



TECHNICAL DOCUMENTATION

I4GEN



CRE TECHNOLOGY
130, allée Charles-Victor Naudin
Zone des Templiers – SOPHIA ANTIPOLIS
06410 BIOT – France
Phone : +33 (0)4.92.38.86.82
www.cretechnology.com
info@cretechnology.com

TABLE OF CONTENTS

INTRODUCTION	3
Caution Safety protections	3
User's Notice	4
Package Contents	4
Environmental Protection Announcement	4
General Description	5
Specifications	6
Presentation	8
INSTALLATION	9
Mechanical mounting	9
USB Device Fixed Parts (Optional)	10
Wifi Antenna Installation (Optional)	11
Power supply	11
Network connection	12
COMMUNICATION	13
Pre-requisite	13
Login/Connection	14
FUNCTIONING	17
Interface	17
Graphic objects	21
Numerical display	21
Numerical display by variable number	21
Boolean display (LED)	21
Bargraph	22
Gauge	23
3D pictures	24
Synchroscope	25
Popup	26
Alarm/Fault page	27
Visualization	27
Reset/Acknowledge	28
Filters	28
About page	29
Home page	30
Supervision pages	31
Static configuration pages	32
Modification by variable number	32
i4Gen Settings	34
Language	34
Theme	35
Screen	36
Date/Time	37
Connection	38
Network	41
Update	42
Preferences	43
System	43
DIMENSIONS	44

INTRODUCTION

CAUTION SAFETY PROTECTIONS

Operate the product according to the correct installation steps and with great care to make sure safety and comfort using experience. Please refer to the following safety instruction guide to avoid danger of electric shock or fire. Abide by the previous safety instruction guide to use and maintain the product and the hard disk to make sure of safe operating environment.

- Please follow the instruction manual for operation guide.
- The appropriate operating temperature ranges from -10...60°C.
- The operation humidity for this product is 5% to 80% RH.
- To avoid high temperature, please DO NOT overload the maximum power of the external power supply while the system is consuming high voltage. Be aware of the maximum temperature allowance of the power supply.
- See to it that the product is not working near the water.
- Always unplug power cable and other hardware cables from the system before cleaning.
- Apply only dry cloth for cleansing the product.
- Make sure that there is no heat source nearby when the product is working.
- Make sure that the thermal louver of the product is not blocked.
- Make sure to remove the power plug from the product when there is a thunder storm.
- Please remove the power plug from the product when you are not going to use the product for a long time.
- Make sure to set up or use the product on a stable surface.
- Make sure not to drop the product or strike it by any means.
- Make sure not to move the product when the power is on.
- Make sure not to step on the power cables and other cables or rest anything in them. Be sure to ground yourself to prevent static charge when installing any internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
- Disconnect the power cord from the Panel PC unit prior to any installation. Be sure both the system and all external devices are turned off. Sudden surge of power could ruin sensitive components. Make sure the Panel PC unit is properly grounded. unit
- Do not open the system's back cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:
- Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on human body.
- When handling boards and components, wear a grounding wrist strap available from most electronic component stores.
- Please contact qualified technician for maintenance or repair.
- Use only accessories and parts that are made by the qualified manufacturer.

USER'S NOTICE

Copyright of this manual belongs to the manufacturer. No part of this manual, including the products and software described in it may be reproduced, transmitted or translated into any language in any form or by any means without written permission of the manufacturer.

This manual contains all information required for the utilization of this product to meet the user's requirements. But it will change, correct at any time without notice.

Manufacturer provides this manual "as is" without warranty of any kind, and will not be liable for any indirect, special, incidental or consequential damages (including damages for loss of profit, loss of business, loss of use of data, interruption of business and the like).

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and they are used only for identification or explanation and to the owner's benefit, without intent to infringe.

PACKAGE CONTENTS

		
X1	X1	X1
		
X2	X4	

- 1x **i4Gen**
- 1x DC-DC Adapter 9 to 36VDC input for 12VDC output
- 1x Power cord
- 2x WIFI antenna
- 4x Cabinet fixed parts

ENVIRONMENTAL PROTECTION ANNOUNCEMENT

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.



GENERAL DESCRIPTION

- 10-point capacitive multi-touch
- Edge-to-edge narrow bezel design and fan-less cooling system
- Designed for easy wall mount, panel mount, and VESA mount installation
- A true flat, easy-to-clean front surface with an edge-to-edge design
- USB 3.0 ports support lock device
- IO ports designed for easy connection
- 9...36V DC-input support, with EOS, OVP design
- On-board Intel® Braswell series SoC processor, with low power consumption never denies the high performance
- On-board 4GB DDR3L 1333Mhz SO-DIMM
- On-board 1 x full-size Mini-PCIE slot
- On-board 1 x M.2 slot (M-key), type-2242 SATA interface for SSD device
- Support 2 x RJ-45 Gigabit LAN port and 1*external RJ-45 COM port
- 1x2.4G WIFI module with support for 802.11 b/g/n WIFI communication

Additional Functions

- **WiFi:** The Mini PCI-E on-board socket in the board is integrated with a WIFI card (802.11 b/g/n) that can act as a mini wireless modem when external antennas are connected. Different computers in the house can build wireless connections through the Mini TOPS (Total Operations Processing System) and take necessary data from it, thus reducing the complexity in network establishment.
- **Giga LAN:** The system is integrated with Gigabit LAN network controller with ACPI (Advanced Configuration and Power Interface) management realizing efficient power management for the operating system.
- **USB 3.0:** Experience fastest data transfers at 5Gb/s with USB 3.0 the new latest connectivity standard. Built connect easily with next-generation components and peripherals, USB 3.0 transfers data 10 times faster and backward compatible with previous USB2.0 components.
- **CPU usage:** The CPU Usage diagram shows a beautiful data curve that indicates a pretty low CPU usage percentage for video playback of different formats. GPU performances are excellent as well.
- **dB value:** The design of the system takes into consideration the needed quiet operating environment in the living room and the average dB value is below 26 under normal operation to ensure the tranquility when you are absorbed in film watching.

SPECIFICATIONS

Display

Front Bazel	IP65, NEMA 4 rugged protection, Full planar metal border
Display Type	10.1" with LED backlight
Brightness (cd/m²)	400 nits
Display Color	16.2M
Resolution	1280 x 800 @ 60Hz
Viewing Angle (H/V)	170o / 170o
Pixel Pitch	0.1695 x 0.1695 mm
Aspect Ratio	16:10
Contrast Ratio	800:1
Response Time	30 ms

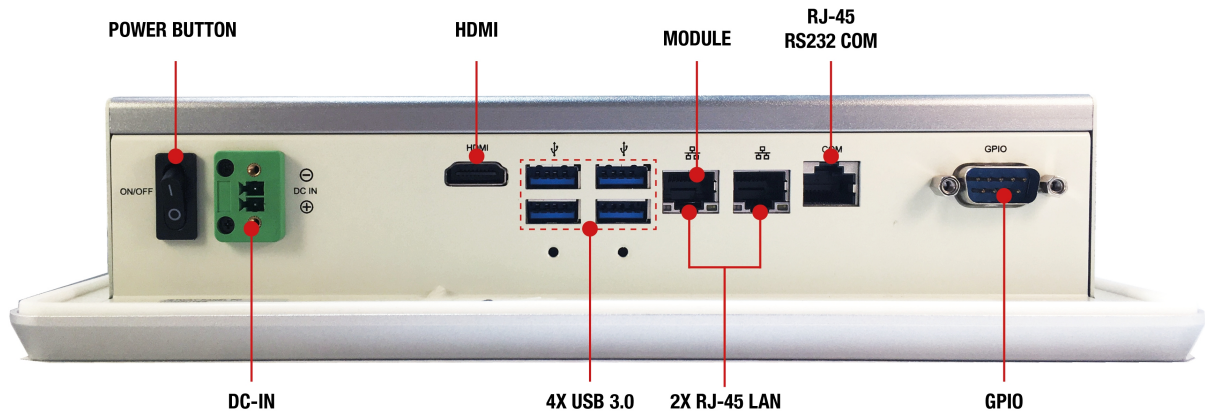
Touch Screen


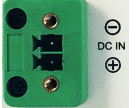





Type	Projected capacitive type
Active Range	257.10 x 159.66mm ± 0.2mm
Transparency	≥ 87%
Surface Hardness	≥ 6H (JIS-5400)
Glass Haze Value	≥ 3%

Main CPU Board

CPU	Intel® Braswell series SoC CPU
System Memory	Onboard 4GB DDR3L 1333MHz SO-DIMM
BIOS	AMI 64Mb Flash ROM

I/O System



Icon	Name	Quantity	Description
	Power Button	1	Press to turn on/ off the system.
	DC-in Power Connector	1	For user to connect compatible terminal power block to provide power supply for the system.
	HDMI Port	1	To connect display device that support HDMI specification. (Not used).
	USB 3.0 Port	4	To connect USB keyboard, mouse or other devices compatible with USB specification. USB 3.0 ports supports up to 5Gbps data transfer rate.
	RJ-45 LAN Port	2	This connector is standard RJ- 45 LAN jack for Network connection.
	RJ-45 COM Port	1	This connector is standard RJ- 45 COM jack for serial console port connection. (Not used).
	GPIO Connector-Male	1	This connector is a RJ- 45 COM port for console function. (Not used).

Environment

Operating temperature ranges	-10...60°C
Humidity	5% to 80% (Relative Humidity)

PRESENTATION

i4Gen is a customer interface made by CRE to offer users a complete management of new CRE controllers. The unit hardware is a multi-touch screen color display develop for harsh environment and industrial areas, providing access to all controller's data for control, measurement and configuration.

Thanks to an embedded TeamViewer© License, it will be possible to access remotely to the **i4Gen** for support, remote control or fleet management.

i4Gen License free software provide also the capability for each user to use the interface from any platform (PC, tablets) in order to configure, customize and program CRE controllers online or offline.

Control and Management

Direct display

i4Gen is able to display information from 1 controller in direct Ethernet connection and shows a basic overview of the power plant by using controller CANbus data when applicable.

SCADA display

i4Gen can be used as a power plant display if connected on an Ethernet HUB accessing to each controller with the Modbus TCP network. In SCADA mode the direct display of any of the controller is available and a SCADA page allows the user to change the displayed controller.

Multi-user display

Several **i4Gen** can also be securely connected by Ethernet hub a single controller (or a group of controllers), for redundancy application, multi-level access or long-distance monitoring panel.

Events displayed/recorded

An innovative feature turns major alarms and faults into 3D graphical object display, to warn operator about an important event and facilitate immediate diagnosis (ex: coolant tank lights up in red in case of coolant temp fault or in orange in case of coolant temp alarm).

An event alarm/fault recorder is also available on a dedicated display page, indicating timestamps, status, acknowledgment, and corresponding variable; the event page can be filtered for diagnosis and investigation of selected variables.

Compatibility

i4Gen is compatible with these controller versions :

- **GENSYS2.0** (starting v5.01). Beware, v5.04 is not supported.



INSTALLATION

MECHANICAL MOUNTING

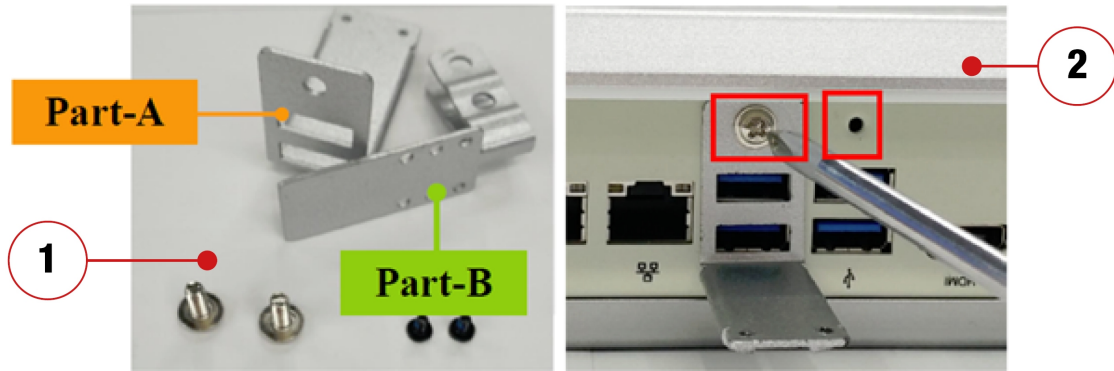
Install **i4Gen** position at eye level and at brightness-less location.

Frame cut-out (hxl): 160x242mm (6.3x9.5in).

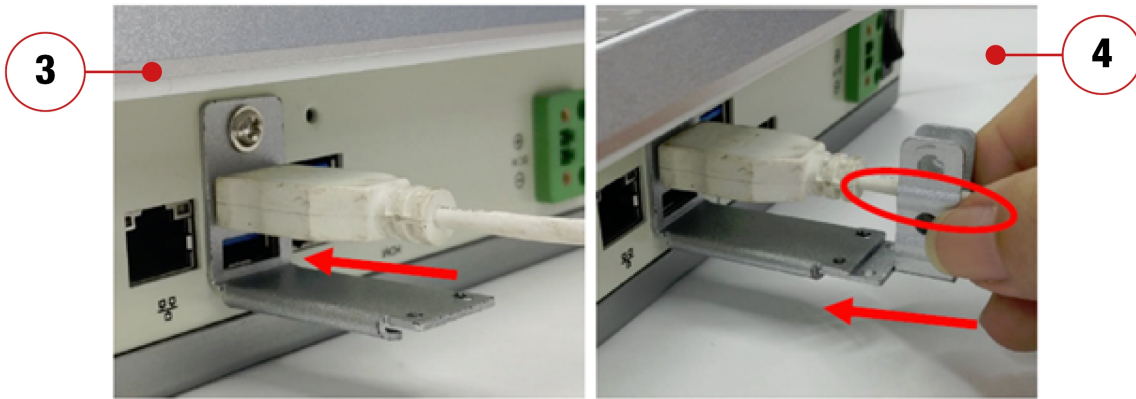
Chassis Fixed Parts

	<ol style="list-style-type: none"> 1. Insert corresponding edges of the fixed part into the slots until they are matched. Make sure the fixed part is installed in the way the photo shows, with protruding tips upwards. 2. The models that support this fixing mode have pairs of slots reserved on both sides of the system. User can choose the height or position of installing spot.
	<ol style="list-style-type: none"> 3. Insert corresponding edges of the fixed part into the slots until they are matched. Tightening up the screw so that the fixed part can be fitted into the slots tightly. Install other fixed parts to the system in the same way.

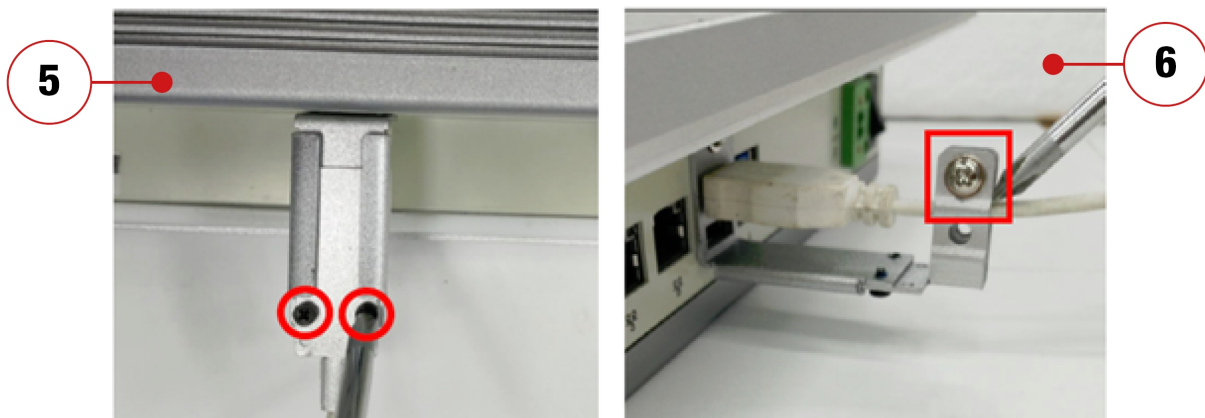
USB DEVICE FIXED PARTS (OPTIONAL)



1. The USB device fixed accessories include Part-A, Part-B and 2 sets of screws of different size.
2. Align the screw hole of Part-A to corresponding screws hole from IO panel of the chassis, and then lock Part-A to the panel with the bigger screw, as the photo shows.



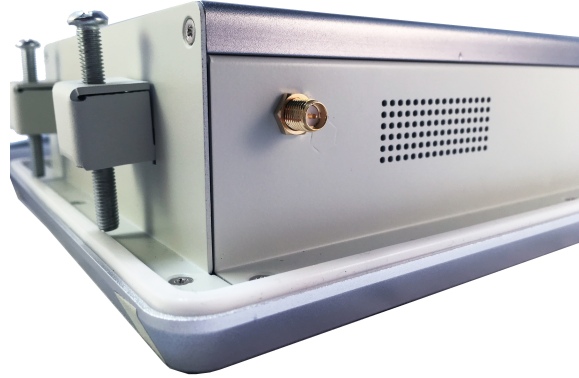
3. Insert the cable end of USB device you wish to connect to USB port of the chassis, as the photo shows.
4. Insert Part-B into corresponding slot of the Part-A and choose the installing length by adjusting the screw holes from both parts. Make sure the screw holes from both parts matched and the USB cable fitted into the reserved slot of Part-B, as the photo shows.



5. Turn over the system on a flat operation platform and lock Part-B to Part-A by tightening the 2 screws in the marked spots.
6. Fastening the USB device cable by tightening up the other screw in the marked spots.

WIFI ANTENNA INSTALLATION (OPTIONAL)

Screw the two antenna on the antenna heads connectors



POWER SUPPLY

By default, power supply connector is connected to the AC-DC adapter. If you want to supply your **i4Gen** with a battery, please disconnect the AC-DC adapter wires from the connector and connect the battery wires to the connector instead.

9...36VDC input Euro terminal power jack

	<ol style="list-style-type: none"> 1. Turn off your power supply. 2. Connect the male supply connector to the female supply connector on the chassis. 3. Tighten the two connector fixing screws. 4. Turn on your power supply. 5. The i4Gen starts automatically when the power is turned on. 6. To turn off the i4Gen, press the On/Off power button on the i4Gen chassis.
--	---

NETWORK CONNECTION

There are several possible connection types between the **i4Gen** and the controller.

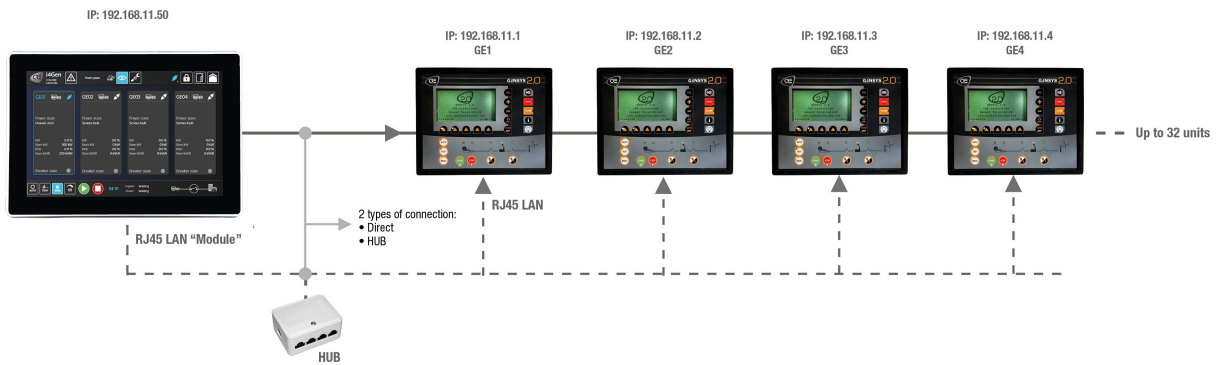
Direct Connection

- Connect the Ethernet port (RJ45-LAN) labeled "**module**" of the **i4Gen** to the Ethernet port of the controller.

Connection Via a Switch

- Connect the Ethernet port (RJ45-LAN) labeled "**module**" of the **i4Gen** on one of the switch's Ethernet ports.
- Connect the Ethernet port of the controller on one of the switch's Ethernet ports.

You can connect up to 32 controllers on one switch. You will then be able to supervise each controller, in turn, using **i4Gen**. To facilitate connection switching from one controller to another, the **i4Gen** has a "**Switch connect**" function (see "**Switch connect**" section in the [Connection](#) section of the settings page).



NOTE: Default configuration for a multi-genset central unit.
IP addresses can be modified by the user but must respect the principle of the diagram above

COMMUNICATION

PRE-REQUISITE

To be able to establish communication between the **i4Gen** and the controller, the network addresses of both devices must be configured:


- The **i4Gen** network configuration can be done from the **i4Gen "Network"** settings page (see [Network](#) chapter).
- The controller network configuration can be done from the controller front panel or controller website or via **CRE Config** software.

If the **i4Gen** and the controller are connected directly, the network configuration of both devices has to be compatible:

- The IP address by default of the **i4Gen** is: 192.168.11.50
- The IP address by default of **CRE Technology** controllers is: 192.168.11.1

These two addresses are in the same subnet (first 3 identical numbers), the **i4Gen** and the controller can communicate together.

LOGIN/CONNECTION

	<p>Press login/connection icon to open login/connection window.</p> <p>i4Gen uses the classic password system of the CRE Technology modules for access authorizations and parameter modification of the connected module.</p>
---	---

Level	Default password	Rights	Menu
0	None	None	Display and manual button
1	1	User settings	All Menus
2	CRE Technology distributor's reserved	Advanced settings	All Menus



To connect to a module, you have to fill the following information:

- The IP address of the controller
- The Modbus port TCP of the controller
- The HTTP port of the controller
- The UDP port of the controller
- The corresponding log in password level

Once you have filled these information, push the button



to connect and to log in with the entered password level.



*Note: Once the connection is established, **i4Gen** downloads the information (labels, accuracies, units) of the modifiable variables.*

Once logged in, you can change the login password level by changing the "**Password**" field and pressing

the button **LOGIN**

Passwords are the same as those used to connect directly to the module via its front panel or embedded website.

It is possible to disconnect by pressing the button **DISCONNECT**.

When the connection to the controller is lost or a connection switch to another controller is done, the **i4Gen** attempts to connect or reconnect to the remote controller for several seconds and then abandons after a while.

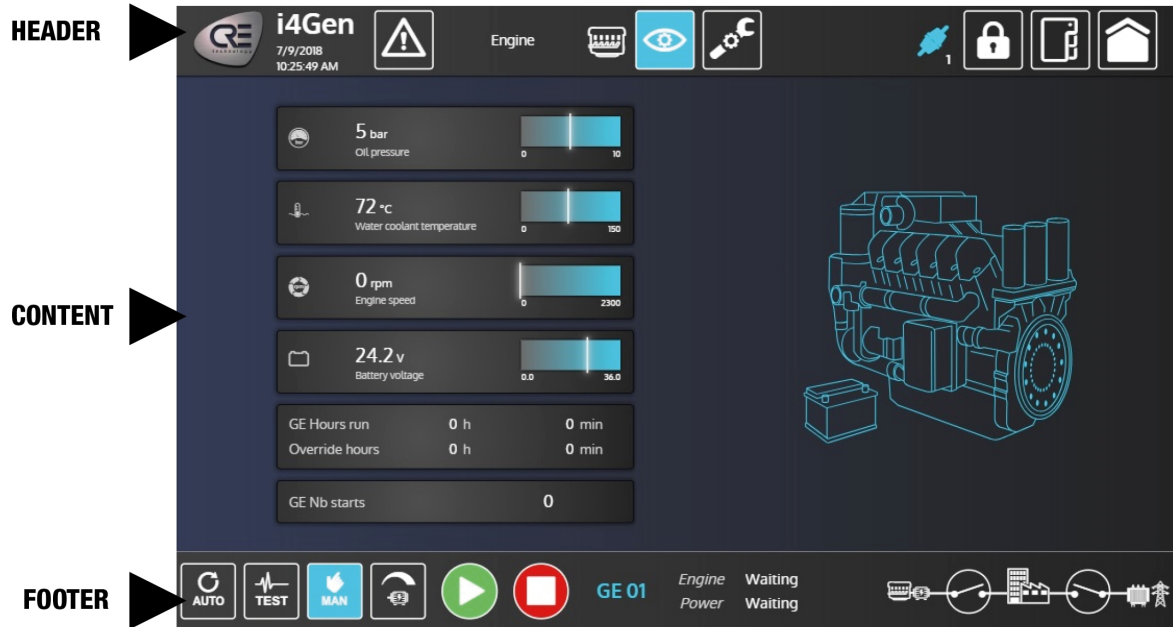
During connection/re-connection attempts, the **DISCONNECT** button is replaced by a **CANCEL** button to manually cancel the attempts.










FUNCTIONING






INTERFACE

The interface of the **i4Gen** allows to replace the front panel of **CRE Technology** modules and to offer a better ergonomics in order to facilitate the supervision of our products.

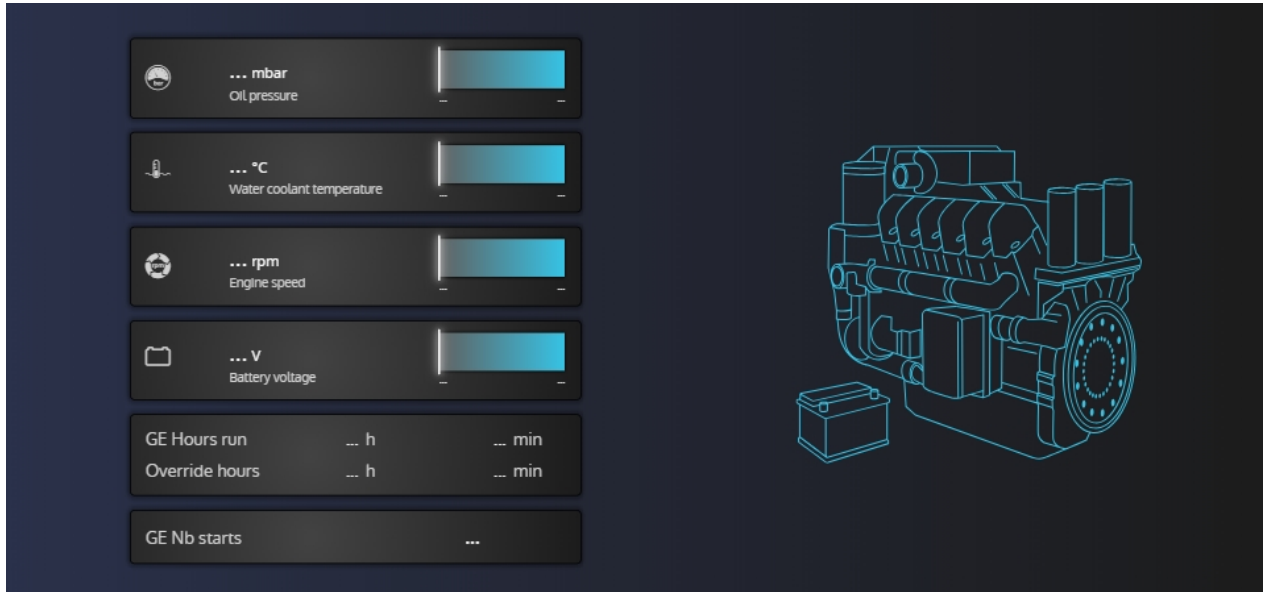


Header

TOUCH ICONS	
	About page
	Fault & Alarm menu (Status when there are no faults or alarms)
	Supervision menu
	Static configuration menu
	Connection/Login menu
	Settings menu
	Home (Back to home page)

INDICATORS	
	Alarm: Blinking unacknowledged alarm, Static: alarm acknowledged and in progress
	Fault: Blinking unacknowledged fault, Static: fault acknowledged and in progress
	Module disconnected
	Module connected + password level (id: 1)
	Connection in progress / Reconnection after connection loss
Generator 1/4	Title and index of current opened page



Content



Footer

All footer buttons are only available when the **i4Gen** is connected:

TOUCH ICON	
	AUTO mode, colored in theme color when active
	TEST mode, colored in theme color when active
	MANUAL mode, colored in theme color when active
	Give access to additional buttons for manual frequency/voltage control. Colored in theme color when active
	Increase frequency
	Decrease frequency
	Increase voltage
	Decrease voltage
	Start generator
	Stop generator

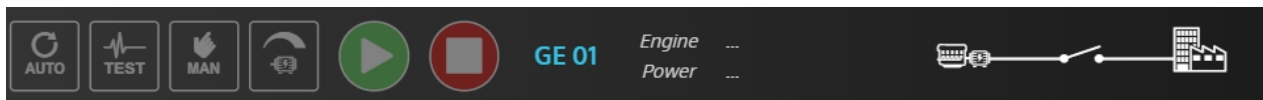
INDICATORS					
GE 01	Generator number of current connected controller				
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Engine</td> <td style="padding: 5px;">Waiting</td> </tr> <tr> <td style="padding: 5px;">Power</td> <td style="padding: 5px;">Waiting</td> </tr> </table>	Engine	Waiting	Power	Waiting	Engine and Power states
Engine	Waiting				
Power	Waiting				
	Synoptic for configurations without Mains. Breaker icon become a button only in manual mode. Supplied elements are colored in green.				
	Synoptic for configurations with Mains. Breaker icon become a button only in manual mode. Supplied elements are colored in green.				

Supervision Mode

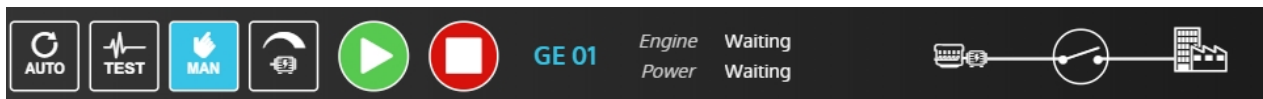
In supervision mode, the footer gives access to :

- Control buttons of the controller.
- Specific information on the generator (number, engine status, power status).
- Synoptic of the installation.

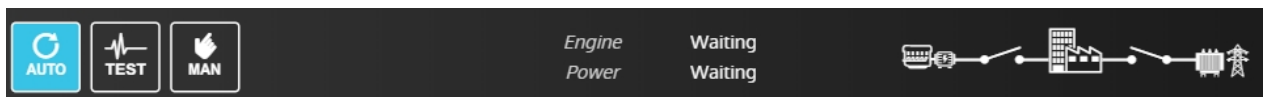
Note: When the i4Gen is off-line, the control buttons from the footer cannot be used.



The i4Gen footer is dynamic and adapts to the controller configuration:



GENSYS2.0 in manual mode: control buttons are available.



GENSYS2.0 in automatic mode: control buttons are hidden

Configuration Mode

In configuration mode, the footer displays :

- The name of the page in use
- A button to send local changes to the controller
- A button to undo local changes



GRAPHIC OBJECTS

The **i4Gen** offers several graphical objects to display the different measures of the connected controller, in order to offer an ergonomic, dynamic and aesthetic display.

NUMERICAL DISPLAY



Composition: label + value + unit.

This is the simplest graphic object in the application, but also the most efficient when it comes to display a large number of measures on the screen.

NUMERICAL DISPLAY BY VARIABLE NUMBER

Composition : label + modifiable address field + value + unit



This is the graphic object used in the "**info**" page of the **i4Gen**. It allows you to search for a controller variable by entering its address in the editable field and display its label, value and unit.

Note : If you're logged in with level 0 password; Address changes in the info page are volatile. They will be lost when the controller restarts. Using level 1 password or above makes any change to be saved instantly and doesn't require any user action.

BOOLEAN DISPLAY (LED)



Composition : label + LED.

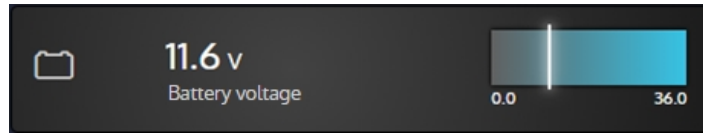
This is the graphic object used for Boolean (binary) variables.

LED color code :

- Green: active
- Grey: inactive

BARGRAPH

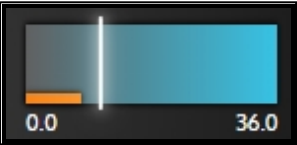

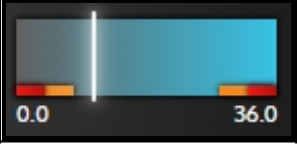

This is the graphical object used for mechanical measures and whose representation of the measure in relation to a minimum and a maximum is important:



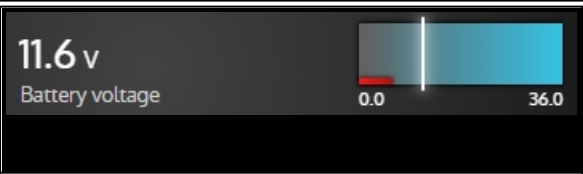


Note: The slider is the value of the measurement relative to the min and max shown below the bar-graph.

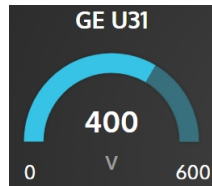
User configuration reminder

The protection levels configured for the measurement associated with the bar graph are directly represented on the bar graph:

	Representation of a minimum protection threshold configured as an alarm.
	Representation of a maximum protection threshold configured as a fault.
	It is possible to display up to 2 max and 2 min protection thresholds per bargraph.
	If none protection is configured, no threshold will be displayed on the bargraph.

Bargraph states

	Nothing to report: When the cursor remains outside the alarm/fault ranges OR no protection threshold has been configured, the background of the bargraph is colored with the selected theme and the numeric value on the left side of the bar graph is white colored.
	Alarm active: When the cursor overlaps an alarm range and the associated protection has been triggered on the controller, the bargraph and its numeric value turn into orange color.
	Active fault: When the cursor overlaps a fault range and the associated protection has been triggered on the controller, the bargraph and its numerical value turn into red color.

GAUGE

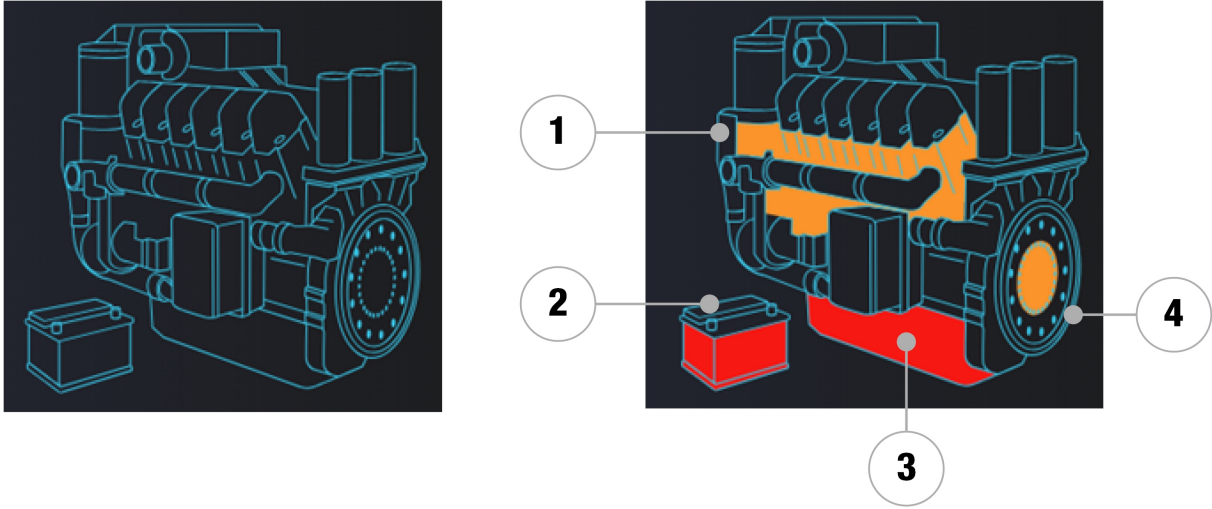
This is the graphic object used for electrical measures and whose representation of the measure with respect to a min and a max is important.

The gauge fill part corresponds to the value of the measurement with respect to the min and max indicated below the gauge.

3D PICTURES

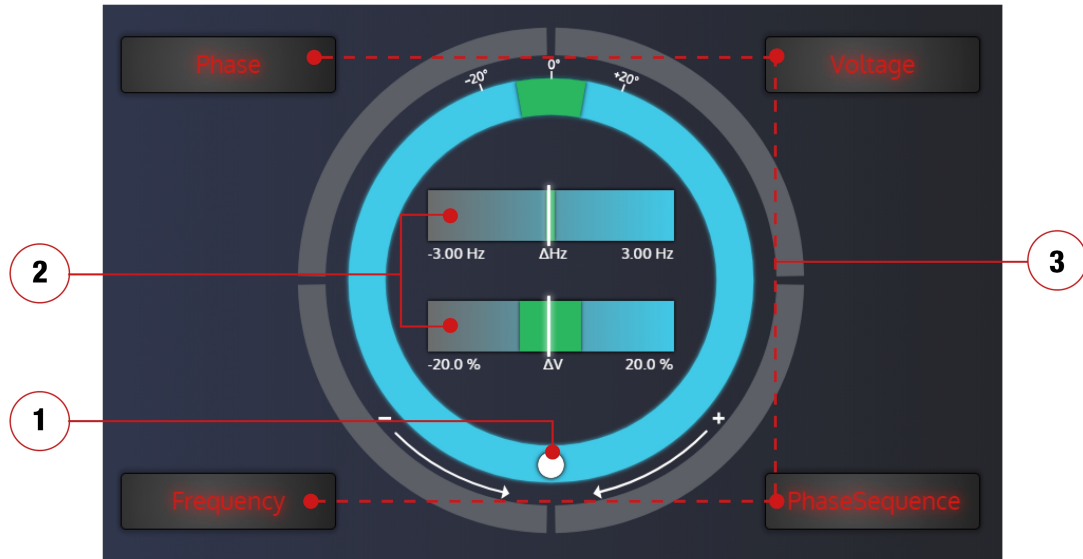
The pages of supervisions "**Engine**", "**Generator**" and "**Mains**" display 3D pictures that change according to the state of the associated protections in each of these pages.

Engine



1. Indicates the presence of a water temperature alarm/fault
2. Indicates the presence of a battery voltage alarm/fault
3. Indicates the presence of an oil pressure alarm/fault
4. Indicates the presence of an engine speed alarm/fault

SYNCHROSCOPE






This is the graphic object used in the "**Synchro**" page of the **i4Gen**. It allows, during a synchronization, to visualize the phase, frequency and voltage differences between the generator and the mains/bus bar as well as the synchronization conditions.

1. The position of the white "**ball**" indicates the phase shift (from -180° to 180°) between the generator and the mains/bus bar. The green area displayed on the phase circle indicates the maximum phase deviation accepted to allow the circuit breaker to close.
2. In the bargraphs located in the center of the synchroscope, the cursor position represents the frequency/voltage difference between the generator and the mains/bus bar. The green area displayed on each bargraph indicates the maximum frequency/voltage deviation accepted to allow the circuit breaker to close. If the frequency difference is too high, the cursor become red colored and the phase measure (ball) is not displayed anymore.
3. The four dials around the phase circle represent the synchronization conditions. Each dial is:
 - Colored in gray (and its label colored in red) if the condition is not respected.
 - Colored in green (and its label too) if the condition is respected.


POPUP

i4Gen can display popup windows to give information to the user.

There is three type of popup :

	Notice : display an information message.
	Warning: display a warning message
	Error: display an error message

ALARM/FAULT PAGE



Press alarms/faults icon to open alarms/faults page and stop the horn.
This page allows you to view and acknowledge/reset controller alarms/faults when **i4Gen** is connected to the module.

VISUALIZATION

1	2	3	4	5	6
DATE	HOUR	TYPE	STATE	N°	LABEL
17/07/18	17:03:04	⚠	ON	252	Emergency stop
17/07/18	16:07:13	⚠	OFF	4750	CANopen fault
17/07/18	16:07:13	⚠	ON	4750	CANopen fault
17/07/18	16:07:10	⚠	OFF	4750	CANopen fault
17/07/18	16:07:10	⚠	ON	4750	CANopen fault
17/07/18	16:07:04	⚠	OFF	600	Isolated prod.
17/07/18	16:06:42	⚠	OFF	4750	CANopen fault
17/07/18	16:06:42	⚠	ON	4750	CANopen fault
17/07/18	16:06:39	⚠	OFF	4203	Batt max Volt
17/07/18	16:06:13	⚠	OFF	4750	CANopen fault
17/07/18	16:06:13	⚠	ON	4750	CANopen fault
17/07/18	16:06:13	⚠	OFF	4475	Fail to start

The fault alarm history is displayed as a table, from the most recent alarm/fault to older one. Each line in the history shows the following information:

1. Date of appearance of the event
2. Time of appearance of the event
3. Event type: alarm (orange) or fault (red)
4. Event status: ON or OFF
5. Variable number corresponding to the event
6. Event label

The red lines correspond to active faults and the orange lines correspond to active alarms

RESET/ACKNOWLEDGE



Reset /acknowledge

Actions on the button :

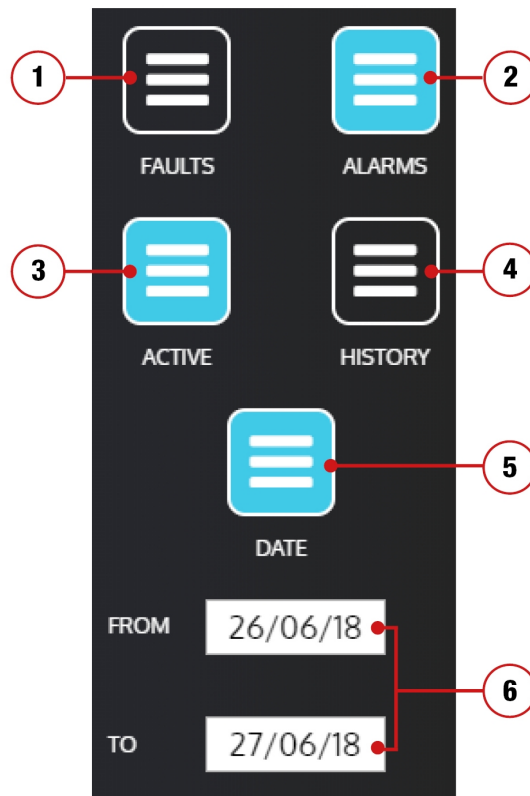
- Reset: Reset alarms/faults that are no longer active.
- Acknowledge: inform **i4Gen** that alarms/faults have been acknowledged.

Alarm/fault acknowledgment status:

- When alarms/faults are active and have not been acknowledged, the alarm/fault panel blinks red/orange.
- When alarms/faults are active and have been acknowledged, the alarm/fault panel is a fixed color.

FILTERS

Several filters are available to filter the display of the alarm/fault table. These filters can be combined vertically (see image below).

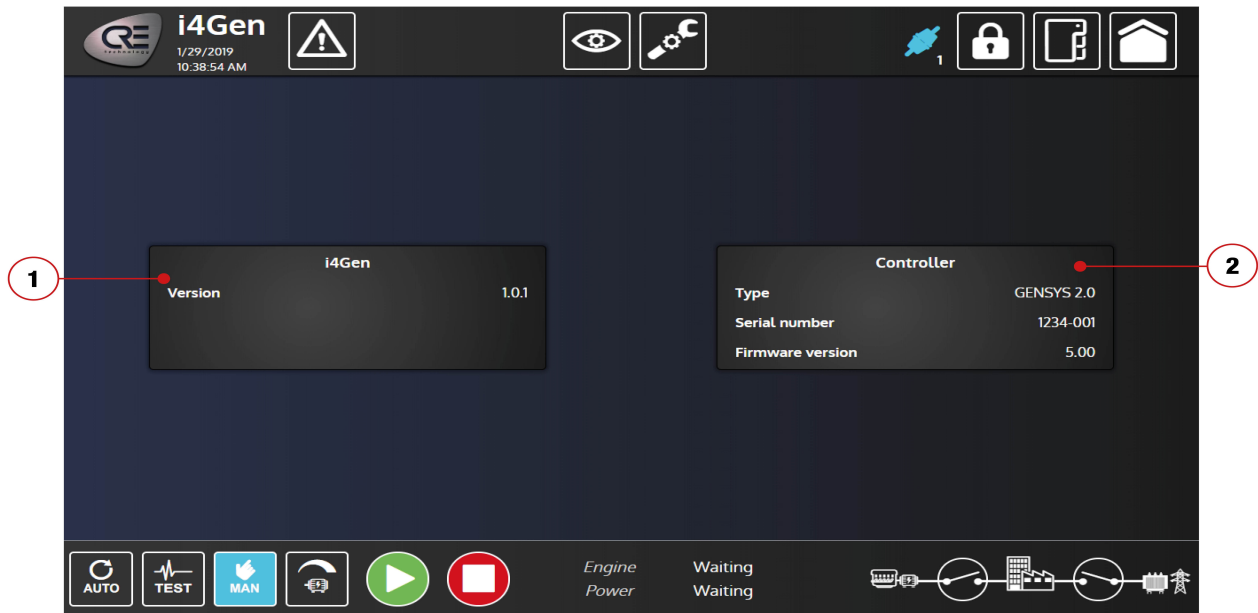
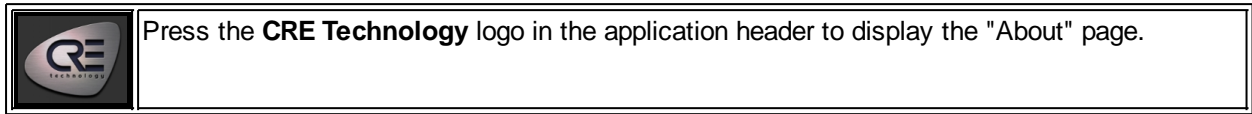


Example of filter configuration: display of active alarms from 26/06/18 to 27/06/18

Description of filters :

1. Faults: displays only faults
2. Alarms : displays only alarms
3. Active: displays only active alarms/faults
4. History: displays only alarms/faults history (without active)
5. Date : displays alarms/faults between two dates
6. "FROM - TO": Choose the period regarding alarms/faults you're searching for.

ABOUT PAGE



This page displays :

1. An **i4Gen** section with the software version (client and server)
2. A controller section with:
 - Type of controller connected to the **i4Gen**.
 - The firmware version of the controller (if connected to a controller).
 - The serial number of the controller (if connected to a controller).


HOME PAGE

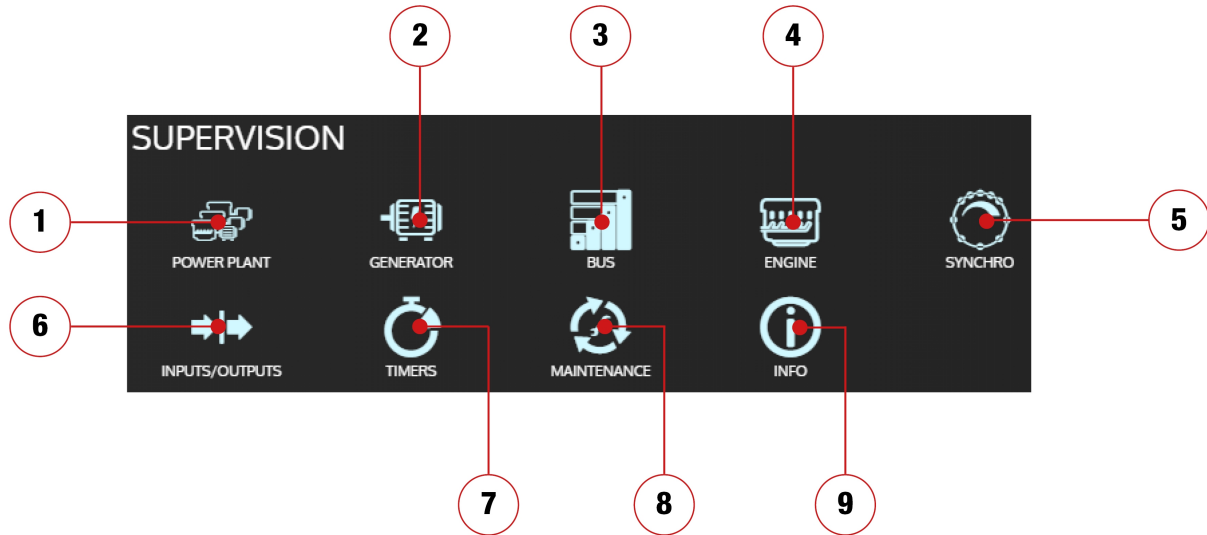


Press home icon to open home page.

The home page is a dynamic page whose content changes according to the "power state" variable and the states of the generator and mains circuit breakers.

SUPERVISION PAGES

 Supervision part displays controller measures in real time. Press supervision icon to open the menu that gives access to all supervision pages (see image below).

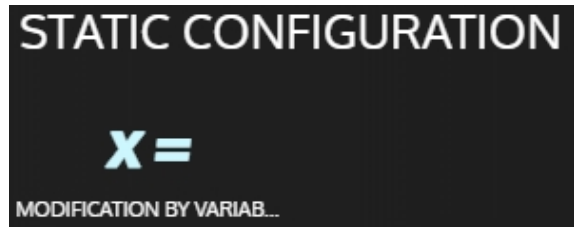


1. **Power plant:** Display of information passing through the CRE link (CAN inter GENSYs) between the different controllers of the power plant.
2. **Generator:** Display of electrical measures of the generator.
3. **Bus/Mains:** Display of electrical measures of the bus/mains.
4. **Engine:** Display of engine measures and J1939 measures (if a J1939 manufacturer has been configured).
5. **Synchro:** Display of synchronization information.
6. **Inputs/Outputs:** Display of digital inputs/outputs, analog inputs and CANopen inputs/outputs (if configured).
7. **Timers:** Display of the controller timers.
8. **Maintenance:** Display of maintenance cycles of the controller (it's possible to reset the cycles to zero in password level 1).
9. **Info:** Display of the customizable page of the **i4Gen**. Variables can be displayed according to their addresses.

STATIC CONFIGURATION PAGES



Static configuration part allows user to display and modify connected controller parameters. Press configuration icon to open the menu that gives access to all configuration pages (see image below).



MODIFICATION BY VARIABLE NUMBER

To change the value of a variable:


1. Enter the number of the variable you want to change in the "Variable number" input field.
2. Enter the value you want to write in the "Value" input field.
3. Press "Send" button to send the change to the controller.

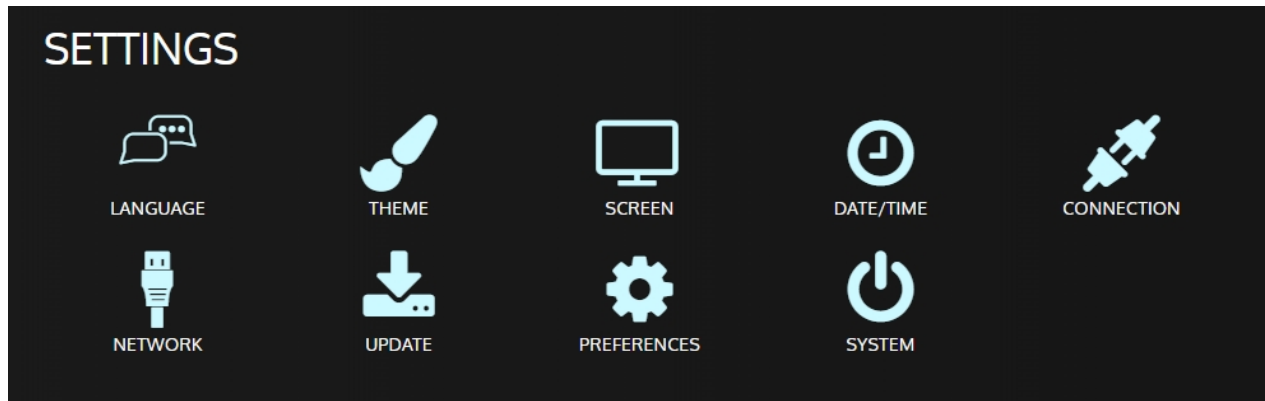
A popup window appears to inform you of the writing result. The different possible cases are the following

	Writing was successful
	Writing failed
	Writing seems to have been successful but the i4Gen could not verify the written value. In this case, you can go to the "Information" supervision page to double check if the value had been written or not.

A "**SAVE FIRMWARE CONFIG**" button is available in the footer of the configuration section. This function is useful when parameters have been temporarily modified by Modbus TCP (modification of info variables from **i4Gen** in password level 0, modification of parameters by an external PLC...) and you want to save these modifications permanently in the controller.

I4GEN SETTINGS

 Settings part allows user to display and modify **i4Gen** settings.
Press settings icon to open the menu that gives access to all settings pages (see image below).



LANGUAGE



The "Language" page has two buttons (flags):

- French: to set to French the application language
- English: to set to English the application language

*Note: In connected mode, a language change requires a download of the editable labels of the **GENSYS2.0** (which are different according to the languages). You can choose whether or not to download these labels into **i4Gen**.*

THEME

The "**Theme**" page allows you to change the theme (color) of the application corresponding to the different controllers of the **CRE Technology Compact** range:



SCREEN

The "**Screen**" page allows you to configure **i4Gen** screen parameters:



HDMI port

The "**HDMI Port**" section allows you to set the HDMI port of the **i4Gen**

- Display mode: when the **i4Gen** is connected to an external screen via an HDMI port, it is possible to duplicate the **i4Gen** display on the external display by pressing the "**duplicate**" button

*Note: Dysfunction, this function is not operational in V1.0.0 of **i4Gen**.*

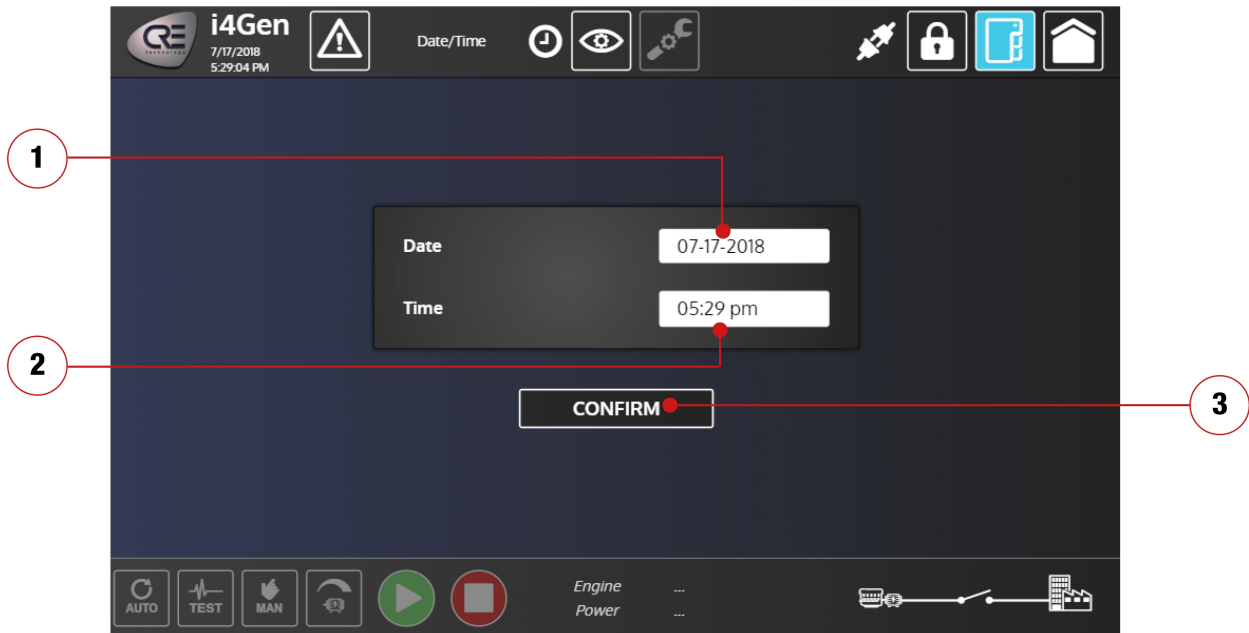
Screen saver

The screen saver section is used to set the **i4Gen** screen saver

- Screen saver delay: Allows you to configure the inactivity delay after which the screen saver appears.

DATE/TIME

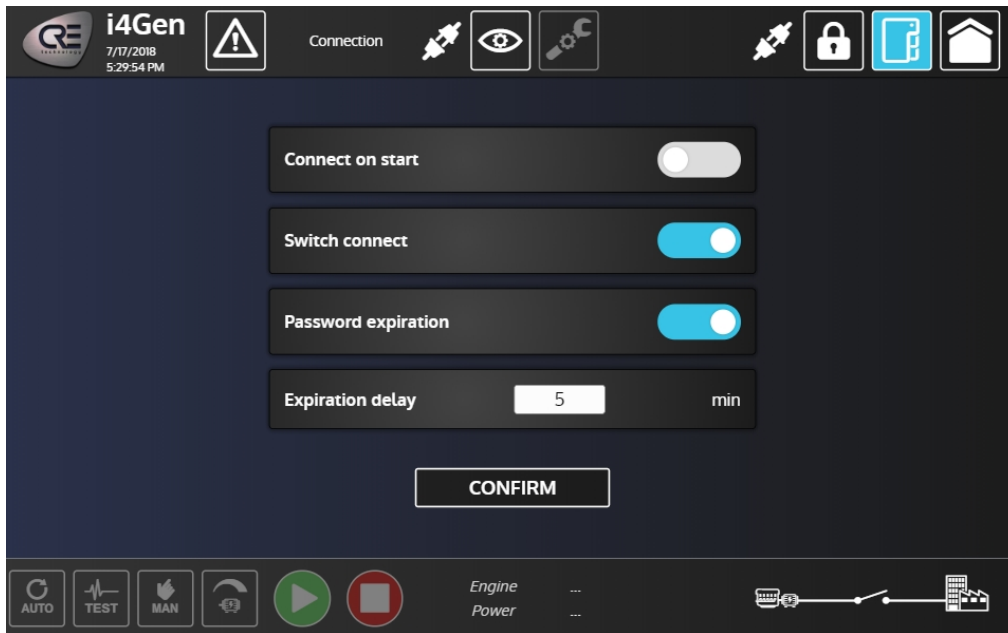
The "**Date/Time**" page allows you to configure the **i4Gen** date/time, and to synchronize the controller date/time with the one of the **i4Gen** :



1. Date: press on the editable field to display a calendar and set up the **i4Gen** date.
2. Time: press on the editable field to set up the **i4Gen** time.
3. Confirm: Press this button to trigger the **i4Gen** date/time change AND to synchronize the controller date/time with the one of the **i4Gen** (if **i4Gen** is connected to the controller)

CONNECTION

The "**Connection**" page allows you to configure the connection parameters of the **i4Gen**:



Connect on start

This parameter is used to activate/deactivate the automatic connection to a controller on **i4Gen** starting. By default, the **i4Gen** will attempt to connect to IP address 192.168.11.1. If the IP address has been modified and saved via the "**preferences**" page, then the **i4Gen** will attempt to connect to that address.

Switch connect

This parameter enables/disables the switch connect function from the "**power-plant**" supervision page. If you have a power plant of several generators with one **CRE Technology** controller per generator set, it is possible to quickly switch the connection of the **i4Gen** from one controller to another from the "**power-plant**" page to supervise them in turn.

When the function is activated, a connection icon appears in the upper right corner of each boxes (each corresponding to a generator) on the "**power-plant**" page.



CONNECTION
ICON

The generator highlighted in blue and whose connection icon is closed corresponds to the controller (and therefore to the generator) that you are supervising. To switch the **i4Gen** connection to another controller, press the corresponding controller **connection icon**.

To be able to use this function, the configuration of the controllers has to respect the following conditions

- The controllers must be configured in the same subnet : the first 3 numbers of their IP addresses must be the same (ex : 192.168.11.X).
- The generator number (v2001) must be different for each controller
- The 4th number of the IP address of a controller must correspond to its generator number (ex: GE number = 2, IP address = X.X.X.2)

Example of configuration with 3 controllers

- **Controller 1**
 - **Number of GE=1**
 - **IP address = 192.168.11.1**

- **Controller 2**
 - **Number of GE=2**
 - **IP address = 192.168.11.2**

- **Controller 3**
 - **Number of GE=3**
 - **IP address = 192.168.11.3**

In this way, in the "**power-plant**" page, GE1 will correspond to controller 1 (192.168.11.1), GE2 will correspond to controller 2 (192.168.11.2) and GE3 will correspond to controller 3 (192.168.11.3).

Note: If the configuration does not meet the above conditions, the connection switching may not work properly.

Password expiration

This parameter is used to activate/deactivate the password level expiration.

Expiration delay

If the password expiration has been enabled, this parameter is used to configure the delay after which the password will expire.

NETWORK

The "**Network**" page retrieves and displays the **i4Gen** and the controller network configuration when the page opens, and allows you to change this configuration:



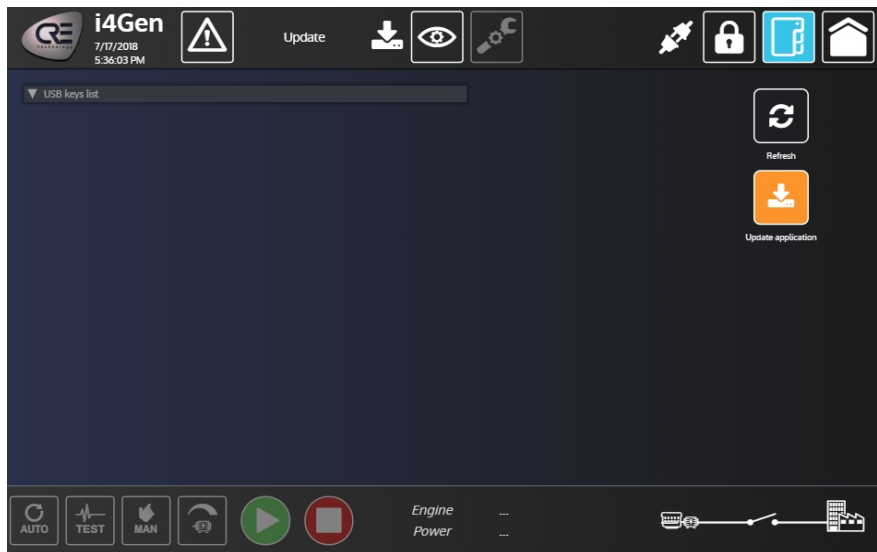
There are two different types of configuration:

- **DHCP Configuration (automatic):** If the **i4Gen** is connected to a DHCP server, you can enable the "**DHCP**" setting to automatically assign an IP address to the **i4Gen**.
- **Manual Setup:** To manually configure the **i4Gen** network settings, disable the "**DHCP**" setting, then fill in the "**IP address**" and "**Subnet Mask**" fields.

For most networks, it is not necessary to inform the gateway. For complex networks, contact your network administrator to make the correct configuration.

UPDATE

The "**Update**" page allows you to update the **i4Gen** software version:



Update procedure

1. Connect a USB key containing the **i4Gen** update archive. Then open the "**i4Gen Update**" page or press the "**Refresh**" button to refresh the **i4Gen** USB device display.
2. Browse on your USB stick via the folder tree and select the update archive.
3. Press the "**Update Application**" button to check the contents of the archive. A confirmation window should appear on the screen, press "**confirm**" to start the update.
4. Once the update is done, the **i4Gen** restarts automatically

Note: don't remove the USB key during the update to avoid disrupting file transfer.

PREFERENCES

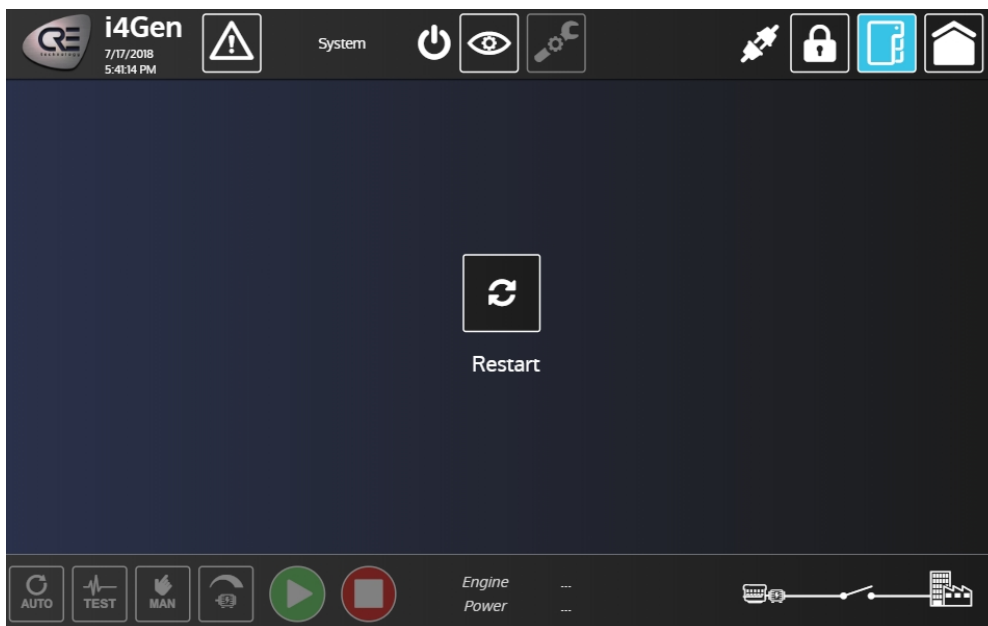
The "**Preferences**" page allows you to view and save the **i4Gen** user configuration:



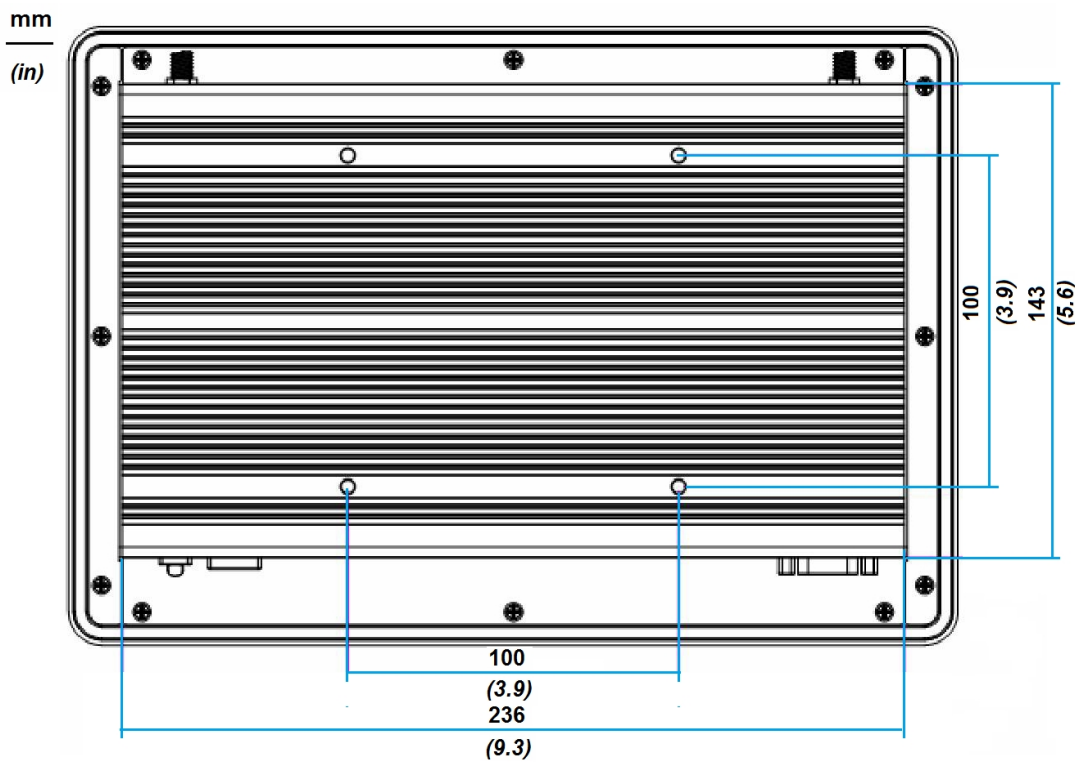
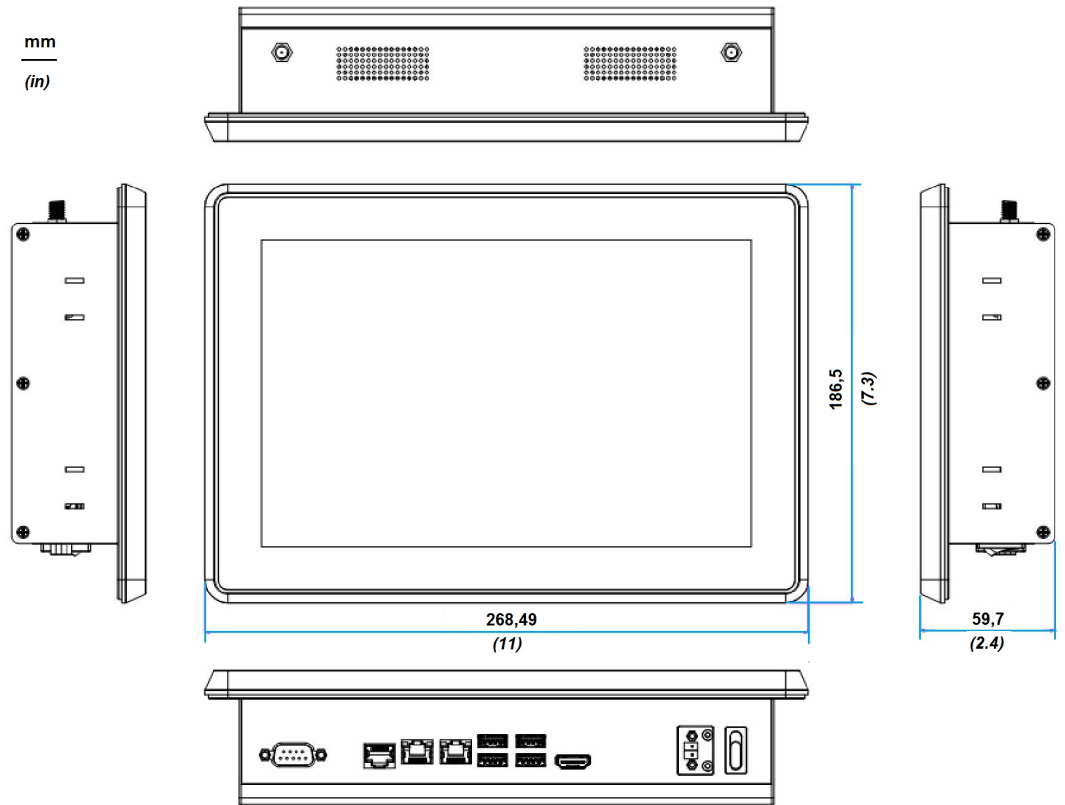
The block on the left side corresponds to the current user configuration. When changes are made in the settings pages, the actual user configuration is updated. This will be lost when the **i4Gen** restarts. The block on the right side corresponds to the saved user configuration. This configuration will be taken into account when restarting the **i4Gen**. The differences between the current user configuration and the saved user configuration are indicated by the orange color. Press the "**Save**" button to overwrite the saved user configuration by the current user configuration.

SYSTEM

The "**System**" page includes a button to restart the **i4Gen**:



DIMENSIONS



Note: Measure unit: mm