

SUNWAY TG OUTDOOR series

# SUNWAY TG760 1000V TE - 360 OD

Outdoor Application



Designed for utility scale applications, the **SUNWAY TG** inverters feature best-in-class technology without compromises providing the highest power density and reliability.

Thanks to its intrinsic flexibility, **SUNWAY TG** product range allow the optimal configuration of medium and large PV plants providing the lowest system cost and the maximum yield.

The **SUNWAY TG** inverters are designed and manufactured in Italy by the technicians and engineers of Elettronica Santerno S.p.A.

## **BENEFITS**

- Very high conversion efficiency with a single power conversion stage, optimized for minimum losses
- Modular construction and cabinet industrialization for maximum reliability and easy access to all components for maintainability and ease of service on site
- Grid Code integrated features (LVVRT, Reactive Power Control, Frequency and Voltage control) in compliance with the most advanced European and WW standards
- Remote monitoring possibility via the SunwayPortal and REMOTE SUNWAY™ software both for a single device and a multi-inverter installation
- Integrated DC-side protection provided by disconnect switch with release coil
- Integrated miswiring protection on DC side
- Integrated AC-side protection with automatic-disconnection on load breaker
- Integrated active monitoring of DC isolation
- Integrated Modbus on RS485 and TCP-IP on Ethernet data connection
- Integrated inputs for environmental sensors
- Possibility to install photovoltaic modules requiring one earthed pole, both positive and negative pole
- Thorough manufacture with first class materials, fully Made in Italy



| Main features                             |                                |
|---|--------------------------------|
| Model                                     | SUNWAY TG760 1000V TE - 360 OD |
| MPPT voltage range <sup>(1)</sup>         | 550 - 820 V                    |
| Number of independent MPPTs               | 1                              |
| Max. Open-circuit voltage                 | 1000 V                         |
| Rated AC voltage                          | 360 V ± 10 %                   |
| Rated output frequency                    | 50 / 60 Hz (up to -3 / +2 Hz)  |
| Power Factor Range <sup>(2)</sup>         | Circular Capability            |
| Operating temperature range               | -25 ÷ 62 °C                    |
| Application / Degree of protection        | Outdoor / IP54                 |
| Maximum operating altitude <sup>(3)</sup> | 4000 m                         |

| Input Ratings (DC)                     |        |
|--|--------|
| Rated input power                      | 824 kW |
| Maximum short circuit PV input current | 2000 A |
| PV Voltage Ripple                      | <1%    |

| Output Ratings (AC)         |                             |
|-----------------------------|-----------------------------|
| Rated output power @ 50°C   | 800 kVA                     |
| Rated output current        | 1283 A                      |
| Power threshold             | 1% of Rated AC output power |
| Total AC current distortion | ≤ 3%                        |

| Inverter efficiency                          |                          |
|--|--------------------------|
| Maximum / EU / CEC efficiency <sup>(4)</sup> | 98.6 % / 98.3 % / 98.0 % |

| Dimensions and weight       |                       |
|-----------------------------|-----------------------|
| Inverter Dimensions (WxHxD) | 2766 x 2303 x 1006 mm |
| Inverter Weight             | 2150 kg               |

| Auxiliary Consumptions                                      |             |
|---|-------------|
| Stop mode losses/Night losses                               | 45 W / 45 W |
| Auxiliary consumptions                                      | 2165 W      |
| Optional Anticondensation heater consumption <sup>(5)</sup> | 1 kW        |

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NOTE

- <sup>(1)</sup> At Vac rated and Cos φ =1
- <sup>(2)</sup> Default range: 1 - 0.9 lead/lag. It can be modified upon request
- <sup>(3)</sup> Up to 1000 m without derating
- <sup>(4)</sup> Auxiliary loads externally supplied
- <sup>(5)</sup> Optional recommended for Outdoor application in cold climate environments



| Additional information                                |  |
|---|--|
| Protection against overvoltage (SPD)                  | DC Side: Yes - AC Side: Optional                       |
| Maximum value for relative humidity                   | 95% non-condensing                                     |
| Cooling system / Fresh air consumption                | Forced air / 12000 m <sup>3</sup> /h                   |
| Thermal protection                                    | Integrated, 5 sensors, both on cabinet and power stack |
| Environmental sensors                                 | 4 embedded inputs                                      |
| Digital communications channels                       | 2xRS485 with Modbus + Ethernet with TCP/IP             |
| Noise emission @ 1m / 10m <sup>(6)</sup>              | 78 / 58 dB (A)   |
| Connection phases                                     | 3  |
| Max DC inputs per pole/ fuse protected <sup>(7)</sup> | 10 + 10 / 10 + 10                                      |
| DC-Parallel included                                  | Available on request                                   |
| DC inputs current monitoring                          | Optional   |
| DC side disconnection device                          | DC disconnect switch                                   |
| AC side disconnection device                          | AC circuit breaker                                     |
| Ground fault monitoring, DC side                      | Yes  |
| Ground fault monitoring, AC side                      | Optional   |
| Grid fault monitoring                                 | Yes  |
| Display   | Alphanumeric display/keypad                            |
| Power modulation                                      | Via Remote Control (RS485, Ethernet) and analog        |
| RAL   | RAL 7035   |
| PV plant monitoring                                   | Optional (Via Sunway Portal)                           |

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#### NOTE

<sup>(6)</sup> Noise level measured in central and front position

<sup>(7)</sup> Fuses to be ordered separately

## Description of Operation

The **SUNWAY TG** are grid connected solar inverters, suitable for connection to LV or MV distribution lines, as well as HV transport grids.

Advanced grid interface, certified in compliance with the most advanced requirements, ensures reliability and maximum uptime, providing grid support features such as FRT, active power modulation, voltage control. Utility Interactive Features are embedded, software-controlled, completely configurable based on the applicable grid code.

Moreover, the Sunway TG inverters can be integrated in smart grid plants, installed together with off-grid inverters.

Best reliability is ensured by design. All electronics PCBs are coated for best protection against harsh environments. Redundant protection systems and auto-diagnostic functions are also implemented.

Auxiliary power and LVRT are self-supplied. Neither external power nor UPS is needed; however, an external source may be connected, if desired.

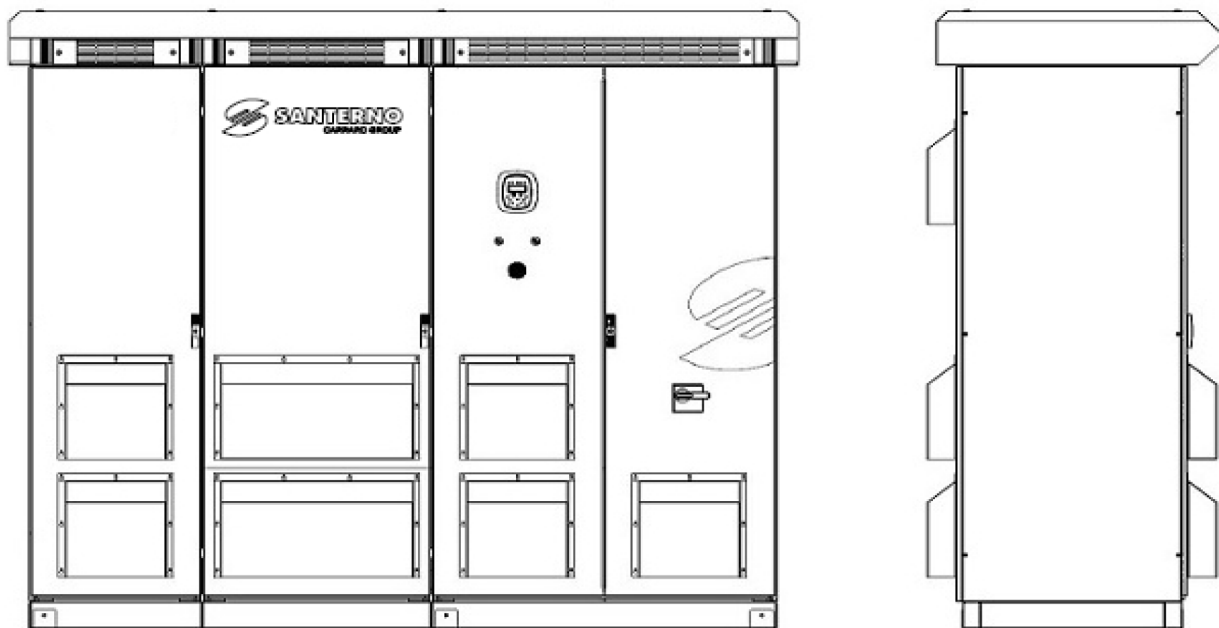
## PV earthing

Optionally, the **SUNWAY TG** inverters can be provided with positive- or negative- ground connection of the PV field. That configuration shall be defined when ordering the equipment and it is recommended when using modules sensitive to PID (potentially induced degradation) are adopted.

## Standard Supply

All inverters are supplied with user manuals, technical documents complying with the regulations in force, keys and lifting hooks, special pallets for easy and safe transport.

## Layout



## Main Normative References

The **SUNWAY TG** inverters have been developed, designed and manufactured in accordance with the up-to-date requirements of the Low Voltage directives, Electromagnetic Compatibility directives and Grid Connection standards.

| Standards <sup>(8)</sup> |  |
|--------------------------|--|
| Certification            | CE, BDEW , CQC ,CSA  |
| Immunity                 | IEC 61000-6-4, IEC 61000-6-2   |
| Harmonics                | IEC 61000-3-2, IEC 61000-3-12  |
| Emissions                | IEC 61000-6-3, IEC 61000-6-1   |
| Safety                   | EN50178, IEC 62109-1, IEC 62109-2  |
| Grid connection          | CEI 0-16, A.70, BDEW, Arrêté du 23 Avril 2008, RD 1699/2011, RD 661/2007, CQC, IEEE 1547 |

NOTE

<sup>(8)</sup> Some standard are applicable only to specific models