

INGECON

SUN STORAGE

3Play
TL M Series



10TL M / 15TL M / 20TL M / 30TL M

THREE-PHASE HYBRID INVERTER WITH TWO OR THREE PV MPPTs

THE BEST SOLUTION FOR RESIDENTIAL OR COMMERCIAL SOLAR+STORAGE SYSTEMS

The INGECON® SUN STORAGE 3Play TL M hybrid inverter makes it possible to combine photovoltaic generation and energy storage with no need for any additional PV inverters.

Two or three MPPT system

This inverter features with two or three maximum power point tracking (MPPT) system, that allows it to draw the maximum power from the PV array, including roof-mounted installations with different orientations or with partial shading.

EMS Inside

The inverter is equipped as standard with an energy management system (EMS). The EMS permits more advanced functionalities, such as self-consumption or peak-shaving. Thanks to the built-in EMS, the installation can be monitored at all times via a PC or mobile phone with the free INGECON® SUN Monitor application, available at Play Store and App Store.

Start-up and monitoring

Fast and easy start-up and display of data and graphics through the integrated user interface. Furthermore, users can easily upgrade the inverter firmware from the application, through a PC, tablet or mobile.

5 year warranty, extendible up to 10 years.

10TL M / 15TL M / 20TL M / 30TL M

The best solution for residential or commercial solar+storage systems

OPERATING MODES:

- Self-consumption mode

This operating mode is directed at grid connection systems with renewable energy sources, in order to minimise grid consumption. If the energy generated is greater than demand, then any surplus energy could either be used to charge the batteries or to be injected into the grid. In addition, it features a back-up and a peak shaving functionality. Also, the user can programme the charge / discharge times of the batteries.

- Stand-alone mode

The INGECON® SUN STORAGE 3Play TL M inverter generates a stand-alone AC grid and acts as a grid manager, guaranteeing the correct balance between PV generation, consumption and the storage system. It is equipped with a relay for the neutral-to-earth connection of the system loads in order to create a TT stand-alone network. Moreover, the inverter permits the connection of an auxiliary generator, which can be started-up through a potential-free output for charging the batteries.

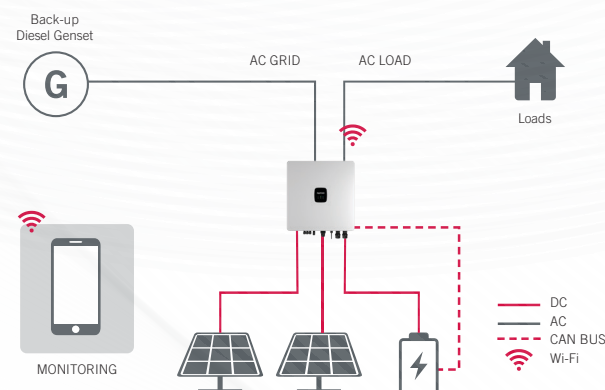
Protections

- AC overvoltages.
- Insulation faults.
- Short-circuits and overloads at the output.
- DC breaker for the PV array.
- Anti-islanding with automatic disconnection.
- Surge Arrester Type 2.

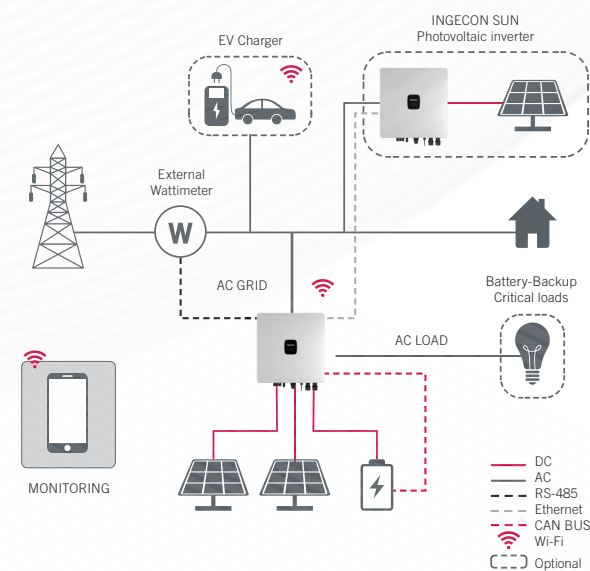
Features

- Two or three MPPT system.
- RS-485 and Ethernet communication for the wattmeter.
- Wi-Fi and Ethernet communication.
- CAN Bus 2.0 communication for the BMS (Battery Management System).
- 2 configurable digital inputs.
- 2 configurable potential free outputs.
- Pre-charging system at the battery input.
- Relay for the neutral to earth connection for critical loads in type TT installations.
- Rapid start-up and view of the installation thanks to the INGECON® SUN Monitor user interface.
- Possibility of operating just from the PV array and of adding the storage system at a later date.
- Suitable for indoor and outdoor installations (IP65).
- Back-up functionality available for self-consumption installations.
- Peak shaving functionality.
- Configuration of the battery charge / discharge times.
- Modbus TCP / Wi-Fi communication with EV chargers.
- DRMO included (for the Australian market).

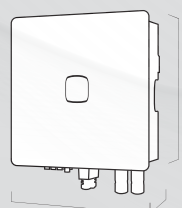
Stand-alone diagram



Self-consumption diagram



Size and weight (mm)



10TL M: 560
15-30TL M: 596

10TL M: 218.3
15-30TL M: 235

10TL M: 580
15-30TL M: 660

10TL M
33 kg.

15-20TL M
45 kg.

30TL M
55 kg.

| BATTERY INPUT (DC) | 10TL M | 15TL M | 20TL M | 30TL M |
|------------------------------------------|-------------------------------------|-------------------|-------------------|-------------------|
| Voltage range ⁽¹⁾ | 120 - 600 V | 120 - 800 V | 120 - 800 V | 120 - 800 V |
| Nominal battery voltage | 250 - 600 V | 285 - 800 V | 380 - 800 V | 230 - 800 V |
| Maximum charge / discharge current | 50 / 50 A | 60 / 60 A | | 2*75 / 2*75 A |
| Maximum charge / discharge power | 15,000 / 11,300 W | 30,000 / 15,000 W | 30,000 / 20,000 W | 45,000 / 30,000 W |
| Maximum voltage | 600 V | 800 V | 800 V | 800 V |
| Type of battery ⁽²⁾ | Ion-lithium (LG, BYD, Pylontech...) | | | |
| Communication with ion-lithium batteries | CAN Bus 2.0 | | | |
| Battery connection way | Dedicated DC connector | | | |

PV INPUT (DC)

| | | | | |
|-------------------------------------------------------------|-------------|-----------|-----------|----------------|
| PV array maximum power | 15,000 W | 30,000 W | 30,000 W | 45,000 W |
| MPPT Voltage range | 160 - 950 V | | | |
| Maximum input voltage ⁽³⁾ | 1,000 V | | | |
| Maximum current per MPPT (input 1 / input 2 / input 3) | 20 / 30 A | 32 / 32 A | 32 / 32 A | 32 / 32 / 32 A |
| Maximum short circuit current (input 1 / input 2 / input 3) | 30 / 40 A | 40 / 40 A | 40 / 40 A | 40 / 40 / 40 A |
| Number of MPP trackers | 2 | 2 | 2 | 3 |
| Number of inputs per MPP | 1 / 2 | 2 / 2 | 2 / 2 | 2 / 2 / 2 |
| Full power MPP voltage | 370-800 V | 260-800 V | 350-800 V | 350-800 V |
| PV connection way | MC4 / H4 | | | |

GRID INPUT (AC)

| | | | | |
|----------------------------------|----------------------------------------------|---------|---------|---------|
| Rated voltage | 380 / 400 / 415 V, 3 W+N+PE | | | |
| Voltage range | 260 - 518 V (Adjustable) | | | |
| Nominal Frequency | 50 / 60 Hz | | | |
| Network type | TT / TN-C / TN-C-S / TN-S | | | |
| Rated power | 10 kW | 15 kW | 20 kW | 30 kW |
| Max. Temperature for rated power | 45°C | | | |
| % of rate power @ 50°C | 80 % | | | |
| Nominal current | 3*15.2A | 3*22.8A | 3*30.4A | 3*45.6A |
| Power Factor | >0.99 Rated power (Adjustable 0.8 LG-0.8 LD) | | | |
| Adjustable Power Factor | YES | | | |
| THD | <5% | <3% | <3% | <3% |
| AC connector type | OT Terminal | | | |

CRITICAL LOAD OUTPUT (AC)

| | | | | |
|--------------------------|-----------------------------|---------|---------|---------|
| Nominal output voltage | 380 / 400 / 415 V, 3 W+N+PE | | | |
| Nominal output frequency | 50 / 60 Hz | | | |
| Nominal output power | 10 kW | 15 kW | 20 kW | 30 kW |
| Nominal output current | 3*15.2A | 3*22.8A | 3*30.4A | 3*45.6A |
| THDV | <3% (R Load), 8% (RCD Load) | | | |
| AC connector type | OT Terminal | | | |

FEATURES

| | | | | |
|---------------------------------------------|----------|----------|----------|----------|
| Back-up function response time | 12 ms | | | |
| Max. Efficiency (PV to grid) | ≥ 97.5 % | ≥ 97.5 % | ≥ 97.5 % | ≥ 97.6 % |
| European Efficiency (PV to grid) | ≥ 97.1 % | ≥ 97.1 % | ≥ 97.1 % | ≥ 97.1 % |
| Max. Charge Efficiency (PV to battery) | ≥ 98.0 % | ≥ 98.0 % | ≥ 98.0 % | ≥ 98.5 % |
| Max. Discharge Efficiency (Battery to grid) | ≥ 97.1 % | ≥ 97.1 % | ≥ 97.1 % | ≥ 97.4 % |
| Max. Charge Efficiency (Grid to battery) | ≥ 96.7 % | ≥ 96.7 % | ≥ 96.7 % | ≥ 96.7 % |

GENERAL INFORMATION

| | | | | |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|--------------------|
| Anti-corrosion | C5 protection class | | | |
| Refrigeration system | Natural ventilation | Natural ventilation | Natural ventilation | Forced ventilation |
| Stand-by consumption | <20 W | | | |
| Consumption at night | <10 W | | | |
| Ambient temperature | -25 °C to 60 °C | | | |
| Relative humidity (non condensing) | 0 - 100% | | | |
| Protection class | IP65 | | IP65 | |
| Marking | CE | | | |
| Acoustic emissions | <30 dB | <35 dB | <35 dB | <60 dB |
| Max. altitude - Max. altitude without derating (m) | 4,000 m - 2,000 m | | | |
| EMC and security standards | EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12, EN 62109-1, EN 62109-2, IEC62103, EN 50178, FCC Part 15, AS3100 | | | |
| Grid connection standards | IEC 61727; IEC 62116; EN 50549-1; UNE 217002; UNE 217001; NTS SEPE 2.1 typeA; CEI 0-21 V1 November 2022 (Including Allegato A+ Allegato B+, Allegato BBis); VDE-AR-N 4105:2018. | | | |

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