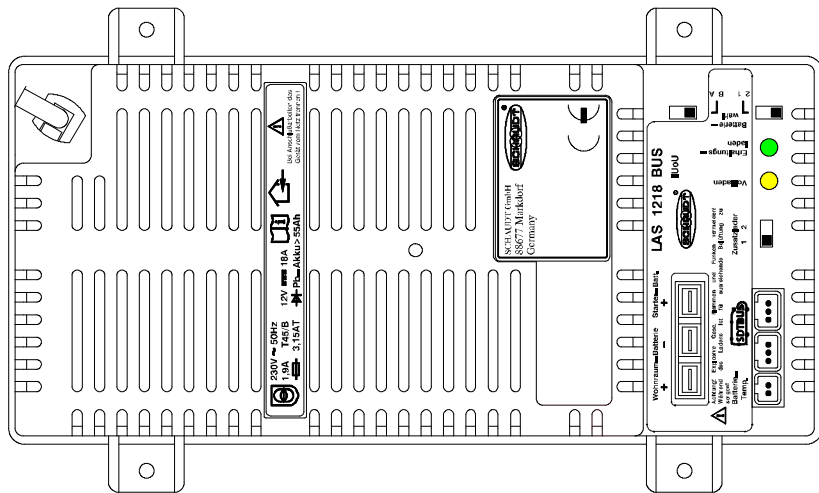


Operating and Installation Instructions



LAS 1218 BUS Battery Charger

Contents

1	Operating instructions	2
1.1	Safety information	2
1.2	Application and layout	3
1.3	Operation	5
1.4	Maintenance	7
2	Installation instructions	8
2.1	Introduction	8
2.2	Mechanical installation	8
2.3	Electrical connection	9
2.4	Initial use	18
2.5	Technical details	20
2.6	Storage, packaging and transportation	21
	Appendix	22

1 Operating instructions

1.1 Safety information

1.1.1 Meaning of safety symbols



▲ DANGER!

Failure to comply with this sign may result in danger to life or physical condition.



▲ WARNING!

Failure to comply with this sign may result in injury.



▲ ATTENTION!

Failure to comply with the sign may result in damage to equipment or other connected loads.

1.1.2 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 lead to injury or damage to the device.

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

Any faults affecting the safety of individuals or the proper functioning of the device must be repaired immediately by specialists.



▲ DANGER!

230V units carrying mains voltage.

Risk of fatal injury due to electric shock or fire:

- The electrical system of the motorhome or caravan must comply with DIN-, VDE- and ISO- regulations.
- Connect devices rated at 230V to the 230V supply in line with national installation regulations.
- Never attempt to modify the device.
- Only carry out electrical work once the 230V supply has been disconnected.
- Never try to start the device using a defective mains cable or a faulty connection.
- Never undertake maintenance work on the device whilst it is still live.
- Ensure proper electrical connections are made.
- Ensure correct electrical fuses are used.
- The mains connection line may only be replaced by an authorised customer service department or by those qualified.



▲ WARNING!

Hot components

Burns:

- Only change blown fuses when the device is fully de-energised
- Blown fuses may only be replaced once the cause of the fault is known and has been rectified
- Never bypass or repair fuses
- Only use original fuses rated as specified on the device or in these instructions.
- The rear of the device may become hot during operation. Do not touch it.
- Never store heat sensitive objects close to the device (e.g. temperature sensitive clothes if the device has been installed in a wardrobe)

1.2 Application and layout

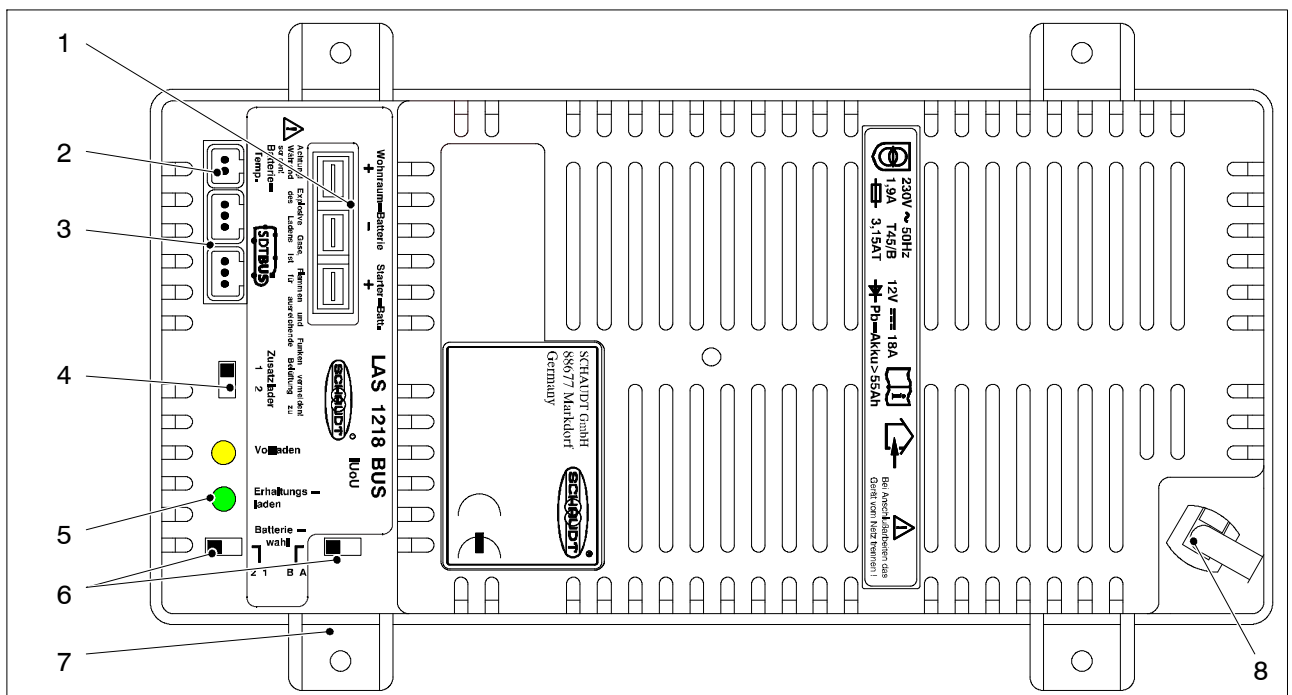


Fig. 1 LAS 1218 BUS battery charger

- 1 Leisure area and starter battery connectors
- 2 Battery temperature sensor connector
- 3 SDTBUS[®] connectors
- 4 Address switch (for use of charger in bus systems)
- 5 Indicator lamps for charging cycle
- 6 Two battery selector switches (A/B and 1/2)
- 7 Installation feet
- 8 Mains cable with earthing type plug or WAGO[®]-connector (optional)

The LAS 1218 BUS battery charger is for charging suitable batteries during 230V operation or supplying 12V consumers without connected battery with power.

Different charging characteristics can be set with two battery selector switches for the perfect charging of different battery types. Temperature compensation of these charging characteristics is realised with (optional) temperature sensor affixed to the battery, and results in additional optimisation of battery charging at maximum battery protection.

The LAS 1218 BUS battery charger is aligned perfectly to Schaudt bus systems, and a corresponding connection to the SDTBUS[®] links the device into the system. This enables fully-automatic control of the entire charging process with all chargers and batteries connected.

The LAS 1218 BUS battery charger is also excellently suited in conventional systems and as standalone chargers.



- ▲ This device is not intended to be used by those (including children) with limited physical, sensory or mental aptitude or lack of experience and/or knowledge unless they are supervised by a person responsible for their safety or have received instruction from this person as to how the device is used.
- ▲ Children are to be supervised so as to ensure they do not play with the device.
- ▲ This device is intended for installation into a vehicle.

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

The battery charger can be used:

- as a battery charger for charging the leisure area battery and for re-charging a connected starter battery
- as an auxiliary charger for loading leisure area batteries with higher capacities, suitable for every Schaudt EBL electroblock with an LAS charger module (the possible number of auxiliary chargers depends on the number of auxiliary charger connections on the respective EBL)
- as an auxiliary charger for charging leisure area batteries with higher capacities, suitable for every SDTBUS[®]-capable Schaudt EBL ... electroblock (up to two auxiliary chargers can be connected here)
- as a power supply unit (up to 18 A) for the 12V consumers connected. No battery is required here.

TF 25 A battery temperature sensor (optional)

The optional TF 25 A battery temperature sensor is used to implement battery temperature-controlled charging.

1.3 Operation

1.3.1 Controls and indicator LEDs

The device has no controls which need to be used on a day-to-day basis. The battery selector switches need only be set correctly on initial use and for a change of battery.



▲ DANGER!

Risk of explosion!

- An incorrect battery selector switch setting poses a risk of explosion due to the formation of electrolytic gases.



▲ ATTENTION!

- An incorrectly set battery selector switch will damage the leisure area battery.
- Disconnect the battery charger from the mains before moving the battery selector switch.

The LAS 1218 BUS charger may have to be reset when a battery type is changed (see also Page 18).

Changing the battery

- Batteries may only be replaced by qualified personnel.
- Follow the battery manufacturer's instructions.
- Charging unsuitable types of battery may damage them beyond repair.

It is possible to swap lead acid batteries with lead gel batteries.

Given the lack of ventilation options within the vehicle, changing from lead gel to lead acid batteries is not possible without additional overhead.

Ask your dealer for advice.

The switching option provided by the battery selector switch ensures optimum charging of the different battery types (lead-gel, lead-acid and AGM).

Indicator LEDs

The indicator LEDs on the front of the battery charger show the current charging phase.

Main / Full charge



This indicator LED lights up yellow in the "Main Charge" and "Full Charge" phases.

Trickle charge



This indicator LED lights up green in the "Trickle Charge" phase.



- ▲ In supply mode, the two LEDs switch alternately every second.

1.3.2 Faults

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

Please contact our customer service address 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 battery charger repaired at a specialist workshop. In this case, you must ensure that the warranty is not invalidated by incorrect repairs being carried out. Schaudt GmbH will not accept any liability for damage resulting from such repairs.

Fault	Possible cause	Remedy
Leisure area battery is not charged during 230V operation (battery voltage constantly below 13.3 V)	No mains voltage	Switch on the automatic fuse in the vehicle Have the mains voltage checked
	Battery charger is defective	Contact customer service
	Battery charger fuse or wiring is defective	Have the fuse and cabling checked
Leisure area battery is overcharged during 230V operation (battery voltage rises to over 15V)	Battery charger is defective	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 fuse in the vehicle Have the mains voltage checked
	Battery charger is defective	Contact customer service
1212V power supply in the leisure area does not work (when the battery charger is being used as a power supply device)	Defective fuse or cabling	Have the fuse and cabling checked
	Battery charger is defective	Contact customer service
	No mains voltage	Switch on the automatic fuse in the vehicle Have the mains voltage checked
The "Main / Full Charge" indicator lamp does not light up despite several hours of charging	Battery charger is defective	Contact customer service

Fault	Possible cause	Remedy
The "Trickle Charge" indicator lamp does not light up despite several hours of charging	System overloaded	Switch off consumers
	Battery charger is defective	Contact customer service
	If the battery charger is not defective: Battery defective	Contact customer service
SDT ... bus system fault messages:		
E280	No LAS 1218 BUS on bus	Check bus cabling Contact customer service
E281	Battery temperature sensor short-circuit*	Check cabling and connectors Contact customer service
E282	Battery temperature sensor cable break or defective sensor*	Check cabling Replace sensor
* For bus systems with another battery temperature sensor (e.g. with HELLA battery sensor), the temperature value available on the bus is used as an alternative.		
When a temperature sensor is connected:		
Indicator lamps flash quickly alternately (approx. every 300 ms)	Battery temperature is too high	Check battery ventilation
	Connector of temperature sensor defective/unplugged or temperature sensor defective	Check connector and temperature sensor; contact customer service



- ▲ 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.

1.4 Maintenance

The battery charger is maintenance-free.

Cleaning Clean the battery charger with a soft, slightly damp cloth and mild detergent. Never use spirit, thinners or similar substances. Do not allow liquids to enter the device.

2 Installation instructions

2.1 Introduction

These installation instructions are aimed at trained personnel.

They contain important information on the connection and safe operation of the device. The safety information provided must be observed.

Always follow the relevant instruction manual in addition to the installation instructions.

The following applications are described for the electrical connection (with the appropriate deliverables):

- Auxiliary charger on electroblock (section 2.3.1.1)
- Auxiliary charger on electroblock in bus systems (Section 2.3.1.2)
- Direct connection to leisure area and starter batteries (Section 2.3.1.3)
- Connection to additional battery (e.g. when used in conjunction with an inverter)

2.2 Mechanical installation

2.2.1 LAS 1218 BUS battery charger



▲ This device is intended for installation into a vehicle.

The device is designed for floor installation.

- Environment** ► Install in a dry, sufficiently ventilated location. No condensation is allowed to form on the device. To prevent a build-up of heat, ventilation holes facing the leisure area must be provided in the upper and lower areas of the place of installation. Its cross-section is based on the size and average temperature of the place of installation.
- Minimum clearance** ► Ensure a minimum clearance to the surrounding fixtures and fittings:
- Maintain a gap of at least 5 cm on all sides (except mounted side).
 - Whilst in operation, the ambient temperature must not exceed +45 °C, measured 2.5 cm away from the sides of the device.
- Fitting** ► On a firm and level surface, tightly screw the battery charger with four screws (5mm diameter).

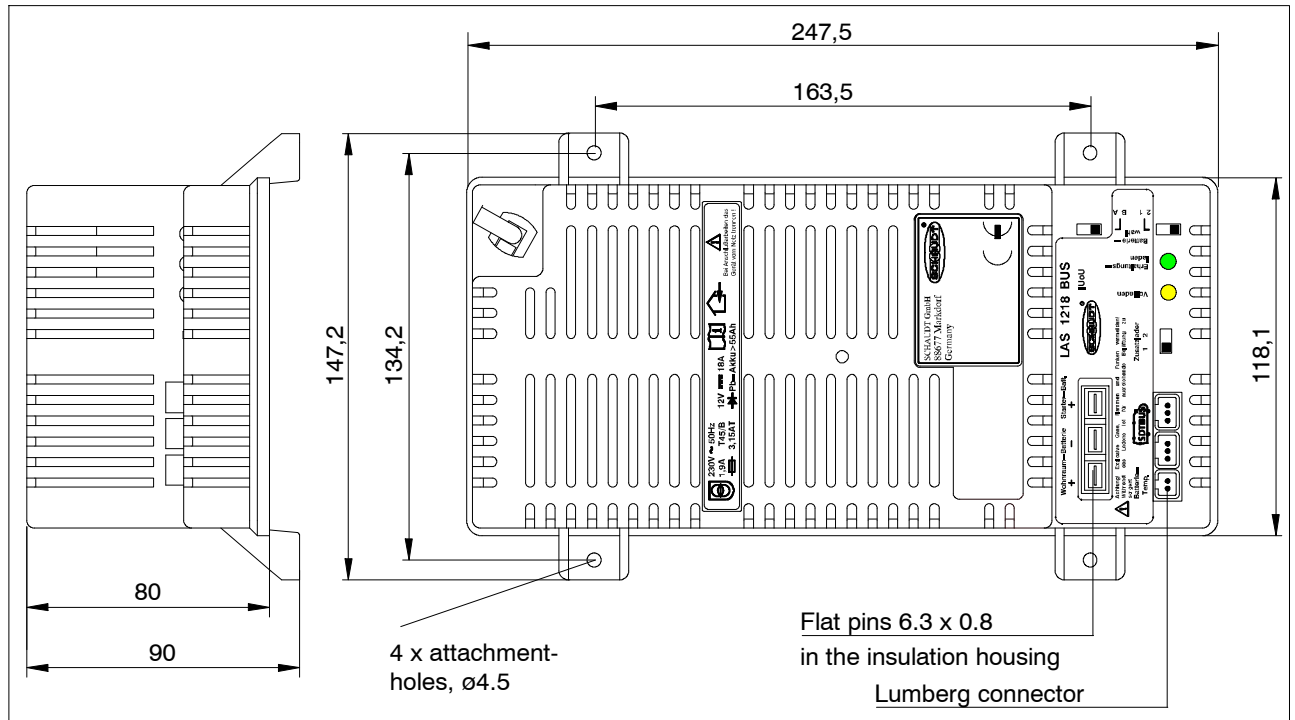


Fig. 1 Dimension diagram for LAS 1218 BUS battery charger (dimensions in mm)

2.2.2 Fuse holder

For applications that require one or two additional fuses (see Section 2.3.1.3 for example), fuse holders from the connector set must be installed.

- Determine the place of installation of the fuse holder(s). The place of installation must be in the direct vicinity of the corresponding battery.
- Drill a hole 8mm in diameter for every fuse holder.
- Lock the fuse holder into place in the drillhole.

2.3 Electrical connection

Connection sequence Establish the battery charger connection in the following order:

1. All connections on the front panel of the battery charger
2. Battery lines to the battery terminals
3. 230V mains connection

Disconnection Disconnect in the reverse order.

Deliverables for connector sets

The following sets are available for different applications:

- Part number 999.308 for vehicles for which the 230V connector is a Wago connector, and the auxiliary charger connector on the EBL has an MNL connector
- Part number 999.305 for general upgrades with an additional charger (on Schaudt EBLs with MNL or Minifit connector for additional charger or for the direct connection to leisure and, where applicable, starter battery)
- Part number 999.309 for vehicles for which the 230V connector is a Wago connector, and the additional charger connector has an MNL or Minifit connector; this connector set is also suitable for Schaudt bus systems (SDTBUS®)

2.3.1 General



▲ ATTENTION!

Short-circuits can cause cable fire or damage to the battery charger. So therefore:

- To protect the supply lines in the event of a short circuit, connect the fuses directly to the positive terminal of battery.

Select cable cross-sections in line with EN 1648-1/-2. The maximum current load must not exceed 90% of the individual fuse rating.

Recommended cable cross-sections:

Line length* (sum of supply and return lines)	Cable cross-section
Up to 4 m	2,5 mm ²
Up to 8 m (only for leisure area battery)	4,0 mm ²
Up to 12 m (only for leisure area battery)	6,0 mm ²

Fuse protection

➤ Fuse the supply lines as follows:

- with 1.5 mm² cable cross-section 10 A
- with 2.5 mm² cable cross-section (or greater) 20 A

2.3.1.1 Connection as for auxiliary charger to the electroblock

Auxiliary charger

The LAS 1218 BUS battery charger can also be used as an auxiliary charger for a Schaudt electroblock. Suitable for use here are all Schaudt electroblocks that include the LAS charger module and have the 2-pin MN connector (e.g. EBL 99) or Minifit connector (e.g. EBL 220) for an auxiliary charger. See the operating instructions for the electroblock, "Suitable accessories".

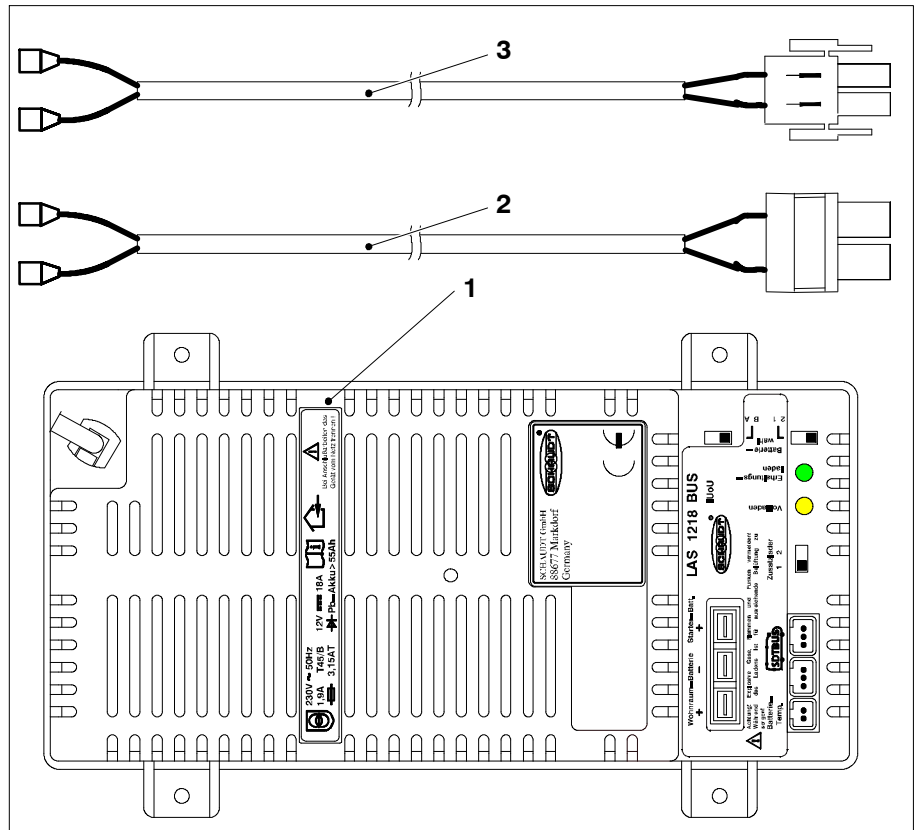


Fig. 2 Parts required for LAS 1218 BUS as auxiliary charger to EBLs

Pos.	Qty	Name
1	1	LAS 1218 BUS battery charger, isolated ground or WAGO connector (optional)
2	1*	Connector cable, 1.7 m with Minifit connector
3	1*	Connector cable, 1.7 m with MNL connector

* Pos. 2 and 3 as an alternative depending on electroblock to be connected

The connector cable (Pos. 2 or 3) is required to connect the LAS 1218 BUS battery charger to the electroblock.

Fuse protection

An additional fuse is not required as there is already one integrated in the electroblock. You only have to check if the fuse is fitted and if it complies with the fuse rating on the label.

The battery charger is connected to the electroblock with a 2-pin charger cable. Other lengths are available on request.

A connection to the starter battery is not required because the electroblock already has the start battery recharge module.

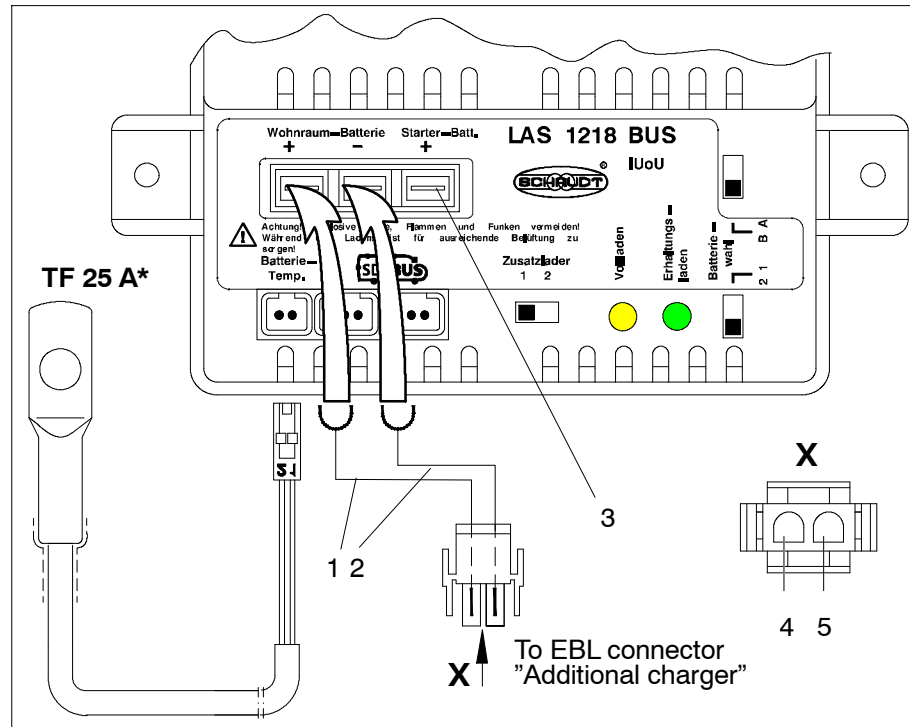


Fig. 3 Connection diagram for LAS 1218 BUS battery charger - to electroblock

- 1 Flat push-on contacts, 6.3 x 0.8, red cable
- 2 Flat push-on contacts, 6.3 x 0.8, brown cable
- 3 Not assigned
- 4 + Leisure area battery (red)
- 5 Negative battery (brown)
- * TF 25 A battery temperature sensor is optional

➤ 2-pin charger cable: LAS 1218 BUS electroblock connection

- + terminal LAS 1218 BUS leisure area battery: Flat push-on contact, 6.3 x 0.8; (Fig.3; Pos. 1)
- - terminal LAS 1218 BUS: Flat push-on contact, 6.3 x 0.8; (Fig.3; Pos. 2)
- MNL connector (view X, Fig. 3; Pos. 4/5) or Minifit connector on electroblock, base "auxiliary charger"; see also operating instructions for electroblock

The following steps are only necessary when using the (optional) TF 25 A battery temperature sensor:

- Clamp the TF 25 A battery sensor to one of the terminals (preferable the negative terminal) of the leisure area battery (note: this is NOT an electrical connection - only the temperature of the battery terminal is read with this mechanical connection; this is virtually identical to the internal temperature of the battery)
- Route the cable through the vehicle to the LAS 1218 BUS battery charger.
- Plug the TF 25 A battery temperature sensor into the LAS 1218 BUS battery charger.
- Secure the battery sensor cable at suitable places (particularly near the connector on the LAS 1218 BUS battery charger to prevent the 2-pin connector from coming loose)

2.3.1.2 Connection as additional charger in SDTBUS[®] systems

Auxiliary charger

The LAS 1218 BUS battery charger can also be used as an auxiliary charger in a Schaudt bus system. Up to two additional LAS 1218 BUS chargers can be connected to the EBL of the bus system.



▲ Connection to the SDTBUS[®] for Schaudt bus systems is possible from the following software versions of the relevant bus system:

Bus system	Software revision	
SDT 213	V 3.XX and higher,	Panel LT 13: V.3.01 and higher
SDT 630	V 3.XX and higher,	Panel LT 6XX: V 3.02 and higher EBL 6XX: V 3.02

Deliverables

The following parts are supplied for this application:

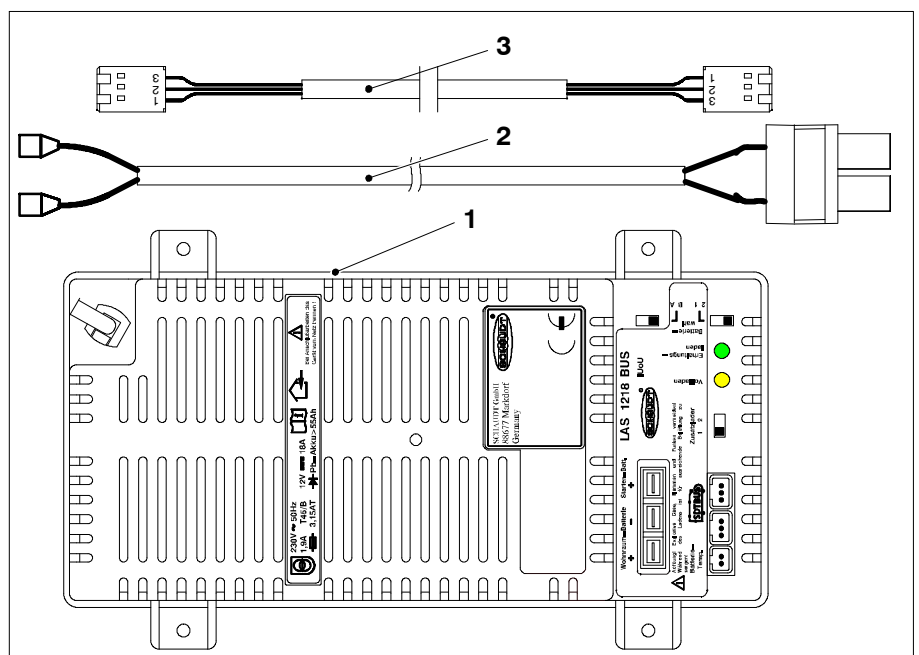


Fig. 4 Parts required for LAS 1218 BUS as auxiliary charger in bus systems

Pos.	Qty	Name
1	1	LAS 1218 BUS battery charger, isolated ground or WAGO connector (optional)
2	1	Connector cable, 1.7 m with Minifit connector
3	1	SDTBUS [®] (2 m) connector cable

Fuse protection

An additional fuse is not required as there is already one integrated in the electroblock. You only have to check if the fuse is fitted and if it complies with the fuse rating on the label.

The battery charger is connected to the electroblock with a 2-pin charger cable. Other lengths are available on request.

A connection to the starter battery is not required because the electroblock already has the start battery recharge module.

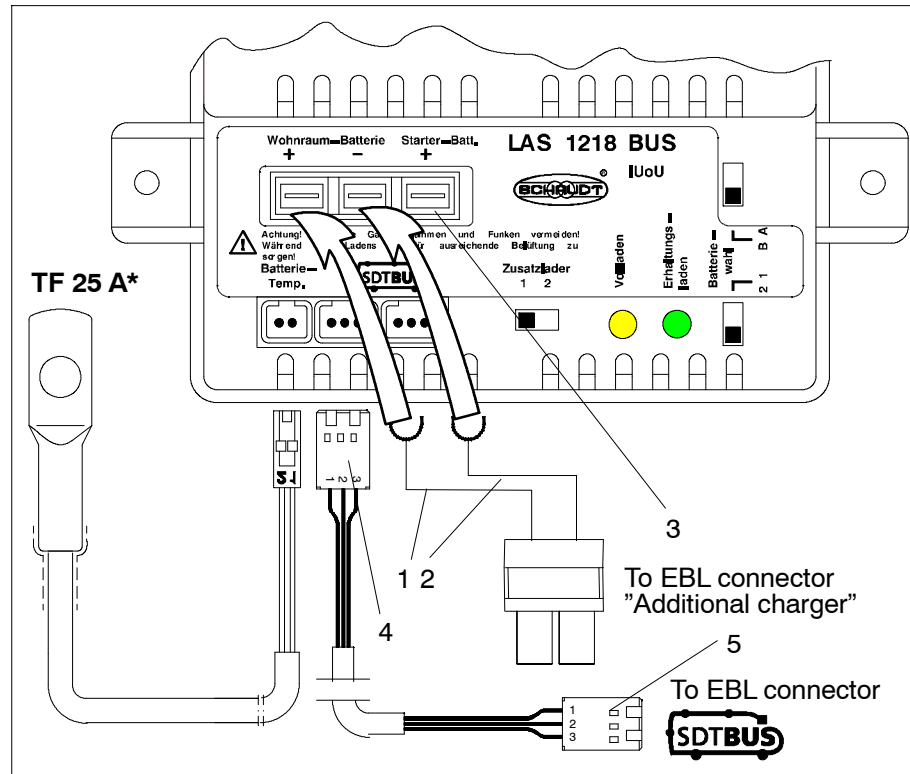


Fig. 5 Connection diagram for LAS 1218 BUS battery charger - to electroblock

- 1 Flat push-on contacts, 6.3 x 0.8, red cable
- 2 Flat push-on contacts, 6.3 x 0.8, brown cable
- 3 Not assigned
- * TF 25 A battery temperature sensor is optional

- 2-pin charger cable: LAS 1218 BUS electroblock connection
 - + terminal LAS 1218 BUS leisure area battery: Flat push-on contact, 6.3 x 0.8; (Fig.3; Pos. 1)
 - - terminal LAS 1218 BUS: Flat push-on contact, 6.3 x 0.8; (Fig.3; Pos. 2)
 - Minifit connector to electroblock, base "Auxiliary charger"; see also operating instructions for electroblock
- 3-pin bus cable: LAS 1218 BUS electroblock connection
 - 3-pin Lumberg connector must be plugged into LAS 1218 BUS, SDTBUS® (Fig. 3; Pos. 4)
 - 3-pin Lumberg connector must be plugged into electroblock, SDTBUS® (Fig. 3; Pos. 5)

The following steps are only necessary when using the (optional) TF 25 A battery temperature sensor:

- Clamp the TF 25 A battery sensor to one of the terminals (preferable the negative terminal) of the leisure area battery (note: this is NOT an electrical connection - only the temperature of the battery terminal is read with this mechanical connection; this is virtually identical to the internal temperature of the battery)
- Route the cable through the vehicle to the LAS 1218 BUS battery charger.
- Plug the TF 25 A battery temperature sensor into the LAS 1218 BUS battery charger.

- Secure the battery sensor cable at suitable places (particularly near the connector on the LAS 1218 BUS battery charger to prevent the 2-pin connector from coming loose)

2.3.1.3 Direct connection to leisure area and starter battery

For this type of connection, there is a direct connection between the LAS 1218 BUS battery charger and the two motorhome batteries (or also only one battery, e.g. for a caravan).

Deliverables The following parts are supplied under part number 999.086 for this application:

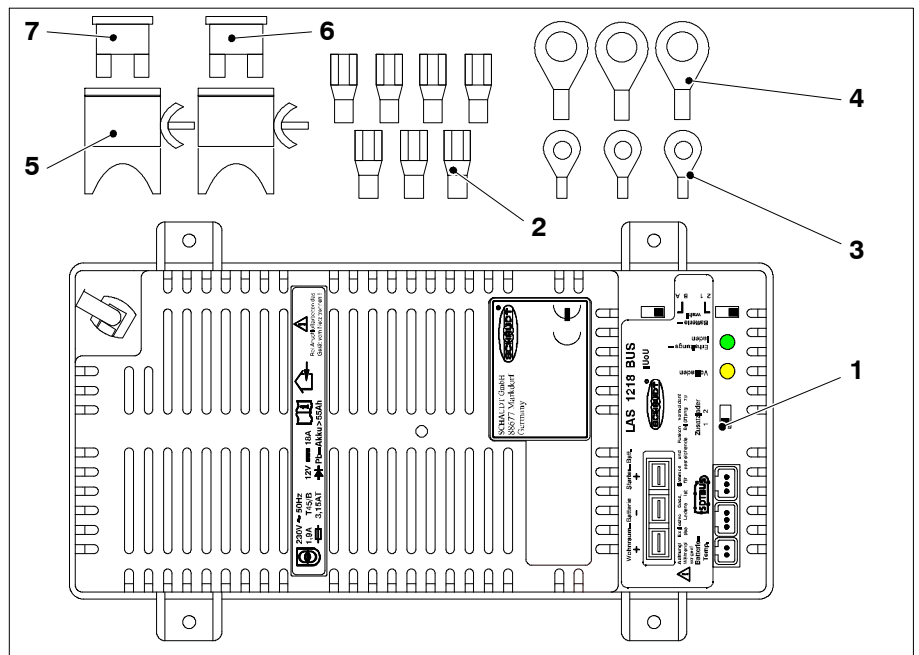


Fig. 6 Parts for general upgrades

Pos.	Qty	Name
1	1	LAS 1218 BUS battery charger
2	7	Flat push-on contacts, 6.3 x 0.8 (blue)
3	3	Ring terminal, 1 ... 2.5 mm ² M6
4	3	Ring terminal, 1 ... 2.5 mm ² M8
5	2	Fuse holder for flat vehicle fuse
6	1	Flat vehicle fuse, 20A
7	1	Flat vehicle fuse, 10 A

The connector set (Pos. 2 to 6) is required to connect the LAS 1218 BUS battery charger to up to two batteries.



- ▲ The length of the line to the starter battery may not exceed 4 m (supply and return lines together) for a cable cross-section of 2.5mm² (see also table on Page 10).

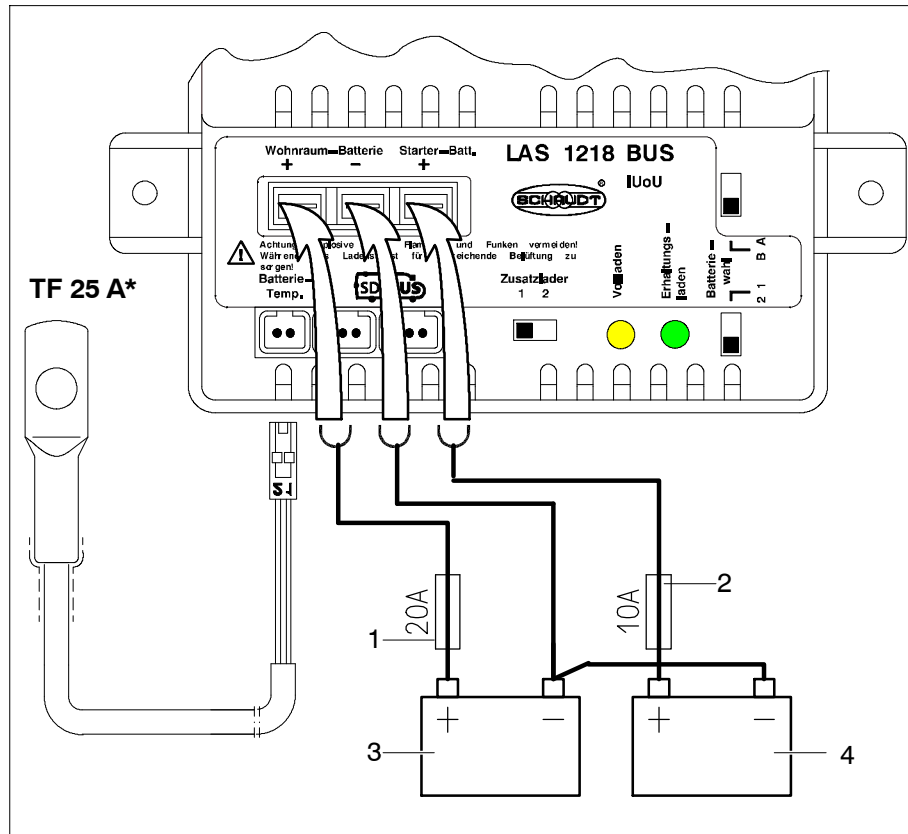


Fig. 7 Connection diagram for LAS 1218 BUS battery charger - to leisure and starter batteries

- 1 Fuse F1
- 2 Fuse F2
- 3 Leisure area battery
- 4 Starter battery
- * TF 25 A battery temperature sensor is optional

- + terminal LAS 1218 BUS leisure area battery (flat push-on contact 6.3 x 0.8) to F1 (flat push-on contact 6.3 x 0.8)
- F1 (flat push-on contact 6.3 x 0.8) to + terminal of leisure area battery (ring terminal, M6 or M8)
- + terminal LAS 1218 BUS starter battery (flat push-on contact 6.3 x 0.8) to F2 (flat push-on contact 6.3 x 0.8)
- F2 (flat push-on contact 6.3 x 0.8) to + terminal of starter battery (ring terminal, M6 or M8)
- Connection, LAS 1218 BUS to leisure area or starter battery
 - - terminal LAS 1218 BUS (flat push-on contact 6.3 x 0.8)
 - - terminal of battery (ring terminal, M6 or M8)
- Label the two fuses with stickers "F1 - leisure area battery" and "F2 - starter battery".



- ▲ The negative terminal (-) of the leisure area battery must be connected externally to the negative terminal (-) of the starter battery.

The following steps are only necessary when using the (optional) TF 25 A battery temperature sensor:

- Clamp the TF 25 A battery sensor to one of the terminals (preferable the negative terminal) of the leisure area battery (note: this is NOT an electri-

cal connection - only the temperature of the battery terminal is read with this mechanical connection; this is virtually identical to the internal temperature of the battery)

- Route the cable through the vehicle to the LAS 1218 BUS battery charger.
- Plug the TF 25 A battery temperature sensor into the LAS 1218 BUS battery charger.
- Secure the battery sensor cable at suitable places (particularly near the connector on the LAS 1218 BUS battery charger to prevent the 2-pin connector from coming loose)

2.3.2 Mains connection



▲ DANGER!

230V units carrying mains voltage.

Risk of fatal injury due to electric shock or fire:

- Only carry out electrical work once the 230V supply has been disconnected.

Mains connection

- The mains must be connected as follows:
 - to a insulated distribution unit with protective contact
 - to a socket with protective contact (isolated ground or suitable plug connector from WAGO®, depending on LAS 1218 BUS variant).

The power cord must be of type H05VV-F 3x1.5.

- The mains cable must have a strain relief where required.

2.4 Initial use

2.4.1 Checks prior to initial use

- Prior to use**
- Ensure that the batteries are connected properly (only for initial use, operation without battery is possible in general).

2.4.2 Setting battery type



- Determine the battery type

▲ DANGER!

Incorrect setting of the battery selector switch.

Risk of explosion from build-up of electrolytic gas, defective battery, defective battery charger or as a result of too high a battery operating temperature (above 305 C):

- Move the battery selector switch to the correct position.

- Store batteries in a place that is sufficiently ventilated (or provide integrated ventilation). Follow the instructions provided by the battery manufacturer.

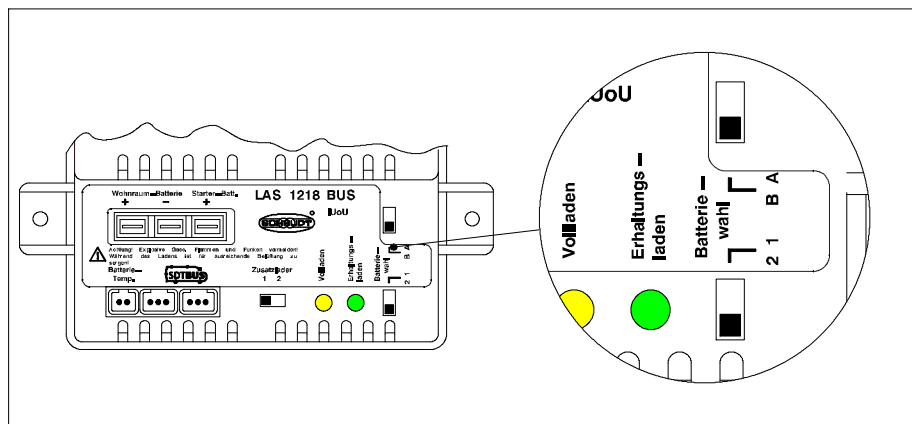


Fig. 8 Battery selector switch



Battery selector switch

- Disconnect the battery charger from the mains before moving the battery selector switch.
- ▲ 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.
- Move the battery selector switch (see Fig. 8) to the correct position using a thin object, such as a ball point pen:

Battery type set*	Switch positions	
	Switch 1/2	Switch A/B
Supply mode	1	A
AGM2	1	B
Lead-gel / AGM1	2	A
Lead-acid	2	B

* See also the table in Section 2.5.2 "Technical details".



- ▲ In supply mode, the charge regulator supplies a constant output voltage
- ▲ The two switches are recessed in the housing to eliminate incorrect operation. A small screwdriver may have to be used to switch setting.
- Then re-check that the battery selector switch is in the correct position for the type of battery used.

2.4.3 Setting the address

When a LAS 1218 BUS is used in Schaudt bus systems, every device connected to the SDTBUS[®] has an "address".

Address switch

Set the "Auxiliary charger" address switch as follows:

One LAS 1218 BUS battery charger as an auxiliary charger:

- Move the "Auxiliary charger" switch to Pos "1"

Two LAS 1218 BUS battery chargers as auxiliary chargers:

- Move the "Auxiliary charger" switch on one device to Pos "1"
- Move the "Auxiliary charger" switch on the other device to Pos "2"

The switch position is not important when the LAS 1218 BUS battery charger is used in conventional systems.

2.4.4 Starting up the system

- Ensure that the battery is connected correctly (or all if more than one is available).
- 230V mains supply must be connected to vehicle.
- Switch on the electrical system of the vehicle (e.g. turn on the main 12V switch on the control panel – refer to the operating instructions for the control panel connected).
- 230V mains cable of the LAS 1218 BUS charger must be connected (the charger does not have its own mains switch).

- Check whether the batteries are being charged (display on the battery charger).

2.5 Technical details

2.5.1 Mechanical details

Dimensions	Approx. 90 x 148 x 248 (H x W x D in mm), including attachment feet
Weight	1.0 kg
Casing	Polyamide blue, similar to RAL 5010

2.5.2 Electrical details

Mains connection	230 V AC voltage +10%, 47 - 63 Hz sinusoidal, protection class I
Current consumption	1.9 A
Suitable batteries	6-cell lead-acid, lead-gel or AGM batteries, 55 Ah and above
Standby current from leisure battery	Approx. 0.3 mA

Conditions for the measurement:

- Approx. 10 minutes after mains isolation without mains connection
- with battery connected (battery voltage 12.6V)

Current-carrying capacity	12V outputs	A maximum of 90% of the nominal current of the relevant fuse may be drawn.
----------------------------------	-------------	--

Battery charging via mains connector	Leisure battery	
	Charging curve	IUoU
	End-of-charge voltage*	Between 14.45V and 14.75V @ 22.5° C battery temperature (and without temperature sensor)
	Charge current	18 A in the entire mains voltage range, electronically limited, minus the charge current into the vehicle battery
	Voltage trickle charging*	Between 13.55V and 13.75V @ 22.5° C battery temperature (and without temperature sensor), with automatic switchover
	New charging cycle, switchover to main charging	As soon as the charging current is limited, switchover to main charging with delay

* Dependent on the battery type set

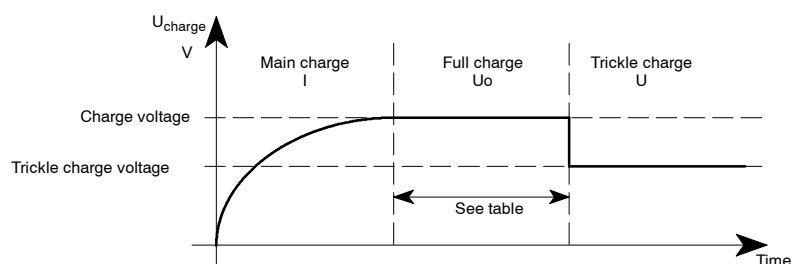


Fig. 9 Example of the charge voltage behaviour with the LAS 1218 BUS battery charger

Battery type set	Charge voltage	Trickle charge voltage	At reference temperature	Time phase
Supply mode	Fixed voltage 12.65V			
AGM2	14.75V	13.70V	22,5° C	4 hours
Lead-gel / AGM1	14.45V	13.70V	22,5° C	12 hours
Lead-acid	14.45V	13.55V	22,5° C	4 hours

The temperature correction of the end-of-charge voltages is -20 mV per degrees of temperature increase (in relation to 25° C) or +20 mV per degrees of temperature decrease (compensation range 0 to 45° C U_{max} 14.9V; the upper voltage limit at 14.9V is in consideration of the maximum input voltage of consumers connected).

- I** Main charge with maximum 18 A charging current, electronically limited, up to end-of-charge voltage. Start of charge also for completely discharged batteries.
- Uo** Automatic switchover to full charge with constant charge voltage (see table above). The duration of the full charge phase is based on the battery type and is set on the device.
- U** Automatic switchover to trickle charging with constant voltage. In the trickle charge phase, a constant voltage is applied to the charger module output. The battery is now fully, or virtually fully, charged.

Standby mode If the charger remains continually connected to the mains after the 3rd phase is reached (U, trickle charging) without the battery being loaded appreciably, the charger switches to standby mode after several days. Refresh cycles are run continually.

Battery charging of the starter battery For mains operation, the starter battery is also charged (with a maximum charge current of about 2.5A).

Operation as power supply unit Output current 18 A, connection of a battery not required
Output voltage 12.65V,
suitable for 12V consumers, smoothed DC voltage

2.5.3 Environmental parameters

Operating temperature -20 °C to +45 °C

Storage temperature -20 °C to +70 °C

Humidity Operation in dry environment only

CE CE mark

2.6 Storage, packaging and transportation

Only transport and store the battery charger if the packing is suitable and ambient conditions are dry.

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Appendix

A EC Declaration of Conformity

Schaudt GmbH hereby confirms that the design of the LAS 1218 BUS battery charger complies with the following relevant regulations:

The original EC declaration of conformity is available for reference at any time.

Manufacturer Schaudt GmbH, Elektrotechnik & Apparatebau

Address Planckstraße 8
88677 Markdorf
Germany

B Accessories

As additional charger Suitable connector cable (MNL or Minifit) to Schaudt electroblock.

As additional charger in bus systems Suitable connector cable (Minifit) and 3-pin bus cable (2 m) to Schaudt electroblock.

As a standalone device Connector set with fuse holders and connector material

For all applications TF 25 A battery temperature sensor

C Customer service

Customer service Schaudt GmbH, Elektrotechnik & Apparatebau
Planckstraße 8
88677 Markdorf, Germany

Phone: +49 7544 9577-16

Email: kundendienst@schaudt-gmbh.de

Web: www.schaudt-gmbh.de

Send in device Returning a faulty device:

➤ Complete and enclose the fault report, see Appendix D.

➤ Send it to the addressee (free delivery).

D Fault report

In the event of damage, please fill in the fault report and send it with the faulty device to the manufacturer.

Device type: _____
Item no.: _____
Vehicle: Manufacturer: _____
 Model: _____
 Own installation? Yes No
 Upgrade? 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 comments:

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