STORAGE SOLUTIONS

for commercial and industrial

Ingeteam

STORAGE SOLUTIONS

for commercial and industrial systems

- STORAGE OF SELF-PRODUCED SOLAR ENERGY USABLE WHEN NEEDED
- UNUSED ENERGY STORED IN THE BATTERY, AS A SUPPLY OF CLEAN ENERGY
- IMPLEMENTATION OF SELF-CONSUMPTION FAVORING NEW SYSTEMS SUCH AS ELECTRIC CAR CHARGING OR HEATING SYSTEMS, ALLOWING THE CUT OF YOUR BILL

INGECON SUN STORAGE 3Play

INGECON SUN STORAGE 100TL

Three-phase transformerless battery inverter with the maximum power density.

Three-phase battery inverters for commercial and industrial systems. These bidirectional storage inverters feature the same technology as ingeteam´s string photovoltaic inverters.

Lower operational costs

Thanks to the wireless communication network that the INGECON® SUN STORAGE 100TL enables, the storage system could be commissioned, monitored and controlled without cables.

Moreover, its string inverter philosophy allows for a fast and easy replacement that does not require qualified technicians.

Greater flexibility and power density

A greater flexibility is possible thanks to its maximum DC voltage (1,100 V) and to its wide input voltage range (627-850 V). Great power density, with 100 kW of power in only 80 kg.

Robust and long-lasting design

Aluminium casing, especially conceived for outdoor installations (IP65).

The design of the INGECON® SUN STORAGE 3Play inverter family guarantees the maximum life expectancy and the best features, even with high temperatures.

Ethernet and Wi-Fi as standard

This battery inverter features Ethernet and Wi-Fi communications as standard. These communications, together with the webserver that the inverter integrates, allow for a faster and more reliable commissioning by using a mobile phone, tablet or laptop.

Furthermore, it is compatible with an external Cloud Connect.

Standard 5 year warranty, extendable for up to 10 years

INGECON SUN STORAGE 100TL

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.
- 4 digital inputs and 2 digital outputs.

PROTECTIONS

- 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.

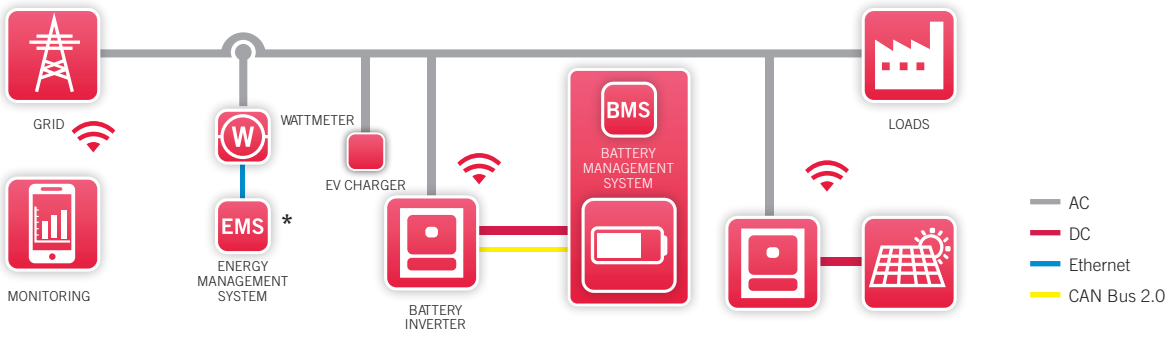
OPTIONAL ACCESSORIES

- 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.

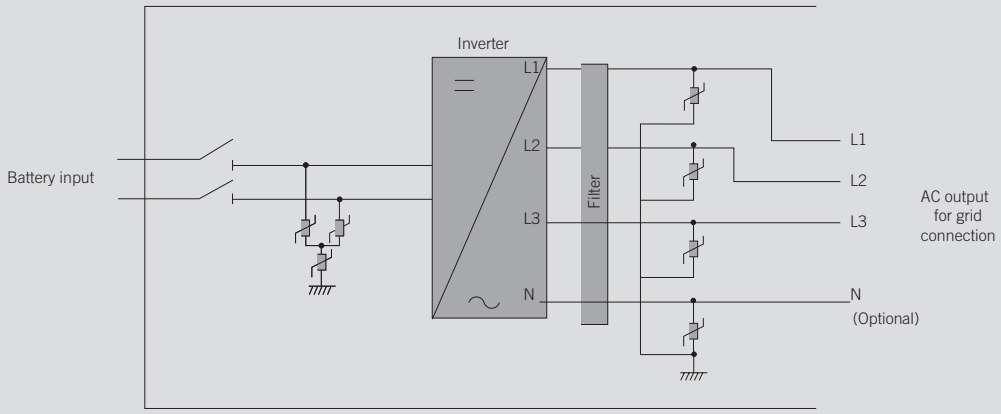
WIRING DIAGRAM



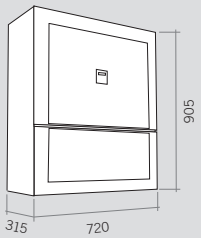
* EMS provided only for Ingeteam Inverters (PV and Storage)

	Integrated elements
Terminal blocks	✓
DC switch	✓
DC surge arresters, type 2	✓
AC surge arresters, type 2	✓

3Play TL



Size and weight (mm)

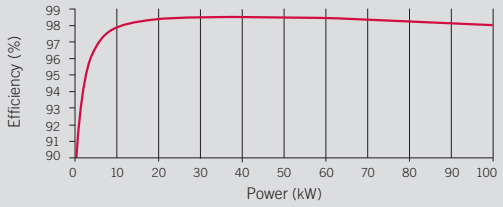


100TL
80 kg.

	INGECON SUN STORAGE 100TL
Input (DC)	
Voltage range[1]	627 - 850 V
Maximum voltage[2]	1,100 V
Maximum power (charge/discharge)	60 kW / 100 kW
Maximum current (charge/discharge)	96 A / 159 A
Battery type	Li-ion, lead
Shortcircuit current	240 A
Communication with the BMS (Battery Management System)	CAN Bus 2.0 / Ethernet
Output (AC)	
Rated power	60 kW /100 kW
Max. temperature at rated power[3]	50 °C
Maximum current	87 A / 145 A
Rated voltage	400 V
Rated frequency	50 / 60 Hz
Power Factor	1
Adjustable power factor	Yes. 0 - 1 (leading / lagging)
THD	<3%
Efficiency	
Maximum efficiency	98.8%
Euroefficiency	98.1%
General Information	
Refrigeration system	Forced ventilation
Air flow	570 m^3/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
Max. operating altitude[4]	3,000 m
Connection	AC: Max. Cross section: 240 mm^2 (one wire) DC connection: Max. Cross section: 300 mm^2 (one wire) Copper and Aluminium cabling permitted for DC and AC
Marking	CE
EMC and safety standards	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, EN 61000-3-11, EN 61000-3-12, EN 62109-1, EN 62109-2, EN 50178, IEC 62116, IEC 61683, EN 50530, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-68
Grid connection standards	IEC 61727, EN 50549-1, EN 50549-2, UNE 206007-1 IN, NTS 2.1 SEPE, NTS 1.1 SENP, CEI 0-21, CEI 0-16, Arrete 9 du Juin, ABNT NBR 16149, ABNT NBR 16150, NDU-015, Portaria 73

Notes: [1] The minimum battery voltage (627 V) has been calculated for Vgridmax = 1.085 p.u. and Cos Phi = 1. If Vgridmax is different from this value, then the minimum battery voltage must be calculated as Vbatmin = 627 * Vgridmax / 1.085 [2] The inverter does not start operating until Vdc <1,000 V [3] For each °C of increase, the outpuy power will be reduced at the rate of 2.3% [4] Beyond 1,000 m, the maximum temperature at rated will decrease at the rate of 5.5 °C per every additional 1,000 m.

Efficiency INGECON® SUN STORAGE 100TL Vdc = 627 V



ISSB 110 HV is the most advanced Lithium Module for Commercial and Industrial Energy Storage systems.

Each application has is own Lithium Chemistry cell in order to guarantee the highest durability and Safety.

INGECON® SUN STORAGE BATTERY Features

- FAST CONNECTIONS
- WALL MOUNTED, FLOOR MOUNTED, STACKABLE IN RACK IP56 AND PARALLEL APPLICATIONS
- HIGH CAPACITY THANKS TO ITS SCALABILITY AND SIMPLE CONFIGURATION.
- WIRELESS MONITORING FOR REAL TIME INTERVENTION AND MAINTENANCE.

INGECON SUN STORAGE Battery

ISSB 110 HV

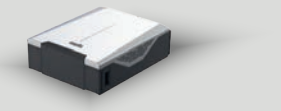
A State-of-the-Art Technology.

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 to our Battery bank being as “modular”, that is the Customer is free to start from a very simple solution, 13 or 14 battery modules stacked (in two towers side by side, together with the HV Box, to form the rack) and up 6 Racks coupled to one Inverter, up to a multi-block “clustered” system so from multiple of 100kW up to multiple MW system equivalent.

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 13 (68,9 kWh) to 14 (74,2 kWh) and up to 6 battery stacks in parallel (445,2 kWh) for each 100kW 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.

ISSB 110 HV



	INGECON® SUN STORAGE BATTERY 110 HV
	Single Module Hv
Basic Parameter	ISSB 110 HV
Battery System Capacity*	5,3 kWh
Single Module Nominal Voltage	51,2 Vdc
Application	HV
Modules Expandibility	HV Mode: from 13 to 14 Modules in Series with Single HV Box = One HV Cluster
Cluster Net Capacity	Max 84 Modules per HV
Voltage Range	45,5-58,4 Vdc
Net Capacity	105 Ah
Usable Capacity	100 Ah
Dimension (D x H x W)	580 x 170 x 492 mm
Weight	54 Kg
Max Charge / Discharge Current	Up to 1C Max
Standard Charge/Discharge, Current	0.5C
Max. DoD%	98%
Forced Charge Control	@ 2% DoD (programmabile)
Communication Port	RS485, CAN, 232, Wi-Fi
Single string quantity	13-14 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 @ STC	> 7000 ↑ (25°C 80% DoD - SOH 70%)
Standards	IEC62619/UL1973 CE/UN38.3
Features	Pre-Charge + Fuse LV + 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.

* 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 SUN STORAGE Battery

HV BOX***	INGECON® SUN STORAGE BATTERY 110 HV*	
Battery Module	6+7	7+7
Battery System Capacity	68,9 kWh	74,2 kWh
Min Voltage (SOC 0%)	617,5V	665V
Recommended Voltage	min 650V max 754V	min 700V max 812V
Dimensions	580x1190x462 mm x 1 580x1360x462 mm x 1	580x1360x462 mm x 2
Weight	702 kg	756 kg
Depth of Discharge	98% (Forced Charge Control @ 2% DoD, programmabile)	
Charge/Discharge	100A/100A	
Communication	RS485, CAN, 232, Wifi	
Protection Class	IP21	
Working Temperature (Discharge**/Charge)	-20°C +65°C / -5°C +55°C	
Storage Temperature**	0°C + 40°C self discharge 1%/month; -15°C +55°C self discharge 2%/month	
Humidity	5% ~ 95% RH non-condensing	
Altitude	< 3000 m	
Design life	10 ↑ Years (25°C)	
Expected Life Cycles @ STC	> 7000 ↑ (825°C 80% DoD - SOH 70%)	
Standards	IEC62619/UL1973/CE/UN38.3	

* Module net usable energy is managed by the BMS control logic set to 100Ah
** See Warranty Terms and the Standard Test Conditions "STC" and the operative temperature
*** HV BOX is compulsory

INGECON SUN STORAGE Battery

ISSB 150 HV RACK

A State-of-the-Art Technology.

They have been designed with a range of features designed to meet very broad market requirements, those that today's experienced customers demand.

Our battery bank is 'modular', with 13 battery modules in series (installed in the IP54 cabinet together with the HV Box, forming the rack) and up to 6 racks coupled to an Inverter; up to a multi-block 'cluster' system, from multiples of about 100kW up to several MW.

In this way, we can cover the vast majority of C&I needs even after installation, our architecture being designed as open.

We offer an IP54, suitable for classic outdoor applications.

The battery bank is built in a lightweight metal casing to reduce weight, and the layout provides for modularity, i.e. the battery bank of 13 (100.1 kWh) and parallelisable up to 6 racks of batteries (600.6 kWh) for each individual 100kW inverter.

The main communication protocols are RS485, CAN, 232, Wi-Fi and the expected cycle life is well over 7000 cycles.

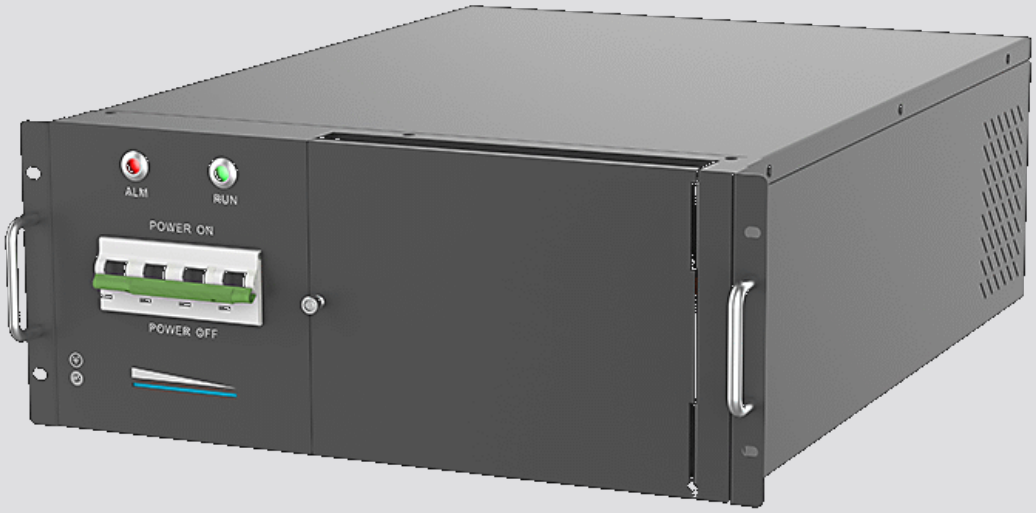
All this is aimed at offering the best flexibility and operational approach, without forgetting that things can be improved from time to time, depending on the customer's needs and interests.

INGECON SUN STORAGE Battery

	INGECON® SUN STORAGE BATTERY 150 HV RACK (IP54)	
Battery	Battery type	Lithium iron phosphate
	Cell specifications	3.2V, 150Ah
	Group approach	16S
	Battery capacity	7.7kWh
	Max DoD	90%
System	Rated capacity	100.1 kWh
	Cabinet slots (max 13 + HVBOX)	13+1 HVBOX
	Rated voltage	686 Vdc
	Voltage range	637 ~ 736 Vdc
	Max Current 1C (peak only)	1C (150A)
	Recommended Discharge /Charge Current (long cycles)	0.5C (75A)
	System Short Circuit Current	7000A
	Battery Short Circuit System	6800A
	HV BOX Fuses Protection	1000V-200A on both poles
	HV BOX Manual Breaker	1500V 200A Type C Automatic Thermal Protection
	HV BOX contactor rating current	350A on both Poles
	Cabinet max Elevation	3000m
Cycles	Number of Cycles 0.5C	≥ 7000 (0.5C,90%DOD,70%SOH)
	Number of cycles 1C	≥4700 (1C,90%DOD,70%SOH)
Communication	Battery to inverter communication	CAN
	AUX Data Communications-MODBUS	RS485
	APP connectivity	INGECON SUN STORAGE BATTERY App
	Cloud platform	LAN+4G
Bms Protections	SOC alerts	Built-in
	Cell over- and under-voltage protection	Built-in
	Overload protection	Built-in
	High/Low temperature alarm	Built-in
Passive Protections	External Stop Button (contactor disconnection impulse)	Built-in
	Smoke alarm	Built-in
	Over-Pressure relief Top Port	Built-in
	Fire detection sensor	Built-in
	Fire Fighting System	Built-in
	DC Fuse protection (Pack level & HV Box)	Built-in
Shelf Life Environment	Storage Max Humidity	RH ≤95% (no condensation)
	Storage Temperature	Less than 3 months: 0~45°C (SOC: 20%~50%)
	Shelf Life without inspections	>3 months: 15~35°C (SOC:20%~50%)
	Storage Elevation	≤3000m
	Dimensions (W*D *H)	1140*1190*2300mm
Basic Parameters	Weight	1550kg
	Cabinet design working Temperature range	-20°C +50°C (Derating due to Defrost Cycles to be considered)
	Raccomended Temperature range	-10°C +45°C (Derating and Defrost Cycles to be considered during operation, coul cause power redution)
	Defrost Coil resistor for extreme low temperature	220V ac Heating resistor for defrosting function (Optional)
	IP rating	IP54
	Cooling Method	Heat Pump and Air conditioner
	A/C stand by consumption (inactive compressor status via EMS)	50W
	A/C consumtion at max cooling Power	1200W
	A/C consumption at max heating Power	2500W
	A/C consumption with compressor OFF and Fan running	250W
	HV BOX self consumption	15W
	HV BOX consumption with all fan running full speed	75W
	Energy Saving Programming Mode	Scheduling via EMS for full energy saving
	Coating	Standard Outddor Painting (Not suitable for applications in saline environments)

The above temperature data are limited by the BMS, these values may therefore not be covered by the performance warranty. To receive the updated datasheets, please contact Ingeteam and read the manual carefully before proceeding with any purchase. All the data listed above are subject to change without prior notice.

INGECON SUN STORAGE Battery



ISSB 314 HV RACK

A State-of-the-Art Technology.

They have been designed with a range of features designed to meet very broad market requirements, those that today's experienced customers demand.

Our battery bank is 'modular', with 13 battery modules in series (installed in the IP54 cabinet together with the HV Box, forming the rack) and up to 6 racks coupled to an Inverter; up to a multi-block 'cluster' system, from multiples of about 100kW up to several MW.

In this way, we can cover the vast majority of C&I needs even after installation, our architecture being designed as open.

We offer an IP54, suitable for classic outdoor applications.

The battery bank is built in a lightweight metal casing to reduce weight, and the layout provides for modularity, i.e. the battery bank of 13 (209.3 kWh) and parallelisable up to 6 battery racks (1,255.8 kWh) per 100kW inverter.

The main communication protocols are RS485, CAN, 232, Wi-Fi and the expected cycle life is well over 7000 cycles.

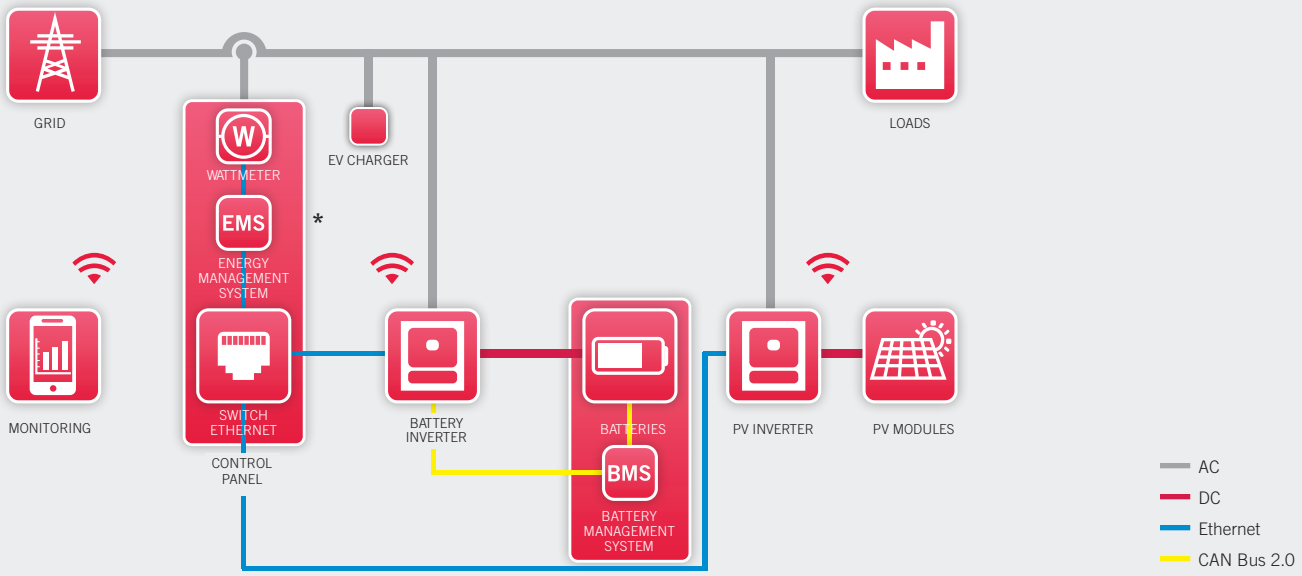
All this is aimed at offering the best flexibility and operational approach, without forgetting that things can be improved from time to time, depending on the customer's needs and interests.

INGECON SUN STORAGE Battery

	INGECON® SUN STORAGE BATTERY 314 HV RACK (IP54)	
Battery	Battery type	Lithium iron phosphate
	Cell specifications	3.2V, 314Ah
	Group approach	16S
	Battery capacity	16.1kWh
	Max DoD	95%
System	Rated capacity	209.3 kWh
	Cabinet slots (max 13 + HVBOX)	13+1 HVBOX
	Rated voltage	686 Vdc
	Voltage range	637 ~ 736 Vdc
	Max Current 1C (peak only)	1C (314A)
	Recommended Discharge /Charge Current (long cycles)	0.5C (157A)
	System Short Circuit Current	9300A
	Battery Short Circuit System	9150A
	HV BOX Fuses Protection	1000V-400A on both poles
	HV BOX Manual Breaker	1500V 400A Type C Automatic Thermal Protection
	HV BOX contactor rating current	400A on both Poles
	Cabinet max Elevation	3000m
Cycles	Number of Cycles 0.5C	≥ 8000 (0.5C,90%DOD,70%SOH)
Communication	Battery to inverter communication	CAN
	AUX Data Communications-MODBUS	RS485
	APP connectivity	INGECON SUN STORAGE BATTERY App
	Cloud platform	LAN+4G
Bms Protections	SOC alerts	Built-in
	Cell over- and under-voltage protection	Built-in
	Overload protection	Built-in
	High/Low temperature alarm	Built-in
Passive Protections	External Stop Button (contactor disconnection impulse)	Built-in
	Smoke alarm	Built-in
	Over-Pressure relief Top Port	Built-in
	Fire detection sensor	Built-in
	Fire Fighting System	Built-in
	DC Fuse protection (Pack level & HV Box)	Built-in
Shelf Life Environment	Storage Max Humidity	RH ≤95% (no condensation)
	Storage Temperature	Less than 3 months: 0~45°C (SOC: 20%~50%)
	Shelf Life without inspections	>3 months: 15~35°C (SOC:20%~50%)
	Storage Elevation	≤3000m
	Dimensions (W*D *H)	1140*1190*2300mm
Basic Parameters	Weight	2300kg
	Cabinet design working Temperature range	-20°C +50°C (Derating due to Defrost Cycles to be considered)
	Raccomended Temperature range	-10°C +45°C (Derating and Defrost Cycles to be considered during operation, coul cause power redution)
	Defrost Coil resistor for extreme low temperature	220V ac Heating resistor for defrosting function (Optional)
	IP rating	IP54
	Cooling Method	Heat Pump and Air conditioner
	A/C stand by consumption (inactive compressor status via EMS)	50W
	A/C consumtion at max cooling Power	1200W
	A/C consumption at max heating Power	2500W
	A/C consumption with compressor OFF and Fan running	250W
	HV BOX self consumption	15W
	HV BOX consumption with all fan running full speed	75W
	Energy Saving Programming Mode	Scheduling via EMS for full energy saving
	Coating	Standard Outdoor Painting (Not suitable for applications in saline environments)

The above temperature data are limited by the BMS, these values may therefore not be covered by the performance warranty. To receive the updated datasheets, please contact Ingeteam and read the manual carefully before proceeding with any purchase. All the data listed above are subject to change without prior notice.

Option 1: 1 inverter storage with 1 battery rack of 13 or 14 modules in total



* EMS provided only for Ingeteam Inverters (PV and Storage)

Scope of supply

- ISS 100TL
- ISS Battery 110 HV + BMS
- PV Inverters (any Ingeteam model)
- INGECON® SUN MONITORING

Description:

The system developed by Ingeteam for the industrial and commercial market comprises, in addition to the INGECON® SUN 3 PLAY inverters for photovoltaic applications, the INGECON® SUN STORAGE 3 Play, a three-phase inverter specifically designed for storage, characterised by a high power density (100 kW of power in just 80 kg).

Operating costs are reduced thanks to the wireless communication network that enables commissioning and monitoring of bat-teries without the need for a cable network, but with an alternative wired Ethernet connection.

Commissioning is fast and reliable, thanks to the app from which all important information can be viewed, allowing any errors to be quickly identified, and also allowing considerable savings in routine and extraordinary maintenance.

Its robust and durable design, with an aluminium casing, is also designed for outdoor installation (IP65).

The second component of this system is the INGECON® SUN STORAGE BATTERY 110 HV, which can be installed on walls, floors and stacked.

Configuration is simple and expandable, and wireless monitoring allows for real-time intervention and maintenance.

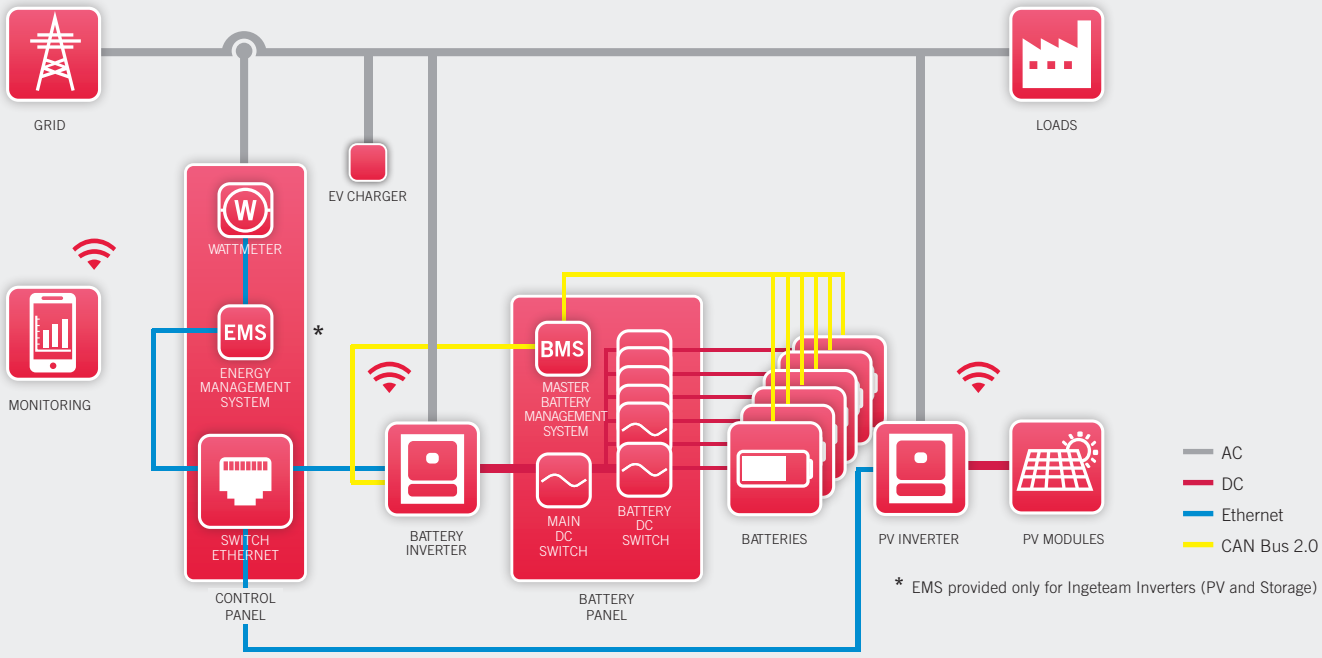
The batteries consist of lithium cells for maximum durability and safety.

The battery pack includes the BMS that communicates with the inverter via the CAN Bus protocol and consists of 13 to 14 modules divided into 1 rack that allows up to 72.8 kWh of energy.

Each battery module is constructed of metal law-ro to reduce weight impact and the layout provides modularity, i.e. the battery bank is stackable, which makes it easy and quick to increase capacity later.

The batteries are designed for more than 7,000 cycles, ensuring an optimal return on investment.

Option 2: 1 inverter storage plus battery racks of 13 or 14 modules

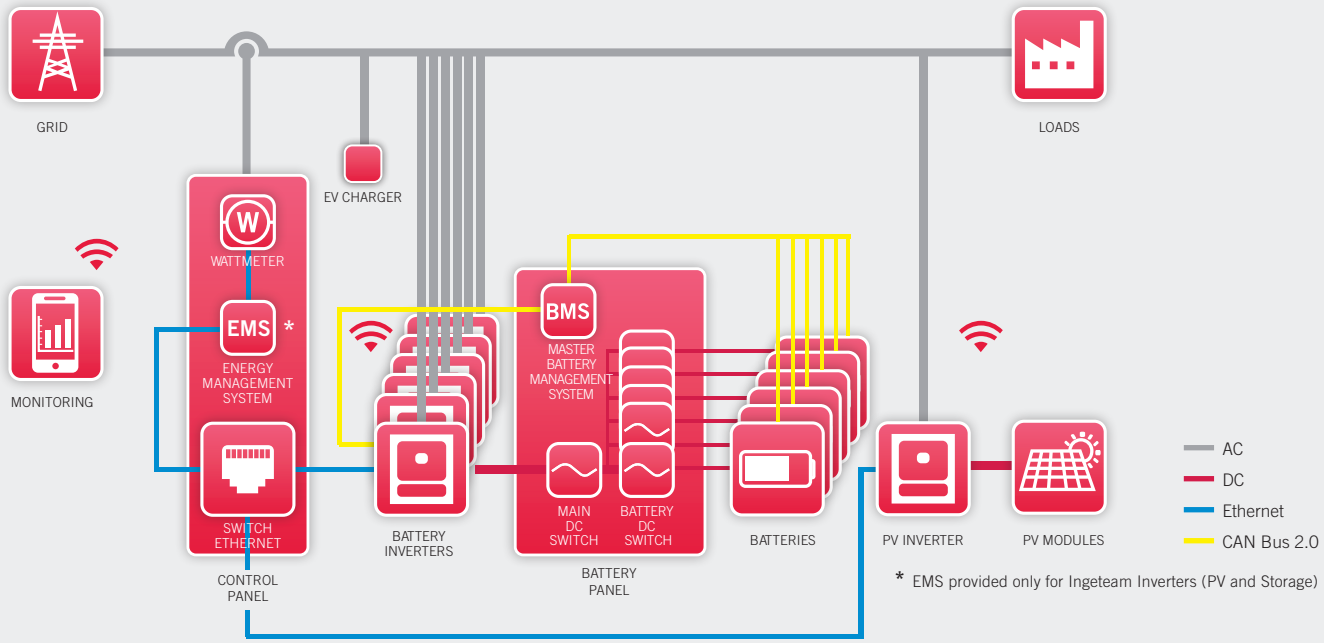


Scope of supply

- ISS 100 TL
- ISS Battery 110 HV
- PV Inverters (any Ingeteam model)
- Battery Panel + BMS
- INGECON® SUN MONITORING

Description:
Compared to option 1, this configuration provides use of multiple battery racks (up to 6) coupled to the same inverter, reaching a maximum capacity of 445,2 kWh. A battery parallel panel is also provided to manage the connection/disconnection of the batteries through dedicated switches.

Option 3: several inverters storage each combined with their own 13 or 14 module battery racks



Scope of supply

- ISS 100TL
- ISS Battery 110 HV
- PV Inverters (any Ingeteam model)
- Battery Panel + BMS
- INGECON® SUN MONITORING (app)

Description:
Compared to the previous option, this configuration allows the management of several storage inverters and consequently the battery groups associated with them. In addition to the battery parallel panel to manage the connection/disconnection of the batteries, a EMS is used to supervise the control and monitoring of the entire system.

INGECON SUN Ems Control Panel

Includes wattmeter and switch ethernet.

The control panel designed by Ingeteam includes a wattmeter with a high accuracy class and an Ethernet switch that allows a secure and reliable connection with all the elements of the network.
Provided only for Ingeteam Inverters (PV and Storage).

EMS for 100TL Inverters

The most efficient energy management solution for selfconsumption systems with 100TL INVERTERS.

This energy management system developed by Ingeteam is directed at optimizing energy consumption in commercial and industrial PV systems equipped with 100TL solar inverters. The EMS is designed to increase the amount of energy generated from renewable sources, to match on-site consumption requirements.

The smart energy manager
The INGECON® SUN EMS Control Panel uses readings from a wattmeter at the point of connection to manage the system energy flows, by sending operating setpoints to the various inverters.

Advanced connectivity
The energy manager can be connected to the devices and equipment forming part of the system either through its Ethernet or WiFi interface (built-in as standard) and can be monitored with the INGECON® SUN EMS Control Panel Tools software. This software is also used to configure the control strategy. Additionally, this device features an RS-485 port for communication with the external wattmeter.

Maximum control of the energy consumed The system energy manager constantly controls the amount of energy exchanged with the public grid.

This information is transferred in real time from the wattmeter and is available for viewing through the INGECON® SUN EMS Control Panel Tools software.

Designed to operate in a whole range of systems
Many different types of systems can be controlled by an INGECON® SUN EMS Control Panel:
- Self-consumption with PV generation.
- PV-diesel hybrid systems.
- Public grid-PV-diesel hybrid systems.
- Monitoring.

EMS inside

INGECON SUN PPC Control Panel

Includes wattmeter and switch ethernet.

The control panel designed by Ingeteam includes, in addition to a sophisticated PPC (Power Plant Controller), a wattmeter with a high accuracy class and an Ethernet switch that allows a secure and reliable connection with all the elements of the network.
Provided only for Ingeteam Inverters (PV and Storage).

BESS Control System

An advanced algorithm combined with a fast and efficient communications system.

The INGECON® SUN PPC Control Panel helps the grid operator to manage the BESS performance and to guarantee the quality and stability of the electricity supply.

Maximum BESS control
An advanced algorithm combined with a fast and efficient communications system, with response times of less than one second, allows for a precise control of the active and reactive power delivered by the plant to the grid.
The INGECON® SUN PPC Control Panel controls the BESS inverters, ensuring compliance with the grid operator's requirements at the BESS connection point. It is also possible to manage energy storage systems and other devices such as diesel generators, through the use of INGECON® SUN STORAGE Power inverters. This is a flexible system that can easily be adapted to the needs and configurations of each particular plant, whilst complying with the country-specific standards and regulations.

Continuous communication with all the devices
The Power Plant Controller dynamically receives the grid operator's setpoints.
For this purpose, a number of communication protocols are incorporated such as Modbus TCP / RTU, DNP3, IEC 60870-5-101, IEC 60870-5104 and OPC UA. Likewise, it is also possible to add digital and analogue I/O modules in order to extend the communication capabilities with third-party devices.

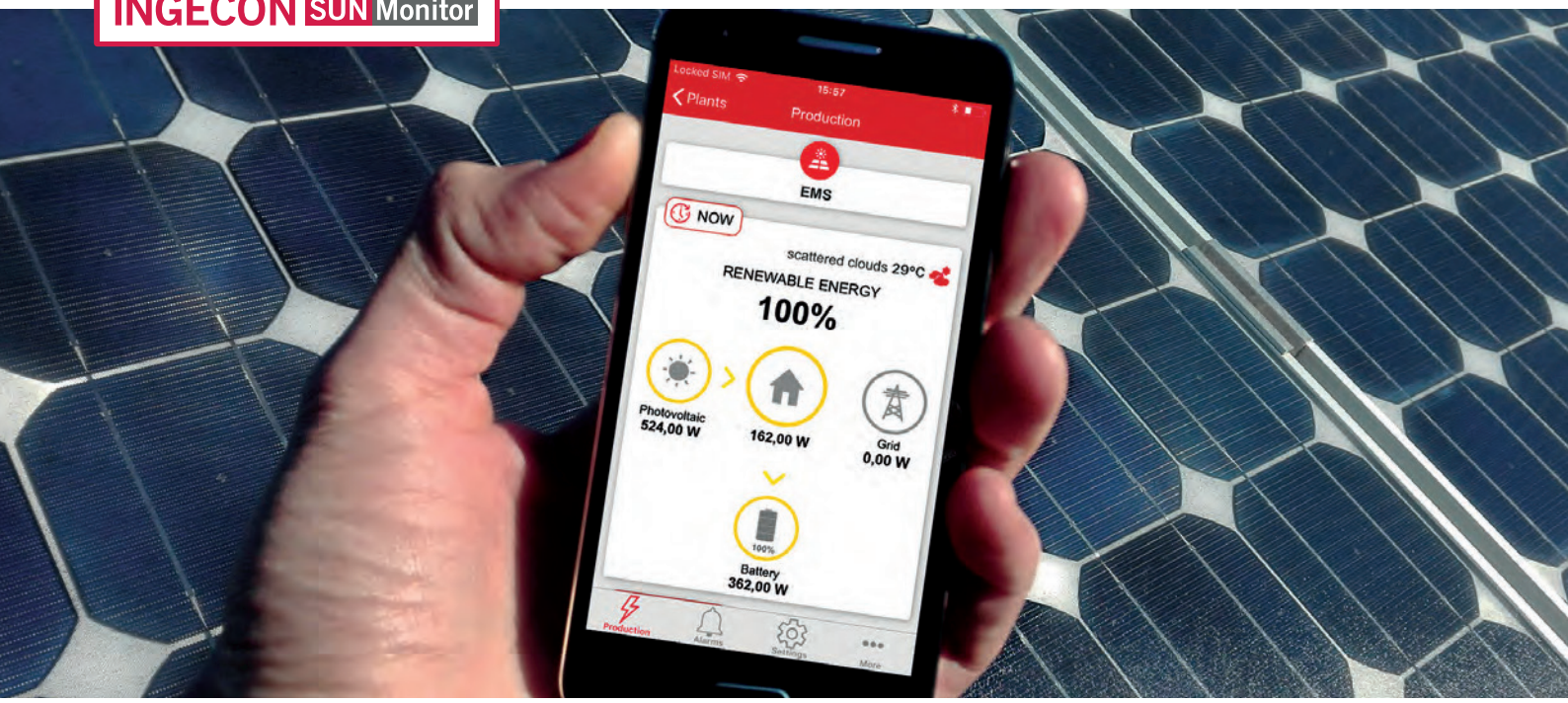
Furthermore, the INGECON® SUN PPC Control Panel permits communication with the plant SCADA to transmit the connection point data. It is also possible a manual control for temporary maintenance or engineering operations.

Parallel DC Battery Panel

Includes Master BMS and switch disconnectors

When a storage capacity greater than that provided by a single rack of 13 or 14 modules is required, it is necessary to install the Parallel DC Battery Panel which includes the DC switches to parallel up to six battery racks with a single inverter and the Master BMS.

INGECON SUN Monitor



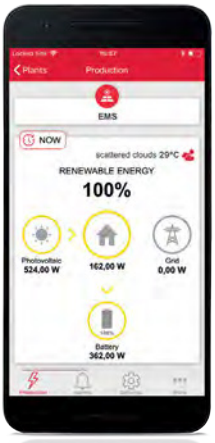
Web portal and Smartphone application to monitor solar power plants and self-consumption systems

The INGECON® SUN Monitor application enables accessing all the data of any so-lar PV plant or self-consumption installa-tion from a PC, a tablet or a Smartphone **(www.ingeconsunmonitor.com)**.

Its user friendly configuration allows system ow ners, installers and developers to control the installation.

Maximum control of the system status
With this software we can get real-time information about the solar system's sta-tus and production levels. This informa-tion is gathered and represented through graphics and lists, and it is also possible to generate an automated email report with production and alarms information. The data collection and storage is done during all the inverter's lifetime.

Also available as Smartphone app
Thanks to the Smartphone app, every solar plant owner or self-consumption system user, with or without batteries, can access all the generation, consump-tion, and batteries charging/discharging data on a daily, weekly, monthly or yearly basis. Moreover, the application can also calculate the savings achieved on the electric bill.



Available on the Play Store

Available on the iPhone App Store

INGEREV FUSION

FUSION

The charging station for public and private installations.

The **FUSION** range is available in two models, **FUSION Street** for ground mounting and **FUSION Wall** for wall mounting.
This dual equipment range has been designed to cover all electric vehicle charging demands in public and private settings alike.
Its standard features include Ethernet and WIFI communications, as well as the latest generation advanced functions such as Dynamic Load Management 2.0 (DLM 2.0) and OCPP protocols.

FEATURES

- Floor and wall mountable models, suitable for outdoor installation.
- Single phase and three phase models, with up to 32 amps per charging socket.
- Multiple charging sockets available, Mode 1 + 2 sockets, cables and Mode 3 sockets
- MID wattmeter.
- RGB LED status indicators.
- Multi-language colour screen.
- RFID reader.
- Ethernet and WIFI.
- DLM 2.0.
- Compatibility with OCPP.
- Updates through USB.
- Thermal-Magnetic Differential circuit breakers.
- Front door for ease of operation and maintenance.
- Ethernet switch to minimize the cost of Ethernet cabling.
- Warning message in the event of an outage.
- Possible customization with vinyl decals on all four faces(1).
- General breaker for the rapid disconnection of the charger.
- Security lock with key.
- Door-opening sensor.
- Automatic software updates (OCPP, ISO15118,...) for the entire product life.

Notes: (1) Large surface for vinyl decals.

NOTES

CE

Notes: All data is subject to change without prior notice; always ask Ingeteam for the most recent datasheet and manual before purchasing. No part of this document can be copied or reproduced without written permission of Ingeteam.

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