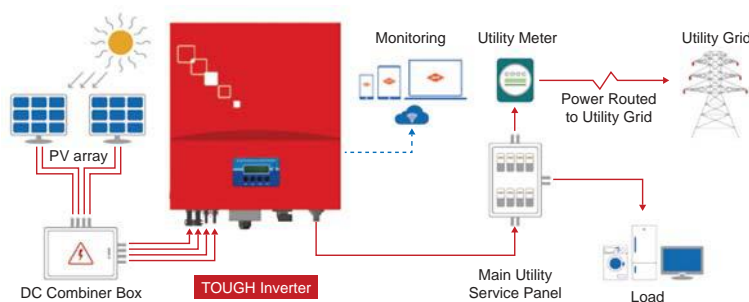
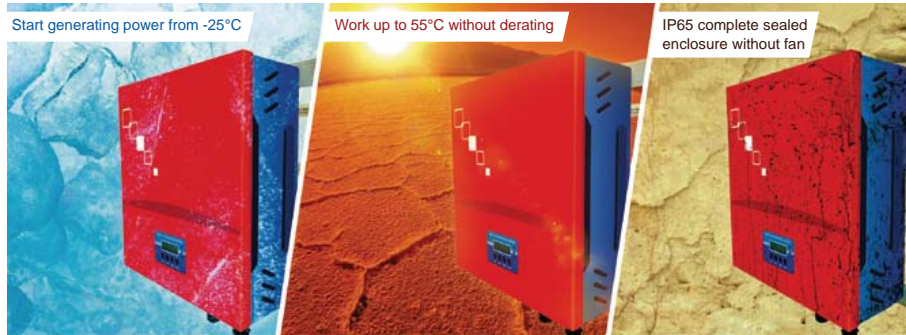


TOUGH SERIES

Single phase Grid-Tied
3.3 kW - 5kW

Features :

- Select Single/Dual MPPT (Maximum power point tracking) automatically, the range of MPPT: 150-500 Vdc
- Maximum DC voltage is up to 650V to design system on best MPPT easily
- Maintenance-free fan-less nature cooling design.
- Modbus RS485 supported for monitoring
- 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.



Specification :

| Model | Tough-3300 | Tough-5000 |
|------------------------------------------------------|-------------------------------------|------------------|
| Output Data (AC) | | |
| Maximum AC Output | 3,300W | 5,000W* |
| Maximum AC Output Current | 16.5 a.c.A | 22 a.c.A |
| Nominal AC Voltage | 220 a.c.V-240 a.c.V | |
| Grid AC Frequency | 50/60Hz, 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 | 3,600W | 5,300W |
| Maximum DC Input Current | 2 x 10 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% | 96.9% |
| Euro. Efficiency | 96.1% | 96.6% |
| Consumption: Standby / Night | <12.5W / <0.2W | |
| General Specification | | |
| Dimensions (W x H x D) in mm | 405 x 442 x 165 | |
| Weight | 25.8kg | |
| Cooling Concept | Natural Cooling | |
| Acoustic Noise Level | < 35dB | |
| Maximum Operating Temperature Range without derating | -25 °C to +60 °C | -20 °C to +55 °C |
| Ambient Temperature Range | -25 °C to +60 °C | |
| Relative Humidity | 0 to 95%, non-condensing | |
| Protection Degree | IP65 | |
| Topology | Transformerless | |
| Features | | |
| DC Connection | MC4 | |
| DC Disconnect | yes | |
| AC Connection | AC connectors | |
| Display | LCD 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 4,600VA

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

*** Specifications are subject to change without prior notice.