GUARD REVOLUTION

Controller for single gen-set applications

SW version 1.1.0

Operator Guide

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1 Front panel elements

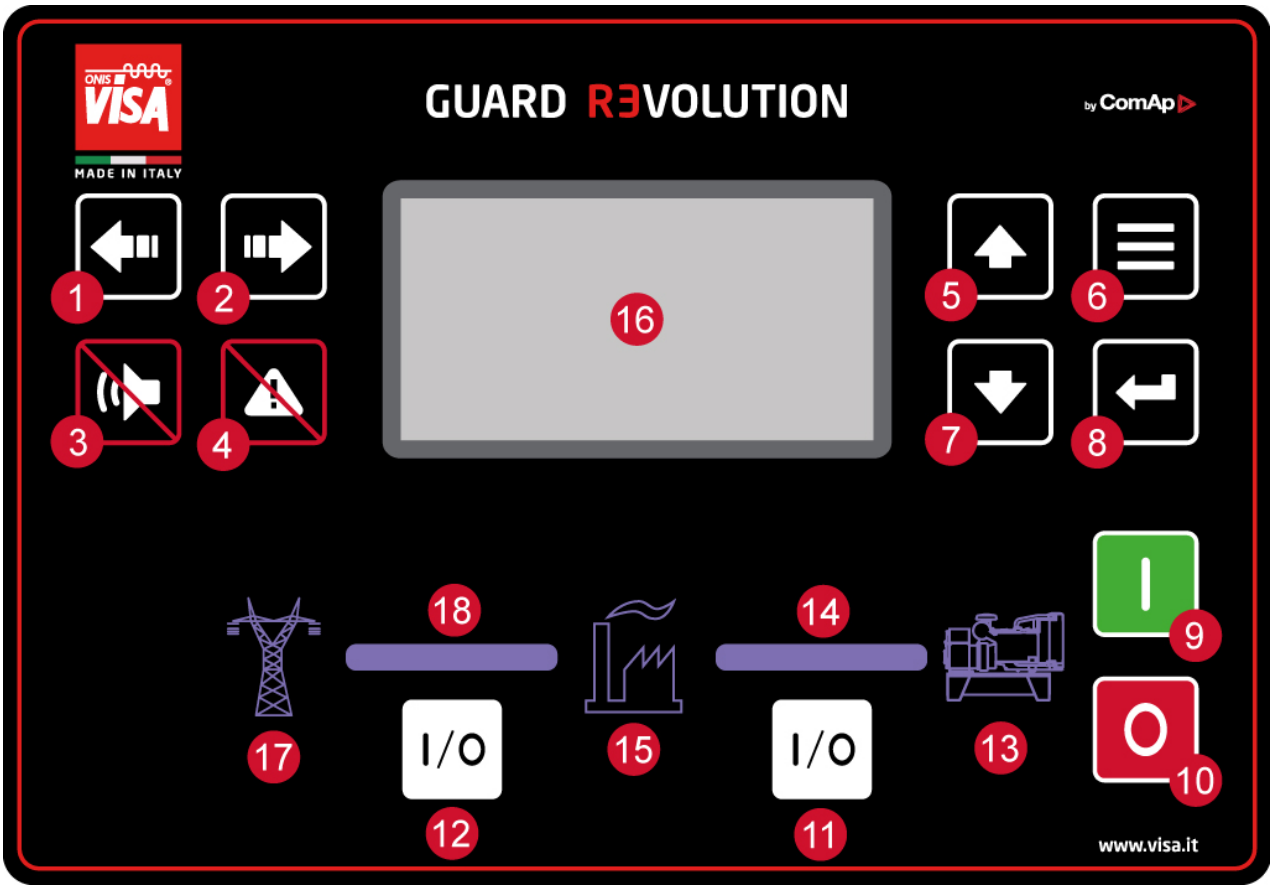


Image 1.1 Operator interface of Guard Revolution

Control buttons		
Position	**Picture**	**Description**
1		**LEFT** button. Use this button to move left or to change the mode. The button can change the mode only if the main screen with the indicator of currently selected mode is displayed. ***Note:*** *This button will not change the mode if the controller mode is forced by one of binary inputs listed in the Reference Guide – "Operating modes" chapter.*
2		**RIGHT** button. Use this button to move right or to change the mode. The button can change the mode only if the main screen with the indicator of currently selected mode is displayed. ***Note:*** *This button will not change the mode if the controller mode is forced by one of binary inputs listed in the Reference Guide – "Operating modes" chapter.*
3		**HORN RESET** button. Use this button to deactivate the horn output without acknowledging the alarms.
4		**FAULT RESET** button. Use this button to acknowledge alarms and deactivate the horn output. Inactive alarms will disappear immediately and status of active alarms will be changed to "confirmed" so they will disappear as soon as their reasons

		dismiss.
5		**UP** button. Use this button to move up or increase value.
6		**PAGE** button. Use this button to switch over display pages.
7		**DOWN** button. Use this button to move down or decrease value.
8		**ENTER** button. Use this button to finish editing a setpoint or moving right in the history page.
9		**START** button. Works in MAN mode only. Press this button to initiate the start sequence of the engine.
10		**STOP** button. Works in MAN mode only. Press this button to initiate the stop sequence of the gen-set. Repeated pressing or holding the button for more than 2 s will cancel current phase of stop sequence (like ramping the power down or cooling) and next phase will continue.
11		**GCB** button. Works in MAN and TEST modes only. Press this button to open or close the GCB.
12		**MCB** button. Works in MAN and TEST modes only. Press this button to open or close the MCB.

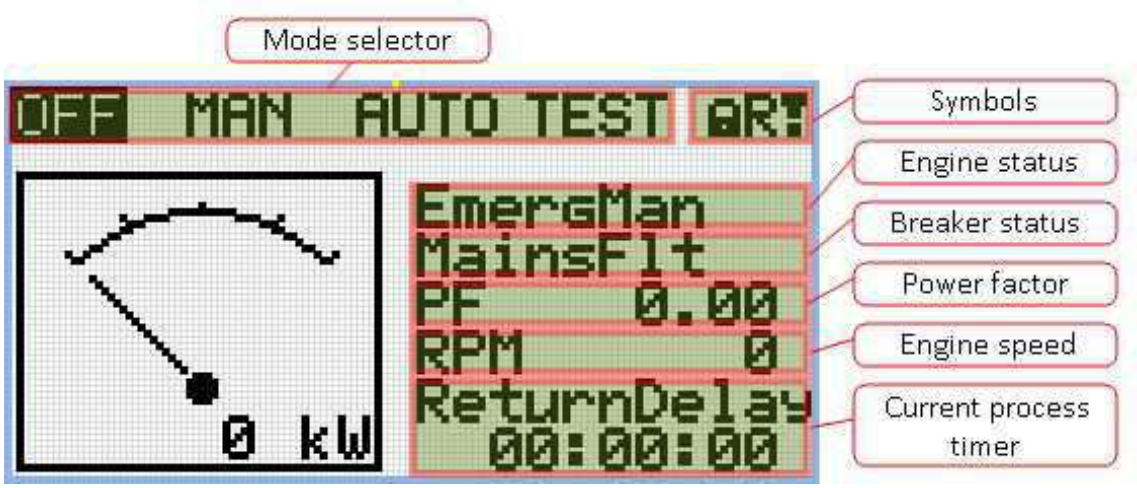
Indicators and others	
Position	**Description**
13	**GENERATOR** status indicator. There are two states - Gen-set OK (indicator is green) and Gen-set failure (indicator is red). Green LED is on if the generator voltage is present and within limits. Red LED starts flashing when gen-set failure occurs. After FAULT RESET button is pressed, goes to steady light (if an alarm is still active) or is off (if no alarm is active).
14	**GCB ON**. Green LEDs are on if GCB is closed and Gen-set is healthy. If Gen-set is not healthy and GCB is closed than middle LED is on. It is driven by GCB CLOSE/OPEN output or by GCB feedback signal.
15	**LOAD**. Green LED is ON if load is supplied by mains or by generator. It means, that Gen-set or mains is OK and proper circuit breaker is closed.
16	Graphic B/W display, 132x64 pixels.
17	**MAINS** status indicator. There are two states - Mains OK (indicator is green) and Mains failure (indicator is red). Green LED is on, if mains is present and within limits. Red LED starts blinking when the mains failure is detected and after the gen-set has started and connected to the load it lights permanently until the mains failure disappears and until Wrn MCB Fail disappears.
18	**MCB ON**. Green LEDs are on if MCB is closed and Mains is healthy. If Mains is not healthy and MCB is closed than middle LED is on. It is driven by MCB CLOSE/OPEN output or by MCB feedback signal.

2 Display screens and pages structure

The displayed information is structured into "pages" and "screens". Use PAGE button to switch over the pages.

- The page Measurement consists of screens which display measured values like voltages, current, oil pressure etc., computed values like i.e. gen-set power, statistic data and the alarm list on the last screen.
- The page Setpoints contains all setpoints organized to groups and also a special group for entering password.
- The page History log shows the history log in the order that the last record is displayed first.

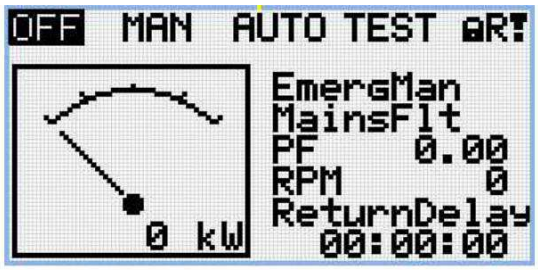
2.1 Main Screen

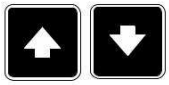


2.1.1 Symbols

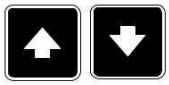
- Padlock - active when LBI ACCESS LOCK is active
- R - active when there is active remote connection to controller
- Exclamation mark - active when there is any alarm in alarmlist

2.2 Measurement Screens





Note: *Use Up and Down button to move between measurement pages.*



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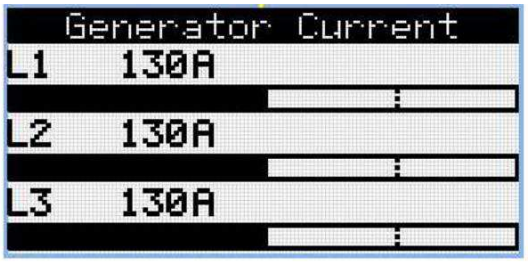

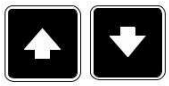

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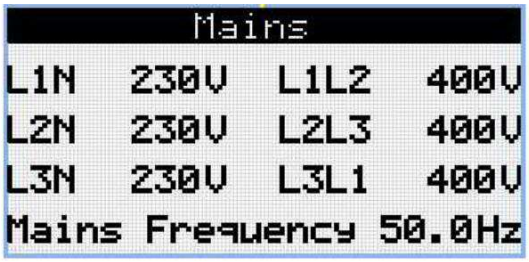

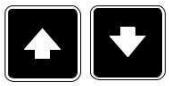

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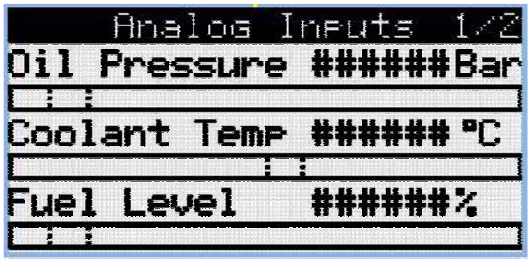

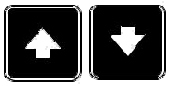

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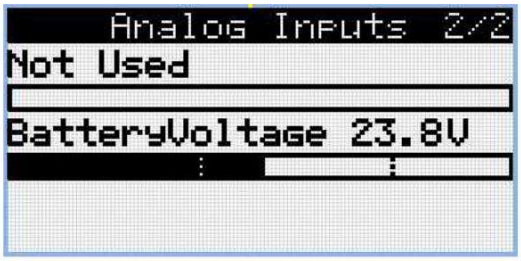

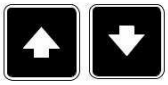

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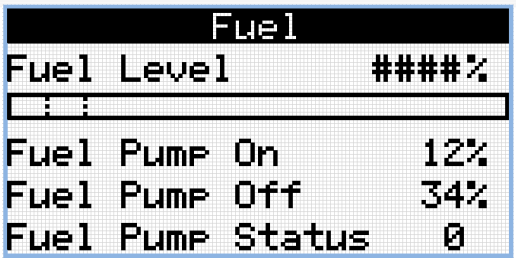

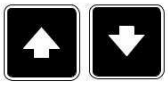

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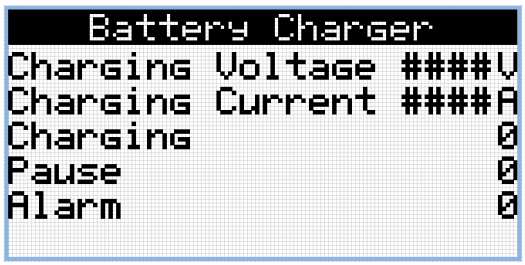

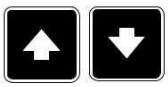

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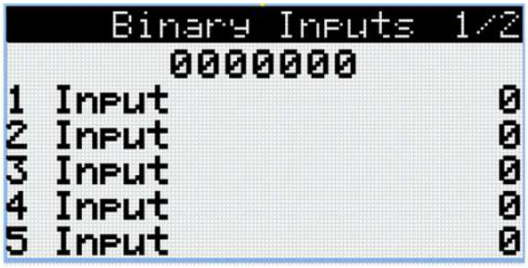

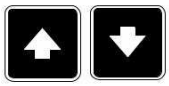

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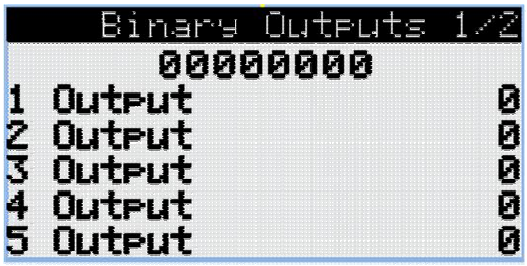

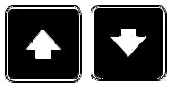

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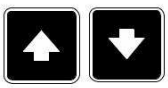

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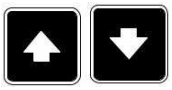

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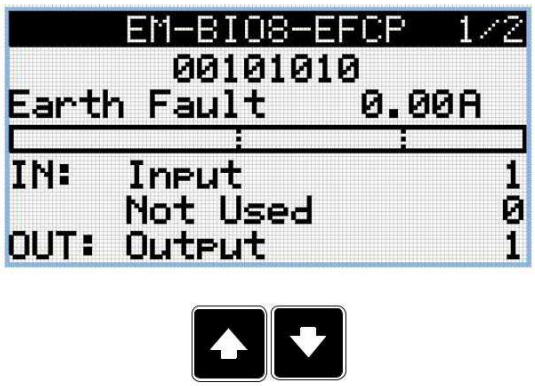

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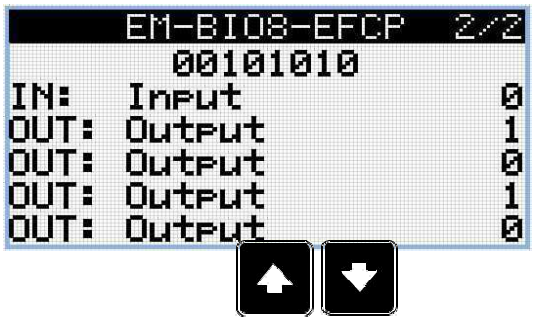

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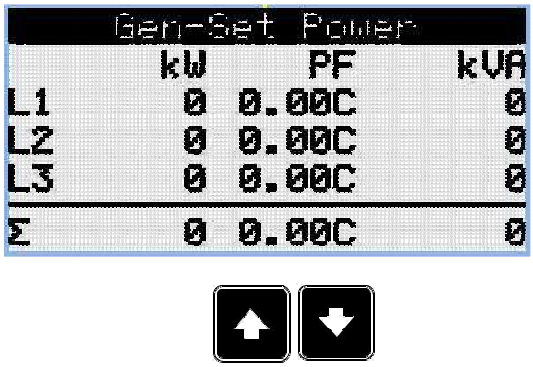

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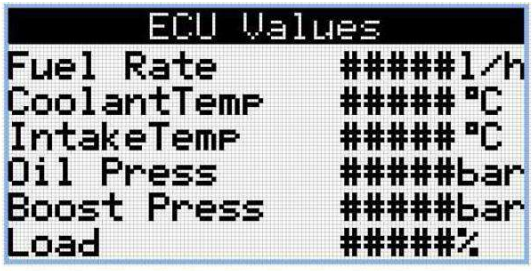

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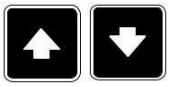

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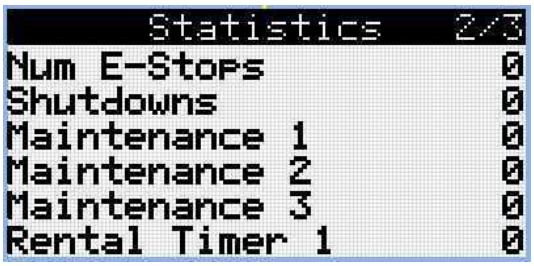

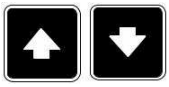

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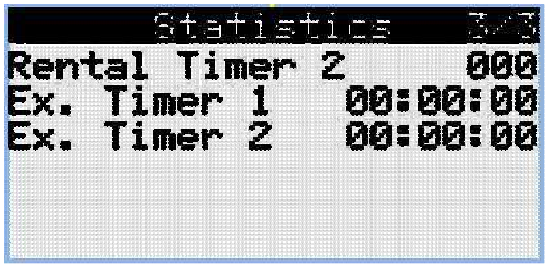

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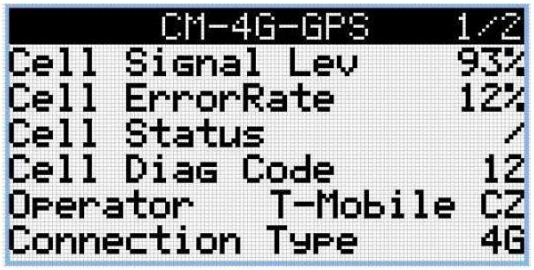

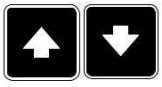

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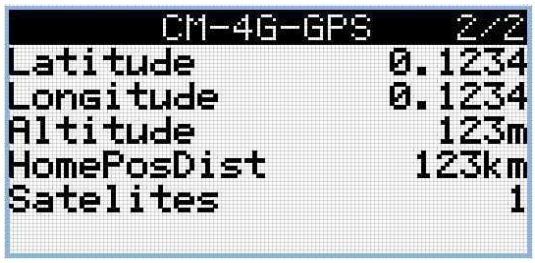

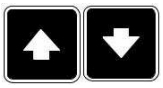

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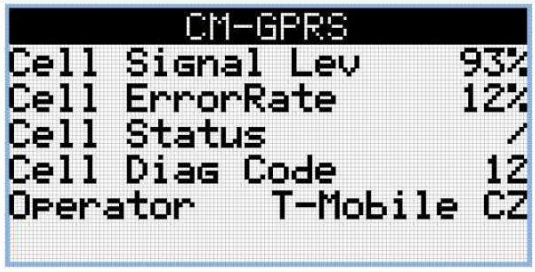

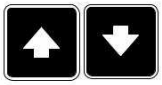

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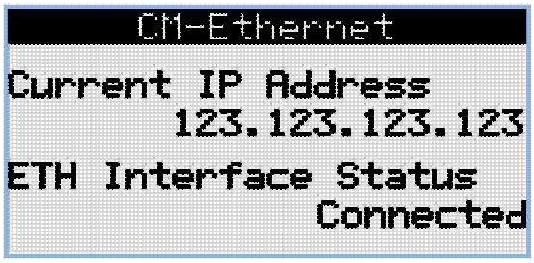

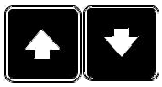

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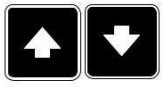

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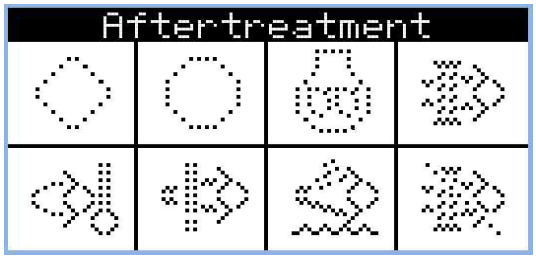

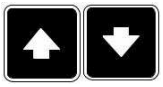

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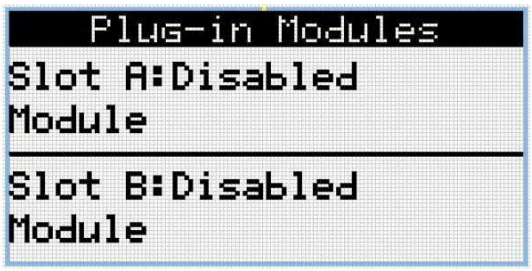
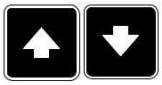
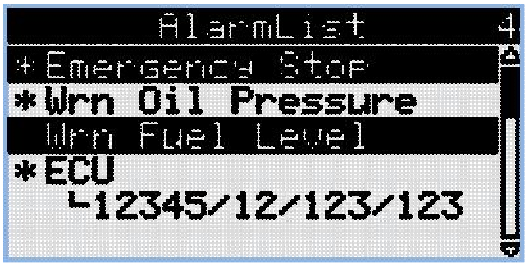
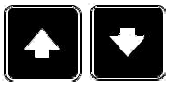




Note: *Use Up and Down button to move between measurement pages.*



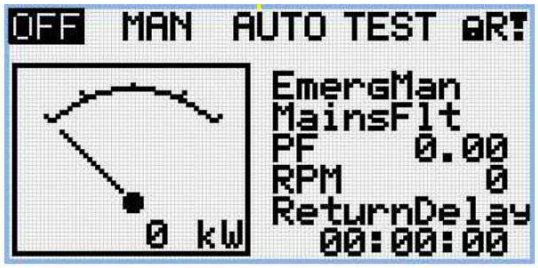


Note: *Use Up and Down button to move between measurement pages.*

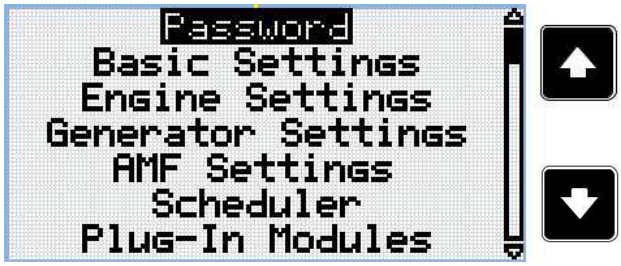
Note: *From all of these pages we can fluently go to the setpoint group page by pressing Page button.*

Note: *There can be some additional screens and also some screens can be hidden. Screen's visibility depends on actual configuration (usage of extension or communication modules, ECU, etc.).*

2.3 Setpoint Screens

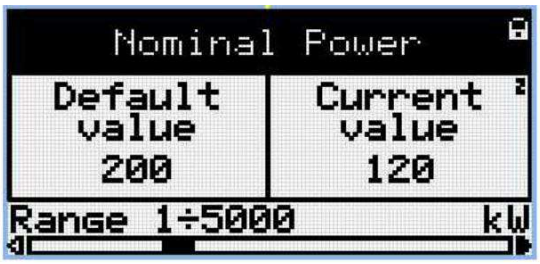


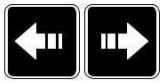
Note: *From all measurement pages we can fluently go to the setpoint group page by pressing Page button.*



Note: *Use Up and Down button to select required setpoint group.*

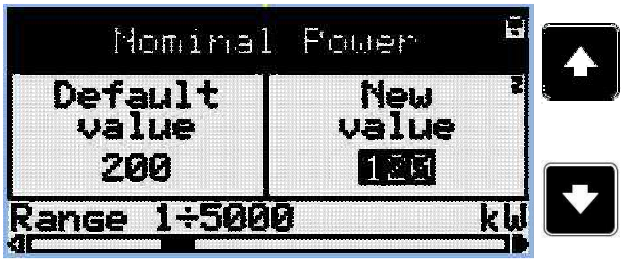
Note: *Use Enter button to enter selected setpoint group.*





Note: *Use Left and Right button to select required setpoint.*

Note: *Use Enter button to enter selected setpoint.*



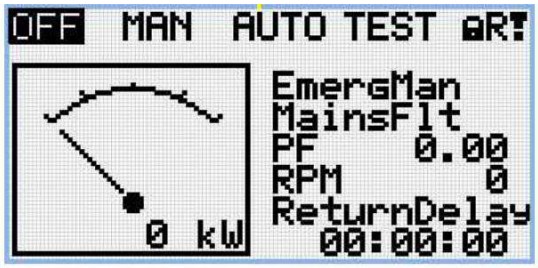
Note: *Use Up and Down button to set required value of selected setpoint.*

Note: *Use Enter button to confirm adjusted value of setpoint.*

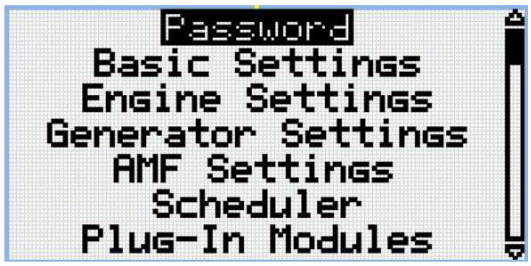
Note: *Use Page button to discard changes, to set setpoint to previous value and to return to the list of setpoints of selected group.*

IMPORTANT: Cannot change setpoint? Setpoints marked with an padlock are password protected. Enter password as described in the chapter Password (page 20).

2.4 History Log



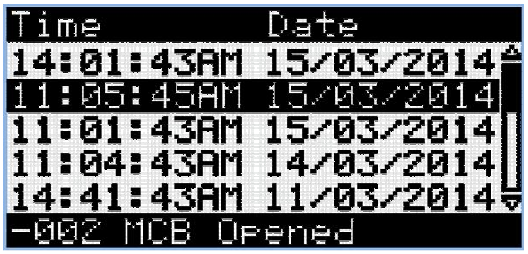
Note: *From all measurement pages we can fluently go to the setpoint group page by pressing Page button.*



Note: *From setpoint group page we can fluently go to the history log pages by pressing Page button.*

Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*

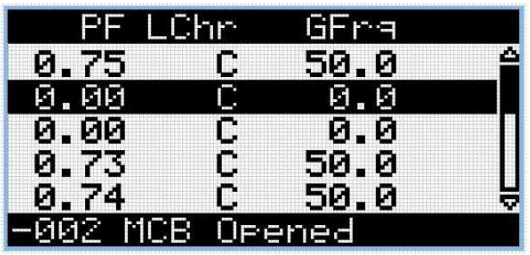


Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*

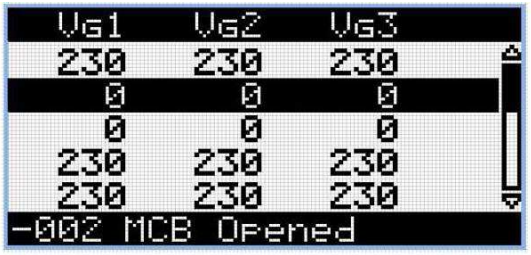
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



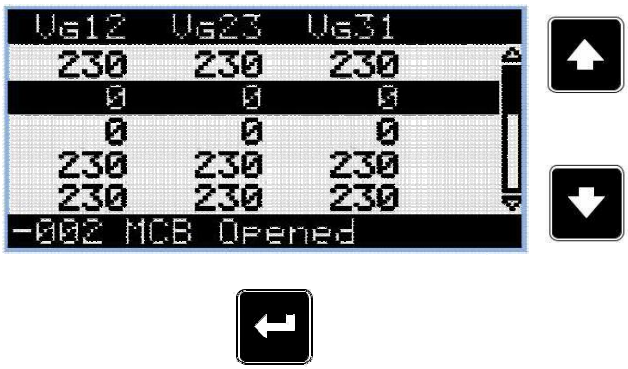
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



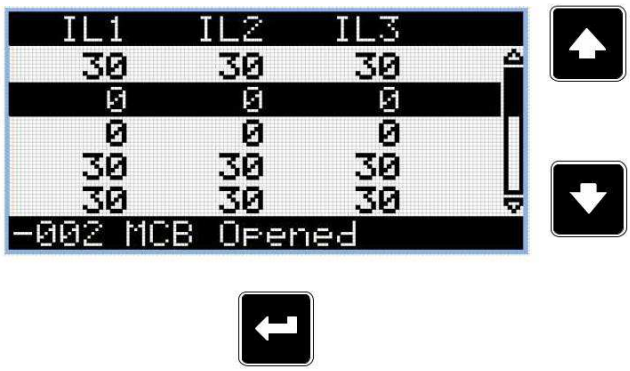
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



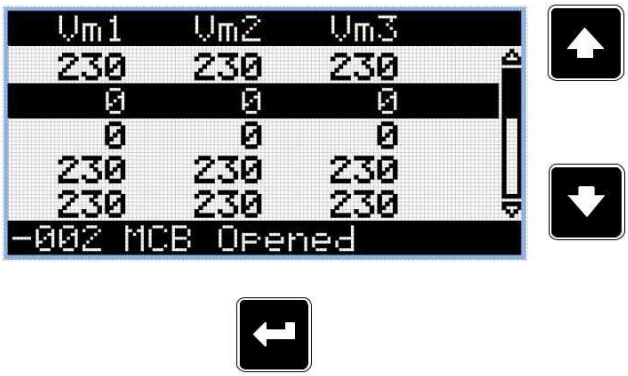
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



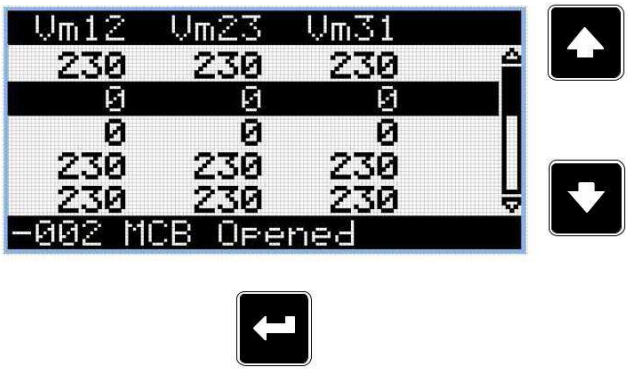
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



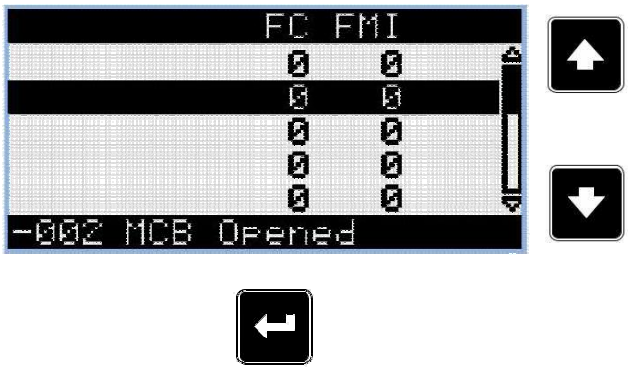
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



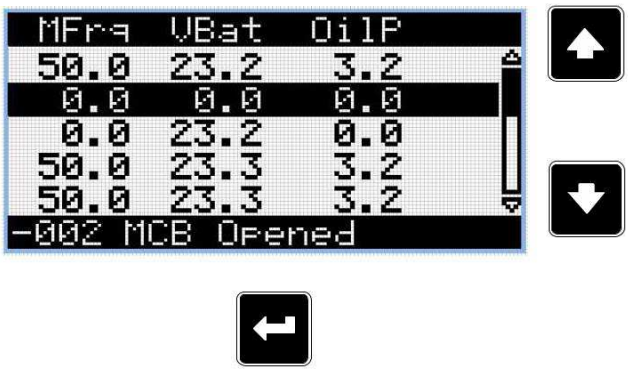
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



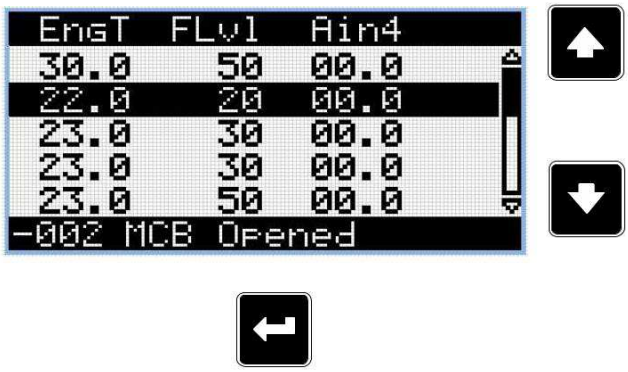
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



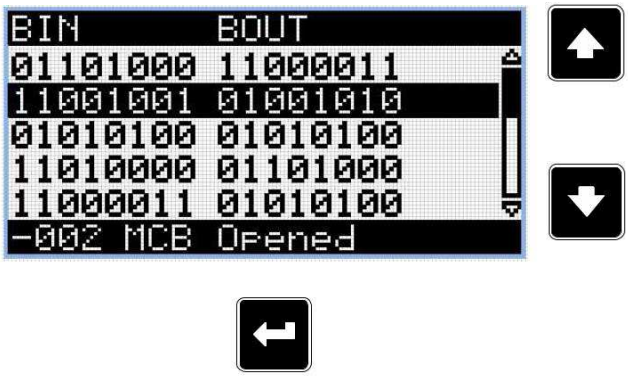
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*



Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the next page of history log.*

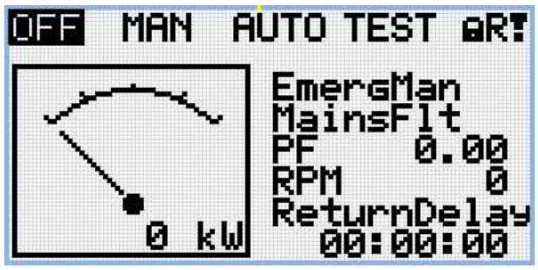
Note: *Use Up and Down button to select required alarm reason.*

Note: *Use Enter button to move to the first page of history log.*

IMPORTANT: The records are numbered in reverse order, i.e. the latest (newest) record is "0" and older records have "-1", "-2" etc.

Note: *This is only basic history record. There can be some additional screens in case that in controller is extension module or ECU is configured. Also it depends on connection type.*

3 Browsing alarms



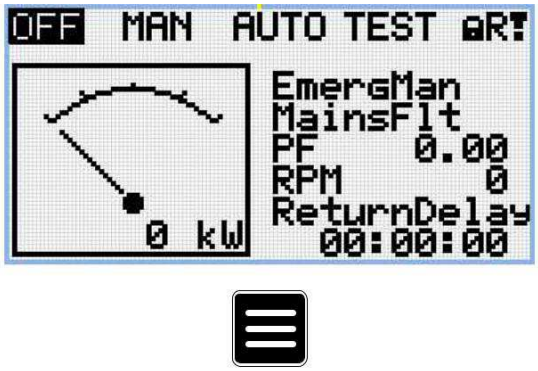
Note: *Use Up button to move to alarmlist from main measurement screen.*

- Active alarms are displayed as white text on black background. It means the alarm is still active, i.e. the appropriate alarm conditions are still present.
- Inactive alarms are displayed as black text on white background. It means the alarm is no more active, i.e. the appropriate alarm conditions are gone
- Not confirmed alarms are displayed with an asterisk. It means the alarm is still not acknowledged (confirmed).
- ECU alarms: SPN/FMI/OC/SC
  - SPN - Suspect parameter number
  - FMI - type of protection
  - OC - number of errors
  - SC - source of error

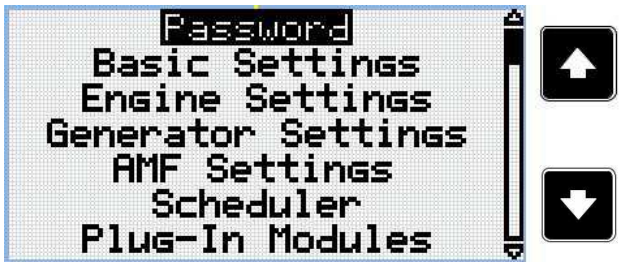
4 Password

User Pasword: 301

4.1 Enter password



Note: *From all measurement pages we can fluently go to the setpoint group page by pressing Page button.*



Note: *Use Up and Down button to select setpoint group Password.*

Note: *Use Enter button to enter setpoint group Password.*

Note: *Use Up and Down button to select Enter Password.*

Note: *Use Enter button to enter selected setpoint.*

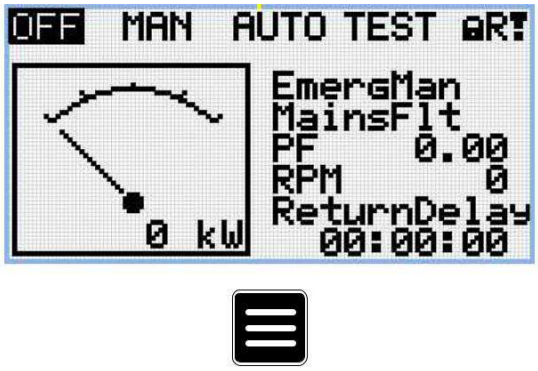
Note: *Use Up and Down button to set required value of selected setpoint.*

Note: *Use Left and Right button to move between digits.*

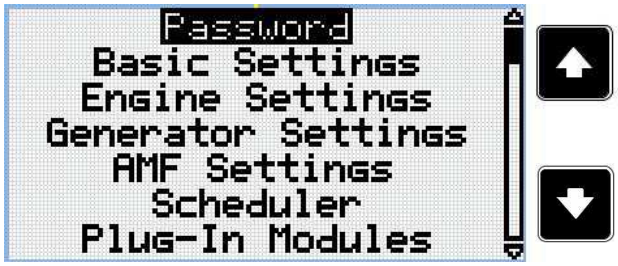
Note: *Use Enter button to confirm the password or Page button to cancel entering the password.*

Note: *In case that invalid password is entered, the controller shows Invalid password screen. Use Page button to go back to menu.*

4.2 Change password



Note: *From all measurement pages we can fluently go to the setpoint group page by pressing Page button.*

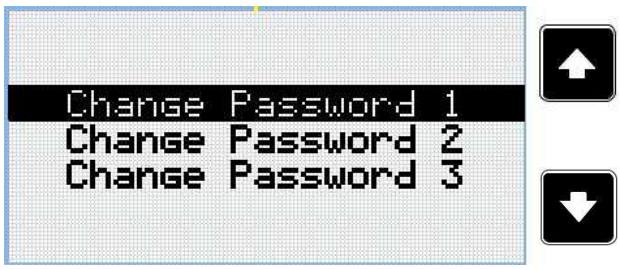


Note: *Use Up and Down button to select setpoint group Password.*

Note: *Use Enter button to enter setpoint group Password.*

Note: *Use Up and Down button to select Change Password.*

Note: *Use Enter button to enter selected setpoint.*



Note: *Use Up and Down button to select required level of password.*

Note: *Use Enter button to enter selected setpoint.*

Note: *Use Up and Down button to set required value of password.*

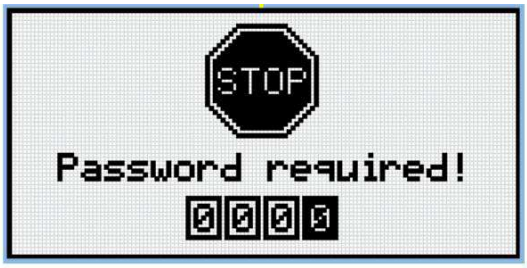
Note: *Use Left and Right button to move between digits.*

Note: *After setting new password use Enter button to confirm adjusted password.*

Note: *Use Up and Down button to set required value of password again.*

Note: *Use Left and Right button to move between digits.*

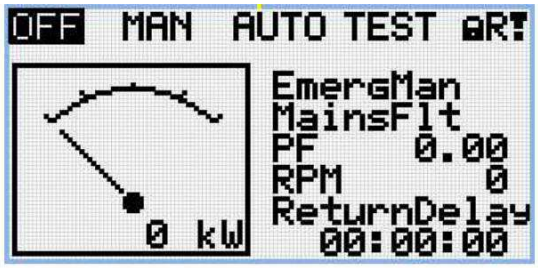
Note: *After setting new password again use Enter button to confirm adjusted password or Page button to discard changes and to cancel changing password.*



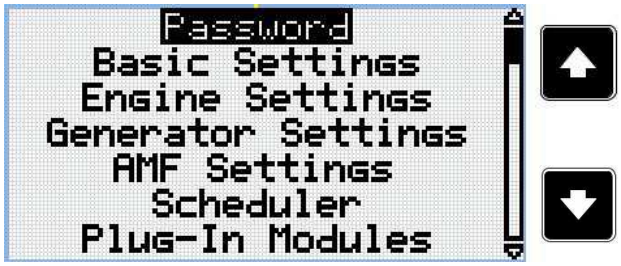
Note: *Before changing the password controller has to be unlocked. In case that controller is locked, the controller shows Password required screen. In that case the password has to be entered before changing the password.*

IMPORTANT: Lost password? Display the information screen containing the serial number and password decode number as described in the chapter Information screen (page 26) and send them to your local distributor.

4.3 Log out from controller



Note: *From all measurement pages we can fluently go to the setpoint group page by pressing Page button.*



Note: *Use Up and Down button to select setpoint group Password.*

Note: *Use Enter button to enter setpoint group Password.*

Note: *Use Up and Down button to select Enter Password.*

Note: *Use Enter button to enter selected setpoint.*

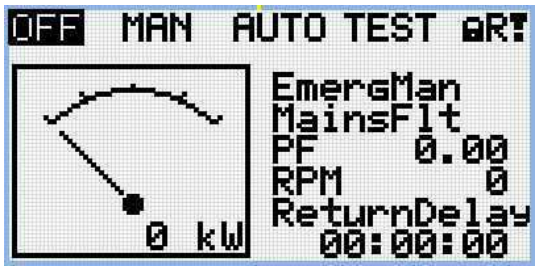
Note: *Use Up and Down button to set required value of selected setpoint.*

Note: *Use Left and Right button to move between digits.*

Note: *Enter invalid password to log out from controller.*

Note: *In case that invalid password is entered, the controller shows Invalid password screen. Use Page button to go back to menu.*

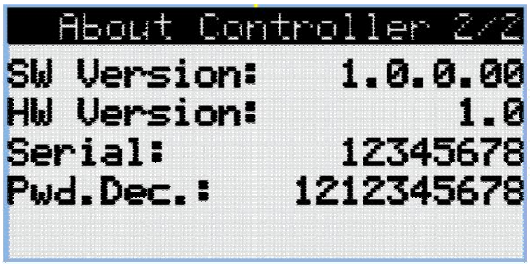
5 Information screen



Note: *On Main measurement screen press Enter and Page button together. Enter button has to be pressed first.*

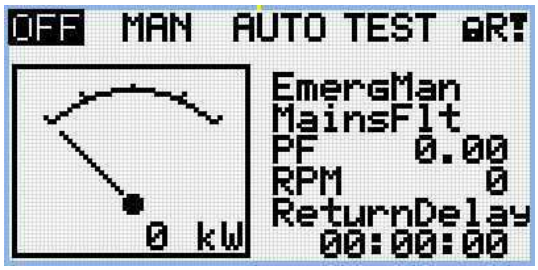
Note: *Use Page button to move to the next page.*

Note: *Use Page button to move to the next page.*



Note: *Use Up button to move back to main measurement screen.*

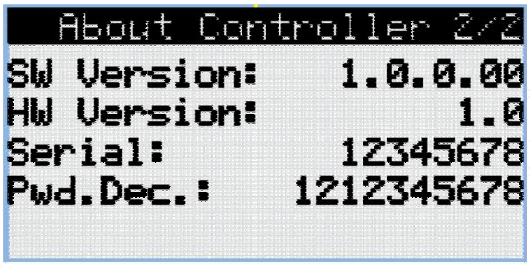
6 Language selection



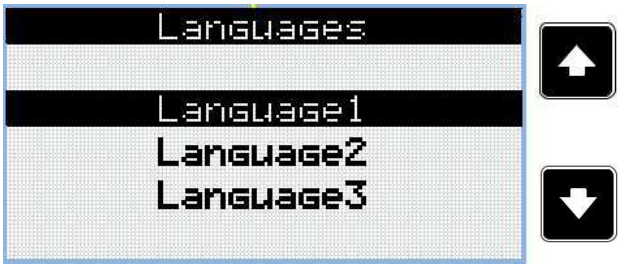
Note: *On Main measurement screen press Enter and Page button together. Enter button has to be pressed first.*

Note: *Use Page button to move to the next page.*

Note: *Use Page button to move to the next page.*



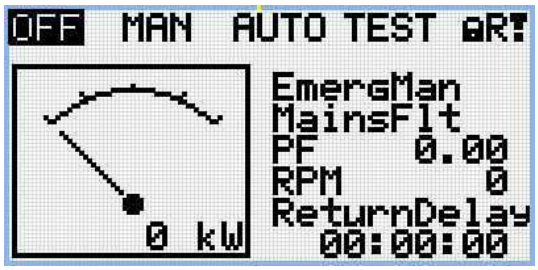
Note: *Use Page button to move to the next page.*



Note: *Use Up and down button to select required language.*

Note: *Use Enter button to confirm selected language.*

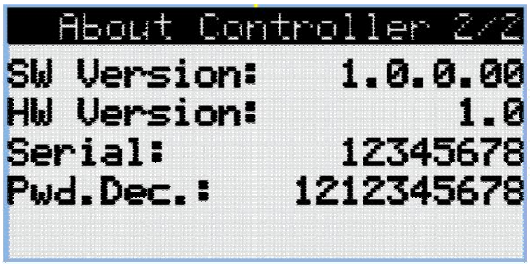
7 Configuration level



Note: *On Main measurement screen press Enter and Page button together. Enter button has to be pressed first.*

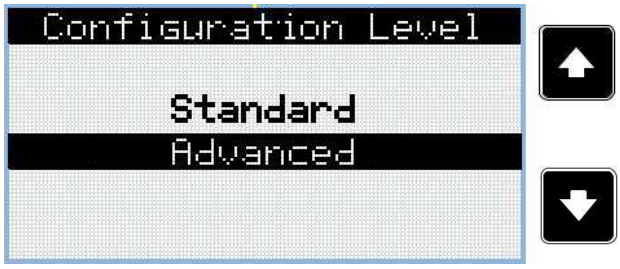
Note: *Use Page button to move to the next page.*

Note: *Use Page button to move to the next page.*



Note: *Use Page button to move to the next page.*

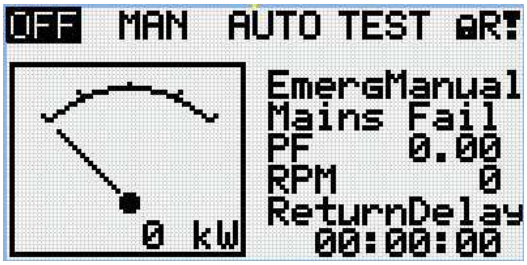
Note: *Use Page button to move to the next page.*



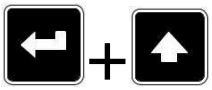
Note: *Use Up and down button to select required level of configuration.*

Note: *Use Enter button to confirm selected level of configuration.*

8 Display contrast adjustment



Note: *On any measurement screen press Enter and Down button together for lower contrast.*



Note: *On any measurement screen press Enter and Up button together for higher contrast.*

Note: *After setting a contrast, no another action is needed.*

9 Manual fuel pump command

LBO "*Fuel Pump On/Off*" will be activated in MANUAL mode only, pressing "*Fault Reset*" and "*Horn Reset*": buttons together and holding for at least 2 seconds. Releasing buttons immediately deactivates Fuel Pump LBO.
If buttons are still pressed, Fuel Pump LBO won't deactivate even if the Fuel Level reach 100%: Fuel pump is fully under manual control (allows tank overfill).
Both buttons (Fault Reset and Horn Reset) keeps their function all the time so manual activation of fuel pump also causes horn reset and fault reset.