VESTFROST SOLUTIONS

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Vestfrost Solutions is working towards reaching the UN - Global Sustainable Development Goals by 2030.

The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all.
In order to implement Goal no 12 ”Responsible Consumption and Production”, this manual has been printed on recycled paper.

VF-EMS manual

GB Instructions for use

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WARNING

As the appliance contains flammable refrigerant, as stated on nameplate, it is essential to ensure that the refrigerant pipes are not damaged.

The quantity and type of the refrigerant used in your appliance is indicated on the rating plate.

Standard EN378 specifies that the room in which you install your appliance must have a volume of 1m³ per 8 g of hydrocarbon refrigerant used in the appliances. This is to avoid the formation of flammable gas/air mixtures in the room where the appliance is located in the event of a leak in the refrigerant circuit.

WARNING:
Ventilation openings in the appliance or in built-in structures must be kept clear.

WARNING:
Do not use other mechanical devices or means to accelerate the defrosting process or to remove rime other than those recommended by the manufacturer.

WARNING:
Do not damage the refrigerant system.

WARNING:
Do not use **electrical appliances** inside the refrigerated storage compartment, unless they are of a type recommended by the manufacturer

WARNING:
Do not expose the appliance to rain, and secure not splashing water when cleaning the floor.

WARNING:
This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack experience and knowledge, unless they have been given supervision or instructions concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance

WARNING:
Children must not play with, on, or around the appliance.

WARNING:
Children must not clean the appliance or carry out general maintenance unless they are at least 8 years old and are being supervised.

WARNING:
Danger risk of fire or explosion. Flammable refrigerant used, as stated on nameplate. To be repaired only by trained personnel.

WARNING:
Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.

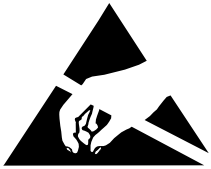
WARNING:
Sharp edges on cabinet, compressor compartment, evaporator, ventilation cover and on internal equipment can occur. Please be aware to avoid injury.

WARNING:
The condenser on the back of the appliance will in some cases have a hot surface. Please be aware to avoid injury.

WARNING:
Appliance use flammable insulation blowing gas.
For information about safe disposal, please contact your local disposal service.
See section for Disposal.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. Touching the chassis before handling parts does not ensure adequate ESD protection on parts sensitive to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, ensure that you discharge static electricity from your body.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.



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Time zone settings

Important!

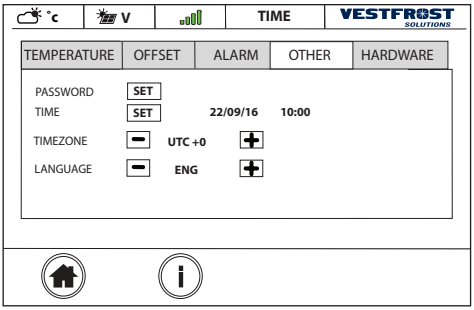
When installing VLS appliances with integrated EMS systems, check Time zone settings are correct.

The EMS system when activated (power on), and connected to GPS/GSM signal will default be set to Time zone setting UTC+0.

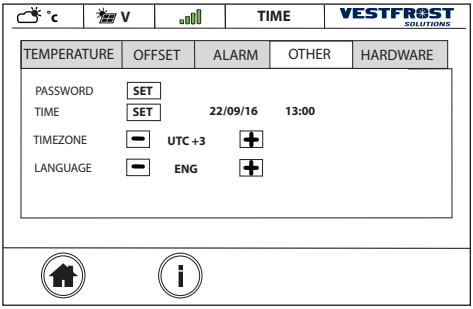
Example:

If you are activating an EMS system in Kenya, with UTC+3, you will have to adjust as shown below.

Default



Adjusted to UTC+3



If there is no GPS/GSM, Time can be set manually.

Navigate to section Change settings screen page 14, to get instructions on how to adjust Time/Timezone

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Display

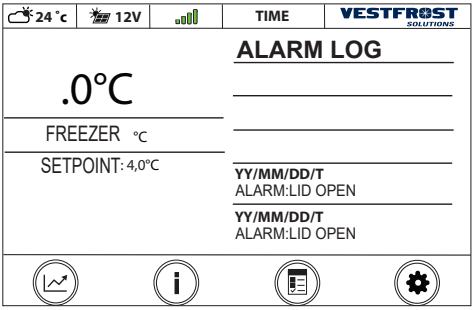
The Display consists of a button to turn on the display and two LEDs.

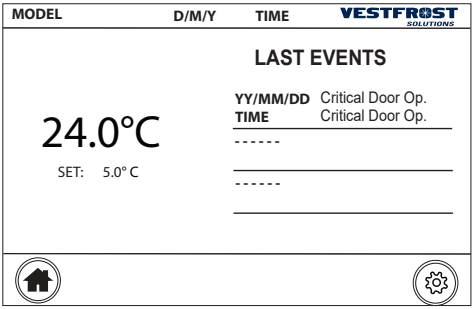
The LED’s will be indicating the device status.

Green: Will be on in the Day period (including the Dawn and Dusk periods).

Blue: Will be on if the supply is strong enough to drive the usb charger output.

Main screen





Temperatur

Combi – refrigerator and freezer in one unit

Stand alone – only refrigerator

Red/green temperature:

- Red text is ok when there is an a normal temperature.
- Blue text when temperature is ok.

24 °c	Ambient temperature
12V	Voltage from solar panels
	Data Signal Strength
TIME	Local Time
SETPOINT:4,0° C	The “trigger temperature” for starting and stopping the cooler
	Max temperature on scale
	High Temperature alarm limit
	Low temperature alarm limit
	Min temperature on scale
	Press this icon to enter the Temperature Graph screen
	Press this icon to enter the Solar Power and Compressor on/off screen
	Press this icon to enter the Event Log
	Press this icon to enter the Settings screen.

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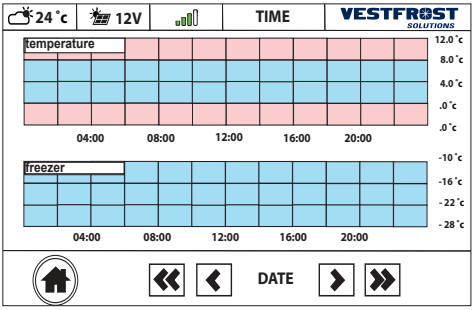
Graph screen



Temperature shall be
”Vaccine compartment temperature 1”

Remove ice bank graph

Scale from 0-12°C (32-54 °F)

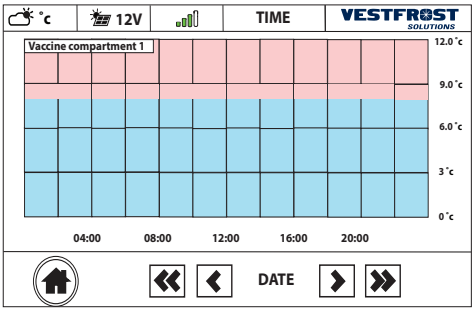
Grey scale from 2-8°C (36-46°F)

Freezer with capital start letter

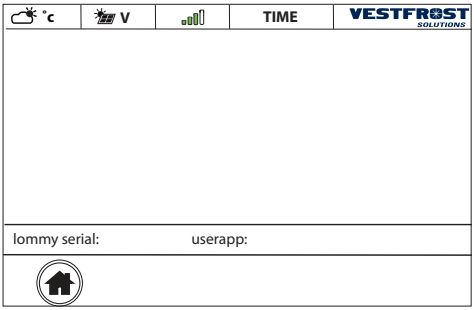
Freezer scale from 0- -25°C
(32- -13°F)

If no freezer temperature, vaccine temperature shall fill the entire page.

	The blue graph shows the temperature at the actual time on the x axis 00:00 – 24:00
	The gray area represents the allowed temperature span
	The high red area represents too high temperatures
	The low red area represents too low temperatures
	Press this icon to get back to the main screen
	Press this icon to go back a week to see historical temperatures
	Press this icon to go back 24 hours to see historical temperatures
	Press this icon to go forward a week to see historical temperatures
	Press this icon to go forward 24 hours to see historical temperatures



de her er på skærmen med ikke i word dokumentet fra Flex



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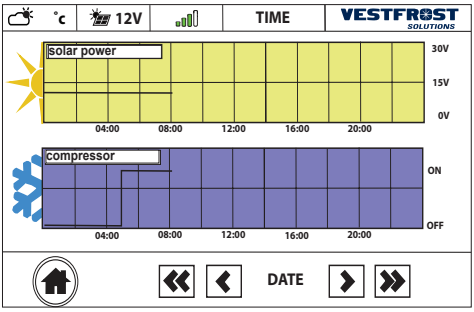
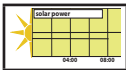
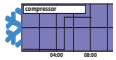
Solar power and compressor screen

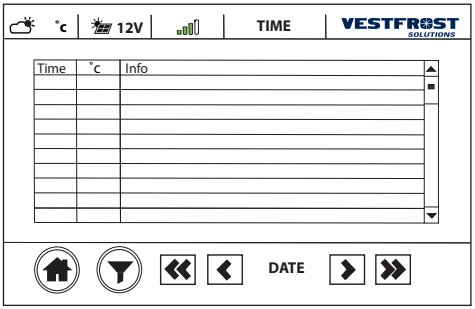
When you press the Solar power and Compressor icon on the main screen you will get to this screen:



	The yellow graph shows the solar power voltage at the actual time on the x axis 00:00 – 24:00 h
	The blue graph shows the compressor on/off status at the actual time on the x axis 00:00 – 24:00 h
	Press this icon to get back to the main screen
	Press this icon to go back a week to see historical temperatures
	Press this icon to go back 24 hours to see historical temperatures
	Press this icon to go forward a week to see historical temperatures
	Press this icon to go forward 24 hours to see historical temperatures

Event log screen

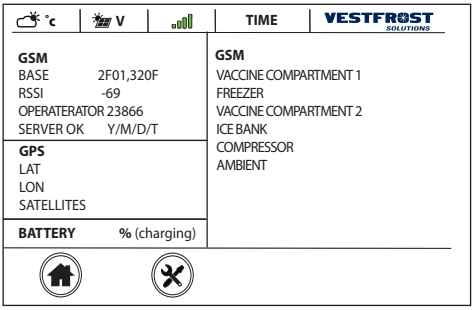
When you press the Event log icon on the main screen you will get to this screen:



Time	The actual time of the event
Temp	The temperature at the time of the event.
Info	A description of the event.
	Press this icon to get back to the main screen.
	Press this icon to show only alarms.
	Press this icon to go back a week to see historical temperatures.
	Press this icon to go back 24 hours to see historical temperatures.
	Press this icon to go forward a week to see historical temperatures
	Press this icon to go forward 24 hours to see historical temperatures

GB

Settings screen



When you press the Settings icon on the main screen you will get to this screen:

Vaccine compartment 1

Freezer

Vaccine compartment 2

Ice bank

Compressor

Ambient

GSM

BASE	The ID of the base station the EMS is connected to.
RSSI	Received Signal Strength Indicator (RSSI) of the gsm network
OPERATOR	The ID of the operator of the base station
SERVER OK	The date and time when the EMS last time connected to the server.

GPS

LAT	The latitude of the position of the EMS
LON	The longitude of the position of the EMS
SATELLITES	Number of satellites the EMS can see.

BATTERY

BATTERY	The percentage of the chargeable battery

SETUP

TEMP C/F	Temperature can be shown in Celcius (C) or Fahrenheit (F)
SETPOINT	If the temperature exceeds SETPOINT + the HYSTERESIS, the compressor will be turned ON. The compressor will remain ON, until the fridge temperature drops below SETPOINT. NOTE: it is the AIR TEMPERATURE (see below) which is used to start/stop the compressor.
TIMEZONE	The timezone of the EMS.

TEMPERATURE

VACCINE COMPARTMENT 1
VACCINE COMPARTMENT 2
ICE BANK
COMPRESSOR
AMBIENT

GENERAL

lommy serial	The serial number of the EMS device
userapp	The firmware version and user app of the EMS device

	Press this icon to go back to the Main screen
	Press this icon to enter the Change Settings screen

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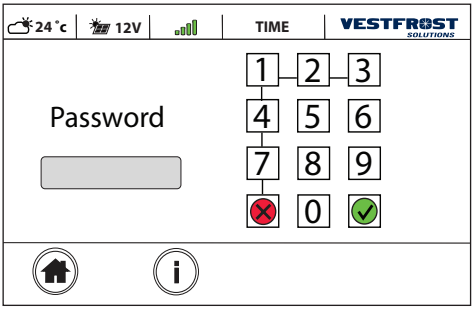
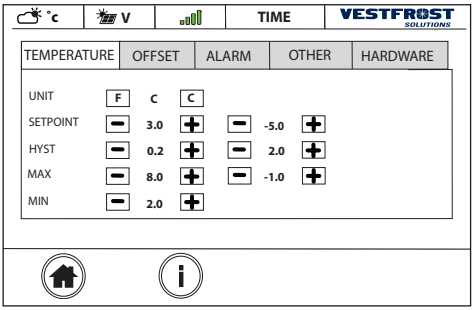
Change settings screen



When you press the Change Settings icon on the Settings screen you will get to this screen:

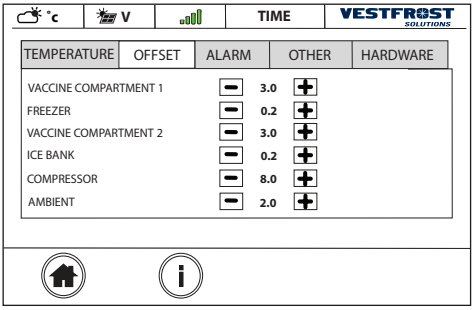
NOTE: Contact your administrator for correct password / pin code.



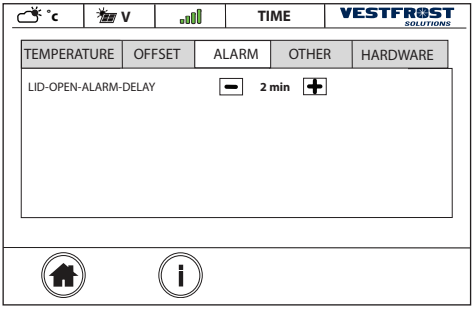
You will now get to the Change Settings screen with the Temperature Tab open.

TEMPERATURE

UNIT	Temperature can be shown in Celcius (C) or Fahrenheit (F).
SETPOINT	Press + or – to change the SETPOINT
HYST	Press + or – to change the HYSTERESIS
MAX	Press + or – to change the MAX temperature. Above this value a TEMP-HIGH alarm will be generated
MIN	Press + or – to change the MIN temperature. Below this value a TEMP-LOW alarm will be generated



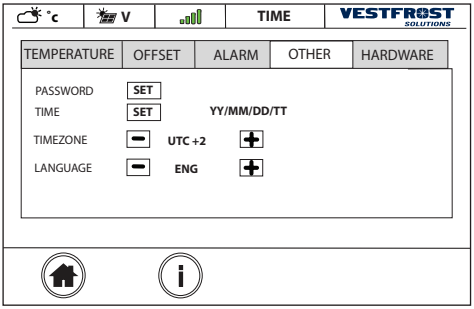
If you press the OFFSET tab you will get this screen:



If you press the ALARM tab you will get this screen:

ALARM

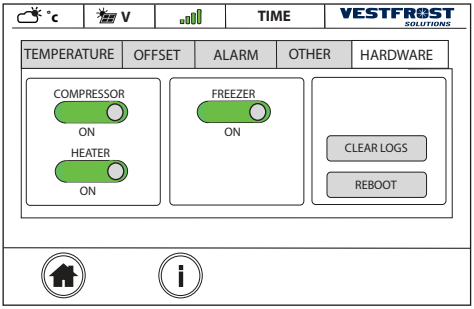
DOOR-ALARM-DELAY	Press + or – to change the max time the lid can be open before an alarm is generated.
	Press this icon to go back to the Main screen



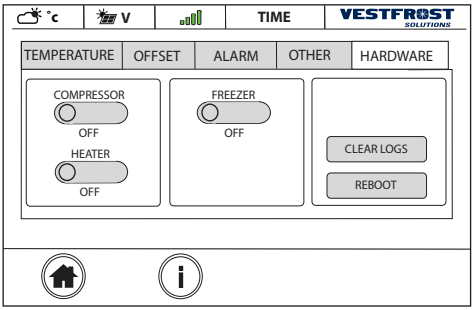
If you press the OTHER tab you will get this screen:

OTHER

TIME	The current local time. This is set from the GPS or from back-end server. In case of no GPS signal or GSM signal the time can be set manually. Press SET to set the actual local time.
TIMEZONE	The timezone of the EMS.
LANGUAGE	Press + or – to toggle the language. Default is ENG = English.
	Press this icon to go back to the Main screen



If you press the HARDWARE tab you will get to this screen:



HARDWARE

COMPRESSOR	Slide the COMPRESSOR slider to the left to manually turn the compressor OFF or to the right to manually turn it ON. NOTE: When you leave the Change Settings screen the COMPRESSOR will return to automatic mode controlled by the AIR temperature.
REBOOT	If you press the REBOOT button the device will restart it self. All settings are kept.

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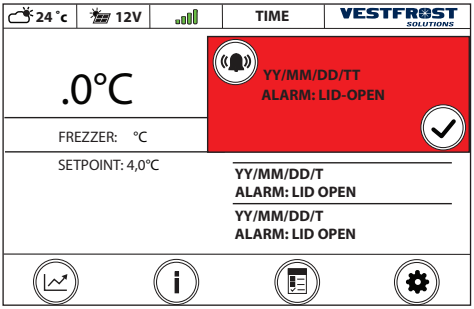
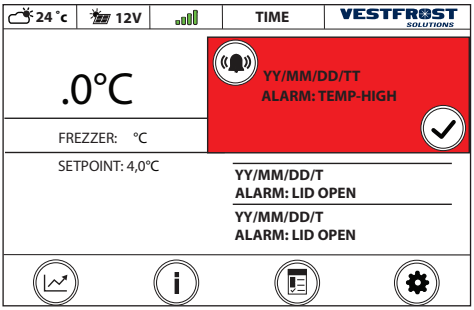
Alarms and Notifications



The following is a short description of the various alarms and warnings the device will display.

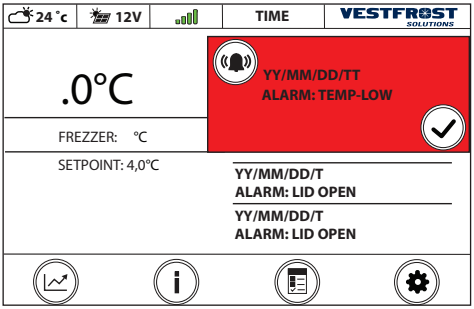
ALARM

DOOR-OPEN	This alarm occurs when the door / lid has been open more than the allowed period specified in on the Settings menu.



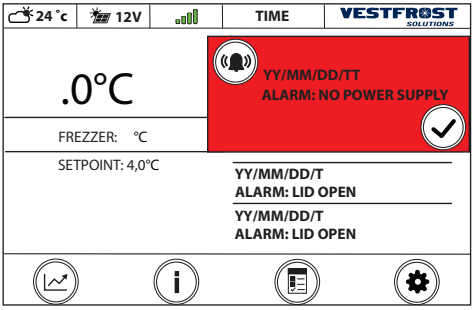
ALARM

TEMP-HIGH	This alarm occurs when the temperature of the fridge raises above the max temperature limit specified in on the Settings menu.
	The alarm will be written to the log file and send back to the server. If the temperature stays above the HIGH-TEMP limit the EMS will not send a new alarm until after 3 hours. This is to prevent the log file from being flodded with identical alarms.



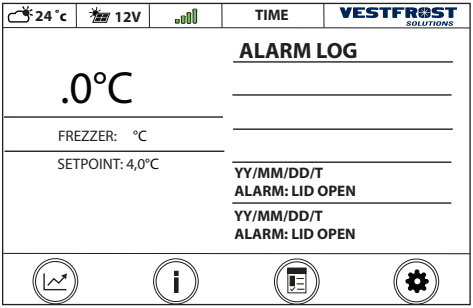
ALARM

LOW TEMP	This alarm occurs when the temperature of the fridge falls below the min temperature limit specified in on the Settings menu. The alarm will be written to the log file and send back to the server. If the temperature stays below the LOW-TEMP limit the EMS will not send a new alarm until after 3 hours. This is to prevent the log file from being flodded with identical alarms.



ALARM

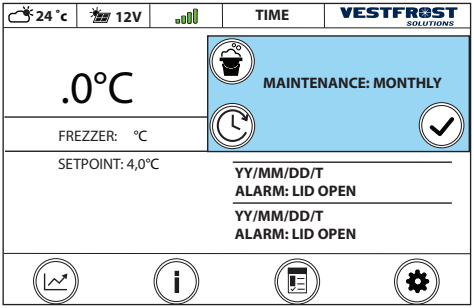
NO POWER SUPPLY	This alarm occurs when the voltage from the solar panels is below 8VDC in more than an hour during daylight.



ALARM

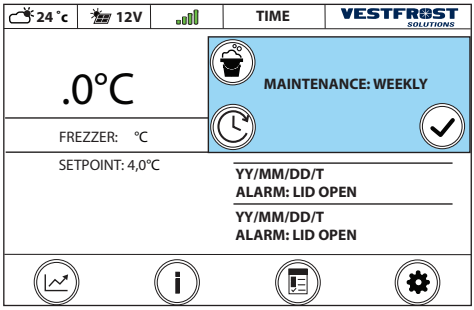
NO TIME	This alarm occurs when the device is unable to get a valid time from either the GPS satellittes or the GSM antenna.

Maintenance



NOTIFICATION:

MAINTENANCE	This notification occurs when it is time for the monthly maintenance



NOTIFICATION:

MAINTENANCE	This notification occurs when it is time for the weekly maintenance