Conergy IPG C series

The new central inverters of the Conergy IPG C series are characterised by their high efficiency and reliability whatever the grid arrangement. They are compliant with all grid-specific requirements and satisfy all conditions for immunity and operational safety. The selection of high-quality components and their ease of use and set-up make them the ideal solution for large photovoltaic systems anywhere in Europe.

- Peak efficiency factor of 98.7 % ensures maximum yields
- Compact, efficient, reliable: now also with integrated generator coupling box
- Greater convenience wherever you are: touchscreen for programming grid parameters enabling use anywhere in Europe
- Compliant with all current directives: easy grid connection guaranteed

Improved peak efficiency of over 98 %

The Conergy IPG C series offers a range of outstanding product features and even greater efficiency and energy yield. The units combine a significant improvement in peak efficiency from 97.5 % to 98.7 % with excellent long-term reliability. This is why Conergy products are among the best on the market.

Less space, plus more features

Our inverters offer increased output despite their smaller size – this is because they are not only more efficient, they are considerably more compact than their predecessor models. Despite significantly reduced dimensions, the latest generation of units also features an integrated generator coupling box, freeing up the stand space that this would otherwise require. In addition, it is no longer necessary to order and install the box separately. This space-saving solution means less installation time and effort.

Usable throughout Europe thanks to programmable grid parameters

The new generation of central inverters also feature an integrated touchscreen. With a clear layout, the screen enables the installer to program all the necessary country-specific grid parameters to ensure that optimum operation is guaranteed anywhere in Europe.

The Conergy IPG C series is compliant with all current directives

Our central inverters have outputs of 200 kW and 300 kW, which makes them suitable for all large-scale solar energy systems, from the roof-mounted installation to the multi-megawatt solar park. The new generation is also compliant with all current directives. In future, the technical specifications of these directives must be fulfilled by all equipment, otherwise the equipment could be rejected by the grid operator.

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Conergy IPG C series	200 C	300 C
Input values (PV generator)		
Recommended DC output	220 kWp	330 kWp
Max. DC output	260 kWp	360 kWp
Min. DC input voltage (V_{dcmin})/ max. DC input voltage (V_{dcmax})	530 V/1,000 V	530 V/1,000 V
Start-up input voltage ($V_{dcstart}$)	530 V	530 V
Rated input voltage ($V_{dc,r}$)	540 V	540 V
Min. MPP voltage (V_{mppmin})/max. MPP voltage (V_{mppmax})	530 V/800 V	530 V/800 V
Maximum input current (I_{dcmax})	400 A	590 A
Feed-in from	1,800 W	1,800 W
Number of MPP trackers	1	1
Connection design	M12 bolts on copper bar	
Number of DC inputs	4	4
MPP accuracy	≥ 99.9 %	≥ 99.9 %
Electrical protection per input (internal, thermal)	175 A–250 A (adjustable)	175 A–250 A (adjustable)
Output data (grid)		
Rated grid voltage ($V_{ac,r}$) [1]	300 V	300 V
Min.grid voltage (V_{acmin})/max. grid voltage (V_{acmax}) [1]	240 V/360 V	240 V/360 V
Maximum output current (I_{acmax})	400 A	590 A
Short-circuit current	400 A	590 A
Short-circuit current factor	1	1
Rated capacity ($Pa_{c,r}$)	200 kVA	300 kVA
Max. output (P_{acmax})	200 kVA	300 kVA
Rated frequency (f_r)	50 Hz	50 Hz
Min. frequency (f_{min})/max. frequency (f_{max})	47.5 Hz/52.0 Hz	47.5 Hz/52.0 Hz
Power factor (cos phi)	Adjustable 0.7 inductive to 0.7 capacitive	
Required grid type	IT grid	IT grid
Distortion factor (at rated capacity)	≤ 2 %	≤ 2 %
Connection design	M12 bolts on copper bar	
Feed-in type	3-phase rotary current	
Efficiency factor		
Max. efficiency factor [2]	98.7 %	98.7 %
European efficiency factor [2]	98.3 %	98.5 %
Californian efficiency factor [2]	98.6 %	98.6 %
Auxiliary supply		
Power consumption (P_{day}) [3]	100 W to 920 W	
Standby/night-time power consumption (P_{night})	≤ 100 W	
Energy requirements for 8 hours at 25° C [4]	3.8 kWh	4.2 kWh
Auxiliary power supply	230 V –10 %/+15 % (acc. to EN 50160)/50 Hz/TN grid (L1, N, PE)	
Buffer period in case of power outage	≥ 1 s	
Required series fuse	C16 A	
Terminal type	Spring-type terminal 1.5 mm^2 to 2.5 mm^2	

[1] Voltage between phases; the measurement in the device is between phase and neutral.
[2] At DC and AC rated voltage without including of auxiliary power.
[3] The fans in the devices are temperature regulated.
[4] Values for information only. There may be other requirements depending on the system, region and installation location.
[5] Including transport packaging, add 200 mm to the depth and 100 mm to the length and width of the devices; height with fan installed 2,000 mm.
[6] Display functions may be limited between –10° C and –20° C.

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Cooling		
Cooling type	Air cooling, thermally controlled fan	
Required air flow	4,000 m^3/h	
Total permissible backpressure for ventilation	70 Pa	
Required air quality	Intake air must be filtered by G3/G4 filters in accordance with EN 779	
Environmental/ambient conditions		
Temperature range [6]	–20° C to +50° C	
Maximum temperature for permanent rated capacity	+50° C	
Relative humidity (non-condensing)	0–95 %	
Installation altitude above sea level	≤ 2,000 m	
Installation location	interior	
Noise emission	< 85 dB	
Safety/protective equipment		
Protection type	IP 20, in accordance with EN 60529	
Protection class	Class I, in accordance with EN 61140	
Ground fault monitoring at PV input	Yes, with adjustable reaction type	
Earthing options	Grounding kit including pre-fuse	
DC overvoltage protection	Automatic disconnection	
Overload behaviour	Working point adjustment	
Excess temperature behaviour	Derating	
Decoupling of PV generator from the grid	None, galvanic insulation is done by the MV-transformer	
Surge arrester for PV input	Type II and Type III in accordance with IEC 61643-1	
Surge arrester for power output	Type I and Type II in accordance with IEC 61643-1	
Surge arrester for auxiliary supply	Type II and Type III in accordance with IEC 61643-1	
Grid monitoring		
Default standards	VDE 0126-1-1, DK 5940 Ed2.2, RD 664, RD 1663, EN 50438:2007, ÖVE E 2750	
Freely programmable parameters		
Delay after grid faults	Adjustable up to 900 seconds	
Reaction time in the event of a grid fault	Adjustable from 100 milliseconds to 60 seconds	
Dimensions/weight		
Dimensions in mm (W x H x D) [5]	1,600 x 1,800 x 800	
Weight	1,250 kg	
Standards		
Transient emissions (EMC)	DIN EN 61000-6-4:2007-09	
Interference resistance (EMC)	DIN EN 61000-6-2:2006-03	
Grid quality	DIN EN 61000-3-11:2001-04/DIN EN 61000-3-12:2005-09	
Equipment reliability	DIN EN 50178:1998-04	
CE conformity	Yes	
GS approval	Yes	
Conformity with EEG 2009 §6.1	Yes	
Conformity with German medium-voltage directive (BDEW), June 2008	Yes	
Other		
Display	Touchscreen display, VGA, 65,536 colours	
Memory	2 GB	
Monitoring	Integrated web server	
Interfaces	CAN, Ethernet	
Languages	German, English, Spanish, Italian, French, Greek	

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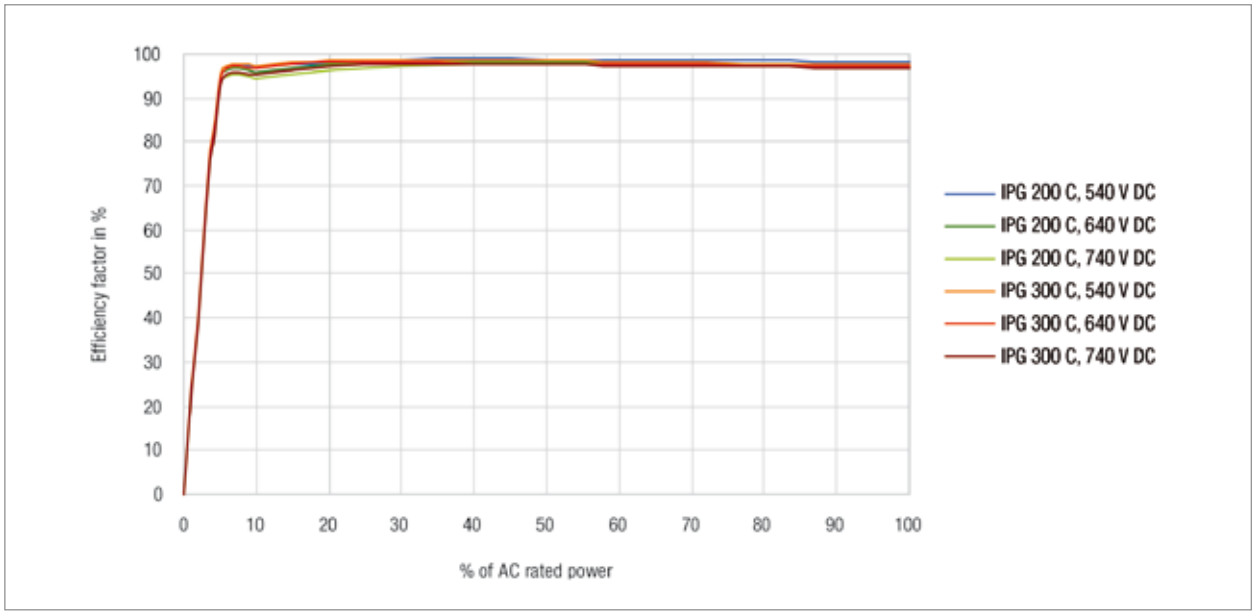
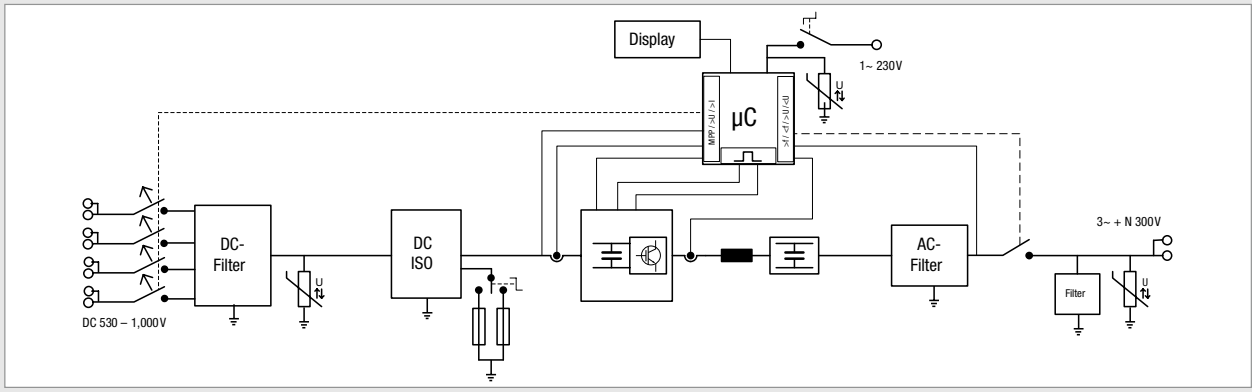
Efficiency curves with various input voltages [8]



Conergy IPG	200 C			300 C		
P_{nenn}	540 V DC	640 V DC	800 V DC	540 V DC	640 V DC	800 V DC
5 %	94.0 %	92.0 %	90.0 %	96.0 %	93.8 %	91.1 %
10 %	97.0 %	95.0 %	93.0 %	97.8 %	96.6 %	95.4 %
20 %	97.8 %	96.6 %	95.4 %	98.5 %	97.7 %	96.8 %
25 %	98.0 %	97.0 %	96.0 %	98.6 %	97.8 %	97.0 %
30 %	98.5 %	97.7 %	96.8 %	98.6 %	97.9 %	97.3 %
50 %	98.7 %	98.1 %	97.5 %	98.7 %	98.1 %	97.6 %
75 %	98.7 %	98.1 %	97.6 %	98.7 %	98.1 %	97.6 %
100 %	98.7 %	98.1 %	97.7 %	98.7 %	98.1 %	97.7 %

Internal design



[8] With AC rated tension, Cos ϕ = 1 and external power supply

Supplier: