

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

### 140TL HV

Three-phase battery inverters for commercial, industrial and large-scale systems. These bi-directional storage inverters feature the same technology as Ingeteam's central photovoltaic inverters.

#### Lower operational costs

Thanks to the wireless communication network that the INGECON® SUN STORAGE 140TL HV 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 (1,500 V) and to its wide input voltage range (673-1,250 V). Great power density, with 100 kW of power in only 75 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.

#### EMS Inside

The inverter is equipped as standard with an energy management system (EMS). The EMS permits more advanced functionalities, such as self-consumption. Thanks to the built-in EMS, the installation can be monitored at all times via a Smartphone or a PC with the free INGECON® SUN Monitor application, available at the Play Store and App Store.

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



### 140TL HV

MAIN FEATURES

- EMS inside.
- 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.
- It is necessary to add a pre-charge system.

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.

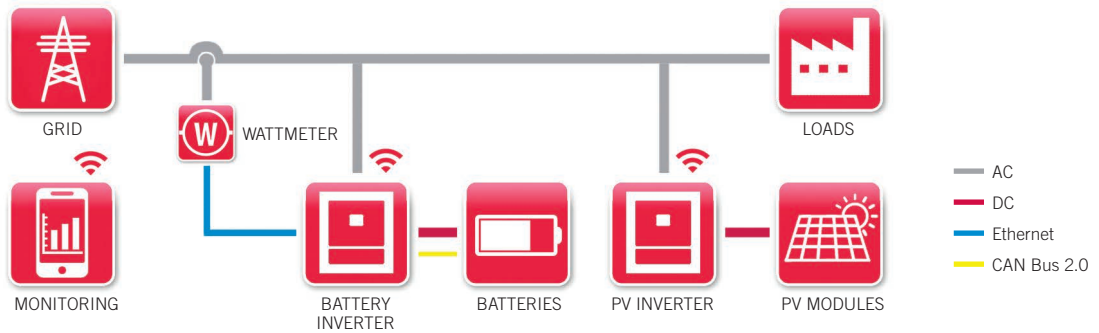
OPTIONAL ACCESSORIES

- 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.

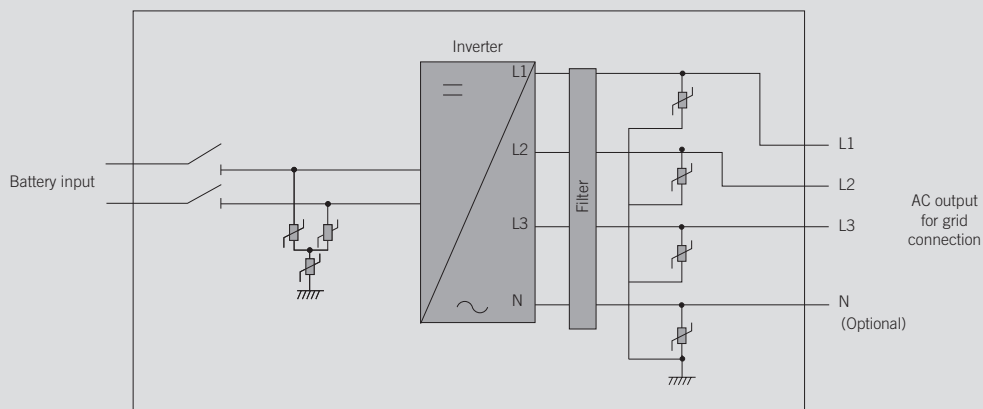
WIRING DIAGRAM



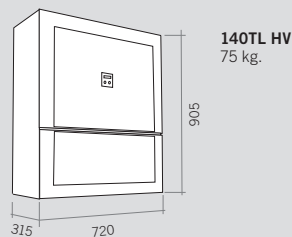
Integrated elements

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

### 3Play TL HV



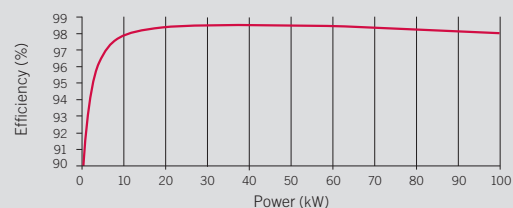
Size and weight (mm)



140TL HV						
<b>Input (DC)</b>						
Voltage range (Min. / Max) <sup>(1)</sup>	673 - 1,250 V	729 - 1,250 V	800 - 1,250 V	895 - 1,250 V	935 - 1,250 V	951 - 1,250 V
Maximum voltage <sup>(2)</sup>	1,500 V					
Maximum power (charge / discharge)	80 kW / 97.5 kW	86.6 kW / 105.5 kW	95.1 kW / 115.8 kW	106.4 kW / 129.6 kW	111.1 kW / 135.3 kW	112.9 kW / 137.6 kW
Maximum current (charge / discharge)	119 A / 144.7 A					
Battery type	Li-ion, lead					
Shortcircuit current	250 A					
Communication with the BMS (Battery Management System)	CAN Bus 2.0 / Ethernet					
<b>Output (AC)</b>						
Rated power charge (25 °C / 40 °C / 50 °C)	81 / 75 / 73.6 kW	87.6 / 81.3 / 79.7 kW	96.2 / 89.2 / 87.5 kW	107.6 / 99.8 / 97.9 kW	112.4 / 104.2 / 102.2 kW	114.3 / 106 / 103.9 kW
Rated power discharge (25 °C / 40 °C / 50 °C)	98.6 / 91.3 / 89.1 kW	106.8 / 98.8 / 96.4 kW	117.2 / 108.5 / 105.8 kW	131.1 / 121.3 / 118.4 kW	136.9 / 126.7 / 123.7 kW	139.3 / 128.9 / 125.7 kW
Maximum current charge (25 °C / 40 °C / 50 °C)	110 / 102 / 100 A					
Maximum current discharge (25 °C / 40 °C / 50 °C)	134 / 124 / 121 A					
Rated voltage	425 V	460 V	505 V	565 V	590 V	600 V
Rated frequency	50 / 60 Hz					
Power factor	1					
Adjustable power factor	Yes. 0 – 1 (leading / lagging)					
THD <sup>(3)</sup>	<3%					
Type of grid	IT					
<b>Efficiency</b>						
Maximum efficiency	98.8%					
Euroefficiency	98.1%					
<b>General Information</b>						
Refrigeration system	Forced ventilation					
Air flow	570 m³/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	3,000 m					
Connection	AC: Max. Cross section: 240 mm² (one wire) DC connection: Max. Cross section: 300 mm² (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:** <sup>(1)</sup> V<sub>min batt</sub> is for rated conditions (V<sub>ac</sub>=1.1 p.u. and Power Factor=1). V<sub>min batt</sub> will depend on the grid voltage (V<sub>ac</sub>), according to this relation: V<sub>min batt</sub>=1.1\*1.44\*V<sub>ac</sub> <sup>(2)</sup> The inverter does not start operating until V<sub>dc</sub> <1,450 V <sup>(3)</sup> For rated AC power and voltage in accordance with IEC 61000-3-4.

**Efficiency INGECON® SUN STORAGE 140TL HV**





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