coolcept³ fleX

Three-phase inverter with one MPP tracker



Inverter topology

The coolcept inverter topology was implemented for the first time in the single-phase StecaGrid inverters and achieved the highest levels of efficiency thanks to its innovative circuitry. The three-phase coolcept³-fleX inverters also enjoy the advantages that this circuit provides. The three-phase topology is fully reactive current-capable and therefore also equipped for future requirements.

Always symmetrical

The advantage of three-phase feed-in is that the solar power produced is always distributed symmetrically on all three grid conductors to the public grid. This is the case with these inverters over the entire power range. The symmetrical feed-in is entirely in the interest of the energy supply companies and also corresponds to the three-phase consumption in the household.

Highest efficiency with a long service life

The very high efficiency level results in a peak efficiency of 98.6%, which means that less power loss has to be generated and dissipated to the environment. These are your yield advantages.
As energy is fed into the grid on at least two phases at all times with three-phase feed-in, intermediate energy storage in the unit is not necessary – as is the case with single-phase feed-in. For example, the coolcept³-fleX inverters completely eliminate the electrolytic capacitors required for intermediate storage, which can affect the service life of an electronic device if they dry out. The system operator therefore has the prospect of a long service life when using the coolcept³-fleX inverters.
In addition, a new, unique cooling concept inside the inverters guarantees an even distribution of heat and with it, a long service life for the devices.

Product design and visualisation

The StecaGrid has a graphical LCD display that visualises energy yield values, current outputs and the operating parameters of the system. The innovative menu offers the possibility of individually selecting the different measured values. A guided, pre-programmed menu ensures seamless, final commissioning of the unit.

Assembly

Weighing just 12 kg, the lightweight units can be mounted effortlessly and securely onto the wall. The wall bracket supplied enables simple and very convenient installation. It is also not necessary to open the unit for installation. All connections as well as the DC isolator are accessible from the outside. For the DC connection, the Sunclix mating connectors are included in the scope of delivery.

Product features
- Highest efficiency
- Three-phase, symmetrical grid feeding
- Simple installation
- Integrated data logger
- Low housing temperature at full load
- Robust metal 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
- Optimised shadow management using global MPP tracking

Displays
- Multifunction graphical LC display with backlighting
- Animated representation of yield

Operation
- Simple menu-driven operation
- Multilingual menu navigation

Kontron eSystems GmbH, Mammostr. 1, 87700 Memmingen, Germany | info@kontron-solar.com | www.kontron-solar.com

	StecaGrid 3213	StecaGrid 4013	StecaGrid 5013	StecaGrid 6013
DC input side (PV generator)				
Maximum input voltage	1000 V			
MPP voltage range	250 V ... 800 V			
Number of MPP tracker	1			
Maximum input current	11.0 A			
Maximum input power at maximum active output power	3300 W	4100 W	5110 W	6130 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	5000 W	6000 W
Maximum apparent power	3200 VA	4000 VA	5000 VA	6000 VA
Rated power	3200 W	4000 W	5000 W	6000 W
Rated frequency	50 Hz and 60 Hz			
Frequency range	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	98.0 %			
European efficiency	97.0 %	98.0 %	98.0 %	98.0 %
MPP efficiency	> 99.7 % (static), > 99 % (dynamic)			
Own consumption	< 8 W			
Power derating at full power from	50 °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	outdoors & indoors			
Climate protection class as per IEC 60721-3-4	3K3			
Ambient temperature	-15 °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 222 mm			
Weight	12.0 kg			
Communication interface	RS-485 (1 x RJ45 sockets; connectable to Meteocontrol WEB'log or Solar-Log™, Ethernet interface (1 x RJ45), Modbus RTU (1 x RJ45 socket: connectable to energy counter)			
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			

Kontron eSystems GmbH, Mammostr. 1, 87700 Memmingen, Germany | info@kontron-solar.com | www.kontron-solar.com