



Monobloc S1 E

FEATURES

Inverter air-water heat pump

Energy efficiency class in average climate heating: A+++ (35°C) and A++ (55°C)

Powers available: 4 Powers with single-phase R32 refrigerant: 6-8-12-16 kW and 2 Powers with three-phase R32 refrigerant: 12-16 kW

DHW production: up to 60°C

Compressor: airtight twin rotary DC Inverter with steam injection, complete with thermal protection

Expansion valve: electronic

Refrigerant circuit with economiser.

Water side exchange battery: with stainless steel plates, complete with antifreeze heater.

Air side heat exchange battery: with finned battery with copper pipes and aluminium-manganese fins with Golden Fin anti-corrosion treatment, in epoxy resin and hydrophilic treatment.

Helical fan with brushless DC motors equipped with internal thermal protection, safety protection grilles and proportional electronic device for continuous adjustment of the rotation speed of the fans.

Remote ambient air temperature probe, for managing of the unit on the ambient set-point.

Structure: in galvanised steel sheet, complete with condensate tray and unit base antifreeze resistance.

Refrigerant gas: R32*

Operating limits: -25°C +48°C.

External air probe integrated in the machine.



COMPACT TECHNOLOGY

Compact unit and reduced dimensions. For all power sizes the machine is equipped with a single fan unit.



DOMESTIC HOT WATER AT 60°C

Domestic hot water is available with temperatures up to 60°C.



LOW GWP GAS

All power sizes use the R32 refrigerant, characterised by greater efficiency and a greenhouse effect reduced by almost 70% (compared to R410A).



TOUCH SCREEN REMOTE CONTROL PANEL

Standard touch screen remote control panel, with 8 m connection cable. Integrated Wi-Fi module for machine management via smartphone and tablet, with a dedicated app (Ewpe).

REMOTE CONTROL VIA APP Ewpe

The heat pump can be controlled remotely with Tablet and Smartphone thanks to the standard Wi-Fi module (to be interfaced with a wireless router connected to the Internet). The "Ewpe" App can be downloaded free of charge from the Google and Apple Stores, which allows control of the machine via the Cloud.



FUNCTIONS

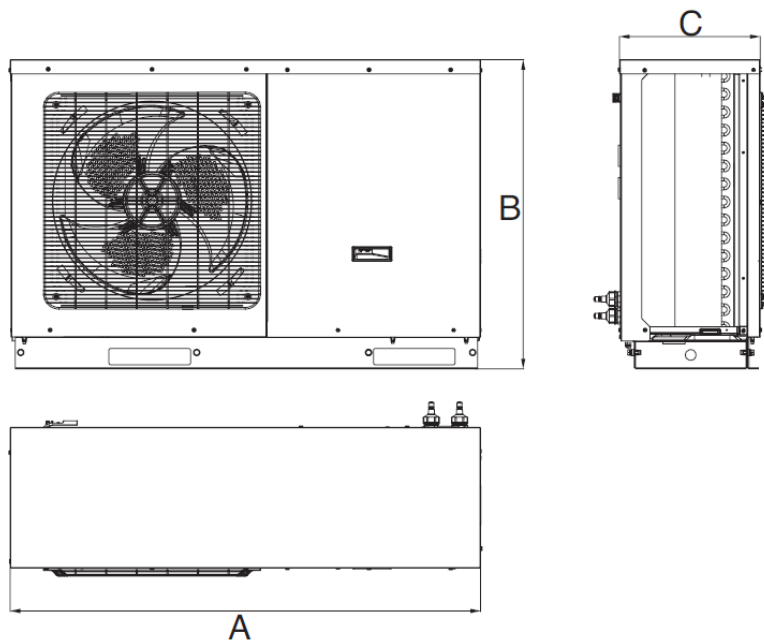
- Management of 3-way diverter valve for the production of domestic hot water.
- Management of 2-way on/off valve for interception of a part of the system.
- Management of auxiliary or supplementary heat source.
- Rapid water heating function
- Anti-legionella cycle function, programmable with activation timer.
- Operation in quiet mode programmable with timer.
- Holiday mode and antifreeze function.
- Weather Dependent Mode function (Climate Control)
- Management by room thermostat, as an alternative to the panel touch screen.

Size						SHERPA MONOBLOC ST E - Single-phase R32												SHERPA MONOBLOC ST E - Three-phase R32					
						6			8			12			16			12T			16T		
INDOOR UNIT CODE						-			-			-			-			-			-		
OUTDOOR UNIT CODE						02021			02022			02023			02025			02024			02026		
Compressor frequency						Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
Precise performance	Heating output	a7/6 - w30/35	(a)	(E)	kW	2.40	6.00	-	2.40	7.50	-	4.80	12.00	-	6.20	15.50	-	4.80	12.00	-	6.20	15.50	-
	COP	a7/6 - w30/35	(a)	(E)	W/W	-	5.00	-	-	4.60	-	-	4.55	-	-	4.31	-	-	4.55	-	-	4.30	-
	Heating output	a2/1 - w30/35	(b)		kW	2.04	5.50	-	2.55	6.38	-	4.08	11.90	-	5.27	13.00	-	4.08	11.90	-	5.27	13.00	-
	COP	a2/1 - w30/35	(b)		W/W	-	4.10	-	-	3.93	-	-	4.14	-	-	4.05	-	-	4.14	-	-	4.05	-
	Heating output	a-7/-8 - w30/35	(c)		kW	1.68	4.92	-	2.10	5.39	-	3.36	9.60	-	4.34	10.65	-	3.36	9.60	-	4.34	10.65	-
	COP	a-7/-8 - w30/35	(c)		W/W	-	3.16	-	-	3.00	-	-	2.80	-	-	3.08	-	-	2.80	-	-	3.08	-
	Heating output	a-15/-16 - w30/35	(d)		kW	1.34	3.90	-	1.68	4.50	-	2.69	8.76	-	3.47	10.54	-	2.69	8.76	-	3.47	10.54	-
	COP	a-15/-16 - w30/35	(d)		W/W	-	2.39	-	-	2.29	-	-	1.79	-	-	1.62	-	-	1.79	-	-	1.62	-
	Heating output (fancoils)	a7/6 - w40/45	(f)	(E)	kW	2.40	6.00	-	3.00	7.50	-	4.80	12.00	-	6.20	15.50	-	4.80	11.00	-	6.20	15.50	-
	COP (fancoils)	a7/6 - w40/45	(f)	(E)	W/W	-	3.80	-	-	3.75	-	-	3.45	-	-	3.30	-	-	3.16	-	-	3.30	-
	Heating output (fancoils)	a2/1 - w40/45	(g)		kW	2.04	5.50	-	2.55	6.30	-	4.08	11.50	-	5.27	13.00	-	4.08	11.50	-	5.27	13.00	-
	COP (fancoils)	a2/1 - w40/45	(g)		W/W	-	3.27	-	-	3.04	-	-	3.20	-	-	3.08	-	-	3.20	-	-	3.08	-
	Heating output (fancoils)	a-7/-8 - w40/45	(h)		kW	1.68	4.02	-	2.10	4.90	-	3.36	8.60	-	4.34	10.78	-	3.36	8.60	-	4.34	10.78	-
	COP (fancoils)	a-7/-8 - w40/45	(h)		W/W	-	2.04	-	-	2.02	-	-	2.60	-	-	2.24	-	-	2.60	-	-	2.24	-
	Heating output (fancoils)	a-15/-16 - w40/45	(i)		kW	1.34	2.82	-	1.68	3.60	-	2.69	8.04	-	3.47	9.92	-	2.69	8.04	-	3.47	9.92	-
	COP (fancoils)	a-15/-16 - w40/45	(i)		W/W	-	1.36	-	-	1.23	-	-	1.76	-	-	1.58	-	-	1.70	-	-	1.58	-
	Cooling power	a35 - w23/18	(l)	(E)	kW	2.32	5.80	-	2.72	6.80	-	4.40	11.00	-	5.80	14.50	-	4.40	11.00	-	5.80	14.50	-
	EER	a35 - w23/18	(l)	(E)	W/W	-	4.30	-	-	4.30	-	-	4.30	-	-	3.77	-	-	4.30	-	-	3.80	-
	Cooling output (fancoils)	a35 - w12/7	(m)	(E)	kW	1.60	4.00	-	2.00	5.00	-	3.62	9.50	-	5.20	13.00	-	3.62	9.50	-	5.20	13.00	-
	EER (fancoils)	a35 - w12/7	(m)	(E)	W/W	-	3.10	-	-	3.10	-	-	3.05	-	-	2.65	-	-	2.97	-	-	2.75	-
Electrical data	System circulator absorption				W	4-75			4-75			4-75			4-75			4-75			4-75		
	Internal unit electrical power supply				V/ph/Hz	-			-			-			-			-			-		
	Maximum absorbed current of the internal unit with active heating elements				A	-			-			-			-			-			-		
	Internal unit maximum power consumption with active heating elements				kW	-			-			-			-			-			-		
	Additional electric heating elements				kW	-			-			-			-			-			-		
	External unit electrical power supply				V/ph/Hz	220-240/1/50			220-240/1/50			220-240/1/50			220-240/1/50			380-415/3/50			380-415/3/50		
	Outdoor unit maximum absorbed current				A	10.4			10.4			25			29			12			12		
Cooling circuit	Outdoor unit maximum absorbed power				kW	2.3			2.3			5.75			6.67			7.8			7.8		
	Compressor type					Inverter rotary			Inverter rotary			Inverter rotary			Inverter rotary			Inverter rotary			Inverter rotary		
	Refrigerant inlet connection diameter				"	-			-			-			-			-			-		
	Coolant gas		(p)			R32			R32			R32			R32			R32			R32		
	Global warming potential				GWP	675			675			675			675			675			675		
	Coolant gas load				kg	0.87			0.87			2.2			2.2			2.2			2.2		
	Refrigerant piping length limit without minimum surface check according to IEC 60335-2-40:2018		(q)			-			-			-			-			-			-		
Hydraulic data	Hydraulic connections				"	1			1			1			1			1			1		
	Capacity of expansion vessel				l	2			2			3			3			3			3		

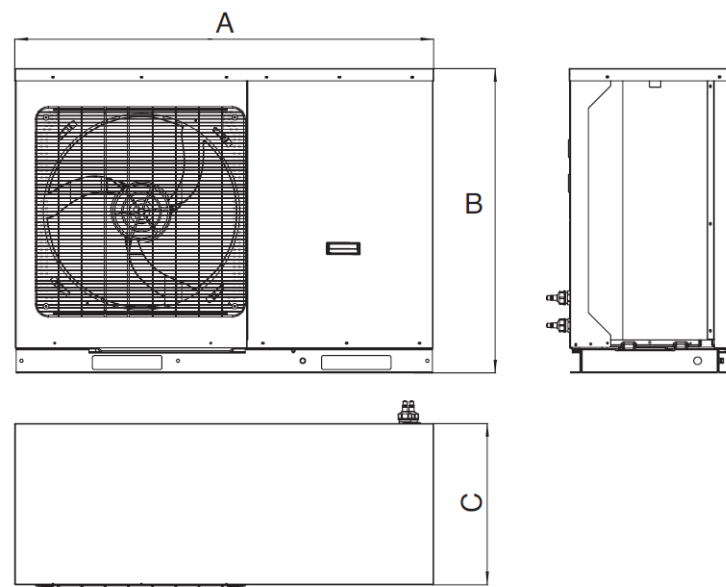
INSTALLATION

DIMENSION

OUTDOOR UNIT 6 - 8



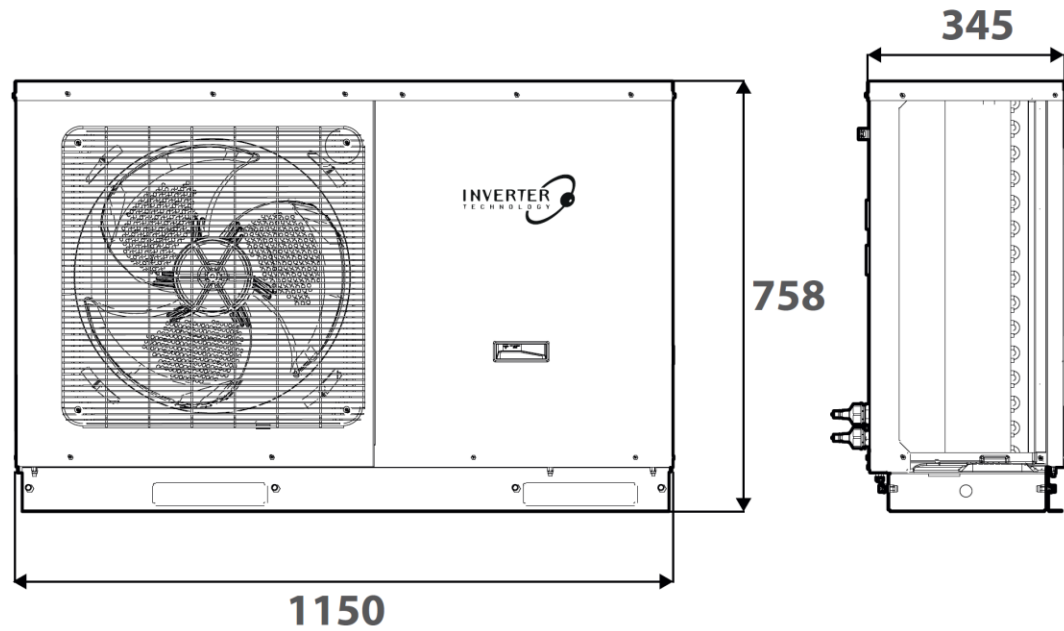
OUTDOOR UNIT 12 - 16 - 12T - 16T



		6	8	12	16	12T	16T
		MONOFAN				MONOFAN	
A	mm	1150	1150	1200	1200	1200	1200
B	mm	758	758	878	878	878	878
C	mm	345	345	460	460	460	460
Net weight	kg	96	96	151	151	151	151

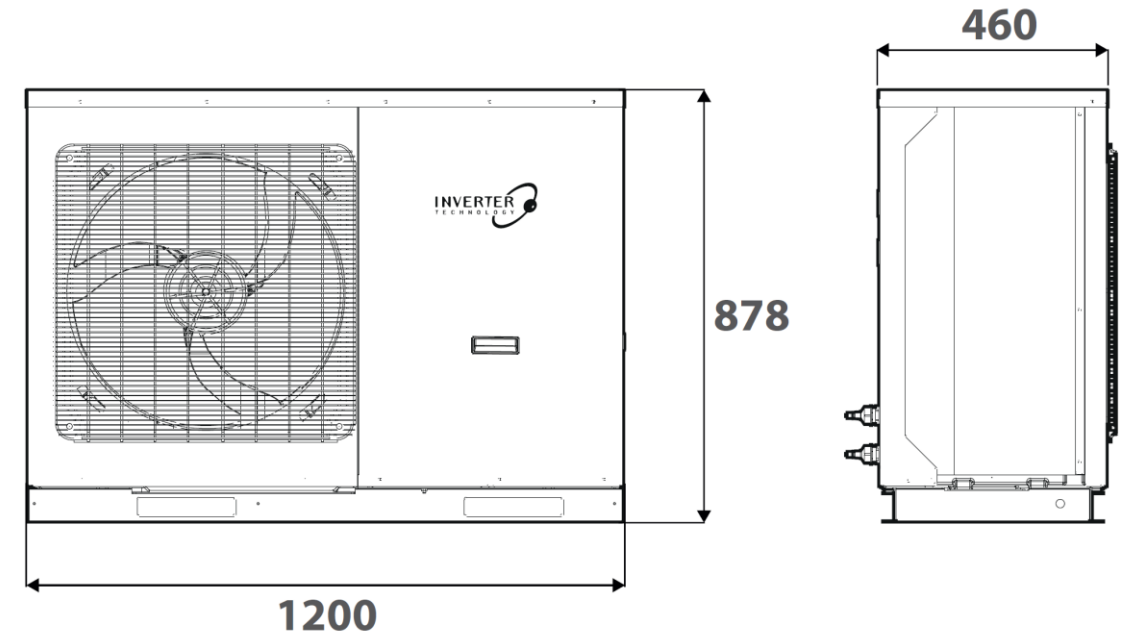
DIMENSION

S1 E 6 - S1 E 8 (mm)



Single fan

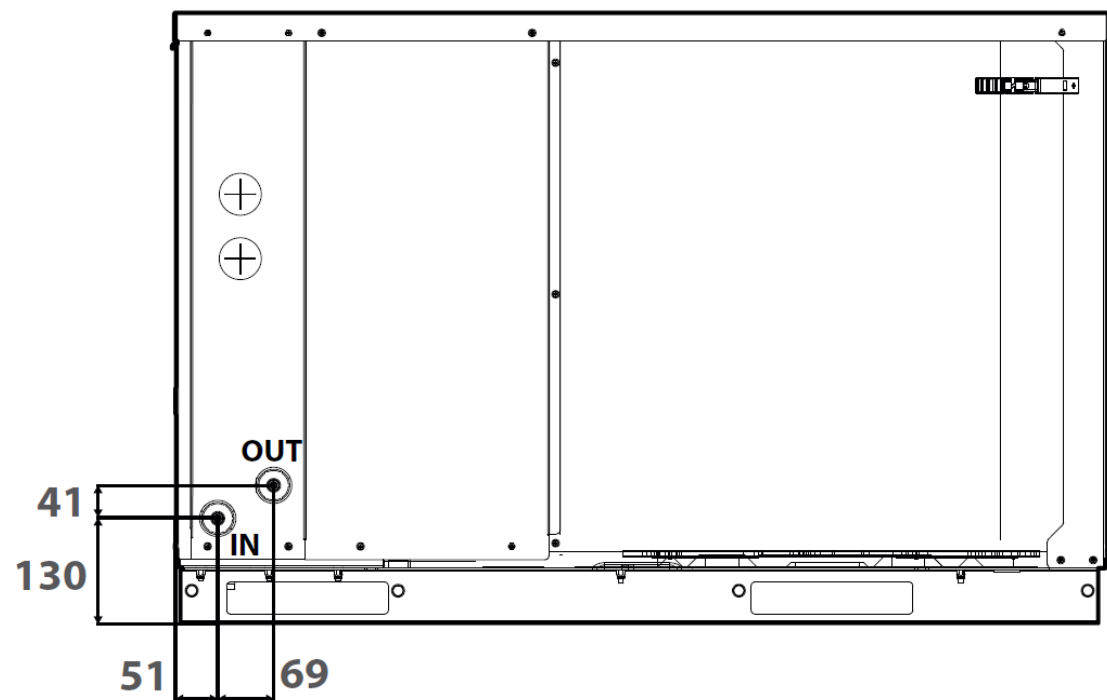
S1 E 12 - S1 E 16 - S1 E 12T - S1 E 16T (mm)



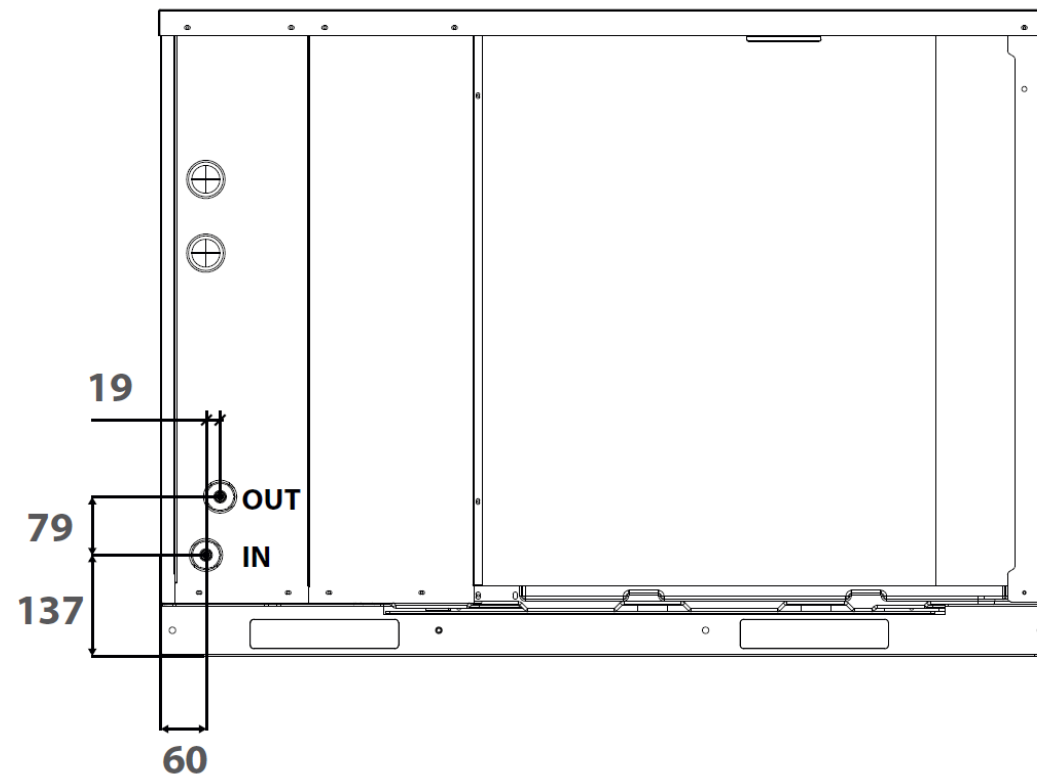
Single fan

HYDRAULIC CONNECTION

S1 E 6 - S1 E 8 (mm)



S1 E 12 - S1 E 16 - S1 E 12T - S1 E 16T (mm)



CONDENSATE DRAIN

If it is necessary to drain the condensation produced during heat pump operation (heating and DHW), it is necessary to plug 3 of the 4 holes using the plugs supplied and connect the condensation drain to the piping connection also supplied.

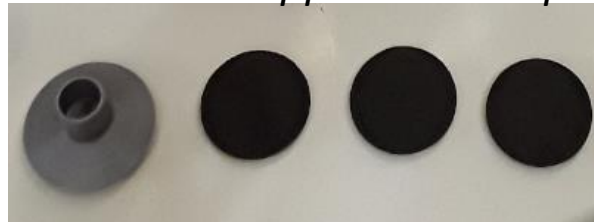
In this way, the condensation produced will not "rain" down from the 4 holes but will be channeled and discharged elsewhere.

N.B: pay attention to the slope of the condensate drain and to the dirt that could clog the drainpipe in the long run.

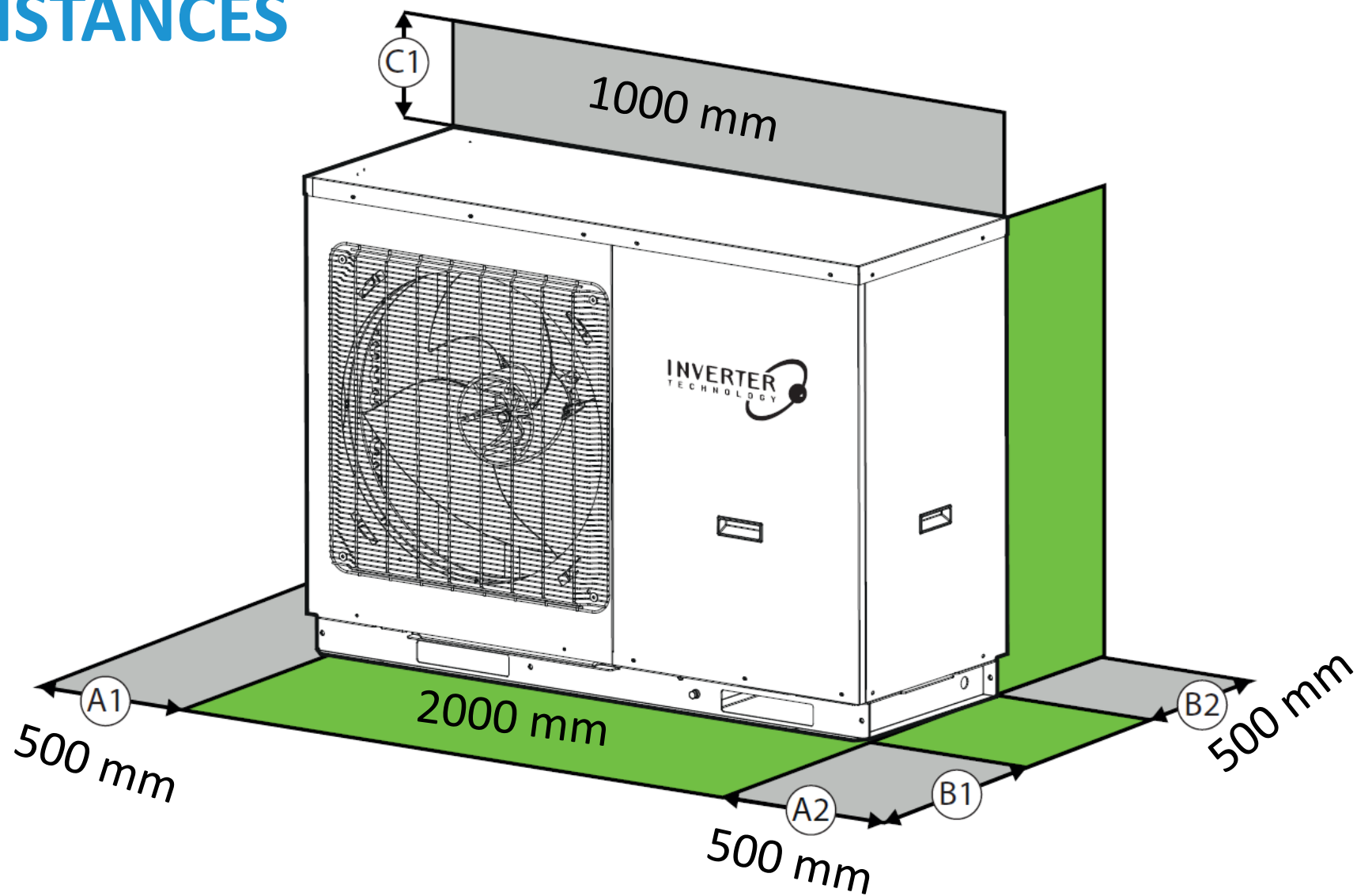
View from the bottom of the unit



Accessories supplied to complete the condensate drain (3 plugs + 1 junction)



MINIMUM DISTANCES



ACCESSORY

Accessories supplied:

- Touch screen control panel (with 8 meters extension cable)
- Room air sensor RT6 (for room temperature control)
- Optional water probe for management of external generator or electric heaters (RT5)
- DHW tank probe RT7 (for DHW management)
- Y-Filter (mandatory installation)
- Plugs and junction condensate drain

Available accessories separately:

B0622 – 3 WAY KIT FOR DOMESTIC HOT WATER (OLD – PHASE OUT)

B0916 – 3 WAY KIT FOR DOMESTIC HOT WATER (NEW)

B0866 – 20 METERS CABLE EXTENSION KIT FOR CONTROL PANEL

15 meters cable extension for control panel connection with outdoor unit (standard 8 meters).

ACCESSORY – KIT B0622 – 3 WAY VALVE (OLD)

**OLIMPIA
SPLENDID**

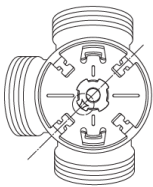
3 WAY VALVE KIT 1" B0622
KIT VALVOLA 3 VIE 1" B0622



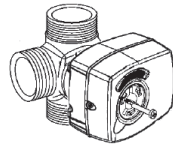
LVD 2006/95/EC
EMC 89/36/EEC
RoHS 2002/95/EC



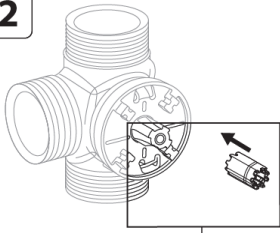
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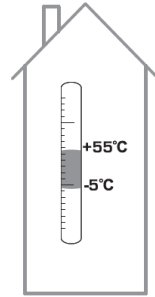
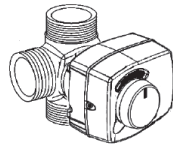
4



2



5



i

XT2

	9	10	11
RISCALDAMENTO	L1 (OFF)	L2 (ON)	N
RAFFRESCAMENTO	ACS		
Valvola a 3 vie 220-240V ~ 50Hz			

INDOOR UNIT SHERPA TERMINAL BLOCK
MORSETTIERA UNITA' INTERNA SHERPA

cod.277321A

ACCESSORY – KIT B0916 – 3 WAY VALVE (NEW)



Valve kit components



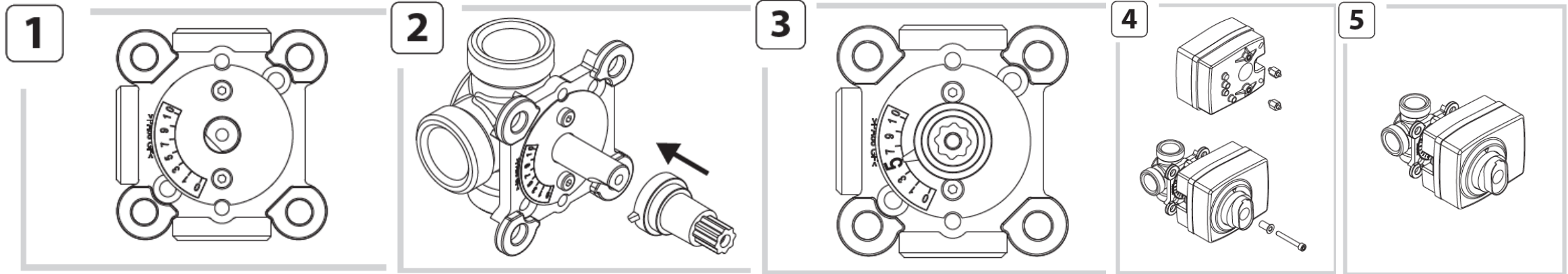
Front view



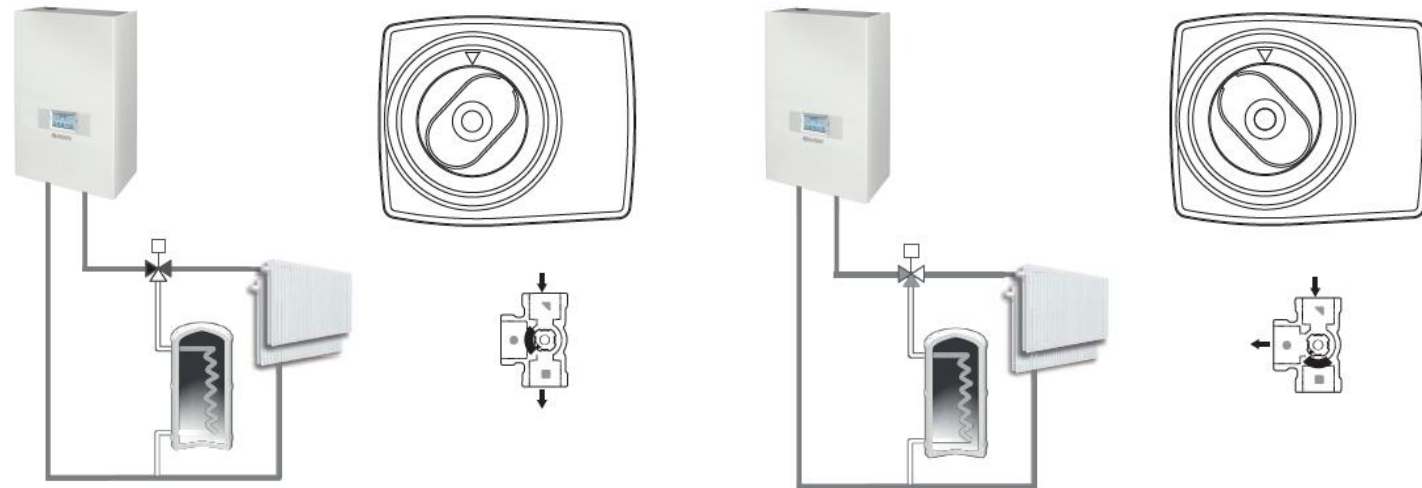
Backside view

ACCESSORY – KIT B0916 – 3 WAY VALVE (NEW)

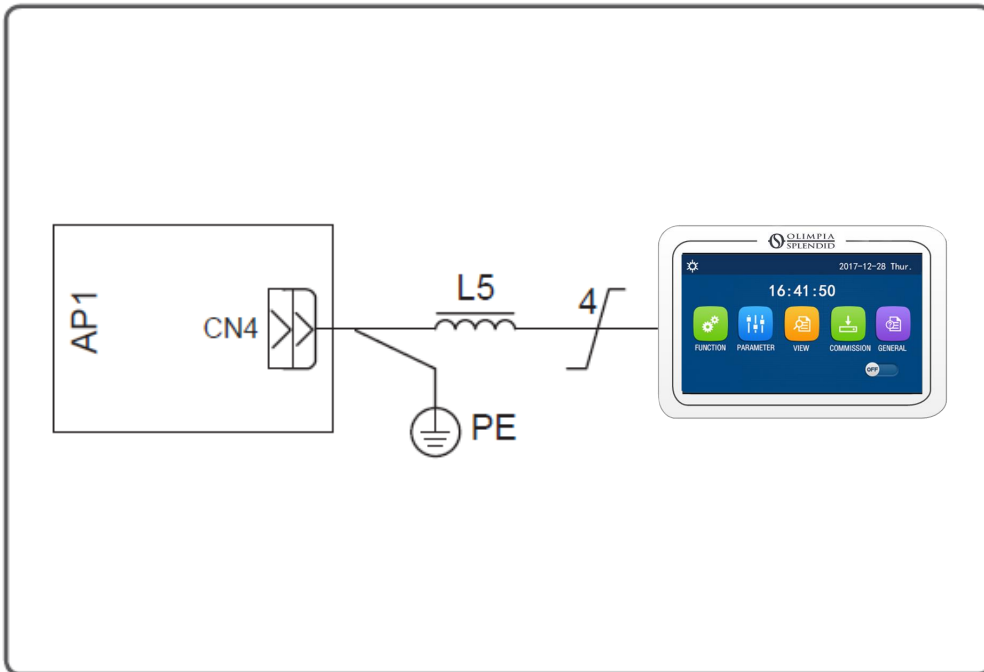
Assembly instructions in case of replacing of the valve



Valve switching in relation to
type of demand whether DHW
or System



ACCESSORY – KIT B0866: EXTENSION CABLE FOR REMOTE CONTROL

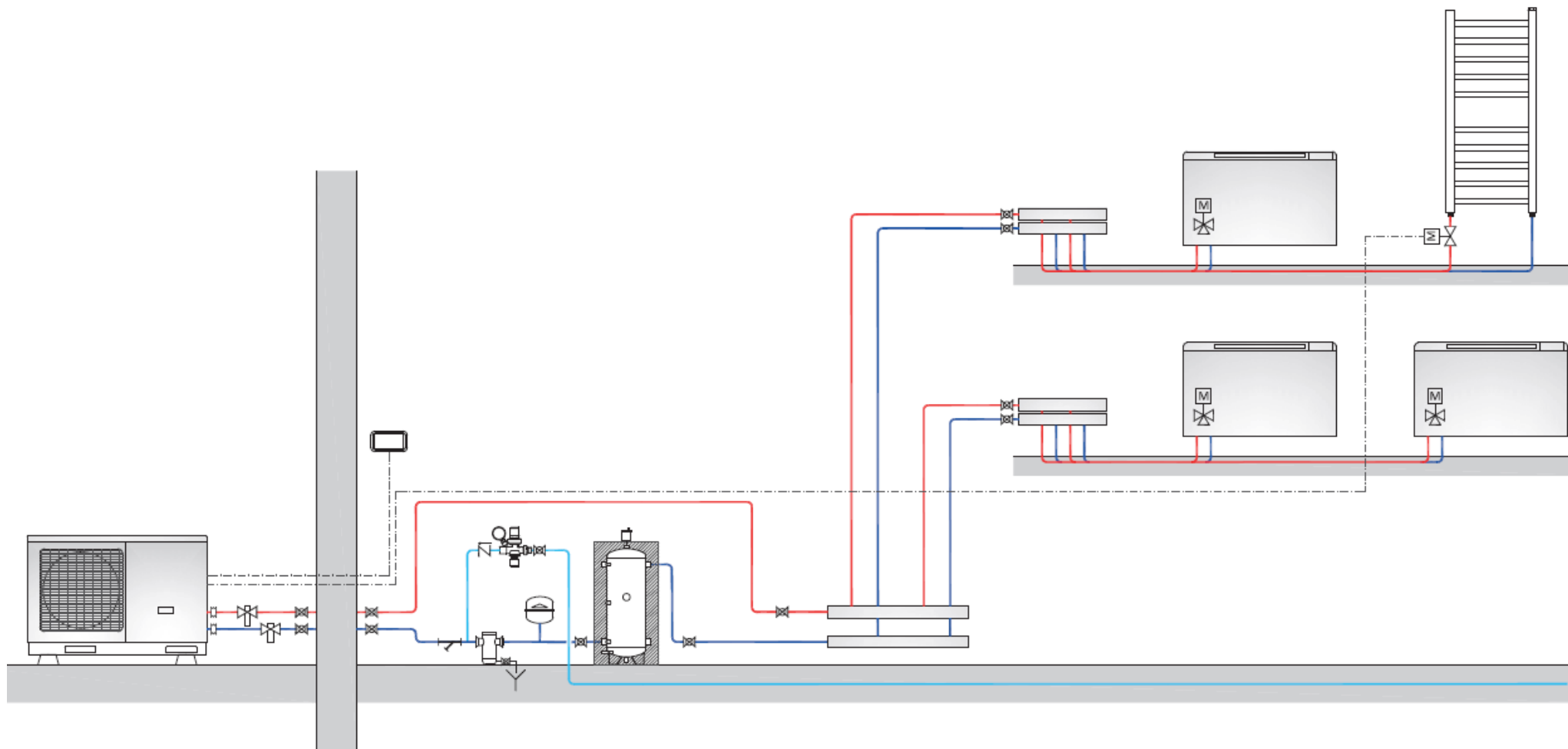


An 8-metre cable is supplied to connect the touch control.

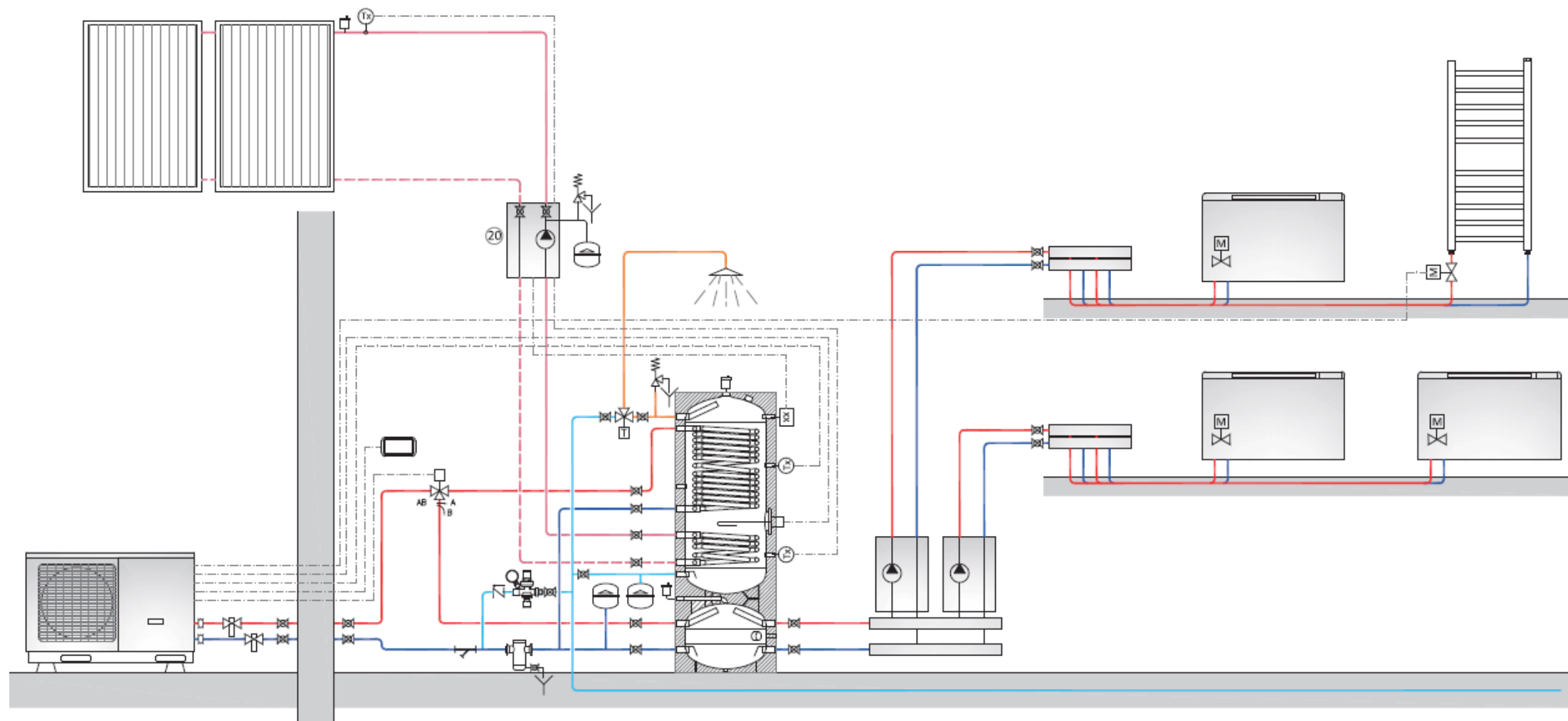
A 15-metre cable is supplied when the B0866 kit is purchased.

SYSTEM DIAGRAMS

SHERPA MONOBLOC STE heat pump (heating and air conditioning) Bi2 SLR fan coil radiator terminals with 3-way valves and inertial storage in series on the return pipe of the air conditioning system.

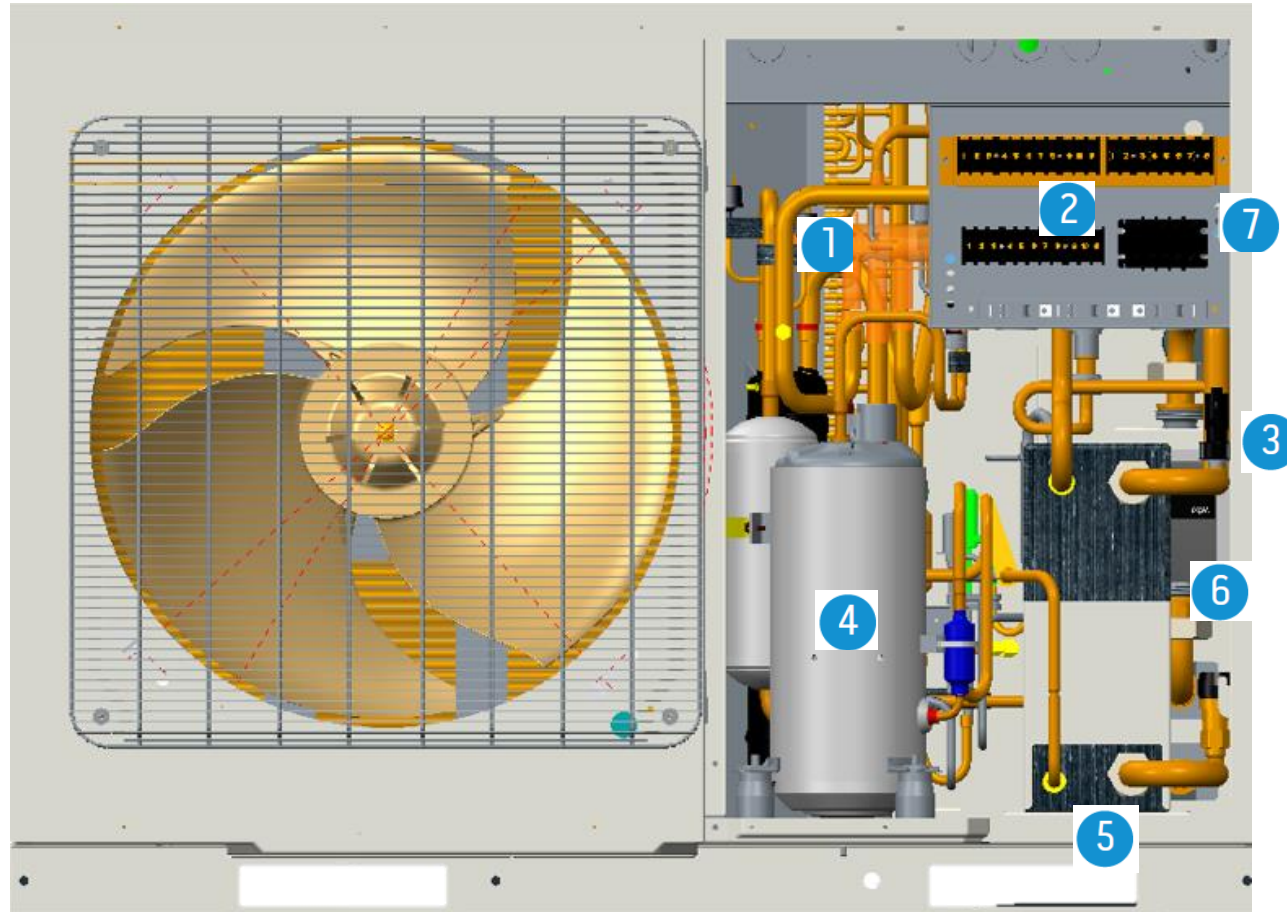


SHERPA MONOBLOC STE heat pump (heating and air conditioning; DHW production) Bi2 SLR fan coil radiator terminals, domestic water integration with solar thermal and integrated inertial storage (used as hydraulic separator) for the air conditioning system.



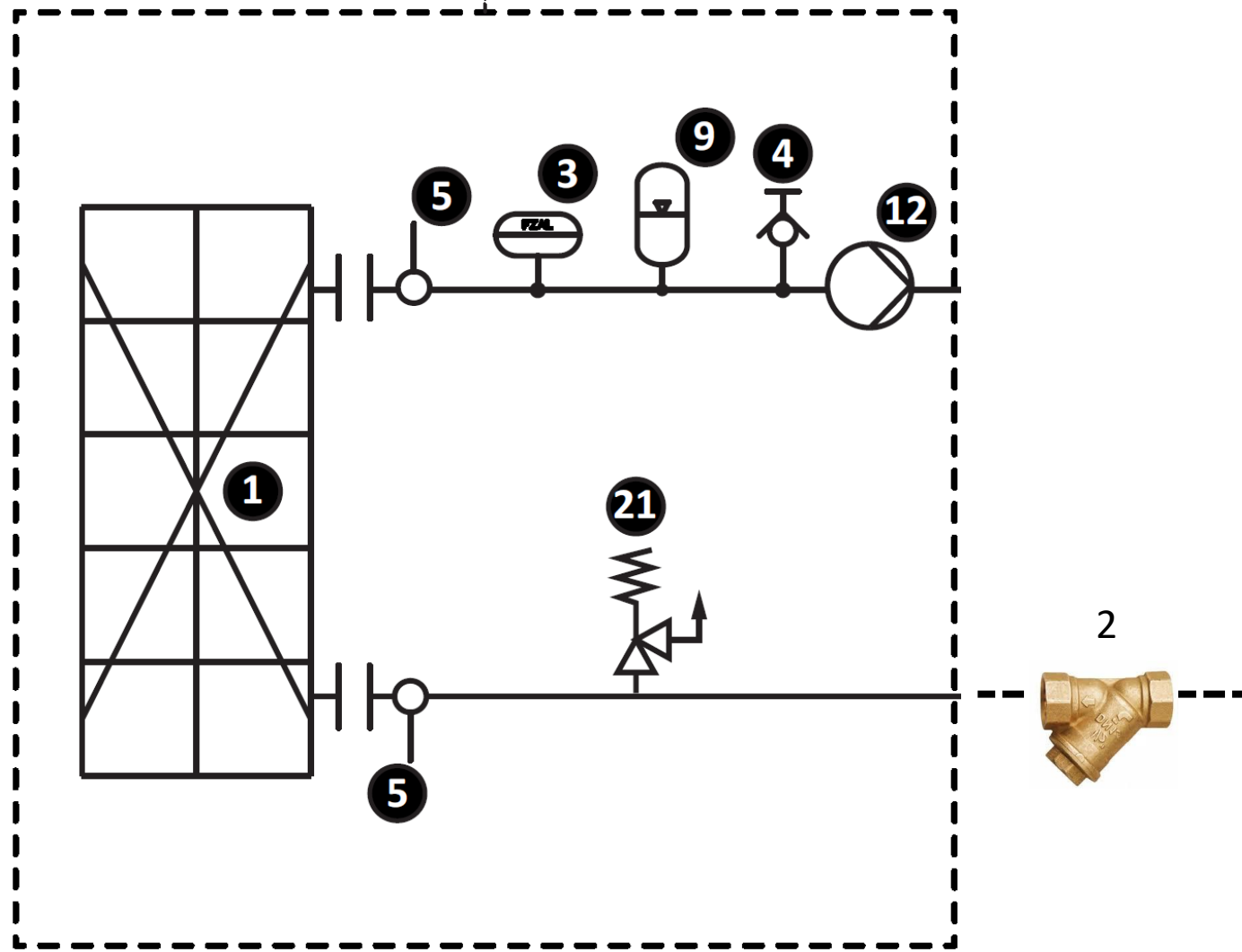
COMPONENTS DESCRIPTION

COMPONENTS



1. Reversible gas circuit
2. Electrical panel
3. Flow switch
4. DC inverter rotary compressor
5. Plate heat exchanger
6. Variable range circulator
7. Expansion vessel (2 or 3 litres)

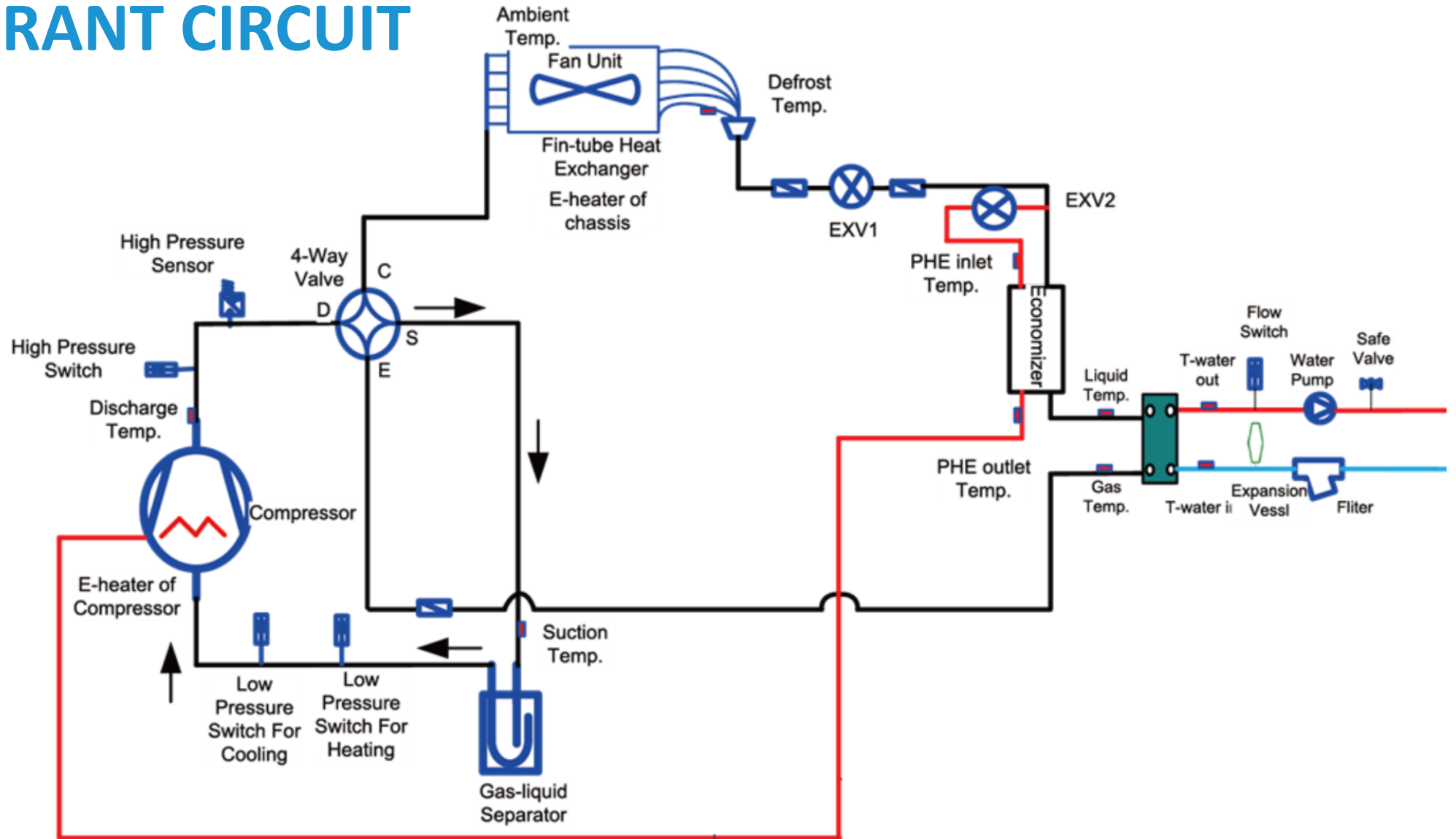
COMPONENTS



COMPONENTS PROVIDED AS STANDARD

- 1. Plate heat exchanger
- 2. Water filter (supplied as standard)
- 3. Flow switch
- 4. Air vent valve
- 5. Water temperature sensors (IN/OUT)
- 9. Expansion Tank
- 12. Pump
- 21. Safety valve

REFRIGERANT CIRCUIT



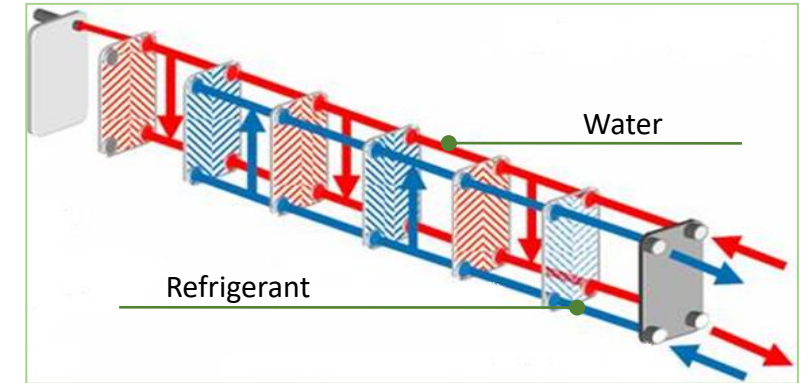
- Economiser and main plate heat exchanger



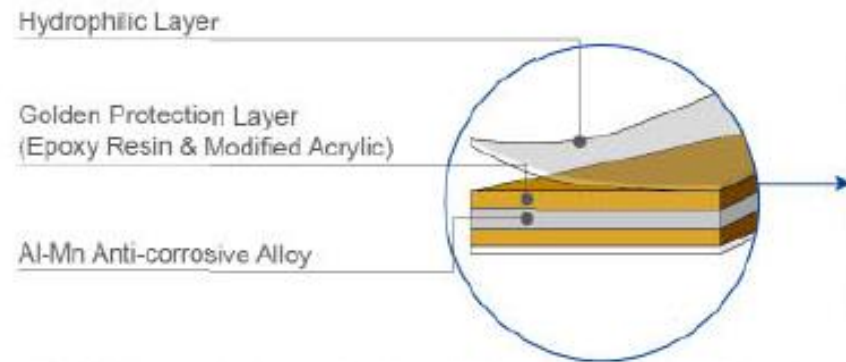
Danfoss PHE
(Economiser)



Alfa Laval PHE
(Water exchange – gas R32)



- External battery coated with Golden fin (Al-Mn) material



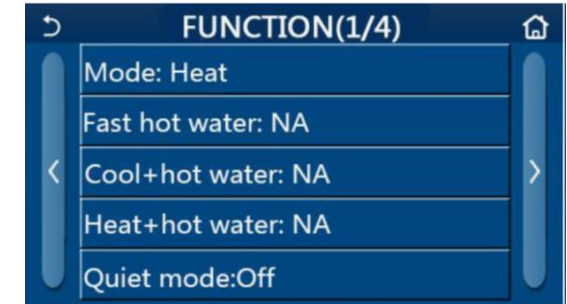
USER INTERFACE



Icon	Meaning
	HEATING mode active
	COOLING mode active
	Domestic hot water mode
	Domestic hot water + Heating
	Domestic hot water + Cooling
	QUIET function active
	Anti-legionella cycle in progress
	EMERGENCY function active
	HOLIDAY function active
	Radiant floor debug function active
	Radiant floor debug function error
	"External contact open" device
	Defrosting in progress
	WiFi connection
	Key for going back to the previous page/menu
	Key for going to the HOME window (menu selection)
	This icon indicates that an alarm is currently active

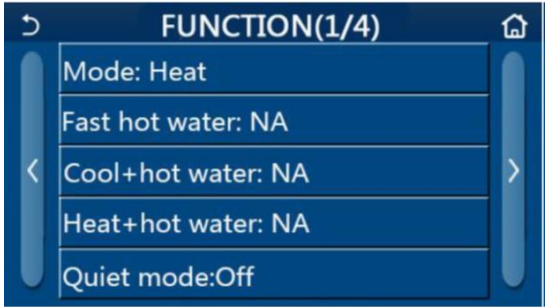
MENU' FUNCTION

	Parameter	Range	Default	Notes
1	Mode	Cooling	Heating	1. When DHW is deactivated, only the heating or cooling setting will be displayed. 2. For heating only units, only the heating or heating + DHW setting will be displayed.
		Heating		
		DHW		
		Cooling + DHW		
		Heating + DHW		
2	Fast DHW	On/off	Off	
3	Priority Cooling/DHW	Cooling / DHW	Cooling	
4	Priority Heating/DHW	Heating / DHW	Heating	
5	Quiet Mode	On/off	Off	
6	Quiet mode timer	On/Off	Off	
7	Climatic curve	On/Off	Off	
8	Weekly timer	On/Off	Off	
9	Holidays	On/Off	Off	
10	Legionella treatment	On/Off	Off	By default, the cycle is activated on Saturdays at 11:00 pm
11	Timer clock	On/Off	Off	
12	Temp. Timer			
13	Emergency mode	On/Off	Off	
14	Holiday mode	On/Off	Off	
15	Preset mode	On/Off	Off	
16	Error Reset	/	/	Some alarms can be reset only after a manual reset
17	Reset wi-fi	/	/	It is used to reset the Wi-Fi configuration.
18	Reset	/	/	Reset user parameters



MENU' FUNCTION → MODE

	Parameter	Range	Default	Notes
1	Mode	Cool	Heat	1. When DHW is deactivated, only the heating or cooling setting will be displayed. 2. For heating only units, only the heating or heating + DHW setting will be displayed.
		Heat		
		Hot water		
		Cool + Hot water		
		Heat + Hot water		



Mode

☐ Heat

☐ Heat + Hot water

☐ Hot water

☒ Cool

☐ Cool + hot water

OK

Cancel

MENU' FUNCTION → FAST DHW (ELECTRIC HEATER KM3)

	Parameter	Range	Default	Notes
2	Fast hot water	On/off	Off	



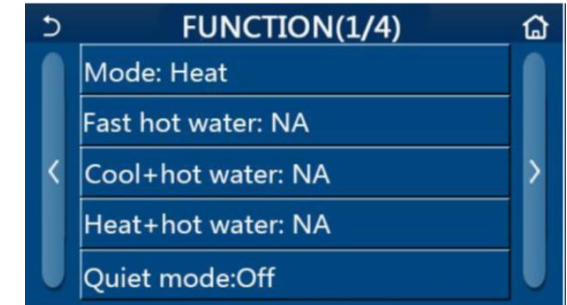
Fast hot water

☒ Off

☐ On

OK

Cancel



If the function is active in case of DHW demand, the compressor and the additional electric DHW heater start together.

Conditions:

- DHW Setted (start-up menu)
- DHW mode on (function menu)
- Configured DHW electric heater (start up menu)
- DHW electric heater installed on the DHW tank and electrically connected to terminals 18 - 19 - 20(KM3)

MENU' FUNCTION → DHW PRIORITY

	Parametro	Range	Default	Notes
3	Cooling/DHW Priority	Cooling / DHW	Cooling	
4	Heating /DHW Priority	Heating / DHW	Heating	

Cool + hot water

☐ Cool

☒ Hot water

OK

Cancel

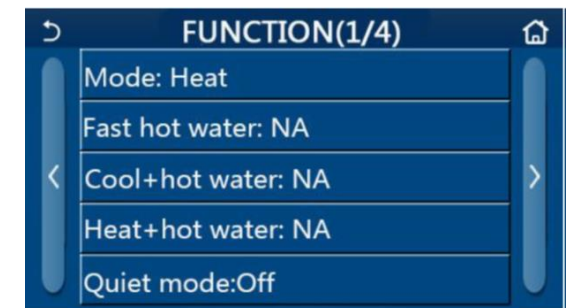
Heat + hot water

☐ Heat

☒ Hot water

OK

Cancel

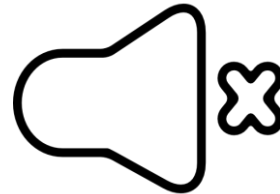
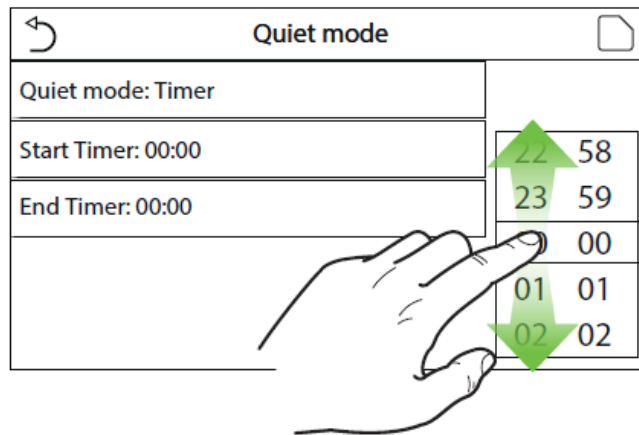


In these 2 parameters you can set the activation priority on system or domestic hot water for the cooling and heating functions respectively.

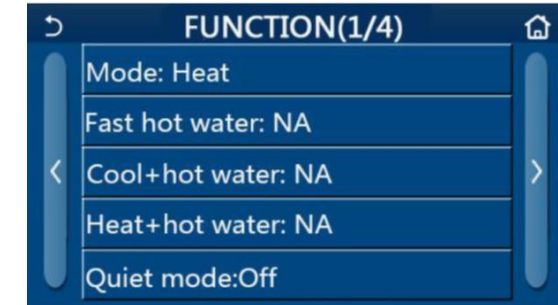
ATTENTION! By default for both seasons priority is given to the heating/cooling system. Change both parameters to allow the domestic hot water demand to be satisfied first.

MENU' FUNCTION → QUIT MODE

	Parameter	Range	Default	Notes
5	Quiet mode	On/off/Timer	Off	

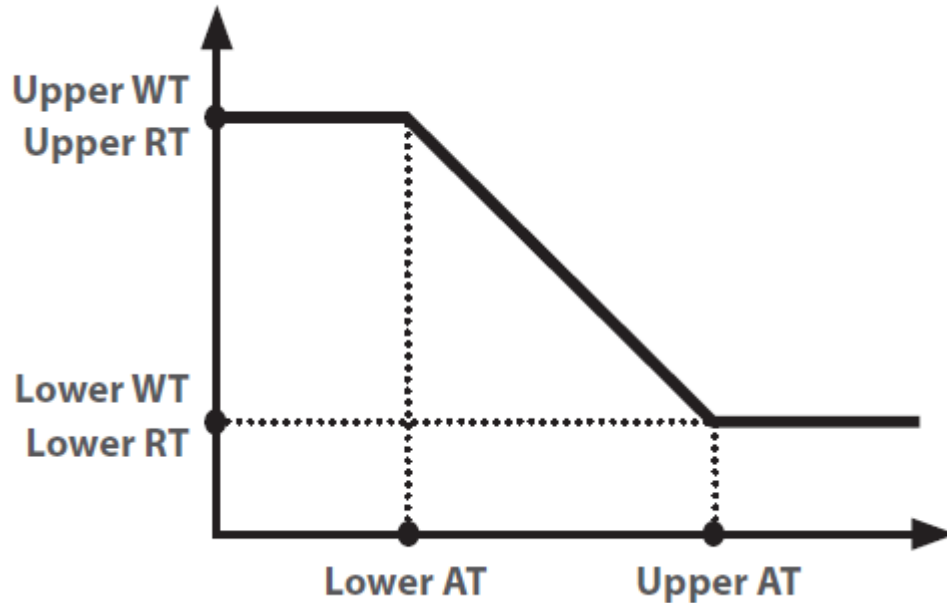


N.B: fixed power reduction to about 60% of maximum power.
Parameter NOT CHANGEABLE



MENU' FUNCTION: CLIMATIC CURVE SETTING

	Parameter	Range	Default	Notes
7	Climatic Curve	On/Off	Off	



Weather depend

☐ Off

☒ On

OK Cancel

3 Weather depend (1/3) 4

1 2

Weather depend: Off

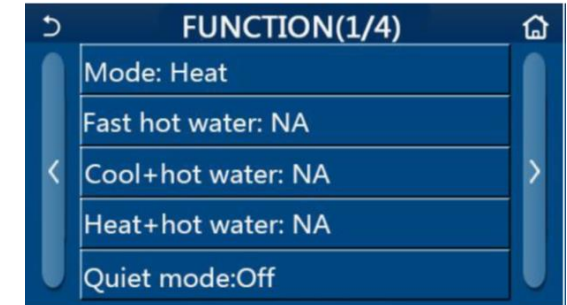
Upper AT Heat: 25°C

Lower AT Heat: -20°C

Upper WT Heat: 55°C

Lower WT Heat: 40°C

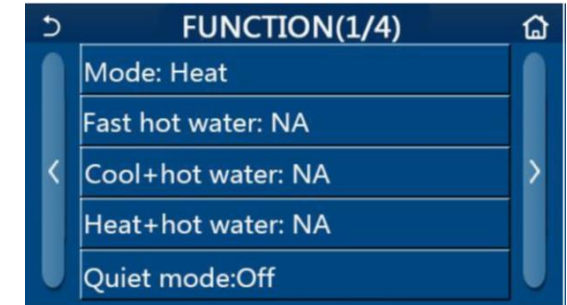
Depending on the type of control used (flow water temperature or room air sensor), it will be possible to apply a climate curve to calculate the setpoint temperature in relation to the outdoor temperature.



MENU' FUNCTION

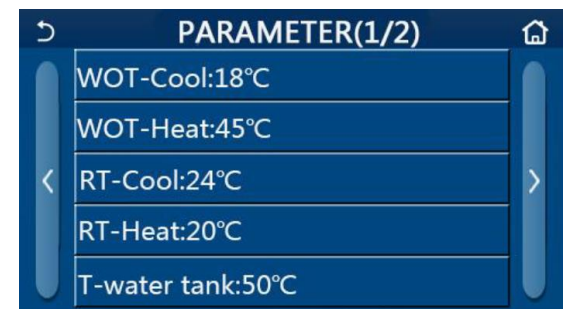
	Parameter	Range	Default	Notes
16	Error reset	/	/	Some alarms can only be reset after a manual reset
17	Wi-Fi Reset	/	/	It is used to reset the Wi-Fi configuration.
18	Reset	/	/	Reset user parameters

- **Error Reset** – to reset active alarms
- **Wi-Fi Reset** – reset wi-fi connection
- **Reset user parameters** – to restore the initial user parameters



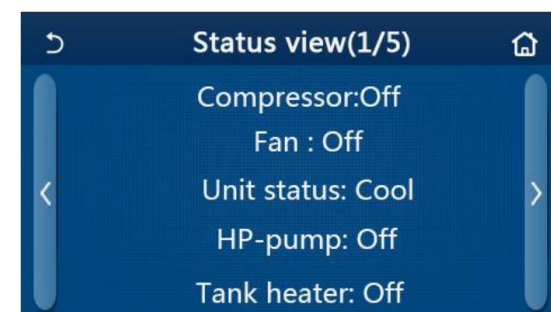
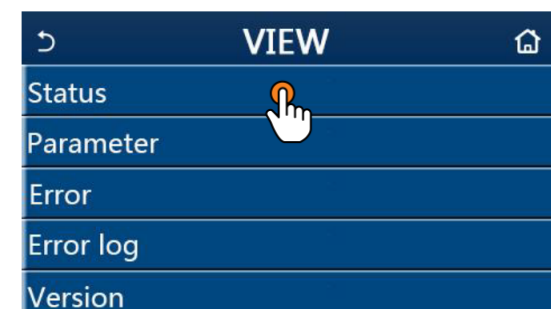
MENU' PARAMETER: SETPOINTS

Parameter	Display Parameter	Range	Default	Notes
Cooling Setpoint (T1)	Flow temperature in cooling	7 – 25 °C	18°C	
Heating Setpoint (T2)	Flow temperature in heating	20 – 60°C	45°C	
Cooling ambient Setpoint (T3)	Ambient Temperature in cooling	18 – 30 °C	24°C	1. If ambient sensor installed
Heating ambient Setpoint (T4)	Ambient temperature in Heating	18 – 30 °C	20°C	1. If ambient sensor installed
DHW Setpoint (T5)	Temperature DHW Tank	40 – 80°C	50°C	With DHW tank ON
Delta T in cooling mode	Cooling DT	2 – 10°C	5°C	
Delta T in heating mode	Heating DT	2 – 10°C	10°C	
Delta T in domestic water	DHW DT	2 – 8°C	5°C	
Ambient temperature hysteresis	Ambient DT	1 – 5°C	2°C	



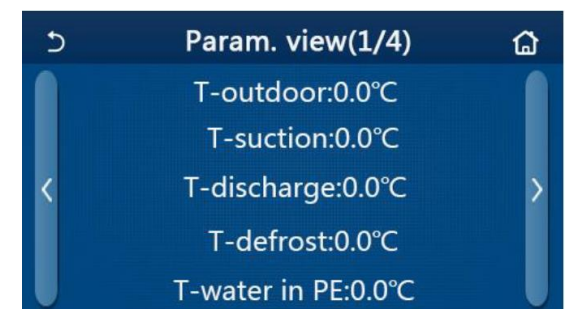
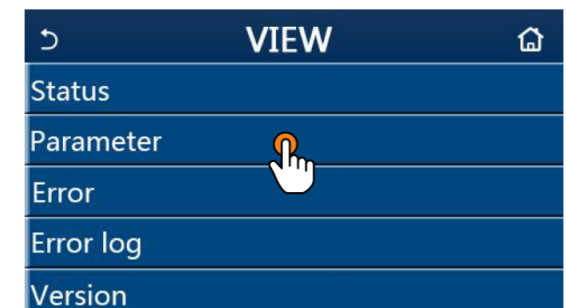
MENU' VIEW → STATUS

	Parametro	Parametro display	Range
1	Compressor status	Compressor	On/Off
2	Fan status	Fan	On/Off
3	Unit status	Unit status	Cooling/Heating/DHW/ Off
4	Pump status	Pump status	On/Off
5	Status of DHW electric heaters	Status of electric heaters	On/Off
6	Status of 3-way valve 1	3-way valve 1	On/Off
7	Status of 3-way valve 2	3-way valve 2	On/Off
8	Status of the electric heater of the compressor crankcase	Electric heater of the compressor crankcase	On/Off
9	Status of electric heater 1	Electric heater 1	On/Off
10	Status of electric heater 2	Electric heater 2	On/Off
11	Status of chassis heater	Chassis Heater	On/Off
12	Plate exchanger status	Plate exchanger	On/Off
13	Defrost function status	Defrost	On/Off
14	Oil return function status	Oil Return	On/Off
15	Ambient thermostat status	Ambient thermostat	OFF / Cooling / Heating
16	Status of other heat sources	Other sources	On/Off
17	3-way valve status	3-way valve	On/Off
18	Antifreeze function status	Antifreeze function	On/Off
19	Status of door guard	Gate-ctrl	Card in/Card out
20	Status of 4-way valve	4-way valve	On/Off
21	Status of Legionella treatment	Legionella treatment function	Off / In progress / Done / Failed
22	Flow switch status	Flow switch	On/Off



MENU' VIEW → PARAMETER

Parametro	Parametro display	Connettore scheda	Scheda	Tipo di sensore
Outdoor temperature	T outdoor	RT11 - TSENSOR R2	AP2	NTC 15 K
Suction gas temperature	T suction	RT13 – TSENSOR R2	AP2	NTC 20 K
Gas discharge temperature	T discharge	RT12 – TSENSOR R2	AP2	NTC 50 K
Defrost temperature	T defrost	RT10 – TSENSOR R1	AP2	NTC 20 K
Return water temperature	T water in PE	RT1 – CN15	AP1	NTC 20 K
Water flow temperature	Plate exchanger outlet temperature	RT2 – CN15	AP1	NTC 20 K
Outdoor heater water flow temperature	T Optional Water temperature sensor (for boiler/electrical heater)	RT5 – CN16	AP1	NTC 50 K
DHW tank temperature	T DHW	RT7 – CN9	AP1	NTC 50 K
Target of radiant floor warm up function.	T heating debug			
Working time of radiant floor warm up function	Time of debug			
Coolant temperature	T coolant	RT3 – CN15	AP1	NTC 20 K
Refrigerant gas temperature	T Gas	RT4 – CN16	AP1	NTC 20 K
Economiser inlet gas temperature	T Eco In	RT8 – TSENSOR R1	AP2	NTC 20 K
Coolant temperature at economiser outlet	T Eco Out	RT9 – TSENSOR R1	AP2	NTC 20 K
Remote air sensor temperature	T Room sensor	RT6 – CN8	AP2	
Compressor discharge pressure	Compressor discharge pressure			
Setpoint temperature from climatic curve calculation	T Climatic curve			



MENU' VIEW → ERROR

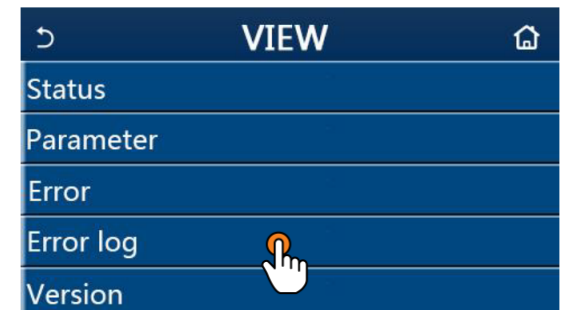
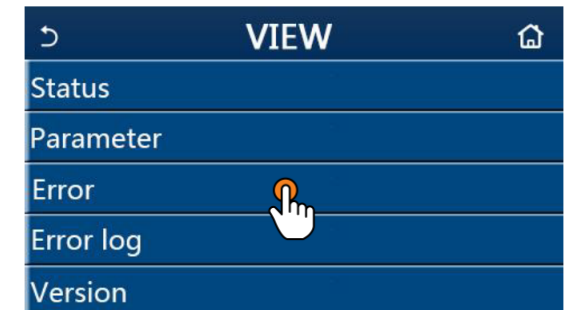
ACTIVE ERRORS

To reset alarms go to functions menu



Error Log:

THE ERROR LOG STORES THE LAST 20 ERRORS

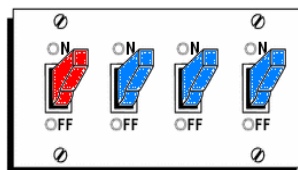


MENU' VIEW → SOFTWARE VERSION



COMMISSIONING

HOW TO MANAGE IT?



CHOICE 1	CHOICE 2	CHOICE 3
CONTROL PANEL TO CHANGE MODE	MANAGEMENT BY REMOTE CONTACTS (DRY CONTACTS)	ROOM SENSOR USE (SUPPLIED)
Control panel used only as a mode selection (off in summer and winter) if you activate one of the 2 modes summer or winter the machine turns on and off in relation to the setpoint temperature set on the water.	Management through remote contacts (remote on-off and summer-winter), the control panel is still installed but can be used only to check parameters and / or any alarms.	Room probe is installed for setpoint management. It will be the probe in relation to the room temperature, the real temperature and the mode selected by the control panel to turn on and off the machine.

CHOICE 1: OUTLET WATER TEMPERATURE CONTROL

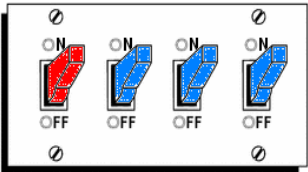


Path: COMMISSIONING/FUNCTIONS

Nr.	Description	Range	Default	1	SETTING
1	Control temperature	Flow water temp. / Room temp.	Flow water temp.	If parameter "Thermostat" is set as cond. or cond. + DHW this parameter CANNOT be set as Room Temp.	Flow water temperature
7	Thermostat	Not active/ Conditioning/ Conditioning + DHW	non-activated		Non activated
10	Room sensor	Activated / non-activated	non-activated	If set as Not Active the parameter "Control temperature" will automatically be set to "Flow temperature".	Non-activated

Logic:
With this configuration in relation to the set mode (heating or cooling), the request on the unit will always be active (circulator always ON) while the compressor will be on or off in order to maintain the flow temperature (output sensor from the main plate heat exchanger) set on the relative heating and cooling setpoints (or calculated setpoint if climate curve is active).

CHOICE 2: REMOTE CONTACTS (DRY CONTACT)



Path: COMMISSIONING/FUNCTIONS

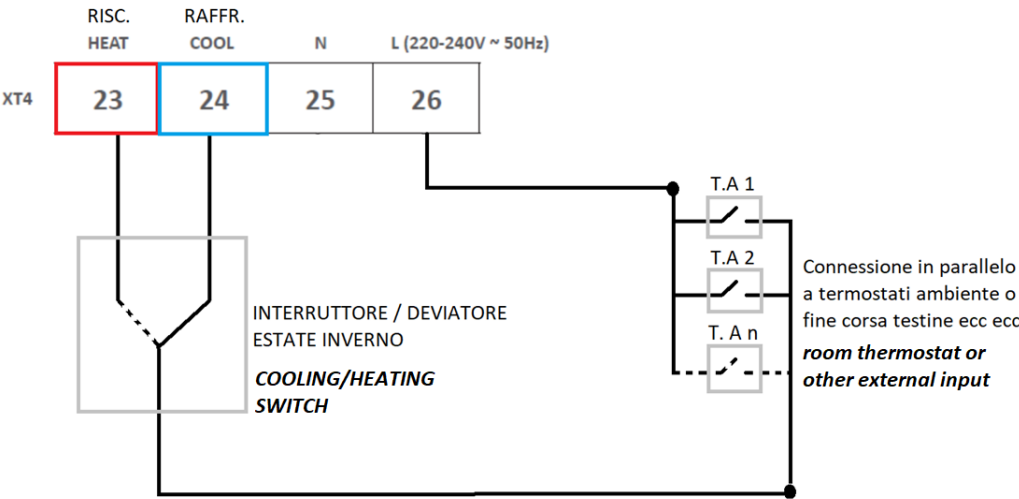
Nr.	Description	Range	Default	1	SETTING
1	Control temperature	Flow water temperature/ Room temperature	Flow water temperature	If parameter " Thermostat " is set as cond. or cond. + DHW this parameter CANNOT be set as Room Temp.	Flow water temperature
7	Thermostat	Not active/ Conditioning/ Conditioning + DHW	Active		Air conditioning/ conditioning + DHW
10	Room sensor	Active / Not active	Not active	If set as Not Active the parameter "Control temperature" will automatically be set to "Flow temperature".	Not active

Logic:

With thermostat contact not active (no phase on terminal 23 or 24) the production of cold water (cooling) hot water (heating) is inhibited. DHW production remains active if the thermostat parameter is set to "Conditioning + DHW", on the contrary, if the parameter is set to "Conditioning" only, if there is no request from the thermostat, DHW production is also inhibited.

Electrical connection:

Thermostat power supply: use terminals 25 - 26 (230 vac)
Operation in heat mode: the thermostat must allow terminal 23 to be powered.
Operation in cold mode: the thermostat must allow terminal 24 to be powered.



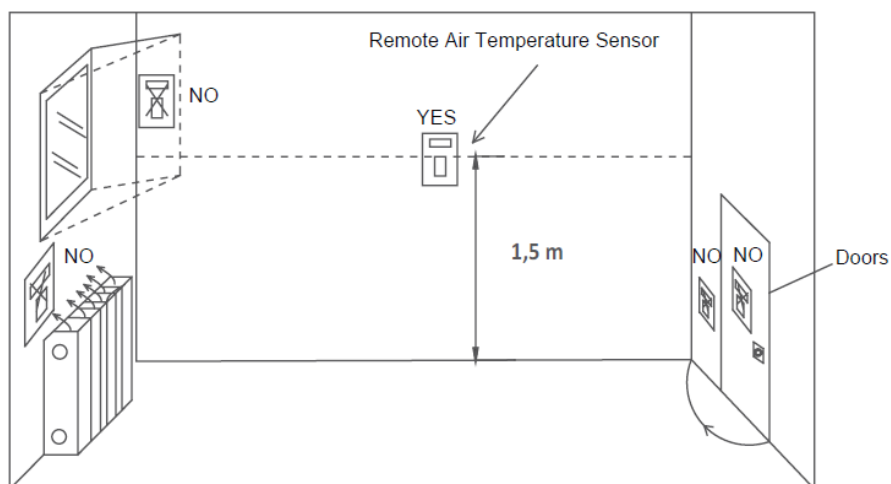
CHOICE 3: ROOM SENSOR CONTROL



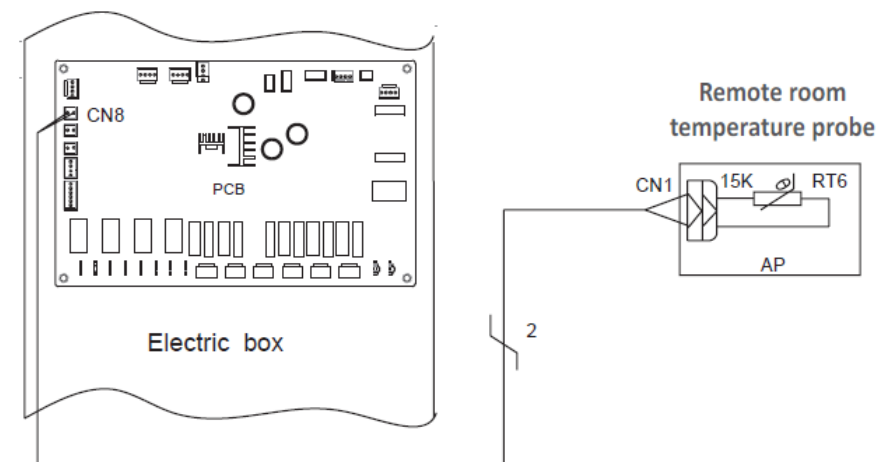
Path: COMMISSIONING/FUNCTIONS

Nr.	Description	Range	Default	1	SETTING
1	Control Temperature	Flow water temperature/ Room temperature	Flow water temperature	If parameter " Thermostat " is set as cond. or cond. + DHW this parameter CANNOT be set as Room Temp.	Room temperature
7	Thermostat	Not active/ Conditioning/ Conditioning + DHW	Not active		Not active
10	Room sensor	Active / Not active	Not active	If set as Not Active the parameter "Control temperature" will automatically be set to "Flow temperature".	Active

Placing:



Electrical connection



The distance between the Indoor unit and the remote room temperature probe must be less than 15m

DHW MANAGEMENT: CONFIGURATION



In order to activate the DHW production control, first activate the DHW tank parameter
Path: COMMISSIONING/FUNCTIONS/DHW tank

Nr.	Description	Range	Default
6	DHW Tank	Active/Inactive	Inactive

ATTENTION: once the cylinder is activated, it is necessary to change the priority between DHW and System (by default in favour of the system)

- Change priority in cooling - Path: FUNCTIONS/Cooling priority/DHW
- Change priority in heating - Path: FUNCTIONS/Heating priority/DHW

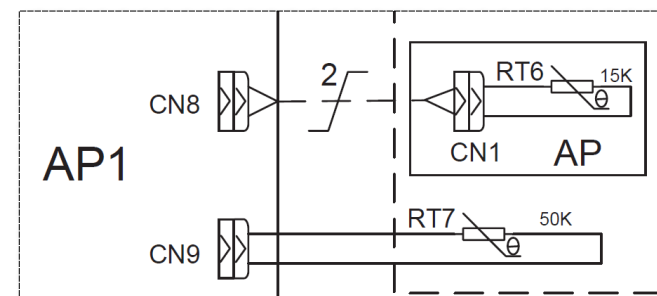
	Parameter	Range	Default
3	Cooling priority/DHW	Cooling / DHW	Cooling mode
4	Heating priority /DHW	Heating / DHW	Heating mode

DHW MANAGEMENT: ELECTRICAL CONNECTION



DHW Tank sensor (provided):

Connect the RT7 sensor supplied to the CN9 connector on the AP1 main board.

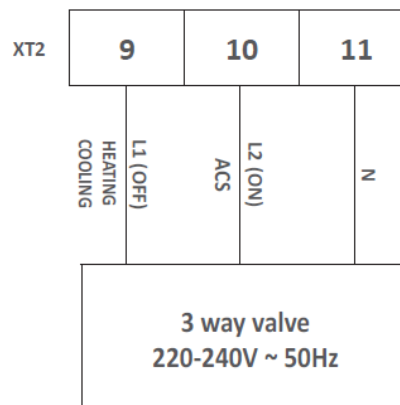


3-way diverter valve (not supplied, catalogue code B0622 (old) or B0916 (new))

- The 3-way valve must switch to the DHW when the clamp is powered L2 (ON) + N.
- The 3-way valve must switch to the system terminals when the clamp is powered L1 (OFF) + N.

Refer to the wiring diagrams shown in this manual.

For more information, refer to the user manual.



ADDITIONAL TWO WAY VALVE MANAGEMENT

7.3. Setting the status of the 2-way valve in cooling mode (Cool 2-Way valve)

After accessing the "Cool 2-Way valve" function, you can set the status of the 2-way valve in cooling mode (for more information about the assembly and use of the 2-way valve, refer to the installation manual). Select the required logic, then press "OK" to confirm.

Cool 2 way valve	
<input checked="" type="radio"/> Off	
<input type="radio"/> On	
OK	Cancel

NOTES:

1. If you select the "Off" status, the valve will be CLOSED in cooling mode; it will be OPEN if you select "On".
2. If the relative function is activated (paragraph 8.3), the value of these parameters will be stored in the memory and automatically reset after any possible voltage failure.

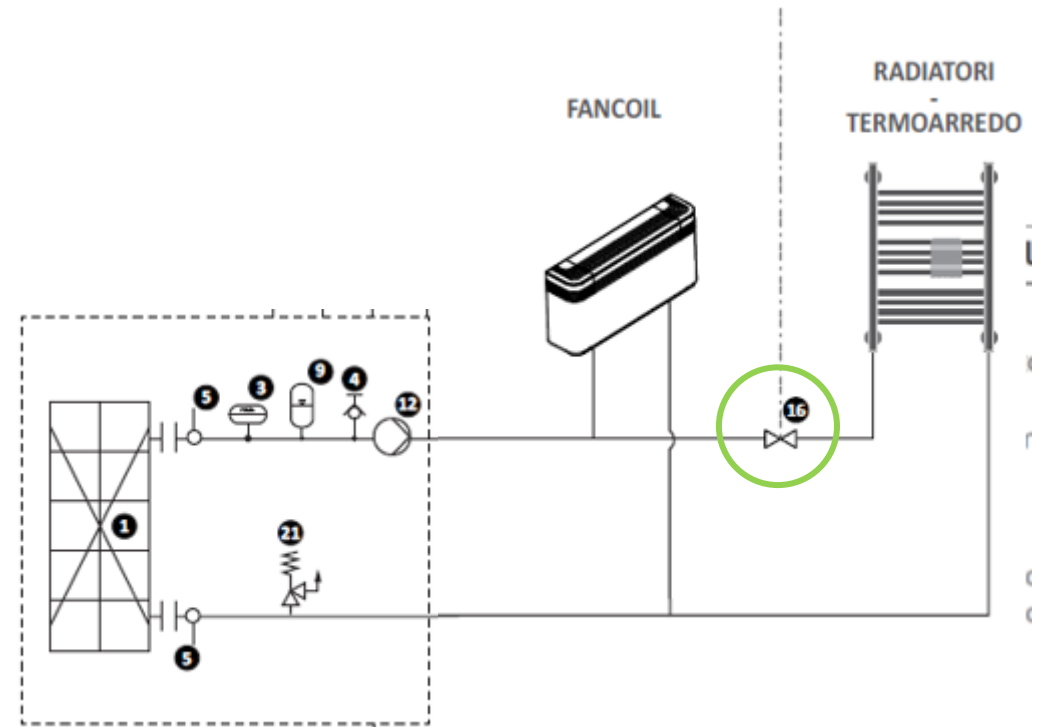
7.4. Setting the status of the 2-way valve in heating mode (Heat 2-Way valve)

After accessing the "Heat 2-Way valve" function, you can set the status of the 2-way valve in heating mode (for more information about the assembly and use of the 2-way valve, refer to the installation manual). Select the required logic, then press "OK" to confirm.

Heat 2 way valve	
<input checked="" type="radio"/> Off	
<input type="radio"/> On	
OK	Cancel

NOTES:

1. If you select the "Off" status, the valve will be CLOSED in heating mode; it will be OPEN if you select "On".
2. If the relative function is activated (paragraph 8.3), the value of these parameters will be stored in the memory and automatically reset after any possible voltage failure.



ADDITIONAL HEAT SOURCE

As the parameter activate the use of the additional heat source via the parameter.

Path: COMMISSIONING/FUNCTIONS/Additional heat source

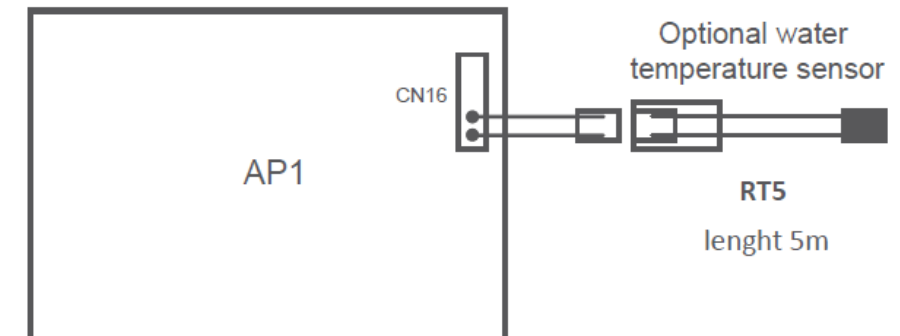
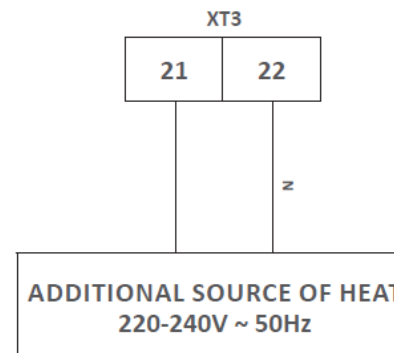
Nr.	Description	Range	Default
8	Additional heat source	Active / Inactive	Inactive
	Additional heat source temperature		- 20° C
	Logic	1 - 3	1



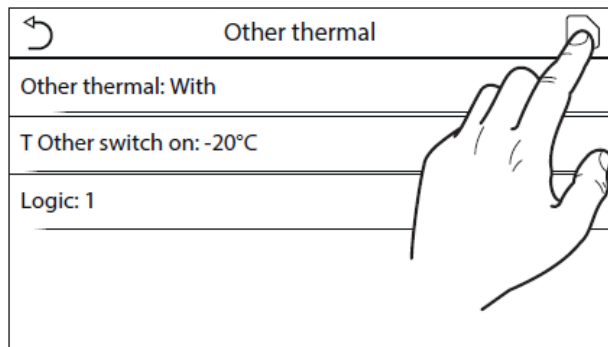
It is recommended to refer to EXAMPLE 2 for a correct installation; in particular:

- The additional heat source to be installed before of the 3-way valve.
- The optional water temperature sensor (RT5) standard supply it must necessarily be installed after of the 3-way valve on the branch of the plant terminals.
- Very ATTENTION to the set temperature on the additional heat source according to the logic set.
- (Temperature Max. 60°C).
- It is not possible to use at the same time the additional heat source with an additional resistance.

Electrical connection



ADDITIONAL HEAT SOURCE



ONLY IN HEATING MODE

HEATING + DHW

STAND ALONE

Setting an additional heat source (Other thermal)
After accessing the "Other thermal" function, you can

activate or deactivate the substitute heat source and set the outdoor temperature threshold below which it will be activated in place of the heat pump, and choose the logic for managing the substitution. The available logic items are:

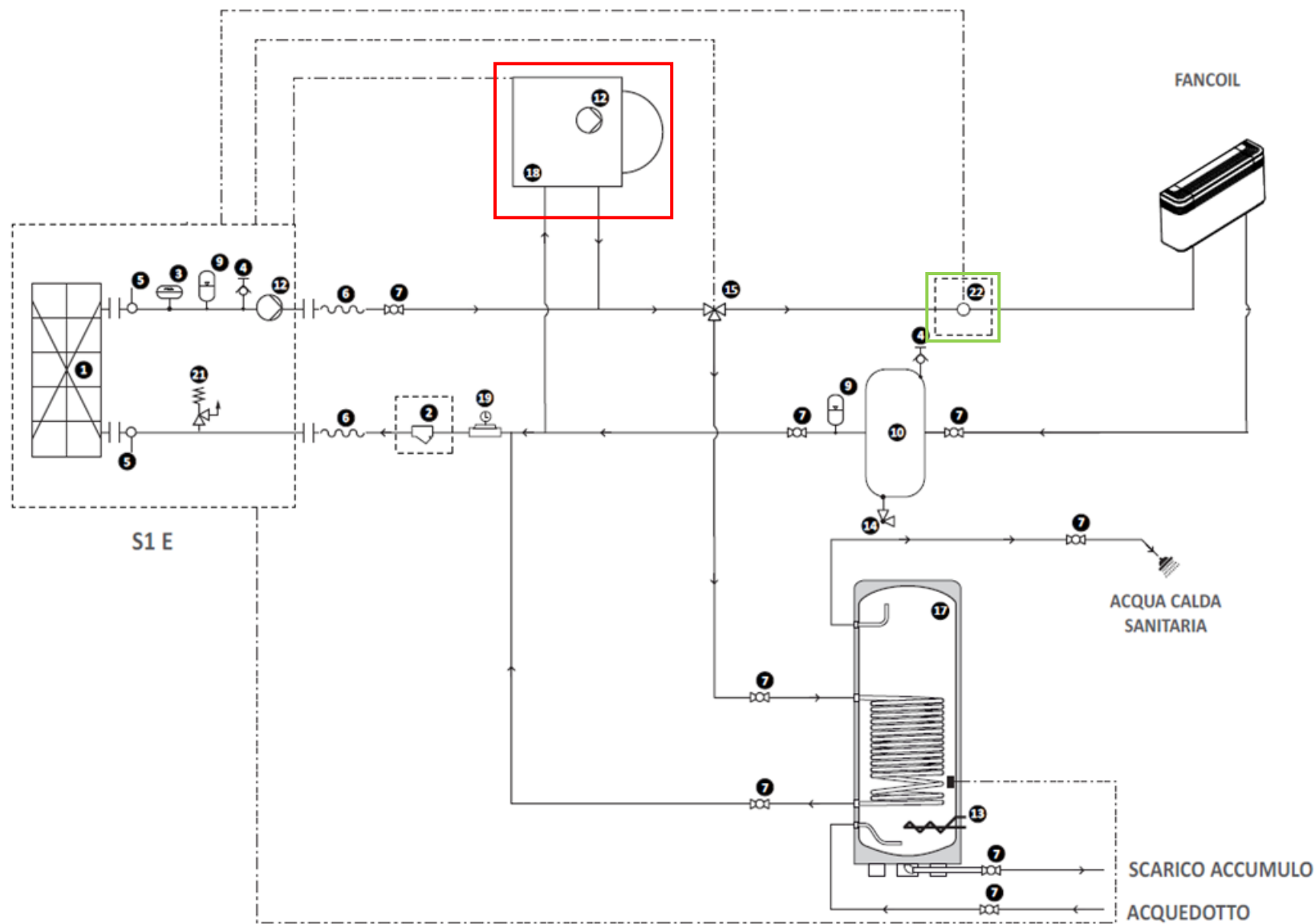
Logic 1: this logic is used to consent to the use of the substitute heat source to meet system-side demand only. The 3-way valve will be blocked on this side, and any requests from the DHW side will be met using the electric heater of the water tank (If present).

Logic 2: this logic is used to consent to the use of the substitute heat source to meet demand from both the system side and the DHW side. The unit continues to manage the diverting valve.

Logic 3: this logic disables the heat pump and activates a 230V signal to the "Other thermal" terminals

(for more information, refer to the installation manual) for activating the additional heat source (which will work in stand-alone mode, separate from the HMI unit).

Lastly, press the top right button to save the data entered.



- 4. Air vent valve
- 6. Anti-vibration joints
- 7. Cut-off valve
- 9. Expansion Tank
- 10. System buffer tank (installation recommended whenever the system water content is less than that indicated in technical manual)
- 13. Antifreeze electric heater
- 14. Drain valve
- 15. 3 way valve
- 16. 2 way valve
- 18. Other thermal source
- 19. Automatic Filling Valve
- 22. Water temperature probe - SUPPLIED AS STANDARD (optional)

Below the cut-off temperature:

- IN HEATING MODE

Generator on-off in relation to the setpoint temperature that will be detected by the optional RT5 sensor. Heat Pump circulator will be off.

- IN DHW

Generator on-off in relation to the setpoint temperature that will be detected by the DHW sensor. 3-way valve diverts to DHW Heat Pump circulator will be off.

NB: maximum boiler flow temperature 60°C!

ELECTRIC HEATERS MANAGEMENT: PARAMETER

Activate the use of the optional electric heater in the parameter.

Path: COMMISSIONING/FUNCTIONS/Optional Electric Heaters



Nr.	Description	Range	Default	Settings
9	Optional Electric Heaters	Off/1/2	Off	Off: Electric heaters disabled 1: only one electric heater enabled (KM1) 2: Both electric heaters enabled (KM1 + KM2)
	Electric Heaters Optional		- 15° C	
	Logic	1 - 3	1	Settings 1 – 2 not available

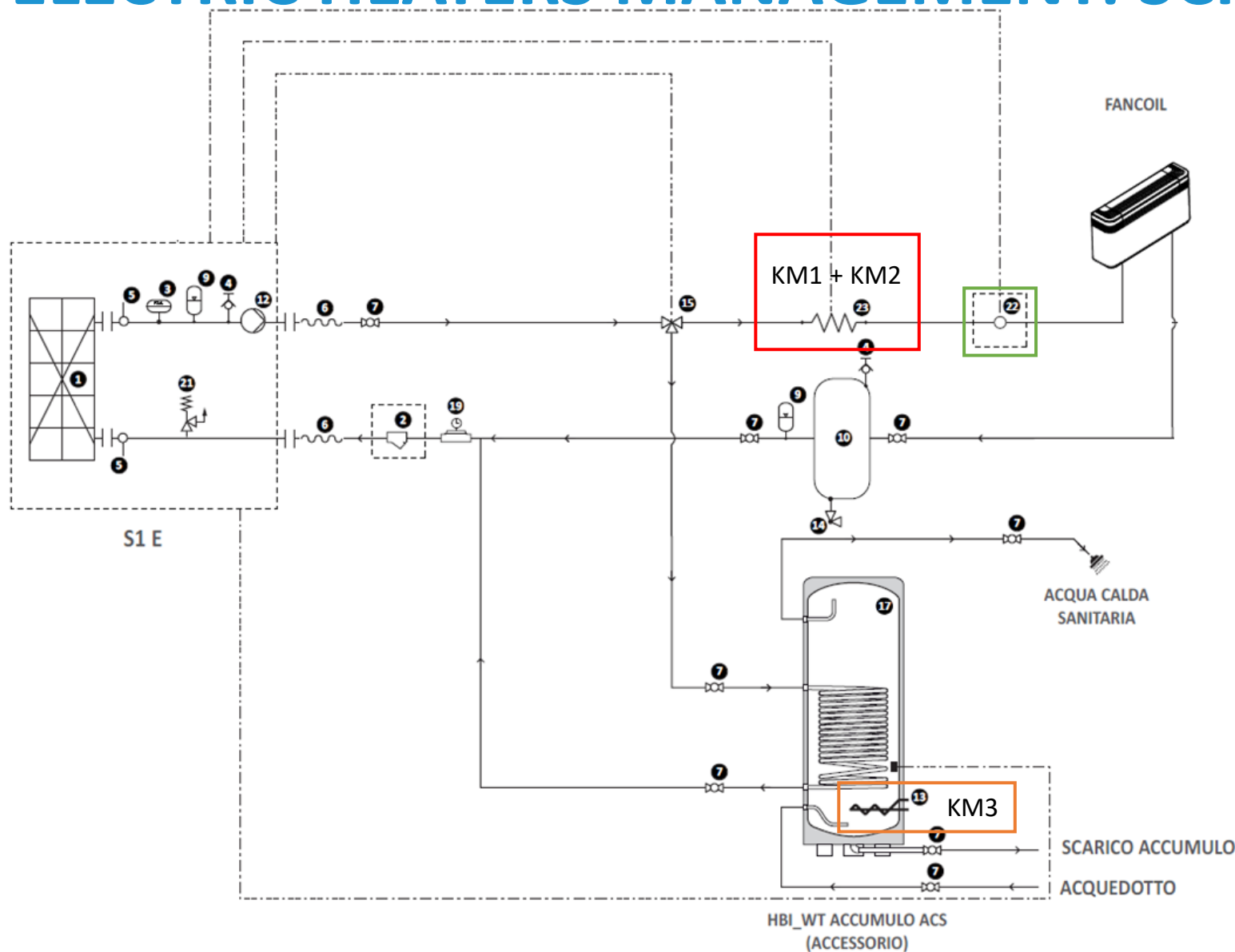
HEATING

Electric KM1 + Electric heaters KM2

DHW

Electric heaters KM3

ELECTRIC HEATERS MANAGEMENT: SCHEME



- 4. Air vent valve
- 6. Anti-vibration joints
- 7. Cut-off valve
- 9. Expansion Tank
- 10. System buffer tank (installation recommended whenever the system water content is less than that indicated in technical manual)
- 13. Antifreeze electric heater
- 14. Drain valve
- 15. 3 way valve
- 16. 2 way valve
- 18. Other thermal source
- 19. Automatic Filling Valve
- 22. Water temperature probe - SUPPLIED AS STANDARD (optional)
- 23. Additional electric resistance

Below the cut-off temperature:

- IN HEATING MODE

On-off management KM1 + KM2 in relation to the setpoint temperature that will be detected by the optional sensor RT5 Heat pump circulator ON

- IN DHW

On-Off KM3 management in relation to the setpoint temperature that will be detected by the DHW sensor.

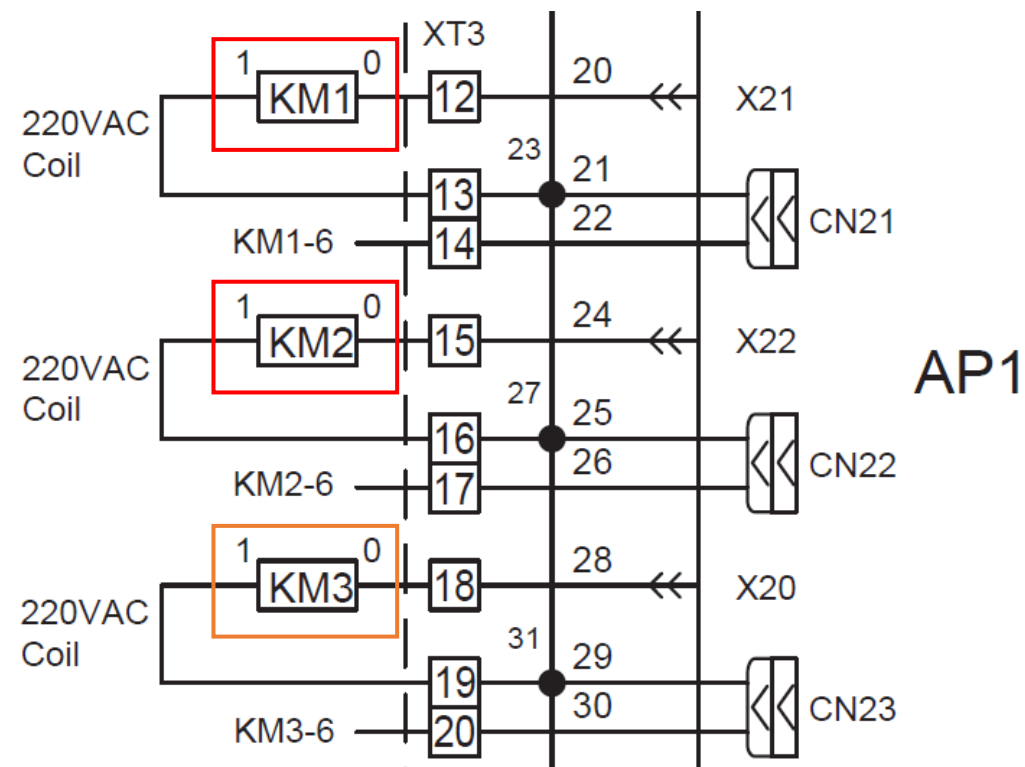
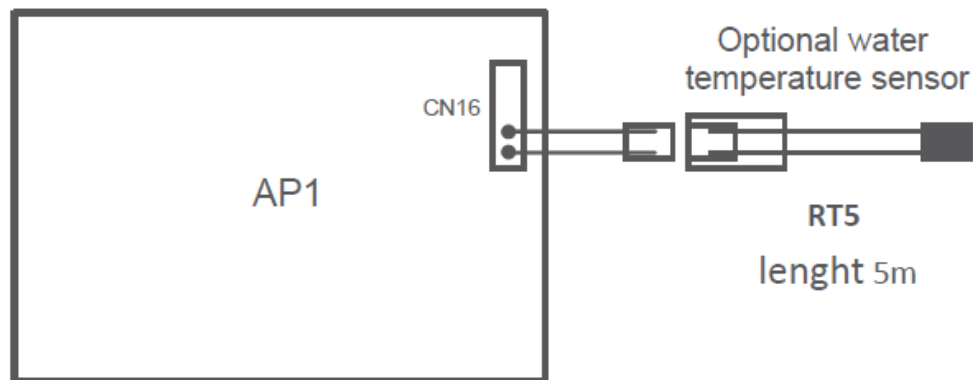
ELECTRIC HEATERS MANAGEMENT: ELECTRICAL CONNECTIONS

The unit provides a 220-240V ~ 50Hz signal to activate one or two additional electrical resistance. (Only heating mode).

For the logics or more information, refer to the user manual.

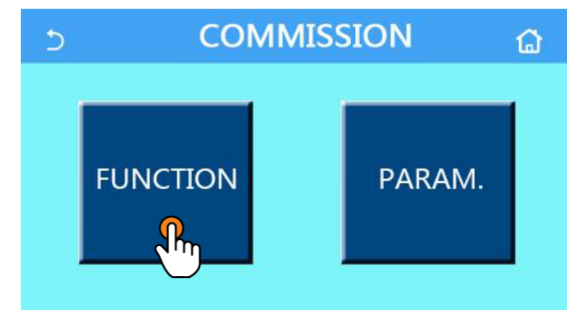
**It is recommended to refer to EXAMPLE 3 for a correct installation;
in particular:**

- The additional electrical resistance to be installed after 3-way valve.
- The optional temperature probe (RT5) standard supplied must necessarily be installed after of the additional resistances on the system terminals branch.
- **It is not possible to use at the same time the additional heat source with an additional resistance.**



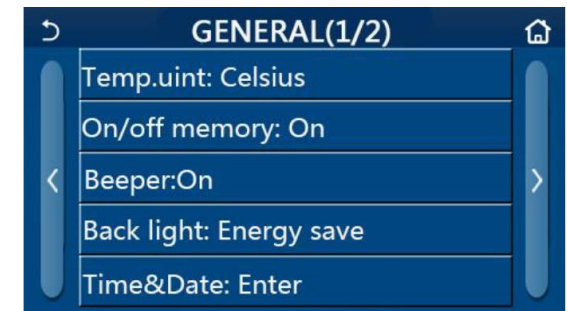
PARAMETER: COMMISSIONING

Nr.	Description	Range	Default
1	Control temperature	Flow water temperature/ Temp. ambiente	Flow water temperature
2	2-way valve	2-way valve in cooling mode	Off
		2-way valve in heating mode	On
5	Solar setting (NOT AVAILABLE)	Active/Inactive	Inactive
6	DHW Tank	Active/Inactive	Disable
7	Thermostat	Inactive/ Conditioning/ Conditioning + DHW	Inactive
8	Additional heat generator	Active/Inactive	Inactive
9	Optional Electrical Heater	Off/1/2	Off
10	Ambient sensor	Active/Inactive	Inactive
11	Air vent	Off / Conditioning / DHW	Off
12	Debug radial floor	On/Off	Off
13	Manual defrosting	On/Off	Off
14	Forced mode	On/Off	Off
15	External Contact	On/Off	Off
16	Current Limit	On/Off	Off
17	Serial Address	[1-125] [127-253]	1
18	Refrigerant gas recovery	On/Off	Off



PARAMETER: GENERAL

	Parametro	Range	Default	Note
1	Temperature measurement units	°C / °F	°C	
2	On/Off Memory	On / Off	On	If set to Off after a power failure, the unit resets the parameters to the previously stored values.
3	Beeper	On/Off	On	Acoustic signal of touch on the display
4	Back light	Brightende / Power Saving	Energy save	Illuminated: backlight always on. Energy save: after 5 minutes the backlight turns off
5	Time & Date	Date and time setting	Date and time setting	Date and time setting
6	Language	Italian / English / Spanish	English	
7	Wi-fi	On / Off	On	



ALARMS

Alarms will be indicated on the display by the following icon



View of active errors and Error Log

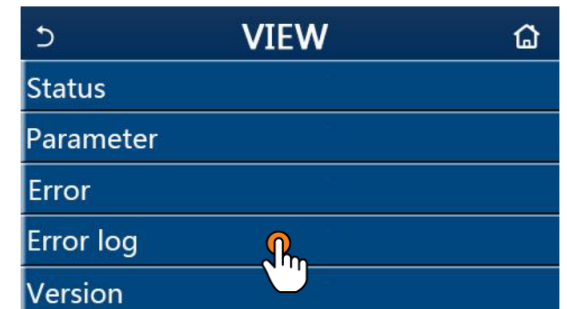
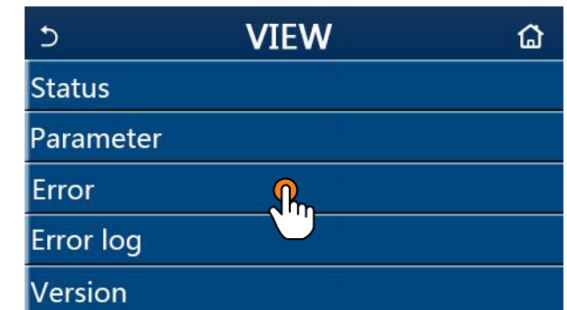
ACTIVE ERRORS

To reset alarms go to functions menu



ERROR LOG:

THE LOG STORES THE LAST 20 ERRORS



ALARMS LIST

Error Code	Error Name (displayed)	Description
F4	Ambient sensor	Room air temperature sensor failure
d6	Defro. sensor	Defrost temperature sensor failure
F7	Disch. sensor	Compressor exhaust temperature sensor failure
F5	Suction sensor	Suction temperture sensor failure
F2	Inlet economiser temperature sensor	Inlet economiser temperature sensor failure
F6	Outlet economiser temperature sensor	Outlet economiser temperature sensor failure
EF	Outdoor fan	Fan motor error
E1	High pressure	High pressure alarm
E3	Low pressure	Low pressure alarm
E4	Hi-discharge	Too high compressor discharge temperature protection
c5	Capacity DIP	DIP switch capacity error
E6	ODU-IDU Com.	ODU-IDU Communication errpr
Fc	Hi-pre. sens.	High pressure sensor error
F9	Temp-HELW	Flow water temperature sensor error
dH	Temp-AHLW	Flow water temperature electric heaters aux sensor error
-	Temp-HEEW	Inlet water temperature sensor failure
FE	Tank sens. 1	DHW tank temperature sensore failure
F3	T-Remote Air1	Room sensor failure

ALARMS LIST

Error Code	Error Name	Description
Ec	HP-Water SW	Flow switch alarm
EH	Auxi. heater 1	Protection of electrical heater auxiliary 1
EH	Auxi. heater 2	Protection of electrical heater auxiliary 2
EH	Auxi. -WTH	Electrical heater AUX tank protection
PL	DC under-vol.	Under-voltage DC bus or voltage drop error
PH	DC over-vol.	Over-voltage DC bus
PA	AC curr. pro.	AC current protection (input side)
H5	IPM defective	IPM Error
Hc	FPC defective	PFC Error
Lc	Start failure	Start failure
P6	Driver reset	Drive module resetting
P0	Com. over-cur.	Compressor over-current
P5	Overspeed	Overspeed
LF	Current sen.	Sensing circuit error or current sensor error
Pc	Desynchronize	Desynchronizing
H7	Comp. stalling	Compressor stalling
LE	drive-main com.	Communication error
P8	Overtemp.-mod.	Radiator or IPM or PFC module overtemperature

ALARMS LIST

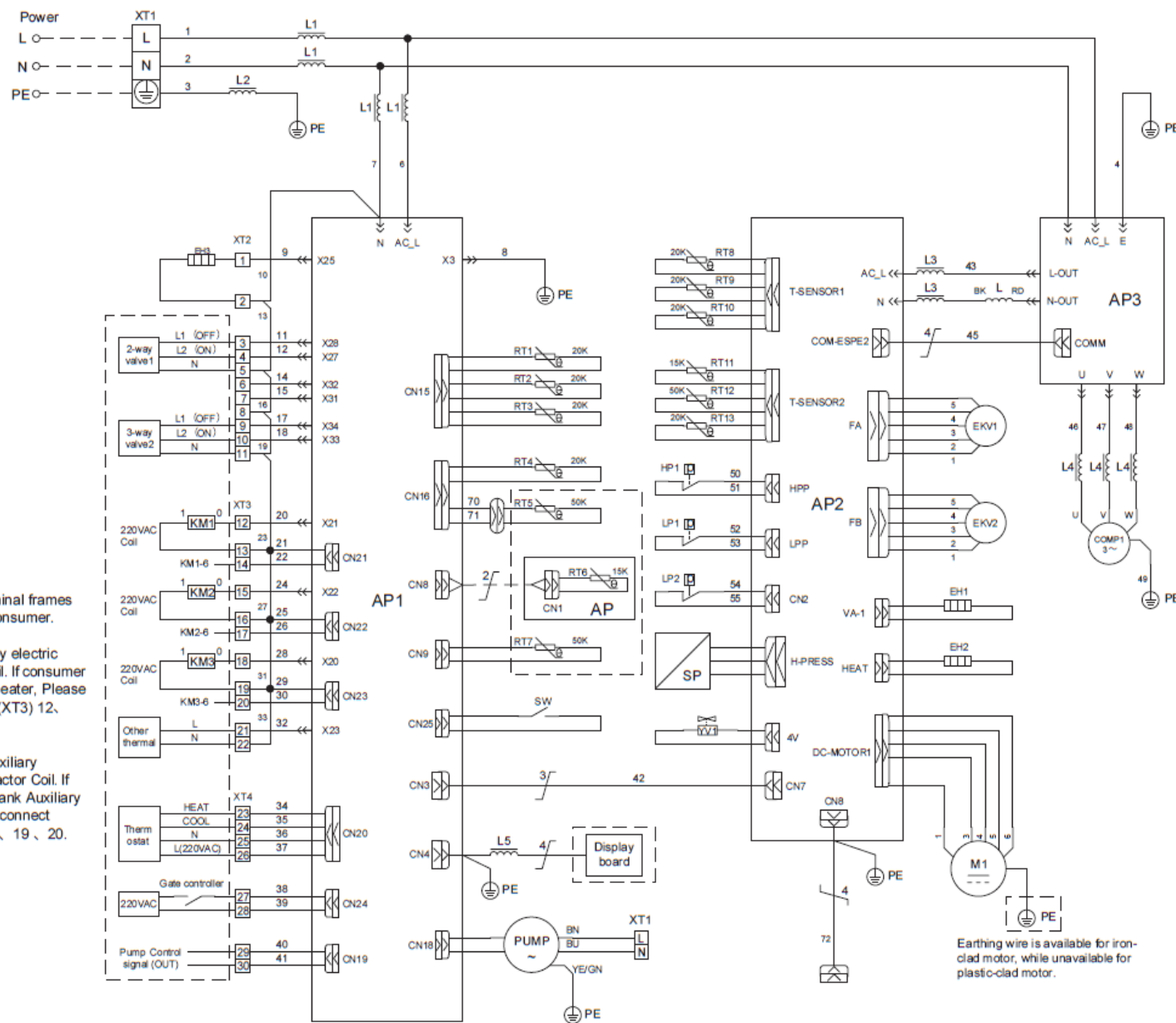
Error Code	Error Name	Description
P7	T-mod. sensor	Radiator or IPM or PFC module temperature sensor error
Pu	Charge circuite	Charge circuite error
PP	AC Voltage	Power supply AC voltage error
PF	Temp-driver	Drive board temperature sensor error
P9	AC Contactor	AC contactor protection or input zero crossing error
PE	Temp. Drift	Temperature drift protection
Pd	Sensor con.	Current sensor connection protection (current sensor not connected to phase U/V)
E6	ODU Com.	Communication error to the outdoor unit
E6	IDU Com.	Communication error to the indoor unit
E6	Driver Com.	Communication error to the drive
F0	Refrigerant gas temperature sensor	Refrigerant gas temperature sensor error
F1	Coolant temperature sensor	Coolant temperature sensor error

Table of probe characteristics

Parameter	Display parameter	Card connector	Board	Sensor type
External temperature	External T.	RT11 - TSENSOR R2	AP2	NTC 15 K 25°C
Gas suction temperature	T compressor suction	RT13 – TSENSOR R2	AP2	NTC 20 K 25°C
Compressor exhaust temperature	T - exhaust compressor	RT12 – TSENSOR R2	AP2	NTC 50 K 25°C
Defrost temperature	Defrost T.	RT10 – TSENSOR R1	AP2	NTC 20 K 25°C
Return water temperature	T Plate Exchanger	RT1 – CN15	AP1	NTC 20 K 25°C
Water flow temperature	T Plate Exchanger	RT2 – CN15	AP1	NTC 20 K 25°C
External heater water supply temperature	Optional water sensor (for heat generator/electrical res.)	RT5 – CN16	AP1	NTC 50 K 25°C
DHW storage temperature	T DHW	RT7 – CN9	AP1	NTC 50 K 25°C
Target of radiant floor warm up function.	T heating debug			
Working time of radiant floor warm up function	Debug time			
Coolant temperature	Coolant Temperature	RT3 – CN15	AP1	NTC 20 K 25°C
Refrigerant gas temperature	T Gas	RT4 – CN16	AP1	NTC 20 K 25°C
Economiser inlet gas temperature	T Eco In	RT8 – TSENSOR R1	AP2	NTC 20 K 25°C
Liquid temperature at economizer outlet	T Eco Out	RT9 – TSENSOR R1	AP2	NTC 20 K 25°C
Remote air sensor temperature	T Room sensor	RT6 – CN8	AP2	
Compressor discharge pressure	Compressor discharge pressure			
Setpoint temperature from climatic curve calculation	Climatic curve temperature			

Temperature (°C)	KOHM	
	203AT	503AT
–50	1253	3168
–45	890.5	2257
–40	642.0	1632
–35	465.8	1186
–30	342.5	872.8
–25	253.6	646.3
–20	190.0	484.3
–15	143.2	364.6
–10	109.1	277.5
–5	83.75	212.3
0	64.88	164.0
5	50.53	127.5
10	39.71	99.99
15	31.36	78.77
20	24.96	62.56
25	20.00	50.00
30	16.12	40.20
35	13.06	32.48
40	10.65	26.43
45	8.716	21.59
50	7.181	17.75
55	5.941	14.64
60	4.943	12.15
65	4.127	10.13
70	3.464	8.482
75	2.916	7.129
80	2.468	6.022
85	2.096	5.105
90	1.788	4.345
95	1.530	3.712
100	1.315	3.185
105	1.134	2.741
110	0.9807	2.369

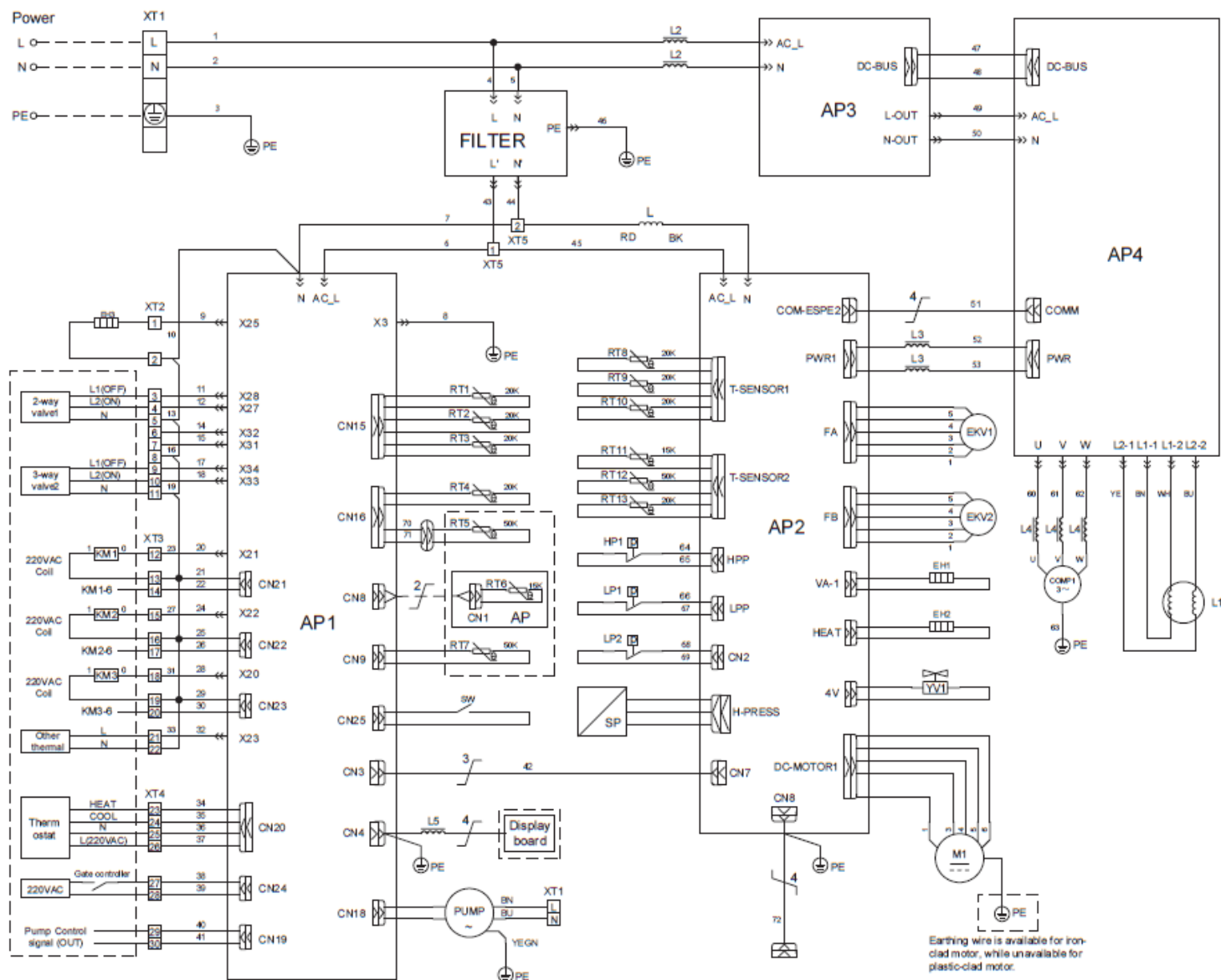
WIRING DIAGRAMS



Specification :

1. The wires in the terminal frames are connected by the consumer.
2. KM1, KM2 is Auxiliary electric heater AC contactor Coil. If consumer need Auxiliary electric heater, Please connect Terminal block(XT3) 12, 13, 14, 15, 16, 17.
3. KM3 is Water tank Auxiliary electric heater AC contactor Coil. If consumer need Water tank Auxiliary electric heater, Please connect Terminal block(XT3) 18, 19, 20.

AP	Main board only for RT6
AP1	Indoor unit Main Board
AP2	Outdoor unit Min Board
AP3	Drive Board
COMP	Compressor
EH1	Bottom band heater
EH2	Compressor band heater
EH3	Plate heat exchanger anti-freezing
EKV1	Electronic expansion valve coil1
EKV2	Electronic expansion valve coil2
HP1	High pressure switch
KM1	Optional electric heater 1 AC contactor
KM2	Optional electric heater 2 AC contactor
L	Electrical Inductance
L1~L5	Magnetic ring
LP1	Low pressure switch for heating
LP2	Low pressure switch for cooling
M1	Motor
PUMP	Indoor unit pump
RT1	Water in temp. Sensor of the whole unit
RT2	Water out temp. Sensor of the whole unit
RT3	Liquid pipe temp. Sensor
RT4	Gas pipe temp. Sensor
RT5	Optional water temp sensor
RT6	Remote room temp. Sensor
RT7	Water tank temperature sensor
RT8	Inlet temp sensor of economizer
RT9	Outlet temp sensor of economizer
RT10	Defrosting temp sensor
RT11	Outdoor temp sensor
RT12	Discharged temp sensor
RT13	Suction temp sensor
SP	High pressure sensor
SW	Waterflow switch
XT1	Power terminal block
XT2	Terminal block (1~11)
XT3	Terminal block (12~22)
XT4	Terminal block (23~30)
YV1	4 way valve coil



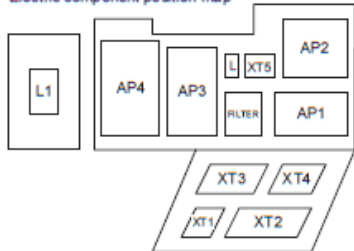
Specification :

1. The wires in the imanal frames are connected by the consumer.

2.KM1、KM2 is A auxiliary electric heater AC contactor Coil. If consumer need Auxiliary electric heater, Please connect Terminal block(XT3) 12、13、14、15、16、17.

3.KM3 is Water tank A auxiliary electric heater AC contactor Coil. If consumer need Water tank Auxiliary electric heater , Please connect Terminal block(XT3) 18、19、20.

Electric component position map



AP	Main board only for RT6
AP1	Indoor unit Main Board
AP2	Outdoor unit Min Board
AP3	Filter board
AP4	Drive Board
COMP1	Compressor
EH1	Bottom band heater
EH2	Compressor band heater
EH3	Plate heat exchanger anti-freezing
EKV1	Electronic expansion valve coil1
EKV2	Electronic expansion valve coil2
FILTER	Filter
HP1	High pressure switch
KM1	Optional electric heater 1 AC contactor
KM2	Optional electric heater 2 AC contactor
L	Electrical Inductance
L1	PFC Electrical Inductance
L1~L5	Inductor
LP1	Low pressure switch for heating
LP2	Low pressure switch for cooling
M1	Motor
PUMP	Indoor unit pump
RT1	Water in temp. Sensor of the whole unit
RT2	Water out temp. Sensor of the whole unit
RT3	Liquid pipe temp. Sensor
RT4	Gas pipe temp. Sensor
RT5	Optional water temp sensor
RT6	Remote room temp. Sensor
RT7	Water tank temperature sensor
RT8	Inlet temp sensor of economizer
RT9	Outlet temp sensor of economizer
RT10	Defrosting temp sensor
RT11	Outdoor temp sensor
RT12	Discharged temp sensor
RT13	Suction temp sensor
SP	High pressure sensor
SW	Waterflow switch
XT1	Power terminal block
XT2	Terminal block (1~11)
XT3	Terminal block (12~22)
XT4	Terminal block (23~30)
XT5	Terminal block (1~2)
YV1	4 way valve coil

Grazie!