

Steca Solarix PI

500-12, 550-24, 1100-24, 1500-48

The new generation of sine wave inverters, Steca Solarix PI, demonstrates robustness. Existing safety features have also been made more customer-friendly and robust. The new generation of the Steca Solarix PI possess different technical properties to predecessor models and may not be suitable to replace these.

In developing the Solarix PI sine wave inverter, Steca has brought about some innovations. In particular these include the ability to connect all Steca Solarix PI models in parallel, the innovative operating concept using a single rotary switch and the electronic fuse. Furthermore, many years of experience have come into play for deploying these inverters specifically in photovoltaic systems. This comes through, for instance, in the way that a most diverse range of appliances is provided with a low operating consumption and a stable energy supply.

The power of the new generation Steca Solarix PIs is only extensible with the new parallel connection box Steca PA Link1. Mixing older generation Steca Solarix PIs and new generation Steca Solarix PIs is not possible.

Product features

- True sine wave voltage
- Excellent overload capabilities
- Optimal battery protection
- Automatic load detection
- Parallel connectable
- Best reliability
- Protective insulation according to protection class II
- Control by digital signal processor (DSP)

Electronic protection functions

- Deep discharge protection
- Battery overvoltage shutdown
- Overtemperature and overload protection
- Short circuit protection
- Reverse polarity protection
- Automatic electronic fuse

Displays

- Multi-coloured LED shows operating states

Operation

- Main switch
- Adjustable load detection

Options

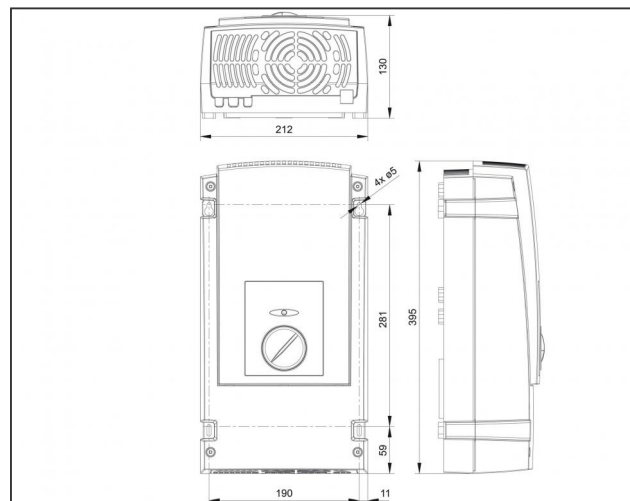
- Type with 230 V / 60 Hz
- Type with 115 V / 60 Hz

Certificates

- Compliant with European Standards (CE)
- Made in Germany
- Developed in Germany
- Manufactured according to ISO 9001 and ISO 14001



Quality made
in Germany



	500-12	550-24	1100-24	1500-48
Inverter type		PI 550-24	PI 1100-24	PI 1500-48
Number of inverters / Steca PA Link1		1 / 0	1 / 0	1 / 0
Characterisation of the operating performance				
System voltage	12 V	24 V	24 V	48 V
Continuous power	450 VA	450 VA	900 VA	900 VA
Power 30 min.	500 VA	550 VA	1100 VA	1500 VA
Power 5 sec.	500 VA	1000 VA	1400 VA	2800 VA
Max. efficiency	93 %	93 %	94 %	94 %
Own consumption standby	0.5 W	0.5 W	0.7 W	0.7 W
Own consumption ON	6.0 W	6.0 W	10.0 W	10.0 W
DC input side				
Battery voltage	10.5 V ... 16 V	21 V ... 32 V	21 V ... 32 V	42 V ... 64 V
Reconnection voltage (LVR)	12.5 V	25.0 V	25.0 V	50.0 V
Deep discharge protection (LVD)	10.5 V	21.0 V	21.0 V	42.0 V
AC output side				
Output voltage	230 V AC ± 10 %			
Output frequency	50 Hz			
Load detection (standby)	adjustable: 2 W ... 50 W			
Safety				
Protection class	II (double insulated)			
Electrical protection	reverse polarity battery, reverse polarity AC, over voltage, over current, over temperature			
Operating conditions				
Ambient temperature	-20 °C ... + 50 °C			
Fitting and construction				
Cable length battery / AC	1.5 m / 1.5 m			
Cable cross-section battery / AC	16 mm² / 1.5 mm²			
Degree of protection	IP 20			
Dimensions (X x Y x Z)	212 x 395 x 130 mm			
Weight	6,6 kg	6,6 kg	9 kg	9 kg

- Deep discharge protection (LVD) adjustable via charge controller together with compatible parallel switch box
- Dimensions and weight per inverter



Steca Solarix PI: flexible and versatile

Parallel connection

A stand-alone PV system is relatively difficult to size, since often the loads and their average running times are not adequately known, or because, when the system is subsequently expanded, more loads are added.

This is where the simple expandability of the Steca Solarix PI inverters pays off. Up to four devices can be operated in parallel. The connections are made via an external box, the Steca PA Link1.

From the outside, the combination of two, three or four inverters functions like one device with a correspondingly higher capacity. Internally, in case of open-circuit operation or low output, e.g. for the lighting, only one inverter continues to operate. This has a positive effect on the electricity consumption, since the devices which are not turned on do not consume any power. Only when a higher capacity is called for, for example when a refrigerator is turned on, are all the inverters automatically switched on, thus ensuring trouble-free operation.

In this regard, Steca Solarix PI inverters are all the same. Only via the connection to the Steca PA Link1 parallel switch box is one inverter designated as the master. This device then has control over the system, whilst the other Steca Solarix PI inverters operate as slaves.

Rotary switch

Operating the Steca Solarix PI is made very easy by the large rotary switch on the front of the device.

If the Steca Solarix PI is being used as a single device, three different modes of operation are possible, and these may be selected using the rotary switch. The load detection section follows on from the 'off' setting on the far left. In this section, the switch can be turned continuously to match the power consumption of the smallest load. In order to reduce power consumption, the inverter is then turned off, and it checks periodically whether a load has been turned on. Only if this is the case does the inverter switch itself on. The 'on' setting on the rotary switch follows on from the load detection section. In this operating status, the inverter makes the output voltage continually available.

If several inverters are connected in parallel, the desired mode of operation is selected using the rotary switch of the device connected to the 'master socket'. In addition to the modes of operation described above, there is also the setting 'all on'. This means that not only the master device is continually switched on, but all other connected inverters as well.

The use of the rotary switch makes it possible to see very quickly which mode of operation the inverter is in.

Electronic fuse

One innovation in sine wave inverters is the electronic fuse as it is employed by Steca in solar charge controllers. With this fuse, the Steca Solarix PI is protected against overloads, and also against the accidental connection of the AC output to the public grid. Because the fuse is electronic, it does not need to be replaced after it has been triggered, as is the case with mechanical fuses. As soon as the problem has been remedied, the inverter automatically reverts back to its selected mode of operation.

The Steca Solarix PI is also internally protected against an incorrect wiring of the battery. In case of reverse polarity, the device remains undamaged, and there is no need to replace the fuse.



Inverter type (2x)	PI 500-12	PI 550-24	PI 1100-24	PI 1500-48
Continuous power	900 VA	900 VA	1,800 VA	1,800 VA
Power 30 min.	950 VA	1,000 VA	2,000 VA	2,800 VA
Power 5 sec.	950 VA	1,350 VA	2,700 VA	4,100 VA



Inverter type (3x)	PI 500-12	PI 550-24	PI 1100-24	PI 1500-48
Continuous power	1,350 VA	1,350 VA	2,700 VA	2,700 VA
Power 30 min.	1,400 VA	1,500 VA	3,000 VA	4,150 VA
Power 5 sec.	1,400 VA	2,050 VA	4,100 VA	5,400 VA



Inverter type (4x)	PI 500-12	PI 550-24	PI 1100-24	PI 1500-48
Continuous power	1,800 VA	1,800 VA	3,600 VA	3,600 VA
Power 30 min.	1,850 VA	2,010 VA	4,000 VA	5,500 VA
Power 5 sec.	1,850 VA	2,750 VA	5,500 VA	6,600 VA

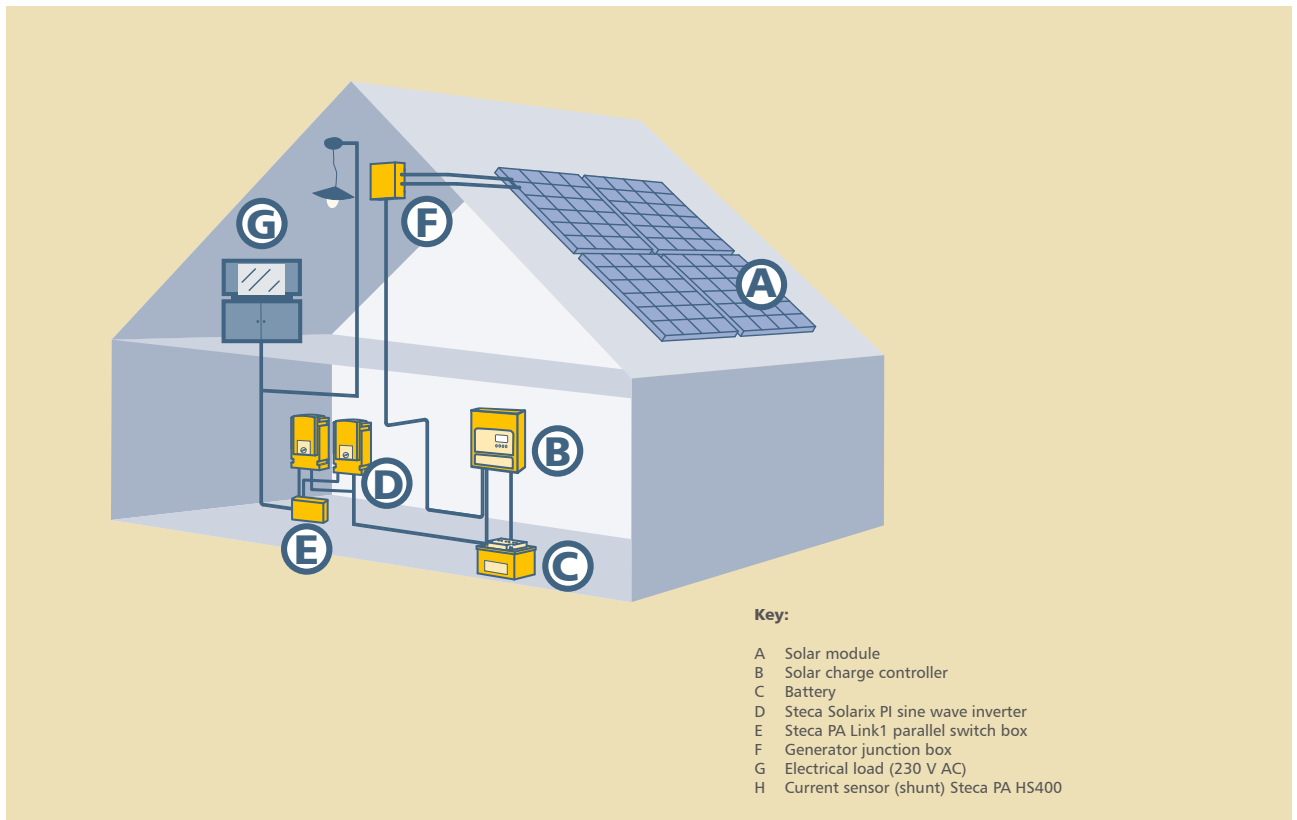
Quick and robust control

The Steca Solarix PI inverter was developed to supply power to a wide range of loads. Even critical loads can be operated, thanks to the quick control. At the heart of the controller is a DSP (digital signal processor) which takes on the extensive calculation work. The inverter's necessary robustness is supplied by a control software program which was developed in cooperation with a renowned research institute.

Low own consumption

The sine wave inverter has benefited from Steca's 15 years of experience in the field of stand-alone PV systems. This is reflected, for instance, in the low own consumption of the Steca Solarix PI. When used in solar home systems, the inverter is connected to the battery 24 hours a day, and is designed to consume as little as possible of the solar-generated energy whilst in load-detection or open-circuit modes.





Communication with Steca solar charge controllers

The electricity sensor Steca PA HS400 is able to measure the power consumed by several Solarix PI inverters and send the data to a Steca Tarom MPPT 6000-M or a Steca Tarom 4545/4545-48. The consumption data in the internal data logger of the respective solar charge controller can be stored and optionally used to calculate the state of charge (SOC).

Switching the charge controller to voltage-controlled operation is no longer necessary. Additional loads and/or energy generators can be measured via the same Steca PA HS400 electricity sensor.

