



OPERATOR's MANUAL

AGC 150



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1. Introduction

1.1 About the operator's manual

General purpose

The general purpose of this document is to give the operator important information to be used in the daily operation of the controller.



DANGER!

Read this document before working with the AGC 150 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 primarily intended for the operator that performs daily operations with the controller.

The manual includes an overview of the LEDs, push-buttons and screens on the controller, as well as general operator tasks, alarms, and logs.

List of technical documentation for AGC 150

Document	Contents
Product sheet	• Short description • Controller applications • Main features and functions • Technical data • Protections • Dimensions
Data sheet	• General description • Functions and features • Controller applications • Controller types and variants • Protections • Inputs and outputs • Technical specifications
Designer's handbook	• Principles • General controller sequences, functions and protections • GENSET controller • Mains controller • BTB controller • Hybrid controller • Protections and alarms • AC configuration and nominal settings • Breaker and synchronisation • Regulation • Load sharing • Hardware characteristics • Modbus
Installation instructions	• Tools and materials

Document	Contents
	• Mounting • Minimum wiring for the controller • Wiring communication
Operator's manual	• Controller equipment (buttons and LEDs) • Operating the system • Alarms • Log
Modbus tables	• Modbus address list ◦ PLC addresses ◦ Corresponding controller functions • Descriptions for function codes, function groups

1.2 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 DEIF recommends to:

- 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.

1.3 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



CAUTION

The AGC 150 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.

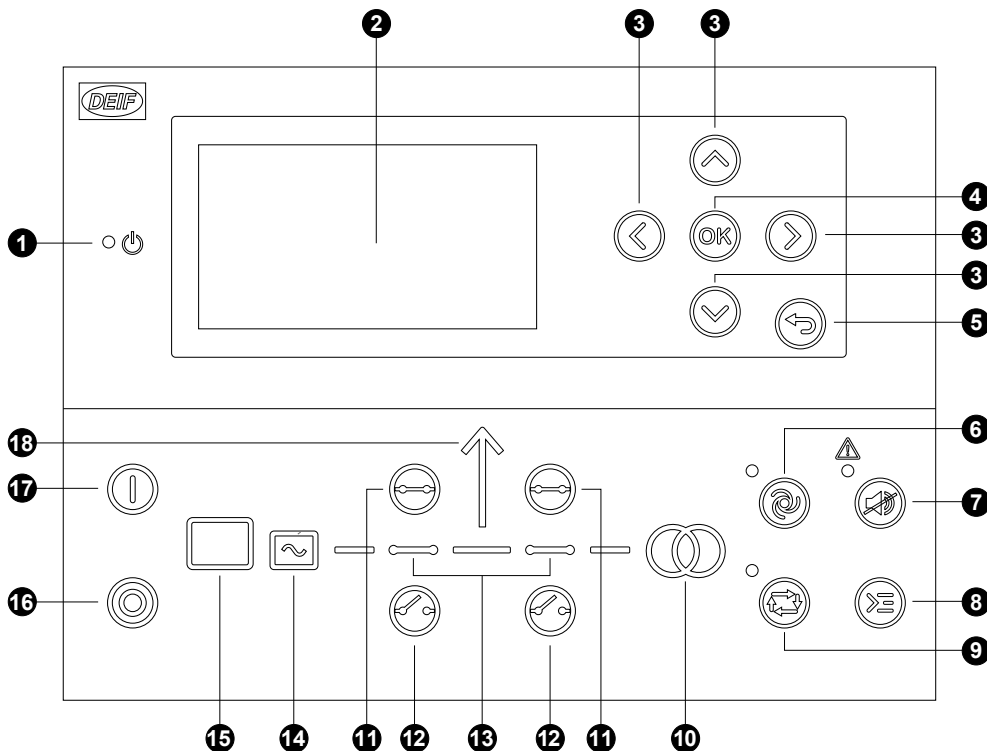
Copyright

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2. Controller overview

2.1 Overview of buttons and LEDs

2.1.1 Front overview



No.	Name	Function
1	Power ON	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	Enter the Menu system. Confirm the selection on the screen.
5	Back	Go to the previous page.
6	AUTO mode	The controller automatically starts and stops gensets according to the system settings. No operator actions are needed.
7	Silence horn	Turns off an alarm horn (if configured) and enters the Alarm menu.
8	Shortcut menu	Gives access to: Jump menu, Mode selection, Test, Lamp test, Hybrid (PV semi start and stop).
9	SEMI-AUTO mode	The controller cannot automatically start, stop, connect or disconnect the genset. The operator can start, stop, connect or disconnect the genset. The controller automatically synchronises before closing a breaker, and automatically de-loads 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	Press to close the breaker.
12	Open breaker	Press to open the breaker.

No.	Name	Function
13	Breaker symbols	Green: Breaker is ON. Green flashing: Synchronising or de-loading. 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.

2.1.2 Display settings

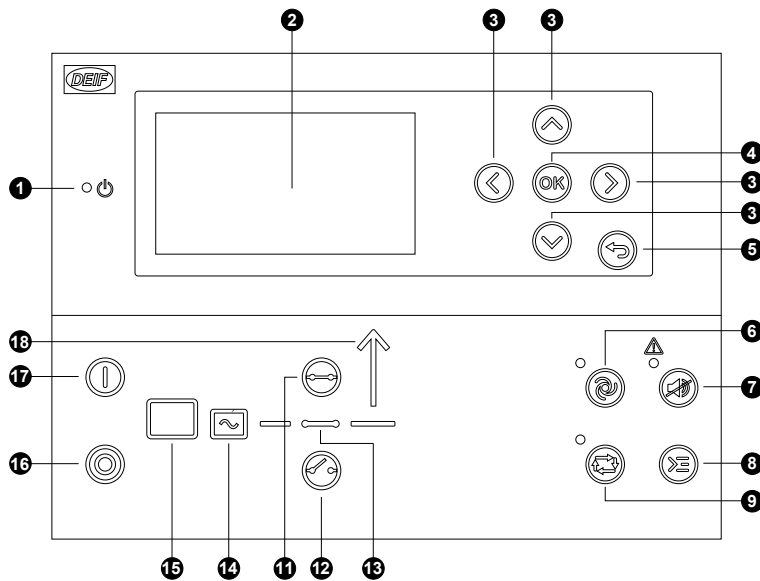
It is possible to adjust the settings for the display to compensate for ambient lighting. Configure these settings under **Settings > Basic settings > Controller settings > Display > Display control**.

Parameter no.	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

2.2 Controller types

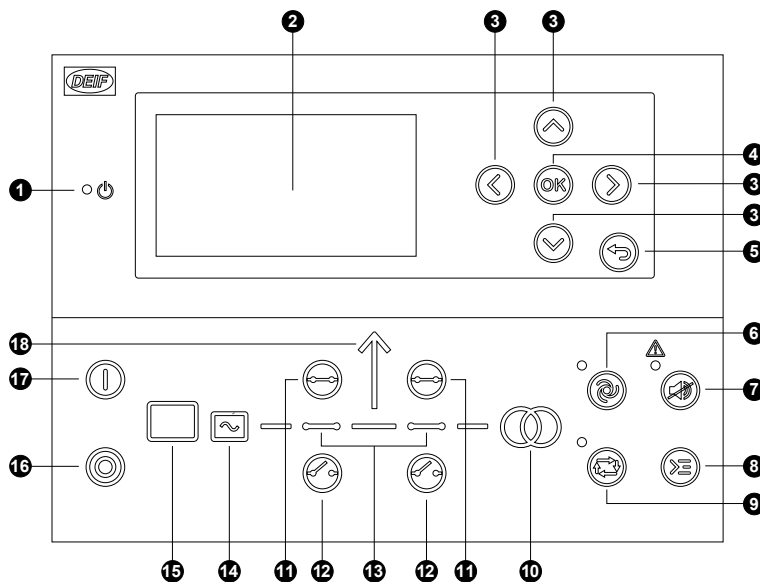
2.2.1 Genset controller layouts

Single genset controller in Island mode



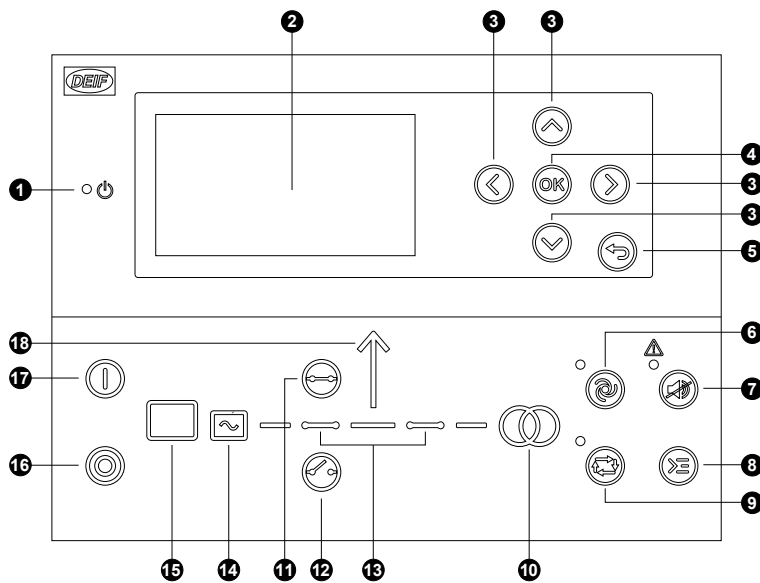
1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. -
11. Close breaker
12. Open breaker
13. Breaker symbols
14. Generator
15. Engine
16. Stop
17. Start
18. Load symbol

Single genset controller with Automatic Mains Failure (AMF)



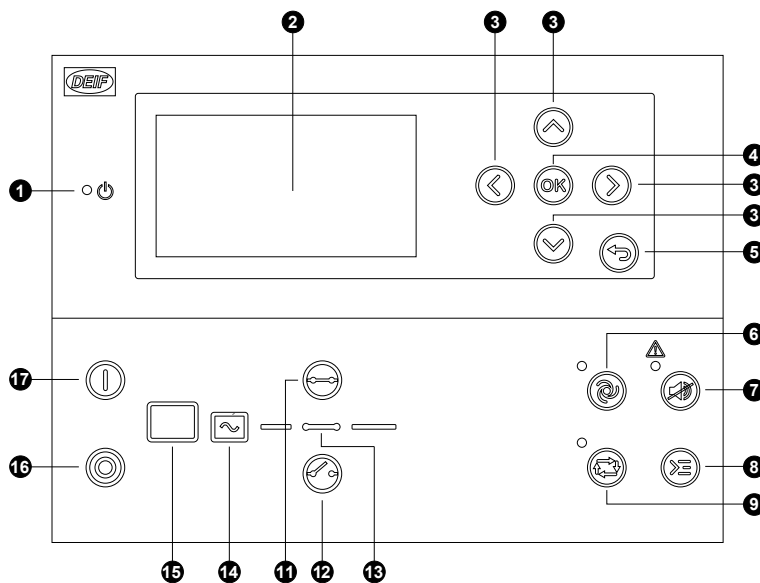
1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. Mains symbol
11. Close breaker
12. Open breaker
13. Breaker symbols
14. Generator
15. Engine
16. Stop
17. Start
18. Load symbol

Single genset controller in parallel without mains breaker



1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. Mains symbol
11. Close breaker
12. Open breaker
13. Breaker symbols
14. Generator
15. Engine
16. Stop
17. Start
18. Load symbol

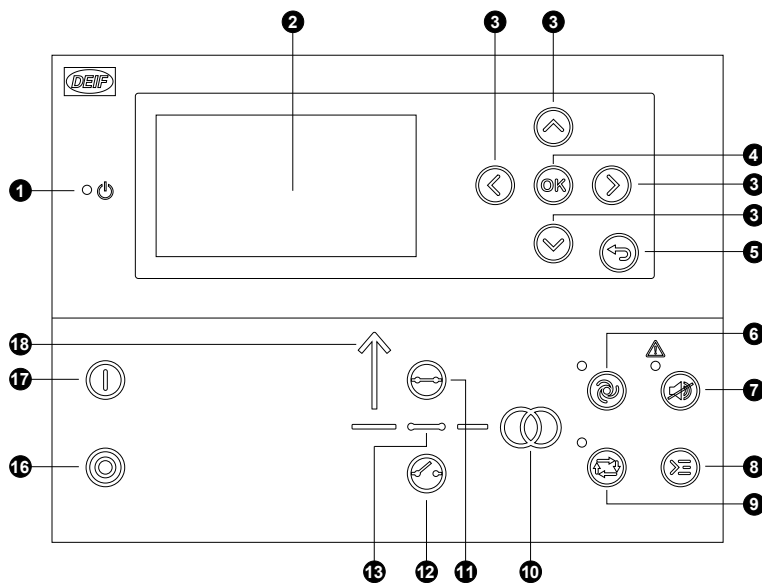
Genset controller in power management systems



1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. -
11. Close breaker
12. Open breaker
13. Breaker symbols
14. Generator
15. Engine
16. Stop
17. Start

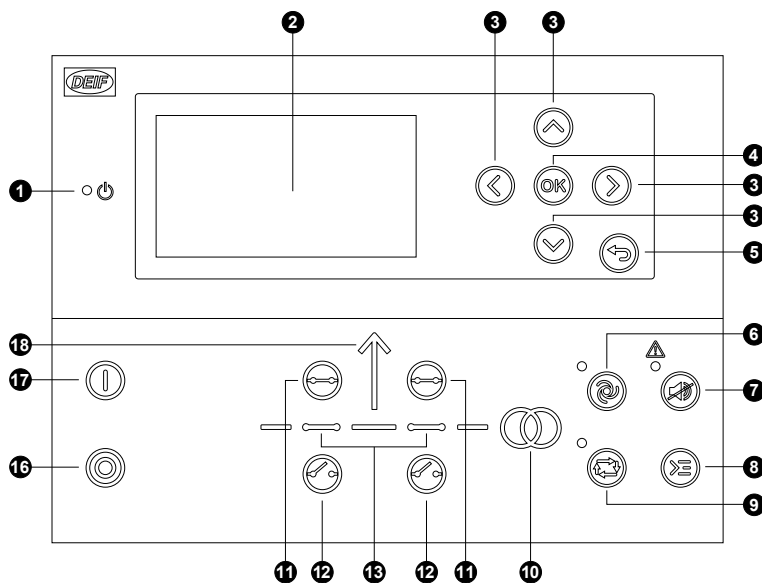
2.2.2 Mains controller layouts

Mains controller



1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. Mains symbol
11. Close breaker
12. Open breaker
13. Breaker symbols
14. -
15. -
16. Stop
17. Start
18. Load symbol

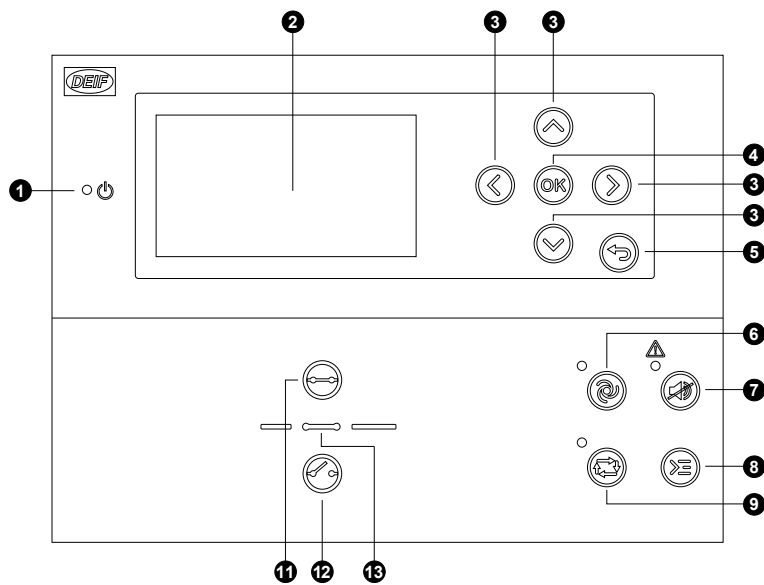
Mains controller with tie breaker



1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. Mains symbol
11. Close breaker
12. Open breaker
13. Breaker symbols
14. -
15. -
16. Stop
17. Start
18. Load symbol

2.2.3 Bus tie breaker controller layouts

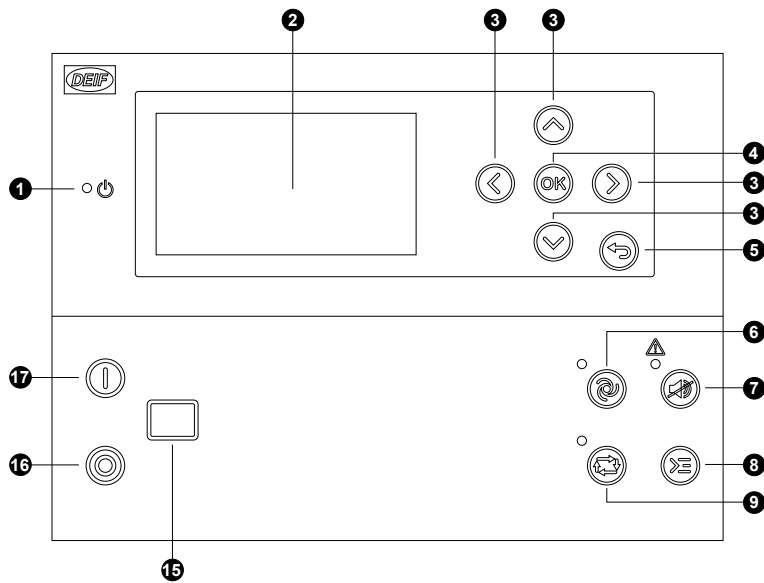
Bus tie braker controller



1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. -
11. Close breaker
12. Open breaker
13. Breaker symbols

2.2.4 Engine Drive controller layout

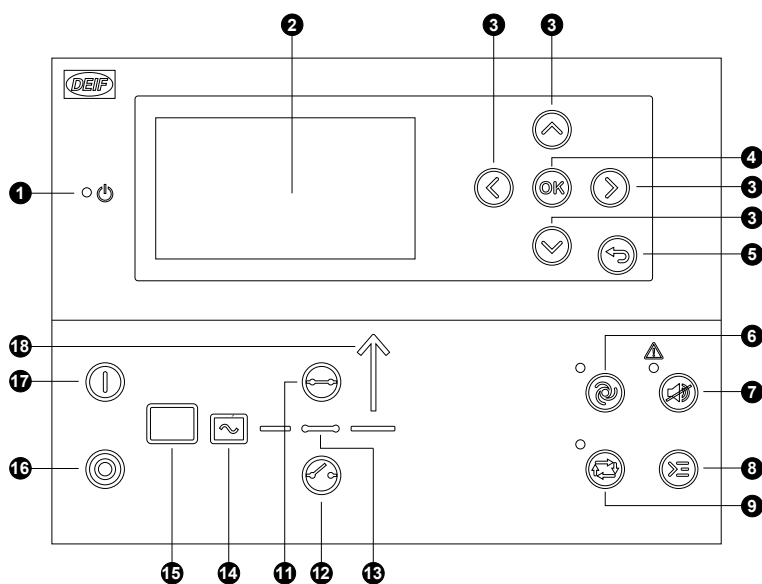
Engine Drive controller



1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. -
11. -
12. -
13. -
14. -
15. Engine
16. Stop
17. Start
18. -

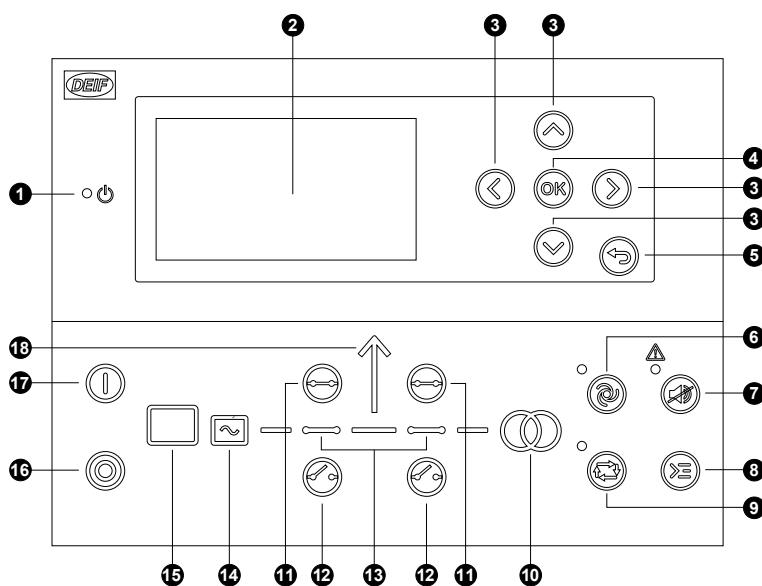
2.2.5 Hybrid controller layouts

Single genset controller in Island mode



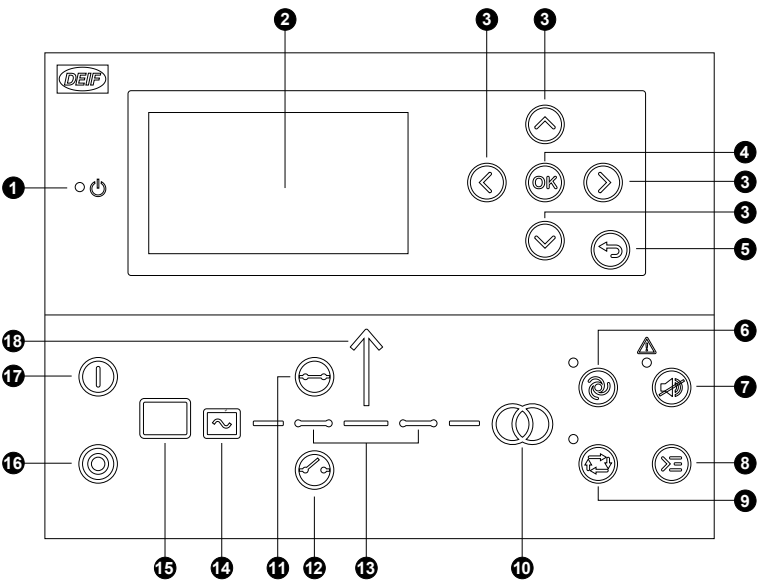
1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. -
11. Close breaker
12. Open breaker
13. Breaker symbols
14. Generator
15. Engine
16. Stop
17. Start
18. Load symbol

Single genset controller with Automatic Mains Failure (AMF)



1. Power ON
2. Display screen (monochrome)
3. Navigation
4. OK
5. Back
6. AUTO mode
7. Silence horn
8. Short cut menu for commands
9. SEMI-AUTO mode
10. Mains symbol
11. Close breaker
12. Open breaker
13. Breaker symbols
14. Generator
15. Engine
16. Stop
17. Start
18. Load symbol

Single genset controller in parallel without mains breaker



- 1. Power ON
- 2. Display screen (monochrome)
- 3. Navigation
- 4. OK
- 5. Back
- 6. AUTO mode
- 7. Silence horn
- 8. Short cut menu for commands
- 9. SEMI-AUTO mode
- 10. Mains symbol
- 11. Close breaker
- 12. Open breaker
- 13. Breaker symbols
- 14. Generator
- 15. Engine
- 16. Stop
- 17. Start
- 18. Load symbol

2.2.6 Mimic function

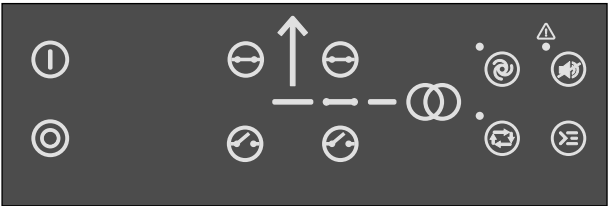
With the Mimic function the operator can choose how the control buttons and LED's are shown on AGC 150, and thereby get a better overview of the controller in different applications.

Configure the Mimic function under **Settings > Basic settings > Controller settings > Display > LED mimic**.

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

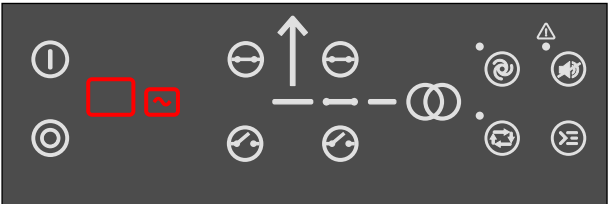
Standard

Control buttons and LED's are continuously visible.
If the genset is stopped, the motor/generator symbols are OFF.



Standard with genset

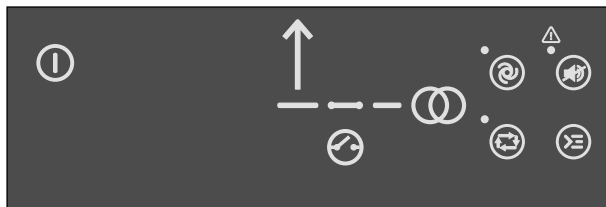
Control buttons and LED's are continuously visible.
If the genset is stopped, the motor/generator symbols are shown in red.



Guided

Active control buttons and LED's are visible, inactive are not shown.

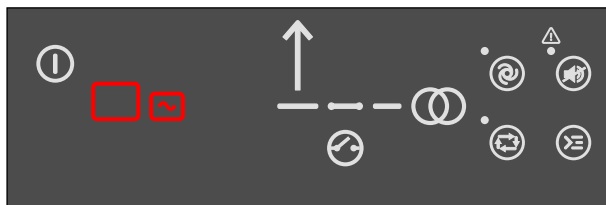
Example: AGC 150 is in SEMI-AUTO mode. The generator is stopped. The only possible action is to start the generator, and so only the Start button is visible.



Guided with genset

Active control buttons, LED's and motor/generator symbols are visible, inactive are not shown.

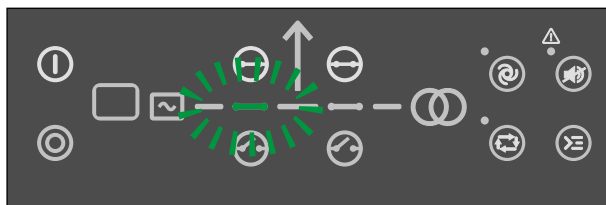
Example: AGC 150 is in SEMI-AUTO mode. The generator is stopped. The only possible action is to start the generator, and so only the Start button and the red motor/generator symbols are visible.



All Mimic settings

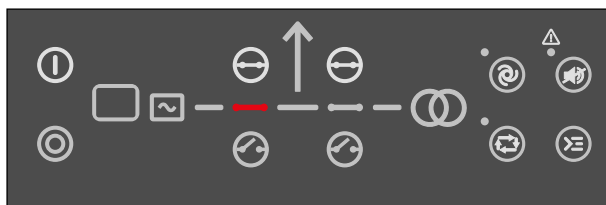
The breaker symbol flashes green:

- Controller is synchronising
- Controller is de-loading



The breaker symbol turns red:

- Breaker position failure
- Breaker close failure



3. Running modes

3.1 Mode overview

AGC 150 has four different running modes and one block mode:

- **AUTO:** In AUTO mode, the controller will operate automatically, and the operator cannot initiate any sequences manually.
- **SEMI-AUTO:** In SEMI-AUTO mode, the operator has to initiate all sequences. This can be done via the push-button functions, Modbus commands or digital inputs. When started in SEMI-AUTO mode, the genset will run at nominal values.
- **Test:** The test sequence will start when the test mode is selected.
- **Manual:** When Manual mode is selected, the digital increase/decrease inputs can be used (if they have been configured) as well as the *Start* and *Stop* push-buttons. When starting in Manual mode, the genset will start without any subsequent regulation.
- **Block:** When the block mode is selected, the controller is not able to initiate any sequences, for example the start sequence. Block mode must be selected when maintenance work is carried out on the genset.



CAUTION

The genset will shut down if block mode is selected while the genset is running.

4. Menu structure

4.1 Menu structure

The AGC 150 has two menu systems, which can be used without password entry:

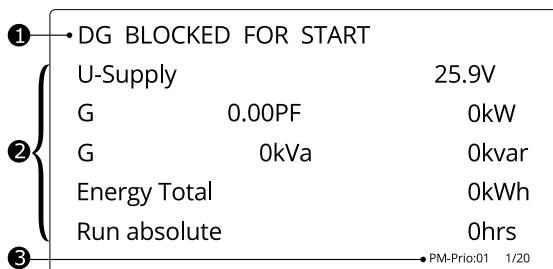
- **The View menu system:** The commonly used menu system, with 20 configurable windows that can be entered with the arrow buttons.
- **The Settings menu system:** The menu system for setting up the controller, and to see detailed information that is not available in the view menu system.

Changes to the parameter settings are password protected.

4.2 The View menu

When AGC 150 is powered up, the View menu appears. It is the daily use menu for the operator, which shows various measured values. If an alarm is present, the event and alarm list is shown at power-up.

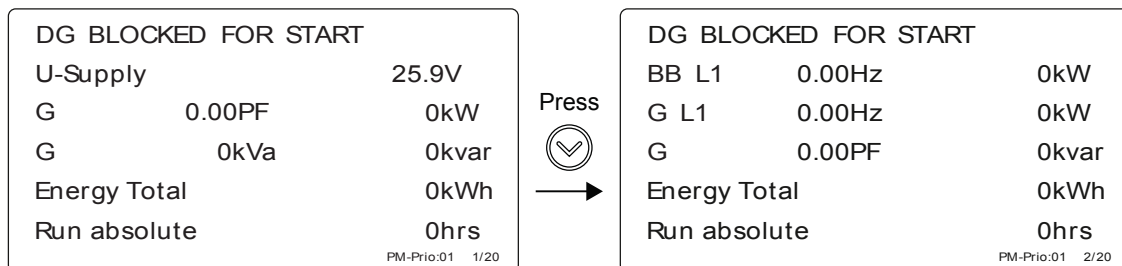
Figure 4.1 The View menu



1. Status line.
2. Operational status or measurements.
3. View Page number, Power Management priority (if available) or Engine DEF level (if available).

The View menu contains up to 20 different pages. Navigate through the pages with the *Up*  and *Down*  buttons.

Figure 4.2 Example: Navigating the View menu



4.3 Status line texts

Status text	Condition	Comment
BLOCK	Block mode is activated.	
SIMPLE TEST	Test mode is activated.	
LOAD TEST		
FULL TEST		
SIMPLE TEST ###.min		
LOAD TEST ###.min	Test mode is activated and test timer counting down.	
FULL TEST ###.min		
ISLAND MAN	Genset stopped or running and no other action taking place.	
ISLAND SEMI		
ISLAND AUTO	Genset stopped in AUTO mode.	
READY ISLAND AUTO		
ISLAND ACTIVE	Genset running in AUTO mode.	
AMF MAN	Genset stopped or running and no other action taking place.	
AMF SEMI		
AMF AUTO	Genset stopped in AUTO mode.	
READY AMF AUTO		Genset is stopped, ready to auto start with mains failure.
AMF ACTIVE	Genset running in AUTO mode.	
FIXED POWER MAN	Genset stopped or running and no other action taking place.	
FIXED POWER SEMI		
READY FIXED P AUTO	Genset stopped in AUTO mode.	
FIXED POWER ACTIVE	Genset running in AUTO mode.	
PEAK SHAVING MAN	Genset stopped or running and no other action taking place.	
PEAK SHAVING SEMI		
PEAK SHAVING AUTO		
READY PEAK SHAV AUTO	Genset stopped in AUTO mode.	
PEAK SHAVING ACTIVE	Genset running in AUTO mode.	
LOAD TAKE OVER MAN	Genset stopped or running and no other action taking place.	
LOAD TAKE OVER SEMI		
LOAD TAKE OVER AUTO		
READY LTO AUTO	Genset stopped in AUTO mode.	Genset is stopped, ready to start and load take-over.
LTO ACTIVE	Genset running in AUTO mode.	Genset is running, ready for load take-over.
MAINS P EXPORT MAN	Genset stopped or running and no other action taking place.	
MAINS P EXPORT SEMI		
MAINS P EXPORT AUTO		
READY MPE AUTO	Genset stopped in AUTO mode.	

Status text	Condition	Comment
MPE ACTIVE	Genset running in mains power export mode.	
DG BLOCKED FOR START	Generator stopped and active alarm(s) on the generator.	
GB ON BLOCKED	Generator running, GB open and an active Trip GB alarm.	
SHUTDOWN OVERRIDE	The configurable input is active.	
ACCESS LOCK	The configurable input is activated, and the operator tries to activate one of the blocked keys.	
GB TRIP EXTERNALLY	Some external equipment has tripped the breaker.	An external trip is logged in the event log.
MB TRIP EXTERNALLY	Some external equipment has tripped the breaker.	An external trip is logged in the event log.
IDLE RUN	The Idle run function is active. The genset will not stop until a timer has expired.	
IDLE RUN ###.##min	The Idle run function is active and the timer is counting down.	
COMPENSATION FREQ	Compensation is active.	The frequency is not at the nominal setting.
Aux. test ##.##V #####s	Battery test activated, and the timer is counting down.	
DELOAD	Decreasing the load of the genset in order to open the breaker.	
START DG(s) IN ###s	The start genset set point is exceeded.	Genset will start when timer expires.
STOP DG(s) IN ###s	The stop genset set point is exceeded.	Genset will stop when timer expires.
START PREPARE	The start prepare relay is activated.	
START RELAY ON	The start relay is activated.	
START RELAY OFF	The start relay is deactivated during the start sequence.	
MAINS FAILURE	Mains failure and mains failure timer expired.	
MAINS FAILURE IN ###s	Frequency or voltage measurement is outside the limits.	The timer shown is the mains failure delay.
MAINS U OK DEL #####s	Mains voltage is OK after a mains failure.	The timer shown is the mains OK delay.
MAINS f OK DEL #####s	Mains frequency is OK after a mains failure.	The timer shown is the mains OK delay.
Hz/V OK IN ###s	The voltage and frequency on the genset is OK.	When the timer runs out, it is allowed to operate the generator breaker.
COOLING DOWN ###s	Cooling-down period is activated.	
GENSET STOPPING	This info is shown when cooling down has finished.	
EXT. STOP TIME ###s		
---xx----- >00< -----	Generator is synchronising.	The "xx" marks the actual generator phase angle position in the synchronisation. When the "xx" is aligned

Status text	Condition	Comment
		over the 00 centre, the generator is synchronised.
TOO SLOW 00<-----	Generator running too slow during synchronisation.	
-----> 00 TOO FAST	Generator running too fast during synchronisation.	
EXT. START ORDER	A planned AMF sequence is activated.	There is no failure on the mains during this sequence.
SELECT GENSET MODE	Power management has been deactivated and no other genset mode has been selected.	
RAMP TO #####kW	The power ramp is ramping in steps, and the next step that will be reached after the timer has expired will be displayed.	
DERATED TO #####kW	Displays the ramp-down set point.	
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 indicates that other breakers cannot close to the busbar because of position failure on one or more GBs.
WARM UP RAMP	Warm up ramp is active.	The available power is limited until the predefined temperature is reached or when the input which activated warm up ramp is set low.
SUNSPEC IDENTIFYING*	Connecting to PV inverter.	Only Sunspec inverters
SUNSPEC INCOMPATIBLE*	PV inverter is not compatible.	Only Sunspec inverters
SUNSPEC INITIALIZED*	PV inverter is successfully initialized.	Only Sunspec inverters

NOTE *Only AGC 150 Hybrid version.

4.4 Texts only related to power management

Table 4.1 All controller types

Status text	Condition	Comment
BROADCASTING APPL. #	Broadcast of an application through the CAN line.	Broadcasts one of the four applications from one AGC 150 to the other controllers in the power management system.
RECEIVING APPL. #	Receiving an application.	
BROADCAST COMPLETED	Successful broadcast of an application.	
RECEIVE COMPLETED	Application received successfully.	
BROADCAST ABORTED	Broadcast terminated.	
RECEIVE ERROR	Application is not received correctly.	
QUICK SETUP ERROR	Quick setup of the application failed.	
MOUNT CAN CONNECTOR	Connect the power management CAN line.	
ADAPT IN PROGRESS	The AGC 150 is receiving the application, to which it has just been connected.	

Status text	Condition	Comment
SETUP IN PROGRESS	The new controller is being added to the existing application.	
SETUP COMPLETED	Successful update of the application in all AGC 150 controllers.	
REMOVE CAN CONNECTOR	Remove the power management CAN lines.	

Table 4.2 DG controller

Status text	Condition	Comment
BLACKOUT ENABLE	This info is shown if a CAN failure is present in a power management application.	
UNIT STANDBY	If redundant mains units are present, this message is shown on the redundant unit.	
DELOADING BTB XX	DG units are load sharing asymmetrically to de-load BTB XX dividing two sections in an island application.	
BTB XX DIVIDING SEC.	BTB XX is dividing two sections in an island application.	
SYNCHRONISING TB XX	TB XX is synchronising.	
SYNCHRONISING MB XX	MB XX is synchronising.	
SYNCHRONISING BTB XX	BTB XX is synchronising.	
De-loading TB XX	Displays that a tie breaker is being de-loaded in SEMI-AUTO mode.	

Table 4.3 Mains controller

Status text	Condition	Comment
UNIT STANDBY	If redundant mains units are present this message is shown on the redundant unit.	
TB TRIP EXTERNALLY	Some external equipment has tripped the breaker.	An external trip is logged in the event log.

Table 4.4 BTB controller

Status text	Condition	Comment
DIVIDING SECTION	A BTB unit is dividing two sections in an island application.	
READY AUTO OPERATION	BTB unit in AUTO mode and ready for breaker operation (no active BTB trip alarm).	
SEMI OPERATION	BTB unit in SEMI-AUTO mode.	
AUTO OPERATION	BTB unit in AUTO mode, but not ready for breaker operation (active BTB trip alarm).	
BLOCKED FOR CLOSING	Last open BTB in a ring bus.	
BTB TRIP EXTERNALLY	Some external equipment has tripped the breaker.	An external trip is logged in the event log.

4.5 Default display views

Overview of the default display views 1 to 20. The display views are customisable via the Utility Software .

Table 4.5 Display view 1

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	U-Supply 0.0V	U-Supply 0.0V	U-Supply 0.0V	PV OFF 0kvar 0kW	U-Supply 0.0V
2	G 0.00PF 0kW	M 0.00PF 0kW	BA L1 0.00Hz 0V	G 0.00PF 0kW	MPU 0rpm
3	G 0kVA 0kvar	M 0kVA 0kvar	BA 0kVA 0kvar	G 0kVA 0kvar	-
4	Energy Total 0kWh	Energy Total 0kWh	BA 0.00PF 0kW	G energy Total 0kWh	[yyyy-mm-dd time]
5	Run absolute 0 hrs	M 0.00PF 0kW	BA 0 0 0A	Run absolute 0hrs	Run absolute 0 hrs

Table 4.6 Display view 2

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	BB L1 0.00Hz 0V	BB L1 0.00Hz 0V	BB L1 0.00Hz 0V	BB L1 0.00Hz 0V	Multi input 20 0.0V
2	G L1 0.00Hz 0V	M L1 0.00Hz 0V	BA L1 0.00Hz 0V	G L1 0.00Hz 0V	Multi input 21 0.0V
3	G 0.00PF 0kW	M 0.00PF 0kW	BA 0kVA 0kvar	G 0.00PF 0kW	Multi input 22 0.0V
4	G 0kVA 0kvar	M 0kVA 0kvar	BA 0.00PF 0kW	G 0kVA 0kvar	Multi input 23 0.0V
5	G 0 0 0A	M 0 0 0A	BA 0 0 0A	G 0 0 0A	-

Table 4.7 Display view 3

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	-	-	-	-	Aftertreatment
2	Synchroniser (graphic)	Synchroniser (graphic)	Synchroniser (graphic)	Synchroniser (graphic)	-
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-

Table 4.8 Display view 4

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	BB L1 0.00Hz 0V	M 0 0 0V	BA 0 0 0V	BB L1 0.00Hz 0V	T. Coolant N.A.
2	G 0.00PF 0kW	M L1 0.00Hz 0V	BA f-L1 0.00Hz	G 0.00PF 0kW	T. TurboOil N.A.
3	G 0kVA 0kvar	-	-	G 0kVA 0kvar	T. Exh. R N.A.
4	G 0 0 0A	BB 0 0 0V	BB 0 0 0V	G 0 0 0A	T. Oil N.A.
5	G L1 0.00Hz 0V	BB L1 0.00Hz 0V	BB f-L1 0.00Hz	G L1 0.00Hz 0V	T. Fuel N.A.

Table 4.9 Display view 5

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	G U-L1L2 0V	M P 0kW	BA P 0kW	G U-L1L2 0V	Serv1 0d 0h
2	G U-L2L3 0V	M Q 0kvar	BA Q 0kvar	G U-L2L3 0V	Serv2 0d 0h

Line	Generator	Mains	BTB	Hybrid	Engine Drive
3	G U-L3L1 0V	M S 0kVA	BA S 0kVA	G U-L3L1 0V	-
4	G U-Max 0V	M 0 0 0V	BA 0 0 0V	G U-Max 0V	-
5	G U-Min 0V	M 0 0 0A	BA 0 0 0A	G U-Min 0V	-

Table 4.10 Display view 6

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	G I-L1 0A	M I-L1 0A	BA I-L1 0A	G I-L1 0A	-
2	G I-L2 0A	M I-L2 0A	BA I-L2 0A	G I-L2 0A	-
3	G I-L3 0A	M I-L3 0A	BA I-L3 0A	G I-L3 0A	-
4	GB Operations 0	M 0.00PF 0kW	BA 0.00PF 0kW	-	-
5	MB Operations 0	M 0 0 0V	BA 0 0 0V	-	-

Table 4.11 Display view 7

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	G f-L1 0.00Hz	M f-L1 0.00Hz	BA f-L1 0.00Hz	G f-L1 0.00Hz	-
2	G f-L2 0.00Hz	M f-L2 0.00Hz	BA f-L2 0.00Hz	G f-L2 0.00Hz	-
3	G f-L3 0.00Hz	M f-L3 0.00Hz	BA f-L3 0.00Hz	G f-L3 0.00Hz	-
4	-	M 0.00PF 0kW	BA 0.00PF 0kW	-	-
5	-	M 0 0 0V	BA 0 0 0A	-	-

Table 4.12 Display view 8

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	G P 0kW	M U-L1N 0V	BA U-L1L2 0V	G P 0kW	-
2	G Q 0kvar	M U-L2N 0V	BA U-L2L3 0V	G Q 0kvar	-
3	G S 0kVA	M U-L3N 0V	BA U-L3L1 0V	G S 0kVA	-
4	G PF 0.00	M f-L1 0.00Hz	BA f-L1 0.00Hz	G PF 0.00	-
5	[yyyy-mm-dd time]	M 0 0 0A	BA 0 0 0A	PV Q reference 0kvar	-

Table 4.13 Display view 9

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	P Available 0kW	P Available 0kW	BB U-L1L2 0V	P Available 0kW	-
2	P Consumed 0kW	P Consumed 0kW	BB U-L1L2 0V	P Consumed 0kW	-
3	P 0kW 0%	P 0kW 0%	BB U-L3L1 0V	P 0kW 0%	-
4	-	Q 0kvar 0%	BB f-L1 0.00Hz	PV P reference 0kW	-
5	-	S 0kva 0%	BA 0 0 0A	PV actual nom. P 0kW	-

Table 4.14 Display view 10

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	G U-L1N 0V	M U-L1L2 0V	Multi input 20 0.0V	G U-L1N 0V	-
2	G U-L2N 0V	M U-L2L3 0V	Multi input 21 0.0V	G U-L2N 0V	-
3	G U-L3N 0V	M U-L3L1 0V	Multi input 22 0.0V	G U-L3N 0V	-
4	-	M f-L1 0.00Hz	Multi input 23 0.0V	G energy total 0kWh	-
5	-	M 0 0 0A	-	Run absolute 0hrs	-

Table 4.15 Display view 11

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	BB U-L1L2 0V	BB U-L1L2 0V	-	BB U-L1L2 0V	-
2	BB U-L2L3 0V	BB U-L2L3 0V	[yyyy-mm-dd time]	BB U-L2L3 0V	-
3	BB U-L3L1 0V	BB U-L3L1 0V	-	BB U-L3L1 0V	-
4	BB U-Max 0V	BB f-L1 0.00Hz	BTB Operations 0	BB U-Max 0V	-
5	BB U-Min 0V	M 0 0 0A	-	BB U-Min 0V	-

Table 4.16 Display view 12

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	G Angle L1L2 -179.9deg	M U-L1N 0V	BB-BA Ang -180.0deg	G Angle L1L2 -179.9deg	-
2	G Angle L2L3 -179.9deg	M U-L2N 0V	BA AngL1L2 -179.9deg	G Angle L2L3 -179.9deg	-
3	G Angle L3L1 -179.9deg	M U-L3N 0V	BA AngL2L3 -179.9deg	G Angle L3L1 -179.9deg	-
4	AVR: NO REGULATION	M 0.00PF 0kW	BB AngL1L2 -179.9deg	BB-G Angle -180.0deg	-
5	GOV: NO REGULATION	Energy Total 0kWh	BB AngL3L1 -179.9deg	-	-

Table 4.17 Display view 13

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	L-L OV P 0kW	Multi input 20 0.0V	-	Run absolute 0hrs	-
2	Amps 0A Q 0kvar	Multi input 21 0.0V	-	GB Operations 0	-
3	Pf 0.00 kW 0%	Multi input 22 0.0V	-	MB Operations 0	-
4	GOV 50.0% AVR 50.0%	Multi input 23 0.0V	-	PVB Off	-
5	R-Down 2,0% R-Up 3.3%	-	-	-	-

Table 4.18 Display view 14

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	Tgt 0kW 0%	-	-	PV E total 0kWh	-
2	Tgt 0kvar 0%	[yyyy-mm-dd time]	-	PV E year 0kWh	-
3	Tgt 0.0 Hz 0.0	-	-	PV E month 0kWh	-
4	Tgt 0V L-N 0V	MB Operations 0	-	PV E week 0kWh	-
5	kW 0% Q 0%	TB Operations 0	-	PV E day 0kWh	-

Table 4.19 Display view 15

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	BB-G Ang -180.0deg	BB-M Angle -180.0deg	-	PV E total 0kvar	-
2	G Ang L1L2 -179.9deg	M Angle L1L2 -179.9deg	-	PV E year 0kvar	-
3	BB Ang L1L2 -179.9deg	M Angle L1L2 -179.9deg	-	PV E month 0kvar	-
4	BB Ang L2L3 -179.9deg	BB Ang L1L2 -179.9deg	-	PV E week 0kvar	-
5	-	BB Ang L3L1 -179.9deg	-	PV E day 0kvar	-

Table 4.20 Display view 16

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	T. Coolant N.A.	-	-	PV E curta. total 0kWh	-
2	T. TurboOil N.A.	-	-	PV E curta. year 0kWh	-
3	T. Exh. R N.A.	-	-	PV E curta. month 0kWh	-
4	T. Oil N.A.	-	-	PV E curta. week 0kWh	-
5	T. Fuel N.A.	-	-	PV E curta. day 0kWh	-

Table 4.21 Display view 17

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	Aftertreatment	-	-	Start attempts 0	-
2	-	-	-	GB Operations 0	-
3	-	-	-	MB Operations 0	-
4	-	-	-	U-Supply 0V	-
5	-	-	-	[yyyy-mm-dd time]	-

Table 4.22 Display view 18

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	Multi input 20 0.0V	-	-	Multi input 20 0.0V	-
2	Multi input 21 0.0V	-	-	Multi input 21 0.0V	-
3	Multi input 22 0.0V	-	-	Multi input 22 0.0V	-
4	Multi input 23 0.0V	-	-	Multi input 23 0.0V	-
5	MPU 0rpm	-	-	MPU 0rpm	-

Table 4.23 Display view 19

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	P available 100%	-	-	P available 100%	-
2	P consumed 0%	-	-	P consumed 0%	-
3	G 0.00PF 0%P	-	-	G 0.00PF 0%P	-
4	BB f-L1 0.00Hz	-	-	BB f-L1 0.00Hz	-
5	BB Ang L1L2 -179.9deg	-	-	BB Ang L1L2 -179.9deg	-

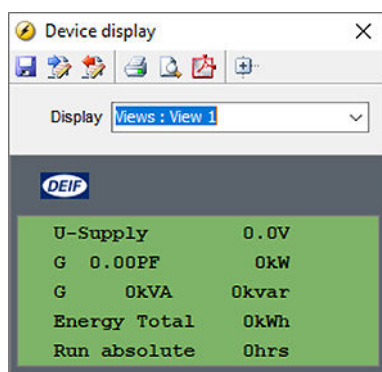
Table 4.24 Display view 20

Line	Generator	Mains	BTB	Hybrid	Engine Drive
1	P 0kW 0%	-	-	P 0kW 0%	-
2	Q 0kvar 0%	-	-	Q 0kvar 0%	-
3	S 0kVA 0%	-	-	S 0kVA 0%	-
4	-	-	-	BB Ang L3L1 -179.9deg	-
5	-	-	-	BB-G Ang -180.0deg	-

4.6 Available display texts

You can configure the display views to apply with your wishes. This is made with the Utility Software:

- In the toolbar, select the *Configuration of the user views* button.
- In the pop-up box, select the display view to be changed.



- Select the display line to be changed.
- In the new pop-up box, navigate to the desired text line, then select OK.

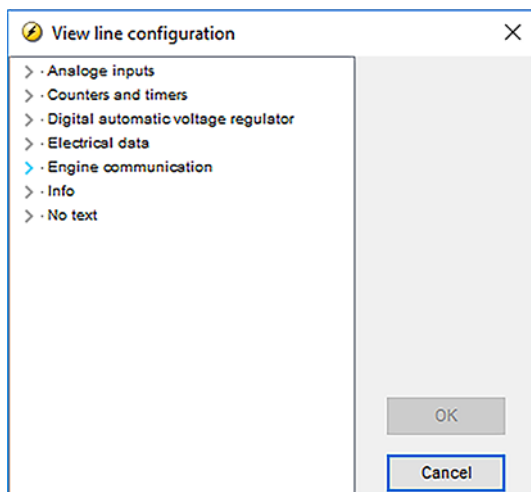


Table 4.25 Analogue inputs

Generator	Mains	BTB	Hybrid	Engine Drive
Multi input 20 0	Multi input 20 0	Multi input 20 0	Multi input 20 0	Multi input 20 0
Multi input 21 0	Multi input 21 0	Multi input 21 0	Multi input 21 0	Multi input 21 0
Multi input 22 0	Multi input 22 0	Multi input 22 0	Multi input 22 0	Multi input 22 0
Multi input 23 0	Multi input 23 0	Multi input 23 0	Multi input 23 0	Multi input 23 0
MPU 0rpm			MPU 0rpm	MPU 0rpm

Table 4.26 Counters and timers

Generator	Mains	BTB	Hybrid	Engine Drive
GB Operations 0	MB Operations 0	BTB Operations 0	GB Operations 0	
MB Operations 0			MB Operations 0	
EIC Trip Engine Running Time	TB Operations 0		EIC Trip Engine Running Time	EIC Trip Engine Running Time
EIC Trip Idle Time			EIC Trip Idle Time	EIC Trip Idle Time
Next prio 0H 0m			Next prio 0H 0m	
Run absolute 0hrs			Run absolute 0hrs	Run absolute 0hrs
Run relative 0Hour			Run relative 0Hour	Run relative 0Hour
Run ShtD 0H 0m			Run ShtD 0H 0m	Run ShtD 0H 0m
Run Time load profile 0Hour			Run Time load profile 0Hour	
Start att Dbl 0			Start att Dbl 0	Start att Dbl 0
Start att Std 0			Start att Std 0	Start att Std 0
Start attempts 0			Start attempts 0	Start attempts 0
Extended alarm timer 1	Extended alarm timer 1	Extended alarm timer 1	Extended alarm timer 1	
Extended alarm timer 2	Extended alarm timer 2	Extended alarm timer 2	Extended alarm timer 2	
Extended alarm timer 3	Extended alarm timer 3	Extended alarm timer 3	Extended alarm timer 3	
Extended alarm timer 4	Extended alarm timer 4	Extended alarm timer 4	Extended alarm timer 4	
Fan A pr. 0 0hrs			Fan A pr. 0 0hrs	Fan A pr. 0 0hrs

Generator	Mains	BTB	Hybrid	Engine Drive
Fan B pr. 0 0hrs			Fan B pr. 0 0hrs	Fan B pr. 0 0hrs
Fan C pr. 0 0hrs			Fan C pr. 0 0hrs	Fan C pr. 0 0hrs
Fan D pr. 0 0hrs			Fan D pr. 0 0hrs	Fan D pr. 0 0hrs
Pulse counter 1 0	Pulse counter 1 0	Pulse counter 1 0	Pulse counter 1 0	
Pulse counter 2 0	Pulse counter 2 0	Pulse counter 2 0	Pulse counter 2 0	
Serv 1 0d 0h			Serv 1 0d 0h	Serv 1 0d 0h
Serv 2 0d 0h			Serv 2 0d 0h	Serv 2 0d 0h

Table 4.27 Digital automatic voltage regulator

Generator	Mains	BTB	Hybrid	Engine Drive
DAVR Gen AC			DAVR Gen AC	
DAVR Gen Alarm			DAVR Gen Alarm	
DAVR Gen Curr			DAVR Gen Curr	
DAVR Gen ExcC			DAVR Gen ExcC	
DAVR Gen Freq			DAVR Gen Freq	
DAVR Gen kVA			DAVR Gen kVA	
DAVR Gen kvar			DAVR Gen kvar	
DAVR Gen kW			DAVR Gen kW	
DAVR Gen PF			DAVR Gen PF	
DAVR Gen PF lag			DAVR Gen PF lag	
DAVR Gen PT_100_1			DAVR Gen PT_100_1	
DAVR Gen PT_100_2			DAVR Gen PT_100_2	
DAVR Gen PT_100_3			DAVR Gen PT_100_3	
DAVR Gen PT_100_4			DAVR Gen PT_100_4	
DAVR Gen PT_100_5			DAVR Gen PT_100_5	

Table 4.28 Electrical data

Generator	Mains	BTB	Hybrid	Engine Drive
4th CT P 0kW	4th CT P 0kW	4th CT P 0kW	4th CT P 0kW	
I earth 0A	I earth 0A	I earth 0A	I earth 0A	
I neutral 0A	I neutral 0A	I neutral 0A	I neutral 0A	
I max. demand L1 0A	I max. demand L1 0A	I max. demand L1 0A	I max. demand L1 0A	
I max. demand L2 0A	I max. demand L2 0A	I max. demand L2 0A	I max. demand L2 0A	
I max. demand L3 0A	I max. demand L3 0A	I max. demand L3 0A	I max. demand L3 0A	
I thermal demand L1 0A	I thermal demand L1 0A	I thermal demand L1 0A	I thermal demand L1 0A	
I thermal demand L2 0A	I thermal demand L2 0A	I thermal demand L2 0A	I thermal demand L2 0A	
I thermal demand L3 0A	I thermal demand L3 0A	I thermal demand L3 0A	I thermal demand L3 0A	
U-Supply 0.0V	U-Supply 0.0V	U-Supply 0.0V	U-Supply 0.0V	U-Supply 0.0V
BB f-L1 0.00Hz	BB f-L1 0.00Hz		BB f-L1 0.00Hz	BB f-L1 0.00Hz

Generator	Mains	BTB	Hybrid	Engine Drive
BB f-L2 0.00Hz	BB f-L2 0.00Hz		BB f-L2 0.00Hz	BB f-L2 0.00Hz
BB f-L3 0.00Hz	BB f-L3 0.00Hz		BB f-L3 0.00Hz	BB f-L3 0.00Hz
		P BTB Ana21 0kW		
BB 0 0 0V	BB 0 0 0V	BB 0 0 0V	BB 0 0 0V	BB 0 0 0V
BB U-L1L2 0V	BB U-L1L2 0V	BB U-L1L2 0V	BB U-L1L2 0V	BB U-L1L2 0V
BB U-L1N 0V	BB U-L1N 0V	BB U-L1N 0V	BB U-L1N 0V	BB U-L1N 0V
BB U-L2L3 0V	BB U-L2L3 0V	BB U-L2L3 0V	BB U-L2L3 0V	BB U-L2L3 0V
BB U-L2N 0V	BB U-L2N 0V	BB U-L2N 0V	BB U-L2N 0V	BB U-L2N 0V
BB U-L3L1 0V	BB U-L3L1 0V	BB U-L3L1 0V	BB U-L3L1 0V	BB U-L3L1 0V
BB U-L3N 0V	BB U-L3N 0V	BB U-L3N 0V	BB U-L3N 0V	BB U-L3N 0V
BB U-Max 0V	BB U-Max 0V	BB U-Max 0V	BB U-Max 0V	BB U-Max 0V
BB U-Min 0V	BB U-Min 0V	BB U-Min 0V	BB U-Min 0V	BB U-Min 0V
Positive volt 0.0%	Positive volt 0.0%	Positive volt 0.0%	Positive volt 0.0%	
BB freq and G freq			BB freq and G freq	
BB L1 0.0Hz 0V	BB L1 0.0Hz 0V		BB L1 0.0Hz 0V	BB L1 0.0Hz 0V
BB L-N and G L-N			BB L-N and G L-N	
Current and Q total			Current and Q total	
G 0%S 0%Q	M 0%S 0%Q		G 0%S 0%Q	G 0%S 0%Q
G 0kVA 0kvar	M 0kVA 0kvar	BA 0kVA 0kvar	G 0kVA 0kvar	G 0kVA 0kvar
G 0.00PF 0%P	M 0.00PF 0%P	BA 0.00PF 0%P	G 0.00PF 0%P	G 0.00PF 0%P
G 0.00PF 0kW	M 0.00PF 0kW		G 0.00PF 0kW	G 0.00PF 0kW
G L1 0.0Hz 0V		BA L1 0.0Hz 0V	G L1 0.0Hz 0V	G L1 0.0Hz 0V
		BB L1 0.0Hz 0V		
GOV and AVR output			GOV and AVR output	
kW % and kvar %			kW % and kvar %	
L-L and P total			L-L and P total	
P 0kw 0%	P 0kw 0%		P 0kw 0%	P 0kw 0%
P 0kW U-Gen L1N 0V			P 0kW U-Gen L1N 0V	P 0kW U-Gen L1N 0V
P GTot and P %			P GTot and P %	
Pf and kW %			Pf and kW %	
Q 0kvar 0%	Q 0kvar 0%		Q 0kvar 0%	Q 0kvar 0%
Q GTot and Q %			Q GTot and Q %	
Ramp down/up setpoint			Ramp down/up setpoint	
S 0kVA 0%	S 0kVA 0%		S 0kVA 0%	S 0kVA 0%
Energy Day 0kWh	Energy Day 0kWh	Energy Day 0kWh	Energy Day 0kWh	Energy Day 0kWh
Energy Day 0kvarh	Energy Day 0kvarh	Energy Day 0kvarh	Energy Day 0kvarh	Energy Day 0kvarh
Energy Month 0kWh	Energy Month 0kWh	Energy Month 0kWh	Energy Month 0kWh	Energy Month 0kWh
Energy Month 0kvarh	Energy Month 0kvarh	Energy Month 0kvarh	Energy Month 0kvarh	Energy Month 0kvarh
Energy Total 0kWh	Energy Total 0kWh	Energy Total 0kWh	Energy Total 0kWh	Energy Total 0kWh

Generator	Mains	BTB	Hybrid	Engine Drive
Energy Total 0kvarh	Energy Total 0kvarh	Energy Total 0kvarh	Energy Total 0kvarh	Energy Total 0kvarh
Energy Week 0kWh	Energy Week 0kWh	Energy Week 0kWh	Energy Week 0kWh	Energy Week 0kWh
Energy Week 0kvarh	Energy Week 0kvarh	Energy Week 0kvarh	Energy Week 0kvarh	Energy Week 0kvarh
Import Day 0kWh	Import Day 0kWh	Import Day 0kWh	Import Day 0kWh	Import Day 0kWh
Import Day 0kvarh	Import Day 0kvarh	Import Day 0kvarh	Import Day 0kvarh	Import Day 0kvarh
Import Month 0kWh	Import Month 0kWh	Import Month 0kWh	Import Month 0kWh	Import Month 0kWh
Import Month 0kvarh	Import Month 0kvarh	Import Month 0kvarh	Import Month 0kvarh	Import Month 0kvarh
Import Total 0kWh	Import Total 0kWh	Import Total 0kWh	Import Total 0kWh	Import Total 0kWh
Import Total 0kvarh	Import Total 0kvarh	Import Total 0kvarh	Import Total 0kvarh	Import Total 0kvarh
Import Week 0kWh	Import Week 0kWh	Import Week 0kWh	Import Week 0kWh	Import Week 0kWh
Import Week 0kvarh	Import Week 0kvarh	Import Week 0kvarh	Import Week 0kvarh	Import Week 0kvarh
G 0 0 0A	M 0 0 0A	BA 0 0 0A	G 0 0 0A	G 0 0 0A
G I-L1 0A	M I-L1 0A	BA I-L1 0A	G I-L1 0A	G I-L1 0A
G I-L2 0A	M I-L2 0A	BA I-L2 0A	G I-L2 0A	G I-L2 0A
G I-L3 0A	M I-L3 0A	BA I-L3 0A	G I-L3 0A	G I-L3 0A
Negative curr. 0.0%	Negative curr. 0.0%	Negative curr. 0.0%	Negative curr. 0.0%	
Zero curr. 0.0%	Zero curr. 0.0%	Zero curr. 0.0%	Zero curr. 0.0%	
G f-L1 0.00Hz	M f-L1 0.00Hz	BA f-L1 0.00Hz	G f-L1 0.00Hz	G f-L1 0.00Hz
G f-L2 0.00Hz	M f-L2 0.00Hz	BA f-L2 0.00Hz	G f-L2 0.00Hz	G f-L2 0.00Hz
G f-L3 0.00Hz	M f-L3 0.00Hz	BA f-L3 0.00Hz	G f-L3 0.00Hz	G f-L3 0.00Hz
G S 0kVA	M S 0kVA	BA S 0kVA	G S 0kVA	G S 0kVA
G S L1 0kVA	M S L1 0kVA	BA S L1 0kVA	G S L1 0kVA	G S L1 0kVA
G S L2 0kVA	M S L2 0kVA	BA S L2 0kVA	G S L2 0kVA	G S L2 0kVA
G S L3 0kVA	M S L3 0kVA	BA S L3 0kVA	G S L3 0kVA	G S L3 0kVA
G Q 0kvar	M Q 0kvar	BA Q 0kvar	G Q 0kvar	G Q 0kvar
G Q L1 0kvar	M Q L1 0kvar	BA Q L1 0kvar	G Q L1 0kvar	G Q L1 0kvar
G Q L2 0kvar	M Q L2 0kvar	BA Q L2 0kvar	G Q L2 0kvar	G Q L2 0kvar
G Q L3 0kvar	M Q L3 0kvar	BA Q L3 0kvar	G Q L3 0kvar	G Q L3 0kvar
G P 0kW	M P 0kW	BA P 0kW	G P 0kW	G P 0kW
G P L1 0kW	M P L1 0kW	BA P L1 0kW	G P L1 0kW	G P L1 0kW
G P L2 0kW	M P L2 0kW	BA P L2 0kW	G P L2 0kW	G P L2 0kW
G P L3 0kW	M P L3 0kW	BA P L3 0kW	G P L3 0kW	G P L3 0kW
G 0 0 0V	M 0 0 0V	BA 0 0 0V	G 0 0 0V	G 0 0 0V
G U-L1L2 0V	M U-L1L2 0V	BA U-L1L2 0V	G U-L1L2 0V	G U-L1L2 0V
G U-L1N 0V	M U-L1N 0V	BA U-L1N 0V	G U-L1N 0V	G U-L1N 0V
G U-L2L3 0V	M U-L2L3 0V	BA U-L2L3 0V	G U-L2L3 0V	G U-L2L3 0V
G U-L2N 0V	M U-L2N 0V	BA U-L2N 0V	G U-L2N 0V	G U-L2N 0V
G U-L3L1 0V	M U-L3L1 0V	BA U-L3L1 0V	G U-L3L1 0V	G U-L3L1 0V
G U-L3N 0V	M U-L3N 0V	BA U-L3N 0V	G U-L3N 0V	G U-L3N 0V

Generator	Mains	BTB	Hybrid	Engine Drive
G U-Max 0V	M U-Max 0V	BA U-Max 0V	G U-Max 0V	G U-Max 0V
G U-Min 0V	M U-Min 0V	BA U-Min 0V	G U-Min 0V	G U-Min 0V
Negative volt. 0.0%	Negative volt. 0.0%	Negative volt. 0.0%	Negative volt. 0.0%	
Zero volt. 0.0%	Zero volt. 0.0%	Zero volt. 0.0%	Zero volt. 0.0%	
		BB f-L1 0.00Hz		
		BB f-L2 0.00Hz		
		BB f-L3 0.00Hz		
G 0.00cosphi	M 0.00cosphi	BA 0.00cosphi	G 0.00cosphi	G 0.00cosphi
G PF 0.00	M PF 0.00	BA PF 0.00	G PF 0.00	G PF 0.00
BB Angle L1L2 0deg	BB Angle L1L2 0deg	BB Angle L1L2 0deg	BB Angle L1L2 0deg	BB Angle L1L2 0deg
BB Angle L2L3 0deg	BB Angle L2L3 0deg	BB Angle L2L3 0deg	BB Angle L2L3 0deg	BB Angle L2L3 0deg
BB-Gen Angle 0deg	BB-Gen Angle 0deg	BB-BA Angle 0deg	BB-Gen Angle 0deg	BB-Gen Angle 0deg
G Angle L1L2 0deg	M Angle L1L2 0deg	BA Angle L1L2 0deg	G Angle L1L2 0deg	G Angle L1L2 0deg
G Angle L2L3 0deg	M Angle L2L3 0deg	BA Angle L2L3 0deg	G Angle L2L3 0deg	G Angle L2L3 0deg
G Angle L3L1 0deg	M Angle L3L1 0deg	BA Angle L3L1 0deg	G Angle L3L1 0deg	G Angle L3L1 0deg
Synchroniser	Synchroniser	Synchroniser	Synchroniser	
	P tie breaker 0kW			
P available 0%	P available 0%		P available 0%	
P available kW	P available kW		P available kW	
P consumed 0%	P consumed 0%		P consumed 0%	
P consumed 0kW	P consumed 0kW		P consumed 0kW	
P DG total 0kW	P DG total 0kW		P DG total 0kW	
P mains 0kW	P mains 0kW		P mains 0kW	
P mains (PM) 0kW	P mains (PM) 0kW		P mains (PM) 0kW	

Table 4.29 Engine communication

Generator	Mains	BTB	Hybrid	Engine Drive
EIC readings			EIC readings	EIC readings

Table 4.30 Hybrid

Generator	Mains	BTB	Hybrid	Engine Drive
			PV actual nom. P	
			PV actual Q and P	
			PV breaker status	
			PV curtailed energy, day	
			PV curtailed energy, month	
			PV curtailed energy, total	

Generator	Mains	BTB	Hybrid	Engine Drive
			PV curtailed energy, week	
			PV curtailed energy, year	
			PV P energy, day	
			PV P energy, month	
			PV P energy, total	
			PV P energy, week	
			PV P energy, year	
			PV P reference	
			PV Q energy, day	
			PV Q energy, month	
			PV Q energy, total	
			PV Q energy, week	
			PV Q energy, year	
			PV Q reference	

Table 4.31 Info

Generator	Mains	BTB	Hybrid	Engine Drive
Date and Time	Date and Time	Date and Time	Date and Time	Date and Time
Parameter ID	Parameter ID	Parameter ID	Parameter ID	Parameter ID
Cosphi ref. current 0.00	Cosphi ref. current 0.00		Cosphi ref. current 0.00	
P ref. actual 0kW			P ref. actual 0kW	
P ref. current 0kW	P ref. current 0kW		P ref. current 0kW	
AVR reg. type			AVR reg. type	
Gov Mode Test	Gov Mode Test	Gov Mode Test	Gov Mode Test	
GOV reg. type			GOV reg. type	
Expected fuel rate			Expected fuel rate	Expected fuel rate

Table 4.32 M-Logic controlled custom view-lines

Generator	Mains	BTB	Hybrid	Engine Drive
Custom view-line 1	Custom view-line 1	Custom view-line 1	Custom view-line 1	Custom view-line 1
Custom view-line 2	Custom view-line 2	Custom view-line 2	Custom view-line 2	Custom view-line 2
Custom view-line 3	Custom view-line 3	Custom view-line 3	Custom view-line 3	Custom view-line 3
Custom view-line 4	Custom view-line 4	Custom view-line 4	Custom view-line 4	Custom view-line 4
Custom view-line 5	Custom view-line 5	Custom view-line 5	Custom view-line 5	Custom view-line 5

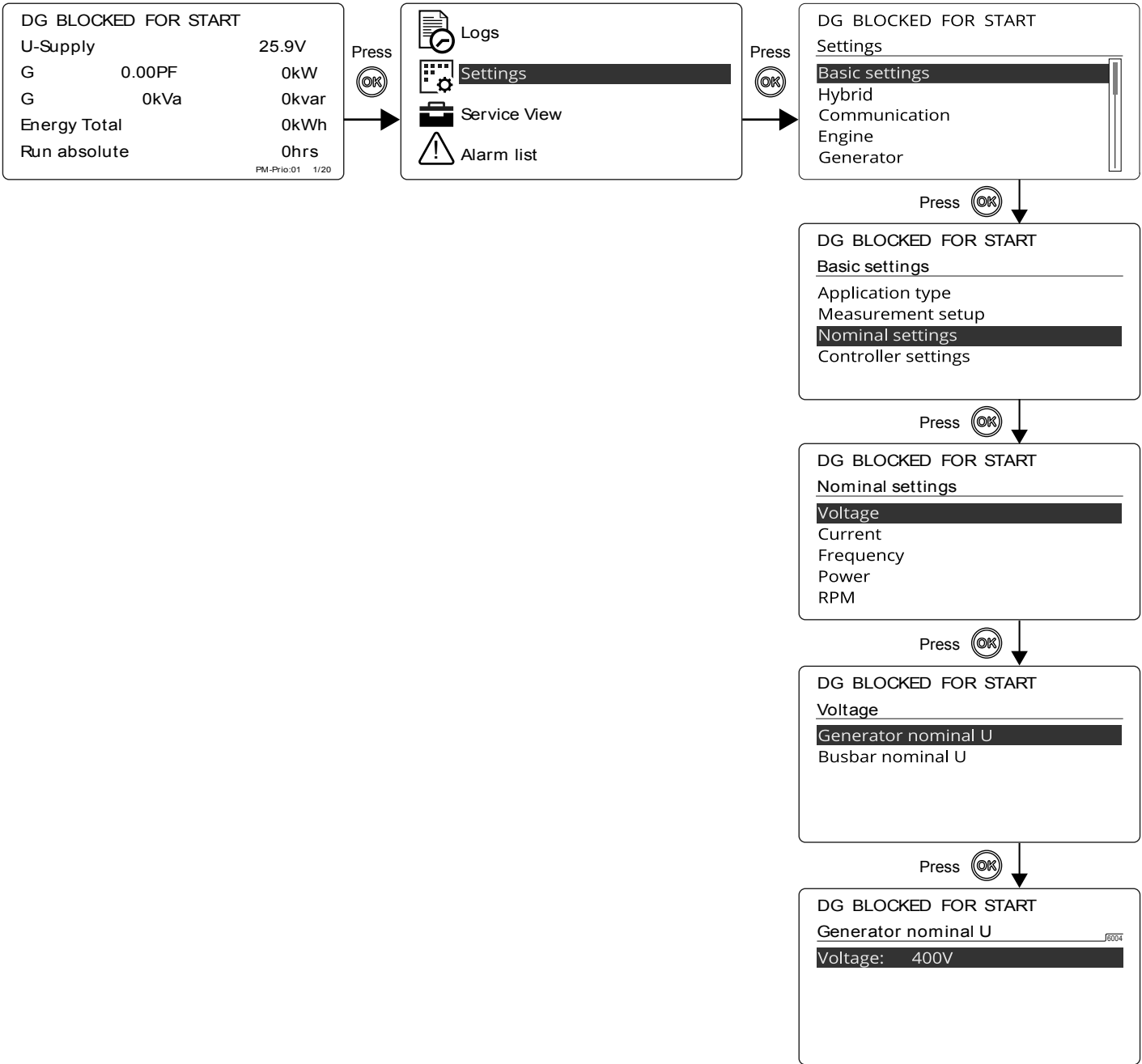
Table 4.33 No text

Generator	Mains	BTB	Hybrid	Engine Drive
No text	No text	No text	No text	No text

4.7 The Settings menu

The Settings menu is used for setting up the controller, and if the operator needs detailed information that is not available in the view menu system. Navigate through the different setup parameters with the Up , Down  and OK  buttons.

Figure 4.3 Example: Navigating the Settings menu

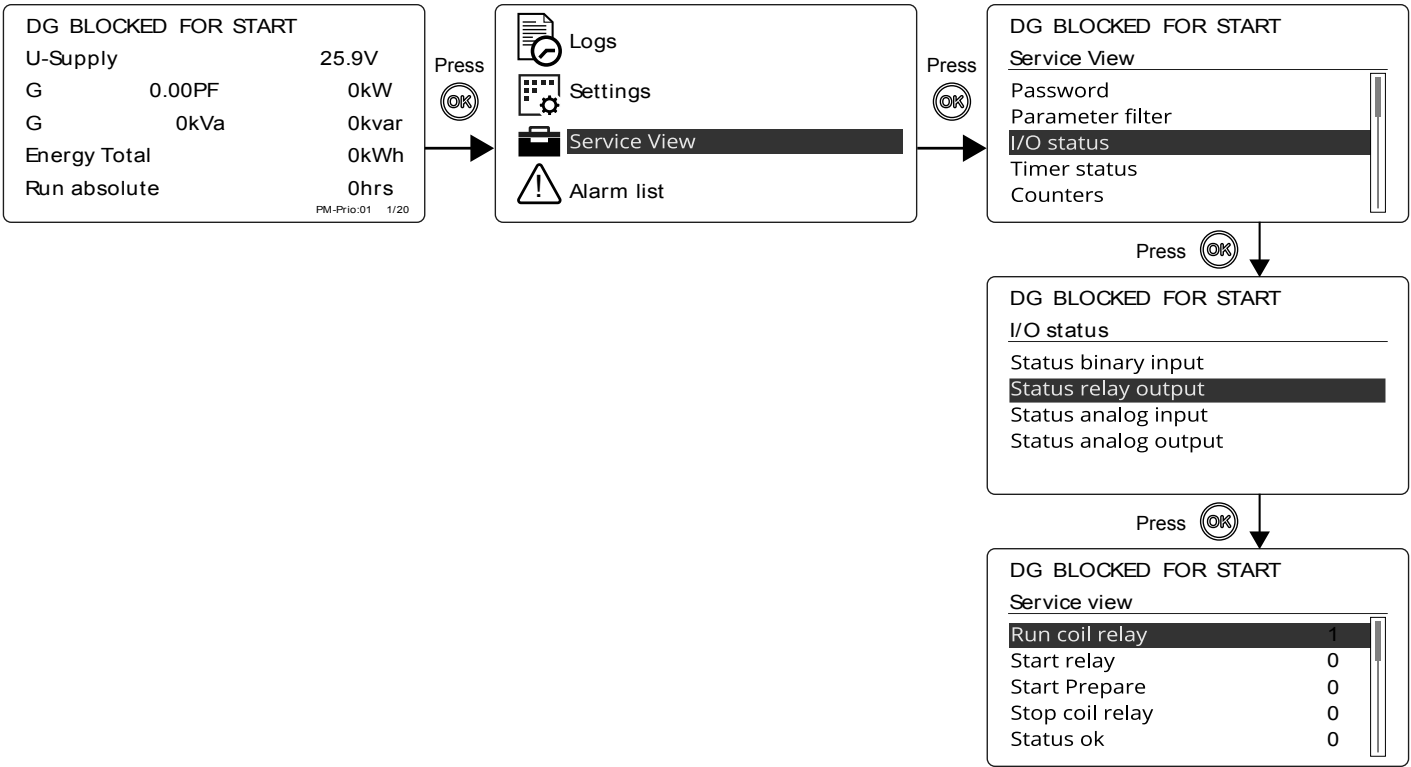


4.8 The Service View

The Service View is used to view the status of the controller. The controller settings can not be changed through the Service View, except for changing the Passwords.

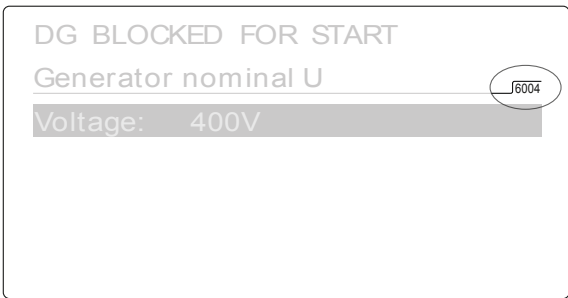
Navigate through the different status views with the Up , Down  and OK  buttons.

Figure 4.4 Example: Navigating the Service View



4.9 Menu numbers

In AGC 150 each setting or parameter has a unique menu number. On the display screen, the menu number can be seen in the upper right corner:



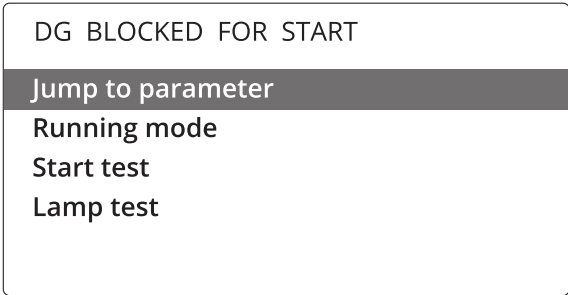
Menu numbers can also be found in the Utility Software:

1. From the toolbar, select the *Parameters*  button.
2. In View mode, choose the List view.
3. The menu numbers are shown in the Channel column.

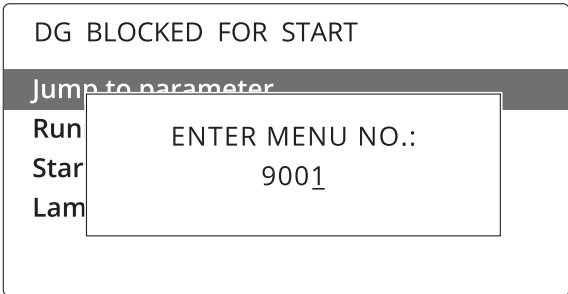
4.10 The Jump function

If you know the menu number for a parameter, you can use the Jump function to go directly to the parameter without navigating through the menus.

On the controller, press the *Shortcut*  button to activate the Jump menu.



Select *Jump to parameter* with the *Up*  and *Down*  buttons, activate with the *OK*  button.

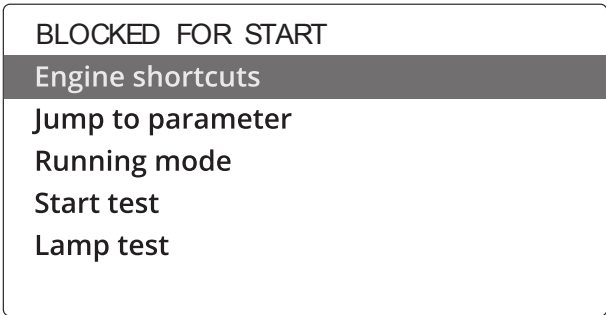


Enter the menu number and select with the *OK*  button.

To activate the Jump function in the Utility Software, select the Parameter page and then the Jump menu.

4.11 Engine Drive shortcut menu

The AGC 150 has a shortcut menu for configuring the PID set points. To activate the Engine Drive shortcut menu, press the *Shortcut*  button.



Select with the *Up*  and *Down*  buttons, and select the menu with the *OK*  button.

BLOCKED FOR START

PID references

PID1 Manuel Up

PID1 Manuel Down

PID references: The input must be active to be shown in the list.

- The scaling is adjusted to the input selected.
- The values are the same found one the PID input tabs (reference 1-3).

Manual regulation (up and down): Used for PID1.

- Not active during ramp up/down.

4.12 Hybrid shortcut menu

The AGC 150 has a shortcut menu for start/stop of the PV inverter in SEMI-AUTO mode. To activate the Hybrid shortcut menu, press the *Shortcut*  button.

DG BLOCKED FOR START

Jump to parameter

Running mode

Start test

Lamp test

Hybrid

Select PV semi start/PV semi stop with the *Up*  and *Down*  buttons, and select the menu with the *OK*  button.

DG BLOCKED FOR START

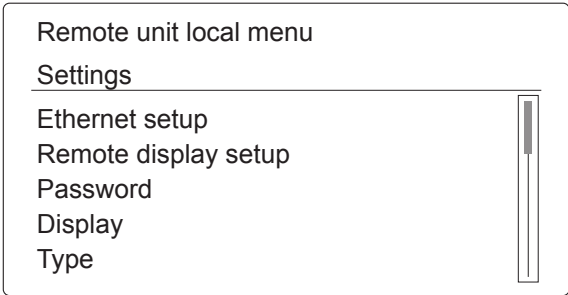
PV semi start

PV semi stop

4.13 Remote Display local menu

When the Remote Display is connected to a master controller, all buttons and LEDs on the Remote Display is a mirror of the master.

You can change the Remote Display setup from the unit. Press and hold the *Shortcut*  button until the Remote Display local menu appears:

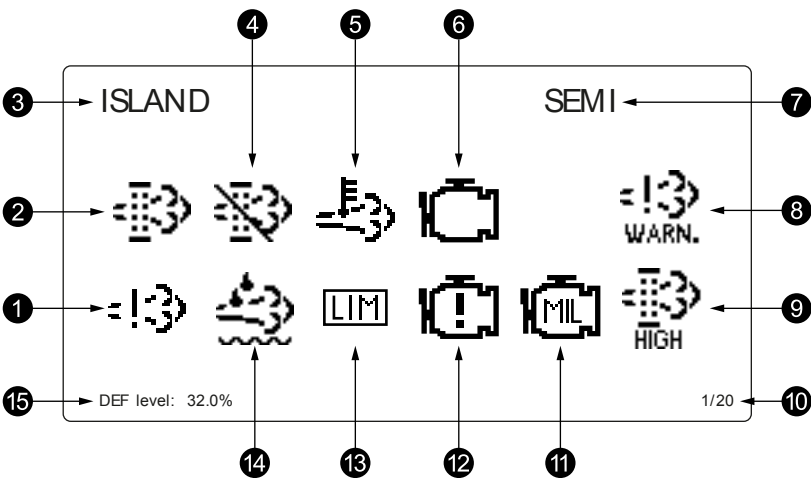


Text	Range
Ethernet setup	Configure the Ethernet address for the Remote Display .
Remote display setup	Configure the Ethernet address for the master controller .
Password	Configure the Password for each password level. See General product information, Controller overview, Password in the Designer's handbook for more information about passwords.
Display	Configure light, contrast etc. for the Remote display . See Controller overview, Overview of buttons and LEDs, Display settings in this document for more information about display settings.
Type	Change type of controller.
Software info	Gives you information about the software in the Remote display .

4.14 Exhaust after-treatment (Tier 4 Final/Stage V)

AGC 150 supports Tier 4 Final/Stage V requirements, and provides monitoring and control of the exhaust after-treatment system, as requested by the standard.

Figure 4.5 AGC 150 Tier 4 Final screen



No.	Item	Symbol	Notes
1.	Engine emission system failure		Shows an emission failure or malfunction.
2.	Diesel Particle Filter (DPF)		Shows that a regeneration is needed.
3.	Application mode	-	-
4.	Diesel Particle Filter (DPF) Inhibit		Shows that regeneration is inhibited.
5.	High temperature - Regeneration		Shows a high temperature and regeneration is in process.
6.	Engine interface status		Shows an engine warning.
7.	Operation mode	-	-
8.	Engine emission system failure level	  	Shows the severity of an emission failure or malfunction.
9.	Diesel Particle Filter (DPF) level	  	Shows the severity of a needed regeneration.
10.	Page number	-	Shows the number of the View menu screens.
11.	Engine interface status		Indicates a malfunction.
12.	Engine interface status		Shows an engine shutdown.
13.	LIMIT lamp		Only for MTU engines.
14.	Diesel Exhaust Fluid (DEF)		Shows the fluid tank level is low.
15.	Diesel Exhaust Fluid (DEF) % level	-	Shows the level (%) of the Diesel Exhaust Fluid.

NOTE Grey symbols show that communication for the item is available. Not all types of engines support all items shown.

5. Alarm handling and log list

5.1 Alarm handling

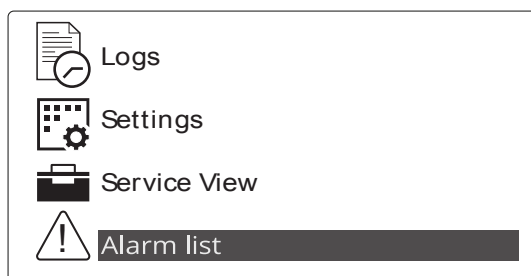
If the function *Alarm Jump* is ON, the controller will automatically show the *Alarm list* on the display screen, when an alarm occurs. Activate the function under **Service View > Display > Alarm Jump**.

Table 5.1 Parameters for Alarm jump

Parameter	Text	Range	Default
9157	Alarm Jump	OFF ON	ON

Access the Alarm list from the display unit

1. From the *View menu*, press the  button.
2. Scroll to the *Alarm list* with the  and  buttons.

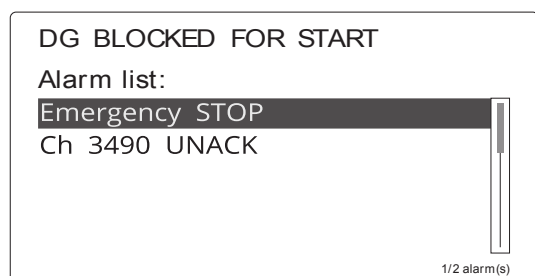


3. Press the  button to select the *Alarm list*.
4. Press the  button to leave the *Alarm list*.

The *Alarm list* contains both acknowledged and unacknowledged alarms that are active (that is, the alarm condition is still present). Once an alarm is acknowledged and the condition has disappeared, the alarm will no longer be displayed in the *Alarm list*. If no alarms are present, the *Alarm list* will read *No alarms*.

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

Figure 5.1 Example of an unacknowledged alarm



To see the other alarms, scroll with the  and  buttons.

To acknowledge an alarm, select the alarm and press the  button.

Access the Alarm list with the Utility Software

To open the *Alarm list* with the Utility Software, press the *Alarms*  button.



CAUTION

If an alarm is blocking a genset in AUTO mode from starting, the genset will automatically start and close the breaker if the condition that triggered the alarm has disappeared and the alarm has been acknowledged.

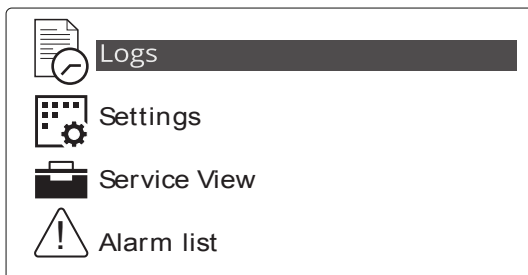
5.2 Logs menu

The log shows three menus:

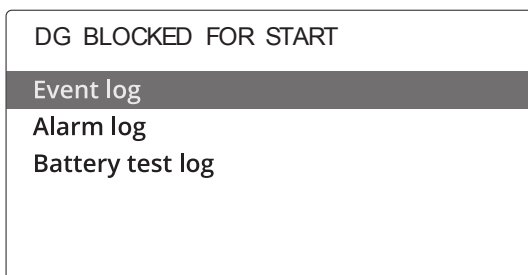
1. Event log: Shows up to 500 events, for example: *Auto Mains Failure*.
2. Alarm log: Shows up to 500 alarms, for example: *Emergency STOP*. Only the latest 100 alarms are shown on the display unit, while the remaining alarms is shown in the Utility Software.
3. Battery test log: Shows up to 52 tests, either *Test OK* or *Test failed*.

Access the Log menu from the display unit

1. From the *View menu*, press the  button.
2. Scroll to *Logs* with the  and  buttons.



3. Press the  button to select *Logs*.
4. Choose the preferred *Log list*.



5. Press the  button to select the preferred *Log list*.
6. Press the  button to leave the *Log list*.

Access the Log list with the Utility Software

Open the *Log menu* with the Utility Software:

1. In the left menu, press the *Logs*  button.
2. In the task bar, press the *Read logs*  button.
3. Choose the preferred *Log list*.