EN

INSTALLATION AND USER MANUAL

AQUAPURA / THERMOBOX

160L | 200L | 270L

Compatible with aerothermal heat pump range:

Aquapura 6 – Inverter R 3-8
Aquapura 12 – Inverter R 8-12
Aquapura 16 – Inverter R 5-18
Aquapura 8HT– Inverter P 3-10
Aquapura 14HT – Inverter P 6-16

Revision: 02
Version: 2
Date: 23/06/2023

CE

Index

1. Safety Information

In order to protect the physical integrity of the operator, as well as the equipment, it is essential that all safety information noted in this manual is taken into account.
The hydraulic and electrical connections must comply with the regulations in force at the place of installation.

 WARNING
This appliance is not intended for use by persons (including children) whose physical, sensory or mental abilities are reduced, or by persons without experience or knowledge, unless supervision or instructions regarding the use of the appliance have been given to them by a person responsible for your safety. Children must be supervised to ensure that they do not play with the appliance.

Icon	Description
 DANGER	Careless handling or intervention can cause serious injury or even death.
 WARNING	Careless handling or intervention can cause serious injury or equipment destruction.

Icon	Description
	Prohibited
	Mandatory
	Pay attention to the message

DANGER

Installation	Description
	The equipment must be installed by qualified technicians. Improper installation can cause water leakage, electric shock or fire.
	Make sure that the THERMOBOX ground connection is properly connected. A bad connection can cause electric shock.

Maintenance	Description
	If you need to move the THERMOBOX to another location, please contact the seller or qualified technician. Improper installation may cause water leakage, electric shock, injury or fire.
	Maintenance or repairs must be carried out by the seller or qualified technician.
	The user is prohibited from carrying out any intervention on the THERMOBOX. Failure to do so can cause water leakage, electric shock, serious injury or fire.

WARNING

Installation	Description
	The THERMOBOX cannot be installed in places with inflammable gas. The occurrence of a gas leak could cause an explosion or fire.
	Make sure that the base where you are going to install the THERMOBOX is sufficiently consistent, thus avoiding cracks or even the fall of the THERMOBOX.

Maintenance	Description
	Before carrying out any intervention on the THERMOBOX, such as cleaning, maintenance, etc. disconnect it from the mains.
	Do not spray the THERMOBOX with flammable liquids, it may cause a fire.
	Do not use cleaning agents that contain sand, acid or chlorides as they can damage the surface of the THERMOBOX.

2. Info

This manual accompanies all equipment and contains important instructions that must be followed during installation.

3. Introduction

Dear Client,

We are grateful for the preference you have given us, congratulating you for the purchase of a first-rate product and great innovation. Your purchase decision will reward you for years to come.

The seriousness of our company guarantees you all the necessary support from the dimensioning, installation and assistance phase.

For the best use of this product, we ask that you carefully read this instruction manual, where you can find all the indications, information and advice necessary to enjoy all the benefits that this appliance provides, following its indications and regulations in force. of optimal functioning and perfect performance.

4. THERMOBOX Features

1. Central Heating&Cooling + DHW in a compact unit;

2. Integration in 60x60 cm module. Ideal for small spaces;

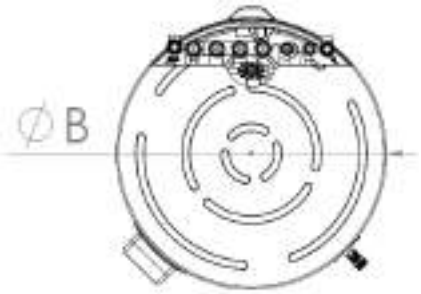
3. Compatible with Aquapura Inverter R 3-8, R 8-12, R 5-18, P 3-10 and P 6-16 aerothermal heat pump range;

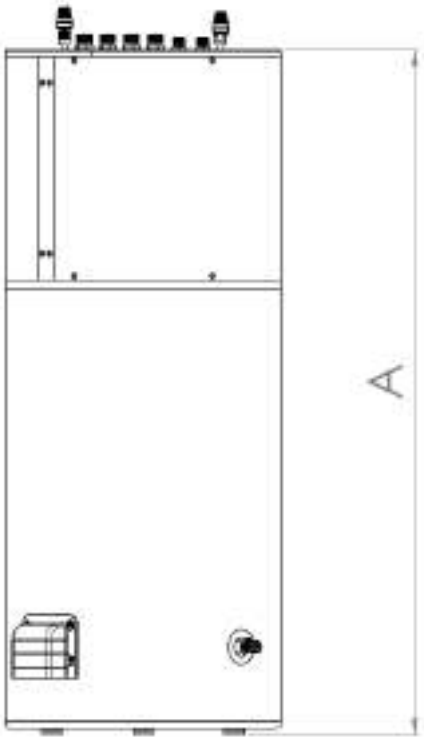
4. Reduced installation costs;

5. Integrated 160L, 200L or 270L DHW tank in stainless steel;

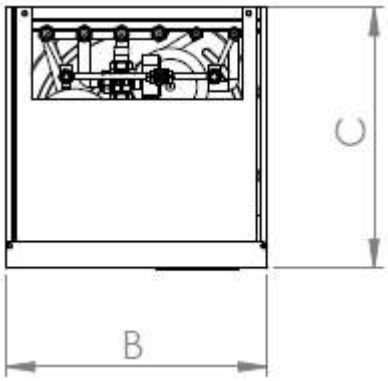
5. Nomenclature and Dimensions

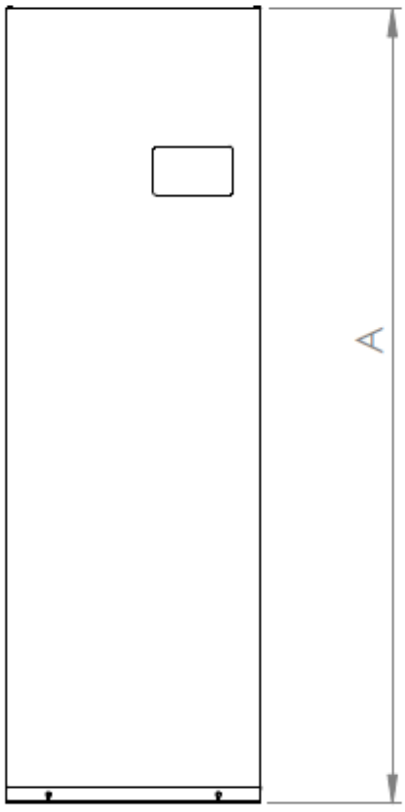
160L





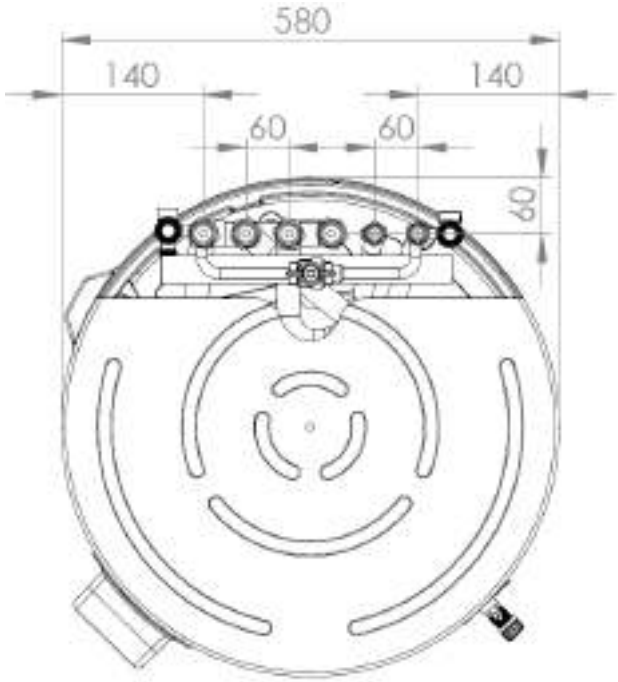
200L e 270L



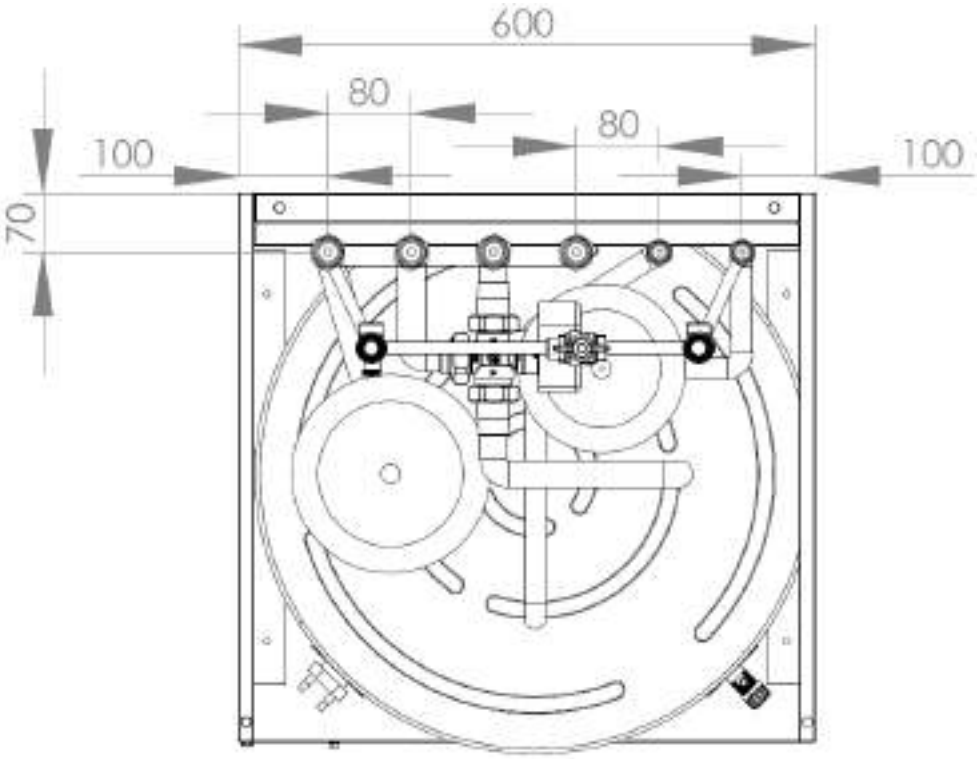


Symbols	160L	200L	270L
A	1450 mm	1900 mm	2200 mm
B	Ø580 mm	600 mm	600 mm
C	-	600 mm	600 mm

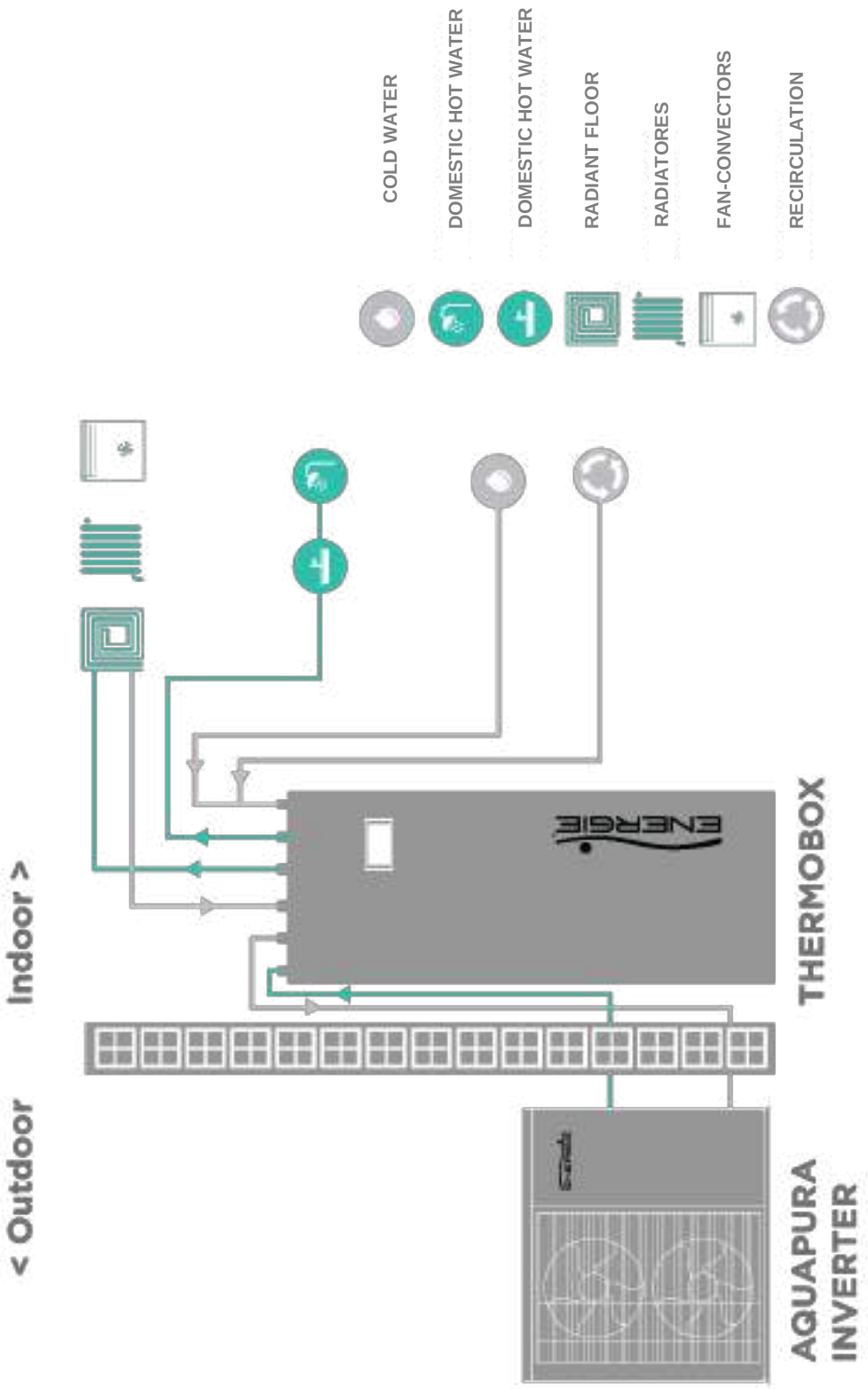
Installation dimensions (connections) – 160L



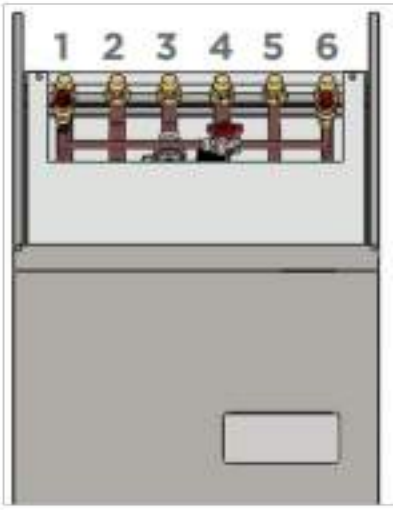
Installation dimensions (connections) – 200L / 270L



6. Hydraulic Installation Scheme



7. Hydraulic Installation

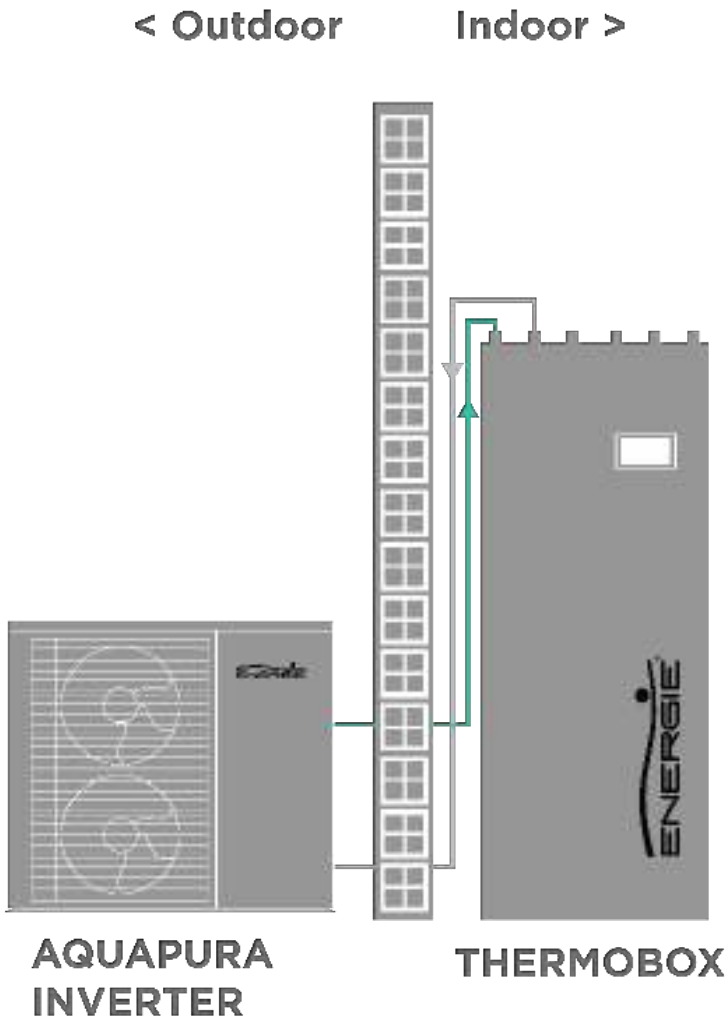


1- INLET from the outdoor unit – 1”M
2- OUTLET to outdoor unit -1”M
3- RETURN from central heating&cooling – 1”M
4- OUTLET to central heating&cooling – 1”M
5- DHW Outlet – 3/4"M
6- Cold water Inlet – 3/4”M
7- Ball Valve
8- Central heating&cooling safety valve (3 bar)
9- DHW safety valve (6 bar)

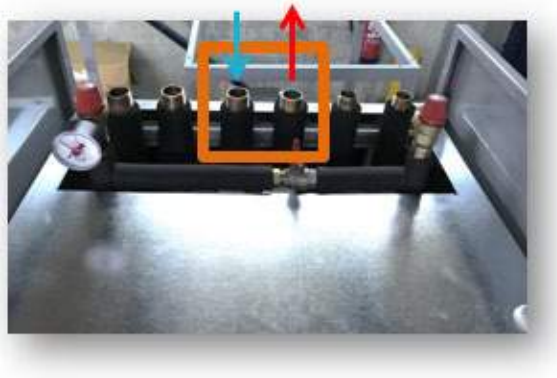
	Diameter hydraulic connections (mm)
1 – Inlet from outdoor unit	28
2 – Outlet to outdoor unit	28
3 – Return from central heating&cooling	28
4 – Outlet to central heating&cooling	28
5 – Domestic hot water outlet	22
6 – Cold water inlet	22

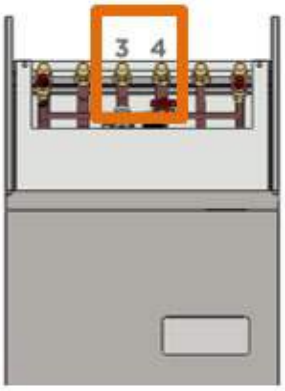
Exterior Unit Connections

1- INLET from the exterior unit – 1”M
2- OUTLET to outdoor unit -1”M



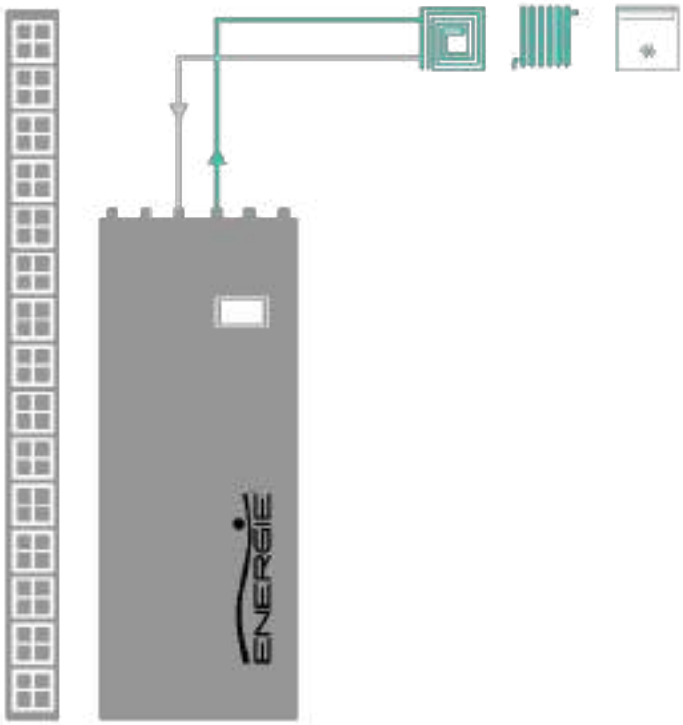
Central Heating & Cooling Connections





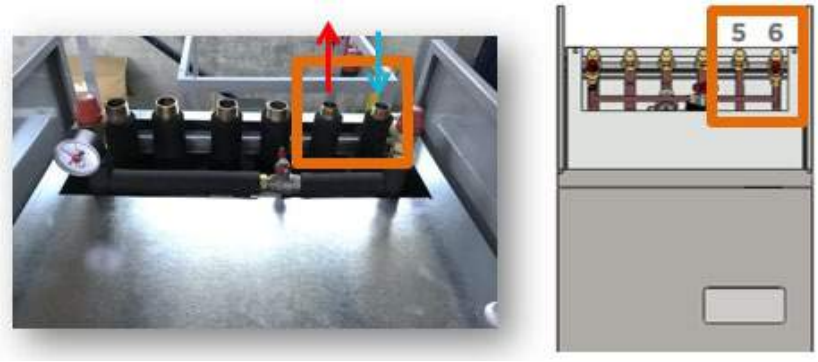
3- RETURN from central heating&cooling – 1”M
4- Outlet to central heating&cooling – 1”M

< Outdoor Indoor >



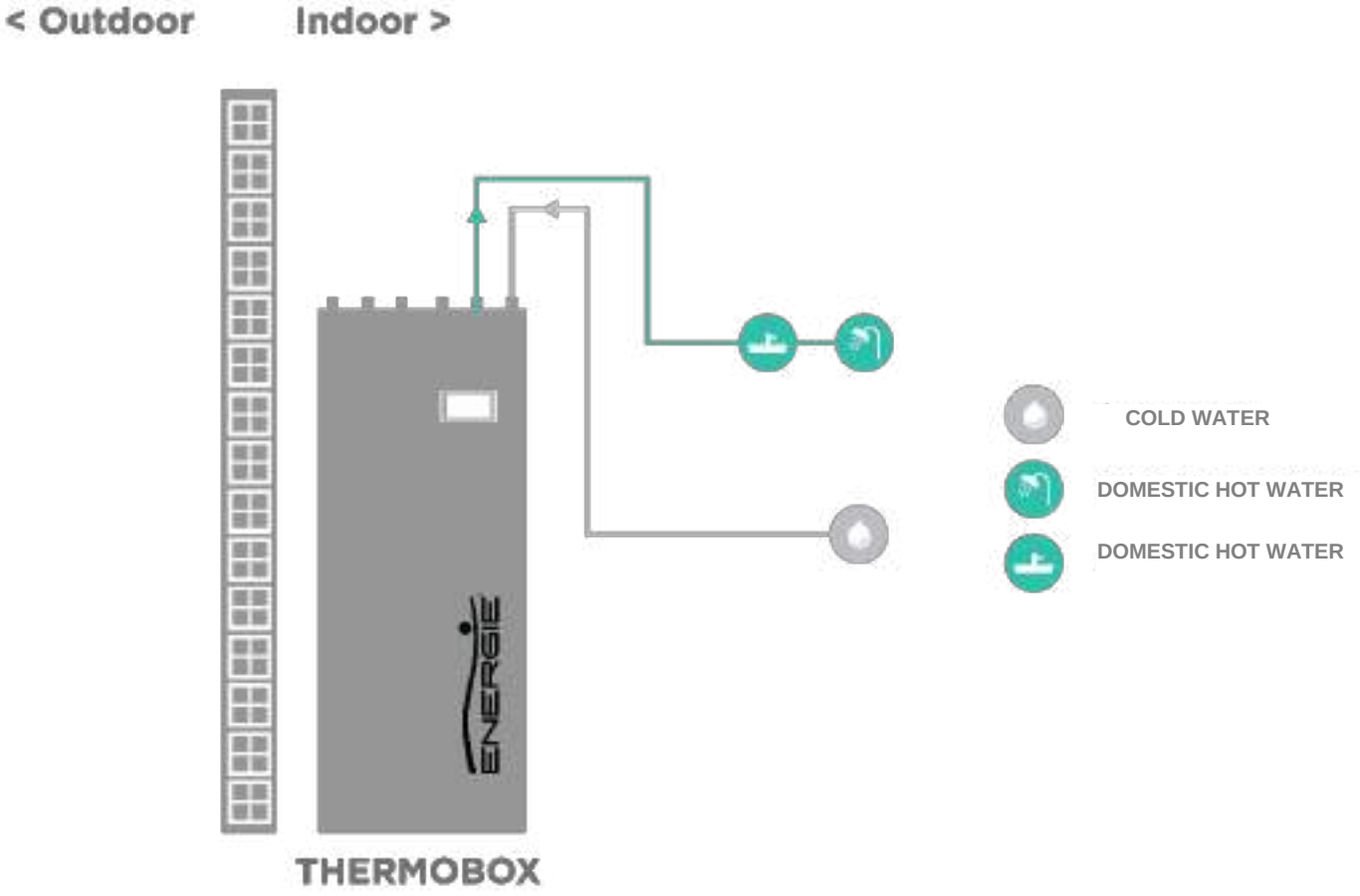
RADIANT FLOOR
RADIATORES
FAN-CONVECTORS

DHW Connections

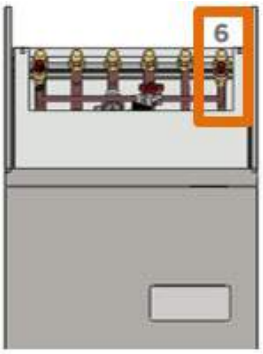


5- DHW Outlet – 3/4"M

6- Cold water Inlet – 3/4”M

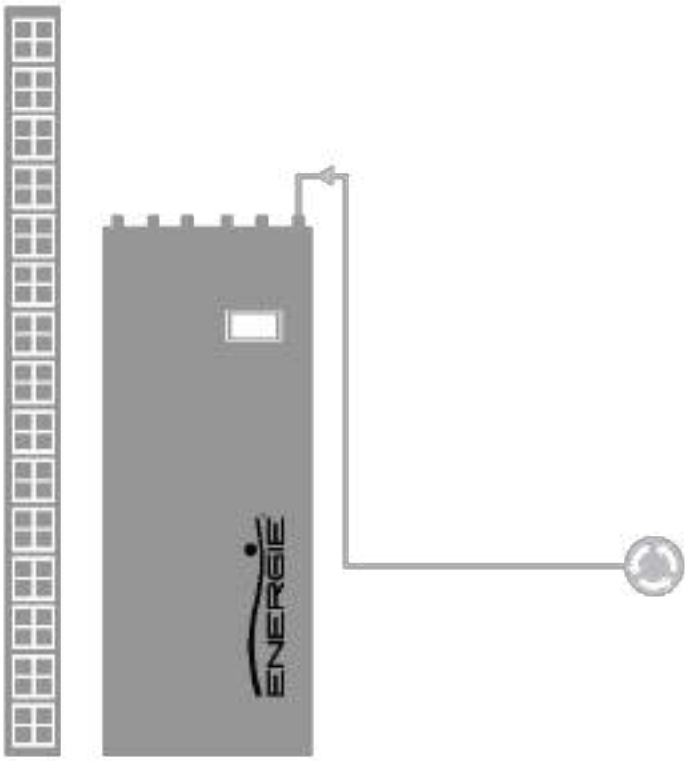


Recirculation



6- Cold water Inlet – 3/4”M

< Outdoor Indoor >



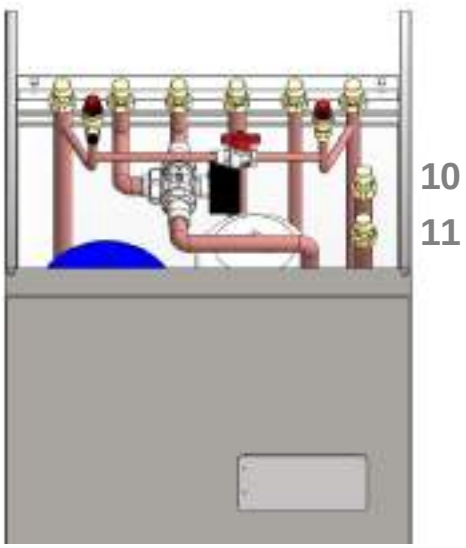
RECIRCULATION

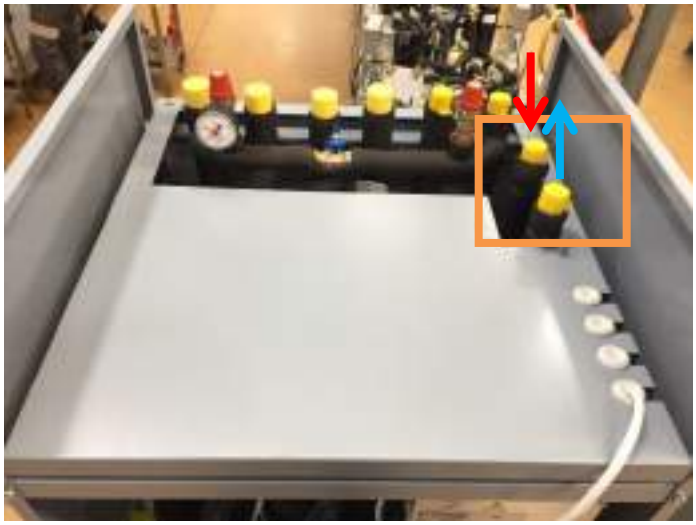
Filling the Hydraulic Circuit

The valve must be opened for the filling of the hydraulic circuit (DHW circuit and central heating&cooling). Before putting the heat pump into operation, check that the hydraulic circuit is full and properly purged. If these two requirements are met, the valve must be closed.

Extra Support Coil (Optional)

The interior unit THERMOBOX-X allows connection to a thermal support by the presence of an extra support coil inside the tank.



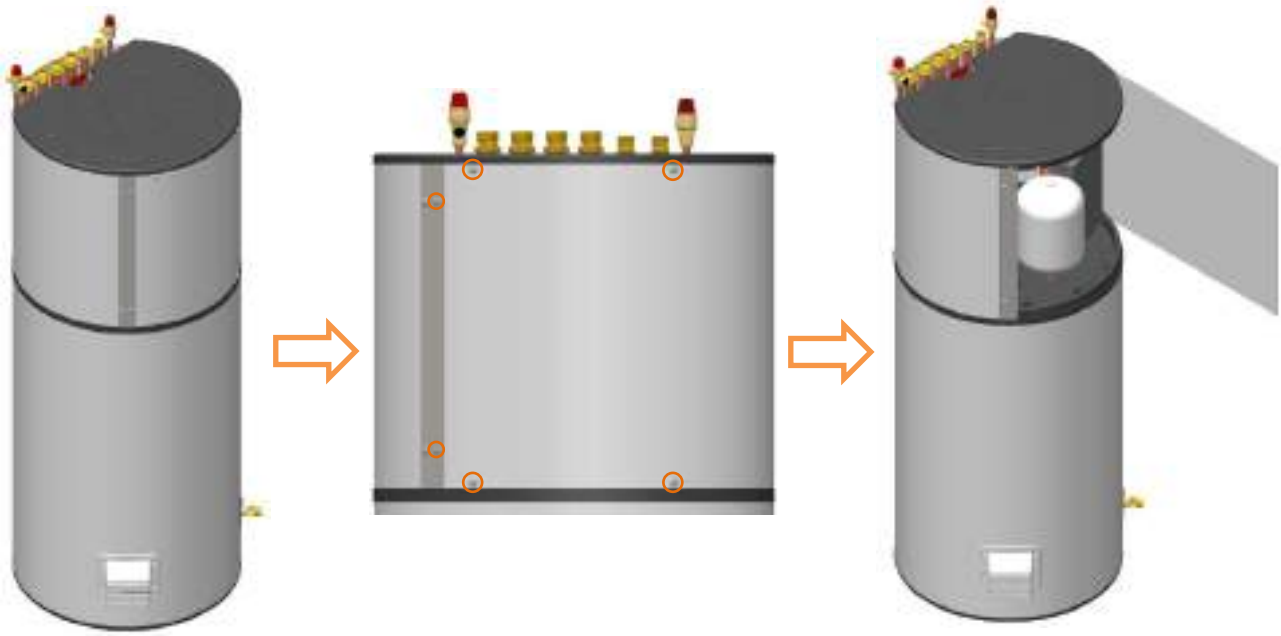


10 – Extra Support Coil Inlet - ¾”
11 – Extra Support Coil Outlet - ¾”

	Diameter hydraulic connections (mm)
10 – Extra Support Coil Outlet	22
11 – Extra Support Coil Inlet	22

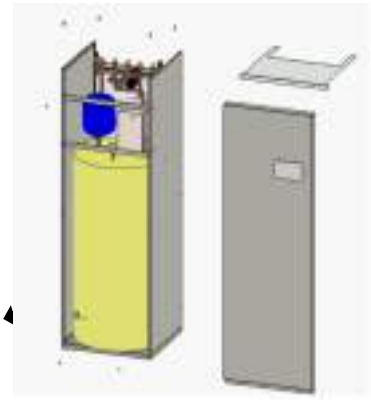
8. Disassembly for Maintenance / Installation (160L)

An important aspect to consider is the most appropriate procedure for dismantling the equipment that may be necessary in the act of maintenance and/or installation. In the 160L model,to access the interior of the equipment, the fixing screws markedon the front of the equipment should be removed to allow unilateral opening of the helmet.

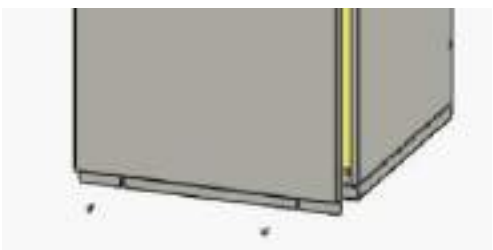


9. Disassembly for Maintenance / Installation (200L and 270L)

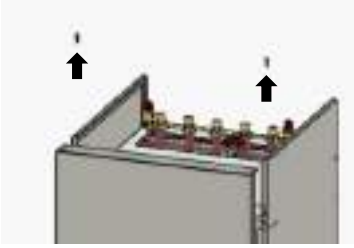
An important aspect to consider is the most appropriate procedure for dismantling the equipment that may be necessary in the act of maintenance and/or installation:



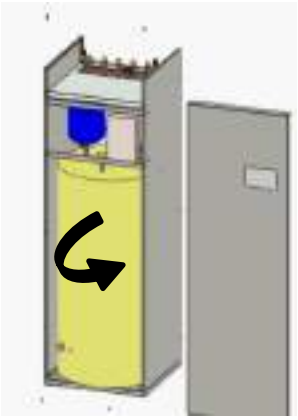
1. Remove the two front screws that fix the lower part of the front cover to the base of the equipment.



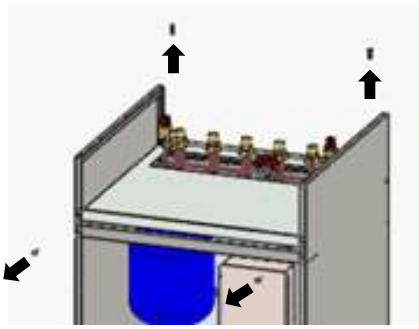
2. Unscrew the two top screws that secure the upper part of the front cover to the top of the equipment's side “walls”.



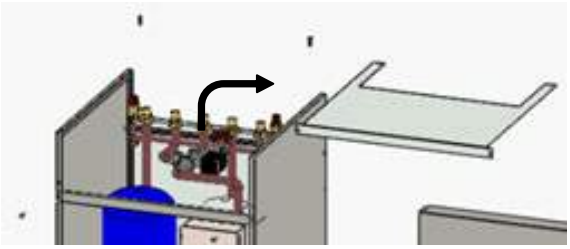
3. Remove the front cover from the equipment.



4. Extract the 4 screws (2 top and 2 front) that fix the upper part to the equipment structure.



5. Remove the upper part.



The follow-up of these steps will facilitate access to any component or part of the equipment.

10. Technical Data

INTERIOR UNIT

			THERMOBOX 160	THERMOBOX 200	THERMOBOX 270
Compatible Outdoor Units	AquaPura 6		●	●	
	AquaPura 12		●	●	●
	AquaPura 16			●	●
	AquaPura 8HT		●	●	
	AquaPura 14HT			●	●
Hydraulic Module	Operating modes		Heating / Cooling / DHW		
	DHW Capacity	L	160	200	270
	Material / Insulation		Stainless Steel / High density polyurethane		
	Weight	kg	80	138	155
	Dimensions	A·L·P (mm)	1450·Ø580	1900·600·600	2200·600·600
	Max Allowable Temperature DHW	ºC	80		
	Max Allowable Pressure DHW	bar	7		
	Thermal Loss	kWh/24h	1,38	1,46	2,05
	Connection type		Hydraulic		
	Unit control		Touch LCD controller		
	Hydronic Kit Climatization/DHW		Yes/Yes		
	Electrical support	W	1500		
	DHW coil	m^2	1,9	2,3	2,6
	DHW Expansion vessel	L	5	5	8
	Climatization expansion vessel	L	8	12	12
	Connections with outdoor unit	pol	1" M		
	Climatization connections	pol	1" M		
	DHW connections	pol	3/4" M		

Performance DHW [1]	Exterior Units		AP6	AP12	AP6	AP12	AP16	14HT	AP12	AP16	14HT
	Heating time (Δt=35ºC)	hh:mm	01:00	00:47	01:15	00:59	00:32	00:28	01:21	00:43	00:37
	COP/SPF		3,25	3,20	3,21	3,17	3,16	3,32	3,18	3,19	3,36
	Load profile		L		L				XL		
	Efficiency	%	135	133	134	132	132	139	132	133	140
	Amount of hot water available (40ºC)	L	206		258				332		
	Energy class		A+		A+				A+		
	DHW Max Temperature	ºC	55		55				55		

1) A14/W10-54, according to EN16147 and Delegated Regulation (EU) Nº812/2013.

EXTERIOR UNIT

			AQUAPURA 6 (INVERTER R 3 - 8)	AQUAPURA 12 (INVERTER R 8-12)	AQUAPURA 16 | 16T (INVERTER R 5-18)
Power supply		--	208-240V~/50-60Hz	208-240V~/50-60Hz	208-240V~/50-60Hz | 3N~/ 400V/ 50-60Hz
Power supplied	Heating (Nom./Max)	kW	6,47 / 8,25	8,25 / 12,52	15,36 / 18,51
	Cooling (Nom./Max)	kW	5,12 / 6,10	7,01 / 11,31	13,92 / 16,23
Power consumed	Heating (Nominal)	kW	1,33	1,71	3,21
	Cooling (Nominal)	kW	1,40	1,94	3,88
COP (1)	Nominal	--	4,87	4,82	4,79
EER (1)	Nominal	--	3,65	3,61	3,58
Energy Class at 35°C	Average climate	--	A+++	A++	A++
SCOP(2)-Seasonal efficiency at 35°C		-- / %	4,76	4,73	4,67
Energy Class at 55°C		--	A++	A++	A++
SCOP(2)- Seasonal efficiency at 55°C		-- / %	3,91	3,86	3,72
Maximum consumption (Power/current)		kW / A	2,9 / 13	4,6 / 21,5	7,2 / 33,2 | 7,2 / 12
Water temperature	Heating	°C	60	60	60
	Cooling	°C	7	7	7
Outdoor operating temperatures	Heating	°C	-25 a 35	-25 a 35	-25 a 35
	Cooling	°C	10 a 43	10 a 43	10 a 43
Refrigerant (R32) / CO2 Equivalent		Kg / Ton	1,3 / 0,88	1,7 / 1,15	(R32) 2,0 / 1,35
Compressor		--	DC Inverter	DC Inverter	DC Inverter
Nº of fans/ Type		--/--	1 / DC	1 / DC	2 / DC
Sound power(3)		dB(A)	37~54	42~55	44~58
Hydraulic connections diameter	Inlet / Outlet	inches	1"	1"	1" 1/4
Recirculation pump		---	Integrated	Integrated	Integrada
Water flow (min)		m3/h	1	1,7	2,9
Hydraulic circuit load loss		kPa	28	32	45
Dimensions		(AxLxP)	805 x 1002 x 490	915 x 953 x 460	1315 x 997 x 437
Weight		Kg	90	108	157

(1) COP and EER were calculated based on the standard EN14511-2
(2) SCOP was calculated according to the standard EN14825
(3) Sound power was calculated according to the standard EN12102-1

			AQUAPURA 8HT (INVERTER P 3-10)	AQUAPURA 14HT (INVERTER P 6-16)
Power supply		--	208-240V~/50-60Hz	208-240V~/50-60Hz
Power supplied	Heating (Nom./Max)	kW	7,2 / 10,3	11,85 / 15,75
	Cooling (Nom./Max)	kW	5,7 / 8,51	7,85 / 11,61
Power consumed	Heating (Nominal)	kW	1,5	2,36
	Cooling (Nominal)	kW	1,64	1,98
COP (1)	Nominal	--	4,8	5,02
EER (1)	Nominal	--	3,47	3,96
Energy Class at 35°C	Average climate	--	A+++	A+++
SCOP(2)-Seasonal efficiency at 35°C		-- / %	5,25	5,13
Energy Class at 55°C		--	A++	A+++
SCOP(2)- Seasonal efficiency at 55°C		-- / %	3,73	3,97
Maximum consumption (Power/current)		kW / A	3,0 / 13,5	5,3 / 24,5
Water temperature	Heating	°C	60	60
	Cooling	°C	7	7
Outdoor operating temperatures	Heating	°C	-25 a 35	-25 a 35
	Cooling	°C	10 a 43	10 a 43
Refrigerant (R32) / CO2 Equivalent		Kg / Ton	(R290) / 0,5 /0,0015	(R290) 0,85 / 0,00255
Compressor		--	DC Inverter	DC Inverter
Nº of fans/ Type		--/--	1 / DC	1 / DC
Sound power(3)		dB(A)	43	42~58
Hydraulic connections diameter	Inlet / Outlet	inches	1	1”
Recirculation pump		---	Integrada	Integrada
Water flow (min)		m3/h	1	1,7
Hydraulic circuit load loss		kPa	20	45
Dimensions		(AxLxP)	795 x 1167 x 455	1287 x 928 x 500
Weight		Kg	80	160

(1) COP e EER foram calculados com base na norma EN14511-2
(2) SCOP foi calculado de acordo com a norma EN14825
(3) Potência sonora foi calculada de acordo com a norma 12102-1

11. Installation

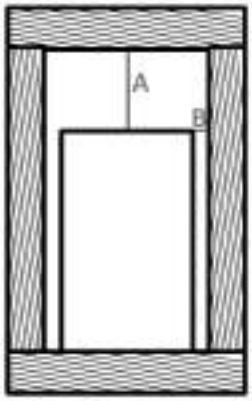
Installation location

Before starting any installation procedure, check that the base of the place where the equipment will be placed is perfectly level. Look for a place with an even, safe and resistant floor considering the weight of the machine.

During their operation, the safety valves may eventually activate or even have to be activated for maintenance procedures, being necessary to prepare the installation site with a drain point to facilitate their drainage.

Another important point is the minimum distances that the equipment must comply with in relation to walls, ceilings or any type of obstacles that may hinder access, both in the act of installation and in any maintenance operations.

The recommendations illustrated are also valid if the equipment is installed inside a movable type box.



	Recommendations	
	A	B
	> 200 mm	> 10 mm

Climatization expansion vessel

For safety reasons when transporting the equipment, the climatization expansion vessel is supplied **disconnected** inside the Thermobox. Before making any hydraulic connection, this expansion vessel must be threaded into the corresponding bush.

12. Aquapura Thermobox (activate back-up electrical heater to DHW)

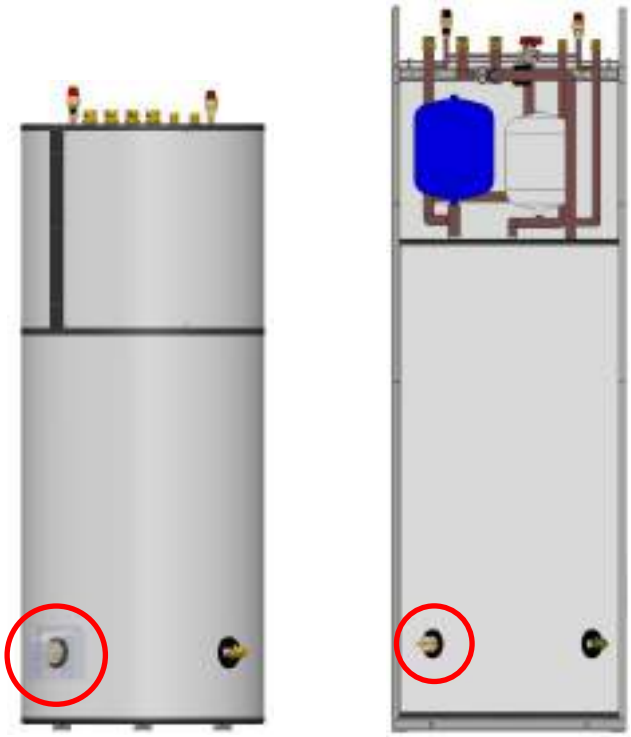
The AQUAPURA THERMOBOX has an immersion electrical heater of 1500W integrated in the DHW water heater.

The electrical heater is activated manually in case of any non-conformity in the equipment.

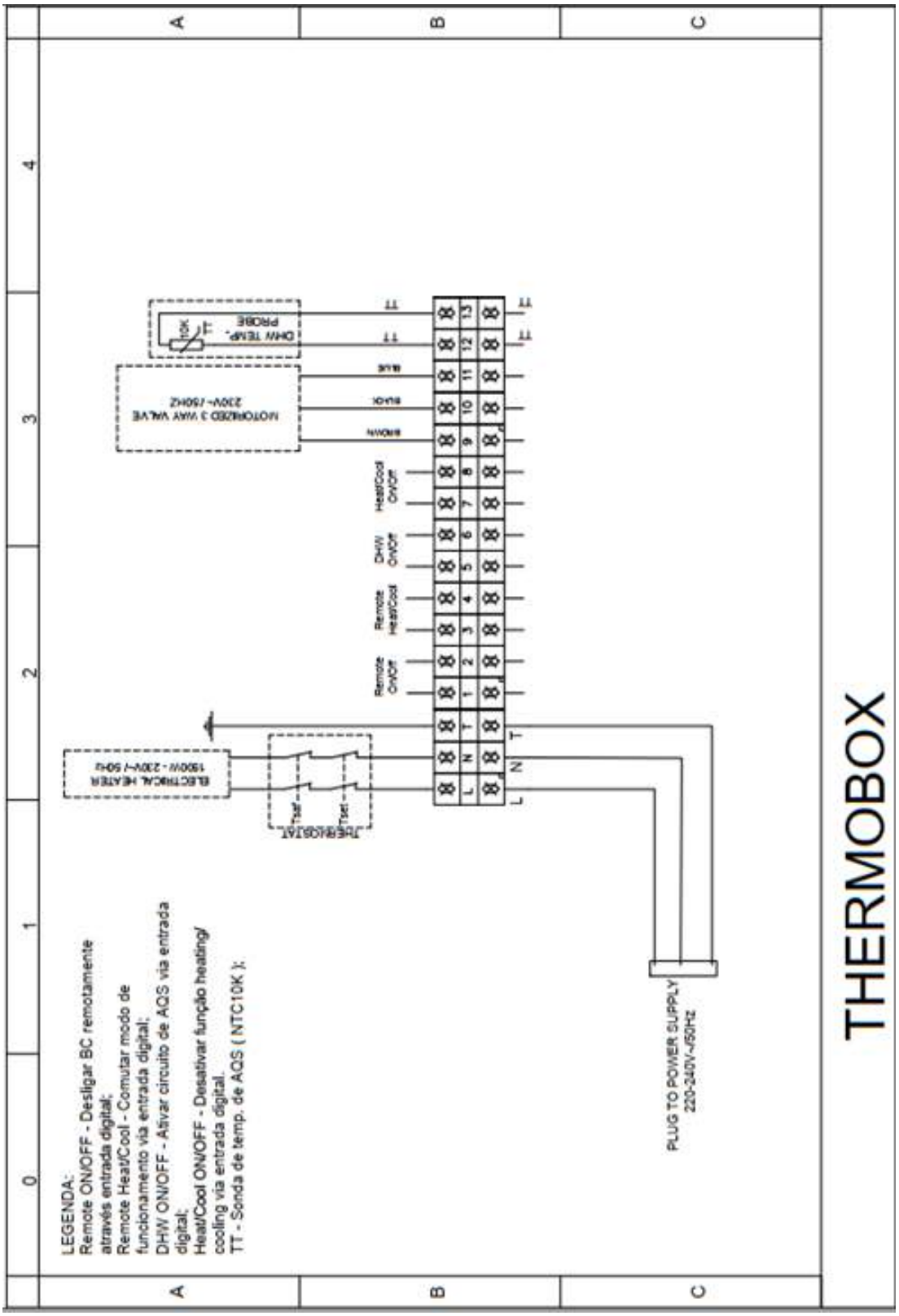
To activate the resistance, connect the plug on top of the THERMOBOX to the socket (230V~).

The heater has an integrated thermostat that is set to heat the water up to 55ºC.

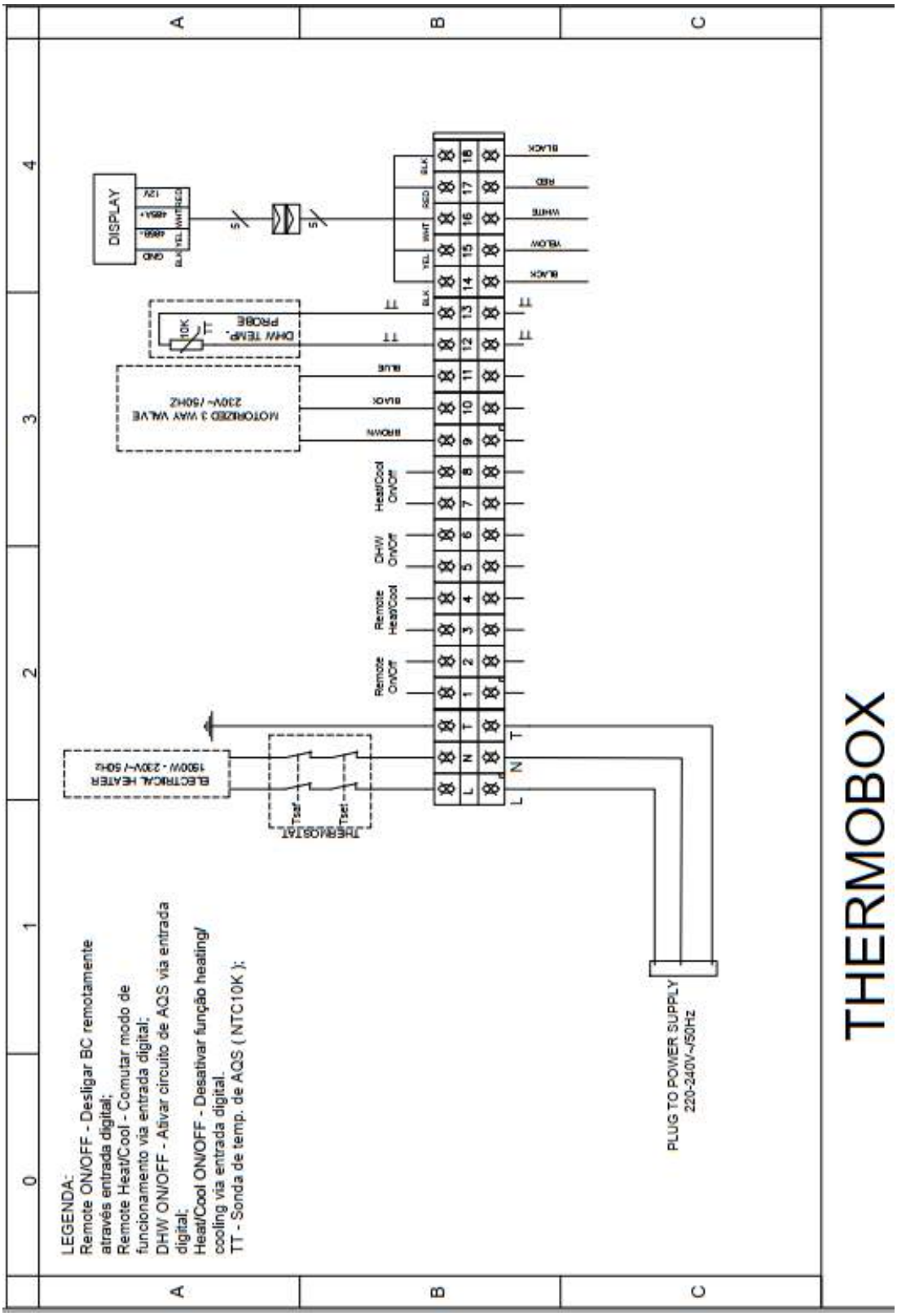
For maintenance, the electrical heater must be disconnected from the electrical socket and the tank must be empty (use the drain valve).



13. Wiring Scheme (160L model)

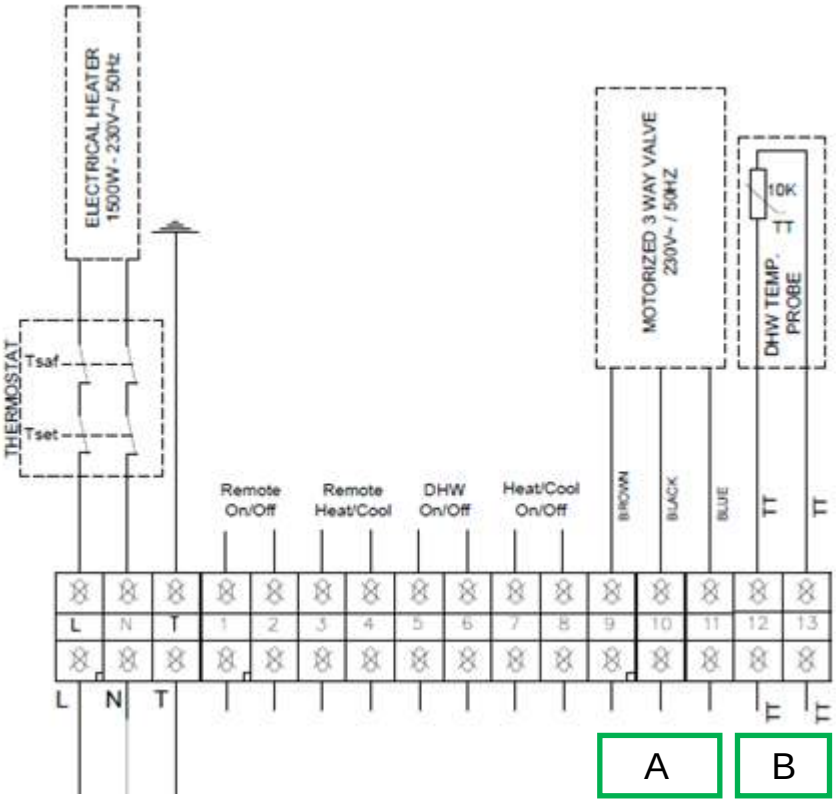


14. Wiring Scheme (200L and 270L model)



15. Electrical connections between the heat pump and the Thermobox controlled by the display (160L model)

The Heat Pump operating modes are changed/executed via the display. This way we disable all digital inputs. In this type of configuration, it is assumed that there is no room thermostat to control the room temperature. In this sense, the Heat Pump is controlled by the return temperature.



In this configuration, the following cables must be passed between the Heat Pump and Thermobox:

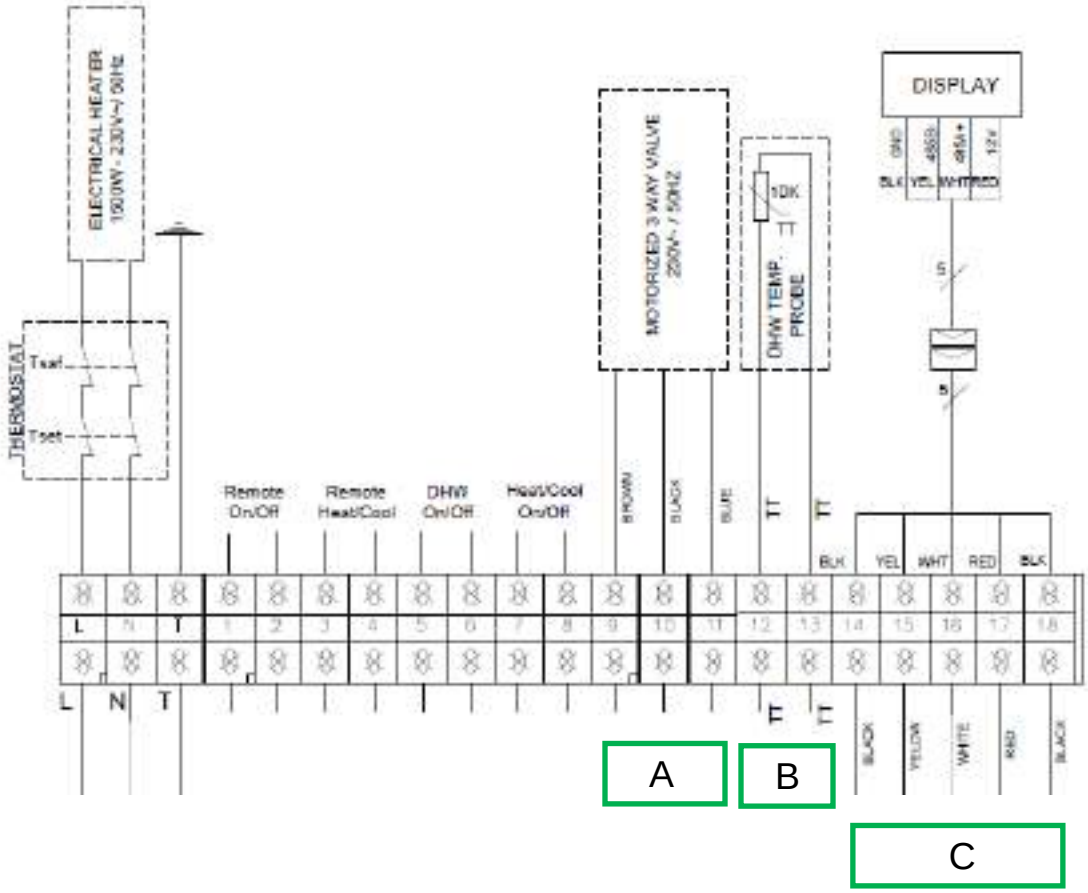
- [A] 3x1.5mm2 cable (Brown – permanent phase; Black – switching phase; Neutral blue)
- [B] Temperature probe cable (supplied for distances up to 12m)

Note: The display is directly connected to the associated heat pump (outdoor unit), so its connection is independent from the Thermobox indoor unit.

In case of doubt, consult the diagram provided in the annex.

16. Electrical connections between the heat pump and the Thermobox controlled by the display (200L and 270L model)

The Heat Pump operating modes are changed/executed via the display. This way we disable all digital inputs. In this type of configuration, it is assumed that there is no room thermostat to control the room temperature. In this sense, the Heat Pump is controlled by the return temperature.



In this configuration, the following cables must be passed between the Heat Pump and Thermobox:

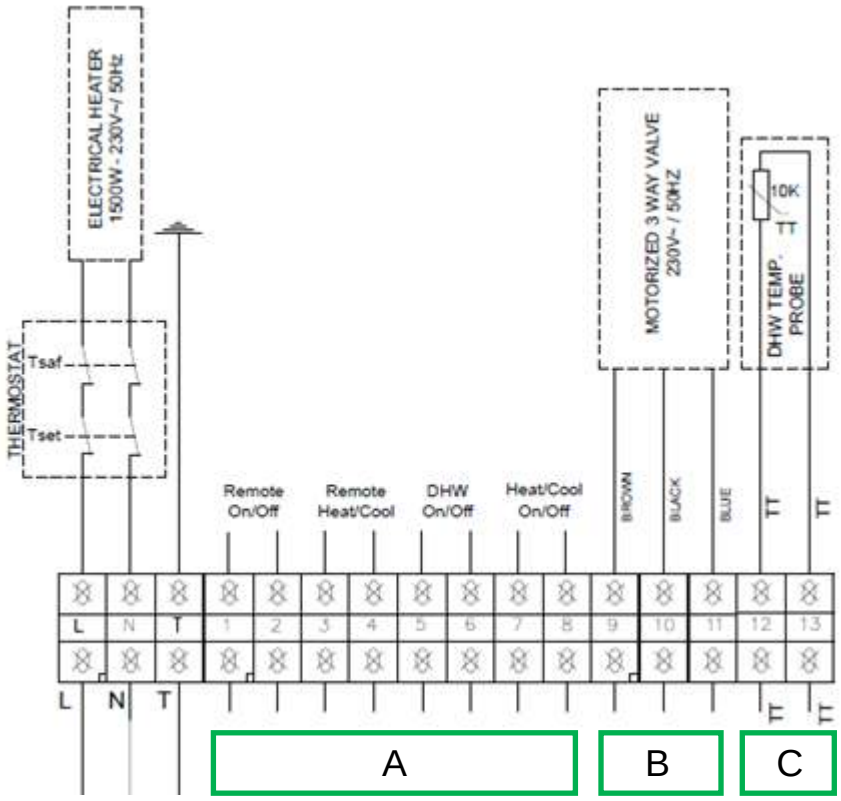
- [A] 3x1.5mm2 cable (Brown – permanent phase; Black – switching phase; Neutral blue)
- [B] Temperature probe cable (supplied for distances up to 12m)
- [C] Display connection cable (supplied for distances up to 12m)

In case of doubt, consult the diagram provided in the annex.

17. Electrical connections between the Heat Pump and Thermobox controlled by digital inputs (160L model)

The operation modes of the Heat Pump are changed/executed through commands given in the digital inputs, thus, we make useless the possibility of changing the operating modes through the display.

In this type of configuration, the existence of a room thermostat for temperature control and selection of operating modes is assumed.



In this configuration, the following cables must be passed between the Heat Pump and Thermobox:

- [A] 4-pair network cable protected with steel mesh (steel mesh must be connected to common point of connection – GND terminal)
- [B] 3x1.5mm2 cable; (Brown - permanent phase; Black - switching phase; Neutral blue)
- [C] Temperature probe cable (supplied for distances up to 12m)

In case of doubt, consult the diagram provided in the annex.

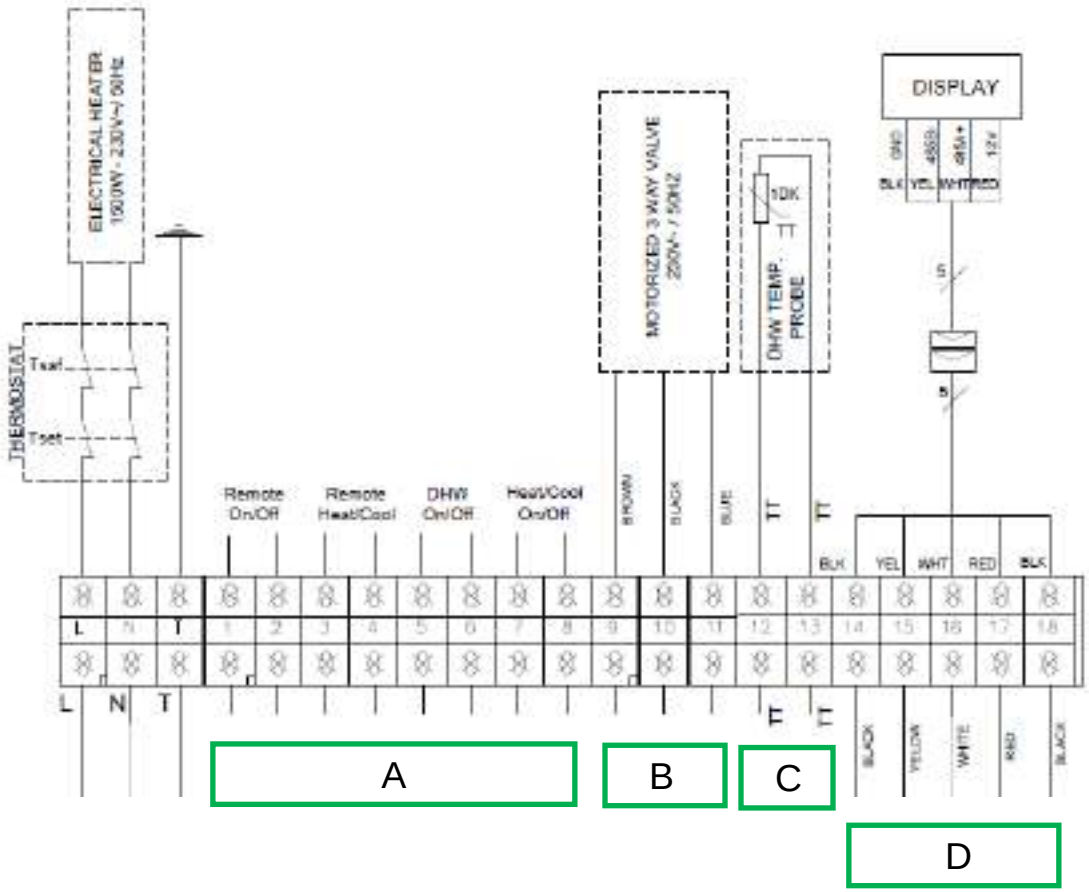
By default, the digital inputs are inactive, in this context it is necessary to enable them.

To enable the digital inputs, follow the procedures described in chapter 19.

18. Electrical connections between the Heat Pump and Thermobox controlled by digital inputs (200L and 270L model)

The operation modes of the Heat Pump are changed/executed through commands given in the digital inputs, thus, we make useless the possibility of changing the operating modes through the display.

In this type of configuration, the existence of a room thermostat for temperature control and selection of operating modes is assumed.



In this configuration, the following cables must be passed between the Heat Pump and Thermobox:

- [A] 4-pair network cable protected with steel mesh (steel mesh must be connected to common point of connection – GND terminal)
- [B] 3x1.5mm2 cable; (Brown - permanent phase; Black - switching phase; Neutral blue)
- [C] Temperature probe cable (supplied for distances up to 12m)
- [D] Display connection cable (supplied for distances up to 12m)

In case of doubt, consult the diagram provided in the annex.

By default, the digital inputs are inactive, in this context it is necessary to enable them.

To enable the digital inputs, follow the procedures described in chapter 19.

19. Enable Digital Inputs HP

WARNING: Do not connect (220/240V~) to the terminals of the digital inputs **Remote On/Off, Remote Heat/Coll, DHW On/Off and Heat/Cool On/Off** otherwise it may cause irreversible damage to the controller and loss of warranty.

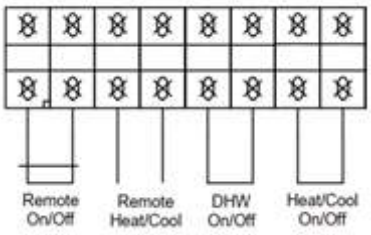
WARNING: The contacts of the digital inputs **Remote On/Off, Remote Heat/Coll, DHW On/Off and Heat/Cool On/Off** are dry contacts, that is, contacts without voltage.

WARNING: The digital inputs **Remote On/Off, Remote Heat/Coll, DHW On/Off and Heat/Cool On/Off** are inactive by default, giving priority to the settings made through the console.

To enable the digital inputs, perform the following procedures:

1. Access the heat pump settings selecting "Parameter" / "Factory".
2. Enter the password "066";
3. Select the menu "System";
4. Change the configuration to "Enable" / "Slave".

After completing the mentioned procedures, the digital inputs are available for use.

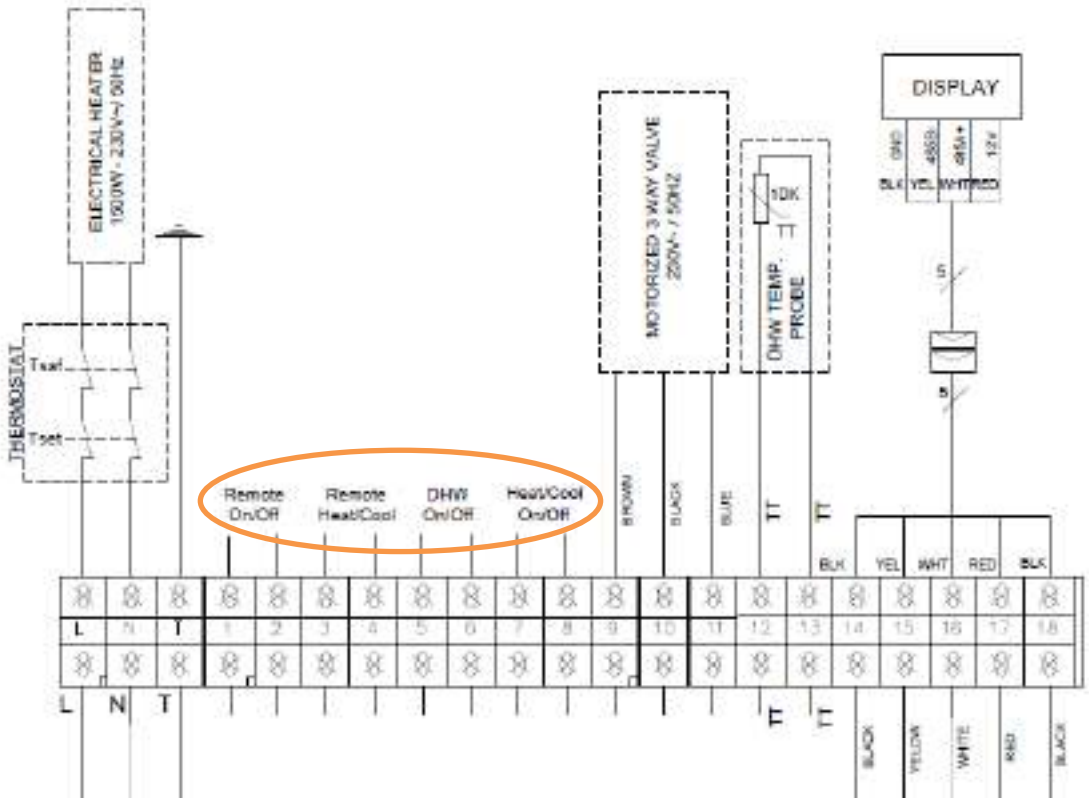


- **REMOTE ON/OFF** – Turn ON or OFF the equipment remotely.
  - Open contact, BC OFF;
  - Closed contact, BC ON;
- **REMOTE HEAT/COOL** – Select the operating mode Heating or Cooling;
  - Open contact, HP in cooling mode;
  - Closed contact, HP in heating mode;
- **DHW ON/OFF** – Enable DHW function;
  - Open contact, HP with DHW function disabled;
  - Closed contact, HP with DHW function enable;
- **HEAT/ COOL ON/OFF** – Enable or disable HP operation in Heating operating mode or in Cooling operating mode:
  - Open contact, HP in standby;
  - Closed contact, HP activated.

The digital input **HEAT/ COOL ON/OFF** is used to connect the ambient thermostat.

WARNING: Use cable protected with steel mesh in the connections of the digital inputs, this way we protect the digital inputs against noise coming from the compressor.
Failure to use this type of cable can generate abnormal behavior in the operation of the equipment.

The mesh must not be connected to the equipment's earth, but to the “GND” terminal of the respective digital input (see supplied electrical diagram).



If detect something in the manual that is not clear or if you have any questions about the operation and maintenance of the equipment, which is not covered in this manual, please contact us.

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