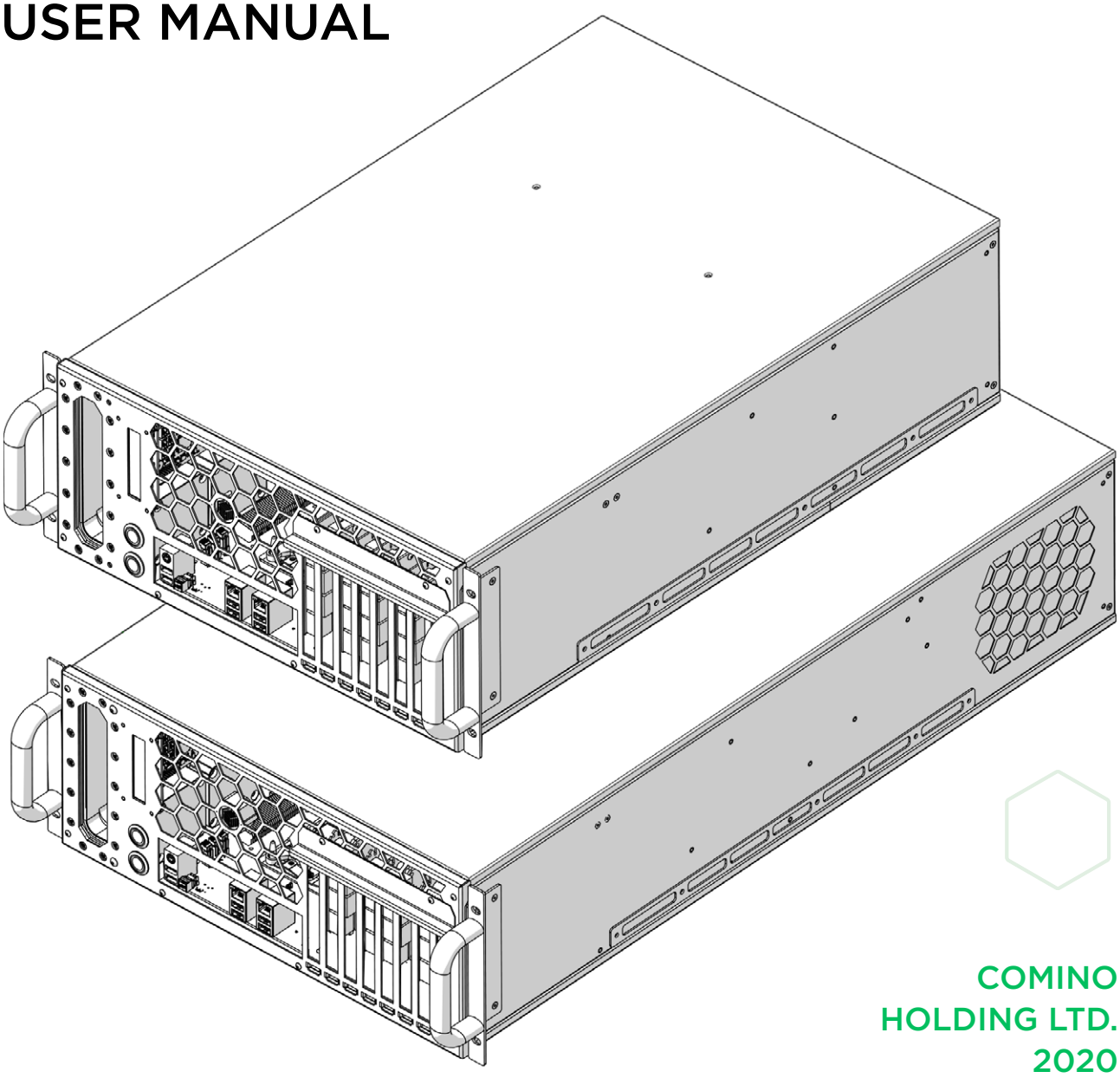
COMINO

GRANDO RM V2L/V2S

USER MANUAL



COMINO
HOLDING LTD.
2020

OVERVIEW

Congratulations on purchasing your **GRANDO RM** Professional Computing Device. We are pleased to welcome you as a customer. These user instructions contain all safety information and instructions necessary for using your **GRANDO RM**.

Before using your device, please familiarise yourself with all relevant information. Only use the device in the manner described and for the applications indicated. If you pass on the device, be absolutely sure to also pass on all instructions and other relevant documents.

1. INTRODUCTION

1.1 Intended Use

This device is intended for use as a Professional Computer. The device shall not be used in caustic or potentially explosive environments, or for medical purposes. The device may only be used as specified in these user instructions.

A GRANDO Professional Computer may only be used with the original accessories and original components.

DANGER

DANGER INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY

WARNING

WARNING INDICATES A POTENTIAL HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY

CAUTION

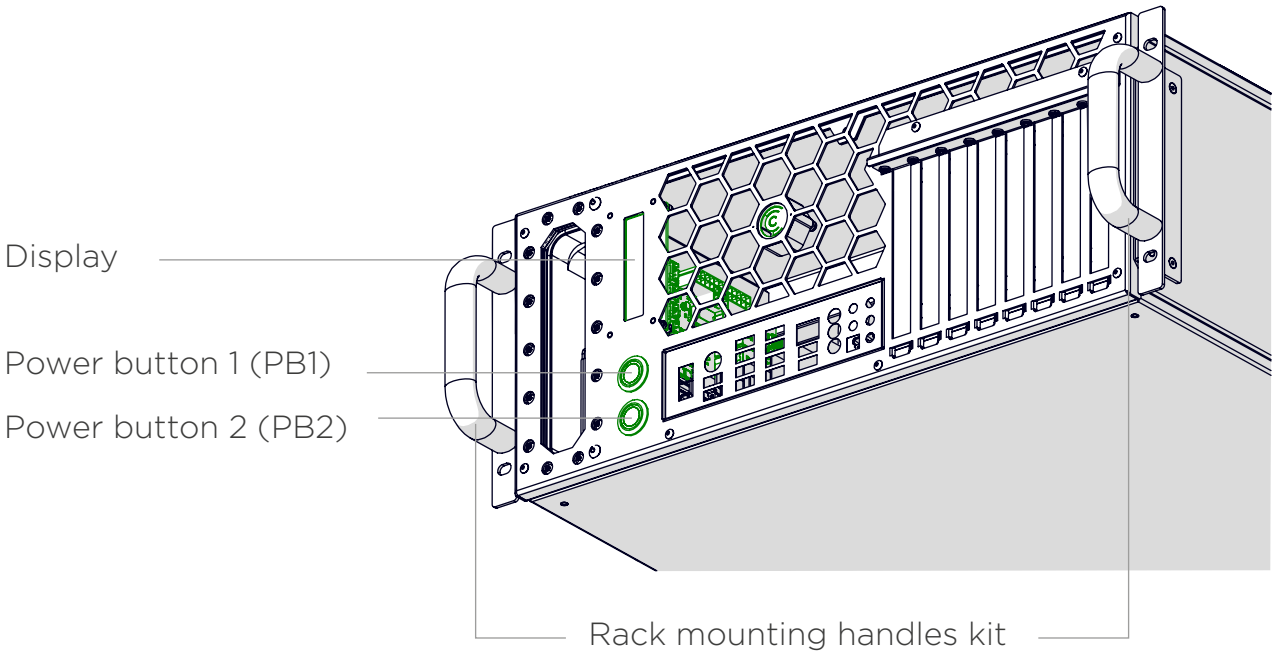
CAUTION INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY

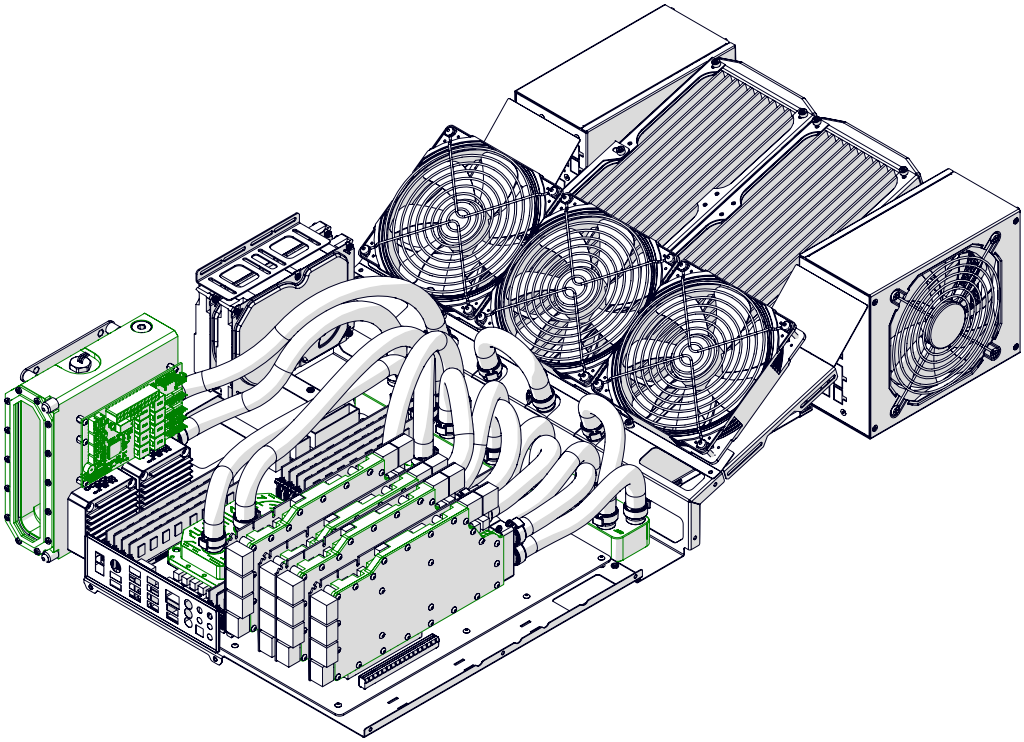
NOTICE

NOTICE INDICATES A SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN PROPERTY DAMAGE

2. PRODUCT DESCRIPTION

2.1 Product Elements





3. SAFETY INSTRUCTIONS

3.1 Warnings and safety information

WARNING

MAKE SURE YOU READ AND UNDERSTAND ALL SAFETY INSTRUCTIONS

3.2 General

- Follow all the instructions. This will avert fire, explosions, electric shock and other hazards that can cause material damage and/or severe injury or death

- Please ensure that all those who use the device have read these warnings and instructions and follow them

- Keep all safety information and instructions available for future reference and pass them onto users who subsequently use the device

- The manufacturer assumes no liability for instances of material damage or personal injury caused by any incorrect use of the device or non-compliance with safety instructions. The warranty is invalidated in such cases.

3. SAFETY INSTRUCTIONS

3.3 Intended use

DANGER

THE DEVICE IS NOT SUITABLE FOR USE IN POTENTIALLY EXPLOSIVE ENVIRONMENTS

- The device is intended for indoor use. Never use it outdoors
- Only use the device within the power limits specified. In the event the device suffers damage, it shall be disconnected from the mains and no longer used
- To prevent overheating, the device shall not be covered or placed near to sources of heat or in direct sunlight, and it shall only be used in ambient temperatures between +3°C and +38°C
- To prevent the system from overheating, do not cover the air intake and outtake vents of the device
- Do not use the device during a gas leak
- Do not use the device close to magnetic or electric fields
- Do not use the device during a thunderstorm
- To prevent electric shocks, unplug the cable from the socket before moving the system
- Do not turn on the device with the side covers removed
- Do not place objects on the surface of the device or insert foreign objects into it
- Use the device with care, avoid impacts and mechanical damage, moisture on the device both outside and inside
- Use the device in a well-ventilated area

3.4 Information for vulnerable people

DANGER

NEVER LEAVE CHILDREN UNSUPERVISED WITH THE PACKAGING MATERIAL. THE PACKAGING MATERIAL REPRESENTS A RISK OF SUFFOCATION.

CHILDREN FREQUENTLY UNDERESTIMATE THESE DANGERS. KEEP CHILDREN AWAY FROM THE PACKAGING MATERIAL.

- This device shall not be used by those (including children) with physical or mental-health issues or a lack of experience and/or knowledge, unless they are supervised by somebody who assumes responsibility for their safety and gives them corresponding instructions on how to use the device correctly.
- To avert injuries, keep the device away from children. Children shall be supervised to ensure they do not play with the device.

3.5 Installation

DANGER

BE VIGILANT AT ALL TIMES, AND ALWAYS BE CAREFUL WHAT YOU ARE DOING. DO NOT USE ELECTRICAL EQUIPMENT IF YOU ARE LACKING IN CONCENTRATION OR AWARENESS, OR ARE UNDER THE INFLUENCE OF DRUGS, ALCOHOL OR MEDICATION. A BRIEF MOMENT OF CARELESSNESS CAN CAUSE SERIOUS ACCIDENTS AND INJURY WHEN USING ELECTRICAL APPLIANCES.

DANGER

NEVER TOUCH A MAINS POWER PLUG WITH WET HANDS. KEEP THE DEVICE AWAY FROM MOISTURE.

3. SAFETY INSTRUCTIONS

- Only use the mains power cord supplied with the device. Other power cables can damage the device. Do not use the power cable together with any other devices.
- Before using the device, check it for any signs of damage. If there is any visible damage, a strong odour or excessive heating of components, disconnect all power plugs immediately and do not use the device.
- Do not place the device on uneven or unstable surfaces.
- Do not expose the device to dirty or dusty environments.
- Do not expose the device to direct sunlight, or place it on heat-sensitive surfaces or close to heaters, air-conditioners or combustible materials.
- Keep the device away from combustible materials such as curtains and drapes.
- Do not use any damaged power cables, accessories or other peripheral devices.
- Do not use the device near liquids or in rainy or humid conditions, or expose it to them.
- Before using an adapter or extension cable, seek the assistance of a specialist because they can cut out the protective earthing circuitry.
- The software and hardware shall be installed as in the user instructions.
- If the device is not installed and used as in these user instructions, it can cause interference to radio and television reception and other electronic devices in residential areas.
- Before connecting the device to the power supply, ensure your local mains voltage matches that indicated on the device. If you are uncertain about the voltage of the power supply, contact your electricity supplier.

- The device shall be connected to a properly installed and earthed AC power socket.
- The mains power socket you use shall be installed close to the device and be easily accessible.
- Be particularly careful not to damage the electric plug. Only use the device with an appropriate, correctly installed and easily accessible mains power socket.
- Ensure the device can be disconnected from the power supply at any time. To disconnect the power supply, pull out the mains power plug.
- Protect the mains power plug from being used by others (especially children).
- The mains power plug shall not be exposed to mechanical stress such as tension or overstretching, or be dropped. Damage to the mains power plug can cause complete failure of the device.

3.6 Usage

- Never leave the device unsupervised when it is switched on. If the device cannot be used without an associated risk, it shall be switched off and protected against unintentional use.
- When it is not needed, and during thunderstorms, always disconnect the device from the power supply.
- Never remove a USB data carrier when the computer is working.

3. SAFETY INSTRUCTIONS

3.7 Maintenance and reparations

CAUTION

RISK OF EXPLOSION! DO NOT CHANGE THE BATTERY!
USED BATTERIES SHALL BE DISPOSED OF IN LINE WITH THE USER INSTRUCTIONS. DO NOT REMOVE THE BATTERY YOURSELF. SEE SECTION DISPOSAL.

- Alterations to the device and technical modifications are not permitted.

3.8 Explanations of the signs on the computer

Use the device with care, avoid impacts and mechanical damage, moisture on the device both outside and inside.

Do not place the device in a dusty or dirty environment.

Do not place objects on the surface of the device or insert foreign objects into it.

Do not expose the device to direct sunlight during operation.

Your Professional Computer satisfies the relevant European directives.

This device shall not be disposed of as unsorted waste and shall be taken to a specialist collection point.

The device satisfies the RoHS directive.

Unplug the mains power plug before opening the device.

4. INSTALLATION

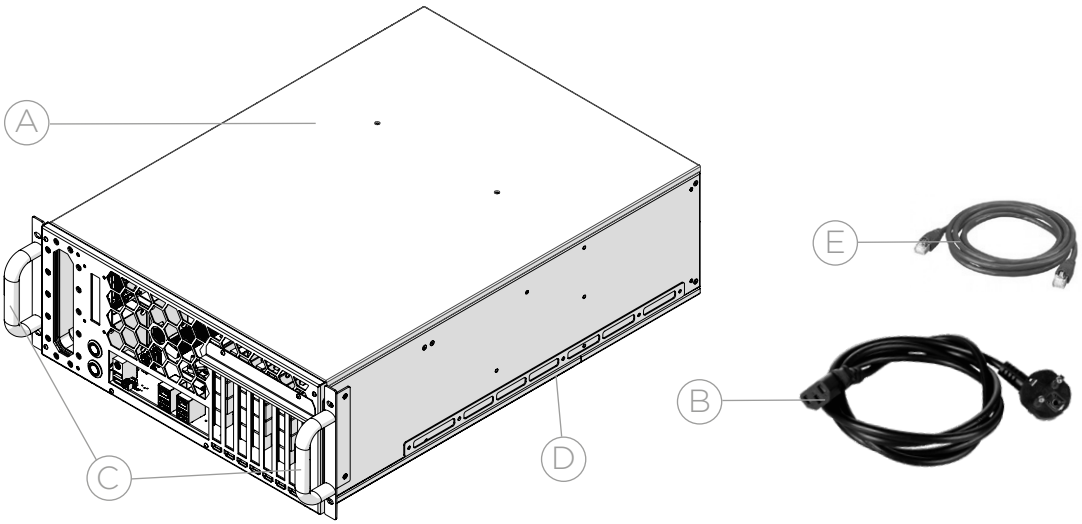
4.1 Unpacking and checking the contents

WARNING

BEFORE USING THE DEVICE, CHECK IT FOR ANY SIGNS OF DAMAGE. IF THERE IS VISIBLE DAMAGE, DO NOT USE THE DEVICE AND CONTACT THE MANUFACTURER.

Unpack the device. Check if the package contains all of the components ordered:

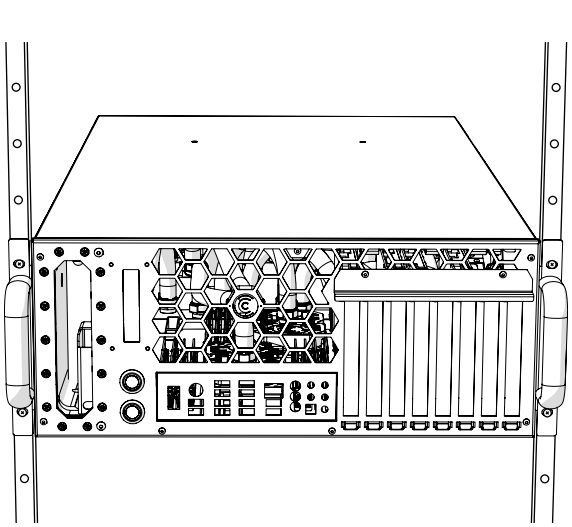
- GRANDO RM (A)
- Power Cables (up to 3) (B)
- Rack mounting ears kit **x2** (C)
- Rail adapters **x2** (D)
- Patch cord (E)

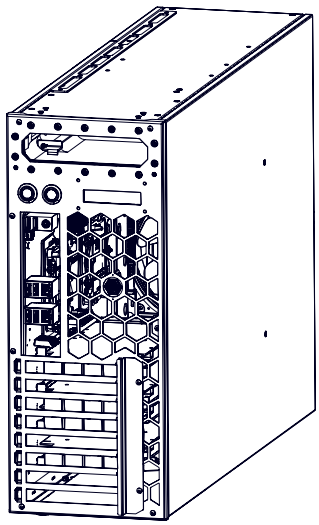


Make sure that device is not visibly damaged. If there is visible damage, do not use the devices and contact the manufacturer.

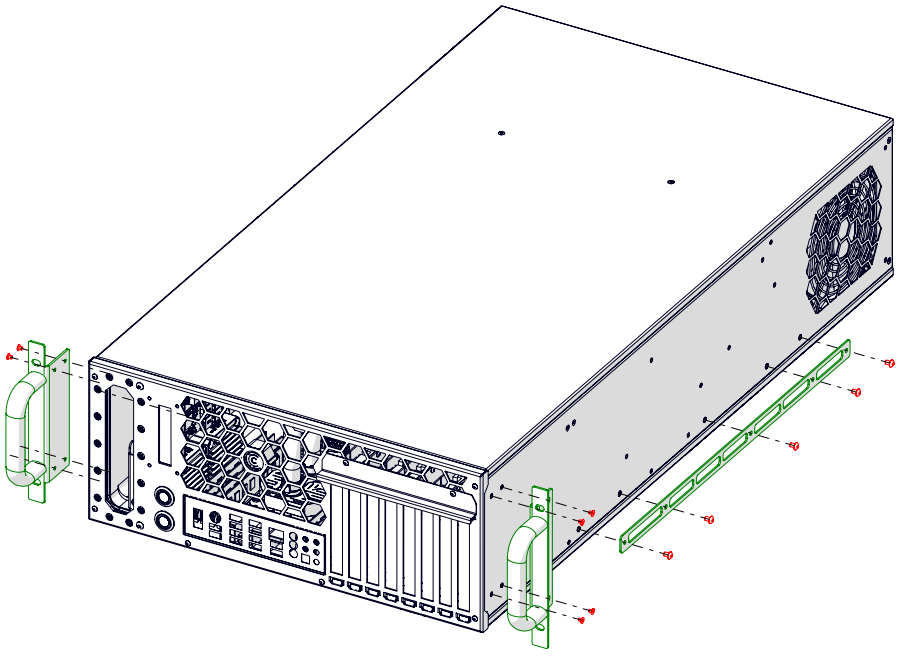
4.2 Installing

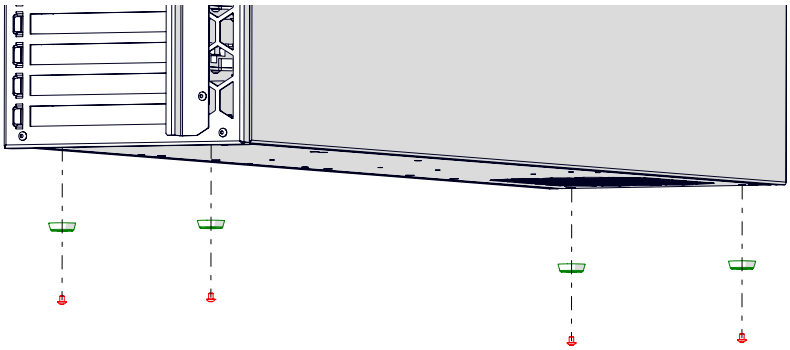
Place the device in a 4U rack space or on a horizontal surface. It’s allowed to place GRANDO RM vertically or horizontally.

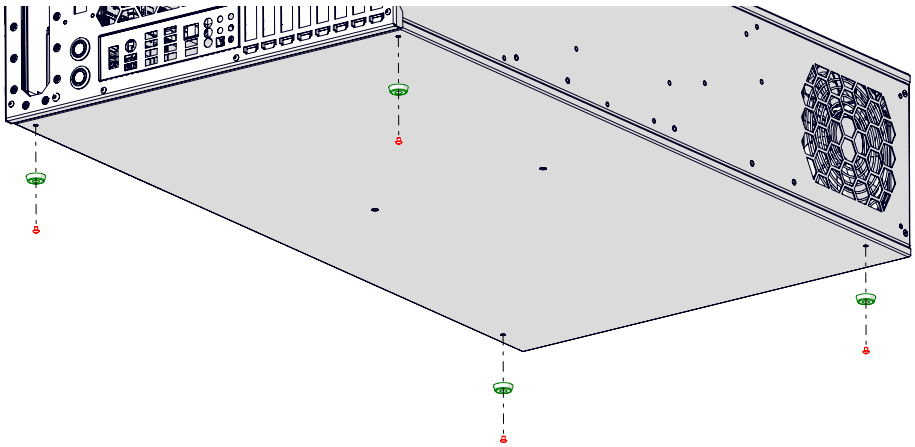




When installing in a 4U rack space, the rack mount ears kit should be attached to the device. GRANDO RM should be installed on the special 19” guide rails or shelf (should be purchased on a separate basis).







Connect all (up to 3) AC power cables to each of the power supply units of GRANDO RM. All PSUs should be powered for correct Device operation.

4.3 Power supply unit

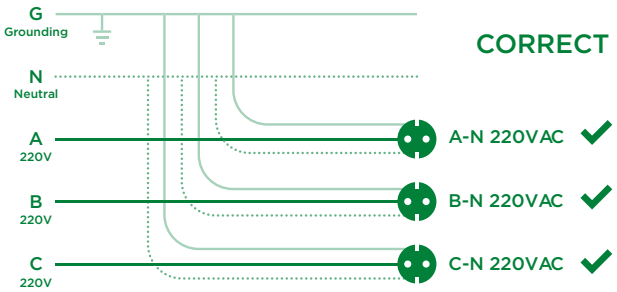
Your system includes Comino Energia power supply unit (PSU) containing up to 3 SFX Power Supply Units (PSUs), 750W each or up to 2 ATX PSU 1700W each depending on configuration.

Each PSU supports line to neutral 110-220V AC and EU standards connection (50/60Hz US and EU standards). It is allowed to connect different PSUs to different lines

2. SETTING UP

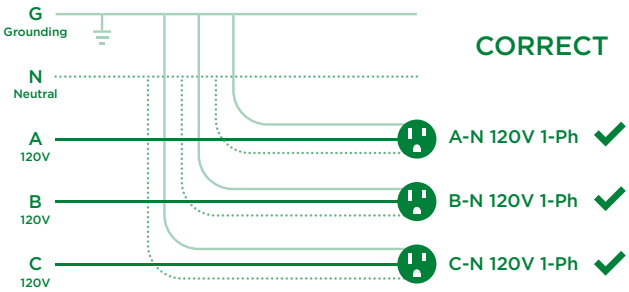
EU Standard

LINE TO NEUTRAL



US Standard

LINE TO NEUTRAL



DANGER

ELECTRICITY WORKS MUST BE COORDINATED WITH A CERTIFIED ELECTRICIAN. UNAUTHORIZED WORKS CAN COST YOU YOUR LIFE.

WARNING

THE POWER SUPPLY SHALL OPERATE WITHIN LIMITED INPUT VOLTAGE RANGE AS DEFINED IN TABLE 1.

PARAMETER	MIN	Nom	MAX	UNIT
Vin	90	100-240	264	VACrms
Vin Frequency	47	60-50	63	Hz
Iin		9A @110V 4A @220V		

4.4 Inrush current

The power supply must meet inrush requirements for any rated AC voltage, during turn on at any phase of AC voltage, during a single cycle AC dropout condition, during repetitive ON/OFF cycling of AC, and over the specified temperature rang. The peak inrush current shall be less than the ratings of its critical components (including input fuse, bulk rectifiers, and surge limiting device).

4.5 Line fuse

Each PSU is supplied with a fast blow type fuse in the live line input wire. It protects PSU from the short circuit inside of it.
Line fuse is resistant to starting current or inner protection circuits.
In case a line fuse is blown up, please check internal components of the PM for damages or contact the developer.

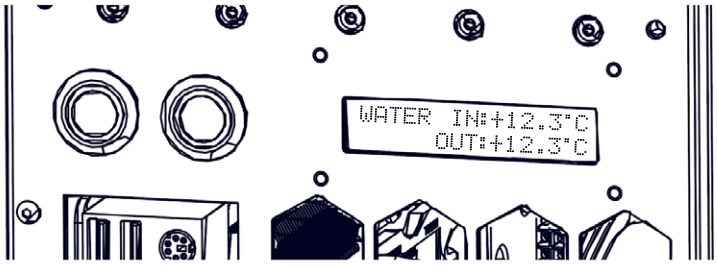
4.6 Efficiency

Power Supply Unit is certified with an 80 Plus Platinum level certificate of efficient energy use. Maximum efficiency reaches 94% at 220 Vin and 50% load.

5. STARTING UP THE DEVICE

After connecting the power supplies to the AC mains, the controller will automatically turn on, followed by liquid cooling system self-diagnosis.

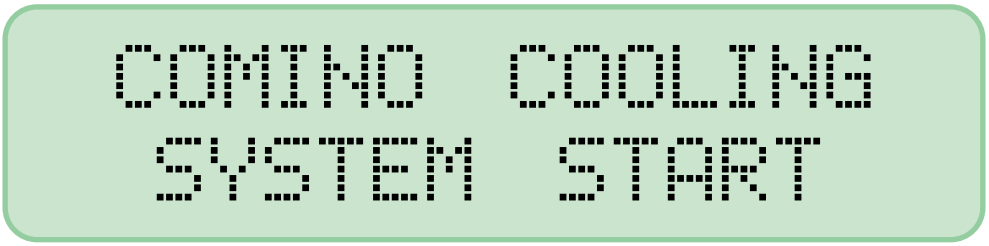
GRANDO RM is equipped with a two-line show, it will display information about the operating modes of the device.

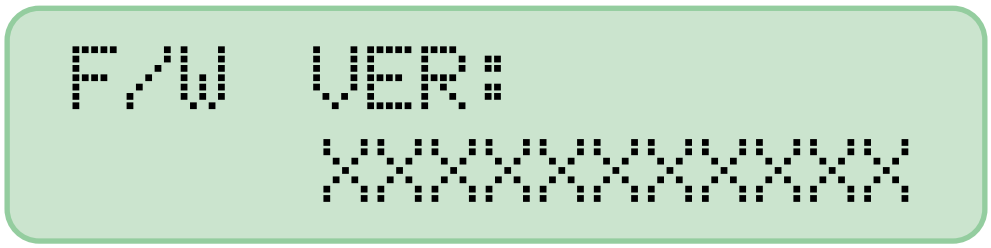


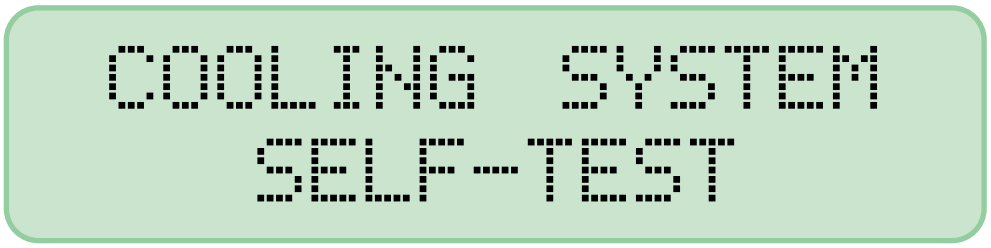
The preliminary stage, performed only when the Internal cooling system is powered for the first time or after power loss recovery. In case of performing a Computing unit regular shutdown without removing the connection voltage, the Internal Cooling System automatically goes into standby mode until it is turned on again.

5.1 Self-diagnostic

When Internal Cooling system is powered, the self-diagnostic procedure begins and the display successively shows:

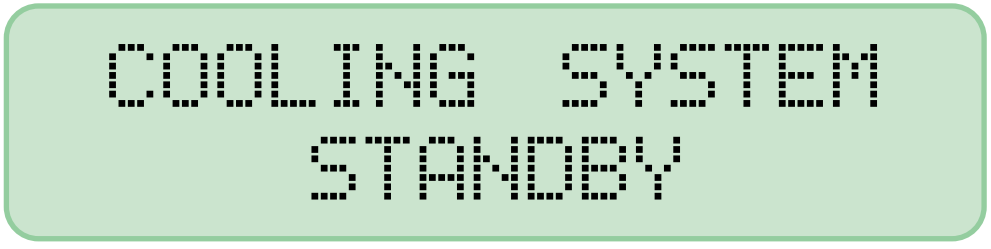






Upon successful completion of the self-diagnostic procedure, the display successively shows:

Further on, the unit goes into standby mode.



5.2 Self-diagnostic errors

In case of error detection or occurrence, the display cyclically shows information about the error itself and the following message and proceed to error display:

When non-critical errors occur that allow further use of the equipment

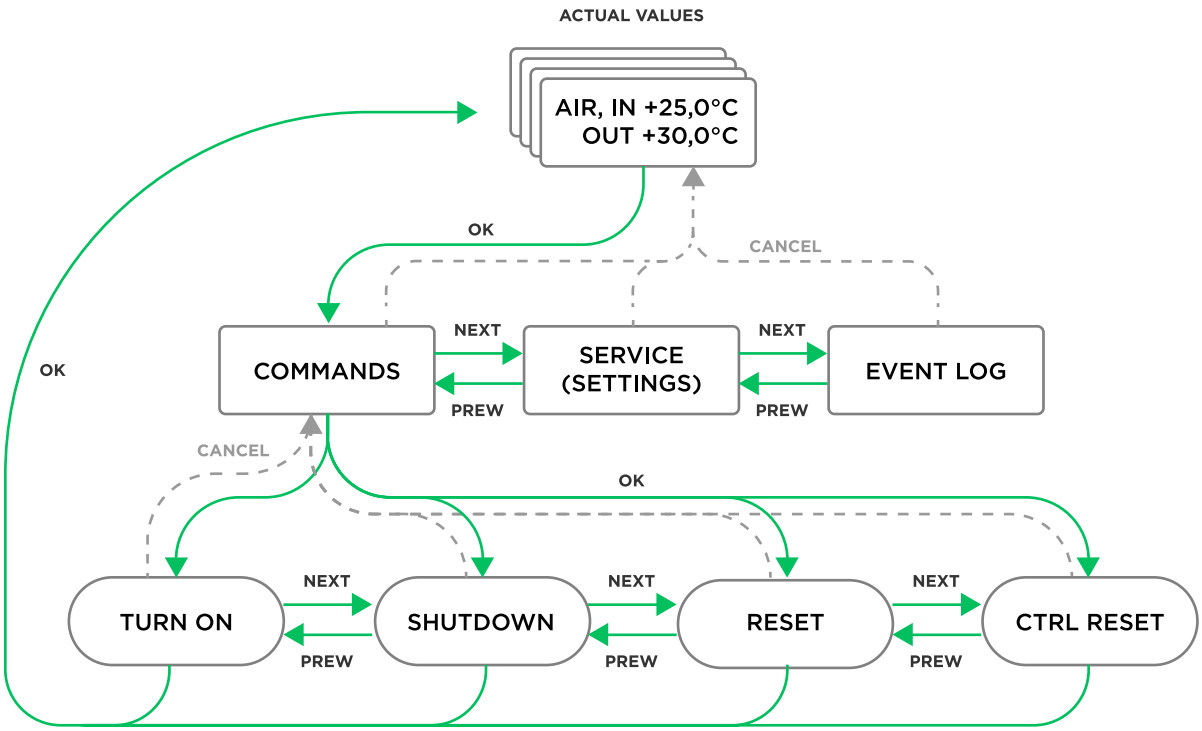
When critical errors occur that prevent further operation of the equipment until the malfunction is fixed

5.3 Menu navigation

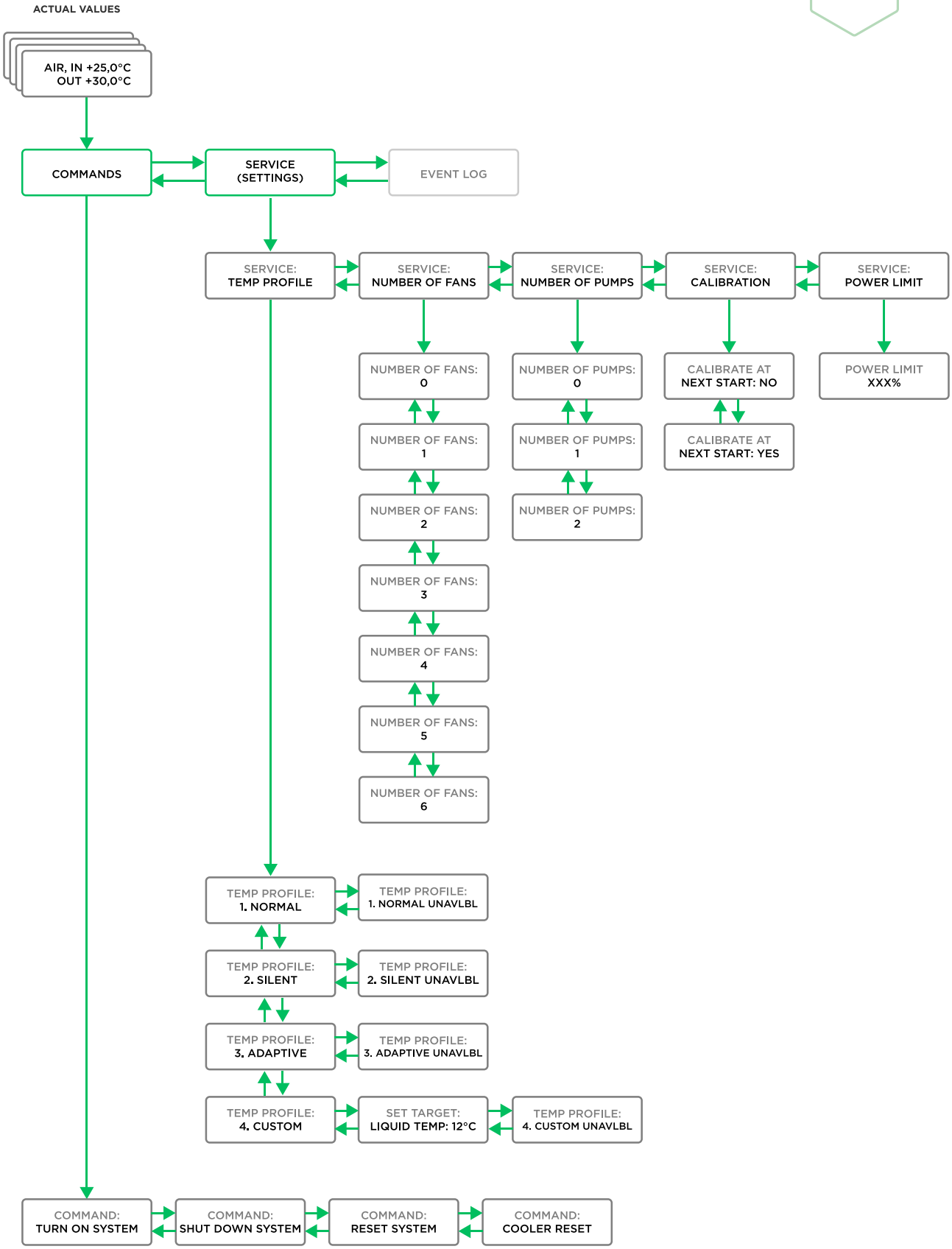
The ACTUAL VALUES menu is displayed by default. For the sake of convenience, the displayed information can be scrolled using the illuminated buttons of the cooling module via short-time (less than 2 seconds) button press.

A long-held press on PB2 (longer than 2 seconds) makes the following menu branches available:

- COMMANDS
- SERVICE (SETTINGS)
- EVENT LOG



5. STARTING UP THE DEVICE



5.4 Main part

The execution of the main part begins when a power-on confirmation signal from Motherboard is received by the Controller. This signal informs the Internal Cooling System about the Motherboard start and the launch of the entire system. When switching to this mode, all connected fans and pumps go into operating mode, fan speed is regulated depending on the coolant temperature and the selected temperature profile. The Internal Cooling System controls the working order of internal components and acceptable operating modes, the display shows information according to the User's choice.

5.4.1 Internal cooling system control buttons usage

- When you press the left button for less than 2 sec, "PREVIOUS" command is performed.
- When you press the right button for less than 2 sec, "NEXT" command is performed.
- When you press the left button for more than 2 sec, "CANCEL" command is performed.
- When you press the right button for more than 2 sec, "OK" command is performed.
- By simultaneously pressing and holding both buttons for 2 seconds the sound alarm goes off.

pic. on next page

	PB1	PB2
less than 2 sec	PREV	NEXT
more than 2 sec	CANCEL	OK

5.4.2 Control buttons illumination

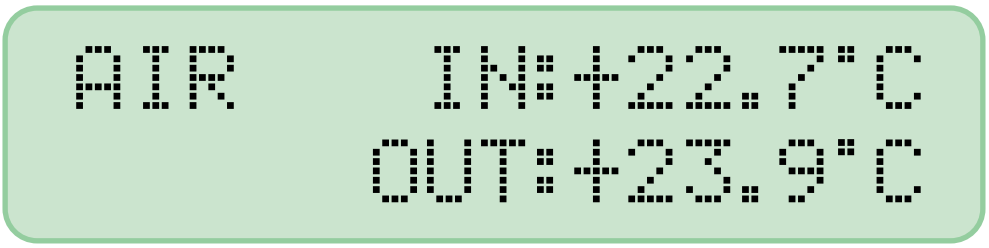
- In the process of self-diagnostics: the backlight of both buttons flashes simultaneously with a delay of 1 second on / 1 second off.
- In case of error or accident: the backlight of two buttons flashes one after another 1 sec on / 1 sec off.
- In OPERATION mode: the backlight of both buttons shines continuously.
- In STANDBY mode: the backlight of the buttons goes out slowly for 2 seconds — slowly turns on for 2 seconds.

To return to the “Actual values” menu press PB1 long-held.

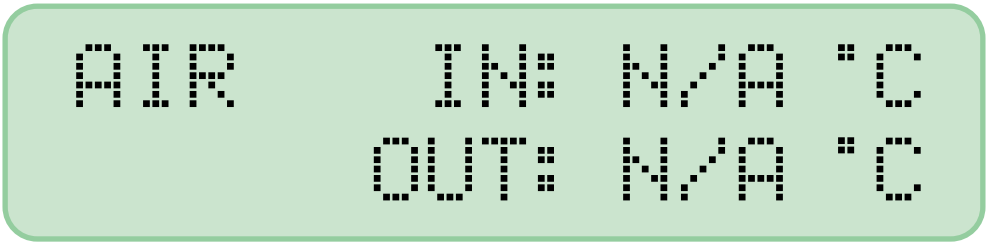
Information available for showing on the display:

5.4.3 Actual values menu

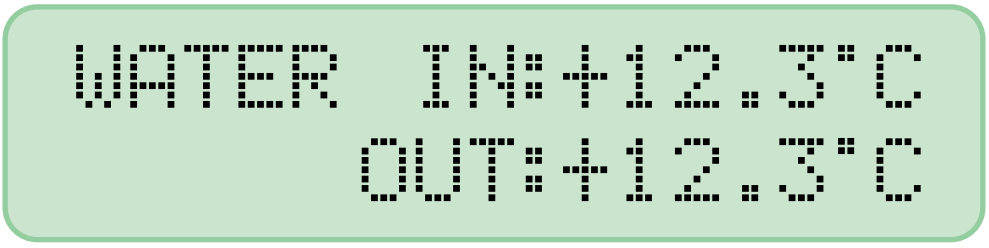
- T °C of air inlet and outlet of the system (2 sensors):



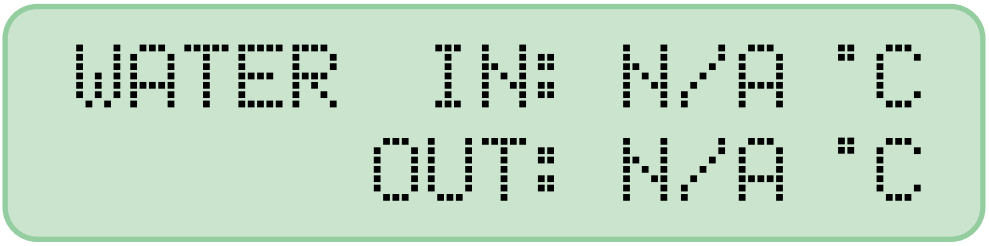
- T °C of air with disconnected sensors or out of range values:



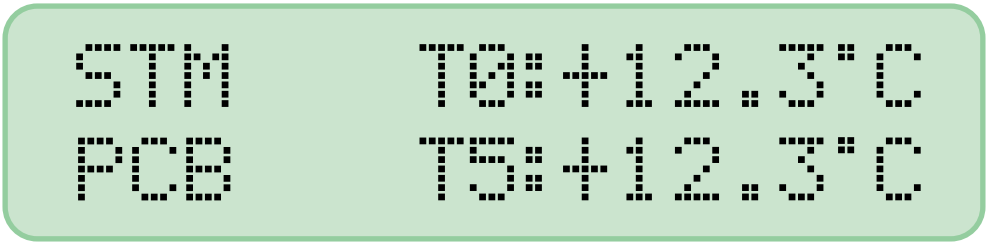
- T °C of cooling liquid inlet and outlet of the system:



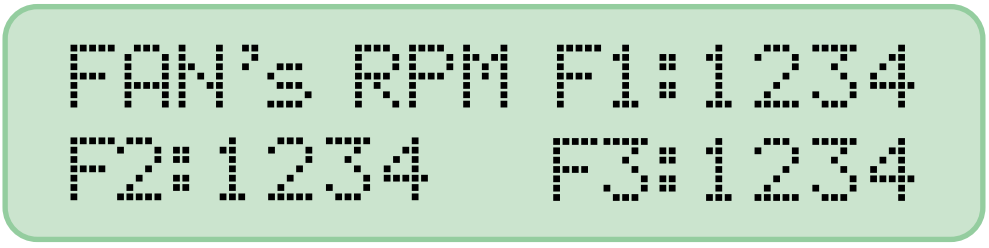
- T °C of cooling liquid with disconnected sensors or out of range values:



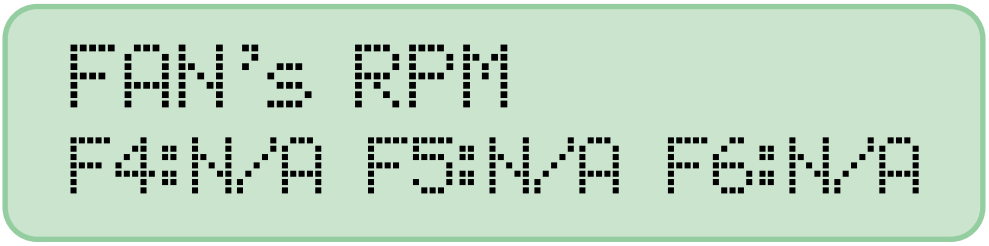
- T (C °), sensors T0 and T5 located on the controller board:



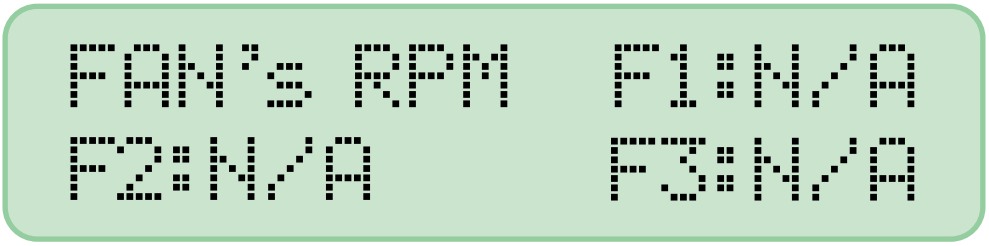
- RPM of front fans 1-3:

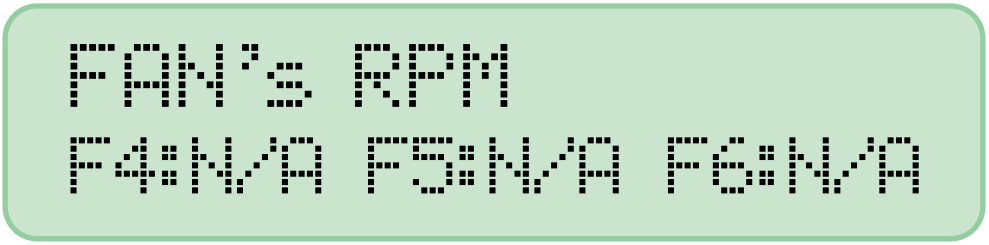


- RPM of backside fans 4-6:

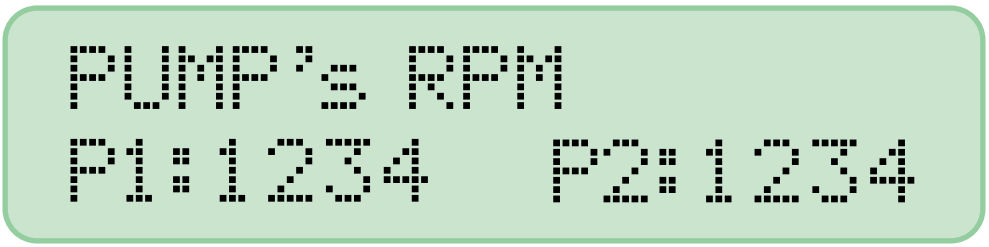


- Fans signal loss or in case of out of range values:

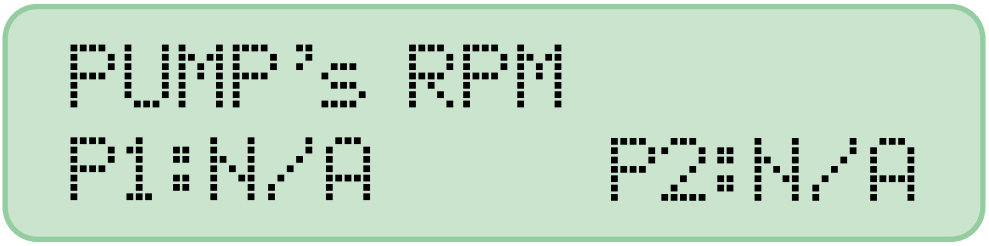




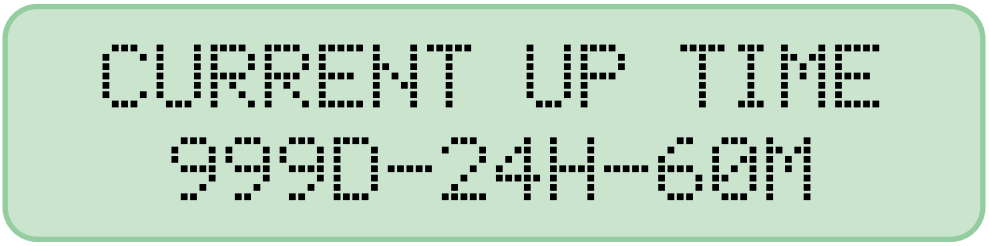
- RPM of pumps 1-2:



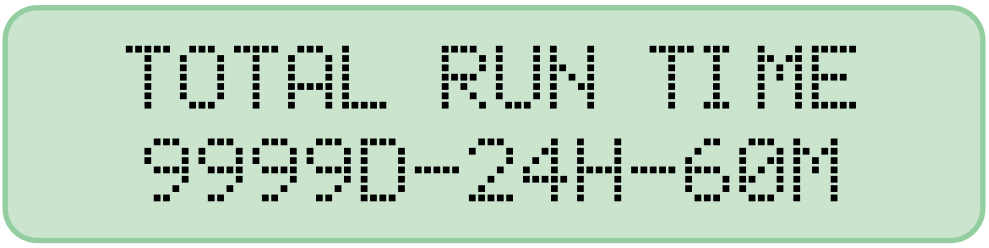
- Pump signal loss or in case of out of range values for pumps:



- Displaying the time of the current session:

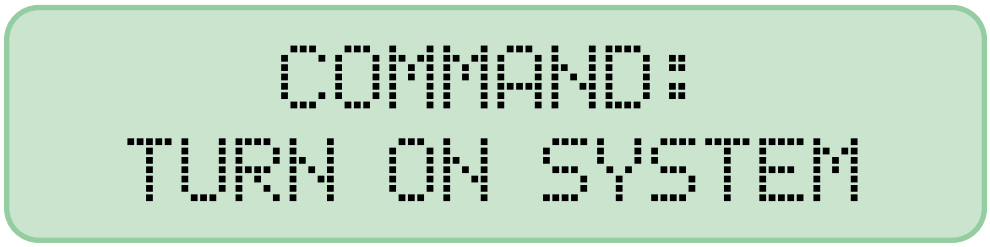


- Total run time

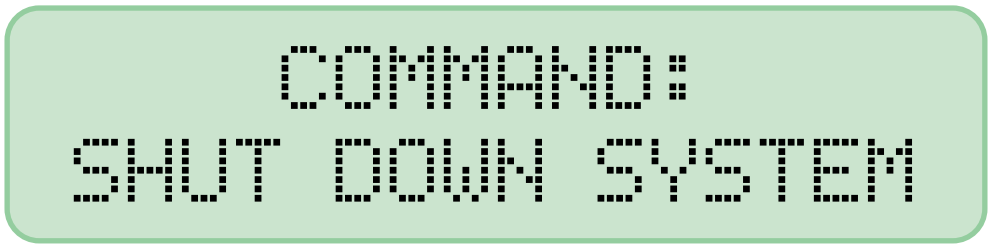


5.5 Commands menu:

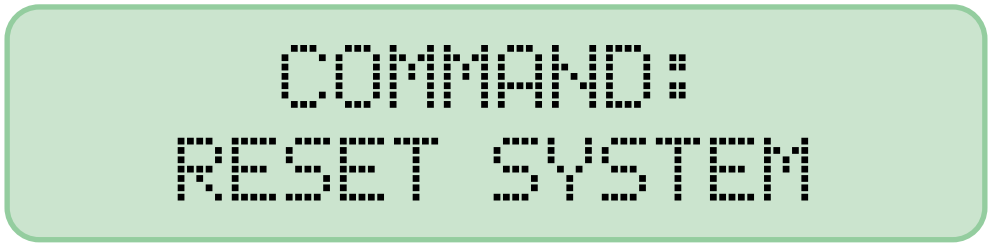
- Command screen for starting the Computing module. Available only in STANDBY mode.



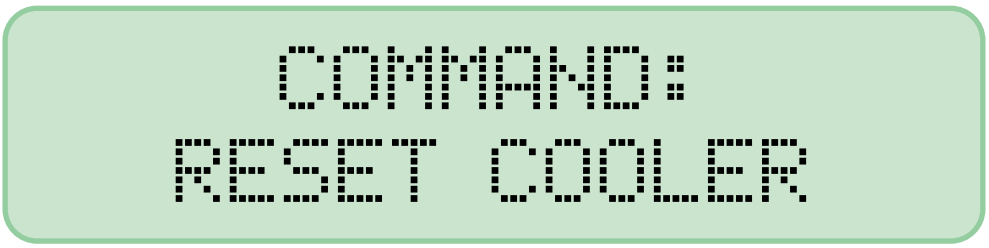
- Command screen to shutdown the Computing module. Available only in OPERATION mode.



- Command screen to reboot the Computing module. Available only in OPERATION mode.

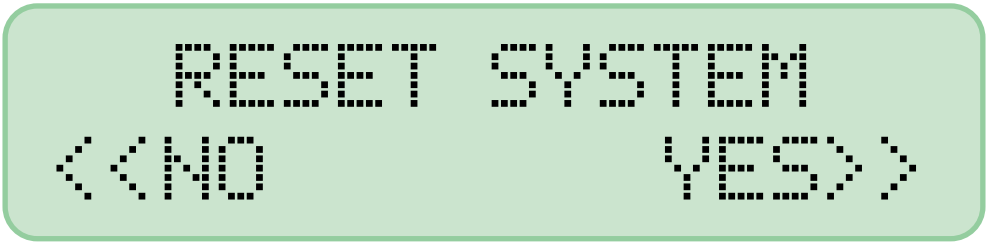


- Command screen to reboot the Controller. Available only in STANDBY mode.



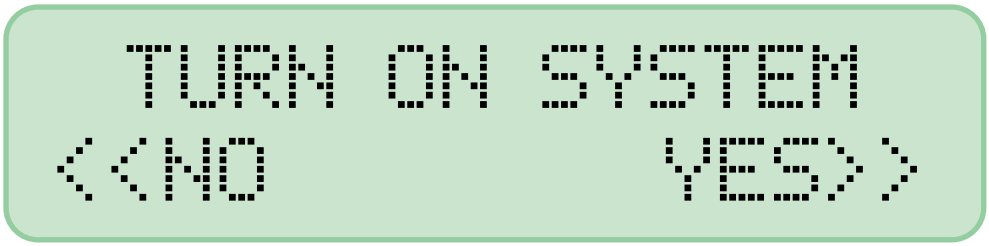
5.6 Control hotkeys

- Holding PB1 and then pressing the PB2 button displays the screen:



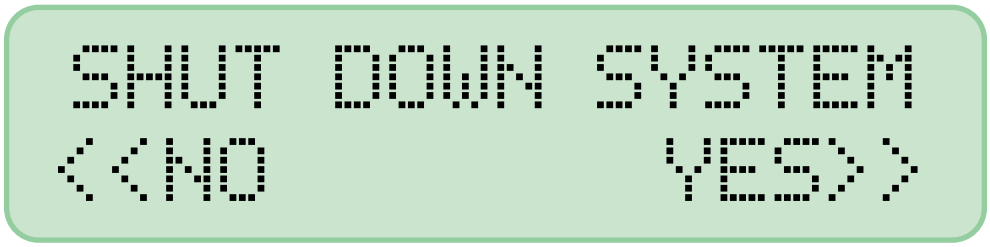
- Then we release both buttons, when PB1 is pressed, the menu screen that preceded the operation returns, when PB2 is pressed, the MB_RESET command is sent to the motherboard

- If the System is in a STANDBY mode, holding down PB2 and then pressing PB1 button displays the screen:



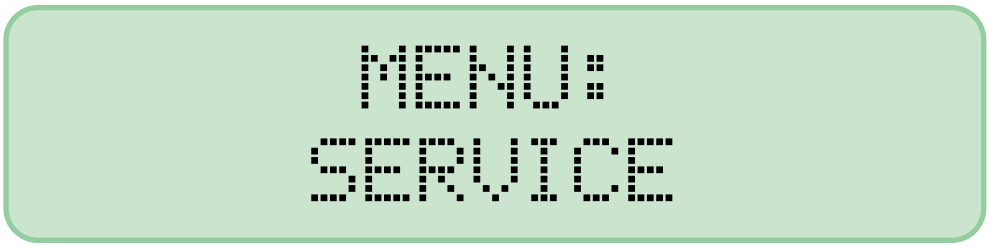
We release the PB2 button, when PB1 is pressed, the menu screen that preceded the operation returns, when PB2 is pressed, the MB_POWER command is sent to the motherboard

- If the System is in operation, holding PB2 and then pressing PB1 displays the screen:

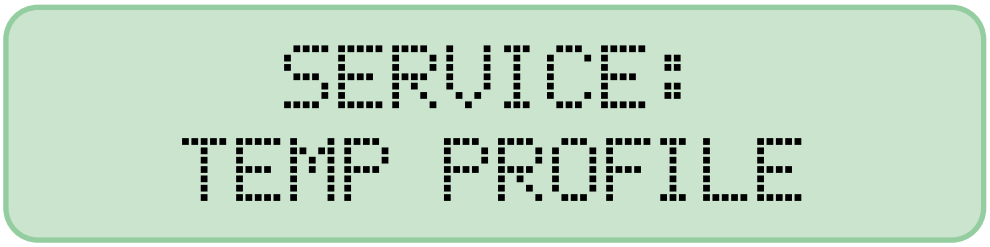


We release the PB2 button, when PB1 is pressed, the menu screen that preceded the operation returns, when PB2 is pressed, the MB_POWER command is sent to the motherboard

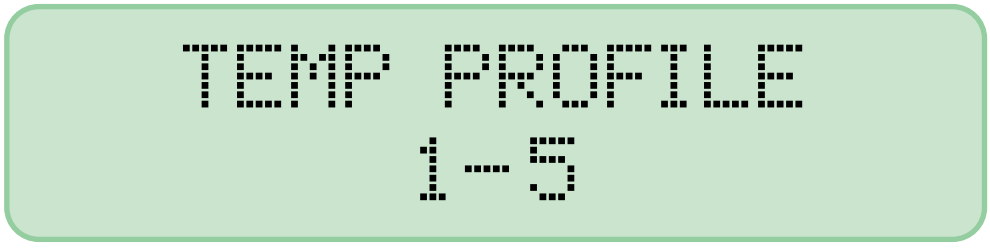
5.7 Service menu



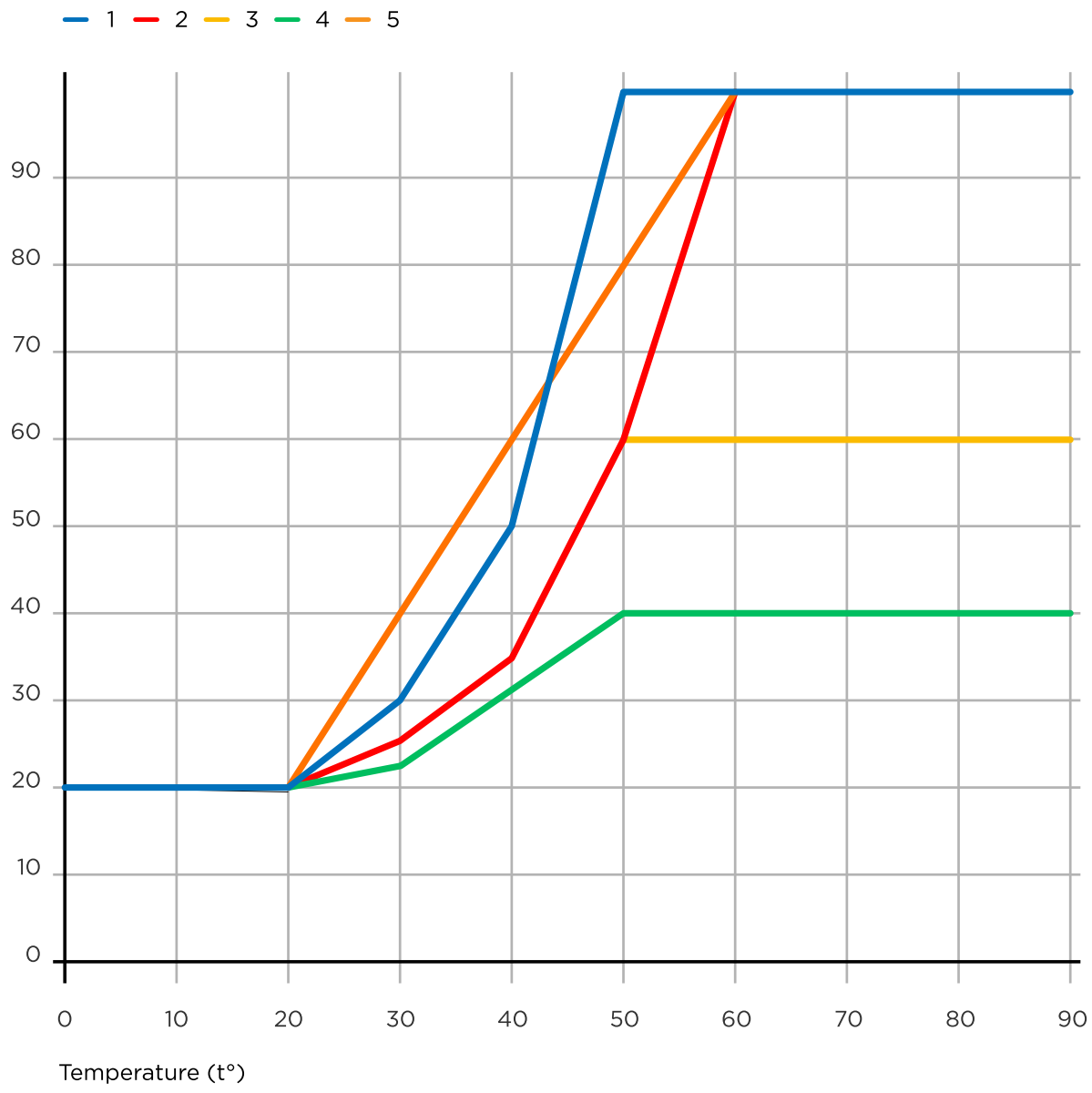
- You can switch between the menu items by short pressing (for less than 2 sec) PB1 **{PREV}** and PB2 **{NEXT}** buttons. To enter the section you've chosen press and hold PB2 for more than 2 sec. **{OK}**



- You can switch between the profile screens by short pressing (for less than 2 sec) PB1 **{PREV}** and PB2 **{NEXT}**. To apply the selected profile, press and hold PB2 for more than 2 sec. **{OK}**



- You can switch between the profile screens by short pressing (for less than 2 sec) PB1 **{PREV}** and PB2 **{NEXT}**. To apply the selected profile, press and hold PB2 for more than 2 sec. **{OK}**



6. POSSIBLE ACCIDENTS

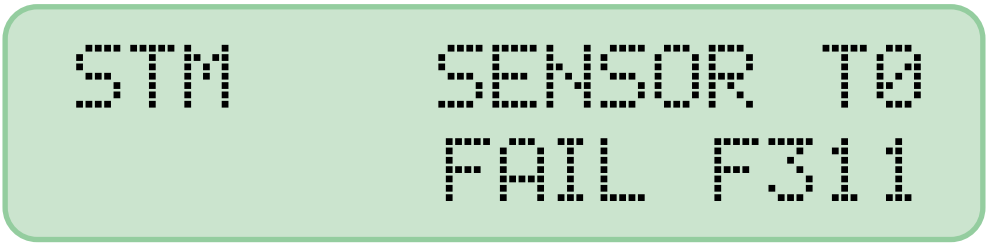
6.1 Possible accidents during operation and self-diagnostic:

If an Error occurs, the System continues to work, information with a description and an alarm code is displayed, and a warning sound signal is turned on.

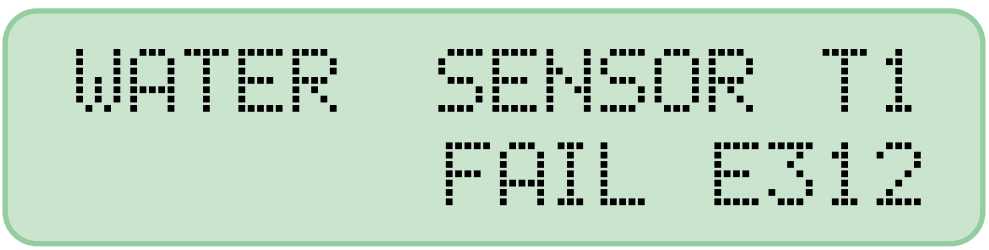
In case of a Failure, the operation of the Computing Unit is stopped by the Internal Cooling System command with or without delay, depending on the emergency nature. The Internal Cooling System blocks the possibility of Computing unit manual control, information with a description and an error code is provided on the display, and an audible alarm.

6.2 Temperature sensors accidents:

Failure: T0 sensor fault (Built-in to STM32)

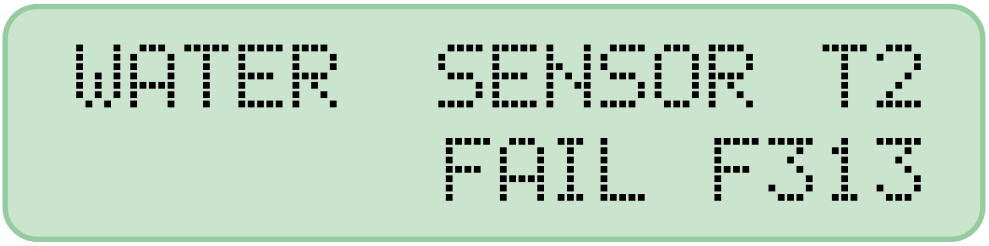


Error: T1 sensor fault (Liquid inlet)

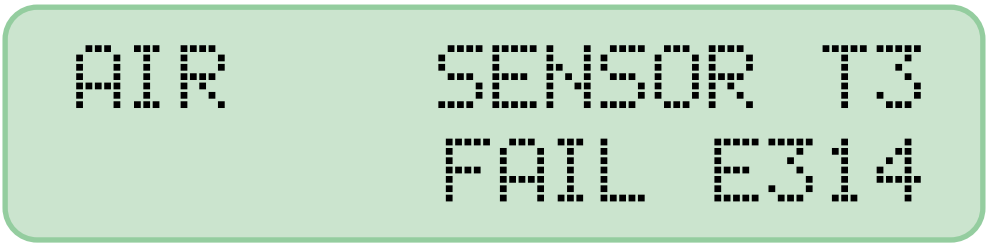


6. POSSIBLE ACCIDENTS

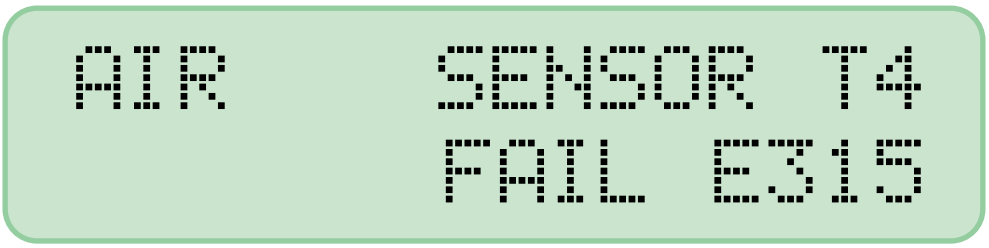
- Failure:T2 sensor fault (Liquid outlet)



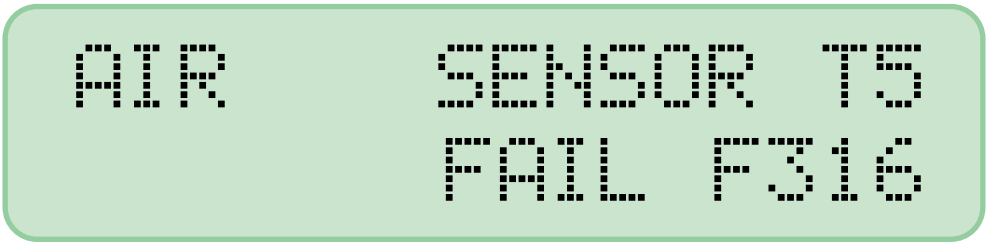
- Error: T3 sensor fault (Air inlet)



- Error: T4 sensor fault (Air outlet)

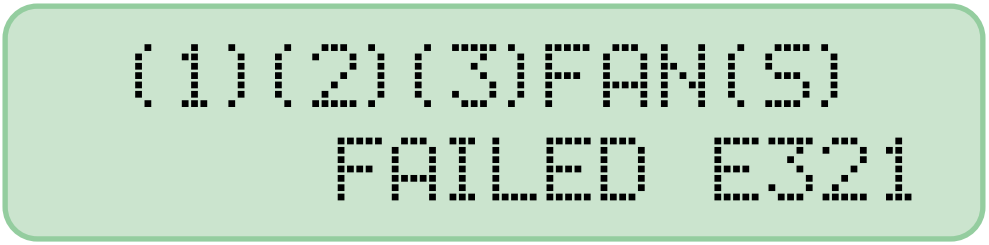


- Failure: T5 sensor fault (Built-in I2C)

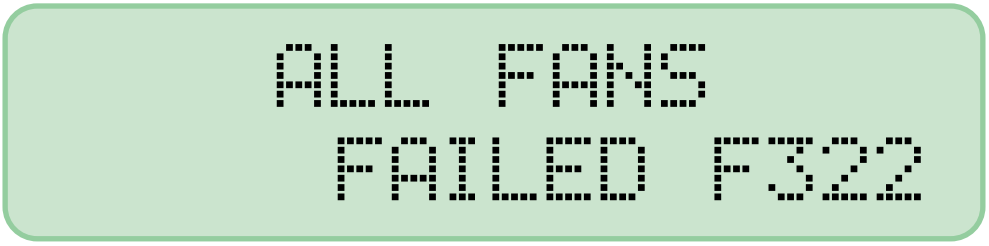


6.3 Fans and pumps

- Error: 1-2 fans fault

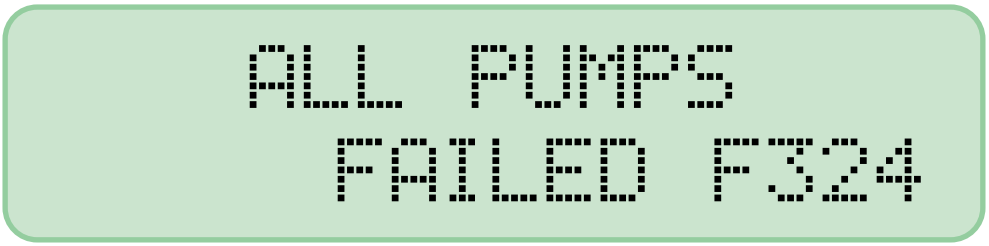


- Failure: all 3 fans fault



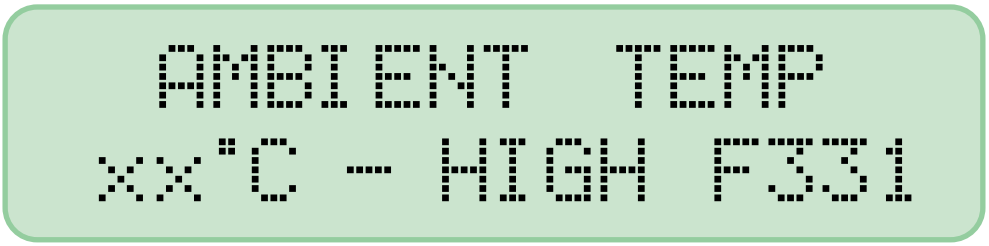
- Failure: any pump fault

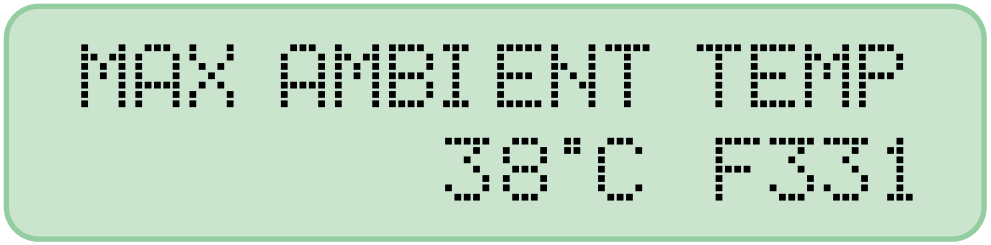
- Failure: both pumps fault



6.4 Operational reasons

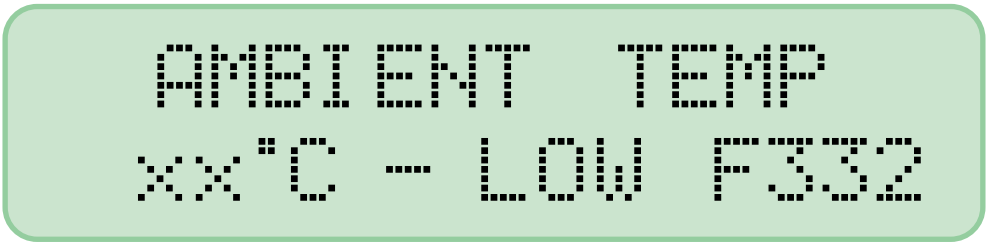
- Failure: T3 excess allowed maximum (Air inlet)





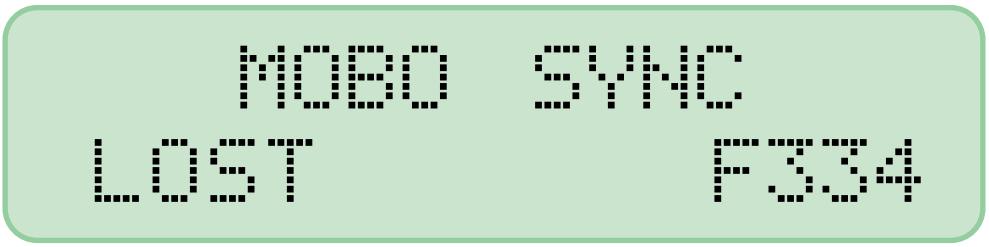
6. POSSIBLE ACCIDENTS

- Failure: T3 below allowed minimum (Air inlet)



- Failure: T2 excess allowed maximum (Liquid outlet)

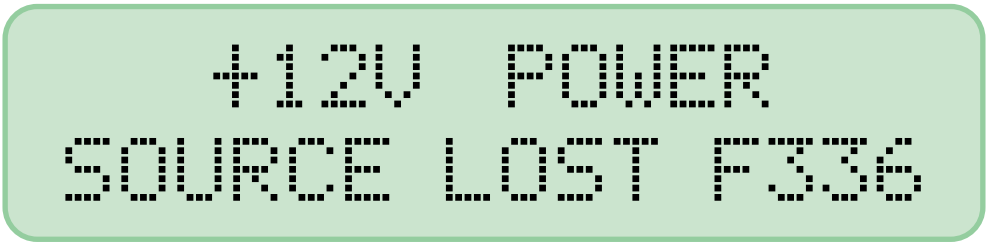
6.5 Failure: No signal from the computing unit



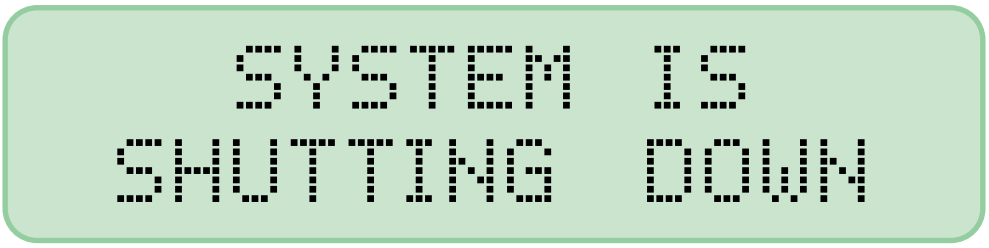
- Failure: T0 exceeding (STM sensor)

6. POSSIBLE ACCIDENTS

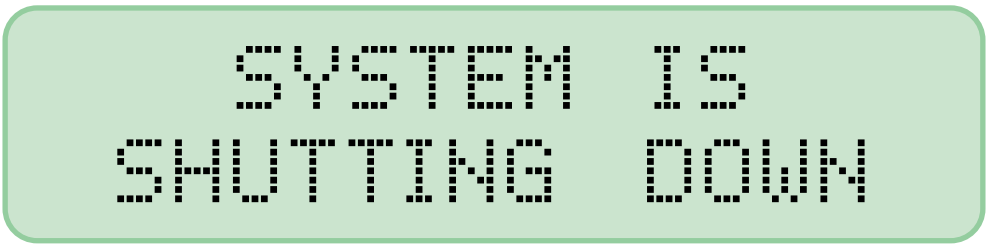
- Failure: lack or dump of the + 12V power source



- Shutdown procedure
  - Normal (the computing unit is switched off by user)



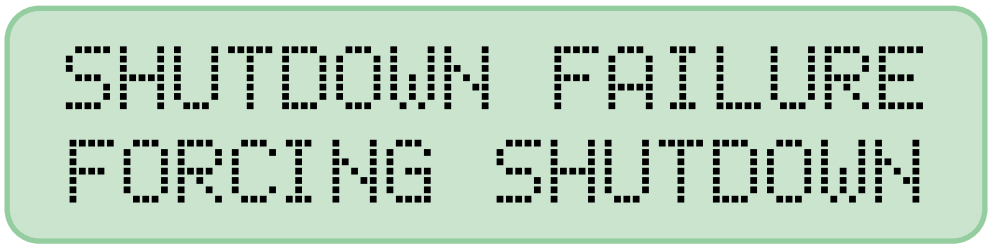
- By Controller command when the critical error occurs
  - Delayed

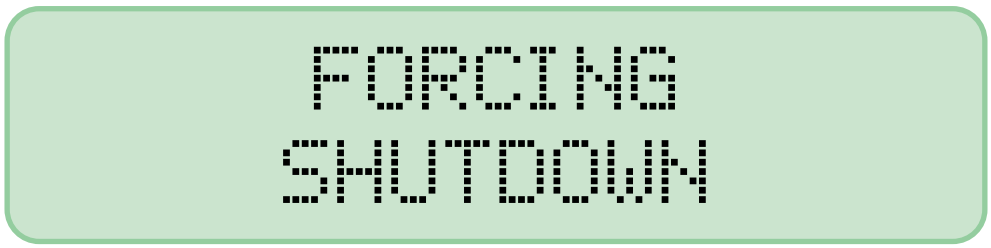


+ the Error code is displayed on the screen

6. POSSIBLE ACCIDENTS

Emergency if the computing module has not not completed its work normally after the controller command





- With further computing unit reboot

  It is performed only when the computing unit is switched off due to accidents with unacceptable coolant or ambient air temperatures.

- The preceding light and sound alarms remain, Internal Cooling System blocks the possibility of Computing unit manual control until the cause of the shutdown disappears.

7. SHUTDOWN PROCEDURE

7.1 Sound alerts

In case of error: intermittent sound signal. It is possible to disable the sound by simultaneously holding both of the buttons for 2 seconds.

In case of an accident: continuous sound signal. It is disabled only when the Computing unit is completely turned off.

8. TROUBLESHOOTING

WARNING

TO REPAIR A FAULTY GPU, DISCONNECT THE MAIN UNIT FROM THE POWER SUPPLY UNIT.

DANGER

IT IS STRONGLY FORBIDDEN TO START REPAIRING A DEVICE WHICH IS CONNECTED TO AN AC NETWORK.

8. TROUBLESHOOTING

8.1

PROBLEM	POSSIBLE CAUSE	SUGGESTABLE CORRECTION
F311	STM sensor is fault or out of range	Reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats, please contact the Manufacturer.
E312	T1 liquid inlet sensor is fault or out of range	Reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats, check if the NTC1 sensor is connected to the Controller correctly. If this problem still remains, please contact the Manufacturer.
F313	T2 liquid outlet sensor is fault or out of range	Reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats, check if the NTC2 sensor is connected to the Controller correctly. If this problem still remains, please contact the Manufacturer. It is allowed to temporarily swap NTC1 and NTC2 sensors to make Device work in case of emergency.

8. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTABLE CORRECTION
E314	T3 air inlet sensor is fault or out of range	Reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats, check if the NTC3 sensor is connected to the Controller correctly. If this problem still remains, please contact the Manufacturer.
E315	T4 air outlet sensor is fault or out of range	Reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats, check if the NTC4 sensor is connected to the Controller correctly. If this problem still remains, please contact the Manufacturer.
F316	T5 temperature and humidity (on-board I2C) sensor is fault or out of range	Reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats. If this problem still remains, please contact the Manufacturer.

8. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTABLE CORRECTION
E321	Up to 2 fans fault (Some of fans fault, at least one is alive)	Reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats, check if the faulty fan is connected to the Controller properly. Ensure, there is nothing preventing fan rotation. It is allowed to swap fans connectors between Controller headers FAN #1-6 to ensure there is no problem with Controller fan output. **Normal Fan speed is 300..3000 RPM.** If a faulty fan is found, It could be changed to identical. If there is a Controller fan output trouble, please contact the Manufacturer.
F322	All fans fault	Reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats, check if the faulty fan is connected to the Controller properly. It is allowed to swap fans connectors between Controller headers FAN #1-6 to ensure there is no problem with Controller fan output. **Normal Fan speed is 300..3000 RPM.** If a faulty fan is found, It could be changed to identical. If there is a Controller fan output trouble, please contact the Manufacturer.

8. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTABLE CORRECTION
F323 **F324**	Any/All pumps fault	Reset controller in STANDBY mode via Commands menu or shut down the Device and de-energize all PSUs. If this problem repeats, check if the faulty pump is connected to the Controller properly. It is allowed to swap pumps connectors between Controller headers PUMP #1-2 to ensure there is no problem with Controller pump output. **Normal Pump speed is 3500..4000 RPM.** If a faulty pump is found, It could be changed to identical. If there is a Controller pump output trouble, please contact the Manufacturer.
F331 **F332**	Ambient temperature is out of allowed range	Please, measure the ambient temperature to ensure it is in allowed range 3-38°C. If Ambient temperature is in range, please, reset controller in STANDBY mode via Commands menu or shut down Device and de-energize all PSUs. If this problem repeats, check if the NTC3 sensor is connected to the Controller correctly. If this problem still remains, please contact the Manufacturer.

8. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTABLE CORRECTION
F333	Liquid overheated	If cooling liquid is overheating, please make sure all fans are operating normally, inlet liquid (T1) is at least 5°C hotter than outlet liquid (T2), outlet air temperature (T4) is at least 5°C higher than inlet air (T3). Check the level of cooling liquid in the reservoir, refill it if needed. After refilling, place the Device horizontally, let the cooling system operate for a while, then place Device vertically, then horizontally again. Refill the tank if liquid level becomes lower, then repeat previous operations.
F334	Motherboard synchronization lost	HL3 (white LED on Controller near the synchronization header X2) should be ON when the motherboard is turned on. If HL3 state doesn't change during motherboard switching, please check if synchronization cable is correctly connected to controller and motherboard (JFP1) headers.
F335	Controller overheating	Normally STM operates at 40-50°C (depends on ambient temperature). If Controller is overheating, it should be changed, please contact the Manufacturer.

8. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTABLE CORRECTION
F336	+12V power source lost or out of range	Please check the PSU#2, which is connected to the Controller via 24pin cable. If cable is connected securely, try to swap this PSU with PSU#1 (it powers Motherboard).
Loud mechanical noise	Pumps operate without liquid.	Pumps operation is not allowed without cooling liquid. It may cause pump permanent fault. Please check the level of cooling liquid in the glass tank, refill it if needed. After refilling, place the Device horizontally, let the cooling system operate for a while, then place Device vertically, then horizontally again. Refill the tank if liquid level becomes lower, then repeat previous operations (if noise hasn't dissappeared, please, contact the Manufacturer).

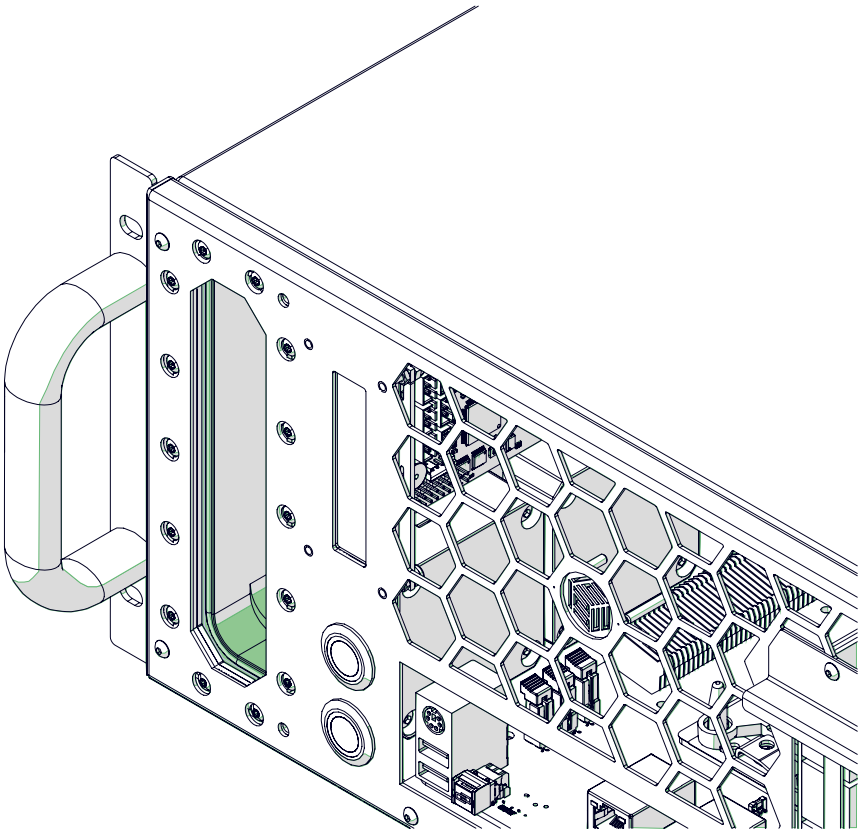
9. MAINTENANCE AND CLEANING

9.1 Checking and refilling coolant

Once in 3 (three) months the coolant level in the reservoir should be checked.

9.1.1 V2 Coolant control procedure:

1. Turn the device off.
2. Place the device in a horizontal working position.
3. Check the coolant level in the reservoir through the reservoir window on the front panel. If the coolant level is lower than 1/2 of the glass window it should be filled up to 8/10 – 9/10 of the reservoir volume.



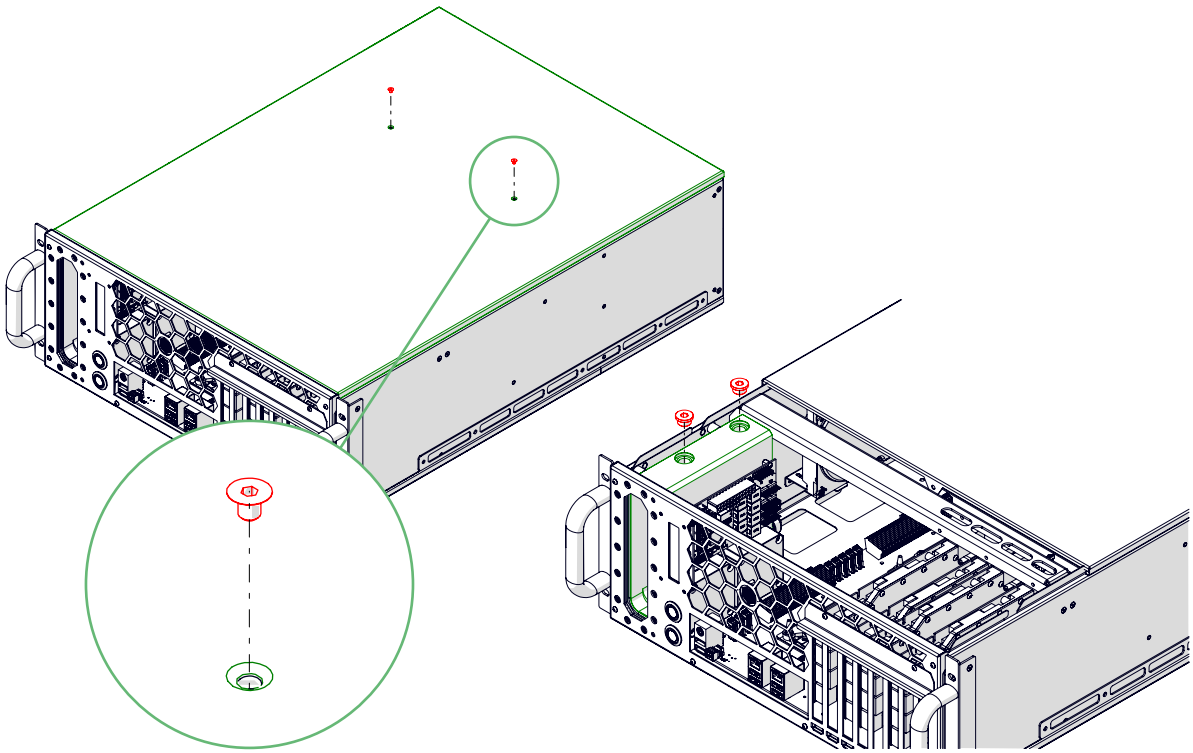
9.1.2 Refilling coolant

WARNING

WHILE POURING THE COOLANT BE SURE NOT TO SPILL IT OUTSIDE OF THE RESERVOIR. IF THE COOLANT IS SPILLED ON THE HARDWARE IT MIGHT LEAD TO HARDWARE MALFUNCTION.

TO SECURE THE HARDWARE PUT PAPER TOWELS AROUND THE RESERVOIR WHILE ADDING THE COOLANT.

1. Place the device in a horizontal working position.
2. Unscrew 2x M3x4 screws.

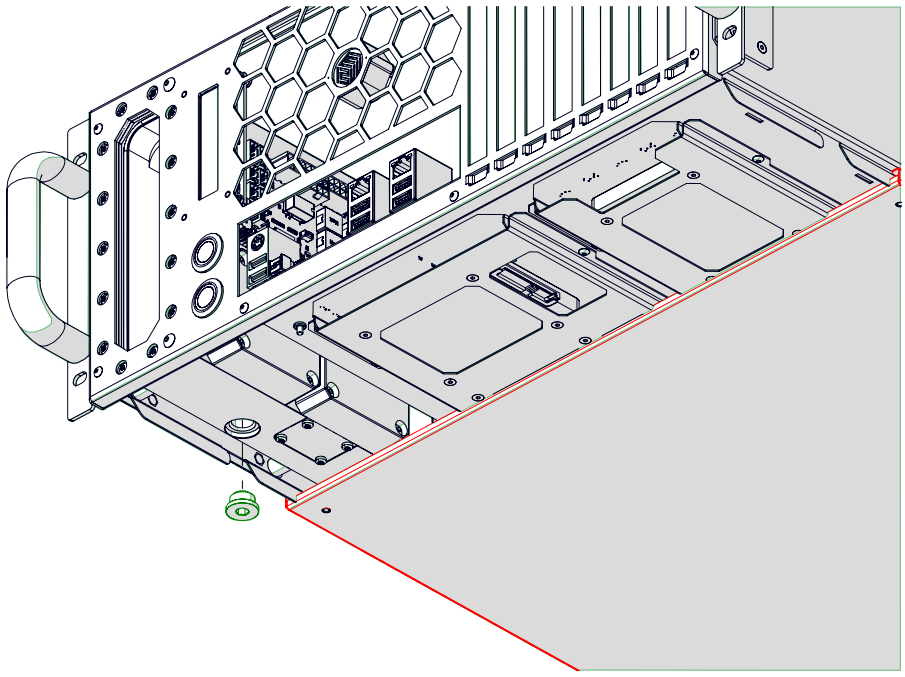


3. Move the top panel backwards, then lift it up.
4. Unscrew 2x coolant filling G1/4” plugs from the reservoir.

5. Using funnel add the coolant to the system.
6. Screw on 2x coolant filling G1/4” plugs to the reservoir.
7. Install the top panel back.

9.1.3 Draining the coolant from the system:

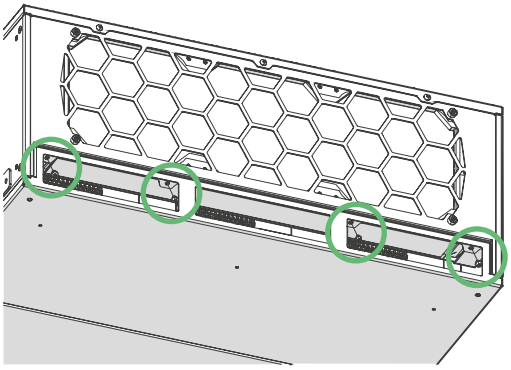
1. Take off the bottom panel (check the paragraphs 1-4 of installing the 2.5” discs instruction).
2. Unscrew the coolant filling plugs (check the paragraphs 1-4 of filling liquid instruction).
3. Place the device in a horizontal working position on the table edge.
4. Unscrew the bottom G1 /4” drain plug, placing a container to collect the liquid directly below the drain hole.

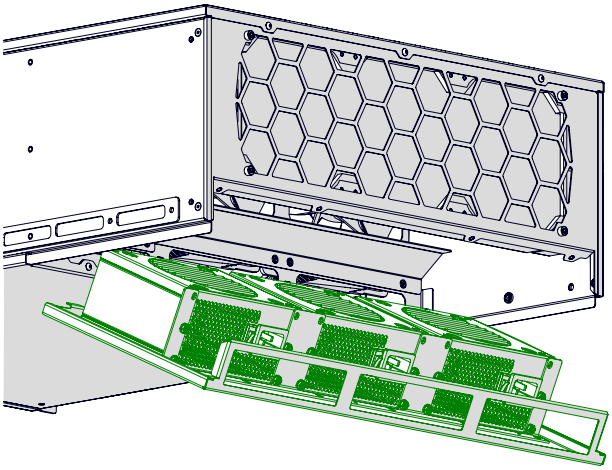


10.2.5” DRIVES INSTALLATION

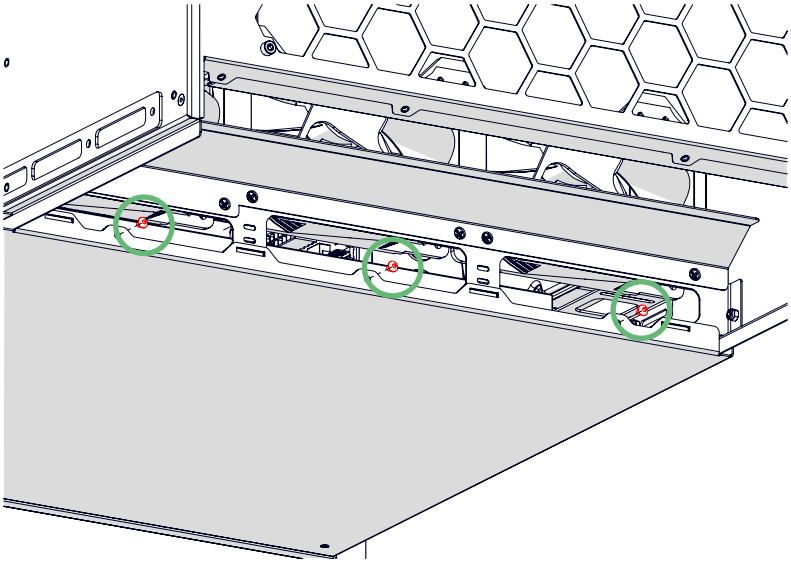
10.1 In the recess on the device back panel, unscrew 4 M3x4 ISO7380 screws fixing the panel with the PSU screwed to it (only for RM V2S)

Gently fold back the PSU panel, it will be held on the power cables (only for RM V2S)



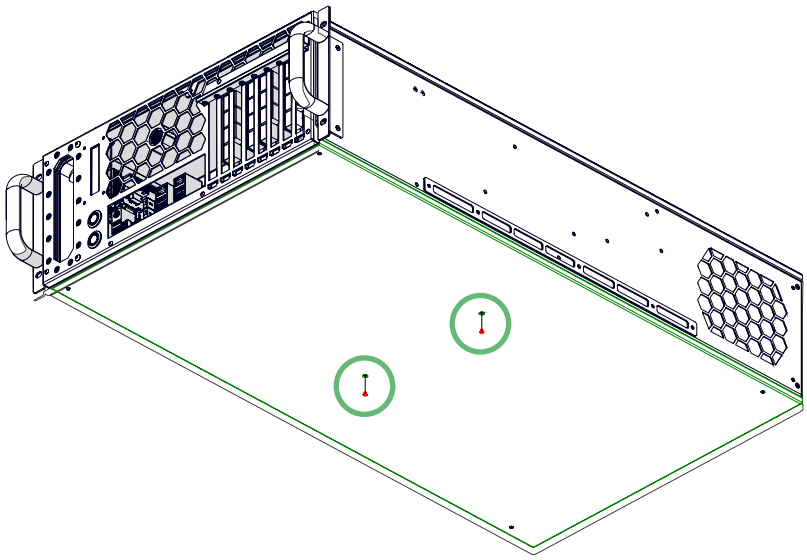


Unscrew 3 M3x4 ISO7380 screws securing the 2.5” drive bay panel (RM V2S only)



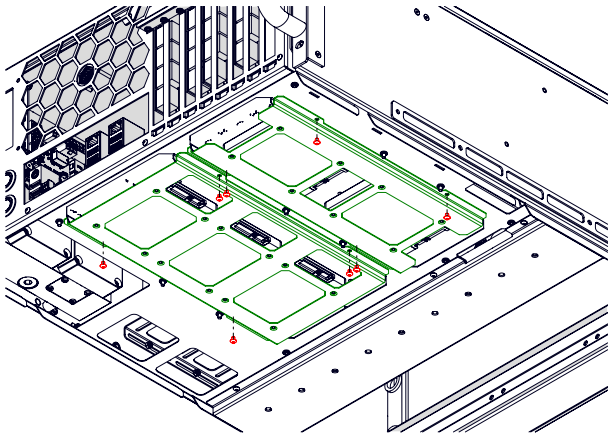
10. 2.5” DRIVES INSTALLATION

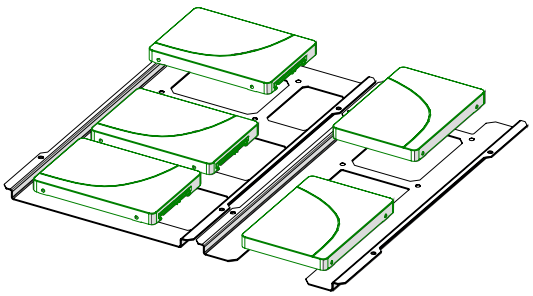
Unscrew 2 M3x4 DIN 7991 screws securing the bottom panel (RM V2L only)



Slide the 2.5” drive bay panel back so it can be removed completely

The drives are located on 2 brackets, each of the brackets is attached to the chassis by 4 M3x4 ISO7380 screws, unscrew them to get the full access to the drives





11. DISPOSAL

11.1 The new product package, the product parts broken during the operation process, as well as an old product should not be disposed of as ordinary household waste, they contain raw materials and materials that can be re-used.

Discarded and unused product parts must be taken to a designated collection center licensed by local authorities.

Also, you can send the used equipment to the manufacturer for subsequent disposal.

Correct disposal of product components avoids potential negative consequences for the environment and human health, and allows the product's constituent materials to be recovered, while significantly saving energy and resources.

Products during the service life and after its end do not pose a threat to life, human health and the environment.

These products are disposed of in accordance with the regulations applicable to electronic equipment. (Federal Law No. 89-FL of 24.06.98 "On Production and Consumption Wastes", as amended on 30.12.2008 No. 309-FL)

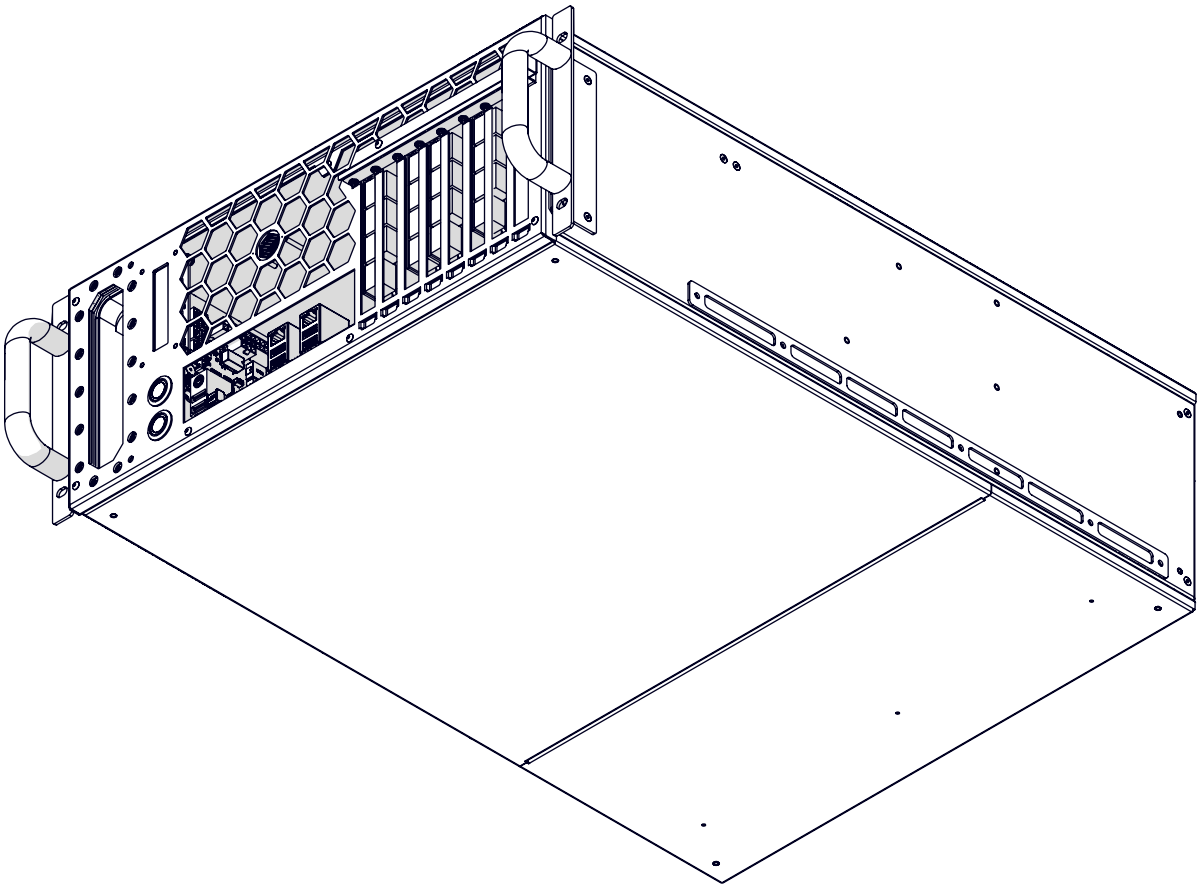
Products marked with the crossed-out trash bin symbol must be disposed of separately from ordinary household waste.

12. WARRANTY

12.1 Always contact the Manufacturer before returning the device.

The warranty period is 12 months from the date of purchase. The defective device shall be sent within two weeks. The warranty is void in the following cases:

- Application of external force
- Improper maintenance
- Failure to comply with the user instructions



COMINO

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