

TRIO PACK HYBRID 4-6-9 I

Heat pump consisting of:

- indoor unit

UITPH I

-condensing boiler

VICTRIX TERA 24 PLUS V2

-outdoor unit

AUDAX PRO 4 - 6 - 9 V2

-Solar / Domus Container frame

IE

Instructions and warnings

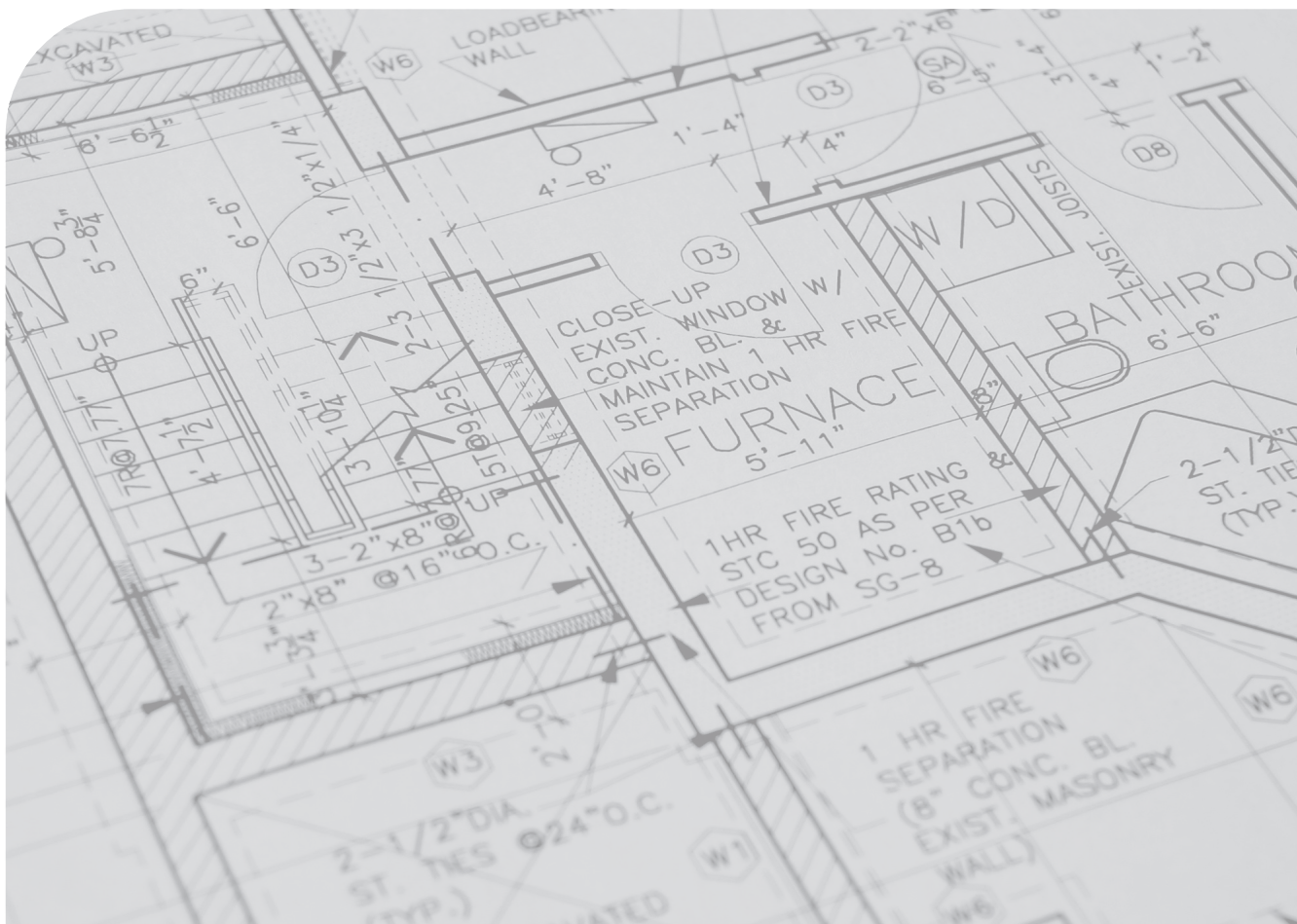
Installer

User

Control panel

Maintenance technician

Technical data





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Dear Customer

Congratulations for having chosen a top-quality Immergas product, able to assure well-being and safety for a long period of time. As an Immergas customer you can also count on a Qualified Authorised After-Sales Technical Assistance Centre, prepared and updated to guarantee constant efficiency of your appliance. Read the following pages carefully: you will be able to draw useful tips on the proper use of the device, compliance with which will confirm your satisfaction with the Immergas product.

For assistance and routine maintenance, contact Authorised Technical Service Centres: they have original spare parts and are specifically trained directly by the manufacturer.

The company **IMMERGAS S.p.A.** with registered office in via Cisa Ligure 95 42041 Brescello (RE), declares that the design, manufacturing and after-sales assistance processes comply with the requirements of standard **UNI EN ISO 9001:2015**.

For further details on the product CE marking, request a copy of the Declaration of Conformity from the manufacturer, specifying the appliance model and the language of the country.

The manufacturer declines all liability due to printing or transcription errors, reserving the right to make any modifications to its technical and commercial documents without forewarning.





GENERAL WARNINGS

- This book contains important information for the:
- **Installer** (section 1);
- **User** (section 2);
- **Maintenance Technician** (section 3).
- For instructions on the “Solar Container” and “Domus Container”, consult the relevant instruction booklets;
- For instructions on the AUDAX PRO V2 outdoor condensing unit and VICTRIX TERA 24 PLUS V2 boiler, please refer to the relevant instruction manuals;
- The user must carefully read the instructions in the specific section (sec.2).
- The user must limit operations on the appliance only to those explicitly allowed in the specific section.
- **Every operation carried out on the heat pump (e.g. set up, inspection, installation and commissioning), must mandatorily be performed by authorised personnel alone and in possession of a technical engineering or professional degree qualifying them to perform these tasks. They must also have attended a refresher course acknowledged by competent authorities. This particularly applies to personal specialised in C.H. and air-conditioning systems and qualified electricians who, due to their specialised training, skills and experience are experts in the correct installation and maintenance of C.H., cooling and air-conditioning systems.**
- The instruction booklet is an integral and essential part of the product and must be given to the new user in the case of transfer or succession of ownership.
- It must be stored with care and consulted carefully, as all of the warnings provide important safety indications for installation, use and maintenance stages.
- In compliance with legislation in force, the systems must be designed by qualified professionals, within the dimensional limits established by the Law. Installation and maintenance must be performed in compliance with the regulations in force, according to the manufacturer's instructions and by professionally qualified staff, meaning staff with specific technical skills in the plant sector, as envisioned by the law.
- Improper installation or assembly of the Immergas appliance and/or components, accessories, kits and devices can cause unexpected problems for people, animals and objects. Read the instructions provided with the product carefully to ensure proper installation.
- This instructions manual provides technical information for installing Immergas products. As for the other issues related to the installation of products (e.g. safety at the workplace, environmental protection, accident prevention), it is necessary to comply with the provisions of the standards in force and the principles of good practice.
- All Immergas products are protected with suitable transport packaging.
- The material must be stored in a dry place protected from the weather.
- Damaged products must not be installed.
- The appliance must only be intended for the use for which it has been expressly declared. Any other use will be considered improper and therefore potentially dangerous.
- If errors occur during installation, operation and maintenance, due to non-compliance with technical laws in force, standards or instructions contained in this booklet (or however supplied by the manufacturer), the manufacturer is excluded from any contractual and extra-contractual liability for any damage and the appliance warranty is invalidated.
- Maintenance must be carried out by skilled technical staff. For example, the Authorised Service Centre that represents a guarantee of qualifications and professionalism.
- In the event of malfunctions, faults or incorrect operation, turn the appliance off and contact an authorised company (e.g. the Authorised Technical Assistance Centre, which has specifically trained staff and original spare parts). Do not attempt to modify or repair the appliance alone.



SAFETY SYMBOLS USED



GENERIC HAZARD

Strictly follow all of the indications next to the pictogram. Failure to follow the indications can generate hazard situations resulting in possible serious harm to the health of the operator and user in general, and/or serious material damage.



ELECTRICAL HAZARD

Strictly follow all of the indications next to the pictogram. The symbol indicates the appliance's electrical components or, in this manual, identifies actions that can cause an electrical hazard.



WARNING FOR INSTALLER

Read the instruction booklet carefully before installing the product.



LOW FLAMMABILITY MATERIAL

The symbol indicates that the appliance contains low flammability material.



WARNINGS

Strictly follow all of the indications next to the pictogram. Failure to follow the indications can generate hazard situations resulting in possible minor injuries to the health of the operator and user in general, and/or minor material damage.



ATTENTION

Read and understand the appliance's instructions before performing any operation, carefully following the indications provided. Failure to follow the indications can generate appliance malfunctions.



INFORMATION

Indicates useful tips or additional information.



EARTH TERMINAL CONNECTION

The symbol identifies the appliance's earth terminal connection point.



DISPOSAL WARNING

The user must not dispose of the appliance at the end of its service life as municipal waste, but send it to appropriate collection centres.

PERSONAL PROTECTIVE EQUIPMENT



SAFETY GLOVES



SAFETY GOGGLES



SAFETY FOOTWEAR



1 INSTALLATION

1.1 DESCRIPTION OF THE PRODUCT.

- Trio Pack Hybrid 4-6-9 I is a hybrid heat pump consisting of:
- UI TPH indoor unit (hereinafter called, indoor unit or UI TPH I).
 - VICTRIX TERA 24 PLUS V2 condensing boiler (hereinafter referred to as boiler).
 - Audax Pro 4-6-9 V2 outdoor unit (hereinafter referred to as outdoor unit or Audax Pro 4-6-9 V2).
 - Solar / Domus Container frame.

Trio Pack Hybrid 4-6-9 I is perfectly operational only if the two units are correctly powered and interconnected.

The UI TPH I indoor unit was designed solely for floor installation for heating and air conditioning and to produce domestic hot water for domestic use and similar purposes.

For normal operation it must be paired with one of the following outdoor units:

- Audax Pro 4 V2 outdoor unit;
- Audax Pro 6 V2 outdoor unit;
- Audax Pro 9 V2 outdoor unit;

Accordingly, it is necessary to comply with all of the rules regarding safety and the use of both appliances.

1.2 INSTALLATION RECOMMENDATIONS.

Operators who install and service the appliance must wear the personal protective equipment required by applicable law.



The place of installation of the appliance and relative Immergas accessories must have suitable features (technical and structural), such as to allow for (always in safe, efficient and comfortable conditions):



- installation (according to the provisions of technical legislation and technical regulations);
- maintenance operations (including scheduled, periodic, routine and special maintenance);
- removal (outdoors in the place for loading and transporting the appliances and components) as well as their eventual replacement with appliances and/or equivalent components.

Installation must be carried out according to regulation standards, current legislation and in compliance with local technical regulations and the required technical procedures.



The appliance operates with R32 refrigerant gas.



This gas is ODOURLESS.



Pay the utmost attention

Strictly follow the instruction handbook of the outdoor unit before installation and any type of operation on the chiller line.

R32 refrigerant gas belongs to the low flammability refrigerant category: class A2L according to standard ISO 817. It guarantees high performance with low environmental impact. The new gas reduces the potential environmental impact by one third compared to R410A, having less effect on global warming (GWP 675).



The manufacturer declines all liability in the event of damage caused by appliances removed from other systems or for any non-conformities with such equipment.



Only professionally qualified companies are authorised to install Immergas appliances.



Check the environmental operating conditions of all parts relevant to installation, referring to this booklet.



When installing the kit or during maintenance of the appliance, always first empty the system and DHW circuits, so as not to endanger the electrical safety of the appliance (*Par. 2.6*).



Always disconnect power to the appliance and, based on the type of intervention, decrease pressure and/or bring it to zero in the gas and DHW circuits.

Before installing the appliance, ensure it has been delivered in perfect condition; if in doubt, contact the supplier immediately.



Packing materials (staples, nails, plastic bags, polystyrene foam, etc.) constitute a hazard and must be kept out of the reach of children.

Keep all flammable objects away from the appliance (paper, rags, plastic, polystyrene, etc.).



Any modification to the appliance that is not explicitly indicated in this section of the booklet is forbidden.



INSTALLER

USER

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Installation Standards.

This UI TPH I, if installed inside the wall, requires the use of the specific "Solar Container".

The indoor unit is absolutely not designed for installation on bases or floors without the appropriate container.



The installation of the "Solar Container" inside the wall must guarantee stable and effective support for the UI TPH I. The Solar Container ensures adequate support only if inserted correctly (according to the rules of good practice) following the instructions given on its instruction sheet. The "Solar Container" for UI TPH I is not a supporting structure and cannot replace the piece of wall removed. It is therefore necessary to check its correct positioning inside the wall. For safety reasons against any leaks it is necessary to plaster the product housing in the brick wall. This product is used to heat water to below boiling temperature in atmospheric pressure. It must be connected to a central heating system and domestic hot water circuit suited to its performance and capacity.



If it is planned to be installed with the use of the special "Domus Container", the indoor unit must be installed in an environment in which the temperature cannot fall below 0°C.

Do not expose the indoor unit to atmospheric agents.



Do not install in places/rooms that constitute public areas of apartment buildings, internal stairways or other escape routes (e.g. floor landings, entrance halls, etc.).



Do not obstruct access to the front door of the Container and periodically check that the front vents are always clear for proper air circulation.



To prevent electrocution, fire or injury, always switch off the unit, disable the protective switch and, if smoke escapes or if the unit is extremely noisy, contact an Authorised After-Sales Technical Assistance Centre.



Do not install in places where there is the risk of combustible gas escaping.



Do not install near sources of heat.



Pay attention not to generate sparks as follows:



- Do not remove the fuses while the unit is on.
 - Do not unplug the unit while it is on.
- It is recommended to install the outlet high up. Lay the cables in such a way that they do not get tangled.

This indoor unit is used to heat water to below boiling temperature in atmospheric pressure.



They must be connected to a central heating system and domestic hot water circuit suited to their performance and capacity.



The appliance is built to also operate in cooling mode.



If cold water production, during summer, could interfere and damage the central heating only systems, necessary precautions must be taken to prevent that an unintentional production of cold water enters the heating only system.

Failure to comply with the above implies personal responsibility and invalidates the warranty.



"Anti-legionella" thermal treatment of the accumulation storage tank unit.

The anti-legionella function is programmed directly on the panel.



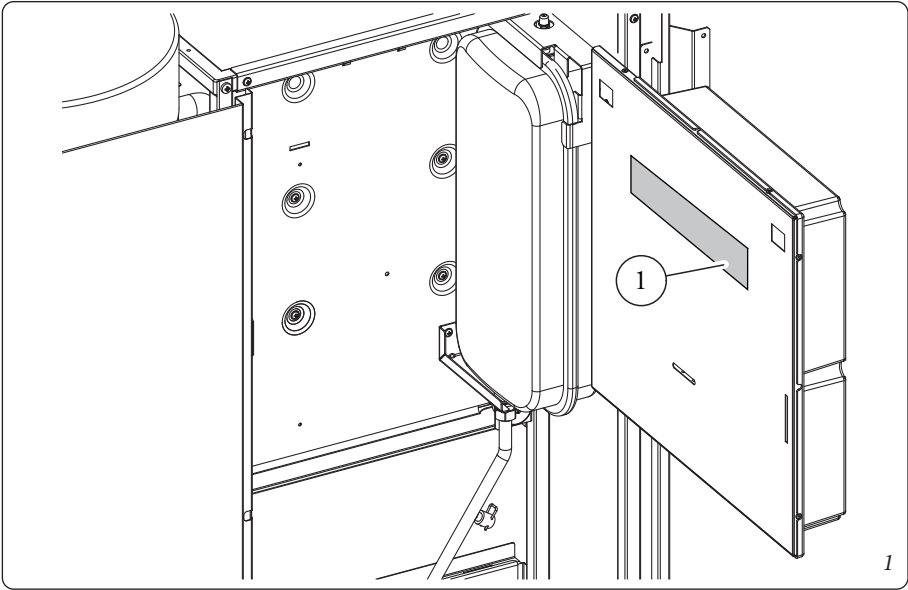
During this phase, the temperature of the water inside the tank exceeds 60°C with the subsequent risk of burns.

Keep this domestic hot water treatment under control (and inform the users) to prevent unforeseeable damage to people, animals, things.

If required install a thermostatic valve on the domestic hot water outlet to prevent scalding.

1.3 DATA PLATE.

1.3.1 Data nameplate positioning



Key (Fig. 1):
1 - Data plate

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1.3.2 Key for Data nameplate

A	B		
Md.	Cod.Md.	Sr N°	CHK X
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	
C		13	
		14	

2

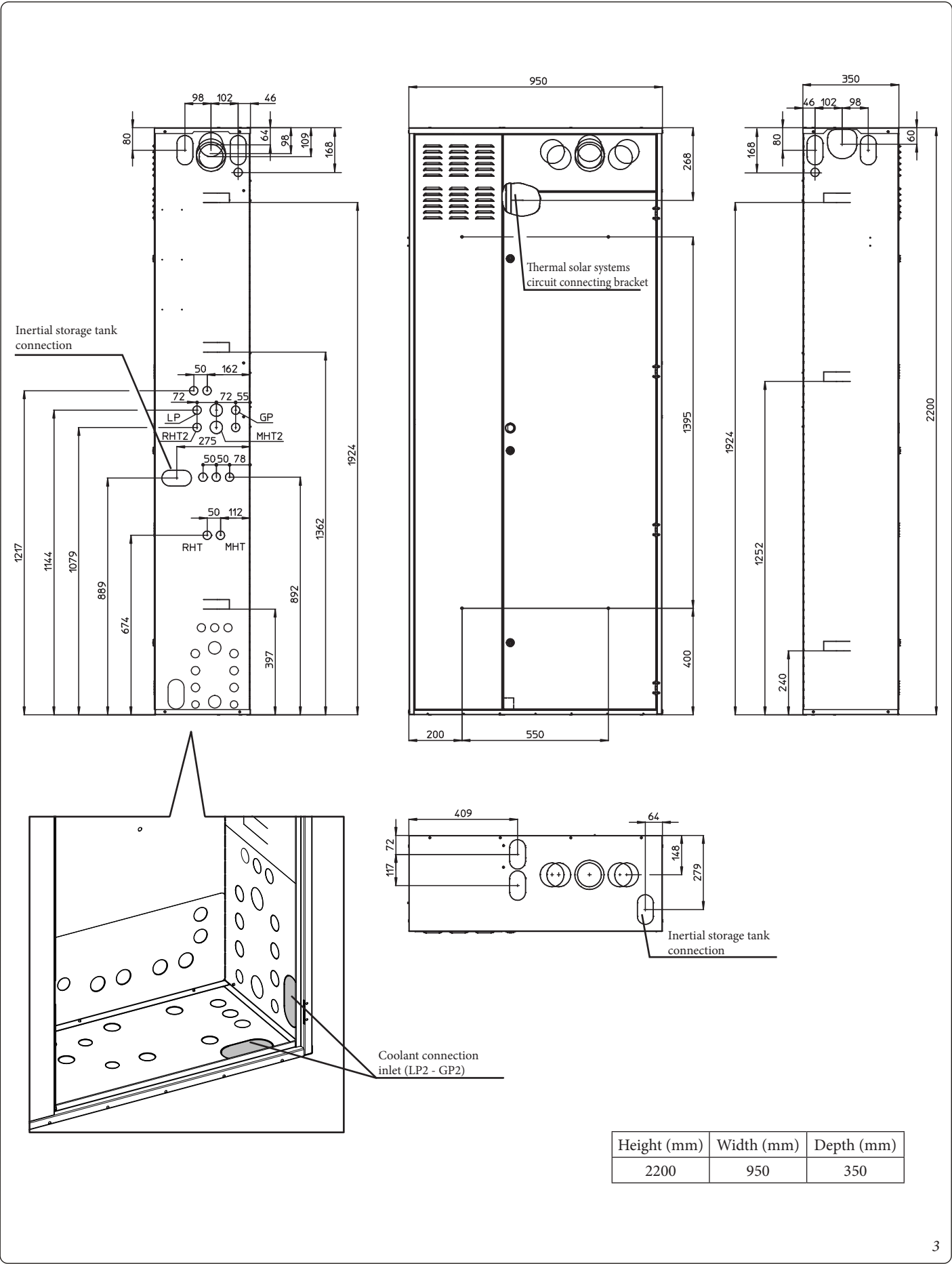
The technical data are provided on the data plate on the appliance.

A	Manufacturer logo
B	Manufacturer's address
Md	Model name
Cod.Md.	Model code
1	Rated voltage, frequency and power 1
2	Rated voltage, frequency and power 2
3	Rated voltage, frequency and power 3
4	Refrigerant 2
5	Refrigerant 3
6	Operating range (Cooling/Heating/DHW)
C	Various logos
7	Maximum refrigerant pressure (High/Low)
8	Heating data
9	DHW data
10	Pump type
11	Product range
12	DHW tank
13	Degree of protection
14	Net weight



1.4 FRAME FEATURES

1.4.1 Solar Container main dimensions.



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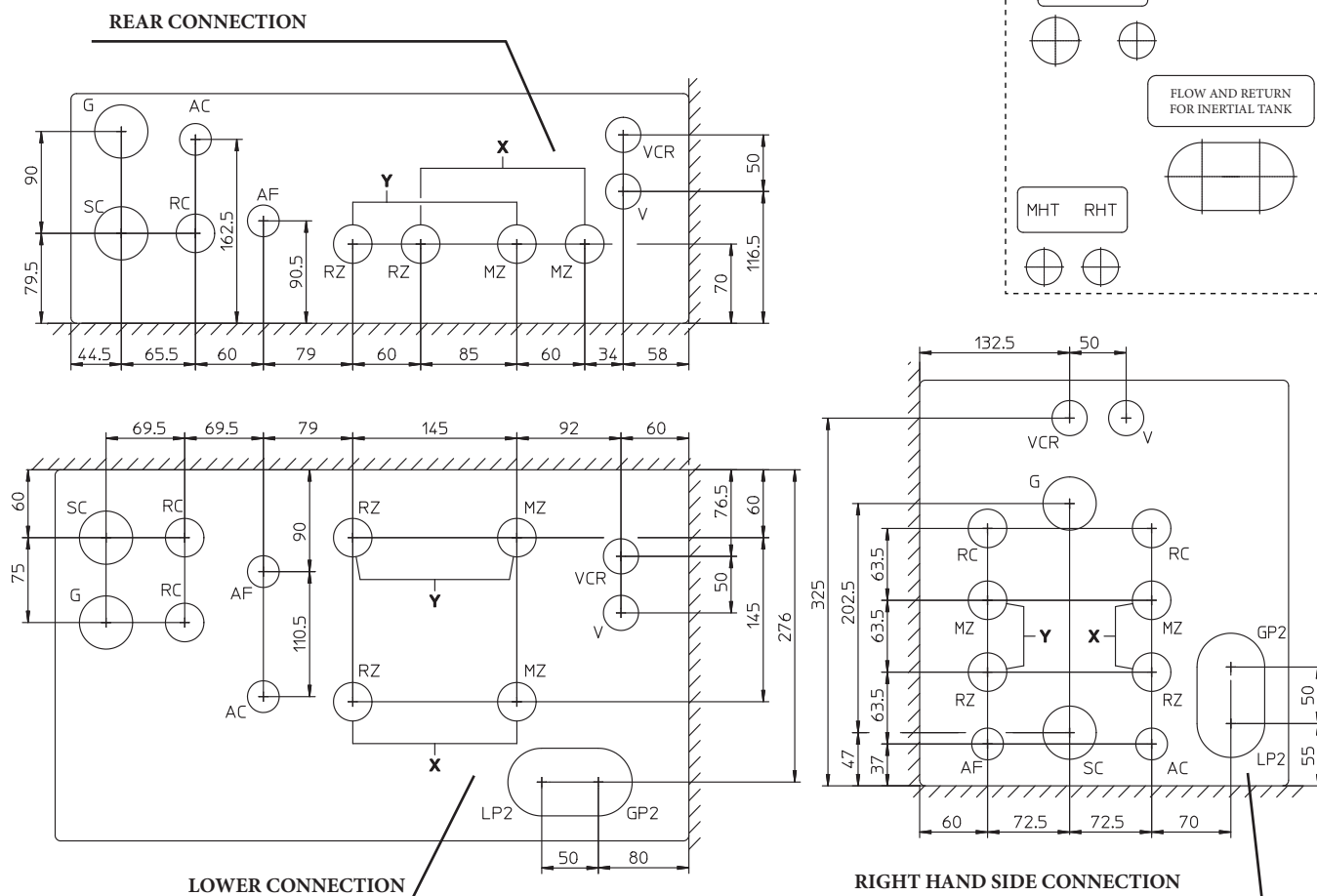
TECHNICAL DATA



1.4.2 Solar Container connection template.

4

**HEAT PUMP CONNECTION -
ACC. INERTIAL - OUTDOOR UNIT**
(Not used on this model)



Key:

G - Gas supply
AC - Domestic hot water outlet
AF - Domestic cold water inlet
MHT - Flow from heat pump (*)
RHT - Return to heat pump (*)
MHT2- Flow from heat pump (*)
RHT2 - Return to heat pump (*)
LP - Chiller line - liquid phase
GP - Chiller line - gaseous phase

LP2- Chiller line - liquid phase (Trio Pack)
GP2- Chiller line - gaseous phase (Trio Pack)
MZ - System flow
RZ - System return
RC - Domestic hot water recirculation
SC - Condensate drain
V - Electrical connection
VCR - Remote control electrical connection
VS - 3 bar air-relief valve

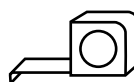
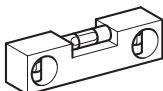
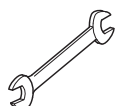
(*) = Not used on this model

CONNECTION TABLE

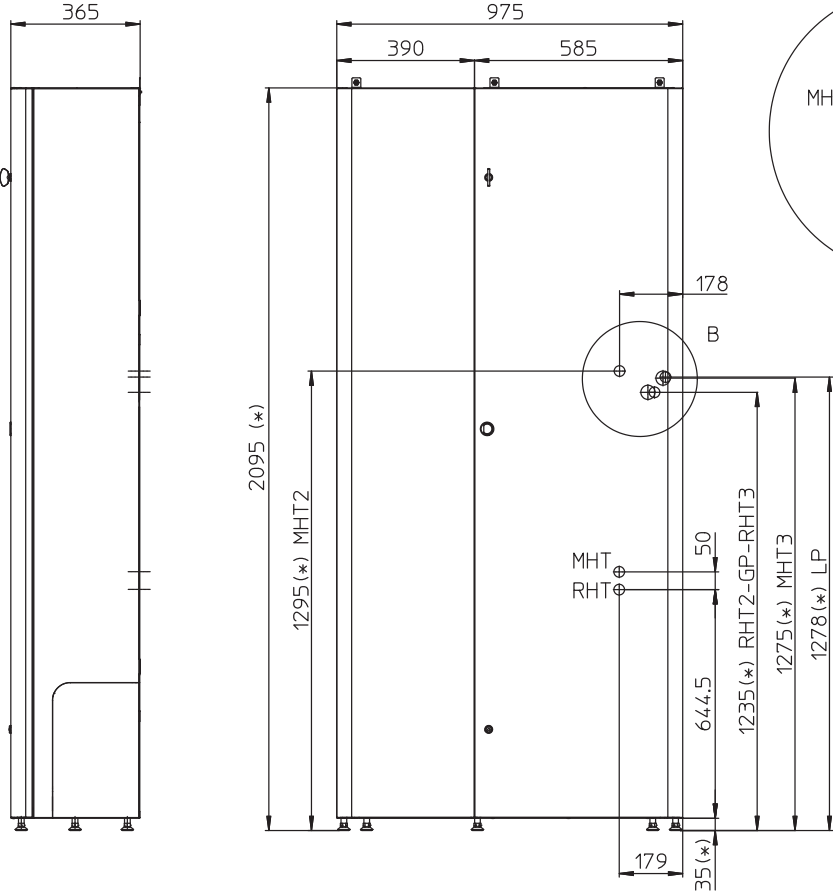
Trio Pack Hybrid	Zone Y		Zone X
	Zone 2 mixed (Optional)		Zone 1 direct

CONNECTIONS

GAS	DOMESTIC HOT WATER		SYSTEM				HEAT PUMP		CHILLER LINE			
G	AC	AF	RZ (Y)	MZ (Y)	RZ (X)	MZ (X)	MHT- RHT	MHT2- RHT2	LP	LP2	GP	GP2
G 1/2"	G 1/2"	G 1/2"	G 3/4"	G 3/4"	G 3/4"	G 3/4"	-	-	1/4" SAE	1/4" SAE	5/8" SAE	5/8" SAE



1.4.1 Domus Container main dimensions.

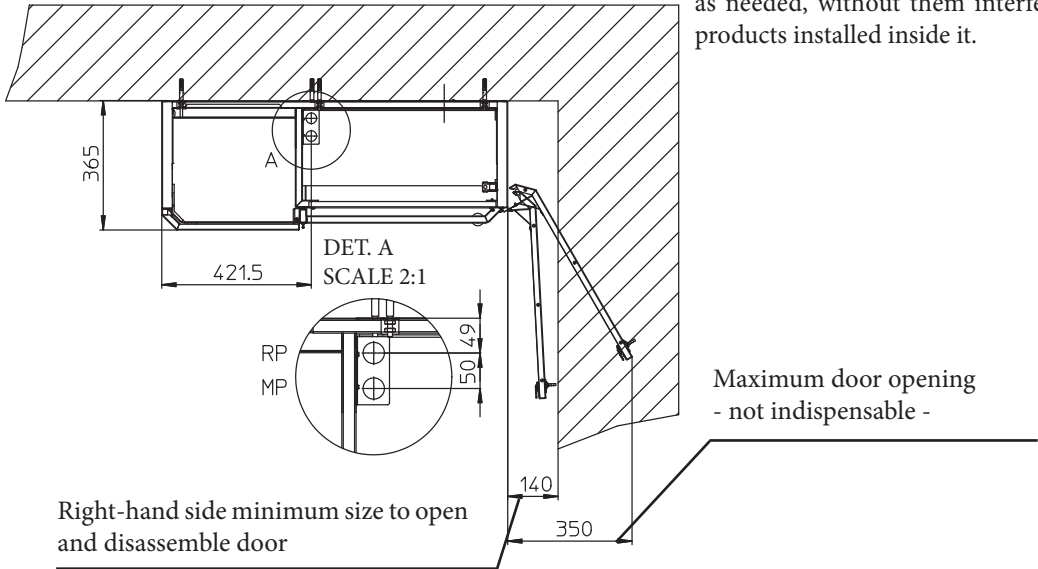


(*) **ATTENTION.**
The 5 support feet are adjustable.
The height of the feet ranges from 35 to 50 mm.
Domus Container Value:
Height with pack feet: 2095 mm
Maximum reachable height: 2110 mm

ATTENTION: for Trio Hydro the connections to the heat pump can only be made on the rear side (MHT3-RHT3).

ATTENTION: in case of installation with concentric flue system, it is necessary to use the flanged stub pipe kit to exit the Domus Container clearance

N.B.: the Domus Container comes with 3 mobile points for wall mounting at the top; place them as needed, without them interfering with the products installed inside it.



Height (mm)	Width (mm)	Depth (mm)
2110	975	365

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TECHNICAL DATA



1.4.2 Domus Container connection template.

REAR CONNECTION

RIGHT HAND SIDE CONNECTION

LOWER CONNECTION

ATTENTION: The indicated height measurements refer to the minimum adjustment of the feet from the ground (35 mm).

Key:

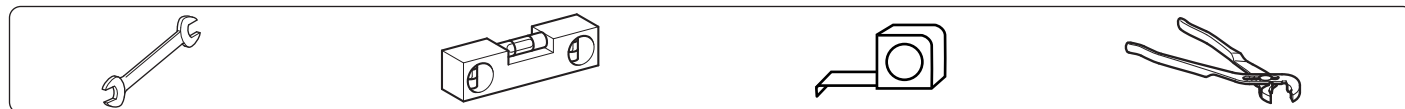
<p>G - Gas supply</p> <p>AC - Domestic hot water outlet</p> <p>AF - Domestic cold water inlet</p> <p>MHT - Flow from heat pump (Fig. 3)</p> <p>RHT - Return to heat pump (Fig. 3)</p> <p>MHT2 - Flow from heat pump (Victrix Hybrid Plus) (Fig. 3)</p> <p>RHT2 - Return to heat pump (Victrix Hybrid Plus) (Fig. 3)</p>	<p>MHT3 - Flow from heat pump (Trio Hydro) (Fig. 3)</p> <p>RHT3 - Return to heat pump (Trio Hydro) (Fig. 3)</p> <p>LP - Chiller line - liquid phase</p> <p>GP - Chiller line - gaseous phase</p> <p>LP2 - Chiller line - liquid phase (Trio Pack)</p> <p>GP2 - Chiller line - gaseous phase (Trio Pack)</p>	<p>MP - Flow from solar panels</p> <p>RP - Return to solar panels</p> <p>MZ - System flow</p> <p>RZ - System return</p> <p>RC - DHW recirculation (not available for instantaneous boilers)</p> <p>SC - Condensate drain</p> <p>V - Electrical connection</p> <p>VCR - Comando Amico Remoto remote control</p> <p>VS - 3 bar air-relief valve</p>
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ZONE CONNECTION TABLE.

Trio Pack Hybrid		Zone Y				Zone X			
		Zone 2 mixed (Optional)				Zone 1 direct			

Height (mm)			Width (mm)				Depth (mm)			
2110			975				365			

CONNECTIONS													
GAS	DOMESTIC HOT WATER		SYSTEM				HEAT PUMP			CHILLER LINE			
			RZ (Y)	MZ (Y)	RZ (X)	MZ (X)	MHT-MHT2	RHT-RHT2	MHT3-RHT3	LP	LP2	GP	GP2
G 1/2"	G 1/2"	G 1/2"	G 3/4"	G 3/4"	G 3/4"	G 3/4"	-	-	-	1/4" SAE	1/4" SAE	5/8" SAE	5/8" SAE



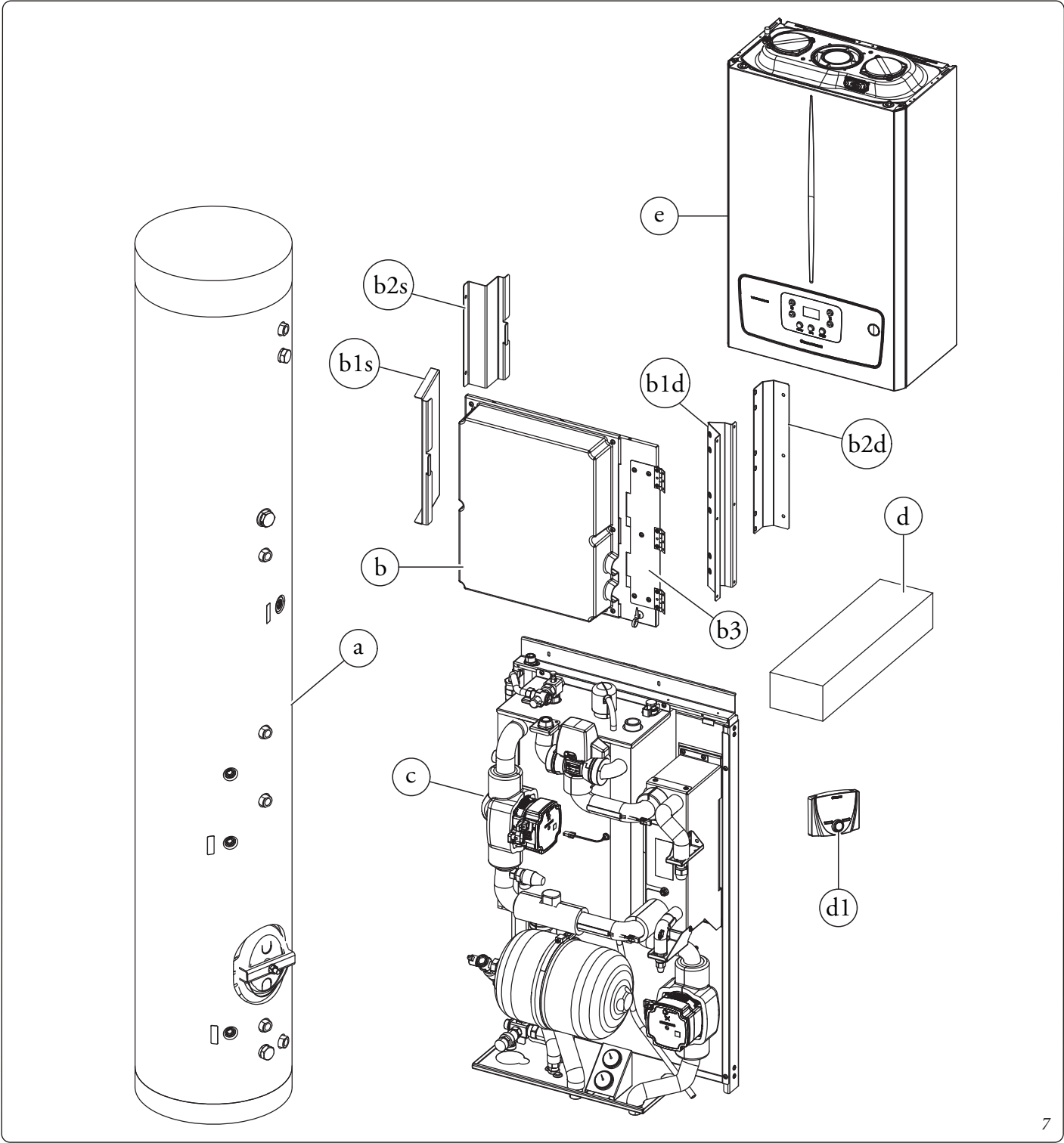
1.5 INSTALLING THE INDOOR UNIT.

Indoor unit composition.

Ref.	Description	Qty
a	Storage tank unit	1
b	Management electronics unit	1
b1	Mount brackets for Solar Container (b1s - b1d)	2
b2	Mount brackets for Domus Container (b2s - b2d)	2
b3	Electronics unit mount bracket with hinges	1
c	1-zone hydronic group (or 2 zones optional)	1
d	Accessories and screws	1
d1	Remote panel	1
e	Victrix Tera 24 Plus V2 Boiler	1

Installation drawings key:

- a Unmistakeable component identification
- 1 Sequential identification of the operation to perform
- A Identification of generic or not supplied component



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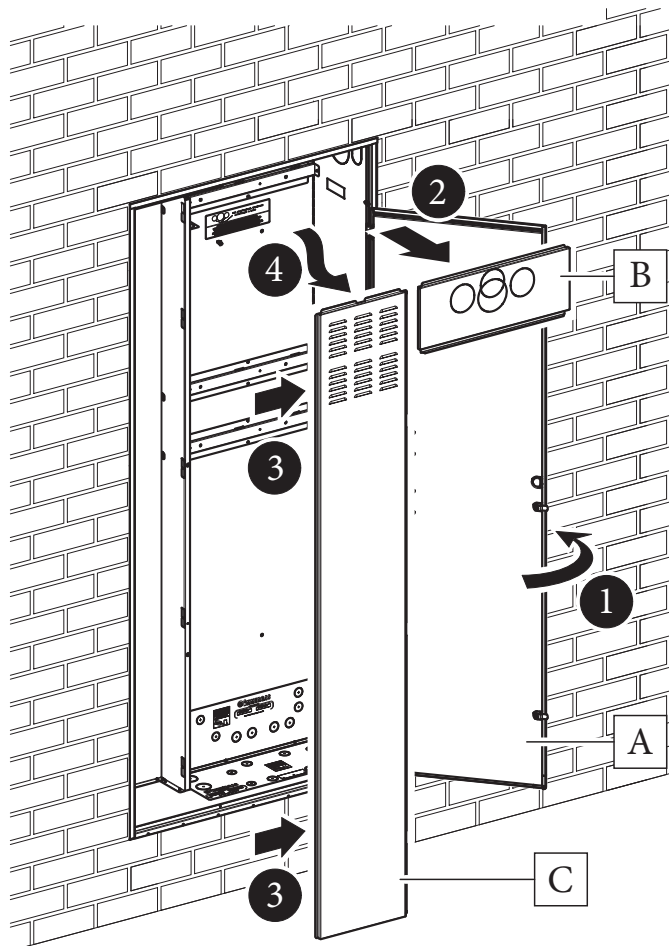
TECHNICAL DATA



1.5.1 Trio Pack in Solar Container installation operations.

Before installing the pack, open the “Solar Container” completely by opening door (A) and blocking it to prevent it from getting in the way during the following installation procedures.

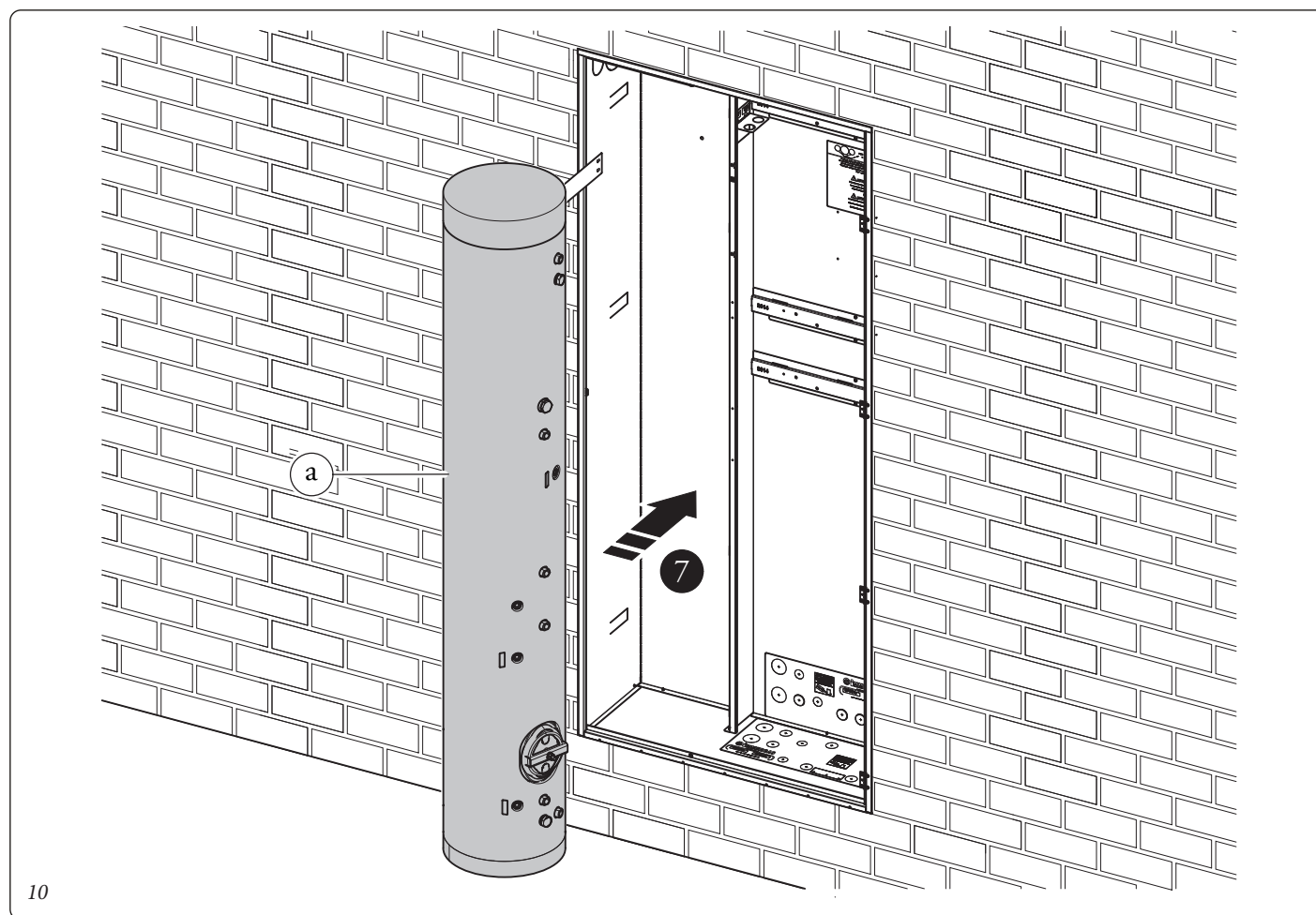
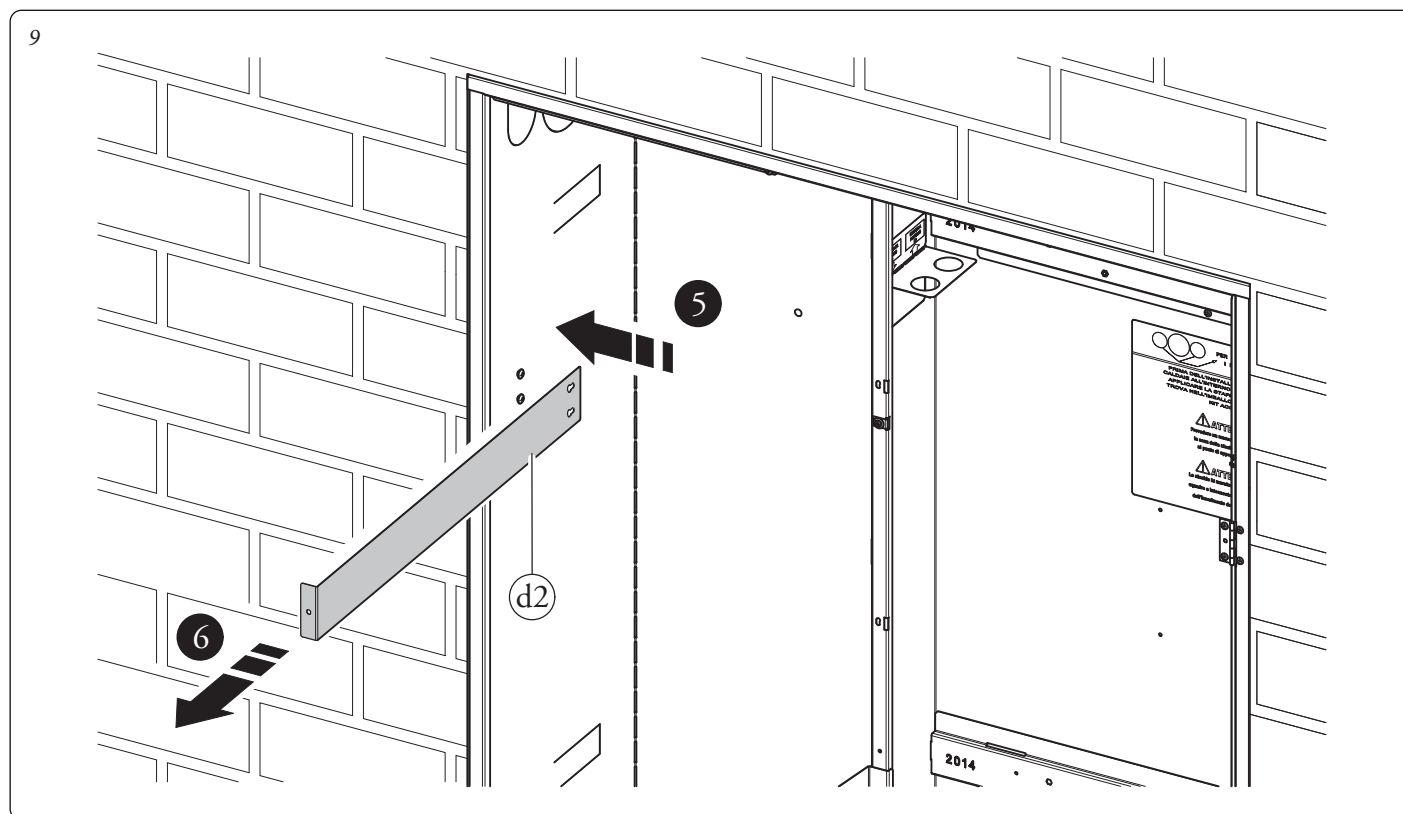
Also remove the cover (B) and the side cover (C).



Installing storage tank unit.

- Insert and block the storage tank unit retaining strip (d2) on the screws fitted on the Solar Container.

- Insert the storage tank unit (a) into the Solar Container with the flange positioned on the right hand side and at the bottom, as shown in Fig. 10.



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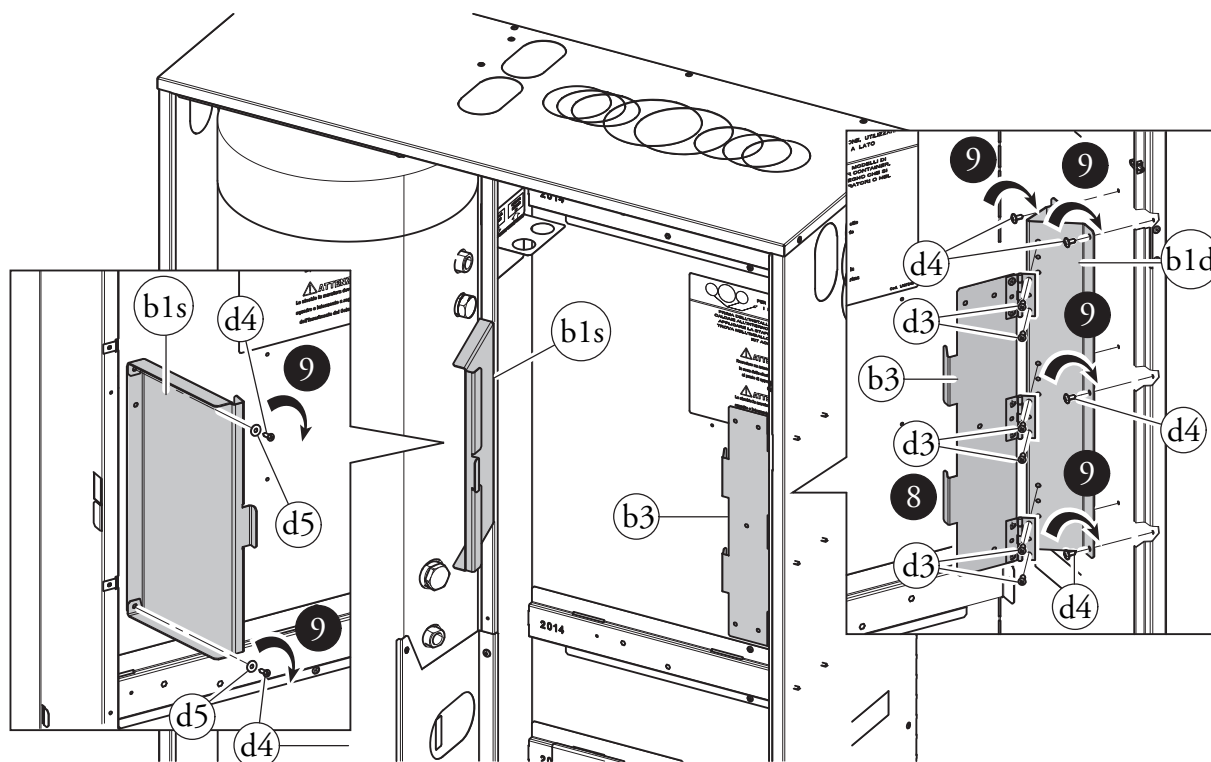
TECHNICAL DATA



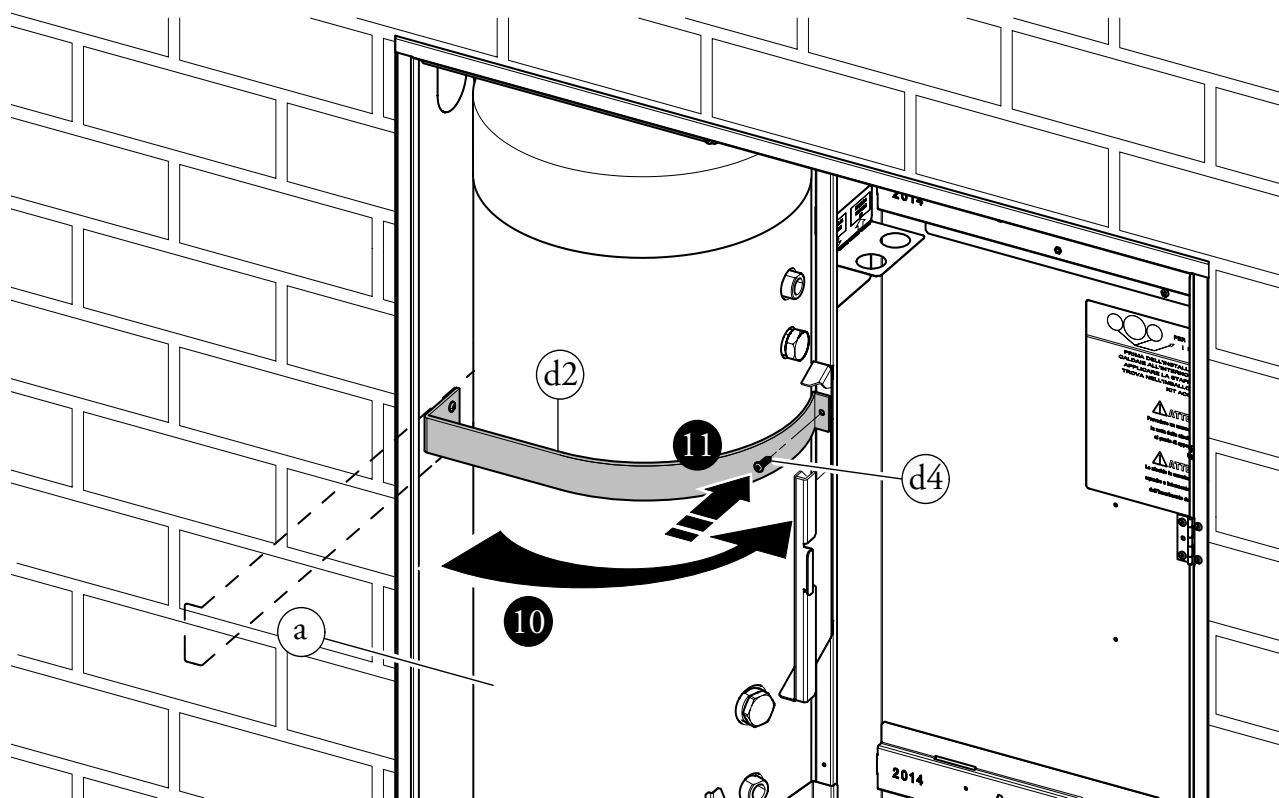
Installation of electrical unit support brackets.

- Fix bracket (b3) to bracket (b1d) with screws (Fig. 11).
- Screw the previously assembled group to the right side of the Solar Container with the screws (d4) (Fig. 11).
- Tighten the brackets (b1) to the Solar Container using screws (d4) and washers (d5) as shown in Fig. 11.
- Bend the strip (d2) around the storage tank unit (a) and fasten it with the screw (D) (Fig. 12).

11



12



Installation of hydronic group.

- Hang the hydronic unit (c) on the central bracket of the Solar Container. Secure the position of the hydronic unit by fastening the screws (d6) on the central bracket (Fig. 13).

N.B.: in the event that the installer thinks it is necessary, it is possible to secure the position of the hydronic unit even further by using self-tapping screws (d7), inserting them into the holes on the lower part of the hydronic unit.



ATTENTION.

The fixing screws (d6 and d7) are present in the connection kit of the device to be combined with the Trio Pack Hybrid I.



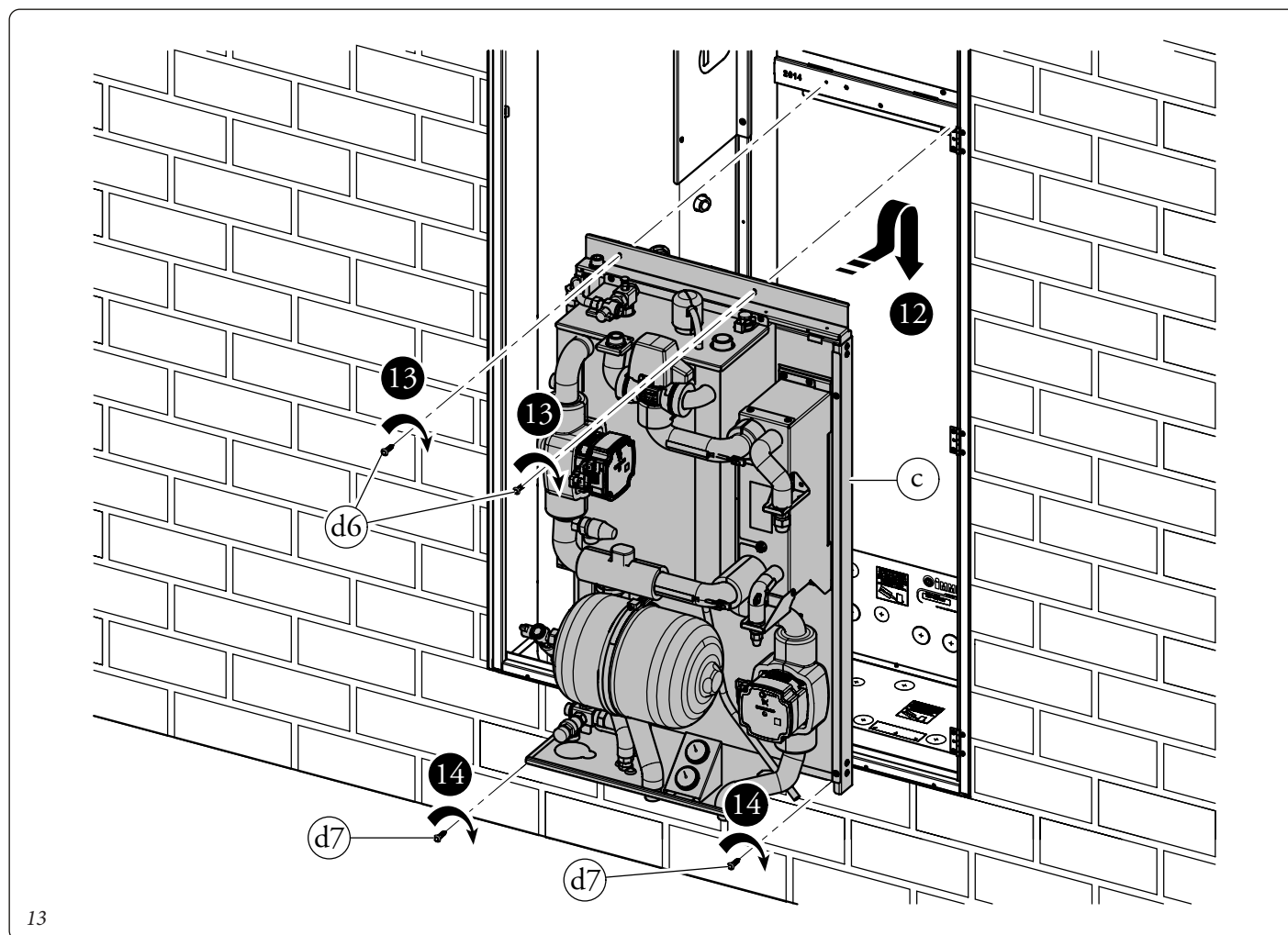
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CONTROL PANEL

MAINTENANCE TECHNICIAN

TECHNICAL DATA



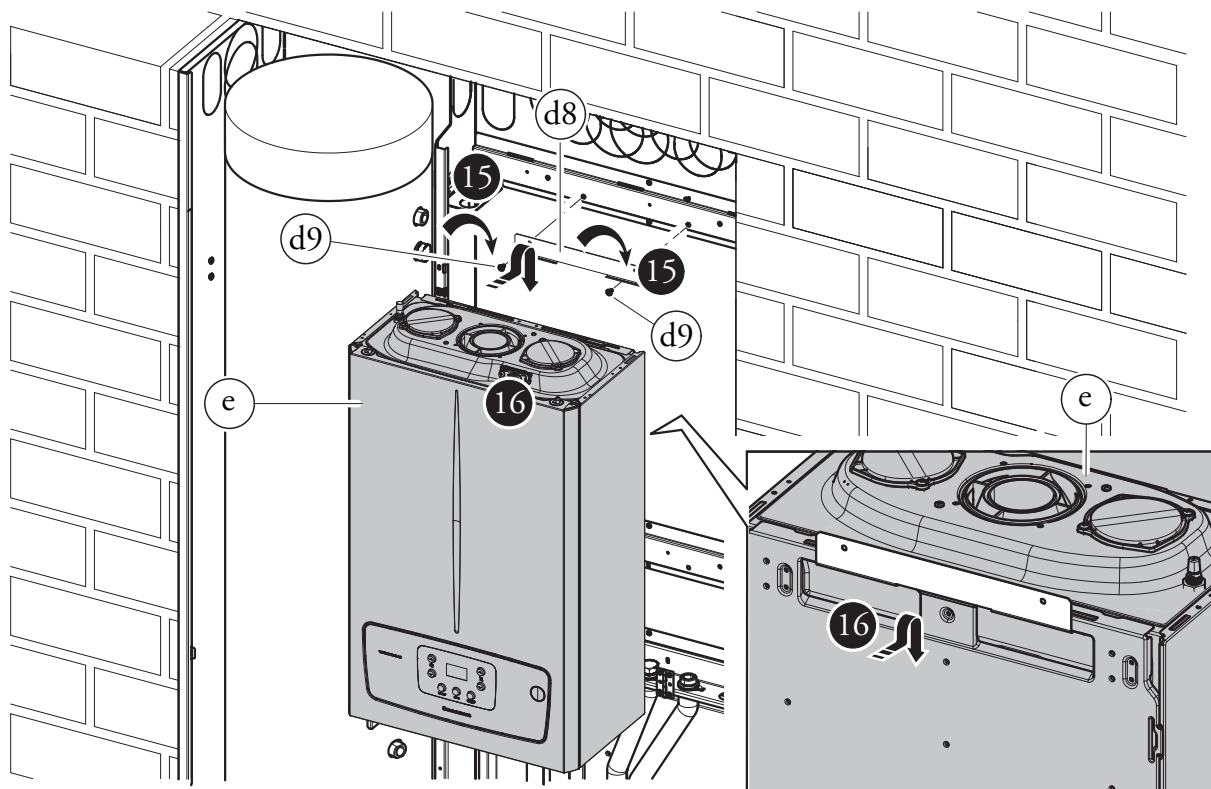
Boiler installation.

- Screw the bracket (d8) to the appropriate upper crosspiece inside the Solar Container with the screws (d9).
- Hang the boiler (I) on the bracket (E) installed previously (Fig. 14).

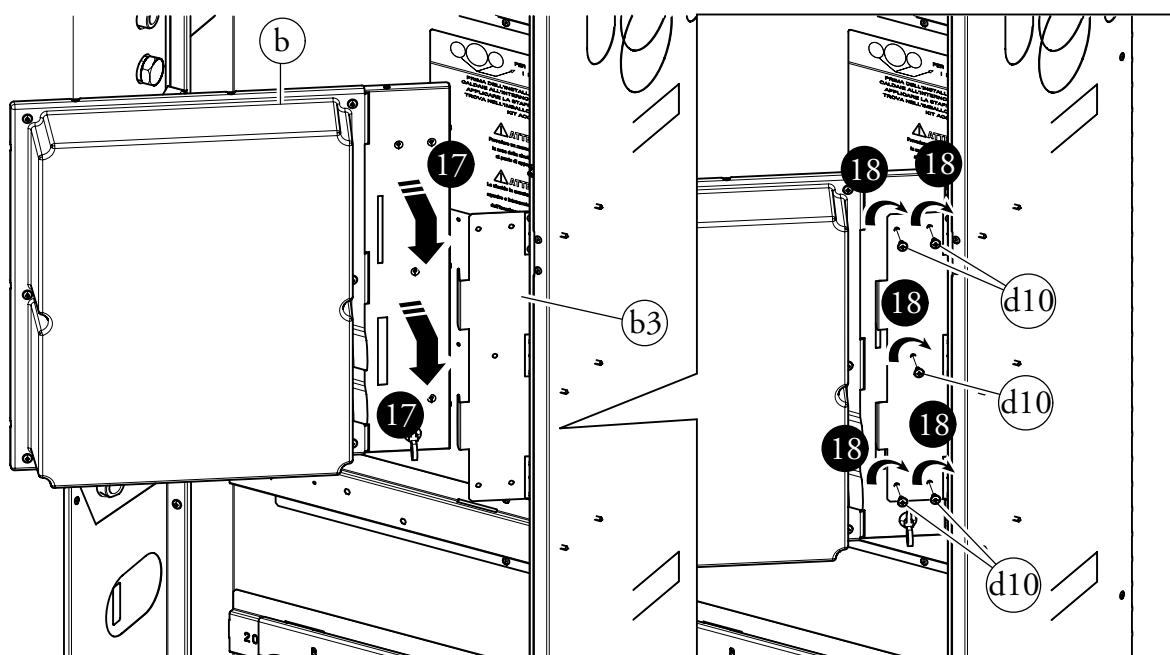
N.B.: To choose the right Immergas flue system for your boiler, refer to the instructions in the boiler's use and maintenance manual.

- Hang the electrical panel (b) on the bracket (b3) as shown in Fig. 15. Once completed the installation, fix everything with the screws (d10).

14

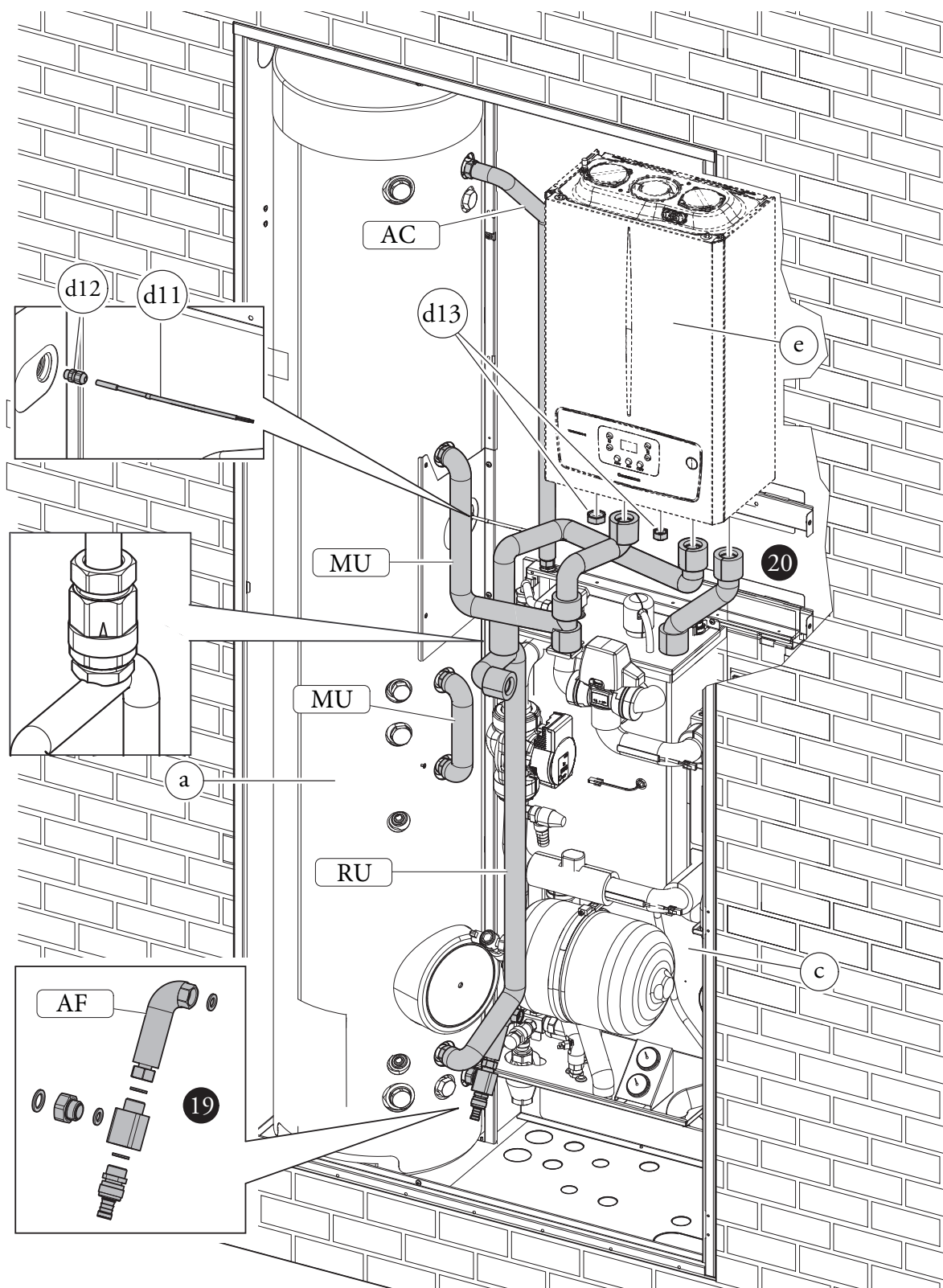


15



- As a first operation, assemble the storage tank drain cock with the relevant connection pipe identified with the abbreviation AF. Connect the storage tank unit (a) to the hydronic unit (c) with the previously assembled group. Using the pipes inside the accessories box (d), make the remaining hydraulic connections between the storage tank unit (a) hydronic group (c) and boiler (e) as highlighted in Fig. 16.

- For easier assembly, start from the pipes closest to the rear wall up to those closest to the installer, remembering to insert the appropriate gaskets supplied.
- The two connection fittings left open under the boiler must be closed with the two caps (d13) interposing the relevant gaskets.
- Install the probe (d11) using the special fairlead (d12). At the end of the installation, insulate all the fittings with the material present inside the accessories box.



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INSTALLER

USER

CONTROL PANEL

MAINTENANCE TECHNICIAN

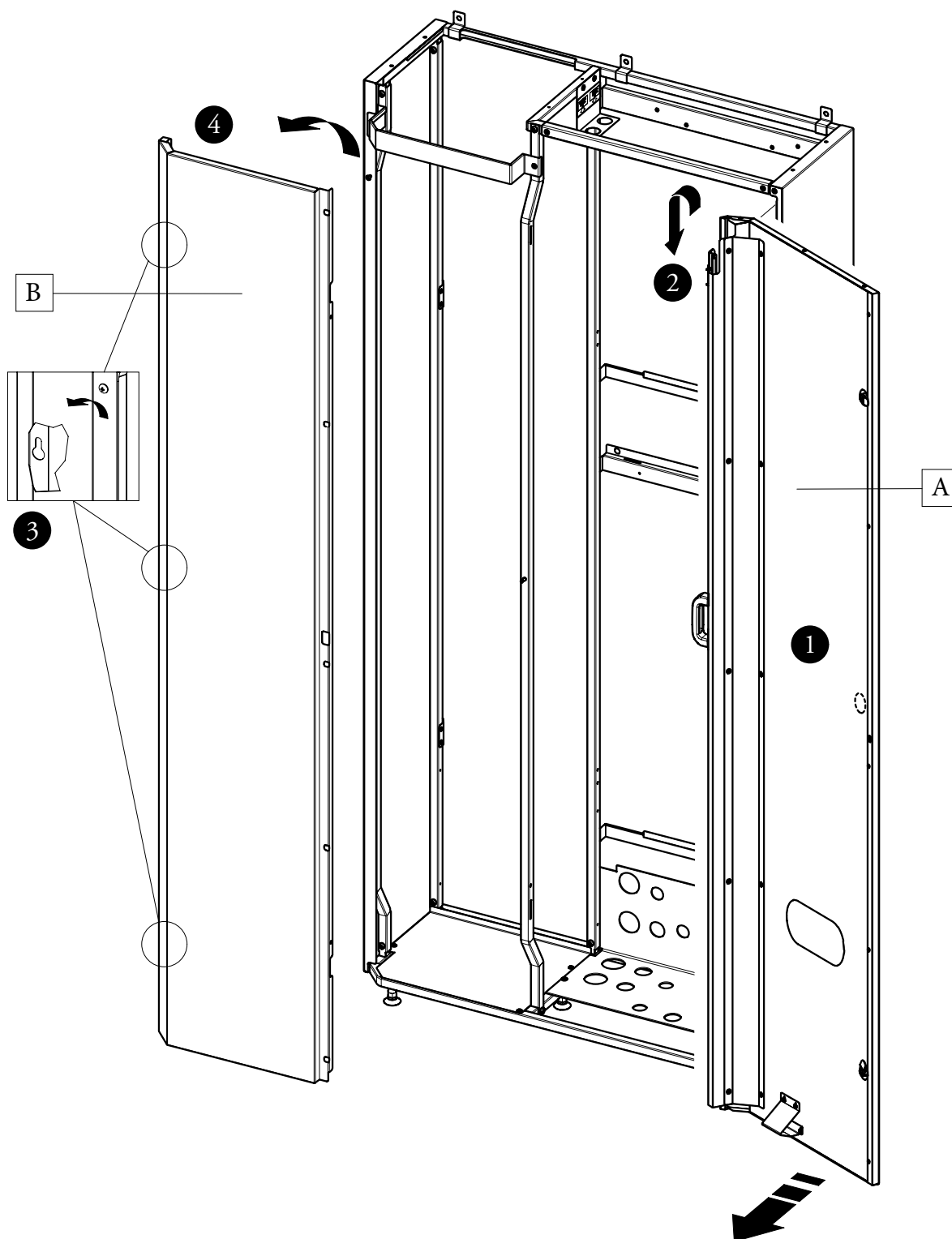
TECHNICAL DATA



1.5.2 Trio Pack in Domus Container installation operations.

Before starting the installation of the product, it is necessary to completely open the “Domus Container” by dismantling the front door (A) and the fixed casing (B) by unscrewing the appropriate fixing screws (Fig.17)

Temporarily remove the front plate of the appliance (C), the front plate of the storage tank unit (D) and the front tube (E) (Fig. 18) Insert the boiler unit (a) inside the Domus Container with the flange positioned on the right side and at the bottom, as shown in Fig. 18.



N.B.: in the event that the installer thinks it is necessary, it is possible to secure the position of the hydronic unit even further by using self-tapping screws (d7), inserting them into the holes on the lower part of the hydronic unit.

Hang the boiler (e) on the bracket (d8) installed previously (Fig. 18).



As a first operation, assemble the storage tank drain cock with the relevant connection pipe identified with the abbreviation AF. Connect the storage tank unit (a) to the hydronic unit (c) with the previously assembled group

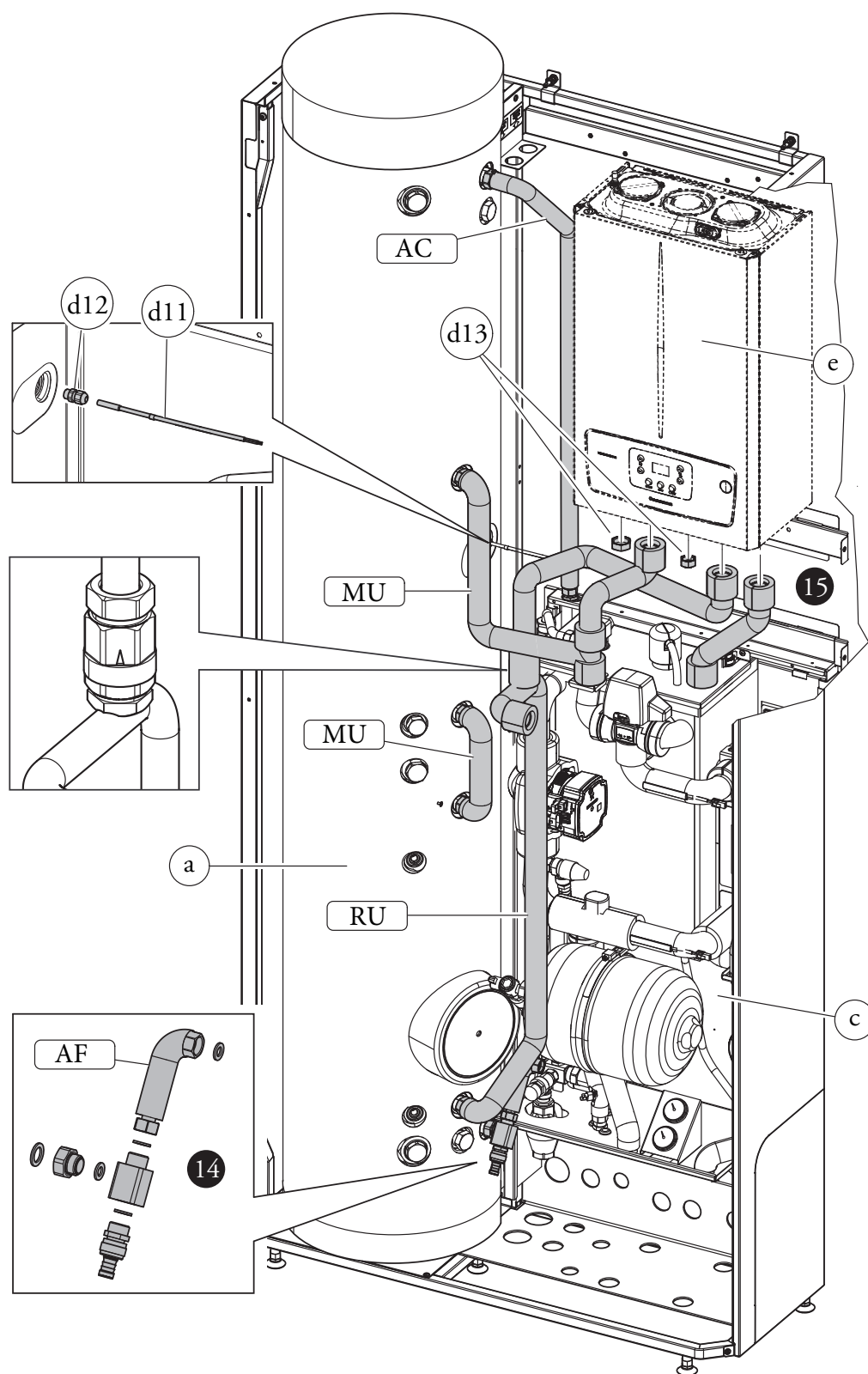
Using the pipes inside the accessories box (d), make the remaining hydraulic connections between the storage tank unit (a) hydronic group (c) and boiler (e) as highlighted in *Fig. 19*.

For easier assembly, start from the pipes near the rear wall up to those near the installer, remembering to insert the special gaskets supplied.

The two connection fittings left open under the boiler must be closed with the two caps (d13) interposing the relevant gaskets. Install the probe (d11) using the special fairlead (d12).

At the end of the installation, insulate all the fittings with the material present inside the accessories box.

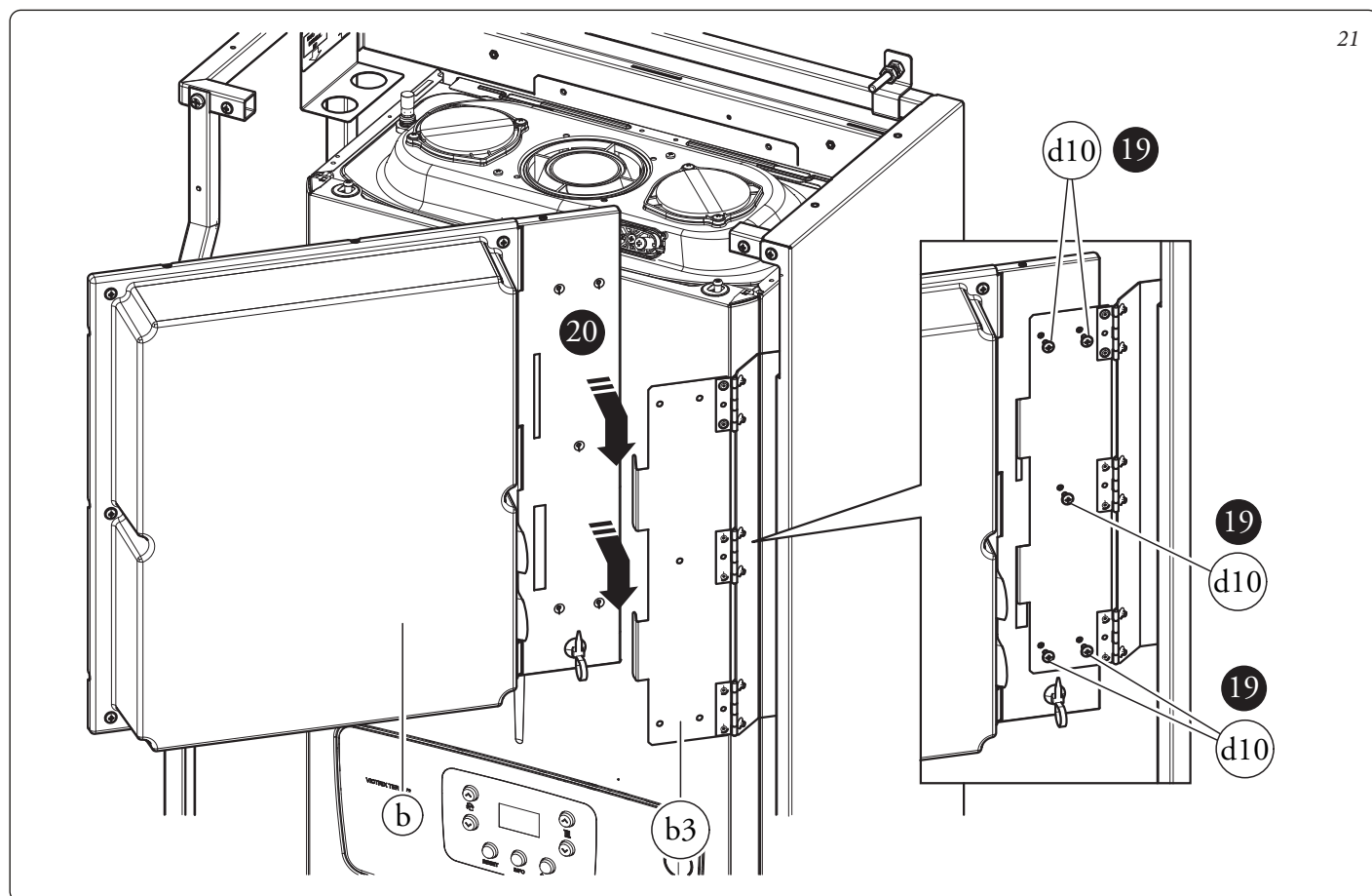
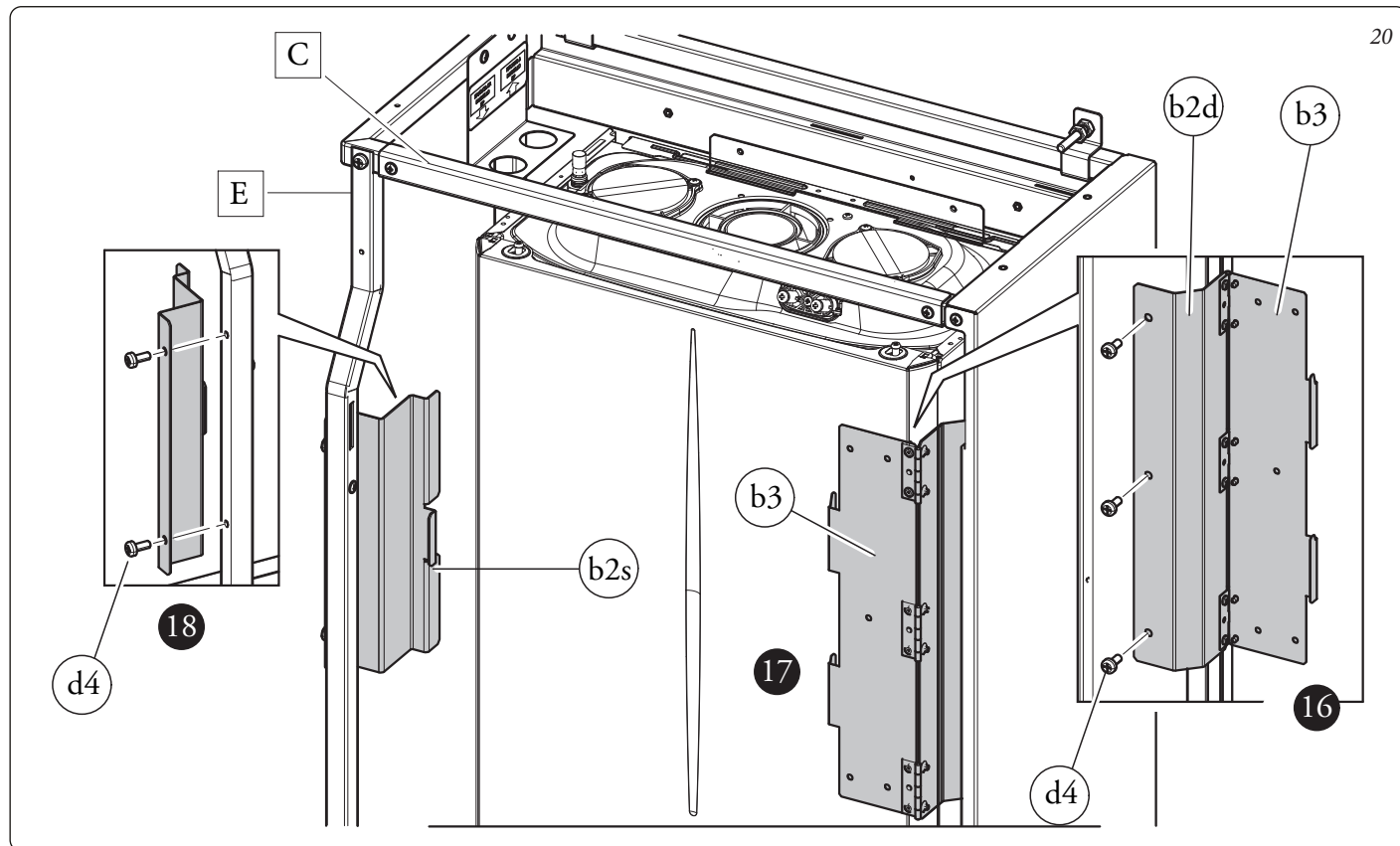
19



Reassemble the front plate of the appliance (C), and the front tube (E)

- Fix bracket (b3) to bracket (b2d) with screws (Fig. 20).
- Screw the previously assembled group to the right tube of the Domus Container with the screws (d4) (Fig. 20).

- Screw the brackets (b2s) to the left tube of the Domus Container with the screws (d4) as indicated in Fig. 20.
- Hang the electrical panel (b) on the bracket (b3) as shown in Fig. 21. Once completed the installation, fix everything with the screws (d10).



INSTALLER

USER

CONTROL PANEL

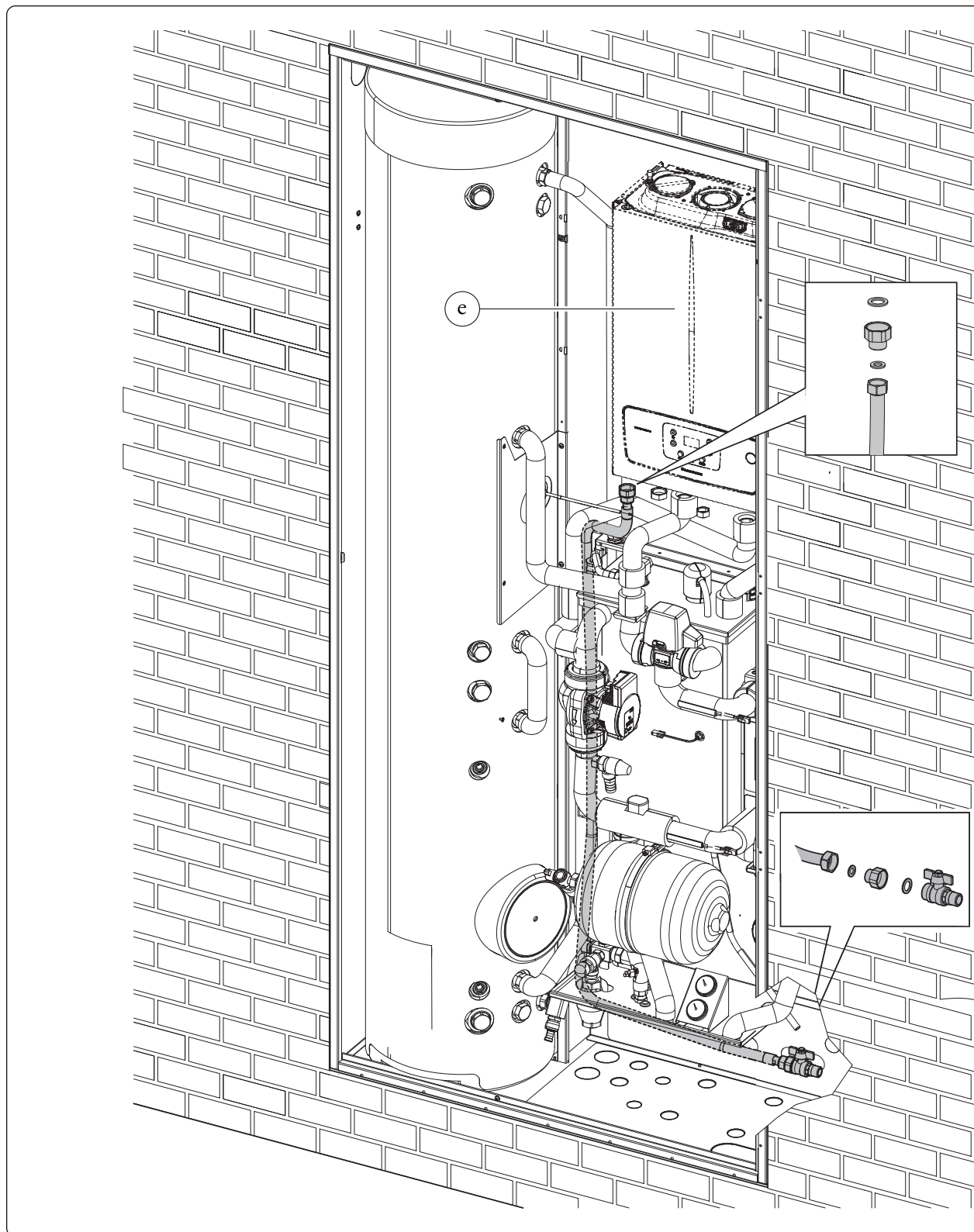
MAINTENANCE TECHNICIAN

TECHNICAL DATA



1.6 GAS CONNECTION.

Perform the boiler gas connection (e, Fig. 22) using the special pipe, cock and reducing coupling supplied and referring to the connection template on the Solar Container or Domus Container (not supplied) and to the boiler operation and maintenance manual.



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NB: The image represents the installation in Solar Container.
It is also valid for installation in Domus Containers.



1.7 HYDRAULIC CONNECTION.

Carry out the hydraulic connection of the Trio Pack Hybrid I by referring to the connection template present in the Solar Container and in the Domus Container.

ATTENTION.



Before making the connections, carefully clean the heating system (pipes, radiators, etc.) with special pickling or descaling products to remove any deposits that could compromise correct operation of the boiler, hydraulic unit and storage tank unit.

N.B.: remove all the protection caps on the flow and return pipes of the hydronic unit, before making the hydraulic connections.



The connections can be made directly using the female couplings on the hydronic unit or by inserting system cut-off cocks (optional). These cocks are particularly useful for maintenance as they allow you to drain the hydronic unit separately without having to empty the entire system.

ATTENTION.



To preserve the duration of appliance efficiency features, we recommend installation of a suitable device for water treatment in presence of water whose characteristics can lead to the deposit of lime scale.

ATTENTION.



To preserve the correct operation of the manifold inside the hydraulic circuit, it is necessary to install an inspectable Y-filter, present in the accessory boxes, on the return of the zones.



1.8 SAFETY VALVE DRAIN.

8 bar domestic hot water safety valve.

Screw the fitting (d18) onto the safety valve. Screw the funnel (d19) onto the fitting (d18) and convey the outlet to the sewer system (Fig. 23).

Hydronic group 3 bar safety valve.

Tighten the rubber fitting (d20) to the safety valve of the hydronic group. Connect the silicone pipe (d21) to the fitting (d20) and, after having cut it to size, insert it into the funnel (d19) as shown in Fig. 24.

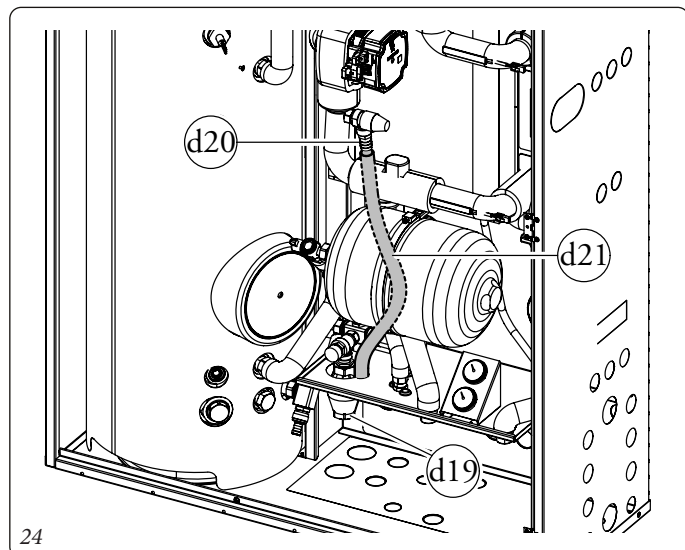
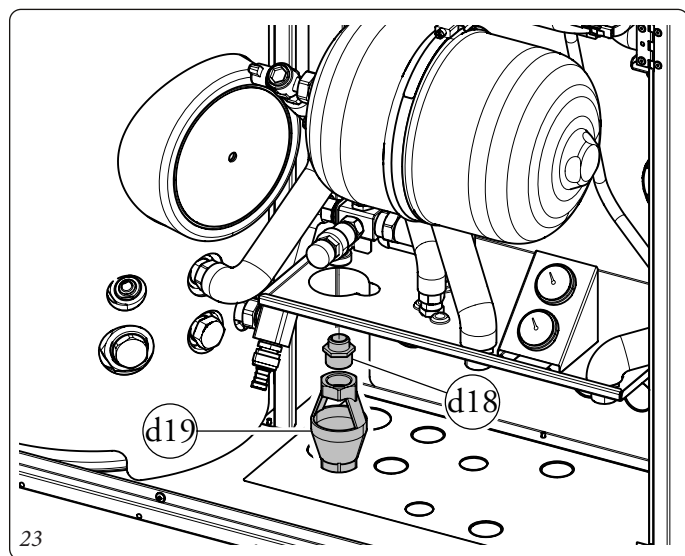
The appliance safety valves outlet must be connected to a draining funnel.

Otherwise, the appliance's manufacturer declines any responsibility in case of flooding if the drain valves cut.



A treatment of the heating and water system water is required, in compliance with the technical standards in force, in order to protect the system and the appliance from deposits (e.g. scale), slurry or other hazardous deposits.

Water connections must be made in a rational way using the couplings on the indoor unit template.



1.9 CONDENSATE DRAIN (WHERE THE OPTIONAL BOILER IS PRESENT).

To drain the condensation produced by the boiler, dismantle the relevant pipe on the boiler and replace it with the one supplied with the Trio V2 pack (longer) and convey the outlet towards the drains, via suitable pipes that can withstand acid condensation, with an internal Ø of at least 13 mm. The system connecting the appliance to the drainage system must be carried out in such a way as to prevent freezing of the liquid contained in it. Before appliance start-up, ensure that the condensate can be correctly removed. Also, comply with standards in force (UNI 11071) with national and local regulations on discharging waste waters.

The manufacturer declines all liability in the event of damage caused by the installation of an automatic filling system.



In order to meet the system requirements established by EN 1717 in terms of pollution of drinking water, we recommend installing the IMMERGAS anti-backflow kit to be used upstream of the cold water inlet connection of the indoor unit. We also recommend using category 2 heat transfer fluid (ex: water + glycol) in the primary circuit (heating and/or cooling circuit), as defined in standard EN 1717.

To preserve the duration of appliance efficiency features, in the presence of water whose features can lead to the deposit of lime scale, installation of the "polyphosphate dispenser" kit is recommended (valid only for Domus Container).



1.10 ELECTRICAL CONNECTIONS TO THE MAIN PANEL.

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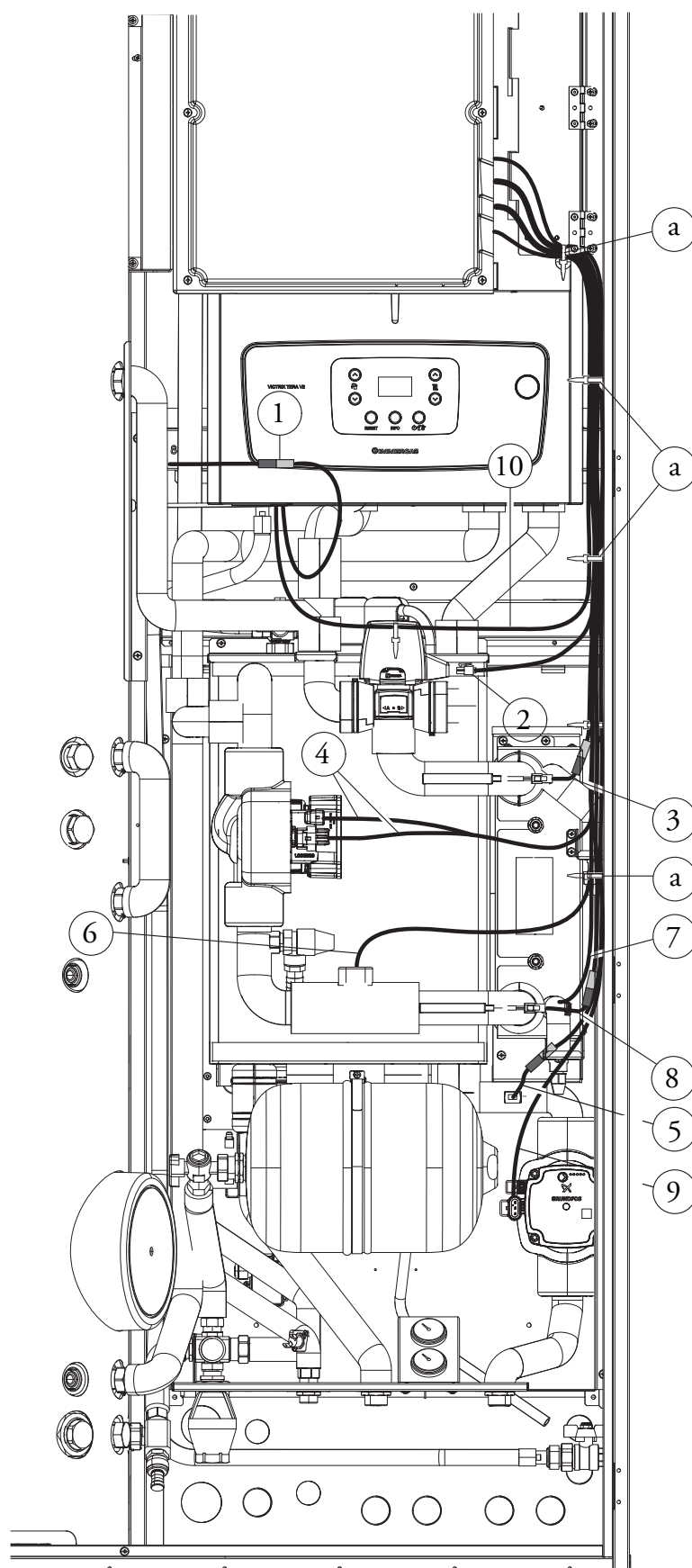
INSTALLER

USER

CONTROL PANEL

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The connection cables must follow the predetermined path using the special cable glands (a) (Fig. 25).

Key (Fig. 25):

- 1 - DHW probe connection (B2)
(36-37, see boiler wiring diagram)
- 2 - 3-way valve connection (M50-HP)
- 3 - Heat pump flow probe connection (B1-HP)
- 4 - Heat pump circulator connection (M1-HP) (power supply and PWM)
- 5 - System probe connection (B1)
- 6 - Flow meter connection (B25)
- 7 - Liquid phase detection probe connection (B29)
- 8 - Heat pump return probe connection (B5-HP)
- 9 - Direct zone pump connection (M10-1)
- 10 - OT communication with boiler
(41-44, see boiler wiring diagram)
- a - Cable glands

The electrical connections available are:

- Zone 2 flow probe.
- Zone 1 humidistat and thermostat.
- Zone 2 humidistat and thermostat.
- Zone 2 pump.
- Zone 2 Mixing Valve.
- Photovoltaic contact.
- Multifunction relay 1.
- Multifunction relay 2.
- Zone 1, 2 remote devices (Zone remote panel, Temperature/humidity probe, Dominus).
- Heat pump disabling contact.

Make the various electrical connections according to your needs.

Outdoor unit electrical connection.

The indoor unit must be coupled to an outdoor unit by connecting terminals F1 and F2 as shown in the wiring diagram (Fig. 30). The outdoor unit is powered at 230 V, regardless of the indoor unit.

Configure the "HP Model" parameter as indicated in paragraph (Parag. 3.8) depending on the type of connected outdoor unit.

Boiler electrical connection.

The unit must be combined with the boiler using connections 41-44 and eliminating the boiler jumper X40 (refer to the boiler instruction booklet).

The boiler is powered at 230 V, for the correct connection refer to the wiring diagram (Fig. 61).



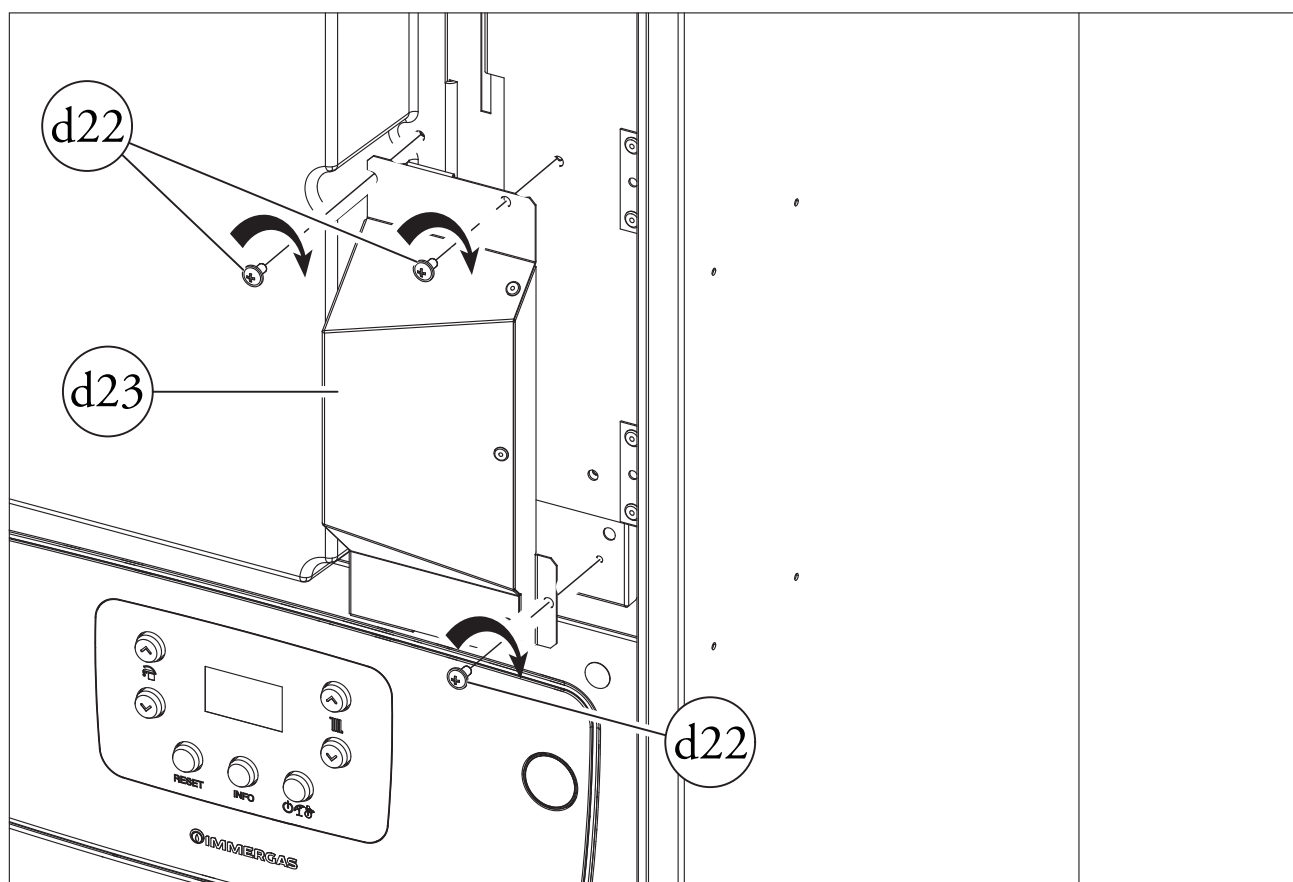
Installation of cable protection sheet.

At the end of the electrical connections it is necessary to insert a protective plate (d23) on the cable outlet part of the main panel.

The protection must be fixed with three screws (d22) as shown in Fig. 26.

NB: After making the various connections, remember to correctly reposition the IP protection of the 3-way valve and secure it using the plastic cable tie supplied in the accessory kit.

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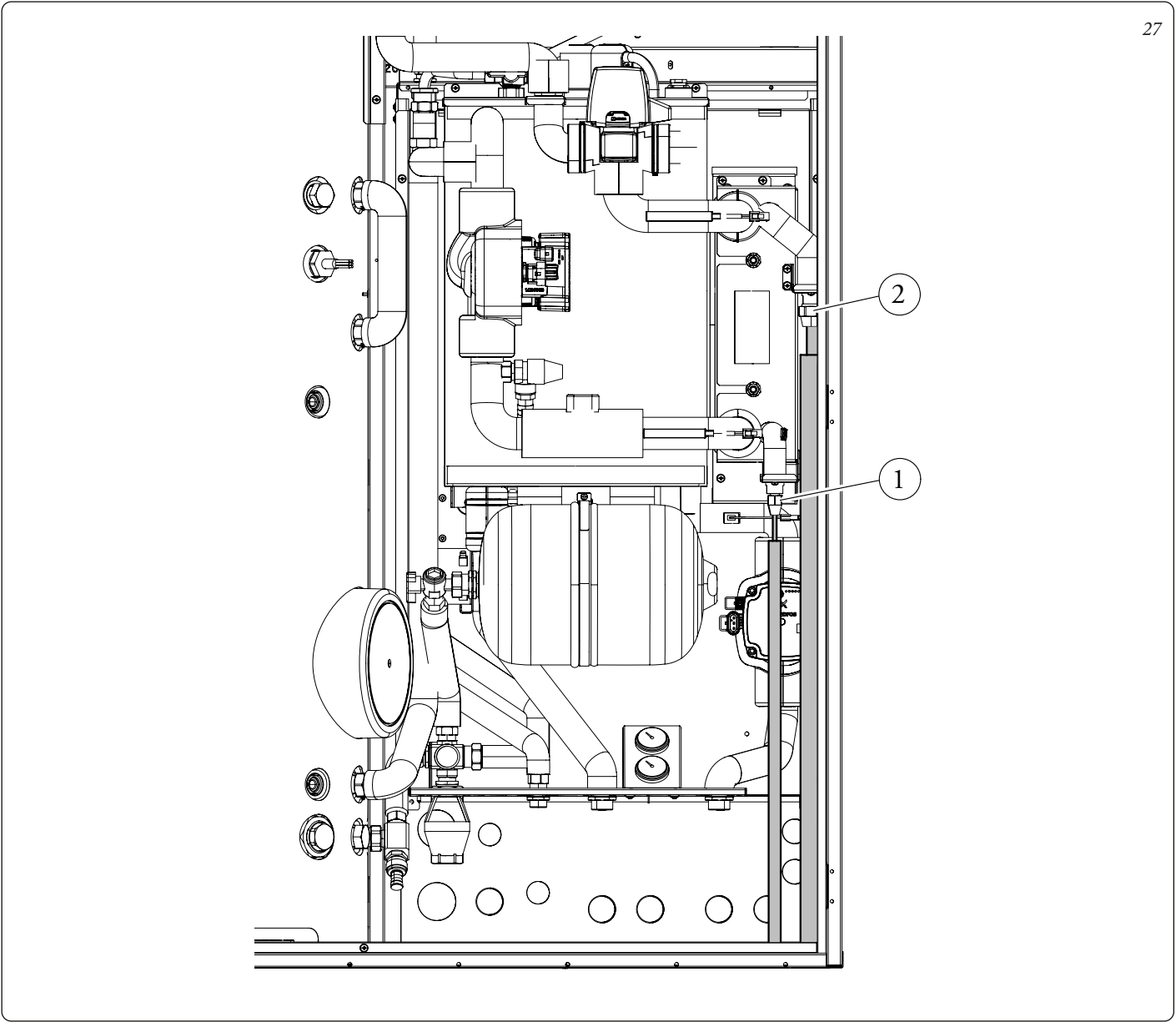


1.11 CHILLER LINE INSTALLATION.

Connect the chiller line of the outdoor unit as shown in *Fig. 25*.
Connect the smaller pipe on the fitting (1) and the larger pipe on the fitting (2).
Using a torque wrench, tighten the nuts (1 and 2) to the tightening torque indicated on the outdoor unit manual.

As far as connecting the chiller line is concerned, all the instructions contained in the outdoor condensing unit instructions booklet must be followed.
Make the connections directly on the indoor unit couplings (*Fig. 27*).

It is suggested to apply thermal insulation over the entire length of the pipes and connection fittings to reduce the formation of condensate during summer operation.



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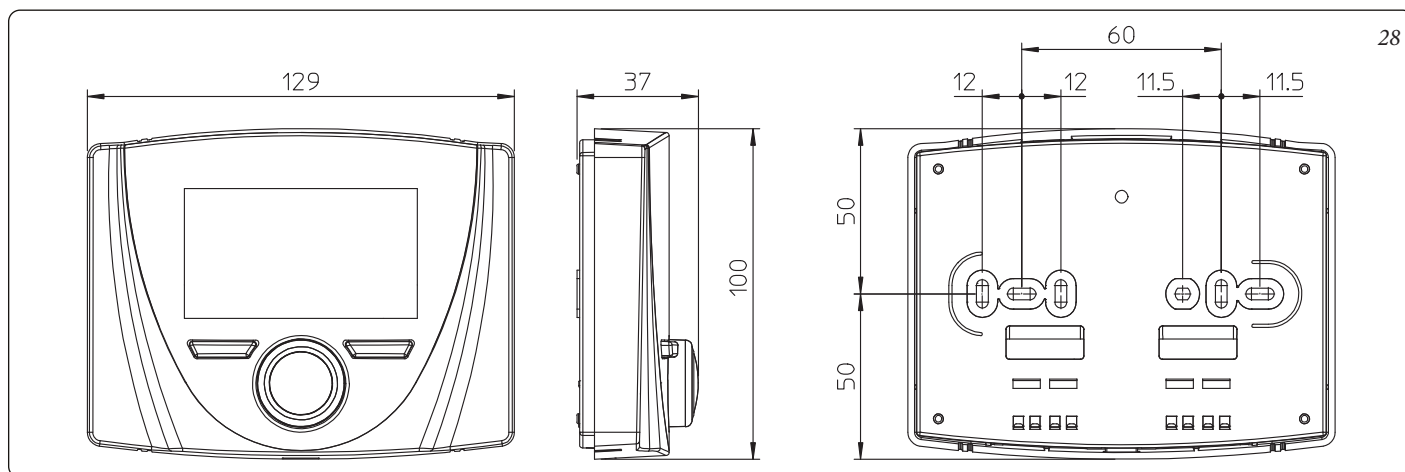
CONTROL PANEL

MAINTENANCE TECHNICIAN

TECHNICAL DATA



1.12 TRIO PACK REMOTE CONTROL DIMENSIONS.

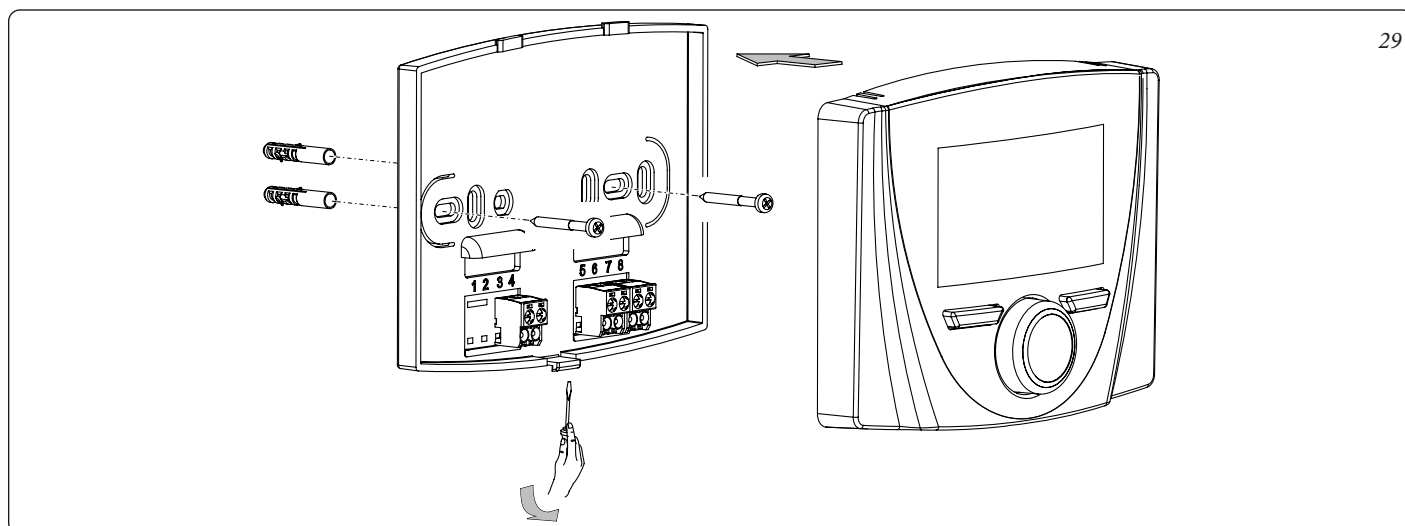


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1.13 REMOTE PANEL INSTALLATION OPERATIONS.

- 1) Separate the fixing template from the body of the remote panel using a screwdriver as a lever in the relative recess (*Fig. 29*). Install the remote panel away from heat sources and in a suitable position to detect the room temperature correctly.
- 2) Install the remote panel using the openings on its rear part directly onto the wall or on a recess box using the relative supplied screws.
- 3) Connect the remote panel to the electronic management clamps, as indicated in the diagram (*Fig. 30*).
The connection is made using wires with a minimum cross-section of 0.50 mm² and maximum cross-section of 1.5 mm² and a maximum length of 50 m.
- 4) Fix the body of the remote control to the mount template, engaging it with pressure.
- 5) After the product has been powered, wait about 30 seconds before regulation so that communication between remote panel and the product has established.

N.B: for correct installation, prepare a dedicated line to connect the remote control according to the Standards in force regarding electrical systems. If this is not possible, interference due to other electric cables could cause malfunctioning of the remote control itself.




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1.14 ELECTRICAL CONNECTION.


The UI TPH I has a protection rating of IPX5D. Electrical safety of the appliance is reached only when it is correctly connected to an efficient earthing system as specified by current safety standards.


ATTENTION.

 The manufacturer declines any responsibility for damage or physical injury caused by failure to connect the Trio Pack Hybrid I device to an efficient earthing system or failure to comply with the reference standards.

The product is supplied complete with an “X” type power supply cable without plug.



 The power supply cable must be connected to a 230V $\pm 10\%$ / 50Hz mains supply respecting L-N polarity and earth connection; this network must also have a multi-pole circuit breaker with class III overvoltage category in compliance with installation regulations.

 To protect from possible dispersions of DC voltage, it is necessary to provide a type A differential safety device.

 If the power supply cable is damaged, it must be replaced by a special cable or assembly, which are only available from the manufacturer or its Authorised After-Sales Technical Assistance Centre.


It is recommended to contact a qualified company (e.g. the Authorised After-Sales Technical Assistance Centre) for replacement to avoid a hazard.

If the fuses on the circuit boards need to be replaced, this must also be done by qualified personnel.

The device is equipped with two fuses: one 230 V fast 3.15A fuse and one 315 mA fuse.


For the main power supply to the appliance, never use adapters, multiple sockets or extension leads.

- **Wiring connection.** Connect the wiring as described in *Par. 1.10*.

- **Product electrical connection.** The power cable must be connected to a 230V $\hat{A} \pm 10\%$ / 50Hz mains, respecting L-N polarity and the earthing connection ; this network must have a multi-pole circuit breaker with Class III overvoltage category. When replacing the power supply cable, contact a qualified company (e.g. the Immergas Authorised After-Sales Technical Assistance Service). For the main power supply to the appliance, never use adapters, multiple sockets or extension leads.

- **Remote panel electrical connection.** The product only operates if connected to the standard supplied remote panel. This must be connected as shown in *Fig. 30*.

IMPORTANT.

 It is compulsory to set up separate lines with different power supply voltages, particularly it is essential to separate the very low voltage connections from the 230 V ones.



1.15 ZONE REMOTE PANEL (OPTIONAL).

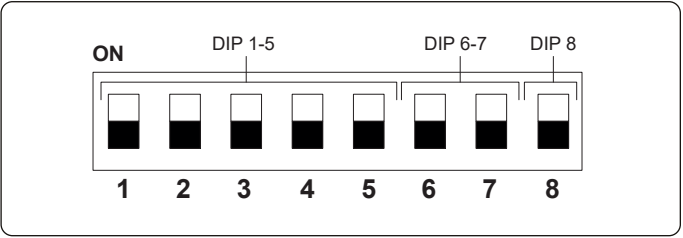
This remote device is used to adjust the setpoints and to view the main information of the zone where it was configured.
Connect the appliance as shown (Fig. 30).
To correctly configure the device, set the parameters as described below:

Assistance Menu -> Device configuration	
Slave address: Address to configure according to the zone where the device is installed	Zone 1 = 41
	Zone 2 = 42
Baud Rate	9600
Parity bit	Even
Stop bits	1
Heat pump control	NO

1.16 MODBUS TEMPERATURE AND HUMIDITY ROOM PROBES (OPTIONAL).

The Modbus temperature and humidity probe is used to detect the room temperature and humidity and to calculate the dew point.
In addition, by setting the relative zone room setpoints available on the Control panel (see Parag. 2.3.3, it is possible to check the temperature and humidity of a room.
Connect the appliance as shown (Fig. 30).

DIP-Switch configuration table.



DIP 1-5 (Address)	<div>ON</div> <div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div></div>	Zone 1 (Address 131)
	<div>ON</div> <div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div></div>	Zone 2 (Address 132)

DIP 6-7 (Type)	<div>ON</div> <div><div>6</div><div>7</div></div>	Modbus 1 - 8 - E - 1
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DIP 8 (Speed)	<div>ON</div> <div><div>8</div></div>	9600 bit/s
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1.17 DOMINUS V2 (OPTIONAL).

The system can be remote controlled using the optional Dominus V2 kit.

Connect the appliance as shown (Fig. 30).

The following is necessary to enable Dominus:

- set the System supervision parameter on the control panel = Domin;
- configure the Dominus APP profile on Trio Pack.

The Dominus firmware must be updated to at least revision 2.02.



For further information, consult the relative instruction sheet.

1.18 ROOM CHRONO-THERMOSTATS (OPTIONAL).

The indoor unit is prepared for the application of room chrono-thermostats, which are available as optional kits (Fig. 30).

A maximum of 2 temperature controllers can be applied directly to the appliance.

All Immergas chrono-thermostats are connected with 2 wires only. Carefully read the user and assembly instructions contained in the accessory kit.

Disconnect power to the appliance before any electrical connection.



On/Off Immergas digital chrono-thermostat.

The chrono-thermostat allows:

- set two room temperature values, one for day (comfort temperature) and one for night (reduced temperature);
- set a weekly programme with four daily switch on and switch off times;
- select the required operating mode from the various possible alternatives:
 - manual mode (with adjustable temperature);
 - automatic mode (with set programme);
 - forced automatic operation (momentarily changing the temperature of the automatic programme).

The chrono-thermostat is powered by two 1.5V LR 6 type alkaline batteries.

On/Off chrono-thermostat electrical connection (Optional).

The operations described below must be performed after having removed the voltage from the appliance.



On/Off ambient thermostat or Chrono-thermostat: must be connected to the 40-1 / 41 terminals, eliminating the X40-1 jumper for zone 1 and 40-2 / 41 for zone 2.

Make sure that the On/Off thermostat contact is "dry", i.e. independent of the mains voltage, otherwise the P.C.B. would be damaged. The connections must be made on the terminal board inside the control panel or the appliance's main panel (Fig. 30).

If any On/Off chrono-thermostat is used, arrange two separate lines in compliance with current regulations regarding electrical systems.



No indoor unit pipes must ever be used to earth the electric system or telephone lines.

Ensure elimination of this risk before making the indoor unit electrical connections.

1.19 HUMIDISTAT ON/OFF (OPTIONAL).

You can make a dehumidification demand by using a humidistat. Connect the appliance as shown (Fig. 30).

1.20 EXTERNAL TEMPERATURE PROBE (OPTIONAL).

The outdoor unit has a standard external probe that can be used as an external probe of the heat pump.

The external probe is used to:

- Thermoregulate the water flow temperature;
- Determine the use of additional generators.

If the outdoor condensing unit is positioned in an area that is not suitable for temperature reading, it is advisable to use an additional external probe (Fig. 31) which is available as an optional kit. Refer to the relative instruction sheet for positioning of the external probe.

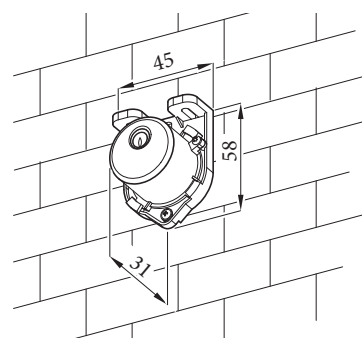
Connect the additional external probe to terminals 38-39 of the boiler.

The presence of the external probe allows the system flow temperature to be set automatically based on the outdoor temperature in order to adapt the heating or cooling provided to the system. The system flow temperature is determined by the setting on the "Zone" menu and by the "User" menu for the offset values based on the curves shown in the diagram (Parag. 1.21).

If the system is divided into two zones, the flow temperature is calculated based on the zone with the higher temperature in central heating mode and with the lower temperature in cooling mode.



In case of failure, after having powered off and back on, the outdoor temperature is automatically detected by the external probe on the outdoor unit.



1.21 TEMPERATURE CONTROL SETTING.

By setting the parameters in the menus

Zones/Configuration

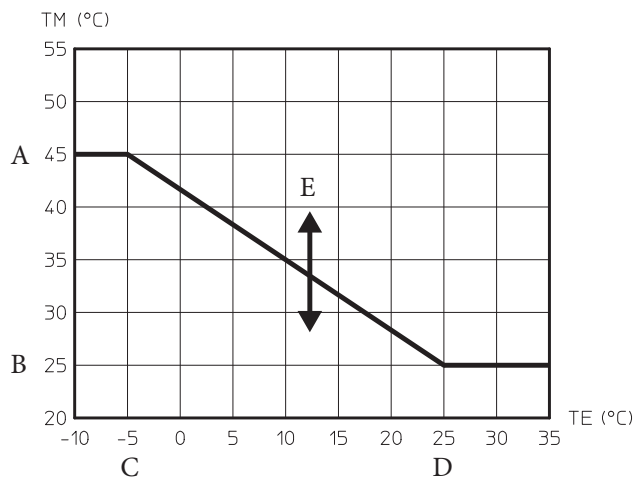
it is possible to automatically adjust the flow temperature of each zone according to the outdoor temperature.

This can be done by enabling the external probe modulation in the menu

Zones/Enablings.

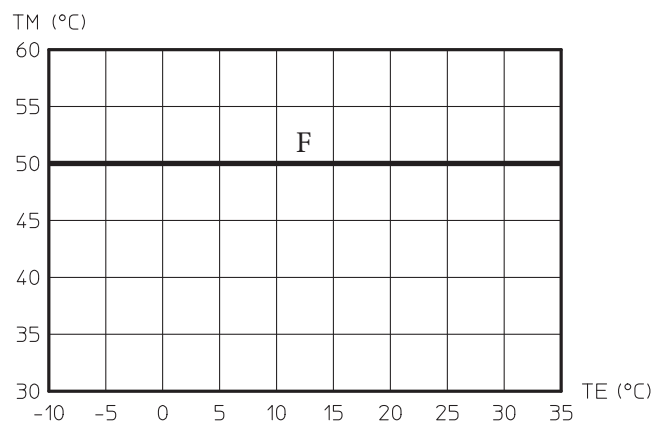
The curves (Fig. 32, 33, 34 e 35) show the default settings in the various operating modes available both with external probe and without.

Zone flow temperature in central heating mode / C.H. mode and external probe modulation enabled



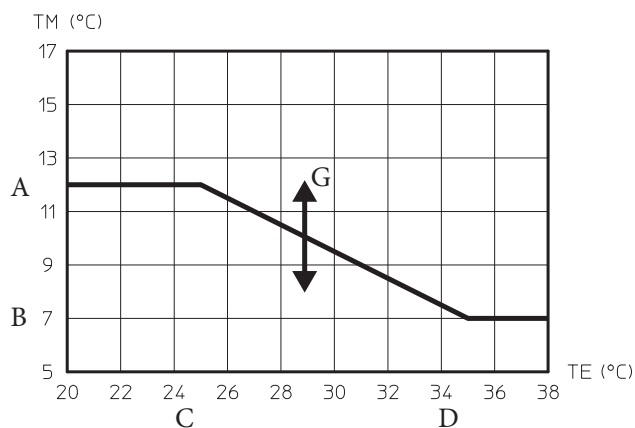
32

Zone flow temperature in central heating mode / C.H. mode and external probe modulation absent



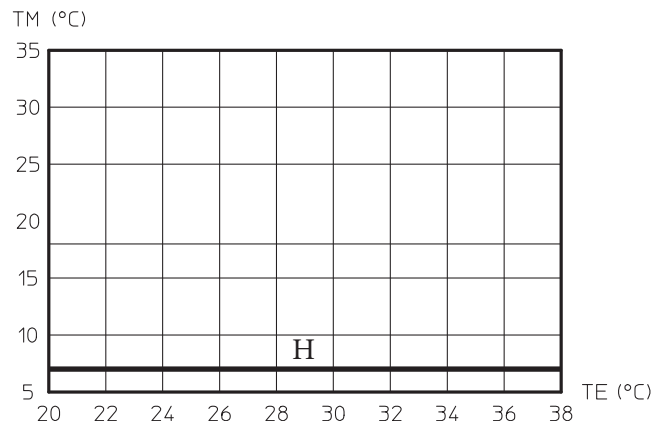
34

Zone flow temperature in cooling mode and external probe modulation enabled



33

Zone flow temperature in cooling mode and external probe modulation absent



35

Key (Fig. 32, 33, 34 and 35)

- A - Maximum flow set
- B - Minimum flow set
- C - Minimum external temperature
- D - Maximum external temperature
- E - Central heating flow temp offset
- F - Central heating flow set
- G - Cooling flow temperature offset
- H - Cooling flow set
- TE - Outdoor temperature
- TM - Flow temperature



1.22 ANTI-FREEZE PROTECTION.

Assembly instructions.

- Wind the heating cable (d15) around the connection pipes and safety valve.

Attention: the graphic representation of the heating cable is purely indicative.

Recommendations for the technician.

The antifreeze heating cable kit was inspected and tested in the factory; therefore, it does not require testing or inspection upon installation.

Once the antifreeze kit has been installed, it is always connected and operational.

Minimum temperature -5°C. The product comes standard with an antifreeze function that activates the electric resistance when the temperature in the Solar Container falls below 4°C.

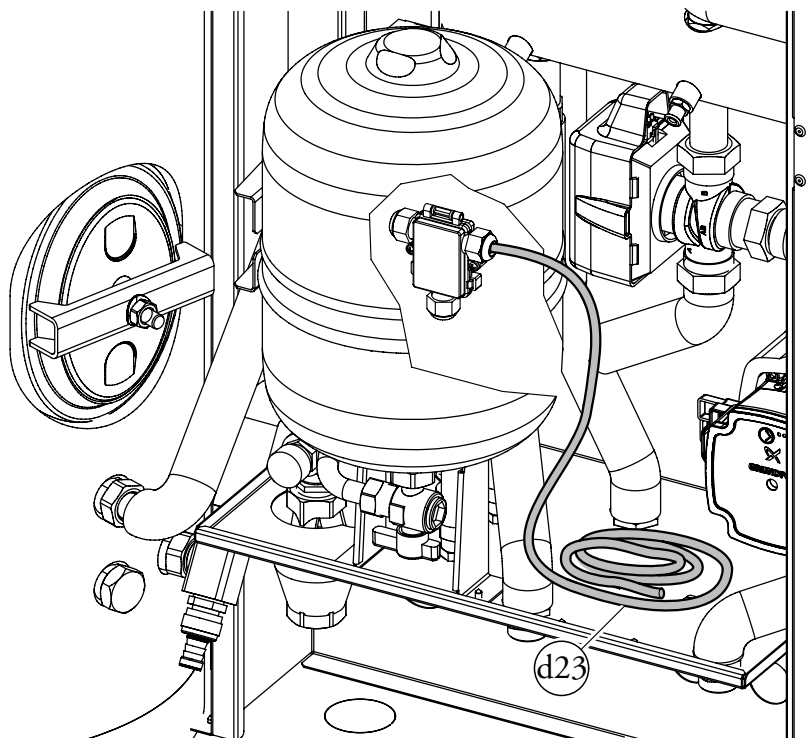
The antifreeze function is only guaranteed if:

- the product is connected properly to the electrical circuit and is constantly powered;
- the essential components are not faulty.

In these conditions the product is protected against freezing up to an ambient temperature of -5°C.

Minimum temperature -15°C. If the boiler is installed in a place where the temperature drops below -5°C, the appliance may freeze. To prevent the risk of freezing, there is an accessory kit that can be supplied on request (antifreeze kit); follow the instructions in the boiler instruction book and the relative instruction sheet of the antifreeze kit (optional).

The warranty does not cover damage due to interruption of the electrical power supply and failure to comply with what is stated in the relative instructions.



1.23 SYSTEM FILLING.

Once the indoor unit is connected, fill the system using the filling cock (Fig. 47, pos. 13).

The indoor unit has one incorporated automatic vent valve located on the manifold and one manual vent valve located on the filling pipe (Fig. 47, pos. 14).

It is recommended to open the manual vent valve during the filling phases to completely eliminate the air from the system.

Make sure that the hoods are loosened.



The filling cock must be closed when the indoor unit pressure gauge indicates approximately 1.2 bar.

During these operations, enable the manual "De-aeration" functions, which lasts about 9 hours (Parag. 3.11).



It is also necessary to manually vent the manifold by acting on the manual air vent valve and to activate the deaeration function also from the boiler menu (refer to the boiler manual). Parag 3.11 Automatic Vent Function).

System minimum water content.

The appliance has an hydraulic manifold acting as the inertial storage tank of primary water sufficient for the good operation of the system.

This is why it is not necessary to add any kind of inertial storage tank to the system.



For the correct and safe operation of the appliance, it is essential to check that the water pressure in the supply system (mains water) is at least 2.5 bar before opening the filling tap. When filling the central heating system (CH), it is essential to comply with the EN 1717 standard, which specifies the requirements for protecting drinking water from contamination by backflow. If the water supply pressure is insufficient, DO NOT OPEN the filling tap. Otherwise, there is a risk of dangerous contamination of the integrated DHW storage tank with heating water, which could compromise user comfort and cause health issues.

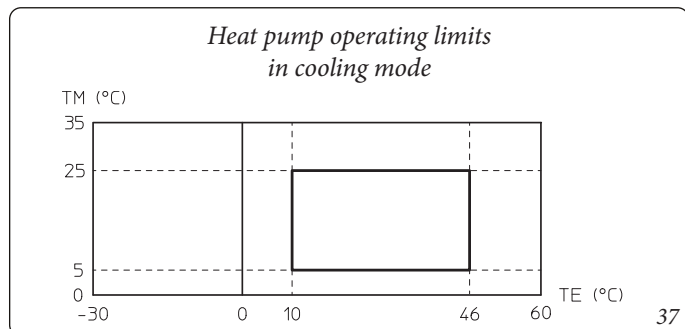


The operator must ensure that the supply water pressure is adequate before filling the central heating system to prevent any possible contamination.



1.24 OPERATING LIMITS.

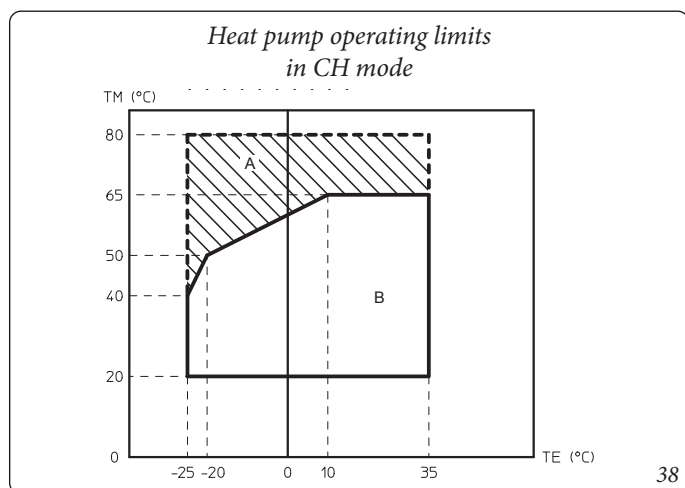
The appliance was designed to work in a specific range of outdoor temperatures and at a specific maximum flow temperature. The chart (Fig. 37, 38 e 39) shows these limits.



Key (Fig. 37):

TE= Outdoor temperature

TM= Flow temperature



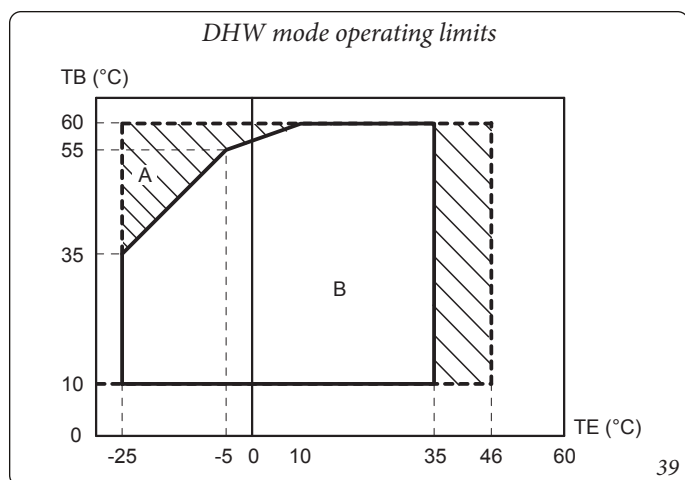
Key (Fig. 38):

TE= Outdoor temperature

TM= Flow temperature

A = With integration boiler

B = Without boiler enabled



Key (Fig. 39):

TE= Outdoor temperature

TB= Storage tank unit temperature

A = With integration boiler

B = Without boiler enabled

1.25 INDOOR UNIT START-UP (IGNITION).

After having installed the chiller lines on the outdoor unit, to commission the heat pump (the operations listed below must only be performed by qualified personnel and in the presence of staff only):

- 1) Check connection to a 230V-50Hz power mains, correct L-N polarity and the earthing connection;
- 2) Switch the indoor unit on and check correct ignition;
- 3) Check the intervention of the main switch located upstream from the indoor unit and in the indoor unit.
- 4) Set the first ignition parameters (Parag. 3.11).

The system must not be started up if even only one of the checks should be negative.



After installation, check for leaks. Toxic gas could be generated if the unit comes into contact with a source of ignition, such as thermal fan, stove and cylinders. Make sure that only refrigerant recovery cylinders are used.



Apply the product data nameplate contained inside the warranty envelope, in an accessible and visible position.



1.26 CIRCULATION PUMP.

The appliance is supplied with two circulators: the heat pump circulator, which deals with the heat exchange with outdoor condensing unit, and the zone pump 1 , which deals with the power supply to the system.

Heat pump circulator

The appliance is supplied with a variable speed pump that adjusts the speed to ensure the best possible performance.

Pump symbols (Fig. 40)

The symbol 2 flashes green (⚡) when the pump is powered and the pwm control signal is connected and on (pump ON or in standby).

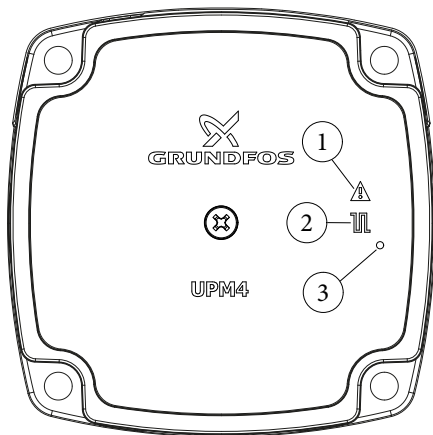
If symbol 2 turns solid green (■), the pump does not detect any command on the PWM signal and always runs at maximum speed.

If the pump detects an alarm, symbol 1 lights up red (⚠). This can mean that there is one of the following faults:

- Low power supply voltage.
- Rotor seized (Cautiously turn the screw in the centre of the head to manually release the motor shaft).
- Electrical error.

Pump release.

If after a long period of inactivity, the circulator is blocked, adjust the screw in the centre of the head in order to manually release the motor shaft. Take great care during this operation to avoid damage to the motor.



- Key:
- 1 -Alarm signal (Red)
 - 2 -Functioning status signal (Steady green/Flashing green)
 - 3 -Led (Not used on this model)

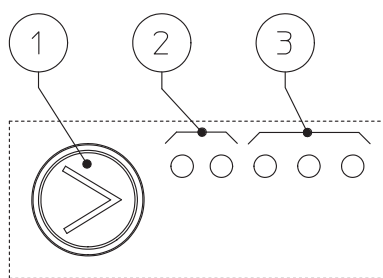


Pump zone 1

The pump is equipped with a speed regulator. These settings are suitable for most systems. In fact, the pump is equipped with electronic control to set advanced functions. For proper operation one must select the most suitable type of operation for the system and select a speed in the available range, with a focus on energy savings.

Selection of operating mode.

When running, the pump indicates the set configuration by means of the codified lighting of the LEDs. The setting is changed by a short pressing of the button.



- Key:
- 1 - Function selection button
 - 2 - 2 Green (G) / red (R) LED
 - 3 - 3 Yellow LEDs (Y)

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Circulating pump LED	Description
G G Y Y Y ● ○ ● ○ ○	Proportional head speed 1
G G Y Y Y ● ○ ● ● ○	Proportional head speed 2
G G Y Y Y ● ○ ● ● ●	Proportional head speed 3
G G Y Y Y ○ ● ● ○ ○	Constant head speed 1
G G Y Y Y ○ ● ● ● ○	Constant head speed 2
G G Y Y Y ○ ● ● ● ●	Constant head speed 3
G G Y Y Y ○ ○ ● ○ ○	Constant curve speed 1
G G Y Y Y ○ ○ ● ● ○	Constant curve speed 2
G G Y Y Y ○ ○ ● ● ●	Constant curve speed 3
G G Y Y Y ● ○ ○ ○ ○	Do not use
G G Y Y Y ○ ● ○ ○ ○	Do not use

The pump is set at "Constant curve speed 3" by default.

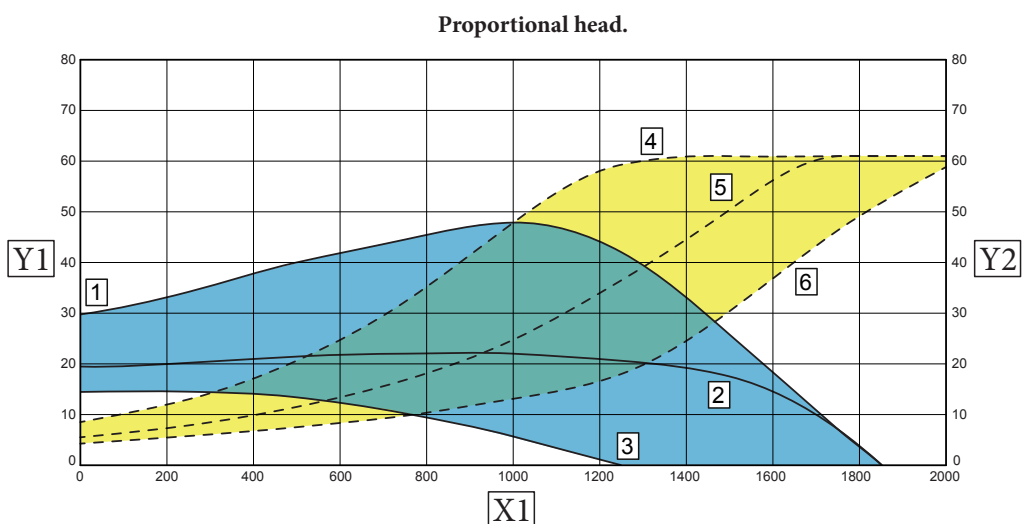
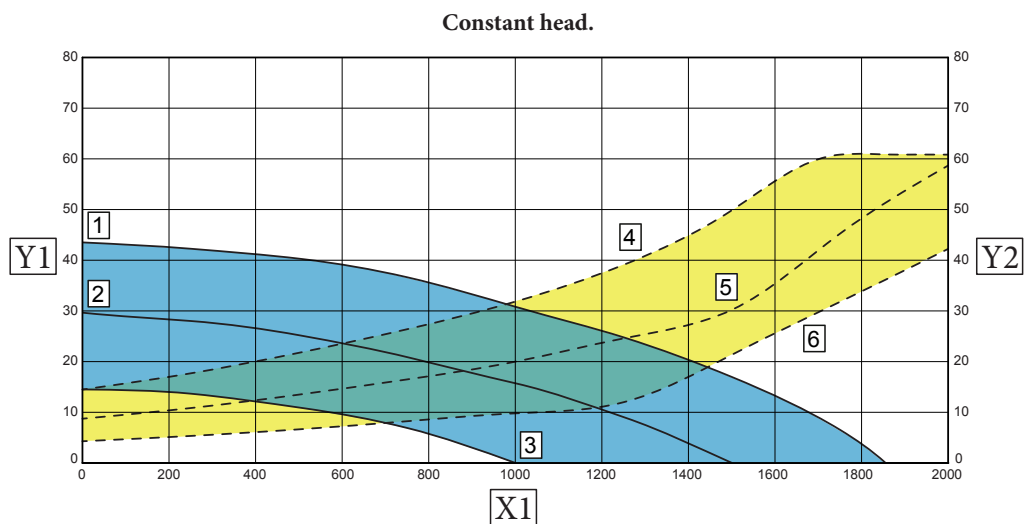
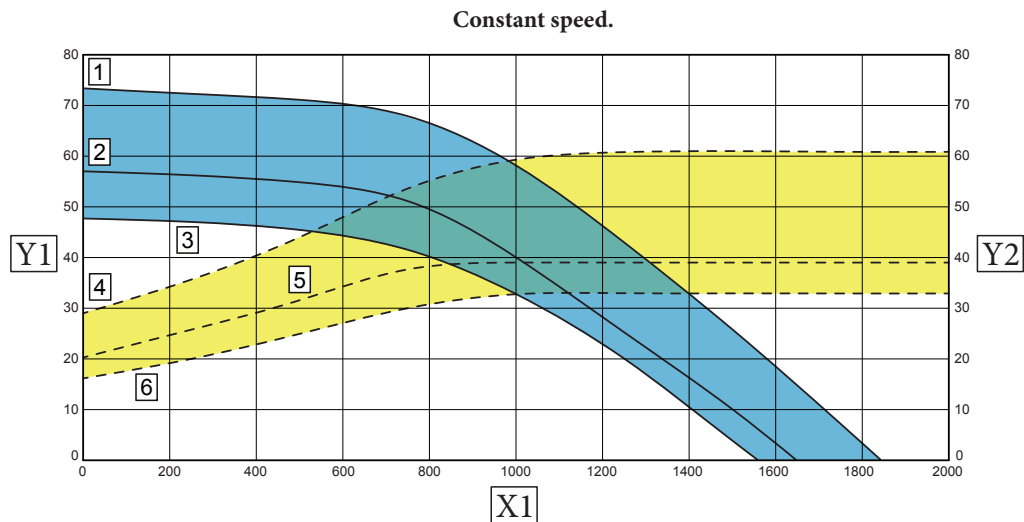
Real-time diagnostics: in the event of malfunction the LEDs provide information on the circulator operation status, see table (Fig. 42):

Circulating pump LED (first red LED)	Description	Diagnostics	Remedy
R Y Y Y Y ● ○ ○ ○ ●	Circulator mechanically blocked	The pump cannot restart automatically due to an anomaly	Wait for the pump to make automatic release attempts or manually release the motor shaft acting on the screw in the centre of the head. If the anomaly persists replace the pump.
R Y Y Y Y ● ○ ○ ● ○	Abnormal situation (the pump continues operating). low power supply voltage	Voltage off range < 160 Vac	Check power supply
R Y Y Y Y ● ○ ● ○ ○	Electrical fault (Pump blocked)	The pump is locked due to power supply too low or serious malfunction	Check the power supply if the anomaly persists replace the pump

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Head available to the system zone 1 (direct zone)



- Key:
- 1 = Head available to the system at Speed 3
 - 2 = Head available to the system at Speed 2
 - 3 = Head available to the system at Speed 1
 - 4 = Power absorbed by the pump at speed 3
 - 5 = Power absorbed by the pump at speed 2
 - 6 = Power absorbed by the pump at speed 1
- Area between curve 1 and 3 = Available system head
- Area between 4 and 6 = Pump absorbed power
- X1 = Flow rate (l/h)
- Y1 = Head (kPa)
- Y2 = Pump absorbed power (W)

INSTALLER

USER

CONTROL PANEL

MAINTENANCE TECHNICIAN

TECHNICAL DATA



Zone 2 pumps (optional) (UPM3L K FLEX)

The pump is ideal for the requirements of each central heating system in a domestic and residential environment. In fact, the pump is equipped with electronic control that allows to set advanced functions.

The pump is equipped with a speed regulator.

These settings are suitable for most systems.

In fact, the pump is equipped with electronic control to set advanced functions. For proper operation one must select the most suitable type of operation for the system and select a speed in the available range, with a focus on energy savings.

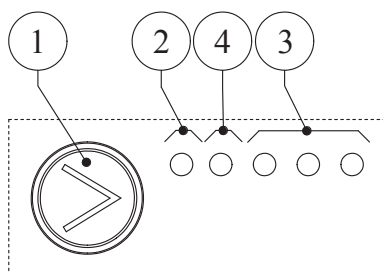
Selection of operating mode.

When running, the pump indicates the set configuration by means of the codified lighting of the LEDs. The setting is changed by a short pressing of the button.

Circulating pump LED	Description
G G Y Y Y ● ○ ● ○ ○	Constant curve speed 1
G G Y Y Y ● ○ ● ● ○	Constant curve speed 2
G G Y Y Y ● ○ ● ● ●	Constant curve speed 3
G G Y Y Y ○ ○ ● ○ ○	Do not use
G G Y Y Y ○ ○ ● ● ○	Do not use
G G Y Y Y ○ ○ ● ● ●	Do not use

The pump is set at “Constant curve speed 3” by default.

Real-time diagnostics: in the event of malfunction the LEDs provide information on the circulator operation status, see table (Fig. 45):



Key:

- 1 - Function selection button
- 2 - 1 Green (G) / red (R) LED
- 3 - 3 Yellow LEDs (Y)
- 4 - 1 LED color green (G) / red (R) - not used on this model

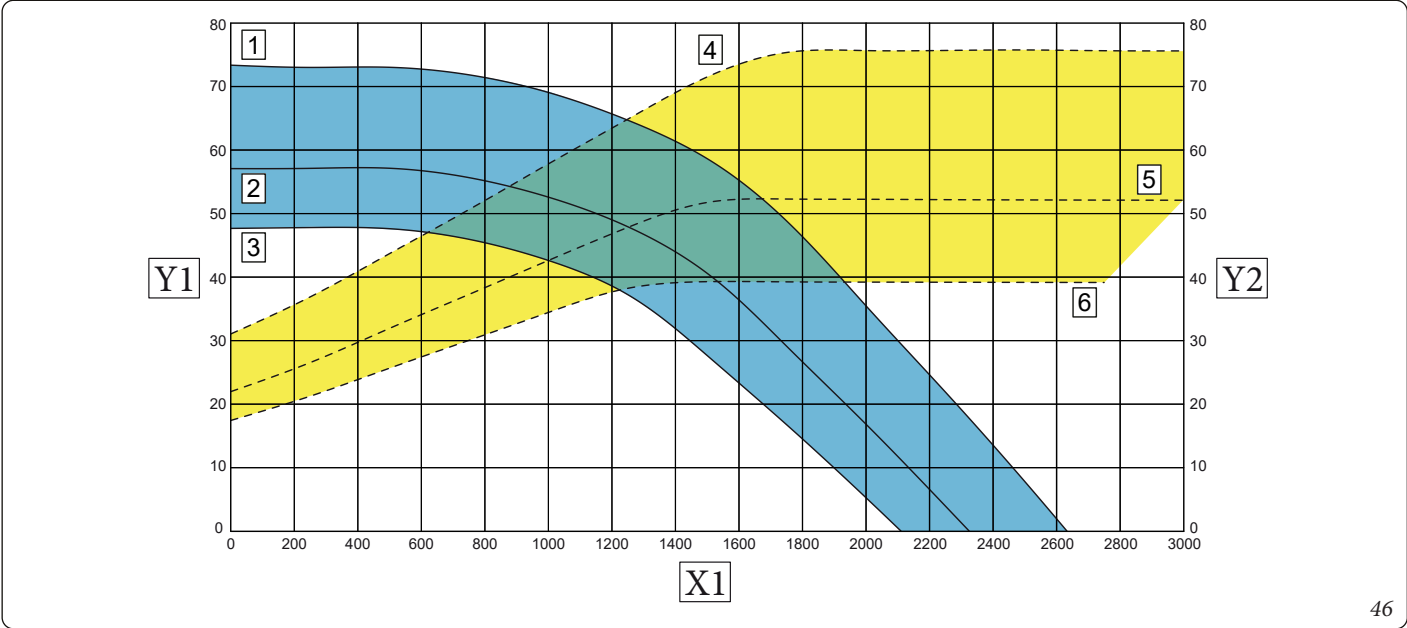
44

Circulating pump LED (first red LED)	Description	Diagnostics	Remedy
R Y Y Y Y ● ○ ○ ○ ●	Circulator mechanically blocked	The pump cannot restart automatically due to an anomaly	Wait for the pump to make automatic release attempts or manually release the motor shaft acting on the screw in the centre of the head. If the anomaly persists replace the pump.
R Y Y Y Y ● ○ ○ ● ○	Abnormal situation (the circulator stops). low power supply voltage	Voltage off range < 160 Vac	Check power supply
R Y Y Y Y ● ○ ● ○ ○	Electrical fault (Pump blocked)	The pump is locked due to power supply too low or serious malfunction	Check the power supply if the anomaly persists replace the pump

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Head available to the fixed speed mixed zone 2 system - open mixing valve (UPM3L K FLEX).



Key (Fig. 46):

- | | |
|---|---|
| 1 = Head available to the system at Speed 3 | Area between curve 1 and 3 = Available system head |
| 2 = Head available to the system at Speed 2 | Area between 4 and 6 = Pump absorbed power (hatched area) |
| 3 = Head available to the system at Speed 1 | |
| 4 = Power absorbed by the pump at speed 3 | X1 = Flow rate (l/h) |
| 5 = Power absorbed by the pump at speed 2 | Y1 = Head (kPa) |
| 6 = Power absorbed by the pump at speed 1 | Y2 = Pump absorbed power (W) |

1.27 DOMESTIC HOT WATER STORAGE TANK UNIT.

The storage tank unit in the appliance is the accumulation type with a capacity of 157 litres. It contains large coiled stainless steel heat exchanger pipes, which allow to notably reduce hot water production times. These storage tank units constructed with stainless steel casing and bottoms, guarantee long duration through time. The assembly concepts and welding (T.I.G.) are implemented to the minimum detail to ensure maximum reliability. The side inspection flange ensures practical control of the storage tank unit and the coiled heat exchanger and easy internal cleaning. The Magnesium Anode holder caps include the same, are supplied as standard for the internal protection of the storage tank unit from possible corrosion. These caps are positioned on the side of the storage tank (Fig. 47).

1.28 KITS AVAILABLE ON-DEMAND.

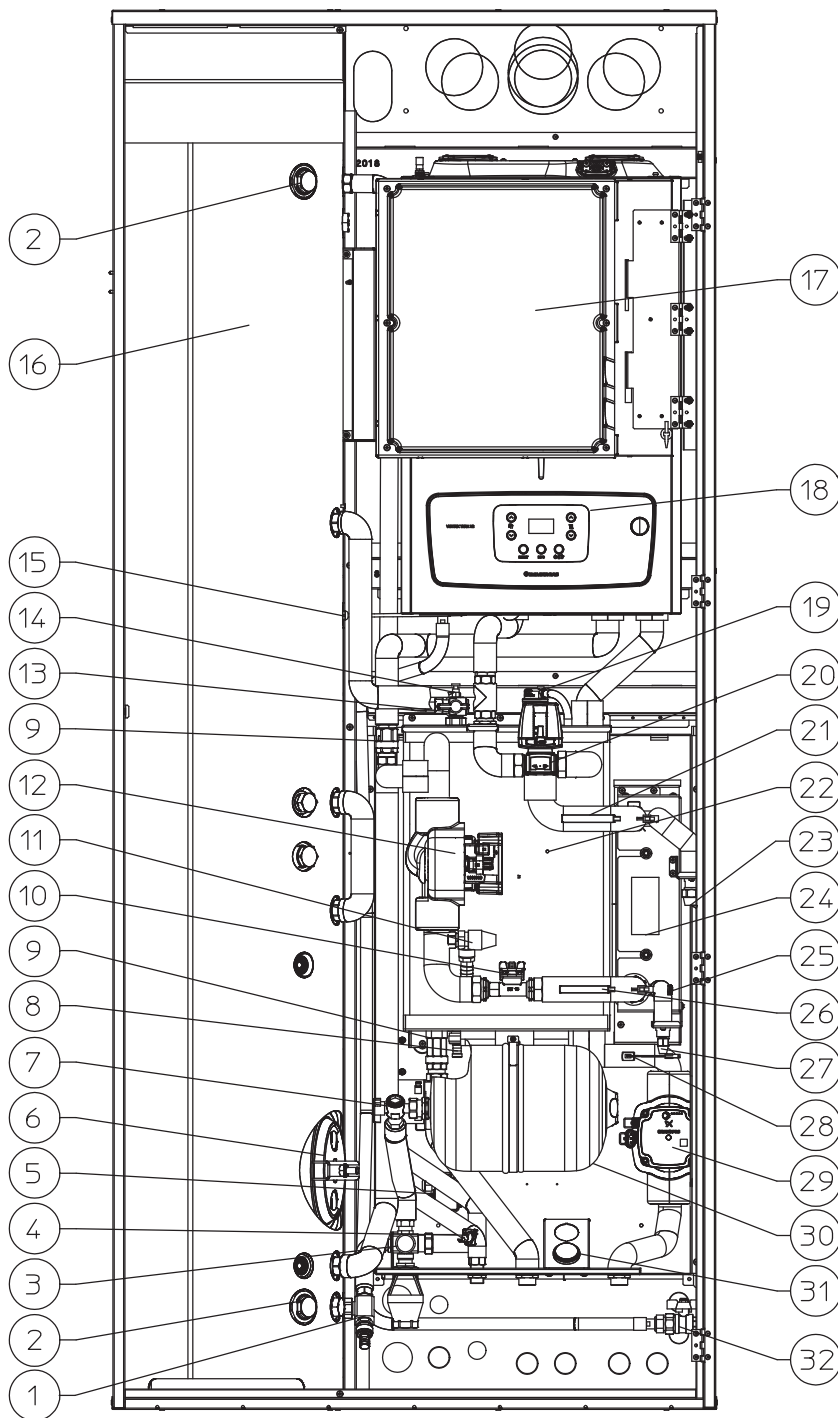
Check the complete list of kits available and which can be combined with the product, consult the Immergas website, the Immergas Price List or the technical-commercial documentation (catalogues and data sheets).

For the installation, see the relevant instruction manual.



1.29 MAIN COMPONENTS.

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Key (Fig. 47):

- | | | |
|---|---|---|
| 1 - Storage tank draining valve | 13 - Filling cock | 25 - Liquid phase detection probe |
| 2 - Sacrificial anode | 14 - Manual air vent valve | 26 - Heat pump return probe |
| 3 - Antifreeze thermostat | 15 - DHW probe | 27 - Chiller line connection liquid status |
| 4 - 8 bar safety valve | 16 - Storage tank unit | 28 - System probe |
| 5 - Antifreeze kit connection box | 17 - Management electronics | 29 - Direct zone pump |
| 6 - Storage tank flange | 18 - Boiler | 30 - 8 l domestic hot water expansion vessel |
| 7 - Domestic hot water vessel shut-off cock | 19 - Automatic vent valve | 31 - Direct zone flow temperature thermometer |
| 8 - Manifold draining valves | 20 - Three-way valve (motorised) | 32 - Gas cock |
| 9 - One way valve | 21 - Heat pump flow probe | |
| 10 - System flow meter | 22 - Hydraulic manifold | |
| 11 - 3 bar safety valve | 23 - Chiller line connection gaseous status | |
| 12 - System circulator pump | 24 - Plate heat exchanger | |



2 USE AND MAINTENANCE INSTRUCTIONS.

2.1 GENERAL WARNINGS

Never expose the indoor unit to direct vapours from a hob.



The device can be used by children at least 8 years old as well as by persons with reduced physical, sensory or mental capabilities, or lack of experience or required knowledge, provided that they are under surveillance, or after they have been instructed relating to the safe use and have understood the potential dangers.

Children must not play with the appliance.

Cleaning and maintenance destined to be performed by the user must not be carried out by unsupervised children.

If temporary shutdown of the indoor unit is required, proceed as follows:

- drain the heating system if antifreeze is not used;
- shut off the electrical and water supply.



Only authorized and professionally trained personnel for the maintenance and assistance of Immergas products may access the internal cleaning of the Container.



Minimize access to the internal parts of the containers, remembering to close the front door and lock it with the vertical locks at the end of the operation.



Do not tamper with any part of the indoor unit



Never clean the appliance or connected parts with easily flammable substances.



Never leave containers or flammable substances in the same environment as the appliance.



Do not climb on the appliance, do not use the appliance as a supporting surface.



Before restoring the pressure of the heating system, make sure that the appliance has been disconnected from the power supply. There may be components with temperatures above 50°C, risk of burns.



Only use the user interface devices listed in this section of the booklet.



The use of components involving use of electrical power requires some fundamental rules to be observed such as:



- **do not touch the appliance with wet or moist parts of the body; do not touch it when barefoot;**
- **never pull electrical cables or leave the appliance exposed to atmospheric agents (rain, sunlight, etc.);**
- **the appliance power cable must not be replaced by the user;**
- **in the event of damage to the cable, switch off the appliance and contact exclusively qualified staff for replacement;**
- **if the appliance is not to be used for a certain period, disconnect the main indoor unit external switch.**

Water at a temperature of more than 50 °C can cause serious burns. Always check the water temperature before any use.



The temperatures indicated by the display have a tolerance of +/- 3°C due to environmental conditions that cannot be blamed on the indoor unit.



At the end of its service life, the appliance must not be disposed of like normal household waste nor abandoned in the environment but must be removed by a professionally authorised company as required by current legislation. Contact the manufacturer for disposal instructions.



2.2 CLEANING AND MAINTENANCE.

To preserve system integrity and keep the distinguishing safety features, performance and reliability unchanged over time, you must execute maintenance operations on a yearly basis in compliance with what is stated in the point regarding "annual appliance check and maintenance".



2.3 USING THE SECONDARY ZONE REMOTE PANEL (OPTIONAL)

For general operation of the zone remote panel, see the relative instruction booklet.

The settings on the remote panel, such as operating mode, flow setting, humidity setting etc. are synchronised with those on the main remote panel.

Moreover, the main remote panel is not disabled if there is any zone remote panel.

2.4 RESTORING CENTRAL HEATING SYSTEM PRESSURE.

For the correct and safe operation of the appliance, it is essential to check that the water pressure in the supply system (mains water) is at least 2.5 bar before opening the filling tap. When filling the central heating system (CH), it is essential to comply with the EN 1717 standard, which specifies the requirements for protecting drinking water from contamination by backflow. If the water supply pressure is insufficient, DO NOT OPEN the filling tap. Otherwise, there is a risk of dangerous contamination of the integrated DHW storage tank with heating water, which could compromise user comfort and cause health issues.



The operator must ensure that the supply water pressure is adequate before filling the central heating system to prevent any possible contamination.

1. Periodically check the system water pressure (the indoor unit's pressure gauge hand must indicate a value between 1 and 1.2 bar).
2. If the pressure falls below 1 bar (when the system is cold) restore normal pressure via the relevant cock located to the left of the manifold, accessible from the main door (refer to the main components).
3. Close the valve after the operation.
4. If the pressure reaches values around 3 bar, there is a risk of tripping the safety valve (in this case, remove water from a radiator air vent valve until a pressure of 1 bar is achieved, or ask for assistance from professionally qualified personnel).
5. In the event of frequent pressure drops, contact qualified staff for assistance to eliminate the possible system leakage.

2.5 EMPTYING THE SYSTEM.

Make sure that the filling cock is closed.
Open the draining cock (*Fig. 47, pos. 8*).
Open all the vent valves present.
At the end, close the draining cock.
Close all the previously opened vent valves.

If fluid containing glycol was added to the system circuit, make sure it is recovered and disposed of in accordance with standard EN 1717.



2.6 EMPTYING IN DHW CIRCUIT.

To do this, always close the domestic cold water inlet upstream of the appliance.

Open any domestic hot water tap to discharge the pressure from the circuit.

Then open the storage tank unit draining cock (*Fig. 47, pos. 1*) and loosen the storage tank hot water outlet fitting to facilitate water drain.

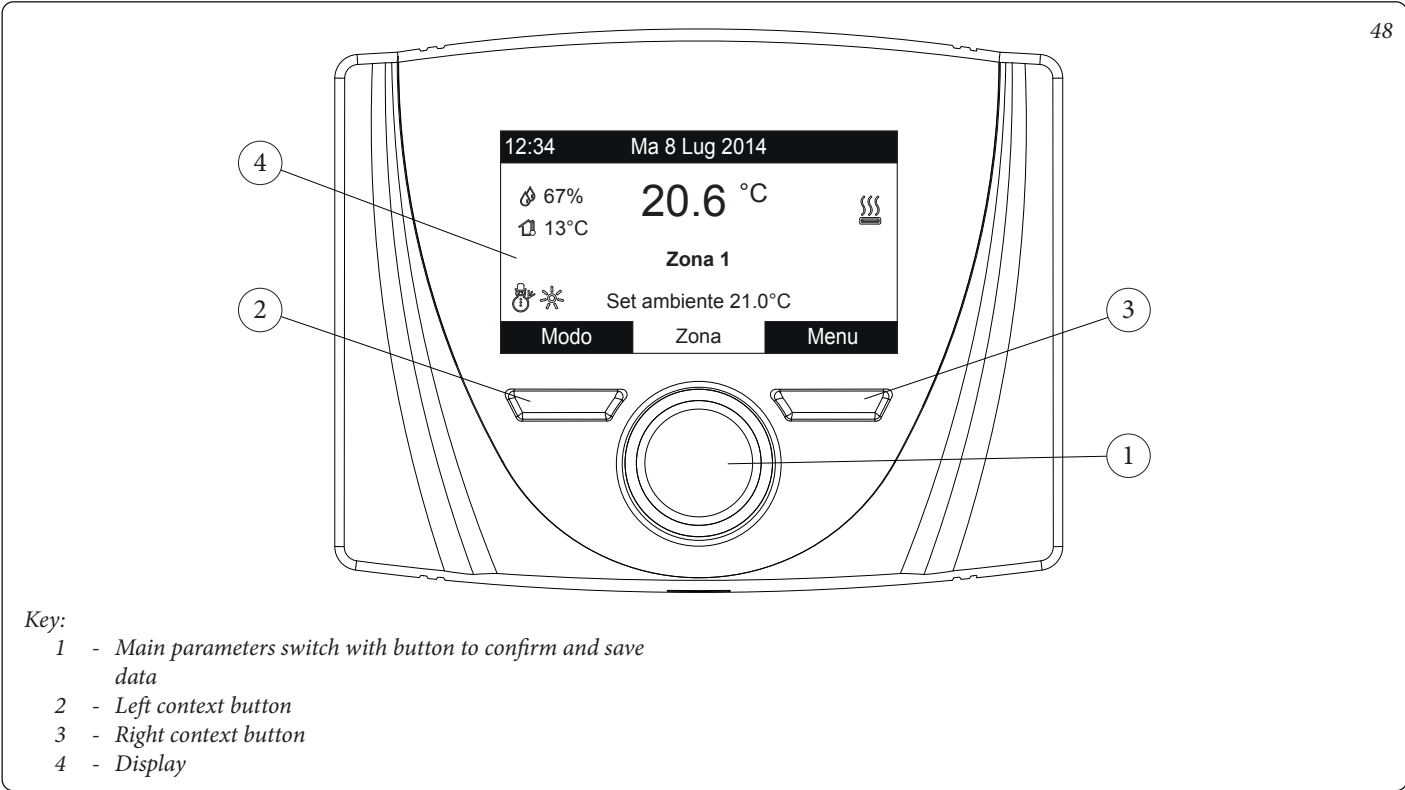
2.7 DECOMMISSIONING.

In the event of permanent system shutdown, contact professional staff for the procedures and ensure that the electrical, water supply lines are previously shut off and disconnected and that the solar collector (if present) is covered.



3 CONTROL PANEL.

3.1 TRIO PACK HYBRID REMOTE PANEL (MAIN).



3.2 SYSTEM USE.

The integrated electronics, depending on the climatic conditions and on the settings, establishes which system to use to satisfy the system requests, choosing the most convenient and suitable energy sources, or using them simultaneously to achieve the best possible comfort.

Once the device has been powered, it goes into the status prior to switch-off. Press the "Modo" (Mode) button to cyclically select the desired mode amongst those available.

The operation mode is general and applies to all zones, the current mode in use is displayed by the relative icon at the bottom left corner (Fig. 48).

Also, depending on the system's configuration, the main screen displays various information regarding the system, amongst which:

Status	Description
	Room humidity value (if humidity probe is present)
	External temperature value (external probe enabled)
	Production of Domestic Hot Water in progress
	Request for room central heating or cooling in progress
	Dehumidify and cool room in progress
	Dehumidify room in progress
	Comfort temperature operation
	Economy temperature operation
	Operation in manual mode
	External probe enabled
	Anomaly present

The area to which the information refers is shown at the centre of the display. It is possible to display one of the two areas and the information on the domestic hot water part. Simply press the main switch to cyclically go from Zone 1, Zone 2 and DHW (Domestic hot water).



The lower part of the display shows the parameter that can be changed (it varies according to configuration). Once the system has captured the data (indicated with the text "Attesa dati..." (Waiting for data...)), it is possible to change the value by turning the main switch and pressing to confirm the parameter change.

The values that can be found according to the configuration, are:

- Set room: defines the room zone temperature.
- Set flow: defines the system's flow temperature to the zone.
- Flow offset: changes the operation curve of the external probe.
- DHW set: this defines the DHW temperature.

3.3 OPERATING MODE.

The indoor unit can work in the following modes:

- STAND-BY (⏻);
- SUMMER (☂);
- SUMMER WITH COOLING (☂❄);
- WINTER (☂🔥).

Press the "MODE" button in sequence to set the system to stand-by ⏻, summer ☂, summer with cooling ☂❄, winter ☂🔥 position.

• "Stand-by" Mode

Press the "MODE" button in succession until the ⏻ symbol appears.

In this mode, the system is able to ensure protection functions only, such as: antifreeze function, antiblock function and any anomaly signals (Fig. 49).

In these conditions the system must still be considered powered.



• Summer

Press the "MODE" button in succession until the ☂ symbol appears.

In this mode the system allows the production of domestic hot water and ensures protection (Fig. 49).

• Summer with cooling

Press the "MODE" button in succession until the ☂❄ symbol appears.

In this mode the system allows the production of domestic hot water, room cooling and dehumidification and ensures protection (Fig. 49).

• Winter

Press the "MODE" button in succession until the ☂🔥 symbol appears.

In this mode the system allows the production of domestic hot water and room central heating and ensures protection (Fig. 49).

List of functions

The following functions can be set on the indoor unit:

- Domestic hot water;
- Central heating;
- Cooling;
- Dehumidify.

Status	Description	Domestic hot water	Cooling	Central heating	Room Antifreeze
⏻	Stand-by	Disabled	Disabled	Disabled	Activated
☂	Summer	Enabled	Disabled	Disabled	Activated
☂❄	Summer with Cooling	Enabled	Enabled	Disabled	Deactivated
☂🔥	Winter	Enabled	Disabled	Enabled	Activated

Domestic hot water

The domestic hot water can be produced with the heat pump or with the boiler.

The system automatically manages the activation of the generators to heat up the domestic hot water in the storage tank unit.

It is possible to set the domestic hot water temperature adjustment in two ways: MANUAL or AUTOMATIC.

The selection takes place in two ways:

or by entering the DHW (Domestic hot water) menu and setting the "Time slot enabling" parameter. This change remains active until the next change of the "Time slot enabling" parameter.

or by turning the main switch of the main DHW (Domestic hot water) page.

This change remains active until the next time slot change within the active calendar or until the default value of the parameter is restored.

Manual adjustment (Man)

The temperature of the DHW is set to MAN mode using the "Set DHW" knob *Fig. 46* after having pressed it until the message "DHW set" appears and then turned to the desired value, or by modifying the "Manual set" value within the "DHW" menu.

Automatic adjustment (Auto)

The AUTOMATIC domestic hot water temperature adjustment involves setting the "Set comfort" and "Set economy" parameters in the "DHW (Domestic hot water)" menu and choosing the calendar inside the menu.

Clock and programs/DHW (Domestic hot water) Program.

In the selected time slots, the DHW (Domestic hot water) set will be automatically set to the "Set comfort" value; outside these, the set DHW (Domestic hot water) will be set to "Set economy" value. It is possible to temporarily modify the DHW (Domestic hot water) set by setting a manual value using the knob of *Fig. 48* after having pressed it until the message "DHW (Domestic hot water) set" appears and then turned to the desired value.

This setting will be lost when the time slot is next changed.

DHW (Domestic hot water) Boost

Activating the "DHW (Domestic hot water) Boost" function via the menu.

DHW (Domestic hot water)/Boost Function = On

DHW (Domestic hot water) operation takes place with the contribution of both the heat pump and the boiler, with a logic that minimises storage tank unit charging time.

Central heating

It is possible to set the C.H. activation parameters for each individual zone in three different ways: MANUAL, AUTOMATIC, OFF. The selection is made by entering the "Set Point Zone" menu of the zone concerned.

Settings/Operating Mode.

There are two types of requests:

- Request from room temperature in the presence of remote control.

Enablings/Enabl. Remote control=Probe/Panel.

- Request from TA (room thermostat).

Enablings/Enabl. Room thermostat = YES.

In the first case, the system works in the following way:

Manual adjustment (Man)

The central heating / C.H. request is adjusted according to a fixed room setpoint.

Central heating / C.H./Central heating / C.H. manual set.

When the room temperature is lower than the manual C.H. set, the appliance is started in C.H.mode.

Automatic adjustment (Auto)

There are two reference setpoints:

Central heating / C.H./Central heating / C.H. comfort set.

Central heating / C.H./Central heating / C.H. economy set.

By associating a calendar with the relevant zone program, it is possible to determine the time slots for activating the C.H. comfort set. The time slots not set, correspond to the central heating / C.H. economy set.

When the detected room temperature is below the C.H. set active at that moment, the appliance is activated in C.H. mode.

Adjustment OFF

Central heating / C.H. always off.

In the second case, the system works in the following way:

Manual adjustment (Man)

The central heating / C.H. demand is activated according to the closing of the TA contact of the relative zone.

Automatic adjustment (Auto)

The central heating / C.H. demand is activated according to the closing of the TA contact of the relative zone, only during zone presence in the comfort band.

Adjustment OFF

Central heating / C.H. always off.

Cooling

It is possible to set the cooling activation parameters for each individual zone in three different ways: MANUAL, AUTOMATIC, OFF.

The selection is made by entering the "Set Point Zone" menu of the zone concerned.

Settings/Operating Mode.

There are two types of requests:

- Request from room temperature in the presence of remote control.

Enablings/Enabl. Remote control=Probe/Panel.

- Request from TA (room thermostat).

Enablings/Enabl. Room thermostat = YES.

In the first case, the system works in the following way:

Manual adjustment (Man)

The cooling request is adjusted according to a fixed room setpoint.

COOLING/Manual cool. set

When the room temperature is higher than the manual cooling set, the appliance is started in cooling mode.



Automatic adjustment (Auto)

There are two reference setpoints:

Cooling/Set cooling comfort.

Cooling/Cooling economy set.

By associating a calendar with the relevant zone program, it is possible to determine the time slots for activating the cooling comfort set. The time slots not set, correspond to the cooling economy set.

When the detected room temperature is above the cooling set active at that moment, the appliance is activated in cooling mode.

Adjustment OFF

Cooling always off.

In the second case, the system works in the following way:

Manual adjustment (Man)

The cooling demand is activated according to the closing of the TA contact of the relative zone.

Automatic adjustment (Auto)

The cooling demand is activated according to the closing of the TA contact of the relative zone, only during zone presence in the comfort band.

Adjustment OFF

Cooling always off.

Dehumidify

If the system is coupled to a humidistat (optional) or a remote zone panel (optional) or a temp and humidity probe (optional), you can manage the room humidity in summer air conditioning mode.

- If coupled to a humidistat, set the degree of humidity on the humidistat itself (see the instruction booklet).
- If coupled to a humidity temperature sensor, set the humidity percentage in the relative user menu.
- If coupled to a zone remote panel, set the humidity percentage in the relative user menu of the control panel or directly in the menu of the panel (see instruction booklet).

The selection is made by entering the "Set Point Zone" menu of the zone concerned.

Dehumidification disabling

It is possible to disable dehumidification for a time slot, typically a night time slot, by setting.

Dehumidification/Hourly disabling = Yes

and the start and end times of disabling.

In central heating or cooling request mode, if the temperature of the water in the system meets the request, the system can work simply by activating the circulator pump.



Room antifreeze function

The room antifreeze function serves to ensure the protection of system components. If the room temperature of the zone falls below the limit set in the 'System Definition' menu, the heat pump is switched on until the set antifreeze protection temperature is reached.

To enable this function, a zone remote panel or a zone humidity temperature probe is required.

The function is not active if Room Thermostat Enable = Yes.

Clock and programs

From this menu, it is possible to set the system's date and time as well as the time slots for operation in Comfort and Economy mode.

• Date and time.

The date and time can be set by modifying the parameters in the menu.

Clock and Programs/Set date and time.

Imposta data e ora

ORA	22:22
GIORNO	5
MESE	1
ANNO	2020

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• Time slots

It is possible to set 4 calendars with 4 time operating slots in system comfort mode. The system will operate in economy mode during out-of-range time of these 4 time slots.

After setting these 4 calendars it is possible to associate them to the various days of the week in the zone programs, DHW (Domestic hot water) according to one's needs.

Set the time slots by modifying the menu.

Clock and programs/Time slots.

Fasce orarie

Calendario: 1

<div style="display: flex; justify-content: space-around;"> <div style="width: 10px; height: 10px; background-color: black;"></div> <div style="width: 10px; height: 10px; background-color: black;"></div> <div style="width: 10px; height: 10px; background-color: black;"></div> </div>												
0	2	4	6	8	10	12	14	16	18	20	22	24
[1] 06:15 - 08:30				[3] 17:45 - 23:00								
[2] 11:30 - 13:45				[4] 24:00 - 24:00								

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• Program for Zone 1, Zone 2 (if present), DHW.

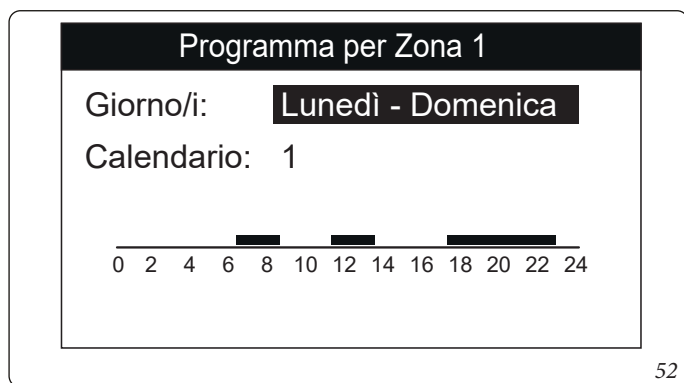
Time ranges (calendars from 1 to 4) are assigned to Zone 1, Zone 2 (if present), DHW (Domestic hot water) and Central heating / C.H. in these menus.

You can assign the calendar to a single day or to a group of days (single day, Monday - Friday, Saturday - Sunday, Monday - Saturday, Monday - Sunday).

Therefore each day may be personalised with 4 different operating programs.

For convenient selection, the bottom part displays the graphics of the relevant calendar being selected (Fig. 52).





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On the menu

Zone/Information

it is possible to identify the status of the various controls managing the central heating / C.H..



• Holiday program.

If required, it is possible to pause system operation for an established period.

Clock and Programs/Holiday Program.

Set the period in which you wish to pause system operation. During this time, the previously set calendars will not be taken into consideration, modifying the menu

Set the period in which you wish to pause system operation. During this time, the previously set calendars will not be taken into consideration.

The antifreeze function is still ensured during the holiday period.

Heat pump disabling

It is possible to disable the heat pump operation for a certain time slot, by setting:

User/Heat pump disabling = Yes

and the start and end times of disabling.

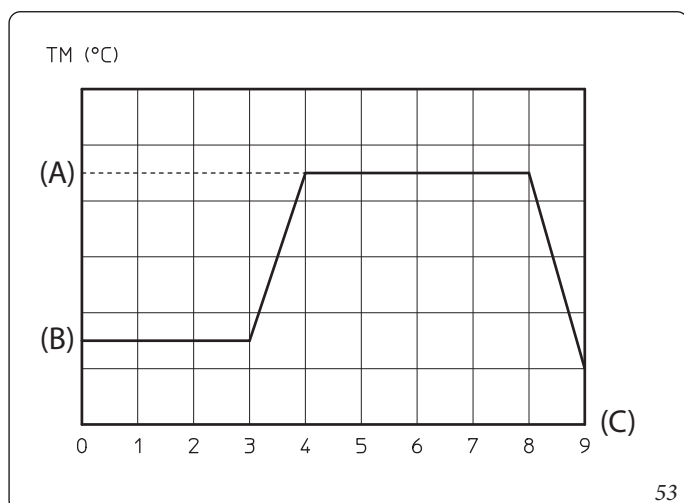
Integration Disabling

The use of the integration boiler can be permanently disabled by setting:

User/Integration disabling = Yes.

Heat pump power reduction

It is possible to reduce the output efficiency of the heat pump for a certain time slot, by setting:



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User/Heat pump power reduction = Yes

and enabling the parameter:

Assistance/Def. System./HP power reduction enabling

and the start and end times of the reduction.

Screed Heater Function

The indoor unit is equipped with a function to perform the thermal shock on new radiant panel systems, as required by the applicable standard.

Contact the manufacturer of the radiant panels for the thermal shock characteristics and its correct execution.



To be able to activate the function there must be no remote control connected, while in case of system divided into zones it must be properly connected, both hydraulically and electrically.



The active zone pumps are those with ongoing requests, made via the room thermostat input.

The standard function lasts in total 7 days - 3 days at the lowest temperature set and 4 days at the highest temperature set (Fig. 53). Duration can be changed by changing the value of the parameters:

User/Heat-Time at minimum set..

User/Heat-Time at maximum set.

and the temperature gradients within the same menu.

The function is activated from the indoor unit in stand-by, by accessing the menu.

Screed heater/Activation.

At this point the message "Fault no. 138" appears on the display: Screed heater in progress".

In case of failure, the function is suspended and will resume when normal operating conditions are reset from the point where it was interrupted.

Operation with external probe

It is possible to use the thermoregulation functions associated to an external probe.

The system is set up to use the outdoor unit external probe or an optional external probe.

With the external probe connected and the thermoregulation function active, the system flow setpoint for room central heating / C.H. or cooling is managed by the system according to the outdoor temperature measured (Parag. 1.20).

You can correct the flow setpoint by choosing the offset value in the specific user menu.

It is possible to enable thermal adjustment for each individual zone. The symbol is present in case of thermoregulation of at least one zone.

Key (Fig. 53):

(A) - Upper set

(B) - Lower set

(C) - Days

TM- Flow temperature

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3.4 SETUP MENU.

Press the "MENU" button to access a list of variables that enable you to customise use of the system.

To browse the menus, which can be accessed by pressing the relative "RH" or "LH" context buttons, scroll through the sub-menus displayed by turning the main switch. Press the said selector to select the one highlighted.

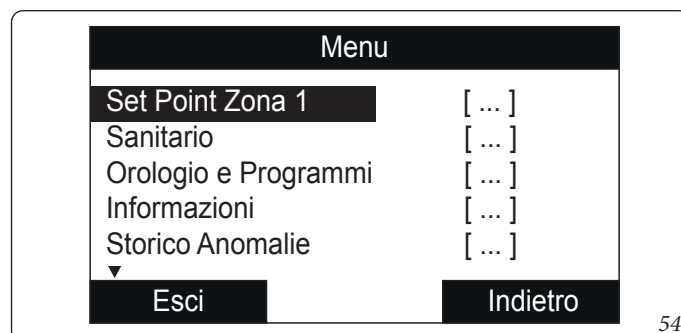
By pressing repeatedly, you can scroll down the menu levels and go back to a previous level by pressing the "Indietro" (Back) context button. To exit the menu completely, press the "Esci" (Exit) button, which will take you back to the initial page of normal operation. To confirm the parameter change, press the main switch.

ATTENTION.

By selecting the zone number equal to 1, the only zone present is identified as Zone 1.



The following menus refer to firmware rev. 1.0.



Hereunder is a list of available menus

MAIN MENU	
Menu item	Description
Zone 1 Set Point	Defines the operating parameters to manage zone 1
Zone 2 Set Point	Defines the operating parameters to manage the zone 2 (present with zone 2 optional kit)
Domestic hot water	Defines the operation parameters in DHW mode
Clock and Programs	Defines the date/time and time operating slots
User	Defines the system parameters that can be modified by the user
Information	This displays the system operating data
Anomalies log	Displays the list of the last 10 anomalies.
Support	Password protected menu dedicated to a qualified technician
Language	Defines the remote panel operation language

Zone 1 Set Point Menu				
Menu item	Description	Range	Default	Customised value
Set central heating comfort	Room temperature in central heating zone 1 Comfort mode	15 ÷ 35 °C	20	
Set central heating economy	Room temperature in central heating zone 1 Economy mode	5 ÷ 25 °C	16	
Central heating manual set	Room temperature in central heating zone 1 Manual mode	5 ÷ 35 °C	20	
Central heating / C.H. flow set	Flow temperature in room zone 1 central heating mode	20 ÷ 85°C	25	
Central heating flow offset	Offset temperature for central heating zone 1	- 15 ÷ + 15°C	0	
Set cooling comfort	Room temperature in cooling zone 1 Comfort mode	15 ÷ 35 °C	25	
Set cooling economy	Room temperature in cooling zone 1 Economy mode	15 ÷ 35 °C	28	
Cooling manual set	Room temperature in cooling zone 1 Manual mode	15 ÷ 35 °C	25	
Cooling humidity set	Humidity value set for zone 1 in cooling mode	30 ÷ 70%	50	
Cooling flow set	Flow temperature in room zone 1 cooling mode	5 ÷ 25 C	20	
Cooling flow offset	Offset temperature for cooling zone 1	-15 ÷ + 15 °C	0	
Operating mode	Zone 1 operating mode	AUTO-MAN-OFF	AUTO	



Zone 2 Set Point Menu (present with optional 2-zone kit)

Menu item	Description	Range	Default	Customised value
Set central heating comfort	Room temperature in central heating zone 2 Comfort mode	15 ÷ 35 °C	20	
Set central heating economy	Room temperature in central heating zone 2 Economy mode	5 ÷ 25 °C	16	
Central heating manual set	Room temperature in central heating zone 2 Manual mode	5 ÷ 35°C	20	
Central heating flow set	Flow temperature in room zone 2 central heating mode	20 ÷ 65°C	25	
Central heating flow offset	Offset temperature for central heating zone 2	- 15 ÷ + 15°C	0	
Set cooling comfort	Room temperature in cooling zone 2 Comfort mode	15 ÷ 35 °C	25	
Set cooling economy	Room temperature in cooling zone 2 Economy mode	15 ÷ 35 °C	28	
Cooling manual set	Room temperature in cooling zone 2 Manual mode	15 ÷ 35 °C	25	
Cooling humidity set	Humidity value set for zone 2 in cooling mode	30 ÷ 70%	50	
Cooling flow set	Flow temperature in room zone 2 cooling mode	5 ÷ 25 C	20	
Cooling flow offset	Offset temperature for cooling zone 2	-15 ÷ + 15 °C	0	
Operating mode	Zone 2 operating mode	AUTO-MAN-OFF	AUTO	

N.B.: the zone 1 central heating / C.H. flow must be greater or equal to the zone 2 flow setpoint.
The zone 1 cooling flow must be lower or equal to the zone 2 flow setpoint.



Domestic hot water

Menu item	Description	Range	Default	Customised value
Comfort set	DHW storage temperature in Comfort phase	20 ÷ 60°C	20	
Economy set	DHW storage temperature in Economy phase	10 ÷ 60°C	10	
Manual set	HP DHW temperature in Manual phase	10 ÷ 60°C	10	
Time slot enabling	Enabling of the DHW setpoint management in automatic mode	AUTO-MAN	MAN	
Boost Function	Defines the Boost function enabling	No/Yes	No	

Clock and programs

Menu item	Description	Range	Default	Customised value
Date and time	Current date and time setting			
Time slots	Defines the time range for operation in Comfort and Economy mode			
	Calendar 1 Slot 1 ON	0-24, 0-45	00:00	
Zone 1 Program	Zone 1 time scheduling			
	Zone 1: Monday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone 1: Tuesday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone 1: Wednesday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone 1: Thursday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone 1: Friday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone 1: Saturday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone 1: Sunday	CAL1, CAL2, CAL3,CAL4	CAL1	
Zone 2 Program	Zone 2 time scheduling			
	Zone 2: Monday	CAL1, CAL2, CAL3,CAL4	CAL1	

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Clock and programs				
Menu item	Description	Range	Default	Customised value
	Zone 2: Tuesday	CAL1, CAL2, CAL3, CAL4	CAL1	
	Zone 2: Wednesday	CAL1, CAL2, CAL3, CAL4	CAL1	
	Zone 2: Thursday	CAL1, CAL2, CAL3, CAL4	CAL1	
	Zone 2: Friday	CAL1, CAL2, CAL3, CAL4	CAL1	
	Zone 2: Saturday	CAL1, CAL2, CAL3, CAL4	CAL1	
	Zone 2: Sunday	CAL1, CAL2, CAL3, CAL4	CAL1	
DHW (Domestic hot water) Program	DHW operation time programming			
	DHW - Monday	CAL1, CAL2, CAL3, CAL4	CAL1	
	DHW - Tuesday	CAL1, CAL2, CAL3, CAL4	CAL1	
	DHW - Wednesday	CAL1, CAL2, CAL3, CAL4	CAL1	
	DHW - Thursday	CAL1, CAL2, CAL3, CAL4	CAL1	
	DHW - Friday	CAL1, CAL2, CAL3, CAL4	CAL1	
	DHW - Saturday	CAL1, CAL2, CAL3, CAL4	CAL1	
	DHW - Sunday	CAL1, CAL2, CAL3, CAL4	CAL1	
Holiday Program	Defines the period during which the system disables both hot water heating and room central heating and/or cooling functions. At the end of the set days, the previously active functions will be reset.		Deactivate	

User Menu				
Menu item	Description	Range	Default	Customised value
Heat pump disabling	It allows to disable the heat pump according to the set time slot.	Yes/No	No	
Heat pump hourly disabling start	Allows to set when disabling starts.	0 - 23	0	
Heat pump hourly disabling end	Allows to set when disabling ends.	0 - 23	0	
Integration disabling	Allows to permanently disable the integration generator.	Yes/No	No	
F1 Electricity price	Allows to enter the price of electricity in euro cents per kWh for time slot 1	0 ÷ 200,00 €	0,28	
F2 Electricity price	Allows to enter the price of electricity in euro cents per kWh for time slot 2	0 ÷ 200,00 €	0,27	
F3 Electricity price	Allows to enter the price of electricity in euro cents per kWh for time slot 3	0 ÷ 200,00 €	0,27	
F1 ON	Allows to set when time slot 1 starts	0 ÷ 24	08 : 00	
F2 ON	Allows to set when time slot 2 starts	0 ÷ 24	19 00	
F3 ON	Allows to set when time slot 3 starts	0 ÷ 24	23 : 00	
Gas type	Type of gas with which to feed the boiler	Methane / LPG	M	
Gas unit of measurement	It establishes the unit of measurement for gas metering	m³/l/kg	m³	
Gas price	Allows to enter the gas price in euro	0 ÷ 200,00 €	1	
Screed heater/Time spent at minimum set	Defines the time spent at minimum operating temperature during the active function	1 ÷ 7 days	3	
Screed heater - Rising gradient	Defines the ascent gradient of the temperature.	3 ÷ 30 °C/g	30	
Screed heater/Time spent at maximum set	Defines the time spent at maximum operating temperature during the active function	1 ÷ 14 days	4	
Screed heater - Descent gradient	Defines the descent gradient of the temperature.	3 ÷ 30 °C/g	30	
Screed heater - Set minimum flow	Defines the minimum delivery temperature of the screed heater function.	20 ÷ 45 °C	25	



User Menu				
Menu item	Description	Range	Default	Customised value
Screed heater - Set maximum flow	Defines the maximum delivery temperature of the screed heater function.	25 ÷ 55 °C	45	
Screed heater activation		Yes/No	No	
Disabling dehumidifier zone 1	It allows to disable the zone 1 dehumidifier according to the set time slot	Yes/No	No	
Start disabling dehumidifier zone 1	Allows to set when disabling starts.	0 - 23	0	
End of disabling dehumidifier zone 1	Allows to set when disabling ends.	0 - 23	0	
Disabling dehumidifier zone 2	It allows to disable the zone 2 dehumidifier according to the set time slot.	Yes/No	No	
Start disabling dehumidifier zone 2	Allows to set when disabling starts.	0 - 23	0	
End of disabling dehumidifier zone 2	Allows to set when disabling ends.	0 - 23	0	
Heat pump power reduction on	It allows to activate the heat pump power reduction according to the set time slot.	Yes/No	No	
Heat pump power reduction start	It allows to set the reduction start time.	0 - 23	0	
Heat pump power reduction end	It allows to set the reduction end time.	0 - 23	0	

Information menu	
Menu item	Description
HP Flow temperature	Heat pump flow temperature.
HP Return temperature	Heat pump return temperature.
Outside temperature	External temper. detected by the external probe (optional).
Calculated set system temperature	Flow temperature requested by the generators.
Zone 1 temperature set	Temperature set on zone 1.
Zone 1 flow temperature	Zone 1 flow temperature.
Zone 1 dew temperature	Zone 1 dew temperature.
Zone 2 temperature set	Temperature set on zone 2.
Zone 2 flow temperature	Zone 2 flow temperature.
Zone 2 dew temperature	Zone 2 dew temperature.
TA status zone 1	Zone 1 TA contact closed.
TA status zone 2	Zone 2 TA contact closed.
DHW set	Displays the domestic hot water flow set.
DHW temperature	DHW storage tank water temperature.
HP Power	Instantaneous power percentage being used at this moment by the system.
HP operating mode	Describes the heat pump operation mode.
Minimum COP	Displays the minimum COP needed to start the heat pump (only present with boiler enabled).
HP COP	Displays the current COP of the heat pump (Displayed only with DHW (Domestic hot water) or central heating / C.H. request).
System integration	Indicates whether the system request is integrated by another energy source in addition to the heat pump.
DHW integration	Indicates whether the system request is integrated by another energy source in addition to the heat pump.
System boiler set	Displays the flow set on the boiler.
DHW (Domestic hot water) boiler set	Displays the DHW (Domestic hot water) set on the boiler.
Management board software version	Management board software revision
Remote panel software version	Main remote panel software revision
Hours of integration operation	No. of system operation hours with energy integration.
HP hours of operation	No. of operating hours of the heat pump.
Audax Pro model	Identifies the heat pump model of the Audax Pro V2 range (4 - 6 - 9).
Screed Heater - Days Remaining	Days left until completion of the screed heater function.
System state	Status parameter

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Information menu	
Menu item	Description
Integration state	Integration state parameter
Output status	Output status parameter

Anomalies Log menu	
Description	
Displays the log of the last 10 anomalies, see <i>Parag. 2.3.5</i> .	

Assistance Menu				
Menu item	Description	Range	Default	Customised value
Password protected menu dedicated to a qualified technician				

Language Menu				
Menu item	Description	Range	Default	Customised value
Language	Defines the remote panel operation language	ITA - ENG	EN	

3.5 DHW SETTING.

To obtain a good DHW comfort, pay attention to the setting of parameters relating to domestic hot water.

There is only one DHW probe in the system, therefore it is sufficient to set a single DHW (Domestic hot water) set to regulate the water temperature.


The DHW (Domestic hot water) set can be the one in the main page or the "comfort/eco/manual" set of the DHW (Domestic hot water) menu.

- **DHW set** (manual or eco/comfort).

Setting of the wanted domestic hot water temperature.

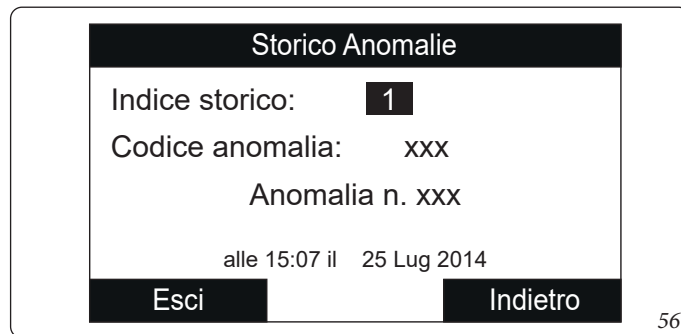
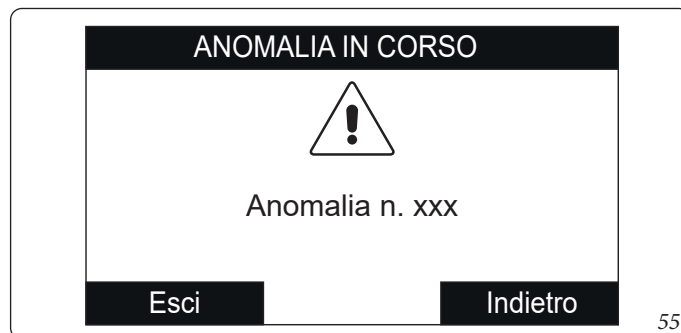
3.6 FAILURE WARNINGS.


The system signals any anomalies by displaying the attention screen with the relative anomaly code (*Fig.55*).

By pressing the Reset button (for resettable anomalies) it is possible to reset the anomaly. Press the "esci" (exit) button to go back to the main screen and the anomaly is displayed with the  symbol.

You must access the "Storico anomalie" (Anomalies log) menu to display the anomalies log where the last 10 system anomalies are displayed in time order (*Fig. 56*) Turn the main switch to scroll through the list.

Within the "Anomaly log" menu it is also possible to reset the list by selecting yes under "Anomaly reset".



The indoor unit signals any anomalies by means of a code with a key symbol next to it "" in the centre of the display.

Error Code	Anomaly signalled	Cause	System status / Solution
5	Flow probe anomaly	The board detects an anomaly on the flow NTC probe.	The system does not start (1).
12	Domestic hot water probe anomaly	The board detects an anomaly on the domestic hot water NTC probe.	The hydronic module is unable to produce domestic hot water (1).
15	Configuration error	If the board detects an anomaly or incongruity on the electric wiring, the appliance will not start.	If normal conditions are restored, the heat generator restarts without having to be reset (1).
23	Return probe anomaly	The board detects an anomaly on the return NTC probe	The system does not start (1).
26	Flowmeter anomaly	The board detects an anomaly on the flowmeter. Booster pump, if any, always working.	The system does not start (1). Make sure the booster pump (optional) only activates when requested.
27	Insufficient circulation	This happens when the hydronic module overheats due to poor water circulation in the primary circuit. The causes can be: - hp pump blocked; free the pump; - damaged flowmeter.	Check system circulation and flowmeter. Press the Reset button (1).
32	Zone 2 flow temperature probe anomaly	If the board detects an anomaly on the zone 2 probe, the system cannot work in the affected area.	(1)
36	IMG Bus communication loss	Communication between the control units is interrupted due to an anomaly on the boiler control unit or on the IMG Bus.	The boiler does not satisfy the room heating requests (1).
50	External probe anomaly	In the event the external probe is not connected or is faulty, the anomaly is indicated.	Check the external probe connection. The system continues to operate with the external probe integrated in the outdoor unit (1). If the external probe is replaced, repeat the installation operations.
55	Zone 1 flow temperature probe anomaly	The zone 1 flow probe has an out-of-range resistive value.	(1)
104	Expansion off-line alarm	The expansion device is offline	(1)
120	Zone 1 dehumidification high set alarm	The cooling flow set calculated for dehumidification exceeds the limit set in zone 1.	The calculated flow set is higher than the limit allowed by the dehumidifier. Cool the room and wait for the dew temperature to go back within acceptable values (1).
121	Zone 1 offline device alarm	The device connected to zone 1 is offline.	(1)
122	Zone 2 offline device alarm	The device connected to zone 2 is offline.	(1)
125	zone 1 room temperature probe error	The zone 1 room probe has an out of range resistive value.	(1)
126	zone 2 room temperature probe error	The zone 2 room probe has an out of range resistive value.	(1)
129	Zone 1 humidity probe error	Anomaly on the zone 1 humidity probe.	In addition to the humidity, the dew point is not calculated for the zone either (1). Zone humidity cannot be checked.
130	Zone 2 humidity probe error	Anomaly on the zone 2 humidity probe.	In addition to the humidity, the dew point is not calculated for the zone either (1). Zone humidity cannot be checked.
132	Zone 2 dehumidification high set alarm	The cooling flow set calculated for dehumidification is higher than the limit set in zone 2	The calculated flow set exceeds the limit permitted by the dehumidifier. Cool the room and wait for the dew temperature to go back within acceptable values (1).
133	Zone 1 dehumidifier fault alarm	Anomaly coming from the dehumidifier (optional) in zone 1	The system does not dehumidify in the relative zone (1)
134	Zone 2 dehumidifier fault alarm	Anomaly coming from the dehumidifier (optional) in zone 2	The system does not dehumidify in the relative zone (1)
137	Reset system alarm - Restart the system	When the default parameters are restored, the system needs to be restarted.	Turn the system off and on.
(1) If the shutdown or fault persists, contact an authorised company (e.g. Authorised Technical After-Sales Service)			

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Error Code	Anomaly signalled	Cause	System status / Solution
138	Screed heater in progress	Screed heater function in progress.	No demand can be made until the end of the function in progress (1).
139	Deaeration in progress	Air deaeration function in progress.	No demand can be made until the end of the function in progress (1).
142	Errore Dominus offline	Communication with Dominus is offline.	(1)
177	DHW maximum time alarm	Domestic hot water production is not met within the pre-established time.	Press the Reset button (1)
178	Block: anti-legionella cycle not successful	The anti-Legionella cycle is run without success within the pre-established time.	Press the Reset button (1)
179	Liquid phase probe alarm	The board detects an anomaly on the liquid phase NTC probe.	The system does not start (1).
183	Outdoor unit in test mode	A signal notifies that the outdoor unit is in test mode.	During this time, room air conditioning and domestic hot water production requirements cannot be met
188	Request out of operating range	A request is made with the outdoor temperature exceeding the operating limits (Parag. 1.25).	The system does not start (1). Wait for the outdoor unit to be restored within operating limits.
189	Time out alarm with communication board	If communication between the printed circuit boards is lost, an anomaly is signalled.	The system does not start (1). Check communication between the P.C.B. and the interface board.
196	High flow temp. block	Excessively high temperature is detected in the flow circuit of the heat pump.	Check the hydraulic circuit (1).
197	Communication board configuration error	An incorrect communication board configuration has been detected.	The system does not start (1).
199	Wrong panel error	The type of main panel installed is not compatible with the system configuration.	The system does not start (1).
209	Poor circulation block in TEST MODE	Insufficient water circulation was detected to ensure compressor operation during TEST MODE.	The system does not start. Check the correct flow rate read by the flowmeter.
210	Poor circulation block during a defrost cycle	Insufficient water circulation was detected to ensure compressor operation during the defrost phase.	The system does not start. Check the correct flow rate read by the flowmeter.
220	Loss of communication with Master control panel	Loss of communication between Master type control panel and slave type Main management board.	(1)
250	Anti-legionella function alarm enabled with no DHW integration	The system does not start.	Check the settings in the Integration menu.
266	Insufficient circulation with active electrical integration	Warning of flow rate not suitable to guarantee correct operation of the internal electrical resistance. It does not interrupt resistance operation.	Check system circulation and flowmeter
(1) If the shutdown or fault persists, contact an authorised company (e.g. Authorised Technical After-Sales Service)			



List of boiler anomalies.

If the outdoor condensing unit is faulty, the error code is displayed in the middle of the control panel (Fig. 48) with code 9xxx where for "xxx" refer to the boiler anomaly code in the relevant instruction manual.

List of Outdoor Unit Anomalies.

If the condensing unit is faulty, the error code is displayed in the middle of the control panel (Fig. 48). with code 1xxx and a key symbol next to it "🔑".

Error Code	Anomaly signalled	System status / Solution
101	Outdoor unit communication error	Check the communication cable to the outdoor unit. Check that the interface board works properly. (1)
109	Communication error due to incorrect address of interface board	Check the address on the interface board. (1)
111	MODBUS communication error	Check communication between the management board and interface boards. (1)
162	EEPROM error	Replace the main board of the outdoor unit (1)
177	Emergency error	(1)
198	Error of thermal fuse terminal board (open)	(1)
201	Communication error (failed coupling) between interface board and outdoor unit	Check the communication cable to the outdoor unit. Check that the interface board and main board of the outdoor unit work properly (1)
202	Communication error (failed coupling) between indoor unit and interface board	Check the communication cable to the outdoor unit. Check that the interface board and main board of the outdoor unit work properly (1)
203	Communication error between Inverter and main board of the outdoor unit	Check wiring of communication between the two boards. Replace the main board. Replace the inverter board. (1)
221	Outdoor unit air temperature sensor error	Check the position of the sensor. Check the relative wiring. Replace the sensor. (1)
231	Condenser temperature sensor error	Check the position of the sensor. Check the relative wiring. Replace the sensor. (1)
251	Discharge temperature sensor error	Check the position of the sensor. Check the relative wiring. Replace the sensor.
320	Compressor sensor error (overload protection sensor)	Check the position of the sensor. Check the relative wiring. Replace the sensor. (1)
403	Freezing detection (during cooling operation)	Check the chiller cycle. Check the temperatures of the plate heat exchanger. (1)
404	Protection of outdoor unit when in overload (during safety start-up, normal operating status)	Check the chiller cycle. Check the compressor connections. Check the resistances between the different phases of the compressor. (1)
407	Compressor not working due to high pressure	Check the chiller cycle. (1)
416	The compressor discharge is overheated	(1)
419	Outdoor unit EEV operation error	(1)
425	Not used on this model	(1)
440	Central heating blocked (outdoor temperature beyond 35°C)	(1)
(1) If the shutdown or fault persists, contact an authorised company (e.g. Authorised Technical After-Sales Service)		

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Error Code	Anomaly signalled	System status / Solution
441	Cooling blocked (outdoor temperature below 9°C)	(1)
458	Error of outdoor unit fan no.1	(1)
461	Compressor start-up error (Inverter)	Check the chiller cycle. Check the compressor connections. Check the resistances between the different phases of the compressor. (1)
462	Inverter total current overload error	Check the inlet current. Check the refrigerant charge. Check normal operation of the fan. (1)
463	Compressor overheated sensor	Check the compressor sensor. (1)
464	Inverter IPM current overload error	Check the compressor connections and its normal operation. Check the refrigerant charge. Check whether there are obstacles around the outdoor unit. Check whether the service valve is open. Check whether the installation pipes are mounted properly. (1)
465	Compressor overload error	Check the compressor connections and its normal operation. Check the resistances between the different phases of the compressor. (1)
466	Low voltage error of DC circuit	Check the input voltage. Check the power connections. (1)
467	Compressor rotation error	Check the compressor connections. Check the resistances between the different phases of the compressor. (1)
468	Current sensor error (inverter)	Check the main board. (1)
469	Voltage sensor error of DC circuit (inverter)	Check the power connector of the inverter board. Check the connectors RY21 and R200 of the inverter board. (1)
470	EEPROM reading/writing error of outdoor unit	Check the main board. (1)
471	EEPROM reading/writing error of outdoor unit	Check the main board. (1)
474	Inverter temperature sensor error	Replace inverter board (1).
475	Error of outdoor unit fan no.2 (where present)	Check the wiring. Check that the fan is powered. Check the board fuses. (1)
484	PFC overload	Check inductances. Replace inverter board. (1)
485	Incoming current sensor error	Replace inverter board. (1)
500	IPM overheated	Check temperature of inverter board. Switch the machine off. Wait for the inverter to cool down. Switch the machine back on. (1)
554	Coolant gas leak error	Check that the coolant is charged. Check the liquid sensor of the indoor unit. Check whether the service valve is open. Check whether the installation pipes are mounted properly. (1)
590	Inverter board error	Check normal operation of the main board. Replace the main board. (1)
601	Not present	(1)
604	Not present	(1)
653	Not present	(1)
(1) If the shutdown or fault persists, contact an authorised company (e.g. Authorised Technical After-Sales Service)		



Error Code	Anomaly signalled	System status / Solution
654	Not present	(1)
899	Not present	(1)
900	Not present	(1)
901	Not used	Indoor unit error. Check indoor unit. (1)
902	Not used	Indoor unit error. Check indoor unit. (1)
903	Not used	Indoor unit error. Check indoor unit. (1)
904	Not used	Indoor unit error. Check indoor unit. (1)
906	Not used	Indoor unit error. Check indoor unit. (1)
911	Not used	Indoor unit error. Check indoor unit. (1)
912	Not used	Indoor unit error. Check indoor unit. (1)
916	Not used	Indoor unit error. Check indoor unit. (1)
919	Not used	Indoor unit error. Check indoor unit. (1)
(1) If the shutdown or fault persists, contact an authorised company (e.g. Authorised Technical After-Sales Service)		

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3.7 SYSTEM PROGRAMMING.

The water heater is set up for possible programming of several operation parameters. By modifying these parameters as described below, the system can be adapted according to specific needs. Access the "Assistenza" (Assistance) menu by pressing the right "Menu" button and turning the main switch until selecting the desired menu. Press the main switch to confirm the selection. Insert the relative access code and customise the parameters according to your requirements.

Assistance Menu		
Menu item	Description	Range
Zone 1 Definition	Zone 1 system setting sub-menu.	-
Zone 2 Definition	Zone 2 system setting sub-menu (present with zone 2 optional kit).	-
System definition	Sub-menu to define the devices connected to the system.	-
Temperature control	Temperature control setting sub-menu.	-
DHW configuration	Setting sub-menu of the system in DHW mode.	-
Integration	System integration setting sub-menu.	-
Heat pump	Heat pump operating parameters sub-menu.	-
Manual	Manual operating parameters sub-menu.	-
Restore default setting	Allows to reset all parameters with factory values.	Yes / No

Assistance Menu -> Zone 1 Definition				
Menu item	Description	Range	Default	Customised value
Mode	Establishes the zone 1 operating mode.	- Heating - Cooling - Heating+Cooling	Heating+Cooling	
Remote control enabling	Enables operation with a remote zone control To be enabled if a remote zone control is used in zone 1 as room control and not the remote panel, which is used in zone 2 (main zone). - NO = No remote control installed. - Contr = Not used. - Pan = Secondary remote zone panel used to control zone 1. - Probe = Temperature and humidity probe.	No / Contr / Pan / Probe	No	
Room probe modulation	Enables modulation with room probe.	Yes / No	No	
Room thermostat enabling	Enables operation of a room thermostat to check the zone.	Yes / No	No	
Dew point enabling	In the presence of the humidity sensor, enable calculation of the dew point. The calculation is particularly needed in case of radiant panel systems.	Yes / No	Yes	
Dehumidifier enabling	Enabling the zone dehumidifier is automatically selected by setting the specific configuration of the optional multifunction relay kits 1,2 or expansion kit (see system definition menu).	Yes / No	No	
Humidistat	Enables the operation of a humidistat.	No / Yes	No	
Max dehumidifier temp.	Maximum flow temperature acceptable for the dehumidifier, beyond which it is kept switched off.	15 - 50	25	
Dehum. alarm set.	Maximum flow set calculated, acceptable by the dehumidifier.	15 - 50	25	
Dehum. flow set	Dehumidifier flow set	5 - 50	20	



Help Menu -> Zone 2 Definition (present with optional 2-zone kit)				
Menu item	Description	Range	Default	Customised value
Mode	Establishes the zone 2 operating mode.	- Heating - Cooling - Hot + Cold	Heating+Cooling	
Remote control enabling	Enables operation with a remote zone control To be enabled if a remote zone control is used in zone 2 as room control and not the remote panel, which is used in zone 1 (main zone). - NO = No remote control installed. - Contr = Remote zone control to manage zone 2. - Pan = Secondary remote zone panel used to control zone 2. - Probe = Temperature and humidity probe.	No / Contr / Pan / Probe	No	
Room probe modulation	Enables modulation with room probe.	Yes / No	No	
Room thermostat enabling	Enables operation of a room thermostat to check the zone.	Yes / No	Yes	
Dew point enabling	In the presence of the humidity sensor, enable calculation of the dew point. The calculation is particularly needed in case of radiant panel systems.	Yes / No	No	
Dehumidifier enabling	Enabling the zone dehumidifier is automatically selected by setting the specific configuration of the optional multifunction relay kits 1,2 or expansion kit (see system definition menu).	Yes / No	No	
Humidistat	Enables the operation of a humidistat.	No / Yes	No	
Max dehumidifier temp.	Maximum temperature acceptable of the dehumidifier.	15 - 50	25	
Dehum. alarm set.	Maximum setpoint calculated, acceptable by the dehumidifier.	15 - 50	25	
Dehum. flow set	Dehumidifier flow set	5 - 50	20	

Assistance Menu -> System definition				
Menu item	Description	Range	Default	Customised value
Main zone	Defines the main zone of the system in which the remote panel will be used.	1 - 2	1	
Number of Zones	Defines the number of zones of the system.	1 - 2	1	
HP Model	Defines the heat pump model combined with the system	Pro4V2, Pro6V2, Pro9V2.	Pro6V2	
Photovoltaic function	Enables the operation combined with a photovoltaic system. If the photovoltaic production is sufficient, the system sets itself for maximum exploitation of the electricity produced.	Yes / No	No	
Activation time	Waiting time before activation of the correction.	1 - 120	20	
Increase time	Time interval for the increase or decrease of 1°C of correction.	1 - 20	5	
Central heating max correction	Max correction during central heating mode.	0 - 10	0	
Cooling max correction	Max correction during cooling mode.	0 - 10*	0	
System supervision	Enabling connection to Dominus or System supervisor.	NO/Domin/ BMS	No	
TA Delay request	The generator request is made after the set delay.	0 - 600 s	0	
Zone 1 Definition	Function not available.	--	--**	
Enable probe zone 1	Function not available.	--	--**	
HP disable contact	Enables the disabling contact of the heat pump.	No / Yes	No	

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Assistance Menu -> System definition				
Menu item	Description	Range	Default	Customised value
Multifunction relay 1.	0 = Disabled. 1 = Zone 1 in neutral air dehumidification contact. 2 = Zone 2 in neutral air dehumidification contact. 3 = Zone 1 in cooled air dehumidification contact. 4 = Zone 2 in cooled air dehumidification contact. 5 = Summer/Winter valve contact. 6 = DHW/system valve contact.	0 - 6	0	
Multifunction relay 2.	0 = Disabled. 1 = Zone 1 in neutral air dehumidification contact. 2 = Zone 2 in neutral air dehumidification contact. 3 = Zone 1 in cooled air dehumidification contact. 4 = Zone 2 in cooled air dehumidification contact. 5 = Summer/Winter valve contact. 6 = DHW/system valve contact.	0 - 6	0	
HP circulator mode	Enable the pump operation with speed set "Max.speed" or the modulating mode with tracking of the "Modulating" temperature differential.	Max sp / Modul	Modul	
Speed HP speed	Value of minimum speed used in modulating operation.	40 %	40 %	
Speed HP maximum	Value of maximum speed used in modulating operation.	50 - 100 %	100 %	
Delta T circulator HP	Temperature delta to be maintained with modulating operation.	5	5	
Enabling power reduction of HP	Enables HP operation frequency reduction, the activation of which is controlled by the relative parameter and the time slot settable from the user menu.	No / Yes	No	
Power in reduced	Power percentage in reduction mode.	50 - 100 %	75 %	
Enabling the expansion board	Enabling the optional expansion board is automatically selected by setting the specific configuration to a value other than zero.	--	--	
Expansion board function	0 = Disabled. 1 = Zone 1 in neutral air dehumidification contact. 2 = Zone 2 in neutral air dehumidification contact. 3 = Zone 1 in cooled air dehumidification contact. 4 = Zone 2 in cooled air dehumidification contact. 5 = Summer/Winter valve contact. 6 = DHW/system valve contact 7 = Dehumidifier alarm enable contact	0 - 100	0	
Ignitions timer	The indoor unit has an electronic timer that controls restarting the compressor of the outdoor unit.	0 - 600	180	
Enabling silent mode	Enables a reduction in the compressor frequency and fan speed of the outdoor unit	No - Yes	No	
Start enabling silent mode	Silent mode start time	0 - 23	0	
End silent mode enable	Silent mode end time	0 - 23	0	
Parameter 1	Do not use.	0 - 100	--**	
Parameter 2	Do not use.	0 - 100	--**	
Parameter 3	Room antifreeze protection setpoint (value multiplied by a factor of 10, 40 is equal to 4°C)	0 - 100	50	
Parameter 4	Boost dehumidification (0 = disabled, 1 = enabled)	0 - 1	0	
Parameter 5	Do not use.	0 - 100	--**	
Parameter 6	Do not use.	0 - 100	--**	
Parameter 7	Do not use.	0 - 100	--**	
Parameter 8	Do not use.	0 - 100	--**	
Parameter 9	Do not use.	0 - 100	--**	
Parameter 10	Do not use.	0 - 100	--**	

(*): the set value is to be understood as the value to be subtracted from the flow setpoint.

(**): the "--" symbol indicates that the function is not available.



Possible configurations allowed:

Enabling dehumidification in cooled air is only possible if dehumidification in neutral air is also enabled in the same zone. E.g. relay 1 can be set = 3 only if relay 2 or relay 3 are set = 1. (For further details, see the instruction sheet for the multifunction relay kit 2 or the expansion kit).



Assistance Menu -> Temperature control				
Menu item	Description	Range	Default	Customised value
External probe	Defines the external probe connection.	No/OU/Boil./IU	OU	
External probe correction	Correction of the external probe value.	-9 ÷ +9	0	
Enable thermor. zone 1	Enables operation with the external probe for zone 1.	No / Yes	Yes	
Enable thermor. zone 2	Enables operation with the external probe for zone 2.	No / Yes	No	
Central heating temperature control	Access to the Central heating temperature control submenu	[...]	[...]	

Assistance Menu -> Temperature control				
Menu item	Description	Range	Default	Customised value
Cooling temperature control	Access to the Cooling temperature control submenu	[...]	[...]	

Assistance Menu -> Temperature control -> Heating temperature control				
Menu item	Description	Range	Default	Customised value
Set zone 1 minimum flow	Without the external probe it defines the minimum flow temperature that can be set by the user. With the external probe present it defines the minimum flow temperature corresponding to operation with maximum external temperature.	20 ÷ 85 °C	25	
Set zone 1 maximum flow	Without the external probe it defines the maximum flow temperature that can be set by the user. With the external probe present it defines the maximum flow temperature corresponding to operation with minimum external temperature.	20 ÷ 85°C	45	
Minimum external temperature zone 1	With the external probe present it defines at what minimum external temperature the system must operate at the maximum flow temperature.	-25 ÷ +15 °C	-5	
Maximum zone 1 external temperature	With the external probe present it defines at what maximum external temperature the system must operate at the minimum flow temperature.	-5 ÷ +45 °C	25	
Set zone 2 minimum flow	Without the external probe it defines the minimum flow temperature that can be set by the user. With the external probe present it defines the minimum flow temperature corresponding to operation with maximum external temperature (not present on the version with one zone).	20 ÷ 85°C	25	
Set zone 2 maximum flow	Without the external probe it defines the maximum flow temperature that can be set by the user. With the external probe present it defines the maximum flow temperature corresponding to operation with minimum external temperature (not present on the version with one zone).	20 ÷ 85°C	45	
Maximum zone 2 external temperature	With the external probe present it defines at what minimum external temperature the system must operate at the maximum flow temperature.	-25 ÷ +15 °C	-5	
Maximum zone 2 external temperature	With the external probe present it defines at what maximum external temperature the system must operate at the minimum flow temperature.	-5 ÷ +45 °C	25	

(**): the "-" symbol indicates that the function is not available.

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Assistance Menu -> Temperature control -> Cooling temperature control

Menu item	Description	Range	Default	Customised value
Set zone 1 minimum flow	Without the external probe it defines the minimum flow that can be set by the user. With the external probe present it defines the minimum flow temperature corresponding to operation with maximum external temperature	5 ÷ 25 °C	18	
Set zone 1 maximum flow	Without the external probe it defines the maximum flow that can be set by the user. With the external probe present it defines the maximum flow temperature corresponding to operation with minimum external temperature	5 ÷ 25 °C	20	
Minimum external temperature zone 1	With the external probe present, it defines at what maximum external temperature the system must operate at the minimum flow temperature	20 ÷ 45°C	25	
Maximum zone 1 external temperature	With the external probe present, it defines at what minimum external temperature the system must operate at the maximum flow temperature	5 ÷ 45°C	35	
Set zone 2 minimum flow	Without the external probe it defines the minimum flow that can be set by the user. With the external probe present it defines the minimum flow temperature corresponding to operation with maximum external temperature (not present on the version with one zone)	5 ÷ 25 °C	18	
Set zone 2 maximum flow	Without the external probe it defines the maximum flow that can be set by the user. With the external probe present it defines the maximum flow temperature corresponding to operation with minimum external temperature (not present on the version with one zone)	5 ÷ 25 °C	20	
Maximum zone 2 external temperature	With the external probe present, it defines at what maximum external temperature the system must operate at the minimum flow temperature	20 ÷ 45°C	25	
Maximum zone 2 external temperature	With the external probe present, it defines at what minimum external temperature the system must operate at the maximum flow temperature	5 ÷ 45°C	35	

Assistance Menu -> DHW Configuration

Menu item	Description	Range	Default	Customised value
DHW hysteresis	It establishes at which temperature different must the system activate to heat the domestic hot water with respect to the set value.	3 ÷ 10 °C	5	
Enable antilegionella	Enables the anti-legionella function.	Yes / No	No	
Anti-legionella cycle time	Establishes the time of activation of the anti-legionella function.	-- : --	02 : 00	
Anti-legionella cycle day	Establishes the day of activation of the anti-legionella function.	Mo ÷ Su	Mon	
Precedence	Do not use.	--	--	
Max time allowed for DHW	Time after which an alarm is signalled for incomplete DHW (Domestic hot water).	1 - 48 (hours)	5	
Max time allowed for anti-legionella	Time after which an alarm is signalled for incomplete anti-legionella cycle.	1 - 48 (hours)	3	
DHW (Domestic hot water) flow offset	The DHW (Domestic hot water) flow temperature is given by the DHW (Domestic hot water) set + DHW (Domestic hot water) flow offset.	0 - 55 °C	10	
DHW Optimization	Function not available.	--	--**	

(**): the "--" symbol indicates that the function is not available.



Assistance menu -> Integration				
Menu item	Description	Range	Default	Customised value
Minimum DHW integration temperature.	Temperature threshold below which the heat pump integration is activated to serve a DHW request	-25 ÷ +35 °C	-20	
Minimum system integration temperature.	Temperature threshold below which the heat pump integration is activated to serve a system request	-25 ÷ +35 °C	-20	
Enable DHW integration	It is possible to select which generator takes care of the dhw mode:	0 = HP 1 = HP - I	HP - I	
Concomitant mode	Enabling of conjunction function.	No / Yes	Yes	
Enable heating integration	It is possible to select which generator takes care of the heating mode:	0 = HP 1 = HP - I	HP - I	
Central heating wait time	Waiting time to reach the setting set before activation of the integration in room heating.	0 ÷ 540'	120'	
DHW wait time	Waiting time to reach the setting set before activation of the integration in the production of domestic hot water.	0 ÷ 540'	60'	
Domestic hot water priority time	Function not available in this version.	-- min	--	
Central heating priority time	Function not available in this version.	-- min	--	
Integration band	If the flow temperature of the heat pumps is lower than the heating-set value minus the activation band divided by 2, then after a period equal to the activation delay time, the supplementary heater will be turned on.	0 - 20 °C	3	
Integration multiplier	Changes the integration ignition time in relation to HP ignition.	0 - 99	1	
Reset HP counter	Reset the number of operating hours of the heat pump.	Yes / No	No	
Reset system integration meter	Reset hours of operation of the room central heating / C.H. integration.	Yes / No	No	

N.B.: the manual operation is only active with the system in stand-by.



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Assistance Menu -> Heat pump			
Parameter Name	Menu item	Description	Unit of measurement
HP Setpoint	Heat pump set	Request setpoint to heat pump.	° C
HP Flow temperature	Flow temperature	Instant outlet temperature from the heat pump.	° C
HP Return temperature	HP Return temperature	Instant inlet temperature to the heat pump.	° C
Compressor outlet temp	Compressor outlet temperature °C	Current heat pump compressor temperature.	° C
Cool.temp. on heat exchanger	Cool.temp. on heat exchanger	Coolant temperature inside the plate heat exchanger.	° C
Battery temp.	Coil temperature	Coil temperature.	° C
External temp.	Outside temperature	Room temperature (heat pump installation place) °C.	° C
HP frequency	HP frequency	Heat pump frequency.	Hz
Req.Mode HP	HP Request mode	Status of the request to heat pump.	
HP Status	HP Status	Heat pump status.	
HP Flow meter	Flow meter	HP circulator instantaneous speed.	
System state	Status parameter	Technical parameter (only for Immergas Assistance).	
Integration state	Integration state parameter	Technical parameter (only for Immergas Assistance).	
Output status	Output status parameter	Technical parameter (only for Immergas Assistance).	
Expansion valve position	Exp.valve position	Position of the expansion valve.	
Inverter current	Inverter current	Inverter current outdoor unit.	
Fan speed	Fan speed	Outdoor unit fan speed	
HP Setpoint	Audax Setpoint	Heat pump current setpoint.	
OU Board revisions	OU Board revisions	Access outdoor unit board revision submenu	
Information 1	-	-	
Information 2	-	-	
Information 3	-	-	
Information 4	-	-	
Information 5	-	-	
Information 6	-	-	
Information 7	-	-	
Information 8	-	-	
Information 9	-	-	
Information 10	-	-	

Assistance Menu -> Heat pump -> OU Board Revisions			
Parameter Name	Menu item	Description	Value
UE board Rev. no.	UE board rev. no.	Outdoor unit main board firmware revision.	
UE board rev. date	UE board rev. date	Outdoor unit main board firmware revision.	
UE inverter Rev. no.	UE inverter rev. no.	Outdoor unit main board firmware revision.	
UE inverter rev. data	UE inverter rev. data	Outdoor unit inverter board firmware data.	
UE eeprom Rev. no.	UE eeprom rev. no.	Outdoor unit EEPROM firmware revision.	
UE eeprom rev. data	UE eeprom rev. data	Outdoor unit EEPROM firmware date.	
UE interface Rev. no.	UE interface rev. no.	Communication board firmware revision.	
UE interface rev. date	UE interface rev. date	Communication board firmware data.	
Expans.board Rev. (H)	Expans.board Rev. (H)	Revision of the expansion board (top part).	
Expans.board Rev. (L)	Expans.board Rev. (L)	Revision of the expansion board (bottom part).	



Assistance menu -> Manual				
Menu item	Description	Range	Default	Customised value
Deaeration function enabling	Enables the deaeration function of the system.	Yes / No	No	
DHW 3-way	Manual activation of the DHW (Domestic hot water) 3-way.	On / Off	Off	
Boiler enabling	Manual activation of the boiler.	On / Off	Off	
Boiler flow temperature	Operation / Functioning temperature during manual activation of the boiler.	25 ÷ 85 °C	25	
Zone 1 circulator	Manual ignition of zone 1 circulator pump.	On / Off	Off	
Mixer zone 2	Manual enabling of the mixing valve on zone 2.	- Off - Close - Open	Off	
Dehumidifier zone 1	Manual ignition of dehumidifier on zone 1.	On / Off	Off	
Zone 1 air conditioning	Manual ignition of air conditioner on zone 1.	On / Off	Off	
Zone 2 circulator	Manual ignition of zone 2 circulator pump (present with optional 2 zone kit).	On / Off	Off	
Dehumidifier zone 2	Manual ignition of dehumidifier on zone 2 (present with optional 2 zone kit).	On / Off	Off	
HP manual drive	Heat pump operation override (all controls on the flow and return sensors are disabled with these modes). 0 - Off. 1 - Test cooling. 2 - Test central heating. 3 - Test cooling with ramp. 4 - Test central heating with ramp.	0 - 4	0	
HP Circ.pump. override	Enables the circulation pump to be manually overridden at the set speed.	0 - 100 %	0 %	
HP Flow temp	Heat pump flow temperature.			
HP Return temp	Heat pump return temperature			
HP frequency	Compressor frequency.	0 - 100 Hz		
HP Flow meter	Flow meter	HP circulator instantaneous speed		

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4 MAINTENANCE AND INITIAL CHECK INSTRUCTIONS.

4.1 GENERAL WARNINGS

Operators who install and service the appliance must wear suitable personal protective equipment (PPE) required by applicable law.



The list of possible (PPE) is not exhaustive because they are indicated and chosen by the employer of the authorized company (installer or maintenance company).

Before performing any maintenance operation, make sure:

- you have disconnected the power to the appliance;
- you have discharged the pressure from the system and domestic hot water circuit.



Whenever accessing the internal parts of the Containers for routine and extraordinary maintenance, it is mandatory to close the front door and lock it using the vertical locks.



Supply of spare parts

The device's warranty shall be rendered null and void if unapproved or unsuitable parts are used for maintenance or repairs. These will also compromise the product's compliance, and the said product may no longer be valid and fail to meet the current regulations. In regard to the above, only use original Immergas spare parts when replacing components.



If additional documentation needs to be consulted for extraordinary maintenance, contact the Authorised After-Sales Service.



The appliance operates with R32 refrigerant gas.



This gas is ODOURLESS.



Pay the utmost attention.

Strictly follow the instruction handbook of the outdoor unit before installation and any type of operation on the chiller line.

R32 refrigerant gas belongs to the low flammability refrigerant category: class A2L according to standard ISO 817. It guarantees high performance with low environmental impact. The new gas reduces the potential environmental impact by one third compared to R410A, having less effect on global warming (GWP 675).



4.2 INITIAL CHECK.

To start up the system proceed as follows:

- make sure that the declaration of conformity for installation is supplied with the appliance;
- check connection to a 230V-50Hz power mains, correct L-N polarity and the earthing connection;
- make sure the central heating system is filled with water and the indoor unit pressure gauge reads a pressure of 1-1.2 bar;
- make sure the chiller circuit has been filled according to what is described in the outdoor unit instructions booklet;
- check the activation of the main switch located upstream of the indoor unit;
- ensure activation of all adjustment devices;
- ensure production of domestic hot water
- check tightness of water circuits.

Even if just one single safety check provides a negative result, do not commission the system.



4.3 YEARLY EQUIPMENT CHECK AND MAINTENANCE.

The following checks and maintenance should be performed at least once a year to ensure operation, safety and efficiency of the appliance over time.



- Check for water leaks or oxidation from/on the fittings.
- Check, after discharging the system pressure and bringing it to zero (read on indoor unit pressure gauge), that the expansion vessel charge is at 1.0 bar.
- Check that the system static pressure (with system cold and after refilling the system by means of the filling valve) is between 1 and 1.2 bar.

For the correct and safe operation of the appliance, it is essential to check that the water pressure in the supply system (mains water) is at least 2.5 bar before opening the filling tap. When filling the central heating system (CH), it is essential to comply with the EN 1717 standard, which specifies the requirements for protecting drinking water from contamination by backflow. If the water supply pressure is insufficient, DO NOT OPEN the filling tap. Otherwise, there is a risk of dangerous contamination of the integrated DHW storage tank with heating water, which could compromise user comfort and cause health issues.



The operator must ensure that the supply water pressure is adequate before filling the central heating system to prevent any possible contamination.

- Visually check that the safety and control devices have not been tampered with and/or short-circuited.
- Check the condition and integrity of the electrical system and in particular:
 - supply voltage cables must be inside the fairleads;
 - there must be no traces of blackening or burning.
- Check correct ignition and functioning.
- Check correct operation of control and adjustment devices of the appliance. and in particular:
 - System regulation probes intervention;
 - Check chiller line connections.
 - Check mesh filter on system return
 - Check the correct flow rate on plate heat exchanger.
 - Check the integrity of the internal insulation.

In addition to yearly maintenance, one must also check the energy efficiency of the thermal system, with frequency and procedures that comply with the indications of the technical regulations in force.



4.4 OUTDOOR UNIT FINNED AIR COIL MAINTENANCE.

We recommend regularly inspecting the finned air coils to check the level of fouling.



This depends on the environment in which the unit is installed. The level of fouling will be worse in urban and industrial sites, as well as near trees that lose their leaves.

There are two maintenance levels to clean the coils:

- If the air heat exchangers are encrusted, clean them gently with a brush in a vertical direction.
- Turn off the fans before working on the air heat exchangers.
- To perform this type of intervention, stop the unit only if the maintenance considerations allow it.
- Perfectly clean air heat exchangers ensure an optimal operation of the unit. When the air heat exchangers begin to encrust, they must be cleaned. The cleaning frequency depends on the season and location of the unit (ventilated, wooded, dusty, etc.).
- Do not use pressurised water without a large diffuser. Do not use high-pressure cleaners for Cu/Cu and Cu/Al air coils.
- Concentrated and/or rotating water jets are strictly prohibited. Never use fluid with a temperature above 45°C to clean the air heat exchangers.
- Proper and frequent cleaning (approx. every three months) prevents 2/3 of corrosion problems.

Clean the air coil using suitable products.

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4.5 HYDRAULIC DIAGRAM.

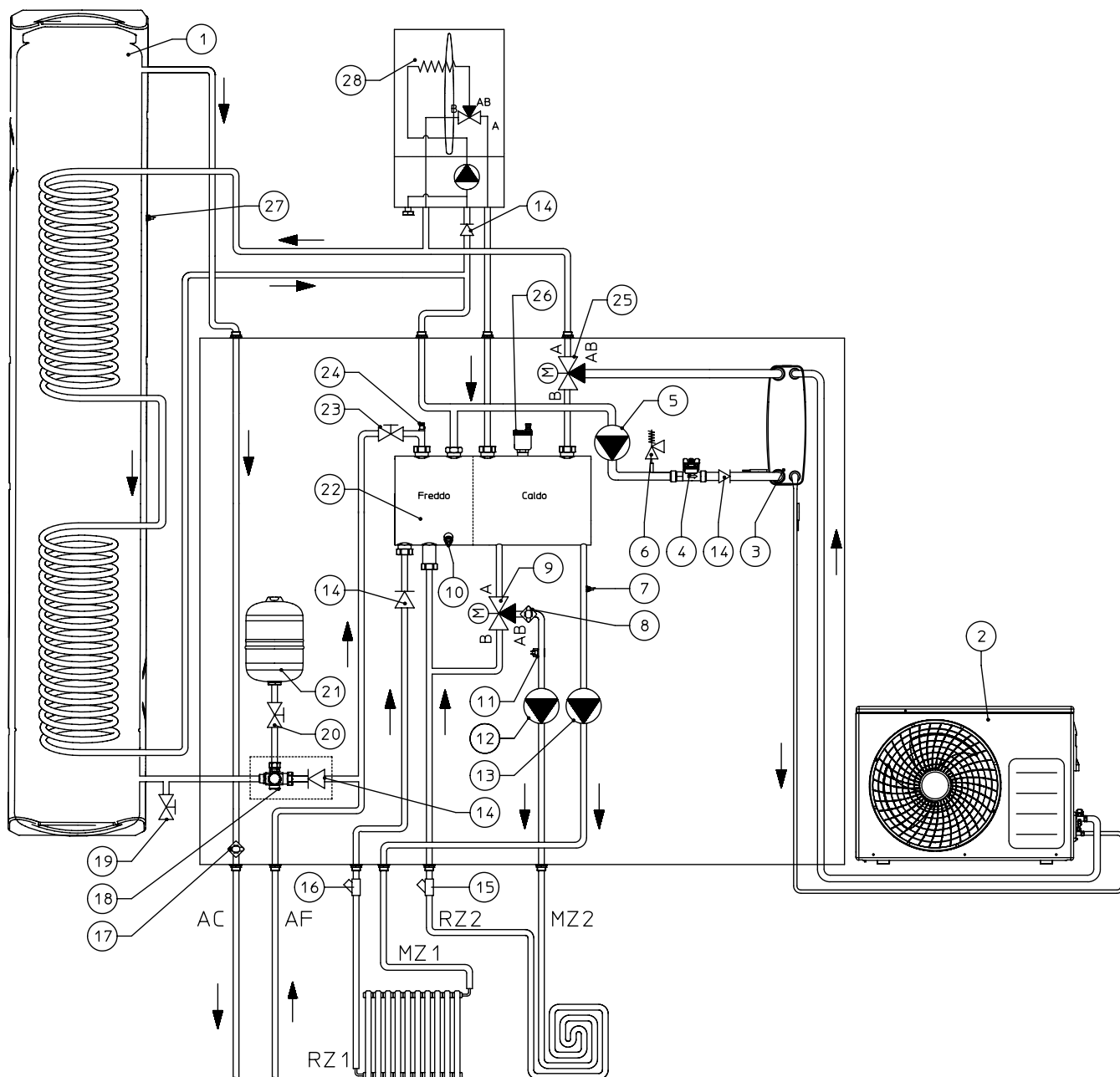
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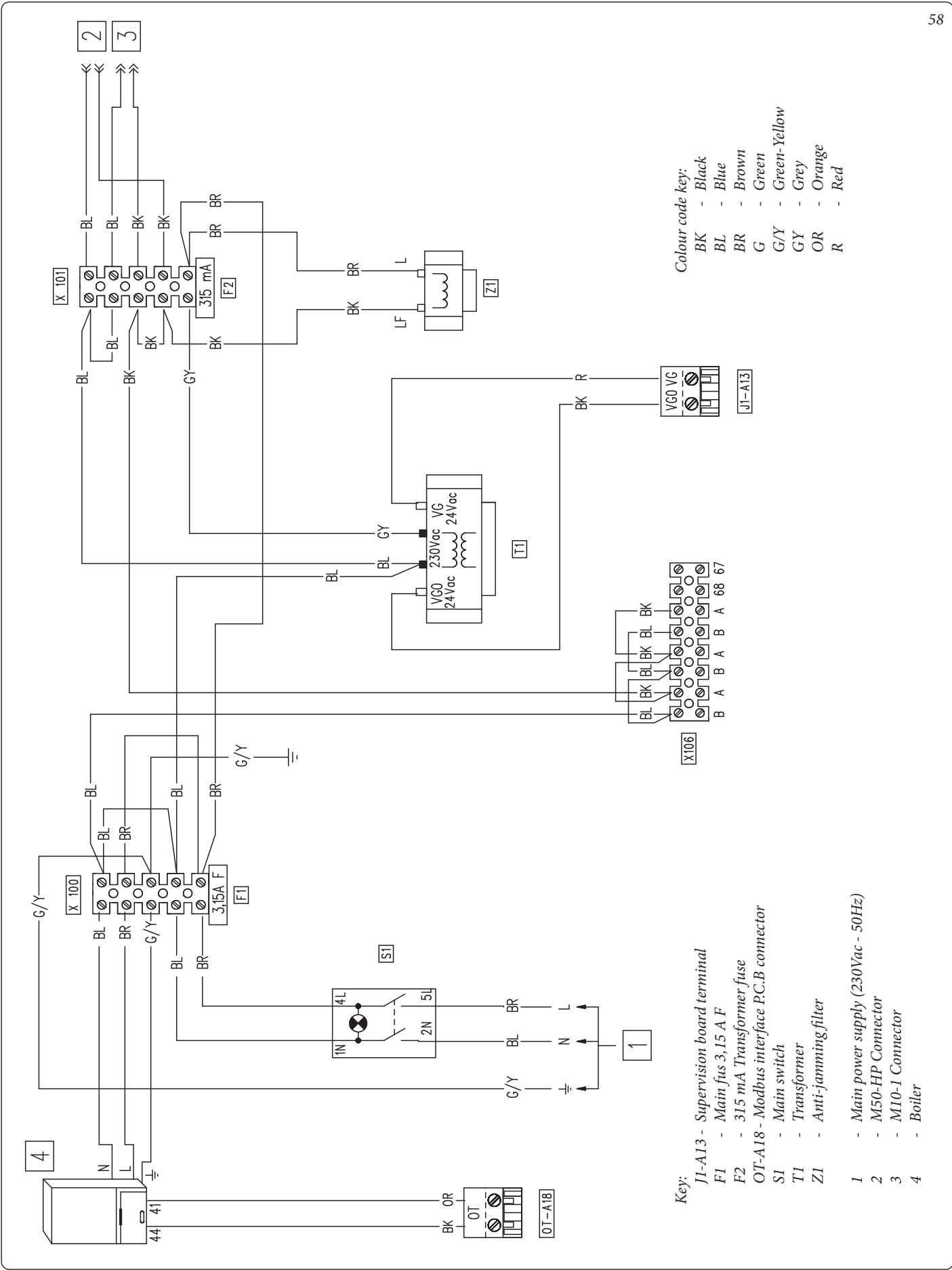
Key:

- | | |
|--|--|
| 1 - Storage tank unit | 19 - Storage tank draining valve |
| 2 - Outdoor unit | 20 - Domestic hot water vessel shut-off cock |
| 3 - Plate heat exchanger | 21 - 8 l domestic hot water expansion vessel |
| 4 - System flow meter | 22 - Hydraulic manifold |
| 5 - System circulator pump | 22a - Manifold flow sector |
| 6 - 3 bar safety valve | 22b - Manifold return sector |
| 7 - System flow probe | 23 - Filling cock |
| 8 - Safety thermostat | 24 - Manual air vent valve |
| 9 - 3-way mixing valve (optional) | 25 - Three-way valve (motorised) |
| 10 - Manifold draining valves | 26 - Automatic vent valve |
| 11 - Mixed zone flow probe (optional) | 27 - Storage tank unit probe |
| 12 - Mixed zone pump (optional) | 28 - Boiler |
| 13 - Direct zone pump | |
| 14 - One way valve | |
| 15 - Filter that can be inspected (optional) | |
| 16 - Inspectable filter | |
| 17 - Antifreeze thermostat | |
| 18 - 8 bar safety valve | |
| | AC - Domestic hot water outlet |
| | AF - Domestic cold water inlet |
| | MZ1 - Direct zone system flow |
| | RZ1 - Direct zone system return |
| | MZ2 - Mixed zone system flow |
| | RZ2 - Mixed zone system return |

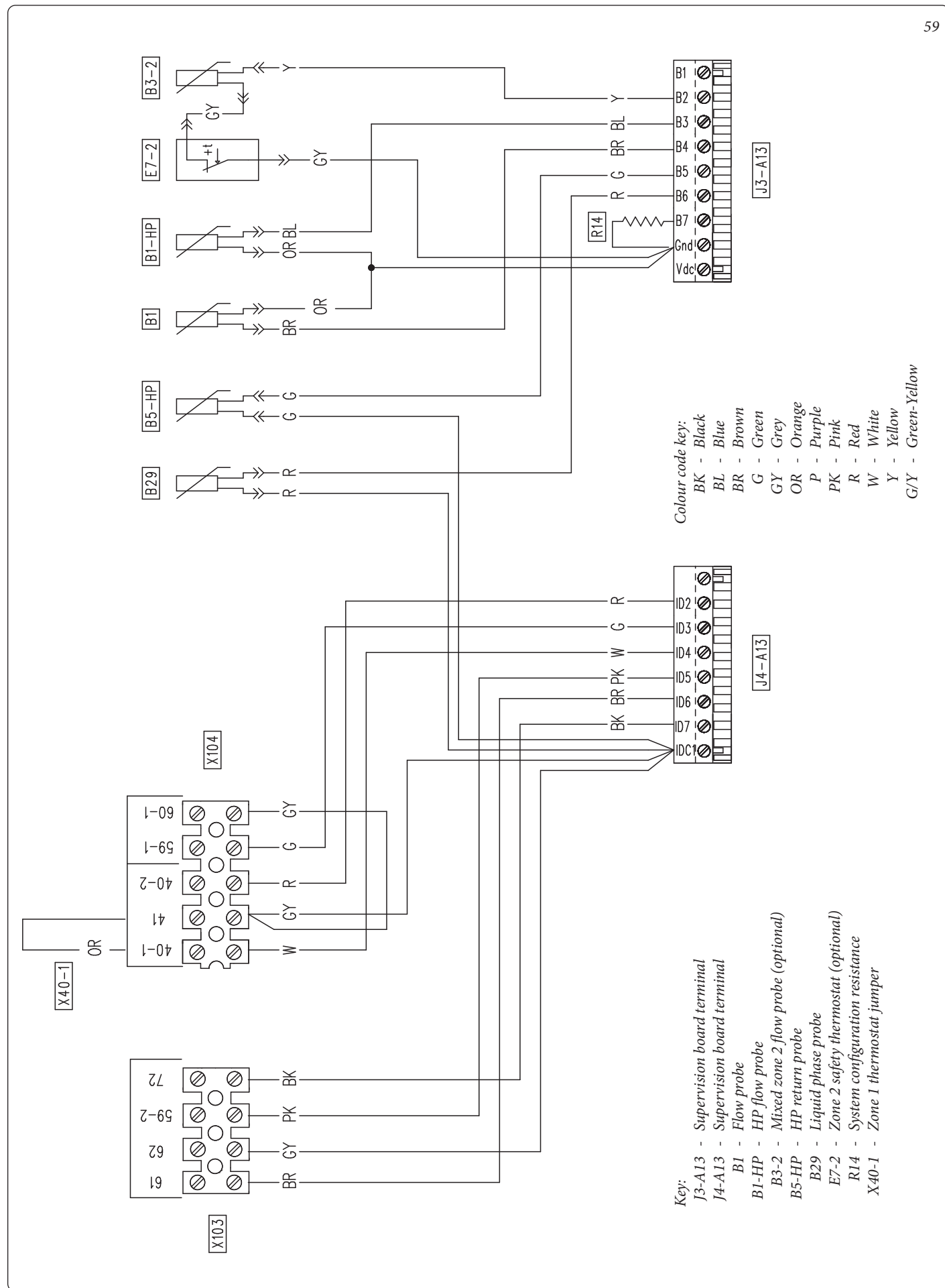


4.6 WIRING DIAGRAM.

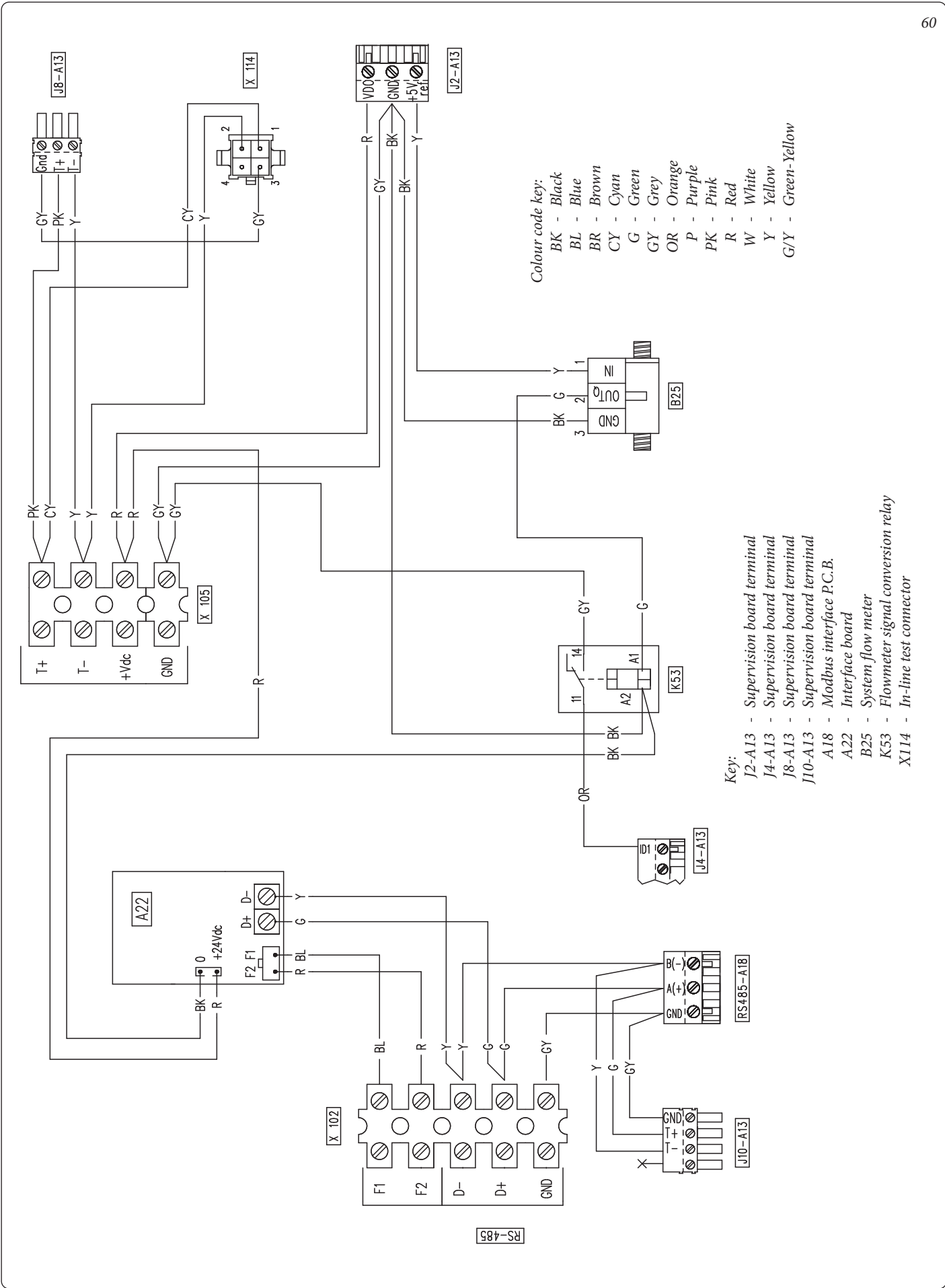
Practical power supply diagram.



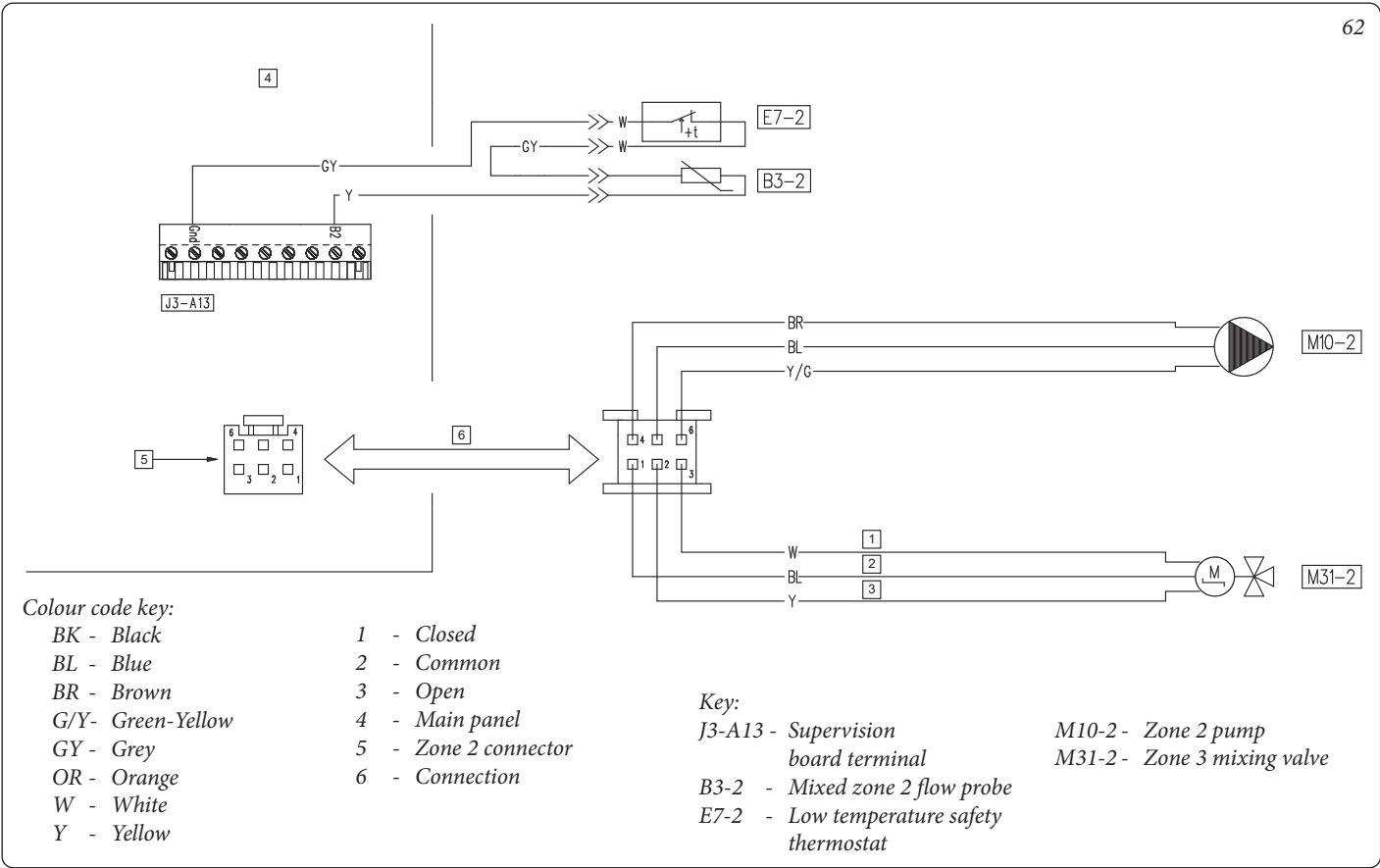
Main connection diagram.



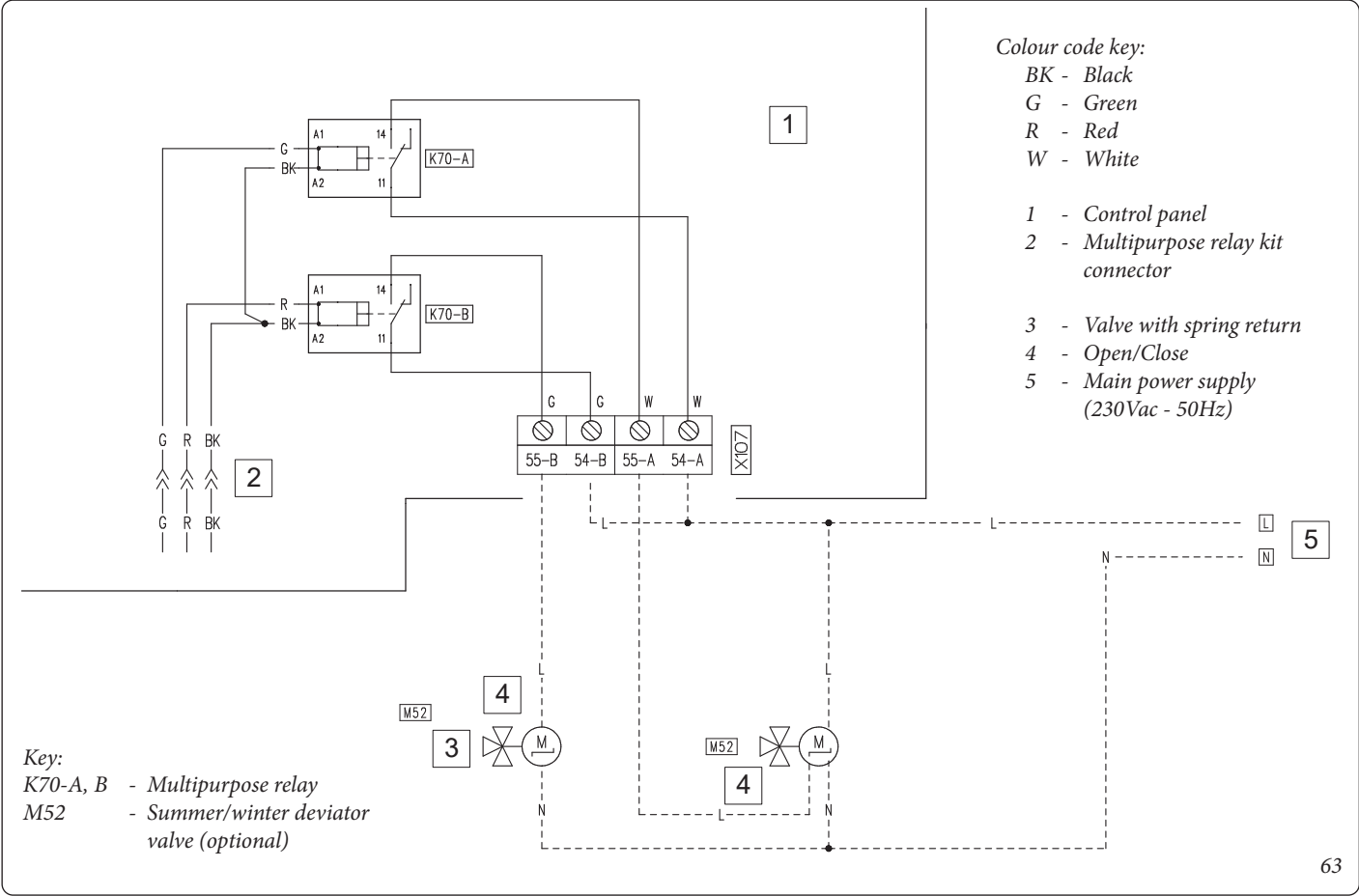
X102 and X105 Terminal board connections diagram.



Zone 2 connection diagram.



Connection diagram for two relay kit (with example of connection to 3-way summer/winter or DHW/system valve).



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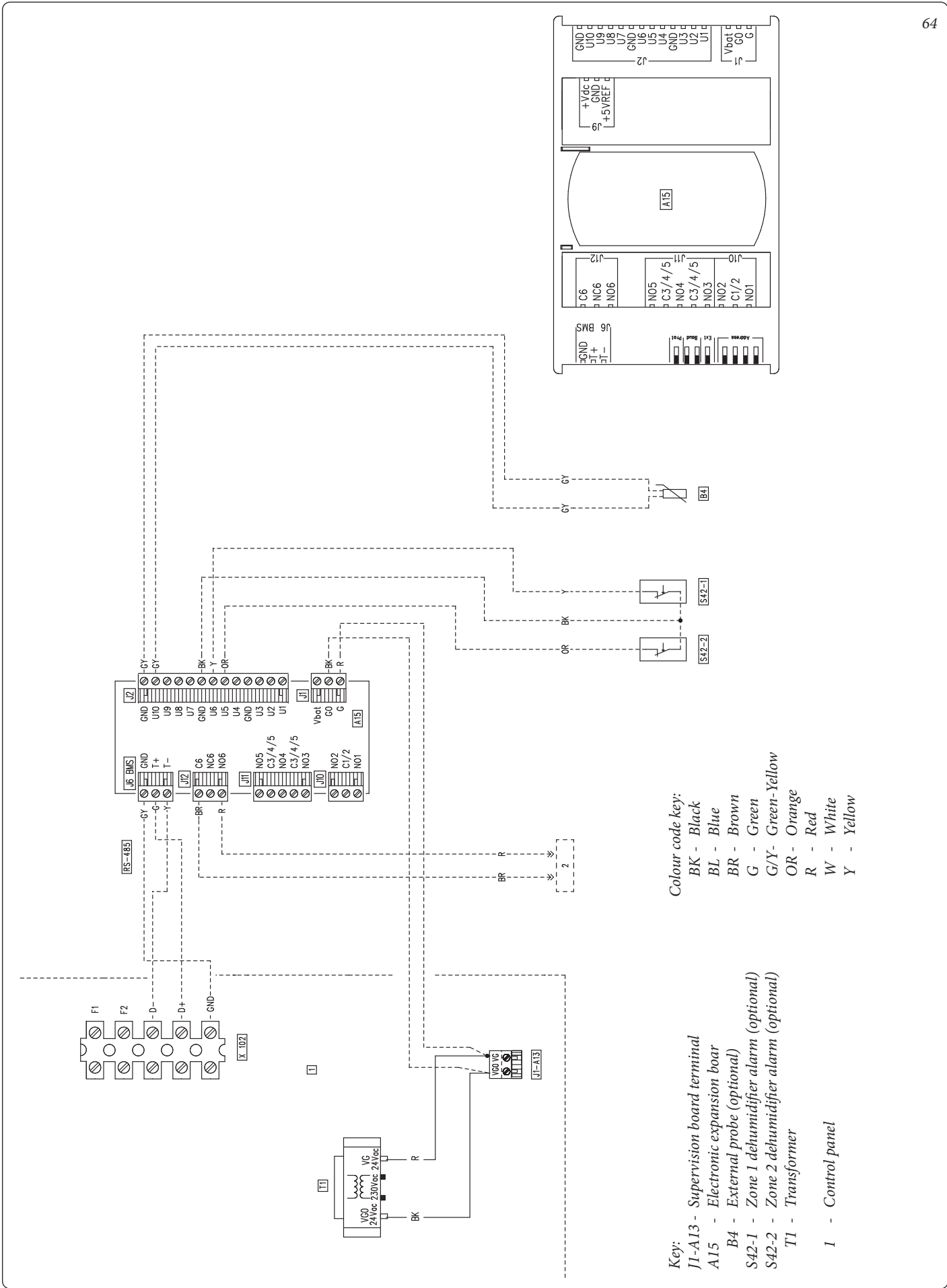
CONTROL PANEL

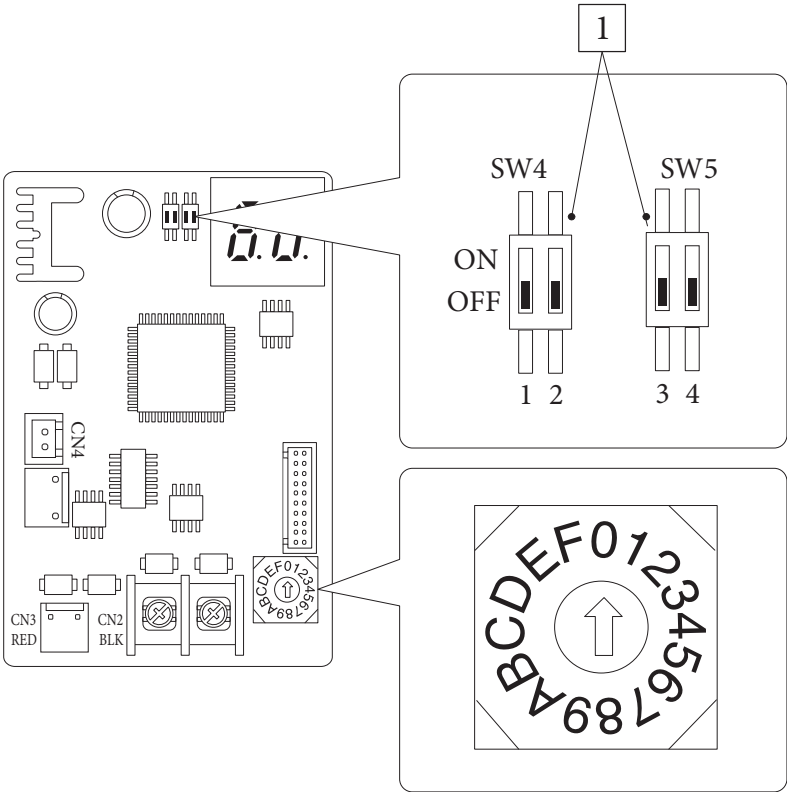
MAINTENANCE TECHNICIAN

TECHNICAL DATA



Expansion kit connection diagram.





Key (Fig. 65):
1 - Factory setting: do not change

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CONTROL PANEL

MAINTENANCE TECHNICIAN

TECHNICAL DATA



4.7 TROUBLESHOOTING.

Maintenance operations must be carried out by an authorised company (e.g. Authorised After-Sales Technical Assistance Centre).



Noise due to air in the system.
 Check opening of the special air vent valve cap (*Det. 14, Fig. 47*).
 Make sure the system pressure and expansion vessel factory-set pressure values are within the set limits.
 The factory-set pressure values of the expansion vessel must be 1.0 bar, the value of system pressure must be between 1 and 1.2 bar.

4.8 PROGRAMMING AND USE OF THE ZONE REMOTE PANEL.

Trio Pack Hybrid remote panel on zone 1 and Remote zone panel on zone 2.

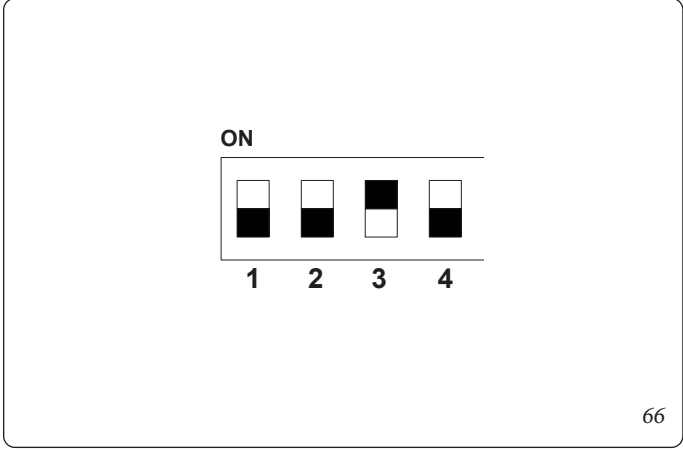
Zone 1	Zone 2
Trio Pack Hybrid remote panel	Remote zone control
Assistance Menu -> System definition -> Main zone:.....1	Assistance Menu -> Device configuration -> Slave address: 42
Assistance Menu -> Definition of Zone 1 ->	Assistance Menu -> Device configuration -> Baud rate: 9600
Enable remote control: NO	Assistance Menu -> Device configuration -> Parity bit: Even
Assistance Menu -> Definition of Zone 2 ->	Assistance Menu -> Device configuration -> Stop Bits: 1
Enable remote control: Panel	Assistance Menu -> Device configuration ->Heat pump control: NO

Trio Pack Hybrid remote panel on zone 2 and Remote zone panel on zone 1.

Zone 1	Zone 2
Remote zone control	Trio Pack Hybrid remote panel
Assistance Menu -> Device configuration -> Slave address: 41	Assistance Menu -> System definition -> Main zone:.....2
Assistance Menu -> Device configuration -> Baud rate: 9600	Assistance Menu -> Definition of Zone 1 ->
Assistance Menu -> Device configuration -> Parity bit: Even	Enable remote control: Panel
Assistance Menu -> Device configuration -> Stop Bits: 1	Assistance Menu -> Definition of Zone 2 ->
Assistance Menu -> Device configuration ->Heat pump control: NO	Enable remote control: NO

4.9 RS-485 MODBUS CONVERTER CONFIGURATION.

To ensure communication between the supervision board and the boiler, check the correct configuration of the DIP-SWITCHES of the RS-485 Modbus module (*Rif. Fig. 66*).



4.10 FIRST IGNITION PARAMETER SETTING.

During the first activation of the appliance, it is necessary to customise the following parameters, which concern the generator operation, the type of outdoor unit and the type of system connected to the appliance.

In the menu

Assistance/System definition

it is possible to modify the heat pump circulator speed by modifying the parameter "HP circ max speed".

it is necessary to adjust the pump speed according to the appliance power, to improve the operating efficiency of the machine

It is suggested to set the following values:

Trio Pack Hybrid 4 I: Speed = 60%

Trio Pack Hybrid 6 I: Speed = 70%

Trio Pack Hybrid 9 I: Speed = 80%

it is also necessary to adjust the speed of the zone pumps according to the type of system present.

This operation must be carried out directly on the relative zone pump (see *Parag. 1.26*).

The heat pump is equipped with a standard boiler, capable of operating as an alternative to the heat pump for the DHW (Domestic hot water) and system functions.

Modifying the parameter:

Integration/DHW (Domestic hot water) integration enabling

it is decided whether to activate only the heat pump or only the boiler or both to perform the DHW Mode.

Modifying the parameter:

Integration/DHW (Domestic hot water) wait time

it is decided how long to activate the heat pump and the boiler alternately.

When the outdoor temp is below:

Integration/Temp. Minimum integration

the boiler activates automatically.

Modifying the parameter:

Integration/System integration enabling

it is decided whether to activate only the heat pump or only the boiler or both to perform the System function..

Modifying the parameter:

Central heating wait time/integr.

it is decided how long to activate the heat pump and the boiler or both together.

When the outdoor temp is below:

Integration/Minimum integration temperature

the boiler activates automatically.

The first served operating mode, in case of contemporaneity, is that of domestic hot water production.

The DHW Mode can have a maximum duration, settable with the parameter:

DHW (Domestic hot water) configuration/Max DHW (Domestic hot water) time

beyond which the alarm is signalled.

The heat pump can manage up to 2 distribution pumps.

To activate the correct number of distribution pumps, modify the parameter:

System definition/Zone number.

It is possible to customise the operation of each individual zone. Each zone can be enabled for a single operating mode, modifying the parameter:

Zone 1-2 Definition/Mode.

The system request for each zone can be made from a room thermostat, which must be enabled in the menu:

Zone 1-2 Definition/Enabl. room thermostat

In case a remote device is used to control the requests, it is necessary to modify the parameter:

Zone 1-2 Definition/Enabl. Remotecontrol. Remote.

Automatic Vent Function

In the case of new systems and, in particular, for floor systems, it is very important that de-aeration is performed correctly.

The function consists of the cyclic activation of the pumps and the 3-way valve.

The function is activated by setting:

User/Enabl. Func. De-aeration = Yes.

De-aeration lasts 9 hours and it can be interrupted by setting:

User/Enabl. Func. De-aeration = No.

If a dehumidifier is present, it is necessary to modify the parameter:

System/Multifunction Relay 1 or Multifunction Relay 2 or Expansion Board Function Definition.

It can happen with the dehumidifier that there are problems in receiving a too high flow temp. For this reason, dehumidifier ignition can be prevented until the flow water drops below the level:

Zone 1-2 Definition/Max dehumidif. temp.

Furthermore, if the setpoint calculated for the dehumidification is too high to carry out a request, the alarm is signalled and the dehumidifier is stopped. This value can be edited through the parameter:

Zone 1-2 Definition/Set dehumidif. alarm

In case a humidistat is used to control the dehumidification requests, it is necessary to modify the parameter:

Zone 1-2 Definition/Humidistat.

In the presence of a floor system, it is necessary to avoid the formation of condensate in the floor by enabling the use of the dew temperature calculation:

Zone 1-2 Definition/Enabl. dew point.

It is possible to enable the flow temperature control via the thermoregulation with "room" probe, by modifying the parameter:

Zone 1-2 Definition/Room probe modul.

The system flow temp drops (it rises in case of cooling) when the room temp. approaches the room setpoint. Modulation with room probe can only be enabled in the presence of a zone remote device.



Make sure that the boiler parameter A5 Storage tank DHW (Domestic hot water) activation offset is set to 3

4.11 DHW BOOST FUNCTION.

In order to activate the DHW (Domestic hot water) BOOST function, it is necessary to enable the boiler by editing the parameter:

Integration/Enable DHW (Domestic hot water) integration and enabling the function by modifying the parameter:

DHW (Domestic hot water)/Boost Function

4.12 ANTI-LEGIONELLA FUNCTION.

The indoor unit is equipped with a function to perform a thermal shock on the storage tank unit.

This function brings the generator temperature to the maximum allowed with integrative boiler enabled.

The function is enabled via the menu:

Config. DHW (Domestic hot water)/Anti-legion. enabling.

The function is activated at the time set via the parameter:

Config. DHW (Domestic hot water)/Anti-legion.cycle time.

on the week day set on the menu:

Config. DHW (Domestic hot water)/Anti-legion.cycle day;

The maximum allowed duration of the function corresponds to the value set in the parameter:

Config. DHW (Domestic hot water)/Max legionella time;

if the function is not completed within the maximum allowed time, an alarm will be triggered.

It is possible to activate the function only with boiler enabled and eventually a thermostatic valve must be installed at the DHW outlet to prevent burns.



4.13 HEAT PUMP CIRCULATOR FUNCTION

The operating mode of the heat pump circulator can be defined via the parameter:

System definition/HP circulator mode,

by setting **Max speed** the pump will always run at the speed defined by the parameter **maximum HP speed**;

setting **Module** the pump will operate at variable speed between the values defined by the parameters **Maximum HP speed** and **Minimum Minimum heat pump circulator** with regulation logics aimed at minimising consumption and guaranteeing the temperature delta between flow and return defined by the parameter of 5°C.

4.14 PUMP ANTI-BLOCK FUNCTION.

The appliance has a function that starts up the pump at least once every 24 hours for 30 seconds in order to reduce the risk of the pump locking up due to prolonged inactivity.

4.15 3-WAY ANTI-BLOCK FUNCTION.

In both phase and , the appliance has a function that activates the motorised 3-way unit 24 hours after the last time it operated by running a complete cycle in order to reduce the risk of the 3-way blocking due to prolonged inactivity.

4.16 SYSTEM SETPOINT CORRECTION FUNCTION.

In the presence of hydraulic disconnections on the system downstream of the appliance distribution circuit, it is possible to activate a function that makes it possible to correct the request setpoint to the generator to approach the set zone setpoint as much as possible. The corrections can be made either in central heating / C.H. or in cooling mode.

Activation takes place by setting the parameters:

System definition/Max central heating / C.H. correction

System definition/Max cooling correction

with a value > 0°C.

Following a demand, the correction begins after a time equal to:

System definition/Activation time

and continue by 1°C each:

System definition/Increase time

minutes.

4.17 PHOTOVOLTAIC FUNCTION.

Should the photovoltaic contact (*contact "S39" Fig. 30*) be closed, the accumulated DHW is heated to a temperature of 60 °C via heat pump operation.

In case of simultaneous DHW (Domestic hot water) and system request, the system will decide which service to satisfy, in order to ensure the best comfort.

Install a mixing valve at the storage tank outlet.



4.18 ZONE 2 SAFETY THERMOSTAT FUNCTION.

In case of zone 2 installation, the safety thermostat installed on the flow branch runs a check on the zone flow temperature; if the limit is exceeded, the mixing valve closes leaving the circulator running.

4.19 CONCOMITANCE MODE.

In case of simultaneous DHW (Domestic hot water) and system request, the system decides which to service to perform on the basis of an alternating logic determined by the system. It is possible to modify this logic, so that the system simultaneously deals with both services, using the generators available. it is possible to activate operation in this mode by modifying the parameter:

Integration/Conjunction mode.

4.20 DEHUMIDIFICATION FUNCTION.

The dehumidification function with dehumidifiers (optional) can be carried out based on two different modes (neutral air or cooled air) and based on three different types of devices:

- 1) Zone remote panel;
- 2) Temperature/humidity sensor.
- 3) Humidistat.

Neutral air mode.

With the first and second type of devices, only the dehumidification request is activated if the humidity value detected by the panel/humidity sensor exceeds the value set in the "Set Point Zone" menu.

In the third case, as soon as the humidistat On/Off contact is closed.

The dehumidification request in neutral air means starting up the Immergas dehumidifier (optional) so as to reduce the humidity without modifying the room temperature.

During the dehumidification function in neutral air, the zone flow set corresponds to the value set with the parameter **Assistance Menu / Zone Definitione / Dehum. flow set..**

To enable the dehumidification function in neutral air, set the parameter

System definition / Multifunction relay 1 or Multifunction relay 2 or Expansion Board Function = 1 for Zone 1 and = 2 for Zone 2

Cooled air mode.

With the first device, Cooled Air mode starts up if, both the humidity and temperature read by the panel/remote control are higher than the set values.

With the second device, the Cooled Air mode starts up if, in addition to the humidity read by the probe is greater than the set value, the On/Off contact of the thermostat also closes.

With the third, it is activated when both On/Off contacts of the zone humidistat and thermostat are closed. The cooled air dehumidification request means activating the Immergas dehumidifier (optional) in a different mode that adds an additional room cooling capacity, in addition to dehumidification.

During the dehumidification function in cooled air, the flow set of the zone corresponds to the highest value chosen between the cooling set of that zone and 15°C.

To enable the dehumidification function in neutral air, set the parameter

System definition / Multifunction relay 1 or Multifunction relay 2 or Expansion Board Function = 2 for Zone 1 and = 4 for Zone 2

4.21 DEHUMIDIFICATION BOOST FUNCTION.

If there is a Immergas remote control, zone remote panel or mod-bus temperature - humidity probe and a Immergas dehumidifier, it is possible to configure the device to increase the cooling capacity of the zone by activating the dehumidifier in cooled air mode (after having set it as described in paragraph 4.20) if the ambient temperature read by the probe exceeds the set value by 2°C by modifying the parameter **Special parameters / Parameter 4.**

4.22 HEAT PUMP DISABLING FUNCTION..

With a closed contact (*contact "S43" Fig. 30*) the heat pump operation is inhibited. No request will be met, excluding the safety functions.

To enable this function, it is necessary to modify the parameter:

System definition/Contact Disab. HP = Yes

4.23 DIVERTER VALVE MANAGEMENT (SUMMER / WINTER) (OPTIONAL).

Valid only in conjunction with relay kit 2 or expansion board kit.



The unit electronics has a 230V outlet to manage the summer / winter diverter valves.

The voltage output is active when the appliance is in SUMMER mode with Cooling.

4.24 DIVERTER VALVE MANAGEMENT (DHW/SYSTEM) (OPTIONAL)

Valid only in conjunction with relay kit 2 or expansion board kit.



The two multifunction relay kit allows you to use the potential-free contact of the output to manage a 3-way DHW/system valve (*Fig. 66*). The contact is closed in DHW mode.

For the configuration, it is necessary to modify the parameter:

System definition/Multifunction Relay 1-2 = 6

4.25 EXTERNAL PROBE SETTING (OPTIONAL).

To activate the optional external probe, it is necessary to modify the parameter:

System definition/Temperature control/External probe.

If the temperature probe is particular far from the indoor unit, it is possible to correct its value by modifying:

System definition/Temperature control/External probe correct.



4.26 MANUAL DRIVES

In the menu

Assistance/Manual

it is possible to manage all the main appliance loads in manual mode.

These parameters must be used in case of system troubleshooting. To correctly activate the functions, it is necessary to set the system in "stand-by".

Manual control activation CANNOT be enabled during the Deaeration function.

4.27 OUTDOOR UNIT TESTMODE FUNCTION.

When test mode is used (see outdoor unit instruction booklet), the indoor unit must be set in "summer with cooling" or "winter" mode. Before activating the Test mode function, wait at least 3 minutes after setting the operating mode.

The alarm 183 is triggered during the test, meaning "Test mode" in progress.

4.28 OUTDOOR UNIT PUMP DOWN FUNCTION.

If the pump down function is used (see outdoor unit instruction booklet) the indoor unit must be set in "Stand-by".

The function can only be activated if the appliance is not under alarm.

4.29 SUPERVISION DEVICE CONFIGURATION.

The appliance can be configured so that it can be controlled by the external supervision devices such as Dominus or other types of home automation systems (not supplied by Immergas).

For the configuration, it is necessary to modify the parameter:

System definition/System supervision.

It is not possible to configure both devices simultaneously.



4.30 SILENT MODE FUNCTION.

In the menu: "Assistance/Plant Definition", by setting the parameter **Enable. Silent Mode = Yes**, it is possible to activate the Silent Mode function, which reduces the noise of the outdoor unit by acting on the compressor frequency and the fan speed.

The function will be activated in the time slot defined by the parameters Start and End Enable Silent Mode.

This function reduces the maximum power of the heat pump.



4.31 YEARLY MAINTENANCE.

- Check the integrity of the storage tank magnesium anode.
- Check tightness of the assembly elements (screws, bolts, plugs, structure elements, etc.).
- Check that the system is in good condition.
- Check for water leaks or oxidation from/on the fittings.
- Perform a visual check to make sure that the safety and control devices have not been tampered with and in particular, the regulator probe, the expansion vessel and the safety valve.
- In case of hard water it is advisable to remove the lime scale from the storage tank / cylinder at least once a year.
- Service the boiler according to the guidelines in the relative instruction book.
- Service the heat pump according to the guidelines in the relative instruction book.

Vent

Any air present in the system must be bled:

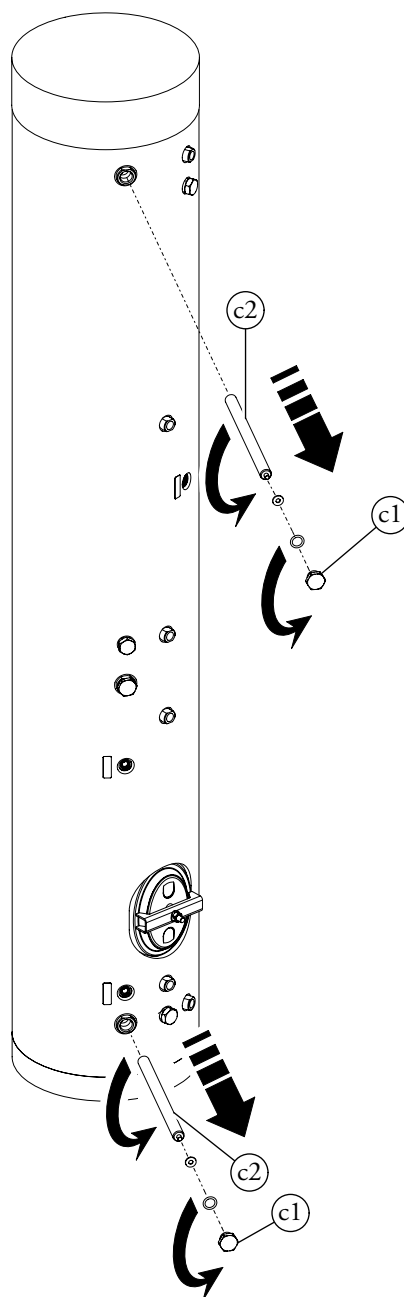
- upon start-up (after filling)
- if necessary, e.g. in the event of breakdown.

Replacing the anode

The anode (c2) present in the storage tank must be replaced, as shown below.

4.32 DECOMMISSIONING.

In the event of permanent system shutdown, contact professional staff for the procedures and ensure that the electrical, water and gas supply lines are shut off and disconnected and that the solar collector (if present) is covered.



5 TECHNICAL DATA.

5.1 TECHNICAL DATA TABLES.

Nominal heating performance

		TRIO PACK HYBRID 4 I	TRIO PACK HYBRID 6 I	TRIO PACK HYBRID 9 I
Outside Air Temperature 7°C/6°C - Water Temperature 30°C/35°C				
Power output	kW	4,40	6,00	9,00
Power absorbed	kW	0,85	1,22	1,87
COP		5,20	4,92	4,81
Outside Air Temperature 7°C/6°C - Water Temperature 40°C/45°C				
Power output	kW	4,20	5,40	8,60
Power absorbed	kW	1,09	1,51	2,33
COP		3,85	3,58	3,69
Outside Air Temperature 7°C/6°C - Water Temperature 47°C/55°C				
Power output	kW	3,90	4,80	8,00
Power absorbed	kW	1,32	1,81	2,73
COP		2,95	2,65	2,93
Outside Air Temperature 2°C/1°C - Water Temperature 30°C/35°C				
Power output	kW	4,20	5,20	7,70
Power absorbed	kW	1,10	1,48	2,26
COP		3,81	3,51	3,41
Outside Air Temperature -7°C/-8°C - Water Temperature 30°C/35°C				
Power output	kW	4,60	5,50	5,50
Power absorbed	kW	1,55	2,00	2,01
COP		2,97	2,75	2,74

Nominal cooling performance

		TRIO PACK HYBRID 4 I	TRIO PACK HYBRID 6 I	TRIO PACK HYBRID 9 I
Outside Air Temperature 35°C - Water Temperature 23°C/18°C				
Power output	kW	5,00	6,50	8,70
Power absorbed	kW	1,09	1,47	2,11
EER		4,59	4,42	4,12
Outside Air Temperature 35°C - Water Temperature 12°C/7°C				
Power output	kW	3,60	4,70	6,50
Power absorbed	kW	1,11	1,44	1,95
EER		3,24	3,26	3,33



Indoor Unit data.

		UI TPH I (UE AUDAX PRO 4 V2)	UI TPH I (UE AUDAX PRO 6 V2)	UI TPH I (UE AUDAX PRO 9 V2)
Weight and dimensions				
Weight of the indoor unit with water content	kg		321,1	
Empty indoor unit weight	kg		125,0	
Dimensions (LxHxD)	mm		950x2200x350 (Solar) - 975x2110x365 (Domus)	
Water connections				
Water connections on the system side - inlet	Inches		3/4	
Water connections on the system side - outlet	Inches		3/4	
Water connections with outdoor unit - inlet	Inches		-	
Water connections with outdoor unit - inlet	Inches		-	
Water connections (DHW) - inlet	Inches		1/2	
Water connections (DHW) - outlet	Inches		1/2	
Storage tank unit water connection - inlet	Inches		-	
Storage tank unit water connection - outlet	Inches		-	
Water filling connection	Inches		-	
Primary circuit				
Nominal water volume	l		35,4	
Expansion vessel Nominal Volume	l		8.0	
Expansion vessel Preload	kPa (bar)		100 (1)	
Maximum operating pressure	kPa (bar)		300 (3)	
Maximum operating temperature	°C		65	
Expansion vessel Useful Volume	l		3.2	
System filling pressure	kPa (bar)		-	
Refrigerant gas connections				
Refrigerant gas connections - liquid phase line	Inches		1/4	
Refrigerant gas connections - gas phase line	Inches		5/8	
Other data				
Expansion vessel Total volume	l		5.9	
Weight and dimensions Unit with packaging				
Weight of the indoor unit with packaging	kg		-	
Dimensions of the indoor unit with packaging (WxHxD)	mm		-	
Other connections (optional)				
System-side water connections - zone 2 flow (MZ2)	Inches		3/4	
System-side water connections - zone 2 flow (RZ2)	Inches		3/4	
System-side water connections - zone 3 flow (MZ3)	Inches		-	
System-side water connections - zone 2 flow (RZ2)	Inches		-	
Water connections (DHW) - DHW recirculation	Inches		1/2	
Solar connections - flow from solar panels (MP)	Inches		3/4	
Solar Connections - Return to Solar Panels (RP)	Inches		3/4	
Electrical features Power supply 1 (standard)				
Electrical connection			230V ~ 50Hz	
Absorbed nominal power	W		200	
Absorbed nominal current	A		1.64	
Power absorbed without heat generator	W		110	
Current absorbed without heat generator	A		0,94	
Thermal generator absorbed power	W		90	
Current absorbed by the heat generator	A		0,70	
Other electrical data				
Degree of protection			IPX5D	
Operating range Indoor unit	°C		-5...+40	
Operating range Indoor unit (with antifreeze kit)	°C		-15...+40	
Rated power of primary circulator	W		75	
Rated current of primary circulator	A		0,66	
Primary pump EEI			≤ 0,20 - Det. 3	

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		UI TPH I (UE AUDAX PRO 4 V2)	UI TPH I (UE AUDAX PRO 6 V2)	UI TPH I (UE AUDAX PRO 9 V2)
Other electrical data				
Rated power of circulator Zone 1	W		60	
Rated Current Circulator Zone 1	A		-	
Zone 1 pump EEI			≤ 0,20 - Det. 3	
Rated power of circulator Zone 2	W		60	
Rated Current Circulator Zone 2	A		-	
Zone 2 pump EEI			≤ 0,20 - Det. 3	
Rated power of circulator Zone 3	W		-	
Rated Current Circulator Zone 3	A		-	
Zone 3 pump EEI			-	
Standby Data				
Power absorbed in stand-by	W		6	
Current consumption in standby	A		0,1	
Classification according to standards 60335-1, 60335.2.40 and 60335-2-21				
Appliance class			I	
Type of appliance			Combined	
Accessibility Class			Accessible to the public	
Type of installation			Fixed	
Power cable			Type X	
DHW Tank Data - 1				
DHW storage tank - Usable volume	l		150,4	
Maximum DHW operating temperature	°C		75	
Maximum DHW operating pressure	kPa (bar)		800 (8)	
Minimum DHW operating pressure	kPa (bar)		-	
Expansion vessel Usable volume	l		3,9	
Expansion vessel Preload	kPa (bar)		300 (3.0)	
Expansion vessel Nominal volume	l		8.0	
Maximum network pressure at storage tank inlet	kPa (bar)		-	
DHW Tank Data - 2				
DHW storage tank - Nominal volume	l		156,6	
DHW storage tank - Water content	l		-	
Expansion vessel Total volume	l		7,1	
Coil - Surface	m ²		1,2	
Coil - Volume	l		5.1	
Maximum DHW operating temperature with coupled solar kit and additional vessel	°C		-	
Additional expansion vessel with solar kit combination: Usable volume	l		-	
Additional expansion vessel with solar kit combination: Preload	kPa (bar)		-	



Heat generator

Element	Symbol	Value	Unit
Rated heat output	P_n	24	kW
Room central heating seasonal energy efficiency	η_s	94	%
Auxiliary electricity consumption			
At full load	$e_{l_{max}}$	0,012	kW
At partial load	$e_{l_{min}}$	0.006	kW
In standby mode	P_{SB}	0.002	kW
At nominal heat output in high temperature mode	P_4	24,0	kW
Energy efficiency at nominal power in high temperature regime	η_4	87,8	%
Useful heat output at 30% nominal heat output in low temperature mode	P_1	8.0	kW
At 30% of nominal heat output in a low temperature mode	η_1	98,7	%
NOTE: Generator integrated into the indoor unit			

Product data.

		TRIO PACK HYBRID 4 I	TRIO PACK HYBRID 6 I	TRIO PACK HYBRID 9 I
Central heating				
Adjustable central heating temperature (operating field)	°C	+20 ÷ +65		
Central heating / C.H. outdoor temperature (operating field)	°C	-25 ÷ +35		
Adjustable heating temperature with integration enabled (working range)	°C	+20 ÷ +80		
External temperature in heating mode with integration enabled (working range)	°C	-25 ÷ +35		

Cooling		
Cooling adjustable temperature (operating field)	°C	+5 ÷ +25
Cooling outdoor temperature (operating field)	°C	+10 ÷ +46

Domestic hot water		
Adjustable DHW temperature without integration (work range)	°C	+10 ÷ +60
External temperature of DHW without integration (work range)	°C	-25 ÷ +35
Adjustable DHW temperature with integration enabled (working range)	°C	+10 ÷ +65
External temperature of DHW with integration enabled (work range)	°C	-25 ÷ +46

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5.2 TRIO PACK HYBRID 4 I PRODUCT FICHE (IN COMPLIANCE WITH REGULATION 811/2013).

A	Supplier's name or brand		-	Immergas
	Supplier Model Identifier		-	TRIO PACK HYBRID 4 I
C	For space heating	Application temperature	-	Average temperature
	For water heating	Declared load profile	-	L
D	Seasonal central heating energy efficiency class of space heating	Average temperature	-	A++
		Low temperature	-	A+++
	Water central heating energy efficiency class		-	A+
E	Nominal thermal power (average climate condition)	Average temperature	kW	5
		Low temperature	kW	5
F	Annual energy consumption for space heating (average climate condition)	Average temperature	kWh	3208
		Low temperature	kWh	2309
	Annual energy consumption for water heating (average climate condition)		kWh	816
G	Space heating seasonal energy efficiency (average climate condition)	Average temperature	%	126
		Low temperature	%	176
	Water heating energy efficiency (average climate condition)		%	125
H	Lwa sound power level indoors		dB	52
I	Operation only during off-peak hours		Yes / No	No
J	Specific precautions		-	-
K	Rated heat output (coldest climate condition)	Average temperature	kW	4
		Low temperature	kW	4
	Rated heat output (warmest climate condition)	Average temperature	kW	5
		Low temperature	kW	5
L	Annual energy consumption for space heating (coldest climate condition)	Average temperature	kWh	4094
		Low temperature	kWh	2830
	Annual energy consumption for space heating (warmest climate condition)	Average temperature	kWh	1791
		Low temperature	kWh	1146
	Annual energy consumption for water heating (coldest climate condition)		kWh	-
M	Space heating seasonal energy efficiency (coldest climate condition)	Average temperature	%	93
		Low temperature	%	136
	Space heating seasonal energy efficiency (warmest climate condition)	Average temperature	%	146
		Low temperature	%	230
N	Lwa sound power level outdoors		dB	51



5.3 TABLE 2 REGULATION 811/2013 (TRIO PACK HYBRID 4 I).

REGULATION No. 813/2013 (Tab. 2)								
Mandatory information for heat pump appliances for space heating and mixed heat pump heating appliances								
Model		TRIO PACK HYBRID 4 I						
Air/water heat pump		YES						
Water/water heat pump		NO						
Brine/water heat pump		NO						
Low temperature heat pump		NO						
With additional central heating device		YES						
Mixed central heating device with heat pump:		YES						
The parameters are declared for average temperature application, except for low temperature heat pumps. For low temperature heat pumps, the parameters are declared for low temperature application.								
THE PARAMETERS ARE DECLARED FOR AVERAGE CLIMATIC, AVERAGE TEMPERATURES CONDITIONS								
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated heat output (*)	Prated	5	kW		Seasonal energy efficiency of space heating	ηs	126	%
Central heating capacity declared with a partial load and indoor temperature equivalent to 20°C and outdoor temperature Tj					Declared coefficient of performance or primary energy index for partial load, with internal temperature equal to 20°C and external temperature Tj			
Tj = - 7 °C	Pdh	4,3	kW		Tj = - 7 °C	COPd	1,95	-
Tj = + 2 °C	Pdh	2.7	kW		Tj = + 2 °C	COPd	3,17	-
Tj = + 7 °C	Pdh	1,7	kW		Tj = + 7 °C	COPd	4.25	-
Tj = + 12 °C	Pdh	1,8	kW		Tj = + 12 °C	COPd	5,43	-
Tj = bivalent temperature	Pdh	4,3	kW		Tj = bivalent temperature	COPd	1,95	-
Tj = operating limit temperature	Pdh	4,0	kW		Tj = operating limit temperature	COPd	1,60	-
For air-water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	Pdh	-	kW		For air-water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	COPd	-	-
Bivalent temperature	Tbiv	-7,0	°C		For air-water heat pumps: Operating limit temperature	TOL	-10	°C
Central heating capacity cycle intervals	Pcyc	-	kW		Efficiency of the cyclicity of the intervals	COPcyc	-	-
Degradation coefficient (**)	Cdh	0,9	-		Operating limit temperature of water heating	WTOL	65	°C
Different mode of energy consumption from the active mode					Additional heater			
OFF mode	P _{OFF}	0,013	kW		Rated heat output (*)	Psup	1.0	kW
Thermostat mode off	P _{TO}	0,015	kW		Type of energy supply voltage		Gas	
Standby mode	P _{SB}	0,013	kW					
Guard heating mode	P _{CK}	0.000	kW					
Other items								
Capacity control	Variable				For air-water heat pumps: air flow, outside		2400	m³/h
Sound power level, indoors/outdoors	LWA	52/51	dB		For water-water heat pumps and brine\water: nominal flow of brine or water, heat exchanger outside			m³/h
Emissions of nitrogen oxides	NO _x	-	mg/ kWh					
For mixed central heating appliances with a heat pump								
Declared load profile		L			Water central heating energy efficiency	η _{wh}	125	%
Daily electrical power consumption	Q _{elec}	3,920	kWh		Daily fuel consumption	Q _{fuel}	-	kWh
Contact information: Immergas S.p.A. via Cisa Ligure n.95								
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Pnominal is equal to the design heating load Pdesignh and the rated heat output of a supplementary heater Psup is equal to the supplementary heating capacity sup (Tj).								
(**) If Cdh is not determined by measuring, the default degradation coefficient is Cdh = 0.9.								

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5.4 TRIO PACK HYBRID 6 I PRODUCT FICHE (IN COMPLIANCE WITH REGULATION 811/2013).

A	Supplier's name or brand		-	Immergas
	Supplier Model Identifier		-	TRIO PACK HYBRID 6 I
C	For space heating	Application temperature	-	Average temperature
	For water heating	Declared load profile	-	L
D	Seasonal central heating energy efficiency class of space heating	Average temperature	-	A++
		Low temperature	-	A+++
	Water central heating energy efficiency class		-	A+
E	Nominal thermal power (average climate condition)	Average temperature	kW	6
		Low temperature	kW	6
F	Annual energy consumption for space heating (average climate condition)	Average temperature	kWh	3860
		Low temperature	kWh	2777
	Annual energy consumption for water heating (average climate condition)		kWh	865
G	Space heating seasonal energy efficiency (average climate condition)	Average temperature	%	125
		Low temperature	%	176
	Water heating energy efficiency (average climate condition)		%	118
H	Lwa sound power level indoors		dB	52
I	Operation only during off-peak hours		Yes / No	No
J	Specific precautions		-	-
K	Rated heat output (coldest climate condition)	Average temperature	kW	5
		Low temperature	kW	5
	Rated heat output (warmest climate condition)	Average temperature	kW	6
		Low temperature	kW	6
L	Annual energy consumption for space heating (coldest climate condition)	Average temperature	kWh	5323
		Low temperature	kWh	3520
	Annual energy consumption for space heating (warmest climate condition)	Average temperature	kWh	2125
		Low temperature	kWh	1358
	Annual energy consumption for water heating (coldest climate condition)		kWh	-
M	Space heating seasonal energy efficiency (coldest climate condition)	Average temperature	%	90
		Low temperature	%	137
	Space heating seasonal energy efficiency (warmest climate condition)	Average temperature	%	148
		Low temperature	%	233
N	Lwa sound power level outdoors		dB	54

5.5 TABLE 2 REGULATION 811/2013 (TRIO PACK HYBRID 6 I).

REGULATION No. 813/2013 (Tab. 2)									
Mandatory information for heat pump appliances for space heating and mixed heat pump heating appliances									
Model		TRIO PACK HYBRID 6 I							
Air/water heat pump		YES							
Water/water heat pump		NO							
Brine/water heat pump		NO							
Low temperature heat pump		NO							
With additional central heating device		YES							
Mixed central heating device with heat pump:		YES							
The parameters are declared for average temperature application, except for low temperature heat pumps. For low temperature heat pumps, the parameters are declared for low temperature application.									
THE PARAMETERS ARE DECLARED FOR AVERAGE CLIMATIC, AVERAGE TEMPERATURES CONDITIONS									
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit	
Rated heat output (*)	Prated	6	kW		Seasonal energy efficiency of space heating	ηs	125	%	
Central heating capacity declared with a partial load and indoor temperature equivalent to 20°C and outdoor temperature Tj					Declared coefficient of performance or primary energy index for partial load, with internal temperature equal to 20°C and external temperature Tj				
Tj = - 7 °C	Pdh	5,2	kW		Tj = - 7 °C	COPd	1.82	-	
Tj = + 2 °C	Pdh	3.2	kW		Tj = + 2 °C	COPd	3,18	-	
Tj = + 7 °C	Pdh	2,1	kW		Tj = + 7 °C	COPd	4.32	-	
Tj = + 12 °C	Pdh	1,8	kW		Tj = + 12 °C	COPd	5,49	-	
Tj = bivalent temperature	Pdh	5,2	kW		Tj = bivalent temperature	COPd	1.82	-	
Tj = operating limit temperature	Pdh	5.0	kW		Tj = operating limit temperature	COPd	1,70	-	
For air-water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	Pdh	-	kW		For air-water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	COPd	-	-	
Bivalent temperature	Tbiv	-7,0	°C		For air-water heat pumps: Operating limit temperature	TOL	-10	°C	
Central heating capacity cycle intervals	Pcych	-	kW		Efficiency of the cyclicity of the intervals	COPcyc	-	-	
Degradation coefficient (**)	Cdh	0,9	-		Operating limit temperature of water heating	WTOL	65	°C	
Different mode of energy consumption from the active mode					Additional heater				
OFF mode	P _{OFF}	0,013	kW		Rated heat output (*)	Psup	1.0	kW	
Thermostat mode off	P _{TO}	0,015	kW		Type of energy supply voltage		Gas		
Standby mode	P _{SB}	0,013	kW						
Guard heating mode	P _{CK}	0.000	kW						
Other items									
Capacity control	Variable				For air-water heat pumps: air flow, outside		2580	m³\h	
Sound power level, indoors/outdoors	LWA	52/54	dB		For water-water heat pumps and brine\water: nominal flow of brine or water, heat exchanger outside				
Emissions of nitrogen oxides	NO _x	-	mg/ kWh				-	m³\h	
For mixed central heating appliances with a heat pump									
Declared load profile		L			Water central heating energy efficiency	η _{wh}	118	%	
Daily electrical power consumption	Q _{elec}	4,140	kWh		Daily fuel consumption	Q _{fuel}	-	kWh	
Contact information: Immergas S.p.A. via Cisa Ligure n.95									
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Pnominal is equal to the design heating load Pdesignh and the rated heat output of a supplementary heater Psup is equal to the supplementary heating capacity sup (Tj).									
(**) If Cdh is not determined by measuring, the default degradation coefficient is Cdh = 0.9.									

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5.6 TRIO PACK HYBRID 9 I PRODUCT FICHE (IN COMPLIANCE WITH REGULATION 811/2013).

A	Supplier's name or brand		-	Immergas
	Supplier Model Identifier		-	TRIO PACK HYBRID 9 I
C	For space heating	Application temperature	-	Average temperature
	For water heating	Declared load profile	-	XL
D	Seasonal central heating energy efficiency class of space heating	Average temperature	-	A++
		Low temperature	-	A+++
	Water central heating energy efficiency class		-	A
E	Nominal thermal power (average climate condition)	Average temperature	kW	8
		Low temperature	kW	9
F	Annual energy consumption for space heating (average climate condition)	Average temperature	kWh	5120
		Low temperature	kWh	3913
	Annual energy consumption for water heating (average climate condition)		kWh	1706
G	Space heating seasonal energy efficiency (average climate condition)	Average temperature	%	126
		Low temperature	%	176
	Water heating energy efficiency (average climate condition)		%	98
H	Lwa sound power level indoors		dB	52
I	Operation only during off-peak hours		Yes / No	No
J	Specific precautions		-	-
K	Rated heat output (coldest climate condition)	Average temperature	kW	7
		Low temperature	kW	8
	Rated heat output (warmest climate condition)	Average temperature	kW	8
		Low temperature	kW	9
L	Annual energy consumption for space heating (coldest climate condition)	Average temperature	kWh	7409
		Low temperature	kWh	5303
	Annual energy consumption for space heating (warmest climate condition)	Average temperature	kWh	2765
		Low temperature	kWh	1899
	Annual energy consumption for water heating (coldest climate condition)		kWh	-
M	Space heating seasonal energy efficiency (coldest climate condition)	Average temperature	%	90
		Low temperature	%	136
	Space heating seasonal energy efficiency (warmest climate condition)	Average temperature	%	152
		Low temperature	%	236
N	Lwa sound power level outdoors		dB	61

5.7 TABLE 2 REGULATION 811/2013 (TRIO PACK HYBRID 9 I).

REGULATION No. 813/2013 (Tab. 2)								
Mandatory information for heat pump appliances for space heating and mixed heat pump heating appliances								
Model	TRIO PACK HYBRID 9 I							
Air/water heat pump		YES						
Water/water heat pump		NO						
Brine/water heat pump		NO						
Low temperature heat pump		NO						
With additional central heating device		YES						
Mixed central heating device with heat pump:		YES						
The parameters are declared for average temperature application, except for low temperature heat pumps. For low temperature heat pumps, the parameters are declared for low temperature application.								
THE PARAMETERS ARE DECLARED FOR AVERAGE CLIMATIC, AVERAGE TEMPERATURES CONDITIONS								
Element	Symbol	Value	Unit		Element	Symbol	Value	Unit
Rated heat output (*)	Prated	8	kW		Seasonal energy efficiency of space heating	ηs	126	%
Central heating capacity declared with a partial load and indoor temperature equivalent to 20°C and outdoor temperature Tj					Declared coefficient of performance or primary energy index for partial load, with internal temperature equal to 20°C and external temperature Tj			
Tj = - 7 °C	Pdh	6,9	kW		Tj = - 7 °C	COPd	1,76	-
Tj = + 2 °C	Pdh	4,0	kW		Tj = + 2 °C	COPd	3,10	-
Tj = + 7 °C	Pdh	2,8	kW		Tj = + 7 °C	COPd	4,66	-
Tj = + 12 °C	Pdh	2.6	kW		Tj = + 12 °C	COPd	6,45	-
Tj = bivalent temperature	Pdh	6,9	kW		Tj = bivalent temperature	COPd	1.76	-
Tj = operating limit temperature	Pdh	5.1	kW		Tj = operating limit temperature	COPd	1.44	-
For air-water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	Pdh	-	kW		For air-water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	COPd	-	-
Bivalent temperature	Tbiv	-7,0	°C		For air-water heat pumps: Operating limit temperature	TOL	-10	°C
Central heating capacity cycle intervals	Pcyc	-	kW		Efficiency of the cyclicity of the intervals	COPcyc	-	-
Degradation coefficient (**)	Cdh	0,9	-		Operating limit temperature of water heating	WTOL	65	°C
Different mode of energy consumption from the active mode					Additional heater			
OFF mode	P _{OFF}	0,013	kW		Rated heat output (*)	Psup	2,9	kW
Thermostat mode off	P _{TO}	0,015	kW		Type of energy supply voltage		Gas	
Standby mode	P _{SB}	0,013	kW					
Guard heating mode	P _{CK}	0.000	kW					
Other items								
Capacity control	Variable				For air-water heat pumps: air flow, outside		3960	m³/h
Sound power level, indoors/outdoors	LWA	52/61	dB		For water-water heat pumps and brine\water: nominal flow of brine or water, heat exchanger outside		-	m³/h
Emissions of nitrogen oxides	NO _x	-	mg/ kWh					
For mixed central heating appliances with a heat pump								
Declared load profile		XL			Water central heating energy efficiency	η _{wh}	98	%
Daily electrical power consumption	Q _{elec}	8,260	kWh		Daily fuel consumption	Q _{fuel}	-	kWh
Contact information: Immergas S.p.A. via Cisa Ligure n.95								
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Pnominal is equal to the design heating load Pdesignh and the rated heat output of a supplementary heater Psup is equal to the supplementary heating capacity sup (Tj).								
(**) If Cdh is not determined by measuring, the default degradation coefficient is Cdh = 0.9.								

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5.8 PARAMETERS FOR FILLING IN THE PACKAGE FICHE.

Should you wish to install an assembly starting from the Trio Pack Hybrid I product, use the package fiche shown in (Fig. 68). To fill it out properly, enter in the specific spaces (as shown in the package fiche facsimile, Fig. 69) the values of the tables in paragraphs "Parameters to fill out low-temperature package fiche (30/35)", "Parameters to fill out medium-temperature package fiche (47/55)".

The remaining values must be obtained from the technical data sheets of the products used to make up the assembly (e.g. solar devices, integration heat pumps, temperature controllers). Use board (Fig. 69) for "assemblies" related to the central heating mode (e.g.: heat pump + temperature controller).

Since the product is standard supplied with a temperature controller, the package fiche must always be completed.



Facsimile for filling in the package fiche for space heating systems.

Space heating seasonal energy efficiency of the heat pump

1
[] %

Temperature control
From temperature
control board

Class I = 1 %, Class II = 2 %,
Class III = 1.5 %, Class IV = 2 %,
Class V = 3 %, Class VI = 4 %,
Class VII = 3.5 %, Class VIII = 5 %

2
+ [] %

Additional hydronic module
From hydronic module data
sheet

Space heating seasonal energy efficiency (in %)

([] - 'I') x "II" = - [] %

Solar contribution

From the board of the solar device

Manifold dimensions
(in m²)

Tank volume (in m³)

Manifold efficiency
(in %)

Classification of the
tank
A* = 0,95, A = 0,91,
B = 0,86, C = 0,83,
D-G = 0,81

('III' x [] + 'IV' x []) x 0,45 x ([] / 100) x [] = + [] %

Space heating seasonal energy efficiency of the assembly in average climate
conditions

5
[] %

Space heating seasonal energy efficiency class of the assembly in average climate conditions

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
G **F** **E** **D** **C** **B** **A** **A⁺** **A⁺⁺** **A⁺⁺⁺**
 < 30 % ≥ 30 % ≥ 34 % ≥ 36 % ≥ 75 % ≥ 82 % ≥ 90 % ≥ 98 % ≥ 125 % ≥ 150 %

Space heating seasonal energy efficiency in colder and hotter climate conditions

Colder: 5
[] - 'V' = [] %

Hotter: 5
[] + 'VI' = [] %

The energy efficiency of the set of products indicated in this sheet may not reflect the actual energy efficiency after installation since such efficiency is affected by additional factors, such as the heat loss in the distribution system and the size of the products compared to the size and features of the building.



Parameters to fill in the average temperature package fiche (47/55).

Trio Pack Hybrid 4 I

Parameter	Colder zones	Average zones	Hotter zones
	■	■	■
"I"	93	126	146
"II"	*	*	*
"III"	5.35	5.35	5.35
"IV"	2.09	2.09	2.09

Trio Pack Hybrid 6 I

Parameter	Colder zones	Average zones	Hotter zones
	■	■	■
"I"	90	125	148
"II"	*	*	*
"III"	4.45	4.45	4.45
"IV"	1,74	1,74	1,74

Trio Pack Hybrid 9 I

Parameter	Colder zones	Average zones	Hotter zones
	■	■	■
"I"	90	126	152
"II"	*	*	*
"III"	3.34	3.34	3.34
"IV"	1,31	1,31	1,31

* to be determined according to Regulation 811/2013 and transient calculation methods as per Notice of the European Community no. 207/2014.

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Space heating system package fiche.

Space heating seasonal energy efficiency of the heat pump

¹
 %

Temperature control
 From temperature
 control board

Class I = 1 %, Class II = 2 %,
 Class III = 1.5 %, Class IV = 2 %,
 Class V = 3 %, Class VI = 4 %,
 Class VII = 3.5 %, Class VIII = 5 %

²
 + %

Additional hydronic module From
 hydronic module data sheet

Space heating seasonal energy efficiency (in %)

(-) x = - ³
 %

Solar contribution

From the board of the solar device

Manifold dimensions
 (in m²)

Tank volume (in m³)

Manifold efficiency
 (in %)

Classification of the
 tank
 A* = 0,95, A = 0,91,
 B = 0,86, C = 0,83,
 D-G = 0,81

(x + x) x 0,45 x (/ 100) x = + ⁴
 %

Space heating seasonal energy efficiency of the assembly in average climate con-
 ditions

⁵
 %

Space heating seasonal energy efficiency class of the assembly in average climate conditions

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	F	E	D	C	B	A	A⁺	A⁺⁺	A⁺⁺⁺
< 30 %	≥ 30 %	≥ 34 %	≥ 36 %	≥ 75 %	≥ 82 %	≥ 90 %	≥ 98 %	≥ 125 %	≥ 150 %

Space heating seasonal energy efficiency in colder and hotter climate conditions

Colder: ⁵
 - = %

Hotter: ⁵
 + = %

The energy efficiency of the set of products indicated in this sheet may not reflect the actual energy efficiency after installation since such efficiency is affected by additional factors, such as the heat loss in the distribution system and the size of the products compared to the size and features of the building.









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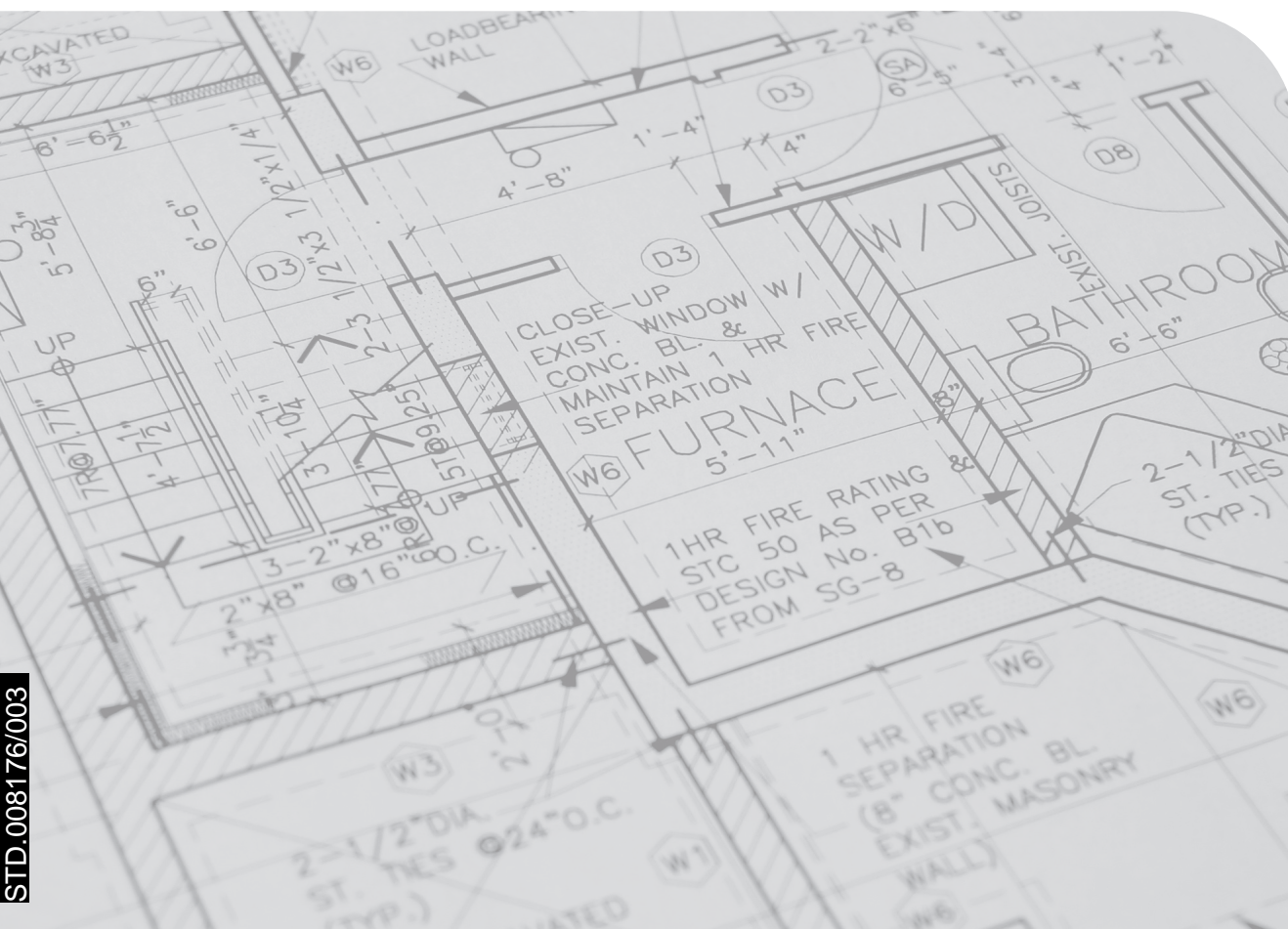
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This instruction booklet is
made of ecological paper.



STD.008176/003