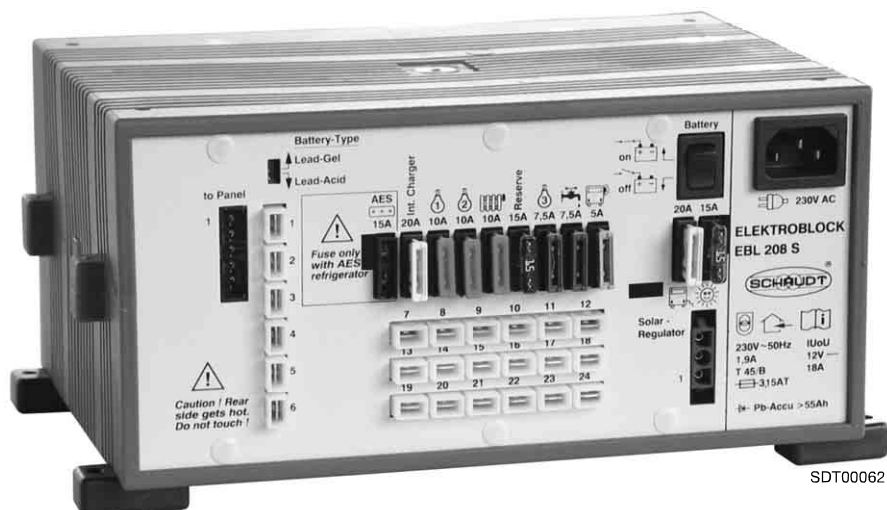




Instruction manual



Electrobloc EBL 208 S E

Type no. 911.475

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1 Introduction

This instruction manual contains important information for safe operation of the Electrobloc. It is essential to read and to follow the given safety information.

The instruction manual should always be kept in the motorhome/caravan. All safety information must be passed on to other users.



- ▲ Failure to comply with this sign may lead to the endangerment of persons.



- ▲ Failure to comply with this sign may damage the unit or the connected consumers.



- ▲ This sign indicates recommendations or special features.

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2 Safety information

The design of the Electrobloc is state-of-the-art and according to approved safety technology. Nevertheless, if the safety information in this instruction manual is not closely followed, persons might get injured or the unit might be damaged.

Do not use the Electrobloc if it is not in technically good order and condition. The instruction manual must be followed.

Any technical faults affecting the safety of persons or of the Electrobloc must be dealt with immediately by qualified personnel.



- ▲ The electrical system of the motorhome or the caravan has to meet current DIN, VDE and ISO regulations. Manipulations of the electrical system will endanger the safety of persons and the vehicle, and are therefore prohibited.
- ▲ The Electrobloc may not be modified.
- ▲ The electrical connection may only be done by qualified personnel and must be carried out according to the Schaudt installation instructions.
- ▲ Electrical connections are to be carried out in tensionless condition only.
- ▲ Risk of fatal injury due to electric shock or fire in the case of a defective mains cable or incorrect connection.
- ▲ Risk of fatal injury!
Never perform maintenance on the Electrobloc when it is live.
- ▲ Blown fuses must only be replaced when the cause of the fault is known and eliminated.
- ▲ Never bridge or repair fuses.
- ▲ Danger of burning! Blown fuses must only be changed on a zero-current Electrobloc.



- ▲ Only use original fuses rated as specified in the instruction manual.
- ▲ Danger of burning! During operation the back of the Electrobloc gets hot. Do not touch.
- ▲ Danger of explosion from formation of detonating gas due to an incorrectly set battery selector switch, defective batteries, defective Electrobloc or an excessively high battery working temperature (more than 30 °C).



- ▲ The AES refrigerator fuse may only be used if a AES refrigerator is connected. Otherwise, the living area battery may get totally discharged. Battery damage is possible.
- ▲ An incorrectly set battery selector switch damages the living area battery.
- ▲ Disconnect the Electrobloc from the mains before adjusting the battery selector switch.
- ▲ When the living area battery is separated from the Electrobloc by the battery cut-off switch, the frost protection valve of the heater system opens.
- ▲ Before and after shutdown, the living area battery must be fully recharged to avoid battery damage. For this purpose the vehicle must be connected to mains supply for a minimum of 12 hours with an 80 Ah battery and 16 hours with a 160 Ah battery.
- ▲ Do not operate the Schaudt solar charge regulator without a battery. This might damage the solar charge regulator or any connected consumers. If the battery is going to be changed or removed, please first take off the positive lead "+ Solar Module" on the solar charge regulator.
- ▲ To avoid voltage peaks during warm-up, do not connect the generator until it is running in a stable manner. Otherwise, the Electrobloc, 12 V consumers or other connected equipment might get damaged. It is essential that the generator complies with the mains supply specifications.
- ▲ The mains supply on board car ferries might not always be perfect. Therefore, never connect the Electrobloc to the mains on car ferries. Otherwise, the Electrobloc, 12 V consumers or other connected equipment might get damaged.

3 Description and appropriate use

The electrical management system Electrobloc EBL 208 S E consists of:

- the LAS 1218 charger module
- the 12 V distribution
- fuses for the 12 V circuits
- a battery monitor module
- other control and monitoring functions

The charger module is a primary controlled switch-mode power supply. This modern switching technology achieves high charging performance at a compact size and low weight.

A control and switch panel has to be connected for operation. This panel controls the electrical functions of the living area in the motorhome, including accessories.

There is a connection for a solar charge regulator.

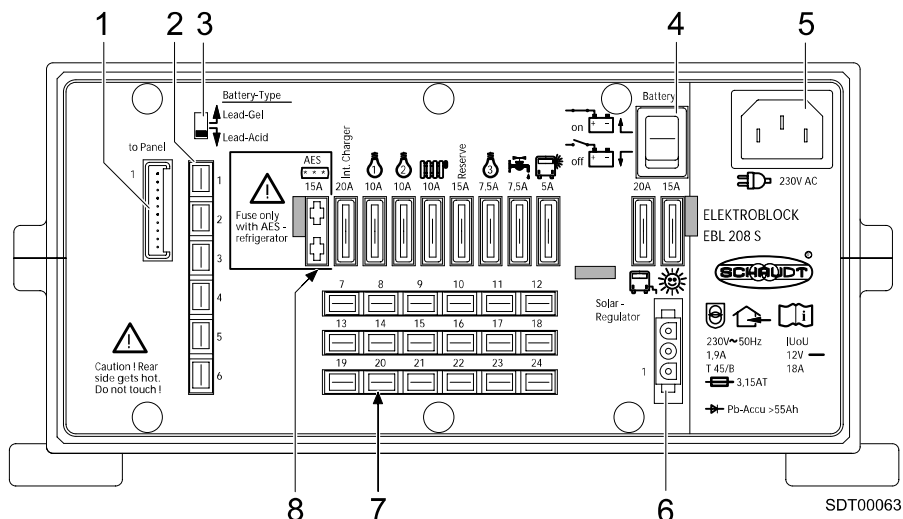


Fig. 1 Electrobloc EBL 208 S E

- 1 Control and switch panel connection
- 2 Connections
- 3 Battery selector switch
- 4 Battery cut-off switch
- 5 Mains connection
- 6 Solar charge regulator connection
- 7 Connections
- 8 Flat vehicle fuses

4 Suitable accessories (not supplied)

Solar charge regulator Schaudt solar charge regulator type LR... for solar modules with a total current of 14 A with connector plug, including 0.5 m cable

Fuse cover Blue fuse cover marked "FUSE", type no. 106.120

5 Technical data

Mains connection 230 V AC $\pm 10\%$, 47 to 63 Hz sinusoidal, protection class I

Suitable batteries 6-cell lead acid or lead gel batteries of at least 55 Ah

Closed circuit current With control panel approx. 1 mA

Current-carrying capacity 12 V outputs

No more than 90 % of the rated current of the appropriate fuse may be drawn, see the block diagram.

Battery charging with **Living area battery**

mains connection

Charging curve

IUoU

Final charging voltage

14.3 V

Charging current

18 A

Voltage for float charge

13.8 V with automatic switching

	Starter battery	
	Charging current	Float charge of starter battery at max. 2 A
Battery charging via solar charge regulator	Only the living area battery is charged.	
	Maximum charging current	14 A, fuse-protected by 15 A fuse
Battery charging while travelling	Simultaneous charging of the starter battery and the living area battery by the alternator	
	Batteries connected in parallel via a cut-off relay	
Battery monitor	Breaking voltage	Approx. 10.5 V
	Minimum battery voltage for switching on via 12 V main switch on the control panel	Approx. 11.0 V

6 Operation

6.1 Operating controls

Flat vehicle fuses



- ▲ Blown fuses must only be replaced when the cause of the fault is known and eliminated.
- ▲ Never bridge or repair fuses.
- ▲ Danger of burning! Blown fuses must only be changed on a zero-current Electrobloc.
- ▲ Only use original fuses rated as specified in the instruction manual.



- ▲ The AES refrigerator fuse may only be used if a AES refrigerator is connected. Otherwise, the living area battery may get totally discharged. Battery damage is possible.

The flat vehicle fuses protect the various circuits. When necessary, take off the blue cover marked "FUSE" (optional) and check or change the fuses.

Battery cut-off switch

The battery cut-off switch "Battery on/off" disconnects the following connections from the living area battery:

- all 12 V consumers except the AES refrigerator and the entrance step
- the frost protection valve
- the control and switch panel

This prevents the living area battery from slowly discharging due to closed circuit current while the vehicle is not in use.

The batteries can still be charged using the Electrobloc, the alternator or the solar charge regulator, even when the battery cut-off switch is switched off.

- To start the system, set the battery cut-off switch to "Battery on".
- To shut down the system, set the battery cut-off switch to "Battery off".



- ▲ When the battery cut-off switch is switched off the frost protection valve on the heater system opens automatically. Water may be lost. For more information, see the instruction manual of the heater system.

Battery selector switch



- ▲ There is a danger of explosion due to the formation of detonating gas if the battery selector switch is incorrectly set.



- ▲ An incorrectly set battery selector switch damages the living area battery.
- ▲ Disconnect the Electrobloc from the mains before adjusting the battery selector switch.

The switching option provided by the battery selector switch ensures optimum charging of the two different types of battery, lead acid and lead gel. The switch must be set to the correct battery type: lead acid or lead gel.

Use a thin object such as a ballpoint pen cartridge to move the battery selector switch.

- For a lead gel battery, set the battery selector switch to "Lead-Gel".
- For a lead acid battery, set the battery selector switch to "Lead-Acid".

12 V main switch (on the control and switch panel)

The 12 V main switch on the control and switch panel switches all consumers on and off.

The only exceptions are the entrance step, frost protection valve and AES refrigerator.

For more information, see the instruction manual of the control and switch panel.

6.2 Additional functions

Automatic switch function for awning light

The awning light only works when the power supply is on, the vehicle engine is off and the D+ connection is not live.

Automatic switch function for refrigerator

This relay supplies the refrigerator with power from the starter battery when the vehicle engine is running and the D+ connection is live. An AES refrigerator is powered by the living area battery when the vehicle engine is switched off.

Mains charging of starter battery

This feature provides an automatic float charge for the starter battery at up to 2 A when the 230 V mains is connected to the Electrobloc.

6.3 Battery monitor

Automatic disconnecter

The battery monitor compares the voltage of the living area battery to a reference voltage. As soon as the battery voltage falls below 10.5 V, all 12 V consumers are switched off. Only the entrance step, the frost protection valve and the AES refrigerator are still powered. The automatic disconnecter is not triggered by short-term low voltage (less than 2 seconds), caused by high current when switching on consumers.

If overload or an insufficiently charged living area battery causes the voltage to fall so low that the automatic disconnecter is triggered, any consumers which are not essential should be switched off.

You may be able to switch on the 12 V power supply for a short time. To do this, switch on the 12 V main switch on the control and switch panel.

However, if the battery voltage remains below 11.0 V, you cannot switch on the 12 V power supply.

Fully charge up the living area battery as soon as possible. For more information see the description of battery voltage.

7 Maintenance

The Electrobloc EBL 208 S E requires no maintenance.

Cleaning

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

8 Shutting down the system



- ▲ When the living area battery is separated from the Electrobloc by the battery cut-off switch, the frost protection valve of the heater system opens. Water may be lost.
- ▲ Before and after shutdown, the living area battery must be fully recharged to avoid battery damage. For this purpose the vehicle must be connected to mains supply for a minimum of 12 hours with an 80 Ah battery and 16 hours with a 160 Ah battery.
- ▲ Do not operate the Schaudt solar charge regulator without a battery. This might damage the solar charge regulator or any connected consumers. If the battery is going to be changed or removed, please first take off the positive lead "+ Solar Module" on the solar charge regulator.

Disconnecting the living area battery from the 12 V power supply

Disconnect the living area battery from the 12 V power supply if you are not going to use the motorhome for a lengthy period (for example during the winter).

- Switch off the 12 V main switch on the control and switch panel.
- Set the battery cut-off switch on the Electrobloc to "Battery off".
- On the solar charge regulator, pull out the "+ Solar cell" plug if you are going to remove the battery.
- Pull out the fuse for the AES refrigerator.



- ▲ The living area battery can also be charged using the internal charger module, the solar charge regulator and the alternator when the battery cut-off switch is switched off.

9 Changing the battery



- ▲ Batteries may only be changed by qualified personnel.
- ▲ Follow the instructions of the battery manufacturer.
- ▲ To electrically disconnect the battery from the Electrobloc, all you need to do is set the battery cut-off switch on the Electrobloc to "Battery off", see 8 "Shutting down the system".
- ▲ Charging unsuitable types of battery may irreparably damage them.
- ▲ Only use the Electrobloc for connecting the 12 V power supply to 6-cell lead gel or lead acid batteries.

Only use batteries of the same type and capacity and those installed by the manufacturer.

You can change from lead acid to lead gel batteries.

You cannot change from lead gel to lead acid batteries. Ask your dealer for advice.



- ▲ There is a danger of explosion due to the formation of detonating gas if the battery selector switch is incorrectly set.



- ▲ An incorrectly set battery selector switch damages the living area battery.
- ▲ Disconnect the Electrobloc from the mains before adjusting the battery selector switch.

The switching option provided by the battery selector switch ensures optimum charging of the two different types of battery, lead acid and lead gel. The switch must be set to the correct battery type: lead acid or lead gel.

Use a thin object such as a ballpoint pen cartridge to move the battery selector switch.

- For a lead gel battery, set the battery selector switch to "Lead-Gel".
- For a lead acid battery, set the battery selector switch to "Lead-Acid".

Starting up the system

- Set the battery cut-off switch on the Electrobloc to "Battery on".
- After having disconnected the living area battery from the Electrobloc using the battery cut-off switch or after changing the battery, briefly switch on the 12 V main switch on the control and switch panel to start up the consumers.

10 Technical faults, possible causes and remedies

If you are unable to solve a fault using the following tables, please contact our customer service address.

If this is not possible, for example if you are abroad, you can have the Electrobloc repaired at a specialist workshop.

Inexpert repairs invalidate the guarantee for the Electrobloc and Schaudt GmbH takes no liability for any resulting damage.

Fault	Possible cause	Remedy
Living area battery is not charged during 230 V operation (battery voltage constantly below 13.3 V)	No mains voltage	Switch on the automatic fuse in the vehicle
		Have the mains voltage checked
	Defective Electrobloc	Call customer service
The living area battery is overloaded during 230 V operation (battery voltage in the red zone on the combined measuring instrument)	Defective Electrobloc	Call customer service
Starter battery is not charged during 230 V operation (battery voltage constantly below 13.0 V)	No mains voltage	Switch on the automatic fuse in the vehicle
		Have the mains voltage checked
	Defective Electrobloc	Call customer service
Living area battery is not charged during mobile operation (battery voltage below 13.0 V)	Defective alternator	Have the alternator checked
	No voltage at D+ input	Have the fuse and wiring checked
	Defective Electrobloc	Call customer service
The living area battery is overloaded during mobile operation (battery voltage in the red zone on the combined measuring instrument)	Defective alternator	Have the alternator checked
The refrigerator does not work during mobile operation	No power supply to the refrigerator	Have the fuse and wiring checked
	Defective Electrobloc	Call customer service
	Defective refrigerator	Have the refrigerator checked
Solar charger does not work (power supply and engine are off)	Solar charge regulator not plugged in	Plug in the solar charge regulator
	Defective fuse or wiring	Have the fuse and wiring checked
	Defective solar charge regulator	Have the solar charge regulator checked

Fault	Possible cause	Remedy
12 V power supply in the living area does not work	12 V main switch for the living area battery is switched off	Switch on the 12 V main switch for the living area battery
	Battery cut-off switch turned off	Switch on the battery cut-off switch
	Defective fuse or wiring	Have the fuse and wiring checked
	Defective Electrobloc	Call customer service



- ▲ If the device becomes too hot due to excessive ambient temperature or lack of ventilation, the charging current is automatically reduced. However, always prevent the device from overheating.
- ▲ If the automatic shutdown mechanism of the battery monitor is triggered, fully charge up the living area battery.

11 Customer service

Customer service address Schaudt GmbH, Elektrotechnik & Apparatebau
Daimlerstraße 5
D-88677 Markdorf
Phone: +49 7544 9577-16
E-mail: kundendienst@schaudt-gmbh.de
Opening hours Mon to Thu 8 to 12 a.m., 1 to 4 p.m.
Fri 8 to 12 a.m.

Sending in the device Returning a defective device:

- Always use well-padded packaging.
- Fill in and enclose the fault report, see section 13.
- Send it to the addressee delivered free.

12 Block diagram - for specialist workshop only

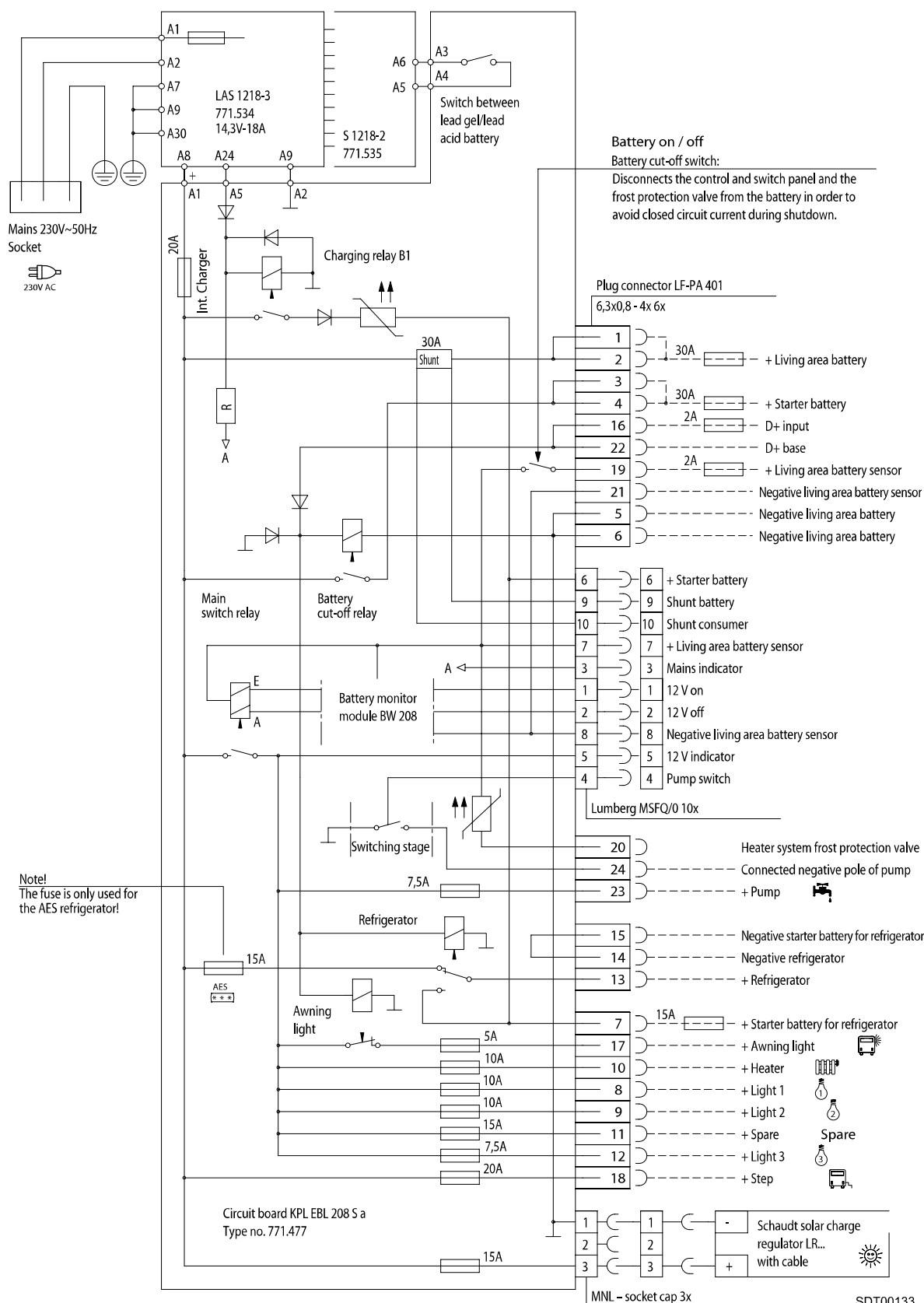


Fig. 2 Block diagram for Electrobloc EBL 208 S E



13 Fault report

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

Device type: EBL 208 S E
Type no.: 911.475

There is the following defect:
(please tick)

Battery not being charged during power operation					
Battery not being charged during mobile operation					
Following electrical consumers do not work:					
Malfunction of control and switch panel		Tank		Voltage	
Constant fault				Current	
Temporary fault/ loose contact					

Other remarks: