



ProCharger

Operating instructions



Read carefully before start up!

order no. 10004601

The Saito ProChargerS is an automatic plug-in charger for motorcycle, scooter and quad bike/ATV starter batteries. It is adjustable between 2 V, 6 V and 12 V by means of a sliding switch and suitable for all customary standard lead-acid batteries – meaning all batteries included in the Louis assortment. It is furthermore appropriate for charging all maintenance-free gel, EXIDE, HAWKER and AGM microfleece batteries. According to the I-U principle, it charges the lead battery with a maximum current of 400 mA (0.4 A) first, until reaching charging end voltage for the respective battery. This is detected by the charging device which then switches to constant voltage and adjusts the charging current (trickle charging function). In this way the battery voltage constantly stays on an optimal level. Therefore the battery can remain connected to the charging device for a longer period of time. This device is therefore also ideally suitable for winter storage. The LED displays of the charging device provide constant information on the current operating status. The plug-in charger is secured against overload and short-term short circuit (< 1 min.). Pay attention to the charging output polarity! A protective circuit prevents charging in the case of polarity reversal which could damage the battery and the charging device. Polarity reversal is signalled by means of a red light. Connection is enabled via coloured pole clips. Due to a protective circuit, the charging clips do not conduct any voltage, as long as they are not connected to a battery. Voltage can thereby not be measured from the open charging clips, either. The Pro-ChargerS can be optionally connected to the battery with crocodile clips or ring terminals (=eyelets).

**Prominent features:**

- Charging current up to 0.4 A
- Automatic adjustment of the charging current (I-U charging principle)
- For 2 V, 6 V and 12 V lead batteries
- Electronic protection against short circuits and polarity reversal
- Trickle charging (ideal for winter storage)
- Battery may remain permanently connected
- Overload protection
- Altogether 3 LED displays in 3 colours (Mains, Charging and Polarity reversal)

Operating voltage: 220-240 V_~, charging current: up to 0.4 A max.

Temperature range for the application: -10°C to +40°C

Included in the delivery



Saito ProChargerS plug-in charger, cable set with crocodile clips for quick connecting, cable set with ring terminals (eyelets) for a permanent connection to the battery as well as a detailed, German and English instruction manual.



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Intended use

Intended use

The charging device is intended for charging and maintaining the charging of customary standard lead-acid batteries as well as all maintenance-free gel and microfleece batteries suitable for the voltage and charging current stated within the technical data. No primary batteries (zinc-carbon, alkaline etc.) or other types of accumulators than lead batteries are supposed to be connected and charged. Any further use exceeding the specifications does not apply as intended for use. Only the user/operator is liable for damages resulting thereof. Observe the battery manufacturers' instructions.

Any use different to the one described above may lead to a damaging of the product. There are further dangers such as short circuit, fire, electric shock etc.



Warning and safety information

Before using the device, refer to the instructions within this manual. The legislator requires us to provide you with important information for your safety and to notify you about how to avoid damaging of the device and other facilities. The manufacturer is not liable for damages resulting from negligent or intentional disregard of the instructions within this manual!

Please refer to the following additional safety information in order to avoid malfunctioning, damages and disturbances of health:

Please carefully read this instruction manual. It contains a lot of important handling and operating information. Only use the charging device according to these instructions. Dispose packaging material which is not required, or store it at a place inaccessible for children. There is a danger of suffocation!

If the charging device or the connecting cables are damaged, they may no longer be used. The device should be repaired by an authorised service centre.

Explosive gases hazardous to health may develop when charging lead-acid batteries. Therefore only charge the batteries in well-aired rooms. Avoid open fire and sparks. Do not charge any other accumulators or batteries than those listed in these instructions.

Make sure that the ventilation slots of the charging device are not covered.

Only connect to a 230 Volt AC/50 Hz (10/16 A) safety plug.

Do not charge any damaged or defective lead-acid accumulators. Never charge dry cell resp. non-rechargeable batteries.

Do not use the charging device outdoors.

Warnings and safety information

Keep the charging device out of children's reach.

Make sure not to wear any conductive jewellery such as chains, arm-bands or rings while using the charging device.

Avoid getting in contact with battery acid. Battery acid can lead to severe chemical burn! In case you have been exposed to battery acid, immediately rinse with a lot of clear water and seek medical advice, if possible.

The device will heat up, if it is used with charging current over a longer period of time. Therefore check the charging process in regular intervals and immediately pull the plug and remove the battery from the charging device, in case of any irregularities (excessive heating of the battery, the charging device, high gas emission of the battery). When you are not using the cable or cleaning it, pull the power plug and remove the battery from the device. Never pull on the power cable, always on the power plug.

Do not open up or take apart the charging device and do not try to repair it.



Dangers in handling the charging device

The charging device has been developed according to the state-of-the-art and approved safety-related guidelines.

Nevertheless, in the case of operating errors or misuse, there is a risk of danger for:

- the user's or third party's health and life
- the charging device itself
- other material assets in the form of consequential damages

All persons involved in the start-up, operation, maintenance and repair of the charging device must refer to this instruction manual by all means. Defects influencing the safety must be avoided and immediately corrected, if possible.

Do not open the device. Unauthorised opening of the casing and improper repairs, changes of the electronic system, the casing, cables etc. may cause dangers for users of the device, and the warranty claim may expire prematurely. Do not connect or remove any power circuits and do not operate the device during a thunder storm.

Check the charging device for orderly functioning resp. the power or charging cable for externally visible damages while using the device resp. at least once a week.

Notice 1.1

Place the charging device, the battery, the power and charging cable so that no one can step on them or stumble.

In order to avoid condensate (development of condensation water), do not operate the device during frost or the danger of frost. The device may neither be exposed to rain nor humidity in order to avoid the danger of fire or electric shock. Do not let liquid of any kind penetrate into the device. For safety and authorisation reasons (CE) independent converting and/or changing of the device or the connection cables is prohibited.

Dangers

Please contact an authorised service centre, if you have any doubts concerning the functioning, safety or the connection of the device.

Check the product and its cables for damages before any start-up. Do not operate the device, if the protective insulation of the power or charging cable is damaged (squashed, cracked, ripped etc.). If you detect any damages, do not operate the device, but take it to an authorised service centre. Even if the device is not functioning anymore, operation must be stopped immediately and the device must be returned to the manufacturer for repair.

Do not work with the charging device in rooms or adverse environments which contain or might contain combustible gases, fumes or powders. Never cover up airing slots resp. the device. Do not place the device close to sources of warm air such as heatings or the like! Do not expose the device to direct sunlight, a lot of dust, mechanical vibrations or impacts.

Do not operate the device close to or on top of combustible or easily inflammable materials. Use a respective non-combustible base (e.g. a large, thick porcelain tile or a stone plate). Do not place or lead the charging cable or the power cable close to inflammable materials.

Do not use the charging device on a boat or a water vehicle. The battery must be removed from the boat or the water vehicle for charging. It should be charged at a suitable location.

The charging or power cable may not be modified resp. extended or shortened. It may neither be bent or squashed, nor led across sharp-edged parts. Voltage cables or circuits, which the device is connected to, must always be inspected with respect to insulation defects, breakage, squashing or bending before and after the use.

**Notice 1.2**

If a defect (damaging) of the cable is identified, the operation must be immediately stopped. Only operate the device outside the vehicle. Always assure a safe and stable connection when attaching the battery charging clips.

Attention! Do not continue the charging process with a defective battery.

Identifying a defective battery:

- Smell of gas within the room
- Different temperature of individual cells when touching the battery
- Mechanical or thermal deformation of the battery casing or the charging device
- Different liquid condition within the cells resp. leakage

For power/current supply, the charging device must be connected to a normal mains power socket (230 V~/50 Hz).

Operation under adverse surrounding conditions must be avoided by all means. Adverse surrounding conditions include: surrounding temperatures below -10°C or above +40°C, combustible gases, solvents, fumes, dust, easily combustible materials, strong vibrations, strong magnetic fields, such as close to machines or loudspeakers, as well as humidity of more than 80 % and wetness.

Only operate the device in dry, closed off, but well-aired rooms. Avoid direct sunlight.

Danger, Safety

Do not place any containers, e.g. vases, plants or the like on top of or next to the charging device and the battery. Liquids could contaminate the casing and thereby affect electric safety. There is a great risk of fire or fatal injury from electric shock. In this case, immediately remove the product from the mains voltage (switch off the power supply of the power plug first and then remove the plug from the socket!) Subsequently remove the charging device from the battery. Do not operate the charging device again; take it to an authorised service station, to an authorised dealer or the manufacturer for inspection.

Safety

The product is not a toy. It is not suitable for children. Be especially careful in the presence of children! Children could try to stick items into the openings of the casing. This could damage the device; furthermore there is a risk of fatal injury from electric shock!

The product may only be placed, operated or stored out of children's reach. Children could change settings or short-circuit the lead battery which could lead to an explosion. Danger to life!

Do not leave the packaging material carelessly lying around. It could turn into a dangerous toy for children!

This product is only suitable for charging of 2 V, 6 V or 12 V standard lead-acid batteries as well as all maintenance-free gel and microfleece batteries. Other batteries or accumulators may not be charged! Danger of explosion!

Never operate the product without supervision, i.e. check on the charging device and the charging process in regular intervals. Despite the extensive and various safety circuits, malfunctioning or problems with charging a battery cannot be excluded.



Only operate the product in a moderate climate, never in a tropical climate. Refer to the chapter “Technical data” (see page 26) for admissible environmental conditions.

Make sure that the charging device is firmly attached to the power socket. There might otherwise be a danger of injury due to the weight of the falling product. The device could furthermore be damaged. Do not use the device, if it has suffered a heavy impact or blow, or if it has been dropped. In such a case the device must be checked resp. repaired by an authorised service centre.

Although the charging device features numerous safety functions, extensive heating of the battery or the device can never be completely excluded.

Make sure that the device is sufficiently aired throughout the operating phase.

Never cover up the charging device or the connected battery. Keep a sufficient distance (at least 10 cm) between the charging device and the surroundings/wall, in order not to constrict the circulation of air.

Never connect the product immediately to the mains voltage, if it was transported from a cold to a warm room. The developing condensation water could lead to malfunctioning or damaging. There is also a risk of fatal injury from electric shock.

Let the charging device (and the battery) warm up to room temperature, before you connect the charging station to the mains voltage and start charging. This can take several hours!

Maintenance, setting and repair work may only be carried out by a specialist/authorised service centre.

Safety

There are no product parts for the user to set resp. to maintain inside the device.

At schools, educational institutions, hobby and self-help workshops, the operating of the product must be supervised by responsible, trained staff.

If you are not sure about the correct connecting resp. operating or should you have any questions which are not clarified within this instruction manual, please contact our technical customer service (see page 30) or an authorised service centre.

If the charging cable is designated for a separate charging adapter, only use the original adapter offered by your dealer.

Never operate the device without supervision! If the charging device is not in use, separate it from the mains voltage and the battery.

Never stick pointed items (e.g. pins, knitting needles, biro, paper clips etc.) into the airing slots and openings of the device; there is a risk of fatal injury from electric shock as well as damaging of the device!

Do not place any items or containers with liquid (e.g. vases, glasses, bottles) onto or next to the charging device and the possibly connected battery. The charging station as well as a connected battery could be damaged by penetrating liquids. There is also a risk of fatal injury from electric shock!



Failure information

If the device does not function, check the following points:

Is the power socket working, does it conduct electricity?

Is the connected lead battery defective or exhaustively discharged?

Has the charging device been connected to the lead battery with the right poles?

In order to avoid a damaging of the batteries, make sure that the batteries are never exhaustively discharged.

Connection and start-up

If the battery to be charged is built in, you must make sure that all current consumers of the vehicle, such as e.g. ignition, radio, light, telephone, mobile charging devices etc., are switched off. The lead battery must be dismantled or disconnected, if applicable. Refer to the battery or vehicle manufacturer's warning notices by all means. Connect the battery charging device with the mains supply first (power socket also corresponding to the VDE provisions). Depending on the battery you wish to charge, adjust the sliding switch from 2 V to 6 V resp. 12 V. Subsequently connect the red clip (+) with the positive pole and the black clip with the negative pole of the battery. Attention! Never clip connections to the vehicle chassis. The battery must be placed in a well-aired location while charging. The openings for recharging the battery resp. airing (cell plugs) must be opened throughout charging (if available and made for opening). We recommend removing non-maintenance-free batteries from the vehicle during the charging process.

Warning notices

Danger of polarity reversal, short circuit and contact with battery acid – pay attention to the lead battery manufacturers' warning notices by all means. **Attention! Battery acid is severely corrosive.** Immediately treat acid spilling on the skin and clothing with soap suds and rinse with a lot of water. If acid spilling reached the eyes, immediately rinse with a lot of water and seek medical advice.

After charging

The battery charging device must be removed from the mains supply immediately after charging. Always pull on the plug and never the cable! Subsequently remove the charging clips from the battery. Check the acid condition of non-maintenance-free lead batteries. If the acid condition is too low, fill up with distilled water. Pay attention to the battery manufacturer's danger and safety notices.



Short explanation/quick guide for experienced users

Operating the device (all safety and danger notices must be read in advance).

Adjusting the battery voltage: Depending on the battery you wish to charge, adjust the sliding switch to 2 V, 6 V resp. 12 V.

Connecting to the 230 V mains: Connect the charging device to the 230 V mains circuit (power socket). **The green LED "Mains" will light up.**

Connecting to the battery: Attach the red connecting clip of the charging device to the positive pole (+) of the battery and the black clip to the negative pole (-) of the battery. The openings for recharging the battery resp. airing (cell plugs) must be opened throughout charging (if available and made for opening).

We recommend removing non-maintenance-free batteries from the vehicle during the charging process.

Charging process

The yellow "Charging" display will light up as soon as the flow of charging current starts. If however the red "Reversely poled" display lights up, immediately check and change the polarity of the pole clips.

The time until charging end voltage is reached depends on several parameters such as

- the capacity (the more capacity, the longer the charging time)
- the type of battery
- the charging condition of the battery (full, partly charged or empty)
- the surrounding temperature
- the general condition (age) of the battery

At the end of charging (battery is full) normally the yellow "Charging" LED will turn off. With older or high capacity batteries the battery could however be too self-discharging (approx. 1 % of the battery capacity) and the charging device may not identify this enhanced trickle charging current as a completed charging cycle (yellow LED display does not switch off). In this case the plug-in charger will work as a buffer in order to compensate the self-discharging of the battery.

In the case of newer batteries the LED will normally light off when the battery is completely charged. Batteries of different capacities can be charged. With larger batteries, charging time will be prolonged; with smaller batteries, it will be shortened.



For the charging operation itself it does not matter whether the battery is only partly or completely discharged. The battery can also remain permanently connected to the charging device; however the surrounding temperature should not exceed approx. 40°C! If the battery is connected to the charging device with reversed polarity by mistake, this will be signalised by means of a red "Polarity reversal" LED and the charging current will be turned off at the same time.

Charging shut-down

The charging devices features a shut-down function which automatically ends the charging process when reaching charging end voltage and independently switches to trickle charging mode.

The yellow charging display will switch off in trickle charging mode resp. if the charging current is reduced to less than 80 mA.

Error display

The "Polarity reversal" LED lights up:

The battery was reversely poled and connected to the charging device.

Technical data

Operating voltage: 220-240 V_~, charging current: up to 0.4 A max.

Temperature range for the application: -10°C to +40°C

Loading device dimensions [W x H x D]: 60 x 80 x 46 mm

Scope of delivery

Saito ProCharger S plug-in charger, cable set with crocodile clips for quick connecting, cable set with ring terminals (eyes) for a permanent connection to the battery as well as a detailed, German instruction manual



Warranty

The dealer/manufacturer selling the device provides a warranty of two years as from the handover of the product with respect to the material and the production of the device.

In the case of a defect, the purchaser is only entitled to supplementary performance. Supplementary performance either includes rectification of defects or delivery of a replacement product. Exchanged devices or parts become property of the dealer.

The purchaser must immediately notify the dealer of any determined defects. Evidence of the warranty claim must be provided by means of an orderly confirmation of purchase (receipt, invoice, in applicable).

Defects caused by improper treatment, operation, storage as well as force majeure or other influences are not covered by the warranty.

We are not liable for damages resulting from modifications carried out by the user, and all third party claims arising will be held free and harmless. Unless otherwise agreed, our general terms and conditions are applicable in their current version.



Information about environment protection

At the end of its service life this product may not be disposed via the normal domestic waste, but must be handed in at a collecting point for recycling of electric and electronic devices. This is indicated by the symbol on the [redacted] product, the instruction manual and the packaging.

Potential recyclables can be recycled according to their labelling. By means of material recycling or other forms of recycling you are making an important contribution to the protection of our environment.

Packaging

When disposing the packaging please pay attention to the applicable laws of environmental protection and waste disposal. The disposal of outer packaging is possible via the normal domestic waste. If you wish to dispose the system components, please observe the applicable laws on disposing electronic waste.

Cleaning

Use a soft cloth and a small amount of cleaning agent for cleaning the device. Strong solvents such as thinners or benzene as well as scouring agents may not be used, since they attack the surface.

Dispose the cleaning cloths and excess cleaning agents in an environmentally friendly way. For safety reasons the power plug must be generally disconnected and the charging cable removed from the battery when cleaning! Avoid cleaning agents getting inside the device!

If you have any questions on the product and/or this instruction manual, please contact our technics centre at the fax number: 0049 (0) 40 – 73 41 93 58 resp. by email: technikcenter@louis.de before the assembly resp. start-up of the product. We will quickly help you. In this way we commonly guarantee that the product is used in a proper way.



The winners!

Advert

DELO® and Saito® Starter Batteries exclusively sold by Louis!

- OEM quality for more than 25 years – proven millions of times
- Enormously high service life
- Very high cold start performance
- ABS suited
- A grade lead plates
- Incl. high-performance pole grease
- Producer certified according to ISO 9001



From the test of the DELO battery: "[...] DELO with highest cold start performance of the entire test field".



- Optimal starting power
- Very long life
- Incl. high-performance pole grease
- Producer certified according to ISO 9001
- Very cost-effective due to bulk purchase

From the test of the Saito battery: "[...] The price-performance ration is unbeatable in any case, the test results are first-class".

**DELO® and Saito®
Starter Batteries:
Winners**

**MOTORRAD NEWS
TIPP**

Magazine 1/2007

9 starter batteries tested (5 standard, 2 pure lead/fleece, 2 gel batteries), including 2 test winners (DELO and Saito standard)