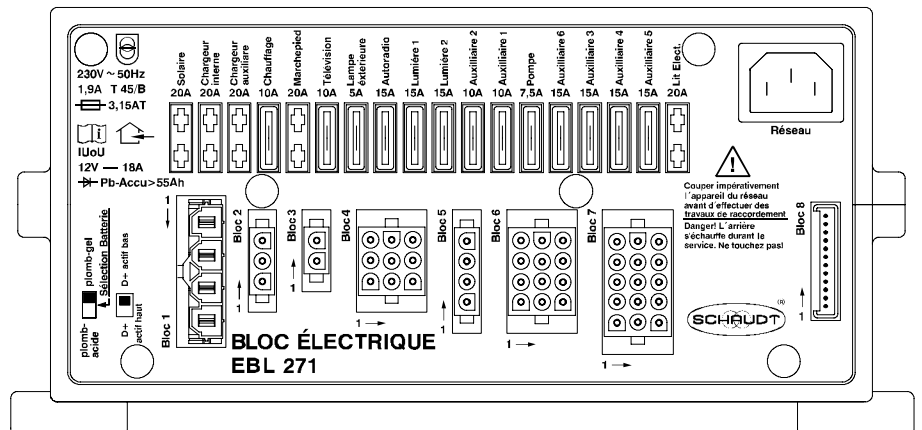


Instruction Manual



Electroblock EBL 271

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1 Safety information

1.1 Meaning of the safety symbols



▲ DANGER!

Failure to comply with this sign may result in danger to life and limb.



▲ WARNING!

Failure to comply with this sign may result in injury.



▲ ATTENTION!

Failure to comply with this sign may result in damage to the device or other connected consumers.

1.2 General safety instructions

The design of the device is state-of-the-art and complies with approved safety regulations. Failure to observe the safety instructions may nonetheless result in damage to the device or injury to persons.

Only use the device when it is in perfect technical condition.

Any faults that may affect the safety of persons or the proper functioning of the device must be repaired immediately by specialists.



▲ DANGER!

230 V unit carrying mains voltage.

Risk of fatal injury 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 it from the power supply.
- Ensure that no liquids enter the device.



▲ WARNING!

Hot components!

Burns:

- Only change blown fuses when the device is completely de-energised.
- Blown fuses may only be replaced when the cause of the fault is known 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 them.
- 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 for safe operation of the device. Make sure you read and follow the safety instructions provided.

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

3 Operation

The electrobloc is operated solely via the IT ... / LT ... control and switch panel connected. .

Operation of the EBL 271 electrobloc is not required in daily use.

Settings only have to be configured once when the battery type is changed (lead-acid or lead-gel), during initial start-up or when retrofitting accessories (see Section 3.2 and the installation instructions for the EBL 271).

3.1 Starting up the system



▲ ATTENTION!

Incorrect electrobloc settings can result in damage to connected devices. Therefore prior to starting:

- Ensure the living area battery is connected.
- Ensure that the battery selector switch (Fig. 3, Pos. 9) is set to the correct position for the battery installed.

Use the main 12V switch (see instruction manual for relevant control and switch panel) to switch on/off all the consumers and the control and switch panel.

Outputs are exceptions:

- Car radio
- Heater
- Refrigerator controller
- Step
- Awning light
- TV

These outputs are not disabled via the main switch of the IT ... /LT ... control and display panel.

Please refer to the operating instructions for the IT ... /LT... control and switch panel for further information. .

Generator operation and passenger vehicle ferries



▲ ATTENTION!

The electrobloc, 12V consumers and the connected devices can be damaged if the thresholds for the 230V supply are exceeded. Note therefore the following:

- It is essential that the generator conforms to the specifications of the mains supply.
- Do not connect the generator until it is running smoothly.
- Do not connect the electrobloc to the mains supply on board passenger vehicle ferries (a correct mains supply is not always guaranteed on board these ferries).

3.2 Changing the battery



▲ ATTENTION!

Using incorrect battery types or incorrectly designed batteries results in damage to the battery or devices connected to the electrobloc. So therefore:

- Batteries should only be changed by qualified personnel.
- Follow the battery manufacturer's instructions.
- Only connect the electrobloc to 12V power supplies with rechargeable 6-cell lead gel or lead acid batteries. Do not use any unsuitable battery types.



- ▲ Normally only batteries of the same type and capacity should be used, i.e. the same as those installed by the manufacturer.
- ▲ It is possible to swap lead acid batteries with lead gel batteries. However, swapping from lead-gel batteries to lead-acid batteries is only possible in certain cases. Contact the vehicle manufacturer for more information.

Changing the battery

- ▶ Electrically disconnect the battery from the electrobloc. To do this, enable battery isolation on the IT .../LT control and switch panel (see also Section 3.1).
- ▶ Replace battery.
- ▶ After changing the battery, recheck which type of battery has been inserted.



▲ DANGER!

Incorrectly setting the battery selector switch poses a risk of explosion due to the formation of detonating gas. So therefore:

- Move the battery selector switch to the correct position.
- ▶ Disconnect the electrobloc from the mains before adjusting the battery selector switch.

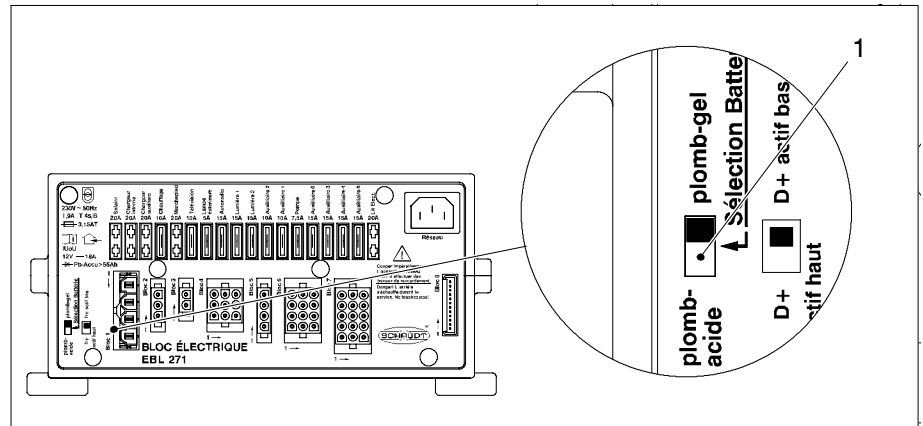


Fig. 1 Battery selector switch

► Move the battery selector switch (Fig. 1, Pos. 1) into the correct position:

- Lead gel battery: Move the battery selector switch to "Lead-gel".
- Lead acid battery: Move the battery selector switch to "Lead-acid".

AGM batteries

- AGM battery: Schaudt GmbH recommends charging AGM batteries with their chargers in switch position "Lead-gel battery". We believe that AGM batteries can be charged perfectly this way. However, suitability must be checked using information from the battery supplier and the charging parameters of Schaudt equipment. The charging parameters are specified in the operating and installation instructions.

Starting up the system

► Start up the system as described in Section 3.1.

3.3 Faults

Flat vehicle fuses

A fault in the power supply system is usually caused by a blown fuse.

Please contact our customer service department if you cannot rectify the fault using the following table.

If this is not possible, e.g. if you are abroad, you can have the electroblock repaired at a specialist workshop. In this case you must ensure that the warranty is not invalidated by incorrect repairs being carried out and Schaudt GmbH will not accept any liability for damage resulting from such repairs.

Polyswitch fuses

The following functions are protected by a polyswitch fuse:

- 12V indicator
- Battery 1
- Output D+
- Marker lights

If there is a fault here, the cause of the overload must be rectified. Afterwards, the relevant supply circuit must be interrupted for a period of about 1 minute (e.g. by removing the relevant connector, see block diagram on Page 14). The polyswitch fuses are reset automatically during this period.

Fault	Possible cause	Remedy
Living area battery is not charged during 230V operation (battery voltage constantly below 13.3 V)	No mains voltage	Switch on the automatic circuit breaker in the vehicle; check the mains voltage
	Too many consumers are switched on	Switch off any consumers not required
	Defective electrobloc	Contact customer service
Living area battery is overcharged during 230V operation (battery voltage constantly above 14.5 V)	Defective electrobloc	Contact customer service
Starter battery is not charged during 230V operation (battery voltage constantly below 13.0 V)	No mains voltage	Switch on the automatic circuit breaker in the vehicle; check the mains voltage
	Too many consumers are switched on	Switch off any consumers not required
	Defective electrobloc	Contact customer service
Living area battery is not charged during mobile operation (battery voltage below 13.0 V)	Defective alternator	Check the alternator
	No voltage on D+ input	Check the fuse and wiring
	D+ switch on the electrobloc is not set correctly.	Set the switch according to the D+ signal from the vehicle (12V or active ground) - dealer
	Defective electrobloc	Contact customer service
The living area battery is overcharged during mobile operation (battery voltage constantly above 14.3 V)	Defective alternator	Check the alternator
The refrigerator does not work during mobile operation	No power supply to the refrigerator	Check the fuse (20A of the supply; possibly 2A of the D+ signal or Polyswitch) and wiring
	Defective electrobloc	Contact customer service
	Defective refrigerator	Check the refrigerator
Solar charging does not work	Solar charge regulator not plugged in	Plug in solar charge regulator
	Defective fuse or wiring	Check fuse and wiring
	Solar charge regulator defective	Check solar charge regulator

Fault	Possible cause	Remedy
12V supply does not work in the living area	12V main switch for the living area battery is switched off	12V main switch for the living area battery must be switched on
	Not all plugs or fuses are plugged into the electroblock	Insert all plugs and fuses (correct values) into the electroblock
	Defective fuse or wiring	Check fuse and wiring
	Defective electroblock	Contact customer service
Marker lights do not work	Polyswitch fuse has tripped	Switch off the electroblock for at least 1 minute (disconnect from 230V supply if required), then switch it on again
	No control signal from the basic vehicle	Check the base vehicle



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

3.4 Closing down the system

A battery is isolated by switching off the main switch on the IT .../LT ... control and switch panel and by disconnecting a plug connector.



▲ ATTENTION!

Damage to the living area battery as a result of total discharge. So therefore:

- Fully charge the living area battery before and after closing down the system. (Connect vehicle to the mains with an 80Ah battery at least 12 hours and with a 160Ah battery at least 24 hours).

Closing down

When the motorhome is not used for a long time, consumers with a permanent supply should be disconnected from the battery.

- ▶ 12V supply on the IT ... / LT control and switch panel must be switched off.
- ▶ Fully charge the living area battery before closing down the system.
- ▶ Remove the MNL connector on block 4 of the electroblock.

The living area battery now only supplies the permanent positive input of the radio (e.g. to prevent the code from having to be re-entered every time after closing down).

Follow the instructions of the battery manufacturer.

4 Application and functions in detail

The EBL 271 electroblock is the central power supply unit for all 12V consumers in the vehicle's electrical system. It is usually located in a cupboard or storage area and is accessible from the front to change fuses.

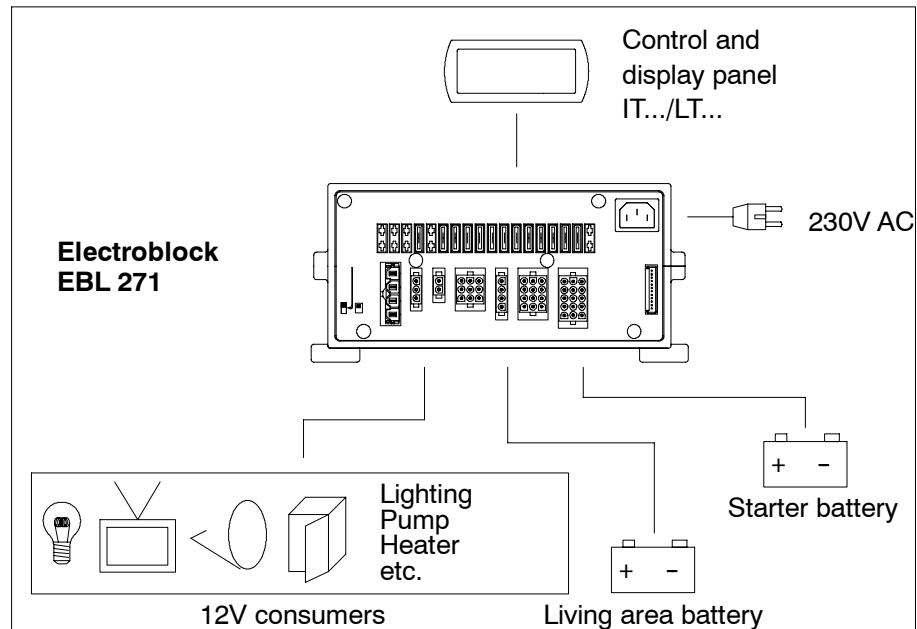


Fig. 2 On-board power supply system

Modules The EBL 271 electroblock contains:

- a charge module for charging all connected batteries
- the 12V distribution unit
- fuses for the 12V circuits

System devices An IT ... or LT ... control and switch panel must be connected for operation. These devices control the electrical functions in the vehicle's living area, including accessories.

There is also an option to connect an additional charger and a solar charge regulator.

Flat vehicle fuses protect the various circuits. The two D+ outputs and the output for the refrigerator controller are exceptions. These are protected by a Polyswitch fuse:

Protective circuits of the charger module

- Excess temperature
- Overload
- Short circuit

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

Current-carrying capacity 12V outputs may be loaded with max. 90% of the rated current of the respective fuse (also see front panel).

4.1 Battery functions

Suitable batteries	6-cell lead acid or lead gel batteries, 55 Ah and above	
Battery charging whilst moving	Simultaneous charging of the starter battery and the living area battery via the alternator, parallel connection of the batteries via a cut-off relay	
Battery selector switch	The switching option provided by the battery selector switch ensures optimum charging of the two battery types (lead gel and lead acid).	
Standby current from living area battery (without consumer currents)	With LT control and switch panel : approx. 4 mA (depending on the control and switch panel used) under the following conditions: <ul style="list-style-type: none">● No mains connection● Living area battery voltage 12.6V● 12V main switch "OFF"	
Battery charging via mains connector	Living area battery	
	Characteristic charging curve	IUoU
	End of charge voltage	14.3V
	Charging current	18A
	Voltage for float charge	13.8V with automatic switch function
	Starter battery	
	Charging current float charge	max. 2A

4.2 Additional functions

- Refrigerator controller** This output can be used to continually supply an existing refrigerator controller.
- Awning light** The power supply to this consumer is automatically interrupted as soon as the engine starts running (the D+ connection is live in this case or switched to ground, depending on the type of vehicle). The awning light can still be used even if the 12V power supply is switched off.
- D+ signal** The conventional D+ signal (D+ connection is live when the engine is running) is evaluated directly.
- An integrated D+ converter enables the connection of vehicles for which the D+ signal is provided as an active ground signal (e.g. FIAT).
- A changeover switch on the electrobloc specifies which D+ signal is to be evaluated.
- Mains charging of the starter battery** This feature provides an automatic max. 2 A float charge for the starter battery when the 230V mains is connected to the electrobloc.
- Marker lights** This output is suitable for supplying the side marker lights of the motorhome. The associated voltage output is switched on as soon as control signal "Vehicle lighting ON" of the basic vehicle is applied at the relevant control input of the EBL 271.
- Power to the electrical fold-away bed** This output provides a supply voltage to operate an electric fold-away bed. The voltage is only applied when switch AUX ON of the control and switch panel is ON AND D+ is not applied, i.e. the vehicle engine is not running.
- This prevents unintentional operation of the bed whilst the vehicle is moving.

5 Maintenance

- The EBL 271 electrobloc is maintenance free.
- Cleaning** Clean the electrobloc with a soft, slightly damp cloth and mild detergent. Never use spirit, thinners or similar substances. Do not allow liquids to enter the electrobloc.

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Appendix

A EC declaration of conformity

Schaudt GmbH hereby confirms that the design of EBL 271 electroblock complies with the following relevant regulations:

EC low voltage directive

2006/95/EC dated 12.12.2006

Electromagnetic compatibility directive

2004/104/EC dated 14.10.2004

2005/49/EC dated 25.07.2005

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 04/2010):

Typgen. no.: e1*72/245*2009/19*5664*__

EC gen. mark.: e1 035664

Manufacturer Schaudt GmbH, Elektrotechnik & Apparatebau

Address Planckstraße 8
88677 Markdorf
Germany

B Special fittings/accessories

Switch panel Schaudt IT ... / LT ... switch panel (required for operation)

C Customer service

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

Phone: +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 device Returning a defective device:

- ▶ Fill in and enclose the fault report, see Appendix D.
- ▶ Send it to the addressee delivered free.

D Fault report

In the event of damage please fill in the fault report and send with the faulty device 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 Design

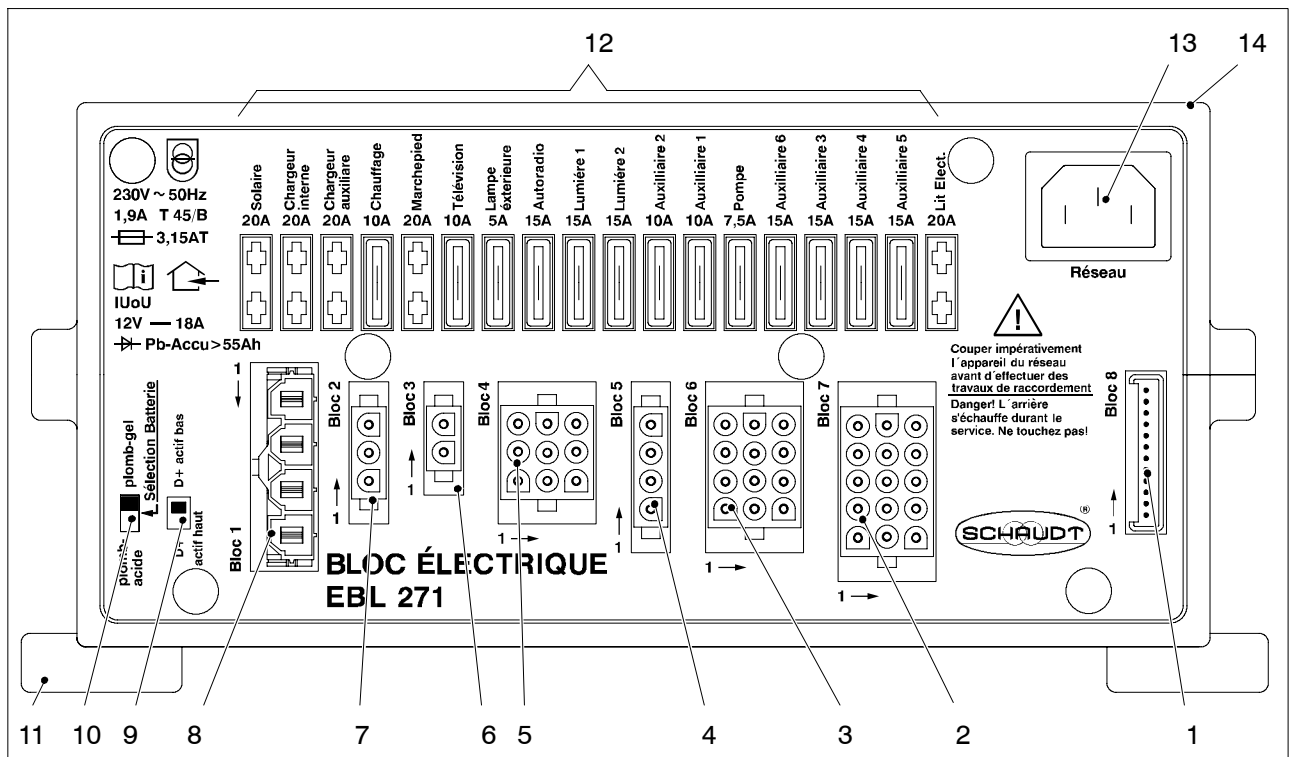


Fig. 3 Layout of the EBL 271 electroblock (front)

- | | |
|---|---|
| 1 Block 8: IT ... / LT ... control and switch panel | 8 Block 1: Refrigerator |
| 2 Block 7: Aux 3...6, fold-away bed, marker lights | 9 D+ signal changeover switch |
| 3 Block 6: Aux 1, 2, lighting, continual positive for radio | 10 Selector switch for acid/gel battery |
| 4 Block 5: D+ (input, output), battery sensor | 11 Assembly flaps |
| 5 Block 4: Consumers, not connected | 12 Flat vehicle fuses |
| 6 Block 3: Additional charger | 13 Mains connector |
| 7 Block 2: Solar regulator | 14 Housing |

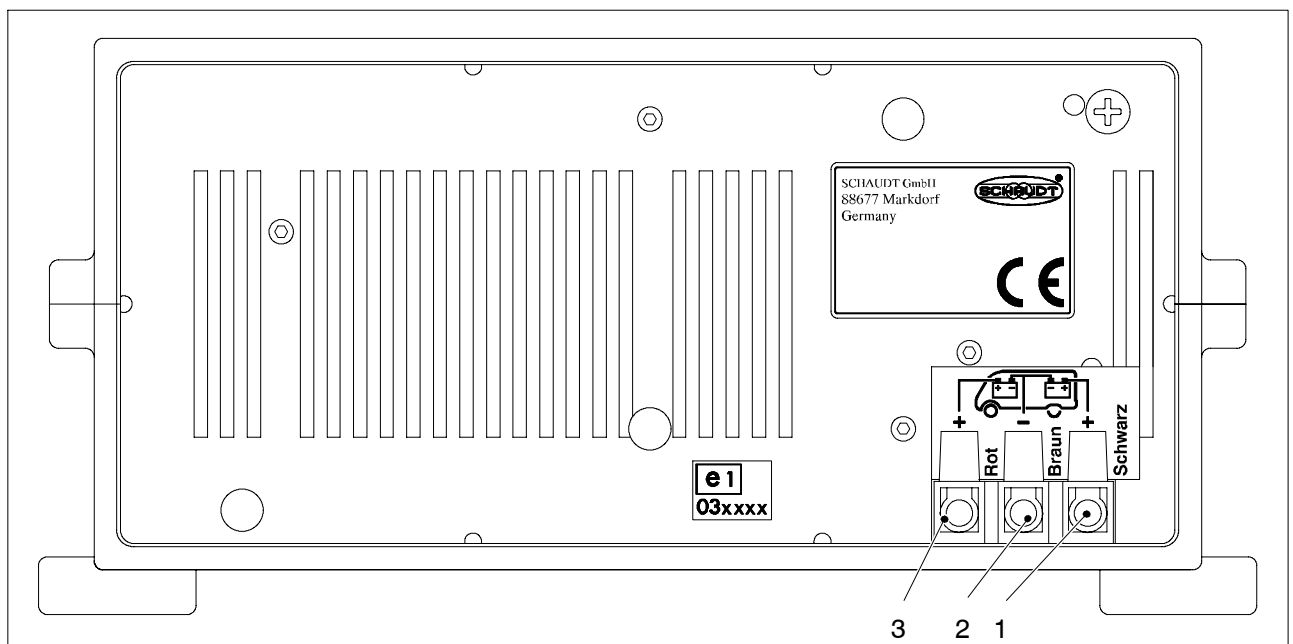


Fig. 4 Layout of EBL 271 electroblock (rear)

- | | |
|-------------------------------------|---------------------------------|
| 1 Connector for living area battery | 3 Connector for starter battery |
| 2 Ground connector | |

F Block diagram/wiring diagram

