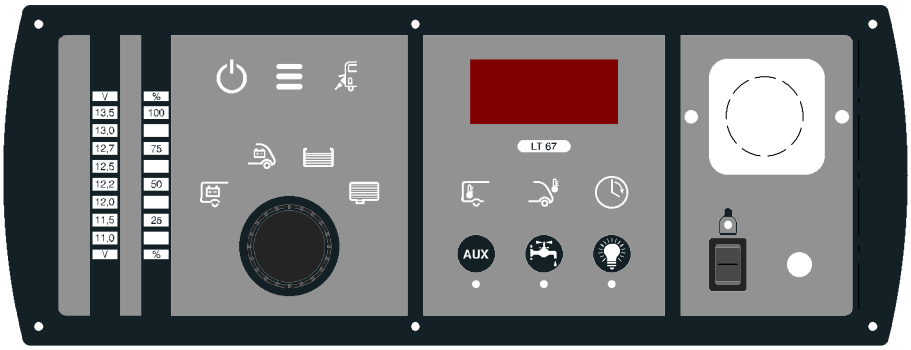
Instruction Manual



LED panels LT 67 & LT 68

Table of contents

1 Introduction

This instruction manual contains important information on the safe operation of equipment supplied by Schaudt. Make sure you read and follow the safety instructions provided.

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

2 Operation

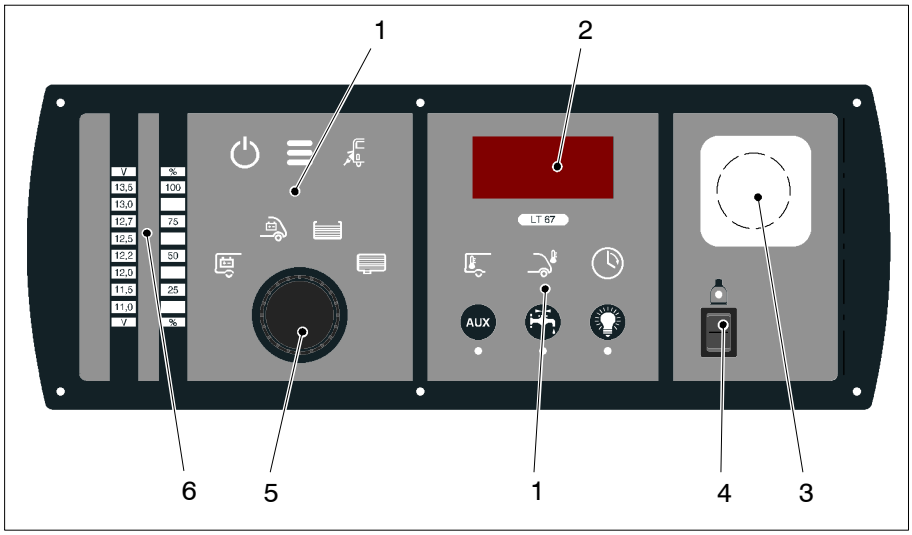
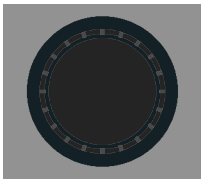


Fig. 1 Layout of the LT 67/68 LED panel

1 Symbols
2 LED 7-segment display (4-digit)
3 Heater control
(see the heater manufacturer's operating instructions – only LT 67)
4 Remote gas switch
(see the operating instructions for the system for controlling the gas supply)
5 Rotary/pulse encoder
6 LED scales

2.1 Operating controls



The LT 67/68 LED panel only has two controls:

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

The rotary/pulse encoder has the following functions:

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

The remote gas switch controls a separate system for monitoring the gas supply.

2.2 Starting up

▶ Override battery isolation – dependent on electroblock:

- Move the battery isolator switch on electroblock EBL ... to the ”ON” position (if available).
- Connect the battery terminals of the living area battery.

▶ If required: Turn on the LT 67/68 LED panel (see section 2.3).

230V mains operation

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

- Mains indicator LED illuminates. The batteries are charged.

2.3 Switching on and off

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

- Heater/auxiliary heater
- Floor light
- Step
- Frost protection valve

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

Switching on

▶ Briefly press the rotary/pulse encoder.

- The indicator LED lights up.
- The 12V living area supply is switched on.
- The time is displayed.
- If there is a mains connection: Mains indicator LED illuminates.

Switching off

Switching off is not possible whilst:

- a temperature is being displayed
- the time is being set
- switch states can be changed (AUX, pump, lighting)

▶ Briefly press the rotary/pulse encoder.

- The indicator LED goes out.
- The 12V living area supply is switched off.
- The consumers above are exceptions –
  they are still operable even when the 12V power supply is switched off.

2.4 Selecting readings

▲ The LT 67/68 LED panel must be switched on to be able to select readings.

▶ Turn on the LT 67/68 LED panel (see section 2.3).

Idle mode

- The LED panel is then in idle mode; only the indicator LED and possibly symbol ”Mains indicator” are on. If readings are displayed, the LED panel automatically returns to idle mode after 20 seconds.

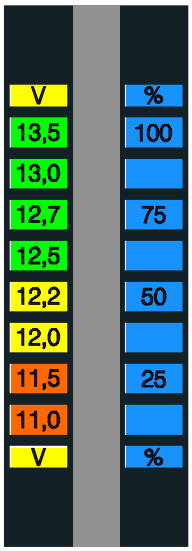
2.4.1 Battery voltages

▶ Turn the rotary/pulse encoder until the ”Living Area Battery” symbol lights up (the larger 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.

▶ Continue to turn the rotary/pulse encoder 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/pulse encoder clockwise or anticlockwise shows the other readings and the current display is ended. 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 offload voltage.

Batteryvoltage	Battery operation	Mobile operation	Mains operation
	Vehicle stationary, no 230V connection	Vehicle moving	Vehicle stationary, 230V connection
Less than 11V Risk of total discharge	If the consumers are switched off: battery flat	The alternator is not charging the battery	The electroblock is not charging the battery
	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)]	The electroblock is not charging the battery [1)]
		12V power supply overloaded 1)	12V power supply overloaded 1)
13,5V 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.

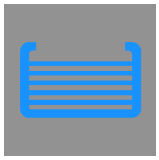
Off-load voltage

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. No significant load should have been placed on the battery in the interim period, meaning 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. Carry out checks in the mornings before 12V consumers are switched on.
The following table shows the correct interpretation of the off-load voltage displayed. The values specified apply for Gel batteries.

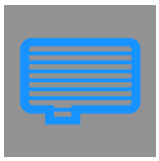
Values for off-load voltage	Charge state of the battery
Less than 12V	Totally discharged
12.2 V	25 %
12.3 V	50 %
More than 12.8V	Full

2.4.2 Tank fill levels



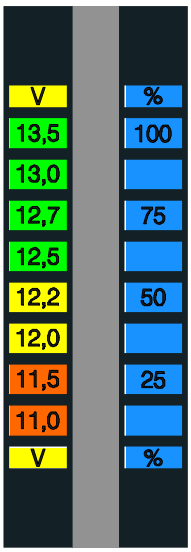
▶ Turn the rotary/pulse encoder until the ”Water Tank” symbol lights up.

- The upper and lower blue ”%” 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.



▶ Continue to turn the rotary/pulse encoder 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.

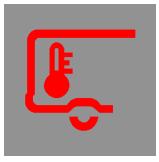


If the light symbols for the fill level flash whilst a tank fill level is being displayed, a sensor fault has occurred with that tank. This means that one of the fill level sensors below the fill level currently being displayed is not returning a measurement signal.

▶ Clean the tank sensors/probe.

▶ Contact your dealer is a defect is found.

2.4.3 Temperatures



▶ Turn the rotary/pulse encoder until the ”Interior Temperature” symbol lights up.

- Display of the interior temperature

▶ Turn the rotary/pulse encoder until the ”Exterior Temperature” symbol lights up.

- Display of the exterior temperature.

2.5 Switch functions ”AUX”, water pump and lighting

▲ The LT 67/68 LED panel must be switched on to select output ”AUX” and the voltage supply of the water pump.

▶ Turn on the LT 67/68 LED panel (see section 2.3).

▶ Turn the rotary/pulse encoder until the ”AUX” symbol lights up.

▶ Press the rotary/pulse encoder.

- The light underneath symbol ”AUX” is turned on/off.
- The relevant supply voltage is enabled/disabled.

▲ The supply voltages for the water pump and lighting are enabled/disabled in the same way.

Whilst the switch function continues to be active, only the symbol that can be enabled/disabled by pressing the rotary/pulse encoder lights up. The switch state of the relevant supply voltage is denoted by the light underneath the symbol.

After ca. 20 seconds, the LED panel switches to idle mode and the switch state of the relevant supply voltage is displayed by the symbol and LED.

Pressing the rotary/pulse encoder now switches off the LT 67/68 LED panel. The switch state remains stored after switch-off - the supply voltages are also switched off when the LED panel is switched off.

2.6 Setting the clock

▶ Turn the rotary/pulse encoder until the ”Clock” symbol lights up.

▶ Press the rotary/pulse encoder, and keep pressed for ca. 3 seconds.

- The hour display flashes.

▶ Set the hours by turning the rotary/pulse encoder.

▶ Press the rotary/pulse encoder

- The minute display flashes.

▶ Set the minutes by turning the rotary/pulse encoder.

▶ Press the rotary/pulse encoder.

- The display stops flashing. The time is set.

2.7 Remote gas switch

The gas supply can be switched on and off with this switch. The LED in the ”Gas cylinder” symbol

- does not light up when the remote gas switch is switched off.
- lights green when the gas supply is switched on.
- lights red when the gas supply has been switched off by the system because of a hazard.

▲ For more detailed information on the display and operation of the system to which the remote gas switch belongs, read and follow the manufacturer’s operating instructions.

2.7.1 Alarms

▲ **ATTENTION!**

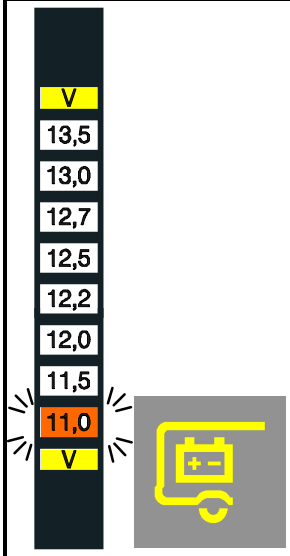
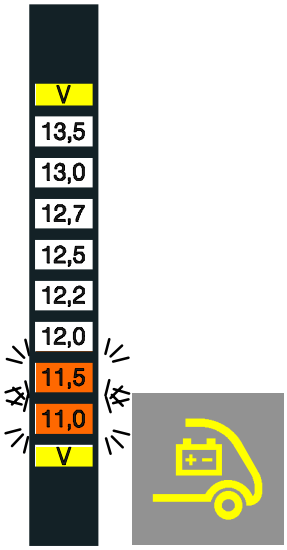
Total discharge.

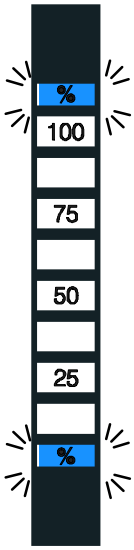
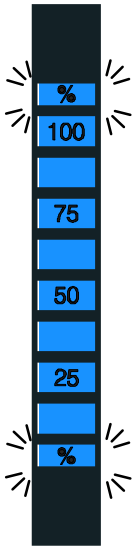
Damage to the living area battery:

- Prevent low battery charge (indicated by low voltage).
- Check the voltage regularly (see section 2.4.1).

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

Alarm	Possible cause	Remedy
The LT 67/68 LED panel switches itself off on its own accord. On attempting to switch on the LT 67/68 LED panel, the ”11.0V” LED flashes. The ”Living Area Battery” symbol and the two ”V” LEDs also light up.	Risk of draining the living area battery. The voltage of the living area battery has fallen below 10.5 V.	The battery monitor in electroblock EBL ... automatically switches off all consumers.
		The battery must be charged immediately (see above). See the instruction manual for the electroblock EBL.... .

Alarm	Possible cause	Remedy
	When the LT 67/68 LED panel is switched on and on display of the ”Battery Voltage”: – ”11.0 V” 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 67/68 LED panel is switched off: – The LT 67/68 LED panel, and hence the 12V living area supply, can no longer be switched on (to protect the battery). – On attempting to switch on the LT 67/68 LED panel, the ”11.0V” LED flashes. The ”Living Area Battery” symbol and the two ”V” LEDs also light up.	Switch off all 12V consumers. Recharge the battery: – Start engine or – connect to 230V power supply
	When the LT 67/68 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 flash) or below 11.0V (only this LED flashes).	Recharge the battery: – Start engine or – connect to 230V power supply

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.

2.7.2 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 re-established by starting the engine.

Flat vehicle fuses

If fuses are blown: Refer to the instruction manual of the relevant electro-block for information on voltage distribution and fusing.

Please contact our customer service team if you cannot 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 becomes void if incorrect repair work is carried out. Schaudt GmbH cannot 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 electroblock EBL... instruction manual. .
12V indicator LED (green) does not light up.	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 electroblock 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 electroblock).
The ”Mains indicator” LED (yellow) does not light up even though the 230V mains supply is connected.	The mains connection is dead.	Check the mains supply (e.g. camping site).
	The circuit breaker to the electroblock has tripped or is disabled.	Reset circuit breaker.

2.8 Closing down the system

The system should be switched off if the vehicle is not being used for a lengthy period, such as during the winter.

▶ Establish battery isolation – dependent on electroblock:

- Move the battery isolator switch on electroblock EBL ... to the ”OFF” position (if available).
- Disconnect the battery terminals of the living area battery.

▶ More detailed information on closing down the system can be found in the electroblock EBL... instruction manual.

3 Application and functions in detail

The LT 67/68 LED panel is the central console for the electroblock 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.

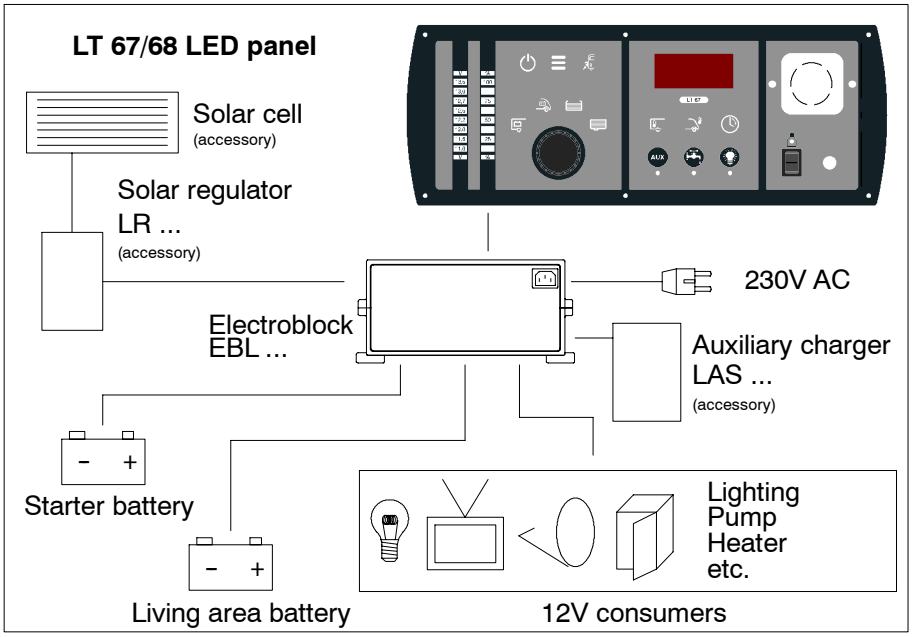


Fig. 2 On-board power supply system

System devices

An electroblock 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:

- Electroblock EBL ...
- Sensors and/or probe for water tank
- Sensors or probe for waste water tank
- Exterior temperature sensor
- System for controlling the gas supply
- Installation opening for the heater control (only LT 67)

4 Design

The LED panel is flush-mounted in a cabinet or wall (see Fig. 1, page 2).

5 Maintenance

The LT 67/68 LED panel requires 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 67 and LT 68 LED panels complies with the following relevant regulations:

Directive on electromagnetic compatibility

2004/104/EC dated 14.10.2004
2005/49/EC dated 25.07.05
and
2005/83/EC dated 23.11.2005

The original EC Declaration of Conformity is available for reference at any time. Used as the basis for this declaration (application submitted for approval; date 05/2010):

Typgen. no.: e1*72/245*2006/28*2762*__
EC-gen. mark.: e1 032762

Manufacturer Schaudt GmbH, Elektrotechnik & Apparatebau

Address Planckstraße 8
88677 Markdorf
Germany

B Special fittings/accessories

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)

Exterior temperature sensor

C Customer service

Customer service address Schaudt GmbH, Elektrotechnik & Apparatebau
Planckstraße 8
D-88677 Markdorf

tel.: +49 7544 9577-16 email: kundendienst@schaudt-gmbh.de

Office hours	Mon to Thurs	08.00 – 12.00, 13.00 – 16.00
	Fri	08.00 – 12.00

Send 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: _____
Item 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
- ❑ Persistent fault
- ❑ Intermittent fault/loose contact

Other remarks:

E Block diagram/wiring diagram