

# Instruction Manual for Operating Panel 301 and 302





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# 1 Introduction and Overview

Two panels are available for the operation and power supply. **Panel 301** is designed for central monitoring and control of all electrical functions on board the yacht. **Panel 302** supplies the 230V devices with power when there is a land connection.

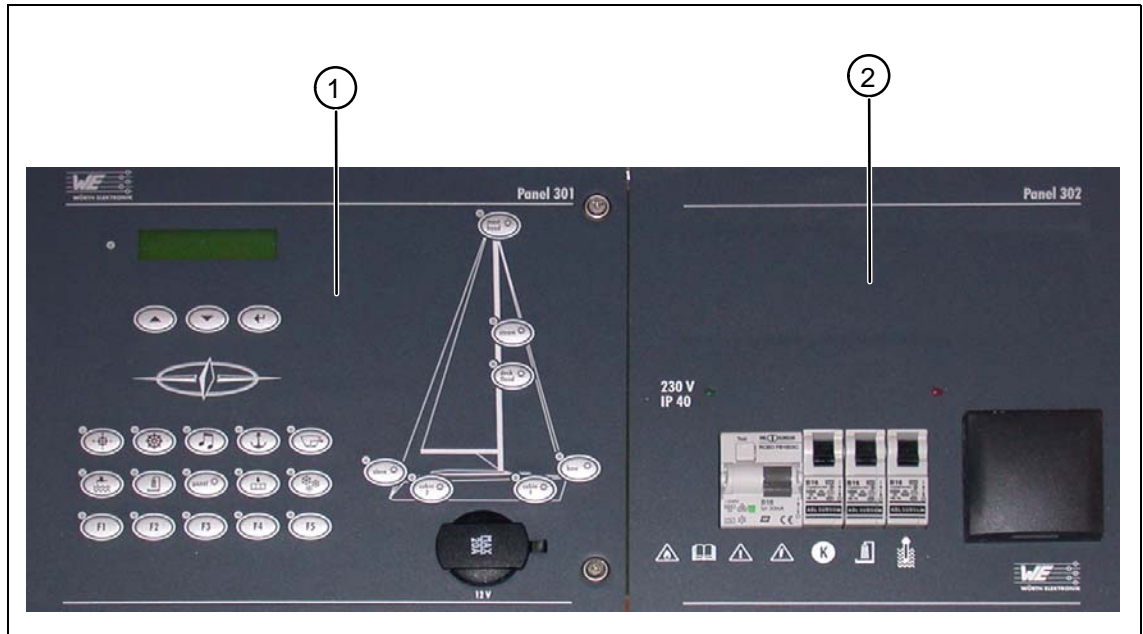


Fig. 1 Overview - panel 301/302

## Key

(1) Panel 301

(2) Panel 302

## 1.1 Panel 301 Controls

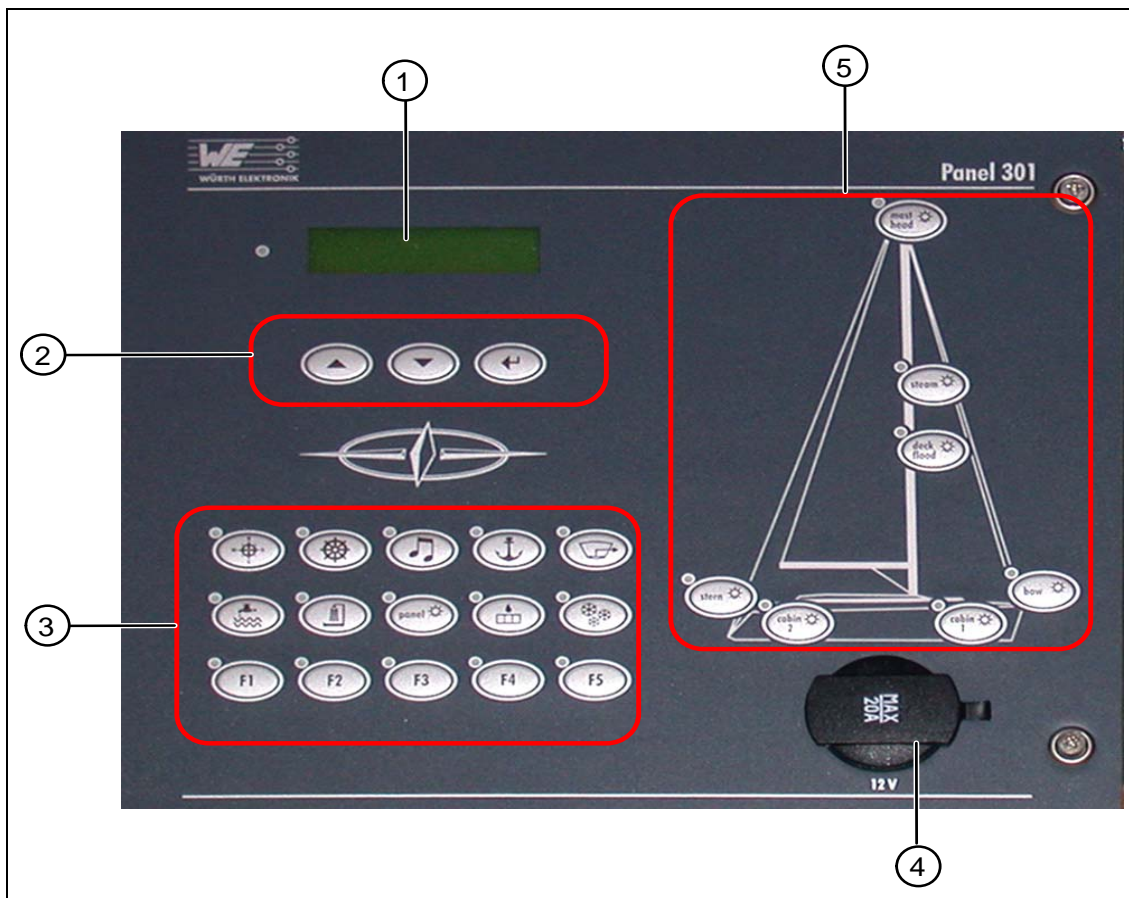


Fig. 2 Overview of panel 301







### Key






- |                      |                                       |
|----------------------|---------------------------------------|
| (1) Display          | (2) Scroll and acknowledgment buttons |
| (3) Function buttons | (4) Socket 12V/20A                    |
| (5) Lighting buttons |                                       |

The current status of the function and lighting buttons is shown by the respective LED.

LED Status	Meaning
Yellow LED on	Button function is switched on
Yellow LED flashes	Malfunction
Yellow LED off	Button function is switched off

## 1.1.1 Function Buttons

Button	Description/Function
	<p><b>Compass</b></p> <p>Switches the compass on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again.</p>
	<p><b>Navigation</b></p> <p>Switches the navigation device on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again. In the event of a malfunction, the yellow LED will flash until the fault has been removed.</p>
	<p><b>Radio</b></p> <p>Switches the radio on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again. In the event of a malfunction, the yellow LED will flash until the fault has been removed.</p>
	<p><b>Anchor</b></p> <p>Switches the anchor relay on and off.</p> <p>The status of this button (ON/OFF) is <b>not</b> stored after the power supply has been switched off. When you switch on the power again, this function will always be OFF.</p> <p>NOTE: For technical reasons, the LEWMAR windlass (type H3) can not be operated via this button.</p>
	<p><b>Bilge pump</b></p> <p>Switches the bilge pump on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again. In the event of a malfunction, the yellow LED will flash until the fault has been removed.</p> <p>CAUTION: Do not dry run the bilge pump!</p>
	<p><b>Fresh water</b></p> <p>Switches the fresh water pump on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again.</p> <p>CAUTION: Do not dry run the fresh water pump!</p>

Button	Description/Function
	<p><b>Waste water</b></p> <p>Switches the waste water pump on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again.</p> <p>CAUTION: Do not dry run the waste water pump!</p>
	<p><b>Panel</b></p> <p>Switches the background lighting of the panel and display on. This background lighting stays on for about 1 minute.</p> <p>The background lighting of the panel and display lights up and then turns off if you do not press either the up/down scroll button, the acknowledgment button or the panel button, during this time.</p>
	<p><b>Heating</b></p> <p>Switches the heating pump on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again.</p>
	<p><b>Fridge</b></p> <p>Switches the fridge on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again. In the event of a malfunction, the yellow LED will flash until the fault has been removed.</p>
	<p><b>F1 to F5</b></p> <p>Switches the reserve outputs on and off. These extra outputs are provided in addition to the functions set by the shipyards and are reserved for the use of other equipment. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again.</p>



## 1.1.2 Lighting Buttons

These buttons are used to switch the various lighting sources on and off. The button status is saved when the power supply has been switched off and is kept until the power is switched back on again.

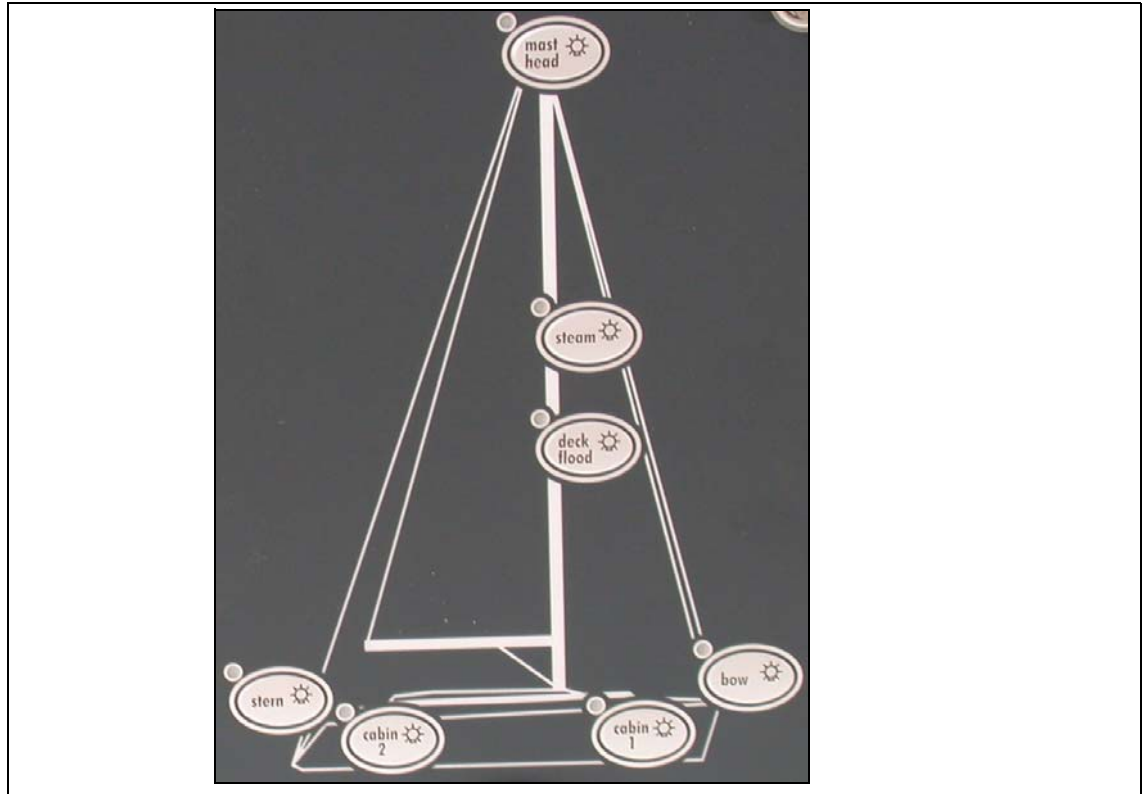


Fig. 3 Detailed view of the lighting buttons

### Outside lighting

The yellow LED will flash in the event of a malfunction.

- Stern
- Bow
- Steam
- Mast head

No function monitoring for:

- Deck flood

### Inside lighting

- Cabin 1
- Cabin 2

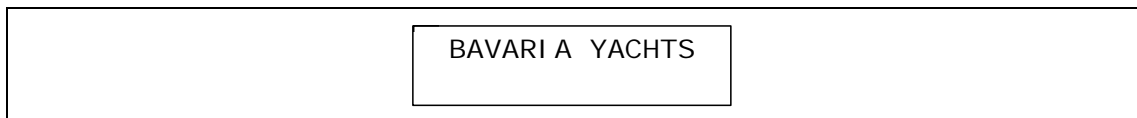
## 1.2 Menu Structure

This section describes how to access the various menu functions and how to change settings.




As soon as the panel is connected to the power source, a function test will be performed and the LEDs will light up for approx. 1 second. After this, the panel is ready for operation.

Alarms will be shown when triggered. See also section 1.2.2.

After activating the main switch, you will see the following start screen on the display:



With the help of the scroll buttons and the acknowledgment button, you can select and view the various information and menus.

Button	Description/Function
	<b>Scroll button - up</b> Navigates up the menu.
	<b>Scroll button - down</b> Navigates down the menu.
	<b>Acknowledgment button</b> Saves or confirms your entries.

You can now perform the required settings at the panel.

## 1.2.1 Menu

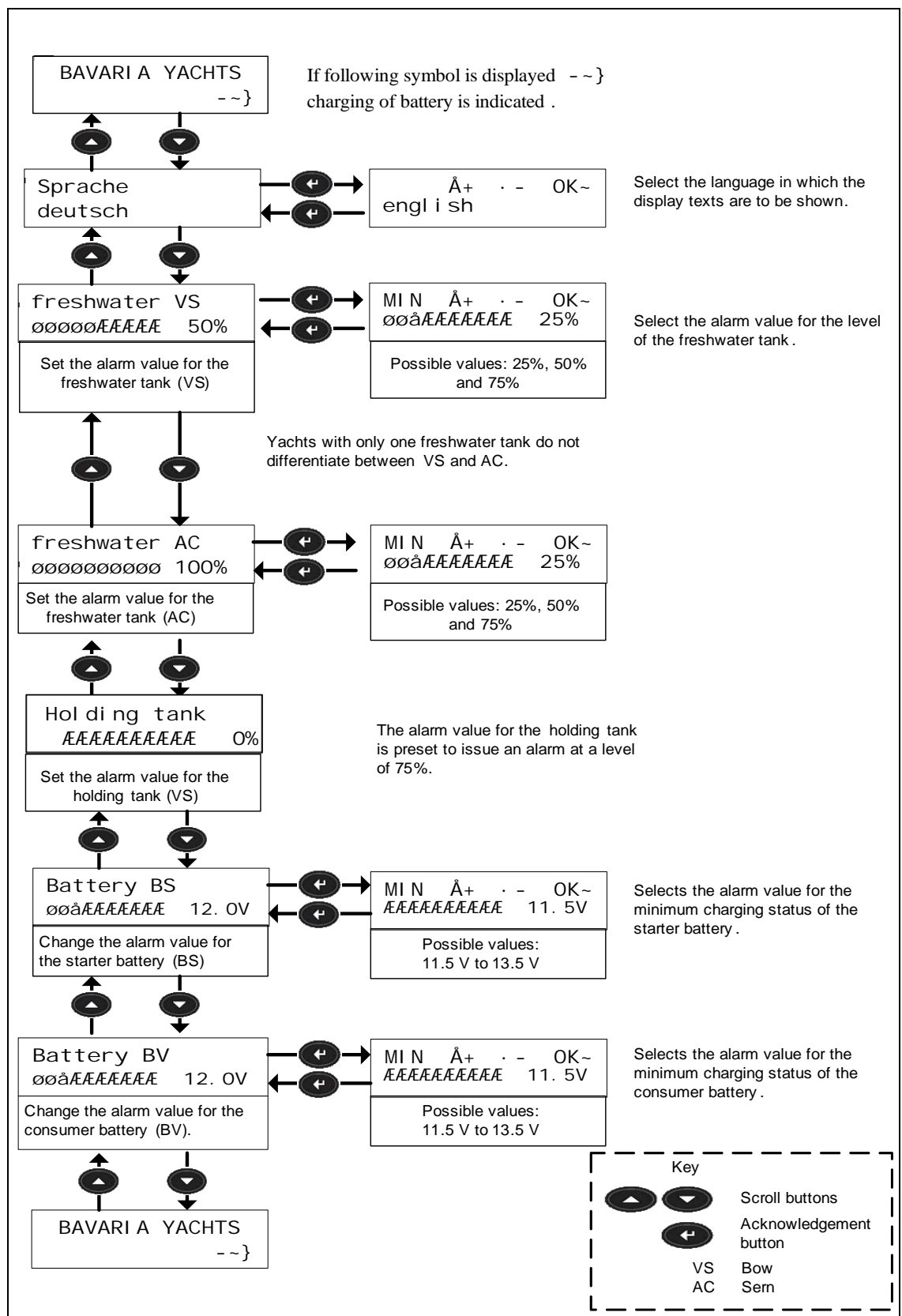


Fig. 4 Panel 301 menu

## 1.2.2 Alarms

If an alarm is triggered, the red LED next to the display will flash. The display will show the menu which has issued the alarm and the alarm itself will be shown by a flashing exclamation mark next to the menu bar. To acknowledge the alarm, press the acknowledgment button for 2 seconds.

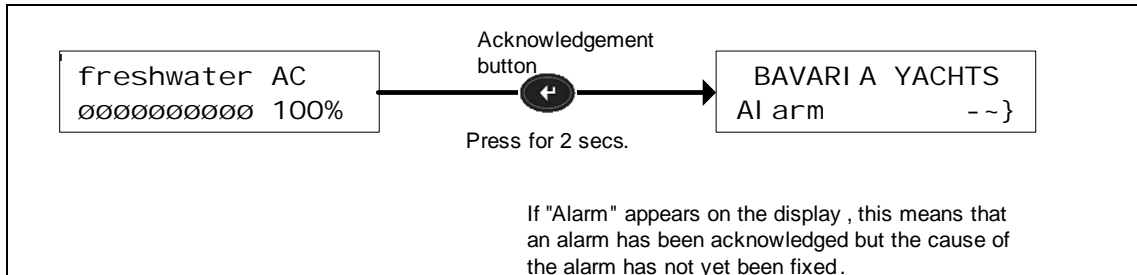


Fig. 5 Alarm display

The red LED extinguishes when you acknowledge the alarm.

## 1.3 Overview of Panel 302

Panel 302 supplies the 230V devices with power when there is a land connection.

### WARNING



#### Observe the current consumption and power input

- The consumer devices connected must not exceed a **total** power input of 3.600 W and a max. current consumption of 16 A.

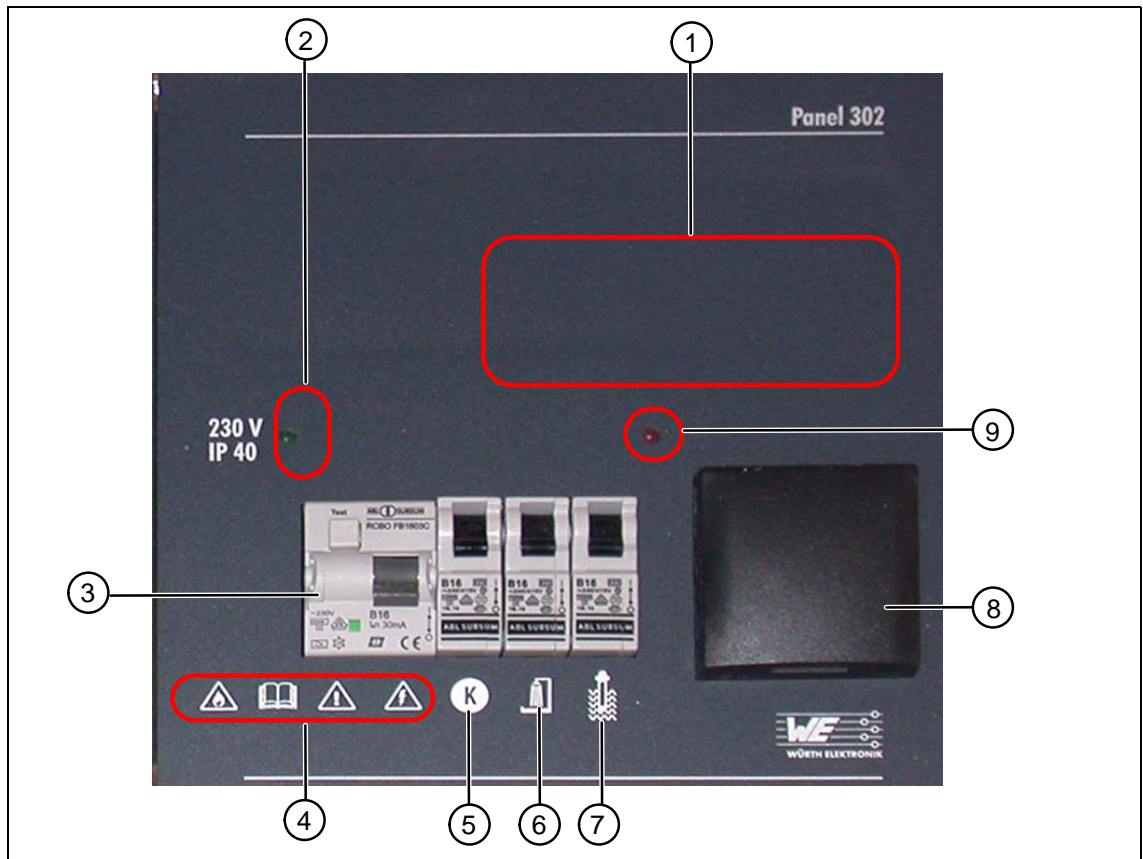


Fig. 6 Overview of panel 302





### Key

- |   |  |
|---|--|
| (1) Installation point for radio (optional)   | (2) LED (green) for residual current circuit breaker |
| (3) Residual current circuit breaker FI / B16 | (4) Observe warning symbols                          |
| (5) Automatic circuit breaker - kitchen (16A) | (6) Automatic circuit breaker - shower (16A)         |
| (7) Automatic circuit breaker - boiler (16A)  | (8) Socket 220V                                      |
| (9) LED (red) for boiler on                   |  |

### Function description

- When the residual current circuit breaker is switched on, a green LED indicates the existing land connection.
- The red LED indicates that the heating boiler is switched on.
- The residual current circuit breaker and fuse B16 are connected upstream of the three automatic circuit breakers (5,6,7).
- The kitchen fuse also serves the integrated socket (8).

### 1.3.1 Warning Symbols on Panel 302

Warning Symbols	Description
	<p><b>Fire or heat warning</b></p> <ul style="list-style-type: none"> <li>– Panel 301/302 must be protected against fire and extreme heat.</li> </ul>
	<p><b>Read the operating instructions</b></p> <ul style="list-style-type: none"> <li>– Read and observe the information in this instruction manual.</li> <li>– The safety instructions and hazard warnings in the boatbuilder's operating manual take precedence when using panels 301/302.</li> </ul>
	<p><b>Warning against unauthorized opening of panels 301/302</b></p> <ul style="list-style-type: none"> <li>– Measurement and service work to panels 301/302 may only be performed by specially qualified personnel.</li> </ul>
	<p><b>Warning against dangerous voltages.</b></p> <ul style="list-style-type: none"> <li>– Potentially lethal voltages are still present at some parts on the rear of panels 301/302 - even when the panels have been switched off at the main switch.</li> </ul>

## 2 Electrical Connections

### 2.1 Safety Instructions



**DANGER**

**Panel 302 is supplied with 230 V~ ± 5 %, 50/60 Hz line voltage.**

- Potentially lethal voltages are therefore still present at some parts on the rear of this panel (input B16/FI) - even when the panel has been switched off at the residual current circuit breaker.
  - Measurement and service work to panels 301/302 may only be performed by specially qualified personnel.
  - Incorrect usage of panels 301/302 may cause serious or even lethal injuries and considerable damage to property.
  - The safety instructions and hazard warnings in the boatbuilder's operating manual take precedence when using panels 301/302.
  - Observe the applicable accident prevention and DIN regulations (particularly DIN EN 60 204, Part 1) or the respective regulations in your country.
  - Before performing any service or maintenance work, always switch off panel 302 at the residual current circuit breaker and disconnect it from the power supply.
  - Secure the panel to prevent unauthorized reconnection of the power supply. Touching live parts can lead to serious or lethal injuries.
- 

### 2.2 Rear View of Panel 301

The connections and micro-fuses can be found on the rear of the operating panel 301.

→ Loosen the two fastening screws at the front and swing the panel open to the side.



## Electrical Connections

- |  |  |
|--|--|
| (1) Monitoring of fresh water tank 2 (bow) | (2) Monitoring of waste tank 2           |
| (3) Monitoring of fresh water tank 1 (AC)  | (4) Monitoring of waste tank 1           |
| (5) Monitoring of charger                  | (6) Monitoring of diesel tank (not used) |
| (7) Bow cable (not used)                   | (8) Stern cable                          |
| (9) Bilge pump                             | (10) Anchor                              |
| (11) Battery - negative pole               | (12) Socket 12V with fuse                |
| (13) Battery - positive pole 12C DC        | (14) Reserve function buttons F1-F5      |
| (15) Options (autopilot/navigation)        | (16) Light cable                         |
| (17) Shower suction extractor pump         | (18) Fridge                              |



## 2.2.1 Terminal Assignment

Connector	[1] Monitoring fresh water tank 2 (bow)	Cable
1	Fresh water tank 2	4/4, wt
2	Fresh water tank 2	3/4, br
3	Fresh water tank 2	2/4, gr
4	Fresh water tank 2	1/4, ye
5	Fresh water tank 2	COM/GND

Connector	[2] + [4] Monitoring waste tank	Cable
1	Waste tank 1	3/4
2	Waste tank 2	COM/GND

Connector	[3] Monitoring fresh water tank 1 (stern)	Cable
1	Fresh water tank 1	4/4, wt
2	Fresh water tank 1	3/4, br
3	Fresh water tank 1	2/4, gr
4	Fresh water tank 1	1/4, ye
5	Fresh water tank 1	COM/GND

Connector	[5] Monitoring charger	Cable
1	GND input	--
2	LED input	--

Connector	[6] Monitoring diesel tank	Cable
1	Not used	--
2	Not used	--
3	Not used	--

Connector	[7] Bow cable (only for Match series)	Cable
1	Top light - not used	1
2	Steam light - not used	2
3	Sailing light - not used	3
4	Fresh water pump - not used	12

Connector	[8] Stern cable, plus option cable	Cable	Description	Connection
1	Stern light	1	Function monitoring Button	10W/2A
2	Compass light	2	No function monitoring Button	10W/1A
3	Fresh water pump	3	No function monitoring Button	90W/8A
4	Navigation instrument (autopilot and chart plotter option)	4 [item14] factory configuration or [item15] optional	Monitoring fuses Button	240W/20A
5	Fresh water pump	5	No function monitoring Button	90W/8A

Connector	[9] Bilge pump	Cable	Description	Connection
	Bilge pump	11	Function monitoring Button Pump 12V	80W/10A

Connector	[10] Windlass	Cable	Description	Connection
	Windlass	10	No function monitoring Button Control external power relay	60W/5A

Connector	[12] Socket	Cable	Description	Connection
	Socket 12V	17	No function monitoring <b>NOT switched</b>	192W/16A

Connector	[14] Reserved for function buttons F1-F5	Cable	Description	Connection
1	Reserve button 1	--	No function monitoring Button	60W/5A
2	Reserve button 2	--	No function monitoring Button	60W/5A
3	Reserve button 3	--	No function monitoring Button	60W/5A
4	Reserve button 4	--	No function monitoring Button	180W/15A
5	Reserve button 5	--	No function monitoring Button	240W/20A

Connector	[16] Light cable	Cable	Description	Connection
1	12 V battery 1+, starter battery, connection only for measuring battery	1	--	--
2	!Not connected, occupied internally!	--	--	--
3	Top light	3	Function monitoring Button	10W/1A
4	Steam light	4	Function monitoring Button	25W/2A
5	Bow light	5	Function monitoring Button	25W/2A
6	Sailing light	6	No function monitoring Button	50W/4A
7+8	Inside lighting 1+2	7+8	No function monitoring Button	240W/20A
9+10	Inside lighting 3+4	9+10	No function monitoring Button	240W/20A

Connector	[16] Light cable	Cable	Description	Connection
11	Heating	11	No function monitoring Button Control line for thermostat	60W/5A
12	Radio (optional)	12	Function monitoring Button	120W/10A
	CB radio (optional)	--	Function monitoring Button	

Connector	[17] Sower suction extractor pump	Cable	Description	Connection
	Shower suction extractor pump	13+13a+ 13b	No function monitoring Button	270W/30A

Connector	[18] Fridge	Cable		Cable
	Cooling unit	16+16a+ 16b+16c	Monitoring fuses Button	360W/30A

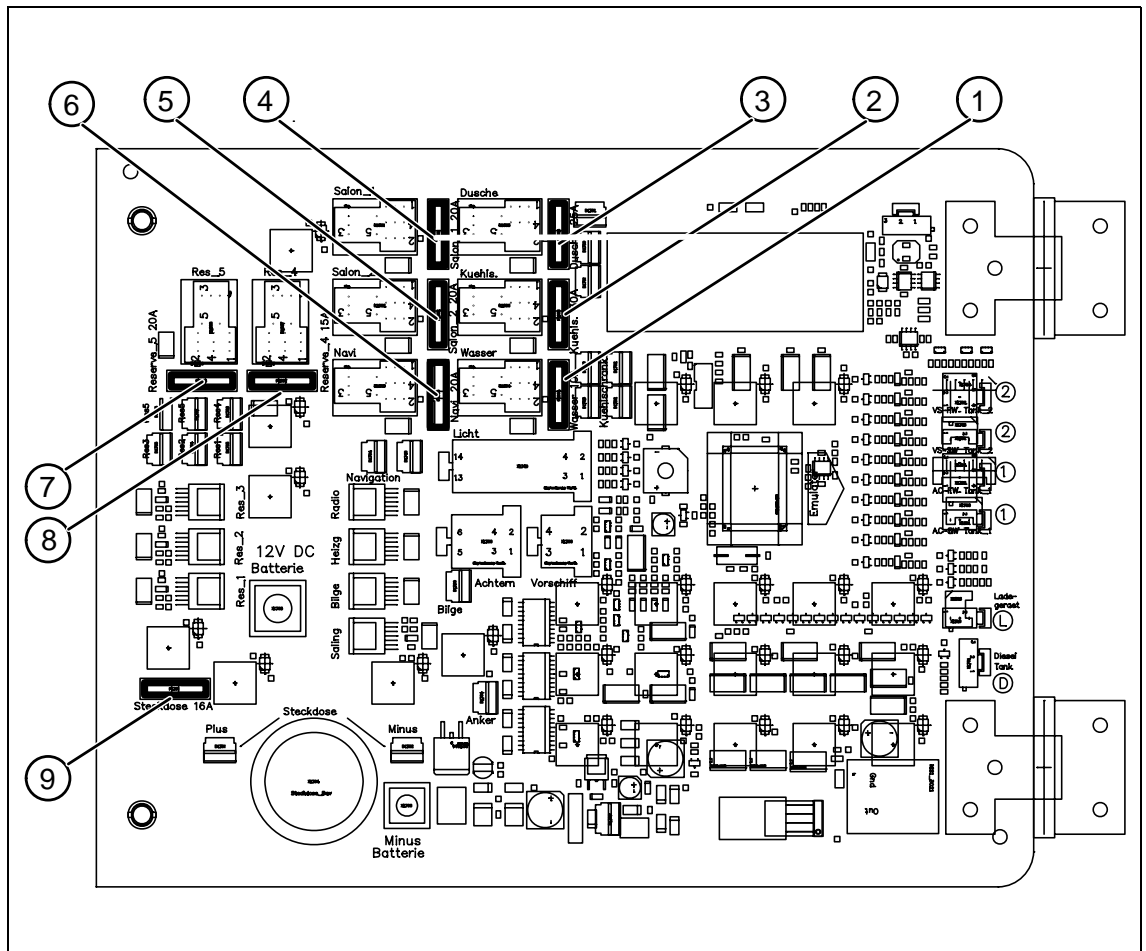


Fig. 8 Rear view of the panel 301 - micro-fuses

### Key

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| (1) Water pump (10A)              | (2) Cooling unit (30A)            |
| (3) Shower pump (30A)             | (4) Inside lighting cabin 1 (20A) |
| (5) Inside lighting cabin 2 (20A) | (6) Navigation (20A)              |
| (7) Reserve button (20A)          | (8) Reserve button (15A)          |
| (9) Socket (16A)                  |                                   |

### WARNING



### Note the current value for the micro fuses

Make sure that the micro fuses have the correct current value. If the micro fuses used have a current value which is too high, this could cause damage to the panel or panel overheating.

## 2.3 Rear View of Panel 302

**DANGER** 

Panel 302 is supplied with 230 V~ ± 5 %, 50/60 Hz line voltage.

- Observe the safety instructions in section „Safety Instructions“ on page 15.

### 2.3.1 Terminal Assignment

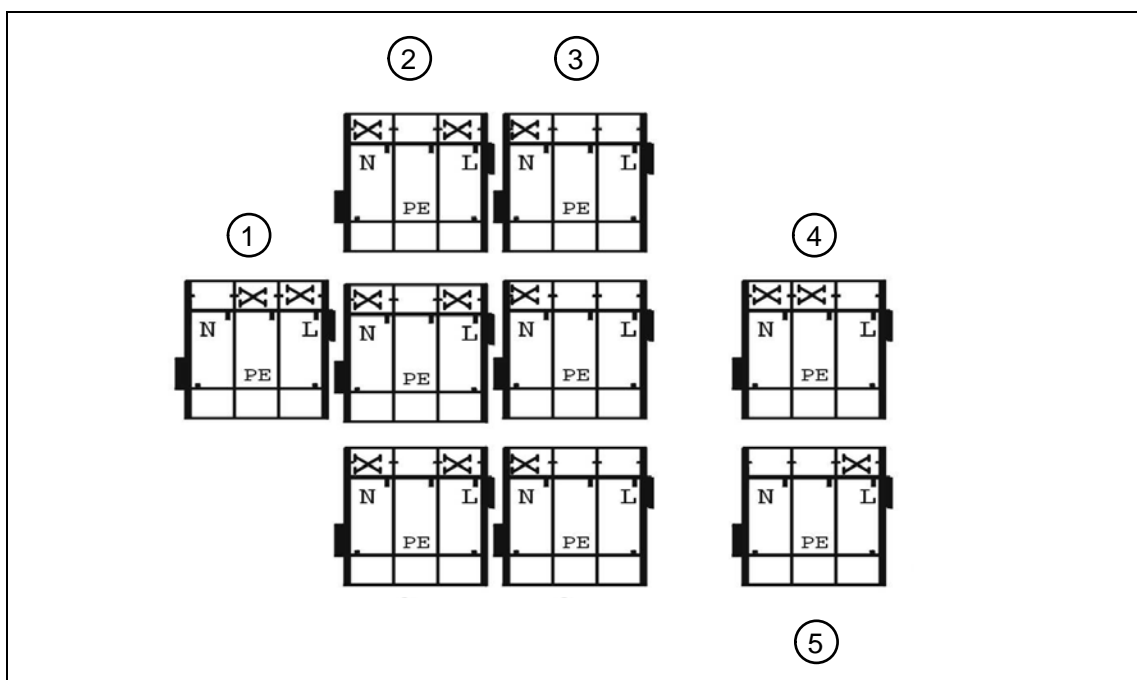


Fig. 9 Rear view of the panel 302 - terminal assignment

#### Key

- |                  |                                  |
|------------------|----------------------------------|
| (1) 1 x Boiler   | (2) 3 x Shower                   |
| (3) 3 x Kitchen  | (4) AC mains for land connection |
| (5) Mains socket |                                  |

#### NOTE:

The protective earth conductor (PE) must be attached to the middle pin.

## 2.4 Circuit Diagram

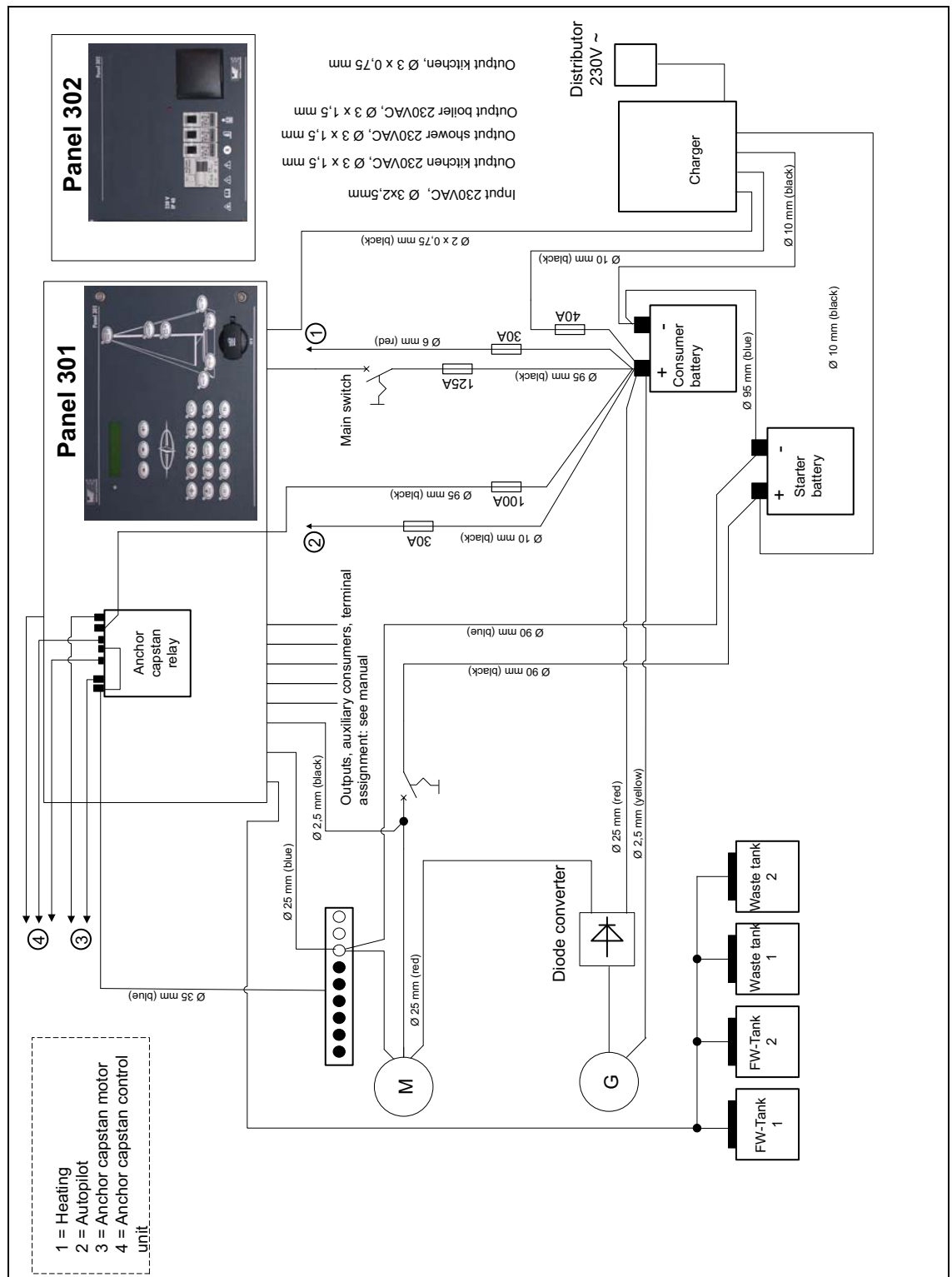


Fig. 10 Circuit diagram

