

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.

Ingeteam

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.

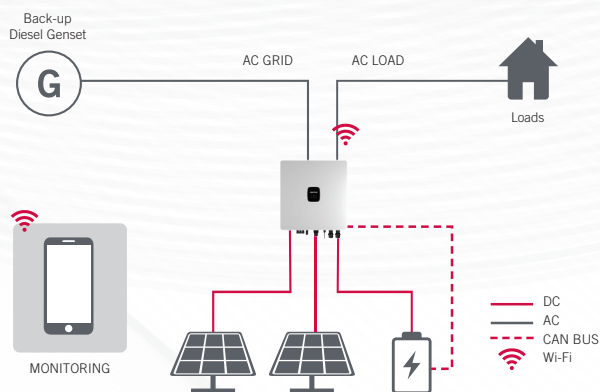
Protections

- 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 II for 10TL M, Type III for 15-30TL M.
- AFCI with automatic disconnection.

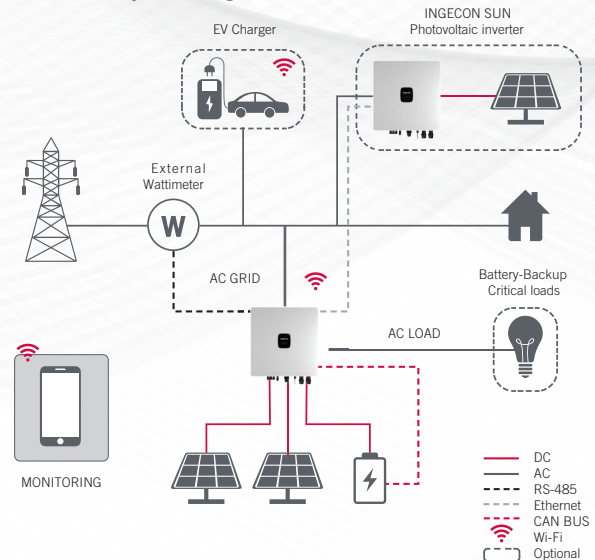
Features

- 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).

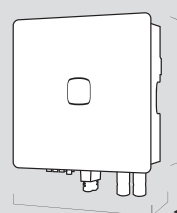
Stand-alone diagram



Self-consumption diagram



Size and weight (mm)



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

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

10TL M
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	60 / 60 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 (110HV e 72HV)			
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)	20 / 30 A	32 / 32 A	32 / 32 / 32 A	32 / 32 / 32 A
Maximum short circuit current (input 1 / input 2)	30 / 40 A	40 / 40 A	40 / 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 / 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)			
Fattore di potenza regolabile	SI			
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	C4H 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	IP66	IP66	IP66
Marking	CE			
Acoustic emissions	<35 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, CEI 0-21;V2:2024-01 (Including Allegato A, Allegato B, Allegato BBis); VDE-AR-N 4105:2018.			

Notes

⁽¹⁾ The maximum power supplied by the battery shall be the battery voltage multiplied by the maximum discharge current.

⁽²⁾ Consult the Ingeteam website for a list of compatible batteries.

⁽³⁾ Never exceed. Consider the voltage increase of the panels 'Voc' at low temperatures.

INGECON

SUN STORAGE

Battery



ISSB 110 HV

A STATE-OF-THE-ART TECHNOLOGY.

They have been conceived with a series of features designed to satisfy very stringent and wide Market needs, the ones that today expert Customers are calling for.

We have thought of our Battery bank being as “modular”, that is the Customer is free to start from a very simple solution, from 1 up to 14 battery modules stacked (in two towers side by side, together with the HV Box, to form the rack) and up to 6 Racks coupled to one Inverter, up to a multi-block “clustered” system so from a few kW up to MW.

Like that, the vast majority of C&I needs is discovered even after the Installation gets done, being our Architecture conceived as an open one.

The IP entry level 21 is suited for classical indoor applications in commercial premises.

The battery bank is built out of a light metal housing to reduce the local weight impact and the layout takes into account the “stacked-like” modularity, that is the battery bank is stackable, making it easy and fast to increase the number of modules afterwards, from 1 (5,3 kWh) to 14 (74,2 kWh) and up to 6 battery stacks in parallel (445,2 kWh) for each single Inverter.

Main communication protocols are RS485, CAN, 232, Wifi and the expected cycle life is well beyond 7000.

All above has been considered to offer the best flexibility and operative approach, without forgetting that things can get improved from time to time, depending on the Customer’s needs and interests.

Ingeteam

INGRESSO BATTERIA (DC)
INGECON® SUN STORAGE BATTERY 110 HV

Basic Parameters	ISSB 110 HV
Battery System Capacity*	5,3 kWh
Single Module Nominal Voltage	51,2 Vdc
Application	HV
Modules Expandibility	Mode: from 2 to 14 Modules in Series with Single HV Box = One HV Cluster
Cluster Net Capacity	Max 84 Modules per HV System
Voltage Range	45,5-58,4 Vdc
Net Capacity	105 Ah
Usable Capacity	100Ah
Dimension (D xH xW)	580 x 170 x 492 mm
Weight	54 Kg
Charge/Discharge Current	Up to 1C max.
Standard Charge/Discharge Current	0.5C
Max. DoD%	98%
Forced Charge Control	@ 2% DoD (programmable)
Communication Port	RS485, CAN, 232, Wi-Fi
Single string quantity	1-14 pcs
Discharge Temperature**	-20 ~ 65°C
Charge Temperature**	-5 ~ 55°C
Humidity	5% ~ 95% RH non-condensing
Altitude	< 3000 m
Design life	10 ↑ Years (25°C)
Expected Life Cycles	> 7000 ↑ (25°C 80% DoD - SOH 70%)
Standards	IEC62619/UL1973 CE/UN38.3
Features	Pre-Charge + Fuse LV + Fuse HV + Auto Contactor + Dual BMS + Multi BMS FW management

Applicable for High Voltage systems, Four protection levels for HV Box, Real time balancing, Adaptive charge/discharge CAN logic, Three step adaptive charging logic, 2xDI/DO programmable ports, Mobile app for monitoring, control, debugging, firmware update and historical information.

Notes

⁽¹⁾ Needed only starting from 2 battery modules

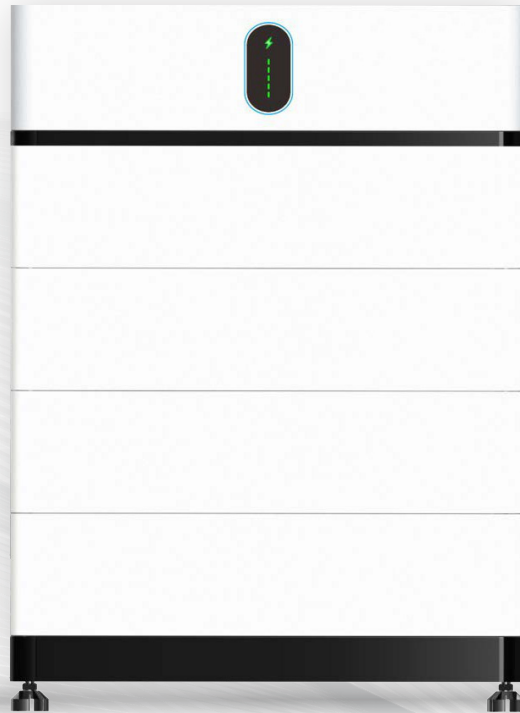
* Module net usable energy is managed by the BMS control logic to 100Ah

** See Warranty Terms and the Standard Test Conditions "STC" and the operative temperature

INGECON

BATTERY ISSB

72HV
5.5kWh



INGECON BATTERY ISSB 72HV 5.5KWh

BATTERY WITH INTELLIGENT MANAGEMENT SYSTEM.

FEATURES

- Lithium Iron Phosphate (LFP) Cell use
- Intelligent management system of BMS
- Up to 60A continuous charge/discharge current
- Max. power exceeding 30kW
- Extendable as needs
- Stackable & Modular design
- Plug and play, no cable between battery modules

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Model	ISSB 11-HVB	ISSB 16.5-HVB	ISSB 22-HVB	ISSB 27.5-HVB	ISSB 33-HVB	ISSB 38.5-HVB	ISSB 44-HVB
Battery Type	LiFePO4, Prismatic Cell						
Battery Module	5.5 kWh / 50kg						
Nominal Energy	11kWh	16.5kWh	22.0kWh	27.5kWh	33.0kWh	38.5kWh	44.0kWh
Energy Usable	10.45kWh	15.68kWh	20.90kWh	26.12kWh	31.35kWh	36.6kWh	41.8kWh
Continuous Charge/ Discharge Current	60A / 60A						
Max.Charge/Discharge Current	72A / 72A						
Nominal Voltage	153.6V	230.4V	307.2V	384.0V	460.8V	537.6V	614.4V
Operating Voltage	129.6V~175.2V	194.4V~262.8V	259.2V~350.4V	324.0V~438.0V	388.8V~525.6V	441.6V~624.0V	518.4V~700.8V
Cycle Life	6000 (1*)						
W*D*H	675*360*626mm	675*360*796mm	675*360*966mm	675*360*1136mm	675*360*1306mm	675*360*1476mm	675*360*1646mm
Net Weight	124kg	174kg	224kg	274kg	324kg	374kg	424kg
Installation	Floor standing / Wall-mounted						
Operation Temperature	With built-in heating function Charge -20-55°C, Discharge -20-55°C						
Transmit Certification	UN38.3						
Safety	IEC 62619, EN 62477						
EMC	EN 61000-6-1/2/3/4						
Protection Degree	IP65						
Max. Altitude	3000m						
Noise Emission	<35dB						
Humidity	5-95%						
Cooling	Natural Cooling						
Fire-fighting	Aerosol fire extinguisher						
Warranty	10 Years						
Display	LED						
Communication Interface	CAN, Ethernet						

Notes

Remarks: (1*) 0,5 C a 25 °C, 70% SOH, 90% DOD.

Specifications are subject to change without advanced notice.

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