Generator Paralleling Controller, GPC-3 -
Generator Protection Unit, GPU-3/GPU-3 Hydro -
Paralleling and Protection Unit, PPU-3

- Display and push-button functions
- Alarm handling
- Log list
1. General information

1.1 Warnings, legal information and safety

1.1.1 Warnings and notes
Throughout this document, a number of warnings and notes with helpful user information will be presented. To ensure that these are noticed, they will be highlighted as follows in order to separate them from the general text.

Warnings

⚠️ Warnings indicate a potentially dangerous situation, which could result in death, personal injury or damaged equipment, if certain guidelines are not followed.

Notes

ℹ️ Notes provide general information, which will be helpful for the reader to bear in mind.

1.1.2 Legal information and disclaimer
DEIF takes no responsibility for installation or operation of the generator set. If there is any doubt about how to install or operate the engine/generator controlled by the Multi-line 2 unit, the company responsible for the installation or the operation of the set must be contacted.

⚠️ The Multi-line 2 unit 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.

1.1.3 Safety issues
Installing and operating the Multi-line 2 unit may imply work with dangerous currents and voltages. Therefore, the installation should only be carried out by authorised personnel who understand the risks involved in working with live electrical equipment.

⚠️ Be aware of the hazardous live currents and voltages. Do not touch any AC measurement inputs as this could lead to injury or death.

1.1.4 Electrostatic discharge awareness
Sufficient care must be taken to protect the terminal against static discharges during the installation. Once the unit is installed and connected, these precautions are no longer necessary.
1.1.5 Factory settings
The Multi-line 2 unit is delivered from factory with certain factory settings. These are based on average values and are not necessarily the correct settings for matching the engine/generator set in question. Precautions must be taken to check the settings before running the engine/generator set.

1.2 About the Operator’s Manual

1.2.1 General purpose
This Operator’s Manual mainly includes general product information, display readings, push-button and LED functions, alarm handling descriptions and presentation of the log list.

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

⚠️ Please make sure to read this document before starting to work with the Multi-line 2 unit and the generator set to be controlled. Failure to do this could result in human injury or damage to the equipment.

1.2.2 Intended users
This Operator's Manual is mainly intended for the daily user. On the basis of this document, the operator will be able to carry out simple procedures such as start/stop and control of the generator set.

1.2.3 Contents and overall structure
This document is divided into chapters, and in order to make the structure simple and easy to use, each chapter will begin from the top of a new page.
2. Display unit

2.1 General

This chapter deals with the display unit including the push-button and LED functions.

2.2 Display (DU-2) layouts

The display dimensions are H × W = 115 × 220 mm (4.528” × 9.055”).

2.2.1 GPC

GPC – standard

GPC – options M4 and Y1

DEIF A/S
GPC – option Y11
2.2.2 GPU

GPU – standard

GPU – options G2 and Y5

GPU – options M4 and Y7
GPU – options G2, M4 and Y1

2.2.3 GPU Hydro
GPU Hydro – standard

GPU Hydro – options G2 and Y5
2.2.4 PPU

PPU – standard

PPU – options M4 and Y1

PPU – option Y11
2.3 Display push-buttons and LEDs

2.3.1 Push-button functions
The functions for all display push-buttons are described below:

INFO: Moves directly to the alarm list where all unacknowledged and present alarms are displayed.

JUMP: Enters a specific menu number selection. All settings have a specific number attached to them. The JUMP button enables the user to select and display any setting without having to navigate through the menus.

VIEW: Shifts the first line displaying in the setup menus. Push two seconds to switch to master display in case more than one display is connected (master password is required).

LOG: Jumps directly to the event and alarm log.

Moves the cursor left for manoeuvring in the menus.

Increases the value of the selected set point (in the setup menu). In daily use, this button function is used to switch between displayed percentage or real value of produced power (kW), reactive power (kvar) and apparent power (kVA) in View 3 (V3).

Selects the underscored entry in the fourth line of the display.

Decreases the value of the selected set point (in the setup menu). In daily use, this button function is used to switch between displayed percentage or real value of produced power (kW), reactive power (kvar) and apparent power (kVA) in View 3 (V3).

Moves the cursor right for manoeuvring in the menus.

BACK: Jumps one step backwards in the menu (to previous display or to the entry window).

REMOTE: Activates the remote mode. The push-buttons for START/STOP/GB open/GB close are deactivated. The control is external.

LOCAL: Activates the local mode. The push-buttons for START/STOP/GB open/GB close are activated.

START: Activates the engine start sequence (only active in LOCAL mode).

STOP: Activates the stop sequence (only active in LOCAL mode) including cooling down. When the STOP push-button is pressed during cooling down, the cooling down time is interrupted immediately and the ext. stop timer starts running.
2.3.2 LED functions

Each LED located on the display has its own function. The colour is green, red or yellow (fixed or flashing) dependent on its function. The functions for all display LEDs are described below:

Alarm:    LED **red flashing** indicates that unacknowledged alarms are present.
          LED **red fixed** light indicates that ALL alarms are acknowledged, but one or more alarms are still present.
          LED **off** when no alarm is present.

Run:      LED **yellow** when a running feedback failure is active. (G V/Hz OK, but no running feedback).
          LED **green** indicates that the generator is running and the voltage and frequency are OK.
          LED **off** when no running feedback and no voltage and frequency are measured.

G V/Hz (~):    LED **yellow** when the DG is running and V/Hz not OK.
               LED **green** when the DG is running and the V/Hz OK timer has expired.

Open:    LED **red** when the breaker is tripped by a protection function.
         LED **yellow** when the breaker is deloaded.
         LED **green** when the breaker is open.
         LED **off** when the breaker is closed.

Closed:    LED **yellow** indicates that the synchronisation function is active.
           LED **green** when the breaker is closed.
           LED **off** when the breaker is open.

BB V/Hz (~):    LED **green** when BB V/Hz OK.
                LED **yellow** when BB V/Hz not OK.
                LED **red** when BB voltage is zero (dead bus).

Ready:    LED **green** when the unit is ready for operation.
          LED **off** when the unit is not ready (for example, the start enable is not activated or an active block, trip or shutdown alarm is present).

This indication is to tell the user whether the controller (not the engine) is ready or not.

Regulator ON:    LED **green** when the regulator is activated.
                 LED **yellow** when regulator is activated but no output has been selected for governor interface.
                 LED **off** when the regulator is off.

Remote:    LED **green** when remote mode is active.
           LED **off** when local or SWBD mode is active.

Local:    LED **green** when local mode is active.
          LED **off** when remote or SWBD mode is active.

Power:    LED **green** indicates that the auxiliary supply is switched on.
Self check: LED green indicates that the unit is OK.

2.4 Lamp test and dimmer functions

2.4.1 Lamp test

Place the cursor under SETUP and press the push-button to activate the DU-2 lamp test.

All LEDs on the DU-2 and AOP-1 will turn yellow except the power LED.

2.4.2 Dimmer function

The dimmer function of the display backlight and LEDs is accessed via the JUMP menu 9150.

The illumination intensity of the backlight and the LEDs of each display panel is adjustable by using the JUMP push-button. This adjustment is done by means of the and push-buttons on the display, and the level of the adjustment will be saved in the display internal memory by pressing the ENTER push-button.
2.4.3 AOP-2 lamp test and dimmer function

The AOP-2 has a separate push-button (1) for the combined lamp test and dimmer functionality. A short activation of the push-button will activate the lamp test function. If no further action is taken within three seconds, the AOP-2 will turn back to normal indication.

To activate the dimmer function, the push-button must be pressed several times or continuously to reach the desired light intensity.
3. Menu systems and structure

3.1 Display menu systems

The display includes two menu systems which can be used without password entry:

**View menu system**
This is the commonly used menu system. 15 windows are configurable and can be entered by using the arrow push-buttons.

**Setup menu system**
This menu system is used to set up the unit, and if the user needs detailed information that is not available in the view menu system. Changing of parameter settings is password protected.

3.2 Menu structure

3.2.1 Entry window
When the unit is powered up, an entry window appears. The entry window is the gateway to the other menus. It can always be reached by pressing the BACK push-button three times.

ℹ️ The event and alarm list will appear at power up, if an alarm is present.
3.2.2 View menu
The view menus (V1, V2 and V3) are the most commonly used menus of the unit.

![View menu diagram]

1. First display line: Operational status or measurements
2. Second display line: Measurements relating to operational status
3. Third display line: Measurements relating to operational status
4. Fourth display line: Selection of setup and view menus

In the view menus, various measured values are on the display.

3.2.3 View menu navigation
Views and setup are all selected by moving the cursor in the fourth display line (please notice the underscore of V3 in the drawing above – this indicates the position of the cursor).

The cursor is moved by means of the \( \langle \rangle \) and \( \langle \rangle \) push-buttons on the right side of the display.

View window 1 (V1)

For detailed information about configuration, please see the Designer's Reference Handbook.

V1 contains up to 20 different windows that can be selected using the \( \langle \rangle \) and \( \langle \rangle \) push-buttons.

View window 2 (V2)

V2 is a copy of V1 and contains up to 20 different windows that can be selected using the \( \langle \rangle \) and \( \langle \rangle \) push-buttons.

View window 3 (V3)

The V3 display changes with the running mode:
- The first display line indicates the status of the unit.
- The second and third display lines display power consumption in kW or percentage. This is changed by pressing the \( \langle \rangle \) or \( \langle \rangle \) push-button.
3.2.4 Setup menu

The setup menu is used for parameter setup or to get detailed information that is not available in the view menu system. In this way, this menu can be used for both daily use and setup purposes. The menu is entered from the entry window by selecting the entry SETUP in the fourth display line.

First display line:
(Daily use) The first line is used to display generator and busbar values

Second display line:
(Daily use) Various values can be displayed
(Menu system) Information about the selected channel number
(Alarm/event list) The latest alarm/event is displayed

Third display line:
(Daily use) Explanation for the fourth line cursor selection presents setting of the selected function, and if changes are made, the possible max. and min. values for the setting

Fourth display line:
(Daily use) Entry selection for the setup menu
Press SELECT to select the underscored menu
(Setup menu) Sub-functions for the individual parameters, for example limit
Setup structure

Setup example
The following example illustrates how a specific setting is changed in the setup menu. In this case, **Reverse power** is the selected parameter.
3.3 Display texts

3.3.1 Information texts
This table explains the different information text messages on the display. The information messages are active for three seconds after a push-button has been pressed.

<table>
<thead>
<tr>
<th>Info text message</th>
<th>GPC/GPU/PPU</th>
<th>GPU Hydro</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOT IN LOCAL</td>
<td>X</td>
<td>X</td>
<td>The system is in remote control</td>
</tr>
<tr>
<td>DG RUNNING</td>
<td>X</td>
<td>NA</td>
<td>The generator is already running (option M4 only)</td>
</tr>
<tr>
<td>DG NOT RUNNING</td>
<td>X</td>
<td>NA</td>
<td>The generator is not running (option M4 only)</td>
</tr>
<tr>
<td>GB IS CLOSED</td>
<td>X</td>
<td>X</td>
<td>The generator breaker is closed</td>
</tr>
<tr>
<td>GB IS OPEN</td>
<td>X</td>
<td>X</td>
<td>The generator breaker is open</td>
</tr>
<tr>
<td>WRONG PASSWORD</td>
<td>X</td>
<td>X</td>
<td>Wrong password has been entered</td>
</tr>
</tbody>
</table>
### 3.3.2 Status texts

The following table explains the different status text messages in the display. Status messages are automatically shown during operation without the operator activating any push-buttons.

<table>
<thead>
<tr>
<th>Status text</th>
<th>GPC/PP U</th>
<th>GPU/GP U Hydro</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>READY</td>
<td>X</td>
<td>X</td>
<td>The generator is not running, and the unit is ready for operation</td>
</tr>
<tr>
<td>NOT READY</td>
<td>X</td>
<td>X</td>
<td>The generator is not running, and for example an active “Trip GB” or “Shutdown” alarm is blocking operation</td>
</tr>
<tr>
<td>MANUAL</td>
<td>X</td>
<td>X</td>
<td>Regulation is in MANUAL mode</td>
</tr>
<tr>
<td>FIXED FREQUENCY INT.</td>
<td>X</td>
<td>X</td>
<td>Fixed frequency using internal set point</td>
</tr>
<tr>
<td>FIXED FREQUENCY EXT.</td>
<td>X</td>
<td>X</td>
<td>Fixed frequency using external set point</td>
</tr>
<tr>
<td>NO REGULATION</td>
<td>X</td>
<td>X</td>
<td>Regulation is off when &quot;Start sync/ctrl&quot; input is deactivated</td>
</tr>
<tr>
<td>STATIC SYNC.</td>
<td>X</td>
<td>X</td>
<td>Static synchronisation in progress</td>
</tr>
<tr>
<td>DYNAMIC SYNC.</td>
<td>X</td>
<td>X</td>
<td>Dynamic synchronisation in progress</td>
</tr>
<tr>
<td>ASYNCHRONOUS SYNC.</td>
<td>X</td>
<td>X</td>
<td>Synchronising asynchronous generator</td>
</tr>
<tr>
<td>FIXED RPM</td>
<td>X</td>
<td>X</td>
<td>Asynchronous generator - GB open and sync. not activated</td>
</tr>
<tr>
<td>LOAD SHARING INT.</td>
<td>X</td>
<td>-</td>
<td>Load sharing using internal set point</td>
</tr>
<tr>
<td>LOAD SHARING EXT.</td>
<td>X</td>
<td>-</td>
<td>Load sharing using external set point</td>
</tr>
<tr>
<td>FIXED POWER INT.</td>
<td>X</td>
<td>-</td>
<td>Fixed power using internal set point</td>
</tr>
<tr>
<td>FIXED POWER EXT.</td>
<td>X</td>
<td>-</td>
<td>Fixed power using external set point</td>
</tr>
<tr>
<td>DROOP INT.</td>
<td>X</td>
<td>-</td>
<td>Droop mode active using internal set point</td>
</tr>
<tr>
<td>DROOP EXT.</td>
<td>X</td>
<td>-</td>
<td>Droop mode active using external set point</td>
</tr>
<tr>
<td>RAMP DOWN</td>
<td>X</td>
<td>-</td>
<td>Deloading the genset before opening of the GB</td>
</tr>
<tr>
<td>RAMP TO ###kW</td>
<td>X</td>
<td>-</td>
<td>Increasing or decreasing the load of the genset to a specific set point</td>
</tr>
<tr>
<td>START PREPARE</td>
<td>X</td>
<td>X</td>
<td>The start prepare relay is activated</td>
</tr>
<tr>
<td>START RELAY ON</td>
<td>X</td>
<td>X</td>
<td>The start relay is activated</td>
</tr>
<tr>
<td>START RELAY OFF</td>
<td>X</td>
<td>X</td>
<td>The start relay is deactivated during the start sequence</td>
</tr>
<tr>
<td>COOLING DOWN ###s</td>
<td>X</td>
<td>X</td>
<td>Cooling down period is activated</td>
</tr>
<tr>
<td>GENSET STOPPING</td>
<td>X</td>
<td>X</td>
<td>This info is shown when cooling down has finished</td>
</tr>
<tr>
<td>EXT. STOP T. ###s</td>
<td>X</td>
<td>X</td>
<td>Extended stop time after the running signal has disappeared</td>
</tr>
<tr>
<td>TOO SLOW 00&lt;--------</td>
<td>X</td>
<td>X</td>
<td>Generator running too slow during synchronising</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------</td>
<td>----------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>00 TOO FAST</td>
<td>X</td>
<td>X</td>
<td>Generator running too fast during synchronising</td>
</tr>
</tbody>
</table>
### 3.4 Unit operation modes and password

#### 3.4.1 Mode overview

The unit has two different operation modes and one switchboard (blocked) mode.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL</td>
<td>- The display push-buttons (START, STOP, GB ON, GB OFF) are active and can be used by the operator.</td>
</tr>
<tr>
<td></td>
<td>- The regulators are also active, that is the speed control will bring the generator to nominal speed upon start.</td>
</tr>
<tr>
<td></td>
<td>- When pushing a breaker button for closing, the unit will synchronise the breaker (if allowed).</td>
</tr>
<tr>
<td>REMOTE</td>
<td>- The display control push-buttons (START, STOP, GB ON, GB OFF) are disabled.</td>
</tr>
<tr>
<td></td>
<td>- The genset can be controlled via the digital inputs, for example “Start sync./control”.</td>
</tr>
<tr>
<td>SWBD</td>
<td>- Display push-buttons are disabled. The generator can only be controlled using the switchboard.</td>
</tr>
<tr>
<td></td>
<td>- The protection functions are still active.</td>
</tr>
<tr>
<td></td>
<td>- The regulators are not active, that is speed control has to take place from the switchboard.</td>
</tr>
</tbody>
</table>

#### 3.4.2 Mode selection

The mode selection is carried out using the LOCAL or REMOTE push-buttons on the display.

#### 3.4.3 Password

The unit includes three password levels. All levels can be adjusted in the PC software.

Available password levels:

<table>
<thead>
<tr>
<th>Password level</th>
<th>Factory setting</th>
<th>Customer</th>
<th>Service</th>
<th>Master</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>2000</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>2001</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>2002</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

A parameter cannot be entered with a password that is ranking too low, but the settings can be displayed without password entry.
Each parameter can be protected by a specific password level by means of the PC utility software. Enter the parameter to be configured and select the correct password level.

The password level can be found in the column “Level” in the parameter view.
Parameter access
To gain access to adjust the parameters, the password level must be entered:

If the password level is not entered, it is not possible to enter the parameters.

The customer password can be changed in menu 9116.
The service password can be changed in menu 9117.
The master password can be changed in menu 9118.

The factory passwords must be changed, if the operator of the genset is not allowed to change the parameters.

It is not possible to change the password at a higher level than the password entered.
4. Alarm handling and log list

4.1 Alarm handling

When an alarm occurs, the unit will automatically go to the alarm list for display of the alarm. This function can be disabled or enabled. For further explanation, please see the Designer’s Reference Handbook.

If you do not want to read the alarms, use the BACK push-button to exit the alarm list.

If you want to enter the alarm list later, use the INFO push-button to jump directly to the alarm list reading.

The alarm list contains both acknowledged and unacknowledged alarms, provided that they are still 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.

This means that if there are no alarms, the alarm list will be empty.

This display example indicates an unacknowledged alarm. The display can only show one alarm at a time. Therefore, all other alarms are hidden.

Use the and push-buttons to scroll in the display and see the other alarms.

Place the cursor (underscore) under ACK and then press SELECT to acknowledge an alarm.

Place the cursor under the selection FIRST or LAST and then press SELECT to jump to the first (oldest) or the last (most recent) alarm.

4.2 Log list

An event is for example closing of breaker and starting of engine. An alarm is for example over-current or high cooling water temperature. A battery test is for example test OK or test failed.

The logging of data is divided into three different groups:
- Event log containing 500 loggings
- Alarm log containing 500 loggings
- Battery test log containing 52 loggings
The logs can be viewed in the display or in the PC utility software. When the individual logs are full, each new event will overwrite the oldest event according to the “first in – first out” principle.

**Display**
When the LOG push-button is pressed, the display looks like this:

![Display Layout]

Now it is possible to select one of the three logs.

If EVENT is selected, the log will look like this:

![EVENT Log Layout]

The specific alarm or event is shown in the second line, and the time stamp is shown in the third line.
If the cursor is moved to INFO, the actual value can be read by pressing SELECT:

![Paralleling and Protection Unit](image)

The first event in the list will be displayed, if the cursor is placed below FIRST and SELECT is pressed.

The last event in the list will be displayed, if the cursor is placed below LAST and SELECT is pressed.

The ▲ and ▼ push-buttons are used for navigating in the list.
5. Service menu

5.1 Purpose of the service menu

The purpose of the service menu is to give information about the present operating condition of the genset. The service menu is entered using the JUMP push-button and selecting menu 9120.

Use the service menu for easy troubleshooting in connection with the event log.

5.2 Entry window

The entry window shows the possible selections in the service menu.

```
Paralleling and Protection Unit
multi-line PPU

G  400  400  400V
9120 Service menu
Timers
TIME   IN    OUT    MISC
```

Available selections:

Timers
Shows the alarm timer and the remaining time. The indicated remaining time is the minimum remaining time. The timer will count down when the set point has been exceeded.
IN (digital input)
Shows the status of the digital inputs.

<table>
<thead>
<tr>
<th>G</th>
<th>400</th>
<th>400</th>
<th>400V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running Input =</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UP</td>
<td>DOWN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OUT (digital output)
Shows the status of the digital outputs.

<table>
<thead>
<tr>
<th>G</th>
<th>400</th>
<th>400</th>
<th>400V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horn Output =</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UP</td>
<td>DOWN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MISC (miscellaneous)
Shows miscellaneous messages.

<table>
<thead>
<tr>
<th>G</th>
<th>400</th>
<th>400</th>
<th>400V</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-Logic enabled Various =</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UP</td>
<td>DOWN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. Parameter setup

6.1 Procedures for setup

The complete parameter list is presented in the separate Parameter List document of the Multi-line unit in question: GPC/GPC Gas/GPC Hydro/GPU Hydro document number 4189340580, GPU/GPU Gas/PPU document number 4189340581.

This chapter deals with the procedure to be followed when the parameters of the unit are set up from the initial point of finding the individual parameter description to the actual setup. By use of various illustrations, the following will guide the user through the whole procedure of parameter setup step by step.

6.2 Finding the selected parameter

The first step in the parameter setup is to find the correct parameter descriptions. All parameter descriptions in the Parameter List document are intended for reference purposes. The descriptions are structured according to their parameter titles and the main parameter group to which they belong.

6.3 Parameter descriptions

In the parameter list, each parameter description is structured according to the same principles. Under the parameter title heading, the detailed parameter descriptions are illustrated and presented. First, a table indicating the parameter facts related to the individual parameter title is presented:

<table>
<thead>
<tr>
<th>Menu number indicated in display</th>
<th>Parameter title</th>
<th>Changeable settings indicated in display</th>
<th>Min. and max. set points</th>
<th>Default set point from factory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 G/SC/SC/BA reverse power 1</td>
<td>Set point</td>
<td>50.0 % 0.0 %</td>
<td>-5.0 %</td>
<td>Designer's Reference Handbook</td>
</tr>
<tr>
<td>1001 G/SC/SC/BA</td>
<td>Delay</td>
<td>0.1 s 100.0 s</td>
<td>10.0 s</td>
<td></td>
</tr>
<tr>
<td>1002 G/SC/SC/BA</td>
<td>Relay output A</td>
<td>Not used Option-dependent</td>
<td>Not used</td>
<td></td>
</tr>
<tr>
<td>1003 G/SC/SC/BA</td>
<td>Relay output B</td>
<td>Not used Option-dependent</td>
<td>Not used</td>
<td></td>
</tr>
<tr>
<td>1004 G/SC/SC/BA</td>
<td>Enable</td>
<td>OFF ON</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>1005 G/SC/SC/BA</td>
<td>Fail class</td>
<td>F1...F8</td>
<td>Warming (F2)</td>
<td></td>
</tr>
</tbody>
</table>

Due to the character of the parameters there may be small differences between the individual tables.

The first column indicates the menu number in the display.

The second column indicates the name of the setting.
The third column describes the function of the parameter.

The fourth column indicates the minimum/maximum set point available for this setting.

The fifth column indicates the default set point of the unit from the factory. When it is necessary, additional information will be supplied below the table in order to make the individual parameter descriptions as informative as possible.

6.4 Setup

At this point of the process, the specific parameter description will have been located. Now, follow the menu structure presented earlier in this manual to set up the individual parameters. (In this overall example, we have chosen to change the set point of the parameter **1000 G -P>**).

Step 1: Enter the setup menu via SETUP in the fourth display line in the entry window.
Step 2: Enter the protection menu via PROT in the fourth display line in the setup menu.
Step 3: Use the ▲ and ▼ push-buttons to locate the selected parameter.
Step 4: Enter the set point menu via SP in the fourth display line.
Step 5: Enter password to change the set point.
Step 6: Use the ▲ and ▼ push-buttons to increase/decrease the set point setting.
Step 7: Move the “underscore” to save and press SEL; the new set point setting has now been saved.