

**TRANSFORMERLESS
CENTRAL
INVERTERS
WITH A SINGLE
POWER BLOCK****Up to 1275 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 DC and AC connections

The input and output connections are integrated into the same cabinet, facilitating connection, maintenance and repair work.

Maximum protection

These three phase inverters are equipped with a motorized DC switch to decouple the PV generator from the inverter. Moreover, they are also supplied with a motorized AC circuit breaker with door control. Optionally, they can incorporate DC fuses, smart 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. Thanks to a sophisticated control algorithm, this equipment can guarantee maximum efficiency depending on the PV power available.

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 to deliver its rated power up to 50 °C.



Up to 1275 kVA at 1000 V_{dc}

Long-lasting design

The inverters have been designed to guarantee a long life expectancy, as demonstrated by the stress tests they are subjected to. 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 in different countries, 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.

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 (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.
- Lightning induced DC and AC surge arrestors, type 2 (type 1 also available for the DC side).
- Motorized DC switch to automatically disconnect the inverter from the PV array.
- Motorized AC circuit breaker.
- Low-voltage ride-through capability.
- Hardware protection via firmware.
- Additional protection for the power stack, as it is air-cooled by a closed loop.

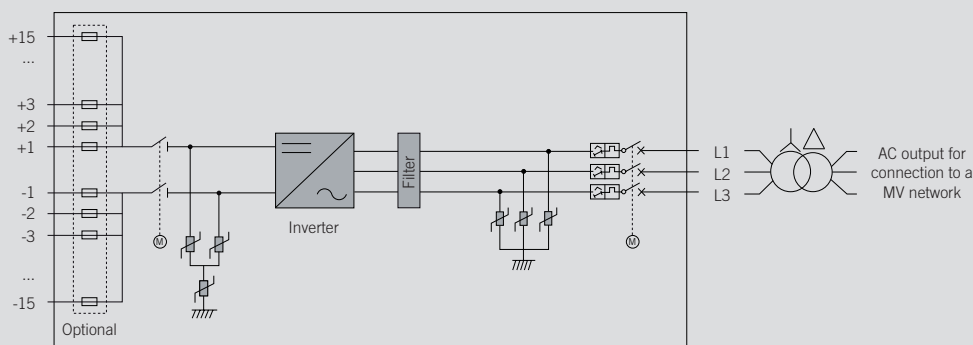
OPTIONAL ACCESSORIES

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

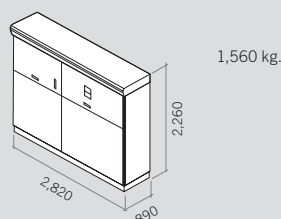
ADVANTAGES OF THE B SERIES

- 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



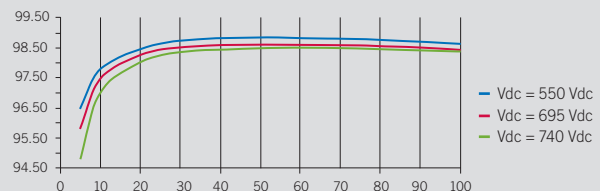
Size and weight (mm)



	830TL B300	1000TL B360	1070TL B385	1110TL B400	1140TL B410
Input (DC)					
Recommended PV array power range ⁽¹⁾	841 - 1,081 kWp	1,010 - 1,297 kWp	1,080 - 1,387 kWp	1,122 - 1,441.1 kWp	1,150 - 1,477 kWp
Voltage Range MPP ⁽²⁾	440 - 820 V	524 - 820 V	560 - 820 V	580 - 820 V	595 - 820 V
Maximum voltage ⁽³⁾	1,050 V				
Maximum current	2,000 A				
N° inputs with fuse holders	5 up to 15 (up to 12 with the combiner box)				
Fuse dimensions	63 A / 1,000 V to 630 A / 1,000 V fuses (optional)				
Type of connection	Connection to copper bars				
Number of power blocks	1				
MPPT	1				
Max. current at each input	From 40 A to 410 A for positive and negative poles				
Inputs protection					
Overtoltage 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) / Insulation failure monitoring / Anti-islanding protection / Emergency pushbutton				
Output (AC)					
Power @35 °C / @50 °C	831.4 kVA / 765 kVA	997.7 kVA / 918 kVA	1,066.9 kVA / 981.8 kVA	1,108.5 kVA / 1,020 kVA	1,136.2 kVA / 1,045.5 kVA
Current @35 °C / @50 °C	1,600 A / 1,472 A				
Rated voltage ⁽⁴⁾	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 ⁽⁵⁾	1				
Power Factor adjustable	Yes, 0-1 (leading / lagging)				
THD (Total Harmonic Distortion) ⁽⁶⁾	<3%				
Output protections					
Overtoltage protections	Type II surge arresters (type I+II optional)				
AC breaker	Motorized AC circuit breaker				
Anti-islanding protection	Yes, with automatic disconnection				
Other protections	AC short circuits and overloads				
Features					
Maximum efficiency	98.7%	98.9%			
Euroefficiency	98.3%	98.5%	98.6%	98.5%	
Max. consumption aux. services	3,000 W				
Stand-by or night consumption ⁽⁷⁾	60 W				
Average power consumption per day	1,400 W				
General Information					
Operating 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 ³ /h				
Average air flow	3,800 m ³ /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, Peruvian 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: ⁽¹⁾ Depending on the type of installation and geographical location. Data for STC conditions ⁽²⁾ V_{mpp,min} is for rated conditions (V_{ac}=1 p.u. and Power Factor=1) ⁽³⁾ Consider the voltage increase of the 'Voc' at low temperatures ⁽⁴⁾ Other AC voltages and powers available upon request ⁽⁵⁾ For P_{out}>25% of the rated power ⁽⁶⁾ For P_{out}>25% of the rated power and voltage in accordance with IEC 61000-3-4 ⁽⁷⁾ Consumption from PV field when there is PV power available.

Efficiency INGECON® SUN 1070TL B385



	1165TL B420	1190TL B430	1220TL B440	1250TL B450	1275TL B460
Input (DC)					
Recommended PV array power range ⁽¹⁾	1,178 - 1,513.2 kWp	1,234 - 1,585 kWp	1,262 - 1,621 kWp	1,206 - 1,549 kWp	1,290 - 1,657 kWp
Voltage Range MPP ⁽²⁾	610 - 820 V	623.5 - 820 V	638 - 820 V	652 - 820 V	666 - 820 V
Maximum voltage ⁽³⁾	1,050 V				
Maximum current	2,000 A				
N° inputs with fuse holders	5 up to 15 (up to 12 with the combiner box)				
Fuse dimensions	63 A / 1,000 V to 630 A / 1,000 V fuses (optional)				
Type of connection	Connection to copper bars				
Number of power blocks	1				
MPPT	1				
Max. current at each input	From 40 A to 410 A for positive and negative poles				
Inputs protection					
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) / Insulation failure monitoring / Anti-islanding protection / Emergency pushbutton				
Output (AC)					
Power @35 °C / @50 °C	1,163.9 kVA / 1,071 kVA	1,191 kVA / 1,096 kVA	1,219 kVA / 1,122 kVA	1,247 kVA / 1,147 kVA	1,275 kVA / 1,173 kVA
Current @35 °C / @50 °C	1,600 A / 1,472 A				
Rated voltage ⁽⁴⁾	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 ⁽⁵⁾	1				
Power Factor adjustable	Yes, 0-1 (leading / lagging)				
THD (Total Harmonic Distortion) ⁽⁶⁾	<3%				
Output protections					
Overvoltage protections	Type II surge arresters (type I+II optional)				
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%				
Euroefficiency	98.5%				
Max. consumption aux. services	3,000 W				
Stand-by or night consumption ⁽⁷⁾	60 W				
Average power consumption per day	1,400 W				
General Information					
Operating 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				
Average air flow	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				
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, Peruvian 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: ⁽¹⁾ Depending on the type of installation and geographical location. Data for STC conditions ⁽²⁾ Vmpp.min is for rated conditions (Vac=1 p.u. and Power Factor=1) ⁽³⁾ Consider the voltage increase of the 'Voc' at low temperatures ⁽⁴⁾ Other AC voltages and powers available upon request ⁽⁵⁾ For P_{out}>25% of the rated power ⁽⁶⁾ For P_{out}>25% of the rated power and voltage in accordance with IEC 61000-3-4 ⁽⁷⁾ Consumption from PV field when there is PV power available.

Efficiency INGECON® SUN 1165TL B420

