

8. Remote Control Panel P4 Control

| | | |
|--|---------|---------------------------------|
|  Fischer Panda | Art Nr. | 0000522 |
|  Fischer Panda | Bez. | Remote Control Panel P4 Control |

Tabelle 1:

| | Dokument | Hardware | Software |
|----------|----------|----------|----------|
| Aktuell: | R03 | V1.00 | ----- |
| Ersetzt: | R02.1 | V1.00 | ----- |

8.1 Remote control panel

Remote control panel P4 Control

The remote control panel is necessary to control the generator and to evaluate the motor/generator properties. The generators will automatically cutout, if it does not run as required. The generator may not be run without the remote control panel.

Fig. 8.1-1: Remote control panel



8.1.1 Cleaning and Replacing parts at the generator

Disconnect the battery when working on the generator

The battery must always be disconnected (first negative then positive pole), when work on the generator or the electrical system of the generator are made, so that the generator can not be started accidentally.

This is especially true for systems with an automatic start function. The automatic start function is to be deactivated before the work.

Sea valve must be closed. (only PMS version)

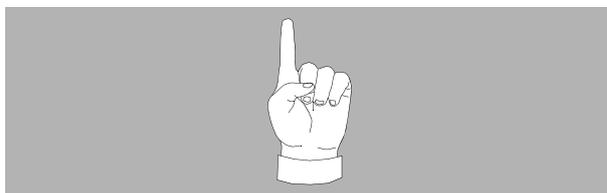
Note also the safety of the other components of your system.

**Generator, oil and antifreeze can be hot during/after operation.
Risk of severe burns.**

Attention!:



Note!:

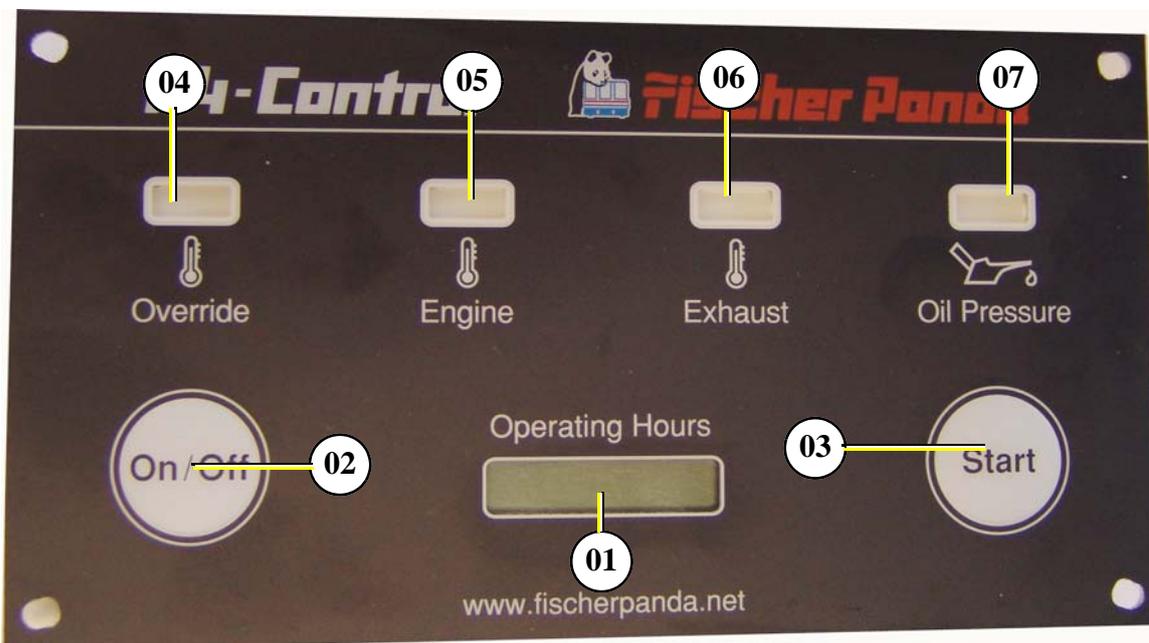


Warning!: Hot surface/material



8.2 Front side

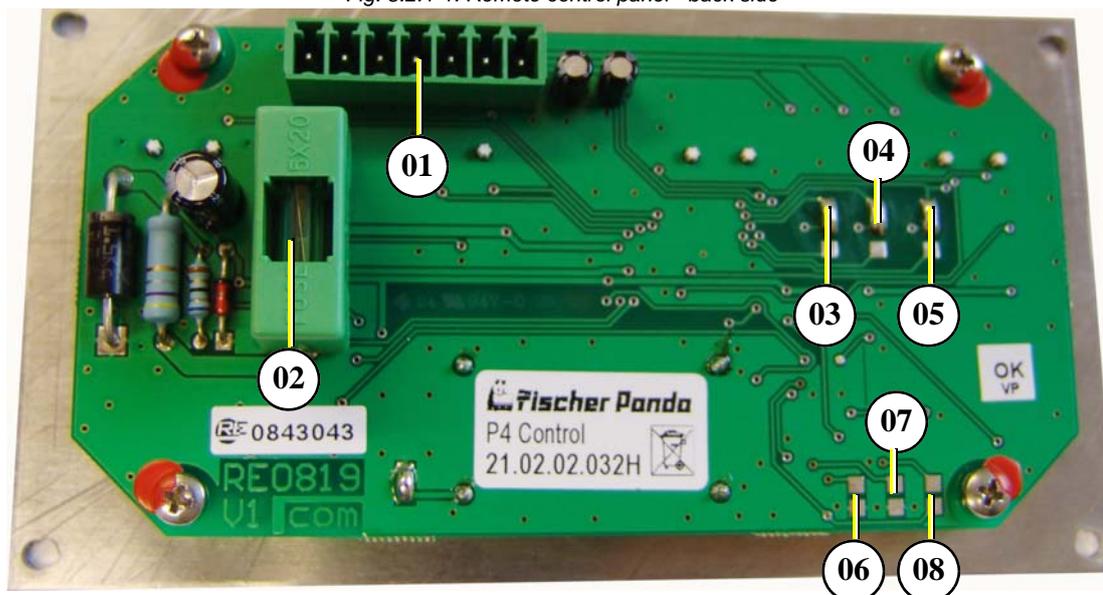
Fig. 8.2-1: Remote Control Panel - Front Side



- | | |
|------------------------------|---|
| 01) Display operating hours | 05) Warning light for engine temperature |
| 02) Power „ON/OFF“-button | 06) Warning light for exhaust temperature |
| 03) Generator „Start“-button | 07) Warning light for oil pressure |
| 04) Control light „Override“ | |

8.2.1 Back side

Fig. 8.2.1-1: Remote control panel - back side



- | | |
|-----------------------------------|-----------------|
| 01) Connector for generator cable | 05) Jumper J101 |
| 02) Fuse 0,5A | 06) Jumper J104 |
| 03) Jumper J103 | 07) Jumper J105 |
| 04) Jumper J102 | 08) Jumper J106 |

8.3 Operation manual

8.3.1 Preliminary remarks

Advices concerning the starter battery

Fischer Panda recommends normal starter battery use. If a genset is required for extreme winter conditions, then the starter battery capacity should be doubled. It is recommended that the starter battery be regularly charged by a suitable battery-charging device (i.e., at least every 2 months). A correctly charged starter battery is necessary for low temperatures.

8.3.2 Override function

Depending on the installation situation, a heat accumulation inside the generator sound insulated capsule may occur (especially after longer run time with high load). According to this situation the engine overheat switch release after the generator has already stopped. The generator can not be started until the engine has cooled down.

To prevent this, the P4 Control panel has an override mode. While the start button is pressed and several seconds after it (can be modified with jumpers on the panel back side), the temperature error is ignored. The circulation of the cooling water cool down the engine and the generator can be started normal.

The control light „Override“ is turned on:

- if the panel is on and the generator is stopped (function control)
- during the „Start“ button is pressed (Override active)
- during the set time after the „Start button is released“ (Override active)

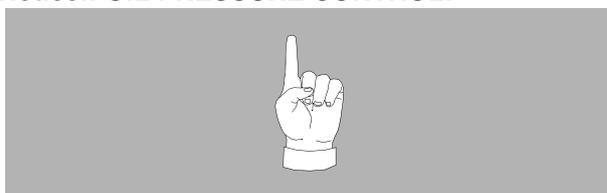
Not in use at the Panda 4000s series.

8.3.3 Daily routine checks before starting

1. Oil Level Control (ideal level: 2/3).

True, the diesel motor automatically switches off when there is a lack of oil, but it is very damaging for the motor, if the oil level drops to the lowest limit. Air can be sucked in suddenly when the boat rocks in heavy seas, if the oil level is at a minimum. This affects the grease in the bearings. It is therefore necessary to check the oil level daily before initially running the generator. The oil level must be topped up to the 2/3 level, if the level drops below the min. mark

Notice!: OIL PRESSURE CONTROL!



2. State of cooling water.

The external compensation tank should be filled up to a maximum of in a cold state. It is very important that large expansion area remains above the cooling water level.

3. Open sea cock for cooling water intake. (only Marine)

For safety reasons, the sea cock must be closed after the generator has been switched off. It should be re-opened before starting the generator.

4. Check raw water filter. (only Marine)

The raw water filter must be regularly checked and cleaned. The impeller fatigue increases, if residual affects the raw water intake.

5. Check all hose connections and hose clamps are leakage.

Leaks at hose connections must be immediately repaired, especially the raw water impeller pump. It is certainly possible that the raw water impeller pump will produce leaks, depending upon the situation. (This can be caused by sand particles in the raw water etc.) In this case, immediately exchange the pump, because the dripping water will

be sprayed by the belt pulley into the sound insulated casing and can quickly cause corrosion.

6. Check all electrical lead terminal contacts are firm.

This is especially the case with the temperature switch contacts, which automatically switch off the generator in case of faults. There is only safety if these systems are regularly checked, and these systems will protect the generator, when there is a fault.

7. Check the motor and generator mounting screws are tight.

The mounting screws must be checked regularly to ensure the generator is safe. A visual check of these screws must be made, when the oil level is checked.

8. Switch the land electricity/generator switch to zero before starting or switch off all the load. (only Marine)

The generator should only be started when all the load have been switched off. The excitation of the generator will be suppressed, if the generator is switched off with load connected, left for a while, or switched on with extra load, thus reducing the residual magnetism necessary for excitation of the generator to a minimum. In certain circumstances, this can lead to the generator being re-excited by means of a DC source. If the generator does not excite itself when starting, then excitation by means of DC must be carried out again.

9. Check the automatic controls functions and oil pressure.

Removing a cable end from the monitoring switch carries out this control test. The generator should then automatically switch off. Please adhere to the inspection timetable (see Checklist in the appendix).

8.3.4 Starting the generator

1. Open sea lock and close battery switch if necessary.
2. Push „ON/OFF“ button to switch panel on.
3. Push „Start/Stop“ button to start the generator.
4. Switch on load.

In the event of starting problems, close the sea water inlet cock. Panda marine generators only.

Should there be any reason to turn the engine (over) or start the engine i.e. to bleed the fuel system, the sea water inlet cock must be closed! During the starting process, the cooling water pump is driven with the motor. The cooling water is discharged to the exhaust outlet and, since the motor has not run, the exhaust pressure is not high enough to expel the sea water which has been brought to the exhaust outlet. To avoid filling the exhaust outlet with water and causing further problems, close the inlet sea water valve.

Once the engine is running, be sure to open the inlet valve!

Attention!:



8.3.5 Stopping the generator

1. Switch off load.
2. If the load is higher than 70 % of the nominal load, the generator temperatures should be stabilised by switching off the load for at least 5 minutes.

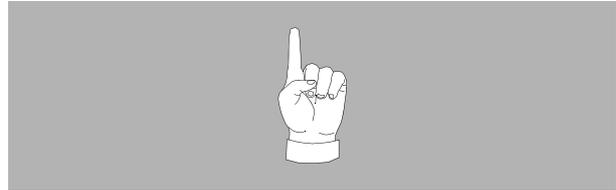
At higher ambient temperatures (more than 25 °C) the generator should always run for at least 5 minutes without load, before it is switched off, regardless of the load.

3. Press „OFF“ button and switch off the generator.
4. Activate additional switches (Battery switch, fuel stop valve etc.).

Never switch off the battery until the generator has stopped.

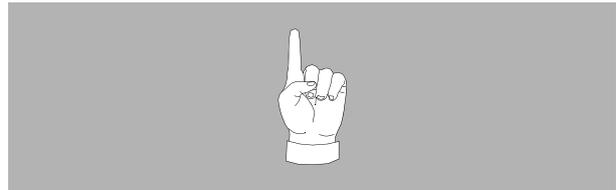
5. If necessary, close sea cock.

Notice!:



If the generator switches itself off with the operation with load for temperature reasons, must be examined immediately, which the cause is. That can be an error at the cooling system or any error in the range of the outside cooling system.

:Notice!:



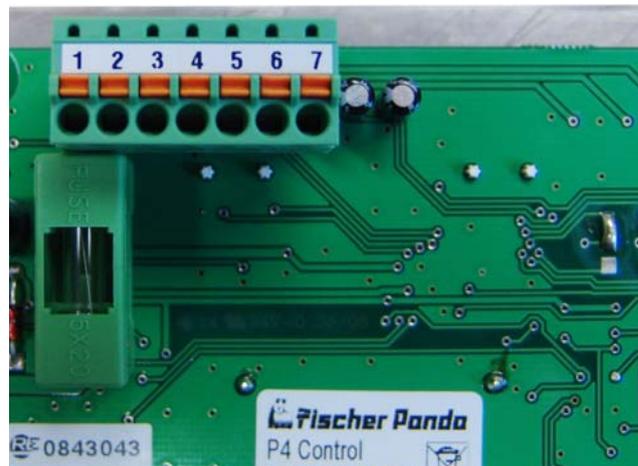
8.4 Installation of the panel

8.4.1 Connection of the remote control panel

As standard a 7 core connection-cable, 7m long, is included in the supply. Cores are numbered from 1 to 7. The control cables are securely connected to the genset. On the back of the control panel there are terminals numbered from 1 - 7. Connect the cores of the control-cable in respective order.

Please ensure that the remote control panel is installed in a protected, dry and easily accessible place.

Fig. 8.4.1-1: Remote control panel - back side



| Term.-No | Terminator.-name | i / o | Description |
|----------|------------------|-------|---|
| 1 | Vbat | i | Power supply 12 V (+) |
| 2 | GND | i | Power supply 12 V (-) |
| 3 | T-Cyl | i | <p>Error „engine temp“. Temperature switch engine head in.</p> <p>Can be set up by jumper as NC or NO</p> <p>Gives 22 mA (12 V +) on the switch.</p> <p>This error is ignored while the „Start“ button is pressed and several seconds after it is released (time set up by jumpers)</p> <p>The yellow „Override“ LED is on while the error is ignored.</p> <p>Status is displayed by green/red LED.</p> |

| | | | |
|---|-----------|---|---|
| 4 | T-EXH | i | Error „exhaust temp.“. Temperature switch exhaust elbow in. Can be set up by jumper as NC or NO Gives 22 mA (12 V +) on the switch. Status is displayed by green/red LED. |
| 5 | Oil-Press | i | Error „oil pressure“. Oil pressure switch in. Can be set up by jumper as NC or NO Gives 22 mA (12 V +) on the switch. Status is displayed by green/red LED. |
| 6 | Start | o | Start relay out . Is active while the „Start“ button is pressed. The supply voltage is switched on the relay. (see remarks 1-3) |
| 7 | Fuel-Pump | o | Fuel pump relay out. Is active, if no error (temp. or oil press. at 3, 4, 5) is applied. Is active during the „Override“. The supply voltage is switched on the relay. (see remarks 1-3) |

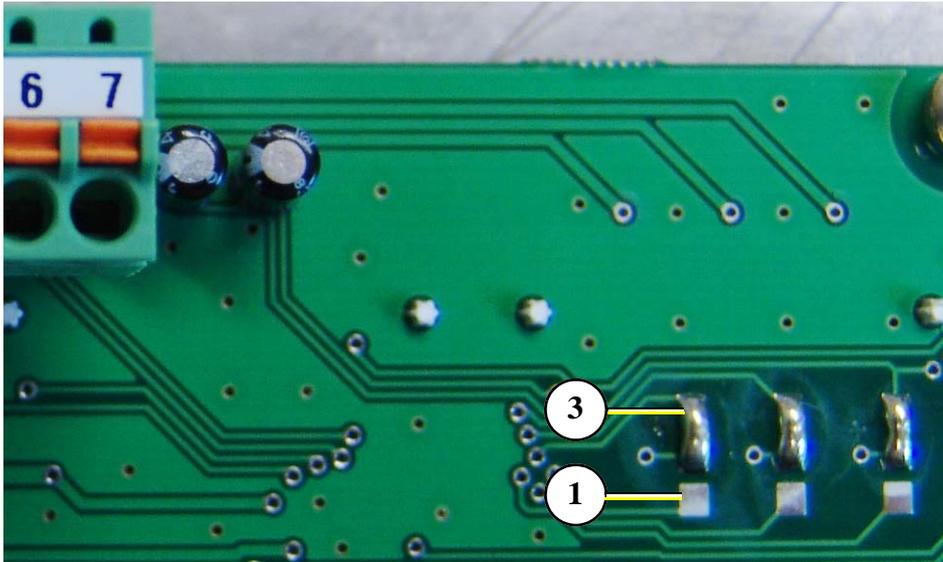
- 1) Max. current out continuous operation: 0,25 A short time 0,4 A
- 2) Max. current out is limited by the panel fuse (minus 0,1 A for the panel).
- 3) The out is protected by an freewheeling diode.

8.5 Jumper configuration

8.5.1 Jumper configuration for the input

8.5.1.1 Jumper J101-J103

Fig. 8.5.1.1-1: Jumper J101 - J103



At the 3 pin jumpers J101-J103 the pin 3 is at the termination block side.

| Jumper | Status | Desc. |
|--------|--------|---------------------------------|
| J101 | 1-2 | Temp. switch engine head is NC |
| | 2-3 | Temp. switch engine head is NO |
| J102 | 1-2 | Temp switch exhaust elbow is NC |
| | 2-3 | Temp switch exhaust elbow is NO |
| J103 | 1-2 | Oil pressure switch is NC |
| | 2-3 | Oil pressure switch is NO |

8.5.2 Jumper for configuration of the „Override“ time

| | J104 | J105 | J106 | Test-Mode | Override time [s] |
|----------|-------------|-------------|---------------|------------|-------------------|
| 1 | open | open | open | no | 40 |
| 2 | closed | open | open | no | 20 |
| 3 | open | closed | open | no | 10 |
| 4 | closed | closed | open | no | 5 |
| 5 | open | open | closed | no | 0,16 |
| 6 | closed | open | closed | no | 0,08 |
| 7 | open | closed | closed | no | 0,04 |
| 8 | closed | closed | closed | no | 0,02 |
| 9 | open | open | -- | yes | 2,5 |
| 10 | closed | open | -- | yes | 1,25 |
| 11 | open | closed | -- | yes | 0,63 |
| 12 | closed | closed | -- | yes | 0,31 |

1 is standard for „override“ activated

2 is standard for „Override“ deactivated“

9 is standard for „Test mode“

The Test mode is active as long as the button „on/off“ is pressed by turning on the panel.

8.6 Maximum ratings

Operation outside of the maximum ratings can causes damage at the panel and the generator

In not indicated otherwise the ambient temperature is assumed. All voltage data are against GND (X1.2).

Operation voltage U_b is the voltage at terminator X1.1

| Parameter | Desc. | min. | max. | |
|-----------------------------------|--|------|-------|----|
| Operation Voltage | without time limit. full function | 10,5 | 15 | V |
| | without time limit, full function (except H-Meter, LED light lower) | 6 | | V |
| | maximal 60 min, $T_a = 65\text{ °C}$, full function | | 17 | V |
| | maximal 60 s, $T_a = 65\text{ °C}$, full function | | 18 | V |
| | maximal 100 ms, $T_a = 65\text{ °C}$, full function | | 22 | V |
| | maximal 100 ms, full function, except H-Meter, some LED out of ordered | 4,5 | | V |
| ambient temperature for operation | | 0 | +85 | °C |
| capacity of the outputs | without time limit | | 0,25 | A |
| | without time limit (1 output only) | | 0,4 | A |
| External voltage on the outputs | Outputs with freewheeling diode for short out negative external voltage | -0,3 | U_b | V |
| External Voltage on the inputs | without time limit. Voltage which are out of the rating will be short out by the Z- diode. | -0,3 | U_b | V |
| Internal F1 | Micro fuse 5 x 20 mm glass fuse slow to blow | | 0,5 | A |

