

## THREE-PHASE TRANSFORMERLESS STRING INVERTER WITH THE MAXIMUM POWER DENSITY

### 100TL

A three-phase inverter family for commercial, industrial and utility-scale PV plants.

#### Greater cost-effectiveness

Thanks to its greater output power (up to 110 kW if connected to a 440 Vac network), the new INGECON® SUN 100TL allows to drastically reduce the number of inverters required for designing a PV power plant. Thus, it minimises the labour cost and reduces the global cabling cost. Furthermore, it enables up to a 20% cost reduction in AC cabling as this PV inverter does not require a neutral wire.

Moreover, it does not require DC combiner boxes, nor AC combiner boxes, ensuring the minimum possible CAPEX (Capital Expenditures).

#### Lower operational costs

Thanks to the wireless communication network that this inverter allows, the power plant can be commissioned, monitored and controlled without any communications cabling.

Furthermore, its string inverter philosophy permits an easy and immediate replacement that does not require qualified technicians.

#### Higher flexibility and power density

The highest flexibility thanks to its maximum DC voltage (1,100 V) and to its wide voltage range MPP (570-850 V). Awesome power density, with up to 110 kW in a 75 kg inverter.

#### Rugged design

Aluminium casing, especially conceived for indoor and outdoor applications (IP65). The INGECON® SUN 3Play TL inverters have been designed to guarantee a long life expectancy and to withstand extreme temperatures.

#### Ethernet and Wi-Fi as standard

This PV inverter features Ethernet and Wi-Fi communications as standard. These communications, together with the webserver that the inverter integrates, enable a fast and reliable commissioning using a mobile phone, a tablet or a laptop. Furthermore, it is compatible with external Cloud Connect software.

**Standard 5 year warranty, extendable for up to 25 years**



# 100TL

## Different versions to choose from

In order to satisfy its clients' needs, Ingeteam has created different versions for the INGECON® SUN 3Play TL family:

- STD version
- PRO version

Versions available	STD version	PRO version
DC Terminal blocks	✓	
PV connectors <sup>(1)</sup>		✓
DC switch	✓	✓
DC surge arresters, type 2	✓	✓
AC surge arresters, type 2	✓	✓
DC fuses		✓ <sup>(2)</sup>
String current metering kit		✓

Notes: <sup>(1)</sup> No crimping tools needed <sup>(2)</sup> 1,500 V fuses. Only for the positive pole.

### MAIN FEATURES

- Low-voltage ride-through capability.
- Reactive power capability.
- Compatible with external Cloud Connect software.
- 98.8% maximum efficiency.
- Ethernet and Wi-Fi communications supplied as standard.
- Integrated Webserver.
- Software INGECON® SUN Monitor for PV plant monitoring.
- Suitable for indoor and outdoor installations (IP65).
- High temperature performance.
- Different versions to satisfy every project needs.
- Compatible with night power supply.
- 4 digital inputs and 2 digital outputs.
- DRMO ready (for the Australian market).

### PROTECTIONS

- Reverse polarity.
- Shortcircuits and overloads at the output.
- Anti-islanding with automatic disconnection.
- Insulation faults.
- AC overvoltages with type 2 surge arresters.
- DC overvoltages with type 2 surge arresters.

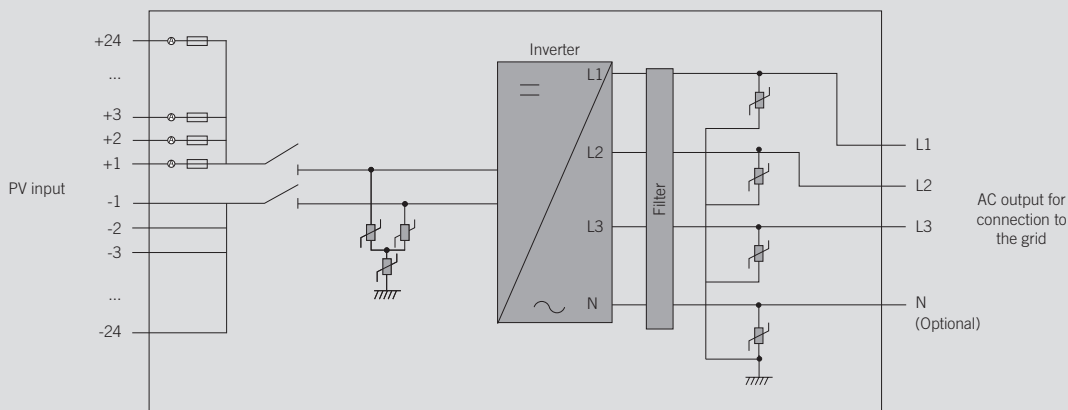
### OPTIONAL ACCESORIES

- Self-consumption kit.
- RS-485 communication.

### BENEFITS

- Greater power density.
- Greater cost-effectiveness thanks to the cabling cost reduction.
- High availability compared to central inverters.
- High efficiency rates.
- Easy maintenance.

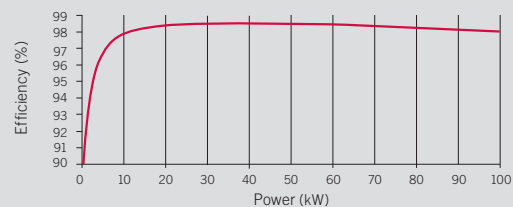
## 3Play TL PRO version



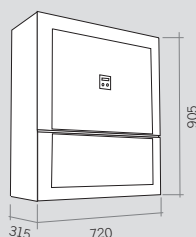
100TL					
<b>Input (DC)</b>					
Recommended PV array power range	92.7 - 160 kWp	97.9 - 160 kWp	103 - 160 kWp	108.2 - 160 kWp	113.3 - 160 kWp
Voltage range MPP <sup>(1)</sup>	513 - 850 V	541.5 - 850 V	570 - 850 V	598.5 - 850 V	627 - 850 V
Maximum voltage <sup>(2)</sup>	1,100 V				
Maximum current <sup>(3)</sup>	185 A				
Short-circuit current	240 A				
Inputs (STD / PRO)	1 / 24				
MPPT	1				
<b>Output (AC)</b>					
Rated power at rated Vac	90 kW	95 kW	100 kW	105 kW	110 kW
Max. temperature at rated power <sup>(4)</sup>	50 °C				
Maximum current	145 A				
Rated voltage	360 V	380 V	400 V	420 V	440 V
Frequency	50 / 60 Hz				
Power Factor	1				
Power Factor adjustable <sup>(5)</sup>	Yes. Smax=90 kVA Qmax=54 kVAR	Yes. Smax=95 kVA Qmax=57 kVAR	Yes. Smax=100 kVA Qmax=60 kVAR	Yes. Smax=105 kVA Qmax=63 kVAR	Yes. Smax=110 kVA Qmax=66 kVAR
THD	<3%				
<b>Efficiency</b>					
Maximum efficiency	98.8%				
Euroefficiency	98.1%				
<b>General Information</b>					
Refrigeration system	Forced ventilation				
Air flow	570 m <sup>3</sup> /h				
Stand-by consumption	20 W				
Consumption at night	1 W				
Ambient temperature	-25 °C to 60 °C				
Relative humidity (non-condensing)	0 - 100%				
Protection class	IP65 / NEMA 4				
RCD	1,000 mA				
Maximum operating altitude <sup>(6)</sup>	3,000 m				
Connection	AC: Max. Cross section: 240 mm <sup>2</sup> (one wire) DC connection (STD): Max. Cross section: 300 mm <sup>2</sup> (one wire) DC connection (PRO): 6 mm <sup>2</sup> (24 pairs of PV connectors) Copper and Aluminium cabling permitted for DC and AC				
Marking	CE				
EMC and safety standards	IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4, IEC 61000-3-11, IEC 62109-1, IEC 62109-2, IEC 62103, IEC 61000-3-12, EN50178, FCC Part 15, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-68, IEC 60529				
Grid connection standards	DIN V VDE V 0126-1-1, Arrêté du 23 avril 2008, EN 50438, EN 50439, EN 50549, CEI 0-21, CEI 0-16 VDE-AR-N 4105:2011-08, G59/3, P.O.12.3, AS4777.2, BDEW, IEC 62116, IEC 61727, UNE 206007-1, ABNT NBR 16149, ABNT NBR 16150, Brazilian Grid Code, South African Grid Code, Chilean Grid Code, DEWA 2.0, Jordanian Grid Code, Thailand MEA & PEA requirements				

**Notes:** <sup>(1)</sup>  $V_{mpp,min}$  is for rated conditions ( $V_{ac}=1$  p.u. and Power Factor=1).  $V_{mpp,min}$  will depend on the grid voltage ( $V_{ac}$ ), according to this relation:  $V_{mpp,min}=1.425 \cdot V_{ac}$   
<sup>(2)</sup> The inverter does not start operating until  $V_{dc} < 1,000$  V <sup>(3)</sup> The maximum current per PV connector is 11 A for the PRO version <sup>(4)</sup> For each °C of increase, the output power will be reduced at the rate of 2.3% <sup>(5)</sup> Q=0 outside the voltage range MPP <sup>(6)</sup> Beyond 1,000 m, the maximum temperature at rated power will decrease at the rate of 5.5 °C per every additional 1,000 m.

**Efficiency INGECON® SUN 100TL**  $V_{dc} = 570$  V



**Size and weight (mm)**



**100TL**  
75 kg.



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