Panda xControl Manual

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1. Panda xControl Safety Instructions

1.1 Personnel

The settings described here can be performed by the operator unless highlighted differently.

The installation should be implemented by specially trained technical personnel or by authorised workshops (Fischer Panda Service Points), only.

1.2 Safety instructions

Adhere to the safety instructions in the Fischer Panda generator manual.

If these instructions are not to hand, they can be requested from Fischer Panda GmbH, 33104 Paderborn, Germany.

Note!

An external signal may trigger an automatic start-up.

WARNING: Automatic start-up

The generator must not be operated with the cover removed.

Warning!

If the generator is being installed without a sound insulation capsule, it must be ensured that all rotating parts (belt pulley, belts etc.) are covered and protected so that there is no danger to life and body!

All service, maintenance, or repair work may only be carried out when the unit is not running.

Electric voltage - Deadly Danger!

WARNING: Electrical voltage

Electric voltages of more than 48 V are potentially lethal in any situation. The rules of the respective regional authority must be adhered to for installation and maintenance.

For safety reasons, only an electrician may carry out the installation of the electrical connections of the generator.

Disconnect battery before working on the generator

Attention!

The battery must always be disconnected (first the negative terminal, then the positive terminal) if work on the generator or electrical system is to be performed, so that the generator cannot be started inadvertently.

This applies in particular to systems with an automatic start-up function. The automatic start-up function shall be deactivated before starting work.

The flooding valve must be closed. (For PMS version only.)

Also observe the safety instructions for the other components of your system.

Note!

2. Panda xControl

The Panda xControl is a generator control system with three main components.

2.1 Components of the xControl

2.1.1 xControl - CP-G

(**C**ontrol **P**anel – **G**enerator) - Part No. 21.02.02.204P

Display and Control Element of the xControl

Fig. 2.1.1-1: Control Panel - Generator

The xControl CP-G is the display and control element

Power is supplied via the bus cable. Multiple control elements can be installed in a single system.

2.1.2 xControl - GC-S

(**G**enerator **C**ontrol - **S**ervo) - Part.No. 21.02.08.019P

Main module of the xControl.

Fig. 2.1.2-1: Generator Control - Servo

The module contains the control electronics

The xControl GC-S is usually installed in the generator capsule.

The xControl GC-S takes over the monitoring and control of the diesel engine of the Fischer Panda generator, as well as the control of the output voltage and frequency of the generator.

The xControl GC-S is suitable for 12V and 24 V starting systems. The connected actuators are supplied with power via switching outputs with input voltage.

Current measurement is single-phase and can be done directly. A voltage sensor is not necessary. Current measurement takes place via an external current sensor. An additional three-phase module can be used for three-phase generators.

2.1.3 xControl - CB-G

(**C**onnection **B**ox - **G**enerator)

The xControl GC-S is usually installed in the generator capsule (externally).

Fig. 2.1.3-1: Connection Box - Generator

The xControl CB-G is the external terminal block for the xControl generator.

The control element and the fuel pump are connected here.

An emergency stop device, auto-start, load relays and boosters can be connected as options.

Only electricians may work on the xControl CB-G

Note:

2.2 Installation

2.2.1 Installation of the Electronic Control Unit (ECU) xControl - GC-S

The ECU xControl - GC-S is pre-installed. The ECU can be exchanged easily. All connections are mechanically coded and prevent the risk of confusion.

2.2.2 Installation of the Connection Box xControl - CB-G

The connection box is pre-installed. External components are connected in accordance with the installation manual and the circuit diagram of the xControl generator.

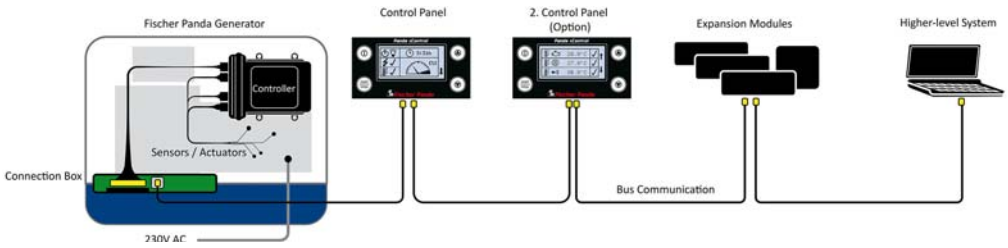
2.2.3 Installation of the xControl - CP-G

The xContol - CP-G is a CAN Bus module. All Fischer Panda CAN bus modules have two RJ45 ports. One for connection to the module on the CAN bus, the second to relay the CAN bus. The last module on the CAN bus must have a terminating resistor in the RJ45 port.

Connection by means of the Fischer Panda bus cable is mandatory.

Fig. 2.2-1: xControl CP-G rear

Fig. 2.2-2: Connection Diagram



2.3 Operation

The xControl is operated by means of the xControl CP-G panel.

Fig. 2.3-1: xControl CP-G front

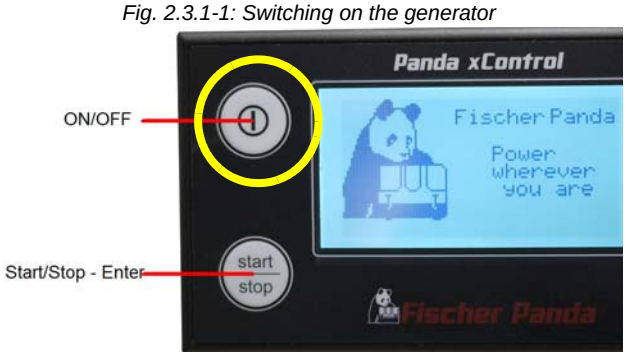
2.3.1 Switching on the generator

Press the "ON/OFF" switch to switch on the control system of the generator.

The xControl Generator thereby switches to "standby mode".

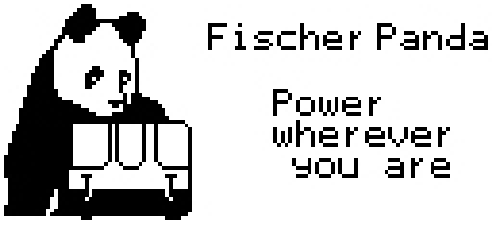
If automatic starting is activated at the menu, the generator can henceforth be started by means of an external signal.

Fig. 2.3.1-1: Switching on the generator



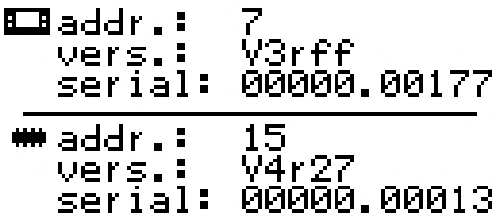
The CP-G Panel displays the home page for two seconds.

Fig. 2.3.1-2: Home Page



The CP-G then displays the address page for one second

Fig. 2.3.1-3: Address Page

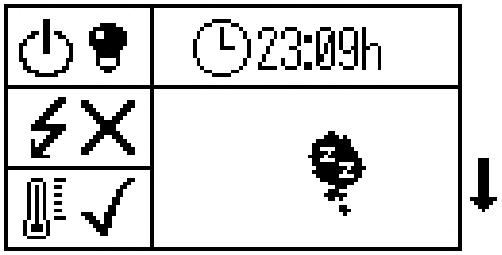


At the end of the power-on routine, the CP-G displays the first overview page.

The language as well as the display mode can be set in the menu.

Overview Page 1 is the same in all display modes/languages.

Fig. 2.3.1-4: Overview Page 1



2.3.1.1 Overview page with Autostart activated

Deadly danger! - The generator can be equipped with an Autostart function. This means that the generator is started by an external signal. In order to prevent an inadvertent start-up, the starter battery must be disconnected before work on the generator may commence.

The "Autostart" also remains active if the xControl CP-G is switched off and then on again.

If a fault should arise when the generator is started or is already operating, it is stopped and the Autostart is set to "off".

If the generator is operated by Autostart and is stopped manually, the Autostart is set to "off".

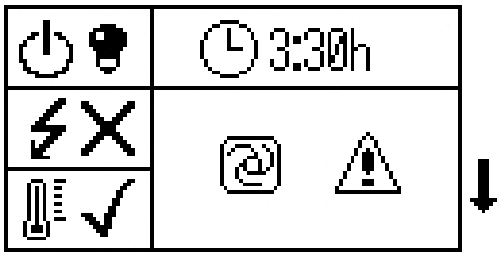
Once the system has been switched off and then on again, the Autostart is active once more.

WARNING: Autostart

The first overview page shows if the Autostart is active.

Overview Page 1 with Autostart function activated.

Fig. 2.3.1-1: Overview Page 1 with Autostart



2.3.2 The overview pages

The display mode/language of the display can be set in the menu.

2.3.3 Symbols used in overview pages

Overview Page 1:

01. Generator Status (on/off)

02. AC OK

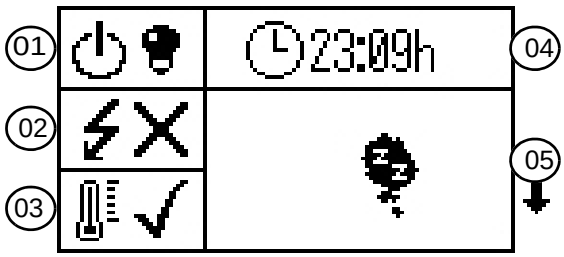
03. Temperature of the generator (OK/Error)

04. Operating hours of the generator

05. Info screen

Overview Page 1 is the same in all languages.

Fig. 2.3.3-1: Symbols used in Overview Page 1



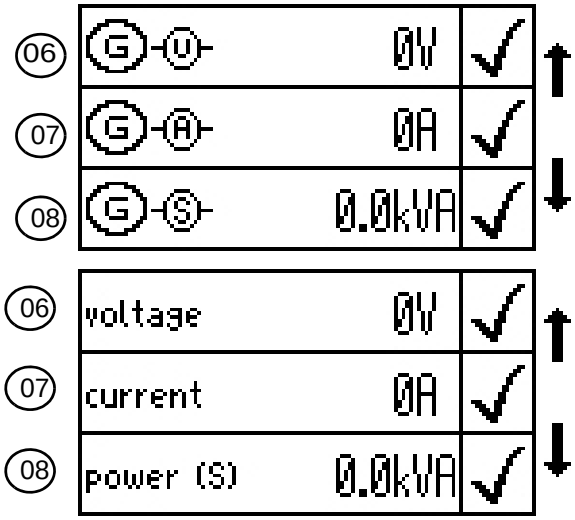
Overview Page 2 (Generator):

06. Output voltage [V]

07. Generator current [A]

08. Generator apparent power [kVA]

Fig. 2.3.3-2: Overview Page 2 Symbols/English

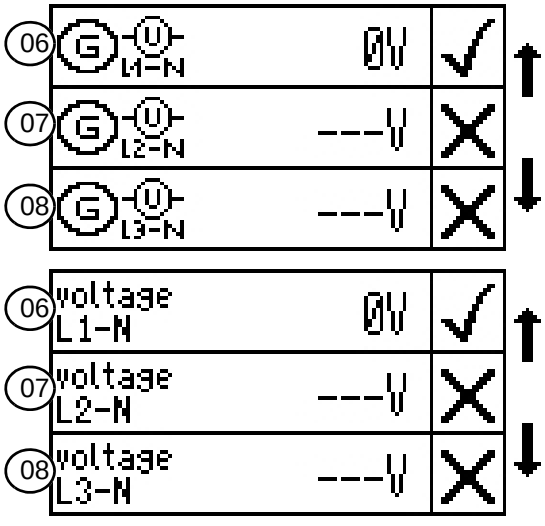


In the case of three-phase generators, the voltage, the current and the electrical power are shown on separate pages. Each page shows the value of the three phases one below the other.

Example of the voltage display of a 3-phase generator.

Note:

Fig. 2.3.3-3: Voltage display 3-P Symbols/English



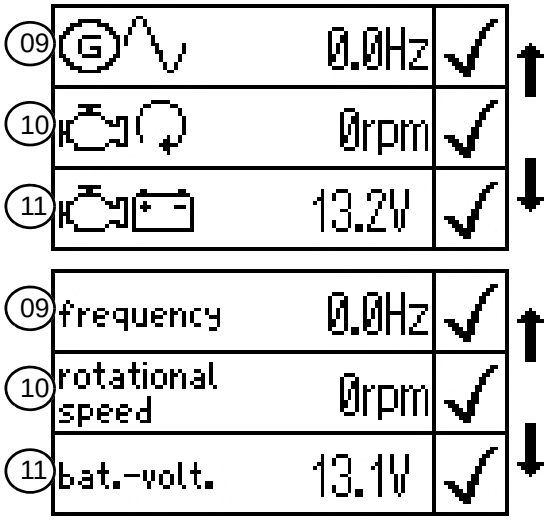
Overview Page 3:

09. Frequency of the generator [Hz]

10. Generator speed (r.p.m.)

11. Voltage of the starter battery [V]

Fig. 2.3.3-4: Overview Page 3 Symbols/English



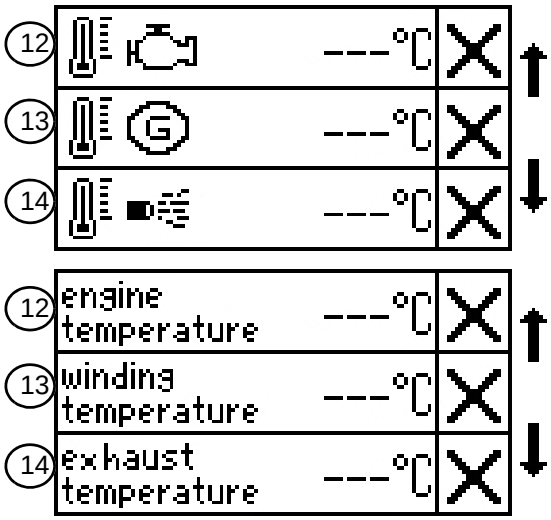
Overview Page 4:

12. Temperature of the cylinder head

13. Temperature of the generator winding

14. Temperature at exhaust manifold

Fig. 2.3.3-5: Overview Page 4 Symbols/English



If the information pages of optional components (e.g. fuel gauge, oil pressure) are available, then these pages are inserted after Overview Page 4.

Whether these pages are displayed automatically, always or not at all can be set in the Panel menu.

Note!:

Final Overview Page:

Fig. 2.3.3-6: Final overview page

Proceed to this menu by pressing the Start/Stop - Enter key

Overview Page 5 is the same in all display modes/languages.

2.4 Starting up the generator.

2.4.1 Preparations for starting up / Checks (daily) for marine version

1. Oil level check (ideal level: 2/3 Max).

   The level should be about 2/3 of the maximum level when the engine is cold.

   Further, if installed, the oil level of the oil-cooled bearing must be checked before each start - see sight glass on generator front cover!.

2. Check cooling water level.

   The external expansion tank should be filled to 1/3 in a cold state. It is very important that there is sufficient volume for expansion of the coolant.

3. Check if the raw water intake valve is open.

   For safety reasons, the raw water intake valve must be shut after the generator has been switched off. It should be re-opened before starting the generator.

4. Check raw water filter.

   The raw water filter must be regularly checked and cleaned. If the raw water intake is restricted by detached residue, this increases wear on the impeller.

5. Visual inspection

   Control fixing bolts, check hose connectors for leaks, check electrical connections. Check electrical lines for damage/chafing.

6. Switch off loads.

   The generator should only be started without a load.

7. Open fuel valve, if installed.
8. Close main battery switch (switch on).

2.4.2 Preparations for starting up / Checks (daily) for vehicle version

1. Oil level check (ideal level: 2/3 Max).

   The level should be about 2/3 of the maximum level when the engine is cold.

   Further, if installed, the oil level of the oil-cooled bearing must be checked before each start - see sight glass on generator front cover!.

2. Check cooling water level.

   The external expansion tank should be at 1/3 in a cold state. It is very important that there is sufficient volume available for expansion of the coolant.

3. Visual inspection

   Control fixing bolts, check hose connectors for leaks, check electrical connections. Check electrical lines for damage/chafing.

4. Switch off loads.

   The generator should only be started without a load.

5. Open fuel valve, if installed.
6. Close main battery switch (switch on).

2.4.3 Starting up the generator

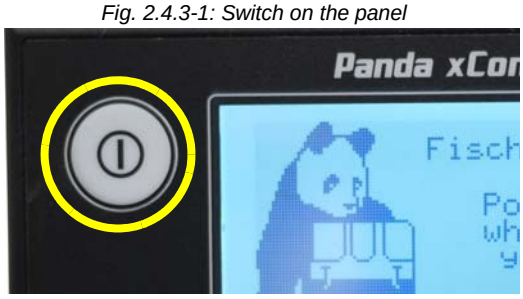
Deadly danger! - The generator can be equipped with an Autostart function. This means that the generator is started by an external signal. In order to prevent an inadvertent start-up, the starter battery must be disconnected before work on the generator may commence.

WARNING: Automatic start-up

1. Switch on the xControl CP-G

   The remote control panel is started by pressing the On/Off button. The On/Off button must be pressed until the Home page is displayed.

Fig. 2.4.3-1: Switch on the panel

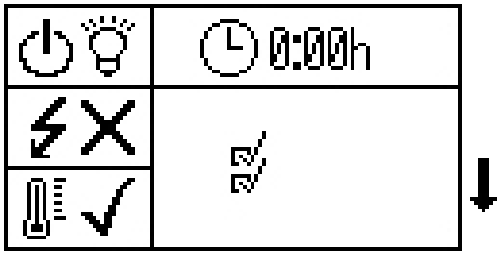


2. Press the Start/Stop - Enter key

Fig. 2.4.3-2: Start the generator.

3. The xControl performs a self-test.

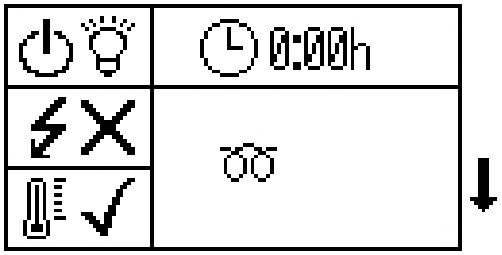
Fig. 2.4.3-3: Self-test



4. The xControl preheats the diesel engine.

After preheating, the generator is started by the xControl system.

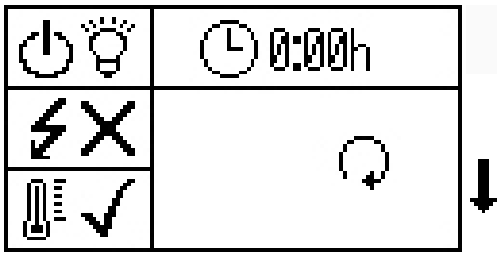
Fig. 2.4.3-4: Preheating



5. Starter on.

In order to minimise current consumption, preheating is interrupted briefly when the starter is operated.

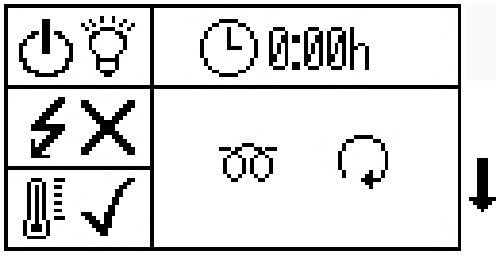
Fig. 2.4.3-5: Electric starter



6. Starter and preheater

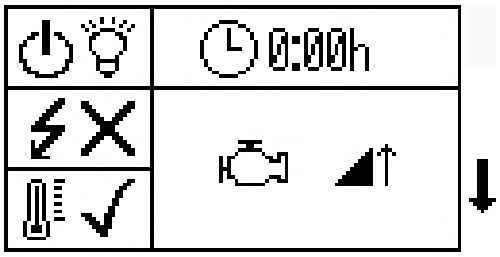
As soon as the high inrush current of the starter has dropped, preheating is switched on again.

Fig. 2.4.3-6: Preheating



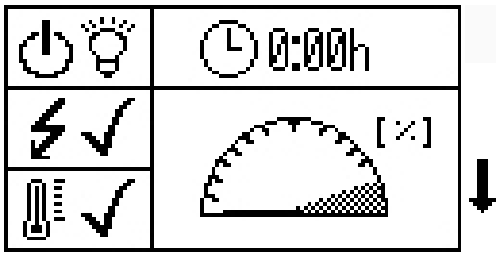
The engine idles for the first few seconds. Thereafter, the xControl increases the speed to the operating speed and indicates this in the display.

Fig. 2.4.3-7: Increase revolutions



As soon as the AC voltage is within the limits (200-250V) (normal operating mode), the load can be connected.

Fig. 2.4.3-8: AC OK



Close the raw water intake valve in the event start-up problems (Panda Marine generators only)

ATTENTION:

If multiple attempts to start up are required (e.g. to bleed the fuel lines), then the raw water intake valve must definitely be shut while the attempts are being made. The cooling water impeller turns during the starting process and feeds cooling water. As long as the engine has not started up, the exhaust gas pressure is insufficient to discharge the coolant water that has been introduced. This protracted start-up process would flood the exhaust system with water. This can damage/destroy the generator/engine.

Re-open the raw water intake valve as soon as the generator has started.

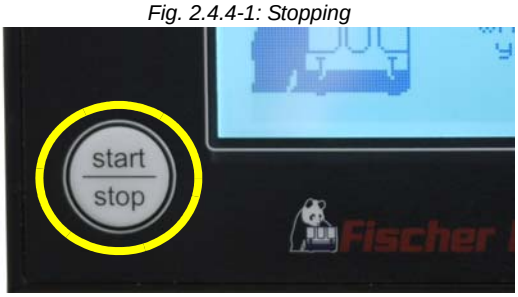
2.4.4 Stopping the generator

1. Switch off loads.
2. Recommendation: With turbo engines and under a load that exceeds 70 % of the rated output, allow the generator temperature to stabilise for at least 5 minutes with load switched off.

At higher ambient temperatures (greater than 25 °C) the generator should always run for at least 5 minutes without load before it is switched off, regardless of the load having been switched off.

3. Press "Start/Stop" button (switching off).

Fig. 2.4.4-1: Stopping



NOTE: Never switch off the main battery until the generator has stopped, shut the fuel valve if necessary!

ATTENTION:

2.5 The Menu

One can access the menu from the final overview page.

Switch on the CP-G and scroll down to "Enter Menu Page".

Press the Start/Stop - Enter key to enter the menu.

Fig. 2.5-1: Menu entry symbols

2.5.1 Main Menu

You can choose from the following sub-menus in the main menu:

Fig. 2.5.1-1: Main Menu

1. "Panel" sub-menu - The display of the of the panel can be adapted in the "Panel" sub-menu (e.g. brightness, language, etc.).

2. "Generator" sub-menu - All settings related to the generator can be made in the "Generator" sub-menu, e.g. bleeding the fuel pump etc.

3. The "Service" sub-menu is blocked and can only be accessed by trained personnel and Fischer Panda employees.

4. Back - back to the overview pages

2.5.2 Sub-menu: "Panel"

The following items can be selected in the Panel sub-menu:

1. Lighting

   - *changes the brightness of the display in normal mode.*

2. Contrast

   - *changes the contrast of the display.*

3. Standby Time

   - *to set the time until the panel switches to standby mode.*

4. Standby Lighting

   - *changes the brightness of the display in standby mode.*

5. Display Mode

   - *changes the display mode of the overview pages.*

6. Language selection

   - *changes the language of the panel*

7. Temperature Unit

   - *to set the temperature unit to °C or °F*

8. Audible alarm

   - *to activate the audible alarm in the event of a fault*

9. Flashing when faulty

   - *to activate panel flashing in the event of a fault*

10. Panel heating

    - *activates panel heating at temperatures <+10°C*

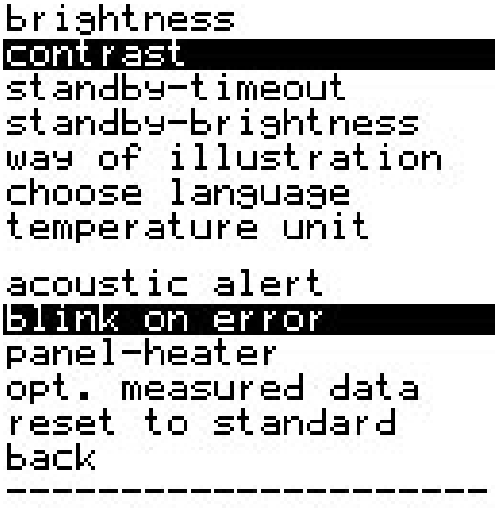
11. Reset to standard

The "Panel" sub-menu

12. is reset to the factory settings

    - *Switching from the "Panel" sub-menu to the Main Menu*

Fig. 2.5.2-1: Sub-menu: Panel



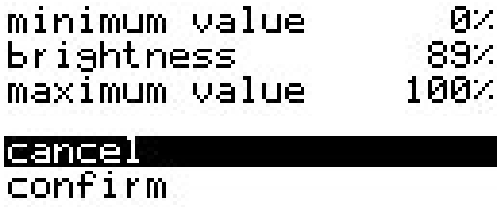
2.5.2.1 Setting the illumination of the CP-G

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

The value is changed by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.1-1: Sub-menu: Illumination



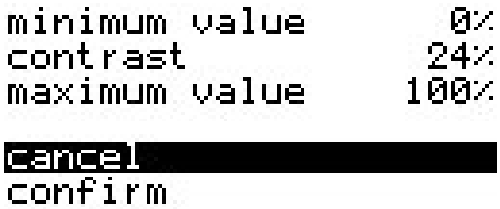
2.5.2.2 Setting the contrast of the CP-G

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

The value is changed by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.2-1: Sub-menu: Contrast



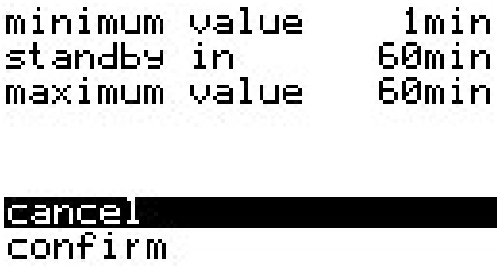
2.5.2.3 Setting the standby time of the CP-G

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

The value is changed by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.3-1: Sub-menu: Standby Time



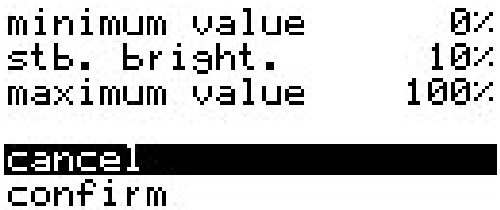
2.5.2.4 Setting the standby illumination of the CP-G

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

The value is changed by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.4-1: Sub-menu: Standby Illumination



2.5.2.5 Setting the display mode of the CP-G overview page

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The

respective menu item opens.

"Symbolic View" or "Text View" can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

The "Back" item returns you to the "Panel" sub-menu.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.5-1: Sub-menu: Display Mode

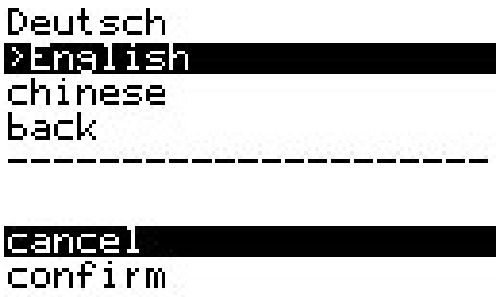
2.5.2.6 Setting the language of the text pages of the CP-G

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

Select the corresponding language by using the "Step-up"/ "Step-down" keys and then confirm with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.6-1: Sub-menu: Language Selection



2.5.2.7 Setting the Temperature Unit

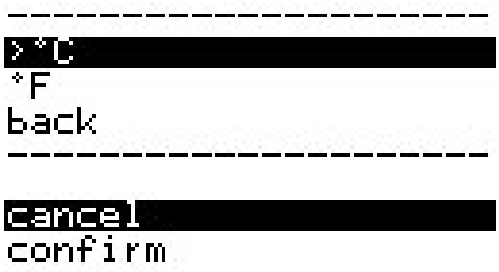
The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

"°C“ for "degrees Celsius" or "°F" for "degrees Fahrenheit“ can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

The "Back" item returns you to the Panel sub-menu.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.7-1: Sub-menu: Temperature Unit



2.5.2.8 Setting the Aural Alarm

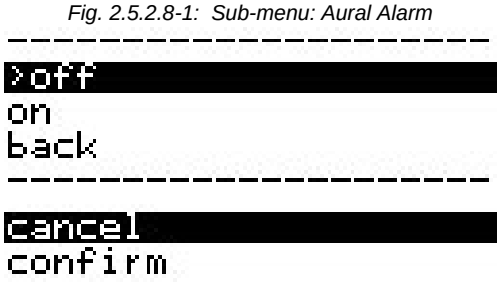
The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

"Off" or "On" can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

The "Back" item returns you to the Panel sub-menu.

"Cancel" or "Confirm" can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.8-1: Sub-menu: Aural Alarm



2.5.2.9 Setting the display to flash in the event of a fault

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

"Off" or "Error" or "Warning and Error" can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

The "Back" item returns you to the Panel sub-menu.

"Cancel" or "Confirm" can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.9-1: Sub-menu: Flashing when Faulty

2.5.2.10 Setting the Panel Heating

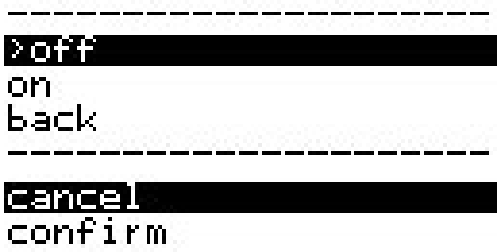
The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

"Off" or "On" can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

The "Back" item returns you to the Panel sub-menu.

"Cancel" or "Confirm" can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.10-1: Sub-menu: Panel Heating



2.5.2.11 Setting the display of the optional measurement data

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

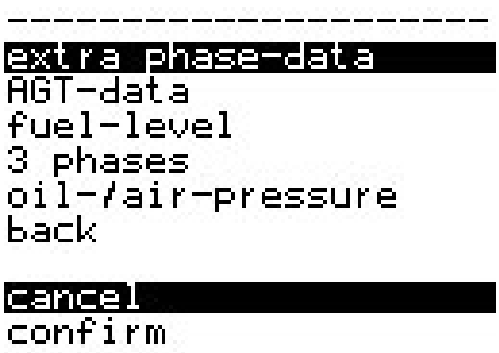
The desired optional measurement data is changed by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

The desired option is selected by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

The "Back" item returns you to the Panel sub-menu.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.11-1: Sub-menu: Optional Measurement Data



2.5.2.12 Resetting all values of the Panel sub-menu to default values

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.2.12-1: Resetting all values

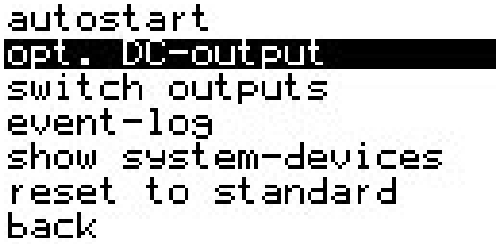
2.5.2.13 Return to Main Menu

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

2.5.3 Sub-menu: "Generator"

The following items can be selected in the Generator sub-menu:

Fig. 2.5.3-1: Generator Sub-Menu



1. Autostart

   - *configuring the Autostart function*

2. Optional DC Output

   - *setting the optional DC output*

3. Switch Outputs

   - *manual switching of the individual digital outputs*

4. Event Memory

   - *displaying the event memory*

5. Display System Devices

   - *displaying the detected system devices*

6. Reset to standard

   - *all parameters of the "Generator" sub-menu are reset to*

the factory settings

7. Back

- Switching from the "Generator" sub-menu to the Main Menu

2.5.3.1 Setting the Autostart of the CP-G

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

A choice can be made between "Switch on/off" and "Number of start-up attempts" in in the "Autostart" sub-menu.

Fig. 2.5.3.1-1: Autostart

Switching On / Off

Fig. 2.5.3.1-2: Autostart

"Off" for deactivated or "On" for activated can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Number of start-up attempts

Fig. 2.5.3.1-3: Autostart

The value is changed by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

For safety reasons, the number of start-up attempts is limited to one in the case of marine (PMS) generators.

Deadly danger! - The generator can be equipped with an Autostart function. This means that the generator is started by an external signal. In order to prevent an inadvertent start-up, the starter battery must be disconnected before work on the generator may commence.

Warning! Automatic start-up

The "Autostart" also remains active if the xControl CP-G is switched off and then on again.

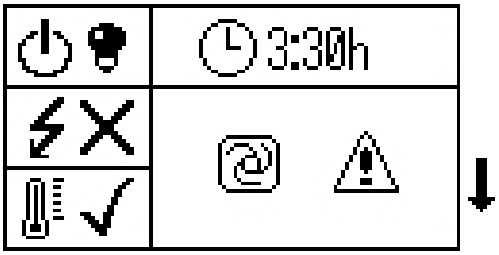
If a fault should arise when the generator is started or is already operating, it is stopped and the Autostart is set to "off".

If the generator is operated by Autostart and is stopped manually, the Autostart is set to "off".

Once the system has been switched off and then on again, the Autostart is active once more.

The first overview page shows if the Autostart is active.

Fig. 2.5.3-4: Overview Page 1 with Autostart



2.5.3.2 Setting the optional DC output of the CP-G

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

"Operating Mode" or "Follow-up Time" can be selected by using the "Step-up"/"Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

The "Back" item returns you to the "Generator" sub-menu.

Select cancel or confirm by using the "Step-up"/"Step-down" keys and then confirm with the "Start/Stop - Enter“ key.

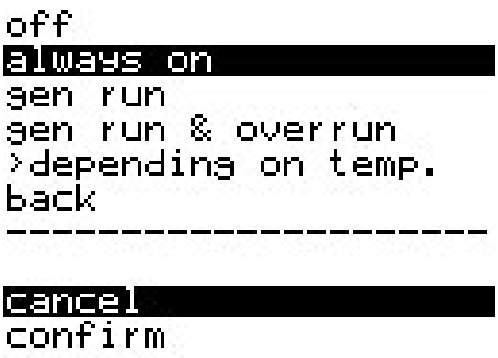
Fig. 2.5.3.2-1: Sub-menu: Optional DC Output

Setting the "Operating Mode" for the opt. DC Output (DP) of the CP-G

An option can be selected by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.3.2-2: Sub-menu: Operating Mode

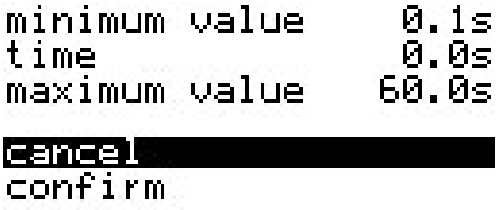


Setting the follow-up time of the optional DP Output of the CP-G

The value is changed by using the "Step-up"/"Step-down" keys and the setting is confirmed with the "Start/Stop - Enter“ key.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.3.2-3: Sub-menu: Follow-up Time



2.5.3.3 Switching the switching outputs of the CP-G

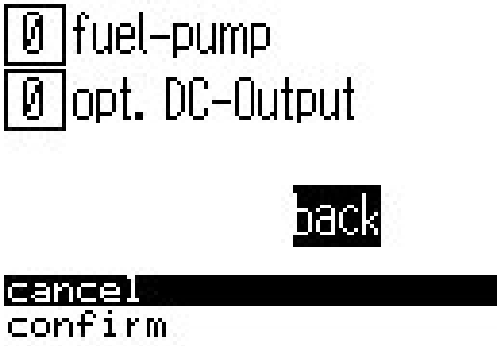
The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

Select the "Fuel Pump" or "Opt. DC Outputs" by using the "Step-up"/"Step-down" keys and then confirm with the "Start/ Stop - Enter“ key.

The "Back" item returns you to the "Generator" sub-menu.

The value of the output can be set to "0" for deactivated or "1" for activated by using the "Step-up"/"Step-down" keys. Confirm with the "Start/Stop - Enter“ key.

Fig. 2.5.3.3-1: Sub-menu: Switching Outputs



2.5.3.4 Reading out the Event Log of the CP-G

The menu item is selected by using the "Step-up"/"Step-down" keys and confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

See “Table of Faults” on page 26. See “Description of the symbols” on page 27.

Fig. 2.5.3.4-1: Event Memory

One can scroll through the event memory by using the "Step-up"/"Step-down" keys and then return to the Generator menu with the "Start/Stop - Enter“ key.

2.5.3.5 Resetting all values of the Generator sub-menu to the default values

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

"Cancel" or "Confirm" can be selected by using the "Step-up"/ "Step-down" keys and then confirmed with the "Start/Stop - Enter“ key.

Fig. 2.5.3.5-1: Resetting all values

2.5.3.6 Returning the Main Menu

The menu item is selected by using the "Step-up"/"Step-down" keys confirmed with the "Start/Stop - Enter“ key. The respective menu item opens.

2.5.4 Resetting the panel language to the default (English)

1. Press and hold the "Step down" key with the panel switched off.
2. Switch on the panel and hold down the "Step down" key until the first overview screen is displayed.
3. The panel language has now been reset. All other settings are retained.

2.5.4.1 How to set the panel language after a reset.

1. Switching on the xControl Panel CP-G
2. Wait until the first overview screen appears.
3. Scroll to the last overview screen.
4. Press the "Start/Stop - Enter" key to access the menu.
5. Scroll down to the "Panel" menu item.
6. Press the "Start/Stop - Enter" key to access the "Panel" sub-menu.
7. Scroll down to the "Choose language" menu item.
8. Press the Start/Stop - Enter key to access the "Language Selection" sub-menu.
9. Scroll to the desired language and confirm with the "Start/Stop - Enter" key.
10. Scroll down to the "Confirm" menu item and press the "Start/Stop - Enter" key.

The menu text is now set to the selected language.

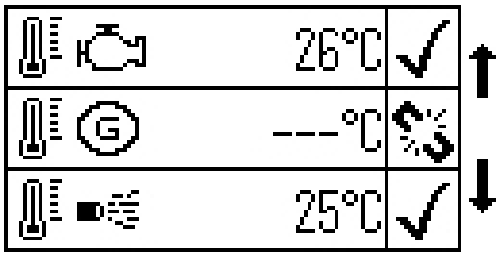
2.6 Faults

2.6.1 Symbols and messages on the display

2.6.1.1 Example of message - "Sensor defective"

A soon as a defective sensor is detected, the xControl reports this on the display.

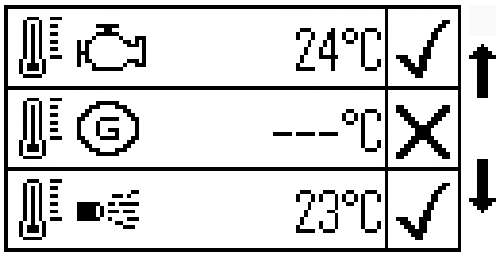
Fig. 2.6.1.1-1: Sensor defective



2.6.1.2 Example of message - "Sensor/Cable break"

If the sensor has failed or the cable is broken, the following report is displayed:

Fig. 2.6.1.2-1: Sensor/Cable break



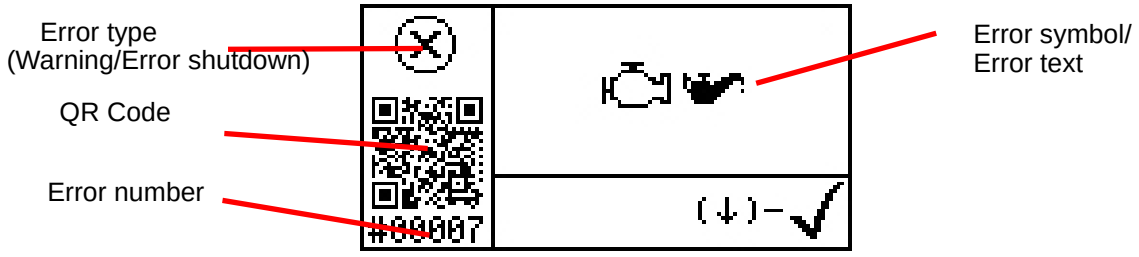
2.6.2 Error code

An error code is displayed if a parameter lies beyond its operating limits.

See “Table of Faults” on page 26. See “Description of the symbols” on page 27.

Example: Error No. 7 - Oil pressure too low -Fault led to emergency shutdown

Fig. 2.6.2.0-1: Sub-menu: "Event Log"



2.6.2.1 Table of Faults

See also the "Faults" chapter in the manual of the generator.

Fig. 2.6-1: Table of faults

No.	Description	Cause	Explanation	Warning	Gen.Stop	Info
1	AC Voltage	Voltage too low		yes	yes	n.a.
2	AC Frequency	Frequency too low		yes	yes	n.a.
5	Emergency	Emergency button pushed	"Emergency" contact open	n.a.	yes	n.a.
7	Oil pressure	Oil pressure too low	Failure oil pressure switch	n.a.	yes	n.a.
13	Starter power	Starter failure	Short circuit starter defect	yes	n.a.	n.a.
14	Glow circuit	Glow circuit failure	Short circuit defect	yes	n.a.	n.a.
16	Fuel supply	Failure fuel supply	Short circuit defect	yes	n.a.	n.a.
17	Stop solenoid - Hold	Failure stop solenoid hold coil	Short circuit	yes	n.a.	n.a.
18	Stop solenoid - Pull	Failure stop solenoid pull coil	Short circuit	yes	n.a.	n.a.
19	Optional DC out	Failure optional DC out	Short circuit	yes	n.a.	n.a.
20	Current sensor	No voltage on supply current sensor	Short circuit defect		yes	
25	Battery voltage	Battery voltage too low		yes	yes	
26	RPM failure	RPM out of range	Failure fuel supply Fuel empty	n.a.	yes	
29	Power out relay	Failure power out relay	Short circuit	n.a.	n.a.	
30	AC Voltage L2	Voltage too low L2		yes	yes	
31	AC Frequency L2	Frequency too low L2		yes	yes	
34	AC Voltage L3	Voltage too low L3		yes	yes	
35	AC Frequency L3	Frequency too low L3		yes	yes	
63	Fuel level	Fuel level to low		yes	no	
65	AC Voltage	Voltage too high		yes	yes	
66	AC Frequency	Frequency to high		yes	yes	
67	AC Current	Current too high		yes	n.a.	
68	AC Power	Load too high		yes	n.a.	
70	Servo Power	Power too high	Mechanically blocked. Power consumption too high, short circuit	yes	yes	
72	Temperature Cylinder head	Temp. value too high		yes	yes	
73	Temperature Winding	Temp. value too high		yes	yes	
74	Temperature Exhaust	Temp. value too high		yes	yes	
75	Temperature Electronics	Temp. value too high		yes	n.a.	
77	Starter power	Starter failure	Short circuit starter defect	yes	n.a.	
78	Glow circuit	Glow circuit failure	Short circuit defect	yes	n.a.	
80	Fuel supply	Failure fuel supply	Short circuit defect	yes	n.a.	
81	Stop solenoid - Hold	Failure stop solenoid hold coil	Short circuit	yes	n.a.	

No.	Description	Cause	Explanation	Warning	Gen.Stop	Info
82	Stop solenoid - Pull	Failure stop solenoid pull coil	Short circuit	yes	n.a.	
83	Optional DC out	Failure optional DC out	Short circuit	yes	n.a.	
84	Power Supply	Current Sensor Current too high	Short circuit defect	yes	yes	
85	Boost Relay	Failure Boost relay	short circuit or too many modules	yes	yes	
86	Bus Power	Bus Power Consumption high	Short circuit	yes	no	
89	Battery voltage	Battery voltage too high		yes	yes	
93	Power out relay	Failure power out relay	Short circuit or defect	yes	yes	
94	AC Voltage L2	Voltage too high L2		yes	yes	
95	AC Frequency L2	Frequency too high L2		yes	yes	
96	AC Current L2	Current too high L2		yes	n.a.	
97	AC Power L2	Power too high L2		yes	n.a.	
98	AC Voltage L3	Voltage too high L3		yes	yes	
99	AC Frequency L3	Frequency too high L3		yes	yes	
100	AC Current L3	Current too high L3		yes	n.a.	
101	AC Power L3	Power too high L3		yes	n.a.	
126	Temperature Fuel	Fuel Temperature too high		yes	n.a.	
130	No Panel found	Wrong patch cable/wrong contact	check cable/harness	n.a.	yes	n.a.
131	Communication FP BUS	Communication failure	lost communication with Panel	n.a.	yes	
132	Service interval	Service due		yes	n.a.	
133	BUS Module lost (3ph-measurement)			yes	n.a.	
134	BUS Module lost (DC-measurement)			n.a.	yes	
135	Sync failure	generators cannot be synced	second generator cannot be switched to the running generator		yes	
136	Communication motor controller	No data from motor controller	Short circuit defect		yes	
137	Air filter	Error Air filter	Bad air filter		yes	
139	Sync module	No data from sync module	Short circuit defect		yes	
140	load balancing	Generator takes less load	Generator produces insufficient power		yes	
141	Configuration sync module	Sync module available but not selected	Crippled mode only		no	
246	Service done	user	Service interval reset	n.a.	n.a.	yes
251	Admin Param changed	user	Parameter changed at Admin level	n.a.	n.a.	yes
255	Reserved			n.a.	n.a.	yes

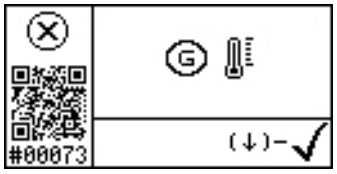
2.6.2.2 Description of the symbols

Fig. 2.6-1: Description of the symbols

Symbol	Description			Symbol	Description	
	WARNING				Current	Generator output
	Error shutdown				Frequency	Generator output

Symbol	Description			Symbol	Description	
	Faults	No contact			Voltage	Generator output
	Broken	Short circuit			(%)/Load	
	OK				Generator runs	
	AC Voltage				Generator off	
	Run-up phase/Over-ride	Generator start-up			Temperature	
	Standby				Engine	
	Automatic start-up.				Exhaust system	
	Starter battery				Winding	
	Operating hours				Preheating	
	Oil pressure				Speed/RPM	
	Self test				Tank gauge %	
	Apparent power				Starter turns	

Example:



Error73: Error shutdown due to winding temperature

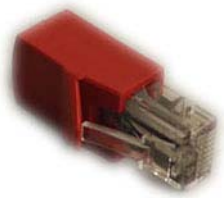
2.7 Accessories:

FP Bus Cable (15 m): 34.02.02.131H

Fig. 2.7-1: FP Bus Cable (15 m): 34.02.02.131H

Terminating resistor:34.02.02.133H

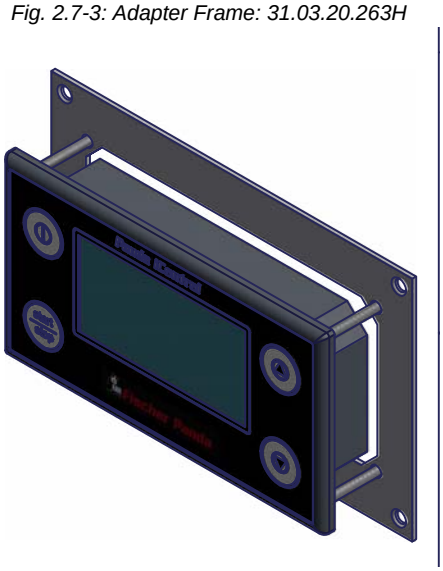
Fig. 2.7-2: Terminating resistor:34.02.02.133H



Adapter Frame: 31.03.20.263H

Fig. 2.7-3: Adapter Frame: 31.03.20.263H

xContol CP-G in a Generator Control (P6+) section



2.7.1 Dimensional drawing

Fig. 2.7.1-1: CP-G