



## 10TL M2 / 15TL M2 / 20TL M2

### THREE-PHASE PV INVERTER WITH TWO MPPTs

### THE BEST SOLUTION FOR COMMERCIAL SELF-CONSUMPTION SYSTEMS

A three-phase inverter family for residential and commercial three-phase self-consumption PV systems.

#### Maximum efficiency with two independent MPPT inputs

A single DC-to-AC power conversion stage with an advanced maximum power point tracking system (MPPT), making it possible to harness the maximum energy from the PV array at all times, including difficult situations such as scattered clouds and partial shading. Great flexibility for configuring the solar array, thanks to the two independent MPP trackers with a wide input voltage range. Moreover, it enables to connect different DC input powers to each MPP tracker (asymmetric configuration).

#### Plug & Play technology

Extremely easy to install. The inverter connection is fast and simple. The country specific configuration and language can be easily selected from the inverter App.

#### Rugged design

Die cast aluminum casing, especially designed for indoor and outdoor applications (IP66). The INGECON® SUN 3Play TL M inverters have been designed to guarantee a long life expectancy and to withstand extreme temperatures.

#### Ease of maintenance

Internal datalogger for data storage.

Control either from a remote PC or on-site setting. Status and alarm LED indicators.

#### Software included

Included at no extra cost are the INGECON® SUN Monitor and its smartphone version iSun Monitor for monitoring and recording the inverter data over the internet. In addition, users can download the latest version of the firmware from the Ingeteam website [www.ingeteam.com](http://www.ingeteam.com), and update it using a simple remote connection. Ethernet and Wi-Fi communications are supplied as standard.

**Standard 10 year warranty.**

## 10TL M2 / 15TL M2 / 20TL M2

### The best solution for commercial self-consumption systems

All the models feature DC and AC surge arresters type II, and an integrated DC switch.

#### Main features

- EMS inside.
- Double-MPPT system.
- 98% maximum efficiency.
- Digital inputs.
- Ethernet, Wi-Fi and RS-485 communications supplied as standard.
- Remote configuration and upgrade.
- Software INGECON® SUN Monitor for PV plant monitoring.
- LED Status.
- Easy maintenance.
- Plug & Play technology. Suitable for indoor and outdoor installations (IP66).
- High temperature performance.
- Compact design.
- Language and country network code configuration through the application.
- Compatible with High Power Modules.
- Nominal voltage configuration via after-sales service.
- The IS 3Play 10TL M2-15TL M2-20TL M2 inverters automatically detect the parallel connection of their MPPT inputs. However, to maintain the warranty, the installation safety standards must be followed. See document ACL2010IMC10, Ingecon Sun 1Play 3Play, parallel string connection.

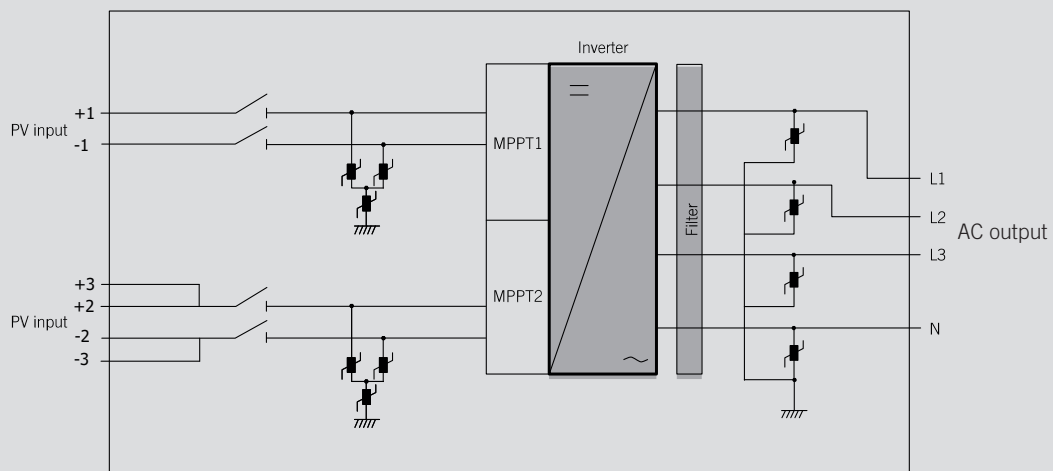
#### Protections

- Reverse polarity.
- Shortcircuits and overloads at the output.
- Anti-islanding with automatic disconnection.
- Insulation faults.
- Input and output overvoltages with type II surge arresters.
- Electrical Arc Fault Circuit Interrupter (AFCI) with Automatic Disconnection Device.

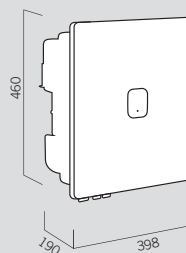
#### Benefits

- Greater performance thanks to the double MPPT system.
- Easy maintenance.
- Higher inverter life expectancy.
- Die cast aluminium casing.
- Waterproof and dustproof with IP66 protection class.
- Anti-corrosion with C5 protection class.

#### INGECON SUN 15TL M2



#### Size (mm) and weight



10TL M2 / 15TL M2 / 20TL M2  
17.2 kg / 19.1 kg / 20.5 kg

INPUT (DC)	10TL M2	15TL M2	20TL M2
Recommended PV array power range	10.3 - 15 kWp	15.5 - 22.5 kWp	20.6 - 30 kWp
Voltage range MPPT	160 - 1,000 V		
Start input voltage	180 V		
Maximum voltage <sup>(1)</sup>	1,000 V		
Rated input voltage	620 V		
Number of MPPTs	2		
Max. Short circuit current per MPPT	20 A + 20 A	20 A + 40 A	40 A + 40 A
Maximum current per MPPT	15 A + 15 A	15 A + 30 A	30 A + 30 A
Inputs with PV connectors	2 ( 1 / 1 )	3 ( 1 / 2 )	4 ( 2 / 2 )
Maximum current per input <sup>(2)</sup>	15 A / 15 A	15 A / 30 A	30 A / 30 A

#### OUTPUT (AC)

Rated power	10 kW	15 kW	20 kW
Max. apparent power <sup>(3)</sup>	11.2 kVA	16.7 kVA	22 kVA
Max. active power (PF = 1) <sup>(3)</sup>	11.2 kW	16.7 kW	22 kW
Max. output current	3*17A	3*25.3A	3*33.7A
Rated voltage	400 V		
Voltage range <sup>(4)</sup>	260 - 510 V (Adjustable)		
Frequency	50 Hz / 60 Hz		
Type of grid	TT / TN		
Power Factor	> 0.99 Rated power (Adjustable 0.8 LD - 0.8 LG)		
THD	< 3% @ Rated power		

#### EFFICIENCY

Maximum efficiency	98%	98.2%	98.2%
Maximum euroefficiency	97.3%	97.6%	97.9%

#### GENERAL INFORMATION

Refrigeration system	Natural ventilation	Forced ventilation
Consumption at night	< 10 W	
Ambient temperature	-25°C to 60°C	
Relative humidity (non-condensing)	0 - 100 %	
Protection class	IP66	
Marking	CE	
Acoustic emissions	< 30 dB	< 45 dB
Max. Operating altitude	4,000 m	
EMC and security standards	EN IEC 61000-6-1:2019, EN IEC 61000-6-2:2019, EN IEC 61000-6-3:2021, EN IEC 61000-6-4:2019, EN 61000-3-2:2018, EN 61000-3-3:2013+A1, EN 61000-3-11:2017, EN 61000-3-12:2011, EN 62109-1:2010, EN 62109-2:2011, IEC 62109-1:2010, IEC 62109-2:2011	

Grid connection standards IEC 61727:2004, IEC 62116:2014, EN 50549-1:2019, UNE 217002:2020, UNE 217001:2020, NTS SEPE 2.1 type A, CEI 0-21 v1 November 2022 (including Allegato B), VDE-AR-N 4105:2018, CEI 0-16:2022/V1:2022( Including Allegato N), RD647:2020

#### Notes

- <sup>(1)</sup> The maximum voltage that the equipment can withstand without damage is 1100V. The range of DC input voltages for grid connection is the MPPT range.  
<sup>(2)</sup> If only one input is to be used for each MPPT. If both inputs of an MPPT are used, the sum of the currents must not exceed the MPPT's maximum current.  
<sup>(3)</sup> In Spain, according to Spanish regulations, the maximum active power will be the same as the nominal power.  
<sup>(4)</sup> The output voltage and frequency range may vary depending on different grid codes. Specifications are subject to change without prior notice.

#### Integrated elements

DC switch	✓
Anti-islanding protection	✓
AC overcurrent protection	✓
AC short-circuit protection	✓
DC reverse connection	✓
DC & AC surge arresters, type II	✓
Insulation detection	✓
Leakage current protection	✓

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