StecaGrid SEM

Smart Energy Manager for coolcept, coolcept-120, coolcept-x, coolcept³, coolcept³-x, StecaGrid 8000+ 3ph and 10000+ 3ph,

The feed-in management solution
The StecaGrid SEM offers different options of realising feed-in management with a photovoltaic system. A ripple control receiver from the relevant distribution grid operator can be connected. From firmware version 3.0, the feed output at the grid connection point can be limited to an adjustable value, or the ripple control signal can be switched to the relay output. The individual operating modes are selected and defined via the free StecaGrid User PC software. Up to ten inverters can be connected to the StecaGrid SEM via the RS 485 interface.

SEM stands for Smart Energy Manager

Easiest installation
StecaGrid SEM can be installed on a top-hat rail in the switching cabinet right next to the ripple control receiver. Its width is 4 HP. Direct power supply at 230 V. A mains adapter plug or an external direct current power supply are not required.

Easily accessible service interface
All connected StecaGrid inverters can be accessed via a USB interface on the StecaGrid SEM. Connection to a PC via the supplied USB cable. The interface is on the front side of the casing – the cover does not need to be removed in the switching cabinet.
   The StecaGrid SEM can be configured via the StecaGrid User Software (from version 3.0). The software is available at www.steca-solar.com for free download.

StecaGrid SEM
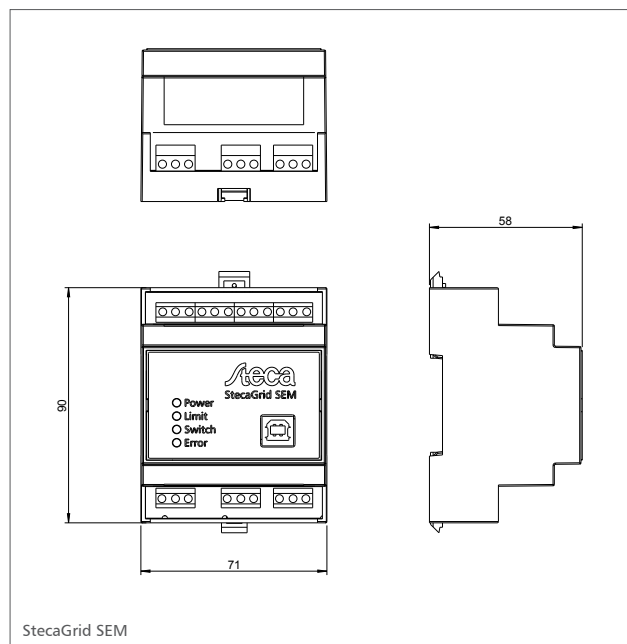
StecaGrid SEM

Product features
· Wall-mounting with top-hat rail
· Compact and robust product design
· Quiet and emission-free
· Maintenance-free
· Firmware update possible

Displays
· 4 LEDs show operating states
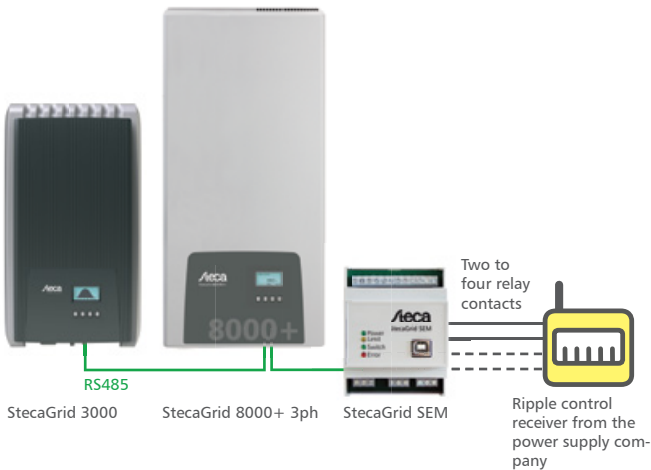
Interfaces
· Steca RS485 bus

Certificates
· Compliant with European Standards (CE)
· Made in Germany

Options
· Can be connected to the StecaGrid Vision display unit or a data logger

	StecaGrid SEM
Characterisation of the operating performance	
Own consumption	< 3 W
Operating conditions	
Area of application	indoor rooms, with or without air conditioning
Interface to inverter	Steca RS485 bus with max. 1,000 m cable length and 10 bus participants at maximum
Ambient temperature	0 °C ... +60 °C
Storage temperature	-40 °C ... +85 °C
Relative humidity	0 % ... 95 %
Noise emission	silent
Fitting and construction	
Degree of protection	IP 20
Terminal (fine / single wire)	1.5 mm² / 2.5 mm²
Dimensions (X x Y x Z)	72 x 91 x 58 mm
Weight	300 g
Power supply	230 V / 50 Hz or 60 Hz
Communication interface	2 x RJ45; 4 x analogue for ripple control receiver, via screw-type terminals; USB, type B socket; S0 interface
Relay output	potential-free contact, 250 V AC / 16 A
Test certificate	CE mark

Modes of operation

RS485

StecaGrid 3000   StecaGrid 8000+ 3ph   StecaGrid SEM

Two to four relay contacts

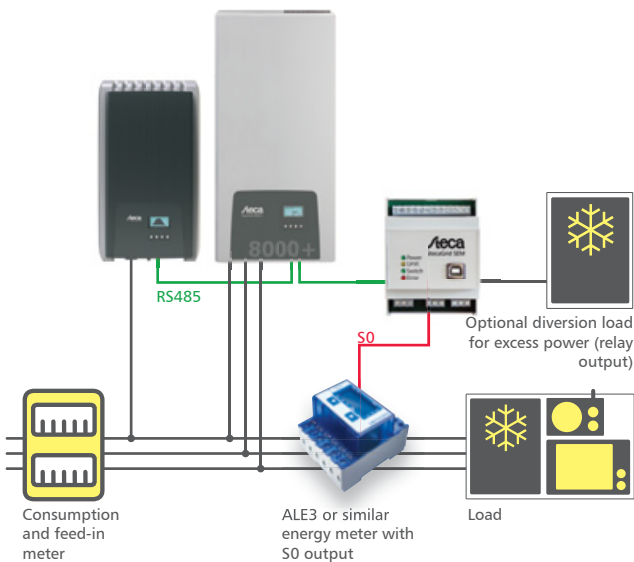Ripple control receiver from the power supply company

Forwarding of ripple control signal

In Germany, photovoltaic systems require feed-in management. To this end, ripple control receivers of the respective grid operators are installed. These ripple control receivers transmit a reduction signal from the grid operator whenever the system has to be throttled due to grid overloads.

StecaGrid SEM is the easiest way to connect your StecaGrid inverter to the ripple control receiver. StecaGrid SEM evaluates the relay outputs of the ripple control receiver and transmits the signals via the Steca solar bus (or Steca RS485 bus) to the connected inverters.

With the StecaGrid User software, the function of the individual relay outputs of the ripple control receiver can be freely configured. In this way, all ripple control receivers with two to four outputs can be used.

RS485

S0

Consumption and feed-in meter

ALE3 or similar energy meter with S0 output

Optional diversion load for excess power (relay output)

Load

Dynamic feed limitation

Data can be read from an energy meter via an S0 interface. This allows for a distinction between the share of PV energy used at home and that fed into the grid. With this measurement data, StecaGrid SEM monitors the house connection and ensures that no more than a specified output is fed into the grid. If required, it accurately reduces the output of the connected inverters.

Benefit for system operators: energy consumed at home is not included in the limitation. The limit may be changed as required via the StecaGrid User software and the USB interface on the StecaGrid SEM. For example, the 70 % limitation or the standards set by the KfW funding programme for storage systems (60 %) are fulfilled. In general, feeding into the public grid can also be prevented by setting the specified value to 0 W.

The StecaGrid SEM can connect a load via a relay. The switch-on value for the load can be specified as required. The parameters for switching the relay, and therefore also the load, on and off can also be set as needed.

Direct relay triggering

Direct relay triggering is specifically suited for PV systems with the StecaGrid 9000 3ph inverters from 30 kWp to 100 kWp, which in Germany must be incorporated into feed-in management by the end of 2013.

The signals from the ripple control receiver to be fitted in the system are switched to the relay output of the StecaGrid SEM. If the specified value of the power supply company is below 100%, the PV system is disconnected from the grid. This fulfils the standards for feed-in management.

StecaGrid 9000 3ph   StecaGrid 9000 3ph   StecaGrid 9000 3ph   StecaGrid 9000 3ph   StecaGrid 9000 3ph

Feed-in meter

Contactor

Triggering via relay output

StecaGrid SEM

Two to four relay contacts

Ripple control receiver from the power supply company