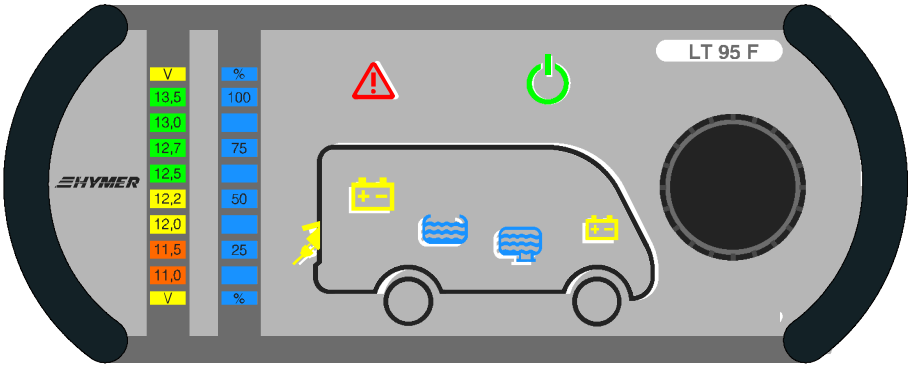
Instruction Manual



LT 95 F LED panel

Contents

1 Safety Information

1.1 Meaning of safety symbols

▲ DANGER!
Failure to heed this warning may result in death or serious injury.

▲ WARNING!
Failure to heed this warning may result in personal injuries.

▲ ATTENTION!
Failure to heed this warning may result in damage to the device or connected consumers.

1.2 General safety information

The device is state-of-the-art and complies with approved safety regulations. Nonetheless, personal injuries or damage to the device may occur if the safety instructions contained herein are not followed.

Ensure that the device is in perfect working order before use.

Any technical faults which may have an adverse effect on personal safety or device safety must be rectified immediately by qualified personnel.

▲ DANGER!
230V mains voltage carrying parts.
Danger of death due to electric shock or fire:

- Do not carry out maintenance or repair work on the device.
- If cables or the device housing are damaged, no longer use the device and isolate from the power supply.
- Ensure that no liquids enter the device.

▲ WARNING!
Hot components!
Burns:

- Only replace blown fuses when the device is completely de-energised.
- Only replace blown fuses once the cause of the fault has been identified and rectified.
- Never bypass or repair fuses.
- Only use original fuses rated as specified on the device.
- Device parts can become hot during operation. Do not touch.
- Never store heat sensitive objects close to the device (e.g. temperature sensitive clothes if the device has been installed in a wardrobe).

2 Introduction

This instruction manual contains important information on the safe operation of equipment supplied by Schaudt. Read and always follow the safety instructions.

The instruction manual should be kept in the vehicle at all times. Ensure that other users are made aware of the safety regulations.

3 Operation

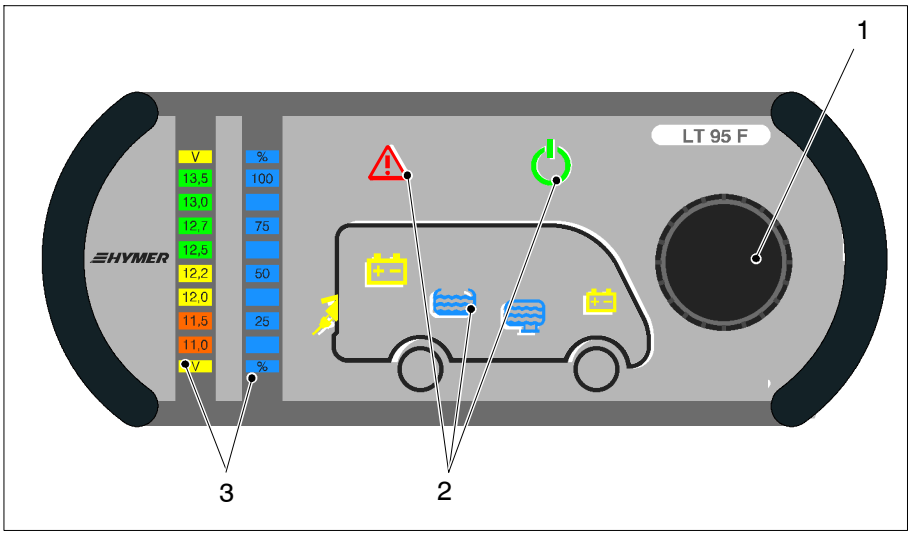
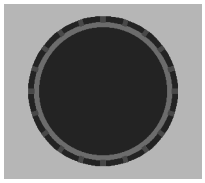


Fig. 1 Layout of the LT 95 F LED panel

1 Rotary encoder/pulse generator
2 Light symbols
3 LED scales

3.1 Operating controls



The LT 95 F LED panel has just a single operator control:

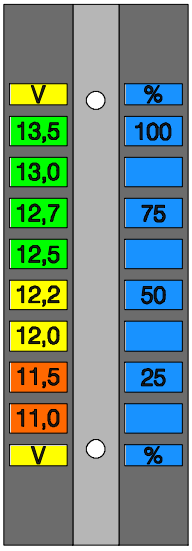
- A rotary encoder/pulse generator with switch function (by pressing)

The operator control has the following functions:

- Switching on/off of the 12V supply of the living area by pressing the rotary encoder/pulse generator
- Selection of the battery and tank display by turning the encoder/pulse generator

3.2 Display elements

The LT 95 F LED panel has the following display elements:



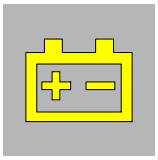
Two LED scales:

- Display of the battery voltage between 11.0V and 13.5V (left-hand scale)
- Display of the tank fill level in four increments (right-hand scale):
  - empty, 25%, 50%, 75%, full

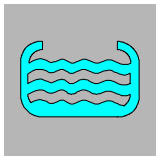
Dimming

The luminance of all LEDs and symbols automatically adjusts to the surrounding brightness (in 16 increments). In the event of a sudden change in the surrounding brightness (such as the light in the living space being turned on), the luminance of the LEDs changes by one increment per second.

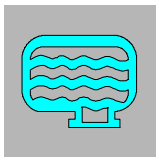
Lit symbols are used to display current information. The displays are shown in the following order:



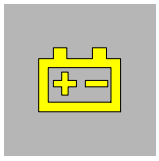
- Voltage of the living area battery (large battery symbol, left)



- Water tank

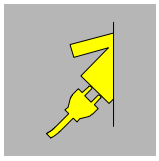


- Waste water tank



- Voltage of the vehicle battery (small battery symbol, right)

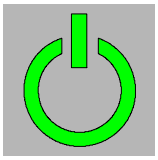
Three further symbols provide information on the current state of the electrical system:



Mains indicator
The yellow LED lights up when mains power is being supplied to the vehicle (see instruction manual for Electrobloc EBL ... , section ”Starting up”).

Alarm display
Alarm in standby or when readings are being displayed:

- Battery alarms
- Tank alarms



Indicator LED
to show that the system and the 12V supply are switched on.

3.3 Starting up

▶ Switch battery isolator on the Electrobloc EBL ... to the ”ON” position.

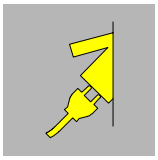
▶ Quickly turn the system on and off (see section 3.4).

- The system is now ready for daily use in the vehicle.

▶ If required: Turn on LT 95 F LED panel (see section 3.4).

230V mains operation

▶ Connect the plug for mains operation to the 230V power supply.



Mains indicator LED illuminates. The batteries are charged.

▲ The mains indicator LED also illuminates when the LT 95 F LED panel (and hence the 12V supply of the living area) is switched off.

3.4 Switching on and off

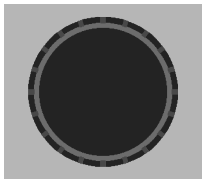
The 12V living area supply is switched on via the rotary encoder/pulse generator. Excluded are:

- Heater
- Floor light/step
- Frost protection valve
- Other circuits are excluded if required
  (see instruction manual of Electrobloc EBL ...)

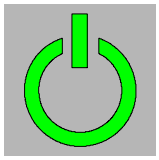
These consumers are still operable even when the 12V power supply is switched off.

▲ The system must be briefly switched on via the rotary encoder/pulse generator on the LED panel to first start up these consumers after the Electrobloc has been switched off by the battery isolator or by the battery monitor or after a battery change or after connection of the living area battery after a long break.

3.4.1 Switching on

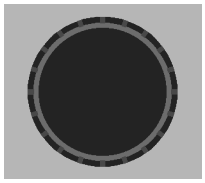


▶ Briefly press rotary encoder/pulse generator.

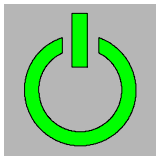


The indicator LED lights up.
The 12V living area supply is switched on.

3.4.2 Switching off



▶ Briefly press the rotary encoder/pulse generator.



The indicator LED goes out.
The 12V living area supply is switched off.

Exceptions here are the consumers mentioned under 3.4 (page 5).

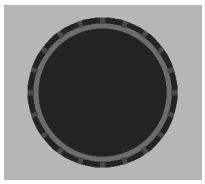
These consumers are still operable even when the 12V power supply is switched off.

3.5 Selecting readings

▲ The LT 95 F LED panel must be switched on to be able to select readings.

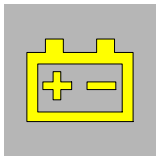
▶ Turn on the LT 95 F LED panel (see section 3.4).

3.5.1 Battery voltages

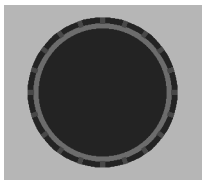


▶ Turn the rotary encoder/pulse generator clockwise by one position until the ”Living Area Battery” lights up (the larger battery symbol).

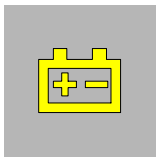
▶ Turning anticlockwise (only) enables the display for the living area battery.



- The upper and lower yellow ”V” LEDs on the left-hand scale light up.
- The voltage of the living area battery is displayed on the left-hand scale for approx. 20 seconds.

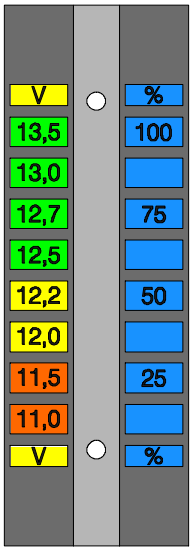


▶ Turn the rotary encoder/pulse generator further in the clockwise direction until the ”Starter Battery” symbol lights up (the smaller battery symbol).



- The upper and lower yellow ”V” LEDs on the left-hand scale light up.
- The voltage of the living area battery is displayed on the left-hand scale for approx. 20 seconds.

Continuing to turn the rotary encoder/pulse generator clockwise or anticlockwise calls up the other readings and the current display is ended. Further switching forwards from the display for ”Living Area Battery Voltage” (by continuing to turn anticlockwise) or backwards from the display for ”Starter Battery Voltage” (by continuing to turn clockwise) is not possible.



The following table shows the correct interpretation of the voltage of the living area battery displayed on the scale.
These values apply to actual operation, not off-load voltage.

Batteryvoltage	Battery operation	Mobile operation	Power operation
	Vehicle stationary, no 230V connection	Vehicle moving	Vehicle stationary, 230V connection
Less than 11V Risk of total discharge	When consumer is switched off: Battery flat	No charging via the alternator	No charging via the Electrobloc
	If many consumers are switched on: Possible battery overload	12V power supply overloaded	12V power supply overloaded
11,5V to 13.0V	Normal range	The alternator is not charging the battery [1)]	No charging via the Electrobloc [1)]
		12V power supply overloaded [1)]	12V power supply overloaded [1)]
13,5 V and over	Occurs only briefly after charging	Battery being charged	Battery being charged

[1)] If the voltage does not exceed this range for several hours.

Off-load voltage

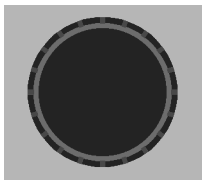
Measuring the off-load voltage is a simple and effective method of checking the condition of the battery. Off-load voltage is the voltage of the charged battery in a passive state, with no current being supplied or drawn.

Take the measurement several hours after the last charging. In the meantime, no significant load should have been placed on the battery, which means no current should have been drawn from it. If the off-load voltage of the battery is less than 12.0V, there is a risk of total discharge.

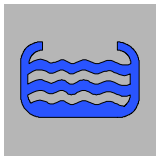
The following table shows the correct interpretation of the off-load voltage displayed. The values specified apply for Gel batteries.

Values for off-load voltage	Charge state of the battery
Less than 12V	Totally discharged
12.2V	25 %
12.3V	50 %
More than 12.8V	Full

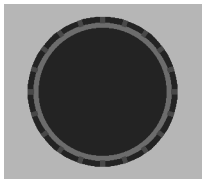
3.5.2 Tank fill levels



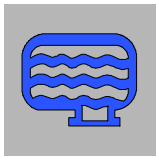
▶ Turn the rotary encoder/pulse generator clockwise until the ”Water Tank” symbol lights up.



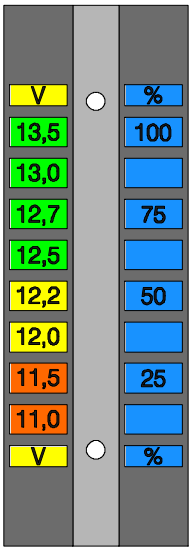
- The upper and lower blue ”V” LEDs on the right-hand scale light up.
- The fill level of the water tank is displayed on the right-hand scale for approx. 20 seconds.



▶ Turn the rotary encoder/pulse generator further in the clockwise direction until the ”Waste Water Tank” symbol lights up.



- The upper and lower blue ”%” LEDs on the right-hand scale light up.
- The fill level of the waste water tank (or excrement tank, depending on model) is displayed on the right-hand scale for approx. 20 seconds.



If the light symbols for the fill level flash whilst a tank fill level is being displayed, a sensor fault has occurred with that tank. This means that one of the fill level sensors currently below the fill level currently being displayed is not returning a measurement signal.

Continuing to turn the rotary encoder/pulse generator clockwise or anticlockwise calls up the other readings and the current display is ended.

3.6 Troubleshooting and remedies

3.6.1 Alarms

▲ **ATTENTION!**

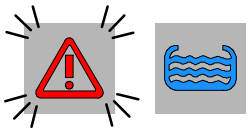
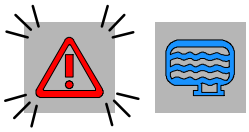
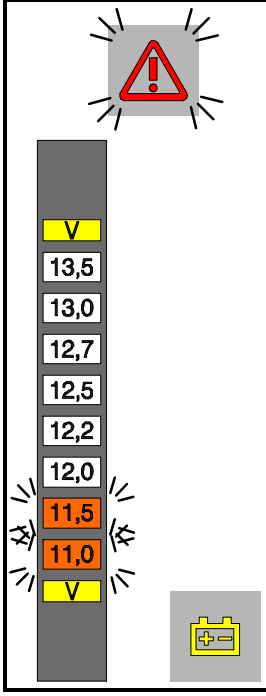
Total discharge!

Damage to the living area battery:

- Prevent low battery charge (indicated by low voltage).
- Check the voltage regularly (see section 3.5.1).

▲ Carry out checks in the mornings before 12V consumers have been switched on.

Alarm	Possible cause	Remedy
	When LT 95 F LED panel is switched on (when "Living Area Battery" voltage is displayed, the "11V" LED flashes): – Risk of total discharge of the living area battery. – Voltage of the living area battery has fallen below 11.0V. When the LT 95 F LED panel is switched off: – Voltage of the living area battery has fallen below 11.0V – when the voltage ist above 10.6V switching on is still possible. – Voltage of the living area battery has fallen below 10.6V – supply, can no longer be switched on (to protect the battery). **Note:** If the voltage of the living area battery has fallen below 10.5V once, switching on is possible, when the voltage exceeds 11V.	Switch off all 12V consumers. Charge the battery: – start the engine or – connect to the 230V power supply
	Risk of total discharge of the living area battery. Voltage of the living area battery has fallen below 10.5V.	The battery monitor in Electrobloc EBL ... automatically switches off all consumers. The battery must be charged immediately (see above). See Electrobloc EBL... instruction manual. .

Alarm	Possible cause	Remedy
	On display of the ”Water Tank” fill level: The water tank is empty	Fill tank.
	On display of the ”Waste Water Tank” fill level: The waste water tank is full.	Empty tank.
	When the LT 95 F LED panel is switched on and on display of the ”Starter Battery” voltage: - Voltage of the starter battery is below 11.5V (both orange LEDs are flashing) or below 11.0V (only this LED is flashing).	Charge the battery: - start the engine or - connect to the 230V power supply

3.6.2 Faults

Faults in the power supply system are usually caused by a discharged battery or a blown fuse.

Start the engine

If the battery is discharged, the 12V supply can be reestablished by starting the engine.

Flat vehicle fuses

If fuses are blown: Refer to the instruction manual of the relevant Electrobloc for information on the voltage distribution and fuse.

Please contact our customer service department if you are unable to rectify the fault using the following table. If this is not possible (such as when you are abroad), you can have the LED panel repaired at a specialist workshop. Please note that the warranty will become void if incorrect repair work is carried out. Schaudt GmbH shall not accept liability for any damages resulting from such repairs.

Fault	Possible cause	Remedy
12V supply does not function (or some areas are not powered).	12V main switch is switched off.	12V main switch must be switched on.
	Fuse blown.	See Electrobloc EBL... instruction manual. .
12V indicator LED (green) does not illuminate.	12V main switch is switched off.	12V main switch must be switched on.
	Living area battery not charged, battery monitor has switched off.	Charge the living area battery.
	Fuse blown.	See Electrobloc EBL... instruction manual. .
Living area battery is flat.	Living area battery is discharged.	Charge the living area battery immediately. The living area battery will be damaged beyond repair if it remains totally discharged for a lengthy period.
	The battery can be discharged by inactive consumers such as the frost protection valve in the heater system	Prior to leaving the motorhome standing for long periods, fully charge the living area battery and use the battery isolator (see also instruction manual of Electrobloc).
The mains indicator LED (yellow) does not illuminate even though it is connected to the 230V mains supply.	The mains connection is dead.	Check the mains supply (e.g. camping site).
	The power cutout to the Electrobloc has tripped or is disabled.	Reset power cutout.

3.7 Closing down the system

The system should be switched off if the vehicle is not going to be used for a longer period, e.g. during the winter.

- ▶ Disable the battery isolator in the Electrobloc.
- ▶ More detailed information on closing down the system can be found in the Electrobloc EBL... instruction manual.

4 Application and Functions in Detail

The LT 95 F LED panel is the central console for the Electrobloc EBL ... which powers all 12V consumers in the vehicle's electrical system. It is usually installed in an easily accessible place high up near the door of the motorhome/caravan.

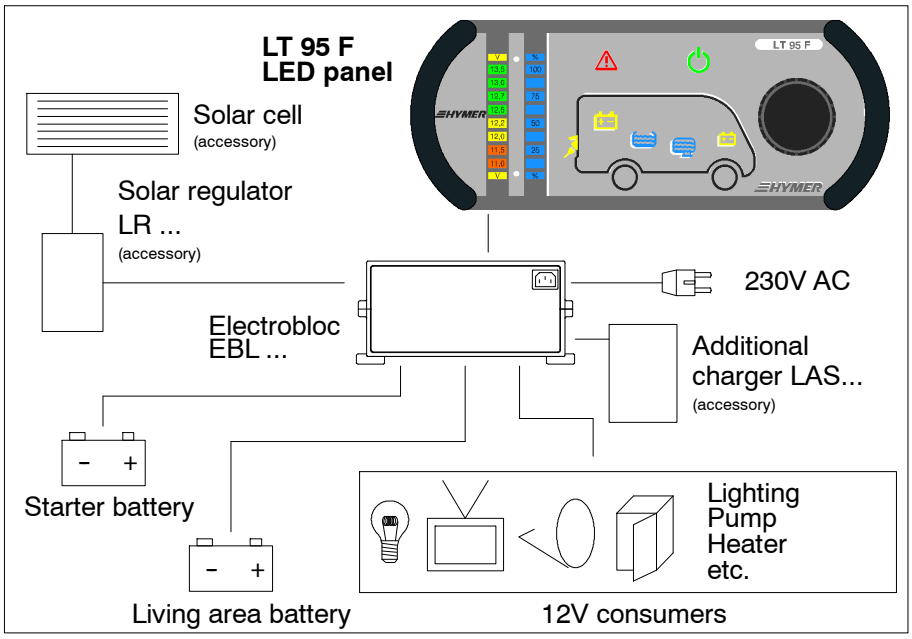


Fig. 2 On-board power supply system

System devices

An Electrobloc EBL ... must be connected for operation. This powers the 12V devices in the motorhome/caravan and charges the living area battery and starter battery.

The following connection options are available:

- Electrobloc EBL ...
- Sensors or probe for water tank
- Sensors or probe for waste water tank

5 Design

The LED panel is flush-mounted in a cabinet or wall (see fig. 1, page 3).

6 Maintenance

The LT 95 F LED panel needs no maintenance.

Cleaning

Clean the front plate with a soft, slightly damp cloth and a mild detergent. Never use spirit, thinners or similar substances. Do not allow fluid to penetrate the inside of the LED panel.

Appendix

A EC Declaration of Conformity

Schaudt GmbH hereby confirms that the design of the LT 95 F LED panel complies with the relevant regulations.

The original EU conformity declaration is available and can be referred to at any time.

Manufacturer Schaudt GmbH, Elektrotechnik & Apparatebau

Address Planckstrasse 8
88677 Markdorf
Germany

B Special fittings/accessories

Rod tank probes Per tank:
1 x rod-type tank probe, 1 x seal, type no. 126.007,
1 x locking nut, type no. 102.106, 1 x probe cable (5 x 0.5)

Tank sensors Alternative (per tank):
5 x tank sensor, type no. 933.663, 1 x sensor cable (5 x 0.5)

Mixed operation Mixed operation of tank probes and tank sensors is possible.

C Customer service

Customer service address

Schaudt GmbH, Elektrotechnik & Apparatebau
Planckstrasse 8
D-88677 Markdorf

tel.: +49 7544 9577-16

e-mail: kundendienst@schaudt-gmbh.de

web: www.schaudt-gmbh.de

Sending in the device

Returning a defective device:

- ▶ Fill in and enclose the fault report, see Appendix D.
- ▶ Send it to the addressee (free of charge).

D Fault report

In the event of damage, please return the defective device together with the completed fault report to the manufacturer.

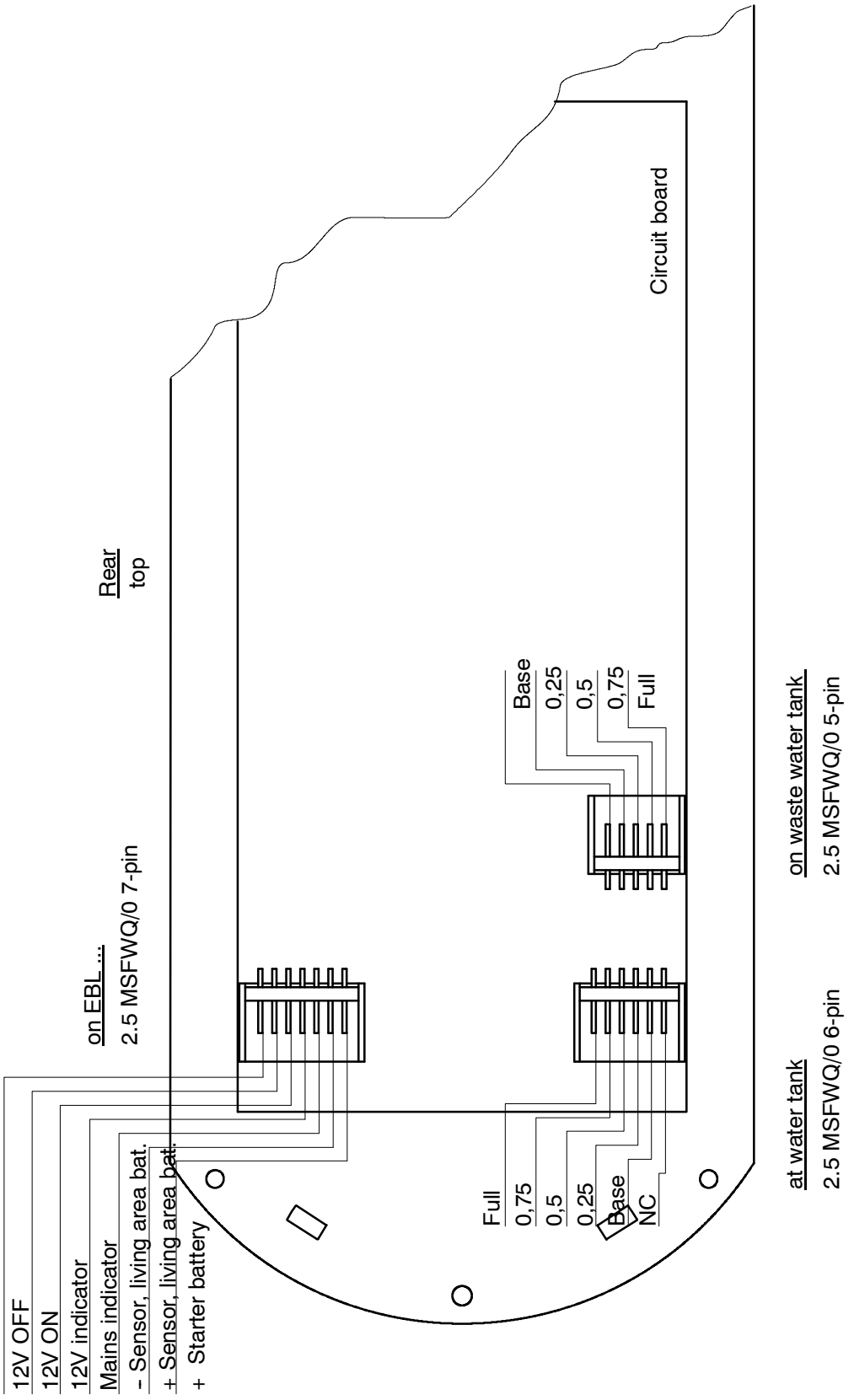
Device type: _____
Article no.: _____
Vehicle: Manufacturer: _____
Model: _____
Own installation? Yes ❑ No ❑
Upgrade? Yes ❑ No ❑
Upstream overvoltage protection? Yes ❑ No ❑

Following fault has occurred (please tick):

- ❑ Electrical consumers do not work – which? (please specify below)
- ❑ Switching on and off not possible
- ❑ Continual fault
- ❑ Intermittent fault/loose contact

Other remarks:

E Block diagram/connection diagram



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