

coolcept³-x

StecaGrid 3203x, StecaGrid 4003x, StecaGrid 4803x, StecaGrid 5503x

Inverter topology

The coolcept inverter topology was first implemented in the single-phase StecaGrid. It achieved optimum efficiency ratings thanks to the innovative switching concept. The three-phase coolcept³-x inverters also benefit from the advantages of this switching concept. The three-phase topology is fully reactive current capable and therefore set up to meet demands that may be made in future as well.

Always symmetrical

The advantage of three-phase feeding is that the produced solar capacity is always symmetrically distributed on all three power conductors to the public power grid. This is the case across the whole output range offered by these inverters. The symmetrical feed-in is very much in the interests of the power supply companies, and is also compatible with domestic three-phase consumption.

Highest efficiency with longer service life

The high efficiency results in a peak efficiency of 98.6 %, which means that less power is lost that must be dissipated into the environment. This improves your yields.

As at least two phases of a three-phase feed-in design feed energy into the grid, it is not necessary to provide for intermediate energy storage in the device, as must be done in the case of single-phase feed-in. For this reason, the coolcept³-x inverters dispense completely with the electrolytic capacitors that are required for intermediate storage. These capacitors may influence the service life of electronic devices as they may dry out. Therefore by using coolcept³-x inverters, plant operators may expect to benefit from their long service lives.

In addition to this, a new and unique cooling concept inside the inverter ensures an even distribution of the dissipated heat and a long service life for the device.

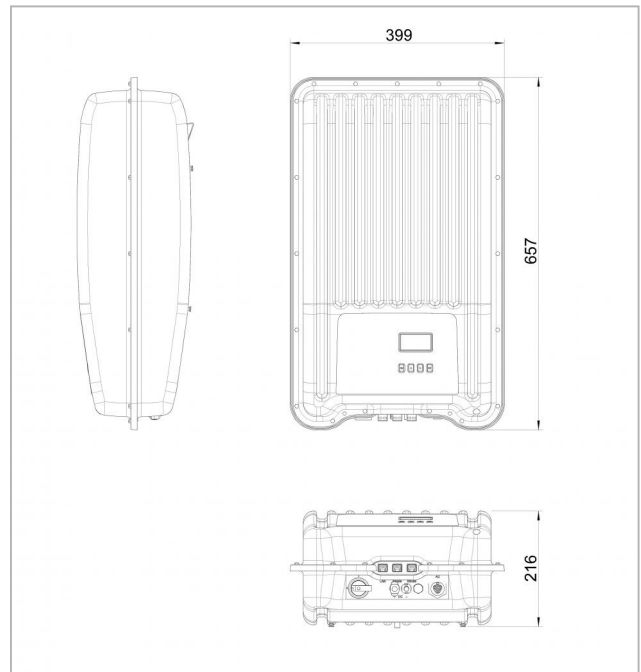
Product design and visualisation

The StecaGrid has a graphical LCD display for visualising the energy yield values, current performance and operating parameters of the system. Its innovative menu allows individual selection of the various measurements. The guided, pre-programmed menu allows easy final commissioning of the device.

Installation

The lightweights with only 12 kg can be easily and safely mounted on a wall. The supplied wall bracket make mounting of the device simple and convenient. The device does not need to be opened for installation. All connections and the DC circuit breaker are externally accessible. For making DC connections, Sunclix mating connectors are included in the scope of supply.

The devices meet all the standards for the IP65 protection class. Its robust stainless steel housing provides reliable protection against dust and water, including jet water. This enables problem-free installation of the inverters outdoors.



Product features

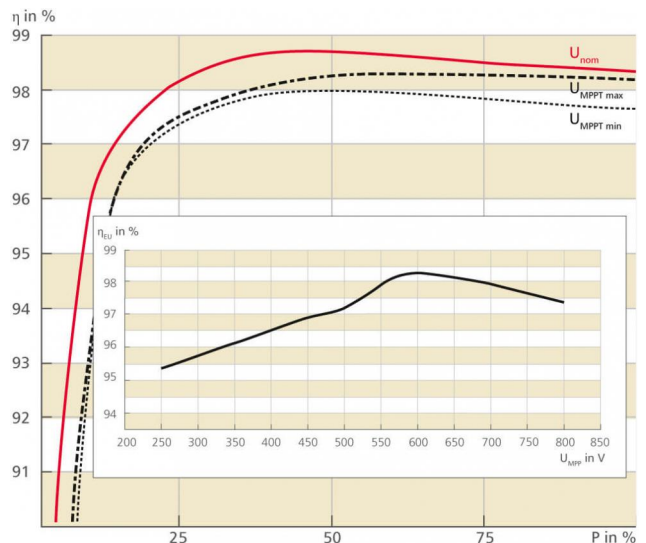
- Highest efficiency
- Three-phase, symmetrical grid feeding
- Simple installation
- Integrated data logger
- Low housing temperature at full load
- Solid stainless steel casing
- Suitable for outdoor installation
- Integrated DC circuit breaker
- Very long service life
- Droop Mode for integration in hybrid systems
- Fixed voltage mode for other energy sources
- Up to 7-year free warranty after registration
- Optimised shadow management using global MPP tracking

Displays

- Multifunction graphical LCD display with backlighting
- Animated representation of yield

Operation

- Simple menu-driven operation
- Multilingual menu navigation



Efficiency values and comparison of the MPPT voltage of the StecaGrid 5003x

| | StecaGrid 3203x | StecaGrid 4003x | StecaGrid 4803x | StecaGrid 5503x |
|--|---|---------------------------|---------------------------|---------------------------|
| DC input side (PV generator) | | | | |
| Maximum input voltage | 1000 V | | | |
| Operating input voltage range | 250 V ... 800 V | | | |
| Number of MPP tracker | 1 | | | |
| Maximum input current | 11.0 A | | | |
| Maximum short circuit current | +20 A / -13 A | | | |
| Maximum input power at maximum active output power | 3300 W | 4100 W | 4920 W | 5620 W |
| AC output side (Grid connection) | | | | |
| Grid voltage | 320 V ... 480 V (depending on regional settings) | | | |
| Rated grid voltage | 400 V | | | |
| Maximum output current | 7.0 A | 7.0 A | 10.0 A | 10.0 A |
| Maximum active power (cos phi = 1) | 3200 W | 4000 W | 4800 W | 5500 W |
| Maximum active power (cos phi = 0.95) | 3040 W | 3800 W | 4560 W | 5225 W |
| Maximum active power (cos phi = 0.9) | 2880 W | 3600 W | 4320 W | 4950 W |
| Maximum apparent power (cos phi = 0.95) | 3200 VA | 4000 VA | 4800 VA | 5500 VA |
| Maximum apparent power (cos phi = 0.9) | 3200 VA | 4000 VA | 4800 VA | 5500 VA |
| Rated power | 3200 W | 4000 W | 4800 W | 5500 W |
| Rated frequency | 50 Hz and 60 Hz | | | |
| Frequency | 45 Hz ... 65 Hz (depending on regional settings) | | | |
| Night-time power loss | < 3 W | | | |
| Feeding phases | three-phase | | | |
| Total harmonic distortion (cos phi = 1) | < 1 % | | | |
| Power factor cos phi | 0.8 capacitive ... 0.8 inductive | | | |
| Characterisation of the operating performance | | | | |
| Max. efficiency | 98.6 % | 98.6 % | 98.7 % | 98.7 % |
| European efficiency | 97.9 % | 98.1 % | 98.2 % | 98.3 % |
| Californian efficiency | 98.3 % | 98.4 % | 98.5 % | 98.5 % |
| MPP efficiency | > 99.8 % (static), > 99 % (dynamic) | | | |
| Own consumption | < 8 W | | | |
| Power derating at full power from | 50 °C (T _{amb}) | 50 °C (T _{amb}) | 50 °C (T _{amb}) | 45 °C (T _{amb}) |
| Safety | | | | |
| Isolation principle | no galvanic isolation, transformerless | | | |
| Grid monitoring | yes, integrated | | | |
| Residual current monitoring | yes, integrated (The design of the inverter prevents it from causing DC leakage current) | | | |
| Operating conditions | | | | |
| Area of application | indoor rooms with or without air conditioning, outdoors with or without protection | | | |
| Climate protection class as per IEC 60721-3-4 | 4K4H | | | |
| Ambient temperature | -25 °C ... +60 °C | | | |
| Storage temperature | -30 °C ... +70 °C | | | |
| Relative humidity | 0 % ... 100 %, non-condensating | | | |
| Noise emission (typical) | 29 dBA | | | |
| Fitting and construction | | | | |
| Degree of protection | IP 65 | | | |
| Overvoltage category | III (AC), II (DC) | | | |
| DC Input side connection | Phoenix Contact SUNCLIX (1 pair), mating connector included | | | |
| AC output side connection | Wieland RST25I5 plug, mating connector included | | | |
| Dimensions (X x Y x Z) | 399 x 657 x 227 mm | | | |
| Weight | 12.0 kg | | | |
| Communication interface | RS-485 (2 x RJ45 sockets; connectable to Meteocontrol WEB'log or Solar-Log™), Ethernet interface (1 x RJ45) | | | |
| Integrated DC circuit breaker | yes, compliant with VDE 0100-712 | | | |
| Cooling principle | temperature controlled fan, variable speed, internal (dustproof) | | | |
| Test certificate | see certificate download on the product page | | | |