



Medical Devices Touch Controller

Operating and Maintenance Instructions

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IMPORTANT Read this instruction manual. Failure to follow the instructions in this manual can result in damage to the unit, injury to operating personnel, and poor equipment performance.

CAUTION All internal adjustments and maintenance must be performed by qualified service personnel.

Material in this manual is for informational purposes only. The contents and the product it describes are subject to change without notice. Thermo Fisher Scientific makes no representations or warranties with respect to this manual. In no event shall Thermo be held liable for any damages, direct or incidental, arising from or related to the use of this manual.

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Models

Model	Temperature at Factory Set-point
TSB140R	+2°C to +8°C
TSB250R	+2°C to +8°C
TSB400R	+2°C to +8°C
TSB700R	+2°C to +8°C
TSB1500R	+2°C to +8°C
TSB140F	-12°C to -25°C
TSB250F	-30°C to -40°C
TSB400F	-30°C to -40°C
TSB700F	-30°C to -40°C

Safety Considerations

Failure to read this manual and any misunderstandings regarding the instructions contained within it can cause irreversible damage to the unit as well as create a source of danger for users and significantly decrease device performance.

The manufacturer declines all responsibility for any uses other than those listed below.

Read this user manual carefully.



Any maintenance operations must be carried out by personnel authorized by the manufacturer.



The corresponding warranty will become immediately void in the event of use or maintenance of equipment not in compliance with specifications by the manufacturer.

The material contained in this manual is for informational purposes only. Its contents and the product itself may be subject to change without prior notification. In no event shall the manufacturer be held responsible for any damage due to use of this manual.



Provide all the information required regarding operation of the device being tested in order to request technical support from manufacturer.

General Safety Rules

Read the manual carefully and follow instructions contained herein. Do not use the equipment for purposes other than those for which it was designed.

The user assumes full responsibility in case of operations carried out without observing the instructions in the manual.



List of the main safety rules:

- Do not touch the equipment with moist or wet hands or feet.
- Do not insert screwdrivers or other objects into the guards or moving parts.
- Do not pull the power cord to disconnect the appliance from the electrical mains.
- Do not allow the machine to be used by unauthorized users.
- Before performing any cleaning or maintenance, disconnect the machine from the electrical mains by switching it off and disconnecting the plug.
- In case of failure and/or malfunction, switch off the machine and do not attempt to repair or service it on your own. It is absolutely necessary to contact qualified personnel.

- **Moving parts:** All components with the possibility of movement have been designed, built and configured to avoid risk. Some parts are also protected by fixed guards to prevent contact or injury.

The following is a list of measures adopted to protect against other risks:

- **Electrical power:** This machine has been designed, built and fit with the aim of preventing risks of electric shock in compliance with established safety regulations.
- **Noise:** This machine has been designed and built to minimize risks related to the emission of acoustic noise (always lower than 70 dB).



The following is strictly forbidden:

- Tampering with or removing the evaporator cover enclosure that protects the user from a risk of cutting on the evaporator fins.
- Removal of the data plates fixed in the inside edge of the motor compartment that contain technical specifications and earth connection warnings.
- Removal of the data plate fixed on the evaporator unit guard and near the electrical wiring inside the motor compartment which warns the user to disconnect power before working on the unit.

Safety and Accident Prevention

This machine has been designed with suitable measures to assure safety and the health of the user. The following is a list of protections adopted against mechanical risks:

- **Stability:** This machine has been designed and built in order to guarantee its stability in all foreseen operating conditions even if the shelves/drawers are extracted without any risk of tipping, falling or sudden movement.
- **Surfaces, edges, corners:** Within the limits permitted by their functions, accessible parts of the machine have no sharp corners, sharp edges or rough surfaces that could cause injury.



The manufacturer declines any responsibility for safety of the machine if the above recommendations are not observed.

Contraindications

The refrigerated cabinet must not be used:

- Exposed to weathering.
- With adapters or extension cords.
- In explosive atmospheres or where there is a risk of fire.
- Near heat sources (radiators, etc.).

- If the device is built in furniture, proper ventilation must be guaranteed. On the contrary, warranty will automatically expire.

Warning on the Refrigerant Gas



These devices contain R290 as refrigerant (Flammable Gas).



In this case, some special precautions should be taken:

1. Position the appliance in an environment of suitable dimensions in compliance with EN 378: the environment must have a volume of 1m³ every 8gr of R290 refrigerant. The quantity of gas contained in the circuit is declared on the silver data plate attached inside the cabinet.
2. Do not use the equipment if damaged.
3. To avoid damages to the refrigerant circuit, do not use mechanical devices to accelerate defrost process.
4. Make sure that air grids are always free to guarantee a certain ventilation to the device.
5. If there is refrigerant leakage, avoid using open flames, remove from the device flammable products and ventilate immediately the environment.
6. Do not store potential explosive substances (for example spray cans containing flammable gases) inside the device.
7. Do not use electrical appliances inside the chamber, ATEX approved appliance.

If there is any malfunction, disconnect the equipment from the mains. Extraordinary maintenance should be performed only by qualified personnel.

General Information

Certification

Thermo Fisher Scientific refrigerators and freezers designed for the storage and preservation of human blood, human body liquids and human body tissues destined to transfusion, administration and re-introduction in human body, in accordance with the definition of Attachment IX, point III, rule 2 of Medical Devices Directive 93/42/EC and subsequent modification 2007/47/EC. Following the same directive these devices fall in class II a.

According to the above mentioned directive (Article 1), these refrigerators are NOT medical devices; nevertheless, they are comprehended in the category, since they are meant to store/manage a medical device, i.e. a blood bag, destined to store human blood, human body liquids and human body tissues destined to transfusion, administration and re-introduction in human body. Therefore, these devices are defined as BORDERLINE, and, as such, norms related to the type of equipment applies, although not strictly related to medical device directive.



Testing and Warranty

The machine is tested at our factory in accordance with current regulations and it is shipped ready to use. The warranty is valid for 12 months from the date of delivery and establishes the right to repair/replace parts that are defective, not including electrical and electronic parts. Apparent defects and any deviations from orders must be communicated to the manufacturer within 5 days of receipt of the goods under penalty of invalidation of the warranty. Any other defects (not apparent) must be communicated within 5 days of discovery, and in any case within the maximum 6 months warranty period.

The customer will only be entitled to the repair or replacement of goods, with the absolute exclusion of any direct or indirect damages of any kind. In any case,

the right to repair or replacement of materials must be exercised within the maximum time limit provided by the warranty, with the time limits having been contractually reduced with respect to those established by law.

Repair or replacement of defective materials will occur at the manufacturer's factory, where materials must be delivered with freight prepaid. The manufacturer will then return them carriage forward.

Purpose, Content and Recipients of the Manual

This manual has been drafted for the purpose of providing all the instructions necessary for correct use of the machine and for maintaining it in perfect condition, in particular with regard to the user's safety. The following professional figures shall be defined in order to identify tasks and responsibilities:

Installer: Qualified technician who performs machine placement and commissioning in accordance with the instructions in this manual.

User: Person who after carefully reading this manual, uses the machine for his own permitted uses. It is mandatory for the user to read the manual carefully and make reference to it.

Routine maintenance worker: Qualified technician able to carry out routine maintenance on the machine by following the instructions in this manual.

Special maintenance worker: Qualified technician authorized by the manufacturer who carries out special maintenance on the machine. The manufacturer declines any responsibility for improper or unreasonable use of the machine and for all those operations carried out on the same ignoring the instructions in this manual. The manual must be kept in an accessible location known to all operators (installers, users, routine and special maintenance workers). No part of this manual may be reproduced and/or disclosed by any means and in any form whatsoever.

Arrangements Prepared by the Customer

The following arrangements are set by the customer:

- The machine electrical connection
- Installation site arrangement
- Routine maintenance
- Refrigerator cleaning and the products used for it.

Product Description

Technical Description

The refrigerated cabinet covered by this manual produces cold by means of low-pressure vaporisation of a liquid refrigerant such as R290 inside a heat exchanger (evaporator). The vapor thus obtained is brought back to the liquid state by means of a higher pressure mechanical compression (via a compressor) followed by cooling in another heat exchanger (condenser). The correct, uniform distribution of air inside the cabinet is guaranteed by one or more fan motors depending on the model.

The machine is composed of a modular monocoque coated with different materials and insulated with polyurethane foam at a density of 43 kg/m³.

The instrumentation is grouped on the front panel. On some models, the motor compartment where the condenser unit and electrical wiring can be housed closes automatically.

Inside, the machine is equipped with brackets suitable for supporting wire shelves, extractible drawers and steel baskets.

The doors on all machines are equipped with a closing device with automatic return and door lock and easily replaceable magnetic seals for perfect tightness. Measures were taken during design and construction to obtain a machine that meets specific safety requirements such as internal rounded corners, condensate liquid drainage, no rough surfaces, fixed guards on moving or potentially dangerous parts and so on.

The maximum capacity of drawers load on all Thermo Fisher Scientific models is 30 kg with weight uniformly distributed.



All models are for indoor use and cannot be installed outdoors.

Warranty will immediately expire, if equipment is installed improperly.

Intended Use

All the listed models are suitable for storage. For this reason, we suggest only storing products that have already been refrigerated or frozen (depending on the model).

We declare that any use outside of those allowed by the machine is considered as “improper use” and therefore the manufacturer declines all responsibility.

Thermo Fisher Scientific refrigerators and freezers designed for the storage and preservation of human blood, human body liquids and human body tissues destined to transfusion, administration and re-introduction in human body in accordance with the definition of Attachment IX, point III, rule 2 of Medical Devices Directive 93/42/EC and subsequent modification 2007/47/EC.

In accordance with the same directive, medical devices fall in class IIa.

Hence, Thermo Fisher Scientific devices can store:

- Blood
- Plasma
- Breast milk

Despite the above definition of medical devices, the same refrigerators are allowed for storage and preservation of:

- Drugs, vaccines, reagents properly stored, whatever nature.
- Generic use substances and materials in hospital, laboratory or pharmaceutical environment, not flammable nor explosive.

Note: User must take care of allowed storage temperature. Since, these units are medical devices, temperature factory setpoint are adjustable within limits connected to the intended use and therefore, it is user's responsibility to store those substances or material following the manufacturer guidelines.



IMPORTANT: Breast milk, blood bags and blood products cannot be stored together with other material (drugs, reagents and generic use substances) and must be stored in accordance with the temperature settings by the manufacturer and with respect to suitable storage period.



IMPORTANT: Blood and breast milk cannot be stored together. It is important to allocate devices to store one or the other. Avoid mixed use.



IMPORTANT: Manufacturer declines responsibility in case staff in charge is not adequately formed and trained on blood storage specifications (temperatures and storage periods) and the correct treatment of donated breast milk according to the guidelines (G.U.n.32, 8 February 2014).



IMPORTANT: Manufacturer declines responsibility concerning previous or following phases of the product lifecycle.

The following table explains the meaning of the climatic class symbols:

Table 1. Climatic Class Symbols

Symbol	Ambient Temperature Range
SN	from +10°C to +32°C
N	from +16°C to +32°C
ST	from +18°C to +38°C
C	from +10°C to +25°C



Climatic class on the dataplate refers to the factory setpoint.

General Device Features

Device	Features
Power supply	230V \pm 10%
Frequency	50 Hz
Allowed ambient temperature	See climatic class
Storage temperature	-10°C to +50°C
Acoustic pressure at 1 mt	\leq 60dBA

Climatic Class

The unit identification label (see **Labeling**) reports the climatic class to which the unit belongs, i.e. the ambient temperature range between which the unit can work.

Transport and Handling

The machine must be transported and handled solely in a vertical position and following the instructions printed on the packaging. This precaution is necessary to avoid contamination of the compressor with oil which may cause the rupture of valves of the cooling coils and problems with electric motor starting.

The accessories supplied with the machine (slides, wire shelves, drawers, baskets, etc.) are shipped inside the unit. The machine is fixed on a wooden pallet by means of screws, wrapped with polyethylene and packaged in cardboard, a wooden crate or wooden case.

The machine must be handled using a forklift or pallet truck with suitable forks (fork length at least equal to 2/3 length of the unit).



If the machine needs to be set down in order to bring it into the installation location it is necessary to wait at least 6 hours before switching it on.

The manufacturer declines any responsibility for problems due to transport carried out in any condition different from those specified above.

Positioning

Incorrect positioning can cause damage to the machine and create dangerous conditions for users; therefore, the installer must comply with the following general rules:



Position the machine keeping a minimum distance of 100 mm from all walls. If the machine is embedded in any type of furniture, a correct air flow of the condensing unit (compressor/fan motors) must be always ensured. The warranty will immediately expire, if this is not guaranteed. (Refer to **Figure 1**).

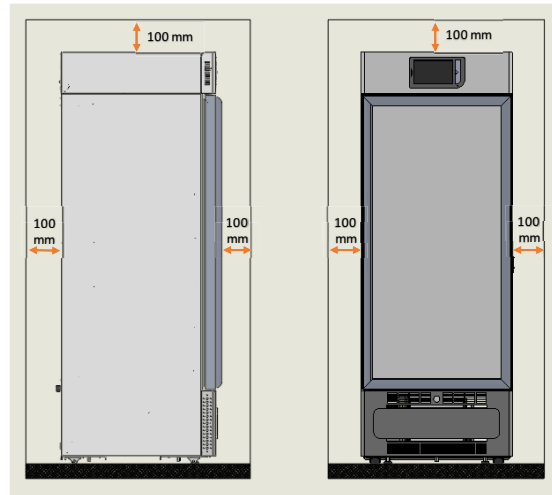


Figure 1. Equipment Position

- Set the machine in a sufficiently ventilated environment.
- Place the machine far from heat sources and far from sources of electromagnetic interferences (such as motors, generators, infrared beams, telephones) which can have negative effects on equipment functioning.
- Avoid exposure to direct sunlight and air conditioning flows.
- Remove the supplied accessories and the wooden pallet base.
- Position the machine with the aid of a spirit level.



For models taller than 1.5 m, installation with wall fixing brackets is recommended.

Cleaning

Equipment shipped is already cleaned. However, it is advised to carry out a further washing by following the instructions below:

- Remove the protective PVC film from the external surfaces of the machine.
- Clean inside of the chamber with a cloth dampened with alcohol in order to eliminate the protective oil.



The glass door must be cleaned using a cloth dampened with water.
Do not therefore use chemicals.



Figure 2. Glass Cleaning Label

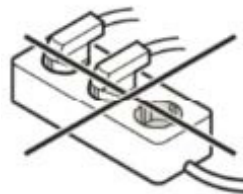
Wiring and Electrical Connection

The electrical system and connection must be set up by qualified personnel.

Follow the instructions below for safety reasons:



- Ensure that the system is suitably sized for the absorbed power of the machine.
 - It is essential to properly connect the machine to an effective grounding system set in accordance with current legislation.
 - In the event of incompatibility between the outlet and machine plug, replace the outlet with a suitable type, provided that the part is approved according to the laws in force.
 - If electrical cable is damaged it must be replaced by a qualified personnel to prevent any risk.
 - If the freezer is supplied without a plug, connect it directly under the switch board.
 - Do not interpose adapters and/or reducers.
 - Electric socket must not be directly behind the device and must be easily accessible.
- Do not use extension cords or multiple sockets (see figure below).



- Do not use inverters for standalone systems (conversion of direct current into alternating current or three-phase current) or energy saving connector. Could cause damage to the electronics.

Electrical Protections

These devices are equipped with 2 safety fuses (phase and neutral) with integral protection against electric shocks, short circuits and over-currents and according to the standards for laboratory devices.

The fuses can be accessed from the front: Open the refrigerator door and the fuses will be found behind the front control unit panel. The activation current of the fuses must be between 10 A and 16 A.

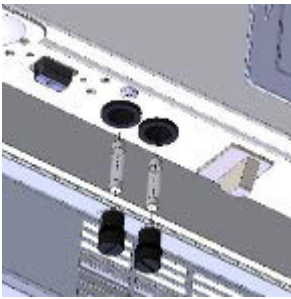


Figure 3. Fuse Housing



The replacement must be done by qualified personnel.

Set-Up Operations

Before turning on the appliance, it is necessary to check that it has not been damaged during transport, handling and installation.



- Check the condition of the packaging (it must not show dents and/or breakages).
- Check the condition of the external frame (it must not show dents and/or breakages).
- Check the condition of the power cord (it should not have scratches or cuts).
- Check the wheels are stable.
- Check that door opens correctly and closes hermetically.
- Check door gaskets (they should not have scratches or cuts).
- Check that display do not show cracks.

Use of the Internal Compartment and Material Storage

The stainless-steel rack system allows for the installation of fully extractable drawers on telescopic guides with "bayonet connection".

Drawers Installation

Insert the guides into the special slots of racks (**Figure 4**) and pull out the telescopic guides by gently pressing on the white lever (**Figure 5**), install them on the drawer and fill the drawer on the guides installed on racks (**Figure 6**).

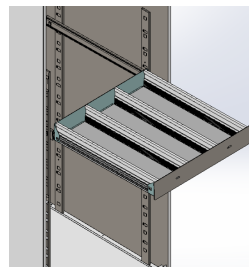


Figure 4. Installation of drawer on rack

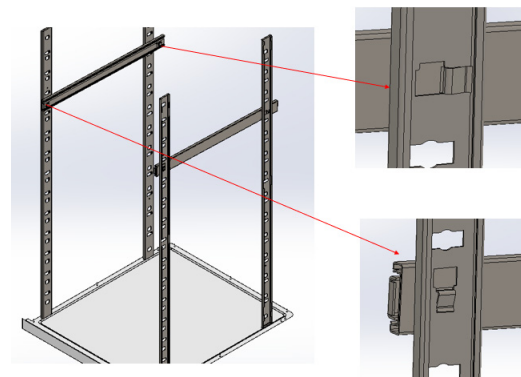


Figure 5. Guides Installation

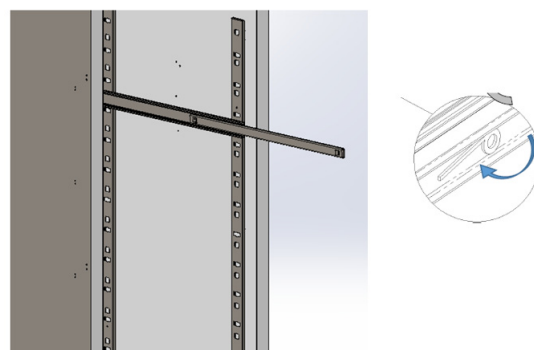


Figure 6. Pulling Guides Out

Placing Material Inside the Compartment

Care must be taken when loading material to avoid malfunctions and allow air flow to ensure temperature uniformity inside the refrigerated compartment.



Observe the following instructions:

- Do not place material over the label indicating the maximum permitted loading level, if present.
- Store material leaving a distance of at least 60 mm from sides and at least 180 mm from the top of the compartment (refer **Figure 7** and **Figure 8**).

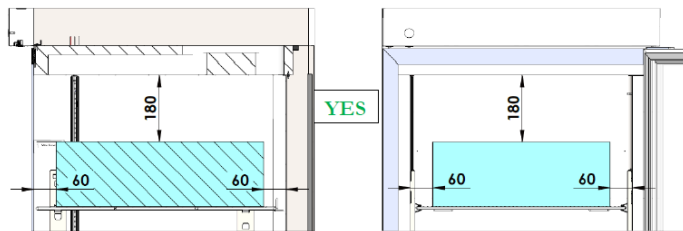


Figure 7. Correct Material Storage

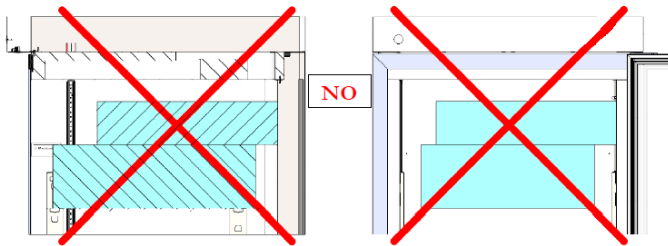


Figure 8. Incorrect Material Storage

- Do not position material in contact with or near the temperature probes (**Figure 9**).

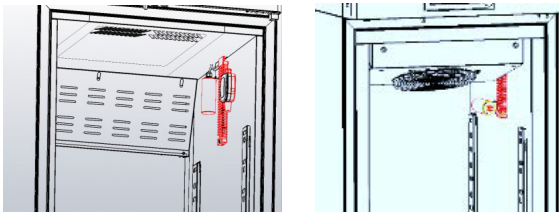


Figure 9. Probes Position

- Do not block air vents (**Figure 10**).

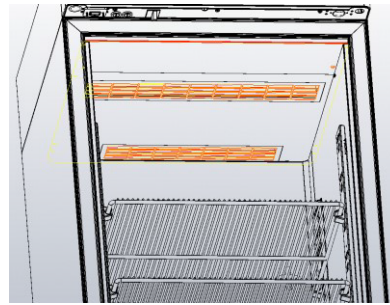


Figure 10. Air Vents at the Top of the Compartment

Indication for Optimal Use

The following instructions are provided to the user to follow in order to get the best equipment performances:



- The power supply must comply with the information provided on the technical data plate (+/- 10%).
- The units have been designed and built to work in environment with temperatures falling within the climatic class temperatures indicated on the technical data plate (see **Device Identification Label**) and at a relative humidity of 60%.
- Do not block the motor compartment air vents.
- Load stored material gradually at ambient temperature to grant proper refrigeration.
- Store material on drawers.
Do not place products directly on the bottom or against the wall, doors or fixed guards of the unit (see **Placing Material Inside the Compartment**)
- Ensure doors are closed properly.
- Limit door opening frequency and duration. Each time the door is opened, the internal temperature will alter and there will be possible ice formation on the evaporator
- Keep the defrost water drain outlet clear.
- Follow a regular maintenance schedule (see **Ordinary and Extraordinary Maintenance**).



Every model of freezer is designed to store material already frozen, especially model SUPERARTIC. Material load turnover cannot exceed 5% of the total stored load.

Touchscreen Controller Display Functioning

Touchscreen Controller Operation

Switching On

To switch on the equipment for the first time follow these below instructions:

Table 2. Instructions for switching ON



Sl. No	Instructions	Graphical Representation
1	Connect the plug to the electric socket.	
2	Switch on the equipment by pressing the three blue squares sequentially from left to right (if pressed correctly, the squares will become green).	

Table 2. Instructions for switching ON

Sl. No	Instructions	Graphical Representation
3	Select language and set date and hour.	
4	User interface will be displayed	<p>Equipment with one chamber Setpoint Tempertaure</p> <p>Temperature detected inside the chamber</p>

Panel User Interface

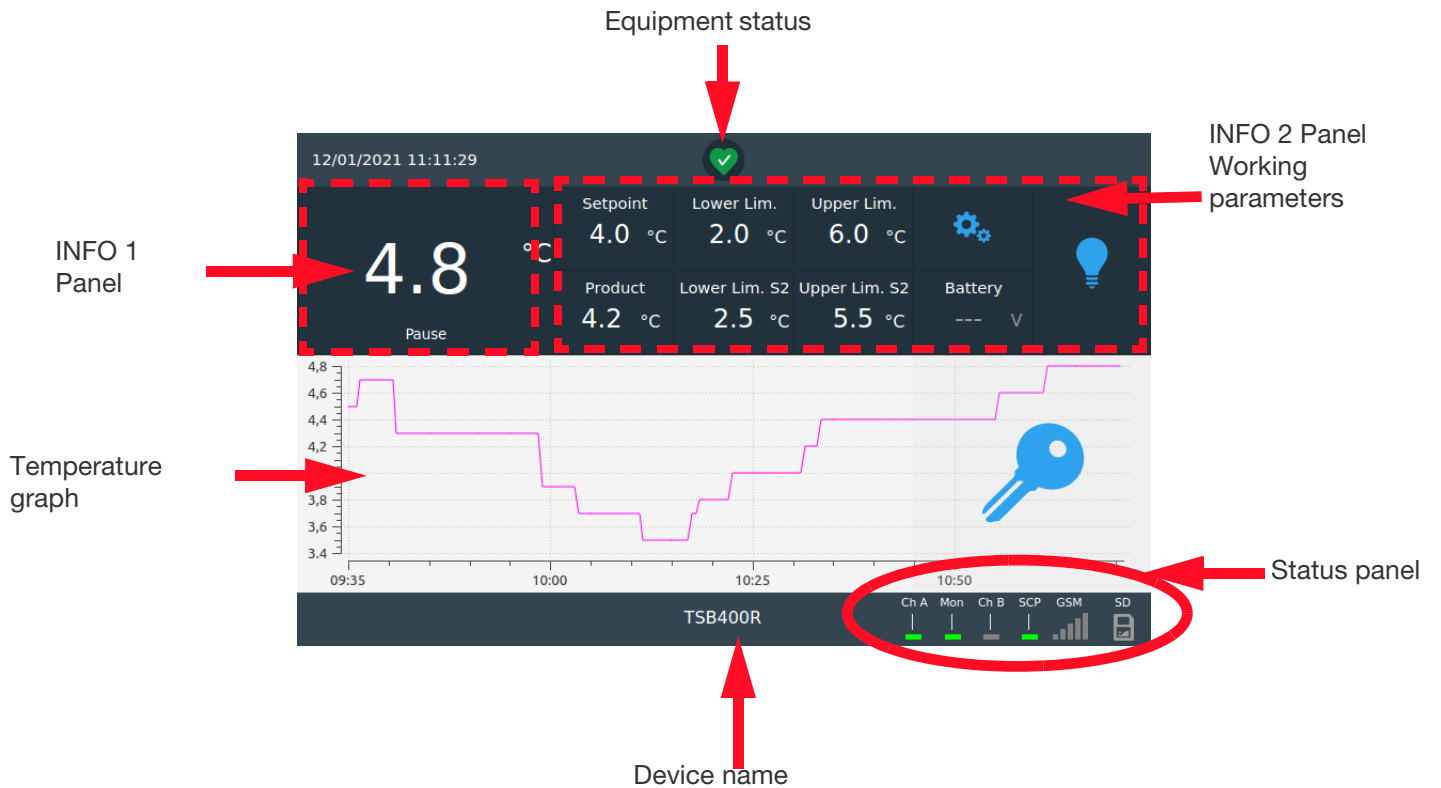


Figure 11. Equipment with One Chamber

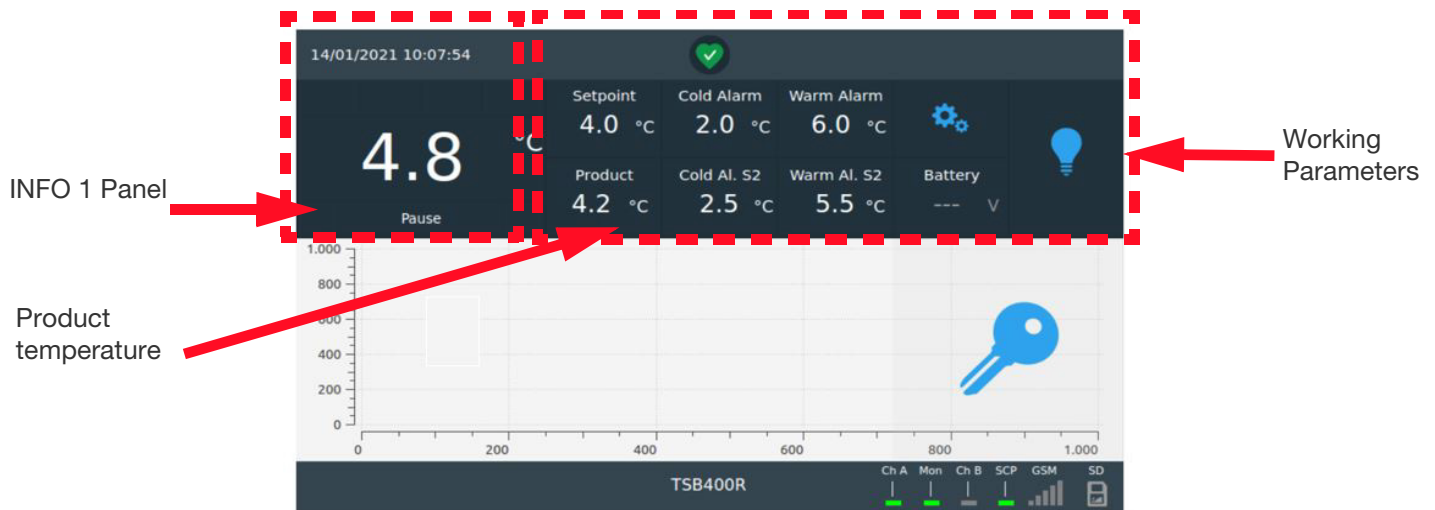


Figure 12. Equipment with One Chamber + Ballasted Temperature Product Probe



Figure 13. Ballasted Temperature Product Probe

User Hardware Interface

USB port for software update, programming and data backup download.



SD card to register functional data, temperatures and to store technical documents in digital format.

Figure 14. Hardware Interface

Info 1 Panel

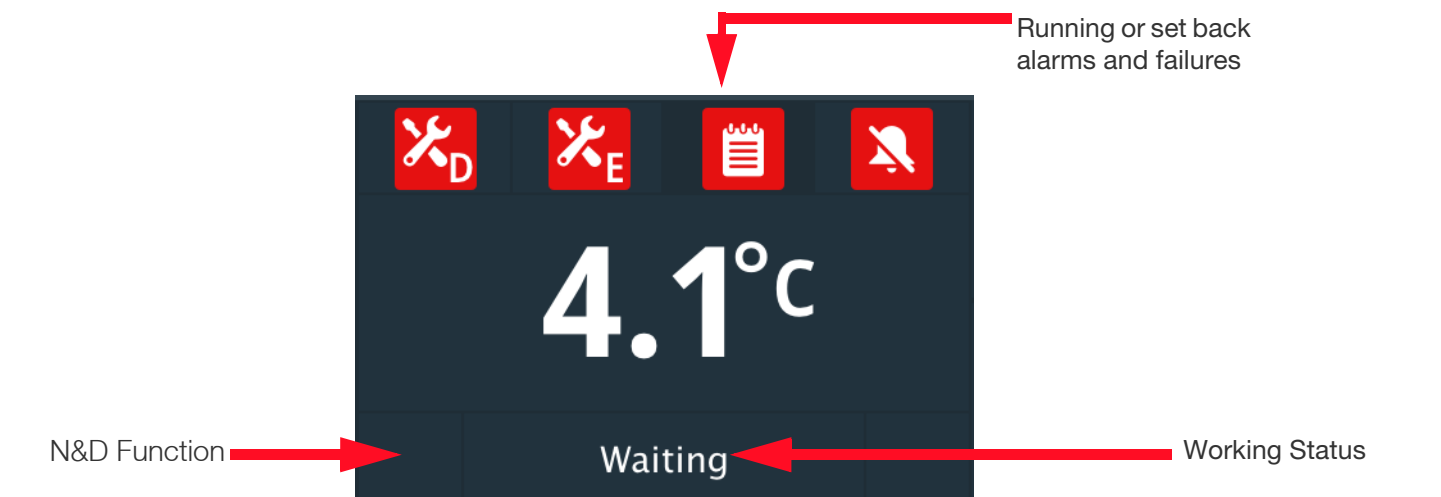


Figure 15. INFO 1 Panel

Table 3. Working Status Strings

STRING	WORKING STATUS
PAUSE	Compressor is off, waiting for next cooling cycle.
COOLING	The compressor is ON to reach setpoint.
DEFROST	The refrigerator defrosts, warming up the evaporator.
DRIPPING	Last phase of defrosting to allow evaporator dripping.
WAITING	The compressor is ON after defrosting to re-acquire the temperature.
HEATING	Heating action active (available only for some specific models).

Info 2 Panel

In Info 2 panel set parameters (setpoint, high and low temperature limits) and working equipment information are displayed.

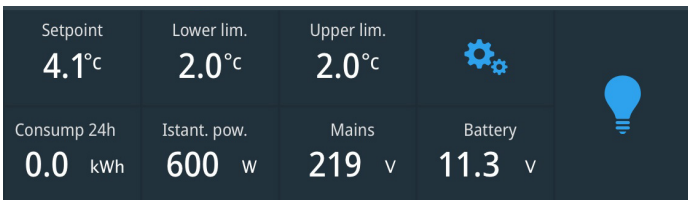
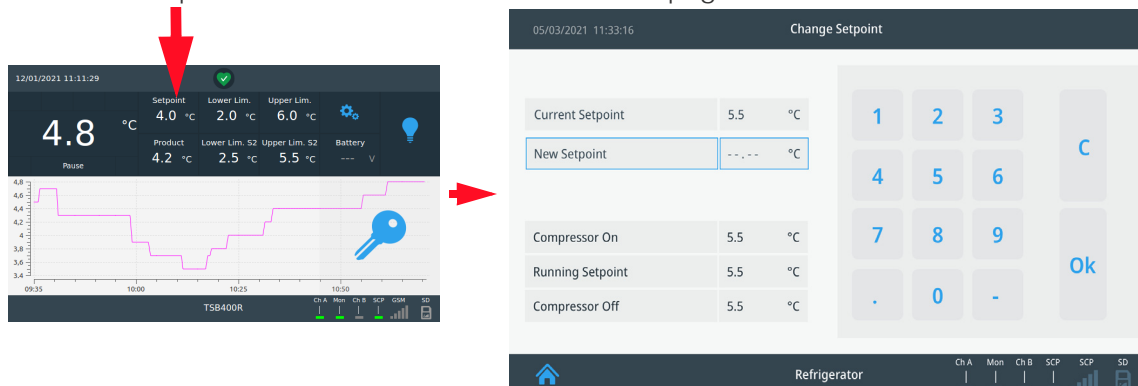



Figure 16. Info 2 Panel

How to Change Setpoint

Touch the setpoint value to access to the dedicated page.



In “Change Setpoint” page, enter the new desired value and press OK to confirm. When the “HOME”  icon is touched, user will go back to homepage.

In the same page, user can find information also of compressor switching on/off differential and running setpoint (this differs from the current setpoint when the night and day function is activated – see **Night & Day Function**).



Every time the setpoint temperature is changed, user must check that the limits are still properly set. If they are not coherent, user should change them accordingly (see **Setpoint Adjustment Limits**).



If user password is enabled (see **User Password Setup**), a password will be asked to change setpoint.

Setpoint Adjustment Limits

Setpoint can be adjusted only according to relative guidelines for storage and preservation of blood, plasma and breast milk.

Table 4. Setpoint Adjustment Limits

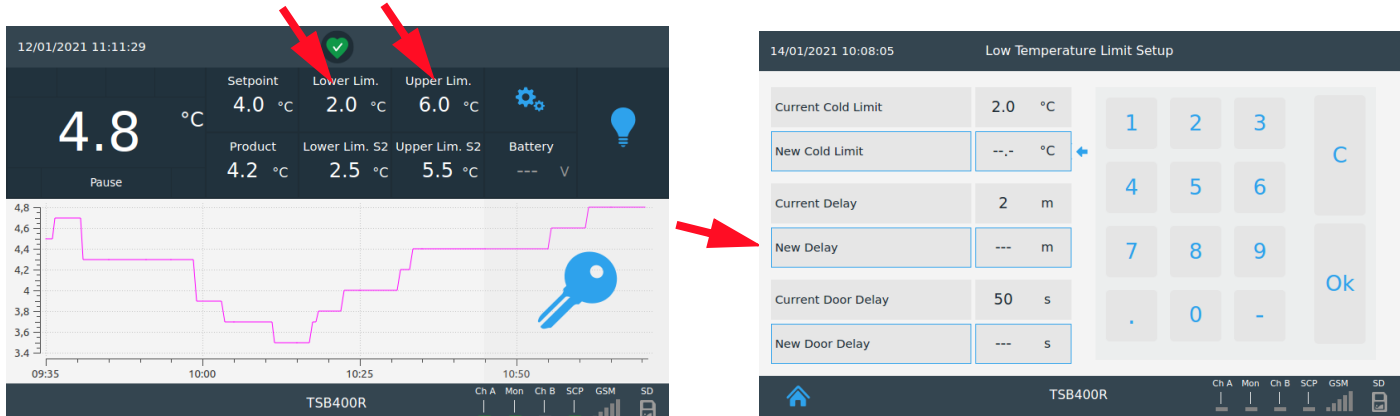
Model	Factory Setpoint	Adjustment Limits
TSB140R	+4°C	+3°C; +5°C
TSB250R		
TSB400R		
TSB700R		
TSB1500R		
TSB140F	-20°C	-20°C; -10°C
TSB250F	-35°C	-40°C; -20°C
TSB400F		
TSB700F		



Duration of storage is strictly related to temperature set.
Manufacturer declines responsibility concerning previous or following phases of the product lifecycle.

How to Change Alarm Delay Signalization

Touch lower or upper limit to access to the dedicated page.



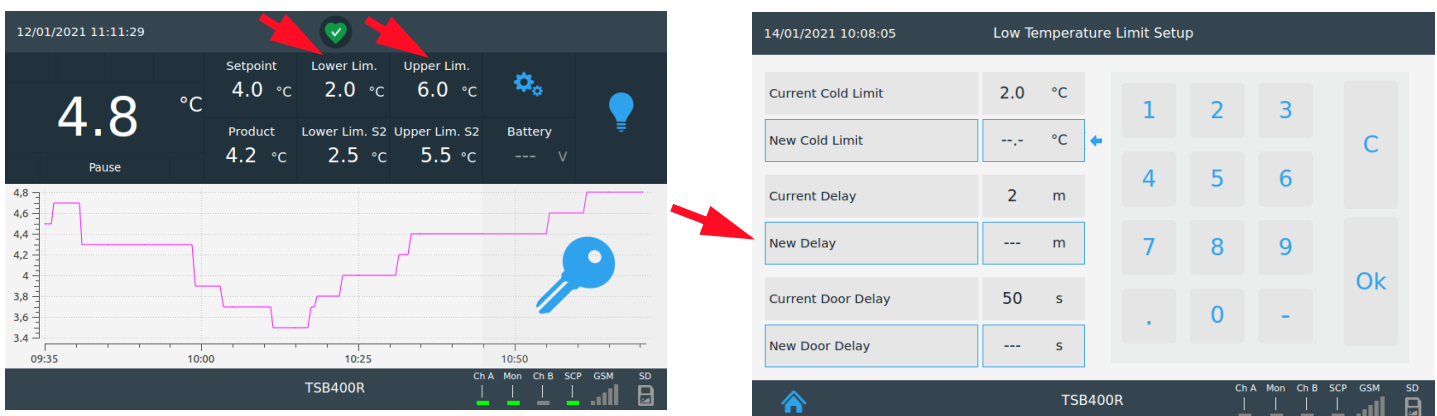
Touch NEW DELAY and enter the new value. Press OK to confirm it. Go back to homepage by touching home icon



If user password is enabled (see **User Password Setup**), a password will be asked to access to this page.

How to Change Door Alarm Delay Signalization

Touch lower or upper limit to access to the dedicated page.



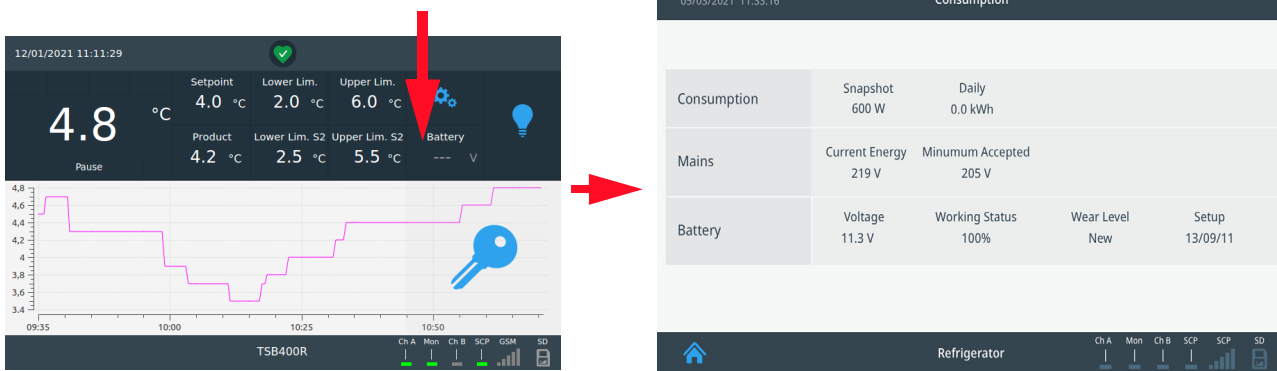
Touch NEW DOOR DELAY and enter the new value. Press OK to confirm it. Go back to homepage by touching home icon



If user password is enabled (see **User Password Setup**), a password will be asked to access to this page.

Consumption Panel

Touch battery to access to the dedicated page.



In Consumption panel the following information is displayed:

- Snapshot equipment consumption.
- Daily equipment consumption (of the last 24 hour).
- Current energy mains.
- Minimum accepted value for the signalization of "Low mains tension".
- Battery backup voltage (if battery backup installed).
- Battery backup working status (if battery backup installed).
- Battery backup wear level (if battery backup installed).
- Battery backup setup date (if battery backup installed).



When the equipment gets turned off (Standby status), the electric digital lock opens itself automatically.

In case of power failure, lock remains open, if it was open. On the contrary, it remains closed, if it was closed and you should follow instructions to unlock the door manually (see **Manual Unlocking of the Door**).

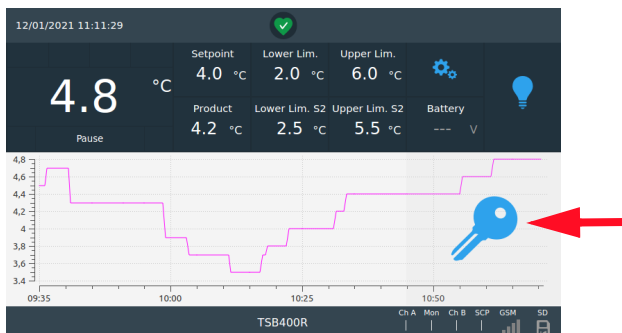
Go back to homepage by touching home icon .

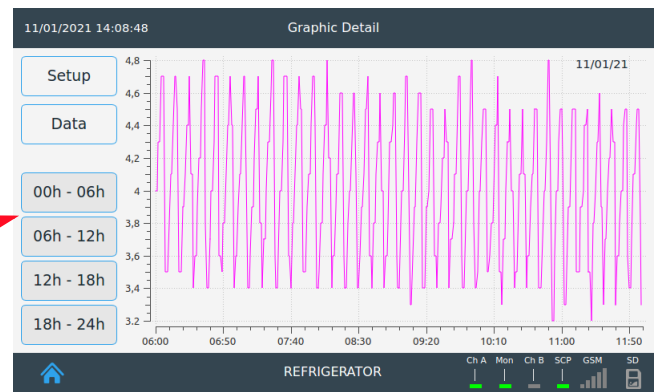
Temperature Graphic Visualization



In the homepage a temperature graph of the last 6 hours is constantly visualized. Touching the graph the user can enter the sub-menu "GRAPHIC DETAIL".

Electric Digital Key Lock

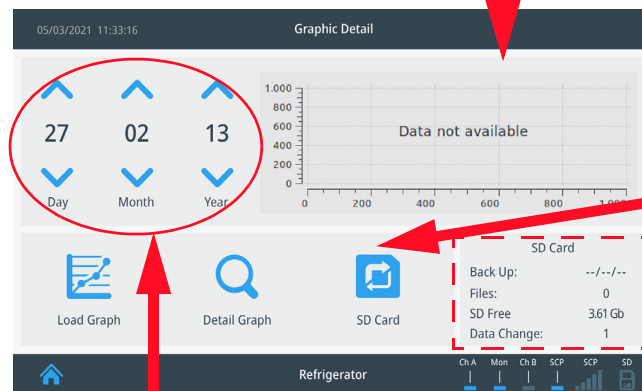
As safety device against unauthorized door opening, the equipment can be fit with an electric digital key lock. The door is opened by gently pressing on the key icon in the homepage.





By means of the following icons , it is possible to visualize immediately the current daily time spans graphic details. On the contrary, by touching  it is possible to analyze the past registered temperature data.

24 hour temperature graphic preview



It allows to switch from SD stored data to the flash memory stored data (flash memory stores up to 1 year) in case SD card is not in its slot, it has been lost or damaged.

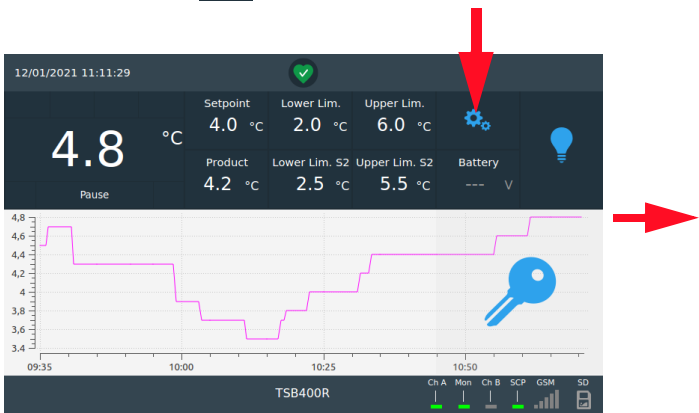
SD Info:

- Date of last backup
- No. Files included
- Free space
- No of date/hour changes done by the user lost or damaged.

Select day/month/year to visualize the temperature graph of the date of interest. Then, touch LOAD GRAPH: a daily temperature graph preview will be visualized on the right of the display. Touching the icon DETAIL GRAPH, it is possible to visualize the time spans graphic detail of the loaded day.

Touchscreen Controller User Panel

Touch the icon  to access to the dedicated page.



In this page there are different sub-menus:

Table 5. User Panel Icons

















Icons	Description
	It allows to turn the equipment off (password protected, if passwords are enabled).
	It allows to visualize the latest n. 32 recorded alarms.
	It allows to visualize the latest n. 32 days in which door opening alarm has occurred.
	It allows access to the night & day function and to the key locking management settings (key locking is password protected, if password is enabled).
	It runs a manual defrost.
	It allows access to multimedia information (TUTORIAL).
	It allows to change date and hour.
	It allows to set the desired language.



Table 5. User Panel Icons

Icons	Description
	It allows access to the user setup management.
	The icon allows the visualization of all the registered users as well as the related enabled tasks (User Password Setup and User Management)
	It allows the users to backup the temperature registered data.
	It allows access to the SERVICE menu (Always password protected).

Switching Off

Switch off the equipment by touching the icon . Then, select the following icon: .The screen will ask to confirm again. Therefore, to confirm the system turning off press  or  to cancel the operation.



If the control user password is enabled (see **User Password Setup**), users shall enter the password in order to switch off the system.

Alarms List

Touch  icon and then  to access to alarms list page.



In the alarm list the following is visualized:

- Type of alarm
- Date/hour of alarm beginning
- Duration of alarm
- Critical temperature attained

Table 6. Alarms list

Message	Type of Fault in Progress
HIGH TEMPERATURE	High temperature inside the chamber.
LOW TEMPERATURE	Low temperature inside the chamber.
HIGH TEMP. DUE TO OPEN DOOR	High temperature inside the chamber due to door not properly closed or door opened too frequently and too long.
HIGH TEMP. DUE TO MAINS FAILURE	High temperature inside the chamber due to mains failure.



Door Opening List

Touch icon  and then  to access to door opening list.

In this page, the last 32 days in which door has been opened are visualized. Each door opening is detailed as follow:

- Door openings date
- Door openings total duration in a day
- Total number of openings in a day
- No. Of critical openings in a day (critical duration > 30 seconds)

Night & Day Function

Touch icon  and then  to access to Night & day function.

This page allows to manage two functions:


a) Night and Day Function

This special function allows saving energy when the equipment is not used frequently (e.g. during the night, holidays, days off, etc.). When the Night & Day function is enabled:

- The display, logo and led light brightness is lowered (LED light inside the chamber will turn blue)
- The temperature inside the chamber is increased of a default value (from 0.1°C to 2°C max). Thus, it is assumed that there aren't door openings during the selected period.

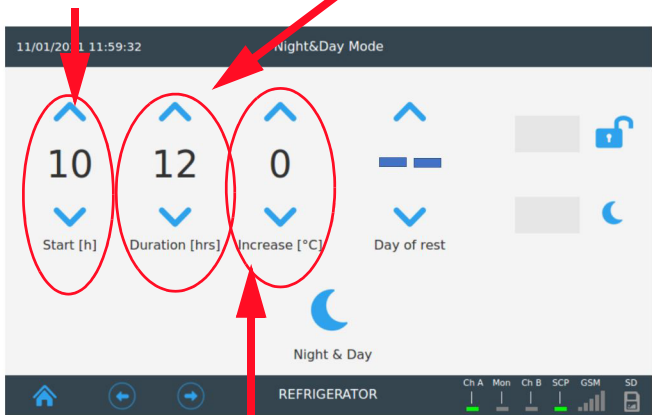
The Night & Day function can be enabled in different ways:

1. At a specific hour of the day:

Select the Night and Day start hour, the duration and the temperature increase value. Then, touch  to enable the function. Every day at the set hour and for the required duration, the refrigerator will activate the Night & Day function. This function will automatically deactivate after the set duration.


Start hour

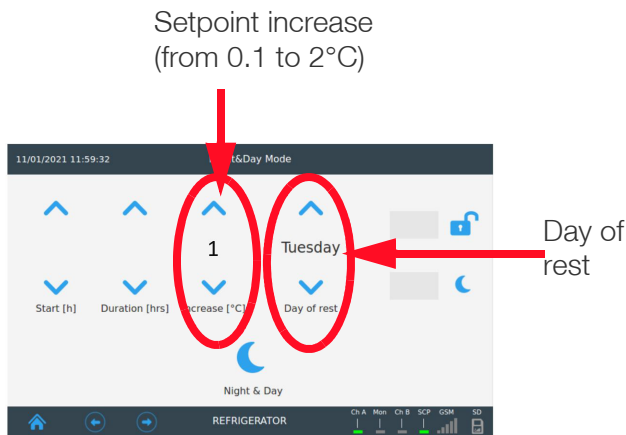
Duration




Setpoint increase (from 0.1 to 2°C)

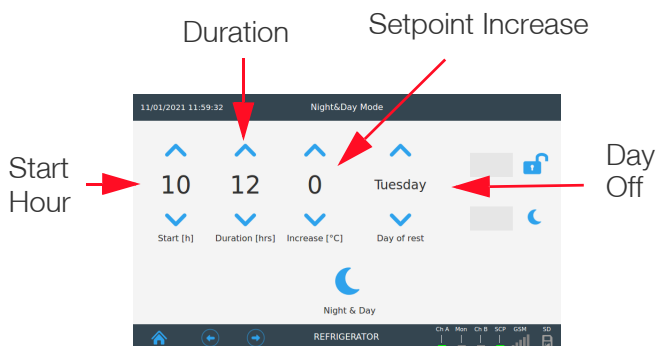
2. Only in a specific day of the week:

Select the day of rest (e.g. Monday) and the temperature increase value. Then, touch  to enable the function. During the chosen day, the Night & Day function will activate and will deactivate the day after.





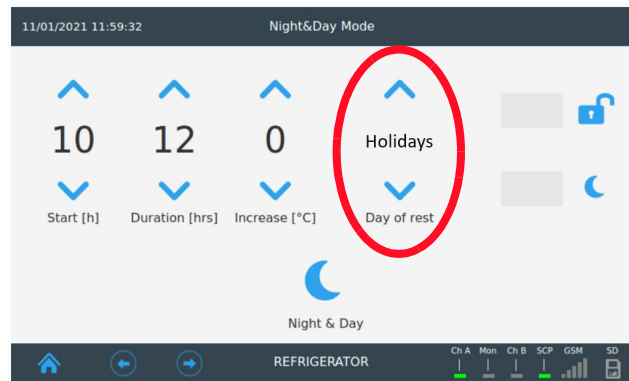
3. Every day at a specific hour and during the day of rest:

Select the Night and Day start hour, the duration, the temperature increase value and the day of rest. Then, touch  to enable the function. In this way, the Night & Day function will activate both every day at a specific hour and for the set duration and for the whole day of rest chosen. The Night & Day function deactivates automatically.



4. Night & Day function enabled during HOLIDAYS:





Enter as day of rest HOLIDAYS and touch  to enable the function. This function will activate immediately, and it will last till it won't be disabled manually by touching again the icon .



If the control user password is enabled (see **User Password Setup**), user must enter the password 0000 to enable Night & Day function.



b) Digital Electric Lock Management

This feature allows the user to configure the lock in accordance with its optimal use. In addition to the standard opening by touching the relating icon, possible configurations are nr. 2:

- Lock always open ➡  touch to activate .
- Automatic opening and closing according to Night & day setup: Always open during daytime use and closed when
Night & Day function is on ➡ touch   to activate.

It is still possible to open the door by touching the key icon in homepage while Night & Day function is active.


Access List

Touch icon  and then  to access to the dedicated sub-menu. In this page, it is possible to visualize how many door openings, switch on/off, change limits, etc have been done by the/each user every day (if different users have been created, see **User Management**).


Defrosting

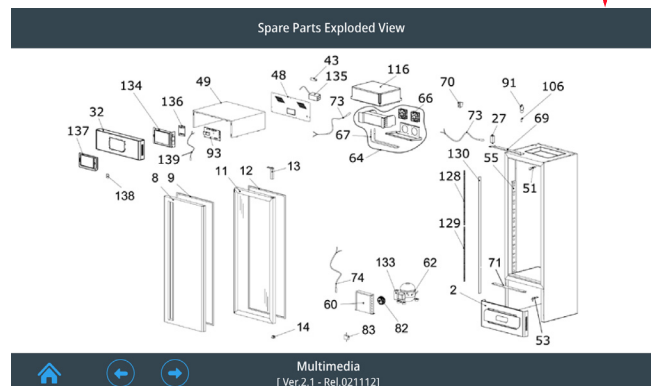
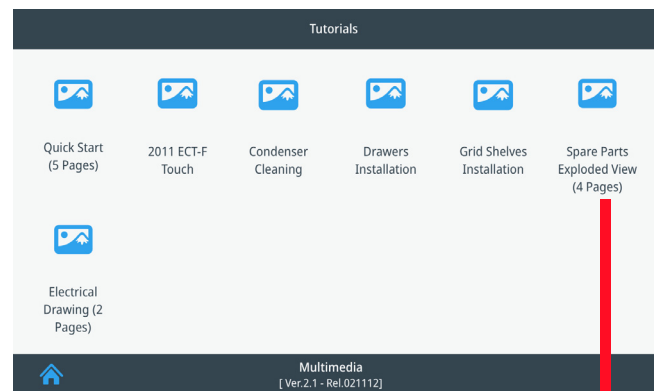
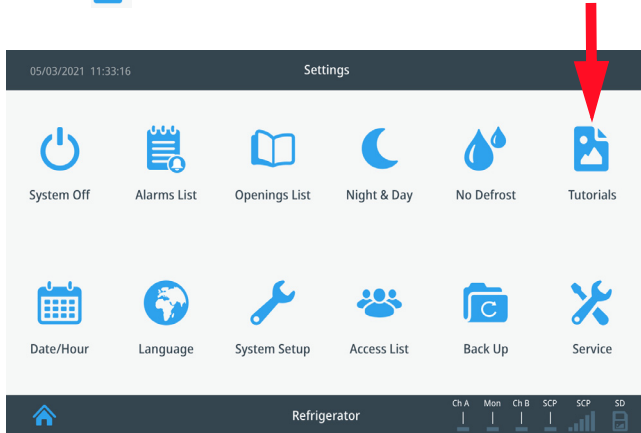
Equipment fitted with touchscreen controller is provided with an advanced managing of the defrosting cycles.

The defrosting is operated only if necessary, thus drastically reducing the number of cycles for a cost-effective operation. For this reason, a manual defrosting has never to be operated.



Despite this, in user panel the defrost icon  is available to run manual defrost if necessary and only under specific conditions.

Multimedia Information (TUTORIAL)

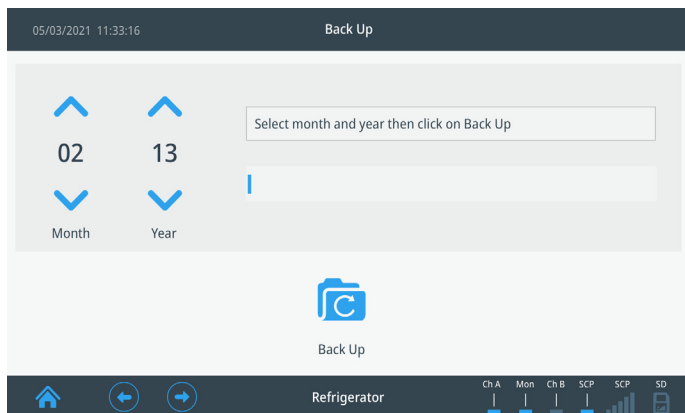
The multimedia section enables the user to watch technical static contents (PDF).
Touch  to access to the menu.




Data Backup from USB

This menu is useful to run a monthly backup of the temperature data by means of a USB. Access to the dedicated page by touching on  and then on  icon.

This is the page that will be visualized:



Enter the month/year you desire to copy, touch the following icon  and follow the described procedure that will appear in the screen.

Inside of the USB a folder with all the registered data will be automatically created. The name of the folder is a particular code which identifies the equipment; therefore, it is possible to load in the USB different backup of different equipment.

bck12345_1_12

Backup Serial number Month and Year





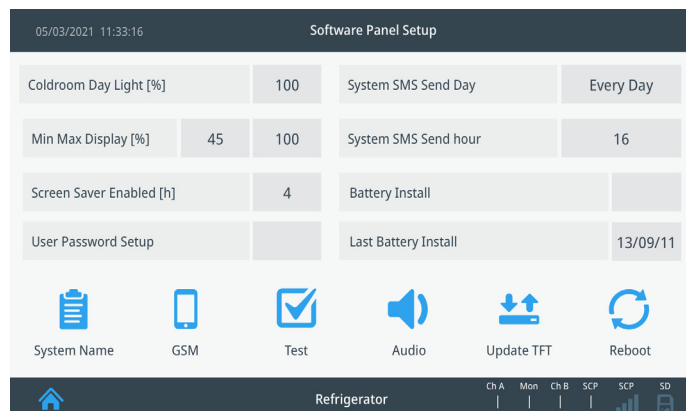
CAUTION: If date/hour has been changed (for example, this might happen when civil time is changed to solar time and vice versa), there might be data loss while downloading data from USB. Therefore, we advise to backup data from SD CARD (see **Temperature Data Backup from SD Card**).



We advise to use the SD Card for the first download of data in order also to install the software Capture 5.2 provided free in SD CARD (see **Temperature Data Backup from SD Card**).

System Panel Setup

Touch icon  and then  to access to software panel setup menu. In this menu the user has the possibility to customize some specific functions of the equipment.





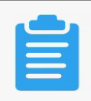



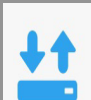

Coldroom Day Light [%]	100	To modify the internal light brightness (from 0 to 100%)
Min Max Display [%]	45 100	To modify the brightness of the display (MAX during the equipment functioning, MIN when screensaver or Night and Day function are enabled)
Screen Saver Enabled [h]	4	To activate  screensaver each (h) hours (from 1 to 12 h or never)
User Password Setup		To activate or deactivate the USER PASSWORD SETUP (to activate and deactivate PSW: 0000). The generic password is then 1234. To change this password see User Password Setup
System SMS Send Day	Every Day	To setup day and hour for the system SMS (only when GSM Communicator is installed)
System SMS Send hour	16	
EASIER ACCESSIBILITY		To activate  "Easier accessibility". This function will increase in homepage the dimension of key and light.
Last Battery Install	13/09/11	Date in which battery was installed the last time.

Table 7. Software Setup Panel Icons

	It enables to give a name to the equipment to be then visualized in the homepage.
	It enables to enter a GSM number to send SOS SMS automatically in case of a system failure (only if additional GSM module is installed).
	It enables to access to a menu specifically designed to run tests on the equipment. To get more detailed information, see Test Function .
	It activates or deactivates the equipment audio.
	To run a TFT upgrade (to be used only upon technical service authorization).
	To run a system reboot. TO BE USED ONLY IF STRICTLY NECESSARY.



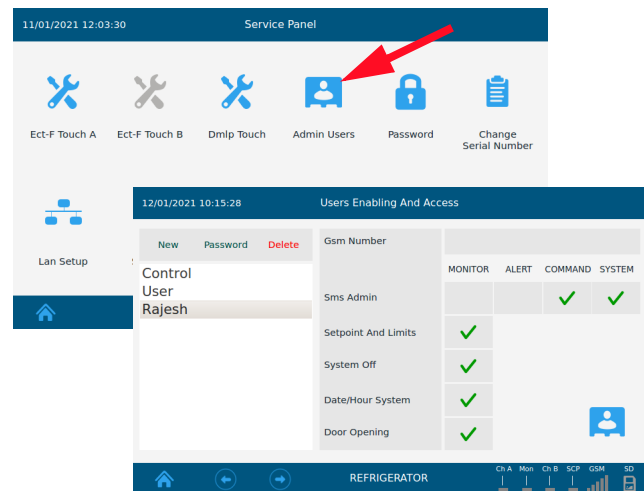
- Switching off
- Date/hour changing
- Temperature setpoint changing
- Min. and Max. alarm temperature limits changing
- User Menu accessing
- Door opening, if digital electric lock is installed
- Night & Day menu accessing.



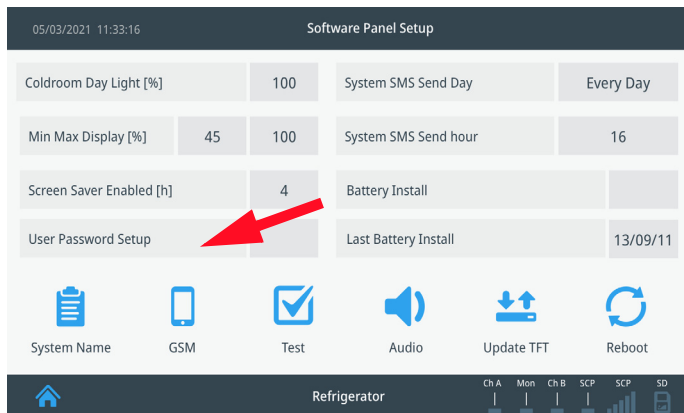
The generic USER password is 1234 and it can be changed only entering the Service Menu - “ADMIN USERS” sub-menu.


User Management

In service menu, enter “ADMIN USERS” section touching  icon.



User Password Setup



Enabling the “USER PASSWORD SETUP”  in the SOFTWARE PANEL SETUP (enter PSW: 0000 to activate), it is possible to protect the equipment from no qualified personnel who may change important parameters for the correct functioning of the equipment.


Password will be asked for the following operations:

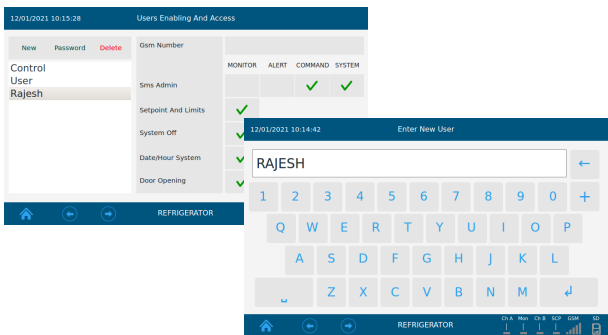
- Switching on



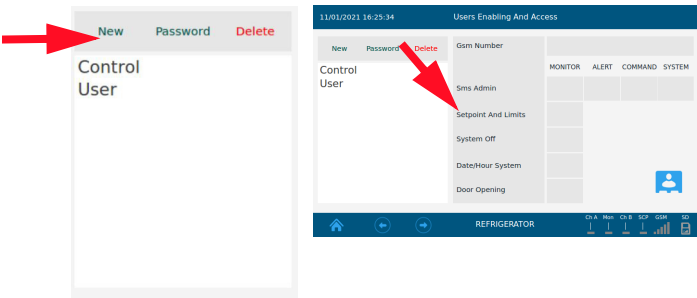
CAUTION: Password 0000 is the one requested in SYSTEM SETUP when enabling the USER PASSWORD SETUP.

The second is called USER: It is enabled by default to do everything using password 1234.

New users can be created by gently pressing “NEW” and typing in the name (for example JOHN). After confirming by pressing,  a specific password will be requested for this user.

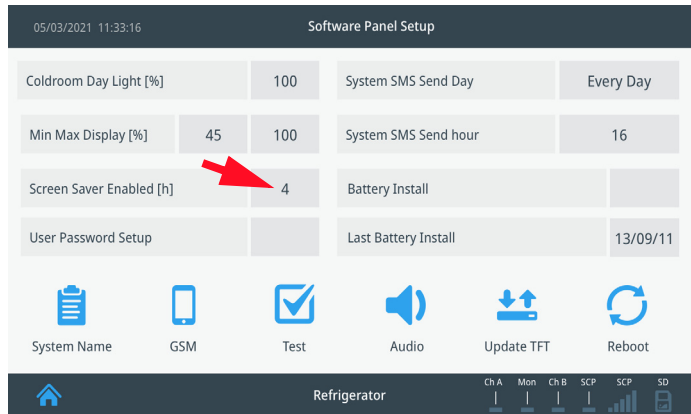


Double click the name of the created user (if selected correctly, it will turn blue) and enable or disable the functions required for this user (setpoint and limits changing, switching on/off the equipment, the door opening, the date/hour changing, etc.).



ScreenSaver

User can enable screensaver entering software panel setup. Screensaver will automatically activate, if the screen is not in use for a certain period of time.



The screensaver page will show the chamber temperature against a black background easily readable from the distance. The screensaver page will disappear at the touching of the screen.



Test Function

Test program allows to check operation of some security signaling, such as acoustic alarm for event of high temperature, acoustic alarm for event of low temperature and remote alarm test for acoustic alarm and dry contacts.

During these tests, device operation keeps taking place regularly and temperature inside the chamber remains within limits.

Following table describes the functions of the mentioned menu.

Table 8. Functions of Test Menu





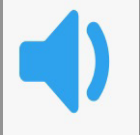
Icons	Description
	<p>By selecting this icon, the displayed value of the probe slowly (within a minute) and artificially increases up to a value above the upper limit set. Once it happens, acoustic signalling takes place three times and dry contact switches.</p> <p>To conclude test, the value of the probe turns back close to the device operating value; after that it is allowed to exit the menu or to select a different test.</p> <p>The event generated by the test is filed in alarm list and on SD card, under the name of "SIMULATED HIGH TEMP".</p>
	<p>Capture software allows for certain to view the event when loading data with sampling rate of 30 sec. On the contrary, a sampling frequency of 1 min or 5 mins does not assure to catch it, as it depends on the exact moment in which the test is performed.</p>


Table 8. Functions of Test Menu

Icons	Description
	<p>By selecting this icon, the displayed value of the probe slowly (within a minute) and artificially decreases down to a value below the lower limit set. Once it happens, acoustic signalling takes place three times and dry contact switches.</p> <p>To conclude test, the value of the probe turns back close to the device operating value; after that it is allowed to exit the menu or to select a different test.</p> <p>The event generated by the test is filed in alarm list and on SD card, under the name of "SIMULATED LOW TEMP".</p> <p>Capture software allows for certain to view the event when loading data with sampling rate of 30 sec. On the contrary, a sampling frequency of 1 min or 5 mins does not assure to catch it, as it depends on the exact moment in which the test is performed.</p>
	
	<p>Tapping this icon allows to test device audio buzzer, by activating a single acoustic signalling, and on the dry contact (remote alarm) switching for 10 seconds. Potential-free relay is placed on the electronic board or, if available, on the external terminal board placed in the back of the refrigerator (External Terminal Board)</p>





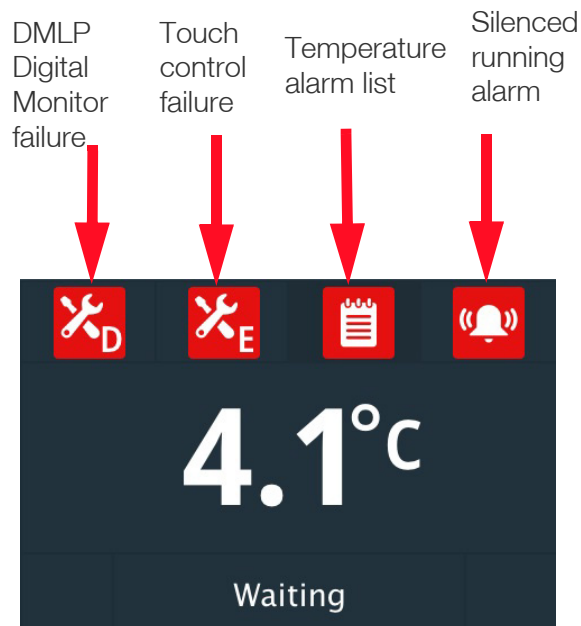
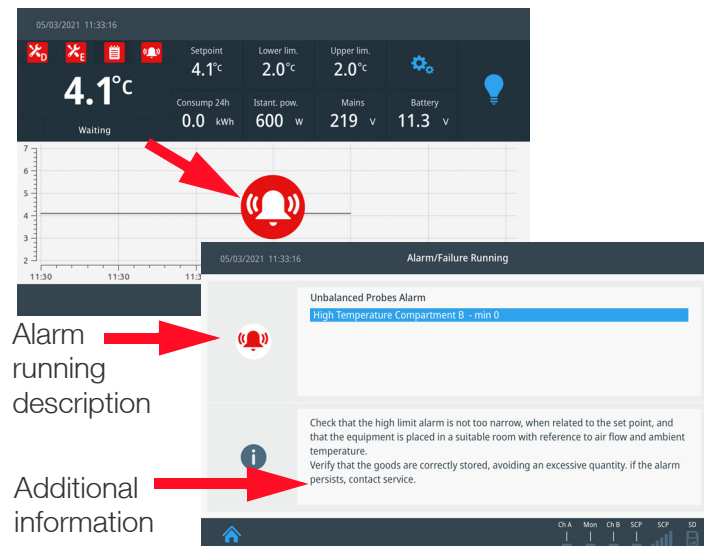
Remote alarm test is available on each model.






High temperature and low temperature test may be performed only under conditions of ideal and abnormalities free device functioning. Should test fail, icon  will be displayed and it will be possible to go back to home-screen to verify presence of alarms.


Alarms and Failures Signal

When a failure or alarm is detected, in the display will appear the following icon  and an acoustic alarm will be heard. Touch the icon  in order to silence the acoustic alarm and visualize the description of the alarm. It is possible to touch the description of the failure in order to have more information also about the possible solution of the problem.



Once visualized the description, in the homepage the icon of alarm  will appear littler and near the temperature of the chamber in order to signal that the alarm is still running. If after 30 minutes, the Failure/ Alarm persists, the acoustic alarm will be reiterated, and the alarm icon  will appear again big in the middle of the display.

When the alarm or failure is off, the user will continue to be informed in the Homepage both visually, with a dedicated icon “Temperature Alarm” , and acoustically every 2 minutes until the type of alarm or failure is visualized.

By touching , you inspect the alarm and you stop the signaling.

Temperature Data Backup from SD Card

We suggest taking backup of data every two months in the computer's SD card to prevent data loss in case the SD card is lost or damaged.

To take backup of data, extract the SD card and take a copy of the backup folder in your PC without deleting any folder or file.

The software CAPTURE 5.2 available in the SD card allows reading, creating and printing daily/weekly graphs of the backup data saved in the USB.

While the SD card is extracted, all data will be registered.



In case of problems with SD card always check that the lever on the side of the same is positioned in “writing” position. If not, the controller won’t recognize it.



In order to guarantee the maximum efficiency of the system we advise to replace the SD card every 3-4 years.



Figure 17. SD card lever position

Data Loading in Capture Software

SD card contains no. 4 folders:

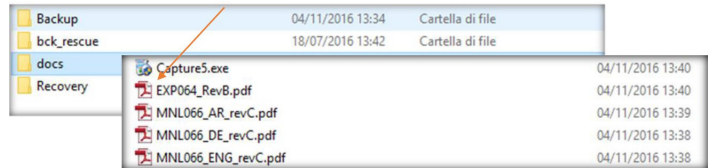
- Backup (including temperature data).
- Bck_rescue (including additional temperature backup folder).
- Docs (including Capture 5.2 software, manuals and electric drawings).
- Recovery (including the backup of all the customization made by the user).

Follow the below steps to install Capture 5.2 software:

- Remove the SD card from the slot of the equipment.
- Insert the SD card in the slot of the computer (if present) or use a Card Reader.
- Double click on Removable Disk related to SD Card (e.g. Removable Disk G:).

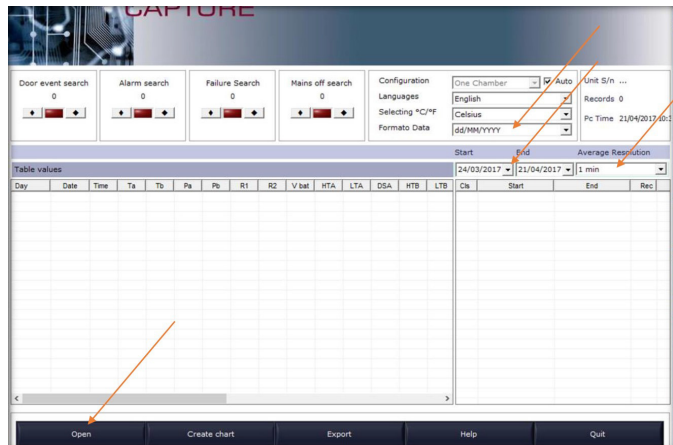


- Open “Docs” folder and install Capture software.

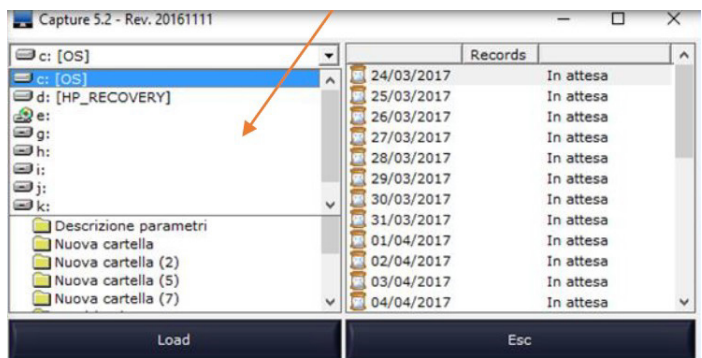



- Open Capture software, select the time period you would like to download (Start-End) and set the average resolution (select 5 minutes to create monthly graphs).

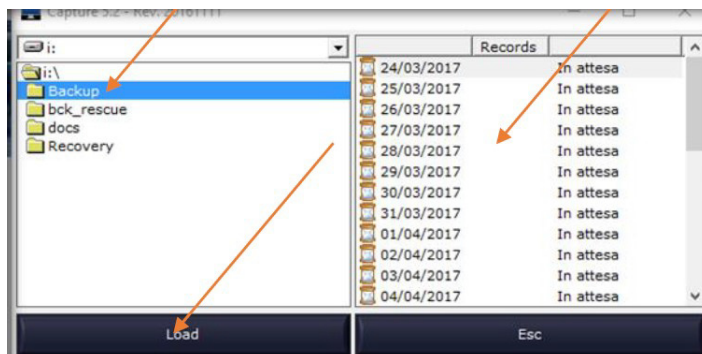
- Click on .






- Select the path of the folder you want to load.



- Double click the Backup folder and click . Wait for data loading.






The chart is daily and by clicking  it is possible to visualize the temperature graph of the next day. You can build a weekly chart by clicking . Clicking again  the next week temperature chart will be visualized.

The scale on the axis of the graph of the temperatures is automatic and it is based on the values displayed on the chart but you can change it using the appropriate menu in the lower left by selecting the "Man".

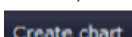


Click the buttons at the left of the graph to enable or disable the visualization of the desired chamber (Ta-Tb-Set- 1-S2-S3-Rh).

The button  allows setting a start/end date  to create a customized chart of the required period.

The available "Zoom" tools  and the "Auto Scale" Y-axis function allows performing further analysis on the recorded data.

How to Create a Temperature Graph

When data has been downloaded, it is possible to create charts by clicking on .

Then, select the desired chamber (Chamber A – Chamber B – Chamber A+B – Battery)

The following relevant data is visualized in each chart:

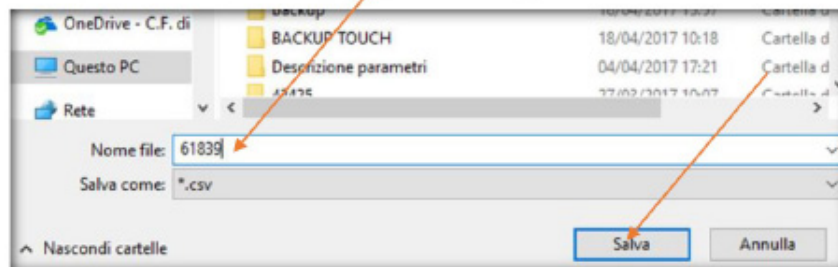
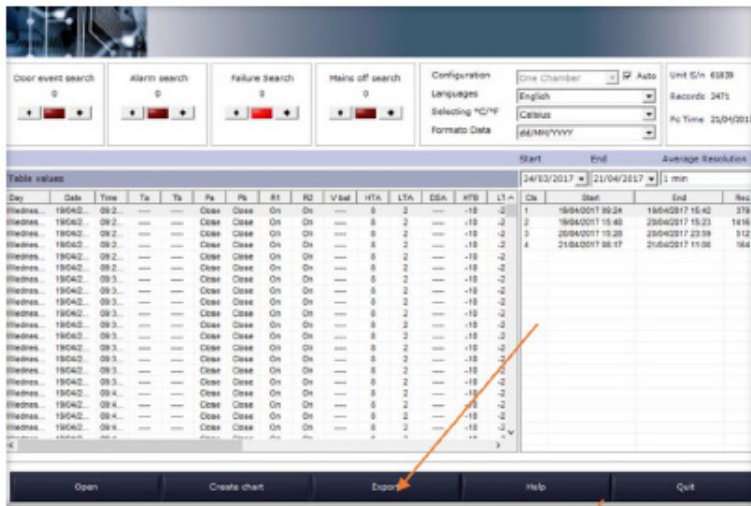
Serial Number: Serial number of the device

Start / end date of the graph

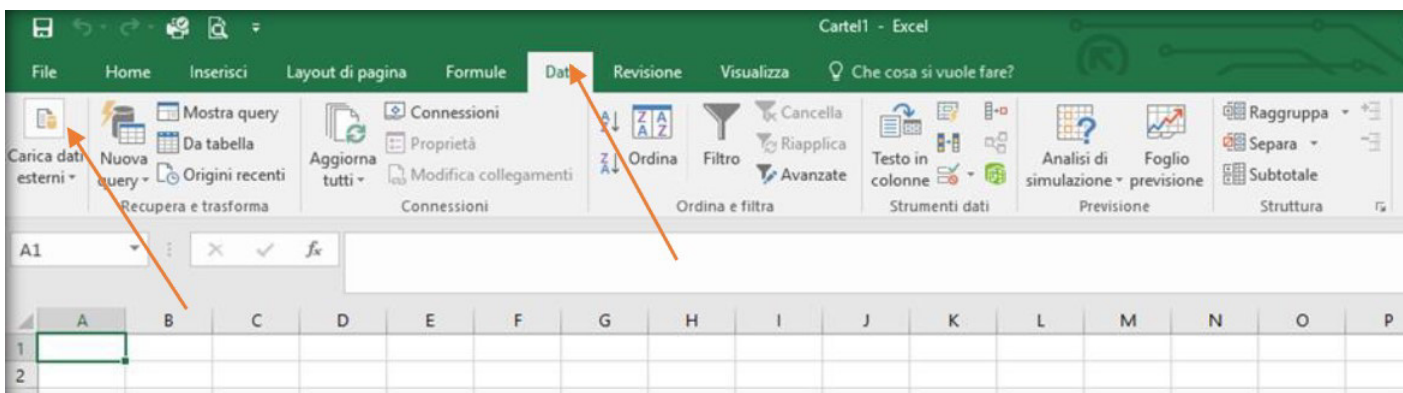
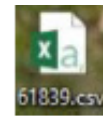
Print the date of printing

How to Export Data

Click **Export** and save the file (for example, save it with equipment serial number).



- Open "Excel" software, click Data and load the file saved previously



- Then, follow these steps:

Importazione guidata testo - Passaggio 1 di 3

La creazione guidata del testo ha riscontrato che i dati sono delimitati.
Scegliere **Avanti** o il tipo dati che meglio si adatta ai dati.

Tipo dati originali

Scegliere il tipo di file che meglio si adatta ai dati:

☒ **Delimitato** - Con campi separati da caratteri quali virgole o tabulazioni.
☐ **Larghezza fissa** - Con campi allineati in colonne e separati da spazi.

Inizia ad importare alla riga: Origine file:

☐ Dati con intestazioni

Anteprima del file C:\Users\assistenza\CP\Desktop\61839.csv

1	Day; Date; Time; Ta; Tb; Pa; Pb; R1; R2; V bat; HTA; LTA; DSA; HTS; LTS; DSS; AL a; AL b; Delip
2	Wednesday; 19/04/2017; 09:24:00; ----; ----; Close; Close; On; On; ----; 8; 2; ----; -10; -24;
3	Wednesday; 19/04/2017; 09:25:00; ----; ----; Close; Close; On; On; ----; 8; 2; ----; -10; -24;
4	Wednesday; 19/04/2017; 09:26:00; ----; ----; Close; Close; On; On; ----; 8; 2; ----; -10; -24;
5	Wednesday; 19/04/2017; 09:27:00; ----; ----; Close; Close; On; On; ----; 8; 2; ----; -10; -24;

Importazione guidata testo - Passaggio 2 di 3

In questa finestra di dialogo è possibile impostare i delimitatori contenuti nei dati. L'anteprima mostra come si presenta il testo.

Delimitatori

☒ **Tabulazione**
☒ **Punto e virgola** ☐ Considera delimitatori consecutivi come uno solo
☐ Virgola
☐ Spazio
☐ Altro:

Qualificatore di testo:

Anteprima dati

Day	Date	Time	Ta	Tb	Pa	Pb	R1	R2	V bat	HTA	LTA	DSA
Wednesday	19/04/2017	09:24:00	----	----	Close	Close	On	On	----	8	2	----
Wednesday	19/04/2017	09:25:00	----	----	Close	Close	On	On	----	8	2	----
Wednesday	19/04/2017	09:26:00	----	----	Close	Close	On	On	----	8	2	----
Wednesday	19/04/2017	09:27:00	----	----	Close	Close	On	On	----	8	2	----

Qui è possibile selezionare ciascuna colonna ed impostare il Formato dati.

Formato dati per colonna

☒ Generale
☐ Testo
☐ Data: GMA
☐ Non importare colonna (salta)

'Generale' converte valori numerici in numeri, valori data in date e i restanti valori in testo.

Avanzate...

Anteprima dati

Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Day	Date	Time	Ta	Tb	Pa	Pb	R1	R2	V bat	HTA	LTA	DSA	
Wednesday	19/04/2017	09:24:00	----	----	Close	Close	On	On	----	8	2	----	
Wednesday	19/04/2017	09:25:00	----	----	Close	Close	On	On	----	8	2	----	
Wednesday	19/04/2017	09:26:00	----	----	Close	Close	On	On	----	8	2	----	
Wednesday	19/04/2017	09:27:00	----	----	Close	Close	On	On	----	8	2	----	

Annulla
< Indietro
Avanti >
Fine

- This is the exported table:

FileHomeInserisciLayout di paginaFormuleDatiRevisioneVisualizzaChe cosa si vuole fare?

Carica dati esterni

Nuova query

Mostra query

Da tabella

Origini recenti

Recupera e trasforma

Aggiorna tutti

Connessioni

Proprietà

Modifica collegamenti

Connessioni

Ordina

Filtro

Ordina e filtra

Cancella

Riapplica

Avanzate

Testo in colonne

Strumenti dati

Analisi di simulazione

Foglio di previsione

Previsione

Raggruppa

Separa

Subtotale

Struttura

A1

Buffer Battery for Alarm in the Event of Power Failure

A buffer battery is provided which allows the controller to operate autonomously for approximately 12 hours in the event of power failure.

The controller itself will recharge the battery keeping it charged and ensuring availability when needed.

BATTERY BACKUP

N.8 Rechargeable NIMH AA 1.2V 2700mAh

Figure 18. Battery Label



Figure 19. Buffer Batteries

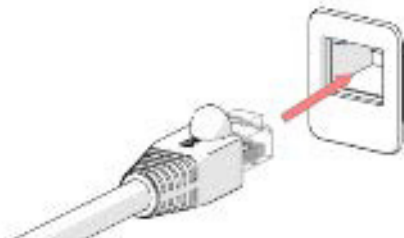
Connection to External Contacts


Ethernet Setup

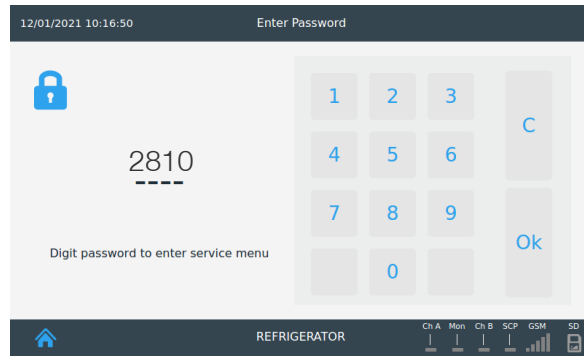
Plug in the ethernet cable into the equipment's RJ-45 port.



The appliance is factory setup with the following IP address 192.168.0.127.

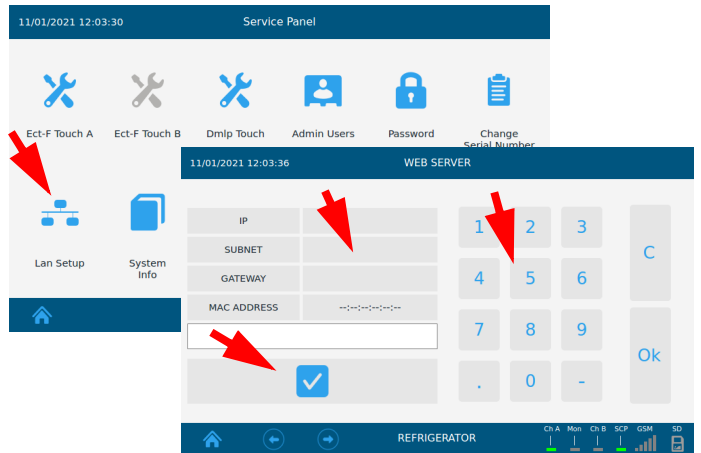
This IP address must be setup according to your corporate network, so follow these steps:



In the homepage, touch first user menu icon  and second service menu icon . Now, the service menu password is asked. Enter 2810 PSW and confirm.



Access to LAN setup menu by touching  icon and change IP and SUBNET address. Once entered the new addresses confirm by "OK", and touch  to record and exit from the menu.



In order to check if the procedure has been successful, enter the new IP address in a computer's browser (advised browser: MOZILLA FIREFOX) connected to the ethernet line – a detailed view of the equipment main functions should appear:

03/10/14 17:54:04				
Coldroom	Low Limit	High Limit	Setpoint	Mains
4.5 °C	2 °C	8 °C	5 °C	234 V
Light	Door	N&D	Power	Energy 24h
on	closed	disabled	63 W	0.471 kWh
Evaporator	Condenser	Compressor	Board Temp.	Relais
-1.3 / 8.1 -1 °C	21.1 / 29.1 26.3 °C	02:36 / 03:00 25 %	32 °C	00110010
Alarms				
ALTA TEMPERATURA PER BLACK-OUT				
IP 192.168.2.127				
MEDICA 409 TOUCH(12345)				



CAUTION: In the service menu there are parameters and configurations that guarantee the proper functioning of the equipment. Any unauthorized tampering may irreversibly compromise the equipment and warranty will automatically expire.

External Terminal Board

When the external terminal board is installed behind the unit, it is possible to connect the equipment to an external alarm system by dry contacts (AL1, AL2) and ethernet port.

na	c	nc	na	c	nc			-	+	-	+
AL1			AL2					4-20mA A		4-20mA B	

Figure 20. External Terminal Board Label

AL1

The dry contact (no-c-nc) commutes when an alarm/failure of touchscreen controller (or DMLP DIGITAL MONITOR, if present) happens.

Table 9. AL1 Configurations

AL1 Configurations			
	Standard	with DMLP installed	with DMLP and PT100 probe for temp. product simulation installed
AL1	•	•	•

4-20mA Output (Optional)

The 4-20mA outputs allows connecting the equipment to an external system with 4-20mA input. 4-20mA outputs convert a temperature value detected by the touchscreen controller or DMLP digital monitor probe into an electric signal.

Manual Unlocking of the Door

In the event of unexpected power failure, it is possible to unlock the electronic locking (if installed) by means of the screw driver (Figure 22).

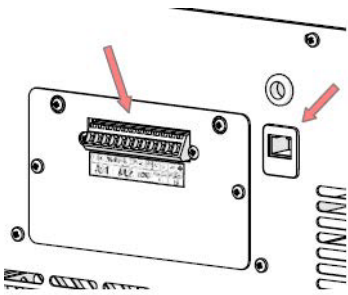


Figure 21. External Terminal Board Position

Figure 22. Screw Driver

- **One chamber equipment:** Insert the screw driver in dedicated slot placed on the front panel side in accordance with the door handle position. In order to be able to open the door, it is necessary to hold the release lever pushed. By stopping pushing, the mechanism door will be locked again. (Figure 23).

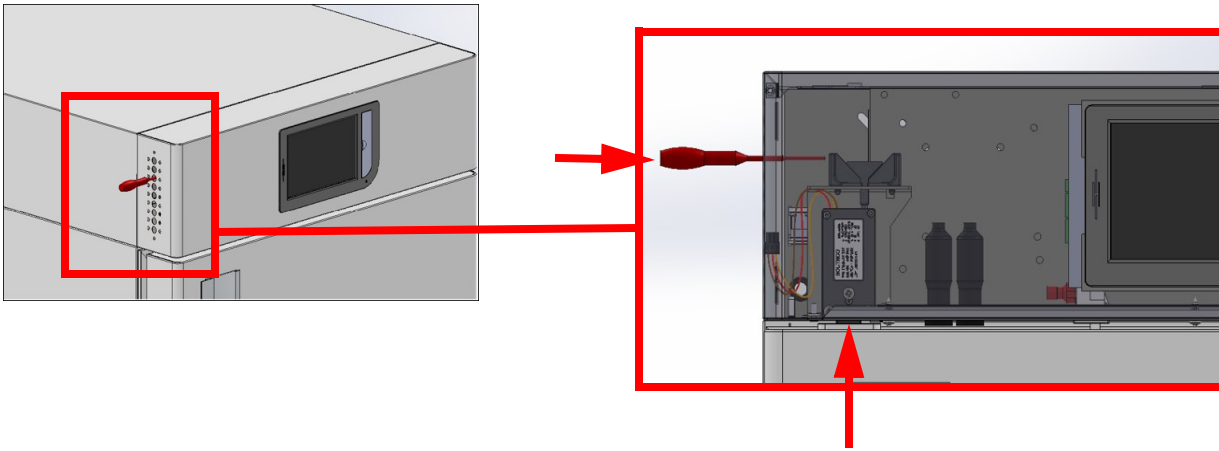


Figure 23. Key position to open the door manually in equipment with one chamber

- For model 1500, manual door opening has to be performed by accessing from top of the refrigerator – **Figure 24.** Pulling the release lever upwards and keeping levers individually in tractions allows opening the related door.

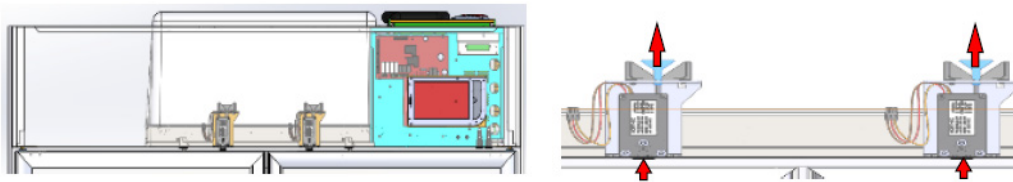


Figure 24. Mod. 1500 digital electric lock position

Ordinary and Extraordinary Maintenance

The information in this chapter is addressed to both users (non-specialized personnel) and routine maintenance workers.

Prohibition of Safety Device Removal



Do not remove safety protections without switching off the refrigerator cabinet and disconnecting it from the electrical mains.

The manufacturer disclaims all liability that may arise if this regulation is not observed.

Cleaning the Unit Inside and Outside

We recommend cleaning both inside and outside surfaces of the unit at least twice a year. Disconnect the power cord before any cleaning.

The following is indicated for this purpose:



- **Cleaning products:** Water and non-abrasive neutral detergents. Do not use solvents or thinners.
- **Cleaning method:** Use a cloth or sponge soaked in a suitable cleaning product to clean the inside and outside parts of the cabinet.
- **Disinfection:** Do not use substances that can alter the organoleptic characteristics of stored products.
- **Rinsing:** Use a cloth or sponge soaked in water. Do not use water jets.
- **Frequency:** At least twice a year or at different intervals depending on the type products stored.

Cleaning the Condenser



Failure to clean the condenser as well as temperature being too high in the environment in which it is installed is one of the main causes of difficult cabinet operation. Cleaning must be carried out every 2-3 months, even in the cleanest environments.

You must access the condenser coil placed in all models in the technical compartment near the compressor and clean it with one of the following:

- Long bristle brush
- Vacuum cleaner
- Compressed air

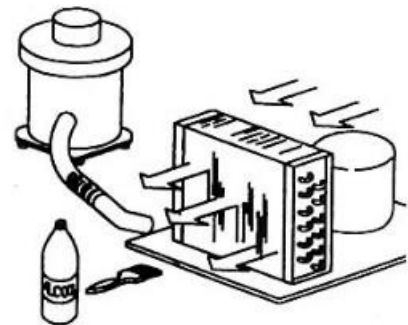


Figure 25. Condenser Image



CAUTION: Do not use metal brushes. Do not bend condenser fins.



CAUTION: Always disconnect the power cord before this operation.

In order to ensure optimal unit operation, follow the manufacturer instructions, arranging for periodic maintenance to be carried out by qualified technicians.

Follow the following cleaning instructions according to the bought model:

MODEL 140

PHASE 1

Use a Phillips head screwdriver to remove the cover (if the battery pack cover is present, do not remove the screws to the right and left of the terminal board or those for fixing the cover itself).

PHASE 2

Use a vacuum cleaner or air jet to remove any dust on the condenser fins. Perform this procedure backwards to restore correct fastening of the rear cover.

PHASE 3

Restore the electrical current and switch back on the device.

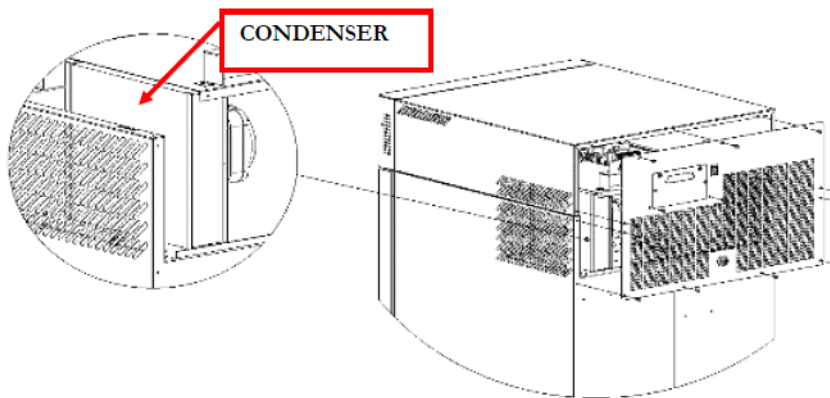


Figure 26. Condenser Position in models 140

MODEL 250-400

PHASE 1

Use a Phillips head screwdriver to remove the guard (3 screws).

PHASE 2

Use a vacuum cleaner, air jet, or a long bristle brush to remove any dust on the condenser fins. Perform this procedure backwards to restore correct fastening of the guard.

PHASE 3

Restore the electrical current and switch back on the device.

MODEL 700-1500

PHASE 1

In models with higher motors (700-1500 L), the condenser can be accessed directly from the outside using a ladder.

PHASE 2

Use a vacuum cleaner, air jet, or a long bristle brush to remove any dust on the condenser fins.

PHASE 3

Restore the electrical current and switch back on the device.

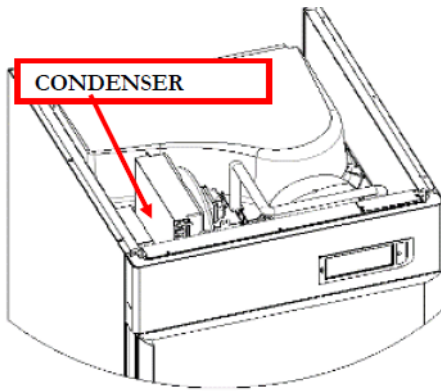


Figure 27. Condenser position in models 700-1500

Condensate Water Draining

Defrosting causes the formation of condensate water. The water evaporates automatically in models with motor compartment in lower position.

In some other models, water is collected in a tray, included in supply which is set under the unit and inserted in the corresponding slides. This tray must be emptied frequently.

Optionally, models with upper motor compartment can have a collecting tray included for automatic condensation water evaporation.

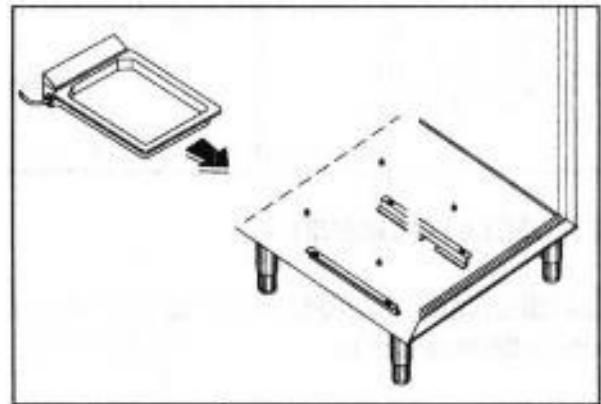


Figure 29. Tray with automatic condensate water evaporation

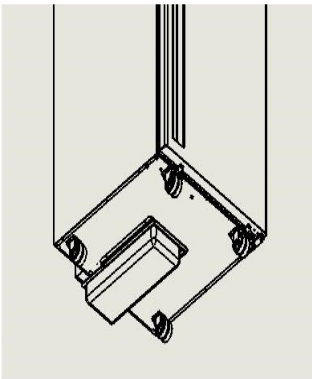


Figure 28. Condensate collection tray position

Replacing Buffer Batteries

To ensure maximum efficiency, we suggest periodically changing backup batteries at least every 2 years. This operation can be performed by users, easily accessing the housing located;

- at the rear of the device.
- at the upper of the device (models with upper motor compartment).

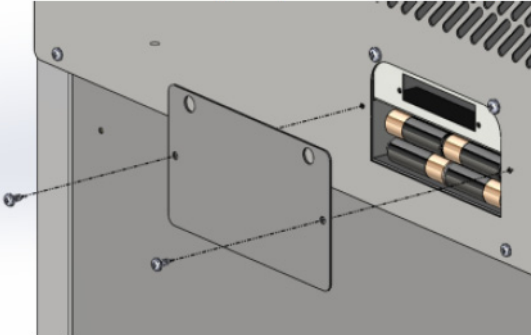



Figure 30. Battery position

Disposal

This unit is marked in compliance with European Directive 2012/19/EU (WEEE).

The symbols  on the product means that it must not be considered as domestic waste but it must be given to the competent authority for the recycling of electric and electronic appliances.

Before scrapping the machine, make it unusable by cutting the power cord, and removing the doors, shelves and drawers so that children cannot access the unit. Do not leave it unattended even for a few days.

For further information about the treatment, retrieval and recycling of the product, contact local officials, the domestic waste collection service or the distributor.

Comply with applicable laws.

The gas present into the system must be extracted by authorized personnel.

Labeling

Device Identification Label

The diagram shows a label for a Fiocchetti device. The label includes the following fields and annotations:

- Model:** Points to the 'Modello' field, which contains 'TSB400R'.
- Code:** Points to the 'Classe' field, which contains 'N'.
- Power voltage supply:** Points to the 'Tensione' field, which contains '230V/1~/50Hz'.
- Power absorption:** Points to the 'Assorb' field, which contains '1'.
- Symbol in case refrigerant is flammable:** Points to the flame symbol in the 'Gas' field.
- Gas refrigerant type:** Points to the 'R290' field in the 'Gas' section.
- Fuse:** Points to the 'Fusibile' field, which contains 'T 10A 250V'.
- Serial number:** Points to the 'Matr. S/N' field, which contains '75675'.
- Defrost heater power:** Points to the 'Res.' field, which contains '250'.
- Light power:** Points to the 'Luce' field, which contains '8'.
- Manufacturer name and address:** Points to the top section of the label containing 'C.F. di Ciro Fiocchetti & C. snc - Via Panagulis, 48 - Luzzara (RE) - ITALY'.
- Notified body identification number:** Points to the '0051' field.
- Year of production:** Points to the '2020' field.
- Ambient temperature class:** Points to the 'N' field in the 'Classe' section.
- Gas refrigerant type:** Points to the 'R290' field.

* Ambient temperature caption:

SN (da +10°C a +32°)

N (da +16°C a +32°)


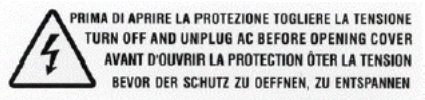





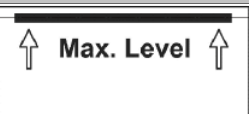

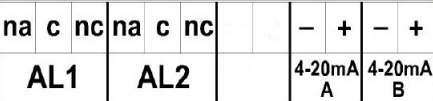

ST (da +18°C a +38°C)

T (da +18°C a +43°)

C (da +10°C a +25°)




Other Labeling

Table 10. Labels

	Danger of electrocution Disconnect power supply before removing the protection
	Cut off power before removing the guard.
	Earthing symbol
	Flammability Circuit containing flammable refrigerant
	Danger of heat High temperature parts
	Periodic condenser cleaning
	Glass door cleaning for Vision models
	Do not exceed the indicated level
	Position of batteries for alarms
	External dry contacts label
	Warning and obligation to manual reading

Consumable Materials

Table 11. Consumable materials

Type/Characteristics	Application	Image
BATTERY 3V Lithium Coin Cell Battery type CR 2032	Clock battery on the board	
BATTERY type AA rechargeable NiMH 1.2 V 2.7 Ah	Acoustic and visual alarm battery backup	
SD Card 8GB Sandisk SDSDAA-008G	SD card	

Troubleshooting



WARNING: Troubleshooting procedures involve working with high voltages which can cause injury or death. Troubleshooting should only be performed by trained personnel.

The following table lists information regarding the possible causes and actions to be taken for the most common faults which do not need automatic technical servicing. Servicing on the electrical system must also be carried out by trusted electricians.

Table 12. Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
The unit does not switch on.	Controller set to “Stand-by”	Switch on the controller.
	No mains	Check the plug, outlet, fuses and electrical line.
	Power plug not connected to the electrical outlet.	Connect the power cord to the electrical socket.
	Control panel fault	Contact Technical Support.
Unit does not reach the set temperature.	Too much material has been placed in the compartment	Reduce the quantity and leave space between the shelves and walls. Place products in the cabinet a few at a time after the temperature has stabilised.
	Material was placed in the freezer area at room temperature (i.e. +25°).	Store only already frozen products.
	Prolonged or too frequent door openings	Reduce door openings and close the door more quickly.
	Ambient temperature is too high.	Air condition the environment.
	Condenser clogged by dust or dirt.	Clean the condenser.
	Electronic controller operating fault	Contact Technical Support.
	Cooling system operating fault	Contact Technical Support.
The unit is noisy	Unit instability	Eliminate the cause.
	Contact with objects (e.g. cardboards, polystyrene or other materials)	Move and/or remove objects touching the equipment.
Repeated alarm or fault signals or alarm noticed	Unit has detected an alarm.	Visualize alarms (see Alarms List)
Products wet	Formation of ice in the evaporator or sudden defrosting	Contact Technical Support.
	High humidity level in the environment	Air condition or ventilate the environment.
Glass door wet	High humidity level in the environment	Air condition or ventilate the environment.

Touchscreen Troubleshooting

Table 13. Touchscreen Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Screen red/black/white colour	Electrical parts disconnected.	Contact Technical Support.
	External electromagnetic fields.	
	Spikes surge.	
Icons do not react to commands or perform different functions	Improper use of screen with pens and pins, screen marked or spoiled.	Use stylus for touch screens.
	Icons are touched too fast (multitouch).	The screen does not support multitouch – touch icons more slowly.
	Unbalanced screen.	Contact Technical Support.
System stuck in “starting system” mode	O.S. files damaged by power surges.	Contact Technical Support.

Diagnostic

Table 14. Visual Alarms List

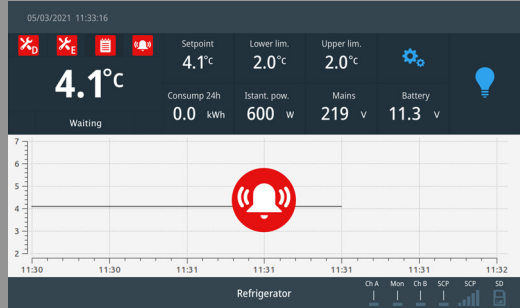



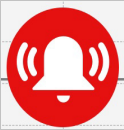


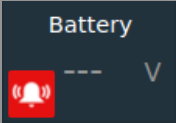

VISUAL ALARM	MEANING
	Visual and acoustic indication of a running alarm or failure (touch the red triangle  to get more information).
	DMLP FAILURE RUNNING ALARM OR OFF (if present)
	ECT-F FAILURE RUNING ALARM OR OFF
	TEMPERATURE ALARM OFF
	RUNNING ALARM, but muted (the red triangle goes back in the middle of touch screen after 15 minutes).
	Acoustic alarm disabled.

Table 14. Visual Alarms List

VISUAL ALARM	MEANING
	SD card absent or damaged or not recognized. Check SD card – see Temperature Data Backup from SD Card .
	Battery disconnected or discharged.

In presence of an off alarm or failure icon, touch the icon and wait for failure/alarm list loading.

To stop the acoustic alarm, touch the icon  and go back to homepage.

To permanently delete the acoustic signal, disable the audio device (**System Panel Setup**). If other faults or alarms occur, you will get only a visual signal.

VISUAL AND ACOUSTIC ALARM	SOLUTION
HIGH TEMPERATURE	<p>Check that products have been correctly stored in the chamber (see Placing Material Inside the Compartment)</p> <p>Check ambient conditions (environment should be neither too hot nor too cold).</p> <p>Clean the condenser (see Cleaning the Condenser)</p> <p>Check that door is properly closed.</p> <p>Air condition the environment.</p> <p>Check the electrical system or accidental disconnection of the plug.</p>
LOW TEMPERATURE	Contact Technical Support.
OPEN DOOR ALARM	<p>Check that door is properly closed.</p> <p>Check if door has been kept opened more than the programmed limit.</p>

VISUAL AND ACOUSTIC ALARM	SOLUTION
LOW EVAPORATION TEMPERATURE	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Check that door is properly closed.</p> <p>If the problem persists, contact Technical Support.</p>
HIGH CONDENSING TEMPERATURE	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Air condition the environment.</p> <p>Check that installation has been properly performed (see Positioning)</p> <p>Clean the condenser (see Cleaning the Condenser)</p> <p>If the problem persists, contact Technical Support.</p>

VISUAL AND ACOUSTIC ALARM	SOLUTION
LOW MAINS VOLTAGE	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Check mains voltage.</p> <p>If the problem persists, contact Technical Support.</p>
MAX TIME DEFROST	<p>Check that products have been properly stored inside the cabinet (see Placing Material Inside the Compartment).</p> <p>Check ambient conditions (environment should be neither too hot nor too cold).</p> <p>Touch the running failure/alarm icon to eliminate the signalization.</p> <p>If the problem persists, contact Technical Support.</p>
COMPRESSOR WORK	<p>Air condition the environment.</p> <p>Clean the condenser (see Cleaning the Condenser)</p> <p>Check that installation has been properly performed (see Positioning)</p> <p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Check that door is properly closed.</p> <p>If the problem persists, contact Technical Support.</p>
POWER FEEDER FAILURE	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Contact Technical Support.</p>
MAINS FAILURE	<p>Check the electrical system or accidental disconnection of the plug.</p>

VISUAL AND ACOUSTIC ALARM	SOLUTION
NO BATTERY	Replace the battery.
BATTERY FAILURE	Replace the battery.
SWITCH DOOR FAILURE	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Check that door is properly closed.</p> <p>If the problem persists, contact Technical Support.</p>
PROBE S1-S2-S3 FAILURE	Contact Technical Support. Refrigerator functioning is guaranteed anyway.
FAILURE LOAD U1-U2-U3-U4-U5-U6-LOAD 1 AUX-LOAD 2 AUX	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Contact Technical Support. Refrigerator functioning is guaranteed anyway.</p>
--%	Contact Technical Support.
PROTECTION AGAINST OVERHEATING	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Contact Technical Support. Refrigerator functioning is guaranteed anyway.</p>

VISUAL AND ACOUSTIC ALARM	SOLUTION
PROTECTION AGAINST FREEZING	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Contact Technical Support. Refrigerator functioning is guaranteed anyway.</p>
S1m-S2m (only if Dmlp Digital Monitor is installed)	<p>Contact Technical Support. Refrigerator functioning is guaranteed anyway.</p>
UNBALANCED PROBES ALARM (only if Dmlp Digital Monitor is installed)	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization</p> <p>Contact Technical Support.</p>
AUXILIARY COOLING SYSTEM FAILURE (only for TWIN models)	<p>High temperature alarm due to long door opening.</p> <p>Contact Technical Support. Refrigerator functioning is guaranteed anyway.</p>
TWIN COMMUNICATION FAILURE (only for TWIN models)	<p>Switch off the equipment (see Switching Off). Disconnect the plug from the mains, wait for some seconds and plug it again. Switch on the equipment and touch the running failure/alarm icon to eliminate the signalization.</p> <p>Contact Technical Support.</p>

1. User Data for Technical Support Request

Fill in the following tables in order to provide all data necessary for Technical support. If possible, leave the refrigerator in operation for 1 hour or, even better, 24 hours to allow the controller to fully collect information.

MODEL*:

Device traceability, see the silver plate at the end of this manual.

1. Has periodic cleaning of the condenser been carried out as per the use and maintenance manual?
YES NO

SERIAL NUMBER*:

If Yes, indicate the date of the last cleaning and the names of personnel who performed it.

2. Have the problems been verified according to the information stated in the use and maintenance manual?
YES NO

Fill out the following table.

Table 15. Fault signal table

Equipment:	yes	no
Does not cool		
Does not reach the set temperature		
Does not switch on		
Equipment built into furniture		
Power cable connected to multiple sockets or adapters of the power outlet		
The refrigerator unit is noisy		
Display off		
The Display signals:		
The Display signals:	yes	no
Evaporator		
Condenser		
No battery		
Battery failure		
Comp. work		
Invalid SD		

Notes:

SENT ON:

SIGNATURE: (legible)

Note: failure to submit a properly completed request (*required fields) will result in a failure to open servicing with a resulting delay in the resolution of issues.

2. Medical Device Usability

The purpose of this questionnaire is to identify the aptitude of medical device use (MD) and to check if the information provided is correct.

This form shall be filled in its entirety for each installed MD by the person (s) responsible (s) of its usage. A copy must be kept at the ward hospital where the MD has been installed and another must be signed by the person in charge of the hospital ward and sent back to C.F di Ciro Fiocchetti & C. s.n.c. at one of the following addresses:

e-mail : tecnico@fiocchetti.it

Fax : +39 0522 976028

Medical Device Identification
Model
Model Code
Serial number
INTENDED USE
Ward where the MD is installed
Type of stored product

List of Personnel Intended for Use		
First Name	Surname	Position

If required, the usage of MD can be evaluated according to the following criteria (select only one):

Evaluation	Description
1	Very poor
2	Poor
3	Satisfactory
4	Very good
5	Excellent

Questionnaire						
S.No	Question/Request	Answer/Evaluation				
1	Have you already used an identical or similar device, of the same or different brand?	Yes		No		
2	Have the users intended to use the MD been properly trained about the "good use" of blood and blood related products? (blood sampling, processing and storage)	Yes		No		
3	Have the users intended to use the MD been properly trained about the "good use" of breast milk? (sampling, processing and storage)					
4	Is there in the chosen medical staff intended to use the MD a person informed and updated on the current regulations for MD?	Yes		No		
5	Has the Use and Maintenance manual been read?	Yes		No		
6	Was the installation carried out in compliance with the indications listed in the manual?	Yes		No		
7	The provided documentation is clear, and it provides all the useful information for the usage of the device.	1	2	3	4	5
8	The instructions stick on the packaging for its removal are clear and comprehensive.	1	2	3	4	5
9	The installation instructions displayed in the manual are clear and don't give margin for interpretation.	1	2	3	4	5
10	Taking into account the instructions provided in the manual by the manufacturer, can the MD be used improperly or incorrectly?	Yes		No		
11	If you answered "YES" to the question above, provide details/reasons:					
12	The device display (Touch screen or keyboard) is intuitive and easy to be used.	1	2	3	4	5
13	The access to user panel interface is easy.	1	2	3	4	5
14	The alarms described in the manual and shown in the display are adequate to grant the safety of the stored product.	1	2	3	4	5
15	The accessories supplied for the storage of "products" are easy to be used (for example, shelves or drawers with dividers).	1	2	3	4	5

Stamp and signature

DATE:

The following documents are attached:

- Declaration of conformity with DIRECTIVE 93/42/ECC
- Electric safety check receipt
- Wiring diagram

WEEE Compliance

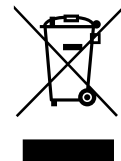
WEEE Compliance. This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2012/19/EU. It is marked with the following symbol. Thermo Fisher Scientific has contracted with one or more recycling/disposal companies in each EU Member State, and this product should be disposed of or recycled through them. Further information on our compliance with these Directives, the recyclers in your country, and information on Thermo Scientific products which may assist the detection of substances subject to the RoHS Directive are available at www.thermofisher.com/WEEERoHS.

Great Britain



WEEE Konformität. Dieses Produkt muss die EU Waste Electrical & Electronic Equipment (WEEE) Richtlinie 2012/19/EU erfüllen. Das Produkt ist durch folgendes Symbol gekennzeichnet. Thermo Fisher Scientific hat Vereinbarungen getroffen mit Verwertungs-/Entsorgungsanlagen in allen EU-Mitgliedstaaten und dieses Produkt muss durch diese Firmen verwertet oder entsorgt werden. Mehr Informationen über die Einhaltung dieser Anweisungen durch Thermo Scientific, die Verwerter und Hinweise die Ihnen nützlich sein können, die Thermo Fisher Scientific Produkte zu identifizieren, die unter diese RoHS-Anweisung fallen, finden Sie unter www.thermofisher.com/WEEERoHS.

Deutschland



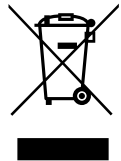
Conformità WEEE. Questo prodotto deve rispondere alla direttiva dell'Unione Europea 2012/19/EU in merito ai Rifiuti degli Apparecchi Elettrici ed Elettronici (WEEE). È marcato col seguente simbolo. Thermo Fisher Scientific ha stipulato contratti con una o diverse società di riciclaggio/smaltimento in ognuno degli Stati Membri Europei. Questo prodotto verrà smaltito o riciclato tramite queste medesime. Ulteriori informazioni sulla conformità di Thermo Fisher Scientific con queste Direttive, l'elenco delle ditte di riciclaggio nel Vostro paese e informazioni sui prodotti Thermo Scientific che possono essere utili alla rilevazione di sostanze soggette alla Direttiva RoHS sono disponibili sul sito www.thermofisher.com/WEEERoHS.

Italia



Conformité WEEE. Ce produit doit être conforme à la directive européenne (2012/19/EU) des Déchets d'Équipements Électriques et Électroniques (DEEE). Il est marqué par le symbole suivant. Thermo Fisher Scientific s'est associé avec une ou plusieurs compagnies de recyclage dans chaque état membre de l'union européenne et ce produit devrait être collecté ou recyclé par celles-ci. Davantage d'informations sur la conformité de Thermo Fisher Scientific à ces directives, les recycleurs dans votre pays et les informations sur les produits Thermo Fisher Scientific qui peuvent aider la détection des substances sujettes à la directive RoHS sont disponibles sur www.thermofisher.com/WEEERoHS.

France



thermo scientific

Contact Information

Thermo Fisher Scientific refrigerators and freezers products are backed by a global technical support team ready to support your applications. We offer cold storage accessories, including remote alarms, temperature recorders, and validation services. Visit www.thermofisher.com/cold or call:

Countries	Customer Support
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France	+33 2 2803 2180
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Find out more at thermofisher.com/cold

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