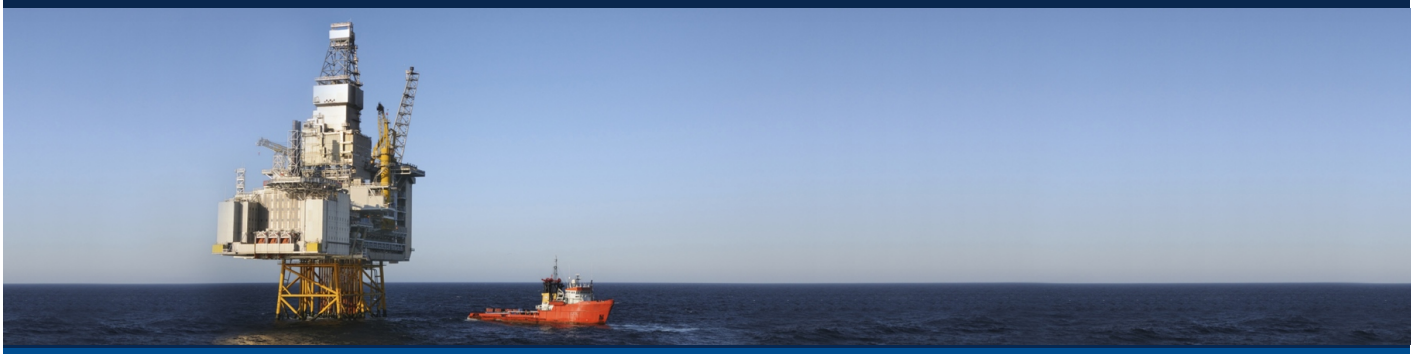
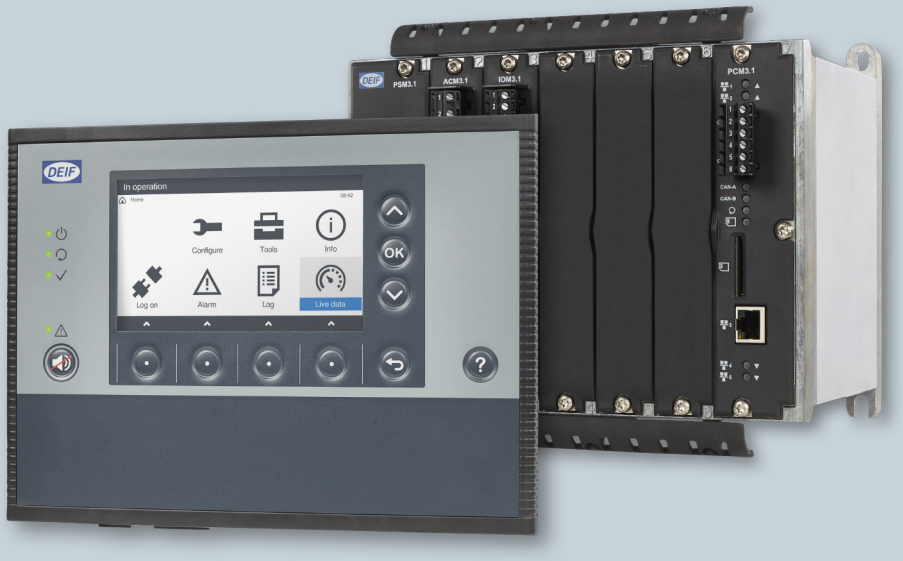
-power in control

QUICK START GUIDE



Generator Protection Unit
GPU 300



DEIF A/S · Frisenborgvej 33 · DK-7800 Skive
Tel.: +45 9614 9614 · Fax: +45 9614 9615
Info@deif.com · www.deif.com

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1. Introduction

1.1 About the quick start guide

1.1.1 General purpose

This is the quick start guide for DEIF's Generator Protection Unit, GPU 300. The guide provides the basic information to install and configure the GPU 300.

Refer to the **Designer's handbook**, **Installation instructions**, **Commissioning guidelines** and **PICUS manual** for more information.

1.1.2 Software version

This **Quick start guide** corresponds to the following software versions.

Table 1.1 Software versions

Software	Details	Version
PCM APPL	Controller application	GPU 300 1.0.x.x
DU APPL	Display unit application	GPU 300 1.0.x
PICUS	PC software	1.0.x.x

1.2 Warnings and safety

1.2.1 Safety during installation and operation

Installing and operating the equipment may require work with dangerous currents and voltages. The installation must only be carried out by authorised personnel who understand the risks involved in working with electrical equipment.

DANGER!
Hazardous live currents and voltages. Do not touch any terminals, especially the AC measurement inputs and the relay terminals. Touching the terminals could lead to injury or death.

1.2.2 Controller power supply

If the controller has no power supply, it is OFF and does not provide any protection to the system. The controller cannot enforce any trip, block, or latch when it is off. All the controller relays de-energise.

The controller must have a reliable power supply, which must include a backup power supply. In addition, the switchboard design must ensure that the system is sufficiently protected if the controller power supply fails.

1.2.3 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.

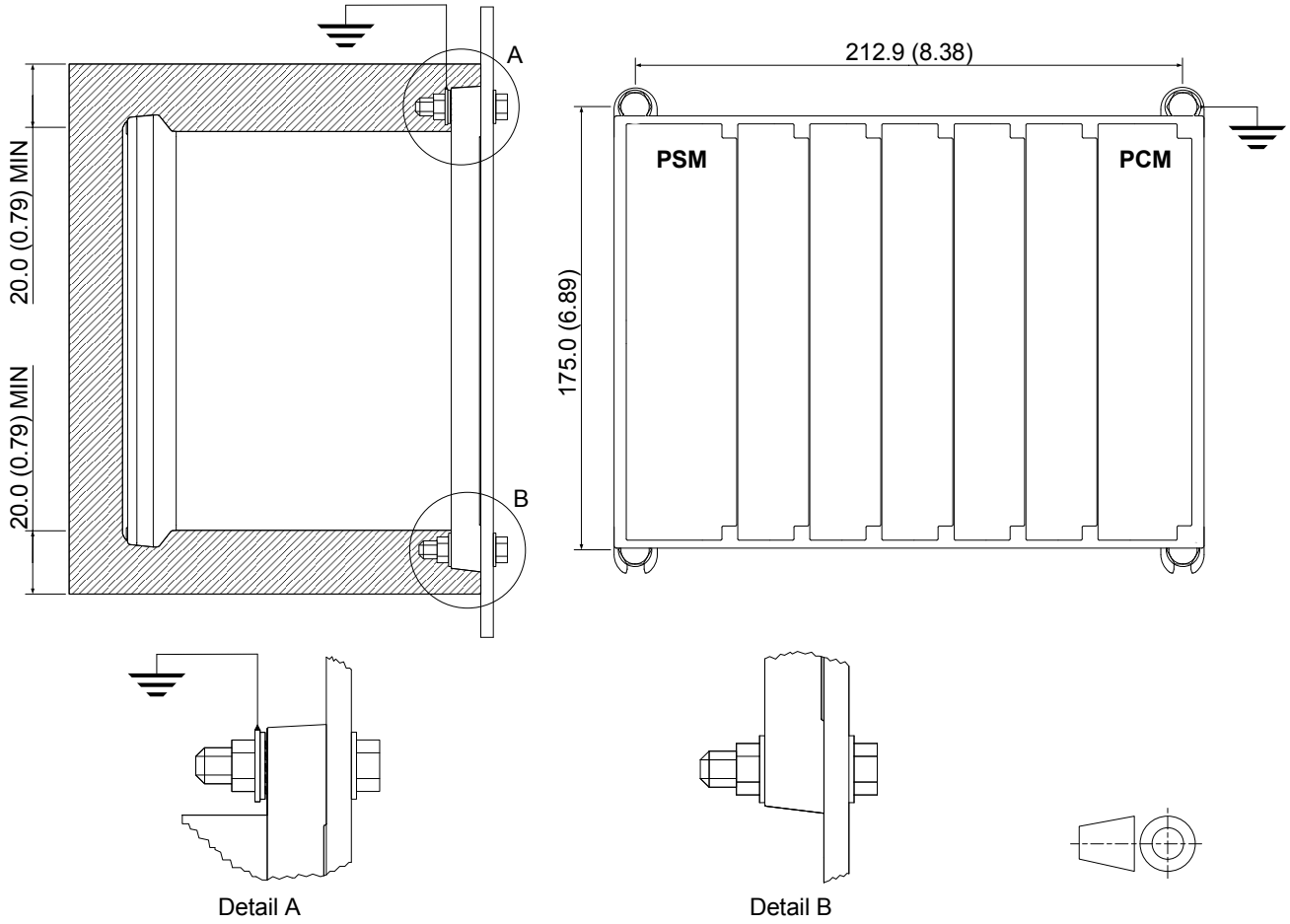
1.2.4 Electrostatic discharge

You must protect the equipment terminals from static discharge during handling, including installation and dismounting. Once the equipment is correctly installed and the frame ground is connected, it is no longer necessary to protect the terminals from static discharge.

2. Hardware setup

2.1 Mount the hardware

2.1.1 Controller mounting



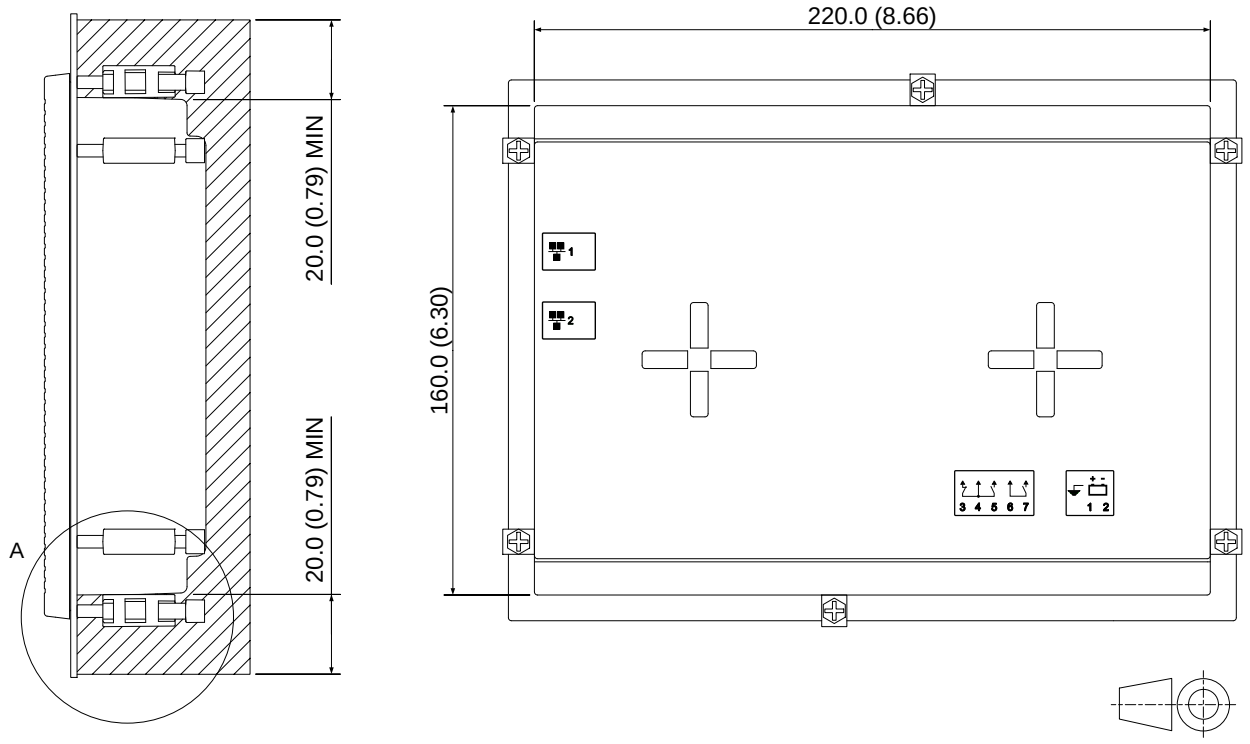
1. Check the available space at the vertical mounting position. There should be a minimum of 20 mm (0.79 inches) of free space above and below the controller for ventilation.

INFO
More free space might be required for the communication cable connectors and the cable bend radius.

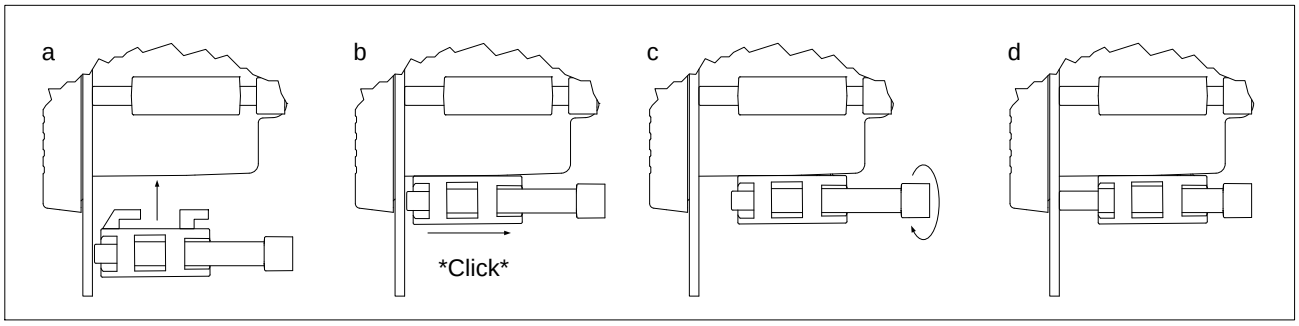
2. Mount the rack at the mounting position with the PSM on the left and the PCM on the right when looking at the controller from the front.
3. One mounting position should be grounded. See *Detail A*.

INFO
The grounded position must have a toothed lock washer between the controller foot and the earth connection.

2.1.2 Display unit mounting



Detail A



1. Check the available space at the vertical mounting position. There should be a minimum of 20 mm (0.79 inches) of free space above and below the controller for ventilation.

INFO
More free space might be required for the communication cable connectors and the cable bend radius.

2. Slide the display unit into the mounting position.
3. Click in, and fasten the securing screws. See *Detail A*.

2.2 Wire the hardware

2.2.1 Wire the controllers

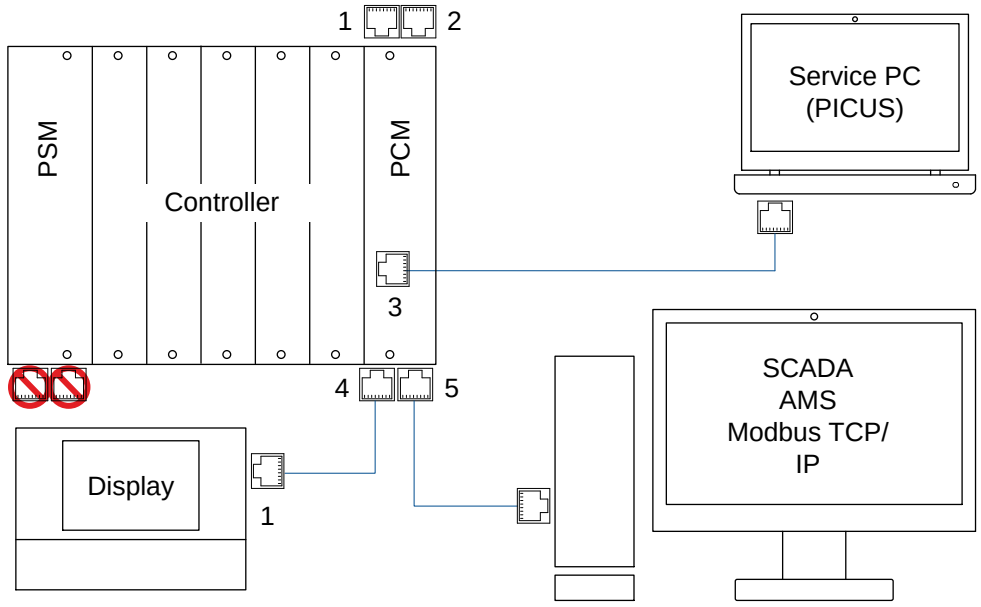
Connect the wires to the front of the controller modules according to the system design.

CAUTION
Do NOT connect the power cables at this time.

Refer to the **Designer's handbook**, **Installation instructions** and **Commissioning guidelines** for more information.

2.2.2 Wire the communication

Figure 2.1 Example of how communication wires can be connected

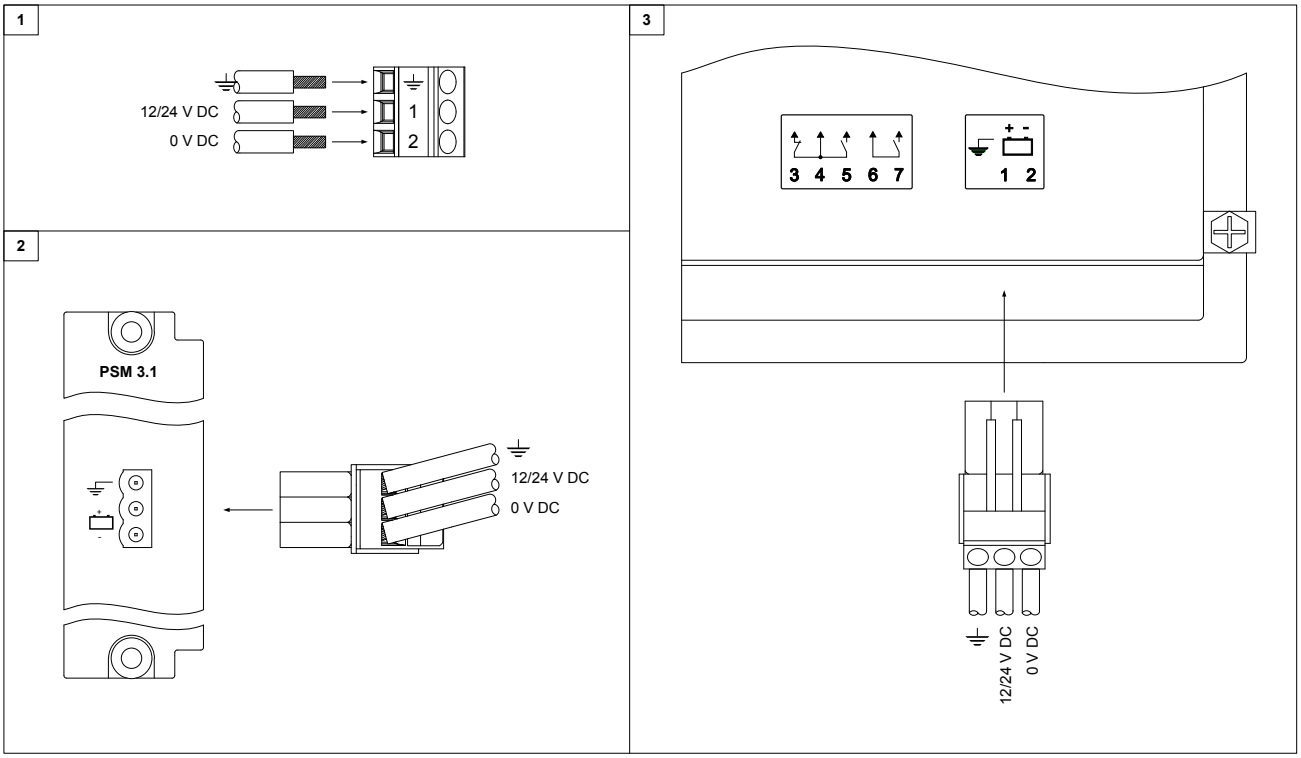


Connect the communication wires according to the system design.

- The diagram shows the recommended default connection for the Ethernet cables.
- The service PC, SCADA, alarm management system (AMS)and modbus TCP/IP connections can be connected to any controller in the network.

2.2.3 Wire the power supplies

CAUTION
Ensure the power supply is OFF before connecting the power supply to the controllers and display units.



1. Connect the wires from the power supply to the power terminal blocks for the controllers and the display units.
2. Insert the power terminal blocks into the power terminals of the controllers' modules.
3. Insert the power terminal blocks into the power terminals of the display units.
4. Turn on the power.

3. Software setup

3.1 PICUS

3.1.1 Download and install

1. Visit http://www.deif.com/software/software-download.
2. Select PICUS software from the list and submit your email address to receive a download link.
3. Follow the link in the email to download the software.
4. Launch the PICUS installer.
5. Follow the on-screen instructions to install PICUS.

CAUTION
PICUS uses *Bonjour* for the network detection on the DEIF network. You must install *Bonjour*, or already have this installed on your computer.

3.1.2 First time log on

Logon

1. Connect the service computer, with PICUS installed, to the controller.
2. Launch PICUS from the installed location.
3. In PICUS, select the controller from the list and select **Connect** at the bottom of the window.
4. Select the *Admin* user (default password: 00000004).
5. Log on using the default password.

Change administrator password

1. Go to **Tools > Advanced > Permissions > Users**.
2. Select *Admin* and click **Edit** .
3. Confirm the *Old password*, then enter and confirm the *New password*. Select **Save** .
4. Click **Write** in the right side panel.

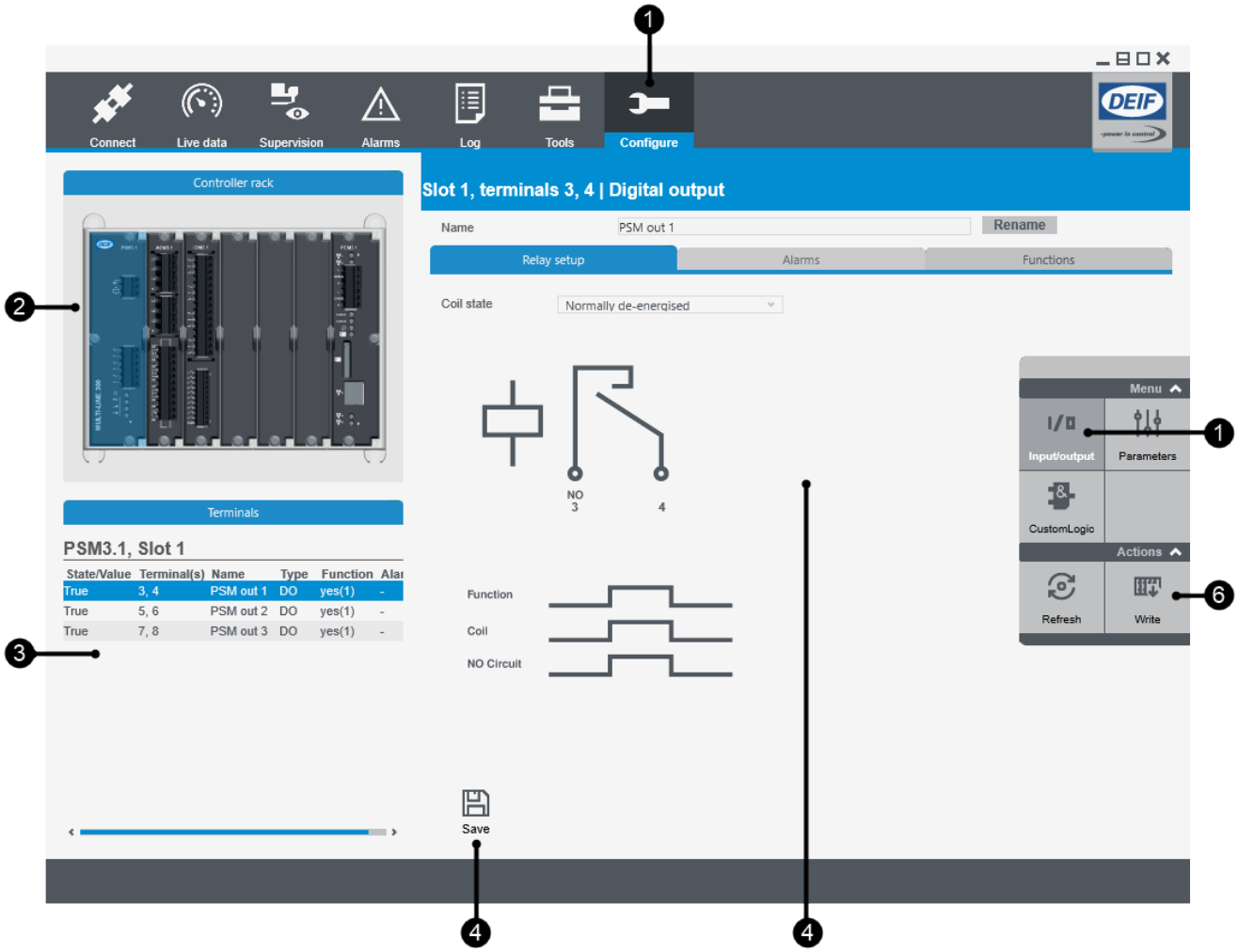
Change date and time

1. Go to **Tools > Date and time**.
2. Enter the correct date and time.
3. Click **Write** in the right side panel.

See the **PICUS manual** for more information.

3.2 Software configuration

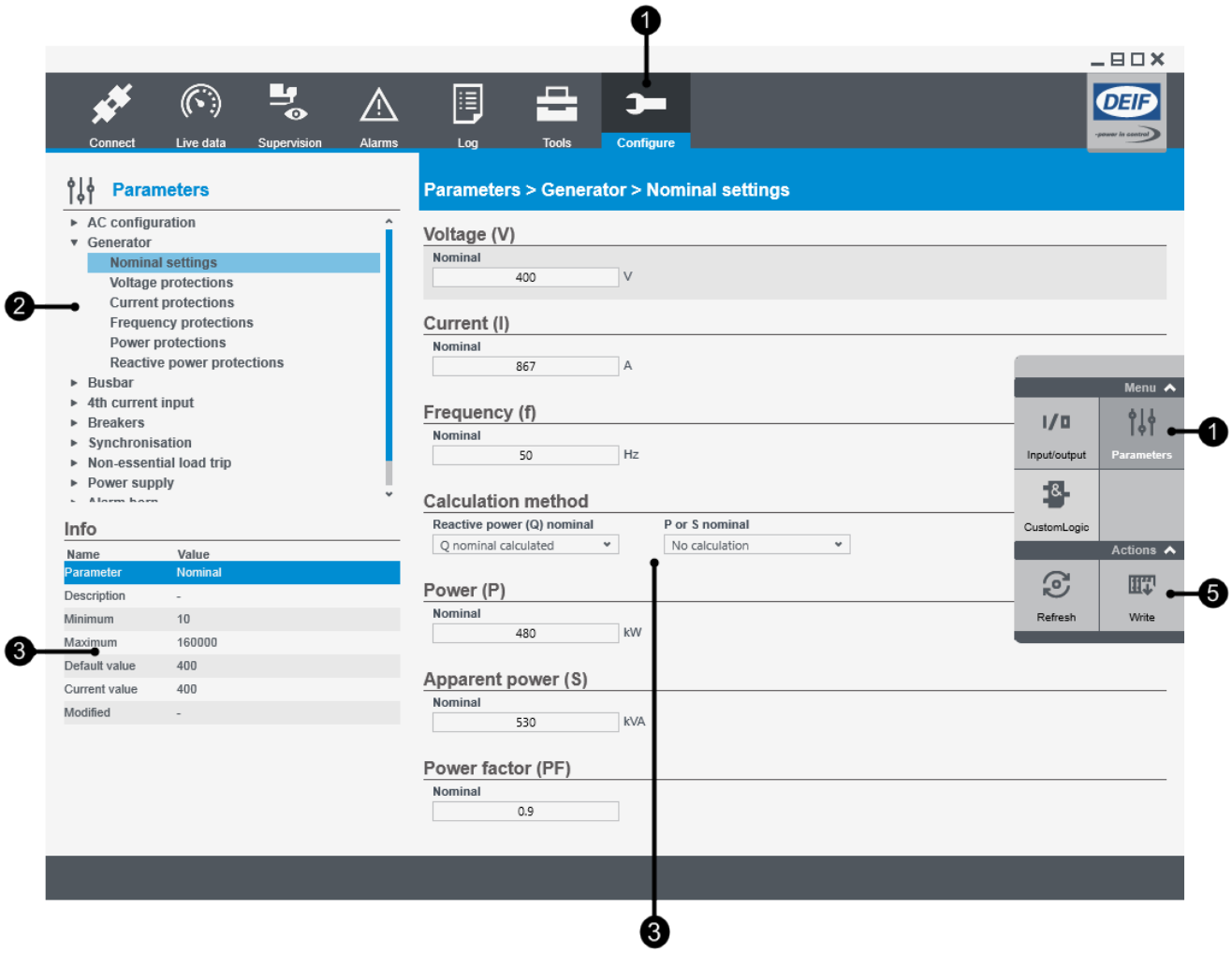
3.2.1 Configure inputs and outputs



1. Go to **Configure > Input/output**.
2. Select the controller module to configure.
3. Select the terminal to configure.
4. Configure the terminal and click **Save**  when the configuration is complete.
5. Repeat step 3 and step 4 for the remaining terminal configurations.
6. Click **Write**  in the right side panel.

INFO
You only configure the controller that you are *Logged on* and *Connected* to.

3.2.2 Configure parameters

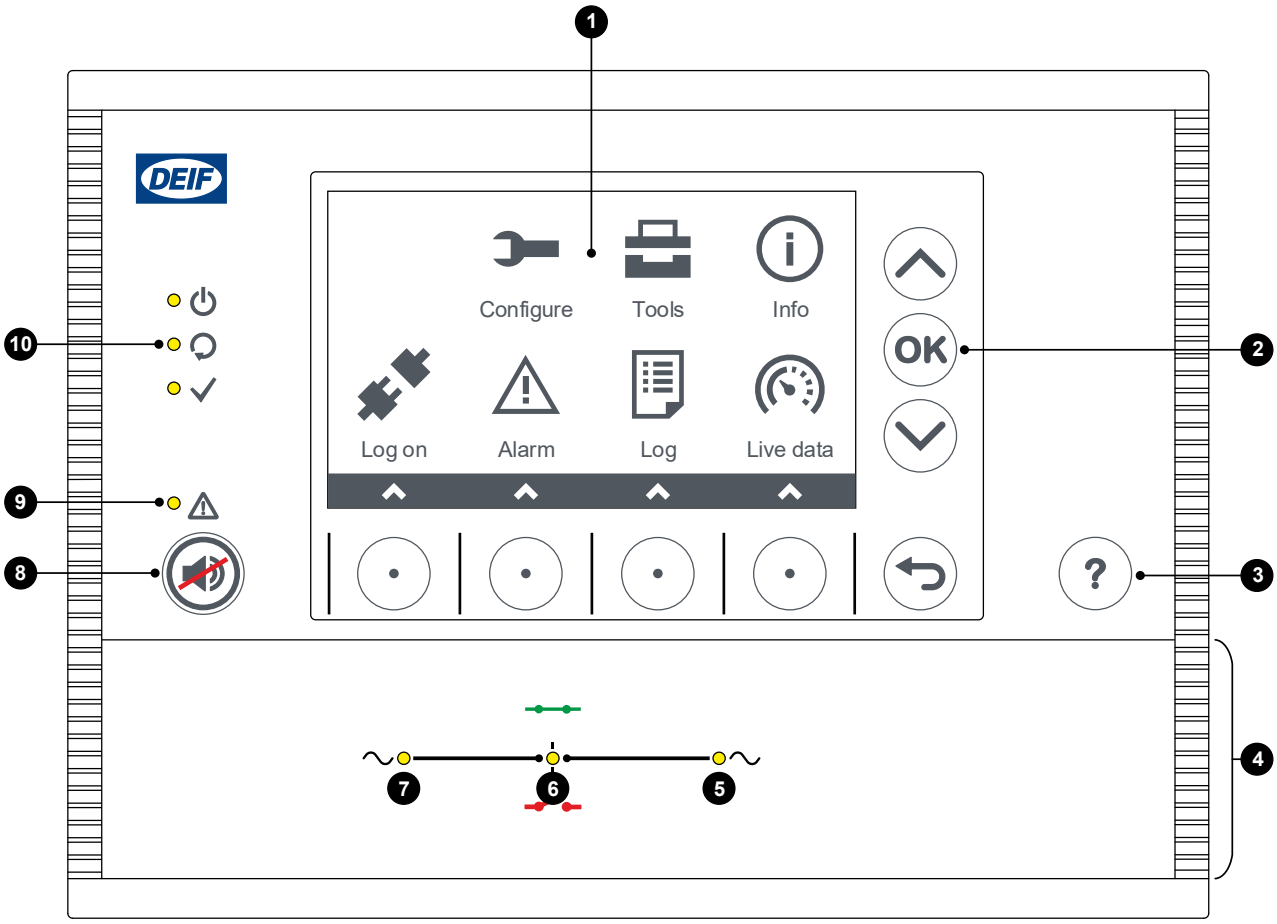


1. Go to **Configure > Parameters**.
2. Select the parameter group that you want to configure from the list.
3. Select and configure the parameter. Additional information about the parameter that you are configuring is displayed under *Info*.
4. Repeat step 2 and step 3 for the remaining parameters.
5. Select **Write** in the right side panel.

INFO
You only configure the controller that you are *Logged on* and *Connected* to.

4. Display unit overview

4.1 Display unit overview



Number	Name	Function
1	Screen	Displays the menus and status of the connected controller.
2	Navigation push buttons	Eight push buttons to navigate the menus and make configurations.
3	Help	Opens help for the screen that you are viewing.
4	Display unit configurable folio	The LEDs and picture on the bottom of the folio vary according to the display unit option chosen.

Number	Name	Function
5	Busbar LED	**Green**: The busbar voltage and frequency are OK. **Green (flashing)**: The busbar voltage and frequency are OK, but the V&Hz OK timer is still running. **Yellow**: The busbar voltage and frequency are measurable, but not OK. **Red**: The busbar voltage is too low to measure (for example, during a blackout).
6	Breaker LED	**Green**: The breaker is closed. **Red**: The controller tripped the breaker, and the trip alarm is unacknowledged and/or the alarm condition is still present. **Red (flashing)**: Any generator breaker trip alarm is active. **OFF**: The breaker is open.
7	Generator LED	**Green**: The generator voltage and frequency are OK. **Green (flashing)**: The generator voltage and frequency are OK, but the V&Hz OK timer is still running. **Yellow**: The generator voltage and frequency are measurable, but not OK. The breaker cannot close. **OFF**: The generator voltage is too low to measure.
8	Silence horn	Stop the horn output immediately.
9	Alarm LED	**Red (constant)**: Alarm(s) active, and all alarms acknowledged. **Red (flashing)**: Unacknowledged alarm(s). **Yellow**: Unlatched alarms can be reset (when no other alarms require action). **Green (flashing)**: Only unacknowledged alarm(s) where the alarm condition has cleared. **Green (constant)**: No alarms.
10	Controller status LEDs	
	⏻ Display unit power OK	**Green (constant)**: The display unit power is OK. **OFF**: The display unit power is not OK.
	↻ Self-check OK	**Green (constant)** The controller self-check is OK. **OFF**: The controller self-check is not OK, or there is no connection to the controller.
	✓ Ready for operation	**Green (constant)**: There is no alarm action (trip) that prevents the equipment from connecting and supplying power. **OFF**: There is an alarm action (trip) that prevents the equipment from connecting and supplying power.