



# COTEK

Factory representation  
for more than 25 years

**Inverters & Chargers**  
DC/AC - AC/DC

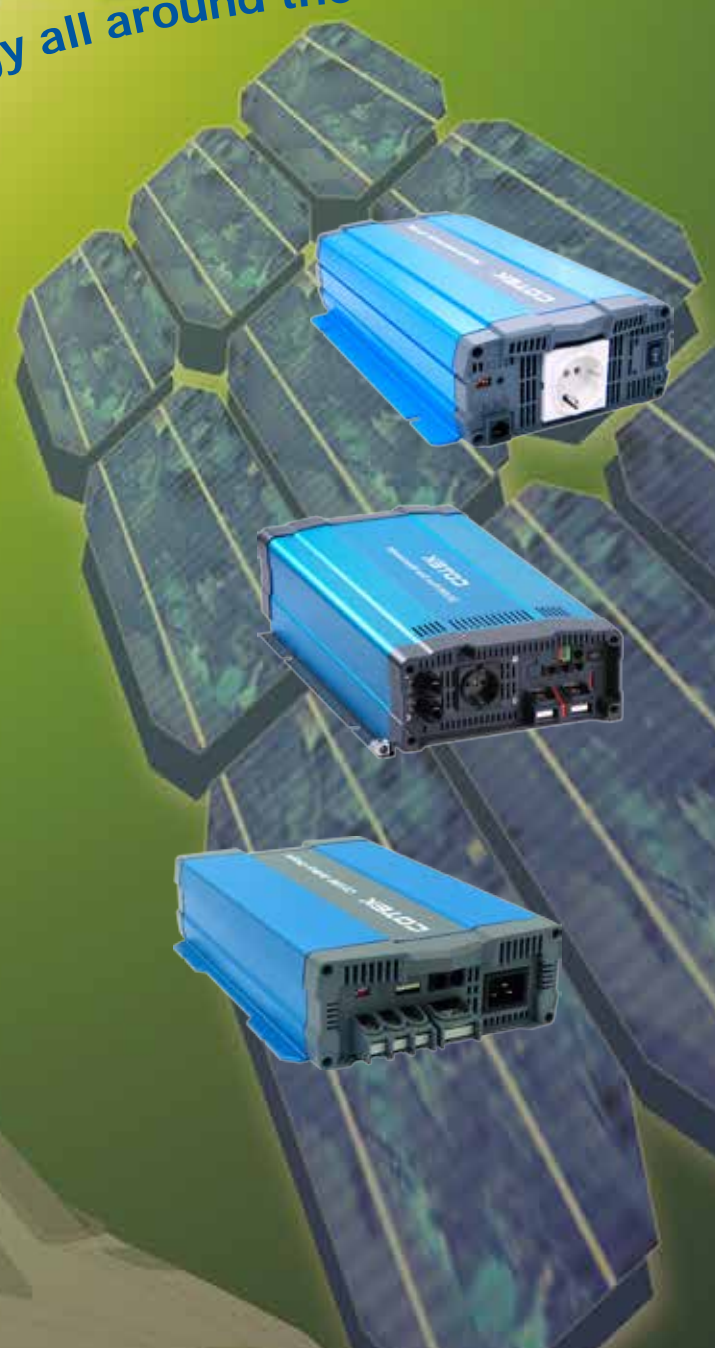


*trust creates energy™*

*Energy technology all around the vehicle*



the mobile  
TRUSTEC lithium battery



**Cable Systems & Chargers**  
IP 44/65



## We offer you the complete electrotechnical additional vehicle equipment also for electric vehicles

Our technology-partners are:

**COTEK**

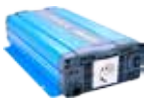
Pure Sine Wave Inverter and Chargers in perfection

**DEFA**

Chargers IP44/65, Car plugs / sockets, cables

**TRUSTEC**

Insulation monitors, cable sets, energy installation sets, roof solar panels, E-HYB Inverter



1. **COTEK 230 V Wave Inverter**  
SE series 350 W, SP series from 700 - 4000 W in 12/24/48 V for TR 40 mains connection and ECU connection, SD series 1500 -3500 W, scalable up to 10 KW, also 3-phase 400 V with integrated mains connection, reliable , trouble-free and clean energy supply over many years



2. **COTEK TR 40 mains connection**  
Electronic network connection very fast (2 / 10ms), connected external mains power always takes precedence



3. **COTEK remote control**  
various remote controls are available, as well as a comfortable touchscreen, which can be used to operate both the inverter and the COTEK charger



4. **TRUSTEC Insulation Monitor**  
has not been asked in the last 20 years, but the latest safety regulations make it absolutely necessary for every inverter with more than one consumer socket or for outdoor use



5. **COTEK Charger**  
High performance rechargeable battery with 2 outputs for starter and utility battery 12 V from 15-80A, 24V 10-40A



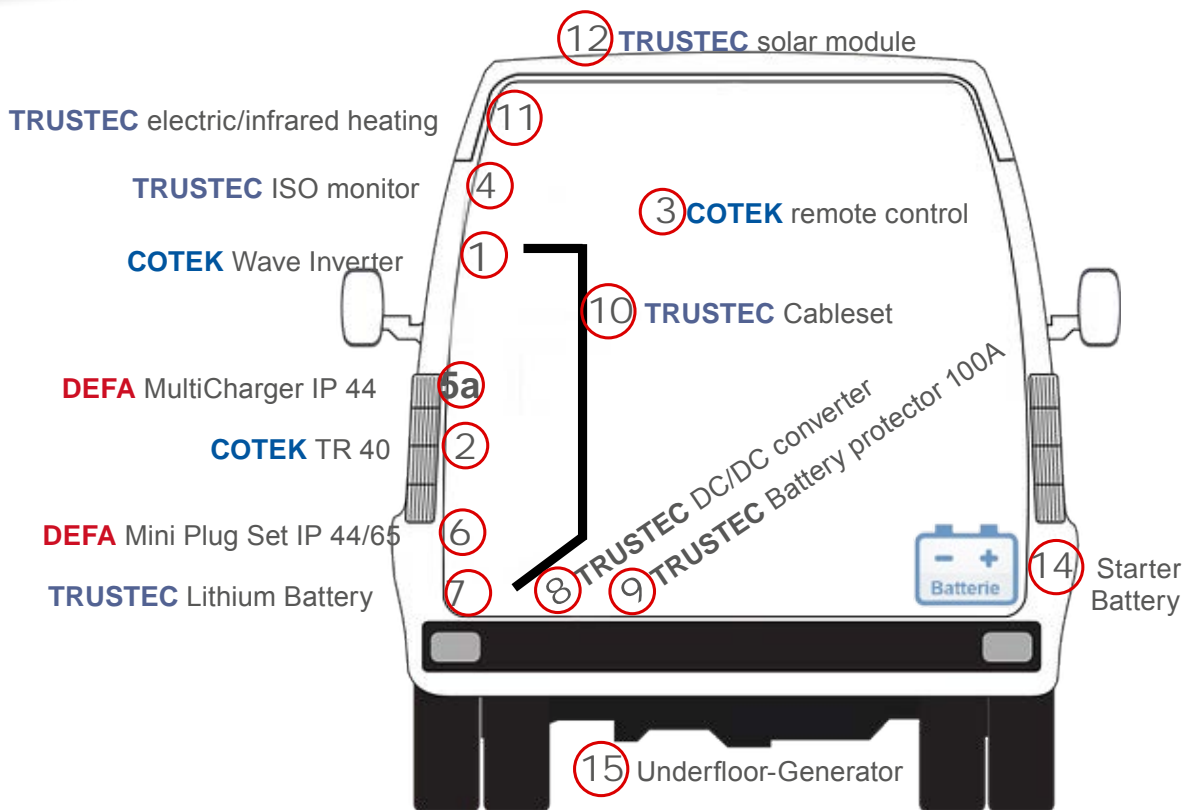
- 5a. **DEFA Charger with moisture protection IP 44**  
Charging technology of 12- 2 x 35 A



6. **DEFA External connectors & cables IP 44/65**  
Ideal and highly secure 230V connection technology, smallest external plug (installation only 24mm bore) with closing flap self-closing with encapsulated IP 65 230V connection cable 0.5-10 m



7. **TRUSTEC mobile Lithium Battery**  
Standard power module scalable, secure, plug & play



- 8. TRUSTEC DC/DC Converter DC-DC 45-90A**  
for optimal second battery charge, ideal for EURO 6 vehicles



- 9. TRUSTEC Batteryprotector 100 A**  
protects the vehicle starting battery from deep discharge, can also be used as a disconnecter



- 10. TRUSTEC Cable sets / energy assembly kits / cable trees for car production**  
Connection cable for inverter and all the above techniques, preassembled devices Set with inverter, additional battery, changeover set etc. on a mounting plate



- 11. TRUSTEC Electric car infrared heating**  
ideal above / to the side of the work or lying area - Informations on request



- 12. TRUSTEC Solar Module**  
430W 1620x1620mm dual glass modules in automotive industry quality standard such as windshields, or flexible, glued or in holders, for battery charging or with TRUSTEC E-HYB multi-function inverter with mains connection and power purchase option from 1-3 KW - Information on request



- 13. Small electrical fuses, relays, etc.**



- 14. Starter Battery**  
Lead /Gel/AGM Technique

- 15. Unterflur-Generator und Nebenantrieb** -complete Perfection installation with manufacturer approval, for larger continuous electrical power we supply complex continuous power energy systems up to 10KW - please inquire

Project planinig by **TRUSTEC Energy GmbH**

## SC Series



**Power sharing function**

**= mains current + battery current parallel**

### 1200 / 2000 W Pure Sine Combi-Inverter incl. Charger

#### SC Series High-performance pure sine wave inverter / charger

##### Features

- Everything in one design: Bi-directional inverter and charger
- 3 step charging function
- Intelligent software for energy management: power division and generator function
- hard-wired connection
- Fan controlled at load and temperature
- Remote management and control
- RS 232 communication interface
- Advanced protection
- Input overvoltage / input voltage / overtemperature / overload / Short circuit / polarity reversal (internal fuse)



Built-in alternating current bypass switch

Wide operating temperature range from -20°C to + 70°C

Minimallast Power-up Wake-up from standby mode when the load is low (<1W)

<sup>1</sup> Normal state VfN = 12.5V / 25V Vo = 200/220/230 / 240VAC Full load (PF = 1.0)  
<sup>2</sup> max. WR output defined 100% load output VAC = 200 VAC  
<sup>3</sup> max. AC output defines AC input current + WR output current (only for fixed cables)  
<sup>4</sup> max. AC input current limited by breaker (only for fixed cables)

# HIGH PERFORMANCE COMBI INVERTER

## 1000 / 2000 W Pure sine wave

# SC Series

		Model	SC 1000-212	SC 1000-224	SC 2000 - 212	SC 2000 - 224	
inverter settings	AC-output	output voltage	200 / 220 / 230 / 240 VAC +/- 3 %		200 / 220 / 230 / 240 VAC +/- 3 %		
		continuous power	1000 W VA (+/-0,3%)		2000 W VA (+/-0,3%)		
		overload	Load 101 - 115 % (1min) 2000 W VA (1sec)		Load 101 - 115 % (1min) 4000 W VA (1sec)		
		curve form	pure sine ( THD <3%)@Linear load <sup>1</sup>				
		Frequency	50 / 60 Hz +/- 0,3% (adjustable)				
		capacity ( max.)	90 %				
		Short circuit protection (1sec)	yes				
		WR AC output	5 A max		10 A max <sup>2</sup>		
		AC output / with mains	5 A max. /35A max. <sup>2</sup>		10 A max. /40 A max. <sup>3</sup>		
	DC-input	nominal voltage	12 VDC	24 VDC <sup>3</sup>	12 VDC	24 VDC	
		Input voltage range	10,5-16,5 VDC +/- 0,3 V	21 - 33 VDC +/- 0,5 V	10,5-16,5 VDC +/- 0,3 V	21 - 33 VDC +/- 0,5 V	
		without load current	3,0 A	1,5 A	4,0 A	2,0 A	
		Input current max	130 A	65 A	260 A	130 A	
		Stand By current	0,2 A	0,1 A	0,2 A	0,1 A	
		Input overvoltage protection	16,5 VDC +/- 0,3 V	33 VDC +/- 0,5 V	16,5 VDC +/- 0,3 V	33 VDC +/- 0,5 V	
		Input undervoltage protection	10,5 VDC +/- 0,3 V	21 VDC +/- 0,5 V	10,5 VDC +/- 0,3 V	21 VDC +/- 0,5 V	
	protection functions	input protection	Reverse polarity protection (internal fuse) / undervoltage protection / overvoltage protection				
		AC output protection	Short circuit / overload				
		AC input protection	30 amp circuit breaker				
Temperature protection		Switch off / autom. restart					
Battery temperature protection		With RJ11 connection to battery temperature sensor					
loader settings	AC input	Rated voltage / frequency	230 VAC , 50/60 Hz				
		AC Input voltage range	180 - 264 VAC				
		AC Input frequency range	47 - 63 HZ				
		AC Nominal current	3,9 A (@230VAC)		7,9 A (@230VAC)		
		Efficiency Full load	>90 %				
		AC Input max.	30 A max <sup>4</sup>				
		Power factor correction	> 0,95 (max)				
	DC output	Charge current range (adjustable dip switch)	12,5/25/37,5/50 A	6,25/12,5/18,75/25 A	25/50/75/100 A	12,5/25,5/27,5/50 A	
		Auxiliary DC Output	20 A				
		Max output voltage	14,7 VDC	29,4 VDC	14,7 VDC	29,4 VDC	
		Battery temp. compensation	-25 mV / °C	-50 mV / °C	-25 mV / °C	-50 mV / °C	
	Battery control 3-stage battery charger	bulk voltage	14,7 VDC	29,4 VDC	14,7 VDC	29,4 VDC	
		Absorption voltage	14,3 VDC	28,6 VDC	14,3 VDC	28,6 VDC	
Flow voltage		13,1 VDC	26,2 VDC	13,1 VDC	26,2 VDC		
Bypass Relay	Relay features	40 Amp / 250 VAC					
	switchover	< 16 ms					
Environment	working temperature range	full load	- 20°C - + 40 °C				
		power reduction	40 W / °C 41 -70 °C temporarily				
		storage	- 30 °C - + 70 °C				
	humidity	0 - 93 % non-condensed					
Safety		EN: 62368-1, EN55022, EN550032 class B, EN 61000-3-2, -3-3, -6-1, -6-1, EN 55024, EN 61204-3, IEC 6100-4-2, 3,4,5,6,8,11					
Controls & Signals	Remote control optional	CR 8 / CR 16 B / CR 20		CR 8 / CR 16 B / CR 20			
	Remote control Terminal	Check by WR ON / OFF operation					
	LED Indicator	Battery voltage / Output power AC / Fault information / Loader WR status					
	Dry contact terminal	with relay		with relay			
	error message	buzzer alarm		buzzer alarm			
	Fan ON/OFF	Automatically by variable fan speed					
Other	Dimension WxHxD / kg	251 x 116 x 386 mm / 5,5		251 x 116 x 453 mm / 7,5			

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## SP Series

**THE  
TOP-Model  
on the market**



### 700 ~ 4000W Pure Sine Wave Inverter

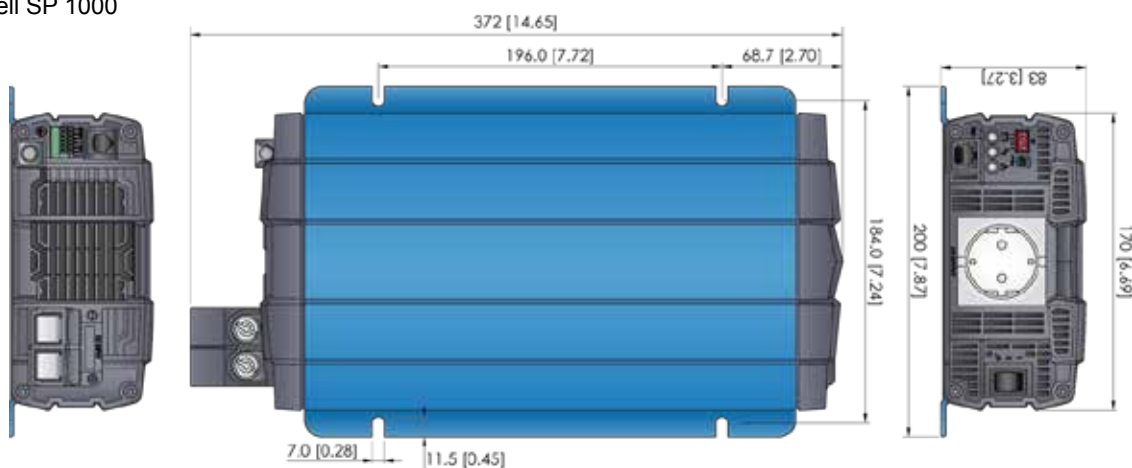
Cotek pure sine wave inverter SP series, the optimization of the reliable SK series. "The inverter classic in the vehicle". Reliable basic technology, millions of applications worldwide, from 700 to 4000 W.

#### Features

- Pure sine output (THD <5% @ Normal charge @ 12.5V/25V/50V)
- RS-232 communication
- Power ON / OFF remote control (Green terminal).
- Remote controller CR 8 / CR16 Operation (selectable).
- Input & output fully isolated temperature and load-controlled fan
- Built-in microprocessor for user-friendly interface
- Output frequency 50/60 Hz DIP switch selectable
- Output voltage DIP switch selectable
- Energy-saving mode adjustable, resistance selectable
- Tri Color Indicators Display status
- AC transfer function Accessories (TR40)
- Protection:
  - Input overvoltage /
  - Input voltage /
  - Overtemperature / overload /
  - Short circuit / polarity reversal (Internal backup)



Modell SP 1000



# PURE SINE WAVE INVERTER

## 700 ~ 4000W

# SP Series



Model	SP-700			SP-1000			SP-1500			SP-2000			SP-3000			SP-4000		
	212	224	248	212	224	248	212	224	248	212	224	248	212	224	248	224	248	
Output	AC Voltage (VAC)	200/220/230/240																
	AC Regulation	±3%																
	Rated Power (VA)	700			1000			1500			2000			3000			4000	
	Surge Power (1sec) (VA)	<1230			<1750			<2650			<3500			<6000			<8000	
	Max Output Power (1min) (VA)	>700~810 (100%~115%)			>1000~1150 (100%~115%)			>1500~1730 (100%~115%)			>2000~2300 (100%~115%)			>3000~3450 (100%~115%)			>4000~4600 (100%~115%)	
	Output Waveform	Pure Sine Wave (THD <3% @Normal Load <sup>1</sup> )																
	Frequency	50/60 Hz ±0,5%																
Input	DC Voltage (VDC)	12	24	48	12	24	48	12	24	48	12	24	48	12	24	48	24	48
	Voltage Range (VDC)	10,5~16,5	21,0~33,0	42,0~66,0	10,5~16,5	21,0~33,0	42,0~66,0	10,5~16,5	21,0~33,0	42,0~66,0	10,5~16,5	21,0~33,0	42,0~66,0	10,5~16,5	21,0~33,0	42,0~66,0	21,0~33,0	42,0~66,0
	NO Load Current	≤1,5A @ 12VDC	≤0,8A @ 24VDC	≤0,5A @ 48VDC	≤1,5A @ 12VDC	≤0,8A @ 24VDC	≤0,4A @ 48VDC	≤1,8A @ 12VDC	≤1,0A @ 24VDC	≤0,5A @ 48VDC	≤1,8A @ 12VDC	≤1,0A @ 24VDC	≤0,5A @ 48VDC	≤1,8A @ 12VDC	≤1,0A @ 24VDC	≤0,5A @ 48VDC	≤3,8A @ 24VDC	≤2,0A @ 48VDC
	Power Saving Mode	<0,1A @ 12VDC	<0,06A @ 24VDC	<0,05A @ 48VDC	<0,1A @ 12VDC	<0,05A @ 24VDC	<0,1A @ 48VDC	<0,1A @ 12VDC	<0,05A @ 24VDC	<0,05A @ 48VDC	<0,1A @ 12VDC	<0,05A @ 24VDC	<0,05A @ 48VDC	<0,1A @ 12VDC	<0,05A @ 24VDC	<0,05A @ 48VDC	<0,4A @ 24VDC	<0,2A @ 48VDC
	Efficiency (Max.)	91%	93%	94%	92%	94%	94%	93%	94%	94%	94%	94%	94%	94%	95%	90%	93%	94%
Protection	Input Under - Voltage Protection (VDC)	10,5 ±0,3	21,0 ±0,5	42,0 ±1,0	10,5 ±0,3	21,0 ±0,5	42,0 ±1,0	10,5 ±0,3	21,0 ±0,5	42,0 ±1,0	10,5 ±0,3	21,0 ±0,5	42,0 ±1,0	10,5 ±0,3	21,0 ±0,5	42,0 ±1,0	21,0 ±0,5	42,0 ±1,0
	Input Under - Voltage Recovery (VDC)	12,5 ±0,3	25,0 ±0,5	50,0 ±1,0	12,5 ±0,3	25,0 ±0,5	50,0 ±1,0	12,5 ±0,3	25,0 ±0,5	50,0 ±1,0	12,5 ±0,3	25,0 ±0,5	50,0 ±1,0	12,5 ±0,3	25,0 ±0,5	50,0 ±1,0	25,0 ±0,5	50,0 ±1,0
	Input Over - Voltage Protection (VDC)	16,5 ±0,3	33,0 ±0,5	66,0 ±1,0	16,5 ±0,3	33,0 ±0,5	66,0 ±1,0	16,5 ±0,3	33,0 ±0,5	66,0 ±1,0	16,5 ±0,3	33,0 ±0,5	66,0 ±1,0	16,5 ±0,3	33,0 ±0,5	66,0 ±1,0	33,0 ±0,5	66,0 ±1,0
	Input Over - Voltage Recovery (VDC)	14,5 ±0,3	29,0 ±0,5	58,0 ±1,0	14,5 ±0,3	29,0 ±0,5	58,0 ±1,0	14,5 ±0,3	29,0 ±0,5	58,0 ±1,0	14,5 ±0,3	29,0 ±0,5	58,0 ±1,0	14,5 ±0,3	29,0 ±0,5	58,0 ±1,0	29,0 ±0,5	58,0 ±1,0
	Output Overload	Shutdown output voltage, restart to recover																
	Output Short	Shutdown output voltage, restart to recover																
	Over Temperature	Heat sink temperature over 80°C ± 5°C, shutdown output voltage, recover automatically after heat sink temperature goes down to 60°C ± 5°C																
DC Input Reverse Polarity	by fuse																	
Environment	Operating Temp.	-20°C ~ +40°C; 60°C at 40% power load																
	Storage Temp.	-30°C ~ +70°C																
	Storage Temp. & Humidity	10 ~ 95% RH																
Safety & EMC	Safety Standards	certified EN60950-1																
	EMC Standards	certified EN 55022 class B; EN 55024 EN 61000-3-2, -3-3 EN 61000-4-2, 3, 4, 5, 6, 8, 11									certified EN 55022 class A <sup>2</sup> ; EN 55024 EN 61000-3-2, -3-3 EN 61000-4-2, 3, 4, 5, 6, 8, 11							
	E-Mark	certified CISPR 25, ISO 7637-2																
Control & Signal	Accessory (optional)	Remote Contol: CR-8 / CR-16A; Transfer Switch: TR40																
	LED Indicator	Input voltage level, output load level and faulty status																
	Dry Contact Terminal	by relay																
	Remote Control Terminal	6-port green terminal																
Others	Dimension (WxHxD mm), Weight Kg	200x83x330 / 2,6			200x83x372 / 3,26			248x83x421 / 4,42			248x83x443 / 5,24			255x158x442 / 8,2			255x158x462 / 10	
	Cooling	Temperature & load controlled cooling fan																
	Application	Home and offica appliances, portable power equipment, vehicle, yacht and off-grid Solar power systems... etc.																

<sup>1</sup>Normal Condition: Vin=12.5V/25V/50V V<sub>o</sub>=200/220/230/240VAC 80% Full load (PF=1,0)

<sup>2</sup>Waring: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



Switch TR 40



opt. ECU

## SD Series



### Pure Sine Wave Inverter - scalable 1500 / 2500 / 3500 x 15

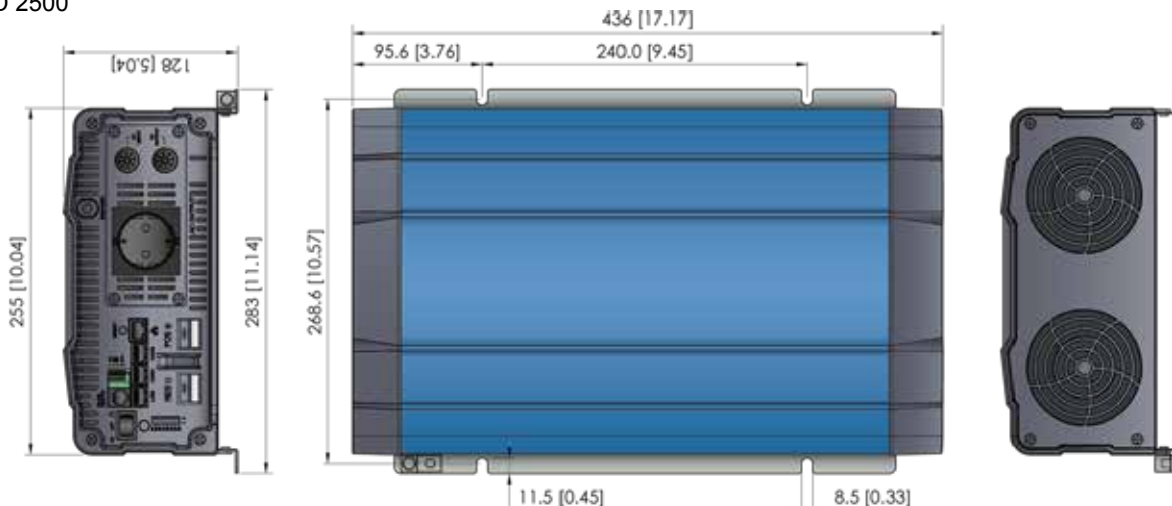
TRUSTEC-Pure Sine Wave Inverter "with reliable network switching"  
safe technology from 1500 to 3500 W

Features:

- Parallel connection of up to 15 SD devices for power expansion (52kW AC power)
- Integrated transfer circuit for synchronous mains switching with 4ms switching time
- 3-phase three-phase current with parallel connection from 3 SD devices
- Thanks to N + X parallel design, significant performance increases, up to 30% weight and volume reduction
- Designed for use in harsh environments (Working temperature -20°~+ 60°)
- Meets safety and EMC requirements
- High-Tech - robust - low-cost
- Ideal combination with COTEK CX-Chargers (15~80A/ 12-24 V)



Modell SD 2500





# SCALABLE PURE SINE WAVE INVERTER

## SD Series



Model		SD-1500			SD-2500			SD-3500		
		212	224	248	212	224	248	212	224	248
Output	Rating Power	1500W			2500W			3500W		
	Peak Power (3Sec)	1800 W			3000W			4500W		
	Surge Power (<0,2Sec)	2400W			4000W			6000W		
	Waveform	Pure Sine Wave								
	Efficiency (max)	88%	88%	90%	88%	88%	90%	90%	91%	91%
	Output Voltage (@rated VDC)	200 / 220 / 230 / 240 VAC ±3%								
	Output Frequency	50 / 60 Hz ±3%								
	Total Harmonic Distortion (THD)	<3% @ under condition; greater than 1,5 times of the rated VDC, 230V / linear load								
DC Input	DC Voltage	12VDC	24VDC	48VDC	12VDC	24VDC	48VDC	12VDC	24VDC	48VDC
	Voltage Range (VDC)	10,0 ~ 16,0	20,0 ~ 32,0	40,0 ~ 64,0	10,0 ~ 16,0	20,0 ~ 32,0	40,0 ~64,0	10,0 ~ 16,0	20,0 ~ 32,0	40,0~64,0
	No load Power Consumption	@12VDC	@24VDC	@48VDC	@12VDC	@24VDC	@48VDC	@12VDC	@24VDC	@48VDC
	On Mode @ Save mode	1,1A	0,7A	0,4A	1,1A	0,7A	0,4A	1,4A	0,5A	0,5A
	On Mode @ No Load Mode	<3,3A	<1,6A	<0,8A	<3,6A	<1,8A	<1A	<3,6A	<1,8A	<1A
	Fuse	40Ax6	20Ax6	15Ax4	40Ax9	20Ax9	15Ax6	40Ax12	20Ax12	20Ax6
AC Input	AC Range	200/220/230/240 VAC±12,5%			200/220/230/240 VAC±25%, recover ±12,5%					
	Frequency Selectable	50 / 60 Hz								
	Synchronous Frequency	47 - 57 / 53 -63 Hz								
	Circuit Breaker	10A			20A			20A		
	Transfer Switch	Standard ATS: Inverter to utility AC:<5ms; Utility AC to Inverter: <10ms optional STS Module: <4ms			Standard ATS: Inverter to utility AC:8~10ms; Utility AC to inverter: 16~50ms optional STS Module: single 4ms; N+1&1P3W&3P4W < 6ms					
Protection	BAT.Low Alarm ±3%	10,5 VDC	21,0 VDC	42,0 VDC	10,5 VDC	21,0 VDC	42,0 VDC	10,5 VDC	21,0 VDC	42,0 VDC
	BAT.Low Shut-down ±3%	10,0 VDC	20,0 VDC	40,0 VDC	10,0 VDC	20,0 VDC	40,0 VDC	10,0 VDC	20,0 VDC	40,0 VDC
	BAT.Low restart ±3%	12,5 VDC	25,0 VDC	50,0 VDC	12,5 VDC	25,0 VDC	50,0 VDC	12,5 VDC	25,0 VDC	50,0 VDC
	BAT.High Alarm ±3%	15,5 VDC	31,0 VDC	62,0 VDC	15,5 VDC	31,0 VDC	62,0 VDC	15,5 VDC	31,0 VDC	62,0 VDC
	BAT.High Shut-down ±3%	16,0 VDC	32,0 VDC	64,0 VDC	16,0 VDC	32,0 VDC	64,0 VDC	16,0 VDC	32,0 VDC	64,0 VDC
	BAT.High Restart ±3%	15,0 VDC	30,0 VDC	60,0 VDC	15,0 VDC	30,0 VDC	60,0 VDC	15,0 VDC	30,0 VDC	60,0 VDC
	Input Protection	Reverse Polarity (Fuse) / Under Voltage / Over Voltage Protection / AC over current (Breaker)								
	Output Protection	Short circuit / Overload / Over Temperature / Over Voltage								
Environment	Working Temp.	-20°C ~ +60°C								
	Storage Temp.	-40°C ~ +70°C								
	relative Humidity	max 90%, non-condensing								
Safety & EMC	Safety Standards	meet EN60950-1			certified EN60950-1			certified EN60950-1		
	EMC Standards	meet EN55014-1, EN55014-2, EN61000-3-2, 3-3, EN61204-3 <sup>1</sup>			certified EN55014-1, EN55014-2, EN61000-3-2, 3-3, IEC61000-4-2, 3, 4, 5, 6, 11 <sup>1</sup>			certified EN55014-1, EN55014-2, EN61000-3-2, 3-3, EN61204-3, EN61000-6-1, -6-3, -6-4 IEC61000-4-2, 3, 4, 5, 6, 11 <sup>1</sup>		
	E-Mark	meet CISPR 25; ISO11452-2; ISO 7637-2			certified CISPR 25; ISO 7637-2					
Control & Signal	LED-Indicator	Input voltage level, faulty status								
	remote control	CR-6, CR-8 und CR-10								
Others	Abmessung(BxHxT mm), Gewicht Kg	283x128x351 / 5,5			283x128x436 / 8			283x128x496 / 10		
	Cooling	Load & Thermal control fan								
	Kommunikationsanschluß	RS-232 (RJ-11 type connector), Ethernet (optional)								

<sup>1</sup> EN55014-1, EN55014-2 Class B: output cable less than 2 meters

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## SE Series



### 350W / 400W Pure Sine Wave Inverter

Cotek pure sine wave inverter SE series, the small supply inverter with the latest technology and a wide temperature range of -20°C ~ + 40°C.

#### Features

- Real sine output (THD <3% at rated VDC, linear load)
- Power On / OFF remote control
- Input & Output fully isolated output frequency 50/60 Hz via DIP switch
- Output voltage / current saving mode selectable
- Input protection: reverse polarity (fuse) / undervoltage / overvoltage protection
- Output protection: short circuit / overload / overtemperature protection
- Energy saving mode <2W
- FCC class B approved



Model SE 350



# PURE SINE WAVE INVERTER

## 350/400W

# SE Series



Model		SE 350			SE 400		
		212	224	248	212	224	248
Output	AC Voltage	200/220/230/240 VAC					
	AC Regulation	±5%			±3%		
	Rated Power	350W			400VA		
	Surge Power (1sec)	700W			<800VA (1Sec)		
	max. Output Power (1min) <sub>(VA)</sub>				>400~460 (100%~115%)		
	Output Waveform	Pure Sine Wave (THD <3% @normal load <sup>1</sup> )					
	Frequency	50/60 Hz ±0,1%			50/60 Hz ±0,5%		
Input	DC Voltage <sub>(VDC)</sub>	12	24	48	12	24	48
	Voltage Range <sub>(VDC)</sub>	10,0~15,5	20,0~31,0	40,0~62,0	10,5~16,5	21,0~32,0	42,0~64,0
	NO Load Current	@12VDC	@24VDC	@48VDC	≤1,8A@12VDC	≤1,0A@24VDC	≤0,5A@48VDC
	Power Saving Mode				<0,1A@12VDC	<0,05A@24VDC	<0,05A@48VDC
	On mode @ save mode	<90 mA	<60 mA	<40mA			
	On mode @no load mode	<0,9A	0,5A	0,25A			
	Efficiency (max.)	89%	90%	91%	88%	89%	90%
Protection	BAT. Low Shutdown	10,0 VDC	20,0 VDC	40,0 VDC			
	BAT.Low Alarm	10,5 VDC	21,0 VDC	42,0 VDC			
	BAT. Low Restart	12,0 VDC	24,0 VDC	48,0 VDC			
	BAT. High Alarm	15,0 VDC	30,0 VDC	60,0 VDC			
	BAT. High Shutdown	15,5 VDC	31,0 VDC	62,0 VDC			
	BAT. High Restart	14,5 VDC	29,0 VDC	58,0 VDC			
	Schutz	overload, short circuit, DC over/under voltage, over temperature					
	DC Input Reverse Polarity	by fuse					
	Input Under - Voltage Protection <sub>(VDC)</sub>				10,5 ± 0,3	21,0 ± 0,5	42,0 ± 1,0
	Input Under - Voltage Recovery <sub>(VDC)</sub>				12,5 ± 0,3	25,0 ± 0,5	50,0 ± 1,0
	Input Over - Voltage Protection <sub>(VDC)</sub>				16,0 ± 0,3	32,0 ± 0,5	64,0 ± 1,0
	Input Over - Voltage Recovery <sub>(VDC)</sub>				14,5 ± 0,3	29,0 ± 0,5	58,0 ± 1,0
	Output Overload	Shutdown, output voltage, restart to recover					
Output Short	Shutdown output voltage, restart to recover						
Over Temperature	Heat sink temperature over 80°C±5°C, shutdown output voltage, recover automatically after heat sink temperature goes down to 60°C±5°C						
Environment	Operating Temp.	-20°C ~ +60°C			-20°C ~ +40°C; 60°C bei 40%Leistungslast		
	Storage Temp.	-30°C ~ +70°C					
	Storage Temp. & Humidity	max. 90% RH non-condensing			10 ~ 95% RH		
Safety & EMC	Safety Standards	certified EN60950-1					
	EMC Standards	certified nach EN 55022 class B; EN 55024 EN 61000-3-2, -3-3 EN 61000-4-2, 3, 4, 5, 6, 8, 11 EN 61000-6-3; EN 61204-3; EN 61000-6-1			certified EN 55022 class B; EN 55024 EN 61000-3-2, -3-3 EN 61000-4-2, 3, 4, 5, 6, 8, 11		
	E-Mark	certified CISPR 25, ISO 7637-2					
Control & Signal	Accessory (optional)	remote control CR-8					
	LED Indicator	Input voltage level, output load level and faulty status					
	Dry Contact Terminal	durch Relais					
	Remote Control Terminal	3-Port green Terminal					
Others	Dimension (WxHxD mm), weight Kg	150x68x187 / 1,6			150x68x187 /1,22		
	Cooling	Temperature & load controlled cooling fan					
	Application	Home and office appliances, portable power equipment, vehicle, yacht and off-grid Solar power systems, ... etc.					

<sup>1</sup>Normal Condition: Vin=12.5V/25V/50V Vo=200/220/230/240VAC 80% Full load (PF=1,0)

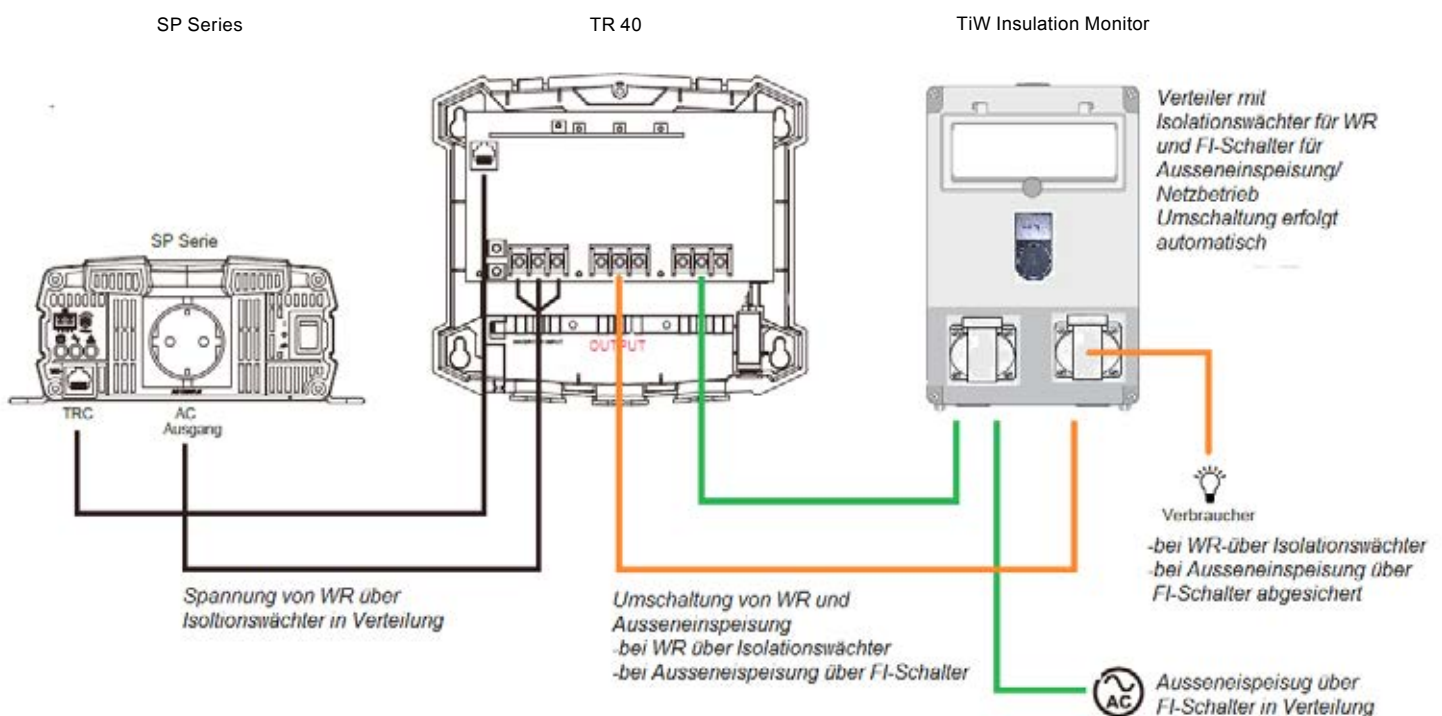


## COTEK AC Switch Set TR 40 for SP-Series

**Features:**

- Energy consumption <1.3W
- Universal AC input / complete program
- Cooling by free convection
- Switching current up to 40A
- Easy to use, free setup
- Short switching times 2-10 msec

optional for model SP 700 - SP 4000



# TR 40

## AC Switch



Model		TR 40
switching capacity	Max. switching voltage	277 VAC
	Max. switching current	40 A
	Max. switching net	11080 VA
	switchover	Inverter to Network 2 m Sec Network to Inverter 10 m Sec
Control	voltage range	100 V - 240 VAC
	AC current (Type)	21 mA / 100 VAC    16 mA / 240 VAC
	frequency range	47 HZ - 63 Hz
	power consumption	< 1,4 W (at 0 load)
Protection	wiring errors	LED Information
	Network Overload	breaker
Environment	working temperature	- 20 °C - + 40 °C
	working humidity	20 - 85 % RH non-condensing
	storage temperature / humidity	- 40 - + 80 °C / 20 - 85 % RH
	Vibration	10 - 500 Hz, 2G 10 min/1 cycle, period for 60 min each length X,Y,Z axes
Safety & EMC	safety standards	EN60947-1 approved (only for TR-40C)
	EMI conduction & radiation	EN55022
	Net Waves & Voltage fluctuation & flicker	EN61000-3-2, EN61000-3-3
	EMS immunity	EN55024, IEC6100-4-2,3,4,5,6,8,11
	Dimension (WxHxD) mm	194 x 220 x 71

## CX Series



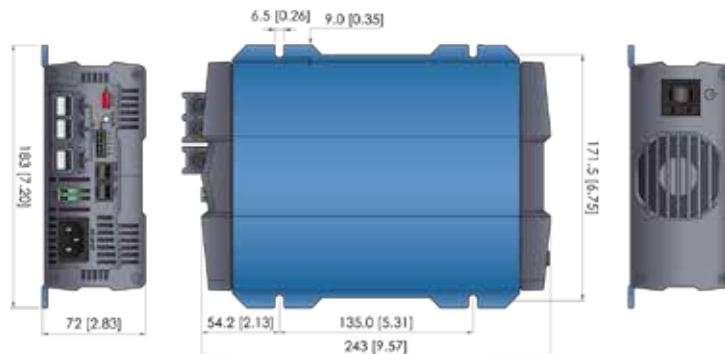
### Advanced Battery Charger 15-80 A

Cotek battery charger CX "Superlative functionality"

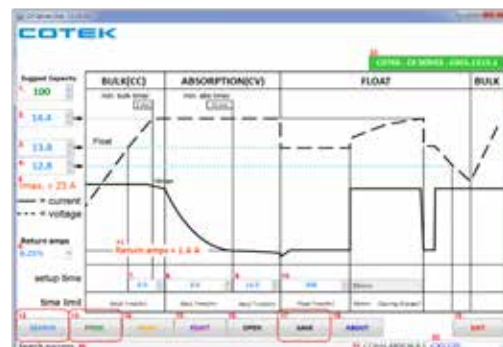
Latest technology from 15 to 80 A / 12/24 V - programmable - lead / gel / AGM / lithium

Features :

- Universal AC Input with active PFC
- Adjustable charging voltage & time setting possible for each charging stage
- Compatible with lead acid, Lilon, Gel and AGM batteries
- RS232 Communication interface
- Voltage / temperature compensation
- 2-stage control of the fan speed
- Output power OK signal
- High efficiency and high reliability
- Built-in battery rescue function
- Integrated motor start battery (ESB) output function
- Short circuit protection / overvoltage / overtemperature / undervoltage protection
- Breakdown voltage 2G Vibration test



*with the CT20-L you can change software programming independently can be ordered as accessorie*



# ADVANCED BATTERY CHARGER

## CX Series



Model		CX1215	CX1225	CX1235	CX1250	CX1280	CX2415	CX2425	CX2440	
Output	Batterie Type	Lead-Acid /Li-ion / Gel / AGM								
	Standard Boost Charge Voltage	14,4V / 14,7V					28,8V / 29,4V			
	Standard Float Charge Voltage	13,8V / 13,5V					27,6V / 27V			
	Main Rated Current	15A	25A	35A	50A	80A	12,5A	25A	40A	
	Current Range	0 ~ 15A	0 ~ 25 A	0 ~ 35 A	0 ~ 50 A	0 ~ 80 A	0 ~ 12,5A	0 ~ 25A	0 ~ 40A	
	Main Output	1	2	2	3	3	2	3	3	
	ESB Output	1	1	1	-	-	-	-	-	
	ESB Output Voltage/ Current	13,8V / 2A	13,8V / 2A	13,8V / 2A	-	-	-	-	-	
	Batterie Charging Mode	3-stage charging capability (IUOU)								
	Single Output Current Limit	15A	25A	35A	40A	40A	12,5A	25A	40A	
Input	Voltage Range	90 ~ 264 VAC								
	Power Factor (Typ.)	PF > 0,92 at full load								
	Frequency Range	47 ~ 63 Hz								
	Efficiency (Typ.) at 230 VAC	87%	87%	87%	87%	87%	90%	90%	90%	
	AC Current (Typ.)	1,07A/240VAC	1,8A/240VAC	2,8A/240VAC	3,6A/240VAC	5,4A/240VAC	1,7A/240VAC	3,6A/240VAC	5,4A/240VAC	
	Leakage Current	for earth < 1mA / 240 VAC								
Protection	Short Circuit	Current is reduced to < 1A continued 30sec., fan will operate 30 seconds then turn off								
	Over Voltage	17,5V±1%, Protection Type: shut down output (recovery after resetting AC Power on)					35V±1%, Protection Type: shut down output (recovery after resetting AC Power on)			
	Over Temperature	Charger Over Temperature 100±5°C detected by heat sink; Battery Over Temperature 52±5°C (Optional device - COTEK temperature sensor), connect on CN3; Protection Type: Auto recovery after heat sink temperature goes down to 50°C								
Function	Alarm Signal	NC. / NO. Relay contact output								
	Power-Mode	Supply 13,2 V current limit output voltage					Supply 26,4V current limit output voltage			
	Temperature Compensation	-10mV /0,5°C with COTEK Temperature sensor								
	Charging Sleep Mode <sup>4</sup>	by remote controller and S1-4 DIP Switch								
	Remote Controller <sup>5</sup>	Support COTEK Remote Controller CR-1 setting function (CN3 or CN4)								
Environment	Working Temp.	-20 ~ 50°C								
	Working Humidity	20 ~ 90% RH non-condensing								
	Storage Temp., Humidity	-40 ~ +80°C, 20 ~ 90% RH					-40 ~ +75°C, 20 ~ 90% RH			
	Temp. Coefficient	±0,03% (0 ~ 50°C)								
	Vibration	10 ~ 500Hz, 2G 10min. / 1cycle period for 60min each along X, Y, Z axes								
Safety & EMC	Safety Standards	certified EN60335-1, EN60335-2-29								
	Withstand Voltage	I/P-O/P: 4242VDC, I/P-FG: 1768VDC, O/P-FG: 700VDC								
	Isolation Resistance	I/P-O/P: 100M Ohm/500VDC								
	EMC Standard	certified EN55022; EN61204-3; EN55014-1; EN61000-3-2, 3-3; EN61000-6-3; EN55024; IEC61000-4-2, 3, 4, 5, 6, 8, 11; EN61000-6-1; EN55014-2								
Others	Dimension (WxHxD) mm	183x72x243	183x72x243	183x72x263	213x77x272	213x77x312	183x72x243	213x77x272	213x77x312	
	weight Kg	1,6	1,7	1,9	3,1	4,0	1,6	2,9	3,9	

1. All parameters not specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.

2. The Charger is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

3. Before Charging, make sure the battery charger and battery specifications are compatible.

4. When using sleep mode, please refer to charging current vs. Ambient temperature de-rating curve..

5. optional Remote Controller (CR-1)



**CR 6 suitable for  
SD series inverter**  
Dimensions 130 x 120 x 25.6 mm



**CR 1 suitable for CX chargers**  
Dimensions 57 x 73.5 x 26.5 mm



**CR 10 suitable for  
SD series inverter**  
Dimensions 92 x 92 x 30.5 mm



**CR 8 suitable for SE, SP and  
SD series inverter**  
Dimensions 57 x 73.5 x 26.5 mm



**CR 16 A suitable for  
SP series inverter**  
Dimensions 98 x 85 x 25.6 mm



**CR 20 suitable for  
SC-series inverter**  
Dimensions 149 x 98 x 22,5 mm



**ECU for SP series**  
prepared for further  
vehicle control options



**CRT1 touch screen for  
SP series inverters / CX chargers**  
On / Off, display of all current flow values,  
battery capacity of BMS  
Dimensions 120 x 100 x 30 mm  
For technical data, see page 22



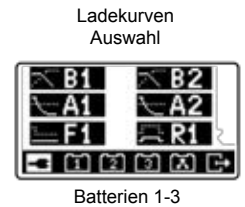
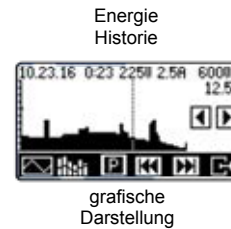
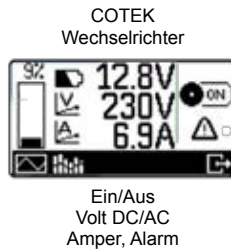
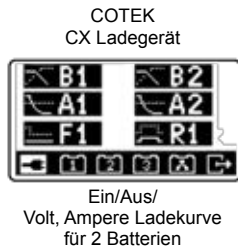
## TRUSTEC - CRT1 Touchscreen for SP-Series Inverter/CX-Charger

control and switch -  
with all performance information  
easy - ideal



**Features:**

- Dual Control - ACH Charger and ASI Inverter
- Digital communication with Charger and Inverter
- Displays mode, voltage, current and alarms from charger
- User can change charging mode, switch fun off, turn power on/off
- Displays percentage of power, voltage current and alarms from Inverter
- User can remotely turn on/off Inverter
- Parameters are stored in non-volatile memory
- Display mono LCD 2,8" with touch control
- Multinational menu based on icons
- Battery backup for real time clock
- Very low current consumption - 4mA at 12VCD
- Dimensions: 120x100x30 mm



Details unter [www.trustec-energy.eu](http://www.trustec-energy.eu)

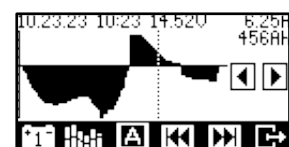
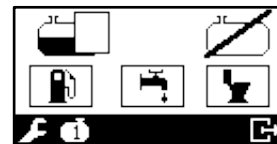
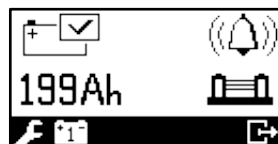
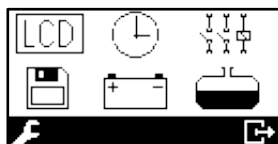
## TRUSTEC - on-board Monitor

the technical monitoring  
instrument on board  
for electricity and water



**Characteristics:**

- monitors up to 3 batteries and 3 tanks
- measures voltage, current and battery capacity
- calculates the average current and the forecast consumption
- measures the amount of liquid in the tanks and Forecast when empty or full
- supports chargers of the COTEK CX series
- Storage of parameters in case of power failure no data loss
- Mono LCD 2,8 „with touch control
- External device outputs and alarms
- very low power consumption 4mA at 12VDC
- digital communication with battery shunts and tanks





## SR Series



### Pure Sine Wave Inverter - 1600 Plus 19"

COTEK -Pure Sine Wave Inverter - secure technology of 1600 Watt

Features :

- Modbus Protocol Interface
- Engineering Bootloader Mode
- Monitoring Event Log
- Direct Alarm Message
- EPO mode (Emergency Power Off)
- Alarm Signal programmable
- Hot swappable module with LED indicator
- Standard 19" 2U rack mount
- Zero transfer time
- DC-Mode/AC-Mode selectable (Dual Input / AC / DC)
- Remote controllable (accessory CR 21)
- AC sharing > 300W
- High efficiency up to 91% at AC-Mode
- Up to 32 modules can be connected in parallel (up to 51,2kW)
- CE/FCC approved

Accessories:

#### Scalable Rack



2 U high ; Rack with 4 Slots;  
Dimension W x H X D cm 48,4 x 8,5 x 50,9

#### By-pass Switch

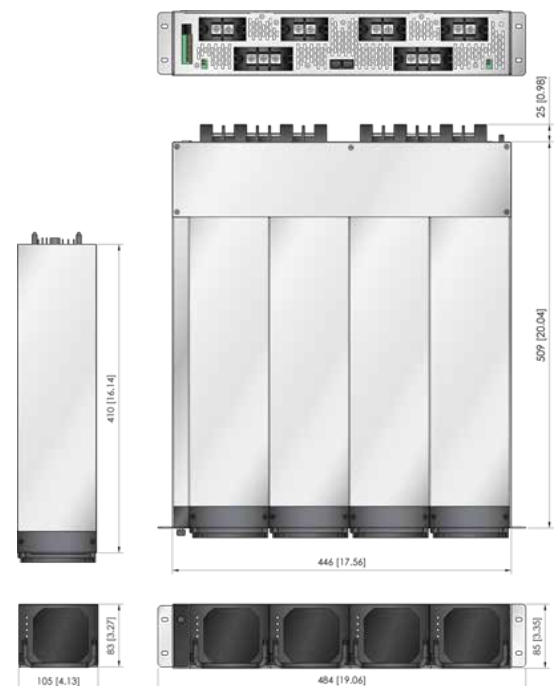


AC to DC Switch; DC to AC Switch  
Dimension W x H X D cm 48,5 x 13,2 x 35,0

#### Front-end variable fan module



Remove the screws to easily  
replace the fan



# PURE SINE WAVE INVERTER

## 1600 W

# SR Series



Model		SR 1600 Plus- 224	SR 1600 Plus - 248
AC Output	Rating Power	1200W / 1600VA	1600W / 1600VA
	Short time overload capacity	108 % - 150% 15sec	
	Nominal voltage(AC)	230 VAC	
	Output voltage range (AC)	200 - 240VAC ±2%	
	Efficiency AC Mode (max.)	95%	
	Efficiency DC Mode (max.)	90%	91%
	Frequency range	50/60Hz	
	Frequency accuracy	±0,01%	
	THD (over 80% resistive load)	<3%	
	Turn on delay	<10sec.	
	Crest Factor at nominal power with short circuit management and protection	DC Mode: 3 nominal current AC Mode: 10 nominal current	
AC Input	Nominal Voltage AC	230VAC	
	Voltage Range	180 ~ 260VAC ±2%	
	Compliance range before transfer to DC	adjustable from 150-265Vac	
	Power Factor @ Rating Power	> 0,99	
	Frequency Range	50 / 60 Hz	
	Synchronization range	47 53Hz, 57 ~ 63Hz	
DC Input	Nominal Voltage (DC)	24VDC	48VDC
	Voltage Range (DC)	18 ~ 34VDC ±3%	36 ~ 68 VDC ±3%
	Nominal current (at 24VDC/48VDC)	56A	37A
	Maximun Input current (15 Sec)	90A	60A
Signal & Control	Indicator	LED	
	Advanced Control	RS485 control interface	
	Failure indication	Buzzer alarm	
Protection	DC Input	Over / Under Voltage, Reverse Polarity	
	AC Input	Over / Under Voltage, Over Current	
	Output	Short-circuit, Overload, Over Temperature	
Transfer Performance	Inverter to Utility AC	0 sek	
	Utility AC to Inverter	0 sek	
Environment	Operating Temperature	-25°C ~ 40°C	
	Storage Temperature	-40°C ~ 70°C	
	Relative humidity	95%, non-condensing	
	Vibration	BS EN61373	
Safety & EMC	Safety Standards	certified EN60950-1	
	EMC Standards	certified EN55022 Class B; EN61204-3; EN55024, EN61000-3-2, -3-3, -6-1, -6-3; IEC61000-4-2, 3, 4, 5, 6, 8, 11	
Others	Dimension (WxHxD) Module in mm	105x83x410	
	Dimension (WxHxD) Rack in mm	446x85x509	
	Weight (Module/Shelf)	3,8kg/6,5kg	

## SR Series

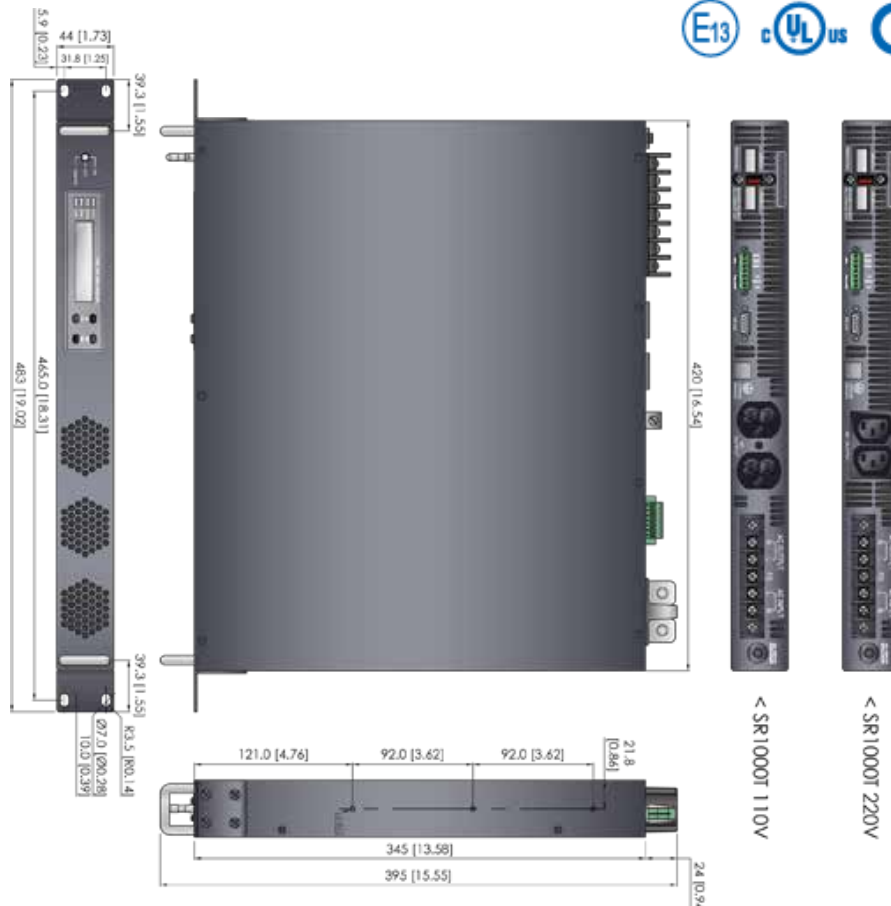


### Pure Sine Wave Inverter - 1000 W 19"

COTEK -Pure Sine Wave Inverter - secure technology of 1000 Watt

Features :

- Pure Sine ou tput (THD <2 %)
- Standard 19" 1 U Rack Assembly
- User-friendly LCM module
- Potential-free contact for alarm system
- RS 232 communicat
- Selectable online / offline mode
- Built-in AC switch and AC circuit breaker
- Hard-wire and dual power outlet
- Fan failure alarm with buzzer
- Input protection: Reverse polarity (fuse) / overvoltage / undervoltage
- Output protection: Short circuit / over temperature



PURE SINE WAVE INVERTER  
1000 W

SR Series



Model		SR 1000 T- 224	SR 1000 T - 248
Output	Continous Output Power	1000W	
	max. Output Power (3min)	1100W	
	Surge Power	2000W	
	Frequency	47 ~ 63Hz ± 0,5% (user-selectable)	
	Output Voltage	194 ~246VAC (user-selectable)	
	Efficiency (Full Load)	90%	91%
	Waveform	reine Sinuswelle (THD < 2%)	
Input	Voltage	24VDC	48VDC
	Voltage Range	18 ~ 34 VDC	36 ~ 68VDC 36 ~ 60VDC (only UL)
	No Load current	1,3A	0,7A
Signal & Control	LCD Panel	zweizeiliges LCD Panel	
	LED Indicator	Input voltage level, output voltage level and faulty status	
	Dry Contact Terminal	by relay	
	Remote Control Port	RJ-11	
Protection	Input Protection	Over / Under Voltage, Reverse Polarity (Fuse)	
	AC Output Protection	Short Circuit, Overload, Over Temperature	
	AC Input Protection	6Amp Circuit Breaker	
Bypass Relais	Relay Specification	15Amp/120VAC, 10Amp/250VAC	
	Bypass Relay selectable	On Line / Off Line (Haphazard, normal, exacting) selectable	
Environment	Working Temp. (Full Load)	0°C ~ 50°C	
	Storage	-30°C ~ 70°C	
Safety & EMc	Safety Standards	certified EN60950-1	
	EMC Standards	certified EN55022 Class B; EN61000-3-2, 3-3; EN55024; IEC61000-4-2, 3, 4, 5, 6, 8, 11	
Others	Failure Indication	Buzzer Alarm and Dry Contact	
	Cooling	Thermal & Load Control Fan	
	Dimension (WxHxD) mm	483x44x345	
	Packing	7,46	
	Application	Focus on Telecommunication (Base-station), Networking (Data Center) & Battery Backup Systems	

*The personal protection*

## **TRUSTEC TiW Insolation Monitor**

**When an inverter / alternator is used in a mobile / portable unit, e.g. In mobile works vehicles, in fire engines, construction vehicles, etc., it is often difficult to ensure safety with grounding. It is, however, imperative for the working person to ensure a high level of safety.**

The standard Norm requires the use of AC inverters or a generator to provide sufficient grounding in conjunction with insulation monitoring. The TiW series ensures insulation monitoring that the alternating current voltage of 230V is automatically disconnected as soon as a dangerous situation could occur for the working person.

**The TiW-Iso-Monitor - is more than a residual current circuit breaker.** The insulation state is continuously measured and displayed in the display. The safety against electric shock is thus guaranteed. In the case of critical insulation conditions - creeping or hard - this patented, unrivaled safety system switches off. The TiW series offers you personal security for all mobile / portable units.

The vehicle itself is already insulated by the contact of the tires to the ground, but as soon as you want to carry out electrical work with 230 V alternating current generated by the inverter in the vehicle outside the vehicle there is the risk of an electric shock with fatal consequences. The TiW insulation monitors can prevent this ground fault and thus protect you from electrical out-of-vehicle work. Even double-insulated components do not guarantee electrical resistance. Impact and / or injuries which may result from a defective wiring or a missing isolated connection.

Therefore the insulation must be monitored. This prevents the risk of injury and possible negligence. The devices TiW3 (required for combination inverter + charger) have an additional FI-switch. This system provides high security under all conditions.

**TiW 1** has a plug-in socket and a connection cable with plug and can thus be switched between the inverter and the load - 1 direct 230V load is allowed

**TiW 2** is compliant with the VDE regulations. Equipped with 2-pole circuit breaker - several 230V loads allowed

**TiW 3 Com** is for the use with an additional external mains connection, alternating-current combi-devices or generator. In this case, it is important to note that an additional protective circuit breaker is installed in accordance with VDE. With the new TiW you increase the electrical safety in your assembly vehicle.

If there is a generator in larger vehicles, a special TiW should be installed for this purpose.

Larger power > 16 A for industry and fire service applications is available



	Insolation Monitor	control fuse	Stall Protection	Cable+Schuko 2pol .	Load secure 2 pol.	Combi for outside	Socket and hinged lid	Cotek WR Fremote	Dimensions cm
Trustec Insolation Monitor TiW									L X W X H
TiW 1 without load protection									
TiW 1- Plug-Protect	*	*	*	*	--		1	--	140x140x90
TiW1-Connect-Protect	*	*	*	--	--		1	--	140x140x90
TiW1 -Connect CR8	*	*	*	--	--		1	CR8	180x110x138
TiW 2 With load securing according to VDE <sup>1</sup>									
TiW 2 2pol-VDE-cable termination	*	*	*		*		*	--	138x245x130
TiW 2-2pol-ST2	*	*	*		*		2	--	138x245x131
TiW 2 2pol-VDE-CR8-ST4	*	*	*		*		4	CR8	205x320x146
TiW 2 2pol-VDE-CR16-ST3	*	*	*		*		3	CR16	205x320x146
TiW 3 With load protection for mains outdoor / inverter connection switchover <sup>1</sup>									
TiW 3 2pol-VDE--ST2	*	*	*		*	*	2	--	138x245x131
TiW 3 2pol-VDE-CR8-ST2	*	*	*		*	*	2	CR8	138x245x131
TiW 3 2pol-VDE-CR8-ST4	*	*	*		*	*	4	CR8	138x245x131

<sup>1</sup> Test- and Resetbutton inside / external Test- and Resetbutton optional)

**Battery cable set custom-made according to customer specifications**

facilitate work, save time and money

**Fuse holder for high load safety up to 500 A**



**Fuses designed for inverter size from 80A to 500A**



**Battery connection cable in 16 - 35 or 50 mm standard 3.0 m or length on request**



**Cable lugs pre-assembled**



Front

**Individual installation kit**



Top

*The ideal additional charging technology of the second battery  
also with Euro 6 light machine control*

## **TRUSTEC** Charger from battery to battery

- **High charging capacity** even at short distances
- Significantly **improved energy balance** of the supply circuit
- **Excellent protection** of the supply battery and the connected loads against the sometimes very strong voltage fluctuations of dynamically controlled light machines in newer vehicles
- For longer journeys, the **IU1oU2 charging system** is used to charge a full charge, thereby preventing overcharging
- **Optimal charging characteristics** for 4 battery types can be adjusted by means of a battery switch (acid, gel, AGM1, AGM2)
- **Automatic, adjustable charging power** ensures the primary charging of the starter battery through the alternator in the case of a heavily loaded vehicle electrical system, thus ensuring the immediate start-up capability of the vehicle
- At the same time in parallel and buffer mode, the battery is charged or fully charged. The charge converter automatically calculates and monitors the charging times.
- **Built-in temperature compensation** automatically adjusts the charging voltage to the battery temperature independently of the generator. Battery temperature sensor Art. 2001 required
- **Easy installation**, no intervention in the starter circuit of the vehicle required, the device is switched to the charging line to the supply battery.
- **Safety-protection** and protection against polarity reversal, short circuit and reverse discharge
- Connection for remote control Art. 2075, operating remote indication IP67 Art. 2081 or Charger State Monitor IP67 Art. 2082
- Also prepared for operation with EBL (electroblock) and EVS.
- **Built-in on-board filter** allows trouble-free parallel operation with solar panels, mains chargers and other charging sources on a battery
- **Galvanic isolation** between input and output ensures excellent suppression of disturbances, for clean ground conditions on both sides even with long supply lines, safety in the event of a fault (no 12V / 24V or 24V / 12V possible) and avoids reliably Unintended back discharges of the battery circuits
- Switch input for fully automatic operation (ignition, D + motor running) or optionally manually controlled by remote switch
- As a matter of fact, the metering input allows a pure voltage control of the device
- The application area also extends to clean battery charging away from the alternator in large vehicles, trailers, utility vehicles, etc.





**Battery - to - Battery Charging 1212**



**Adjustable to Euro 6 standard of the alternator**

	TRUSTEC LW 1212-30 A	TRUSTEC LW 1212-50 A	TRUSTEC LW 1212-70 A	TRUSTEC LW 1212-90 A
<b>OUTPUT: Rated voltage lead-acid, gel, -AGM / LiFe P04</b>	12V / 12,0-13,3V			
<b>Charging current adjustable Limit / max.</b>	- / 30A	39A / 50A	50A / 70A	75A / 90A
<b>Battery capacity, recommended / up to</b>	60-200 / 260Ah	75-320 / 440Ah	100-460 / 620Ah	150-600 / 800Ah
<b>Loader no. adjustable lead acid, gel, AGM</b>	1, 2, 4	1, 2, 3, 4		
<b>Charging programs f. act. LiFeP04 complete batteries w. BMS</b>	Li	4xLi		
<b>Lead temperature compensation / LiFeP04 protection</b>	• / •			
<b>INPUT: starter battery / LiMa voltage range (EURO6)</b>	12V (10,5-16,5V)			
<b>Current max. / 3 limits adjustable</b>	39A / -	68A / 49A / 42A / 33A	95A / 77A / 63A / 50A	125A / 100A / 82A / 64A
<b>Autom. Activation D +, ignition / voltage controlled</b>	• / •			
<b>Connections sensor cable for input / output</b>	• / •			
<b>Charge maintenance for starter battery<sup>1</sup></b>	0-1A	0-3A	0-5A	
<b>Connections remote control, display / VBS2 / CI bus</b>	• / - / -	• / • / •		
<b>Temperature sensor included</b>	•			
<b>Clamps, control front / power back</b>	0,5-2,5 / 4-10mm <sup>2</sup>	0,5-2,5 / 4-25mm <sup>2</sup>	0,5-2,5 / 4-25mm <sup>2</sup>	0,5-2,5 / 4-25mm <sup>2</sup>
<b>Dimension * WxHxD in mm</b>	146x67x40	160x135x72	160x205x72	
<b>weight in g</b>	280	950	1300	1480
<b>Approvals</b>	CE, E-test (EMC / vehicle directive)			

Other device types (also galvanically isolated) on request

- ◆ *discharge*
- ◆ *Transient protection*
- ◆ *Battery main switch*
- ◆ *Emergency "ON" function*

## TRUSTEC Battery Protector 100 / 40

Our **Battery Protector 100** on the one hand protects the board battery from dangerous deep discharges and on the other hand protects consumers and equipment from overvoltage. It is switched between the onboard battery and the load and is suitable for all lead-battery types. The bistable power relay is designed for switching currents of 100 A and can be overloaded up to 180 A for a short time. It also ensures extremely low self-consumption. From an external switch, the device can also be used as a remote-controlled battery main switch. The Battery Protector 100 has an EMERGENCY-ON function, which allows the device to be switched on at any time, can also be remote-controlled via a switch. The device is suitable for 12 V- to 24 V-Borderze, fully automatic and has as special feature an intelligent switching threshold automatic. It detects the alternating load on the battery and ensures optimum utilization of the battery capacity. Optionally the device can also be operated with 3 fixed selectable thresholds. The higher switching thresholds enable the starting capability of emergency vehicles with only one battery circuit according to DIN EN 1789. Furthermore, the Battery Protector 100 has an optical and acoustic pre-alarm, a separate warning switch output and is equipped with solid battery screw connections. The contact cover is included in the scope of supply. 2 LEDs indicate the operating status of the device

### Battery Protector 40 - different specification:

Suitable for switching currents up to 40 A, can be loaded up to 60 A short-term and is available for 12 V as well as 24 V battery systems. A bistable power relay ensures extremely low self-consumption of less than 3 mA (according to DIN EN 13976). Solid screw terminals with a cross-section of 10 mm<sup>2</sup> round the profile. The variant "engine" ensures the starting capability of emergency vehicles with only one battery circuit according to DIN EN 1789 due to higher switching thresholds.



	TRUSTEC Battery Protector 40	TRUSTEC Battery Protector 100
Battery voltage	12 V	12 / 24 V
Switching current duration / short	40 / 60 A	100 / 180 A
Switching threshold / undervoltage	10,7 V	10,6/11,5/11,8 V **; 9,5 - 12,2 V *** **
Reset point / undervoltage	12,5 V	12,4/12,5/12,8 V **; 12,5 V *** **
Overvoltage OFF / ON	15,5 / 15,0 V	15,5 / 15,0 V **
Acoustic signal	nein	ja
Switch output Pre-alarm	--	12V/24V/0,2A
Bistable power relay	yes	yes
ownconsumption	2 mA	3 mA
DIN EN 1789	--	yes
Temperature range	- 20°C bis + 50°C	
Protection grade class	IP 21	
Dimensions * (W x H x D)	90 x 60 x 38 mm	105 x 70 x 38 mm
Weight	97 g	180 g
Approvals	CE, E test (EMC / Motor vehicle regulations)	

\* Dimensions including mounting flange, without connections

\*\* at 24 V operating value x 2

\*\*\* Automatic shiftshaft

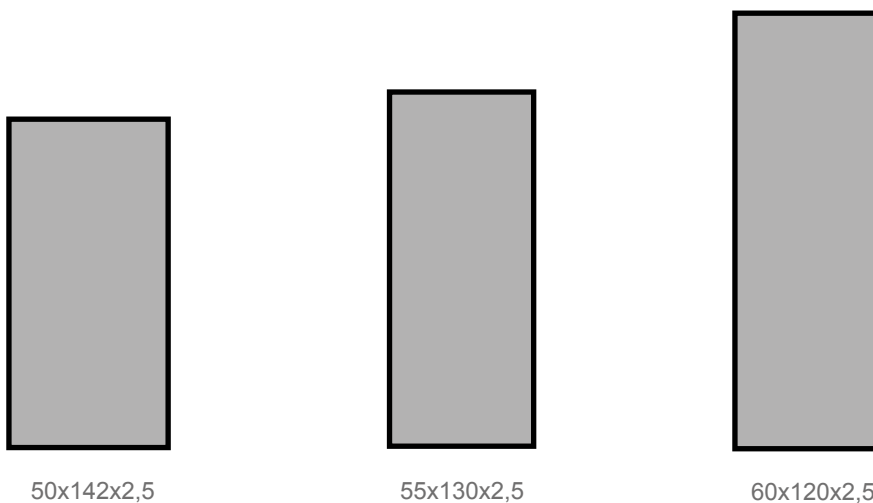
## **TRUSTEC Infrared heating panels**

**for wall and ceiling mounting  
Made in EU**

- ◆ *Heat radiating forward (down)*
- ◆ *fast heat availability*
- ◆ *high energy efficiency / energy-saving*
- ◆ *shock and vibration resistant*
- ◆ *Energy through COTEK inverter 230V from car additional battery*
- ◆ *ideal heat in the workplace or in the workplace  
over the stretcher in the ambulance - after installation standard*

**Panels - white aluminum heat - powder coated**

**700 W power**



sizes  
in cm:

**further dimensions + output sizes on request**

## Lithium - Technologie creates trust

### Standard power module scalable, secure, plug & play

**Features :**

- Lithium Ion Battery Technology (Li-NMC Panasonic)
- Compact and robust design -  
Die-cast aluminum housing
- dust, splash and waterproof: IP 66
- 360 ° mechanical integration
- configurable in parallel
- Safety: integrated battery management system
- Reusable and reusable
- Operating temperature: -20 ° C to +60 ° C
- Fast charging: 70% SoC in 20 min
- freely scalable modular system  
<60 V DC with capacity up to 8 kWh and more
- High energy and power density
- Ready-to-Install / Plug-and-Play
- Intrinsically safe (electrical separation during transport and during Fault)
- Control / communication: E-Switch  
(optional CANBus with R-Type)
- Integrated battery management system: Voltage and temperature monitoring
- SOC – State-of-Charge with LED
- Certificates: UN 38.3, CE, RoHS, IEC 61508 SIL2
- Made in Germany



# TRUSTEC MOBILE LITHIUM BATTERY



technical data	12 V			24 V			48 V		
type	12 V DC - M	12 V DC - M	12 V DC - R	24 V DC - M	24 V DC - M	24 V DC - R	48 V DC - M	48 V DC - M	48 V DC - R
Article	A12010M	A12020M	A12020R	A24010M	A24020M	A24020R	A48010M	A48020M	A48020R
Module-CapacityAh	69,9	139	139	40,6	81,2	81,2	20,3	40,6	40,6
Module-Energy Wh	1006	2004	2004	1023	2046	2046	1023	2046	2046
Discharge Constant Power Max	720W@60A	720W@60A	2400W@200A	1440W@60A	1440W@60A	4800W@200A	2880W@60A	2880W@60A	9600W@200A
Nominal Voltage V DC	14,4	14,4	14,4	25,2	25,2	25,2	50,4	50,4	50,4
Operational Voltage V DC	11,5 - 16,4	9 - 16,4	9 - 16,4	21 - 28,7	21 - 28,7	21 - 28,7	42 - 57,4	42 - 57,4	42 - 57,4
Energy Density Wh/kg	126,3	120,4	120,4	126,3	120,4	120,4	126,3	120,4	120,4
Communication / Wake-Up	E-Switch	E-Switch	E-Switch, CAN-open, Charger-Switch	E-Switch	E-Switch	E-Switch, CAN-open, Charger-Switch	E-Switch	E-Switch	E-Switch, CAN-open, Charger-Switch
Dimensions mm (LxWxH)	400x160x90	442,5x310x115	442,5x310x115	400x160x90	442,5x310x115	442,5x310x115	400x160x90	442,5x310x115	442,5x310x115
Weight Kg	8,1	18	19	8,1	18	19	8,1	18	19
Expected Operational Life	> 5 years (+20°C)								
Temperature Range	-20°C to +60°C								
Water / Dust Protection	IP66								
Humidity	5 to 95 %								
Operational Elevation	< 4000m								
Safety Detection	BMS - Module and cell series monitoring								
Safety Detection-Functions	Overcharge-/Deep Discharge-Protection, Temperature monitoring, Passive Balancing (150mA), Service Disconnect								
Warranty	5 years								
Cycle-Life	> 3000 cycles with 80% discharge depth at +20°C								
Cell Chemistry	Lithium-ion - Li-NMC - 3,6 Vdc - 2,9 Ah								
Housing	Aluminium Die Cast								
Certificates	UN 38.3, CE, RoHS, UL 94 VO								

Produkt-Übersicht

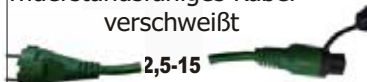


**MiniPlug-  
- IP 44 -**

**"DEFA" das Original "1A"**  
Sicher-  
schnell-  
zuverlässig-dauerhaft

**-Netz-Anschluss-Kabel**

MiniPlug-Connection cables  
MiniPlug Stecker mit Kappe  
Schuko-Stecker 16 A  
widerstandsfähiges Kabel  
verschweißt



Außen

**grün / orange**  
1,5 qmm / 2,5 qmm

460920	2,5	460960
460933	2,5m90°	-----
460938	3,5m	-----
460942	3,5m90°	-----
460921	5,0m	460961
460924	10,0m	460962
460936	15,0m	-----

**-Innen-Kabel**

-Inlet cables  
**AC-Außendose mit Deckel**

Wanddurchführungsteile  
Kabel im Spiralschlauch  
MiniPlug-Stecker  
Massekabel 40 cm



Im Fahrzeug

**schwarz / orange**  
1,5qmm

460902	0,6m	-----
460901	1,0m	704558
460915	1,5m	704559
460939	2,0m	704561

**-Verlängerungs-Kabel**

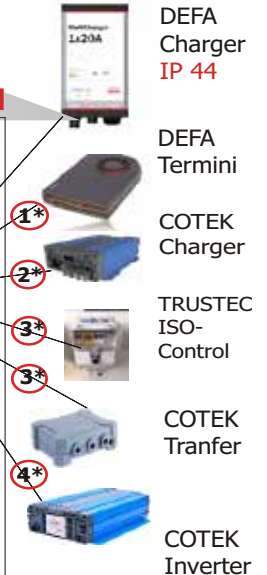
\_extension cables  
MiniPlug-Stecker  
Kabel in Spiralschlauch  
MiniPlug-Buchse



Im Fahrzeug

**schwarz / orange**  
1,5 qmm

460802	0,5m	704547
460803	1,0m	704548
460843	1,5m	704549
460804	2,0m	704550
460844	3,0m	704551
460846	4,0m	704552
460809	5,0m	704553
460847	8,0m	704554
460851	10,0m	704555
460850	12,0m	704556



**Kabel-Set MiniPlug-Connection+Inlet 1,5 qmm**

<b>grün</b>	<b>schwarz</b>
460789	2,5m Conn. /1,5m Inlet
460785	2,5m extrem/1,5m Inlet
460787	5,0m extrem/1,5m Inlet

<b>orange 2,5qmm/orange 1,5q</b>	
706960	2,5m Conn.Schuko/ 1,5m Inlet
706961	5,0m Conn.Schuko/ 1,5m Inlet
706962	2,5m Conn.CCE/ 1,5m Inlet
706963	5,0m Conn.CCE/ 1,5m Inlet

1*= DEFA-Termini Kabel 1,75m	460860
2*= DEFA-Miniplug-Schuko-Dose	460829
3*= DEFA-Adapter-Kabel 0,5m Litze	460802
4*= DEFA-Adapter-Kabel 0,5m Schuko	4608021

**Plugin Teile Ip44:**



Relay 16A  
12V 701445  
24V 701447



Relay-Box 16A  
12V 701445  
24V 701447



LED Indikator Satz  
460881



Anschlusskabelstecker mit Inlet-Steckdose



Y-Abzweig  
460853



T-Abzweig 90°  
460831



AC-Steckdose  
460829

**Einbau-Batterie-Ladegeräte / Charger IP 44 / 1Batterie 12 V**

1x12A <b>Multi</b> Nr.705200	<b>Rescue</b> Nr.705600	<b>Marine</b> Nr.702400
1x20A	705800	706200
1x35A	704600	705000
Remote-Panal 5m	705294	10m 705295
		20m 705296

**Einbau-Batterie-Ladegeräte IP 44 für 2 Batterien 12/24V**

2x12A <b>Multi</b> Nr.705300	<b>Rescue</b> Nr.705700	<b>Marine</b> Nr.702500
2x20A	705900	706300
2x35A	704700	705100
Remote-Panal 5m	705162	10m 705163
		20m 705164
Anschluss-Kabel Schuko-Stecker		705463

**Batterie-Ladekabel**

2m	4m	6m	8m
Serie 2m mit Temp.Sensor			
706-483	-484	-485	---
705-099	-147	-159	-160
25m 705297			
Serie 2m mit Temp.Sensor			
706-483	-484	-485	----
706-099	-147	-159	160
25m 705165			

# CABLE



<i>DEFA</i> MiniPlug Connection Cable with Cap, Schuko PlugIn 16A resistant cable welded, IP 44		Article No.	Length m
MiniPlug Connection cable, 16A, green	1,5 qmm	460920	2,5
MiniPlug Connection cable, 16A, green with angle contact	1,5 qmm	460933	2,5
MiniPlug Connection cable, 16A, green	1,5 qmm	460938	3,5
MiniPlug Connection cable, 16A, green with angle contact	1,5 qmm	460942	3,5
MiniPlug Connection cable, 16A, green	1,5 qmm	460921	5,0
MiniPlug Connection cable, 16A, green	1,5 qmm	460924	10
MiniPlug Connection cable, 16A, green	1,5 qmm	460936	15
MiniPlug Connection cable, 16A, orange	2,5 qmm	460960	2,5
MiniPlug Connection cable, 16A, orange	2,5 qmm	460961	5,0
MiniPlug Connection cable, 16A, orange	2,5 qmm	460962	10

<i>DEFA</i> MiniPlug Inlet cables with cap/wall feed through parts, with earth connector		Article No.	Length m
MiniPlug Inlet cable black	1,5 qmm	460902	0,6
MiniPlug Inlet cable black / orange	1,5 qmm	460901 / 704558	1,0
MiniPlug Inlet cable black / orange	1,5 qmm	460915 / 704559	1,5
MiniPlug Inlet cable black / orange	1,5 qmm	460939 / 704561	2,0



<i>DEFA</i> PlugIn extension cables, IP44		Article No.	Length m
PlugIn extension cable black / orange	1,5 qmm	460802 / 704547	0,5
PlugIn extension cable black / orange	1,5 qmm	460803 / 704548	1,0
PlugIn extension cable black / orange	1,5 qmm	460843 / 704549	1,5
PlugIn extension cable black / orange	1,5 qmm	460804 / 704550	2,0
PlugIn extension cable black / orange	1,5 qmm	460844 / 704551	3,0
PlugIn extension cable black / orange	1,5 qmm	460846 / 704552	4,0
PlugIn extension cable black / orange	1,5 qmm	460809 / 704553	5,0
PlugIn extension cable black / orange	1,5 qmm	460847 / 704554	8,0
PlugIn extension cable black / orange	1,5 qmm	460851 / 704555	10,0
PlugIn extension cable black / orange	1,5 qmm	460850 / 704556	12,0

<i>DEFA</i> Charging Cables for Multi/Rescue/Marine Chargers, required	Article No.	Length m
Charging Cable 1 x 20 A	706483	2,00
Charging Cable 1 x 20 A	706484	4,00
Charging Cable 1 x 20 A	706485	6,00
Charging Cable 1 x 35 A	705099	2,00
Charging Cable 1 x 35 A	705147	4,00
Charging Cable 1 x 35 A	705159	6,00
Charging Cable 1 x 35 A	705160	8,00



<i>DEFA</i> MiniPlug Connection Set (Inlet cable, Connection cable & fitting equipment)		Article No.	Length m Inlet / Conn.	
MiniPlug Connection set, con.cable with angle, Schuko, green		460789	1,5	2,5
MiniPlug Connection set, Schuko, green	extrem	460785	1,5	2,5
MiniPlug Connection set, Schuko, green	extrem	460787	1,5	5,0
MiniPlug Connection set, Schuko, orange		706960	1,5	2,5
MiniPlug Connection set, Schuko, orange		706961	1,5	5,0
MiniPlug Connection set, CCE, orange		706962	1,5	2,5
MiniPlug Connection set, CCE, orange		706963	1,5	5,0

DEFA Connection cables are developed for DEFA MiniPlug and provides a reliable connection from your mains power outlet to the car. The MiniPlug Xtreme is more durable and is suited for cold weather and rough treatment. Xtreme has a black cap to distinguish it from the MiniPlug.



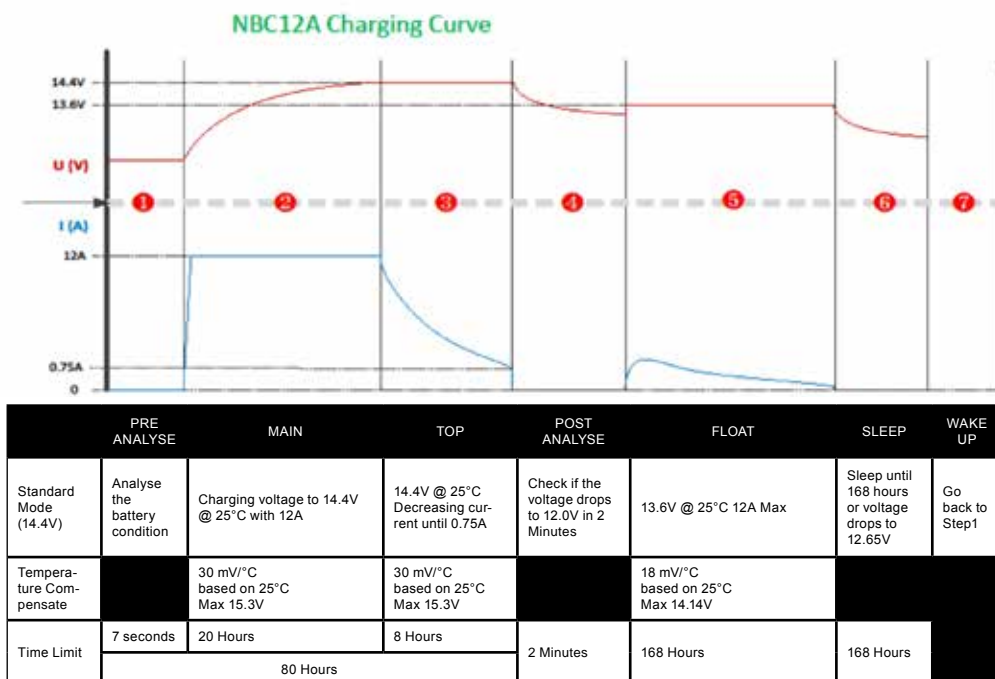
## DEFA Battery Charger "IP 44"

### DEFA MultiCharger 1x12A 1x20A 1x35A with "IP 44"

DEFA **MultiCharger 1x12A** is a battery charger made for permanent installation in vehicles. It is well suited for all lead/acid batteries (AGM,GEL,EFB, Start&Stop) up to 150Ah. With the DEFA Plugin connectors, both input and output, this charger integrates perfectly into the rest of the DEFA system.

**The charger is delivered with 2 meter fixed cable including temperature sensor.**

For the DEFA **MultiCharger 1x20A / 1x35A** the DC cable has to be ordered separately in different lengths (2, 4 or 6 meters) for 20A and 35A versions. The protection class IP 44 allows universal installation in vehicles.





# MULTICHARGER IN 1X12A - 1X20A - 1X35A



MultiCharger	1 x 12 A	1 x 20 A	1 x 35 A
<b>Item No.</b>	<b>705200</b>	<b>705800</b>	<b>704600</b>
Mains Voltage VAC	230 V	230 V/50-60	230 V/50-60
Operating temperature	-35 bis + 50 °C	-35 bis + 50 °C	-35 bis + 50 °C
Charging voltage* S1 VDC	14,4	14,4	14,4
Float voltage S2 VDC	13,5	13,5	13,5
Charging current A	12	20	35
Battery size Ah	150	250	600
IP-rate	44	44	44
Weight kg	1	2	2
Height/Width/Depth mm	138 x 98 x 53	182 x 98 x 53	200 x 98 x 53
Certifications	EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2		



Accessories MC 1 x 20 A	
706483	2 m Charging cable
706484	4 m Charging cable
706485	6 m Charging cable
705294	5 m Remote panel
705295	10 m Remote panel
705296	20 m Remote panel
705297	25 m Remote panel

Accessories MC 1 x 35 A	
705099	2 m Charging cable
705147	4 m Charging cable
705159	6 m Charging cable
705160	8 m Charging cable
705294	5 m Remote panel
705295	10 m Remote panel
705296	20 m Remote panel
705297	25 m Remote panel
705463	Connection Schuko-Plugin



## DEFA MultiCharger 2x12A 2x20A 2x35 A IP 44

DEFA MultiCharger 2x12A consists of two 12A battery chargers mounted on the same bracket. This combination is made for permanent installation in vehicles.

It is well suited for all lead/acid batteries (AGM,GEL,EFB, Start&Stop) up to 2x150Ah. With the DEFA Plugin connectors, both input and output, this charger integrates perfectly into the rest of the DEFA system.

**The charger is delivered with 2 meter fixed cable including temperature sensor.**

For the DEFA MultiCharger 2x20A / 2x35A the DC-cable can be ordered separately in various lengths (2, 4 and 6 meters). The high protection class IP 44 allows universal installation in vehicles.



These DEFA moisture-proof connectors are also suitable for the general vehicle network connection, even without DEFA chargers.

The safe 230 V vehicle outside connection IP 44/65 mounted in only 24 mm bore with protective cap (spring lock)

**simple - clean - fast - safe**

**DEFA Mini cable set** with 1,50 inner cable (black) incl. Grounding cable 70 cm from the inner connector with ring cable boot, incl. All parts for the vehicle wall of the outer plug. The socket including the cap sticks out only 10 mm - outstanding and clean with 2.50 m welded external power supply cable (green).



Internal cable with external socket, internal plug earth connector for earthing the system



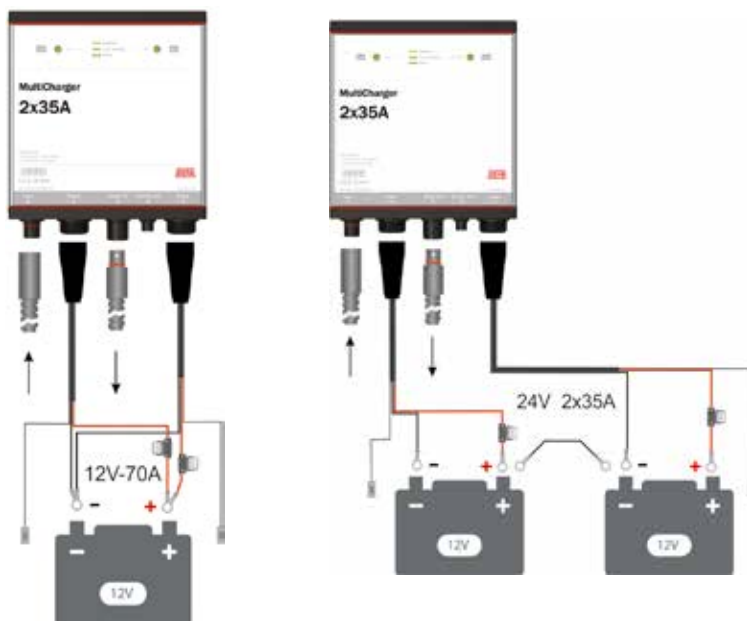
External connection cable with cast-on plugs IP 65 available in 2,4,6,8 m



# MULTICHARGER IN 2X12A - 2X20A - 2X35A



MultiCharger	2 x 12 A	2 x 20 A	2 x 35 A
Item No.	<b>705300</b>	<b>705900</b>	<b>704700</b>
Mains Voltage VAC	230 V	230 V/50-60	230 V/50-60
Operating temperature	-35 bis + 50 °C	-35 bis + 50 °C	-35 bis + 50 °C
Charging voltage* S1 VDC	14,4	14,4	14,4
Float voltage S2 VDC	13,5	13,5	13,5
Charging current A	2 x 12	2 x 20	2 x 35
Battery size Ah	2 x 150	2 x 250	2 x 600
IP-rate	44	44	44
Weight kg	1	3	3
Height/Width/Depth mm	138 x 201x 53	182 x 190 x 53	200 x 190 x 53
Certifications	EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2		



Accessories MC 2 x 20 A	
<b>706483</b>	2 m Charging cable
<b>706484</b>	4 m Charging cable
<b>706485</b>	6 m Charging cable
<b>705294</b>	5 m Remote Panel
<b>705295</b>	10 m Remote Panel
<b>705296</b>	20 m Remote Panel
<b>705297</b>	25 m Remote Panel
<b>705463</b>	Connection Schuko-Plugin

Accessories MC 2 x 35 A	
<b>705099</b>	Charging cable
<b>705147</b>	4 m Charging cable
<b>705159</b>	6 m Charging cable
<b>705160</b>	8 m Charging cable
<b>705294</b>	5 m Remote Panel
<b>705295</b>	10 m Remote Panel
<b>705296</b>	20 m Remote Panel
<b>705297</b>	25 m Remote Panel
<b>705463</b>	Connection Schuko-Plugin

## DEFA MultiChargerKits 12 A and 20 A

### DEFA ChargerKits 12 A und 20 A

ChargerKits includes the battery charger and necessary cables: External socket, inner cable, outer cable. Easy installation of the ChargerKkits by inserting the external socket (24mm bore), laying the inner cable with plug-in connection to the 230V consumer, charger, heater, etc.



Charger Kit 1 x 12 A	Item No. 706252
Multi Charger 1 x 12 A	Item No. 705200
Mini Plug 2,0 m	Item No. 460939
Connection cable 5,0 m	Item No. 460921



Charger Kit 2 x 12 A	Item No. 706253
Multi Charger 1 x 12 A	Item No. 705300
Mini Plug 2,0 m	Item No. 460939
Connection cable 5,0 m	Item No. 460921



Charger Kit 1 x 20 A	Item No. 706930
Multi Charger 1 x 20 A	Item No. 705800
Mini Plug 2,0 m	Item No. 460939
Connection cable 5,0 m	Item No. 460921



Charger Kit 1 x 20 A	Item No. 706930
Multi Charger 1 x 20 A	Item No. 705800
Mini Plug 2,0 m	Item No. 460939
Connection Cable 5,0 m	Item No. 460921

## DEFA RescueCharger 1x12; 1x20; 1x35 A IP 44



DEFA RescueChargers are specifically adjusted to emergency response vehicles which are connected and disconnected several times during a 24-hour period. The charger is suitable for vehicles with battery sizes up to 600Ah. The charger gives a galvanic isolation between net earth and the battery.

RescueCharger	1 x 12 A	1 x 20 A	1 x 35 A
<b>Item No. mit PlugIn</b>	<b>705600</b>	<b>706200</b>	<b>705000</b>
Mains voltage VAC	230 V/50-60	230 V/50-60	230 V/50-60
Operating temperature	-35 bis + 50 °C	-35 bis + 50 °C	-35 bis + 50 °C
Charging voltage* S1 VDC	14,4	14,4	14,4
Float voltage S2 VDC	13,5	13,5	13,5
Charging current A	12	20	35
Recommended battery max. Ah	150	250	600
IP-rate	44	44	44
Weight kg	1	1,5	2
Height/Width/Depth mm	138 x 98 x 53	182 x 98 x 53	200 x 98 x 53



## DEFA RescueCharger 2x12; 2x20; 2x35 A IP 44

DEFA RescueChargers are specifically adjusted to emergency vehicles which are connected and disconnected several times during a 24-hour period. The charger is suitable for vehicles with battery sizes up to 600Ah. The charger gives a galvanic isolation between net earth and the battery..



RescueCharger	2 x 12 A	2 x 20 A	2 x 35 A
<b>Item No. with PlugIn</b>	<b>705700</b>	<b>706300</b>	<b>705100</b>
Mains voltage VAC	230 V/50-60	230 V/50-60	230 V/50-60
Operating temperature	-35 bis + 50 °C	-35 bis + 50 °C	-35 bis + 50 °C
Charging voltage* S1 VDC	14,4	14,4	14,4
Float voltage S2 VDC	13,5	13,5	13,5
Charging current - A	2 x 12	2 x 20	2 x 35
Recommended battery max. Ah	2 x 150	2 x 250	2 x 600
IP-rate	44	44	44
Weight kg	2	3	4
Height/Width/Depth mm	138 x 201 x 53	182 x 190 x 53	200 x 190 x 53



Accessory for DEFA RescueChargers consists of charging cables and remote panels with a range of cable lengths as well as a connection from PlugIn to Schuko. Rettbox is also available for mounting the Rescue chargers,.



RescueCharger Accessories	
706483	2 m Charging cable 20 A
706484	4 m Charging cable 20 A
706485	6 m Charging cable 20 A
705099	2 m Charging cable 35 A
705147	4 m Charging cable 35 A
705159	6 m Charging cable 35 A
715160	8 m Charging cable 35 A
705294	5 m Remote Panel 1x20A,1x35A
705295	10 m Remote Panel 1x20A,1x35A
705296	20 m Remote Panel 1x20A,1x35A
705297	25 m Remote Panel 1x20A,1x35A
705162	5 m Remote Panel 2x20A,2x35A
705163	10m Remote Panel 2x20A,2x35A
705164	20m Remote Panel 2x20A,2x35A
705165	25m Remote Panel 2x20A,2x35A
705463	Connection Schuko Plugin

## DEFA Zubehör

Wall outlet - on wall-mounted single	
Item No.	700401
Mains voltage VAC	230
Weight gr	100
IP-rate	44



Wall outlet - on wall-mounted double	
Item No.	700403
Mains voltage VAC	230
Weight gr	200
IP-rate	44

EI-central	
Item No.	700437
Mains voltage VAC	230
Current max. A	16
1 DEFA PlugIn inlet	
3 DEFA PlugIn outlet (grey)	



EI-central	
Item No.	700441
Mains voltage VAC	230
Current max. A	16
1 DEFA PlugIn inlet	
3 DEFA PlugIn outlet, with general switch (grey)	

EI-central	
Item No.	700433
Mains voltage VAC	230
Current max. A	16
1 DEFA PlugIn inlet	
1 DEFA PlugIn outlet	
1 Schuko outlet (grey)	





The DEFA relay connector is adapted to DEFA PlugIn contacts and used to control the engine and interior heater, together with a DEFA control units. It can also be used for separate control of engine and interior heaters together with DEFA SmartStart. At branching, use T- or Y- connectors.



PlugIn Relay connector	
Item No. 12 V	701445
Item No. 24 V	701447
Operating temperature	- 40 - + 80 °C
Mains voltage VAC	230/12 , 230/24
Current max. A	16
Height/Width/Depth mm	61 x 31 x 67
Weight gr	59
Insolation class - cl	II
IP rate	44

PlugIn Y-connector	
Item No.	460853
Mains voltage VAC	230
Current max. A	16
Height/Width/Depth mm	53 x 48 x 24
Weight gr	23
IP rate	44



PlugIn T-connector	
Item No.	460831
Mains voltage VAC	230
Current max. A	16
Height/Width/Depth mm	42 x 63 x 21
Weight gr	22
IP rate	44

**DEFA SmartCharger is ideal for continuous power supply for standing vehicles**

**DEFA SmartCharger 4 - 10 A IP 65**

SmartCharge 4A and 6A are intelligent chargers which makes it easy and safe to charge your batteries. All you have to do is connect the charger to an outlet, connect the clips to your battery, and then press "On". SmartCharge recognizes which type of battery it is connected to, and charges it accordingly. As the charge is completed, the continuous energy consumption is continuously supplied by the mains power. The IP 65 protection class allows the SmartCharger to be used in the outdoor area for sample and exhibition vehicles.

SmartCharge 8A and 10A are larger and more powerful chargers designed for more rapid charging of larger batteries, such as in a car or boat. SmartCharge has Powersupply for access to continuous current.

**DEFA POWER SUPPLY - Power Adapter - PowerSupply**

Often you need access to continuous current, for example when changing the battery in the vehicle. With PowerSupply, you can avoid your car becoming powerless and all settings in the car have to be reset later.

You can also use PowerSupply to operate 12V units like an ice box or a portable sound system.

The power supply is constantly available with all SmartCharger versions.

It is activated by pressing and holding the ON button for 5 seconds. The power supply then generates 13.6V, indicated by 5 LED segment lighting from bottom to top.

**SIMPLE TO USE**

- One button solution
- Illuminated user-friendly interface and display
- Automatically adjusts to the size (Ah) of your battery
- A display for easy reading of the current power level of your battery
- Integrated cable storage solution
- The battery will never be charged
- Temperature compensated charging cycle



SmartCharger 4 A / 6 A		
	4 A	6 A
Item No.	701515	706060
Battery max Ah	2 - 110 Ah	10 - 150 Ah
IP-rate	65	65
Weight kg	620	620
Height/Width/Depth mm	210 x 90 x 54	210 x 90 x 54

SmartCharger 8 A / 10 A		
	8 A	10 A
Item No.	701785	706161
Battery max Ah	20 - 200 Ah	30 - 250 Ah
IP-rate	65	65
Weight kg	750	750
Height/Width/Depth mm	235 x 90 x 54	235 x 90 x 54

**Charge battery with low voltage**

If your battery is empty, you need SmartCharger. It charges 12V batteries with voltages as low as 2V.

**Charge of large and small batteries**

SmartCharger is suitable for batteries 20 to 250Ah. The 8 - 10A charger is only 2.5 cm higher than 4A and 6A, and more powerful. The larger you select the device, the faster your batteries will be charged.

## DEFA WorkshopCharger 25 / 35 A

The new DEFA WorkShop charger 25 A is a battery charger as well as 13.7V power supply. Its unique display makes every function available with one button access and allows for easy monitoring of the charging process. The unit provides continuous current up to 25/35 A when you need a stable voltage to avoid data loss during ECU programming or battery replacement. It is delivered with cable, a wall bracket and an isolated hood for easy storage and use.

WorkshopCharger 25A / 35A		
	25 A	35 A
<b>Item No.</b>	<b>706900</b>	<b>706400</b>
Volt	12 V charge / 13.7 V power supply	
Rated voltage AC	220-240 VAC , 50-60 Hz	
Charging voltage	normal 14,4 V / 14,7 V	
Float charging	13,6 V	
Min. Battery voltage	2,0 V	5,0 V
Max. Battery voltage	25 A	35 A
Back current drain	< 1 Ah / Monat	
Ambient temperature	- 20°C - + 50°C	
Charging types	7 step, fully automatic charging cycle (Analyze/main charge/top charge/analyze/float/sleep/wake Up)	
Battery types	All types of 12V lead-acid batteries (WET, MF, Ca/Ca, AGM, EFB and GEL) Start-Stop Batteries	
Battery capacity	30 - 500 AH	30 - 600 AH
Dimensions L/W/H	202 x 96 x 53	234 x 96 x 53
IP rate	20	
Weight	2 kg	2 kg



# Energy technology for the vehicle everything from one source



**COTEK**



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