caring for the environment

Installation, use and maintenance manual

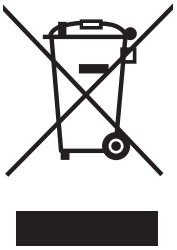
e-NextPro 40

Split air/air heat pump system for the air conditioning of large spaces

powered by electricity and renewable energy

ECO-FRIENDLY REFRIGERANT R32

DISPOSAL
The appliance and all its accessories must be disposed of separately in accordance with the regulations in force.



Use of the WEEE symbol (Waste Electrical and Electronic Equipment) indicates that this product cannot be disposed of as household waste. Proper disposal of this product helps to prevent potential negative consequences for the environment and human health.

Revision: A
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I INTRODUCTION

Installation, use and maintenance manual

This Manual is an integral part of the e-NextPro 40 appliance and must be handed to the end user together with the appliance.

I.1 RECIPIENTS

This Manual is intended for:
- ► End user, for appropriate and safe use of the appliance.
- ► Qualified installer, for correct appliance installation.
- ► Planner, for specific information on the appliance.

I.2 CONTROL DEVICE

In order to be able to work, the e-NextPro 40 appliance needs a control device (PGD control panel, RCC control panel, Multi RCC control panel), which must be connected by the installer.

I.3 AVAILABLE LANGUAGES

This document is originally written in Italian and English. Any other languages are translations of this document.
For versions of this document in other languages, see Robur website.

II SYMBOLS AND DEFINITIONS

II.1 KEY TO SYMBOLS

DANGER

WARNING

NOTE

PROCEDURE

REFERENCE (to other document)

II.2 TERMS AND DEFINITIONS

Fan heater/Indoor module = equivalent terms used to designate the e-NextPro 40 appliance to be installed inside the room to be air-conditioned.
Appliance/Unit = equivalent terms used to designate the air/air heat pump split system e-NextPro 40 for the air conditioning of large spaces.
TAC = Robur authorized Technical Assistance Centre.
RCC control panel = optional Robur adjustment device that allows you to manage an e-NextPro 40 appliance.
Multi RCC control panel = optional Robur adjustment device that allows you to manage up to 15 e-NextPro 40 appliances.
PGD control panel = optional Robur adjustment device that allows complete control of all the operating parameters of the appliance.
COP (Coefficient Of Performance) = efficiency index of electric heat pumps in heating.
EER (Energy Efficiency Ratio) = efficiency index of electric heat pumps in cooling.
Heat pump/Outdoor module = equivalent terms, both used to designate the part of the e-NextPro 40 appliance to be installed outside the room to be air-conditioned.
First start-up = appliance commissioning operation which may only and exclusively be carried out by a TAC.

III WARNINGS

III.1 GENERAL AND SAFETY WARNINGS

Installer's qualifications

Installation must exclusively be performed by a qualified firm and by qualified personnel, with specific knowledge of heating, cooling, electrical systems, electrical heat pumps and F-gas refrigerant gases, in compliance with the laws in force in the Country of installation.
Any activity involving operations on the refrigerant gas and on the circuit in which it evolves (installation, maintenance, repair, replacement or recovery of the refrigerant) can only be carried out by specialised refrigeration technicians who have achieved the qualification for refrigerant fluids according to EN 378-4 or IEC/EN 60335-2-40 (Annex HH).

Declaration of conformity

Upon completing installation, the installing firm must issue the owner/client with a declaration of conformity that the system has been installed according to best practices, according to national/local regulations in force and the manufacturer's instructions/requirements.

Misuse

The appliance must be intended only for the purpose for which it is designed. Any other use is considered dangerous. Incorrect use may affect the operation, durability and safety of the appliance. Follow the manufacturer's instructions.

Use of the appliance by children

The appliance can be used by children over 8 years old and by people with reduced physical, sensory or mental capabilities or lack of experience or knowledge only if they are under surveillance or after they have received

instructions regarding safe use of the appliance and understand the dangers inherent in it. Children should not play with the appliance.

Hazardous situations

- Do not start the appliance in hazardous conditions, such as: problems with the refrigeration/electrical system, parts of the appliance immersed in water or damaged, malfunctioning, disabling or bypassing of control and safety devices.
- In case of danger, request intervention by qualified personnel.
- In case of danger, switch off the electrical power supply only if this can be done in total safety.

Control of the work area

- Before starting work on systems containing flammable refrigerants it is necessary to carry out the appropriate safety checks to ensure that the risk of fire is minimised.
- Work in confined spaces should be avoided.
- The area around the work area must be cordoned off.
- Ensure maximum safety within the work area by appropriate control of flammable material and potential sources of ignition.
- Check for refrigerant: the work area must be checked with a special refrigerant detector before and during work, to ensure that conditions are not created to generate flammable atmospheres. Ensure that the leak detection devices used are suitable for use with flammable refrigerants.
- There must be no source of ignition in the work area. Persons performing work related to a refrigeration system that involves exposure to piping that contain or have contained flammable refrigerant must not use sources of ignition that could involve the risk of fire or explosion. All possible sources of ignition, including cigarettes, must be kept sufficiently away from the installation site, during all operations in which the flammable refrigerant can be released into the surrounding environment. The "no smoking" signs must be displayed.

Refrigerant gas component tightness

- Only qualified personnel, in possession of specific legal certifications, are authorised to operate on the components of the circuit in which the refrigerant gas circulates.
- Upon completing any procedure, perform the leak check according to regulations in force.

Moving parts

The appliance contains moving parts.

- Do not remove guards during operation, and in any case prior to disconnecting the power supply.

Burn hazard

The appliance contains very hot parts.

- Do not open the appliance and do not touch internal components before the appliance has cooled down.

Pressure vessels

The appliance has a sealed circuit classified as a pressure vessel, the tightness of which is tested by the manufacturer.

Refrigerant gas

- This product contains fluorinated greenhouse gases included in the Kyoto Protocol. Do not release such gases into the atmosphere.
- The heat pump uses flammable refrigerant R32 (category A2L).
- In the event of refrigerant leak keep away and disconnect the electrical power supply (only if it is possible to do so with no danger).
- Ask for the intervention of the TAC whenever you have the suspicion of a refrigerant leak.
- Depending on the quantity of refrigerant gas, it is necessary to check and record the hermetic tightness of the heat pump at regular intervals, using qualified personnel.
- Refer to R32 refrigerant safety data sheet for all risk information related to the refrigerant.

Safety valve

The intervention of the safety valve and the consequent release of the refrigerant gas can cause poisoning and serious injuries if the gas comes into direct contact with the skin.

- Do not stand or place any heat source near the valve.
- Maintenance or repair operations that require welding must be carried out with the refrigerant gas system empty.

Electrocution hazard

- Disconnect the electrical power supply before any operation on appliance components.
- For electrical connections use only compliant components and according to the specifications provided by the manufacturer.
- Ensure the appliance cannot be accidentally switched back on.

Earthing

Electrical safety depends on effective earthing system, correctly connected to the appliance and installed according to the regulations in force.

Distance from combustible or flammable materials

- Do not deposit flammable materials (paper, diluents, paints, etc.) near the appliance.
- It is forbidden to commission the appliance in environments with a potentially explosive atmosphere and/or in the presence of combustible dust.

Aggressive substances in the air

Halogenated hydrocarbons containing chlorine and fluorine compounds cause corrosion. The air of the installation site must be free from aggressive substances.

Tampering

- The appliance is supplied complete with everything necessary for its operation (except the connection pipes of the two modules, the electrical cables between the

modules and the control panel, which must be chosen from those available as optional, and the connection cables between the chosen control panel and the outdoor module) directly from the manufacturer: no tampering with the refrigerant circuit or software is allowed.
- Any tampering will compromise the functionality of the appliance and invalidate the manufacturer's responsibilities.
- Absolutely avoid puncturing the appliance.

Switching the appliance off

Disconnecting the power supply while the appliance is running may cause permanent damage to internal components.
- Except in the event of danger, do not disconnect the power supply to switch off the appliance, but always and exclusively use the control device provided (PGD, RCC, Multi RCC).

In the event of failure

Operations on internal components and repairs may exclusively be carried out by a TAC, using only original spare parts.
- In the event of failure of the appliance and/or breakage of any component, do not attempt to repair and/or restore and immediately contact the TAC.

Protection devices

The adoption of safety measures and all the necessary protective equipment is recommended, in relation to the operations to be carried out on the appliance.

Temperature limits

Operation of the heat pump with excessively low outdoor temperatures (Paragraph 1.5.1 *p. 12*) may result in its total blockage.

Prolonged power failure

Following a prolonged power failure, the start-up procedure described below must be used, the purpose of which is to ensure optimal heating of the compressor oil, which is essential to preserve the integrity of the compressor itself.

Nameplate and safety labels

The nameplate and safety labels, including that relating to the refrigerant, must always be clearly visible and legible. If they become illegible over time, it is necessary to replace them, making a request to the Robur technical service.

Routine maintenance

Proper maintenance assures the efficiency and good operation of the appliance over time.
- Maintenance must be performed according to the manufacturer's instructions (see Chapter 7 *p. 26*) and in compliance with current regulations.
- Appliance maintenance and repairs may only be entrusted to firms legally authorised to work on systems containing F-gas refrigerants.
- Enter into a maintenance contract with an authorised specialised firm for routine maintenance and for servicing in case of need.
- Use only original parts.
- Do not use means other than those recommended by the manufacturer to accelerate the defrosting or cleaning process.

Decommissioning and disposal

If the appliance is to be disposed of, contact the manufacturer for its disposal.

Keep the Manual

This Installation, use and maintenance manual must always accompany the appliance and must be handed to the new owner or installer in the event of sale or removal.

III.2 INFORMATION ON THE REFRIGERANT GAS USED

Type of refrigerant used: R32
GWP value: 675
Refrigerant content of the outdoor module (heat pump): 7,4 kg

III.3 COMPLIANCE

III.3.1 EU directives and standards

The e-NextPro 40 appliance complies with the essential requirements of the following Directives:
- ► 2006/42/EC "Machine Directive" as amended and added.
- ► 2009/125/EC "Eco-design Directive" as amended and added.
- ► 2011/65/EU "Restriction of the use of certain hazardous substances in electrical and electronic equipment"
- ► 2014/30/EC "Electromagnetic Compatibility Directive" as amended and added.
- ► 2014/35/EC "Low Voltage Directive" as amended and added.
- ► 2014/68/EU "Pressure Equipment Directive" as amended and added.
- ► 2017/1369/EU "Energy labelling regulation framework" as amended and added.
- ► 2281/2016/EU "Ecodesign requirements for air heating products" as amended and added.

Furthermore, they comply with the requirements of the following standards, as far as they are applicable to the manufacturer:
- ► EN 378 Refrigerating systems and heat pumps.
- ► IEC/EN 60335 Household and similar electrical appliances - Safety.

III.3.2 Other applicable provisions and standards

The design, installation, operation and maintenance of the systems must be carried out in compliance with current applicable regulations, depending on the Country and location, and in accordance with the manufacturer's instructions. In particular, regulations regarding the following must be observed:
- ► Electrical systems and equipment.
- ► Heating and cooling systems, and heat pumps.
- ► Systems containing F-gas refrigerant gases.
- ► Environmental protection.
- ► Fire safety and prevention.
- ► Any other applicable law, standard and regulation.

III.4 EXCLUSIONS OF LIABILITY AND WARRANTY

The manufacturer declines any contractual or extra-contractual liability for any damage caused by incorrect installation and/or improper use and/or failure to comply with regulations and with the manufacturer's directions/instructions.

The manufacturer declines all responsibility for faults or anomalies in the operation of the appliance caused by electrical voltage surges that exceed the tolerances envisaged by the distributor (voltage ±5%, frequency ±2%).

In particular, the warranty on the appliance may be rendered void by the following conditions:

- Incorrect installation.
- Misuse.
- Failure to comply with the manufacturer's indications on installation, use and maintenance.
- Opening of refrigerant gas valves by personnel other than the TAC.
- Alteration or modification of the product or any part thereof.
- Extreme operational conditions or however outside of the operational fields envisaged by the manufacturer.
- Damages caused by external agents such as salts, chlorine, sulphur or other chemical substances present in the air of the installation site.
- Abnormal actions transmitted to the appliance by the plant or installation (mechanical stresses, pressure, vibrations, thermal expansion, electrical surges...).
- Accidental damages or due to force majeure.

1 FEATURES AND TECHNICAL DATA

1.1 FEATURES

1.1.1 Operation

The e-NextPro 40 split air/air heat pump system for the air conditioning of large spaces, powered by electricity and renewable energies, has been designed and built to meet the air conditioning needs of high-volume environments.
The appliance is a split-type air/air system consisting of a fan heater (indoor module) to be placed inside the room to be air-conditioned and an electric heat pump (outdoor module) to be installed outside.
The electric heat pump that makes up the outdoor module is of the full-inverter type, designed to maximise efficiency.
The adoption of EVI (Enhanced Vapour Injection) technology expands the working range and power output in heating mode.
The use of R32 refrigerant gas allows the achievement of high performance and low environmental impact, compatible with the requirements of the most up-to-date version of European Regulation 2024/573 "F-gas".
The presence of two electronic valves, inversion valve, pressure transducers and temperature probes guarantees, through the software integrated in the microprocessor electronic board, the full functionality and reliability of the device in the different operating regimes.
Thanks to the inversion valve, the electric heat pump is able to alternately provide heat or cooling output.
The air flow rate of the indoor module is automatically adjusted according to the temperature of the air-conditioned environment, measured by a special probe supplied.
The operation of the appliance is controlled by a control panel to be provided among those proposed in the catalogue, which dialogues with the control board mounted on the outdoor module.
The e-NextPro 40 split air/air heat pump system for the air conditioning of large spaces includes the following components:

- ► Outdoor module (heat pump)
- ► Indoor module (fan heater)
- ► The control panel (must be chosen from those available as optional, Paragraph 1.4 *p. 9*)
- ► The temperature probe for the air-conditioned environment

1.1.2 Outdoor module (heat pump)

1.1.2.1 Mechanical components

- ► Hydrophilic finned coil
- ► Scroll compressor
- ► Inverter
- ► Electrical power and control panel
- ► Heating resistor of the condensate drain
- ► EVI system
- ► Electronic expansion valves
- ► 4-way valve
- ► Low RPM BLDC modulating fan, rotating clockwise or counterclockwise

1.1.2.2 Control and safety devices

- ► Control board
- ► Safety pressure switch
- ► Compressor discharge temperature probe
- ► Refrigerant circuit safety valve

1.1.3 Indoor module (fan heater)

1.1.3.1 Mechanical components

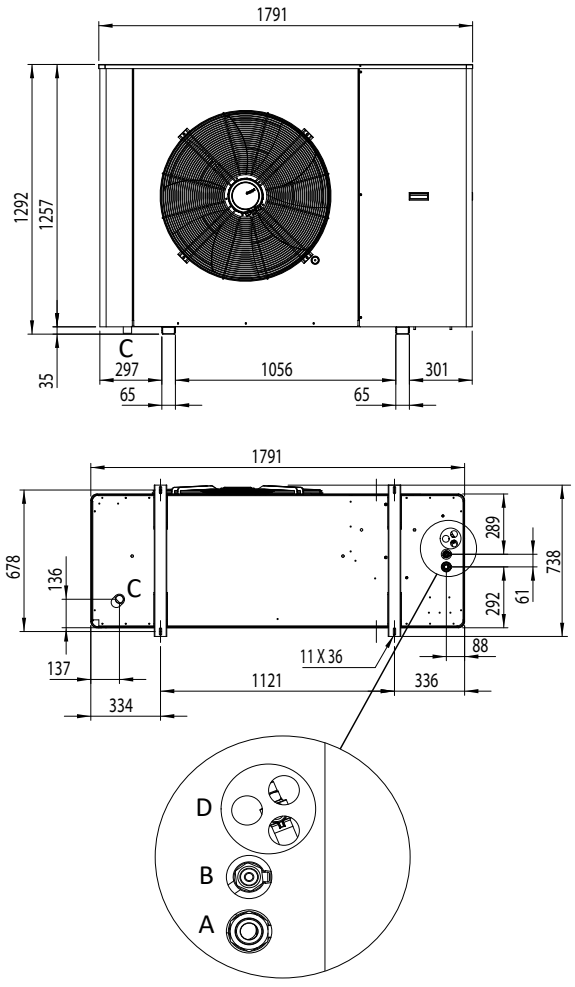
- ► Hydrophilic finned coil
- ► Horizontal baffles for airflow orientation independent of each other
- ► Electrical power supply and control panel
- ► Low RPM BLDC modulating fan, rotating clockwise or counterclockwise

1.1.3.2 Control devices

Room temperature probe

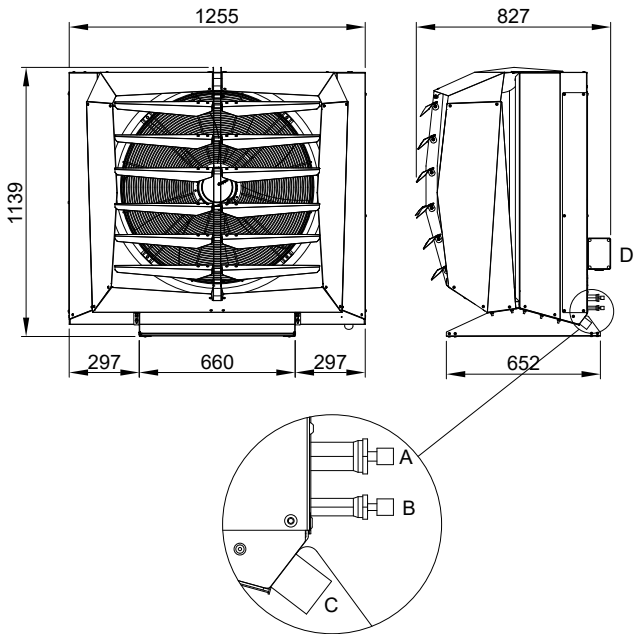
1.2 DIMENSIONS

Figure 1.1 *Heat pump dimensions (outdoor module)*



A	Refrigerant piping (gas) - outside diameter: 22 mm	C	Condensate drain - outside diameter 40 mm
B	Refrigerant piping (liquid) - outside diameter: 12 mm	D	Cable routing

Figure 1.2 *Fan heater dimensions (indoor module)*



A	Refrigerant piping (gas) - outside diameter: 22 mm	C	Condensate drain - outside diameter 32 mm
B	Refrigerant piping (liquid) - outside diameter: 12 mm	D	Electrical panel

1.3 OPERATION MODE

The e-NextPro 40 appliance operates in complete modulation of both the heat or cooling output and the ventilation of the indoor module.

1.4 CONTROLS

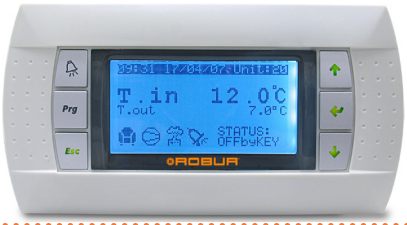
1.4.1 Control device

The appliance may only work if it is connected to a control device, selected from:

1. PGD control panel (optional ODSP055)
2. RCC control panel (optional ODSP056)
3. Multi RCC control panel (optional ODSP057)

1.4.2 PGD control panel (optional ODSP055)

Figure 1.3 *PGD control panel*



The PGD control panel allows complete control of a single e-NextPro 40 appliance.
It features a 132x64 pixel backlit display and a 6-key keyboard.
It can only be mounted on the wall.
The main functions are:

- Room temperature adjustment on three levels (day, night, ECO).
- Data display and parameters setting.
- Time programming.
- Optimisation of energy consumption.
- Diagnostics.
- Error reset (where possible).

The panel is not equipped with a room probe (supplied and already connected to the indoor module), so it can be positioned where it is most appropriate.

For further information, refer to the PGD control panel manual.

1.4.3 RCC control panel (optional ODSP056)

Figure 1.4 *RCC control panel*

The RCC control panel is an optional device that allows the control of the operation and the main parameters of a single e-NextPro 40 appliance.
It provides the possibility of being connected to the Internet via LAN for remote control via the Easy Access application and a VNC program.
It features a 7" colour resistive touch screen with 800x600 resolution.
It can be installed on the wall using the appropriate optional metal frame OTLA012.
The main functions are:

- Room temperature adjustment on three levels (day, night, ECO).
- Data display and parameters setting.
- Time programming.
- Optimisation of energy consumption.
- Diagnostics.
- Error reset (where possible).
- Internet connectivity via LAN.
- Remote control via the Easy Access application.

The panel is not equipped with a room probe (supplied and already connected to the indoor module), so it can be positioned where it is most appropriate.

For further information, refer to the RCC control panel manual.

1.4.4 Multi RCC control panel (optional ODSP057)

Figure 1.5 *Multi RCC control panel*

The Multi RCC control panel allows independent control of the operation and the main parameters of several appliances, up to a maximum of 15 e-NextPro 40.
It provides the possibility of being connected to the Internet via LAN for remote control via the Easy Access application and a VNC program.
It features a 15,6"capacitive colour touchscreen with 1920x1080 resolution.
It can be installed on the wall by means of the adjustable hinge supplied, or recessed on a panel.
The main functions are:

- ► Adjustment of the ambient temperature on three levels (day, night, ECO) for each individual appliance, up to a maximum of 15.
- ► Display of values and setting of parameters for each individual appliance.
- ► Independent time programming for each individual appliance.
- ► Diagnostics.
- ► Error reset (where possible).
- ► Internet connectivity via LAN.
- ► Remote control via the Easy Access application.

The panel is not equipped with a room probe (supplied and already connected to the indoor module), so it can be positioned where it is most appropriate.

For further information, refer to the Multi RCC control panel manual.

1.5 TECHNICAL DATA

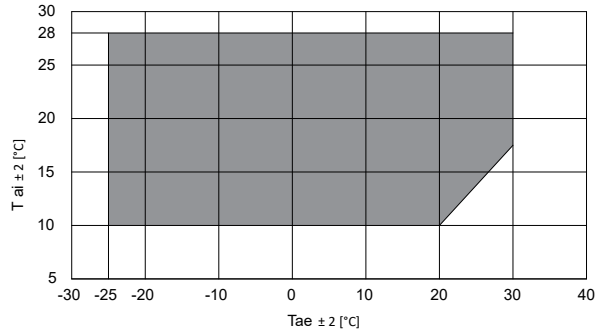
Table 1.1 *Technical data*

Outdoor module (heat pump)			
Heating mode			
Nominal heat output	Outdoor temperature/Indoor temperature A7/A20	kW	39
	Outdoor temperature/Indoor temperature A-7/A20	kW	32
COP efficiency	Outdoor temperature/Indoor temperature A7/A20	-	4,45
	Outdoor temperature/Indoor temperature A-7/A20	-	3,20
Outdoor temperature	minimum	°C	-25
	maximum	°C	30
Room temperature	minimum	°C	10
	maximum	°C	28
Cooling mode			
Nominal cooling output	Outdoor temperature/Indoor temperature A35/A27	kW	35
EER efficiency		-	4,02
Outdoor temperature	minimum	°C	16
	maximum	°C	46
Room temperature	minimum	°C	16
	maximum	°C	35
Electrical specifications			
Electrical power absorption	maximum	kW	12
Electric power consumption		A	14,4
Electrical power supply		V/ph/Hz	400/3/50
Installation data			
Outdoor fan	axial	-	inverter BLDC
	maximum air flow	m^3/h	17200
	diameter	mm	910
Sound power		dB(A)	60,2
Compressor		-	scroll inverter with enhanced vapour injection
Type of refrigerant gas		-	R32
GWP of refrigerant gas		-	675
Quantity of refrigerant gas		kg	7,4 (1)
Diameter of refrigerant gas connections	gas liquid	mm	22 (7/8") 12 (1/2")
Diameter of refrigerant gas piping	gas liquid	mm	22 (7/8") 16 (5/8")
Maximum equivalent piping length of the refrigerant circuit		m	30 (2)
Number of indoor modules		-	1
Dimensions	L x D x H	mm	1791 x 738 x 1292
Weight in operation		kg	270
Indoor module (fan heater)			
Fan type	axial	-	inverter BLDC
Maximum air flow		m^3/h	12000
Fan diameter		mm	800
Sound power		dB(A)	59,6
Dimensions	L x D x H	mm	1255 x 827 x 1139
Weight in operation		kg	110

1 Suitable quantity for refrigerant gas piping up to a maximum length of 10 m (Paragraph 3.2.1 *p. 15*).
2 The equivalent length given must be understood for each gas and liquid piping. It does not correspond to the piping's physical length.

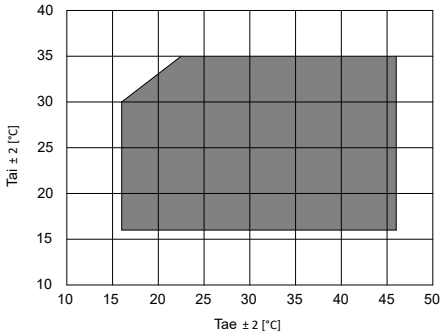
1.5.1 Operation field

Figure 1.6 *Operation field in heating mode*



Tae Outdoor temperature Tai Room temperature

Figure 1.7 *Operation field in cooling mode*



Tae Outdoor temperature Tai Room temperature

1.6 STANDARD EQUIPMENT

The following equipment is standard on the e-NextPro 40 systems:

- ► Outdoor module (heat pump): includes the first part of the thermodynamic circuit, the compressor, the finned coil, the fan, the condensate drain heating resistor.
- ► Indoor module (fan heater): includes the finned coil, the fan, the room temperature probe.
- ► Vibration damper supports (4 pieces) M10x28 Ø50x30 mm male/male for installation on wall brackets (available as optional OSTF021).
- ► Closing caps of the access holes to the screws of the right front panel.
- ► Installation, use and maintenance manual.
- ► Warranty sheet.

1.7 OPTIONALS

For the control of the e-NextPro 40 appliance it is necessary to use one of the available controls:

- ► PGD control panel (ODSP055), Paragraph 1.4.2 *p. 9*.
- ► RCC control panel (ODSP056), Paragraph 1.4.3 *p. 9*.
- ► Multi RCC control panel (ODSP057), Paragraph 1.4.4 *p. 10*.

Upon request, the following are provided:

- ► SBR vibration damper supports for floor installation of the outdoor module (OSPP007).
- ► Brackets for fixing the outdoor module to the wall (OSTF021).
- ► Brackets for fixing the indoor module to the wall (OSTF022).
- ► Connection cable for PGD control panel, length 20 m (OCVO016).
- ► Metal wall frame (outside the wall) for mounting the RCC control panel (OTLA012).
- ► BMS board for connecting each e-NextPro 40 appliance to the Multi RCC control panel (OSLT002).

2 TRANSPORT AND POSITIONING

2.1 WARNINGS

Damage from transport or installation

The manufacturer shall not be liable for any damage during appliance transport and installation.

On-site inspection

- ■ Upon arrival at the site, ensure there is no transport damage on packing, metal panels or finned coil.
- ■ After removing the packing materials, ensure the appliance is intact and complete.

Packing

- ■ Only remove the packing after placing the appliance on site.
- ■ Do not leave parts of the packing (plastic, polystyrene, nails, etc.) within the reach of children, as they are potentially dangerous.

Weight

- ■ The crane and lifting equipment must be suitable for the load.
- ■ Do not stand under suspended loads.

It is forbidden to climb on the appliance.

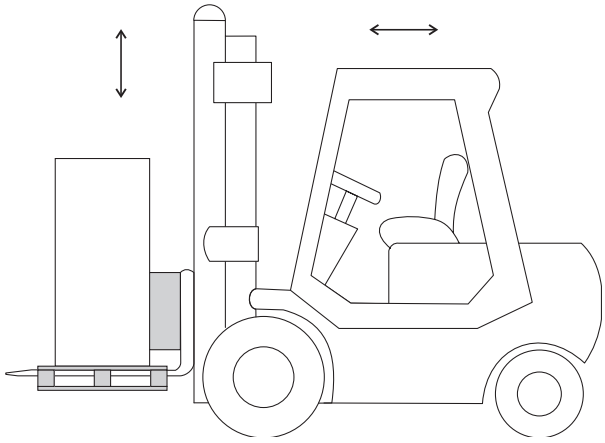
2.2 HANDLING AND LIFTING

- ► Do not tilt the outdoor module more than 45° in any direction.
- ► Always handle the appliance in its packing, as delivered by the factory.
- ► Comply with safety regulations at the installation site.

2.2.1 Handling with forklift

- ► Insert the forks under the pallet or base on the back of the appliance or on the side of the fittings.
- ► Protect the side walls of the outdoor module that come into contact with the forklift to avoid scratches and damage.
- ► Check that the forks of the forklift protrude from the side opposite to where they are inserted.
- ► Pay attention to the presence of the condensate drain pipe (detail C, Figure 1.1 *p. 8*).

Figure 2.1 *Handling of the outdoor module with a forklift*

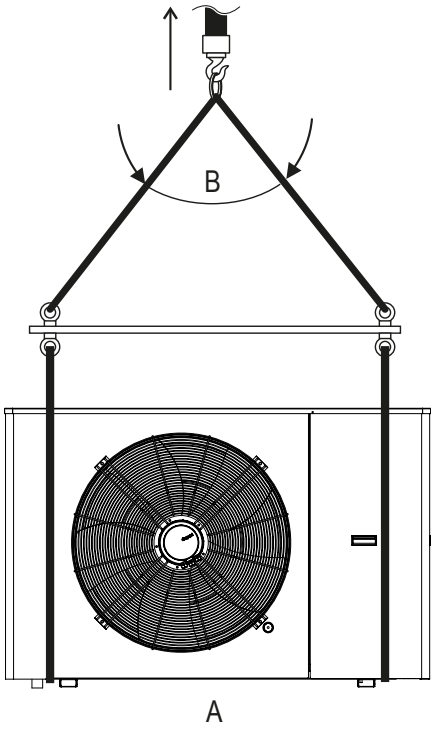


2.2.2 Handling with cables and chains

- ► To lift the appliance, use ropes, cables, slings, hooks or carabiners suitable for the use and lifting capacity, positioned so as to pass on the outside of the brackets under the outdoor module (Figure 2.2 *p. 13*).
- ► Use lifting beams to avoid damaging the outer panels and finned coil (Figure 2.2 *p. 13*).

The capacity of ropes, cables and/or slings decreases as the angle B in Figure 2.2 *p. 13* increases.

Figure 2.2 *Handling of the outdoor module with cables and chains*



A Front side B Opening angle

2.3 APPLIANCE POSITIONING

2.3.1 Outdoor module (heat pump)

- ► Do not cover, even partially, the intake and outlet area of the air being moved.
- ► Do not install the outdoor module too close to the wall. Use the appropriate suspension brackets, available as optional OSTF021, or in any case respect the distances indicated in Paragraph 2.5.1 *p. 14*.
- ► Do not install the appliance near the exhaust of flues, chimneys or polluted air. To operate properly, the appliance requires clean air.
- ► Do not install:
  - ■ in the vicinity of heat sources.
  - ■ in the vicinity of flammable substances.
  - ■ in the immediate vicinity of openings or air inlets of buildings.
  - ■ under deciduous trees.
  - ■ in places that are excessively dusty or characterised by a corrosive atmosphere.
  - ■ in niches or internal courtyards, to avoid potential recirculation of the air expelled by the fan.
- ► Do not direct the fan discharge towards windows, doors or walls of heated rooms.
- ► Avoid places where strong air currents can be created on the air expelled by the fan.
- ► Comply with environmental and safety regulations.
- ► Prepare the installation of the electrical cables.

Do not install inside a room

The appliance is designed for outdoor installation.

2.3.1.1 Where to install the appliance

- ► The appliance may be installed at ground level, on a terrace or on a roof, compatibly with its dimensions and weight.
- ► It can be installed on the wall, providing the brackets available as optional OSTF021 or similar fixing system suitable for supporting the weight of the outdoor module, and avoiding positioning it at excessive heights, such as to make maintenance and assistance operations difficult.
- ► It must be installed outside buildings, in an area of natural air circulation, outside the dripping path of drainpipes or similar. It does not require protection from weathering.
- ► If the outdoor module is installed in areas subject to heavy snowfall, check that snow does not accumulate around the appliance so as to hinder its smooth operation.
- ► The outdoor module requires a large space, ventilated and free from obstacles, to enable smooth flow of air to the finned coil and free air extraction from the fan outlet, with no air recirculation.
- ► Incorrect ventilation may affect efficiency, safety, and cause damage to the appliance.
- ► The manufacturer shall not be liable for any incorrect choices of the place and setting of installation.

2.3.1.2 Defrosting water drainage

In winter, it is normal for frost to form on the finned coil and for the appliance to perform defrosting cycles.

To prevent flooding and damage, provide for a drainage system connected to the condensate drain (detail C, Figure 1.1 *p. 8*).
Make sure that the outdoor module is in a perfectly horizontal position so that the defrost water and rainwater

can be correctly discharged from the condensate drain.

2.3.1.3 Acoustic issues

Pre-emptively assess the appliance's sound effect in connection to the site, taking into account that building corners, enclosed courtyards, restricted spaces may amplify the acoustic impact due to the reverberation phenomenon.

2.3.2 Indoor module (fan heater)

- The recommended installation height for the indoor module is 3,5 to 4 m.
- Do not install the indoor module too close to the wall. Use the appropriate suspension brackets, available as optional OSTF022, or in any case respect the distances indicated in Figure 2.4 *p. 14*.
- Since cold air is emitted from the indoor module during defrosting, avoid the indoor module being in the immediate vicinity of people who may be bothered by a temporary flow of cold air.
- Do not install near heat or steam sources.
- Do not install in particularly humid environments.
- Ensure correct air circulation around the indoor module.
- Install the indoor module in an upright position, fixing it to the wall using the appropriate suspension brackets, available as optional OSTF022.
- Comply with environmental and safety regulations.
- Ensure that the indoor module is in a perfectly horizontal position so that the condensate can be drained correctly from the condensate drain.

When choosing the room in which to place the indoor module, check compliance with the requirements of EN 378 and IEC/EN 60335-2-40 regarding the minimum volume of the room with respect to the maximum refrigerant content.

2.4 SAFETY ZONE

The refrigerant gas R32 contained in the e-NextPro system has a density higher than that of the air and therefore, in the event of a leak, tends to accumulate at ground level.

Care must be taken to prevent the accumulation of refrigerant gas in quantities that could lead to the formation of a dangerous, explosive, suffocating or toxic atmosphere.
For more notes on the safety zone, read the warnings in Chapter III.1 *p. 4*.

2.5 MINIMUM CLEARANCE DISTANCES

2.5.1 Outdoor module (heat pump)

The minimum clearance distances shown in Figure 2.3 *p. 14* (bar any stricter regulations) are required for safety, operation and maintenance.

Figure 2.3 *Minimum clearance distances*

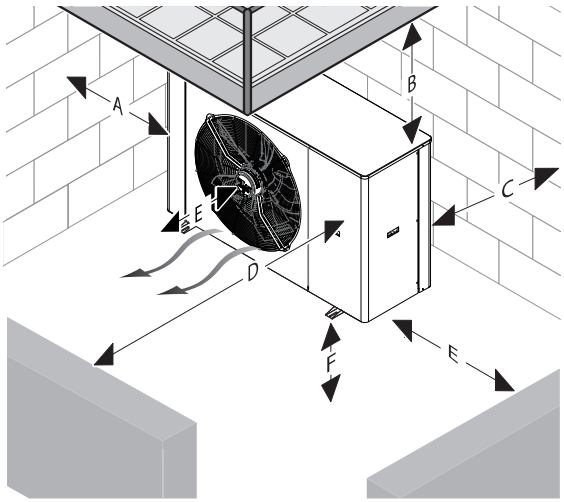
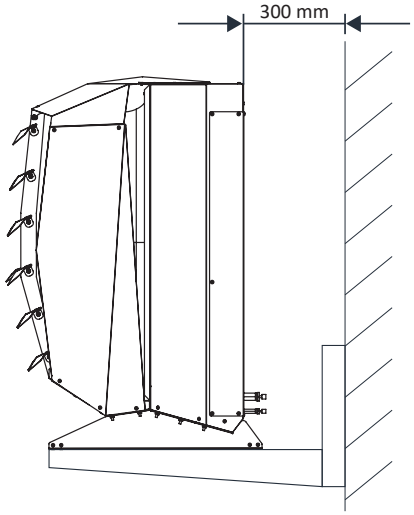


Table 2.1 *Minimum clearance distances*

Distance	Measurement in millimetres
A	> 300
B	> 2500
C	> 500
D	> 3000
E	> 1000
F	> 250

2.5.2 Indoor module (fan heater)

Figure 2.4 *Minimum clearance distances*



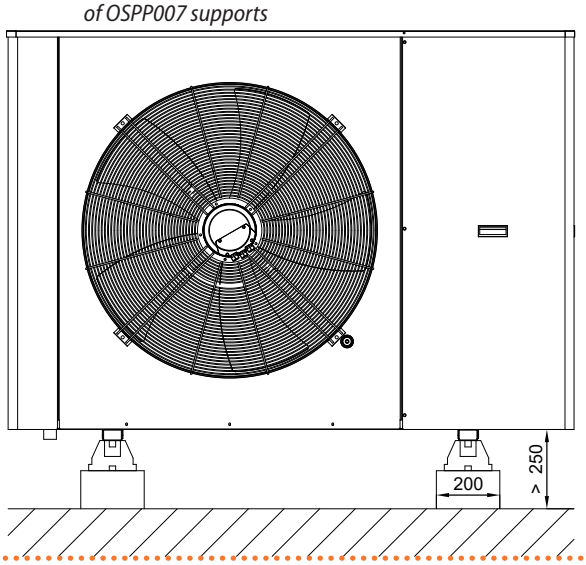
2.6 MOUNTING BASE

2.6.1 Mounting base constructive features

Place the appliance on a level flat surface made of fireproof material and able to withstand its weight.
Pay attention to lift the outdoor module off the ground properly, as specified in Table 2.1 *p. 14*, keeping the appliance perfectly horizontal (in order to properly drain the condensate) and without obstructing the condensate drain.
If using the floor supports in SBR (optional code OSPP007) it is advisable to lift the outdoor module from the ground by means

of appropriate supports in order to respect the minimum distance required in the Table 2.1 *p. 14* (Figure 2.5 *p. 15*).

Figure 2.5 *Boost for the outdoor module of e-NextPro in the presence of OSPP007 supports*



2.6.2 Installation at ground level

If there is no horizontal support base, make a flat and level concrete base, at least 100-150 mm larger than the appliance on each side, suitable to support the weight of the outdoor module.

2.6.3 Installation on terrace or roof

- ► The structure of the building must support the total weight of the appliance and the supporting base.
- ► If necessary, provide a maintenance walkway around the appliance.

2.6.4 Anti vibration mountings

Although the appliance's vibrations are minimal, resonance phenomena might occur in roof or terrace installations.

- ► Use the vibration damper supports supplied when installing the outdoor module on brackets or the optional OSPP007 supports when installing on the ground.

3 HEATING/REFRIGERATION ENGINEER

3.1 WARNINGS

Read the warnings in Chapter III.1 *p. 4*, providing important information on regulations and on safety.

All personnel working on the appliances must be informed about the nature of the work to be carried out and the hazards related to it.

Pipes containing the refrigerant must not be exposed to corrosive substances.

Compliance with installation standards

Installation must comply with applicable regulations in force, based on the installation Country and site, in matters of safety, design, implementation and maintenance of:

- heating systems
- cooling systems
- direct expansion systems with F-gas refrigerant gases

The installation must also comply with the manufacturer's requirements and with the provisions of Regulation 2024/573/EU (F-Gas).

3.2 CONNECTION OF THE REFRIGERANT CIRCUIT

The connection of the refrigerant circuit must be carried out by competent and authorised personnel.
The connection requires the use of welding equipment.

When carrying out the connection and loading procedure of the refrigerant circuit, it is recommended to adopt the safety measures and use all the necessary PPE.

3.2.1 Installation requirements

- ► The connection pipes between the indoor and outdoor modules must comply with the dimensions indicated in Table 3.3 *p. 17*.
- ► Failure to comply with the indicated measures may lead to a significant reduction in the performance of the appliance.
- ► If the difference in height between the indoor and outdoor modules is greater than 4 meters, a siphon must be inserted on each of the pipes, which should be positioned at an intermediate height (see for example Figure 3.2 *p. 17*).
- ► Respect the maximum lengths indicated in the following Table 3.2 *p. 16*.
- ► Create the passages between outside and inside in such a way as to prevent bad weather from entering the air-conditioned environment and to minimise heat loss.

The equivalent length is calculated using Table 3.1 *p. 15*.

Table 3.1 *Equivalent length of gas/liquid piping*

Element type	Equivalent length [m]
90° elbow	1
180° bend	2
Siphon	4
1m linear pipe	1

Calculation of additional refrigerant charge

- In the case of a gas line and a liquid line less than or equal to 10 meters each, no addition of refrigerant is required.
- For longer lines, multiply the grams of additional charge indicated in Table 3.2 *p. 16* by the linear length of the

line minus 10 (which is the linear length already covered by the precharged refrigerant in the outdoor module). Example: in the case of 16 linear metre long lines (both liquid and gas), in the respective diameters indicated in Table 3.3 *p. 17*, the amount of refrigerant to be added will be: (16-10) + (16-10) = 12 metres total, 12 metres x 52 g / m = 624 g total.

Table 3.2 *Sizing of refrigerant piping and additional circuit charge*

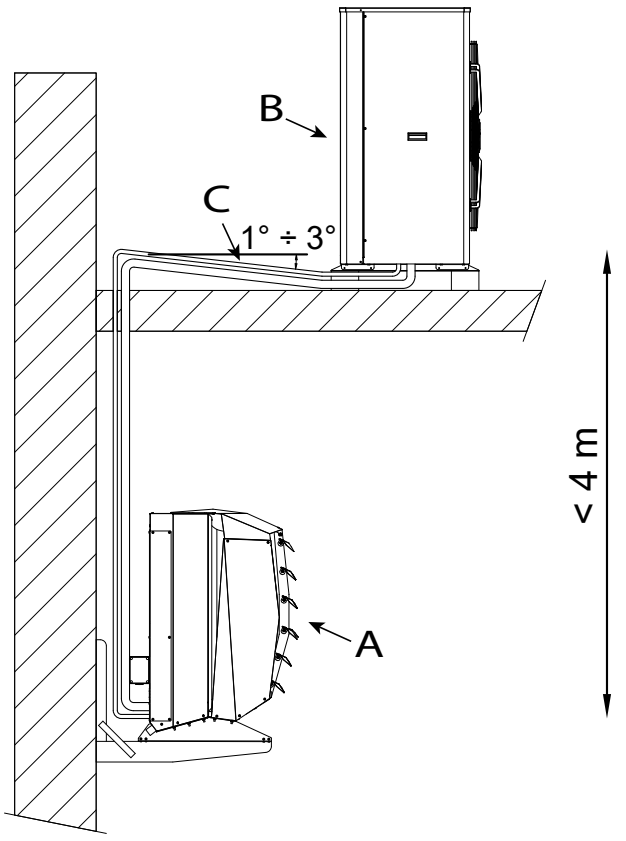
	e-NextPro 40
Maximum length of each gas/liquid pipe (m of equivalent length)	30
Recommended additional refrigerant charge over 10 linear m (g/m of linear length)	52

Additional refrigerant gas charge

The operation of charging any additional refrigerant must be carried out by the installer only in the presence of the TAC, on the occasion of the first start-up.

An example of an installation with an outdoor module positioned higher than the indoor module, but with a difference in height between the two of less than 4 m, is shown in Figure 3.1 *p. 16*. Consequently, the use of siphons in the vertical pipe section is not required.

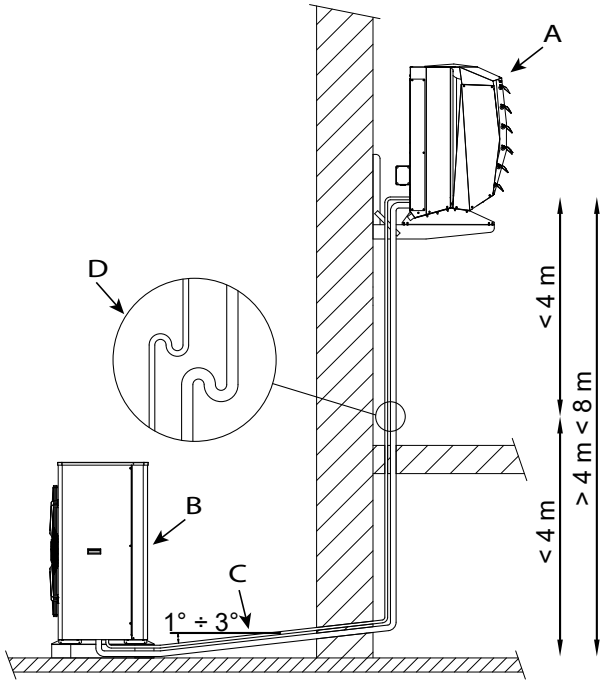
Figure 3.1 *Realisation of the refrigerant gas circuit with an outdoor module higher than the indoor module with a height difference of less than 4 m*



A Indoor module (fan heater)
B Outdoor module (heat pump)
C Slope of the horizontal lines 1 to 3° to facilitate the return of the oil to the compressor

An example of an installation with an outdoor module positioned lower than the indoor module, with a difference in height between the two of more than 4 m but less than 8 m, is shown in Figure 3.2 *p. 17*. Consequently, the use of a pair of siphons is required, on both gas and liquid circuits, in the vertical pipe section, positioned about halfway along the vertical section. The siphons must be positioned so that the difference in height between each of the two vertical sections is less than 4 m.

Figure 3.2 *Realisation of the refrigerant gas circuit with an outdoor module lower than the indoor module with a difference in height between 4 and 8 m*



A Indoor module (fan heater)
B Outdoor module (heat pump)
C Slope of the horizontal lines 1 to 3° to facilitate the return of the oil to the compressor
D Siphons

In the event that the difference in height between the indoor and outdoor modules (or vice versa) is greater than 8 m, the use of 2 pairs of siphons is required, placed at a proportional distance (for example: in the case of a 9 m difference in height, the first pair of siphons will be positioned at about 3 m, the second at about 6 m).

Check compliance with the requirements of EN 378 and IEC/EN 60335-2-40 regarding the minimum volume of the room with respect to the rooms that are crossed by the refrigerant pipes.

3.2.1.1 Online configurator

In order to simplify the design and verification of the refrigerant circuits to be made, an online configurator has been created.
The configurator requires:
- ► length of gas piping
- ► number of bends on gas piping
- ► length of liquid piping
- ► number of bends on liquid piping
- ► position of the outdoor module with respect to the indoor one
- ► difference in height

Once this information is entered, it allows you to verify:
- ► the admissibility of the configuration
- ► the possible need for pairs of siphons
- ► the possible need for an additional charge of R32 refrigerant (and if so, the amount to be added in grams)

Online configurator

The online configurator can be reached from the Robur website or via QRCode .

3.2.2 Preparation and installation of refrigerant pipes

The connections of the refrigerant piping must be sealed to prevent the refrigerant from leaking and causing the heat pump to malfunction.
The connecting pipes must be insulated and have the diameters specified in the Table 3.3 *p. 17*.

Table 3.3 *Refrigerant piping diameter*

	e-NextPro 40
Gas	Ø 22 mm (7/8")
Liquid	Ø 16 mm (5/8")

To install the refrigerant pipes, proceed as follows:
1. Measure the distance between the indoor and outdoor modules and perform all the curves necessary for installation, including any siphons.
2. The laying of the pipes must include as few curves as possible, as each curve increases the pressure drops of the circuit and reduces the performance of the heat pump.
3. Cut the pipes to a length slightly greater than that measured.
4. Completely remove the burrs from the cutting section, keeping the pipe tilted downwards and blowing nitrogen into the pipe.
5. Respect the maximum lengths indicated in Table 3.2 *p. 16*.
6. Before any welding operation, adequately protect the surrounding areas from heat (in particular the areas with valves, as the internal seals of the valves may be damaged).

For the outdoor module:
7. Remove the cover caps of the connections (details C and D, Figure 3.3 *p. 18*) and completely unscrew the pin valves by means of a 0,45 Nm torque wrench, so as not to risk damaging the seals during the subsequent welding operations.
8. Weld the pipes of the refrigerant gas circuit to the respective ends of the connection pipes. Weld the female connections on the inside and the male connections on the outside. Perform welding by flushing the joint with nitrogen to protect the circuit from oxide formation.

For the indoor module:
9. The indoor module is shipped slightly pressurised with nitrogen. Remove the cover caps of the connections (details A and B, Figure 1.2 *p. 9*) and slowly evacuate the nitrogen inside by unscrewing one of the seal valves through the back of the connection cover caps.
10. Once the internal nitrogen has been completely evacuated, cut the connections and proceed to weld the pipes of the refrigerant gas circuit similarly to what has already been done for the outdoor module. When welding, it may be easier to remove the side panel of the indoor module, which covers the connections, by removing the 5 fixing screws (remembering to reassemble it once the welding operation is completed).

Final operations:
11. Carefully insulate the refrigerant connections and fittings. The use of thermal insulation with a minimum thickness of

6 mm is recommended, suitable for the place of installation and installed in a workmanlike manner.

12. Once the welding operations have been completed, before reassembling the pin valves referred to in step 7 on the outdoor module, it is advisable to flush the entire circuit with nitrogen, in order to eliminate any residue.

13. Before proceeding with the leak check, it is necessary to reassemble the pin valves removed in step 7 on the connections C and D (Figure 3.3 *p. 18*) by means of a 0,45 Nm torque wrench.

3.2.3 Leak check

It is mandatory for the installer to perform a nitrogen leak check at 40 bar to verify the correct execution of the connections and welds.

To load with nitrogen, unscrew the 1/4" protective caps inside the outdoor module (details C and D, Figure 3.3 *p. 18*) and load. It is advisable that loading be done from the gas connection (detail D, Figure 3.3 *p. 18*) while the device for checking the pressure must be positioned on the liquid connection (detail C, Figure 3.3 *p. 18*).

Nitrogen charging must be carried out by intermediate pressure steps up to the required 40 bar and left under pressure for a few hours.

At the end of the leak check, once the absence of leaks in the circuit has been verified, the charged nitrogen must be slowly discharged and then the vacuum must be created inside the refrigerant circuit, connecting with the vacuum pump to the same 1/4" connections used for nitrogen charging.

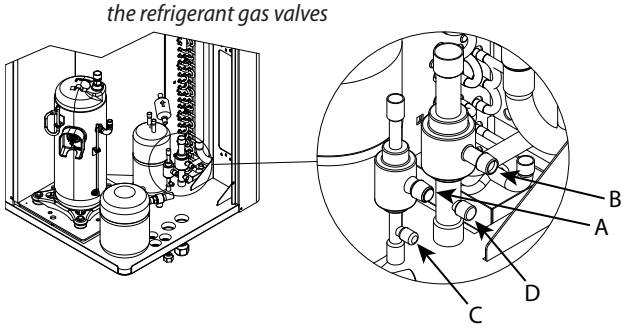
Perform the vacuum procedure until a pressure of 0,4 mbar is reached.

Once the required degree of vacuum has been achieved, contact the TAC for the first start-up.

Do not open the refrigerant gas valves

The refrigerant gas valves must be opened exclusively by the TAC on the occasion of the first start-up, under penalty of forfeiture of the warranty.

Figure 3.3 *Position of the connections for the vacuum procedure and the refrigerant gas valves*



A	Protective cap and refrigerant gas valve (liquid)	C	Protection cap and 1/4"connection refrigerant gas circuit (liquid)
B	Protective cap and refrigerant gas valve (gas)	D	Protective cap and 1/4"connection refrigerant gas circuit (gas)

3.2.4 Additional refrigerant gas charge

If the characteristics of the refrigerant gas circuit made make it necessary (Paragraph 3.2.1 *p. 15*), the installer must add refrigerant gas, in the quantities indicated by the TAC and in the presence of the TAC, at the time of the first start-up.

For charging, it is possible to connect either to the liquid or the gas pipe.

Only charge refrigerant, and not the oil for the compressor.

Do not charge refrigerant gas in the absence of TAC

The refrigerant gas must be charged by the installer, in the quantities indicated by the TAC, exclusively in the presence of the TAC on the occasion of the first start-up.

3.2.5 Compilation of the refrigerant gas label

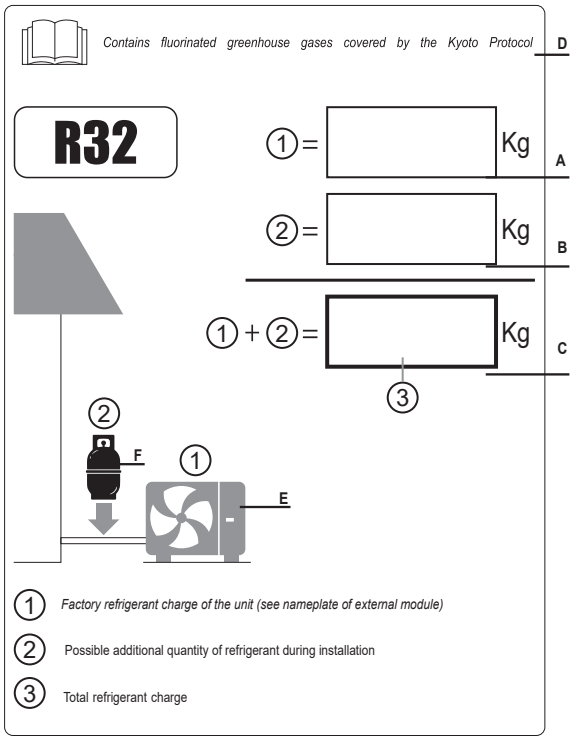
At the end of the connection, verification and charging procedure of the refrigerant circuit, fill in the label in Figure 3.4 *p. 18*, affixed to the outdoor module, with indelible ink, indicating:

1. Factory refrigerant charge of the appliance (see nameplate on the outdoor module)

2. Amount of refrigerant possibly added during installation

3. Total refrigerant charge

Figure 3.4 *Refrigerant gas label*



A	Factory refrigerant charge of the appliance (see nameplate on the outdoor module)	D	Contains fluorinated greenhouse gases included in the Kyoto Protocol
B	Amount of refrigerant possibly added during installation	E	Outdoor module (heat pump)
C	Total refrigerant charge	F	Refrigerant cylinder and charge manifold

3.3 DRAINAGE OF DEFROST WATER AND CONDENSATE

Defrosting

In winter, frost may form on the finned coil of the outdoor module and the appliance performs defrosting cycles.

Condensate

In summer, condensate can form on the finned coil of the indoor module and must be properly evacuated.

3.3.1 Drain pipe

The defrost water and condensate produced in the outdoor module are conveyed and discharged from the appropriate drain (detail C, Figure 1.1 *p. 8*) from the back of the heat pump, through a drain pipe that must be prepared by the installer. The drain pipe must have a minimum diameter of 18 mm and must be suitably protected against the danger of frost. The piping must be installed with an appropriate slope.
The condensate produced by the indoor module must be discharged from the appropriate drain (detail C, Figure 1.2 *p. 9*) from the back of the fan heater, through a drain pipe that must be prepared by the installer. The recommended diameter for the drain pipe is 32 mm external and it must be installed with an appropriate slope.

4 ELECTRICAL INSTALLER

4.1 WARNINGS

Read the warnings in Chapter III.1 *p. 4*, providing important information on regulations and on safety.

Compliance with installation standards

Installation must comply with applicable regulations in force, based on the installation Country and site, in matters of safety, design, implementation and maintenance of electrical systems.
The installation must comply with the connection conditions required by the operators of the power supply networks.

Installation must also comply with the manufacturer's provisions.

Live components

After placing the appliance in the final position, and prior to making electrical connections, ensure not to work on live components.

Earthing

The appliance must be connected to an effective earthing system, installed in compliance with regulations in force.

Cable segregation

Keep power cables physically separate from signal ones.

Do not use the power supply switch to turn the appliance on/off

- Never use the external isolation switch to turn the appliance on and off, since it may be damaged in the long run (occasional blackouts are tolerated).
- To turn the appliance on and off, use only the appropriate control panel provided (PGD, RCC or Multi RCC).

Right rotation field

Respect the right rotation field: if the wiring is incorrect, the heat pump will not start. If the wiring is incorrect, the control panel shows the relevant alarm. Correct the wiring accordingly.

Power cable section

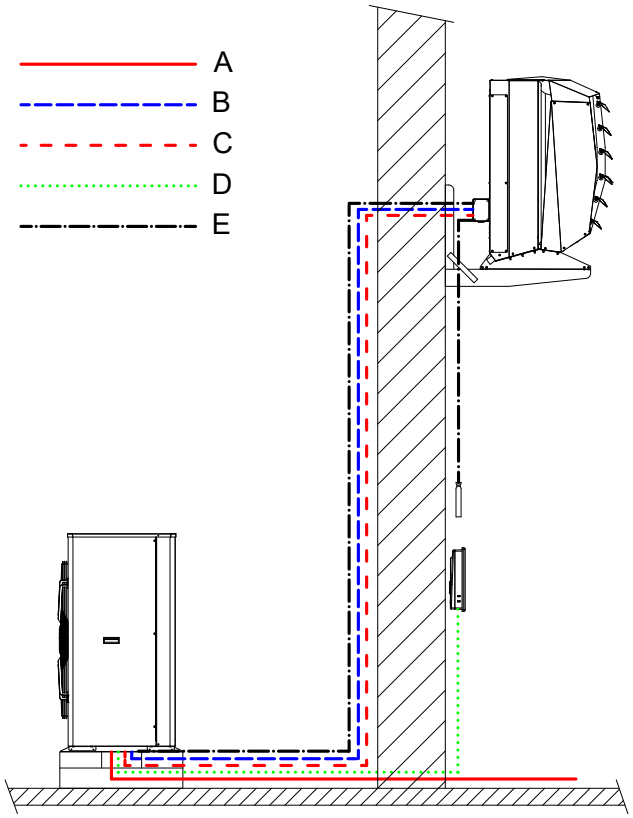
The section of the power cables (Paragraph 4.5 *p. 24*) is to be considered indicative and relative to the last section of the line to the appliance, which must be as short as possible. The external protections, the laying and the section of the cables of the aforementioned power supply line must be sized and carried out by qualified personnel and in accordance with the applicable regulations in force.

4.2 ELECTRICAL SYSTEMS

Electrical connections must provide:
- ► electrical power supply and communication signal between outdoor module and indoor module (Paragraph 4.3 *p. 22*)
- ► control system (Paragraph 4.4 *p. 23*)

The appliance can only be powered when the installation work has been completed, both for the hydraulic part and for the electrical part.

Figure 4.1 *Electrical connections of e-NextPro 40*



A	Three-phase power supply of the e-NextPro system	C	Indoor module drive Modbus signal
B	Three-phase power supply of the indoor module	D	Control system signal
		E	B2 temperature probe signal

4.2.1 General information

We recommend you:

- ► Check that the characteristics of the electrical network (voltage and absorption) are adequate to the data indicated on the nameplate of the appliance.
- ► Check that the indications for connection of the phase, neutral and earth wires are respected, including the correct sequence of the phases (R, S, T).
- ► Check that, upstream from the power supply line, there are suitable protection devices against overloads, short circuits and indirect contacts, considering the specific characteristics of the appliance.
- ► Use double insulated cables for electrical connections, with insulation resistant to UV rays and high temperatures.
- ► Make the earthing of the appliance as the first electrical connection.
- ► Enable all line protections before powering the appliance.
- ► Create the passages between outside and inside in such a way as to prevent bad weather from entering the air-conditioned environment and to minimise heat loss.

The electrical installer must

- Refer to the wiring diagrams of the appliance.
- Provide and connect a general protection and disconnection switch, consisting of a circuit breaker, equipped with a magnetothermic breaker, complying with the applicable regulations in force, with adequate interruption power, to be placed as close as possible to the outdoor module (heat pump), inside a suitable container at the place of installation.
- Carry out the earthing.
- Perform an evaluation on the protection (differential) from indirect contacts, depending on the configuration of the electrical system at the installation site. In this regard, we recommend the use of type "A" differential blocks with reinforced immunity, with Idn = 30 mA. If necessary, the possibility of adding a differential lock to the main switch for protection against indirect contacts can also be considered.

4.2.2 Instructions for laying cables

- ► Lay the cables at a distance from lines with different voltage or from devices that can create electromagnetic interference.
- ► Avoid laying in parallel with other cables, only 90° arrangement is allowed.
- ► Route the power cables and signal cables of the outdoor and indoor modules through the appropriate holes.

4.2.3 How to make connections

How to make connections

All electrical connections must be made on the terminal blocks inside the electrical panels of the outdoor and indoor modules of the e-NextPro system (Figure 4.2 *p. 21*):

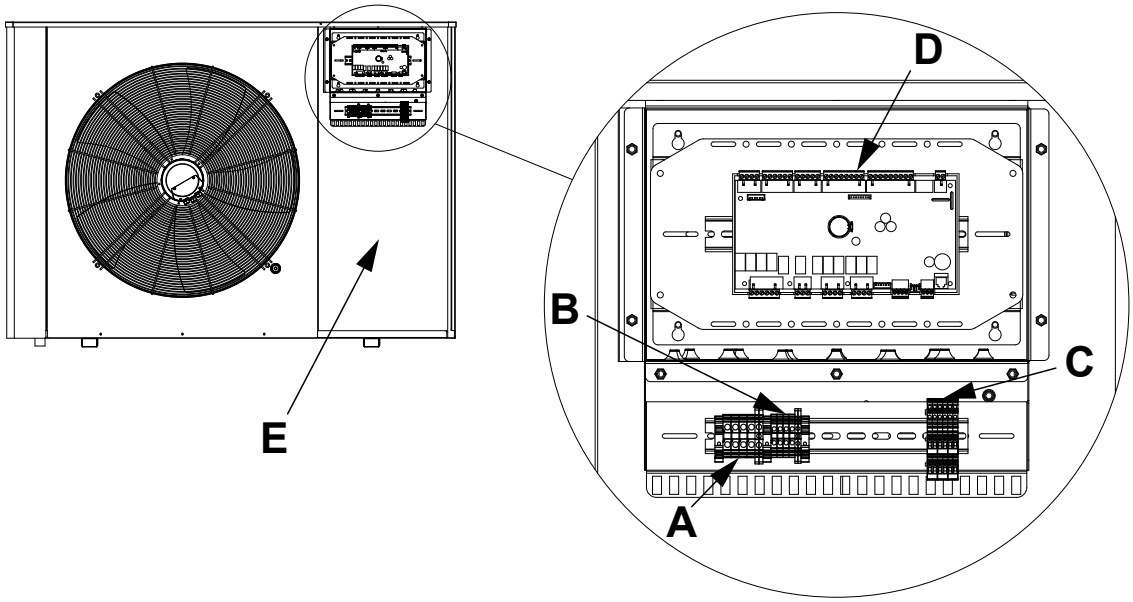
For the connections to be made on the outdoor module (heat pump):

1. Ensure the appliance's electrical panel is not live.
2. Remove the front panel of the outdoor module (detail E, Figure 4.2 *p. 21*) and then the cover of the electrical panel.
3. Route the cables through the appropriate holes at the rear of the outdoor module.
4. Route the cables through the suitable cable glands in the electrical panel.
5. Identify the appropriate connection terminals.
6. Make the connections.
7. Close the electrical panel and reassemble the front panel, covering the access holes to the fixing screws with the appropriate closing caps, supplied in a bag fixed to the fan of the outdoor module.

For the connections to be made on the indoor module (fan heater):

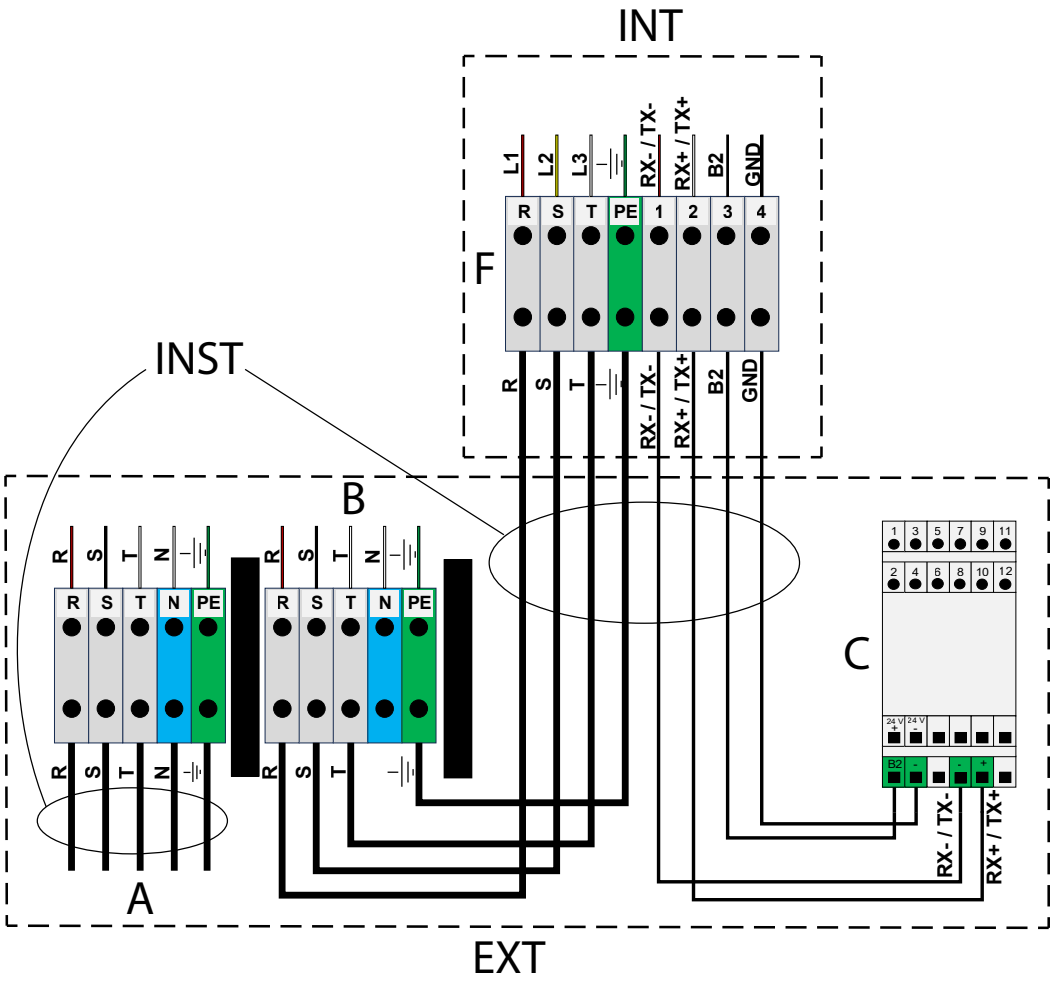
1. Ensure the appliance's electrical panel is not live.
2. Remove the cover of the electrical panel (detail D, Figure 1.2 *p. 9*).
3. Route the cables through the suitable cable glands in the electrical panel.
4. Identify the appropriate connection terminals.
5. Make the connections.
6. Close the electrical panel.

Figure 4.2 *Electrical panel detail of the outdoor module (heat pump)*



A	Outdoor module power supply terminal block		terminal block	D	Outdoor module electronic board
B	Indoor module electrical panel power supply	C	Indoor module signal terminal block	E	Outdoor module front panel

Figure 4.3 *Electrical connections*



EXT (outdoor module)

A Outdoor module power supply

B Indoor module electrical panel power supply

C Fan pilot signals terminal board and probe B2 terminal block of the indoor module

INT (indoor module)

F Indoor module terminal block

INST (connections to be made by the electrical installer)

4.3 ELECTRICAL CONNECTIONS FOR POWER SUPPLY AND SIGNAL

Refer to Figure 4.3 *p. 22*.

4.3.1 Outdoor module (heat pump)

Table 4.1 *Characteristics of protective devices and cables*

	e-NextPro 40
Power consumption	9,98 kW
Rated voltage	400 V
Distribution	3P+N+T
Main switch (magnetothermic breaker)	4x25 A
Cable cross section	5G4

The main switch must be installed as close as possible to the outdoor module and must be able to protect the terminal section of the power supply line from overloads and short circuits.

The section of the power cables shown in Table 4.1 *p. 22* is to be considered indicative and relative to the last section of the line to the outdoor module (which must be as short as possible) and is recommended for a maximum length of 5 metres. For longer lengths or different types of cable laying, the qualified technician will be responsible for appropriately sizing the main switch, the power supply line and the earth protection connection and the connection cables, depending on the place of laying, the ambient temperature, the length, the type of cable and the absorption of the appliance.
The sizing, selection and verification of the protective devices upstream from the appliance must be carried out by qualified technical personnel, in accordance with the regulations in force in the country of installation.

The power supply line must be equipped with a differential that interrupts the power supply if the leakage current to earth exceeds 30 mA for 30 ms, or with an isolation device suitable for the maximum power absorbed by the appliance.

How to connect the power supply

To connect the power supply cable (Figure 4.3 *p. 22*):

1. Access the electrical panel of the appliance according to the Procedure 4.2 *p. 19*.
2. Route the electrical power supply cable at the base of the outdoor module into the appropriate holes (detail D, Figure 1.1 *p. 8*)
3. Connect the earth cable to the PE terminal.
4. Provide the earth lead-in wire longer than live ones (last to be torn in the event of accidental pulling).
5. Connect the R, S, T cables into the power supply terminal block.

4.3.2 Indoor module (fan heater)

The indoor module is connected to the outdoor module by three types of connection, which must be made during electrical installation (Figure 4.3 *p. 22*):

1. power supply (Paragraph 4.3.2.1 *p. 23*)
2. RS 485 signal for fan control
3. B2 temperature probe signal (Paragraph 4.3.2.3 *p. 23*)

4.3.2.1 Electrical power supply

The power supply of the indoor module is derived from the outdoor module, through the appropriate connection terminal blocks provided in the electrical panel of the outdoor module (Figure 4.3 *p. 22*).
Connect the power supply of the indoor module (detail E, Figure 4.2 *p. 21*) using a four-pole cable (minimum section 1,5 mm^2) to the appropriate terminal block of the outdoor module (detail B, Figure 4.2 *p. 21*).
The cable may not be longer than 30 metres.
Pay particular attention to the earth connections of the power supply which must be the same for both modules.

Absolutely avoid contact between the ground of the signal cables (GND) and the earth lead of the power supply.

4.3.2.2 Fan drive

For the RS 485 signal for fan control:

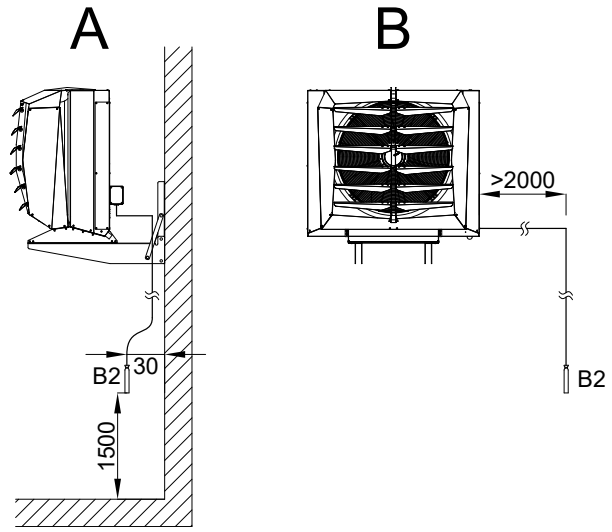
- look for a route far from possible sources of disturbance
- do not make joints along the way, possibly use a shielded 2-pin cable with 1,5 mm^2 section (with the screen connected to the GND terminal on the side of the indoor module)

Absolutely avoid contact between the ground of the signal cables (GND) and the earth lead of the power supply.

4.3.2.3 Temperature probe B2

The temperature probe B2, of resistive type NTC 10 kΩ, is intended to measure the internal temperature of the air-conditioned room and provide this information to the control system of the appliance.
The probe is supplied with the indoor module (fan heater) and is already pre-wired to the electrical panel with a 3 m long cable, tied under the electrical panel.
If the length of the cable is not sufficient, it is possible to make a joint using a 1,5 mm^2 piece of shielded multipolar cable, following the shortest path and staying away from power cables and exposure to any parasitic resistors.
Make the connection with bipolar cable of the signal of the probe B2 between the indoor module (D, Figure 4.3 *p. 22*) and the outdoor module, on the appropriate terminal block in the electrical panel of the outdoor module (C, Figure 4.3 *p. 22*).
The temperature probe B2 must be positioned laterally with respect to the indoor module, at a distance of about 2 m, at human height and taking care that it is not directly in contact with the wall, but spaced from it by at least 30 mm (Figure 4.4 *p. 23*).

Figure 4.4 *Positioning of probe B2*



Measurements are expressed in mm B Front view
A Side view

4.4 ADJUSTMENT AND CONTROL

Three separate control panels are provided, each with specific features, components and diagrams:

1. PGD control panel
2. RCC control panel
3. Multi RCC control panel

The control panels don't work as a room thermostat but only as an interface, as none of the control panels above has an integrated room probe.

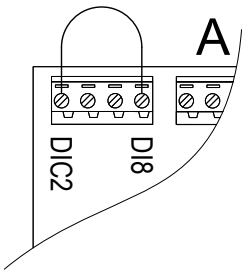
The connection of the control panel is made on the electronic board of the outdoor module (detail D, Figure 4.2 *p. 21*), using the appropriate connection cable.

Refer to the instructions supplied with the specific control panel chosen for further guidance.

4.4.1 Operation via centralised external request

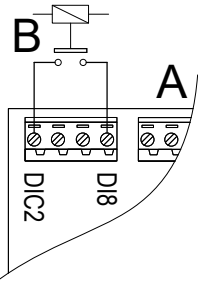
It is also possible to control the operation of the appliance through a centralised external request, to be connected to the DI8 input of the electronic board of the outdoor module (detail D, Figure 4.2 *p. 21*). This request can be used to enable and disable operation, even on multiple e-NextPro 40 appliances.
This functionality does not replace the control panel connected to the individual appliance, which is still necessary, but it is additional.
The appliance is factory supplied with the DI8 contact closed by an electrical bridge (Figure 4.5 *p. 24*). If the DI8 contact is closed, the appliance is enabled for operation and activates in the presence of a service request from the connected control panel.

Figure 4.5 *DI8 contact closed (factory standard): operation enabled*



A Top edge of the outdoor module electronic board

Figure 4.6 *DI8 contact connected to an external request*



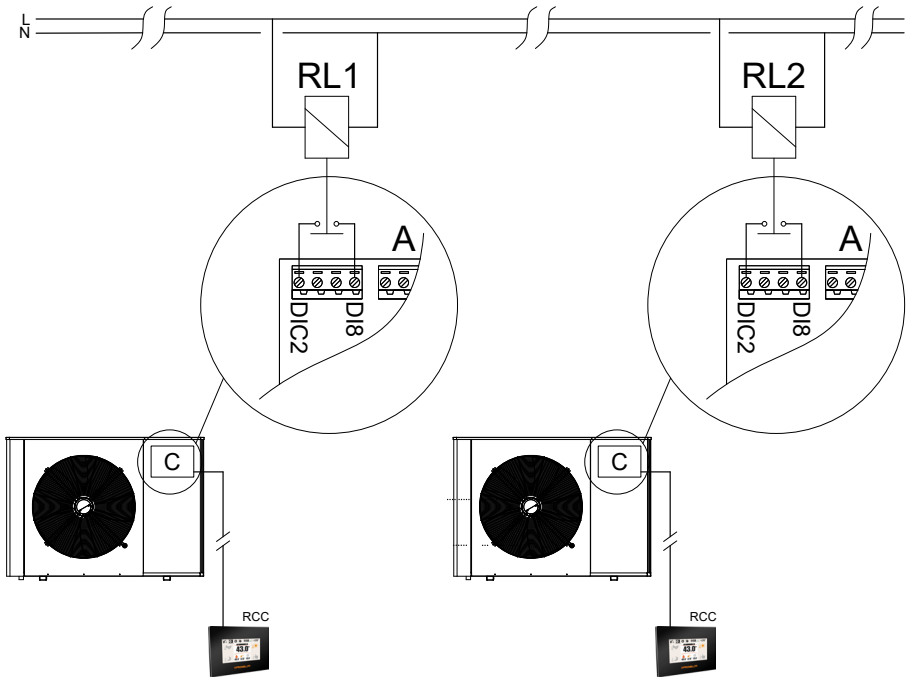
A Top edge of the outdoor module electronic board
B Centralised external request

If the DI8 contact is open, the operation of the appliance will be inhibited, even in the face of a service request from the connected control panel. In this case, the control panel will signal the inhibition of operation by the external DI8 request.
To enable or disable the operation of the appliance by an external request, remove the electrical bridge and connect the centralised external request to the DI8 input (Figure 4.6 *p. 24*).

Use a 2x0,5 mm² cable with a maximum length of 10 metres to connect the DI8 contact.

In the case of centralised management of several appliances, each request must be made through the interposition of an electric relay (Figure 4.7 *p. 24*).

Figure 4.7 *Centralised external request for multiple e-NextPro appliances*



A Top edge of the outdoor module electronic board
C Outdoor module electronic board
L Phase
N Neutral
RL Relays at the service of each e-NextPro appliance
RCC RCC control panel

For the centralised management of multiple appliances, the use of the Multi RCC control panel is recommended, the characteristics of which are detailed in Paragraph 1.4.4 *p. 10*.

For further information on the operation and use of the e-NextPro 40 appliances in this mode, please contact the Robur technical service.

4.5 CONNECTION CABLES

The type of cables indicated in the following Tables must always be checked by the qualified installer with respect to the place and the actual installation conditions.

4.5.1 Outdoor module

Table 4.2 *Outdoor module connection cables (heat pump)*

Power supply from the customer's electrical distribution panel	3P+N+T - 400 V AC - 50 Hz
Power cable from main switch to outdoor module	Maximum length 5 m if using the cable in Table 4.1 *p. 22*
Internal protection device 400 V AC line	3 fuses 5x20 - 4 A
24V DC internal power supply protection device	1 fuse 5x20 - 4 A

4.5.2 Indoor module

Table 4.3 *Indoor module connection cables (fan heater)*

Power supply derived from the outdoor module	3P+N+T - 400 V AC - 50 Hz
Power supply cable	Minimum section 4x1,5 mm^2, maximum length 30 m
Signal cable for indoor module control	Bipolar, RS485 Modbus RTU
Signal cable for relaunching probe B2 from the indoor module and to the indoor module	Shielded bipolar

4.5.3 Control panel

Table 4.4 *Control panel connection cables*

Using the cable	Cable type
Signal cable for the PGD control panel, to be connected to the electronic board of the outdoor module (available as optional OCVO016, length 20 m)	Telephone cable with male RJ12 connector at both ends, maximum length 30 m
Signal cable for the RCC control panel, to be connected to the electronic board of the outdoor module	Shielded bipolar, RS485 Modbus RTU, maximum length 30 m
Signal cable for the Multi RCC control panel, to be connected to the BMS board (available as optional OSLT002) installed in the electronic board of each outdoor module	Shielded bipolar, RS485 Modbus RTU, maximum length 1000 m

5 FIRST START-UP

The first start-up can only be carried out by a Robur TAC. The user/installer is NOT authorised to perform such operations, under penalty of forfeiture of the warranty.

5.1 PRELIMINARY CHECKS

5.1.1 Preliminary checks for first start-up

Upon completing installation, before contacting the TAC the installer must check:

- Suitable refrigerant gas, hydraulic and electrical systems equipped with all the safety and control devices required by the regulations in force.
- Absence of leaks in the refrigerant gas circuit.
- Power supply mains complying with the appliance's rating plate data.
- Appliance correctly installed, according to the manufacturer's provisions.
- System installed in a workmanlike manner, according to national and local regulations.

5.1.2 Abnormal or hazardous installation situations

Should any abnormal or hazardous installation situations be found, the TAC shall not perform first start-up and the appliance shall not be commissioned.
These situations may be:

- Outdoor module installed inside a room.
- Failed compliance with minimum clearances.
- Insufficient distance from combustible or flammable materials.
- Conditions that do not warrant access and maintenance in safety.
- Appliance switched on/off with the main switch, instead of the provided control device.
- Appliance defects or faults caused during transport or installation.
- Refrigerant gas valves open.
- Leaks of refrigerant gas.
- Unsuitable electrical system or wiring.
- All situations that may involve operation abnormalities or are potentially hazardous.

5.1.3 Non-compliant system and corrective actions

Should the TAC find any non conformities, the user/installer is bound to perform any corrective procedures required by the TAC.

After performing the remedial actions (the installer's responsibility), if the TAC deems that safety and conformity conditions are in place, first start-up may be effected.

5.2 COMMISSIONING

Before start-up, check that the transport safety has been removed.

Figure 5.1 *Removal of transport safety devices*

The installer, at the end of the verification procedures described in Paragraph 5.1 *p. 25*, must electrically power the appliance, at least 24 hours before the intervention of the TAC for the first start-up.

Pay attention to the fact that after powering up the appliance, the heat pump will immediately activate the compressor oil heating function, the duration of which depends on the oil temperature at the time of switching on, and can therefore also take a few hours in the presence of very low outdoor temperatures.

Each appliance is tested by the manufacturer before delivery, however it is also advisable to carry out a short run-in, in order not to stress the new compressor excessively.
To run-in the compressor, contact the TAC.

6 NORMAL OPERATION

This section is for the end user.

The use of the appliance by the end user is only allowed after the authorised Robur TAC has completed the first start-up.

6.1 WARNINGS

Prior to using the appliance carefully read the warnings in Chapter III.1 *p. 4*, providing important information on regulations and on safety.

First startup by TAC

First start-up may exclusively be carried out by a Robur TAC (Chapter 5 *p. 25*).

Never power the appliance off while it is running

NEVER power the appliance off while it is running (except in the event of danger, Chapter III.1 *p. 4*), since the appliance or system might be damaged.

6.2 SWITCH ON AND OFF

Routine switching on/off

The appliance may exclusively be switched on/off using the appropriate control device provided (PGD, RCC, Multi RCC).

Checks before switching on

Before switching on the appliance, ensue that:
- appliance electrical power supply (main switch ON)
- control panel power supply
- refrigerant gas circuit ready and filled

6.2.1 How to switch on/off

Refer to the manual of the specific control panel used (PGD, RCC, Multi RCC).

Once switched on with the control, in normal operating conditions, the appliance automatically adjusts its operation according to the needs of the user.
Pay attention to the fact that the switching on of the appliance requires a series of checks to be carried out before the compressor is started, which is normal only after a few minutes with respect to the service request.
In order to maximise efficiency, when switched off (deactivation of the service request) it will not be possible to make a new service request until 30 minutes have elapsed.
If you want to switch off the appliance for a long period, please refer to Paragraph 7.5 *p. 28*.

6.3 MODIFYING SETTINGS

Refer to the manual of the specific control panel used (PGD, RCC, Multi RCC).

Do not modify complex settings

Specific technical and system knowledge is required for complex settings. Contact a TAC.

6.4 EFFICIENCY

For greater appliance efficiency:
- ► Keep the finned coil clean.
- ► Program appliance activation for actual periods of use.
- ► Limit the temperature difference between outdoor and indoor air in the air-conditioned room according to actual needs.

7 MAINTENANCE

7.1 WARNINGS

Before carrying out any maintenance or repair work on the appliance, carefully read the warnings in Chapter III.1 *p. 4*, providing important information on regulations and on safety.

Correct maintenance prevents problems, assures efficiency and keeps running costs low.

Maintenance operations described herein may exclusively be performed by the TAC or skilled maintenance technician.

Any operation on internal components may exclusively be performed by the TAC.

Before performing any operation, switch off the appliance by means of the control device and wait for the end of the shutdown cycle, then disconnect power supply, by acting on the electrical disconnector.

If a fault occurs that could compromise safety, do not connect the electrical power supply to the appliance until the fault is resolved so as to ensure safety.

The efficiency checks and every other "control and maintenance operations" must be performed with a frequency according to current regulations or, if more

restrictive, according to the provisions set forth by the manufacturer, installer or TAC.

Responsibility for efficiency checks, to be carried out for the aims of restricting energy consumption, lies with the system manager.

Environmental or operational heavy conditions

Increase the frequency of appliance maintenance and cleaning operations in especially heavy-duty environmental or use conditions (e.g., intensive use of the equipment, brackish environment, etc.).

Repairs on the refrigerant circuit

The activities must be carried out in such a way as to minimise the presence of flammable gases or vapours during the performance of the work.

Interventions that require welding

Maintenance or repair operations that require welding must be carried out with the refrigerant gas system empty.

7.2 PRE-EMPTIVE MAINTENANCE

It is advisable to carry out routine maintenance (Paragraph 7.3 *p. 27*) with this frequency:

- ► yearly if the appliance is used in only one mode (heating or cooling)
- ► every six months if the appliance is used for both heating and cooling

7.3 SCHEDULED ROUTINE MAINTENANCE

For scheduled routine maintenance, perform the operations in Table 7.1 *p. 27*.

Table 7.1 *Scheduled routine maintenance for e-NextPro 40*

Frequency	Point of intervention	Type of intervention
Every 12 months	Outdoor module	Internal cleaning (coil fins, fan blades, fan grille) Check that the liquid indicator does not indicate the presence of moisture
	Indoor module	Internal cleaning (coil fins, fan blades, fan grille)
	Refrigerant gas piping	Check for refrigerant gas leaks
	Condensate drain	Check the cleanliness of the condensate drain and the collection pan
	Electrical connections	Check the status of the electrical connections
Every 3 years	Vibration damper supports	Check the state of wear and replace if necessary
Every 4 years	Refrigerant circuit safety valve	Safety valve replacement

If topping up the refrigerant gas, remember to update the information on the label 3.4 *p. 18*, if it differs from that given before.

Maintenance must follow the provisions of current national regulations regarding the use of equipment containing greenhouse gas refrigerants.

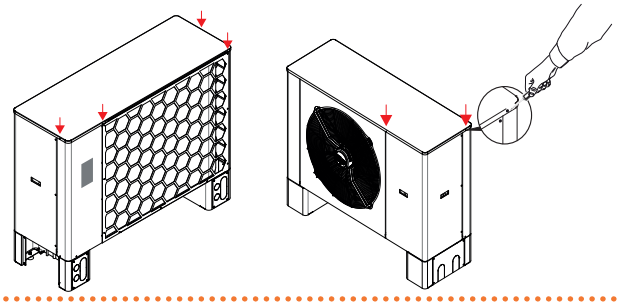
7.3.1 Finned coil cleaning

During operation of the appliance it is possible that the finned coil of the outdoor module is partially clogged due to the presence of leaves or dirt of various kinds, also causing a malfunction of the heat pump.
It is possible to clean the coil with a jet of pressurised air in a direction parallel to that of the fins.
It is also advisable to remove any deposits in the compartment of the finned coil by keeping at a distance such that you do not risk bending the fins of the coil.

Finned coil cleaning

- Clean the front surface
- Remove the top panel as shown in Figure 7.1 *p. 27*

Figure 7.1 *Disassembly of the outdoor module cover*



Also clean the coil of the indoor module, especially if it is located in a dusty and dirty environment.

Avoid contact with the coil fins as this may result in cutting wounds. Avoid bending the coil fins as this reduces the performance of the appliance. If the fins are bent, contact the TAC.

7.3.2 Cleaning the condensate drain

Make sure that the condensate drain pipe of the outdoor module is in the correct position and not clogged, to allow the correct outflow of the condensate that deposits on the coil during heat pump operation.
Check and clean the condensate drain pipe of the indoor module.

7.4 FAULTS AND RESETS

7.4.1 Fault signals on the display

In the case of a blocked appliance, an appropriate alarm signal is shown on the control panel connected to the appliance (PGD, RCC, Multi RCC).

- ► To restart the appliance you must know and perform the procedure concerning the issue signalled and identified by the code (Paragraph 8 *p. 28*).
- ► Only act if you are familiar with the issue and with the procedure (technical expertise and professional qualifications might be required).
- ► If you do not know the code, the problem, the procedure, or you do not have sufficient skills, and in any case of doubt, contact the TAC.

7.4.2 Locked-out appliance

An external intervention (reset or repair) is required due to an appliance fault or problem with the system.

- ► A reset may be enough for a temporary and provisional fault.
- ► For a fault or breakdown, alert the maintenance technician or TAC.

7.4.3 Reset

To reset a fault, use the control device as described in the relevant manual.

7.5 PERIODS OF INACTIVITY

Periods of inactivity

The appliance is not suitable for use with an external inverter. If the appliance is disconnected from the power supply for long periods, do not interrupt the compressor oil heating procedure which starts when the appliance is powered up again. This procedure prevents breakage of the compressor.

7.5.1 Prolonged periods of inactivity

If you expect to leave the appliance inactive for a long period of time, disconnect it from the electrical mains.

How to deactivate the appliance for long periods of time

1. Switch off the appliance using the control panel provided (PGD, RCC, Multi RCC).
2. Wait for the compressor to shut down completely and for the appliance components to cool down.
3. Only when the appliance is completely switched off, disconnect the power supply using the main switch/disconnector.

How to reactivate the appliance after long periods of inactivity

Before reactivating the appliance, the operator/maintenance technician of the system must first of all:

- ■ Check whether any maintenance operations are required (contact the TAC; see Paragraphs 7.2 *p. 27* and 7.3 *p. 27*).
- ■ Check the gas content of the refrigerant circuit and, if necessary, top up (Paragraph 3.2 *p. 15*).
- ■ Check that the condensate drain is clean.

After completing the above checks:

1. Supply electrical current with the main power switch.
2. Wait as long as necessary for the compressor oil to warm up.
3. Switch on the appliance using the control panel provided (PGD, RCC, Multi RCC).

8 DIAGNOSTICS

The following Tables refer to the firmware version 15.00.018 of the heat pump electronic board.

8.1 ALARMS

Table 8.1 *Alarms*

Alarm code	Message displayed	Reset	Delay	Relay	Action
ALA01	Probe B1 faulty or disconnected	Automatic	60 s	Yes	Stop the appliance
ALA02	Probe B2 faulty or disconnected	Automatic	60 s	Yes	
ALA03	Probe B3 faulty or disconnected	Automatic	60 s	Yes	
ALA04	Probe B4 faulty or disconnected	Automatic	60 s	Yes	Stop the appliance
ALA05	Probe B5 faulty or disconnected	Automatic	60 s	Yes	
ALA06	Probe B6 faulty or disconnected	Automatic	60 s	Yes	Lock the functions enabled by the outdoor probe
ALA07	Probe B7 faulty or disconnected	Automatic	60 s	Yes	Stop the appliance
ALA08	Probe B8 faulty or disconnected	Automatic	60 s	Yes	Stop the solar manifold pump
ALA09	Probe B9 faulty or disconnected	Automatic	60 s	Yes	Stop the compressor
ALA10	Probe B10 faulty or disconnected	Automatic	60 s	Yes	Stop the appliance
ALA11	Probe B11 faulty or disconnected	Automatic	60 s	Yes	Stop the appliance
ALA12	Probe B12 faulty or disconnected	Automatic	60 s	Yes	Stop the appliance
ALB01	Position: DI3 high pressure	Manual	Immediate	Yes	Stop the appliance
ALB02	High pressure compressor 1 from transducer	Manual	Immediate	Yes	Stop the appliance

Alarm code	Message displayed	Reset	Delay	Relay	Action
ALB03	Low pressure compressor(s) from transducer	Automatic (page Hc05)	Initial: 40 s (page Hc03) Fully operational: 10 s (page Hc04)	Yes	Stop the appliance
ALC01	Position: DI2 thermal relay compressor 1 or inverter alarm	Manual	Immediate	Yes	Stop the appliance
ALC02	Position: DI9 thermal relay compressor 2	Manual	Immediate	Yes	
ALC03	Envelope alarm: 0. Maximum compression ratio 1. Maximum discharge pressure 2. Current limit 3. Maximum intake pressure 4. Minimum compression ratio 5. Minimum pressure differential 6. Minimum discharge pressure 7. Minimum intake pressure Compressor off for operation outside envelope	Manual	60 s (page H1b14)	Yes	Stop the compressor
ALC04	Compressor start failure alarms	After 5 times in an hour it becomes manual	60 s (page H1b11)	Yes	Stop the compressor
ALC05	Maximum discharge temperature	After 3 times in an hour it becomes manual	Immediate	Yes	Stop the compressor
ALC06	Delta pressure less than the minimum required for oil return to the compressor	Automatic	120 s (page H1b12)	Yes	Stop the compressor
ALP01	Position: DI1 geothermal circuit water flow switch	After 5 times in an hour it becomes manual	Initial: 15 s (page Hc15) Fully operational: 5 s (page Hc16)	Yes	Stop the appliance when the maximum time is reached
ALP02	Position: DI4 pump thermal relay	Manual	Immediate	Yes	Stop the appliance
ALP03	Position: DI10 primary circuit water flow switch	After 5 times in an hour it becomes manual	Initial: 15 s (page Hc12) Fully operational: 5 s (page Hc13)	Yes	Stop the appliance when the maximum time is reached
ALP04	Position: DI5 solar circuit pump thermal relay	Manual	Immediate	Enableable (Gfc01)	Stop the solar manifold pump
ALR01	Position: DI7 boiler/system integration resistor alarm	Automatic	Immediate	Enableable (Gfc02)	Stops boiler operation/primary circuit integration resistor
ALR02	Position: DI6 boiler/DHW resistor thermal relay from digital input	Manual	Immediate	Adjustable (Gfc03)	Stops boiler operation/DHW integration resistor
ALF01	Position: DI1 fan thermal relay	Manual	Immediate		Stop the appliance
ALT01	Compressor 1 working hours threshold reached	Manual	Immediate	Adjustable (Gfa01)	Reporting only
ALT02	Compressor 2 working hours threshold reached	Manual	Immediate	Adjustable (Gfa01)	Reporting only
ALT03	Geothermal pump working hours threshold reached	Manual	Immediate	Adjustable (Gfa01)	Reporting only
ALT04	Primary circuit pump working hours threshold reached	Manual	Immediate	Adjustable (Gfa01)	Reporting only
ALT05	DHW pump working hours threshold reached	Manual	Immediate	Adjustable (Gfa01)	Reporting only
ALT07	Solar pump working hours threshold reached	Manual	Immediate	Adjustable (Gfa01)	Reporting only
ALT08	Outdoor finned coil fan working hours threshold reached	Manual	Immediate	Adjustable (Gfa01)	Reporting only
ALU01	Geothermal exchanger antifreeze	Manual (page Gfc28)	Immediate	Yes	Stop the appliance
ALU02	Primary exchanger antifreeze	Manual (page Gfc32)	Immediate	Yes	Stop the appliance
ALU03	System exchanger overheating	Manual	Immediate	Yes	Stop the appliance
ALW01	DHW high temperature threshold reached	Automatic	60 s	Enableable (Gfc01)	Reporting only
ALW02	Maximum DHW temperature threshold reached at the solar manifold	Automatic	60 s	Yes	Reporting only
ALW03	Exceeded maximum time for end of defrosting	Automatic	Immediate	Yes	Reporting only
ALD01	EEPROM Alarm	Manual	Immediate	Yes	Stop the appliance
ALD02	Probe EVD EVO faulty or disconnected	Automatic	Immediate	Yes	Stop the appliance
ALD03	EEV motor error	Manual	Immediate	Yes	Stop the appliance
ALD04	Low overheating (LowSH)	Manual	Immediate	Yes	Stop the appliance
ALD05	Low intake temperature	Manual	Immediate	Yes	Stop the appliance
ALD06	Low evaporation temperature (LOP)	Manual	Immediate	Yes	Stop the appliance
ALD07	High evaporation temperature (MOP)	Manual	Immediate	Yes	Stop the appliance
ALD08	High condensing temperature (HiTcond)	Manual	Immediate	Yes	Stop the appliance
ALD09	Offline driver	Automatic	Immediate	Yes	Stop the appliance

Alarm code	Message displayed	Reset	Delay	Relay	Action
ALL01	Power+1 device n.1 offline	Automatic	30 s	Yes	Stop the appliance
ALL02	Power+ n.1 alarms 0. No error 1. Overcurrent 2. Motor overcurrent 3. Overvoltage 4. Undervoltage 5. Overtemperature 6. Undertemperature 7. Overcurrent HW 8. Motor overtemperature 9. Reserved 10. Cpu error 11. Default parameters 12. DC BUS ripple 13. Serial communication timeout 14. Thermistor error 15. Autotuning error 16. Drive disabled 17. Lack of motor phase 18. Faulty fan 19. Engine stalled	Manual	Immediate	Yes	Stop the appliance

The letter preceding the numeric digit of the alarm code has the meaning described in Table 8.2 *p. 30*.

Table 8.2 *Decoding alarm families*

Letter	Scope	Description
A	AIN	Failure of the physical probes of the electronic board
B	BOH	Alarms blocking the circuit, high/low pressure
C	Compressor	Thermal relays, envelope
D	Driver	Electronic valve
E	Expansion	Electronic board alarms
F	Air fan	Fans
G	Generic	General alarms, clock fault, HW, memory
H	Humidifier	Humidifier
I	Fancoil	Alarms from a hydronic network
M	MP-BUS	Belimo
O	Offline	Supervisor offline, pLAN offline
P	Pumps	Pump flow switches, pump thermal relay
Q	Quality	HACCP, consumption
R	Remote	Alarms from digital inputs
S	Serial probe	Serial probes
T	Timing	Maintenance warning
U	Unit	Alarms blocking the appliance
V	VFD	Inverter alarms
W	Warning	Generic
X	-	Defrosting
Y	-	Climate

8.2 ALARM RESOLUTION

Before performing any operation on the appliance, switch it off by means of the control device and wait for the end of the shutdown cycle, then disconnect the power supply using the electrical disconnector.

Table 8.3 *Alarm resolution*

Alarm code	Causes	Proposed solution
ALB01 ALB02	High condensing pressure. Most of the times this alarm is caused by the setpoint being too high. Another very frequent cause for this error is the incorrect positioning of the adjustment probe B2.	Check the setpoint and if necessary reduce it. Position probe B2 correctly.
ALB03	The low transducer pressure may be related to the internal dynamics of the appliance, or to a transducer malfunction, or to a refrigerant leak.	If the alarm is frequent (2/3 consecutive times within 4/6 hours) inspect the refrigerant circuit with a leak detector and contact the TAC.
ALC03	Envelope alarm: the compressor has left its working range. This can have many causes.	First of all, it is advisable to evaluate the correct sizing of the appliance and of the refrigerant gas circuit. Refer to Paragraph 1.5.1 *p. 12* and Paragraph 3.2 *p. 15*.
ALC04	The compressor fails to create a minimum pressure delta in a certain time interval. The cause may be the inertia of the system.	If it occurs occasionally, it is simply a warning of a non-serious nature that allows the appliance to continue operating.

Alarm code	Causes	Proposed solution
ALW03	Air currents that cool the finned coil during the defrosting procedure.	Shield the appliance from the direct action of the wind.
ALD04	Alarm that depends on the internal dynamics of the appliance	Contact the TAC.
ALD06	Alarm that depends on the internal dynamics of the appliance	Inspect the appliance with a leak detector and contact the TAC.
ALD07	Alarm that depends on the internal dynamics of the appliance	Contact the TAC.
ALL01	Lack of communication between the inverter and the electronic board caused by slight voltage and current surges or by electromagnetic fields that disturb the network.	Check the meter that powers the appliance and avoid overloading it. Check the power line. Avoid electromagnetic fields in the vicinity of the appliance.
ALL02	Lack of communication between the inverter and the electronic board caused by large voltage and current surges or by electromagnetic fields that disturb the network.	Check the meter that powers the appliance and avoid overloading it. Check the power line. Avoid electromagnetic fields in the vicinity of the appliance. Once these checks have been carried out, contact the TAC.

8.3 ALERTS

Table 8.4 *Alerts*

Alert	Causes
Limited heat transfer	Occurs when the difference between the value of B7 and B2 is excessive.
Power limitation by temperature	It is activated if the heat pump is producing energy that is not transmitted to the system. The compressor is brought to the minimum speed to avoid generating an error.

9 APPENDICES

9.1 PRODUCT FICHE

Figure 9.1 *ErP data sheet*

Table 14
COMMISSION REGULATION (EU) 2016/2281
Information requirements for heat pumps

Model(s):				e-NextPro 40			
Outdoor side heat exchanger of heat pump:				air			
Indoor side heat exchanger of heat pump				air			
Indication if the heater is equipped with a supplementary heater:				NO			
Tipo di azionamento del compressore:				electric motor			
Parameters shall be declared for medium and colder heating season							
Item	**Symbol**	**Value**	**Unit**	**Item**	**Symbol**	**Value**	**Unit**
AVERAGE CLIMATE CONDITIONS							
Rated heating capacity	$P_{rated,h}$	36,2	kW	**Seasonal space heating energy efficiency**	$\eta_{s,h}$	203,0	%
Declared heating capacity for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures T_j			
Tj =-7 °C	*Pdh*	32,0	kW	Tj =-7 °C	COP_d	3,2	-
Tj = +2 °C	*Pdh*	19,5	kW	Tj = +2 °C	COP_d	5,2	-
Tj = +7 °C	*Pdh*	15,9	kW	Tj = +7 °C	COP_d	7,0	-
Tj = +12 °C	*Pdh*	17,8	kW	Tj = +12 °C	COP_d	8,1	-
T_{biv} = bivalent temperature	*Pdh*	32,0	kW	T_{biv} = bivalent temperature	COP_d	3,2	-
T_{OL} = operation limit	*Pdh*	32,0	kW	T_{OL} = operation limit	COP_d	3,0	-
Bivalent temperature	T_{biv}	-7	°C				
Degradation co-efficient heat pumps	C_{dh}	0,25	-				
COLDER CLIMATE CONDITIONS							
Rated heating capacity	$P_{rated,h}$	39,23	kW	**Seasonal space heating energy efficiency**	$\eta_{s,h}$	171,8	%
Declared heating capacity for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj =-7 °C	*Pdh*	23,7	kW	Tj =-7 °C	COP_d	3,6	-
Tj = +2 °C	*Pdh*	14,5	kW	Tj = +2 °C	COP_d	5,5	-
Tj = +7 °C	*Pdh*	15,9	kW	Tj = +7 °C	COP_d	7,0	-
Tj = +12 °C	*Pdh*	17,8	kW	Tj = +12 °C	COP_d	8,1	-
T_{biv} = bivalent temperature	*Pdh*	32,0	kW	Tbiv = bivalent temperature	COP_d	2,7	-
T_{OL} = operation limit	*Pdh*	26,0	kW	TOL = operation limit	COP_d	2,3	-
Bivalent temperature	T_{biv}	-15	°C				
Degradation co-efficient heat pumps	C_{dh}	0,25	-				
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,024	kW	Back-up heating capacity	*elbu*	-	kW
Thermostat-off mode	P_{TO}	0,031	kW	Type of energy input			
Crankcase heatermode	P_{CK}	0,035	kW	Standby mode	P_{SB}	-	kW
Other items							
Capacity control	variable			For air-to-air heat pumps: air flow rate, outdoor measured	—	17200	m³/h
Sound power level, indoor/outdoor measured	L_{WA}	59,6 / 60,2	dB				
GWP of the refrigerant		675	kg CO_{2eq} (100 years)				
Contact details	Robur SPA, Via Parigi 4/6, I-24040 Zingonia (BG)						

EU DECLARATION OF CONFORMITY (DOC)

We

Company name	**Robur S.p.A.**
Address	via Parigi 4/6
Postcode and City	24040 Verdellino/Zingonia (BG) Italy
Telephone number and fax	+39 035 888111 - F +39 035 884165
E-Mail	export@robur.it

declare that the DoC is issued under our sole responsibility and belongs to the following product:

Appliance / Product	**Split air/air heat pump system**
Trade Mark / Commercial Brand	Robur
Type	**e-NextPro**
Models	e-NextPro 40

The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

Pressure Equipment Directive (PED)	**2014/68/EC**
Others applicable Union legislation:	
Low Voltage Directive (LVD)	2014/35/EU
Electromagnetic Compatibility Directive (EMC)	2014/30/EU
Machinery Directive (MD)	2006/42/EC
Eco-design Directive	2009/125/EC
RoHS Directive	2011/65/EU
Regulation for energy labelling	2017/1369/EU
Eco-design regulation of air heating appliances	2281/2016/EU
Notified Body	Identification number as Notified Body
ICIM S.p.A.	0425
EU type examination certificate	**0425 PED 006849-00**

Signed for and on behalf of:

Robur S.p.A. via Parigi 4/6 - Verdellino/Zingonia (BG)	19/03/2025	Jvan Benzoni - R&D Director
place of issue	date of issue	name, function, signature

Robur mission

Robur is dedicated to dynamic progression
in research, development and promotion
of safe, environmentally-friendly, energy-efficiency products,
through the commitment and caring
of its employees and partners.

19/03/2025
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Code: D-LBR902EN
Revision: A

ROBUR®
caring for the environment

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advanced technologies
for air conditioning
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afaq QSE Quality Health and Safety Environment AFNOR CERTIFICATION