mecc alte

DST4602Evo
CONTROLLER

SMARTECH

A DIVISION OF **MECC ALTE**

USER MANUAL

DST4602Evo User Manual
Code: EAAM051100EN
Rev. 00 | Date: 23/10/2015

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INTRODUCTION

The manual must always be kept in a safe place where it is readily available for quick reference.

The manual should be read carefully, and every paragraph understood by the operators and technicians doing routine and periodic maintenance.

If the manual is lost or damaged, ask the installer/manufacturer for a copy, quoting the model, code, serial number and year of manufacture.

1. Safety information

Many accidents are caused by poor knowledge and the non-observance of safety regulations, which must be observed when operating and/or servicing the machine.

To prevent accidents, before using or servicing the machine you should read, understand and observe the precautions and warnings in this manual.

The following words have been used to identify the safety messages in this manual.

⚠ **WARNING!** **This word is used for safety messages in the manual when there are potentially dangerous situations that could cause serious or mortal injury unless the hazard is prevented. These safety messages describe the usual precautions to take to avoid the dangerous situation. Ignoring these precautions can cause serious damage to property and/or injury to persons.**

ⓘ**WARNING!** **This word is used in the safety messages for risks which, unless avoided, can cause minor   or   moderate   injuries   or   damage. The message may also be used for hazards that can cause damage to property and/or injury to persons.**

ⓘ **INFORMATION!** **This term implies the message provides information useful for performing the current operation, or explanations or clarifications for procedures.**

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2. Recycling information

Information on the disposal of old electrical and electronic equipment (applicable in European countries that have adopted separate waste collection systems).

items
such
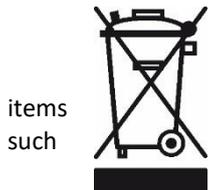
Products bearing the barred wheeled waste container symbol cannot be disposed of with normal urban waste. Old electrical and electronic equipment should be recycled in a facility authorized to process these and dispose of the components. Contact your local authority for information on where and how to deliver products to the authorized site nearest you. Proper recycling and disposal helps conserve resources and prevents detrimental effects for health and the environment.

3. Definitions

LOCKOUT - is used to indicate a fault that prevents the generator from operating and causes automatic and immediate emergency engine shutoff.

POWER-OFF - is used to indicate a fault that prevents the generator from operating and causes the standard automatic engine shutoff (including a cooling phase).
WARNING - is used to indicate a fault that requires the intervention of the operator without engine shutoff.

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4.   Main functions

4.1   Front panel

KEY
1 - Selector
2 - Pushbuttons
3 - Indicators
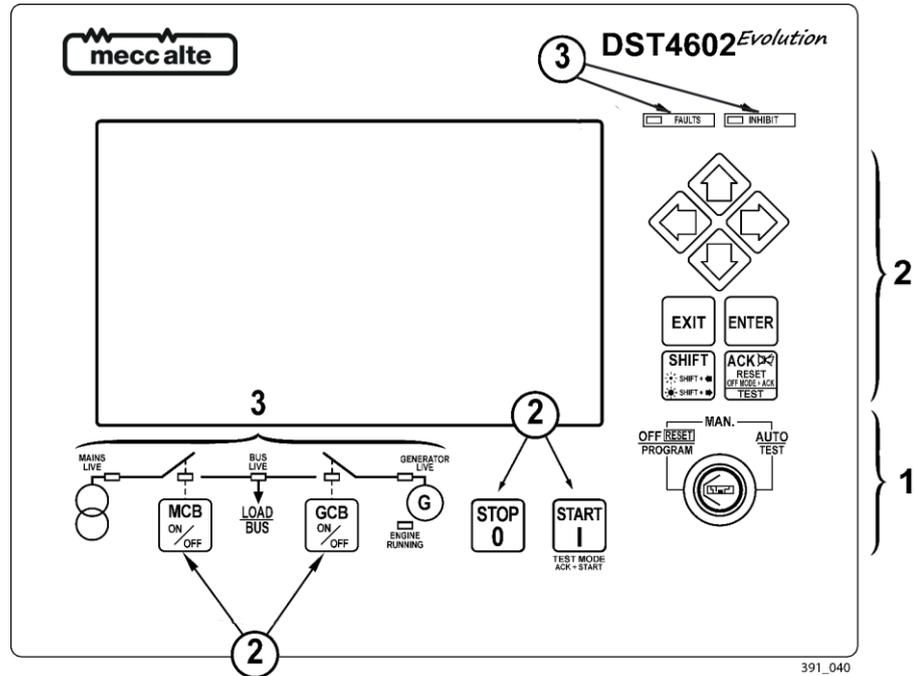
Fig. 1 – Front Panel

The controls consist of a lockable selector (**1**) and 12 pushbuttons (**2**).
The front panel also has some luminous indicators (**3**).

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4.2   Selector (ref. to fig. 1)
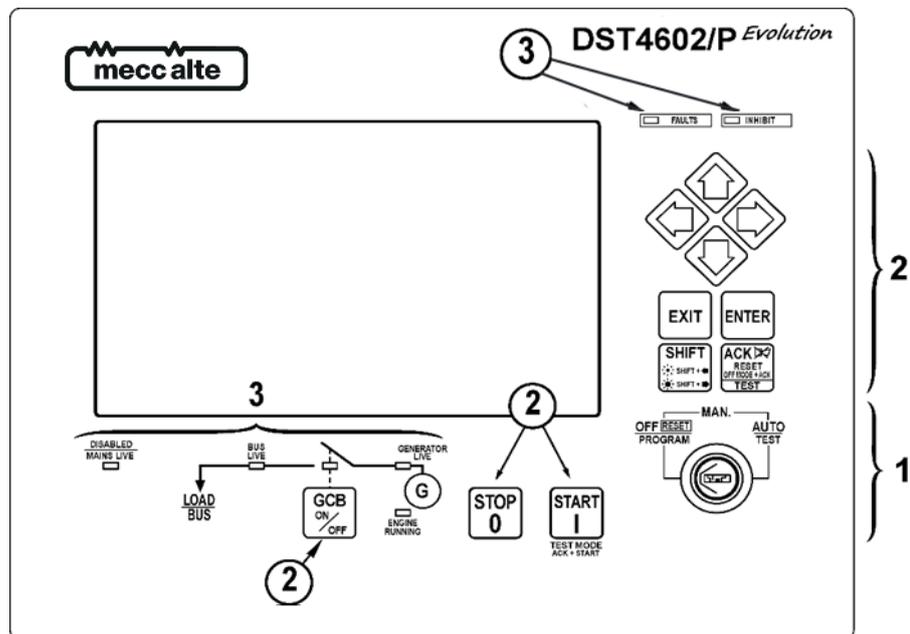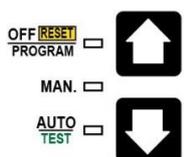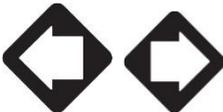
Selector position		Function
	OFF/RESET *PROGRAM*	The generator is disabled; warnings and lockouts are cancelled. You can program the parameters.
	MAN	The Gen-set control module is set for manual gen-set control. Press the **START** button to start the engine. Press the **STOP** button to stop the engine. Buttons **MCB** and **GCB** are for the manual control of the commutation/switches in accordance with system SW - HW configuration. With **BUS** ON, synchronization is required.
	AUTO *TEST*	Gen-set is in automatic mode: all the functions are controlled automatically. The combination of buttons ACK/TEST and **START** lets you activate/deactivate the **TEST** mode; the **STOP** button lets you stop the gen-set (with a lockout). Buttons **MCB** and **GCB** let you switch devices (only in**TEST**mode and on the basis of the type and plant configuration). The activation of a suitably configured external input (or receiving a given command via SMS or from a serial port) can force the starting of the generator and the load outlet with the network connected or with the inhibition input on (**REMOTE START**).

4.3   Pushbuttons (ref. to fig. 1)

Pushbuttons	Function
SHIFT	Dead key. If this is pressed with another button, it changes the button function. When **HELP** is available on the page, holding this button down displays the **HELP** message on the bottom status bar. LCD backlight ON.
LEFT/RIGHT	Horizontal scrolling buttons. These buttons let you select the previous or next page on the display in all modes, except in the **PROGRAM** and **HISTORY LOGS** mode. In **PROGRAM** mode, they are used to position the cursor when entering the strings. Used in combination with the **SHIFT** button, they can be used to adjust the Brightness. To lower the Brightness press the combination of buttons **SHIFT** + **LEFT** . To increase the Brightness, press the combination of buttons **SHIFT** + **RIGHT**

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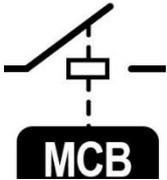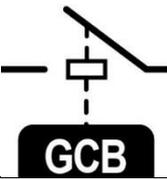| Pushbuttons	Function
UP/DOWN	Vertical scrolling buttons. These buttons let you select the multifunctional display mode. In **PROGRAM** and **HISTORY LOGS** mode you can scroll the menus and the variables/settings. You can increase/decrease the value of the variable to change the settings. Used in combination with the **SHIFT** button you can scroll through the menu ten entries at a time or increase/decrease the variables ten units at a time. During the keyboard regulation phase you can increase or decrease the engine speed (if set to synchronized) or the power supplied (if in power mode).
ENTER	Lets you enter the **PROGRAMMING** mode and open submenus, change a variable, and confirm the operation. Furthermore, you can enable the **HISTORY LOGS** function and open the selected log, "acknowledge" any EEPROM errors at power-up, in the manual synchronization and power setting phase, and enable keyboard regulation.
EXIT	In programming mode, it cancels the changes made to a variable value, brings up the previous menu level, or exits programming mode. If it is pressed for at least two seconds in any menu, you exit the programming mode retaining the current menu position for further programming access. Use the **SHIFT** button to control the **fuel pump** manually. Used with the **ACK/TEST**, button, it resets the partial counters selected with the **ENTER** button and reloads the default programming parameters (in the version with **CANBUS**, it also lets you force the exit **BUS OFF** mode). When used during the keyboard regulation function, it aborts the function.
GCB	Used to command the General Circuit Breaker (GCB) or changeover. The actual function depends also on the plant configuration. In parallel mode with at least one other source powering the **BUS**, if the button is pressed it activates the fast unload ramp before the circuit breaker opens. In case no ramp is needed, simply keep it pressed for a few seconds until the GCB is opened.
MCB	Used to command the Mains Circuit Breaker (MCB) or the changeover. The actual function depends also on the plant configuration.
ACK/TEST	Used to acknowledge any kind of alarm and to silence the horn. In the case of a malfunction, pressing this button deactivates the horn; pressing the button again acknowledges the anomaly, cancelling any inactive warnings. In conjunction with the **START**, button, with the selector in **AUTO** mode, it can be used to activate/deactivate the **TEST** mode. Used with the **EXIT** button, it resets the counters and reloads the default programming parameters (in the version with **CANBUS**, it also lets you force the exit from **BUS OFF** mode).

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START	In **MAN.** mode it can be used to start the engine. In **AUTO** mode, used with the ACK/TEST button, with the selector in **AUTO** mode, it enables/disables **TEST** mode.
STOP	Used to stop the engine. In **AUTO**, **TEST** or **REMOTE START** mode it also triggers a lockout. ⚠️ *WARNING: Stopping the engine with the STOP button in AUTO, TEST or REMOTE START mode, can cause malfunctions and damage property and/or injure persons.* Pressed with the selector in **OFF/RESET** mode, it runs the **LAMP TEST** on all the luminous indicators.

4.4   Indicators (ref. to fig. 1)

LED OFF	LED steady ON	LED flashing
□	▣	▣

	Signalling		Function
FAULTS	**FAULTS**	▣	There is at least one active warning
			Signals at least one lockout or power-off or unload anomaly.
		▣	Signals at least one warning which has not yet been acknowledged with the "**ACK/TEST**" button.
			Signals at least one lockout or power-off which has not yet been acknowledged with the "**ACK/TEST**" button.
		□	No lockouts, power-offs, or unload functions.
			No warnings.
INHIBIT	**INHIBIT**	▣	Signals an active inhibit command from digital input, clock/calendar or load function.
		▣	It means that the input status is active, but the set waiting time hasn't elapsed.
		□	Means an inhibition command is active.
BUS LIVE / LOAD BUS	**BUS LIVE**	▣	Signals **BUS** line ON.
		□	Signals **BUS** line OFF.
		▣	Flashes at 50% during the synchronization phase (opposite sequence to **MCB** or **GCB**).
MAINS LIVE	**MAINS LIVE**	□	Network/Bus mains power is OFF or **MAINS SIMULATION** digital input is disabled.
		▣	Mains power is ON and stable in the range of tolerance, or **MAINS SIMULATION** digital input is enabled from the set time.
		▣	Flashes at 50% during transition between the previous two states.
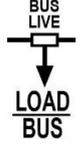
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GENERATOR LIVE (symbol)	**GENERATOR LIVE**	☐	Generator voltage and frequency are not present.
		▣	Generator voltage and frequency are present and stead within the tolerance range.
		◙	Flashes at 50% during transition between the previous two states.
ENGINE RUNNING (symbol)	**ENGINE RUNNING**	☐	The engine is OFF.
		▣	The engine is running
		◙	Cooling phase
MCB (symbol)	**MCB**	☐	The MCB is open.
		▣	The MCB is closed
		◙	Flashes at 25% ON if open after a closing command.
			Flashing at 75% ON if closed after an opening command.
			Flashing at 50% in synchronization phase with **BUS LIVE** indicator.
GCB (symbol)	**GCB**	☐	The GCB is open.
		▣	The GCB is closed
		◙	Flashing at 25% ON if the GCB is open after a closing command.
			Flashing at 75% ON if closed after an opening command.
			Flashing at 50% in synchronization phase with **BUS LIVE** indicator.

4.5   Multifunctional display

4.5.1 LCD lighting

The backlight lamp is managed by the Gen-set control module, which switches off the backlight after a programmable time **(P.492)** if no buttons are pressed in the meantime. Press any button to switch the lamp ON again, (we recommend using the SHIFT button as it has no function when used alone). This function can be disabled by setting parameter **P.492** to **0**.

4.5.2 Brightness

The Brightness can be adjusted by pressing the SHIFT + LEFT buttons to decrease the Backlight or the SHIFT +RIGHT buttons to increase it.

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4.5.3 Mode navigation (ref. to fig. 2)

The display has different display modes with various pages.

Mode	Page identifier
Programming	P.XX
Status information	S.XX
Electrical measurements	M.XX
Engine measurements	E.XX
PMCB	B.XX
History logs	H.XX

Generally, the **UP** and **DOWN** buttons are used to navigate between the modes.
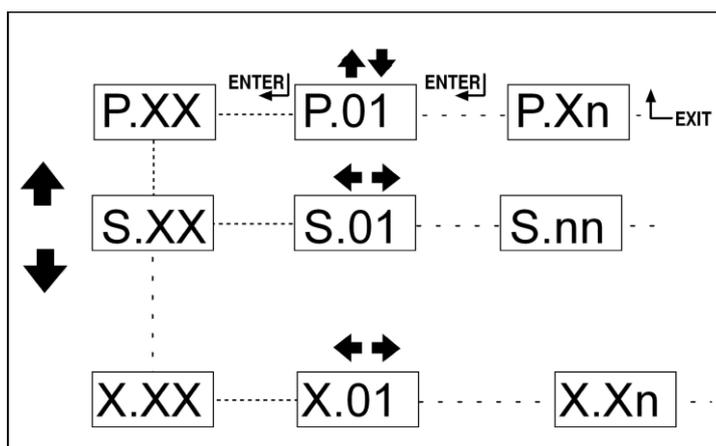
Fig. 2 - Mode navigation

Use the **LEFT** and **RIGHT** buttons to display the pages in the mode.

In some modes (ex.: mode P.xx and mode H.xx) to display the pages, press the **ENTER** , button, and then the **UP** and **DOWN** buttons to browse the pages.

Information! If the UP and DOWN buttons have to be used to manage functions in that mode, the ENTER button must be pressed to activate these functions, and the EXIT button should be pressed to deactivate the same.

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4.5.4 Display area layout (ref. to fig. 3)

KEY:
1 - Status bar
2 - Data area
3 - Bottom status bar
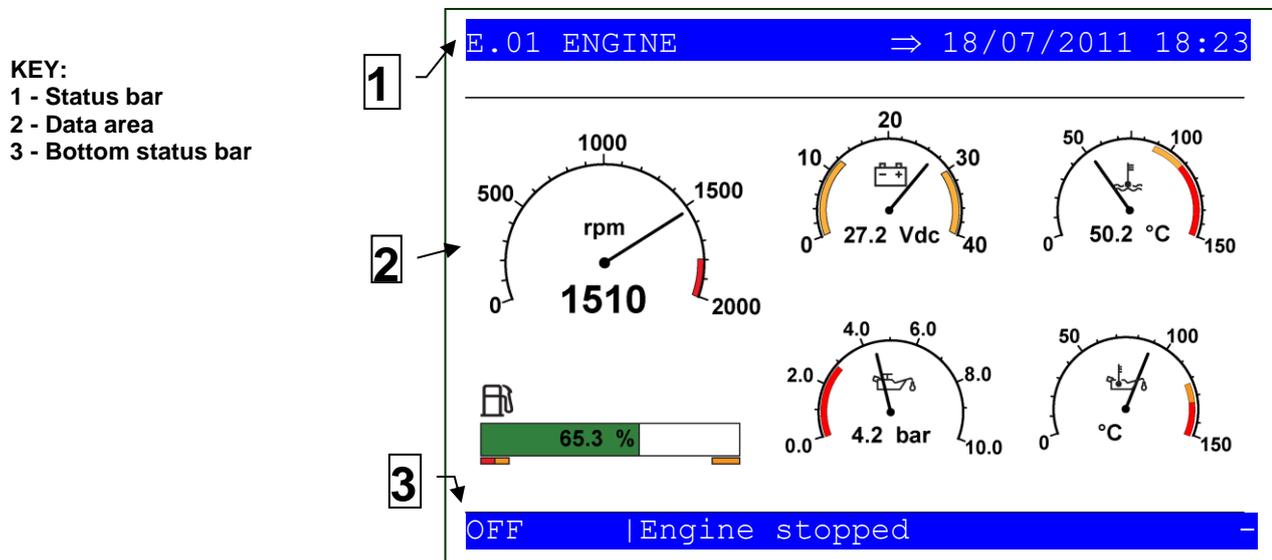
Fig. 3 - Display areas

4.5.5 Top status bar (ref. to fig. 4)

The top status bar contains information on navigation and times.

KEY:
1a - Mode identifier
1b - Page identifier
1c - Page title
1d - Pages to the left or right
1e - Date and time

Fig. 4 - Top status bar

The current mode (**1a**) is shown in the relevant field of the top status bar.
The mode identifier (**1a**), and the page identifier (**1b**) identify and refer to the page so there is no chance of error.

The display on the top status bar with left ⇐, or right ⇒ arrow buttons or both ⇐⇒ (**1d**), indicates there are other pages

which can be viewed using the relevant **LEFT** and **RIGHT** buttons.

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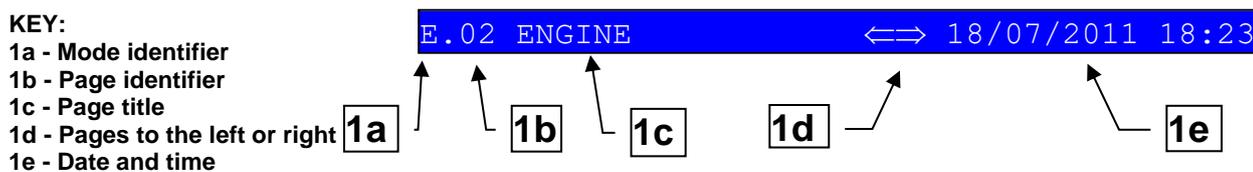Code: EAAM051100EN
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4.5.6 Bottom status bar (ref. to fig. 5)

The bottom status bar displays some information on the system status.

2a - Operating mode
2b - System status

```
OFF        |Engine stopped                    ─
```

2a ↗   ↖ 2b

Fig. 5 - Bottom status bar

Operating mode (**2a**) is controlled by the lockable selector.
System status **(2b)** displays part of the information on page **S.01 (STATUS)** which is useful for the operator, as it can be displayed also if other pages are being viewed and in other display modes.

In some pages, pressing the **SHIFT** button replaces the bottom status bar for the time the button is held down with a **HELP** message. If the message is unavailable, the bar is cleared and restored when the button is released.

4.6   Display mode

4.6.1 Programming (P.xx) (ref. to Fig. 6).

⚠ *WARNING: The parameters must only be changed by qualified personnel. Assigning an incorrect value to one or more parameters can cause malfunctions, damage to things and/or injury to people.*

ⓘ *Information!: Parameters may be password protected*

This mode lets you display and change the programming parameters.
Each programming parameter has a 4-digit numeric code (ex. P.0101) to identify the variables regardless of the language used.

The first line under the top status bar identifies the current menu with the menu number and the relevant text. A pair of numbers are displayed on the right in this line.
The first indicates which entry in the menu is selected or which page is displayed, the seconds indicates how many entries or pages can be displayed in the current menu/submenu.

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1a – Menu Item/Page
1b – Total Pages Menu/submenu

```
 P.07    PROGRAMMING   18/07/11 18:23
                                    2/07
 1.3   Generator
```

1a

1b

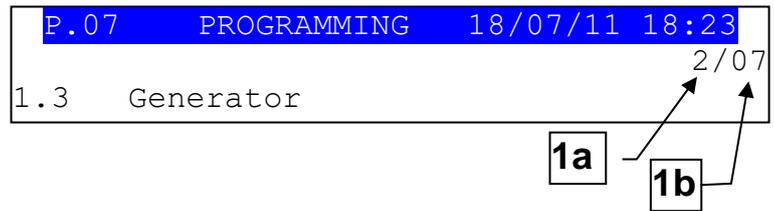*Fig. 6 - Bottom status bar*

4.6.1.1 Access codes

ⓘ *Information!: If the password is lost, you can reconfigure it using a higher level password. Contact our service centre if the "MANUFACTURER" password is lost.*

Access to the programming mode can be controlled by 4 different PASSWORD levels, which are listed in order of priority.

1. Mecc Alte password

2. Manufacturer password

3. Installer password

4. User password

In the first page (**000-Access Code**) of the **SYSTEM** menu, will ask you for the access code if one or more passwords have been assigned.

If a password is set to 0, it is not assigned and not required.

The **USER** can only display and change the **User Password**.

The **INSTALLER** can change the **User Password** and the **Installer Password**.

The **MANUFACTURER** can display and **change all three passwords**.

Mecc Alte can display and change some **critical parameters** fto configure the plant parallel function.

The Password setting pages are displayed in the **SYSTEM** submenu, if the user is authorised to change the settings.

In programming mode, if the page for changing the password isn't displayed when the Password is entered, press **EXIT**

EXIT to return to the previous menu and try opening the page again.

The set access code remains in the memory for about 10 minutes after programming has been completed. After that it must be entered again to access the programming mode.

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4.6.1.2 Setting the parameters

Enable the mode with the **ENTER** [ENTER] button.

Use the **UP** and **DOWN** buttons to select a menu and the **ENTER** [ENTER] button to open the same. Select the variable or submenu with the **UP** and **DOWN** .buttons.

Pressing **ENTER** [ENTER] when there are no submenus, displays the page of variables for the menu entry.

The value of the variable is displayed in square brackets, for example: [400]

To change the variable, press **ENTER** [ENTER]; the square brackets [ ] will flash. Use the **UP** and **DOWN** buttons to change the value and press **ENTER** [ENTER] to confirm or **EXIT** [EXIT] to abort.

To change the variables, the lockable selector must be **OFF**. Some variables can only be changed with the lockable selector in another position other than **OFF**.

If you cannot change a variable in any condition, this is shown as follows:<400> showing that the parameter cannot be changed in this status.

To exit the programming menu, use the **EXIT** [EXIT] button.

4.6.1.3 How to input string value

For some parameters you will have to set a value for the string data.

In this case, pressing **ENTER** [ENTER] makes the square brackets [ ] around the variable flash, and a cursor appears under the first character of the string. Using the **LEFT** and **RIGHT** buttons, you can select which character to change.

Then, use the **UP** and **DOWN** buttons to change the character selected. Repeat the procedure for each character that needs changing.

Use **ENTER** [ENTER] (confirm) or **EXIT** [EXIT] (abort) to end the procedure.

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4.6.1.4 Direct access to the previous page

You can open the last programming page displayed directly. This is possible if, when exiting programming mode, instead of going back though the menus until you exit programming, you hold down **EXIT** EXIT for approximately 2 seconds.

The same is true when accessing the programming mode after Gen-set has automatically exited programming. This is the case, if no programming operations are performed for 60 consecutive seconds or if the lockable selector is switched to **MAN** or **AUTO**.

4.6.1.5 Alarms and protection parameters

⚠ *WARNING!: Setting the trip time of the parameters to 0 disables the protection.*

Protections and alarms can generally be configured using dedicated variables. Generally, the trip time can also be configured.

4.5.5 Status information(S.xx)

In this way, information on the system status is provided.

You can scroll through the various pages using the **LEFT** ◇ and **RIGHT** ◇ buttons.

Page **S.01 (STATUS)** shows system status information. Part of this information is shown on the bottom status bar.

The alarms page **S.02 (ANOMALIES)** is displayed automatically in the case of an anomaly. This page also contains the diagnostic information on engines with the **J1939** or **MTU** interface.

- **alarms code**, the message consists of a letter that identifies the alarm category (**W** - Warning, **A** - Lockout, **D** – Power-off. **See Chapter 3**), an identification number, and the description of the alarm status.

- **engine diagnostic codes**, in accordance with standard SAE J1939 or MTU specifications. In the case of the J1939 standard, when a signal is present the SPN and FMI fault's codes, the number of occurrences (OC), a specific diagnostic code of the family of engines (DTC), and an explanatory text are displayed. For MTU engines the SPN, FMI and OC are not shown, but the DTC code and an alphanumeric description are always displayed.

ⓘ *Information! For more information see document EAAM0380xxXA "Parameters table."*

The engine diagnostic codes are stored (even if the engine removes them) until the yellow/red CanBus indicator light warning is acknowledged with the **ACK/TEST** ACK button.

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On page **S.03 (GEN-SET CONTROL MODULE STATUS)**, as well as some information on the device (Serial Number, Date, Firmware installed, Internal code), you can also change the language.

Page **S.04 (SERIAL PORTS)** is dedicated to serial communication status. In the case of operating errors, check the information in this page. When using a **GSM** modem, the phone company and radio signal are also shown.

Reception COM error counters are displayed. If the condition causing the malfunction has been eliminated, you can

reset the error counters on this page. To activate the error reset function, press the **ENTER** button, use the

vertical scroll **UP** and **DOWN** buttons to select the errors to reset. Hold down the **ACK/TEST** + **EXIT**

 buttons for a few seconds to display the message "**RESET/DEFAULT**". To exit error selection, use the **EXIT**

button.

Page **S.05 (CAN BUS)** is dedicated to the COM status of the following networks: **CAN0** (**ECU INTERFACE** - Engine Control Unit.**J1939** or **MTU**), **CAN1** (**PMCBUS** - Power Management Communication Bus) and **CAN2** (**EX-BUS** - Expansion-BUS).

communication status of bus.

There are three possible indications:

- **ERROR-ACTIVE**: normal operation

- **ERROR-PASSIVE**: communication is working despite faults (errors).

- **BUS-OFF**: Gen-set has interrupted the connection to the bus due to too many errors.

Communication error counters display. If the condition causing the malfunction has been eliminated, you can force exit from the **BUS-OFF** condition on this page.

The error reset function, press the **ENTER** button, use the **UP** and **DOWN** buttons to select the

errors to reset. Hold down the **ACK/TEST** + **EXIT** buttons until the "**RESET/DEFAULT** " message is displayed.

To exit error selection, use the **EXIT** button.

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Pages **S.06**, **S.07**, **S.08**, **S.09**, **S.10**, **S.11**, **S.12** and **S.13 (SYSTEM STATUS)** display the generic status of the digital inputs.

ⓘ *Information!: Digital inputs assigned as Warnings, Lockouts or Power-offs do not come under this category.*

The generic status function, and the display priority of the same in the pages are pre-assigned when configuring the system parameters.

Page **S.14 (DIGITAL INPUTS)** displays the status of the digital inputs of the Gen-set control module and the expansion modules (available only if the **DITEL** expansion module/s is/are installed).

Pressing the **ENTER** [ENTER] button, scrolls through three different pages (**LOGIC STATE, PHYSICAL STATE, BY FUNCTION**), showing the acquisition of digital inputs:

- **LOGIC STATE**: Active or inactive level according to a logic configuration that inverts the electrical signal actually acquired.
- **PHYSICAL STATE**: Active or inactive level of the electrical signal actually acquired.
- **BY FUNCTION**: Displays the status of the main events related to the digital inputs.

Page **S.15 (DIGITAL OUTPUTS)** shows the status of the Gen-set control module's digital outputs. The status of the expansion module outputs is only shown if the **DITEL** expansion module/s is/are installed.

Pressing the **ENTER** [ENTER], button, scrolls through three different pages (**LOGIC STATE, PHYSICAL STATE, BY FUNCTION**), showing the status of the digital inputs:

- **LOGIC STATE**: Output active or inactive on the basis of a logic configuration that inverts the electrical level.
- **PHYSICAL STATE**: Output active or inactive for the actual electrical level.
- **BY FUNCTION**: Displays the main states of the digital outputs.

Page **S.16 (ANALOG INPUTS)** displays the value of the Gen-set control module's analog inputs. The value of the expansion modules' analog inputs is only displayed if the **DITEMP (Ditherm/Digrin)/DIVIT** expansion module/s is/are installed.

Page **S.17 (ANALOG OUTPUTS)** displays the value of the Gen-set control module's analog outputs. The value of the expansion modules' analog outputs is only displayed if the **DANOUT** expansion module/s is/are installed.

Pressing the **ENTER** [ENTER], button, scrolls through two different pages (**LOGIC STATE, BY FUNCTION**), showing the status of the analog inputs:

- **LOGIC STATE**: Displays the output value.
- **BY FUNCTION**: Displays the output value and the pre-assigned function.

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4.6.3 Electrical measurements(M.xx)

You can scroll through the various pages using the **LEFT** ◆ and **RIGHT** ◆ buttons.

This mode displays all the information on the measurements taken by the Gen-set control module on the electric lines.

Page **M.01 (SYSTEM)** displays a wiring diagram of the system. The states of the switches, the **NETWORK/BUS**, the **GENERATOR** and the electrical values depend on the system configuration.

Furthermore, a window for controlling the main active power and the power factor is displayed, on the basis of the type of system.

Page **M.02 (NETWORK)** displays the electrical magnitudes of the NETWORK or BUS.

Page **M.03 (GENERATOR)** displays the electrical magnitudes of the GENERATOR.

Page **M.04 (POWER VALUES)** shows the total and phase power values, the active, reactive and apparent power values, and the power factor.

Page **M.05 (ENERGY COUNTERS)** displays the partial and total energy counters of the GENERATOR.

Page **M.06 (AUXILIARY MEASUREMENTS)** (displayed only if the "**AUXILIARY CURRENT**" and/or "**INVERSE SEQUENCE CURRENT**" protection is enabled.

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Page **M.07 (SYNCHRONISATION)** is used during synchronization. Use the synchroscope displayed with the lockable selector in **MAN** mode for manual synchronisation (only displayed if the internal synchronisation system is configured)

Page **M.08 (PARALLEL)** displays the parameters used to monitor the parallel function.

4.6.4 Engine measurements (E.xx)

The engine related measurements are shown in this mode.

Page **E.01 (ENGINE)** displays the main analog measurements of the engine read by the analog sensors. Some engine measurements are only displayed if the **CAN J1939**, **MTU** system is configured.

Page **E.02 (ENGINE COUNTERS)** displays the partial and total meters of the engine.

Pages **E.03 (TEMPERATURES)**, **E.04 (PRESSURES/ENGINE TORQUE)** and **E.05 (AUXILIARY DATA)** (only displayed if the **CAN J1939** system is configured, **MTU**) contain information on the temperatures, pressures, levels, etc. of the engine. The number of pages displayed may depend on the type of engine set.

Page **E.06 (FUEL PUMP)** (displayed only if FUEL PUMP management is configured) contains information on the fuel pump. The fuel pump management system can be modified in this page

Pages **E.07**, **E.08**, **E.09**, **E.10**, **E.11**, **E.12**, **E.13** and **E.14 (EXTERNAL MEASUREMENTS)** (displayed only if the **DITEMP/DIVIT** expansion module/s is/are installed and/or the device inputs are configured for generic measurements).

ⓘ *Information!: The analog inputs pre-assigned for main measurements do not come under this category.*

4.6.5 PMCB(B.xx) Power Management Communication Bus

Page **B.01 (GEN-SET CONTROL MODULES ON PMCBUS)** displays status information about the **PMCB** (Power Management Communication Bus) network. This includes the number of network devices, the operating mode of the load function, the identifier of the pilot generator and the list of priorities.

Page **B.02 (GENERATORS)** displays measurements (Power reference, Power delivery, Reactive power, Operating hours and State) of power values for gen sets in the **PMCBUS** (Power Management Communication Bus) network.

Page **B.03 (TOTALS ON PMCBUS)** displays measurements (Power reference, Power delivery, Reactive power, Active energy and Reactive energy) for the sum of the energy produced by all the gen sets in the **PMCBUS**(Power Management Communication Bus) network.

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Page **B.04 (LOAD MANAGEMENT)** displays all the information relating to load management configuration on the **PMCBUS**(Power Management Communication Bus) network.

⚠ *WARNING!: Changes should only be made to the pilot generator by qualified personnel.*

Press **ENTER** and the **UP** and **DOWN** buttons on this page to make changes to the pilot generator.

ⓘ *Information!: See the following document for the meaning of the parameters: EAAM0380XX (Parameters Table).*

4.6.6 History logs(H.xx)

In this mode, you can access the events, data recording and **Engine DTC** logs.

A number and time/date stamp identify each record.

The number is shown in the second line on the right of the multifunctional display with the total number of records.

When the archive is full, a new record overwrites the old one; so the identification number may change in time.

To activate the mode, press the **ENTER** button on the "**History logs H.01**" main page. Use the **UP** and **DOWN** buttons to select the type of **RECORD Recorded** and confirm with the **ENTER** button. Use the **UP** and **DOWN** buttons to select the log to display, and the **LEFT** and **RIGHT** buttons to scroll through the details in the log pages.

Press **EXIT** to go to the next menu level or return to the main menu.

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5 Special Functions

5.1 Manual synchronization

⚠️ *WARNING!: Before proceeding with manual synchronization, check the configuration is set so the circuit breaker cannot close in the case of a phase speed alignment error.*

With the lockable selector in the **MAN** position, depending on the plant type and on how the panel is wired, you can command the closing of the **GCB** or **MCB** with manual synchronization.

In **MAN** mode, with the engine and the generator running and network/bus voltages present (**BUS LIVE** indicator lit), the function can be activated by pressing the button of the open circuit breaker (**MCB** [MCB ON/OFF] or **GCB** [GCB ON/OFF]).

When the button is pressed, the circuit breaker will not close, but the manual **SYNCHRO** function is activated and page **M.07 (SYNCHRONISATION)** is automatically displayed.

When using the internal synchronization module, the page will display a synchroscope.

To adjust the engine speed and/or voltage manually, press **ENTER** [ENTER] and the **ACK/TEST** [ACK/RESET OFF MODE+ACK TEST] button to select speed and voltage regulation; use the **UP** ⬆️ and **DOWN** ⬇️ buttons to change the percentage value (%). When the synchroscope indicates the circuit breaker can be closed, (**see fig. 7**), press the circuit breaker button (**MCB** [MCB ON/OFF] or **GCB** [GCB ON/OFF]) again **and hold it down until the circuit breaker has closed.**
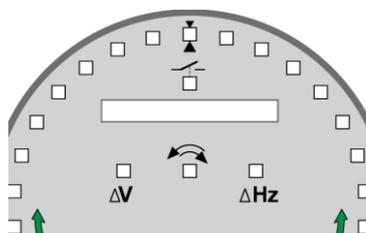
Figure 7 - Synchroscope

At any time, pressing **EXIT** [EXIT] disables the manual speed commands and you can change page.
Changing the page aborts the manual synchronization procedure.

ℹ️ *Information!: The function described can only be used if the system hasn't been configured to use an external potentiometer to regulate the speed; in this case the speed can only be changed using the potentiometer.*

⚠️ **WARNING!** *Make sure that after the circuit breaker closes, the speed reference is set as close as possible to the nominal value so the Gen-set control module can regulate the power properly.*

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5.2 Manual power regulation

⚠️**WARNING!** *As some slow power ramps may have been set, check the command against the "Power reference" value shown in the same page and not against the value of the power actually produced.*

In network parallel applications with **BASE LOAD** or **IMPORT/EXPORT** functions, you can regulate the power supplied manually without having to change the parameter that defines the regulated power directly.

Go to page **M.01 (SYSTEM)** press the **ENTER** button and the **ACK/TEST** button to select "power reference"

Base Load/Imp./Exp. and/or "power factor reference" **P.F.** in the **"Setpoint"** window; use the **UP** button to increase the value and the **DOWN** button to decrease the **kW** and P.F. value set. The value to be changed is highlighted as a negative.

Press the **ENTER** button to exit the settings procedure.

ℹ️*Information!:: The function described is only available if no external potentiometer has been configured for power regulation.*

5.3 Selecting the language

The Gen-set control module can display messages in various languages.

To select a different language, go to page **S.03 (GEN-SET CONTROL MODULE STATUS)**. To change the **LANGUAGE** press **ENTER**; the square brackets [ ] will start flashing. Use the **UP** and

DOWN buttons to display the available LANGUAGES, then press **ENTER** to confirm or **EXIT** to cancel the changes.

5.4 Fuel pump

Gen-set implements the full management of the fuel pump, to pump fuel from the storage tank to the tank on the generator. The pump can be managed automatically or manually using the controls on the front panel.

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5.4.1 Select function

With the lockable selector in the **MAN , AUTO** or **TEST** position, select the **E.XX**"**ENGINE MEASUREMENTS**" mode with

the **UP** and **DOWN** buttons. Scroll through the pages using the **LEFT** or **RIGHT** buttons until you reach page **E.06 (FUEL PUMP)**. In this page you can start the standard setting procedure by pressing the **ENTER**

button (operating mode highlighted in contrast), and use the **UP** and **DOWN** buttons to change the control mode. The following modes can be selected:

- **MANUAL-ON** (pump on - the pump starts and will only stop when the max. fuel level is reached).

- **MANUAL-OFF** (pump off)

- **AUTOMATIC** (automatic pump - The pump starts and stops automatically, controlled by the minimum and maximum level sensor).

Press **ENTER** again to confirm the mode.

5.4.2 Fuel pump mode

With the lockable selector in position **MAN , AUTO** or **TEST** from any page or mode, you can open page "**E.06 FUEL**

PUMP"" with the sequence of buttons **SHIFT** and **EXIT** .

Pressing the sequence of buttons **SHIFT** and **EXIT** again, you can change the fuel pump command from:

- **MANUAL-ON** (pump on - the pump starts and will only stop when the max. fuel level is reached).

- **MANUAL-OFF** (pump off)

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