C-BOX

460 LT

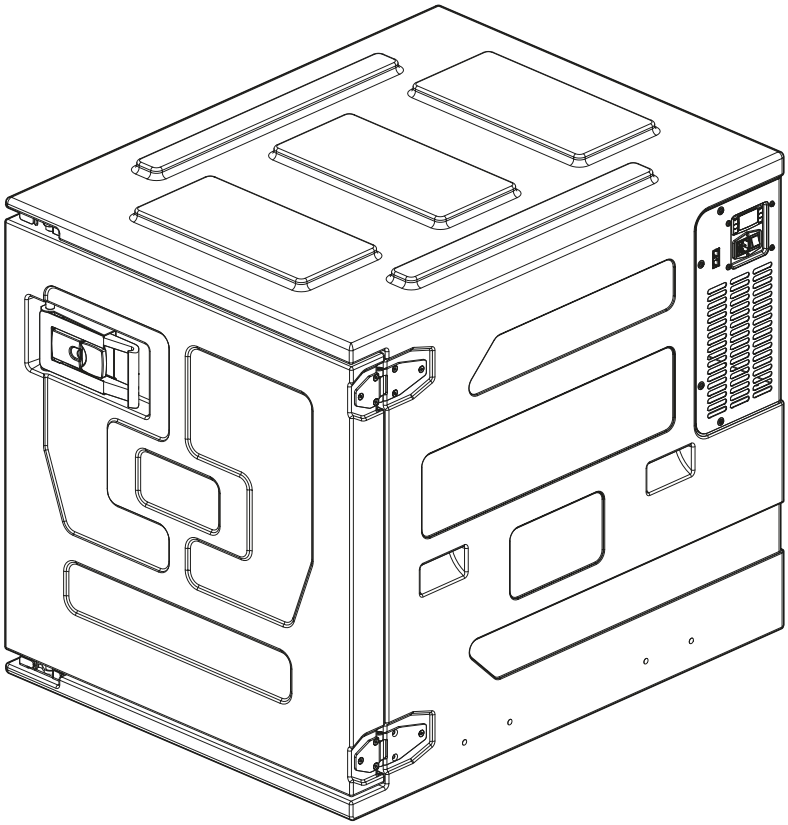
ISTRUZIONI DI MONTAGGIO, USO E MANUTENZIONE

ASSEMBLY INSTRUCTIONS, USE AND MAINTENANCE

INSTRUCTIONS POUR LE MONTAGE, L'EMPLOI ET L'ENTRETIEN

MONTAGEANLEITUNGEN, NUTZUNG UND WARTUNG

INSTRUCCIONES DE MONTAJE, USO Y MANTENIMIENTO



C-BOX REFRIGERATED CONTAINER

MODEL 460 LT R134a 12V DC / 230 VAC - 50 Hz

P/N 10101196

MODEL 460 WITH LITHIUM BATTERY LT R134a 12V DC / 230 VAC - 50 Hz

P/N 10101198

Doc. No. 80817895- Version 0 - Release date: 09 - 11 - 2023

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ASSEMBLY INSTRUCTIONS, USE AND MAINTENANCE.

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INTRODUCTION

This manual provides information for the installation and use of the C-BOX 460 LT refrigerated containers.

The manual is provided by Autoclima as an integral part of the system and is structured intuitively so that users can quickly access information on the use and care of the product.

It is recommended to keep it on hand for maintenance personnel and operators.

Read the instructions carefully before using the product.

CONTAINER TYPE

The C-BOX series of wheeled refrigerated containers are specifically designed to ensure the transportation of products that require the maintenance of the cold chain, in full compliance with current regulations. The containers are available in 2 versions, with or without an integrated lithium battery, useful for maintaining the ideal temperature even in the absence of external power.

• C-BOX 460 LT with R134a refrigerant - 12V DC / 230 VAC	P/N: 10101196
• C-BOX 460 LT with R134a refrigerant - 12V DC / 230 VAC with lithium battery	P/N: 10101198

INTENDED USE

The C-BOX containers are designed for the transport of goods at controlled temperatures in the range 0°C / +12°C (R134a).

They are intended for use in vehicles and environments protected from the weather.

It is essential to ensure that the goods introduced into the container are already at the desired temperature, as the container is designed to maintain temperature and not for cooling.

OPERATING ENVIRONMENT

The containers are designed to operate under the following conditions:

Maximum ambient temperature	45°C
Ambient temperature range	+10 / +35°C
Maximum operating inclination	30°
Minimum space required for aeration	20 cm

It is essential to ensure that the ambient temperature in which the C-Box operates does not exceed 45°C.

The containers are designed to operate in an environment with temperatures between +10°C and +35°C.
Outside this range, performance may differ from that declared.

It is suggested to equip vehicles with ventilation turrets, to prevent the transport compartment from reaching high temperatures. To ensure optimal operation of the containers, adequate ventilation is crucial, leaving at least 20 cm of free space around the ventilation grilles.

MANUFACTURER

C-BOX is produced and supplied by:

Autoclima S.p.A. a socio unico

Via Cavalieri di Vittorio Veneto, 15

10020 Cambiano (TO) Italy

SUPPORT

For information and support with our service centers, please refer to **www.autoclima.com**

For questions related to the container, send an email to: **customercare@autoclima.com**

SAFETY AND PRECAUTIONS

Manufactured according to the latest technological standards, the product strictly adheres to regulations for safe and flawless operation. It's crucial that the operator of the user company provides adequate training to personnel, ensuring that the container is used exclusively for its intended purposes and in compliance with the instructions.

The following symbols are used in this manual:

⚠ Indicates a potential hazard that can lead to death or serious injury if necessary preventive measures are not taken.

❗ Indicates a possible risk that can lead to injury or damage to materials/equipment if necessary preventive measures are not taken.

ℹ Practical information or tips on how to perform a procedure.

❗ The container is specifically designed to preserve temperatures during transport. It must not be used for cooling hot products. It's fundamental that the goods introduced into the container are already at the required temperature for transport.

⚠ The product is designed exclusively for use by properly trained personnel; ensure it is out of reach of minors.

❗ For maintenance interventions, contact only service centers recognized by the manufacturer. Use only original spare parts.

⚠ Components such as the compressor or battery may reach high temperatures after prolonged use. Take the necessary precautions during maintenance.

⚠ When opening and closing the door, it is recommended to use protective gloves to prevent injuries.

⚠ The container does not allow opening from the inside. Ensure that no person or animal remains locked inside.

❗ Ensure that the ventilation grilles are always uncovered. Maintain a minimum free distance of 20 cm around them.

❗ Avoid operating the container at ambient temperatures below or above the recommended range.

❗ Periodically check the condition of the container.

❗ Use the container only on level surfaces that do not exceed a 30° inclination for the correct functioning of the compressor.

❗ Do not use the container if it has suffered damage, falls, or impacts. In the event of overturning or excessive inclination, turn off the cooling unit, reposition correctly, and wait at least an hour before restarting.

❗ Protect the container from contact with sharp objects, direct heat sources, or pointed surfaces.

❗ Avoid direct exposure to adverse conditions such as rain, snow, or polluted environments.

❗ Do not clean with steam or high-pressure devices.

❗ Protect the container from prolonged exposure to direct sunlight.

Do not store flammable substances inside.

Avoid proximity to water sources such as sinks or fountains.

Do not place near heat sources such as stoves or radiators.

Keep the battery away from water and other liquids to prevent short circuits.

Avoid smoking or creating sparks near the battery and charger.

Do not expose the battery to excessive heat, fire, or radiation. Do not expose the battery to temperatures above 50°C.

Do not open or damage the battery's outer shell.

Handle with care during battery replacement and when opening/closing the drawer to avoid hand injuries.

The ATP Certification, available upon request, is valid for 6 years but can be renewed for an additional 6 years at authorized testing centers, or for 3 years through ATP Experts.

Any modification made to an ATP certified container after purchase automatically invalidates its certification. The manufacturer is not responsible if the current safety regulations are not adhered to by the user entity.

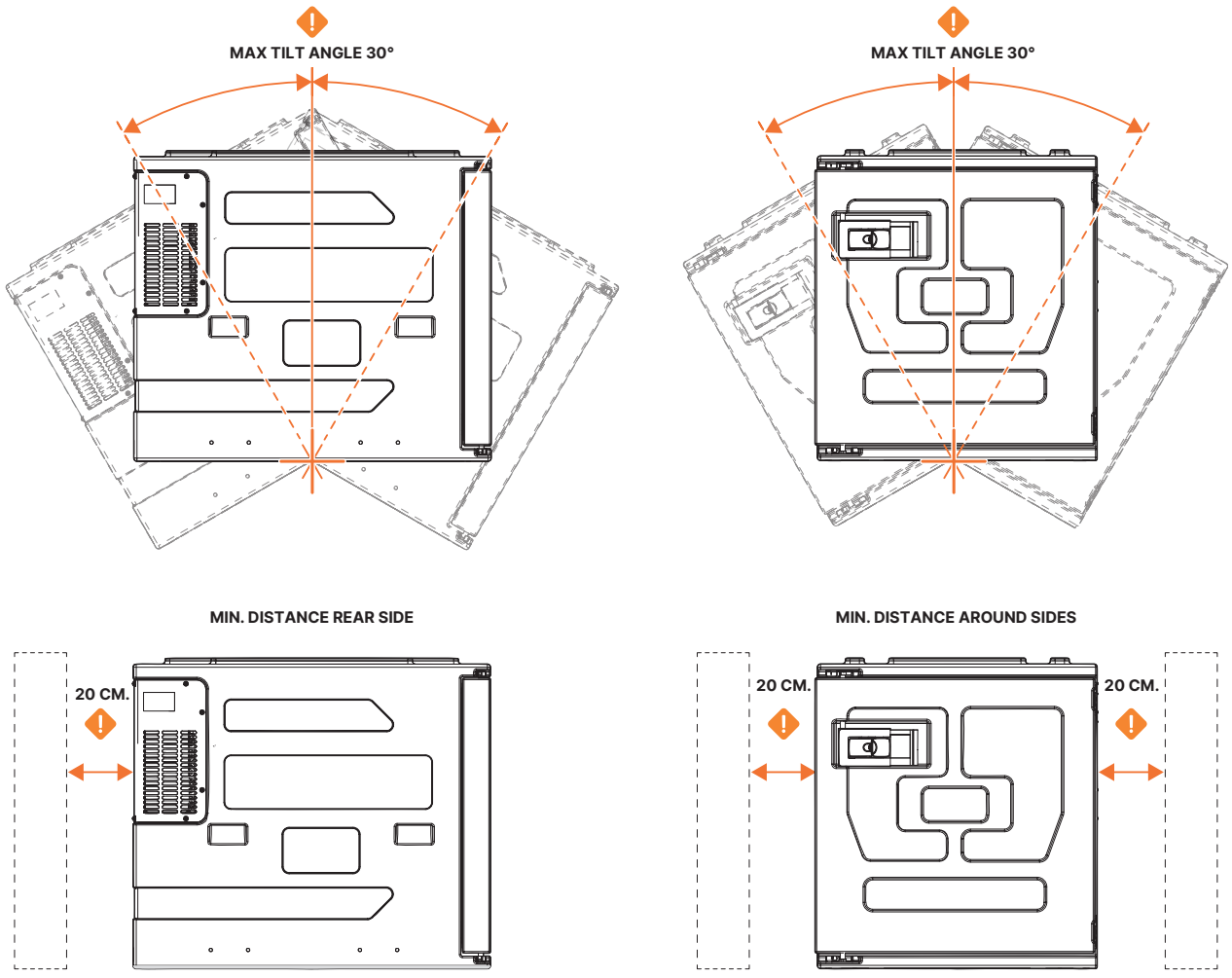


Fig. 1 - Operating Environment

SYMBOLS ON THE CONTAINER

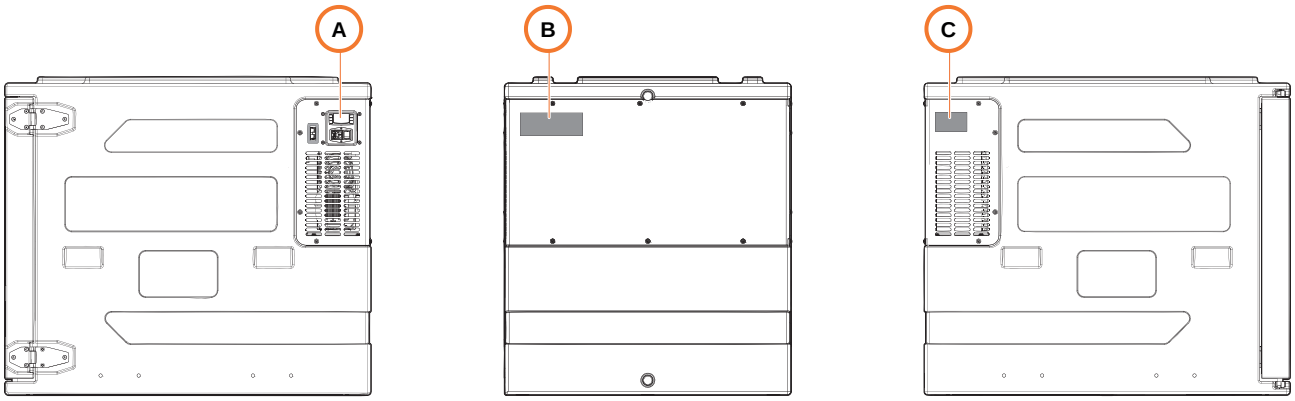
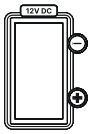
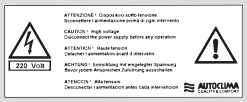
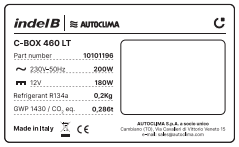


Fig. 2 - Symbols on the container

Pos	Symbol	Description
A		**Indication sticker.** Indicates the 12V DC connection point.
B		**Warning sticker.** Indicates electrical hazard.
C		**Identification sticker.** Indicates key product information.

DIMENSIONS

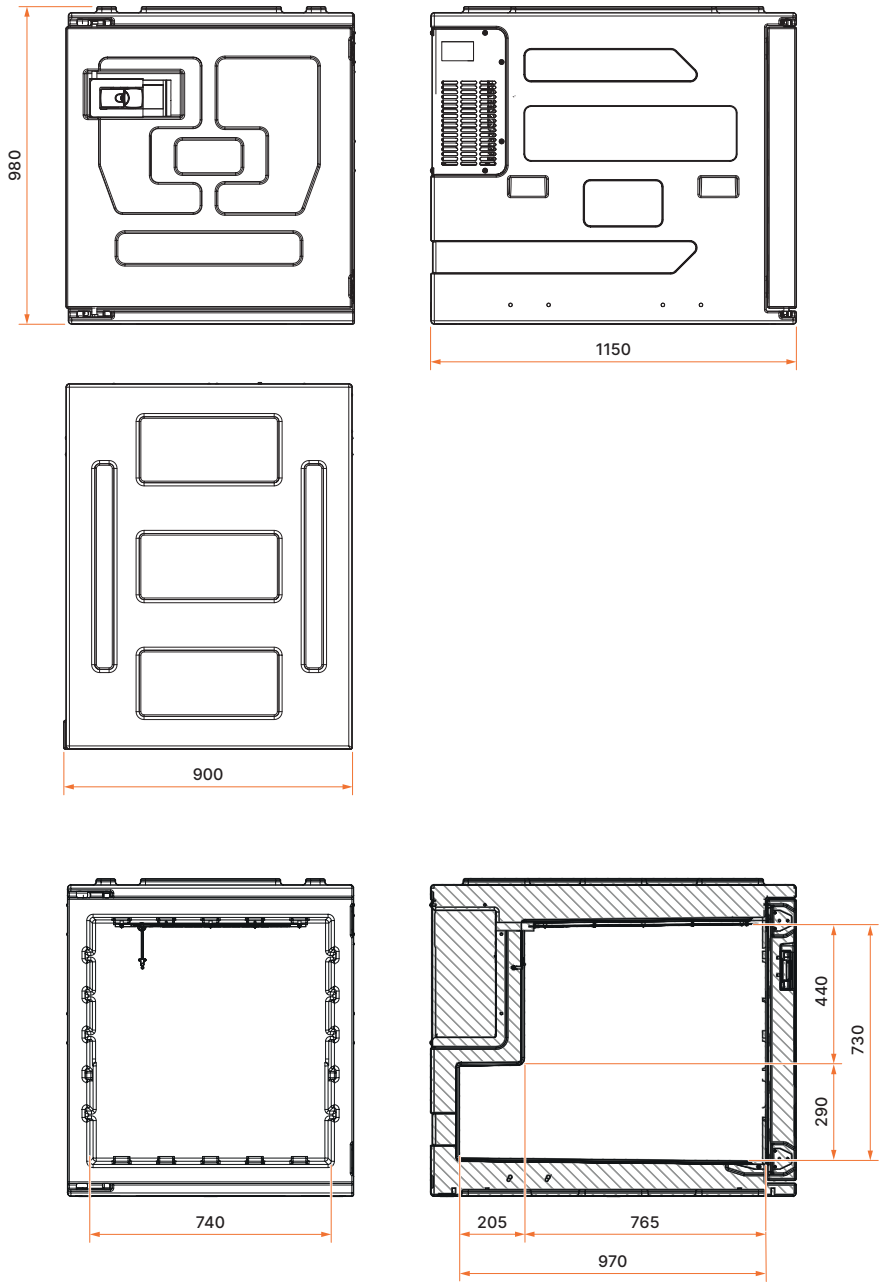


Fig. 3 - Dimensions

OVERVIEW OF THE CONTAINER

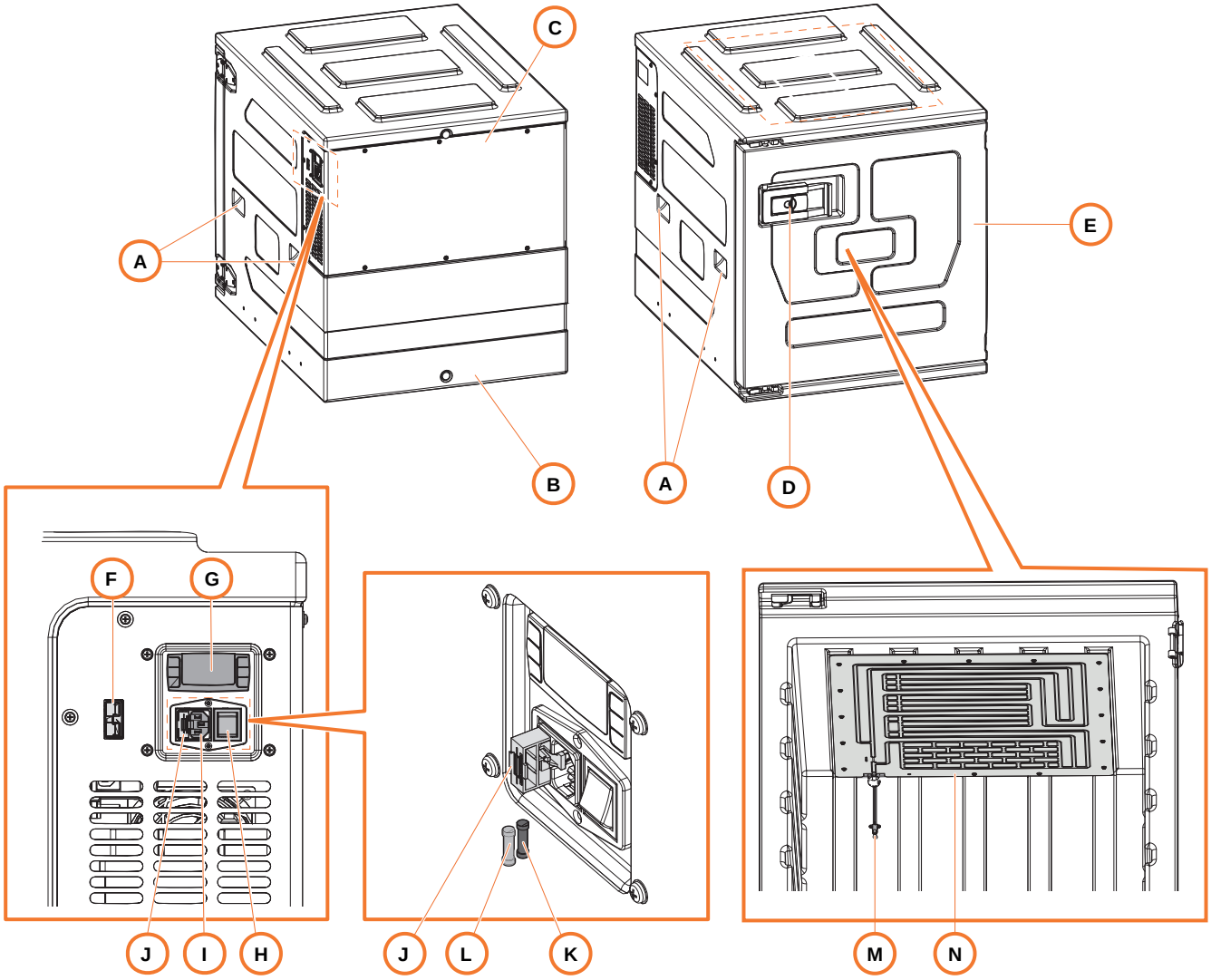


Fig. 4 - Overview of the container

Pos	Description
A	Handles
B	External structure
C	Protective casing
D	Opening/closing handle
E	Door
F	12V DC connection point
G	Digital control unit
H	230 VAC switch
I	230 VAC connection point
J	Fuse box
K	Working fuse
L	Spare fuse
M	Temperature probe
N	Evaporator

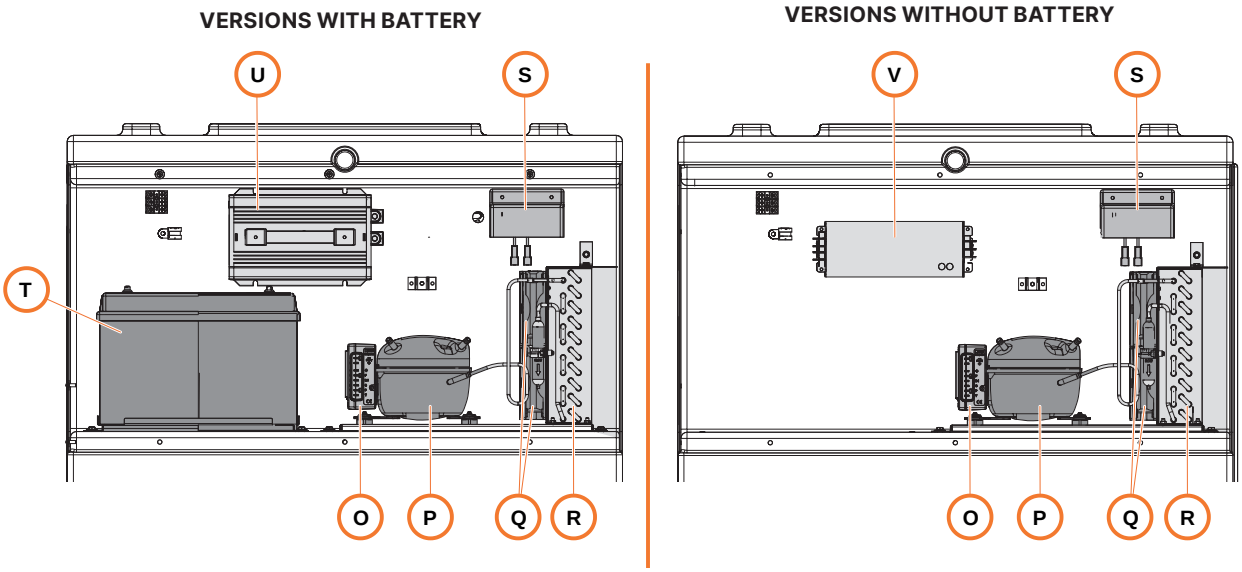


Fig. 5 - Overview of the container

Pos	Description
O	Compressor management unit
p	Compressor
Q	Fan
R	Condenser
S	Diodes
T	Lithium battery (where present)
U	Battery charger (where present)
V	Power supply

FLOOR MOUNTING BRACKETS ASSEMBLY

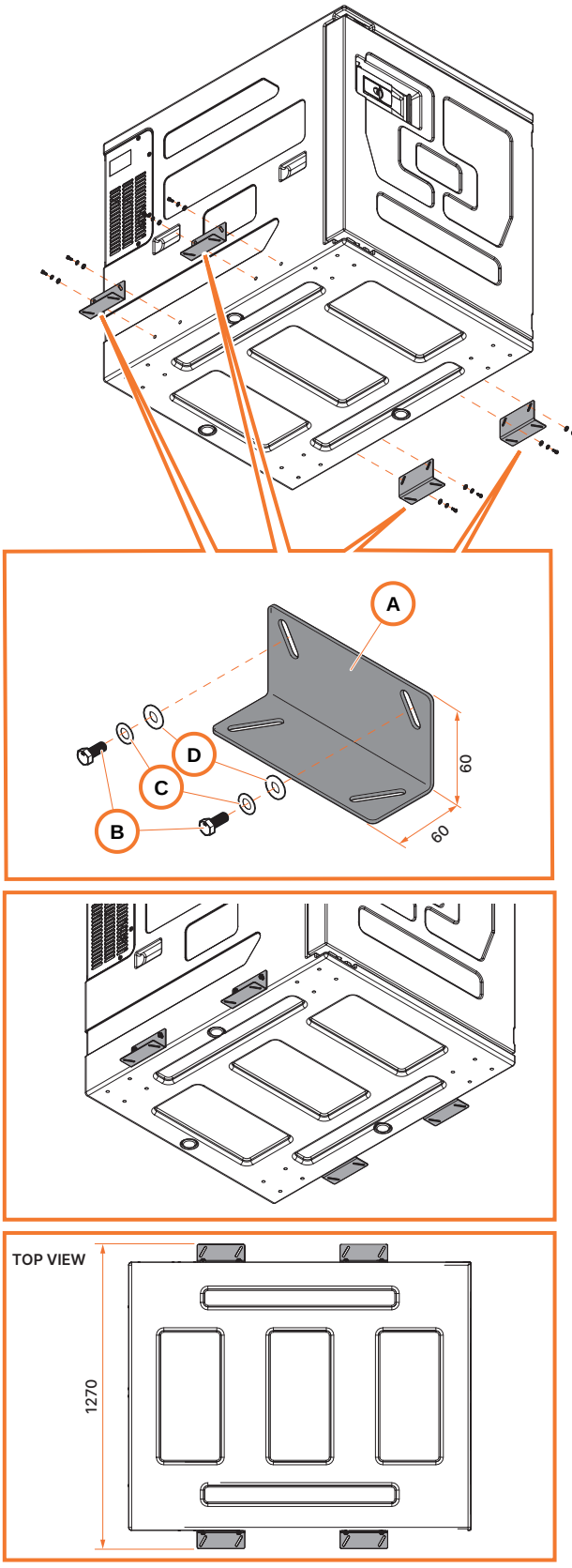


Fig. 6 - Floor mounting brackets assembly

The necessary screws for attaching the brackets to the container are provided. However, please note that anchoring the container to the vehicle floor is the responsibility of the installer. Ensure to follow all local regulations and guidelines during installation.

Pos	Description
A	Mounting bracket
B	M8×16 screw
C	Wave washer Ø8
D	Flat washer Ø8

OPTIONAL LIFTING BRACKET ASSEMBLY

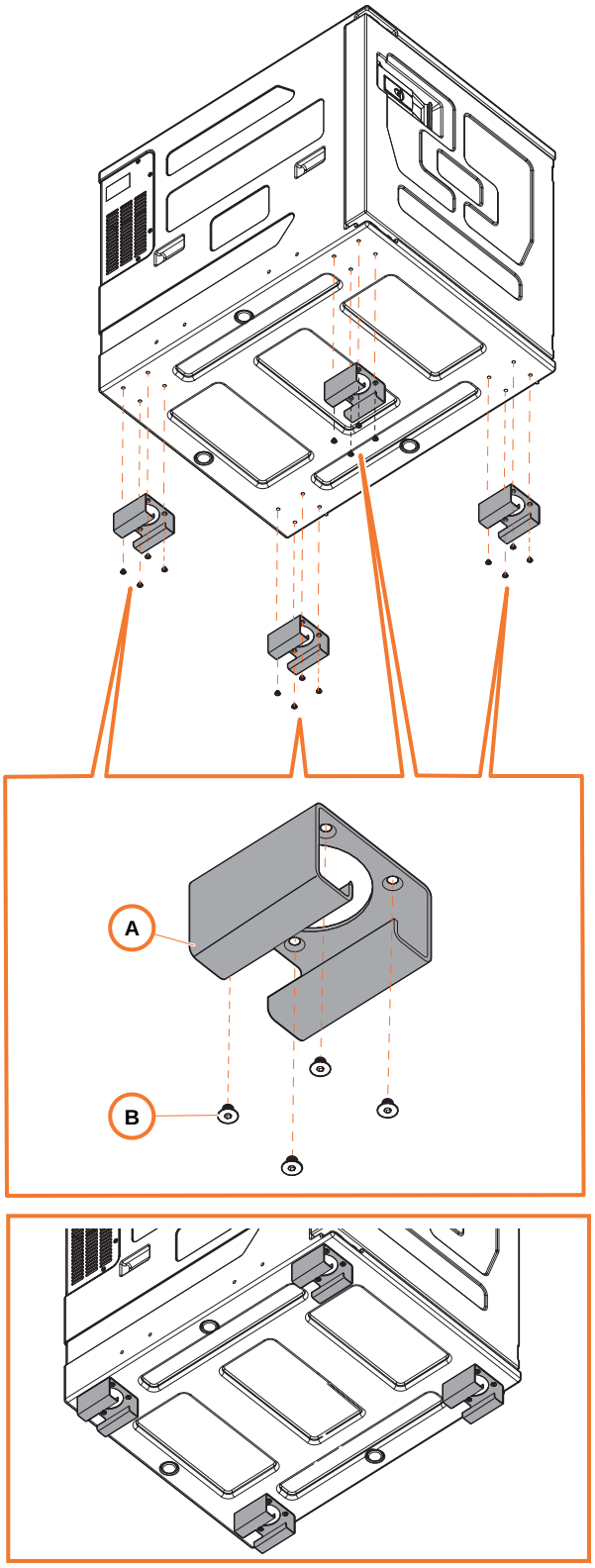


Fig. 7 - Optional lifting bracket assembly

For lifting or moving the container for transport, it is essential to use the container only with the mounted brackets to ensure safety and prevent damage.

The brackets are provided as an optional accessory and are not included as a standard part of the container. Ensure they are correctly mounted before proceeding with any lifting or transportation of the container.

Pos	Description
A	Lifting Bracket
B	M8×10 Screw

TECHNICAL FEATURES

Features	Value
Operating temperature	0°C / +12°C
Refrigerant	R134a
Refrigerant quantity	0,2 kg
Supply voltage	12V DC / 230 VAC -50Hz
Electrical absorption	180W @12V DC 200W @230 VAC
Weight - without optional	67 kg
Weight - with optional	90 kg
Weight - with optional and lithium battery	105 kg
Volume	0,46 m^3 (460 l)
Global Warning Potential (GWP) 1430 / CO_2 EQ.	0,286 t

SUPPLIED COMPONENTS

Component	Quantity
C-BOX 460 LT container	1
Floor mounting brackets	4
Screw M8×16	8
Wave washer Ø8	8
Flat washer Ø8	8
12V DC Power wiring	1
230 VAC Power wiring	1

OPTIONAL

Optional	P/N
Support bracket kit	20270403
Grille kit	20270404

INSTALLATION AND USAGE NOTES OF THE CONTAINER

ELECTRICAL OPERATION

The container is designed to operate in 3 main modes:

- 12V DC
- 230 VAC
- Battery (if present)

12 VDC CONNECTION AND OPERATION MODE

Electrical connections must only be carried out by qualified technical personnel.

It is recommended to power the container with a dedicated service battery or the vehicle's alternator.

If the vehicle's alternator does not meet the necessary requirements, it should be replaced with one of adequate power.

If the vehicle is equipped with a battery disconnect switch, connect the container downstream of the switch. This way, it is possible to interrupt the power supply to the container via the battery disconnect switch.

In the case of direct connection to the vehicle's battery, to avoid possible battery discharge due to continuous absorption, it is necessary to provide a relay for a keyed connection.

Overvoltage can damage the device's electronics.

To avoid voltage and power losses, the power cable should be as short as possible and not be interrupted. For this reason, avoid additional switches, sockets, or multiple plugs.

The container is supplied with wiring for connection to the service battery or alternator, equipped with a protective fuse on the positive cable. If it is not possible to use the supplied wiring, the fuse must be transferred to the positive cable of the new wiring. Connect the supplied wiring stably and permanently to the chosen power source and bring the other end, equipped with a connector, to the transport compartment of the vehicle where the container will normally be placed.

This way, the connection to the container will always be ready.

- Load the container onto the vehicle.
- Connect the connector of the previously installed wiring to the dedicated 12V socket on the container.
- The red switch enables operation at 230V when connected to the network. In this 12V operating mode, the position of this switch is irrelevant (it must still be off).
- Start the operation of the container through the ON/OFF button of the digital control unit.
- For management, read the indications given in the section "digital control unit".

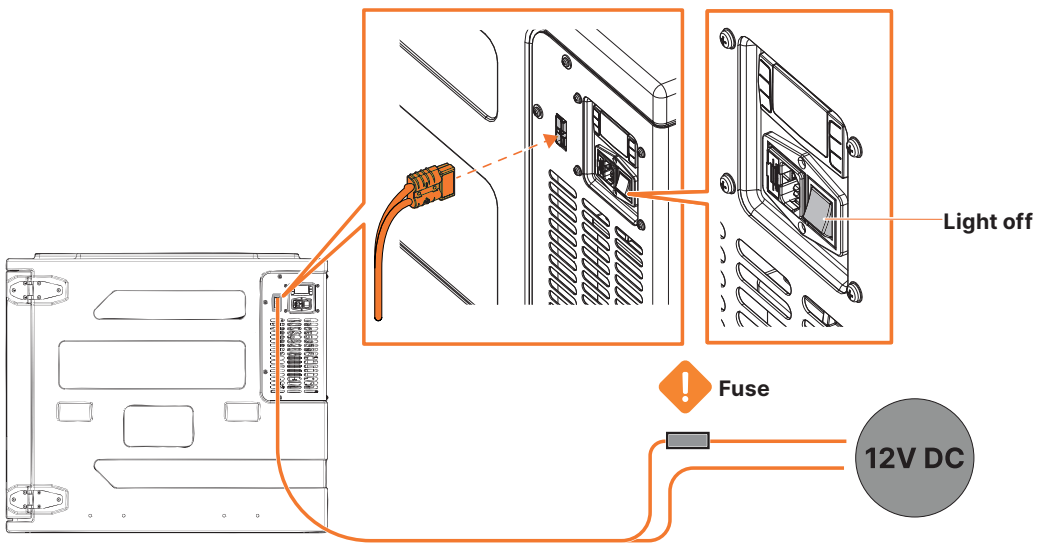


Fig. 8 - 12 VDC operation mode

230 VAC CONNECTION AND OPERATION MODE

⚠ Avoid touching plugs and switches with wet hands or while standing on a wet surface.

When the container is stationary (for example, when the vehicle is stopped in the warehouse or the container is on the ground), it is possible to provide a constant and lasting energy supply through the 230 VAC network power.

- Connect the provided 230V wiring connector to the dedicated 230V socket on the container and the other end of the wiring to a 230 VAC network socket.
- Turn the red switch to the ON position (red light on) to enable the connection. Turn it to OFF (red light off) to disconnect.
- Start the container's operation through the ON/OFF button of the digital control unit.
- For management, read the instructions given in the "digital control unit" section

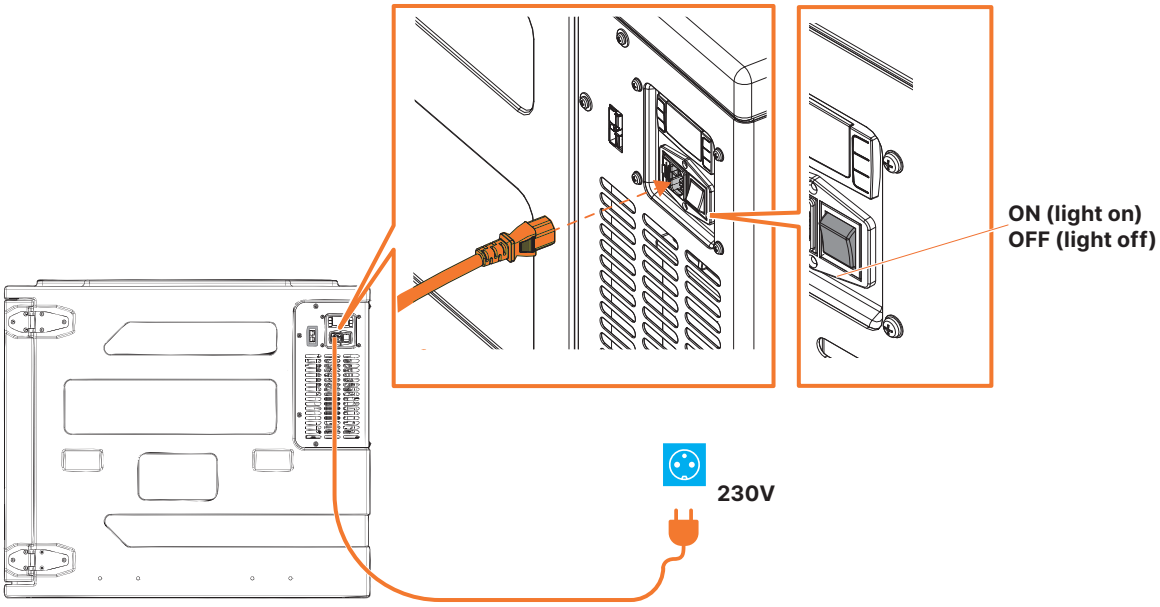


Fig. 9 - 230 VAC Connection and Operation Mode

BATTERY OPERATION MODE (WHERE PRESENT)

The integrated battery serves as an energy reserve, ensuring that the container continues to operate even in the absence of an external power supply.

ℹ Make sure to have a charged battery before proceeding with the transportation of the container in the absence of external power.

Whenever the 12V power from the vehicle or 230V from the network is absent, the container can be used by exploiting the energy stored in the integrated 12V battery.

- The red switch enables operation at 230V when connected to the network. In this 12V operating mode, the position of this switch is irrelevant (it must still be off).
- Start the container's operation through the ON/OFF button of the digital control unit.
- For management, read the instructions given in the "digital control unit" section.

The battery can only be charged through the 230 VAC network connection. Connect the provided 230 V wiring to the container and the network. The charging process starts automatically (regardless of the ON/OFF position of the red switch).

If the red switch is turned to ON (light on), the connection is enabled and the box can be started and operated simultaneously with the charging process.

LITHIUM BATTERY TECHNICAL FEATURES

The battery is equipped with an integrated management system (BMS) that monitors and charges the battery cells, protecting it from overcharging, overvoltage, and overheating.

The battery has a Bluetooth connection and a mobile app (available for both iOS and Android) to monitor the charge status.

GET IT ON Google Play

Download on the App Store

ULTIMATRON LIFEPO4 SMART BMS 100AH 12.8V [UBL-12V-100Ah]

Features	Value
Capacity	100Ah
Voltage Range (Operational)	10-14.6V
Nominal Voltage	12.8V
Charging Voltage	14.6V
Charging Current (MAX)	50A
Weight	11.7kg
Ambient Temperature (Operational)	-20 / 60°C
Ambient Temperature (Charging)	0 / 45°C
Ambient Temperature (Storage)	-5 / 35°C

During component replacement interventions that involve opening the rear compartment, make sure to disconnect the internal battery.

DIGITAL CONTROL UNIT

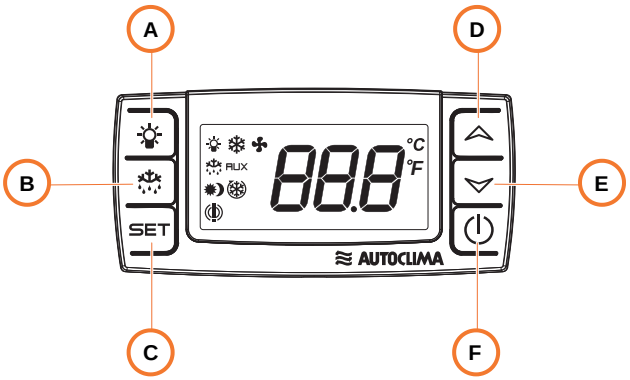


Fig. 10 - Digital control unit

Pos	Meaning
A	Disabled button.
B	Button to initiate defrosting (disabled button).
C	Button to view or change the set point. In programming, select a parameter or confirm a value.
D	Button to view data of a possible temperature alarm. In programming, scroll through parameter codes or increase a value.
E	Button to view data of a possible temperature alarm. In programming, scroll through parameter codes or decrease a value.
F	Power on/off button.

BUTTON COMBINATIONS

Pos	Meaning
∧ + ∨	Keypad lock / unlock.
SET + ∨	To enter the programming mode.
SET + ∧	To exit the programming mode.

LEDS MEANINGS

Led	Meaning
❄	**On:** compressor active. **Flashing:** delay to avoid close starts.
	On: defrosting in progress. **Flashing:** dripping in progress / heating.
	On: fans active. **Flashing:** fan start delay in progress.
	On: temperature alarm occurred.
	On: continuous cycle in progress.
	On: energy saving in progress.
°C	**On:** unit of measure. **Flashing:** programming.

VIEW SET POINT

- Press and release the SET button: the set point will be immediately displayed.
- To return to viewing the temperature, wait 5 seconds, or press the SET button again.

CHANGE SET POINT

- Press the SET button for at least 2 seconds.
- The set point will be displayed and the °C LED will start flashing.
- To change the value, use the / buttons ▽ / △.
- To save the new set point, press the SET button or wait 15 seconds to exit programming.

KEYPAD LOCK

- Hold the ▽ + △ buttons for a few seconds until the “POF” flashing appears.
- At this point, the keypad is locked: it is only possible to view the set point, maximum and minimum temperature.
- If a button is pressed for more than 3 seconds, “POF” appears.

KEYPAD UNLOCK

- Hold the ▽ + △ buttons for a few seconds until the “POn” flashing appears.

CHANGE A PARAMETER VALUE

- Access programming mode by holding the SET + ▽ buttons for a few seconds (the °C LED flashes).
- Select the desired parameter.
- Press the SET button to view the value.
- Change it with the ▽ and △ buttons.
- Press SET to save the new value and move to the next parameter.
- Exit: Press the SET + △ button when viewing a parameter or wait 15 seconds without pressing any button.
- Note: The new set value is stored even when exiting without pressing the button SET.

PROGRAMMING PARAMETERS - DEFAULT VALUES C-BOX

⚠ The digital control unit is pre-programmed. We invite you not to tamper with the default values of the unit.

Label	Default par.
SEt	+5
Hy	2
LS	-20
US	12
ot	0
P2P	N
oE	0
P3P	n
o3	0
P4P	n
o4	0
odS	0
db	n
dbC	df
AC	1
rtr	100
CCt	00:00
CCS	2
Con	10
CoF	10
CF	°C
rES	dE
Lod	P1
dLy	00:00
dtr	50
tdF	Air
dFP	nP
dtE	8
IdF	0
MdF	0
dSd	0
dFd	it
dAd	10
Fdt	0
dPo	n
dAF	0
FnC	C-Y

Label	Default par.
Fnd	1
FSt	50
Fon	0
FoF	0
FAP	P2
ALC	Ab
ALU	110
ALL	-50
AFH	1
ALd	15
dAo	1:30
AP2	P4
AL2	-40
AU2	110
AH2	5
Ad2	15
dA2	1:30
bLL	n
AC2	n
i1P	CL
i1F	PAL
did	60
nPS	5
OdC	no
rrd	Y
HES	0
Adr	1
PbC	ntc
onF	“.”
dP1	-
dP2	-
dP3	-
dP4	-
rSE	-
rEL	-
Ptb	-

REGULATION

Label	Description	Range	Default par.
SEt	**Set point**	LS - US	**5°C** **41°F**
Hy	**Differential.** Intervention differential for set point, always positive. Compressor Cut IN is Set Point + differential (Hy). Compressor Cut OUT is when the temperature reaches the set point.	(0,1°C ÷ 25,5°C) (32°F ÷ 78°F)	**2°C** **35,6°F**
LS	**Minimum set point.** Sets the minimum value for the set point.	(-55,0°C ÷ SET) (-67°F ÷ SET)	**-20°C** **-4°F**
US	**Thermostat probe (P1) maximum set point.** Set the maximum value for set point.	(SET ÷ 150,0°C) (SET ÷ 302°F)	**12°C** **53,6°F**
Ot	**Thermostat probe calibration (P1).** Allows to adjust possible offset of the thermostat probe.	(-12.0 ÷ 12.0°C) (10,4 ÷ 53,6°F)	**0°C** **32°F**
P2P	**Evaporator probe presence (P2).** n=not present: the defrost stops by time; y=present: the defrost stops by temperature.	n - Y	**N**
OE	**Evaporator probe calibration (P2).** Allows to adjust possible offset of the evaporator probe.	(-12.0 ÷ 12.0°C) (10,4 ÷ 53,6°F)	**0°C** **32°F**
P3P	**Third optional probe presence (P3).** n=not present: the terminal operates as digital input; y=present: the terminal operates as third probe.	n - Y	**n**
O3	**Third optional probe calibration (P3).** Allows to adjust possible offset of the third probe.	(-12.0 ÷ 12.0°C) (10,4 ÷ 53,6°F)	**0°C** **32°F**
P4P	**Fourth optional probe presence (P4).** n=not present; y=present.	n - Y	**n**
o4	**Fourth probe calibration (P4).** Allows to adjust possible offset of the fourth probe.	(-12.0 ÷ 12.0°C) (10,4 ÷ 53,6°F)	**0°C** **32°F**
odS	**Outputs activation delay at start up.** This function is enabled at the initial start up of the instrument and inhibits any output activation for the period of time set in the parameter.	0 ÷ 255 (min)	**0**
db	**Compressor neutral zone activation - defrost.** n=neutral zone disabled; y=neutral zone enabled.	n - Y	**n**
dbC	**Neutral zone type.** cdF=during hot action active: compressor, fan, defrost; dF=during hot action active: fan, defrost.	Cdf - dF	**df**
AC	**Anti-short cycle delay.** Minimum interval between the compressor stop and the following restart.	0 ÷ 50 min	**1**
rtr	**Percentage of the probe P1 and probe P2 regulation.** It allows to set the regulation according to the percentage of the first and second probe, as for the following formula: (rtr (P1-P2) / 100+P2).	0 ÷ 100 (100=P1; 0=P2)	**100**
CCt	**Continuous cycle duration.** Allows to set the length of the continuous cycle: compressor stays on without interruption for the CCt time. Can be used, for instance, when the room is filled with new products.	0.0 ÷ 24.0h;	**00:00**

Label	Description	Range	Default par.
CCS	**Set point for continuous cycle.** Set point used during the continuous cycle.	(-55.0 ÷ 150,0°C) (-67 ÷ 302°F)	**2°C** **35,6°F**
COn	**Compressor ON time with faulty probe.** Time during which the compressor is active in case of faulty thermostat probe. With COn=0 compressor is always OFF. Please note: "COn=0" and "COF"=0 the compressor remains switched OFF.	0 ÷ 255 (min)	**10**
COF	**Compressor OFF time with faulty probe.** Time during which the compressor is OFF in case of faulty thermostat probe. With COF=0 compressor is always active.	0 ÷ 255 (min)	**10**

DISPLAY

Label	Description	Range	Default par.
CF	**Temperature measurement unit.** °C=Celsius;°F=Fahrenheit. WARNING: When the measurement unit is changed the SET point and the values of the parameters Hy, LS, US, ccS, Ot, OE,o3, o4, dtE, FSt, ALU, ALL and AFH have to be checked and modified if necessary.	°C - °F	**°C**
rES	**Resolution (for°C) (integral; decimal).** (in=1°C; dE=0.1°C) allows decimal point display.	dE - in	**dE**
Lod	**Instrument display.** It selects which probe is displayed by the instrument: P1=Thermostat probe; P2=Evaporator probe; P3=Third probe (only for mode with this option enabled); P4=Fourth probe, SET=set point; dtr=percentage of visualization.	P1 - P2 - P3 - P4 - SET - dtr	**P1**
dLy	**Temperature display delay.** When the temperature increases, the display is updated of 1°C / 1°F after this time.	0 ÷ 20 min (10 sec)	**00:00**
dtr	**Percentage of the second and first probe for visualization.** If Lod=dtr it allows to set the visualization according to the percentage of the first and second probe, as for the following formula (dtr (P1-P2) / 100+P2).	1 ÷ 99 (100=P1; 0=P2)	**50**

DEFROST

Label	Description	Range	Default par.
tdF	**Defrost type.** EL=electrical heater; in=hot gas; Air=hot air.	EL - in - Air	**Air**
dFP	**Probe selection for defrost termination.** nP=no probe; P1=thermostat probe; P2=evaporator probe; P3=configurable probe; P4=Probe on Hot Key plug.	nP - P1 - P2 - P3 - P4	**nP**
dtE	**Defrost termination temperature.** Sets the temperature measured by the evaporator probe, which causes the end of defrost.	(-55 ÷ 50°C) (-67 ÷ 122°F)	**8°C** **46,4°F**
IdF	**Interval between defrost cycles.** Determines the time interval between the beginning of two defrost cycles.	0 ÷ 120 (h)	**0**
MdF	**(Maximum) length for defrost.** When P2P=n, (not evaporator probe: timed defrost) it sets the defrost duration. When P2P=y (defrost end based on temperature) it sets the maximum length for defrost.	0 ÷ 255 (min)	**0**
dSd	**Start defrost delay.** This is useful when different defrost start times are necessary to avoid overloading the system.	0 ÷ 255 (min)	**0**
dFd	**Displayed during defrost.** rt=real temperature; it=temperature at defrost start; SEt=set point; dEF="dEF" label.	rt - it - set - dEF	**it**
dAd	**MAX display delay after defrost.** Sets the maximum time between the end of defrost and the restarting of the real room temperature display.	0 ÷ 255 (min)	**10**
Fdt	**Drip time.** Time interval between reaching defrost termination temperature and the restoring of the control's normal operation.	0 ÷ 255 (min)	**0**
dPo	**First defrost after start-up.** y=immediately; n=after the IdF time.	n - Y	**n**
dAF	**Defrost delay after continuous cycle.** Time interval between the end of the fast freezing cycle and the following defrost related to it.	0 ÷ 24.0 h	**0**

FANS

Label	Description	Range	Default par.
FnC	**Fans operating mode.** C-n=runs with the compressor, OFF during defrost; o-n=continuous mode, OFF during defrost; C-Y=runs with the compressor, ON during defrost; o-Y=continuous mode, ON during defrost.	C-n / o-n / C-Y / o-Y	**C-Y**
Fnd	**Fans delay after defrost.** Interval between end of defrost and evaporator fans start.	0 ÷ 255 (min)	**1**
FSt	**Fans stop temperature.** Setting of temperature, detected by evaporator probe, above which fans are always OFF.	-55 ÷ 50°C -67 ÷ 122°F	**50°C** **122°F**
Fon	**Fan ON time.** With Fnc=C_n or C_y, (fan activated in parallel with compressor). it sets the evaporator fan ON cycling time when the compressor is off. With Fon=0 and FoF≠ 0 the fan are always off, with Fon=0 and FoF=0 the fan are always off.	0 ÷ 15 min	**0**
FoF	**Fan OFF time.** With Fnc=C_n or C_y, (fan activated in parallel with compressor). it sets the evaporator fan off cycling time when the compressor is off. With Fon≠ 0 and FoF=0 the fan are always on, with Fon=0 and FoF=0 the fan are always off.	0 ÷ 15 min	**0**
FAP	**Probe selection for fan management.** nP=no probe; P1=thermostat probe; P2=evaporator probe; P3=configurable probe; P4=Probe on Hot Key plug.	nP - P1 - P2 - P3 - P4	**P2**

TEMPERATURE ALARMS

Label	Description	Range	Default par.
ALC	**Temperature alarms configuration.** Ab=absolute temperature: alarm temperature is given by the ALL or ALU values. rE=temperature alarms are referred to the set point. Temperature alarm is enabled when the temperature exceeds the “SET+ALU” or “SET-ALL” values.	Ab - rE	**Ab**
ALU	**MAXIMUM temperature alarm.** When this temperature is reached the alarm is enabled, after the “ALd” delay time.	0,0 ÷ 50,0°C rel. o ALL + 150°C 0,0 ÷ 122,0°F rel. o ALL + 302°F	**110°C** **230°F**
ALL	**Minimum temperature alarm.** When this temperature is reached the alarm is enabled, after the “ALd” delay time.	0,0 ÷ 50,0°C rel. o. 55 + ALU 0,0 ÷ 122,0°F rel o. 131°F + ALU	**-50°C** **-58°F**
AFH	**Differential for temperature alarm/ fan recovery.** Intervention differential for recovery of temperature alarm. It’s also used for the restart of the fan when the FSt temperature is reached	0,1°C ÷ 25,5°C 32°F ÷ 78°F	**1°C** **33,8°F**
ALd	**Temperature alarm delay.** Time interval between the detection of an alarm condition and alarm signalling.	0 ÷ 255 (min)	**15**
dAO	**Exclusion of temperature alarm at startup.** Time interval between the detection of the temperature alarm condition after instrument power on and alarm signalling.	0 ÷ 24.0 h	**1:30**

CONDENSER TEMPERATURE ALARM

Label	Description	Range	Default par.
AP2	**Probe selection for temperature alarm of condenser.** nP=no probe; P1=thermostat probe; P2=evaporator probe; P3=configurable probe; P4=Probe on Hot Key plug.	nP - P1 - P2 - P3 - P4	**P4**
AL2	**Low temperature alarm of condenser.** When this temperature is reached the alarm is signalled, possibly after the Ad2 delay.	-55 ÷ 150°C -67 ÷ 302°F	**-40°C** **-40°F**
Au2	**High temperature alarm of condenser.** When this temperature is reached the alarm is signalled, possibly after the Ad2 delay.	-55 ÷ 150°C -67 ÷ 302°F	**110°C** **230°F**
AH2	**Differential for temperature condenser alarm recovery.**	0,1°C ÷ 25,5°C 32°F ÷ 78°F	**5°C** **41°F**
Ad2	**Condenser temperature alarm delay.** Time interval between the detection of the condenser alarm condition and alarm signalling.	0 ÷ 254 min 255=nU	**15**
dA2	**Condenser temperature alarm exclusion at start up.**	0 ÷ 24.0 h	**1:30**
bLL	**Compressor off with low temperature alarm of condenser.** n=no: compressor keeps on working; Y=yes, compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.	n(0) - Y(1)	**n**
AC2	**Compressor off with high temperature alarm of condenser.** n=no: compressor keeps on working; Y=yes, compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.	n(0) - Y(1)	**n**

DIGITAL INPUT

Label	Description	Range	Default par.
i1P	**Digital input polarity.** oP=the digital input is activated by opening the contact; CL=the digital input is activated by closing the contact.	OP - CL	**CL**
i1F	**Digital input configuration.** EAL=external alarm: "EA" message is displayed; bAL=serious alarm PAL=pressure switch alarm, dor=door switch function; dEF=activation of a defrost cycle; AUS=not enabled; Htr=kind of action inversion (cooling – heating); FAn=not set it; ES=Energy saving.	EAL - bAL - PAL dor - dEF - AUS Htr - FAn - ES	**PAL**
did	**with i1F=EAL** or **i1F=bAL** digital input alarm delay: delay between the detection of the external alarm condition and its signalling; **with i1F=dor:** door open signalling delay; **with i1F=PAL:** time for pressure switch function: time interval to calculate the number of the pressure switch activation.	(0 ÷ 255 min)	**60**
nPS	**Pressure switch number.** Number of activation of the pressure switch, during the "did" interval, before signalling the alarm event (I2F=PAL). If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.	0 ÷ 15	**5**
odc	**Compressor and fan status when open door.** no=normal; Fan=Fan OFF; CPr=Compressor OFF; F_C=Compressor and fan OFF.	no - Fan CPr - F_C	**no**
rrd	**Outputs restart after doA alarm.** no=outputs not affected by the doA alarm; yES=outputs restart with the doA alarm;	n - Y	**Y**
HES	**Temperature increase during the Energy Saving cycle.** it sets the increasing value of the set point during the Energy Saving cycle.	-30 ÷ 30°C -22 ÷ 86°F	**0°C** **32°F**

OTHER

Label	Description	Range	Default par.
Adr	**Serial address.** Identifies the instrument address when connected to a ModBUS compatible monitoring system.	0 ÷ 247	**1**
Pbc	**Type of probe.** It allows to set the kind of probe used by the instrument: PtC=PTC probe; ntc=NTC probe.	PtC - ntC	**ntC**

onF	**On / off key enabling.**
	nu=disabled;
	oFF=enabled;
	ES=not set it.
		nu - oFF - ES	**"."**

dP1	**Thermostat probe display.**	-	**-**
dP2	**Evaporator probe display.**	-	**-**
dP3	**Third probe display: optional.**	-	**-**
dP4	**Fourth probe display.**	-	**-**
rSE	**Real set point.** (readable only), it shows the set point used during the energy saving cycle or during the continuous cycle.	-	**-**
rEL	**Software release for internal use (readable only).**	-	**-**
Ptb	**Parameter table code (readable only).**	-	**-**

FIRST USE

Although the container has been sanitized before shipment, it is still advisable to clean it again.

Before operating the container, ensure that the battery is fully charged.

In case of prolonged periods of inactivity, a full recharge is essential, and it is suggested to test the container before use.

GUIDELINES FOR SAFE TRANSPORT

⚠ Ensure that only qualified and risk-informed operators proceed with handling the product.

Preliminary check: ensure that the container's door is firmly closed before proceeding with handling.

Weight management: since the loaded container can be heavy, the use of suitable trolleys or other assisted means for lifting or moving it is recommended.

Lifting mode: use only the dedicated handles to lift or transport the container, avoiding the use of closure levers to prevent accidental openings and possible falls.

Care during handling: exercise utmost caution to avoid collisions with objects or people while moving the container.

Management of multiple deliveries: In the case of multiple deliveries with the same container, limit openings to a minimum in order to reduce thermal energy loss.

PROCEDURES FOR PROLONGED STORAGE

In situations of prolonged non-use of the container, it is recommended to follow these instructions:

Emptying the Container: remove all products inside.

Turning off the refrigeration system: press the "OFF" position on the 230 VAC switch.

Disconnect the container from any electrical power source (12V or 230V) and store the power cable in a dry and safe place, away from moisture.

Cleaning the container: proceed with the cleaning of the container.

Ventilation: leave the container's door open for a few hours to prevent the formation of unpleasant odors.

Battery maintenance: perform a full battery charge and test the device's operation before reusing it.

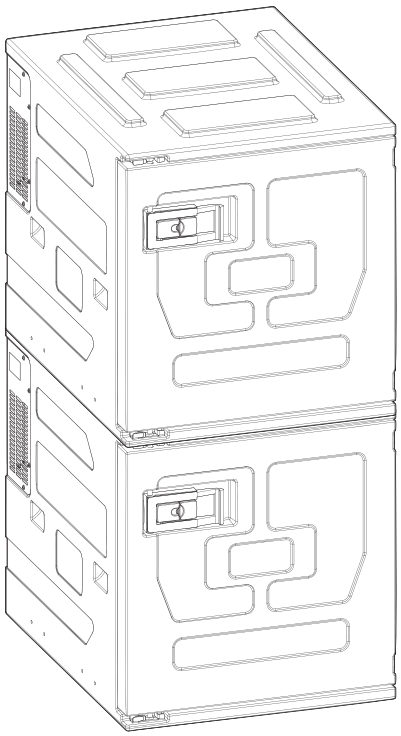


Fig. 11 - Stacking

CONTAINER MAINTENANCE

CLEANING INSTRUCTIONS

During the cleaning of the product, ensure that water does not enter the control knobs, side ventilation grilles, or power sockets of the container.

Before proceeding with the cleaning of the container, stop its operation by pressing the button of the 230 VAC switch and disconnect it from the power sources.

Disconnect the connected connectors.

Protect the wiring from moisture sources during the cleaning phase.

For cleaning and removing dirt, use warm water with a soapy solution.

For hygiene reasons, rinsing should be done using disposable cloths or paper, never reusable cloths.

Never use metallic or synthetic pads, only use soft and non-abrasive materials.

Do not use ammonia-based or acidic detergents, solvents, or abrasive powders.

Do not use high-pressure steam jet devices (pressure washers).

MAINTENANCE INTERVALS

Component	Type of Control	Interval
Connection Cables	**Periodic visual inspection.** Check that the wiring is not damaged. Replace if worn or damaged. 3 months Periodic visual inspection.	3 months
Seal	**Periodic visual inspection.** Check that the seal is in good condition and adheres properly. Replace if worn or damaged.	3 months
Operation of the Fans	**Periodic operation check.** Check the proper functioning of the fans.	3 months
Battery	**Daily charge check when in use.** It is important to verify the proper functioning of the battery. Never fully discharge the battery.	In use / monthly

FUSE REPLACEMENT

The container is equipped with a protection fuse on the 230 VAC line, located inside the fuse drawer near the socket and the switch.

Replacement process:

- Disconnect the container from the power sources (12V DC / 230 VAC).
- Open the fuse drawer.
- Remove the operating fuse.
- Replace the fuse with the spare one.
- Close the fuse drawer.
- Reconnect the power and check the correct operation of the container on the 230 VAC line.

SPARE PARTS

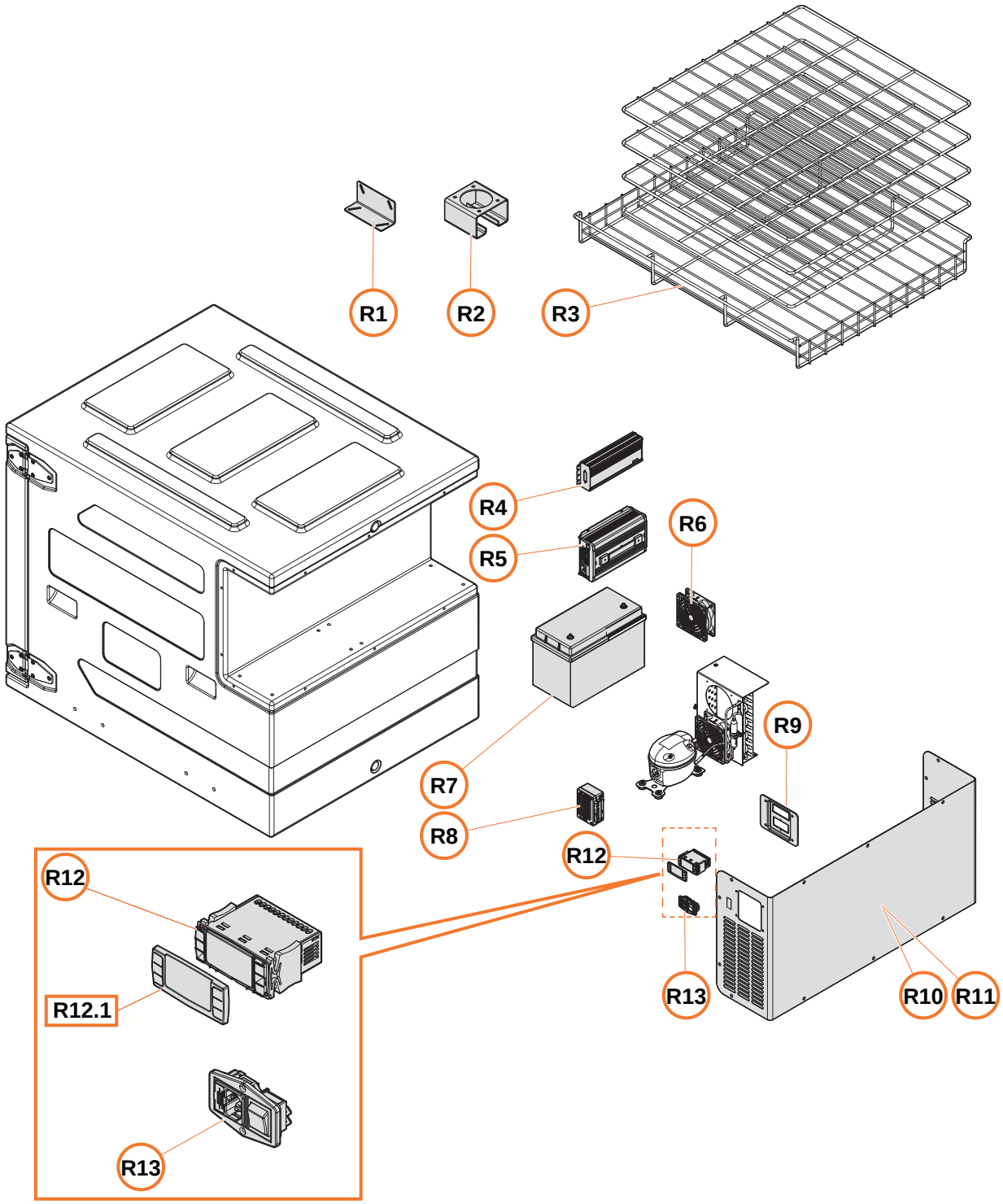


Fig. 12 - Spare parts

Pos	Description	P/N
R1	Floor mounting bracket kit (x4)	80821799
R2	Lifting bracket kit (x4)	20270403
R3	Grille kit	20270404
R4	Power supply (versions without lithium battery)	606701222
R5	Battery charger (versions with lithium battery)	606701256
R6	Fan	30315422R
R7	Lithium battery	606701255
R8	Compressor management unit	40460897
R9	Thermostat/switch support plate	202901939.1R
R10	Protection casing (versions without battery)	30330684.1R
R11	Protection casing (versions with battery)	30330684.2R
R12	Digital control unit	20235291
R12.1	Front panel (digital control unit)	202901780
R13	230V switch (with fuses)	606701228R

DISPOSAL

PRODUCT PACKAGING

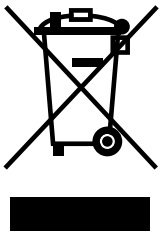
The packaging is 100% recyclable. The responsibility for the disposal of the packaging lies with the user, who must comply with local regulations.

CONTAINER DISPOSAL

The product falls under EU directives governing the use of hazardous substances in electrical and electronic equipment and their disposal. The user is responsible for disposing of the product appropriately, delivering it to a designated collection point for the recycling of electrical and electronic equipment. The external container and the door of the container are made of recyclable materials and can be disposed of in an environmentally friendly manner.

BATTERY DISPOSAL

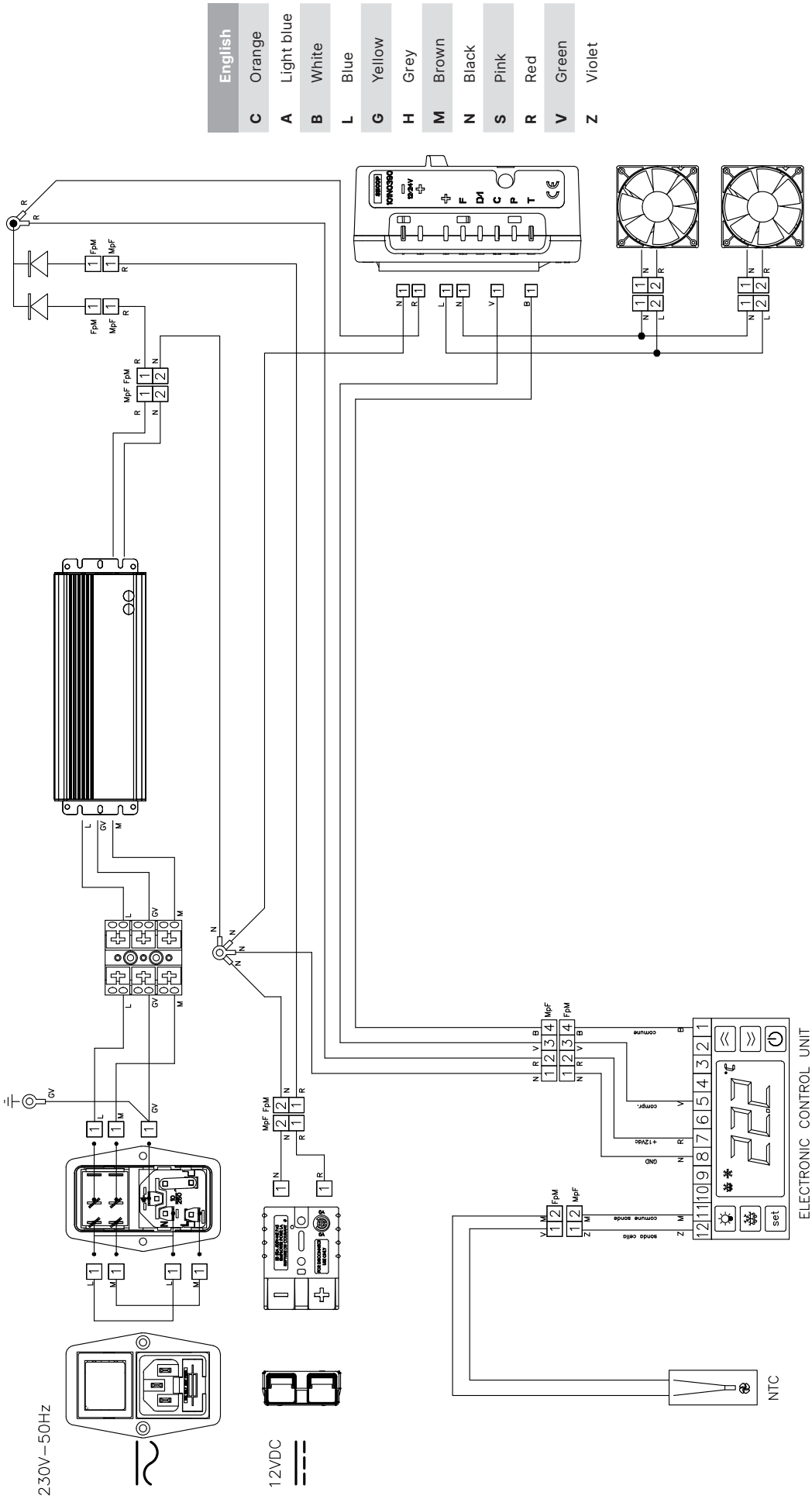
Batteries marked with the recycling symbol must be returned to recognized recycling centers. Once depleted, they can also be returned to the manufacturer. Batteries must not be disposed of in household or industrial waste.



REFRIGERANT GAS

The R134a refrigerant gas used in the refrigeration circuit of the C-BOX containers complies with European regulations. The container is supplied pre-charged with refrigerant, and its refrigeration circuit is hermetic and does not pose risks of refrigerant leakage under normal operating conditions.

ELECTRICAL WIRING DIAGRAM - VERSIONS WITHOUT BATTERY



ELECTRICAL WIRING DIAGRAM - VERSIONS WITH BATTERY