



Owner's manual for the Accumulator Charging System





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Introduction:

The charging device is a modern fully automatic charger which can not only charge accumulators correctly and efficiently but also monitors them.

Relevant charging data like current, voltage and charged capacity are displayed. In addition, the system has an integrated memory from which the manufacturer can read out further values and error statuses.

The charger can be used as a static device or be carried as a mobile unit.



Please carefully read through this owner's manual and the safety instructions before the first starting.

- **Note:** Please mind that new accumulators do not reach their full capacity until several charging-discharging-cycles are completed. Older batteries often do not reach their full capacity any more and it appears that the charging process is not finished correctly (e.g. the charger reports the error: maximal charging time exceeded). Do not charge only just discharged accumulators. The temperature of the battery while connecting with the charger should be beneath 45°C in order to prevent an early switch-off.

1. Be aware of the following safety instructions before starting:



The charger must only be used with the connecting cables delivered by the manufacturer. The cables must not be extended, shortened or connected in any other way.



Always disconnect the power plug 230V first and then disconnect the accumulator cable from the accumulator.



It is not allowed to connect any non-rechargeable batteries or accumulators which had not been delivered by the manufacturer to the charging device.



Always check the device for damages to the cables, connectors, casing etc. It is not allowed to use a defective charger.



Always protect the device from direct solar radiation, dust, humidity and rain.



In case of a thunder storm, always unplug the power plug (230V) from the electrical outlet.



Always unplug the power plug (230V) and disconnect the accumulator from the charging cables after the charging is finished.



For charging LiPo-accumulators, it is only allowed to use the charging device ACS18 with integrated balancer.



Owner's manual for the Accumulator Charging System

2. Intended usage of the charging device:

- The charger must only be used for charging this type of battery that was delivered from the manufacturer for use with the charger.
- LiPo-accumulators and other types of cells which tend to drift on the voltage side are only allowed to be charged with charging devices with an integrated balancer (ACS18).
- The charger must not be used for purposes other than intended.

3. Connecting order:

- a. First, connect the black negative pole of the battery to the charger.
- b. Then, connect the red positive pole of the battery to the charger.
- c. If the device has an integrated balancer system, connect the 20-pole balancer connector to the battery.
- d. Only now, plug the power plug into the 230V electrical outlet.

Now, the charging system starts the charging process after a short self-test pause (up to 50 seconds).



Never leave the accumulator unattended while charging.

Disconnect the battery in reverse order as described above!

4. Error messages:

The charging device monitors all relevant charging data und reports errors by a flashing LED. The appearance of a fault causes the immediate switch-off of the charging current.

The errors reported by the flashing LED are described in the following:

No LED illuminating/flashing after connecting:

1. **Check battery connectors**
2. **Check power connection**
3. **Contact the manufacturer**

The LED-fault flashes up iterative: n times flashing / 2 seconds of pause / n times flashing... with n = number of flash pulses. The following table lists up the error descriptions corresponding to the error codes:

Flash pulses	Error description
1 x	Breakdown of the temperature sensor of the charger
2 x	Time limit of the charging process exceeded
3 x	Breakdown of the temperature sensor of the battery (if parameterized)
4 x	Temperature of the charging device is too high
5 x	Accumulator voltage too high at engaging
6 x	Temperature of the battery too low (if parameterized)
7 x	Temperature of the battery too high (if parameterized)
8 x	Battery was disconnected from charger while charging
9 x	Wrong checksum of the parameters in the flash
10 x	Problem with current measurement
11 x	Wrong parameter values in the flash
12 x	No current can be measured
13 x	Charging current measurement out of tolerance
14 x	Charging current can not be controlled correctly



Owner's manual for the Accumulator Charging System

5. Types:

ACS 18 (with integrated balancer):

ACS 9 (without Balancer):



Status display for displaying relevant data while charging

ACS x Frontansicht:



Status display:

Bezeichnung	Bedeutung
Current in A	Ongoing charging current
Voltage in V	Ongoing charging voltage at the charger's output
Power in W	Ongoing power output in Watt
Energy in Wh	Ongoing charged Energy in Wh
Power peak in W	Power peak of the ongoing charging in Watt
Current peak in Ap	Current peak of the ongoing charging in Ampere
Min. Voltage in V	Minimal voltage at engaging
Voltage in V	Ongoing charging voltage at the charger's output
Power in W	Ongoing power output in Watt

These data are displayed alternate on the left bottom

These data are permanently displayed on the display



Owner's manual for the Accumulator Charging System

6. Technical specifications:

Typ	ACS 9	ACS18:
Nominal accumulator voltage	14 cells Li-Ion	14 cells Li-Ion/Lipo
Nominal charging current	9A	18A
AC power	600W	1200W
AC voltage	230V~50/60Hz	230V~50/60Hz
Humidity	15 to 95% not condensing	15 to 95% not condensing
Weight incl. cables	2.1 kg	4.0 kg
Dimensions:	140mm*250mm*90mm	240mm*250mm*90mm
Protection system:	IP21	IP21
Environmental temperature:	-25 to 35 °C	-25 to 35 °C
Technical norms:	EN55 022:1998, EN50 082:1997, EN61000-4-3/96, EN61 000-4-2/1995, EN61000-4-4/1995, IEC 1000-4-11/1994, IEC 1000-4-6:1996	EN55 022:1998, EN50 082:1997, EN61000-4-3/96, EN61 000-4-2/1995, EN61000-4-4/1995, IEC 1000-4-11/1994, IEC 1000-4-6:1996
Safety:	EN30 335-2-29	EN30 335-2-29

7. Service

In case of a fault or damage(s), post the devices and a formulation of the problem(s) to the manufacturer:

Geiger Engineering
 Kronacher Str. 41
 96052 Bamberg
 Phone: (0049)-951/9649-220

We now wish you lots of fun and success with your **Accumulator Charging System**.