EN

StecaGrid SEM feed-in manager
Installation and operating instructions

Description[B]

Depending on the operating mode, the CE compliant StecaGrid SEM (SEM) can be used as

- an interface between a *ripple control receiver for EEG compliant feed-in management* (*RCR*) and Steca inverters,
- an independent feed-in manager.

The SEM converts the K1 ... Kx channel states of the RCR according to the PV power to the Steca RS485 bus. A USB interface allows updating/configuration using a PC and the free *StecaGrid User* software (version 3.0 or later). Four operating modes[C] allow the unit to be adapted to suit various different system configurations. The status of the SEM is indicated via four LEDs. The supply voltage is 230 V ~. An external data logger can be connected to the RS485 bus.

Safety and installation

The SEM may only be installed by a qualified, trained electrician.

- The SEM may only be installed in switching cabinets on a 35 mm supporting rail (top-hat rail).
- When using *Dynamic feed limitation* the energy meter must be installed between the consumers and the inverters[B].

Danger
Danger of death from electrical voltage. The connections must be covered in the switching cabinet. The covering may only be removable with the aid of a tool.

Scope of delivery

• StecaGrid SEM • USB cable, type B • Data sheet

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Maintenance

The SEM is maintenance-free. If necessary, clean the SEM as follows:

Danger
Danger of death from electrical voltage. Only clean the device when the power has been disconnected (applies to all supply cables)!

▶ Clean the device with a dry or slightly damp cloth (2 % hard soap solution possible; remove soap residues).

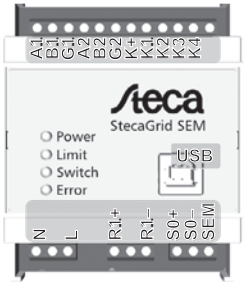
Guarantee

The guarantee period is 5 years. More information on this is provided at www.steca.com/service.

Technical data

Characterisation of the operating behaviour	
Own consumption	< 3 W
Application conditions	
Operational area	• Indoors, with air conditioning • Indoors, without air conditioning
Interface to the inverter	Steca RS485 bus with a maximum cable length of 1,000 m
Ambient temperature	Operation: 0 °C ... +60 °C Storage: –40 °C ... +85 °C
Relative humidity	0 % ... 95 %
Noise emission	Silent
Equipment and design	
Degree of protection	IP 20
Protection class	II
Connection terminals (fine-wire/single-wire)	1.5 mm² / 2.5 mm²
Dimensions	91 x 72 x 58 mm
Weight	300 g
Power supply	230 V ~ / 50 Hz or 60 Hz
Interfaces	
RCR channels[F]	2, 3 or 4 channels (K1 ... K4)
RS485 bus[F]	*Terminals A1, B1, G1*: Connection of ≤ 10 slaves[H] (inverters StecaGrid coolcept/coolcept-x/8000/8000+/10000/10000+) *Terminals A2, B2, G2*: Connection of 1 master[E] (PC or external data logger SolarLog/MeteoControl)
S0[F]	Pulses/kWh configurable[C]
Relay	250 V AC, 16 A
USB[F]	Type B, for connecting a PC[E] with *StecaGrid User* software
LEDs	
Power (green)	On: No fault Off: No power supply
Switch (green)	On: Excess power, relay is switched on Off: Relay is switched off
Limit (yellow)	On: Inverter capacity is reduced Off: Full feed
Error (red)	On: Channel assignments for K1 ... Kx are invalid, bus communication is faulty Off: No fault

Connections



RS485 bus cable connector assignments

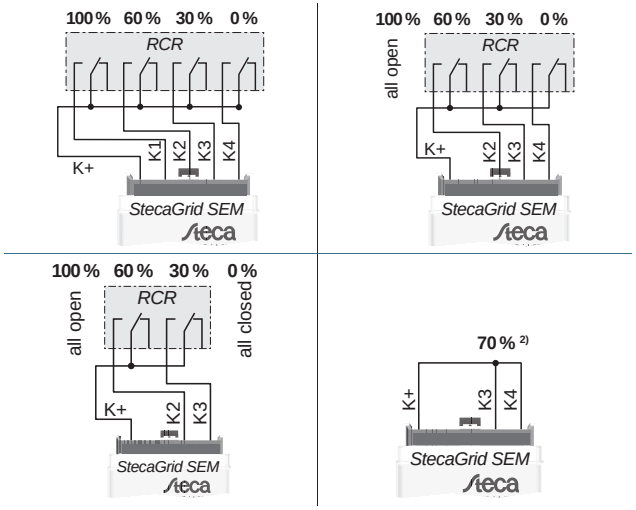
RS485 signals	SEM terminals [K]	RJ45 Slave	SEM terminals [K]	Master
Data A	A1	1	A2	see [I]
Data B	B1	2	B2	
–	–	–	–	
–	–	–	–	
–	–	–	–	
–	–	–	–	
–	–	–	–	
Ground	G1	8	G2	

Connection diagram: see data sheet[B]
RJ45 pin assignments: see [G]

Pin	Description
N	Neutral conductor
L	Phase conductor
R1+, R1–	Relay contact, normally open, for controlling consumers [A] [C]
S0+, S0–	S0 input from consumer energy meter[B] [C] (e.g. Saia-Burgess *ALE3* or equivalent energy meter with an S0 output)
SEM	*No function at this time*
A1, B1, G1	RS485 bus to the inverters (Slaves)[H]; connection assignments for the connection cable according to the table above
A2, B2, G2	RS485 bus to peripheral device (Master[E]), e.g. PC, data logger; connection assignments for the connection cable according to the table above and [I]
K+	Power supply for the relay contacts of the *RCR*
K1 ... K4	Inputs for control signals from the *RCR* (see figure at right)
USB	PC interface

Ripple control receiver connection[1]

Attention
The power supply for K1 ... K4 **must** be provided via K+



= ripple control receiver
1) = Standard wiring; for other configurations see [C]
2) 70 % = fixed value

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[A] Switches on consumers via a relay contact when excess energy is present.
[B] Further information provided in data sheet; see also www.steca.com/sem.
[C] Function can be configured via StecaGrid User; see www.steca.com/stecagrid_user.
[D] The data can be displayed using *StecaGrid User*.
[E] The automatic Multi-Master mode allows 2 masters to be simultaneously connected to the SEM: 1 via RS485 (A2, B2, G2) and 1 via USB.
[F] Safety extra low voltage (SELV)
[G] RJ45 plug pin assignments:

[H]

Attention
Except for the SEM, **no additional master** is to be connected to the RS485 bus to the inverters (terminals A1, B1, G1). If necessary, connect an additional master (PC, external data logger) to A2, B2, G2.

[I] Connection assignments as per slave manual, section *Data communication*
[K] For connection, remove the RJ45 plug of the RS485 bus cable and prepare the individual conductors for clamping.