

**TRANSFORMERLESS  
DUAL SOLUTION  
WITH TWO B SERIES  
INVERTERS****Up to 2550 kVA at 1000 Vdc****Maximum power density**

These PV central inverters feature more power per cubic foot. Thanks to the use of high-quality components, this inverter series performs at the highest possible level.

**Latest generation electronics**

The B Series inverters integrate an innovative control unit that runs faster and performs a more efficient and sophisticated inverter control, as it uses a last-generation digital signal processor. Furthermore, the hardware of the control unit allows some more accurate measurements and very reliable protections.

These inverters feature a low voltage ride-through capability and also a lower power consumption thanks to a more efficient power supply electronic board.

**Integrated AC connections**

The output connections are integrated into the same cabinet, facilitating close-coupled connection with the MV transformer, as well as maintenance and repair work.

**Maximum protection**

These PV inverters can guarantee the maximum protection thanks to their motorized DC switch to decouple the PV generator from the inverter.

Moreover, they are also supplied with a motorized AC circuit breaker. Optionally, they can be supplied with DC fuses, grounding kit and input current monitoring.

**Maximum efficiency values**

Through the use of innovative electronic conversion topologies, efficiency values of up to 98.9% can be achieved.

**Enhanced functionality**

This new INGECON® SUN PowerMax range features a revamped, improved enclosure which, together with its innovative air cooling system, makes it possible to increase the ambient operating temperature.



**Long-lasting design**

These inverters have been designed to guarantee a long life expectancy. Standard 5 year warranty, extendable for up to 25 years.

**Grid support**

The INGECON® SUN PowerMax B Series has been designed to comply with the grid connection requirements, contributing to the quality and stability of the electric system. These inverters therefore feature a low voltage ride-through capability, and can deliver reactive power and control the active power delivered to the grid. Moreover, they can operate in weak power grids with a low SCR.

**Ease of maintenance**

All the elements can be removed or replaced directly from the inverter's front side, thanks to its new design.

**Easy to operate**

The INGECON® SUN PowerMax inverters feature an LCD screen for the simple and convenient monitoring of the inverter status and a range of internal variables. The display also includes a number of LEDs to show the inverter operating status with warning lights to indicate any incidents. All this helps to simplify and facilitate maintenance tasks.

**Monitoring and communication**

Ethernet communications supplied as standard. The following applications are included at no extra cost: INGECON® SUN Manager, INGECON® SUN Monitor and its Smartphone version Web Monitor, available on the App Store. These applications are used for monitoring and recording the inverter's internal operating variables through the Internet (alarms, real time production, etc.), in addition to the historical production data.

Two communication ports available for each inverter (one for monitoring and one for plant controlling), allowing fast and simultaneous plant control.

PROTECTIONS

- DC Reverse polarity.
- Short-circuits and overloads at the output.
- Anti-islanding with automatic disconnection.
- Insulation failure DC.
- Up to 15 pairs of fuse-holders per power block.
- Lightning induced DC and AC surge arresters, type II.
- DC surge arresters type I+II optional.
- Motorized DC switch to automatically disconnect the inverter from the PV array.
- Low voltage ride-through capability.
- Motorized AC circuit breaker.
- Hardware protection via firmware.
- Additional protection for the power stack, as it is air-cooled by a closed loop.

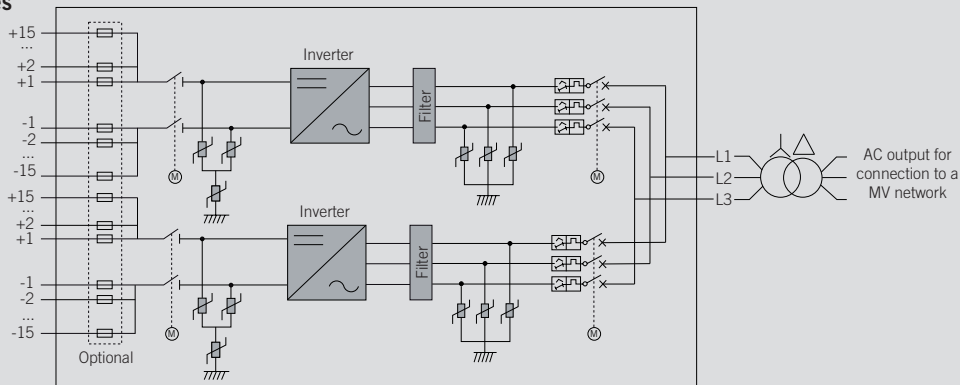
OPTIONAL ACCESSORIES

- Insulation failure AC.
- Grounding kit.
- Heating kit, for operating at an ambient temperature of down to -30 °F.
- DC fuses.
- Monitoring of the group currents at the DC input.
- PID prevention kit (PID: Potential Induced Degradation).
- Night time reactive power injection.
- Sand trap kit.
- Integrated DC combiner box.

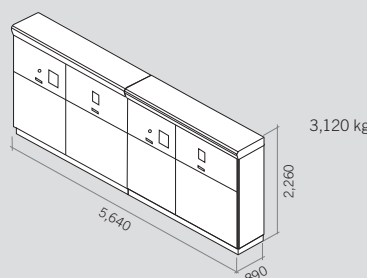
ADVANTAGES OF THE B SERIES

- Higher power density.
- Latest generation electronics.
- More efficient electronic protection.
- Night time supply to communicate with the inverter at night.
- Enhanced performance.
- Easier maintenance thanks to its new design and enclosure.
- Lightweight spares.
- It allows to ground the PV array.
- Components easily replaceable.

**PowerMax B Series**



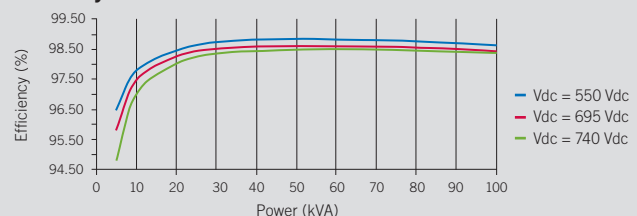
**Size and weight** (mm and kg)



	1660 kVA DUAL INGECON® SUN 830TL B300	2000 kVA DUAL INGECON® SUN 1000TL B360	2140 kVA DUAL INGECON® SUN 1070TL B385	2220 kVA DUAL INGECON® SUN 1110TL B400	2280 kVA DUAL INGECON® SUN 1140TL B410
<b>Input (DC)</b>					
Recommended PV array power range <sup>(1)</sup>	1,682 - 2,162 kWp	2,020 - 2,594 kWp	2,160 - 2,774 kWp	2,244 - 2,882 kWp	2,300 - 2,954 kWp
Voltage Range MPP <sup>(2)</sup>	440 - 820 V	524 - 820 V	560 - 820 V	580 - 820 V	595 - 820 V
Maximum voltage <sup>(3)</sup>	1,050 V				
Maximum current	2,000 A per power block				
N° inputs with fuse holders	5 up to 15 per power block (up to 12 with the combiner box)				
Fuse dimensions	63 A / 1,000 V to 630 A / 1,000 V				
Type of connection	Connection to copper bars				
Power blocks	2				
MPPT	2				
<b>Input protections</b>					
Overvoltage protections	Type II surge arresters (type I+II optional)				
DC switch	Motorized DC load break disconnect				
Other protections	Up to 15 pairs of DC fuses (optional) / Reverse polarity / Insulation failure monitoring / Anti-islanding protection / Emergency pushbutton				
<b>Output (AC)</b>					
Power @ 35 °C / @ 50 °C	1,663 kVA / 1,530 kVA	1,995.5 kVA / 1,836 kVA	2,134 kVA / 1,964 kVA	2,217 kVA / 2,040 kVA	2,272.5 kVA / 2,091 kVA
Current @ 35 °C / @ 50 °C	3,200 A / 2,944 A				
Rated voltage <sup>(4)</sup>	300 V IT System	360 V IT System	385 V IT System	400 V IT System	410 V IT System
Frequency	50 / 60 Hz				
Power Factor <sup>(5)</sup>	1				
Power Factor adjustable	Yes. S <sub>max</sub> =1,663 kVA	Yes. S <sub>max</sub> =1,995.5 kVA	Yes. S <sub>max</sub> =2,134 kVA	Yes. S <sub>max</sub> =2,217 kVA	Yes. S <sub>max</sub> =2,272.5 kVA
THD (Total Harmonic Distortion) <sup>(6)</sup>	<3%				
<b>Output protections</b>					
Overvoltage protections	Type II surge arresters				
AC breaker	Motorized AC circuit breaker with door control				
Anti-islanding protection	Yes, with automatic disconnection				
Other protections	AC short-circuits and overloads				
<b>Features</b>					
Operating efficiency	98.9%				
CEC	98.5%				
Max. consumption aux. services	6,000 W				
Stand-by or night consumption <sup>(7)</sup>	120 W				
Average power consumption per day	2,800 W				
<b>General Information</b>					
PV inverters included	Two units of the INGECON® SUN 830TL B300	Two units of the INGECON® SUN 1000TL B360	Two units of the INGECON® SUN 1070TL B385	Two units of the INGECON® SUN 1110TL B400	Two units of the INGECON® SUN 1140TL B410
Ambient temperature	-20 °C to +60 °C				
Relative humidity (non-condensing)	0-100%				
Protection class	IP54 (IP56 with the sand trap kit)				
Maximum altitude	4,500 m (for installations beyond 1,000 m, please contact Ingeteam's solar sales department)				
Cooling system	Air forced with temperature control (230 V phase+ neutral power supply)				
Air flow range	0-6,200 m <sup>3</sup> /h per power block				
Average air flow	2 x 3,800 m <sup>3</sup> /h				
Acoustic emission (100% / 50% load)	<66 dB(A) at 10m / <54.5 dB(A) at 10m				
Marking	CE				
EMC and security 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, IEC62103, EN 50178, FCC Part 15, AS3100				
Grid connection standards	IEC 62116, Arrêté 23-04-2008, CEI 0-16 Ed. III, Terna A68, G59/2, BDEW-Mittelspannungsrichtlinie:2011, P.O.12.3, South African Grid code (ver 2.6), Chilean Grid Code, Ecuadorian Grid Code, Peruan Grid code, Thailand PEA requirements, IEC61727, UNE 206007-1, ABNT NBR 16149, ABNT NBR 16150, IEEE 1547, IEEE1547.1, GGC&CGC China, DEWA (Dubai) Grid code, Jordan Grid Code				

**Notes:** <sup>(1)</sup> Depending on the type of installation and geographical location. Data for STC conditions <sup>(2)</sup> V<sub>mpp,min</sub> is for rated conditions (V<sub>ac</sub>=1 p.u. and Power Factor=1) <sup>(3)</sup> Consider the voltage increase of the 'Voc' at low temperatures <sup>(4)</sup> Other AC voltages and powers available upon request <sup>(5)</sup> For P<sub>out</sub>>25% of the rated power <sup>(6)</sup> For P<sub>out</sub>>25% of the rated power and voltage in accordance with IEC 61000-3-4 <sup>(7)</sup> Consumption from PV field when there is PV power available.

**Efficiency DUAL INGECON® SUN 1070TL B385**



	2330 kVA DUAL INGECON® SUN 1165TL B420	2380 kVA DUAL INGECON® SUN 1190TL B430	2440 kVA DUAL INGECON® SUN 1220TL B440	2500 kVA DUAL INGECON® SUN 1250TL B450	2550 kVA DUAL INGECON® SUN 1275TL B460
<b>Input (DC)</b>					
Recommended PV array power range <sup>(1)</sup>	2,356 - 3,026 kWp	2,412 - 3,098 kWp	2,468 - 3,170 kWp	2,524 - 3,242 kWp	2,580 - 3,314 kWp
Voltage Range MPP <sup>(2)</sup>	610 - 820 V	623.5 - 820 V	638 - 820 V	652 - 820 V	666 - 820 V
Maximum voltage <sup>(3)</sup>	1,050 V				
Maximum current	2,000 A per power block				
N° inputs with fuse holders	5 up to 15 per power block (up to 12 with the combiner box)				
Fuse dimensions	63 A / 1,000 V to 630 A / 1,000 V				
Type of connection	Connection to copper bars				
Power blocks	2				
MPPT	2				
<b>Input protections</b>					
Overvoltage protections	Type II surge arresters (type I+II optional)				
DC switch	Motorized DC load break disconnect				
Other protections	Up to 15 pairs of DC fuses (optional) / Reverse polarity / Insulation failure monitoring / Anti-islanding protection / Emergency pushbutton				
<b>Output (AC)</b>					
Power @ 35 °C / @ 50 °C	2,328 kVA / 2,142 kVA	2,383 kVA / 2,193 kVA	2,434 kVA / 2,244 kVA	2,494 kVA / 2,294 kVA	2,550 kVA / 2,346 kVA
Current @ 35 °C / @ 50 °C	3,200 A / 2,944 A				
Rated voltage <sup>(4)</sup>	420 V IT System	430 V IT System	440 V IT System	450 V IT System	460 V IT System
Frequency	50 / 60 Hz				
Power Factor <sup>(5)</sup>	1				
Power Factor adjustable	Yes. Smax=2,328 kVA	Yes. Smax=2,383 kVA	Yes. Smax=2,434 kVA	Yes. Smax=2,494 kVA	Yes. Smax= 2,550 kVA
THD (Total Harmonic Distortion) <sup>(6)</sup>	<3%				
<b>Output protections</b>					
Overvoltage protections	Type II surge arresters				
AC breaker	Motorized AC circuit breaker with door control				
Anti-islanding protection	Yes, with automatic disconnection				
Other protections	AC short-circuits and overloads				
<b>Features</b>					
Operating efficiency	98.9%				
CEC	98.5%				
Max. consumption aux. services	6,000 W				
Stand-by or night consumption <sup>(7)</sup>	120 W				
Average power consumption per day	2,800 W				
<b>General Information</b>					
PV inverters included	Two units of the INGECON® SUN 1165TL B420	Two units of the INGECON® SUN 1190TL B430	Two units of the INGECON® SUN 1220TL B440	Two units of the INGECON® SUN 1250TL B450	Two units of the INGECON® SUN 1275TL B460
Ambient temperature	-20 °C to +60 °C				
Relative humidity (non-condensing)	0-100%				
Protection class	IP54 (IP56 with the sand trap kit)				
Maximum altitude	4,500 m (for installations beyond 1,000 m, please contact Ingeteam's solar sales department)				
Cooling system	Air forced with temperature control (230 V phase+ neutral power supply)				
Air flow range	0-6,200 m³/h per power block				
Average air flow	2 x 3,800 m³/h				
Acoustic emission (100% / 50% load)	<66 dB(A) at 10m / <54.5 dB(A) at 10m				
Marking	CE				
EMC and security 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, IEC62103, EN 50178, FCC Part 15, AS3100				
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**Efficiency DUAL INGECON® SUN 1165TL B420**

