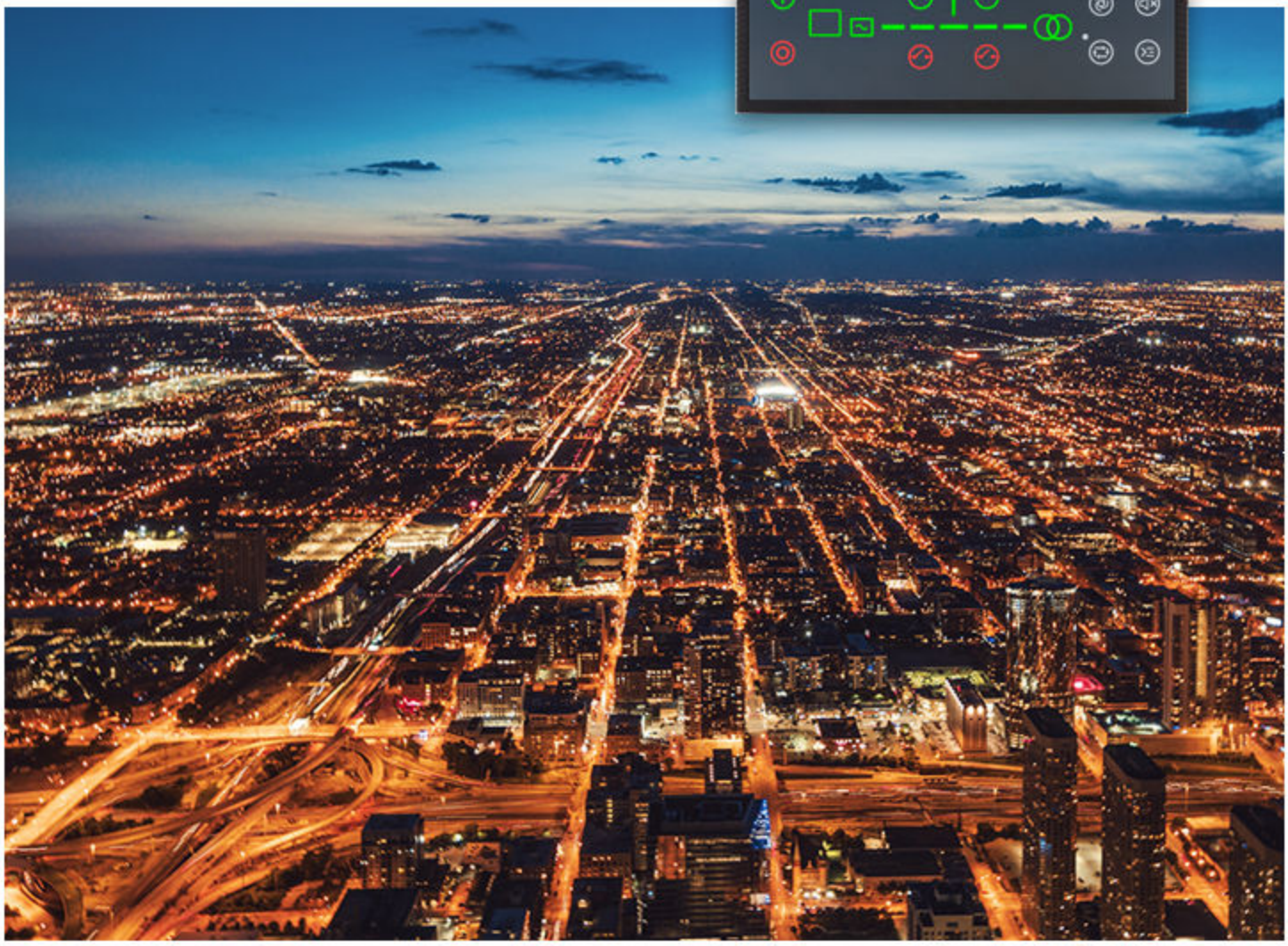
AGC 150

4189341312C

Generator, Mains and BTB

Operator's manual

Improve Tomorrow



1. Introduction

1.1 Symbols for hazard statements

DANGER!

This shows dangerous situations.

If the guidelines are not followed, these situations will result in death, serious personal injury, and equipment damage or destruction.

WARNING

This shows potentially dangerous situations.

If the guidelines are not followed, these situations could result in death, serious personal injury, and equipment damage or destruction.

CAUTION

This shows low level risk situation.

If the guidelines are not followed, these situations could result in minor or moderate injury.

NOTICE

This shows an important notice

Make sure to read this information.

1.2 About the operator's manual

This document gives the necessary information to operate the controller.

CAUTION

Installation errors

Read this document before working with the controller. Failure to do this may result in human injury or damage to the equipment.

Intended users of the operator's manual

The operator's manual is for the operator that uses the controller regularly.

The manual describes the LEDs, buttons and screens on the controller, alarm handling, and the logs menu.

1.3 Warnings and safety

Factory settings

The controller is delivered pre-programmed from the factory with a set of default settings. These settings are based on typical values and may not be correct for your system. You must therefore check all parameters before using the controller.

Data security

To minimise the risk of data security breaches:

- As far as possible, avoid exposing controllers and controller networks to public networks and the Internet.
- Use additional security layers like a VPN for remote access, and install firewall mechanisms.
- Restrict access to authorised persons.

1.4 Legal information

Third party equipment

DEIF takes no responsibility for the installation or operation of any third party equipment, including the **genset**. Contact the **genset company** if you have any doubt about how to install or operate the genset.

Warranty

NOTICE

Warranty

The controller is not to be opened by unauthorised personnel. If opened anyway, the warranty will be lost.

Disclaimer

DEIF A/S reserves the right to change any of the contents of this document without prior notice.

The English version of this document always contains the most recent and up-to-date information about the product. DEIF does not take responsibility for the accuracy of translations, and translations might not be updated at the same time as the English document. If there is a discrepancy, the English version prevails.

Copyright

Software version

This document is based on the AGC 150 software version 1.10.0.

2. Getting started

2.1 About controller operation

The AGC 150 Generator controller contains all the functions needed to protect and control a genset, and the genset breaker. If you do not use power management, the controller can also protect and control the mains breaker.

The AGC 150 Mains controller protects and controls a mains breaker, and a tie breaker.

The AGC 150 BTB controller protects and controls a bus tie breaker. The power management system manages the busbar sections.

Power management system

AGC 150 controllers can work together in a power management system (PMS). This includes synchronisation, island operation, and running parallel to mains. The PMS can automatically start and stop gensets, and open and close breakers. You can also use AGC 150 in power management systems with other DEIF controllers.

Buttons and LEDs

Use the buttons to operate the system. You can change running modes, stop alarms, see the shortcut menu, and navigate the controller. You can only use the start and stop buttons and the buttons to open and close the breakers in SEMI-AUTO mode and manual mode. Use the mimic function to select how the control buttons and LEDs are shown on the controller's display.

Display screen

Use the display screen to:

- See the operating status
- See the alarms and logs list
- Monitor the exhaust after-treatment (Tier 4/Stage V)
- Configure the controller settings and parameters

2.1.1 Display settings

To adjust for ambient lighting, configure the display settings.

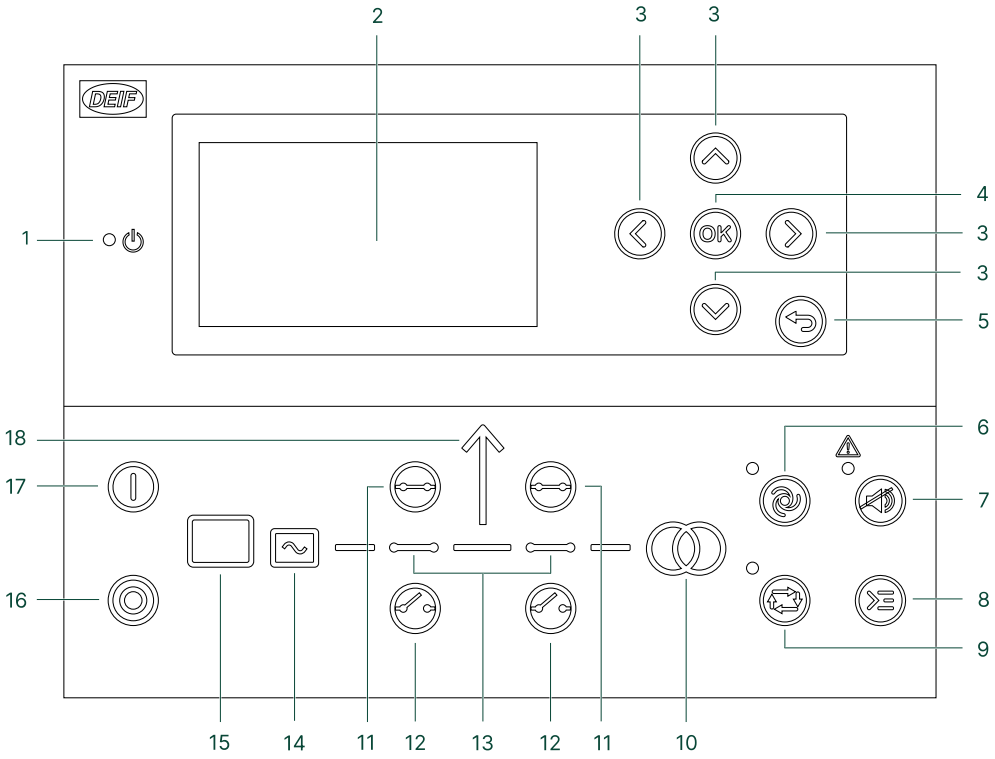
`Settings > Basic settings > Controller settings > Display > Display control`

Parameter	Text	Range	Default
9151	Backlight dimmer	0 to 15 *	12
9152	Green LEDs dimmer	1 to 15 *	15
9153	Red LEDs dimmer	1 to 15 *	15
9154	Contrast level	-20 to +20	0
9155	Sleep mode timer	1 to 1800 s	60 s
9156	Enable (Sleep mode timer)	OFF ON	ON
9157	Alarm Jump	OFF ON	ON
9158	Engineering units	Bar/Celcius PSI/Fahrenheit	Bar/Celcius

NOTE * Low numbers are minimum brightness and high numbers are maximum brightness.

3. About the AGC 150 Generator

3.1 Display, buttons and LEDs



No.	Name	Function
1	Power	Green: The controller power is ON. OFF: The controller power is OFF.
2	Display screen	Resolution: 240 x 128 px. Viewing area: 88.50 x 51.40 mm. Six lines, each with 25 characters.
3	Navigation	Move the selector up, down, left and right on the screen.
4	OK	Go to the Menu system. Confirm the selection on the screen.
5	Back	Go to the previous page.
6	AUTO mode	For generator controllers, the controller automatically starts and stops (and connects and disconnects) gensets. No operator actions are needed. The controllers use the power management configuration to automatically select the power management action.
7	Silence horn	Stops an alarm horn (if configured) and enters the Alarm menu.
8	Shortcut menu	Access the Jump menu, Mode selection, Test, Lamp test.
9	SEMI-AUTO mode	The operator or an external signal can start, stop, connect or disconnect the genset. The generator controller cannot automatically start, stop, connect or disconnect the genset. The controller automatically synchronises before closing a breaker, and automatically deloads before opening a breaker.
10	Mains symbol	Green: Mains voltage and frequency are OK. The controller can synchronise and close the breaker. Red: Mains failure.
11	Close breaker	Push to close the breaker.
12	Open breaker	Push to open the breaker.

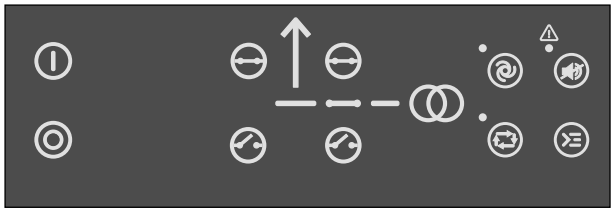
No.	Name	Function
13	Breaker symbols	Green: Breaker is closed. Green flashing: Synchronising or deloading. Red: Breaker failure.
14	Generator	Green: Generator voltage and frequency are OK. The controller can synchronise and close the breaker. Green flashing: The generator voltage and frequency are OK, but the V&Hz OK timer is still running. The controller cannot close the breaker. Red: The generator voltage is too low to measure.
15	Engine	Green: There is running feedback. Green flashing: The engine is getting ready. Red: The engine is not running, or there is no running feedback.
16	Stop	Stops the genset if SEMI-AUTO or Manual is selected.
17	Start	Starts the genset if SEMI-AUTO or Manual is selected.
18	Load symbol	OFF: Power management application. Green: The supply voltage and frequency are OK. Red: Supply voltage/frequency failure.

3.2 Mimic function

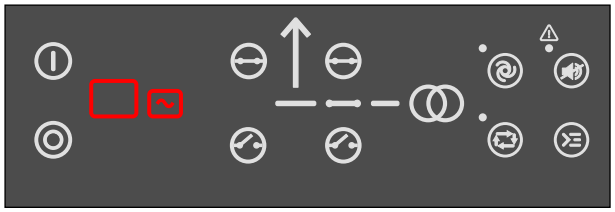
Settings > Basic settings > Controller settings > Display > LED mimic

Parameter no.	Item	Range
6082	LED mimic	Standard with genset Standard Guided with genset Guided

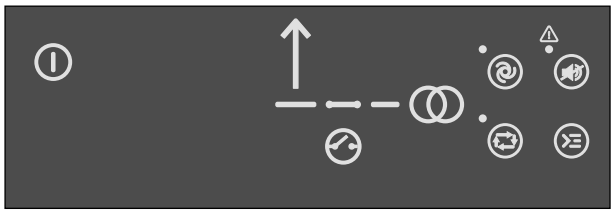
Standard
The control buttons and LEDs are shown.
If you stop the genset, the motor/generator symbols are not shown.



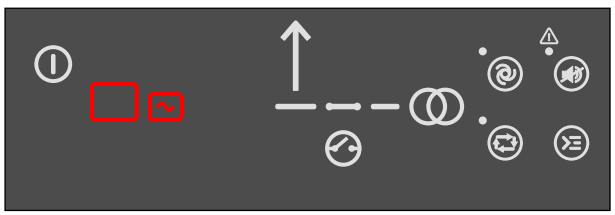
Standard with genset
The control buttons and LEDs are shown.
If you the stop the genset, the motor/generator symbols are shown in red.



Guided
Active control buttons and LEDs are shown inactive are not shown.
Example: The controller is in SEMI-AUTO mode, and the genset is not operating. Only the start button is shown, as this is the only possible action.



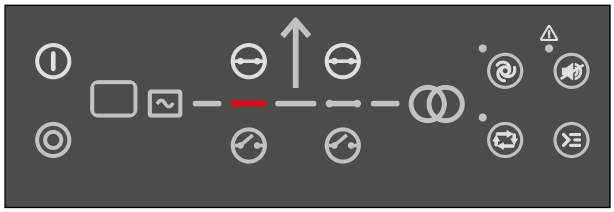
Guided with genset
Active control buttons, LEDs and the motor/generator symbols are shown, inactive are not shown.
Example: The controller is in SEMI-AUTO mode. The genset is not operating. The only possible action is to start the genset, and so only the start button and the red motor/generator symbols are shown.



All Mimic settings

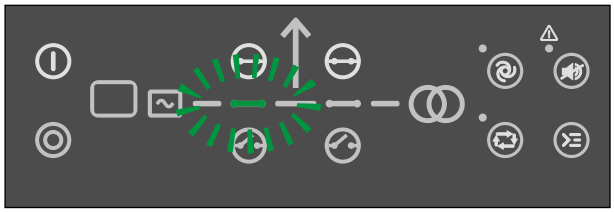
The breaker symbol is shown in red:

- Breaker position failure
- Breaker close failure



The breaker symbol flashes green:

- The controller is synchronising
- The controller is de-loading



3.3 Running modes

The AGC 150 Generator controller has four running modes, and a test mode. To configure the running mode push the *Shortcut* button and select *Running Modes*. Configure the test mode in `Settings > Power set points > Test`. To run the test push the *Shortcut* button and select *Start Test*.

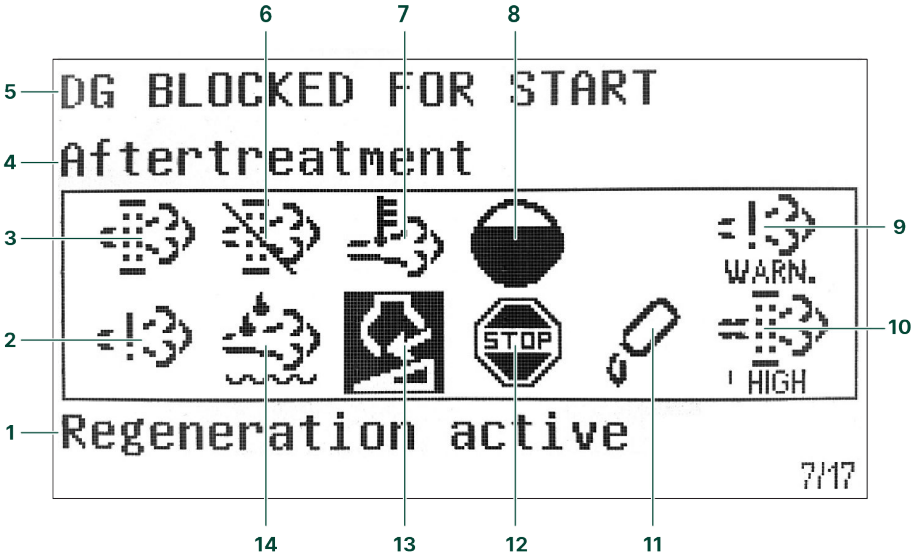
Mode	Description
AUTO	The controller automatically starts and stops (and connects and disconnects) the genset. The operator cannot start a sequence manually. The controllers use the power management configuration to automatically select the power management action.
SEMI-AUTO	The controller cannot automatically start, stop, connect and disconnect the genset. The operator or an external signal can start these sequences. The controller automatically synchronises before closing a breaker, and automatically de-loads before opening a breaker.
MANUAL	The operator can use the digital increase/decrease inputs (if they are configured) and the *Start* and *Stop* buttons. When the genset starts in manual mode, it starts without subsequent regulation.
BLOCK	The controller cannot start a sequence. Select the block mode when you do maintenance work on the genset.
Test	The test sequence starts when you select the test mode.

NOTE The genset shuts down if you select the block mode while the genset is operating.

3.4 Exhaust after-treatment (Tier 4/Stage V)

AGC 150 meets the Tier 4 (Final)/Stage V requirements. The user can use the display to monitor (and control) both the engine, and the exhaust after-treatment system.

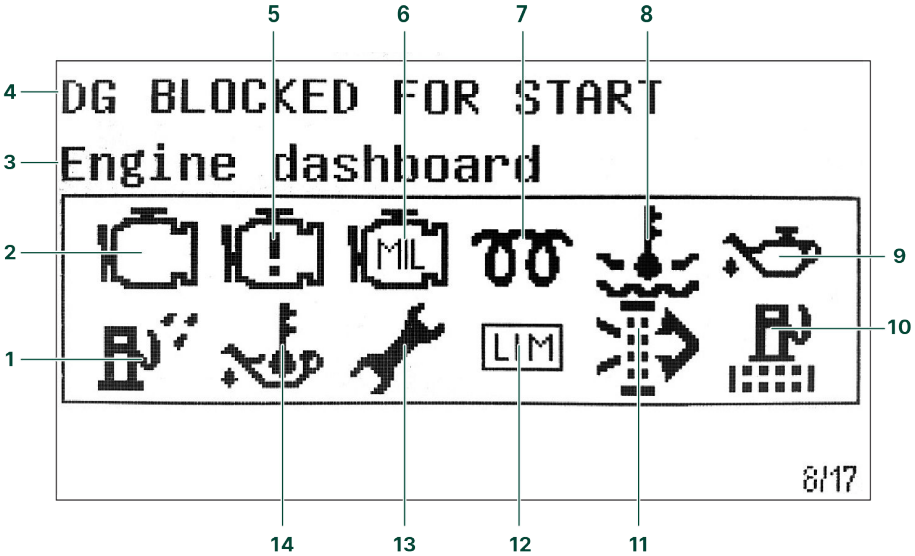
After-treatment page

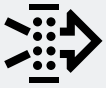


No.	Referent	Symbol	Description
1	After-treatment status	-	
2	Engine emission system failure		Emission failure or malfunction.
3	Diesel Particle Filter (DPF)		A regeneration is needed.
4	Page name	-	
5	Controller status	-	
6	Diesel Particle Filter (DPF) Inhibit		Regeneration is inhibited.
7	High temperature - Regeneration		There is a high temperature and regeneration is in process.
8	HC burn-off		
9	Engine emission system failure level	LOW HIGH WARN.	Emission failure or malfunction, with the severity.

No.	Referent	Symbol	Description
10	Diesel Particle Filter (DPF) level		The severity of the needed regeneration.
11	DEF level warning		
12	DEF shutdown		
13	DEF level inducement		Mid-level inducement
			Severe inducement
14	Diesel Exhaust Fluid (DEF)		The DEF tank level is low.

Engine dashboard

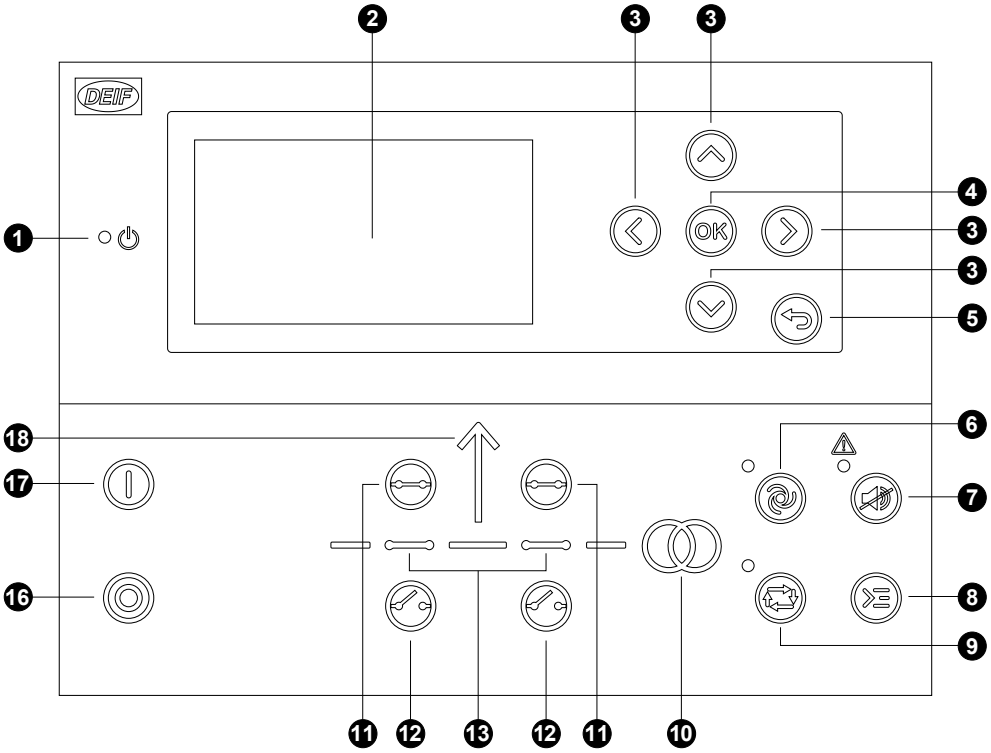


No.	Referent	Symbol	Description
1	Water in fuel		
2	Engine interface status		An engine warning.
3	Page name	-	-
4	Controller status	-	
5	Engine interface status		An engine shutdown.
6	Engine interface status		An engine malfunction.
7	Cold start		
8	High engine coolant temperature		
9	Low engine oil pressure		
10	Fuel filter clogging		
11	Air filter clogging		
12	LIMIT lamp		Only for MTU engines.
13	Oil change		
14	High engine oil temperature		

NOTE Grey symbols show that communication is available for the referent. An engine type might not support all of the referents.

4. About the AGC 150 Mains

4.1 Display, buttons and LEDs



No.	Name	Function
1	Power	Green: The controller power is ON. OFF: The controller power is OFF.
2	Display screen	Resolution: 240 x 128 px. Viewing area: 88.50 x 51.40 mm. Six lines, each with 25 characters.
3	Navigation	Move the selector up, down, left and right on the screen.
4	OK	Go to the Menu system. Confirm the selection on the screen.
5	Back	Go to the previous page.
6	AUTO mode	For mains controllers, the controller automatically connects and disconnects the mains. No operator actions are needed. The controllers use the power management configuration to automatically select the power management action.
7	Silence horn	Stops an alarm horn (if configured) and enters the Alarm menu.
8	Shortcut menu	Access the Jump menu, Mode selection, Test, Lamp test.
9	SEMI-AUTO mode	The operator or an external signal can connect or disconnect the mains. The mains controller cannot automatically connect or disconnect the mains. The controller automatically synchronises before closing a breaker, and automatically deloads before opening a breaker.
10	Mains symbol	Green: Mains voltage and frequency are OK. The controller can synchronise and close the breaker. Red: Mains failure.
11	Close breaker	Push to close the breaker.
12	Open breaker	Push to open the breaker.

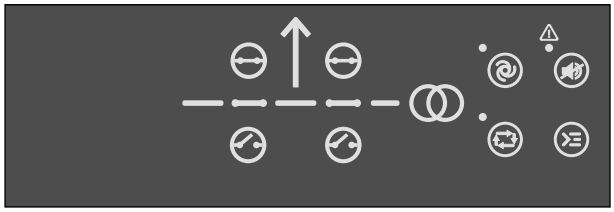
No.	Name	Function
13	Breaker symbols	Green: Breaker is closed. Green flashing: Synchronising or deloading. Red: Breaker failure.
16	Stop	Stops the plant.
17	Start	Starts the plant.
18	Load symbol	OFF: Power management application. Green: The supply voltage and frequency are OK. Red: Supply voltage/frequency failure.

4.2 Mimic function

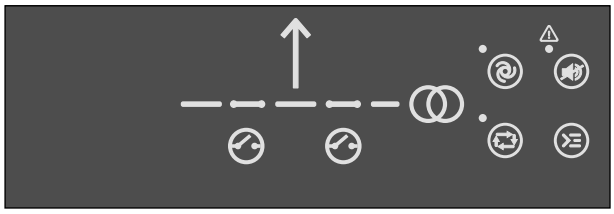
`Settings > Basic settings > Controller settings > Display > LED mimic`

Parameter no.	Item	Range
6082	LED mimic	Standard Guided

Standard
The LEDs are shown.



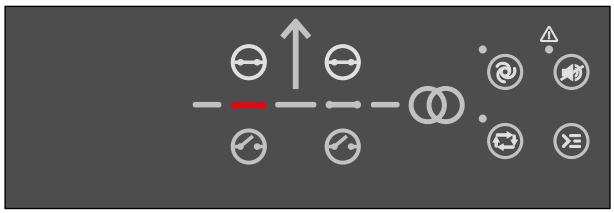
Guided
Active LEDs are shown and inactive are not shown.
Example: The controller is in SEMI-AUTO mode, and the breakers are closed. Only the Open breaker symbols are shown, as this is the only possible action.



All Mimic settings

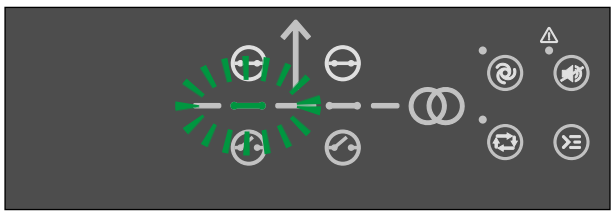
The breaker symbol is shown in red:

- Breaker position failure
- Breaker close failure



The breaker symbol flashes green:

- The controller is synchronising
- The controller is de-loading



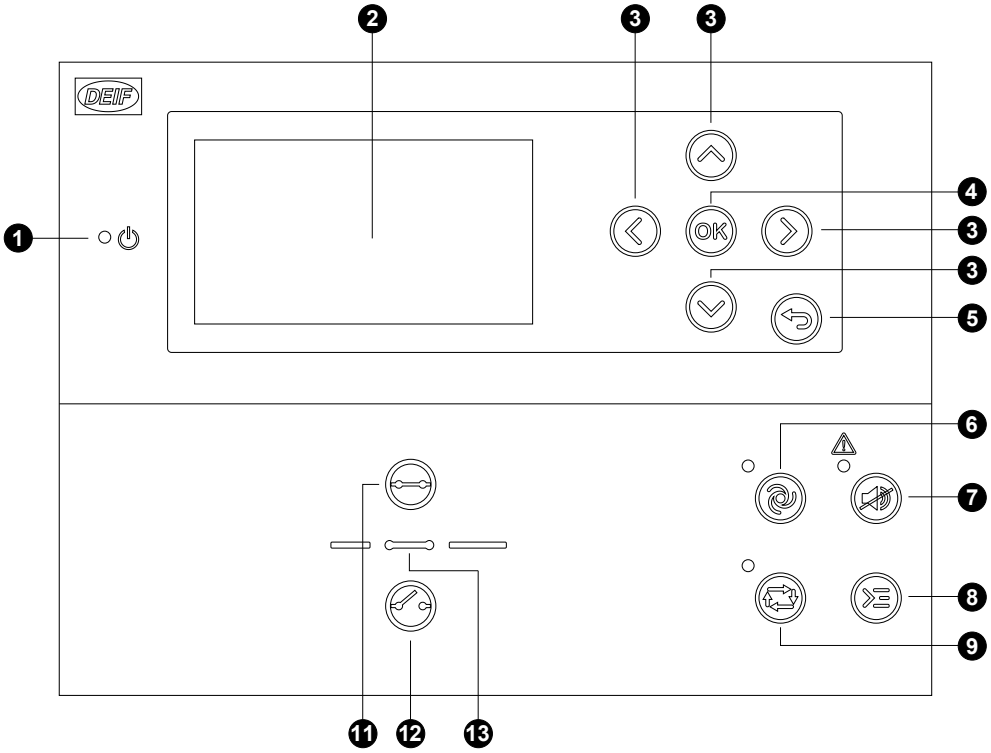
4.3 Running modes

The AGC 150 Mains controller has three running modes, and a test mode. Push the *Shortcut* button and select *Running Modes* to configure the mode. Configure the test mode in `Settings > Power set points > Test`. To run the test push the *Shortcut* button and select *Start Test*.

Mode	Description
AUTO	The controller automatically connects and disconnects the mains. The operator cannot start a sequence manually. The controllers use the power management configuration to automatically select the power management action.
SEMI-AUTO	The controller cannot automatically connect and disconnect the mains. The operator or an external signal can start these sequences. The controller automatically synchronises before closing a breaker, and automatically de-loads before opening a breaker.
Test	The test sequence starts when you select the test mode.
BLOCK	The controller cannot start sequences. Select the block mode when you do maintenance work.

5. About the AGC 150 BTB

5.1 Display, buttons and LEDs



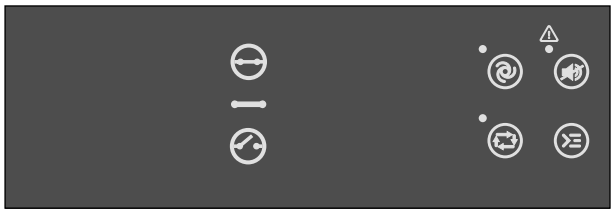
No.	Name	Function
1	Power	Green: The controller power is ON. OFF: The controller power is OFF.
2	Display screen	Resolution: 240 x 128 px. Viewing area: 88.50 x 51.40 mm. Six lines, each with 25 characters.
3	Navigation	Move the selector up, down, left and right on the screen.
4	OK	Go to the Menu system. Confirm the selection on the screen.
5	Back	Go to the previous page.
6	AUTO mode	For BTB controllers, the controller automatically joins and splits the busbar. No operator actions are needed. The controllers use the power management configuration to automatically select the power management action.
7	Silence horn	Stops an alarm horn (if configured) and enters the Alarm menu.
8	Shortcut menu	Access the Jump menu, Lamp test.
9	SEMI-AUTO mode	The operator or an external signal can join or split the busbar. The BTB controller cannot automatically join or split the busbar. The controller automatically synchronises before closing a breaker, and automatically deloads before opening a breaker.
11	Close breaker	Push to close the breaker.
12	Open breaker	Push to open the breaker.
13	Breaker symbols	Green: Breaker is closed. Green flashing: Synchronising or deloading. Red: Breaker failure.

5.2 Mimic function

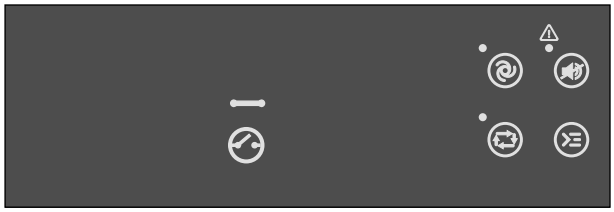
Settings > Basic settings > Controller settings > Display > LED mimic

Parameter no.	Item	Range
6082	LED mimic	Standard Guided

Standard
The LEDs are shown.



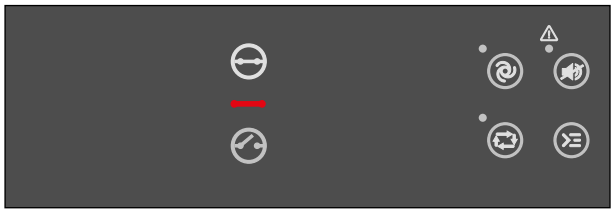
Guided
Active LEDs are shown and inactive are not shown.
Example: The controller is in SEMI-AUTO mode, and the breaker is closed. Only the Open breaker symbol is shown, as this is the only possible action.



All Mimic settings

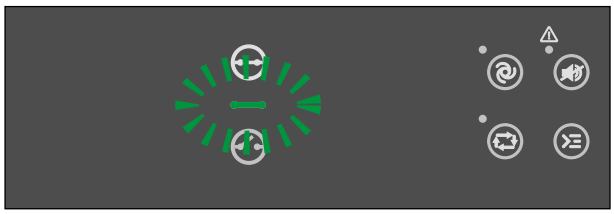
The breaker symbol is shown in red:

- Breaker position failure
- Breaker close failure



The breaker symbol flashes green:

- The controller is synchronising
- The controller is de-loading



5.3 Running modes

The AGC 150 BTB controller has three running modes. To configure the running mode push the *Shortcut* button and select *Running Modes*.

Mode	Description
AUTO	The controller automatically joins and splits the busbar. The operator cannot start a sequence manually. The controllers use the power management configuration to automatically select the power management action.
SEMI-AUTO	The controller cannot automatically join and split the busbar. The operator or an external signal can start these sequences. The controller automatically synchronises before closing a breaker, and automatically de-loads before opening a breaker.
BLOCK	The controller cannot start sequences. Select the block mode when you do maintenance work.

6. Menus

6.1 Menu structure

The controller has two menu systems, which can be used without password entry:

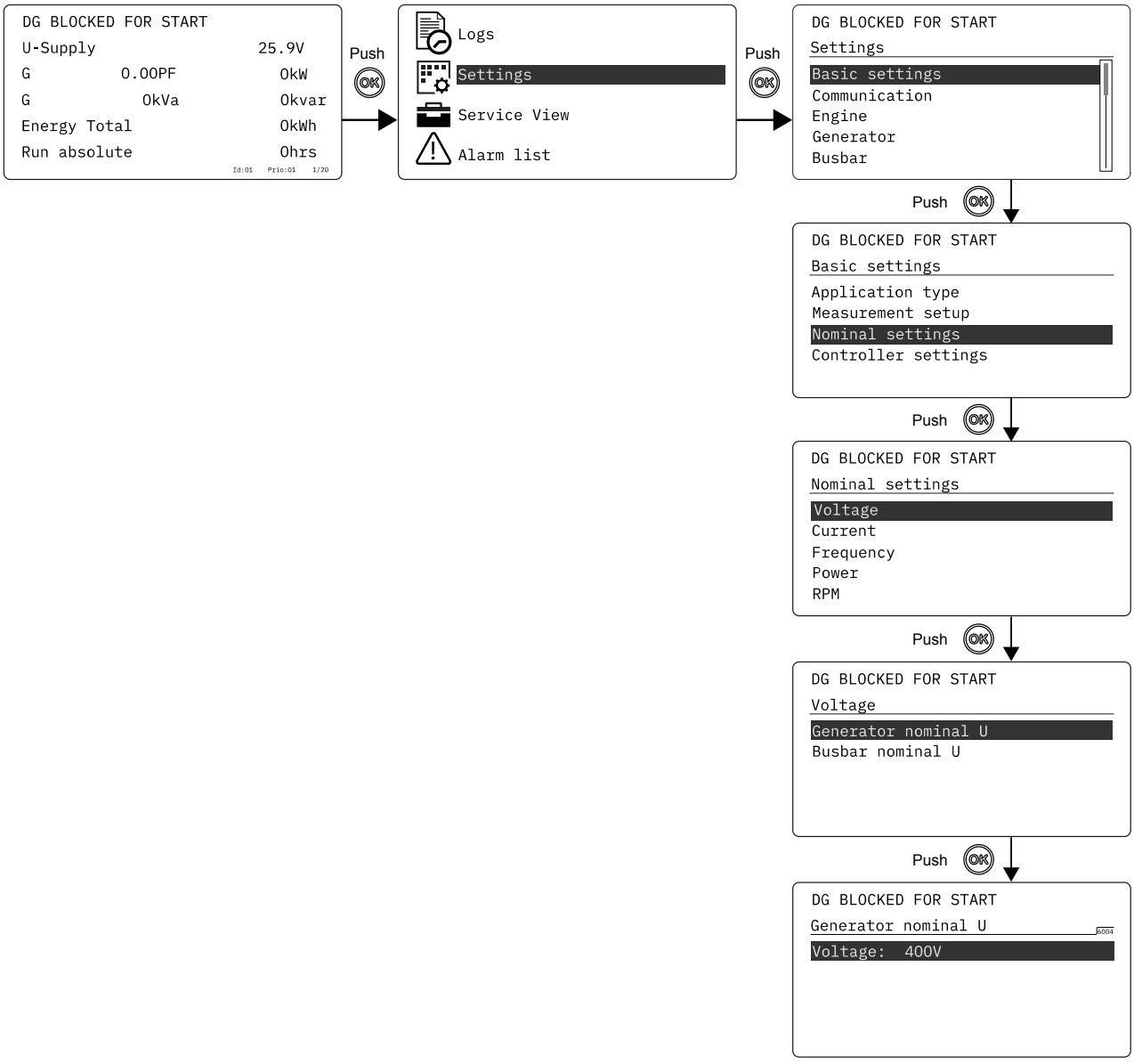
- **The View menu system**: Shows the operating status and values. The system has 20 configurable windows, that can be entered with the arrow buttons.
- **The Settings menu system**: The operator can see the controller's parameters. A password is necessary to change the parameter settings.

6.2 Settings menu

You can configure the controller in the settings menu and you can also find information, which is not available in the view menu. From the view menu, push the OK button to find the settings menu. Use the ⌄ and ⌃ buttons to find the different settings parameter and select with the OK button.

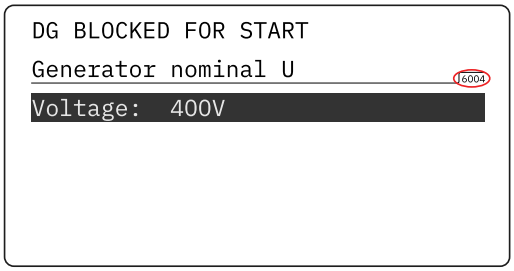
Settings menu example

This is an example of how to change the nominal voltage settings.



6.2.1 Menu numbers

Each parameter has a menu number. You can find the number in the upper right corner on the display screen.



You can also find the menu number with the utility software:

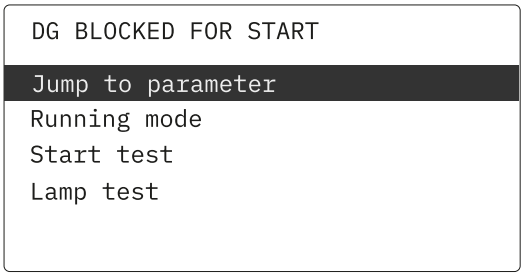
1. Select *Parameters*  from the vertical toolbar on the left.
2. Set the view mode to list. The view mode can be found in the left corner of the screen.
3. The menu numbers are in the *Channel* column.

6.2.2 The jump to parameter function

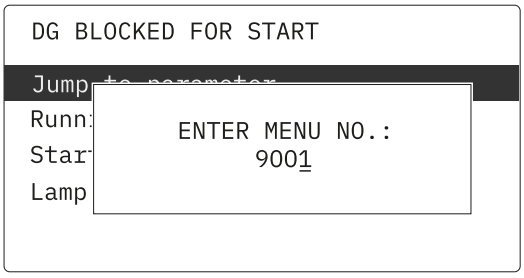
If you know the menu number for a parameter, you can use the jump to parameter function to go directly to the parameter.

On the controller

1. From the view menu, push the *Shortcut* button to see the jump to parameter function:



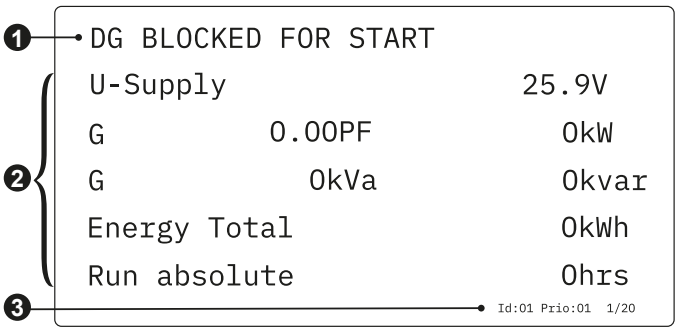
2. Use the and buttons to go to *Jump to parameter* and push the button.



3. Use the and buttons to change the numbers, and push the button to save. Use the and buttons to move to the next number.

6.3 View menu

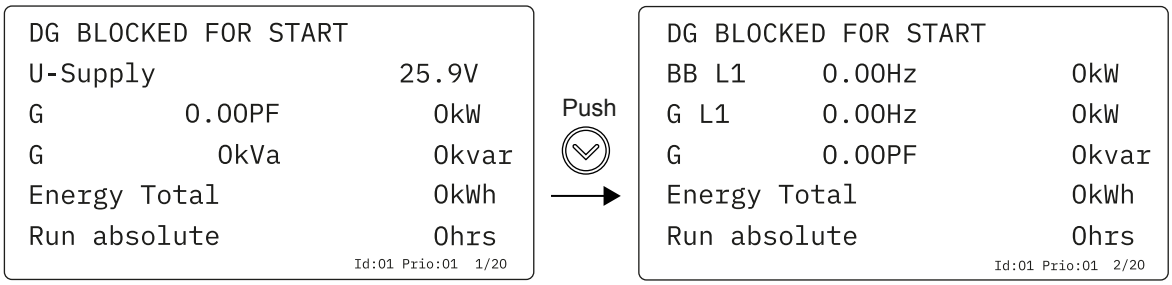
The view menu is shown when the controller is turned on, and you can see the operating status and values. The event and alarms list is also shown if an alarm is active.



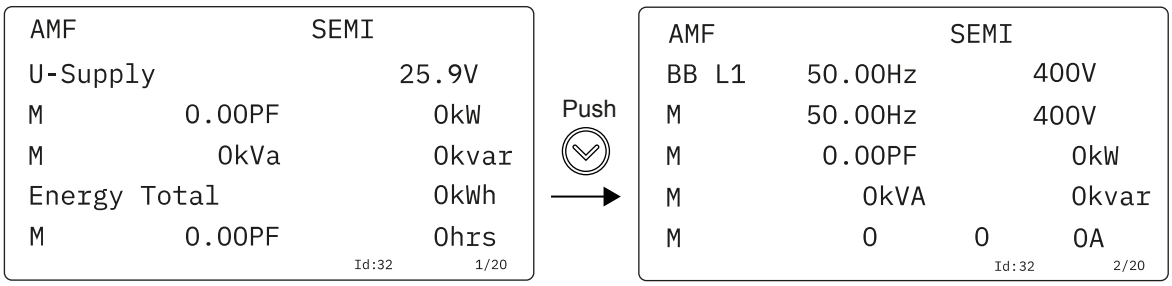
1. Operating status
2. Values and information
3. Page number, power management priority, power management ID and engine DEF level.

The view menu has 20 different display views. Use the and buttons to select a view.

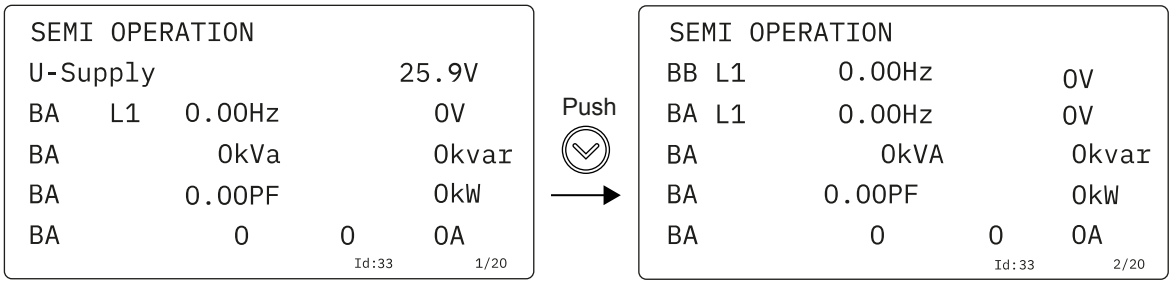
AGC 150 Generator example



AGC 150 Mains example



AGC 150 BTB example



6.3.1 Display views

The controllers have 20 different display views, and some are pre-configured. You can configure the views with the utility software.

AGC 150 Generator

Line	View 1	View 2	View 3	View 4	View 5
1	U-Supply 0.0V	BB L1 0.0Hz 0V	-	BB L1 0.0Hz 0V	G U-L1L2 0V
2	G 0.00PF 0kW	G L1 0.0Hz 0V	Synchroniser	G 0.00PF 0kW	G U-L2L3 0V
3	G 0kVA 0kvar	G 0.00PF 0kW	-	G 0kVA 0kvar	G U-L3L1 0V
4	Energy Total 0kWh	G 0kVA 0kvar	-	G 0 0 0A	G U-Max 0V
5	Run absolute 0hrs	G 0 0 0A	-	G L1 0.0Hz 0V	G U-Min 0V

Line	View 6	View 7	View 8	View 9	View 10
1	G I-L1 0A	G f-L1 0.00Hz	G P 0kW	P available 0kW	G U-L1N 0V
2	G I-L2 0A	G f-L2 0.00Hz	G Q 0kvar	P consumed 0kW	G U-L2N 0V
3	G I-L3 0A	G f-L3 0.00Hz	G S 0kVA	P 0kW 0%	G U-L3N 0V
4	GB Operations 0	-	G PF 0.00	-	-
5	MB Operations 0	-	Date and Time	-	-

Line	View 11	View 12	View 13	View 14	View 15
1	BB U-L1L2 0V	G Angle L1L2 0deg	L-L and P total	P GTot and P %	BB-Gen Angle
2	BB U-L2L3 0V	G Angle L2L3 0deg	Current and Q total	Q GTot and Q %	G Angle L1L2
3	BB U-L3L1 0V	G Angle L3L1 0deg	Pf and kW %	BB freq and G freq	BB Angle L1L2
4	BB U-Max 0V	AVR reg. type	GOV and AVR output	BB L-N and G L-N	BB Angle L2L3
5	BB U-Min 0V	GOV reg. type	Ramp down/up setpoint	kW % and kvar %	-

Line	View 16	View 17	View 18	View 19	View 20
1	EIC T. Coolant	Aftertreatment text	Multi input 20 0	P available 0%	P 0kW 0%
2	EIC T. TurboOil	EIC Tier 4 Icons	Multi input 21 0	P consumed 0%	Q 0kvar 0%
3	EIC T. Exh. R	-	Multi input 22 0	G 0.00PF 0%P	S 0kVA 0%
4	EIC T. Oil	-	Multi input 23 0	BB f-L1 0.00Hz	-
5	EIC T. Fuel	-	MPU 0rpm	BB Angle L1L2 0deg	-

AGC 150 Mains

Line	View 1	View 2	View 3	View 4	View 5
1	U-Supply 0.0V	BB L1 0.0Hz 0V	-	M 0 0 0V	M P 0kW
2	M 0.00PF 0kW	M 0.0Hz 0V	Synchroniser	M L1 0.0Hz 0V	M Q 0kvar
3	M 0kVA 0kvar	M 0.00PF 0kW	-	-	M S 0kVA
4	Energy Total 0kWh	M 0kVA 0kvar	-	BB 0 0 0V	M 0 0 0V
5	M 0.00PF okW	M 0 0 0A	-	BB L1 0.0Hz 0V	M 0 0 0A

Line	View 6	View 7	View 8	View 9	View 10
1	M I-L1 0A	M f-L1 0.00Hz	M U-L1N 0V	P available 0kW	M U-L1N 0V
2	M I-L2 0A	M f-L2 0.00Hz	M U-L2N 0V	P consumed 0kW	M U-L2N 0V

Line	View 6	View 7	View 8	View 9	View 10
3	M I-L3 0A	M f-L3 0.00Hz	M U-L3N 0V	P 0kW 0%	M U-L3N 0V
4	M 0.00PF 0kW	M 0.00PF 0kW	M f-L1 0.00Hz	Q 0kvar 0%	M f-L1 0.00Hz
5	M 0 0 0V	M 0 0 0V	M 0 0 0A	S 0kVA 0%	M 0 0 0A

Line	View 11	View 12	View 13	View 14	View 15
1	BB U-L1L2 0V	M U-L1N 0V	Multi Input 20 0	-	BB-M Angle 0deg
2	BB U-L2L3 0V	M U-L2N 0V	Multi Input 21 0	Date and Time	M Angle L1L2 0deg
3	BB U-L3L1 0V	M U-L3N 0V	Multi Input 22 0	-	M Angle L2L3 0deg
4	BB f-L1 0.00Hz	M 0.00PF 0kW	Multi Input 23 0	MB operations	BB Angle L1L2 0deg
5	M 0 0 0A	Energy Total 0kWh	-	TB Operations	BB Angle L2L3 0deg

AGC 150 BTB

Line	View 1	View 2	View 3	View 4	View 5
1	U-Supply 0.0V	BB L1 0.0Hz 0V	-	BA 0 0 0V	BA P 0kW
2	BA L1 0.0Hz 0V	BA L1 0.0Hz 0V	Synchroniser	BA f-L1 0.00Hz	BA Q 0kvar
3	BA 0kVA 0kvar	BA 0kVA 0kvar	-	-	BA S 0kVA
4	BA 0.00PF 0kW	BA 0.00PF 0kW	-	BB 0 0 0V	BA 0 0 0V
5	BA 0 0 0A	BA 0 0 0A	-	BB f-L1 0.00Hz	BA 0 0 0A

Line	View 6	View 7	View 8	View 9	View 10
1	BA I-L1 0A	BA f-L1 0.00Hz	BA U-L1L2 0V	BB U-L1L2 0V	Multi Input 20 0
2	BA I-L2 0A	BA f-L2 0.00Hz	BA U-L2L3 0V	BB U-L1L2 0V	Multi Input 21 0
3	BA I-L3 0A	BA f-L3 0.00Hz	BA U-L3L1 0V	BB U-L3L1 0V	Multi Input 22 0
4	BA 0.00PF 0kW	BA 0.00PF 0kW	BA f-L1 0.00Hz	BB f-L1 0.00Hz	Multi Input 23 0
5	BA 0 0 0V	BA 0 0 0A	BA 0 0 0A	BA 0 0 0A	-

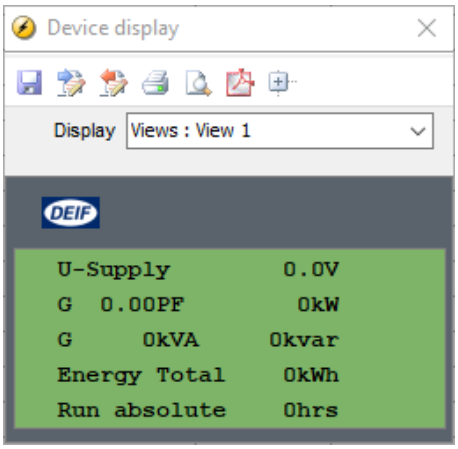
Line	View 11	View 12	View 13	View 14	View 15
1	-	Angle BB-BA 0deg	-	-	-
2	Date and Time	BA Angle L1L2 0deg	-	-	-
3	-	BA Angle L2L3 0deg	-	-	-
4	BTB Operations 0	BB Angle L1L2 0deg	-	-	-
5	-	BB Angle L2L3 0deg	-	-	-

6.3.2 Display text

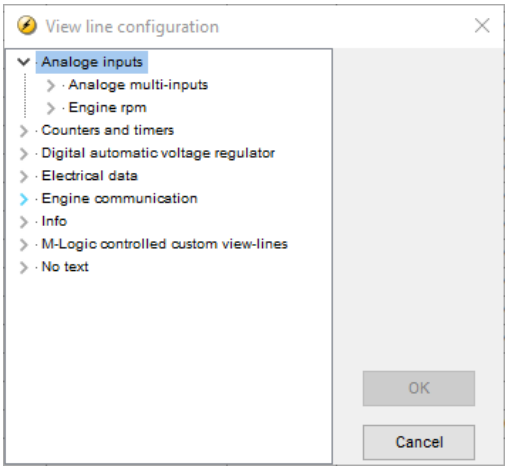
Configure the display views

You can configure the display views with the utility software.

1. Select the *Configuration of the user views*  button in the toolbar.
2. In the pop-up window, select the display view you want to change.



3. Select the display line you want to change.
4. In the pop-up window, select the text you want and click OK.



Display text

You can select five of the display texts for each display view.

6.4 Status texts

Status text	Condition
ACCESS LOCK	The configurable input is activated, and the operator tries to activate one of the blocked keys.
ADAPT IN PROGRESS	Power management: The controller is receiving the application it has connected to.
AMF ACTIVE	The controller is in auto mode during a mains failure.
AMF AUTO	The mains controller is in auto mode and ready to respond.
AMF MAN	The controller is in manual mode and waiting for operator input.
AMF SEMI	The controller is in semi-automatic mode and waiting for operator input.
AUTO OPERATION	BTB power management: BTB controller is in AUTO mode, but is not ready for breaker operation (because of an active BTB trip alarm).
Aux. test ##.#V ####s	The battery test is activated.
BLACKOUT ENABLE	Generator power management: CAN failure in a power management application.
BLOCK	Block mode is activated.
BLOCKED FOR CLOSING	BTB power management: Last open BTB in a ring bus.
BROADCAST ABORTED	Power management: Broadcast terminated.

Status text	Condition
BROADCASTING APPL. #	Power management: Broadcast one of the four applications from one controller to the other controllers in the power management system, through the CAN line.
BROADCAST COMPLETED	Power management: Correct broadcast of an application.
BTB TRIP EXTERNALLY	BTB power management: External equipment has tripped the breaker, and this is logged in the event log.
BTB XX DIVIDING SEC.	Generator power management: BTB XX is dividing two sections in an island application.
COMPENSATION FREQ.	Compensation is active. The frequency is not at the nominal setting.
COOLING DOWN ###s	Cooling-down period is activated.
DELOAD	The controller is decreasing the load of the genset in order to open the breaker.
DELOADING BTB XX	Generator power management: Genset controllers are load sharing asymmetrically to de-load BTB XX.
DERATED TO #####kW	Displays the ramp-down set point.
DG BLOCKED FOR START	The generator has stopped and has active alarm(s).
DIVIDING SECTION	BTB power management: A BTB unit is dividing two sections in an island application.
EXT. START ORDER	A planned AMF sequence is activated (without a mains failure).
EXT. STOP TIME ###s	The extended stop timer is running.
FIXED POWER ACTIVE	The controller is in auto mode and supplying fixed power.
FIXED POWER AUTO	The mains controller is in auto mode and ready to respond.
FIXED POWER MAN	The controller is in manual mode and waiting for operator input.
FIXED POWER SEMI	The controller is in semi-automatic mode and waiting for operator input.
FULL TEST	Test mode is activated.
FULL TEST ###.#min	Test mode is activated and test timer counting down.
GB ON BLOCKED	The generator is running, the GB is open and there is an active Trip GB alarm.
GB TRIP EXTERNALLY	Some external equipment has tripped the breaker. An external trip is logged in the event log.
GENSET STOPPING	Cooling down has finished.
Hz/V OK IN ###s	The voltage and frequency on the genset is OK. When the timer runs out the generator breaker can be closed.
IDLE RUN	The Idle run function is active. The genset does not stop until a timer has expired.
IDLE RUN ###.#min	The Idle run function is active. The genset does not stop until the timer has expired.
ISLAND ACTIVE	The controller is in auto mode and supplying power while not connected to a mains supply.
ISLAND AUTO	The mains controller is in auto mode and ready to respond.
ISLAND MAN	The controller is in manual mode and waiting for operator input.
ISLAND SEMI	The controller is in semi-automatic mode and waiting for operator input.
Loadshare conf error	Analogue load sharing is selected, but there is no IOM.
LOAD TAKE OVER AUTO	The mains controller is in auto mode and ready to respond.
LOAD TAKE OVER MAN	The controller is in manual mode and waiting for operator input.
LOAD TAKE OVER SEMI	The controller is in semi-automatic mode and waiting for operator input.
LOAD TEST	Test mode is activated.
LOAD TEST ###.#min	Test mode is activated and test timer counting down.

Status text	Condition
LTO ACTIVE	The controller is in auto mode and taking over the load.
MAINS FAILURE	Mains failure and mains failure timer expired.
MAINS FAILURE IN ###s	The frequency or voltage measurement is outside the limits. The timer shown is the mains failure delay.
MAINS f OK DEL ####s	Mains frequency is OK after a mains failure. The timer shown is the mains OK delay.
MAINS P EXPORT AUTO	The mains controller is in auto mode and ready to respond.
MAINS P EXPORT MAN	The controller is in manual mode and waiting for operator input.
MAINS P EXPORT SEMI	The controller is in semi-automatic mode and waiting for operator input.
MAINS U OK DEL ####s	The mains voltage is OK after a mains failure. The timer shown is the mains OK delay.
MB TRIP EXTERNALLY	Power management: Some external equipment (not the controller) has tripped the breaker. An external trip is logged in the event log.
MOUNT CAN CONNECTOR	Power management: Connect the power management CAN line.
MPE ACTIVE	The controller is in auto mode and exporting power to the mains.
PEAK SHAVING ACTIVE	The controller is in auto mode and doing peak shaving.
PEAK SHAVING AUTO	The mains controller is in auto mode and ready to respond.
PEAK SHAVING MAN	The controller is in manual mode and waiting for operator input.
PEAK SHAVING SEMI	The controller is in semi-automatic mode and waiting for operator input.
QUICK SETUP ERROR	Power management: Failure of the quick setup of the application.
RAMP TO #####kW	The power ramp is ramping in steps. The next step that is reached after the timer has expired is displayed.
READY AMF AUTO	The genset controller is in auto mode and the genset is stopped.
READY AUTO OPERATION	BTB power management: BTB unit in AUTO mode and ready for breaker operation (no active BTB trip alarm).
READY FIXED P AUTO	The genset controller is in auto mode and the genset is stopped.
READY ISLAND AUTO	The genset controller is in auto mode and the genset is stopped.
READY LTO AUTO	The genset controller is in auto mode and the genset is stopped.
READY MPE AUTO	The genset controller is in auto mode and the genset is stopped.
READY PEAK SHAV AUTO	The genset controller is in auto mode and the genset is stopped.
RECEIVING APPL. #	Power management: The controller is receiving an application.
RECEIVE COMPLETED	Power management: Application received correctly.
RECEIVE ERROR	Power management: Application is not received correctly.
REMOVE CAN CONNECTOR	Power management: Remove the power management CAN lines.
SELECT GENSET MODE	Power management is deactivated and no other genset mode is selected.
SEMI OPERATION	BTB power management: BTB unit in SEMI-AUTO mode.
SETUP COMPLETED	Power management: Correct update of the application in all controllers.
SETUP IN PROGRESS	Power management: The new controller is being added to the existing application.
SHUTDOWN OVERRIDE	The configurable input is active.
SIMPLE TEST	Test mode is activated.
SIMPLE TEST ###.#min	Test mode is activated and test timer counting down.
START DG(s) IN ###s	The start genset set point has been exceeded. The genset starts when the timer expires.

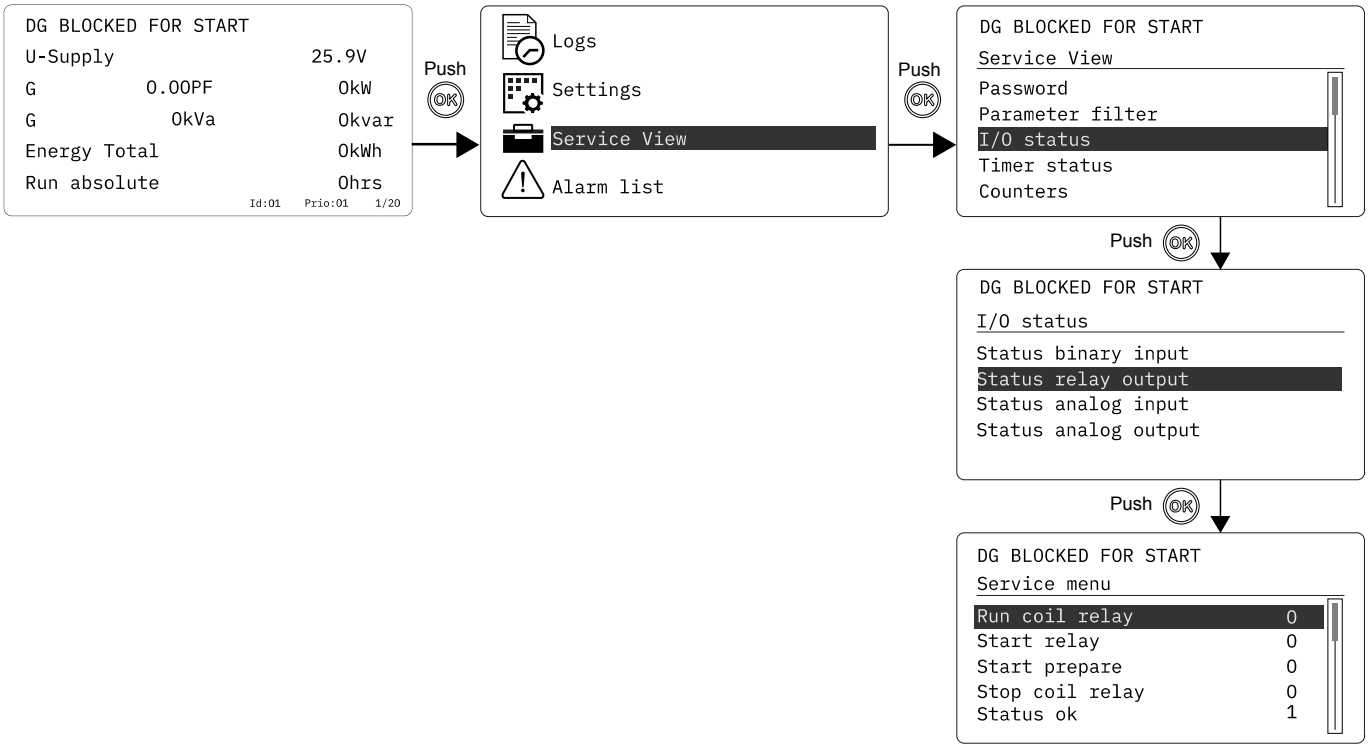
Status text	Condition
START PREPARE	The start prepare relay is activated.
START RELAY OFF	The start relay is deactivated during the start sequence.
START RELAY ON	The start relay is activated.
STOP DG(s) IN ###s	The stop genset set point has been exceeded. The genset stops when the timer expires.
SYNCHRONISING BTB XX	Generator power management: BTB XX is synchronising.
SYNCHRONISING MB XX	Generator power management: MB XX is synchronising.
SYNCHRONISING TB XX	Generator power management: TB XX is synchronising.
TB TRIP EXTERNALLY	Mains power management: External equipment has tripped the breaker, and this is logged in the event log.
TOO SLOW 00⟵----------	Generator running too slow during synchronisation.
--------⟶ 00 TOO FAST	Generator running too fast during synchronisation.
UNEXPECTED GB ON BB	Another generator breaker is closed on to the busbar (due to a GB position failure) while no voltage is present on the busbar. This shows that other breakers cannot close to the busbar because of position failure on one or more GBs.
UNIT STANDBY	Generator and Mains power management: If there are redundant mains controllers, this is shown on the redundant controller.
WARM UP RAMP	Warm up ramp is active. The available power is limited until the pre-defined temperature is reached, or when the input that activated warm up ramp is deactivated.
---xx-------- >00< ----------	Generator is synchronising. The "xx" marks the actual generator phase angle position in the synchronisation. When the "xx" is aligned over the 00 centre, the generator is synchronised.

6.5 Service view

You can use the service view to see the status of the controller. You can change the passwords in the service menu, but not the other controller settings.

From the view menu, push the OK button and select *Service View* . Use the ⌄ and ⌃ buttons to go through the parameters in the service view, and use the OK button to select the parameters.

Service view example



7. Alarm handling and log list

7.1 Alarm handling

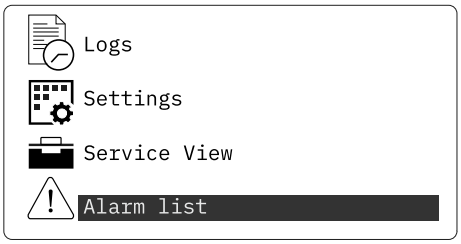
If the function *Alarm Jump* is on, the controller automatically shows the alarm list on the display screen when an alarm occurs.

`Service View > Display > Alarm Jump`

Parameter	Text	Range	Default
9157	Alarm Jump	OFF ON	ON

Access the alarm list from the controller

1. From the view menu, push the OK button.
2. Use the ^ and v buttons to go to the *Alarm list*.

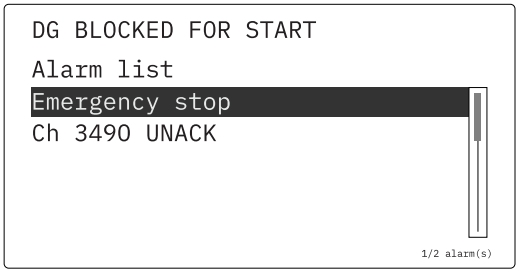


3. Push the OK button to view the *Alarm list*.
4. Push the ← button to go back.

The alarm list contains both acknowledged and unacknowledged alarms that are active. An alarm is active, if you have not cleared the alarm condition, which started the alarm. Once an alarm is acknowledged and you have cleared the alarm condition, the alarm is removed from the alarm list. If there are no alarms, then the alarm list shows *No alarms*.

The display screen can show only one alarm at a time. The number of alarms is shown on the right at the bottom of the screen.

Example of an unacknowledged alarm



To see the other alarms, use the ^ and v buttons to go through the list. To acknowledge an alarm, select the alarm and push the OK button.

Access the alarm list with the utility Software

Select *Alarms*  on the vertical panel on the left.

CAUTION

Caution

If an alarm is blocking a genset in AUTO mode from starting, the genset automatically starts if the condition that triggered the alarm has gone and the alarm has been acknowledged.

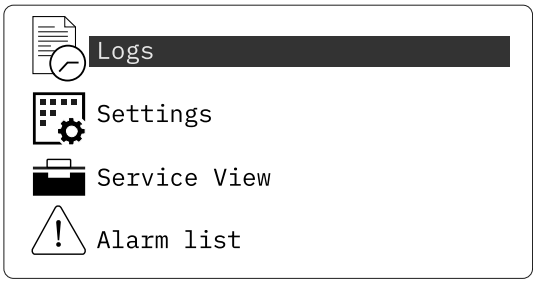
7.2 Logs menu

These are the log sub-menus:

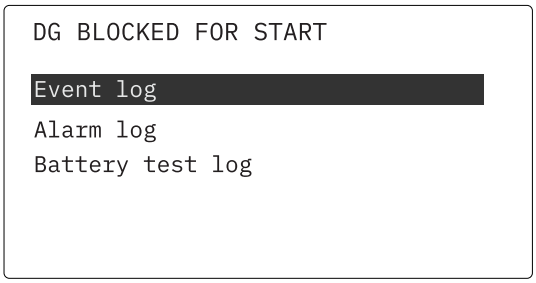
1. Event log: Shows up to 500 events.
2. Alarm log: Shows up to 500 alarms. Only the latest 100 alarms are shown on the display unit, while the remaining alarms are shown in the utility software.
3. Battery test log: Shows up to 52 tests, either *Test OK* or *Test failed*.

Access the log menu from the controller

1. From the view menu, push the OK button.
2. Use the ^ and v buttons to go to *Logs*.



3. Push the OK button to select *Logs*.
4. Select the log you want to see and push the OK button.



5. To leave the *Log* , push the back button.

Access the log list with the utility software

1. In the vertical panel on the left, select *Logs* .
2. In the task bar, select *Read logs* .
3. Select the *Log list* you want to see.