SCHAUDT®

EBL 226

D Bedienungsanleitung

GB Instruction manual

F Manuel d`utilisation

I Istruzione per l`uso

Instruction manual

Electrobloc EBL 226

Type no. 911.571

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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 device or the connected consumers.

▲ This sign indicates recommendations or special features.

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 Electrobloc 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.

▲ Never make any modifications to the Electrobloc.

▲ The electrical connection may only be established by qualified personnel and must be carried out according to the Schaudt installation instructions.

▲ Connection work is 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.

▲ Overvoltage protection: the use of a Schaudt overvoltage protection device OVP is recommended.

▲ 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 by the formation of detonating gas due to an incorrectly set battery selector switch, defective batteries, defective Electrobloc or an excessively high battery working temperature (above 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.

▲ If the living area battery is separated from the Electrobloc using the 12 V main switch at the control and switch panel, the frost protection valve of the heater system opens. Water may be lost. For more information, see the instruction manual of the heater system.

▲ 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 24 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, 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, the 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, the 12 V consumers or other connected equipment might get damaged.

3 Description and appropriate use

The Electrobloc EBL 226 is designed as a main power distributor for motorhomes. It is a permanent installation. The Electrobloc is for charging batteries and supplying 12 V appliances with power.

The Electrobloc consists of:

- The LAS 1218 charger module
- The 12 V distribution
- Fuses for the 12 V circuits
- 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 control and switch panel controls the electrical functions in the living area of in the motorhome, including accessories.

There are connections for an auxiliary charging unit and a solar charge regulator.

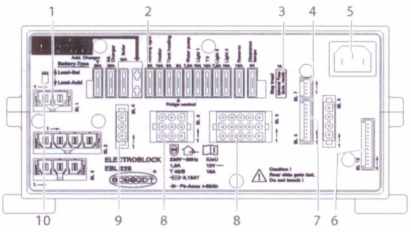

Fig. 1 Electrobloc EBL 226 front view

1 Connections for auxiliary charging unit
2 Passenger car flat-plug fuses
3 PolySwitch step alarm fuse
4 Connections for solar charge regulator (signal, only in connection with the control panel and switchboard of the type DT ...)
5 230 V mains connection
6 Connections for control and switch panel
7 Connections for control and switch panel
8 12 V connections
9 Connections for solar charge regulator (output)
10 Battery selector switch

4 Suitable accessories (not supplied)

Control and switch panel DT 220, LT 500

Auxiliary charging unit Schaudt battery charging unit type LAS... with up to 18 A charge current
Additional 2-pin charging cable, lengths supplied on request

Solar charge regulator Schaudt solar charge regulator type LRS... for solar modules with a total current of 14 A incl. 0.5 m cable and plug

5 Electrical data

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

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

Current-carrying capacity 12 V outputs — No more than 90 % of the rated current of the corresponding fuse may be drawn, see the block diagram.

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 flat vehicle fuses protect the various circuits. This does not apply to the step.

PolySwitch fuse The "step" output is equipped with a self-resetting PolySwitch fuse.
If there is a fault, e.g. overcurrent, the PolySwitch fuse interrupts the circuit.
After rectifying the fault, the PolySwitch fuse automatically resets after approx. 1 minute.
The circuit is equipped with a 15 A fuse.

▲ Only press the step switch briefly. The PolySwitch fuse may otherwise trigger and interrupt the circuit.

Before putting the unit into service for the first time

- Make sure the living area battery is connected.
- Make sure the battery selector switch is set for the correct type of battery.
- Make sure the AES fuse is only used if the AES refrigerator is connected.

Starting up the system

- The system is switched on using the 12 V main switch at the control and switch panel. Follow the instruction manual of the control and switch panel.
- After switching off the system with the battery monitor or after changing batteries: Switch on the 12 V main switch on the control and switch panel briefly to start up the consumers.

Battery selector switch

▲ Danger of explosion by the 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).

▲ 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 (e.g. a ballpoint pen cartridge) to move the battery selector switch.

- Set lead gel battery: Set the battery selector switch to "Lead-Gel".
- Set the 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 and the panel on and off.
Exceptions:

- Side marking lamps
- Heater
- Step
- Frost protection valve
- AES/compressor refrigerator
- Refrigerator control
- Waste water tank heater
- Awning light

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

6.2 Additional functions

Automatic switch function for AES/compressor refrigerator This relay supplies the AES/compressor refrigerator with power from the starter battery when the vehicle engine is running and the D+ (or D+ Active Ground) connection is live. An AES/compressor 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 8 A if the 230 V mains is connected to the Electrobloc.

Awning light relay This relay controls the power supply of the awning light. The power supply to the awning light is automatically interrupted as soon as the engine is running and the D+ connection is live. The awning light can also be used if the 12 V power supply is switched off.

Tank heater relay This relay controls the waste water tank heater. The waste water tank heater is activated at the control and switch panel. The heating of the tank can also be operated if the 12V supply is switched off.

Side marking lamps The side marking lamps are switched on via the integrated relay. They are supplied by the starter battery.

6.3 Battery monitor

Automatic disconnector The battery monitor of the control and switch panel compares the voltage of the living area battery to a reference voltage. The battery monitoring device of the control panel and switchboard will permanently check the voltage of the living area battery. It disposes of a dynamic voltage threshold, i. e. in case of minor electrical discharges it will be switched off "earlier" than in case of higher currents. As soon as the battery voltage falls below 10.5 V, all 12 V consumers are switched off via main switch relays 1 and 2. Only the frost protection valve is still powered. The automatic disconnector is not triggered by short-term low voltage (less than 2 seconds), caused by high current when switching on consumers.
If an overload or an insufficiently charged living area battery causes the voltage to fall so low that the automatic disconnector 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 the 12 V power supply back on.
Fully charge up the living area battery as soon as possible.

7 Maintenance

The Electrobloc 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

The system has a battery separation unit that completely switches off the living area battery. The separation of the batteries is activated with the control and switch panel.

▲ 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 24 hours with a 160 Ah battery.

Switch off the system if you are not going to use the motorhome for a lengthy period (for example during the winter).

Shutting down the system for up to 6 months Fully charge up the living area battery before shutting down the system. The living area battery is then protected against total discharge. This applies only if the battery is intact. Follow the instructions of the battery manufacturer. The shut down system requires approx. 4 Ah a month.

Shutting down the system for more than 6 months Fully charge up the living area battery and remove the connecting terminals on the battery poles. The battery alarm is then no longer active.

Activating battery separation Carry out the following work steps in the correct order:

1. Switch off the 12 V main switch on the control and switch panel.
2. Press the "Battery" switch on the control and switch panel for more than 10 seconds. Follow the instruction manual of the control and switch panel.

▲ If battery separation is activated, the frost protection valve on the heater system opens. Water may be lost. For more information, see the instruction manual of the heater system.

After shutting down Press the 12 V main switch on the control and switch panel for more than 5 seconds to deactivate battery separation. For more information, see the instruction manual for the control and switch panel.

9 Changing the battery

▲ Batteries may only be changed by qualified personnel.
▲ Follow the instructions of the battery manufacturer.
▲ 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.
▲ 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, take off the positive lead "+ Solar Module" on the solar charge regulator.

Prior to changing batteries, switch off the 12 V main switch on the control and switch panel.
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.

▲ 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).

▲ 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 (e.g. a ballpoint pen cartridge) to move the battery selector switch.

- Set lead gel battery: Set the battery selector switch to "Lead-Gel".
- Set the lead acid battery: Set the battery selector switch to "Lead-Acid".

Starting up the system

- After changing batteries: Switch on the 12 V main switch on the control and switch panel briefly 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, e.g. 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
Living area battery is overcharged during 230 V operation (battery voltage constantly above 14.5 V)	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

Fault	Possible cause	Remedy
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 overcharged during mobile operation (battery voltage constantly above 14.3 V)	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
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
	Defective fuse or wiring	Have the fuse and wiring checked
	Defective Electrobloc	Call customer service
	System shut down	Start up the system

▲ 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
88677 Markdorf
Germany

Phone: +49 7544 9577-16

Email: 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.

Disposal instruction

When the product service life is over, dispose of the device in accordance with the applicable regulations.

13 Fault report

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

Device type: EBL 226
Type no.: 911.571

Overvoltage protection device OVP used? ❑ Yes ❑ No

There is the following defect: (please tick)

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

Other remarks:

12 Block diagram - for specialist workshop only

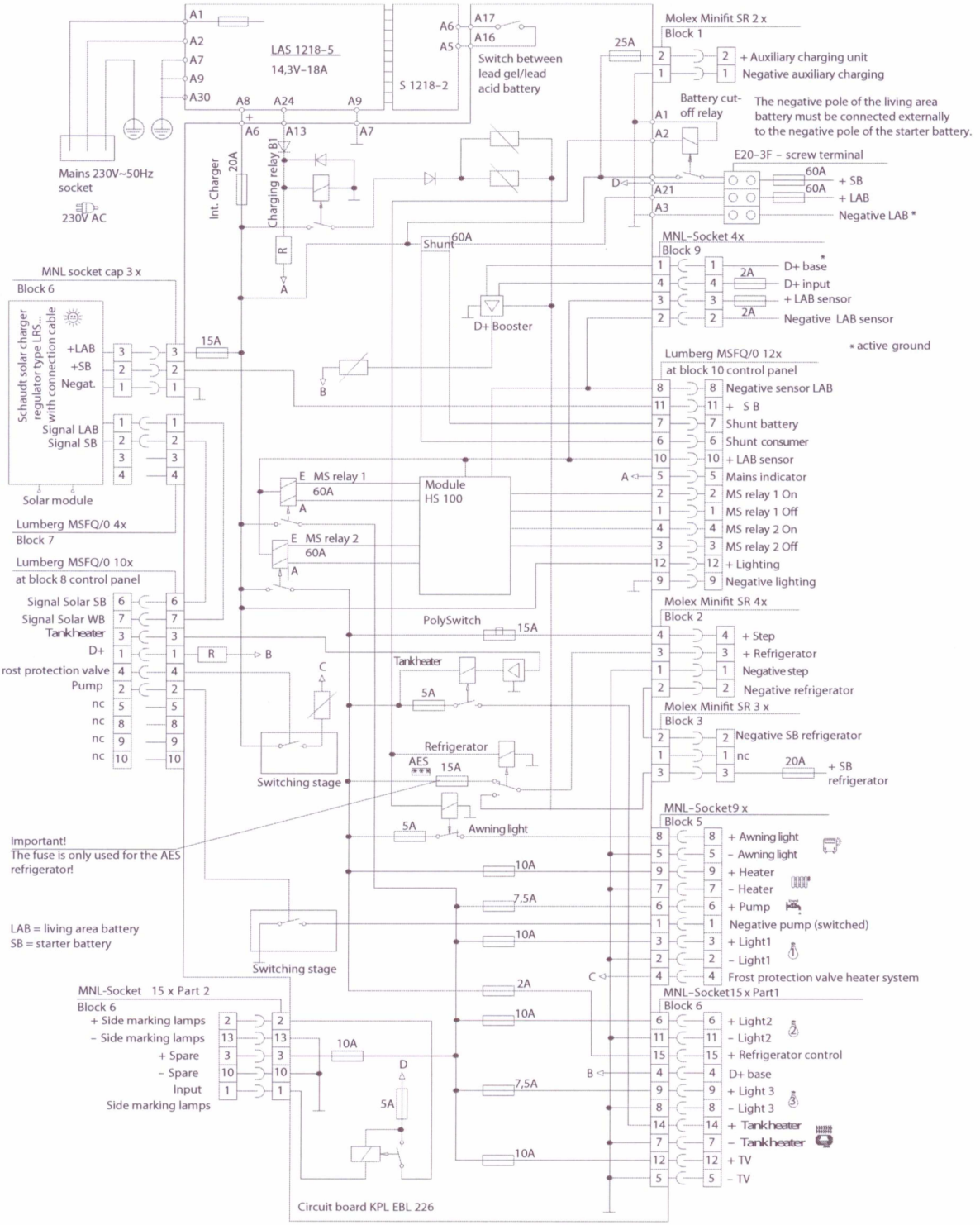

Fig. 2 Block diagram of Electrobloc EBL 226