

# VOTRONIC

## Installation and Operating Manual

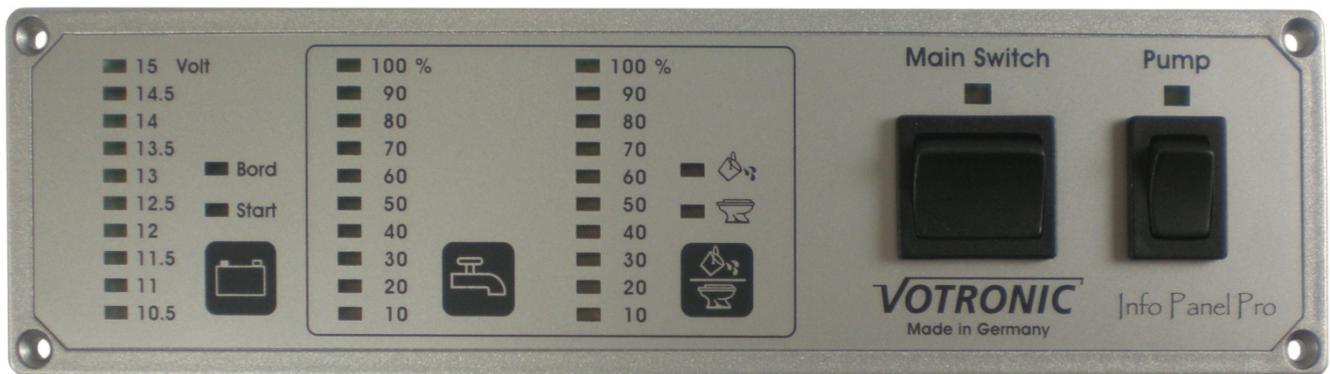
Info Panel Pro

12 V

No. 5330



Please read the mounting instructions and operating manual including the safety regulations completely prior to starting connection and start-up.



### Centralized Control and Information Unit for Camper and Boat, Functional Features:

- Digital Voltage Display for Starter Battery and Board Battery
- Tank Displays for Fresh Water Tanks, Sewage Water Tanks and Feces Tanks (Level Measuring)
- Pump Main Switch with LED Pilot Lamp (Water Pump)
- Battery Main Switch with LED Pilot Lamp (Equipment-on Check)

### Installation:

Choose a well visible and easily accessible location in the living area for installation of the unit. The installation place in the front panel of the furniture should be chosen in such a way that the contrast of the display be not hindered (sun light).

The small mounting depth of only 12 mm of the electronic system allows flush mounting into commercial furniture boards to ensure, that an optimum installation place can always be chosen without losing precious storage space.

#### TIP

The clear opening of the furniture cutout should be slightly larger than the assembly dimensions of 176 x 43 mm to ensure safe alignment of the unit's front panel. Use the delivered drilling jig for alignment.

The rear cutout opening should be covered with electrically nonconducting material (e. g. plastic plate, poplar plywood, or similar material) to ensure full utilization of the storage space, which might be located behind

Make all electric connections, place the Info Panel Pro centrally in the cutout and use the delivered screws for fastening.

## Start-up:



**Always disconnect the power supply to the battery prior to working on the electric system to avoid short-circuits!**

The Info Panel Pro is connected prior to the final installation. Therefore, the length of the connection cable should be sufficient, in order to facilitate connection and installation of the display unit. It is, however, recommendable to use connection cables of different colours to avoid malfunctions due to mixed up connections.

The connections of the panel are combined on the terminal strip, and they are marked on the on the board by numbers. The numbering of all VOTRONIC units has been assigned systematically to the corresponding connections, and they are explained by a label on the rear side. Thus, the configuration of connections is always available.



It doesn't make any difference if the connections are plug-in type terminal screws or female connectors. It is **IMPORTANT** to carefully screwing down and crimping the stripped cable with all single wires, observing that no single wires jut out laterally!



**When inserting brand-new female connectors for the first time, expenditure of force is required. We therefore recommend to carefully using pliers for the first insertion.**

## Switch Functions:

### Main Switch:

This switch is used to switch the entire power supply in the camper on or off. It is indicated by the red light-emitting diode "Main Switch".

The switch is designed for small to medium-sized systems, which means, that the maximum switching current of the board supply should not exceed approx. 16 A.

In case of higher current load due to consumers, switching by a VOTRONIC Battery Protector is recommendable, see page 3, "Automatic Protection against Total Discharge and Remote-controlled Main Switch".

### Operation:

If the main switch is actuated, all displays will be started for a short moment for reasons of testing, and all signal LEDs on the display will be lighting up.

After that the unit will change to normal operation. The board battery, the fresh water and the sewage water tank will be displayed, and usual operation is allowed. 10 minutes after the last activity, the display will be switched-off automatically for reasons of power saving.

### Pump (Pump Main Switch):

This switch is used to switch-on the pump of the water supply, which is indicated by the red LED "Pump".

Any commercially available pump, the current consumption of which does not exceed approx. 10 A, can be connected.

## Voltage Display for Starter Battery and Board Battery:

The two voltage rates of the board battery and the starter battery will be displayed at choice. The most interesting range of the battery voltage, from the total discharge to the maximum charging voltage, will be displayed clearly.

The luminous spot display supplies a quite precise display of the battery voltage rates, since also the intermediate values are clearly legible due to the different brightness of the adjacent luminous spots. At the push of a button, the voltage of board or starter battery can be selected, or the display can be switched-off. In case of low battery voltage rates, red pilot lamps indicate that battery recharging is required.

### Operation:

- If the key is actuated, the voltage of the board battery will be displayed, and the LED "board" will be lighting.
- If the key is actuated for a second time, it will be switched to the starter battery. The LED "Start" is lighting.
- If the key is actuated for a third time, the display will be switched-off.
- If the starter battery is not connected, the lowest LED "10.5" is lighting dimly at least brightness.
- 10 minutes after the last activity, the display will be switched-off automatically for reasons of power saving.

### Display:

The voltage is indicated by a lighting LED on the scale.

Simultaneous lighting of 2 light-emitting diodes indicates a voltage between the corresponding values.

EXAMPLE: If the two LEDs "12.5 V" and "13 V" are lighting with identical brightness, the battery voltage is 12.75 V.

If the brightness of the light-emitting diodes is different, the battery voltage tends to the light-emitting diode being the brighter one.

The range of operation of the lead battery 12 V is indicated by the red and green light-emitting diodes, and it is valid for inferior to normal load (current consumption) of the battery. **Green means o. k.!**

If powerful consumers with high current consumption are used, such as inverters, the battery voltage might drop below 11 V.

However, if the display is in the red range without any battery load or in case of only inferior battery load, the corresponding battery should be recharged immediately.

If the voltage "10.5 V" is reached, switch-off all consumers in order to avoid total discharge of the battery. Now, recharging is highly recommended !



Several times of total discharge result in loss of capacity or in destruction of the battery!  
Never leave lead storage batteries in discharged condition !

## Automatic Protection against Total Discharge and Remote-controlled Main Switch:



An efficient protection against totally discharged batteries is ensured by installation of a VOTRONIC Battery Protector, which effects an automatic separation of battery and consumers.  
Battery Protector 40 (12 V, to 40 A load current), order No. 3075 or

Battery Protector 100 (12 V, to 100 A load current), order No. 3078.

It can also be used as efficient, remote-controlled main-switch. For this purpose, connect terminal "8" of the Info Panel Pro to the "Sense +" cable of the battery protector. Refer also to its operating manual, paragraph "Remote Control".

In this case, the consumers are connected to the Battery Protector. and output "2a"+" consumers board battery" of the Info Panel Pro is not used.

## Tank Displays:

The tank level is represented in form of a clearly arranged luminous bar with 10 light-emitting diodes (each) in three colours allowing that the tank level can be read conveniently at a glance. Display is effected continuously; intermediate values are displayed in variable brightness.

During refuelling and defuelling of the tanks, the continuously raising or dropping display shows a direct image of the instantaneous tank level.

The fresh water tank display warns in time of an empty water tank. Due to its accuracy it is a very good aid for tank filling. Also the sewage water and the feces tank display facilitate immediate disposal, which is appreciated by environment-conscious users.

Level measurement requires installation of a tank transmitter (measuring sensor) at each tank, which must be connected to the Info Panel Pro via three cables or two cables (as well as ground/battery minus).

Required Measuring Sensors ( 1 each Tank) for 12 V								
Selection acc. to Tank volume, tank height and installation possibility at the tank:								
Tank Transmitter, Measuring Sensor Type	Order No.	Installation at the Tank	Adjustable Tank Height in cm		Tank Material Pl = Plastic Me = Metal	Tank Volume		
			min.	max.				
Tank Electrode 12-24 K	5543	Top/Bottom	12	24	Pl / Me	•	•	•
Tank Electrode 15-50 K	5545	Top/Bottom	15	50	Pl / Me	•	•	•
Tank Electrode 20 K-WC	5555	Top	12	24	Pl / Me	--	•	•
Tank Electrode 50*	5542	Top/Bottom	20	50	Pl / Me	•	•	--
Tank Electrode 30-110 K-FL	5551	Top	30	110	Pl / Me	•	•	--
Tank Sensor FL	5530	Lateral Side/ Top	30	100	Pl / Me	•	•	--

\* Article is well suited, but no longer in the current delivery programme, indicated as representative for several types

**Note:** All measuring sensors listed in the table supply a continuous signal and are designed for continuous operation. Thus, their design is optimally adapted to an operation at the Info Panel Pro.

Former measuring sensors, such as the **Tank Transmitter Set**, order No. 5510, and the **Tank Probe**, order No. 5520, work according to the conductive measuring method (conductivity). Due to the 7-stage measurement, they are **no longer suitable** for **continuous** operation at the tank displays S.

### Operation of the Fresh Water Single Display:

- When pressing the key, the instantaneous level of the tank will be displayed.
- If they key is pressed again, the display is switched-off.
- In case of an empty tank, the lowest LED is always lighting dimly at least brightness.
- 10 minutes after the last activity, the display will be switched-off automatically for reasons of power saving.
- Activation of the tank transmitters is effected together with the display.

### Operation of the Sewage Water/Feces Double Display:

- When pressing the key, the instantaneous level of the sewage water tank will be displayed. The LED "Sewage Water" is lighting.
- If the key is actuated for a second time, it will be switched to the feces tank. The LED "Feces Tank" is lighting.
- If they key is pressed for a third time, the display is switched-off \*\*.
- In case of an empty tank, the lowest LED is always lighting dimly at least brightness.
- 10 minutes after the last activity, the display will be switched-off automatically for reasons of power saving.
- Activation of the tank transmitters is effected together with the display.

\*\* "Feces Tank" will be completely skipped, if there is no tank transmitter connected!

## Tips for Single and Double Tank Displays:

If the connection is obviously correct and malfunctions are suspected, please check the following:

Possible causes, if the displayed value is permanently < 10%:

- a. Cable 5 = Tank +, switched, to the tank transmitters, 12 V: Interrupted or short-circuited → Check
- b. Cable 4 = Measuring signal of the tank transmitter: Short-circuited to ground → Check

Possible causes, if the displayed value is permanently 100%:

- a. Cable 1 = Board Battery "-" or Body ground to the tank: Interrupted → Check
- b. Cable 4 = Measuring signal of the tank transmitter: Short-circuited to plus → Check

Performance Test Display: Release terminal 4 = measuring signal of the tank transmitter and connect terminal 4 (for reasons of testing) to:

- a. Terminal 1 = Board Battery "-" or Body ground → Display must drop to 3 %
- b. Terminal 5 = Tank +, switched → The display should increase to 100%

Then, the display function is basically correct, and the cause has to be searched with regard to the tank transmitter.

### 2 Tanks at one display:

The individual tank displays can also be assigned for selective measuring, such as inside / outside tank, summer/winter operation, additional tank etc.

For switching, separate switches 2xUM are suitable, such as:

Switch Panel 16 A S      Order No. 1289

Switch Panel 2 x 16 A S      Order No. 1291

With the double selector switches the cables

- 4 = Tank signal (measuring signal) and
- 5 = Tank + (Plus)

can be switched selectively to either of the tank measuring sensors.

The cables 1 = Board Battery "-" (Minus) or Body Ground remain always connected.



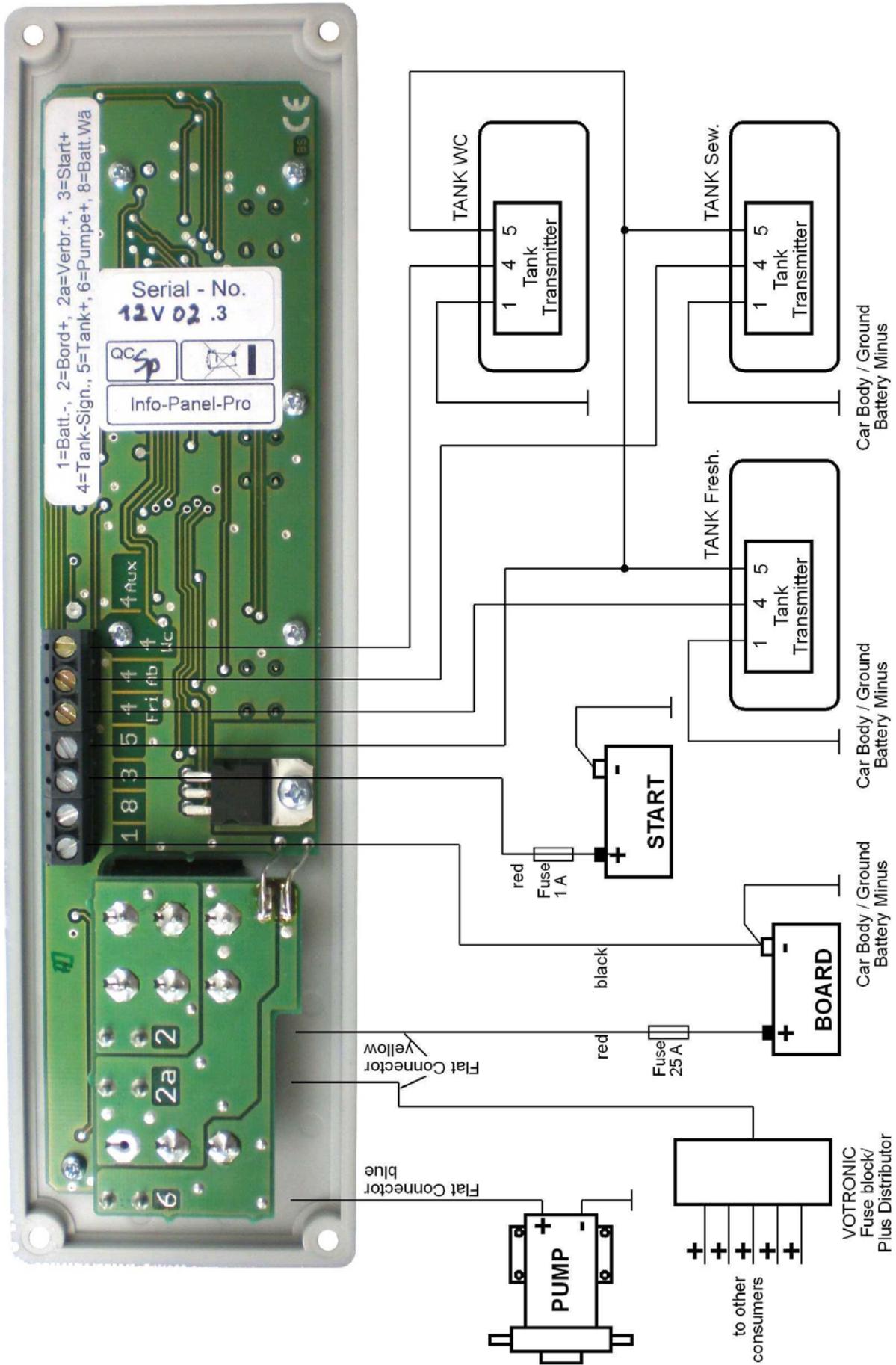
### Safety Regulations and Appropriate Application:

The unit has been designed according to the valid safety regulations.

**Appropriate application is restricted to:**

1. **Fused battery direct voltage with nominal voltage 12 V.**
2. **Technically faultless condition.**
3. **Installation in a well-ventilated room, protected from rain, humidity, dust, aggressive battery gas, as well as in an environment being free from condensation water.**
4. **With a rear insulating cover of the display unit.**
  - Never use the unit at locations where the risk of gas or dust explosion exists!
  - Cables are always to be laid in such a way that damage is excluded. Observe to fasten them tightly.
  - Never lay 12 V (24 V) cables and 230 V mains supply cables into the same cable conduit (empty conduit).
  - Check live cables or leads periodically for insulation faults, points of break or loosened connections. Occurring defects must be remedied immediately.
  - **Always disconnect the power supply to the battery prior to working on the electric system.**
  - **The unit is to be disconnected from any connection prior to electrically welding.**
  - If the user is not able to draw from the manual, which characteristic values are valid for a unit or which regulations are to be observed, a specialist is to be consulted.
  - The user/buyer is obliged to observe any construction and safety regulations.
  - **The unit is not equipped with parts, which can be replaced by the user.**
  - **Never use solvents or aggressive household cleaners for cleaning of the display!**
  - The warranty period is 36 months from the purchase date (against presentation of the sales slip or invoice).
  - The warranty will be void in case of any inappropriate utilisation of the unit, if it is used beyond the technical specification, in case of improper operation or external intervention. We do not assume any liability for any damage resulting hereof. The liability exclusion is extended to any service being executed by third, which has not been ordered by us in writing. Service is to be effected exclusively by VOTRONIC, Lauterbach.

### Connection Plan Info Panel Pro (Rear View):



**Configuration of Connections Info Panel Pro**

No.	Designation	Female Connector	Cable Cross-Sections up to a length of 2 m	Cable Cross-Sections from a length of 2 m
1	Board Battery "-" (Minus)/Body Ground	--	1 mm <sup>2</sup>	1 mm <sup>2</sup>
2	Board Battery "+" (Plus)	6.3 mm yellow	4 mm <sup>2</sup>	6 mm <sup>2</sup>
2a	Output "+" Consumers of Board Battery	6.3 mm yellow	4 mm <sup>2</sup>	6 mm <sup>2</sup>
3	Starter Storage Battery "+" (Plus)	--	1 mm <sup>2</sup>	1 mm <sup>2</sup>
4 Fri	Tank Pulse Fresh Water	--	1 mm <sup>2</sup>	1 mm <sup>2</sup>
4 Ab	Tank Pulse Sewage Water	--	1 mm <sup>2</sup>	1 mm <sup>2</sup>
4 Wc	Tank Pulse Feces	--	1 mm <sup>2</sup>	1 mm <sup>2</sup>
5	Tank "+", switched for Fresh Water, Sewage Water and Feces Tank	--	1 mm <sup>2</sup>	1 mm <sup>2</sup>
6	Pump "+" (Plus)	6.3 mm blue	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
8	Battery Protector, see Page 3	--	1 mm <sup>2</sup>	1 mm <sup>2</sup>

**Technical Data:**

Operating Voltage	12 V DC Board Mains
Operating Voltage Range	10 V-16 V
Current Consumption	0 - max. 50 mA
Terminal "5" Tank +	10 V-16 V max. 120 mA with internal electronic protection
Switching Current	Main Switch max. 16 A Pump max. 10 A
Weight	90 g
Dimensions	200 x 55 x 18 mm
Assembly Dimensions/Mounting Depth	176 x 43 mm / 12 mm

**Info Panel Pro**



**Declaration of Conformity:**

In accordance with the provisions of the statutory requirements and the relevant directives, Electrical Equipment (Safety) Regulations 2016, Electromagnetic Compatibility Regulations 2016, The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 this product complies with the following standards or normative documents:

BS EN55014-1; BS EN61000-6-1; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-4; BS EN62368-1; BS EN50498, BS EN IEC 63000.



**Declaration of Conformity:**

In accordance with the provisions of Directives 2014/35/EU, 2014/30/EU, 2009/19/EC, this product complies with the following standards or normative documents:

EN55014-1; EN61000-6-1; EN61000-4-2; EN61000-4-3; EN61000-4-4; EN62368-1; EN50498.



The product must not be disposed of in the household waste.



The product is RoHS compliant. It complies with the directive 2015/863/EU for Reduction of Hazardous Substances in electrical and electronic equipment.



**Recycling:**

At the end of its useful life, you can send us this device for professional disposal: You can find more information about this on our website at [www.votronic.de/recycling](http://www.votronic.de/recycling)

**Delivery Scope:**

- 1 Info Panel Pro
- 2 Female Connectors 6.3 mm, yellow (for 4 mm<sup>2</sup>-6 mm<sup>2</sup>)
- 1 Female Connector 6.3 mm, blue (for 1 mm<sup>2</sup>-2.5 mm<sup>2</sup>)
- 4 Fastening Screws
- 1 Installation and Operating Manual
- 1 Drilling Jig

If VOTRONIC units are used in combination with other products, faultless operation cannot be guaranteed!

Subject to misprints, errors and technical modification without notice.

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