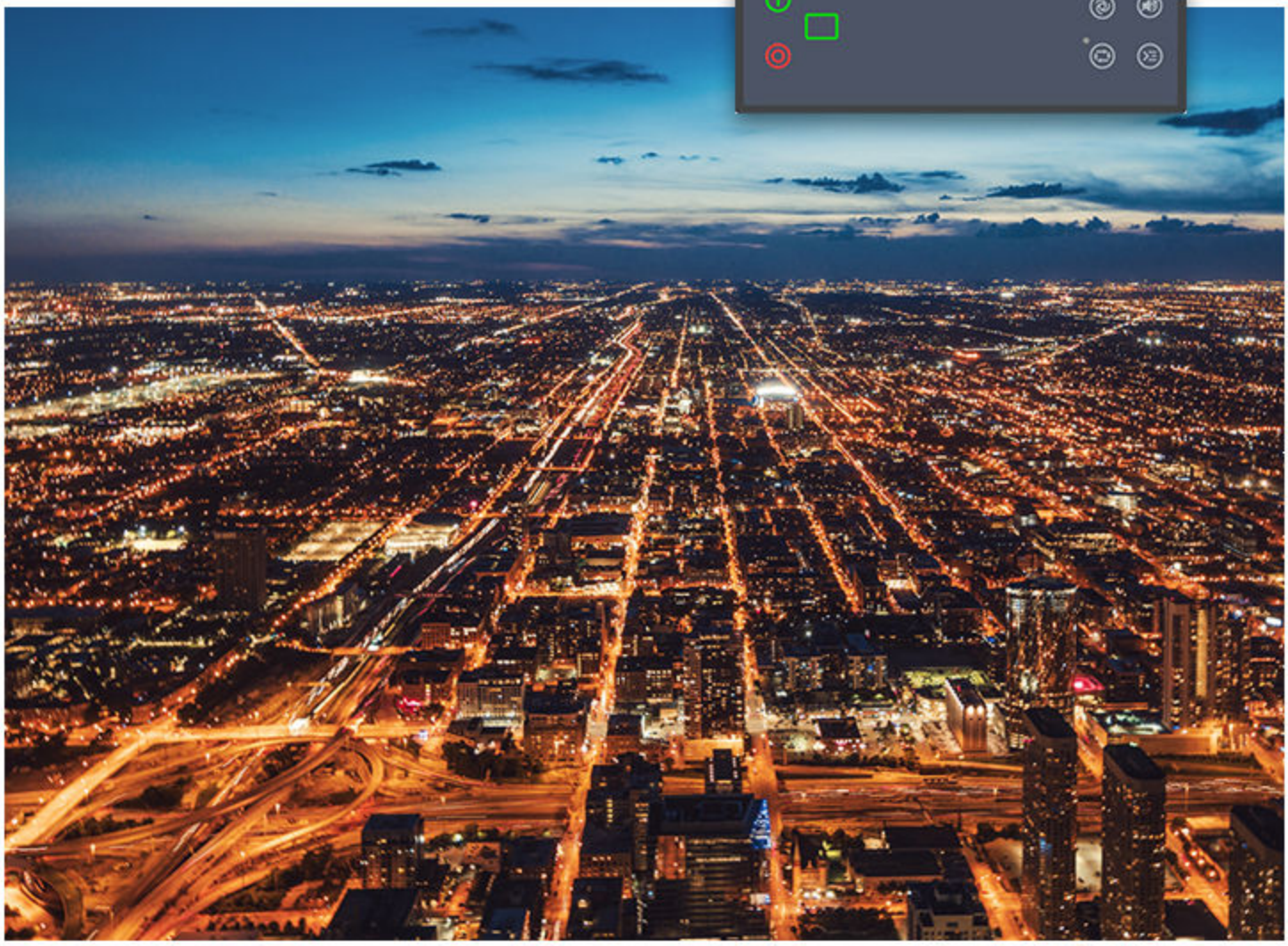
AGC 150 Engine drive

4189341305-D

Operator's manual

Improve Tomorrow



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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

Read this manual

Read this manual before you operate the system. Failure to do this may result in personal injury and 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 and settings 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

Legal information

Third party equipment

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

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.

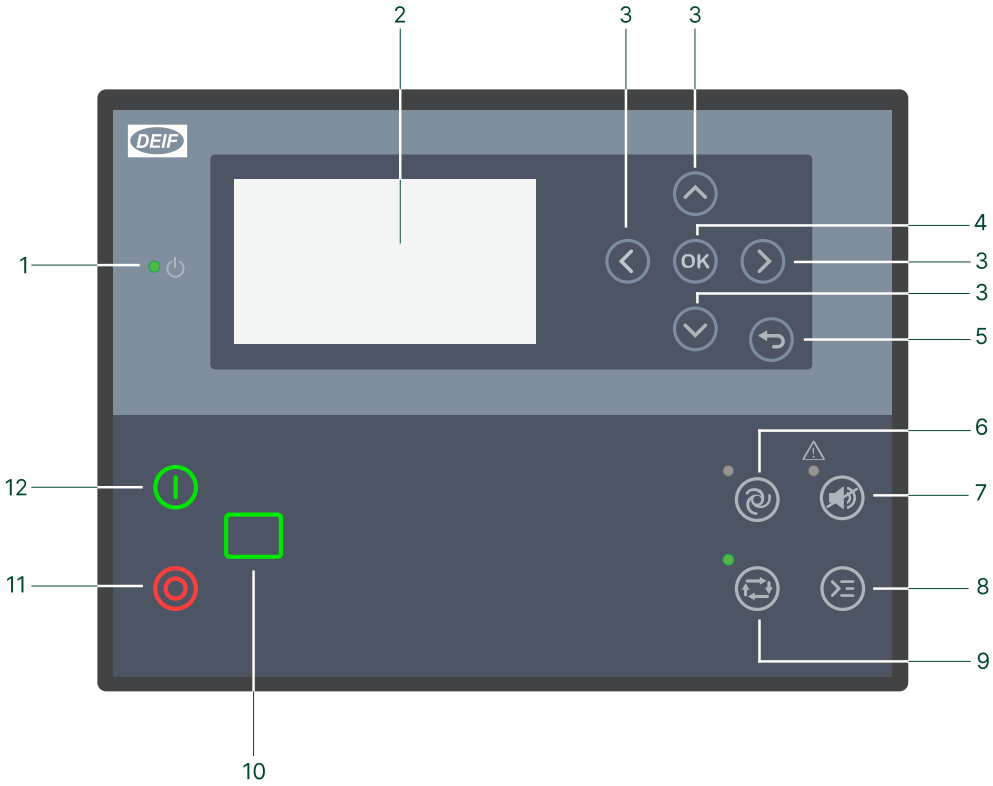
Copyright

Software version

This document is based on the AGC 150 software version 1.30.

2. About the AGC 150 Engine drive

2.1 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	The controller automatically starts and stops the engine. No operator actions are needed.
7	Silence horn	Stops an alarm horn (if configured) and enters the alarm menu.
8	Shortcut menu	Access jump to parameter, running mode, test and lamp test.
9	MANUAL mode	The controller cannot automatically start and stop the engine. The operator can start and stop the engine manually from the display.
10	Engine	Green: There is running feedback or an external signal. Green flashing: The engine is getting ready. Red: The engine is not running, or there is no running feedback.
11	Stop	Stops the engine if MANUAL or NoReg mode is selected.
12	Start	Starts the engine if MANUAL or NoReg mode is selected.

2.2 Display settings

To adjust for ambient lighting, configure the display settings.

Parameters > 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/Celsius PSI/Fahrenheit	Bar/Celsius

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

2.3 Mimic function

With the mimic function you can select how the control buttons and LEDs are shown on the controller's display.

Parameters > 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 engine, the engine symbol is not shown.

Standard with genset
The control buttons and LEDs are shown.
If you the stop the engine, the engine symbol is shown in red.

Guided
Active control buttons and LEDs are shown, inactive are not shown.
Example: The AGC 150 Engine drive is in MANUAL mode, and the engine 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 engine symbol are shown, inactive are not shown.
Example: AGC 150 is in MANUAL mode. The engine is not operating. The only possible action is to start the engine, and so only the start button and the red engine symbol are shown.

2.4 Running modes

The controller has three different running modes, a block mode and a test mode. Push the *Shortcut* button and select *Running Modes* to see the running modes and block mode. To select the test mode, push the *Shortcut* button and select *Start Test*.

Mode	Description
AUTO	The controller automatically starts and stops the engine.
MANUAL	The controller cannot automatically start and stop the engine. The operator can start these sequences using the buttons on the controller, Modbus commands or the digital inputs.
NoReg	The operator can use the digital increase/decrease inputs (if they are configured) and the *Start* and *Stop* buttons. When the engine starts in NoReg mode, it will start without subsequent regulation.
Block	The controller cannot start a sequence, for example the start sequence. Select the Block mode when you do maintenance work on the engine.
Test	The test sequence will start when you select the Test mode.

NOTE The engine will shut down if you select the Block mode while the engine is operating.

3. Menus

3.1 Menu structure

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

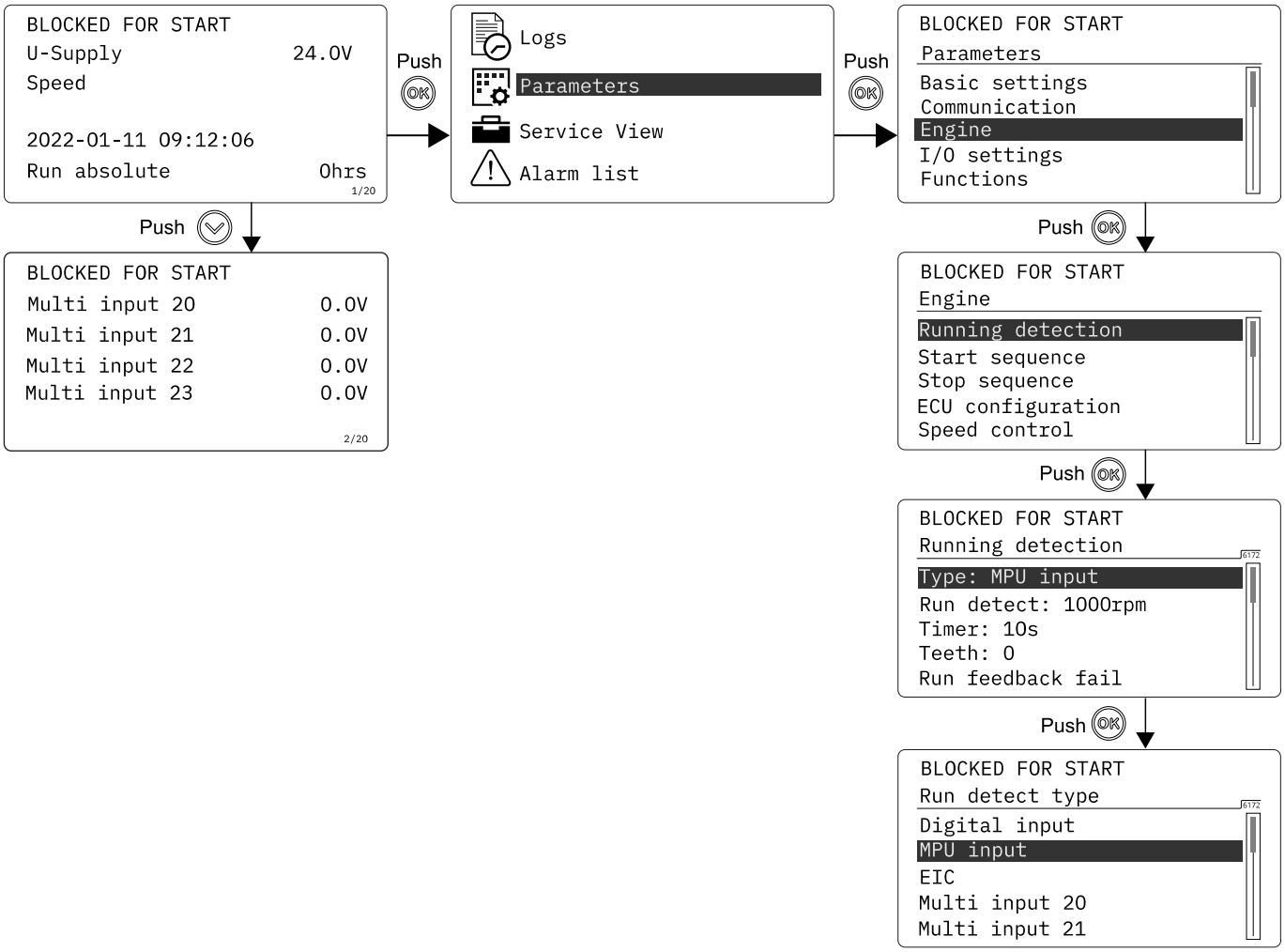
- **The View menu system**: Shows the operating status and values. The system has 20 configurable windows, that can be entered with the arrow buttons.
- **The Parameters menu system**: The operator can see the controller's parameters. A password is necessary to change the parameter settings.

3.2 Parameters menu

You can configure the controller in the parameters 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 parameters menu. Use the ⌄ and ⌃ buttons to find the different parameters and select with the OK button.

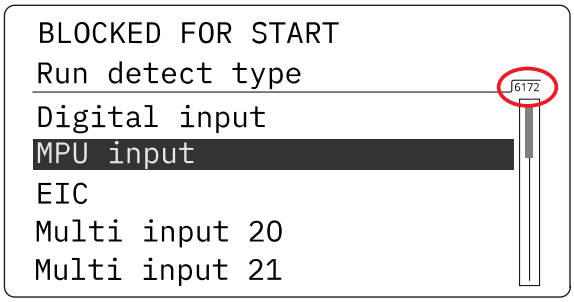
Parameters menu example

This is an example of how to change the running detection type.



3.2.1 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:

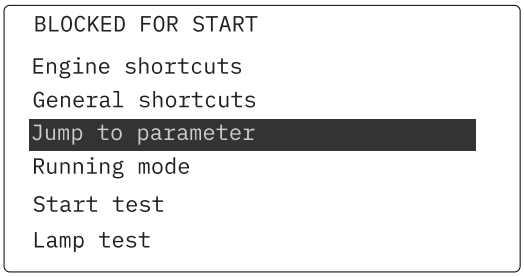
1. Select *Parameters* from the vertical toolbar on the left.
2. Set the view mode to list. The view mode can be found in the left corner of the screen.
3. The menu numbers are in the *Channel* column.

3.2.2 The jump to parameter function

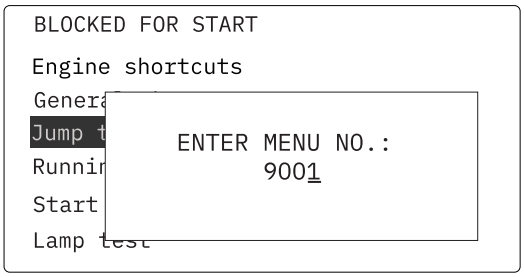
If you know the menu number for a parameter, you can use the jump to parameter function to go directly to the parameter.

On the controller:

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



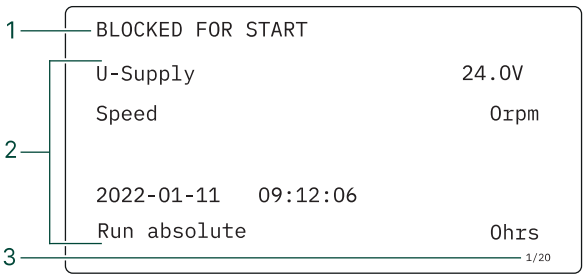
2. Use the and buttons to go to *Jump to parameter* and push the button.



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.

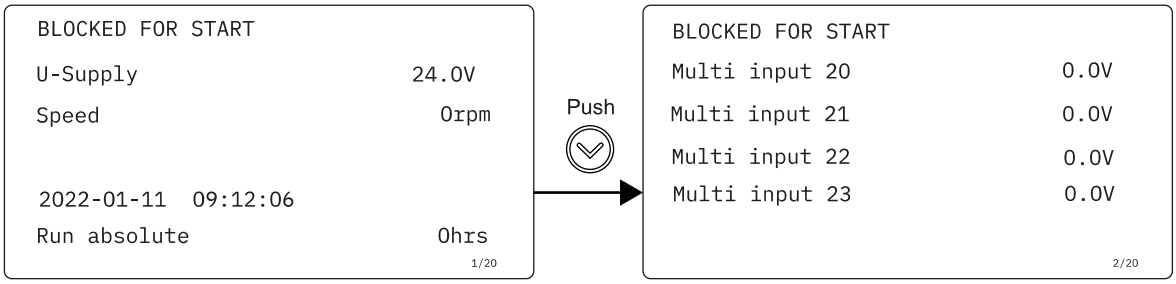
3.3 View menu

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 will also be shown if an alarm is on.



1. Operating status
2. Values and information
3. Page number

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



3.3.1 Display views

The controller has 20 different display views, and 5 of the views are pre-configured. You can configure the views with the utility software.

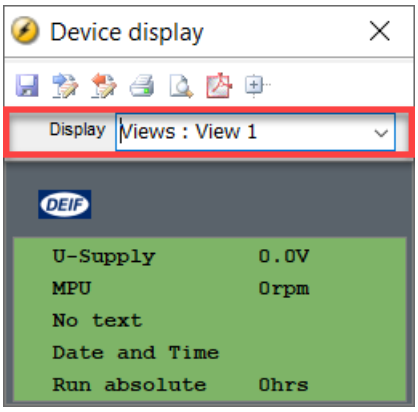
Line	View 1	View 2	View 3	View 4	View 5
1	U-Supply 0.0V	Multi input 20 0.0	Aftertreatment	EIC T. Coolant	Serv1 0d 0h
2	MPU 0rpm	Multi input 21 0.0	EIC Tier 4 Icons	EIC T. Turbo Oil	Serv2 0d 0h
3	-	Multi input 22 0.0	-	EIC T. Exh. Right	-
4	*[yyyy-mm-dd time]*	Multi input 23 0.0	-	EIC T. Oil	-
5	Run absolute 0 hrs	-	-	EIC T. Fuel	-

3.3.2 Display text

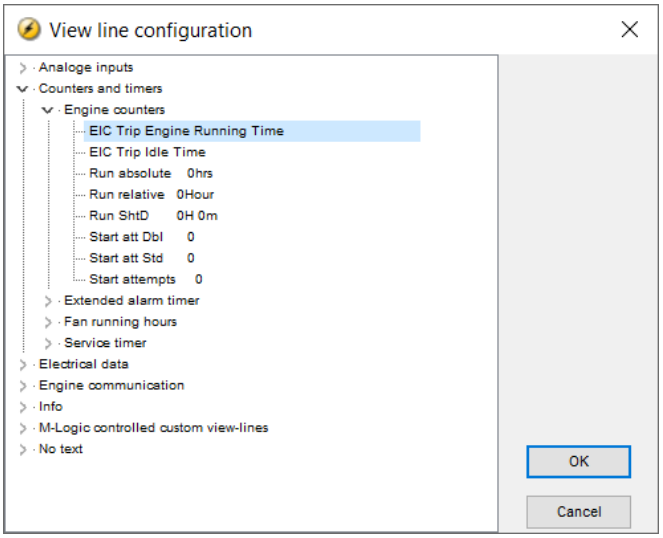
Configure the display views

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 to be changed.



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.

3.4 Status text

Status text	Condition
ACCESS LOCK	The configurable input is activated, and the operator tries to activate one of the blocked keys.
Aux. test ##.#V ####s	The battery test is activated.
BLOCK	Block mode is activated.
COOLING DOWN ###s	Cooling-down period is activated.
DERATED TO #####kW	Displays the ramp-down set point.
EXT. START ORDER	There was an external engine start command.
EXT. STOP TIME ###s	The extended stop timer is running.
FULL TEST	Test mode is activated.
FULL TEST ###.#min	Test mode is activated and test timer counting down.
IDLE RUN	The Idle run function is active. The engine will not stop until a timer has expired.
IDLE RUN ###.#min	The Idle run function is active. The engine will not stop until the timer has expired.
LOAD TEST	Test mode is activated.

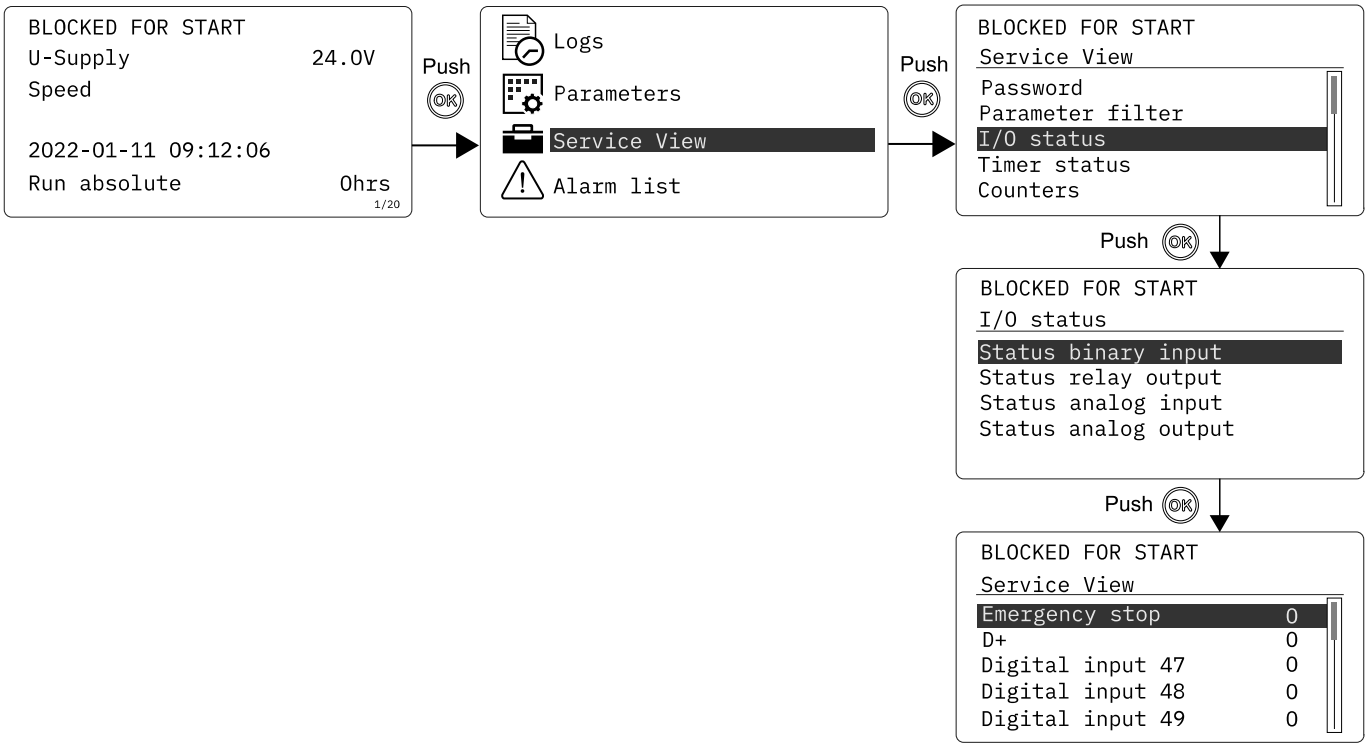
Status text	Condition
LOAD TEST ###.#min	Test mode is activated and test timer counting down.
NOT POSSIBLE	Unable to do the requested demand.
PROGRAMMING LANGUAGE	Downloading the language file using the PC utility software.
RAMP FREEZED	Stopped ramping (ramping frozen).
RAMP TO #####kW	The power ramp is ramping in steps. The next step that is reached after the timer has expired is displayed.
RAMPING	Ramping up to the set point.
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 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.

3.5 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



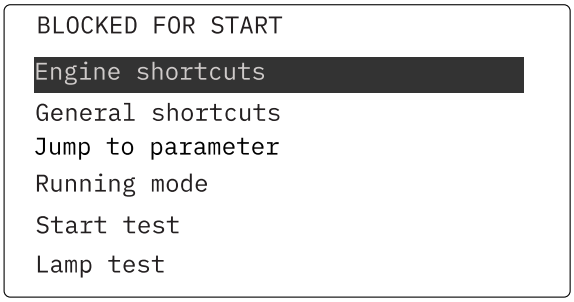
3.6 Engine shortcuts

3.6.1 PID configuration

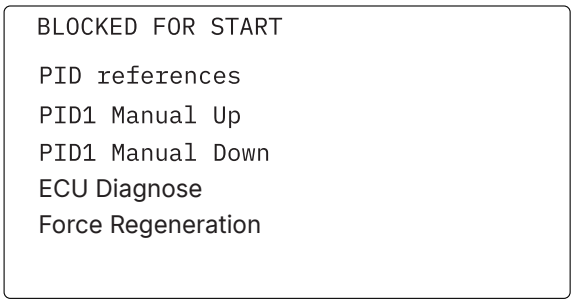
You can use the engine shortcuts menu to configure the PID set points.

On the controller

1. From the view menu, push the *Shortcut* button to see the menu.



2. Use the *Up* and *Down* buttons to go to *Engine shortcuts* menu, and push the button.



PID references

- Only active inputs are shown in the list.
- You can also see the values in the utility software. Select *General Purpose PID* from the left menu. There are a total of 2 reference values.

Manual regulation (up and down)

- Used for PID1.
- Not active during ramp up/down.

3.6.2 ECU Diagnose and Force Regeneration

You can activate ECU diagnose from the engine shortcuts menu. You can also use the menu to inhibit or force regeneration.

ECU Diagnose

Use ECU Diagnose to read ECU data without starting the engine.

To activate ECU diagnose on the controller:

1. Push the *Shortcut* button.
2. Select *Engine shortcuts*.
3. Select *ECU Diagnose*.

The diagnostics timer is activated when you select ECU Diagnose, and the controller starts to read the ECU data when the diagnostic timer expires. To configure this timer, go to *Parameters* in the utility software and select parameter *6701*.

Force Regeneration

To inhibit or force regeneration:

1. Push the *Shortcut* button.
2. Select *Engine shortcuts*.
3. Select *Force Regeneration*.
4. Select *Inhibit* or *Force*.

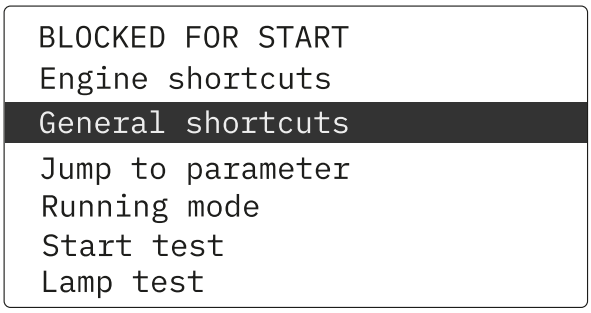
3.7 General shortcuts

You can see your configured shortcuts in the General shortcuts menu. If you have not configured a shortcut, then the menu is empty. Use the shortcuts when the controller is in MANUAL and NoReg mode.

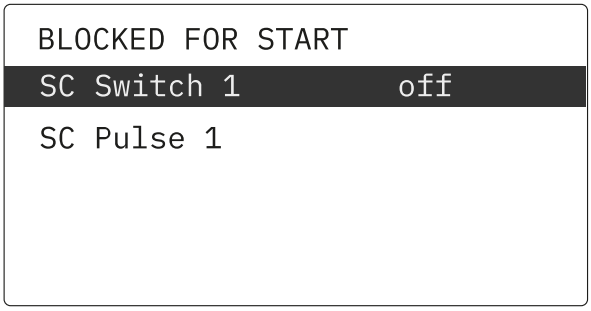
More information
See **General shortcuts** in the **AGC 150 Engine drive Designer's handbook** for how to configure the general shortcuts.

On the controller

1. From the view menu, push the *Shortcut* button to see the menu.



2. Use the *Up* and *Down* buttons to go to *General shortcuts*, and push the OK button.

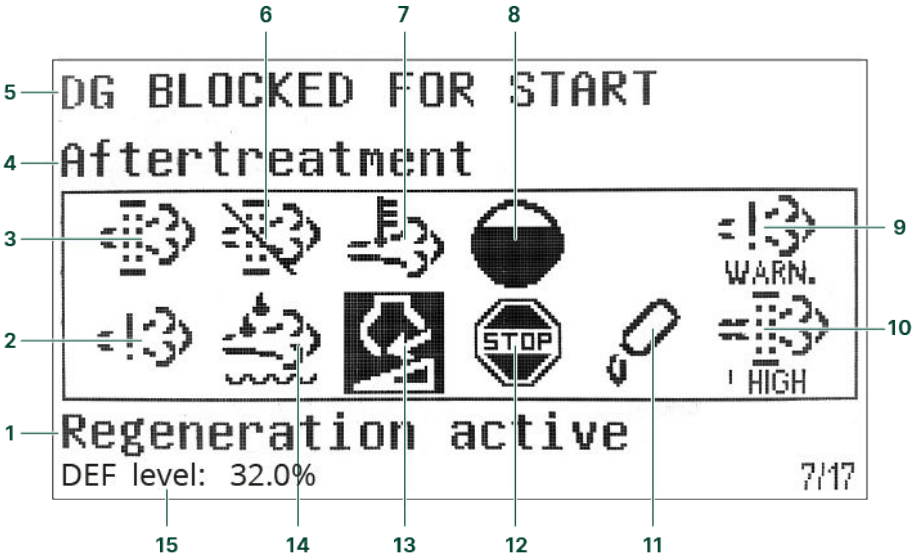


3. Use the *Up* and *Down* buttons to go to select a shortcut.

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

The controller meets the Tier 4 (Final)/Stage V requirements. Use the display to monitor and control the engine and the exhaust after-treatment system.

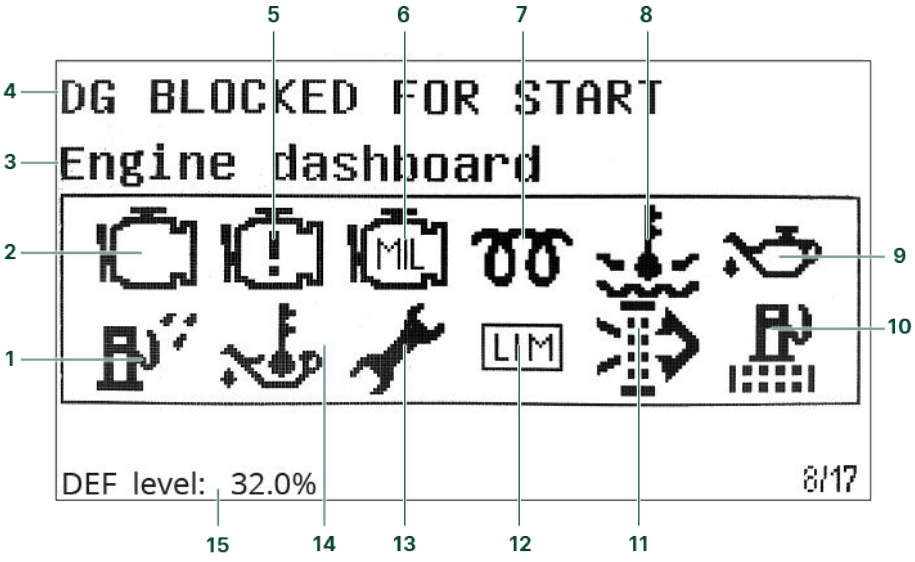
After-treatment page

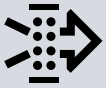


No.	Referent	Symbol	Description
1	After-treatment status	-	
2	Engine emission system failure		Emission failure or malfunction.
3	Diesel Particle Filter (DPF)		Regeneration is needed.
4	Page name	-	
5	Controller status	-	
6	Diesel Particle Filter (DPF) Inhibit		Regeneration is inhibited.
7	High temperature - Regeneration		There is a high temperature and regeneration is in process.
8	HC burn-off		Hydrocarbon accumulation that requires 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	  	Regeneration needed, with the severity.
11	DEF level warning		Low DEF level.
12	DEF shutdown		DEF problem stops normal operation.
13	DEF level inducement		Mid-level inducement.
			Severe inducement.
14	Diesel Exhaust Fluid (DEF)		DEF quality is low.
15	Diesel Exhaust Fluid (DEF) % level		Shows the level (%) of the Diesel Exhaust Fluid.

Engine dashboard



No.	Referent	Symbol	Description
1	Water in fuel		There is water in the 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		The engine is cold.
8	High engine coolant temperature		The engine coolant temperature is high.
9	Low engine oil pressure		The engine oil pressure is low.
10	Fuel filter clogging		The fuel filter is blocked.
11	Air filter clogging		The air filter is blocked.
12	LIMIT lamp		Only for MTU engines.
13	Oil change		The engine needs an oil change.
14	High engine oil temperature		The engine oil temperature is high.
15	Diesel Exhaust Fluid (DEF) % level		Shows the level (%) of the Diesel Exhaust Fluid.

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

4. Alarm handling and log list

4.1 Alarm handling

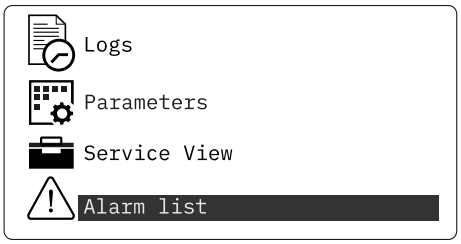
If the function *Alarm Jump* is on, the controller will automatically show the alarm list on the display screen when an alarm occurs.

`Service View > Display > 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, push the OK button.
2. Use the ▲ and ▼ buttons to go to the *Alarm list*.

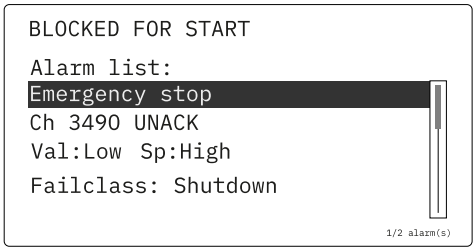


3. Push the OK button to view the *Alarm list*.
4. Push the ↩ button to go back.

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 will show *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 ▼ 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* from the toolbar on the left.

CAUTION

Caution

If an alarm is blocking an engine in AUTO mode from starting, the engine will automatically start if the condition that triggered the alarm has gone and the alarm has been acknowledged.

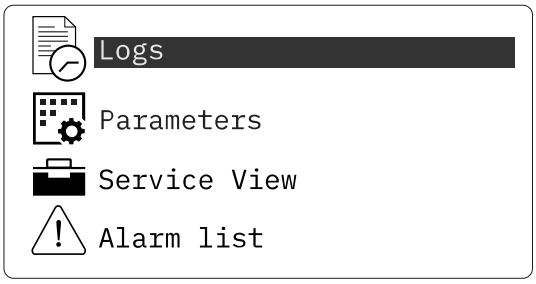
4.2 Logs menu

These are the log sub-menus:

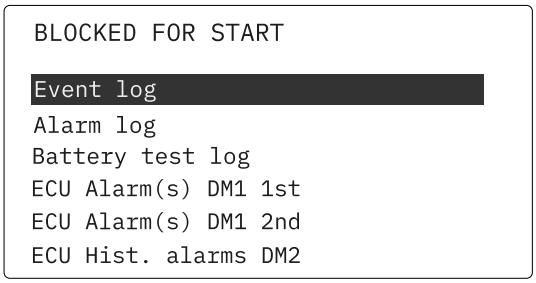
1. Event log: Shows up to 500 events.
2. Alarm log: Shows up to 500 alarms. Only the latest 100 alarms are shown on the display unit, while the remaining alarms are shown in the utility software.
3. Battery test log: Shows up to 52 tests, either *Test OK* or *Test failed*.

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 list*, push the ↩ button.

Access the log list with the utility software

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