

iE 150

Battery

Operator's manual

4189341502-A



Improve
Tomorrow



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1. About the Operator's manual

1.1 Symbols and notation

Symbols for general notes

NOTE This shows general information.



More information

This shows where you can find more information.



Example

This shows an example.



How to ...

This shows a link to a video for help and guidance.

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 Intended users of the Operator's manual

**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.

The Operator's manual is for the operator that completes daily operations with the controller. The manual includes information about the LEDs, buttons and screens, and general operator tasks, alarms, and logs.

1.3 Need more information?

Use the links below to access the available resources.

**DEIF website**

Official DEIF homepage.

**Give feedback**

Help improve our documentation with your feedback.

**Support**

Self-help resources and how to contact DEIF for assistance.

**Documentation**

iE 150 documentation.

**Product**

iE 150 product page.

**How to...**

Learn how to use this product.

1.4 Software versions

The information in this document relates to software versions:

Software	Details	Version
iE 150	Application software	1.38
USW	Multi-line 2 Utility Software	3.66

1.5 Warnings and safety

Safety during operation

When you operate the equipment, you may have to work with dangerous currents and voltages.

**DANGER!**

**Hazardous live currents and voltages**

Do not touch any terminals, especially the AC measurement inputs, as this could lead to injury or death.

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.

1.5.1 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.

1.6 Legal information

Warranty

NOTICE	
	Warranty The warranty will be lost if the warranty seals are broken.

Open source software

This product contains open source software licensed under, for example, the GNU General Public License (GNU GPL) and GNU Lesser General Public License (GNU LGPL). The source code for this software can be obtained by contacting DEIF at support@deif.com. DEIF reserves the right to charge for the cost of the service.

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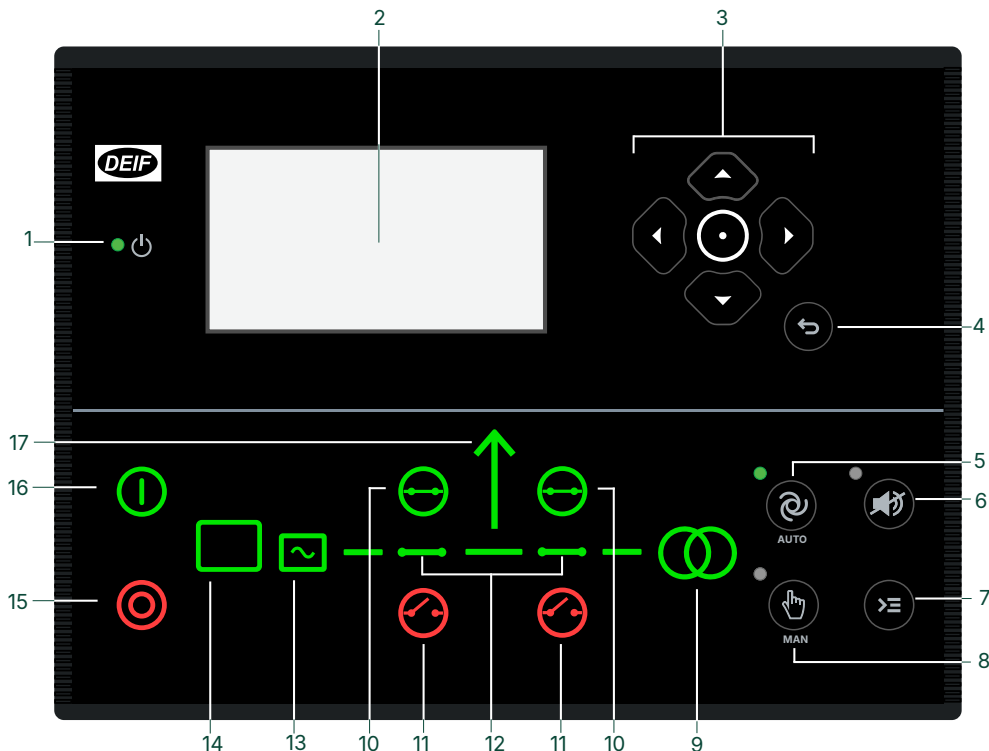
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2. Getting started

2.1 Display layout



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 buttons	Move the selector up, down, left and right on the screen.
	 Enter button	Confirms the selection.
4	 Back button	Go to the previous page.
5	 AUTO mode	The controller automatically starts and stops (and connects and disconnects) the battery system. The controller automatically controls the power to and from the battery system. No operator actions are needed.
6	 Silence horn	Stops an alarm horn (if configured) and enters the Alarm menu.
7	 Shortcut menu	Access the Jump menu, Mode selection, Test, Lamp test, and Battery.
8	 Manual mode	The operator or an external signal can also start or stop, and open and close the battery breaker. Automatic controller actions are not possible. The controller automatically synchronises before closing a breaker, and automatically de-loads before opening a breaker.
9	Mains symbol	Green: Mains/busbar voltage and frequency are OK. The controller can synchronise and close the breaker. Red: Mains/busbar voltage failure.

No.	Name	Function
10	 Close breaker	Push to close the breaker.
11	 Open breaker	Push to open the breaker.
12	Breaker symbol	Green: Breaker is closed. Green flashing: Synchronising or de-loading. Red: Breaker failure.
13	Power converter	Green: Power converter voltage and frequency are OK. The controller can synchronise and close the breaker. Green flashing: The power converter voltage and frequency are OK, but the V&Hz OK timer is still running. The controller cannot close the breaker. Red: The power converter voltage is too low to measure.
14	Battery management system	Green: There is battery system available feedback. Green flashing: The battery system is getting ready. Red: The battery system is not running, or there is no availability feedback.
15	Stop	Stops the power converter if manual is selected.
16	Start	Starts the power converter if manual is selected.
17	Load symbol	OFF: Power management application Green: The supply voltage and frequency are OK. Red: Supply voltage/frequency failure.

NOTE * You can use the display to monitor the battery operation.

The controller can use the voltage and frequency measurements from the ESS. If communication with the ESS then fails, an alarm is activated. On the display folio, the ESS icon, mains icon, and load lines LEDs flash yellow, red and green.

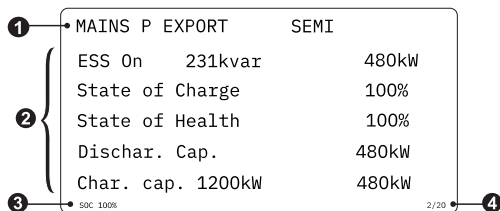
2.2 Controls

You can operate the controller with the following controls:

Control type	Description
6-way navigation	The four arrow buttons plus OK and Back allow full control, selection, and text entry throughout all menus.
Dedicated mode buttons	AUTO and MANUAL buttons give one-press mode switching from any screen.
Dedicated ESS buttons	Start and Stop buttons for direct ESS control in MANUAL mode.
Dedicated breaker buttons	Close and Open buttons for direct ESS breaker control.
Shortcut button	Quick-access menu for Running Modes, Jump to parameter, Test, Lamp test, Engine shortcuts, and General shortcuts.
Silence horn button	Silences the alarm horn output and opens the Alarm list directly.

2.3 Screen layout

The display screen shows six lines of text at a time. The View menu is shown when the controller powers on.



No.	Notes
1	Shows the controller status text. See Controller status text .
2	Shows measurement values and operating data for the current display view. Use the <i>Up</i> and <i>Down</i> buttons to scroll between the 20 available views.
3	Shows the current page number (for example, 1/20) and any active shortcut indicators.

The View menu has 20 display views. Use the Up and Down arrow buttons to step between views. See Display views for the full list of pre-configured views.



More information

For more information, see [Display views](#).

2.4 Mimic function

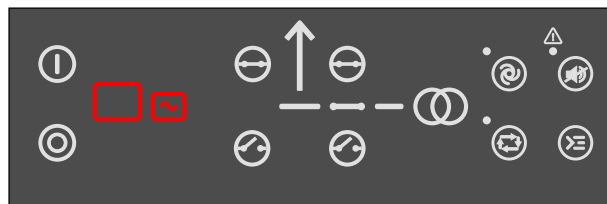
Settings > Basic settings > Controller settings > Display > LED mimic

Parameter no.	Item	Range
6082	LED mimic	Standard Guided

Standard

The control buttons and LEDs are shown.

If you stop the energy storage system (ESS), the ESS symbols are shown in red.



Guided

Active control buttons, LEDs, and the ESS symbols are shown, inactive are not shown.

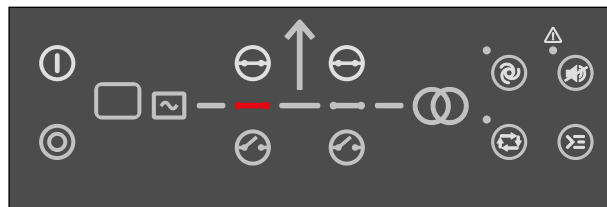
Example: The controller is in MANUAL mode, and the ESS is not operating. The only possible action is to start the ESS, or open the mains breaker. Therefore, only the start button, the red ESS symbols, and the button to open the mains breaker are shown.



All Mimic settings

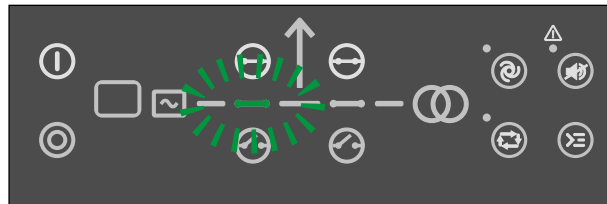
The breaker symbol is shown in red:

- Breaker position failure
- Breaker close failure



The breaker symbol flashes green:

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



2.5 Display settings

Adjust the display at your installation.

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 values indicate minimum brightness. High values indicate maximum brightness.

3. Control and operation

3.1 About controller operation

The iE 150 Battery controller provides advanced control and monitoring of battery energy storage systems (BESS). It can operate as a standalone controller or as part of a DEIF power and energy management system. The intuitive display gives easy access to system operation and monitoring. Configurable overview screens provide a clear visual representation of the installation, including power flow, breaker status, battery state of charge, and key system information.

3.2 Controller modes

The selected controller mode determines which actions are performed automatically by the controller and which actions require operator input.

To see the running modes and block mode, push the *Shortcut*  button and select *Running Modes*.

Mode	Description
AUTO	In AUTO mode, the controller automatically controls the ESS according to the configured operating mode and system requirements. The operator can monitor the system, but cannot manually control ESS operation or ESS breaker operation from the display.
MANUAL	The operator can start, stop, connect, and disconnect the ESS. These actions must be initiated using controller buttons, digital inputs, or Modbus commands. The controller does not automatically perform operating sequences.

3.3 ESS control

The controller can start and stop the battery energy storage system. The available functions depend on the system configuration and the selected controller mode.

3.3.1 Start the ESS

Mode	Procedure
AUTO (Automatic)	ESS starting is typically controlled automatically and the display control is not available.
MANUAL	To start the ESS: 1. Push  once. 2. The controller runs the start sequence. • If everything is OK, the ESS starts. • If the ESS does not start, the display shows an info message.

3.3.2 Stop the ESS

Mode	Procedure
AUTO (Automatic)	The ESS stop is controlled automatically and the display control is not available.
MANUAL	To stop the ESS: 1. Push  once. 2. The controller runs the stop sequence. • If everything is OK, the ESS stops. • If the ESS does not stop, the display shows an information message.

3.4 ESS breaker control

The ESS breaker connects the battery energy storage system to the electrical system. Breaker operation is normally available only in MANUAL mode.

3.4.1 Close the breaker

Mode	Procedure
AUTO (Automatic)	ESS breaker closing is controlled automatically and the display control is not available.
MANUAL	The ESS must be running to close the breaker. See Start the BESS. To close the ESS breaker: Push  once. • If there is no voltage on the busbar, the controller closes the ESS breaker. • If there is voltage on the busbar, the ESS breaker does not close.

3.4.2 Open the breaker

Mode	Procedure
AUTO (Automatic)	ESS breaker open is controlled automatically and the display control is not available.
MANUAL	To open the breaker: Push  once. The controller opens the ESS breaker. The ESS remains operational unless a stop command is issued.

3.5 Operating modes

The available operating modes depend on the application configuration. The controller automatically controls the battery energy storage system according to the selected operating mode.

Operating mode	Description
Island mode	The ESS supplies power to the electrical system independently of the utility grid.
Automatic mains failure (AMF)	The ESS automatically responds to a loss of utility power according to the configured application.
Fixed power	The ESS operates according to a fixed active power reference
Peak shaving	The ESS supports the electrical load during periods of high power demand.
Mains power export (MPE)	The ESS exports power to the utility grid.
Load takeover	The ESS gradually takes over load from another power source.

NOTE Not all operating modes are available in every application. The available operating modes depend on the system configuration.



More information

For more information, see **IE 150 Battery Designer's Handbook**.

3.6 Battery monitoring

The controller displays battery and energy storage system (ESS) information that helps the operator monitor system operation.

The available information depends on the application configuration and connected equipment.

Measurement	Description
State of charge (SOC)	Indicates the available battery capacity.
State of health (SOH)	Indicates the overall condition of the battery.
Charge/discharge status	Indicates whether the battery is charging, discharging, or idle.
Battery voltage	Indicates the battery voltage reported by the ESS.
Battery current	Indicates the battery current reported by the ESS.
Active power	Indicates the active power transferred to or from the battery.
Reactive power	Indicates the reactive power transferred to or from the battery.
Charging capacity	Indicates the available charging capacity.
Discharging capacity	Indicates the available discharging capacity.

NOTE The available information depends on the energy storage system and system configuration.



More information

For more information about ESS measurements, see **IE 150 Battery Designer's Handbook**.

3.7 Alarms

3.7.1 About alarms

The controller uses alarms to indicate abnormal operating conditions and to protect the ESS and electrical installation.

When an alarm is activated, the controller can:

- Display an alarm message.
- Activate the alarm horn.
- Open a breaker.
- Stop the ESS.
- Block ESS start.

The action taken depends on the alarm configuration. Some alarms provide information only, while others automatically protect the system by stopping operation or disconnecting equipment.

3.7.2 Alarm states

An alarm can be active or inactive and acknowledged or unacknowledged. An alarm is removed from the active alarm list when the alarm condition is no longer present and the alarm has been acknowledged.

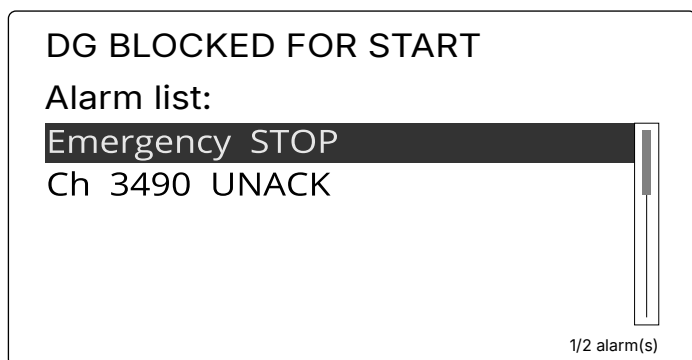
Alarm condition *	Acknowledge status	Notes
Active	Unacknowledged	The alarm condition is present and requires acknowledgement.
Active	Acknowledged	The alarm has been acknowledged, but the condition is still present.
Inactive	Unacknowledged	The alarm condition has cleared, but the alarm has not been acknowledged.
Inactive	Acknowledged	The alarm condition has cleared and the alarm has been acknowledged.

NOTE * An alarm condition usually occurs when the *Set point* is exceeded.

3.7.3 View active alarms

To view active alarms:

1. Push the  button.
2. Select **Alarm list**.
3. Push **OK**.
4. Use the navigation buttons to browse the alarms.



The display shows one alarm at a time. The total number of active alarms is shown on the screen.

3.7.3.1 Acknowledge an alarm

To acknowledge an alarm:

1. Open the **Alarm list**.
2. Select the alarm.
3. Push **OK**.

Acknowledging an alarm does not remove the alarm condition. The alarm remains active until the cause of the alarm is removed.

NOTE Acknowledging an alarm does not correct the fault that caused the alarm. Before returning the system to operation, identify and correct the cause of the alarm.

3.7.3.2 Silence the alarm horn

If an alarm horn is configured, it activates when an alarm occurs.

To silence the alarm horn: Push the  button.

Silencing the alarm horn does not acknowledge the alarm and does not remove the alarm condition. The alarm remains visible until it is acknowledged and the alarm condition is cleared.

3.7.3.3 Automatic restart after alarm acknowledgement

If an alarm prevents the generator from starting in AUTO mode, the generator can automatically start when:

1. The alarm condition is cleared.
2. The alarm is acknowledged.
3. A valid start condition still exists.

NOTE



Automatic start

The generator can start automatically after an alarm has been acknowledged.

Make sure personnel are clear of the equipment before acknowledging alarms.

3.8 Logs

3.8.1 About logs

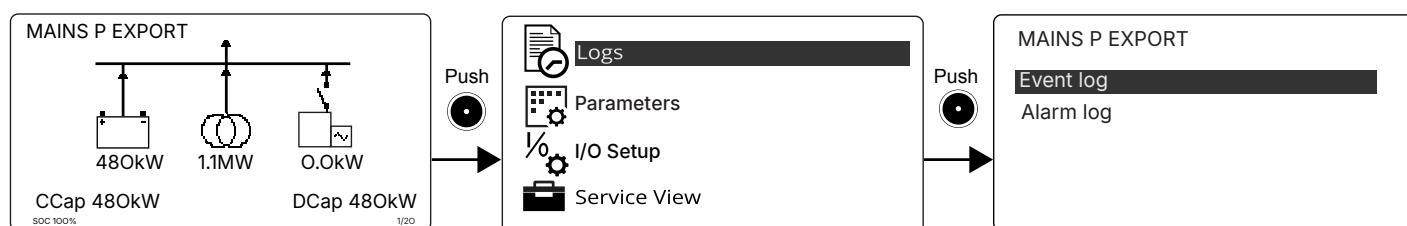
The log menus record a history of controller events, alarms, and test results. Use the logs to investigate the cause of an alarm or to review system behaviour over time.

Log	Capacity	Notes
Event log	Up to 500 events	A historical list of all system and operator events, for example alarm acknowledgements, breaker operations, and parameter changes.
Alarm log	Up to 500 alarms	Records all alarm activations and acknowledgements. Only the latest 100 alarms are shown on the display. All 500 are visible in the utility software.
Battery test log	Up to 52 tests	Records the result of each battery test as either Test OK or Test failed.

3.8.2 Access logs

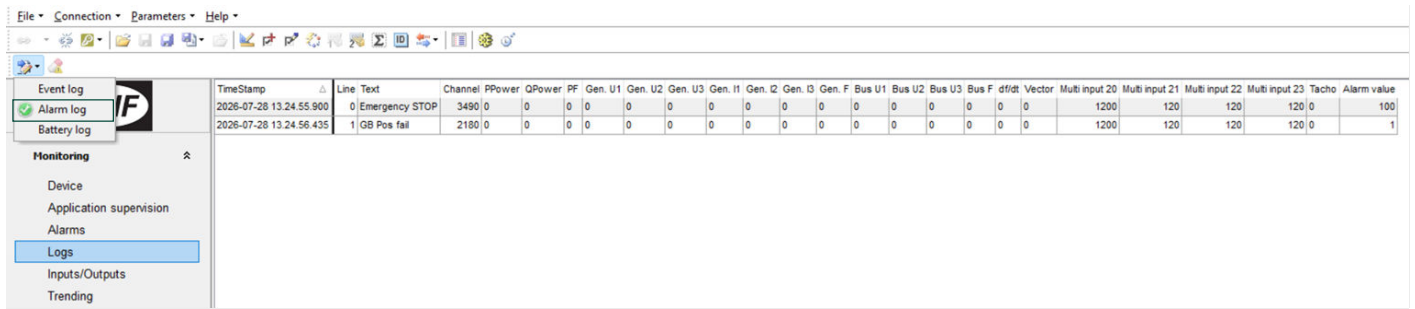
From the display

1. Push .
2. Use the Up and Down buttons to go to *Logs*.
3. Push  to select *Logs*.
4. Use the Up and Down buttons to select the log you want to see and push .
5. Push  to exit the log.



With the utility software

- Select *Logs* from the menu on the left.
- In the task bar, select Read logs.
- Select the log list you want to view.



3.9 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	The controller is receiving the application that it has just connected to.
ADD ESS TO CAN PMS?	Easy connect: Add ESS to PMS plant.
AMF ACTIVE	The controller is in auto mode during a mains failure.
AMF AUTO	The controller is in auto mode and ready to respond.
AMF MAN	The controller is in manual mode and waiting for operator input.
Aux. test ##.#V #####s	The controller power supply test is activated.
AUX TEST ST. SEQ.	Genset battery test.
AUX TEST START SEQ.	Genset battery test.
AWAITING ESS RUN OK	The ESS must be operating before attempting to close the breaker.
AWAITING MODE INFO	The selected mode is not supported by the configured application. Select another application mode.
BATT	Battery application is selected.
BATT READY	The battery is ready for operation.
BATT RUNNING	The battery is operating.
BATT SUPPLY	The battery is supplying power.
BATT in OPERATION	The ESS is in operation.
BATTERY BOOST ACTIVE	The battery is boosting the DC voltage to increase the state of charge (SOC).
BB BLOCKED BY GB	Power management: GB has a position failure.
BB BLOCKED BY MB	Power management: MB has a position failure.
BB BLOCKED BY TB	Power management: TB has a position failure.
BB V/Hz OK IN	The voltage and frequency will be okay in #####s.
BB VOLTAGE DETECTED	Voltage detected on the busbar.
BESS INITIALIZING	The controller is establishing communication to the BESS.
BLACKOUT ENABLE	Blackout close when there is a CAN failure.
BLOCKED FOR CLOSING	The breaker is unable to close.
BLOCKED FOR START	There are active alarms.
BROADCAST ABORTED	Power management: Broadcast terminated.
BROADCAST COMPLETED	Power management: Successful broadcast of application.
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.

Status text	Condition
CHECKING CAN PMS	Easy connect: Checking for other units on the PMS CAN line.
CLOSE DELAY	ES breaker close delay.
COMPENSATION FREQ.	Compensation is active. The frequency is not at the nominal setting.
DELAY REG.	Regulation is delayed until after start.
DELOAD	The controller is decreasing the load of the genset in order to open the breaker.
DELOAD ERROR	There is an error when deloading.
DELOADING MB	The ESS controller (without power management application) is increasing the load to de-load MB XX.
DERATED TO	Displays the ramp-down set point.
EASY CONNECT ERROR	Easy connect failure.
ESB OPEN BLOCKED	The ES breaker is blocked from opening.
ESS NOT READY	The ESS is not ready for operation.
EXT. MB OPEN FAILURE	External MB open failure.
EXT. STOP TIMER	Extended stop timer.
EXTERNAL START ORDER	A planned AMF sequence is activated (without a mains failure).
FIXED POWER ACTIVE	The controller is in auto mode and supplying fixed power.
FIXED POWER AUTO	The controller is in auto mode and ready to respond.
FIXED POWER MAN	The controller is in manual mode and waiting for operator input.
FULL TEST	Test mode is activated.
ID 1-16 SUPPORT ONLY	Only IDs 1 to 16 are supported.
ISLAND ACTIVE	The controller is in auto mode and supplying power while not connected to a mains supply.
ISLAND AUTO	The controller is in auto mode and ready to respond.
ISLAND MAN	The controller is in manual mode and waiting for operator input.
LOAD TAKE OVER AUTO	The 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 TEST	Test mode is activated.
LTO ACTIVE	The controller is in auto mode and taking over the load.
MAIN BB FAILURE	Phase is missing.
MAIN BB U OK IN	The mains BB voltage is OK after mains failure. The timer shown is the mains OK delay.
MAIN BB F OK IN	The mains BB frequency is OK after mains failure. The timer shown is the mains OK delay.
MAIN BUSBAR OK	The mains busbar is OK after mains failure. The timer shown is the mains OK delay.
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 FAILURE TIMER	Mains failure present timer.
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 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 U OK DEL #####s	The mains voltage is OK after a mains failure. The timer shown is the mains OK delay.
MB CLOSED INHIBITED	MB closing inhibited.

Status text	Condition
MB EXT. TRIPPED	The mains breaker is tripped externally.
MB IS CLOSED	The mains breaker is already closed.
MB IS OPEN	The mains breaker is already open.
MB SYNCHRONISING	Synchronising the mains breaker.
MB RACKED OUT	The <i>Breaker racked out</i> digital input is activated. Position failure and external trip alarms from the racked out breaker will not interfere with the rest of the system.
MIN GEN LOAD CHARGING	The battery is charging to make sure the gensets are operating at the minimum genset load.
MOUNT CAN CONNECTOR	Quick setup.
MPE ACTIVE	The controller is in auto mode and exporting power to the mains.
NOT IN NOREG OR MAN	The user tried to open or close the mains breaker in auto mode.
NOT POSSIBLE	Unable to do the requested command.
PEAK SHAVING ACTIVE	The controller is in auto mode and doing peak shaving.
PEAK SHAVING AUTO	The controller is in auto mode and ready to respond.
PEAK SHAVING MAN	The controller is in manual mode and waiting for operator input.
POWER DERATE	Power derate is active.
PROGRAMMING LANGUAGE	Downloading the language file, using the PC utility software.
QUICK SETUP ERROR	Quick setup of the application failed.
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.
READY AMF AUTO	The controller is in auto mode and the ESS is stopped.
READY AUTO OPERATION	The controller in auto mode and ready for breaker operation (no active BTB trip alarm).
READY FIXED P AUTO	The controller is in auto mode and the ESS is stopped.
READY ISLAND AUTO	The controller is in auto mode and the ESS is stopped.
READY LTO AUTO	The controller is in auto mode and the ESS is stopped.
READY MPE AUTO	The controller is in auto mode and the ESS is stopped.
READY PEAKSHAV AUTO	The controller is in auto mode and the ESS is stopped.
READY TO BE ADDED	Easy connect: Controller is ready to be added.
RECEIVE COMPLETED	The broadcast application has been received.
RECEIVE ERROR	There was an error receiving the broadcast application.
RECEIVING APPL.	Receiving the broadcast application on the CAN line.
REM. FROM PMS ESS	Easy connect: Remove ESS from PMS plant.
REMOVE CAN CONNECTOR	Remove the power management CAN lines.
SELECT OPERATION MO	An operation mode has not been selected.
SELECT PLANT MODE	A plant mode has not been selected.
SETUP COMPLETED	Successful update of the application in all the controllers.
SETUP IN PROGRESS	A new controller is being added to the existing application.
SETUP STAND ALONE?	Easy connect: Configure the controller in a stand-alone application.

Status text	Condition
SIMPLE TEST	Test mode is activated.
SOC STOP LIM > THR2	Warning: The SOC genset stop limit is more than the SOC threshold 2.
START GEN(s) IN ###s	Genset start timer: Load dependent start/stop.
START NEW PLANT	Easy connect: Configure a new PMS plant.
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 GEN(s) IN ###s	Genset stop timer: Load dependent start/stop.
SYNCHRONIZING MB	MB is synchronising.
TOO SLOW 00←-----	ESS frequency is less than the BB frequency.
-----→ 00 TOO F	ESS frequency is more than the BB frequency.
UNEXPECTED GB ON BB	A stopped genset has a closed GB.
VOLT/FREQ OK IN	BB Hz/V OK timer.
VOLTAGE/FREQUENCY OK	The voltage and frequency are okay, and the timer has run out.
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.

4. Configuration

4.1 Parameters

4.1.1 About parameters menu

The controller provides access to operating parameters and settings through the Parameters menu.

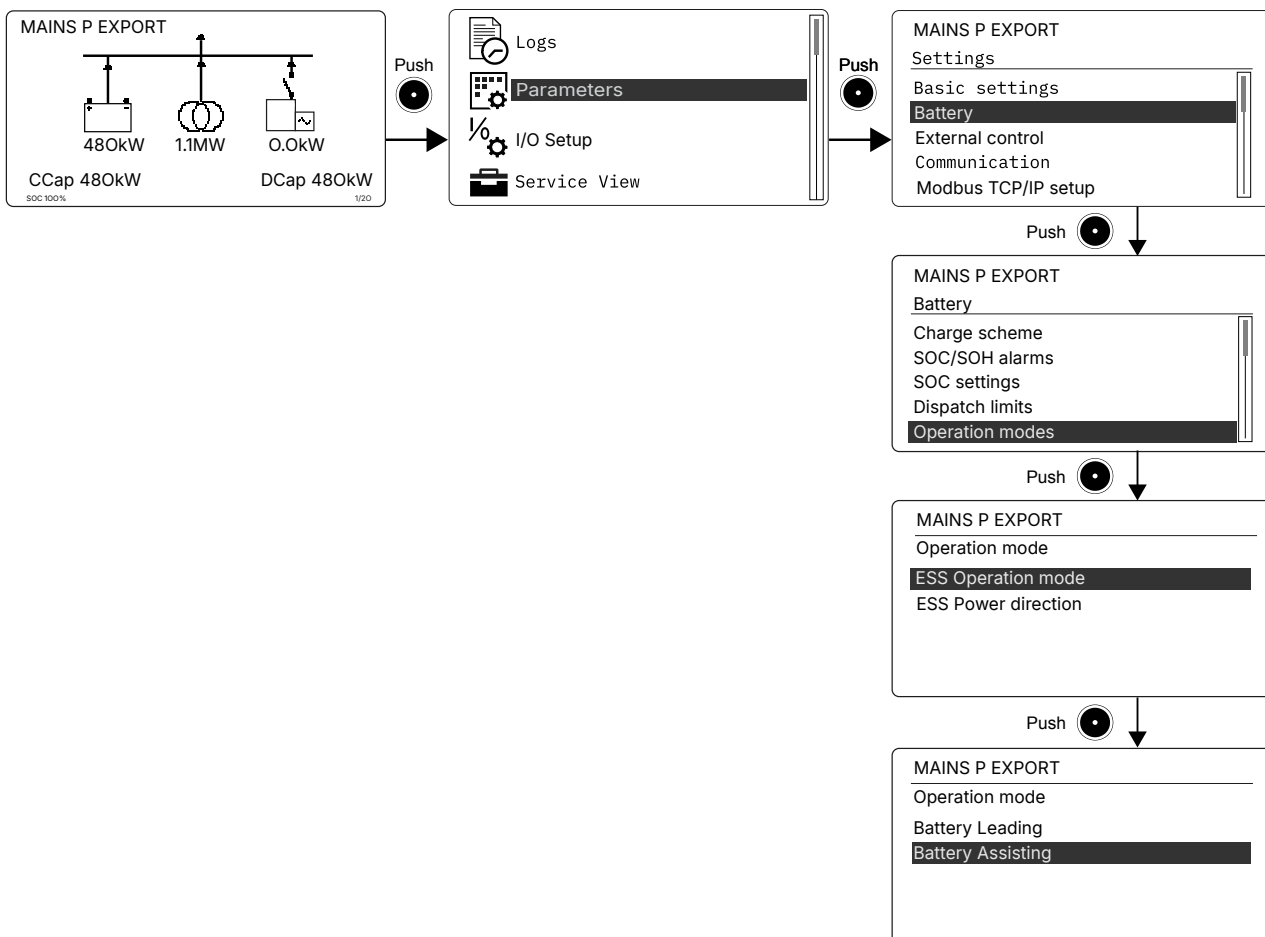
Some parameters can be viewed only, while others can be modified if the required access level is available. Depending on the controller configuration, a password may be required to change parameter values.

4.1.2 Access the parameters menu

To access the Parameters menu:

1. From the View menu, push the  button.
2. Use the Up and Down buttons to navigate to **Parameters**.
3. Push  to select a category or parameter.
4. Use Up and Down buttons to browse the menu structure.

This is an example of how to change the operation mode settings.



4.1.3 Parameter number

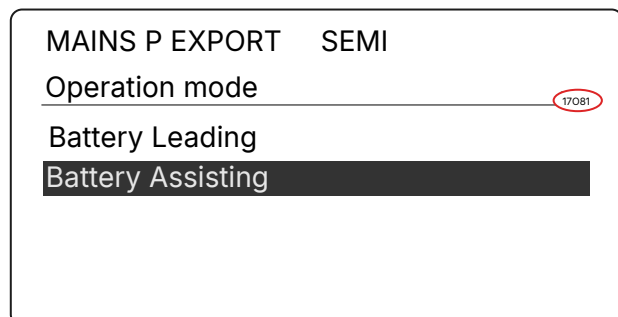
Each parameter has a unique parameter number.

The parameter number uniquely identifies a setting in the controller and makes it easier to locate the correct parameter when following instructions, troubleshooting, or receiving support. The same parameter number is used in the controller display and the utility software.

You can use the parameter number when:

- Looking up a specific setting.
- Following instructions from DEIF Support.
- Reviewing commissioning documentation.
- Comparing settings between controllers.
- Navigating directly to a parameter using the *Jump to parameter* function.

The parameter number is shown on the parameter screen.



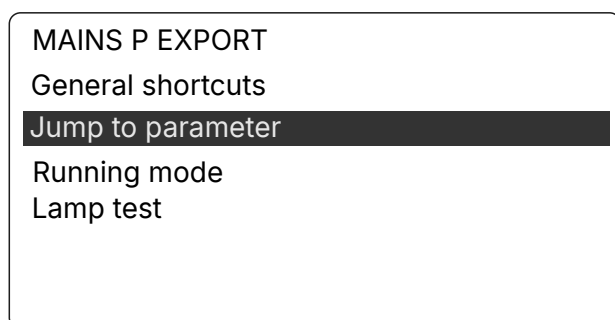
You can also find the menu number with the utility software:

1. Select *Parameters* from the 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.

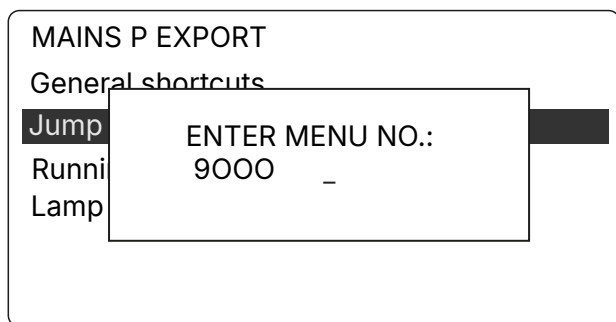
4.1.4 Jump to parameter

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

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



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



- Use the Up and Down buttons to change the numbers, and push the  button to save. Use the Left and Right buttons to move to the next digit.

4.2 Display views

Display views show operating information, measurements, counters, engine information, and application-specific data. The controller has 20 different display views and 18 of the views are pre-configured. You can configure the views with the utility software. Navigate display views To move between display views:

- Go to the View menu.
- Push the Up or Down navigation button.
- Continue until the required display view is shown.

Line	View 1	View 2	View 3	View 4	View 5
1	Supervision Drawing	ESS PkW QkVAR	Synchroniser	ES P 0kW	P 0kW 0%
2	-	State of Charge %	-	ES Q 0kvar	Q 0kVAR 0%
3	-	State of Health %	-	ES PF 0.00	ES f-L1 0.00Hz
4	-	Dischar. Cap. kW	-	ES 0 0 0V	ES f-L2 0.00Hz
5	Supervision	Char. Cap. kW	-	BB 0 0 0V	ES f-L3 0.00Hz

Line	View 6	View 7	View 8	View 9	View 10
1	ES P 0kW	ES UL1N 0V	Angle BB-ES 0deg	BB U-Max 0V	Date and Time
2	ES Q 0kvar	ES U-L2N 0V	ES U-L1L2 0V	BB U-Min 0V	BB U-L1L2 0V
3	ES I-L1 0A	ES U-L3N 0V	ES U-L2L3 0V	BB U-L1N 0V	BB UL2L3 0V
4	ES I-L2 0A	PF %	ES U-L3L1	BB U-L2N	BB U-L3L1 0V
5	ES I-L3	State of Energy kWh	Energy Day 0kWh	BB U-L3N 0V	BB f-L1 0.00Hz

Line	View 11	View 12	View 13	View 14	View 15
1	Multi Input 20 0	ESS P Reference	DCU Vdc	ES P L1 0kW	ES Q L1 0kvar
2	Multi Input 21 0	ESS Q Reference	DCI Adc	ES P L2 0kW	ES Q L2 0kvar
3	Multi Input 22 0	Energy Week 0kWh	Energy Function Okay	ES P L3 0kW	ES Q L3 0kvar
4	Multi Input 23 0	Energy Month 0kWh	Power Function Okay	Low Missing Nodes	Function Mode
5	P Mains	Missing nodes	MB Operations	High Missing Nodes	Ext. DG Pkw Qkvar

Line	View 16	View 17	View 18	View 19	View 20
1	ES S L1 0kVA	Energy Day 0kvarh	Import Week 0kWh	-	-
2	ES S L2 0kVA	Energy Week 0kvarh	Import Month 0kWh	-	-
3	ES S L3 0kVA	Energy Month 0kvarh	Import Total 0kvarh	-	-
4	-	Import Total 0kWh	Import Day 0kvarh	-	-
5	-	Import Day 0kWh	Import Week 0kvarh	-	-

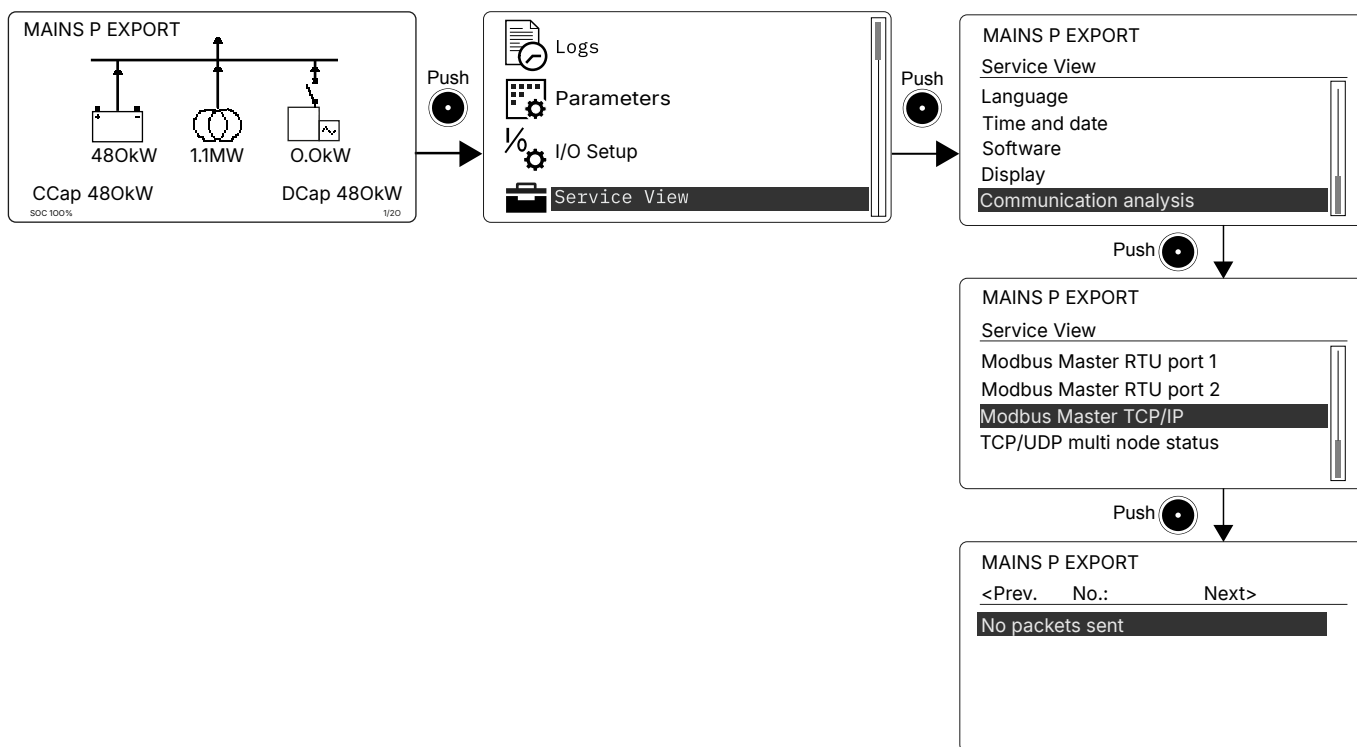
4.3 Service view

Use the service view to access controller information used for monitoring, maintenance, and troubleshooting, and change the passwords.

To access Service View:

1. From the view menu, push  button
2. Select *Service View*
3. Push  button.
4. Browse the available information using the navigation buttons.

Example



4.3.1 Communication troubleshooting

In *Service View > Communication analysis* you can see:

- Modbus Master RTU port 1
- Modbus Master RTU port 2
- Modbus Master TCP/IP
- TCP/UDP multi mode status

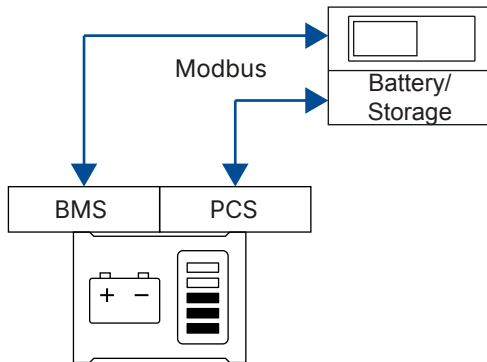
For each selection, you can see configuration and operating details. For example, for Modbus Master TCP/IP you can see:

- Details for each connected device (use <Prev. and Next> to navigate)
- IDs, Rx and Tx info, IP address, connected (true or false), and so on.

The ASC 150 Storage controller controls the ESS with communication to a battery management system (BMS), a battery control unit (BCU), or a power conversion system (PCS).

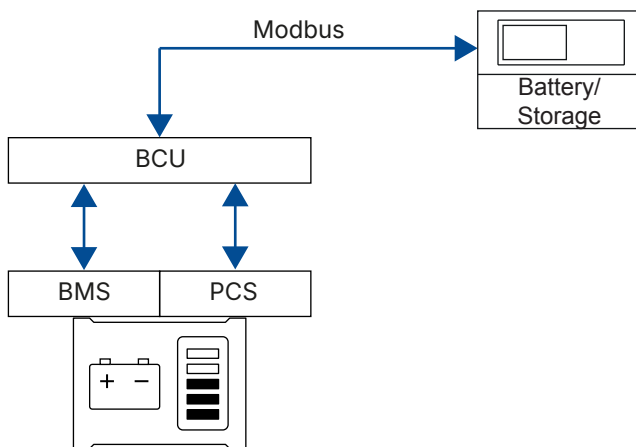
Communication with the battery management system (BMS) and power conversion system (PCS)

If the ESS does not have a BCU, the ASC 150 Storage controller communicates with the BMS over Modbus. The ASC also communicates with the PCS over Modbus. This examples shows a simplified version of this type of communication.



Communication with the battery control unit (BCU)

If the ESS does have a battery control unit (BCU), the ASC communicates with the BCU over Modbus. This is a simplified example of how this type of communication works. Troubleshooting is only for communication between the BCU and the ASC controller since communication between the BCU and BMS, and the BCU and PCS is proprietary.



4.4 I/O Setup

The I/O Setup menu provides access to the controller inputs and outputs.

Depending on the access level and controller configuration, you can use I/O Setup to:

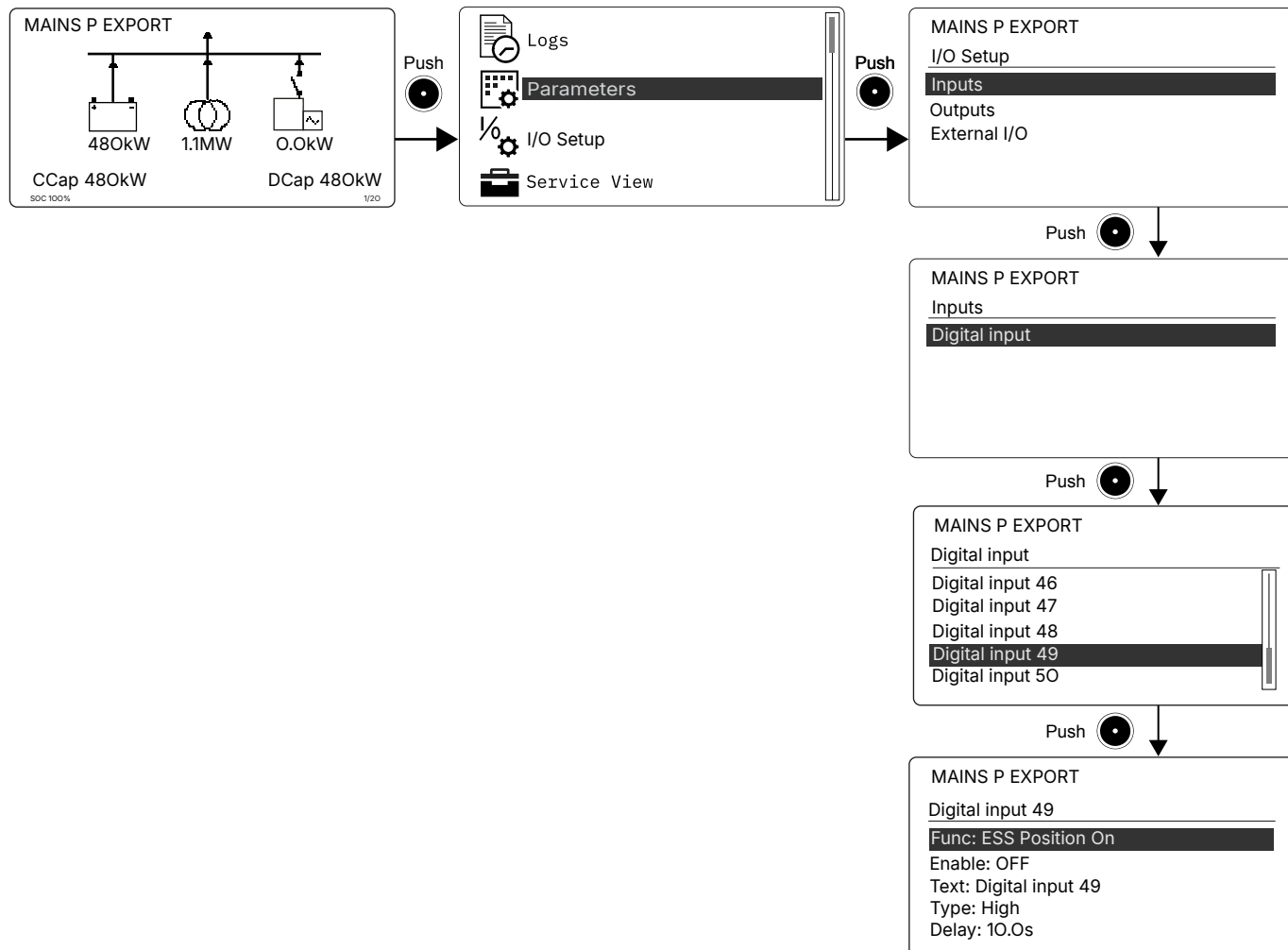
- View input and output status.
- Verify signal values.
- Check configured input and output functions.
- Modify I/O settings and parameters.

Typical signal types include digital inputs, digital outputs, multi-inputs, and external I/O.

To access I/O Setup:

1. Push  button.
2. Select *I/O Setup*.
3. Push  button.
4. Select the required I/O type.
5. Browse the available channels and settings using navigation buttons.

Example



4.5 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 mode.



More information

See **General shortcuts** in the **Designer's handbook** for how to configure the general shortcuts.

Example

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

BLOCKED FOR START
Engine shortcuts
General shortcuts
Jump to parameter
Running mode
Start test
Lamp test

2. Select *General shortcuts* using the navigation buttons

3. Push the  button.

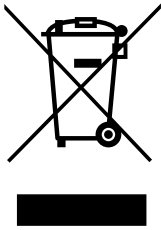
BLOCKED FOR START
SC Switch 1 off
SC Pulse 1

4. Use the navigation buttons to select a shortcut.

5. End-of-life

5.1 Disposal of waste electrical and electronic equipment

WEEE symbol



All products that are marked with the crossed-out wheeled bin (the WEEE symbol) are electrical and electronic equipment (EEE). EEE contains materials, components and substances that can be dangerous and harmful to people's health and to the environment. Waste electrical and electronic equipment (WEEE) must therefore be disposed of properly. In the EU, the disposal of WEEE is governed by the WEEE directive issued by the European Parliament. DEIF complies with this directive.

You must not dispose of WEEE as unsorted municipal waste. Instead, WEEE must be collected separately, to minimise the load on the environment, and to improve the opportunities to recycle, reuse and/or recover the WEEE. In the EU, local governments are responsible for facilities to receive WEEE. If you need more information on how to dispose of DEIF WEEE, please contact DEIF.