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SC300 / 500
SmartCharger

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

Abbildung ähnlich / device similar to figure

UK
CE CA CSA KC

SC300 / 500 - derivative table

Type	Input voltage	Typ. output voltage (configurable)*			Output current**	Cat. No.
		Charge Pb / LiFe	LTC*** Pb / LiFe	FSV****		
SC300-14	100-240 VAC	14,4 / 14,0 V	14,4 / 14,0 V	14,0 V	20 A	107143/20/000
SC500-14	100-240 VAC	14,4 / 14,0 V	14,4 / 14,0 V	14,0 V	35 A	107142/20/000

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

** See functional description "current limiting"

*** Long term charge

**** Power supply mode

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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 (I_{inrush} < current consumption at full load)
current consumption at full load	< 4 A / < 6 A	SC300-14 / SC500-14 (see characteristic in fig. 7.2)
Power factor	> 0,95	typ. 0,98
No-load power	typ. 2 W typ. 4,2 W	On Standby (operating mode selection) With active load detection (see characteristic in fig. 7.3)

2 Output

Output voltage		see SC300 / 500 - derivative table on page 1
Continuous output current	max. 20 / 35 A	SC300-14 / SC500-14
current limiting	typ. ± 0,5%	of max. output current
Output power	< 300 / 515 W	SC300-14 / SC500-14 automatic power regulation depending on input voltage, ambient temperature and load condition, see characteristic in fig. 7.1
Nominal output voltage U_{nom}	15,0 VDC	Reference value for tolerance specifications
Initial tolerance $N_{initial}$	$U_{nom} \pm 0,5$ %	-
Load regulation tolerance N_{load}	U_{nom} +0,5 % / -2,0 %	-
Ripple & Noise N_{RN}	< ± 1,8% U_{nom}	< 550 mVpp, typ. < 300 mVpp, 20 MHz measurement bandwidth
Overall tolerance $N_{overall}$	U_{nom} + 2,8 % / - 4,3 %	$N_{overall} = N_{initial} + N_{load} + N_{RN}$
Load regulation dynamic (10-90%)	< 10%	-
Recovery time	< 2 ms	-
Temperature drift	< 1% (-25 °C...+60 °C)	typ. 0,5% (-25 °C...+60 °C); typ. 0,2% (0...40 °C)

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| Operating modes | Charge Pb /
Charge Pb LTC /
Charge LiFe /
Charge LiFe LTC /
Power supply /
PowerUp /
Automatic cable compensation | Other modes on request. By default on delivery cable compensation is not activ |

3 EMC (Electromagnetic compatibility)

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

4 Enviroment

Operating temperature	-25 °C...+60 °C	automatic output power derating
Storage temperature	-40 °C...+85 °C	-
Humidity	max. 95%	no operation in presence of dewing allowed
Pollution degree	2	acc. to EN50178
Climatic category	3K3	acc. to EN60721

5 General data

Electrical safety		EN60335, UL1236, CAN/CSA C22.2 No. 107.2-01
Protective system	Class I	-
Isolation voltage	3000 VAC 500 VDC	Input / output Output / enclosure
Efficiency	typ. 91%	see characteristic in fig. 7.4 und fig. 7.5
Enclosure		Metal (Aluminium), especially designed for car manufacturer and service stations. Plastic caps lateral.
Service interface	Mini-USB	-
Dimensions		see fig. 8.1
Weight	approx. 4,8 kg	without cables and nor package

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Alle Daten gemessen bei 230V/50Hz, 20 / 35A und 25°C Umgebungstemperatur, wenn nicht anders gekennzeichnet. I All parameters are specified at 230V/50Hz, 20 / 35A and 25°C ambient, if not marked otherwise.
Technische Änderungen und Irrtümer vorbehalten. I Technical modifications and mistakes reserved.

Mit den Angaben im Katalog und in den Datenblättern werden Produkte beschrieben, nicht Eigenschaften zugesichert. Belastung mit „Grenzwerten" (einfache Kombination) ist zulässig ohne bleibende Schäden der Produkte. Betrieb der Geräte mit Grenzwertbelastung für längere Zeit kann die Zuverlässigkeit beeinträchtigen. Grenzwerttoleranzen unterliegen üblichen Schwankungen. I Products are described by information contained in catalogs and data-sheets. It is not considered as assured qualities. Stresses listed under „Maximum Rating"(one at a time) may be applied to devices without resulting in permanent damage. The operation of the equipment for extended periods may affect device reliability. Limiting value tolerance are subject to usual fluctuation margins.

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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

The general installation and safety instructions for charging computers can be found at www.deutronic.com

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7 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.
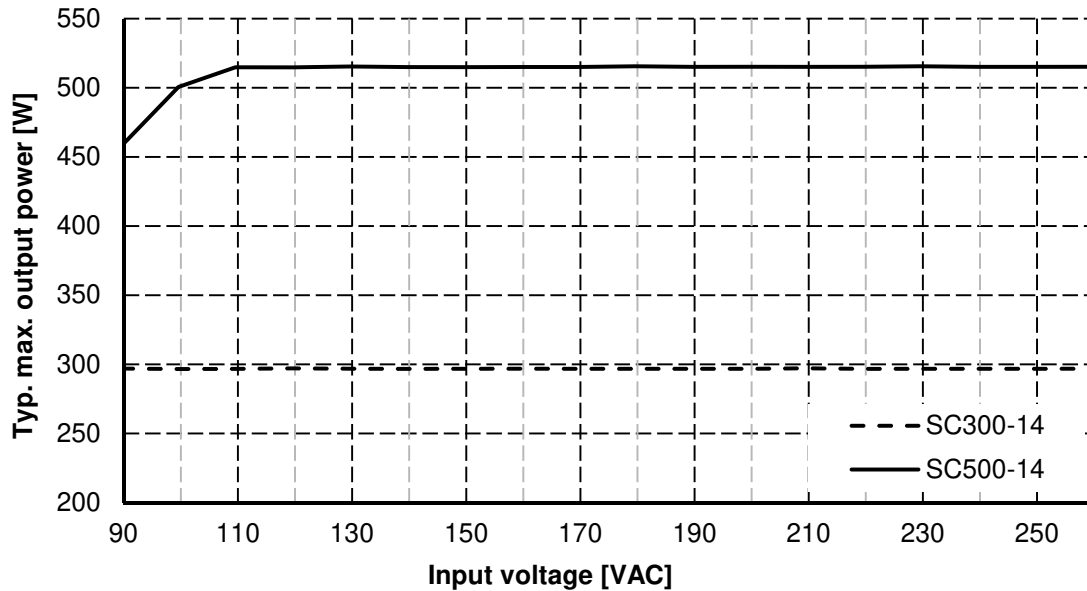

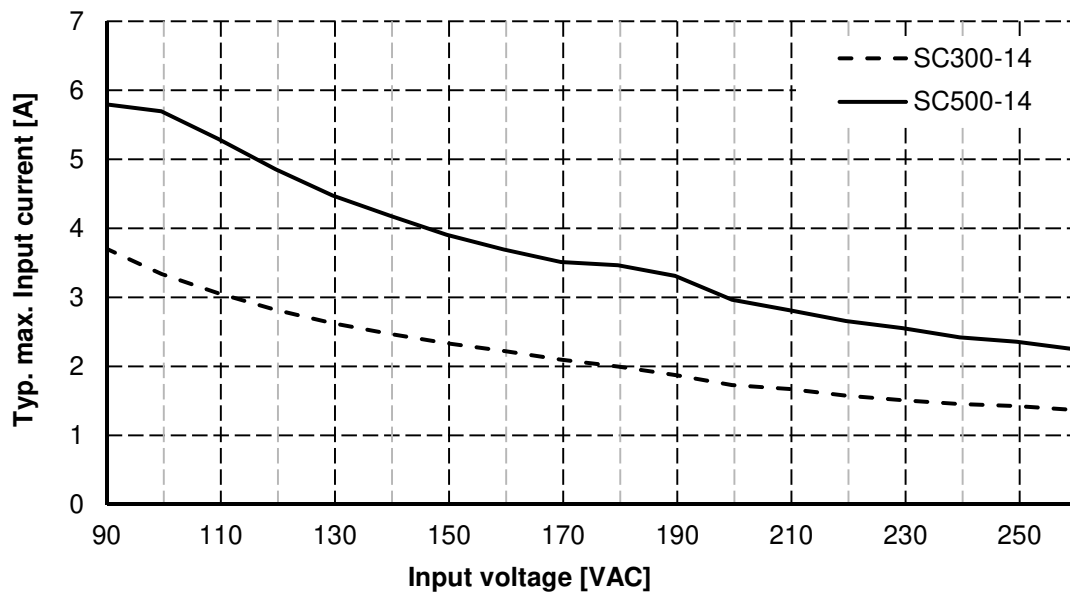Figure 7.1: Maximum output power as a function of input voltage

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Figure 7.2: Maximum input current as a function of input voltage

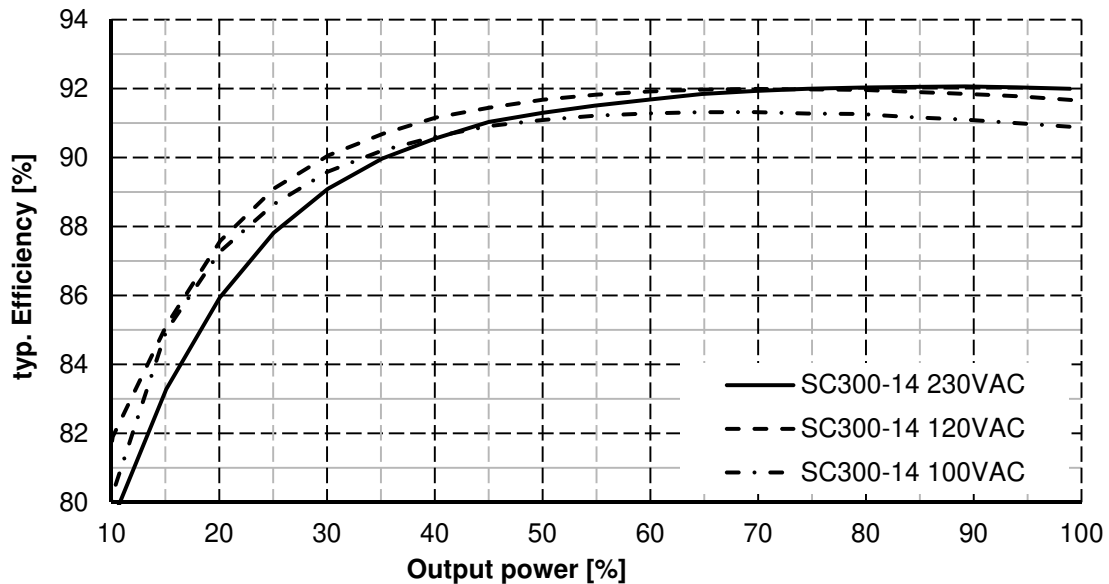Figure 7.3: No-load power consumption as a function of input voltage
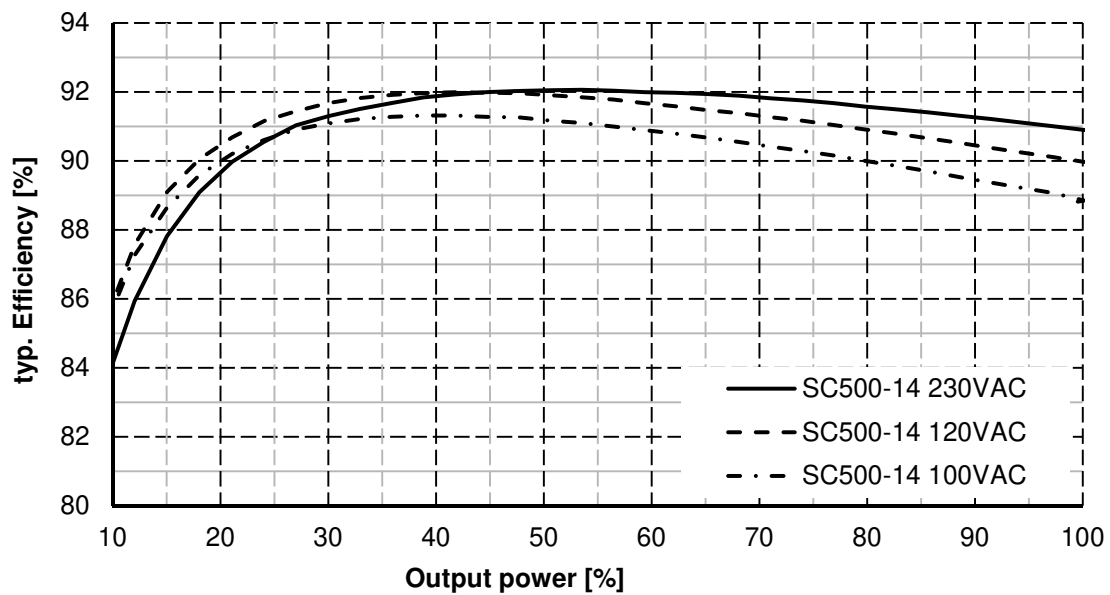

Figure 7.4: Typical efficiency SC300-14

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Figure 7.5: Typical efficiency SC500-14

SmartCharger

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8 Dimensions

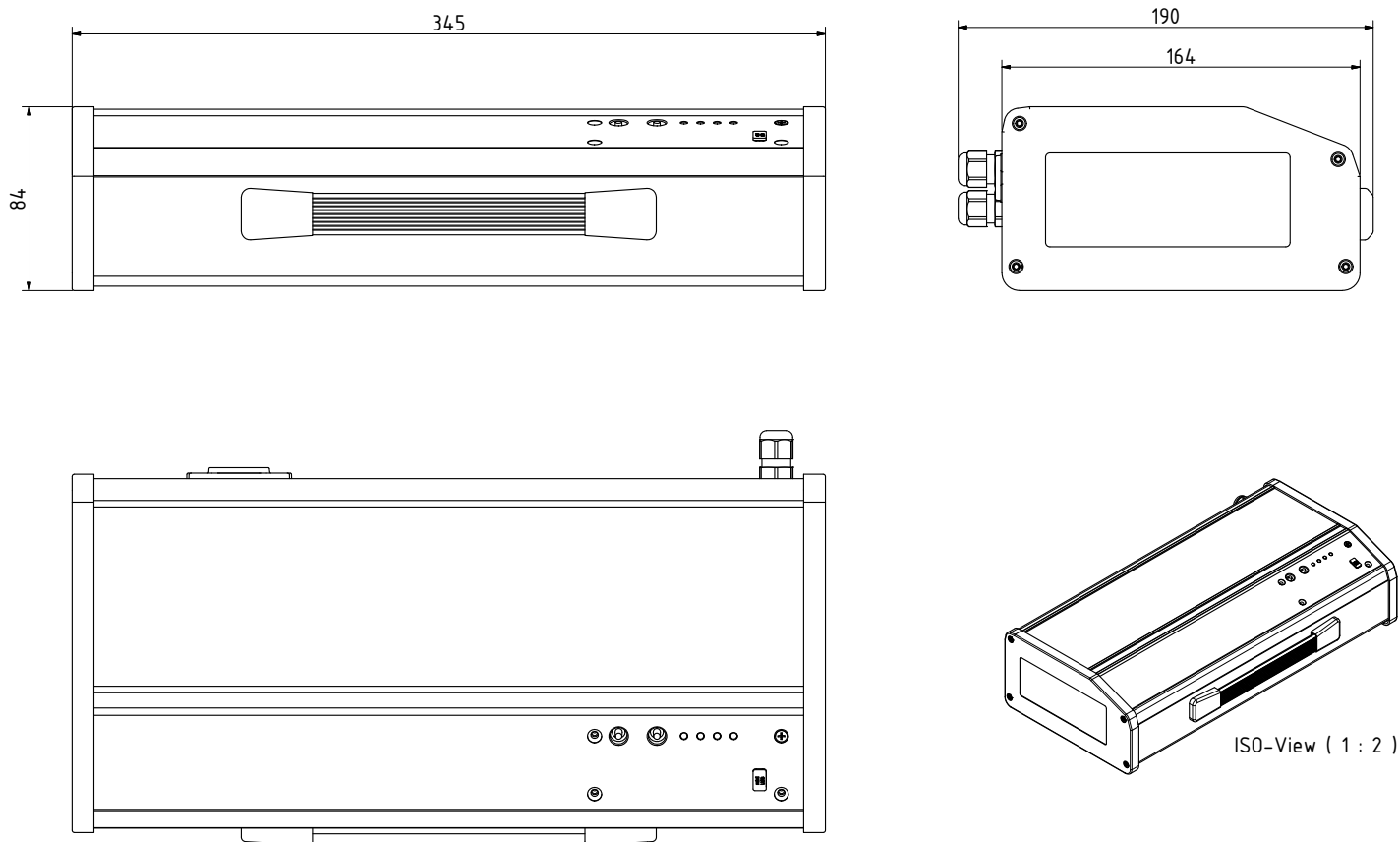All dimensions are given in millimeters and have a general tolerance according to DIN ISO 2768 - m. The integrated output cables (included in delivery) are not shown in this drawing.

Figure 8.1: Dimensions

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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.

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