

# SC750

## SmartCharger

Intelligent charger for lead acid / AGM / VRLA / LiFePO4 batteries



Abbildung ähnlich / device similar to figure



SC750 - derivative table

| Type         | Input voltage | Typ. output voltage (configurable)* |                  |        | Output current | Cat. No.      |
|--------------|---------------|-------------------------------------|------------------|--------|----------------|---------------|
|              |               | Charge<br>Pb / LiFe                 | LTC<br>Pb / LiFe | FSV    |                |               |
| SC500GEN2-14 | 100-240 VAC   | 14,4 / 14,0 V                       | 14,4 / 14,0 V    | 14,0 V | 35 A           | 107144/20/000 |
| SC750-14     | 100-240 VAC   | 14,4 / 14,0 V                       | 14,4 / 14,0 V    | 14,0 V | 50 A           | 107146/x/yyy  |

\* Charging voltages can be customized on request. The actual charging voltage depends on the prevailing operating state.

#### Accessories /x/:

- /0/: WITHOUT accessories
- /20/: with power cable Europe and charging cable set (3.0m/6mm<sup>2</sup>) with charging clamps
- /21/: with power cable USA/Canada/Japan (3.0m/6mm<sup>2</sup>) with charging clamps
- /22/: with power cable China/Australia/New Zealand and charging cable set (3.0m/6mm<sup>2</sup>) with charging clamps
- /23/: with power cable UK/Ireland/Hong Kong and charging cable set (3.0m/6mm<sup>2</sup>) with charging clamps

Setting /yyy: see 9 - Function Description

## SmartCharger

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## 1 Input

|                                  |                                    |                                                                                                   |
|----------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------|
| Input voltage range AC           | 100 - 240 VAC                      | tolerance: 85 - 265 VAC                                                                           |
| Input frequency                  | 50 - 60 Hz                         | tolerance: 45 - 65 Hz                                                                             |
| Input voltage range DC           | 140 - 340 VDC                      | tolerance: 130 - 350 VDC                                                                          |
| Inrush current                   | No inrush current                  | active regulated current limitation<br>( $I_{inrush} < \text{current consumption at full load}$ ) |
| Current consumption at full load | $< 6 \text{ A} / < 8 \text{ A}$    | SC500GEN2-14 / SC750-14                                                                           |
| Power factor                     | $> 0,95$                           | -                                                                                                 |
| No-load power                    | $< 3 \text{ W}$<br>$< 6 \text{ W}$ | On Standby (operating mode selection)<br>With active load detection                               |

## 2 Output

|                                           |                                                      |                                                                                                                          |
|-------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Output voltage                            |                                                      | see SC750 - derivative table on page 1                                                                                   |
| Continuous output current                 | max. 35 A<br>max. 50 A                               | SC500GEN2-14<br>SC750-14                                                                                                 |
| Current limiting                          | $< 1 \% I_{max}$                                     | of max. output current                                                                                                   |
| Output power                              | $< 525 / 750 \text{ W}$                              | SC500GEN2-14 / SC750-14<br>automatic power regulation depending on input voltage, ambient temperature and load condition |
| Nominal output voltage $U_{nom}$          | 14,0 VDC                                             | Reference value for tolerance specifications                                                                             |
| Initial tolerance $N_{initial}$           | $\pm 0,5 \% U_{nom}$                                 | -                                                                                                                        |
| Load regulation tolerance $N_{load}$      | $+ 0,5 \% / -2,0 \% U_{nom}$                         | -                                                                                                                        |
| Ripple & Noise $N_{RN}$                   | $\pm 1,8 \% U_{nom}$                                 | $< 300 \text{ mVpp}$ , typ. $< 200 \text{ mVpp}$ , 20 MHz measurement bandwidth                                          |
| Overall toleranz $N_{overall}$ 0 - 20 MHz | $+ 2,8 \% / - 4,3 \% U_{nom}$                        | $N_{overall} = N_{initial} + N_{load} + N_{RN}$                                                                          |
| Load regulation dynamic (10-90%)          | $< 10\%$                                             | -                                                                                                                        |
| Recovery time                             | $< 2 \text{ ms}$                                     | -                                                                                                                        |
| Temperature drift                         | $< 1 \% (-25^{\circ}\text{C}...+60^{\circ}\text{C})$ | typ. $0,5 \% (-25^{\circ}\text{C}...+60^{\circ}\text{C})$ ; typ. $0,2 \% (0...40^{\circ}\text{C})$                       |

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## 3 Environment

|                                        |                 |                                 |
|----------------------------------------|-----------------|---------------------------------|
| Operating temperature                  | -25 °C...+60 °C | automatic output power derating |
| Storage temperature                    | -40 °C...+85 °C | -                               |
| Humidity                               | max. 95%        | -                               |
| Dewing                                 | not allowed     | -                               |
| Pollution degree according to EN61010  | 2               | -                               |
| Climatic category according to EN60721 | 3K3             | -                               |
| Protection class according to EN60529  | IP54            | without connection system       |

## 4 General data

|                    |                     |                                                                                      |
|--------------------|---------------------|--------------------------------------------------------------------------------------|
| Protective system  | Class I             | -                                                                                    |
| Isolation voltage  | 3000 VAC<br>500 VDC | Input / output<br>Output / enclosure                                                 |
| Efficiency         | typ. 91%            | -                                                                                    |
| Enclosure          | Metal               | Especially designed for car manufacturer and service stations. Plastic caps lateral. |
| Service interface  | Mini-USB            | -                                                                                    |
| Dimensions (LxWxH) | 345 x 190 x 84 mm   | see fig. 7.1                                                                         |
| Weight             | approx. 5,2 kg      | with charging cable, without mains cable and without packaging                       |

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## 5 Standards

### EMC (Electromagnetic compatibility)

| Title                      | Standard    | Data                                          |
|----------------------------|-------------|-----------------------------------------------|
| RF-Emission                | EN55011     | group 1, class B                              |
| Harmonic current emissions | EN61000-3-2 | -                                             |
| Immunity                   | EN61000-6-2 | Immunity standard for industrial environments |

### Electrical safety

| Title             | Standard                                       | Data |
|-------------------|------------------------------------------------|------|
| Electrical safety | EN60335, UL1236,<br>CAN/CSA C22.2 No. 107.2-01 | -    |

## 6 Installation and Safety Instructions

In addition to the general installation and safety instructions for SmartCharger, the following values and supplements apply:

|                                    |                    |                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cooling                            | Natural convection | Temperature monitoring (Automatic electronic power reduction at too high temperatures due to insufficient or missing cooling)                                                                                                                                                                                                            |
| Mounting position                  | -                  | any                                                                                                                                                                                                                                                                                                                                      |
| Connection input                   | -                  | IEC/EN 60320, C14                                                                                                                                                                                                                                                                                                                        |
| Connection output                  | -                  | approx. 3 m Charging cable with integrated plug contact / predetermined breaking point (on the device side a cable piece of approx. 1m is permanently mounted and a cable piece including charging tongs of approx. 2 m can be flexibly adapted)                                                                                         |
| Input fuse                         | -                  | F1 (10 A T)/250 V (6,3x32) mm                                                                                                                                                                                                                                                                                                            |
| Transient over voltage protection  | -                  | Varistor (6,5 kA / 190 J)                                                                                                                                                                                                                                                                                                                |
| Reverse polarity protection output | -                  | In case of wrong polarity the charging process is interrupted                                                                                                                                                                                                                                                                            |
| Charging batteries                 | -                  | The device is approved solely for the conditioning of one lead-acid, lead-gel, AGM, fleece and lithium-ion accumulator in vehicle electrical systems with the mode suitable for the accumulator in question. The typical nominal battery capacity is in the range of 5 Ah - 150 Ah. Attention: Do not charge non-rechargeable batteries! |

The general installation and safety instructions for charging computers can be found at [www.deutronic.com](http://www.deutronic.com)

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## 7 Dimensions

All dimensions are given in millimeters and have a general tolerance according to DIN ISO 2768 - m. The integrated output cables (included in delivery) are not shown in this drawing.

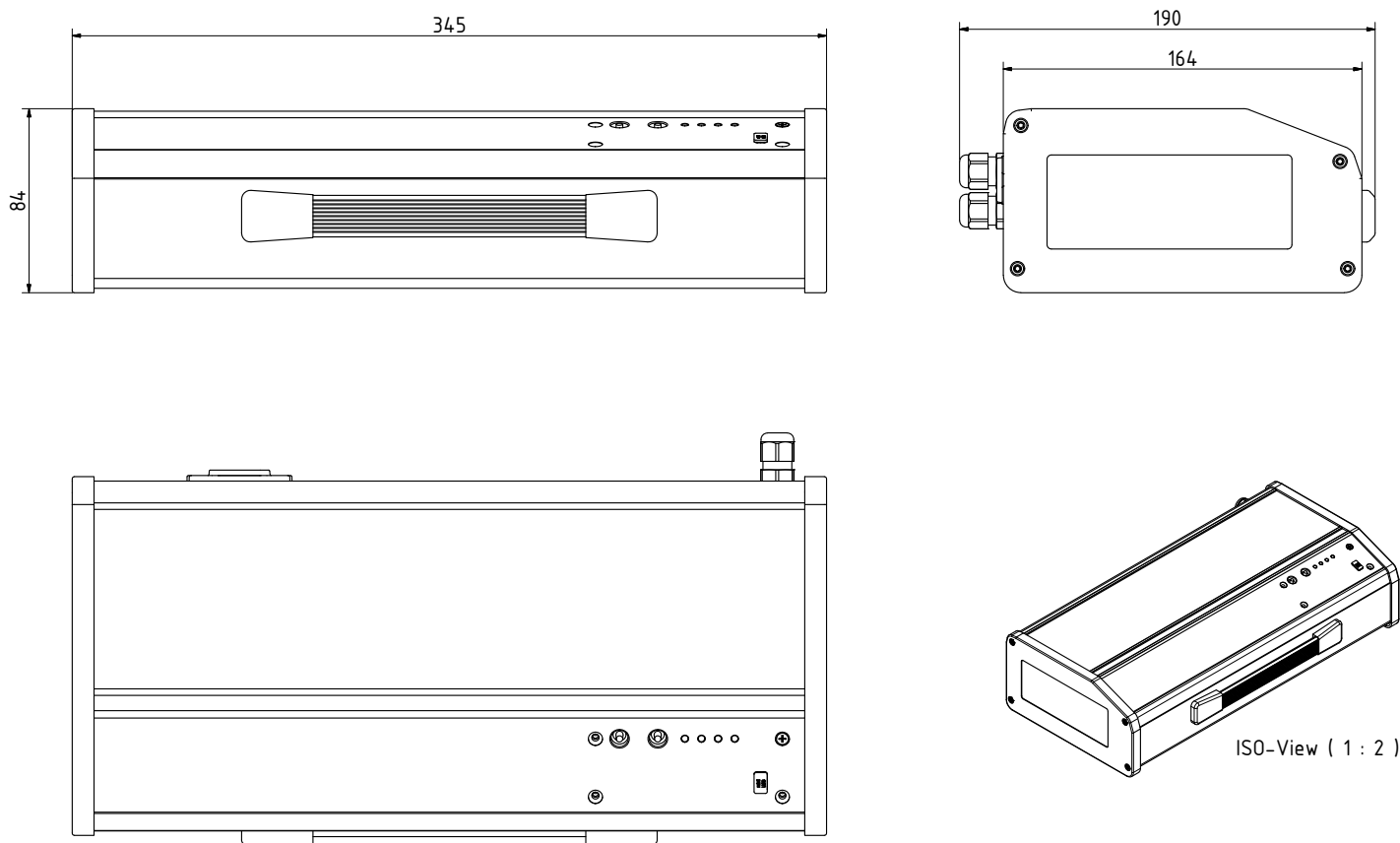


Figure 7.1: Dimensions

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## 8 Characteristics

All shown characteristics were measured at 25 °C ambient temperature, an input voltage of 230 VAC and an input frequency of 50 Hz, unless otherwise indicated.

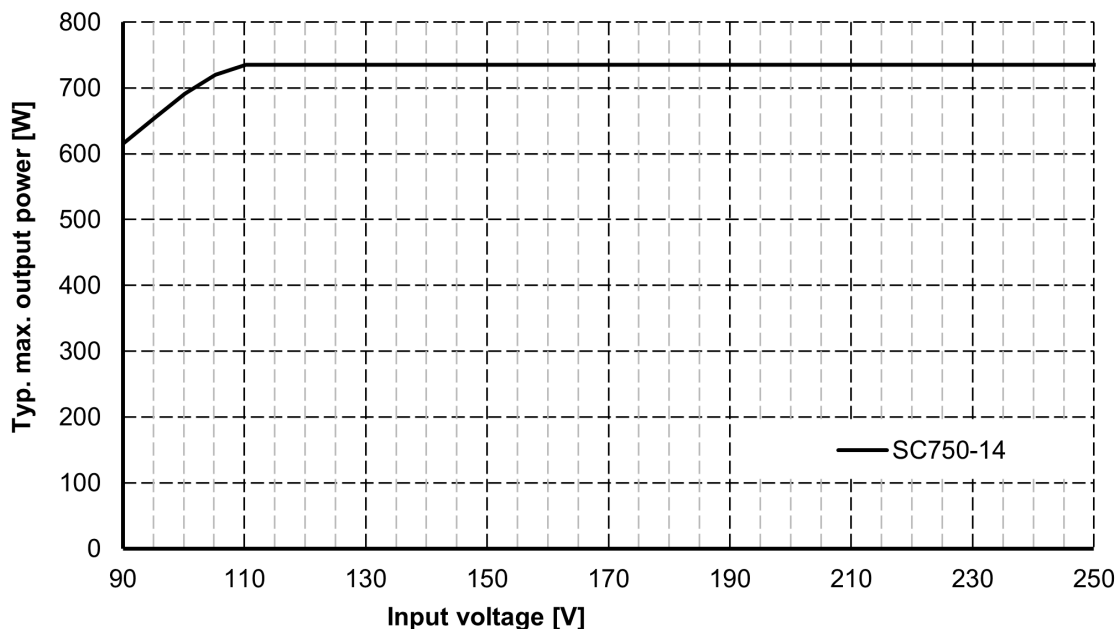


Figure 8.1: Maximum output power as a function of input voltage

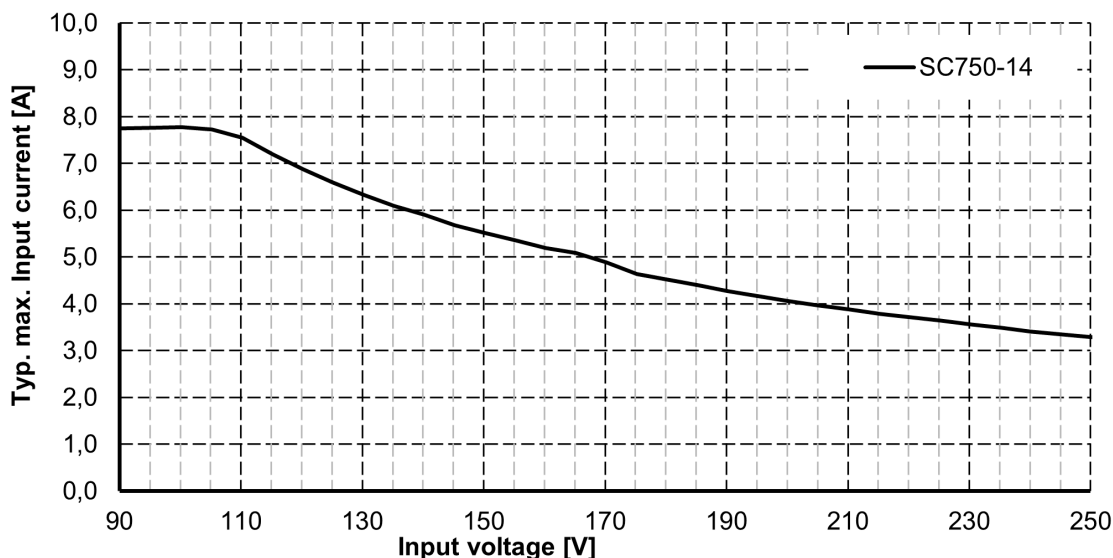


Figure 8.2: Maximum input current as a function of input voltage

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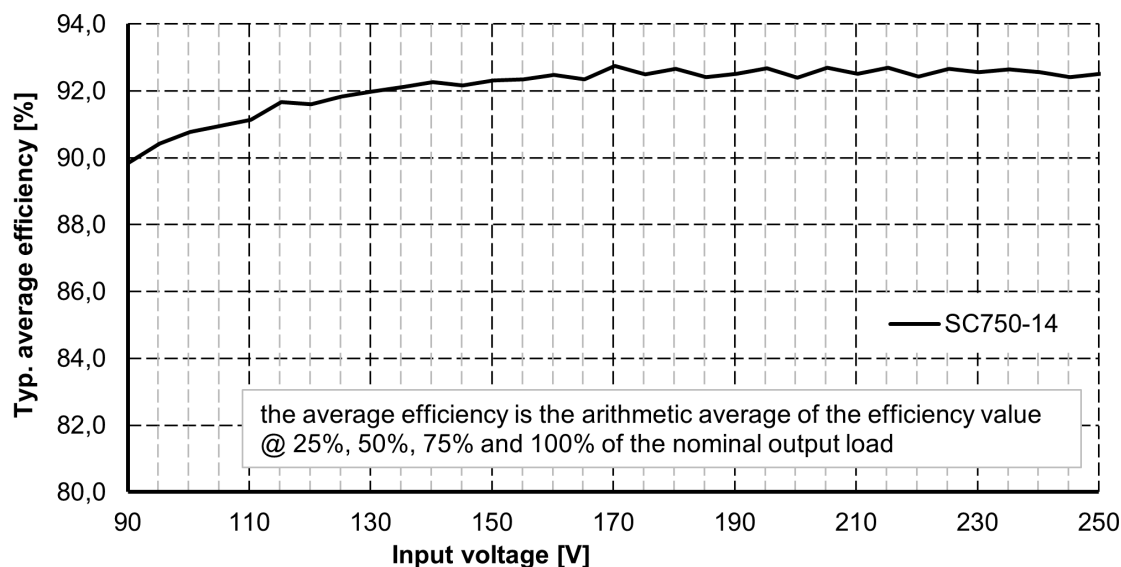


Figure 8.3: Average efficiency SC750-14

## 9 Function description

### Features

Load detection, reverse polarity, short circuit and over voltage protection (OVP), cable compensation

### Output (Factory settings)

Output voltage monitored by OVP (Over Voltage Protection) and complete disable of output current if preset charging voltage limit is exceeded. Extensive functional description of the charger's features - see operating instructions.

### Charge Mode (Factory settings)

For more details on the individual modes, such as LTC Pb, LTC, LiFe, refer to the corresponding operating instructions.

### Current limiting

According to the operation state the current limit is automatically adjusted during operation.

### Operating modes

Standard setting /000

- Pb-Charging
- Li-Charging
- Pb-Long-Time-Charging (Pb-LTC)
- Li-Long-Time-Charging (Li-LTC)
- External-Power-Supply (FSV)
- PowerUp1
- PowerUp2

Hint: For more details, please refer to the corresponding operating instructions.

Customized setting /yyy

on request:

- universal configurations and charging programs

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