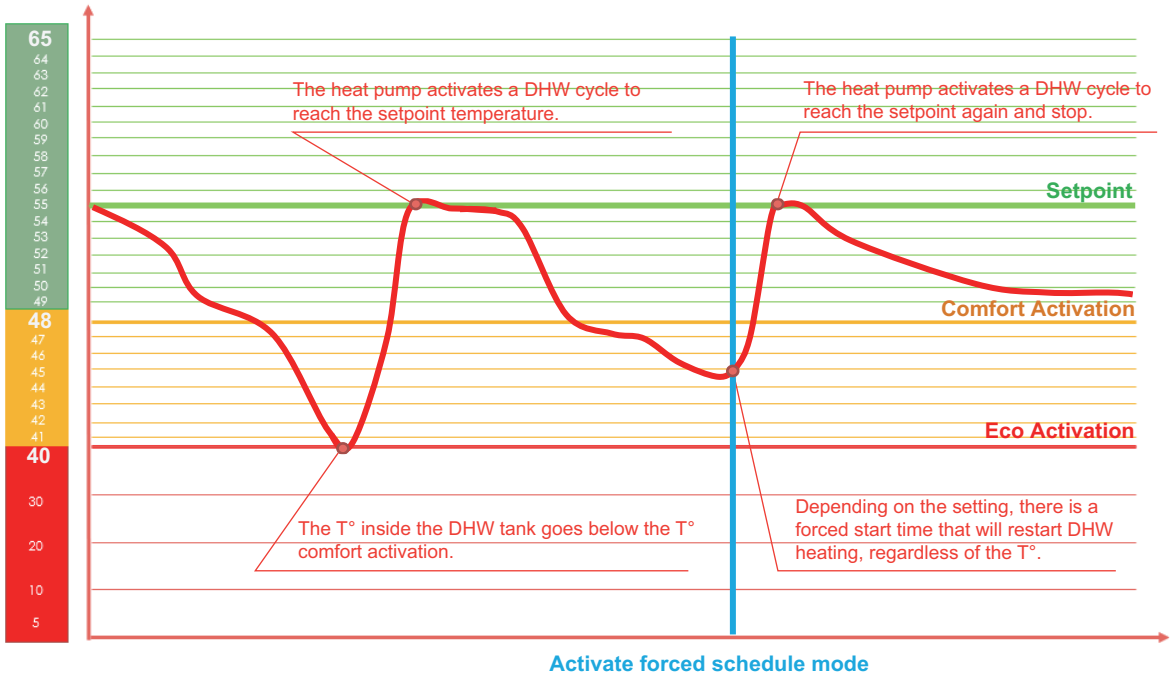


– **Comfort**: provides maximum comfort by ensuring a large quantity of hot water at all times.



DHW Activation by Comfort T°

– **Eco**: for maximum savings while ensuring comfortable heating and sanitary conditions.



DHW Activation by Eco T°

- **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.

CONTROL SYSTEM

2-3. Installed options

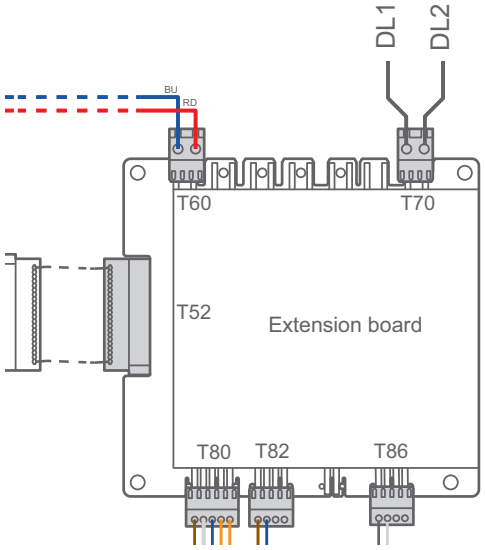
Access	Function		Setting range or Display	Setting increment
I	Installed options	Outdoor unit model	XX kW	1 kW
I		Electrical heater	None/3 kW/3 kW + 3 kW	---
I		Number of circuits	1/2	---
I		Circuit X: Name	Circuit 1/Day/Night/Ground floor/Floor/ Living areas/Bedrooms	---
I		Circuit X: Emitters type	Radiators/Floor/Ceiling/Fan convector	---
I		Circuit X: Comfort served	Heating/Heating and Cooling	---
I		Outside Temperature (Information depending on outside sensor location)	From Outdoor Unit/From remote sensor	---
I		Safety input	Normally Open/Normally Closed	---
I		Ext 1 input: Type of functions	None/Off -peak hours/Photovoltaics/ Smart Grid	---
I		External input 1 Switching settings	0 V/230 V	---
I		Ext 2 input: Type of functions	None/Power shedding/Cooling switch/ Smart Grid	---
I		External input 2 Switching settings	0 V/230 V	---
I		If power shedding order/ Power shedding	Compressor Allowed/ Compressor Forbidden	---

- **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

CONTROL SYSTEM

- **Ext 1 input: Type of functions:**
  External input are an option available with the 2-zone kit or Extension regulation kit (option: UTW-KREXQ)
  – **Component location**



  – **Function**

Setting DL1	Signal on DL1	None	Off-peak hours	Photovoltaics
230 V	230 V	No effect	DHW in Comfort mode	DHW forced ON Setpoint: Maximum of DHW T° (65°C)*
	0 V	No effect	DHW in Eco mode	No effect
0V	230 V	No effect	DHW in Eco mode	No effect
	0 V	No effect	DHW in Comfort mode	DHW forced ON Setpoint: Maximum of DHW T° (65°C)*

*: Photovoltaics function is activated when the DHW is off or load shedding (DL2) is activated.

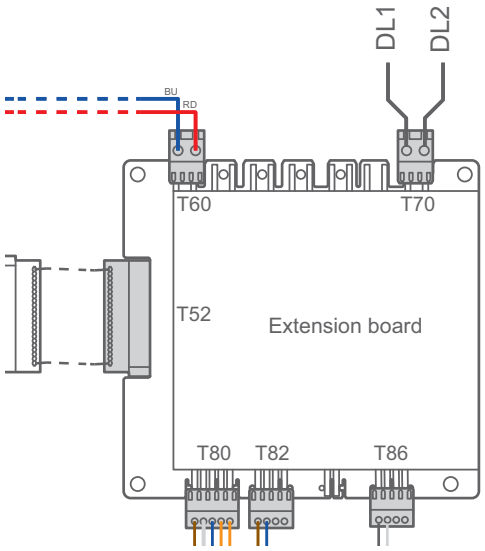
- **Off-peak hours**
  This function indicates you that cheap electricity is currently available.
  The DHW charges to comfort setpoint to optimize power consumption from an economical point of view.
  – Connect the “Power Provide” contact to input DL1 of the T70 connector.
  – Set the “External input 1: Type of functions” to “Off-peak hours” in the menu “Installed Options”.
  – By default: 230 V (DL1): Information "Off-peak hours" activated.
  The DHW is produced at the comfort setting.

- **PhotoVoltaics**
  When there is excess power available from the local Photovoltaics installation then, this function is activated. The DHW is in charge to the max temperature (65°C) with only electrical heater.
  – Connect the “Power Provider” contact to input DL1 of the connector T70.
  – Set the “External input 1: Type of functions” to “PhotoVoltaics” in the menu “Installed Options”.
  – By default: 230 V (DL1): Information "PhotoVoltaics" activated.
  The electric backup for the domestic hot water tank is activated up to a maximum temperature of 65°C.

- **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	Idem Power shedding
0 V	230 V	Idem Off-peak hours
230 V	230 V	DHW forced ON at the maximum of DHW setting

- **Ext 2 input: Type of functions:**
  External input are an option available with the 2-zone kit or Extension regulation kit (option: UTW-KREXQ)
  Smart Grid is automatically set if DL1 is also set in Smart Grid.
  – **Component location**



  – **Function**
    - **Power shedding**
      Electrical heaters are locked and Compressor can be available or locked due to high cost electricity.

Setting DL2	Signal on DL2	Compressor	Outdoor unit	Heating electrical backup	DHW electrical backup
230 V	230 V	Authorized	Yes	No	Yes
	0 V	Forbidden	No	No	Yes
0 V	230 V	Forbidden	No	No	Yes
	0 V	Authorized	Yes	No	Yes

    - **Cooling switch**
      It is possible to control the changeover from “Heating Mode” to “Cooling Mode” via an “external control input”.
      – Connect the external control box to the input DL2 of the connector T70.
      – Set the “External input 2: Type of functions” to “Switch to cooling” in the menu “Installed Options”.
      – By default: Heating/Cooling mode is as follows.
      0 V on DL2: Heating mode
      230 V on DL2: Cooling mode
      – Demand management by circuit mode via room thermostat input(s).

      ⚠ CAUTION
      Do not connect the ON/OFF thermostat to the external control setting.

2-4. Domestic Hot Water

Access	Function		Setting range or Display	Setting increment	Factory setting
I	Settings	Heating mode	Comfort/Eco	---	Comfort
I		Temperature	47°C... 55°C... Temperature max	1°C	55°C
I		Temperature max	Temperature... 65°C	1°C	65°C
I		Forced load	Auto/Manual	---	Auto
I		Forced heating 1/2	Set the time	15 min	---
I	Anti-Legionella	Weekly protection	Enabled/Inactive	---	Inactive
I		Cycle time	Setting the day and time	15 min	---
I		Temperature	55°C... 60°C... 65°C	1°C	60°C

- **Forced load, Forced heating 1/2**
  - If you selected Auto in Forced load:
    Forced load will be started each day at 00:00.
  - If you selected Manual in Forced load:
    You can choose start time in Forced heating 1/2.

  When Forced load is activated, DHW will be forced ON. For details, refer to "Domestic hot water" on page 03-5.

- **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.

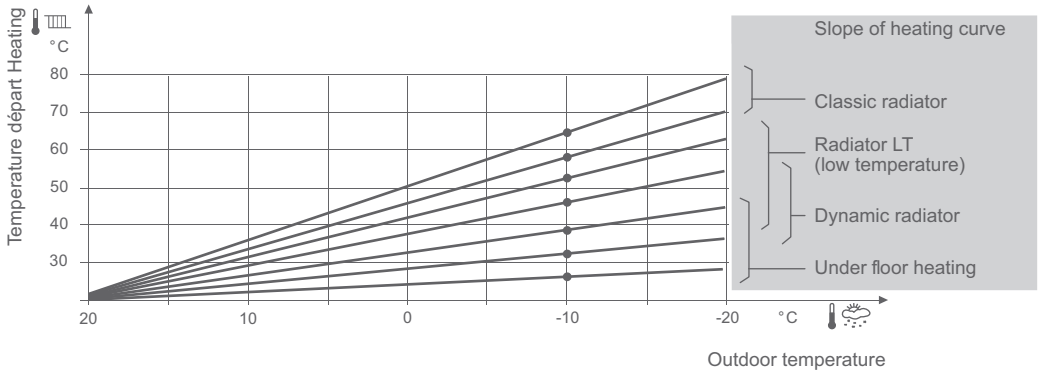
  With this setting, heating up to the legionella setpoint occurs on the scheduled day of the week, regardless of the storage tank temperatures during the previous period.

CONTROL SYSTEM

2-5. Heating/Cooling

Access	Function		Setting range or Display	Setting increment	Factory setting
I	Heating	Flow setpoint limits	Min: 10°C... 20°C	1°C	---
I			Max: 20°C... 65°C	1°C	---
I		Temperature control Refer to flow setpoint	Weather compensation/ Smart Adapt	---	Weather compensation
I		Flow temp at -10°C outside	Flow temp at 20°C outside... 80°C	1°C	---
I		Flow temp at 20°C outside	10°C... Flow temp at -10°C outside	1°C	---
I		Room temperature influence	10%... 50%... 100%	5%	50%
I	Cooling	Flow setpoint limits	Min: 10°C... 35°C	1°C	---
I		Temperature control Refer to flow setpoint	Weather compensation/ Smart Adapt	---	Weather compensation
I		Flow temp at 25°C outside	Flow temp at 20°C outside... 35°C	1°C	---
I		Flow temp at 35°C outside	7°C... Flow temp at -10°C outside	1°C	---
I	Thresholds in Auto	Switch to heating at	15°C... 20°C	1°C	---
I		Cooling switch at	21°C... 30°C	1°C	---

- **Weather compensation**
  Room temperature will be controlled according to Heating Curve shown below.
  Heating curve slope will be changed automatically by choosing emitter type.



- **Smart Adapt**
  This function enables to adapt continuously to disturbances, whether positive (free input: oven, sunshine, activity...) or negative (opening a window...).
  This function will need Room thermostat (option).

- **Flow temp at -10°C outside, Flow temp at 20°C outside**
  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

- **Room temperature influence**
  - **10...95%: Control according to outdoor conditions with room influence**
    The difference between the room temperature and the setpoint value is measured and taken into account for temperature control. This enables taking into account possible heat inputs and ensures a more accurate room temperature control. Thus the differences with the room temperature are taken into account and the room temperature becomes more stable. The influence of the difference is defined as a percentage. The better the installation in the reference room (accurate room temperature, correct installation location, etc.) the higher will be the value that can be set.

    Recommend:
    - Radiator 70%
    - Underfloor heating 30%
    - Fan coil no room thermostat
  - **100%: Control according to room temperature only**
    The flow temperature is adjusted according to the room temperature setpoint, the current room temperature and its evolution. A slight increase in room temperature, for example, causes an immediate drop in the flow temperature.

- **Flow temp at 25°C outside, Flow temp at 35°C outside**
  Heating curve slope in weather compensation will be affected by setting these parameters.
  It is calculated with a linear function between two points (25°C and 35°C).

- **Auto thresholds**
  In AUTO mode the balancing between heating/cooling is automatic according the outdoor temperature.

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 min	8 min
I		Overrun	10 s... 30 s... 600 s	10 s	30 s
I	For DHW production	Maximum DHW charging time	90 min... 120 min... 180 min	10 min	120 min
I		Back to Heating/Cooling	10 min... 30 min...180 min	10 min	30 min
I	Electrical heater	Outdoor temperature threshold	Inactive/-15°C... 2°C... 10°C	1°C	2°C
I		Switching threshold	0°C min... 10°C min... 500°C min	10°C min	10°C min
I	Circulators	Outdoor unit Pump speed	60%... 100%	10%	100%
I		System pump speed	70%... 100%	10%	100%
I		Circuit 2 Pump speed	70%... 100%	10%	100%

CONTROL SYSTEM

- **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.

- **For DHW production**
  - **Maximum 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.

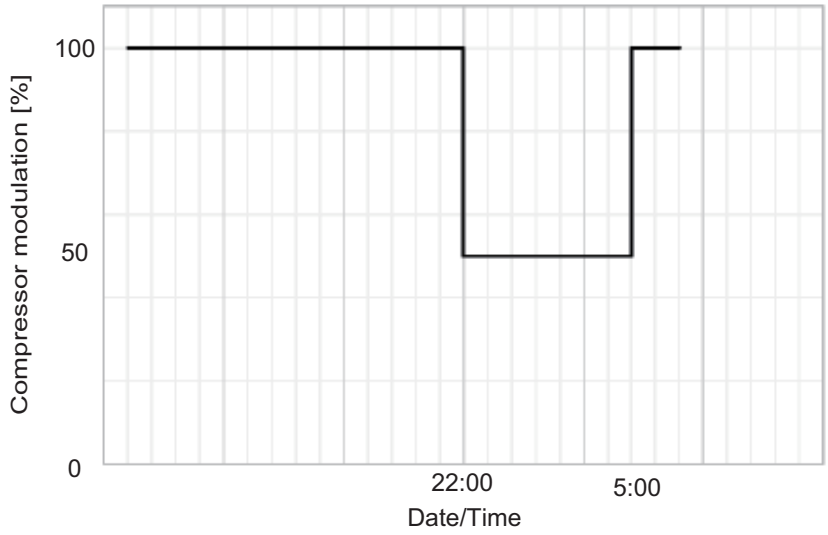
  - **Back to Heating/Cooling**
    If “Back to Heating/Cooling“ time has elapsed, then DHW operation is resumed.

2-7. Additional functions

Access	Function		Setting range or Display	Setting increment	Factory setting
I	Attenuation mode	Compressor limitation	Enabled/Inactive	---	Inactive
I		Max allowed speed	10%... 95%	10%	---
I		Active as	Outdoor > -15°C... 10°C	1°C	---
I		Period 1/2/3	Set the period	15 min	---
I	Air purge cycle		---	---	---
I	Floor drying circuit 1	Drying	Off/Manual for 25 days/ Progressive 18 days + Shock 7 days	---	Off
I		Flow temperature setpoint	20°C... 55°C	1°C	---

CONTROL SYSTEM

- **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**

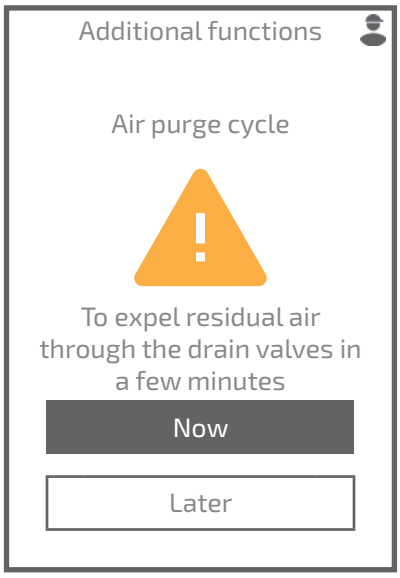
  The air purge cycle takes approximately 4 minutes.

  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.

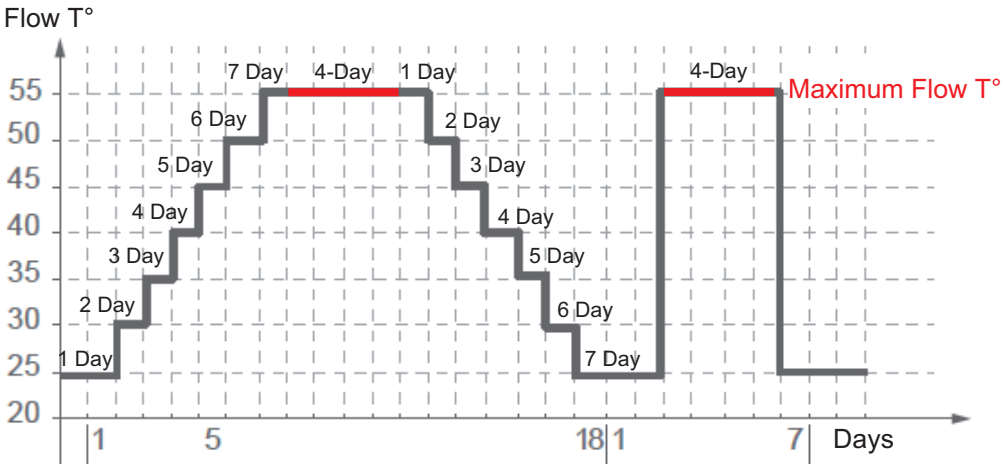


- **Floor drying circuit 1**

  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 Controls: Features	---	---	---
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		Displays the status of the various functions and actuators.	---	---
I	Outdoor unit			---	---
I	Operation Counters			---	---
I	Test Outdoor unit	Mode:	Heating/Cooling	---	---
I		Compressor modulation	Off/100%	---	Off
I	Actuator test	System pump Outdoor unit	Off/60%...100%	10%	Off
I		System pump	Off/70%...100%	10%	Off
I		Electrical heater	Off/On	---	Off
I		Circuit 2 Pump speed	Off/70%...100%	10%	Off
I		Mixing valve Circuit 2	Closed/Opened 10%...100%	10%	Closed
I		DHW electrical heater	Off/On	---	Off
I		Directional valve	Heating/Domestic hot water/ Middle position	---	---
I	Reset		The factory settings, stored in the controller, replace and override the custom personalized programssettings	---	---

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

CONTROL SYSTEM