INGECON SUN STORAGE

Power B Series
1,500 Vdc

THREE-PHASE TRANSFORMERLESS BATTERY INVERTER

Battery inverter up to 1.71 MVA with 1500 V technology

The INGECON® SUN STORAGE Power is a three-phase bidirectional battery inverter that can be used in grid-connected and stand-alone systems. This battery inverter offers a high-power density in a single power block, providing different configurable operating modes. Besides, it features the same technology as Ingeteam's PV inverters, facilitating the supply of spare parts.

Easy maintenance
String inverter philosophy has been applied in the design of this central inverter, facilitating the inverter usage. Moreover, the input and output lines are integrated into the same cabinet, in order to make maintenance work easier.

Battery management
The INGECON® SUN STORAGE Power features a highly advanced battery control technology, ensuring the maximum life of the storage system. The battery temperature could be controlled at all times ensuring an enhanced lifespan of the accumulator. This battery inverter is 100% compatible with Ingeteam's PV inverters.

Software included
Included at no extra cost the software INGECON® SUN Manager for monitoring and recording the inverter data over the Internet. Ethernet communications are supplied as standard.

The INGECON® SUN STORAGE Power three-phase battery inverter complies with the most demanding international standards.

Standard 5 year warranty, extendable for up to 25 years

PROTECTIONS

- Output short-circuits and overloads.
- Insulation failures.
- Motorized DC load break disconnect.
- DC and AC surge arresters, type 2.
- Motorized AC circuit breaker.
- Additional protection for the power stack, as it is air cooled by a closed loop.

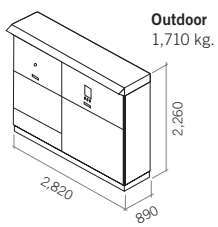
INTEGRATED ACCESSORIES

- Ethernet communication.
- AC pre-charge system.

OPTIONAL ACCESSORIES

- DC fuses.
- DC pre-charge system.
- Heating kit, for operating at an ambient temperature of down to -30 ºC.
- Sand trap kit.

Size (mm)



Outdoor
1,710 kg.

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Ingeteam

Power converter stands both, grid-following and grid forming operating modes:

Real power related functionalities

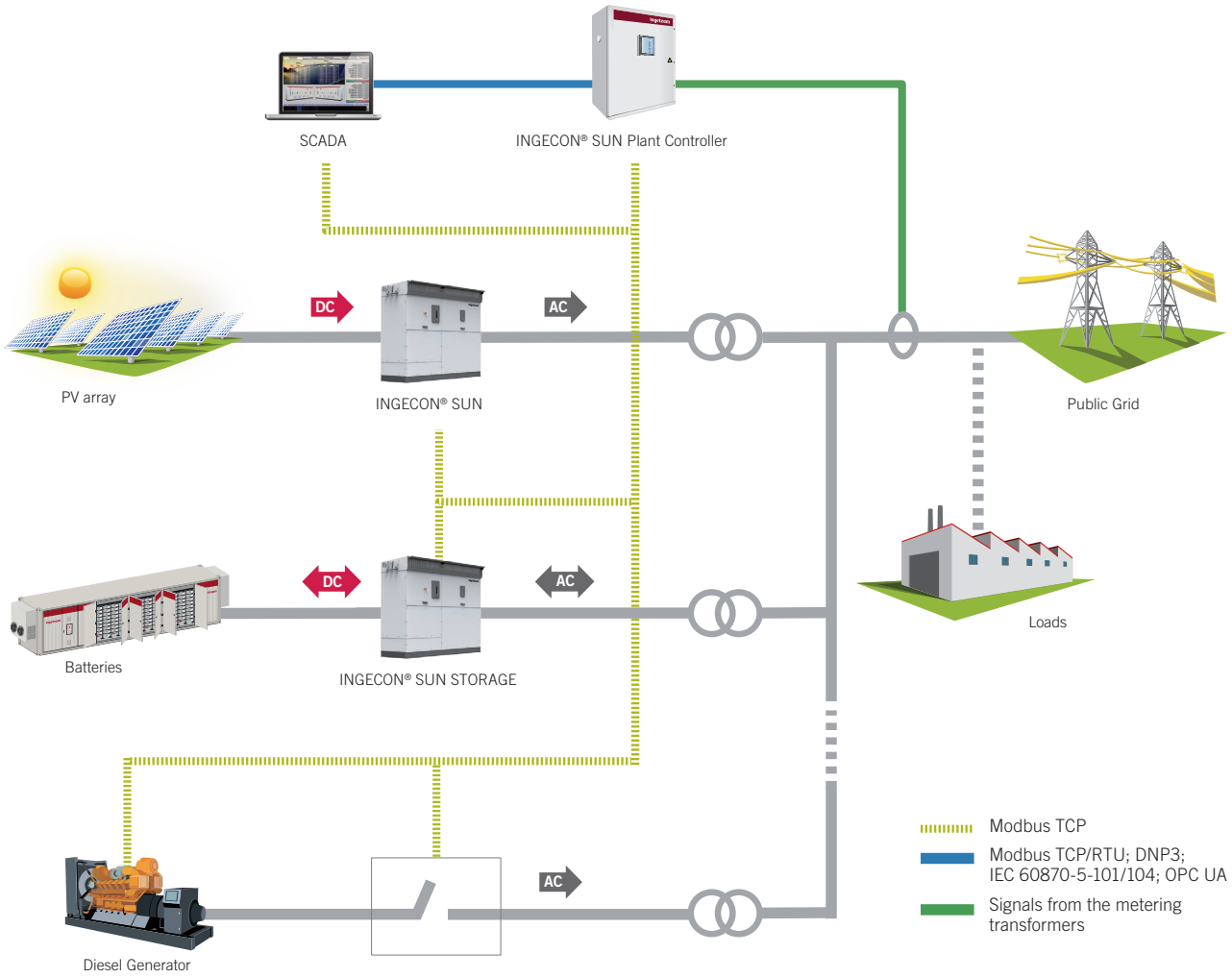
- Renewable resources integration:
  - Ramp limits.
  - Power smoothing / firming / curtailment.
  - Time shifting.
  - Micro grids.
- Grid support / Ancillary services:
  - Frequency regulation.
  - Synthetic inertia.
  - Black start.
  - Frequency control / protection.
  - Virtual “Synchronous Machine”.
- Investment deferral:
  - Peak shaving.
  - Load shifting / Load following.
  - Real power response improvement of conventional power plants.
- Power efficiency:
  - Time shifting.
  - Price arbitrage.
  - Real power response improvement of conventional power plants.
  - Peak shaving.
- Safety and quality:
  - “Un-interruptible” Power.
  - Grid code compliance.
  - Transmission congestion relief / Power quality - reliability.

Reactive power related functionalities

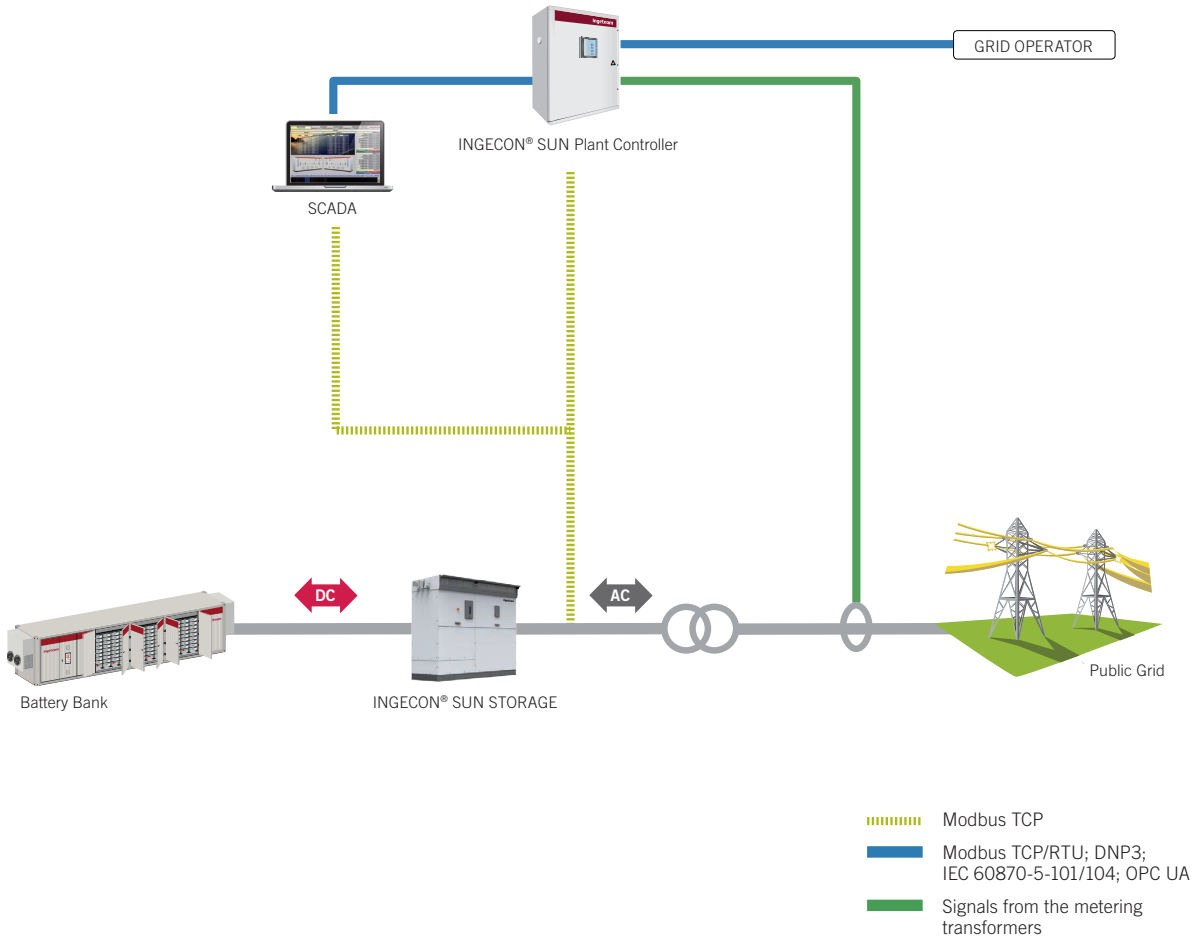
- Voltage control (Q/V).
- Voltage control / protection.
- Fixed power factor (QPF).
- Fixed reactive power output (Qref).
- Limitation of response of Reactive Power.

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

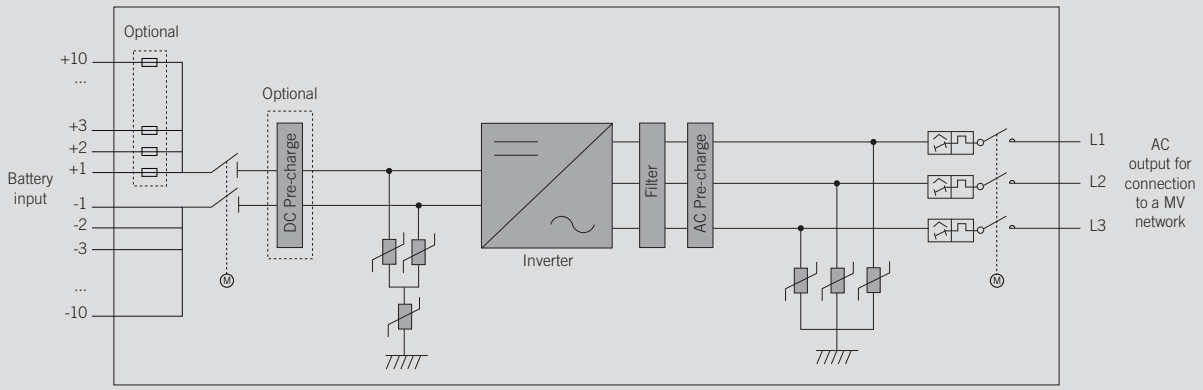
Example of schema for hybrid applications



Example of schema for stand-alone applications



INGECON SUN STORAGE Power



	950TL B366	1170TL B450	1325TL B510	1500TL B578	1560TL B600	1640TL B630	1715TL B660
Input (DC)							
Battery voltage range for off-grid mode	529 - 1,300 V	645 - 1,300 V	728 - 1,300 V	822 - 1,300 V	853 - 1,300 V	894 - 1,300 V	936 - 1,300 V
Battery voltage for grid-tied mode[1]	579 - 1,300 V	707 - 1,300 V	798 - 1,300 V	902 - 1,300 V	936 - 1,300 V	982 - 1,300 V	1,026 - 1,300 V
Maximum voltage[2]	1,500 V						
Maximum current	1,870 A						
Storage technology[3]	Any type: Batteries (Li-Ion, redox, lead acid, ...), super-capacitors, others						
N° inputs with fuse holders	6 up to 10						
Fuse dimensions	Up to 630 A / 1,500 V / aR / 100 kA (L/R 5mS) (optional)						
Type of connection	Single copper bar (up to 30 cables) or multiple copper bars with fuse holders						
Input protections							
Overvoltage protections	Type 2 surge arresters						
DC switch	Motorized DC load break disconnect						
Other protections	Up to 10 pairs of DC fuses (optional) / Insulation failure monitoring / Anti-islanding protection / Emergency pushbutton						
Output (AC)							
Power IP54 @30 °C / @50 °C	951 kVA / 856 kVA	1,169 kVA / 1,052 kVA	1,325 kVA / 1,193 kVA	1,502 kVA / 1,352 kVA	1,559 kVA / 1,403 kVA	1,637 kVA / 1,473 kVA	1,715 kVA / 1,543 kVA
Current IP54 @30 °C / @50 °C	1,500 A / 1,350 A						
Power IP56 @27 °C / @50 °C[4]	951 kVA / 842 kVA	1,169 kVA / 1,035 kVA	1,325 kVA / 1,173 kVA	1,502 kVA / 1,330 kVA	1,559 kVA / 1,380 kVA	1,637 kVA / 1,449 kVA	1,715 kVA / 1,518 kVA
Current IP56 @27 °C / @50 °C[4]	1,500 A / 1,328 A						
Rated voltage	366 V IT System	450 V IT System	510 V IT System	578 V IT System	600 V IT System	630 V IT System	660 V IT System
Frequency	50 / 60 Hz						
Power Factor adjustable	Yes, 0-1 (leading / lagging)						
THD (Total Harmonic Distortion)[5]	<3%						
Type of connection	Connection to cables or copper bars						
Output protections							
Overvoltage protections	Type 2 surge arresters						
AC breaker	Motorized AC circuit breaker						
Anti-islanding protection	Yes, with automatic disconnection						
Other protections	AC short circuits and overloads						
Features							
Maximum efficiency	98.9%						
CEC efficiency	98.5%						
Max. consumption aux. services	4,700 W (25 A)						
Stand-by or night consumption[6]	<90 W						
Average power consumption per day	2,000 W						
General Information							
Ambient temperature	-20 °C to +57 °C						
Relative humidity (non-condensing)	0 - 100%						
Protection class	IP54 (IP56 with the sand trap kit)						
Corrosion protection	External corrosion protection						
Maximum altitude	4,500 m (for installations beyond 1,000 m, please contact Ingeteam's BESS sales department)						
Cooling system	Forced air with temperature control (230 V phase + neutral power supply)						
Air flow range	0 - 7,800 m^3/h						
Average air flow	4,200 m^3/h						
Acoustic emission (100% / 50% load)	<66 dB(A) at 10m / <54.5 dB(A) at 10m						
Marking	CE, ETL						
EMC & Security standards	IEC 62920, IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-4, IEC 61000-3-11, IEC 61000-3-12, IEC 62109-1, IEC 62109-2, EN 50178, FCC Part 15, AS3100						
Grid connection standards	IEC 62116, EN 50530, IEC 61683, EU 631/2016 (EN 50549-2, CEI 0-16, NTS Spain, VDE-AR-N 4120, VDE-AR-N 4110, , Arrêté du 9 juin 2020, Terna A68), G99, South African Grid Code, Mexican Grid code, Chilean Grid Code, Ecuadorian Grid Code, Peruvian Grid Code, IEC61727, ABNT NBR 16149, ABNT NBR 16150, IEEE 1547, IEEE1547.1, DEWA (Dubai), Abu Dhabi Grid Code, Jordan Grid Code, Egyptian Grid Code, Saudi Arabia Grid Code, RETIE Colombia, Australian Grid Code						

Notes: [1] Minimum voltage DC ($V_{DC, min}$) for $V_{grid,max}$ = 1.1 p.u. and Power Factor=1. If $V_{grid,max}$ is higher than this value, the minimum voltage should be corrected as $V_{DC, min}$ * $V_{grid,max}$ / 1.1. For other DC voltage ranges, please contact Ingeteam's BESS sales department [2] Beyond 1,300 V, the maximum current decreases gradually [3] Please contact Ingeteam's BESS sales department to access the full list of compatible batteries and BMS [4] With the sand trap kit [5] For P out >25% of the rated power and voltage in accordance with IEC 61000-3-4 [6] Consumption from battery.

Ref: TF-02-IPT_BESS-01_C DATA SUBJECT TO CHANGE