

TOUGH SERIES

Characteristics:

- Single/Dual MPPT (Maximum power point tracking), the range of MPPT: 150-500 Vdc.
- Maximum DC voltage is up to 650V to design system on best MPPT easily.
- IP65 water/dust proof enclosure
- Up to 55°C without derating.
- Maintenance-free fan-less nature cooling design.
- Low acoustic noise while the inverter operates.
- Monitor the power information and the system settings via a computer, the monitoring software and RS232 / RS485 / Bluetooth (optional) interfaces.
- Conformity to the EMC, Low Voltage Directives and Standards, e.g. 2004 / 108 / EC, 2006 / 95 / EC, IEC / EN 62109-1 / -2 and VDE-AR-N 4105.



1 phase

3.3 - 5kW

Grid-Tied PV Inverter



Specification:

RESIDENTIAL

Model	TOUGH - 3300	TOUGH - 4000	TOUGH - 5000
Output Data (AC)			
Maximum AC Output	3300W	4000W	5000W*
Maximum AC Output Current	16.5 a.c.A	20 a.c.A	22 a.c.A
Nominal AC Voltage	220-240 a.c.A		
Grid AC Frequency	50 / 60 Hz , auto - selection		
Power Factor	> 0.99 @ 20% load		
Reactive Power Factor	1 or adjustable from - 0.9 to + 0.9**		
Total Harmonic Distortion	<3%		
AC connection / Grid forms	Single - Phase / TN - C , TN -S , TN - C - S		
Input Data (DC)			
Maximum DC Power	3600W	4300W	5300W
Maximum DC Input Current	2 x 10 d.c.A	2 x 13 d.c.A	2 x 15 d.c.A
Max. number of MPP Trackers	2		
Maximum DC Voltage	650 d.c.V		
MPP Tracking Voltage Range	150 - 500 d.c.V		
Peak Power Tracking Voltage Range	200 - 460 d.c.V		
Efficiency			
MPPT Efficiency	>99.9%		
Maximum Efficiency	96.5%	96.7%	96.9%
Euro. Efficiency	96.1%	96.3%	96.6%
Consumption : Operating (standby) / Night	< 12.5W / < 0.2 W		
General Specification			
Dimensions (W x H x D) in mm	405 x 442 x 165		
Weight	25.8 kg		
Cooling Concept	free convection		
Acoustic Noise Level	< 35dB (A)		
Maximum Operating Temperature Range without derating	-25 to ~ 60 °C	-20 to ~ 55 °C	
Ambient Temperature Range	-25 to + 60 °C		
Humidity	0 to 95% , non - condensing		
Protection Degree	IP65		
Topology	Transformerless		
Features			
DC Connection	Mc4 , Tyco		
DC Disconnect	yes		
AC Connection	AC connectors		
Display	LCD 16 x 2 screen		
Communication Interface	Rs232, RS485; Bluetooth (Option)		
Safety	VDE - AR - N 4105; IEC 62109 -1 / -2		
Warranty	5 years		

* For VDE-AR-N4105, the inverter is rated 4600 VA.

** Adjustable from 0.95 over-excited to 0.95 under-excited with VDE -AR -N 4105.