INGECON SUN

Power Dual B Series
1,500 Vdc

TRANSFORMERLESS DUAL SOLUTION WITH TWO B SERIES INVERTERS

Up to 3.6 MVA at 1500 V

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 the 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 Power range features a revamped, improved enclosure which, together with its innovative air cooling system, makes it possible to increase the ambient operating temperature.

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Ingeteam

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 Power 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 Power 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.
- 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.

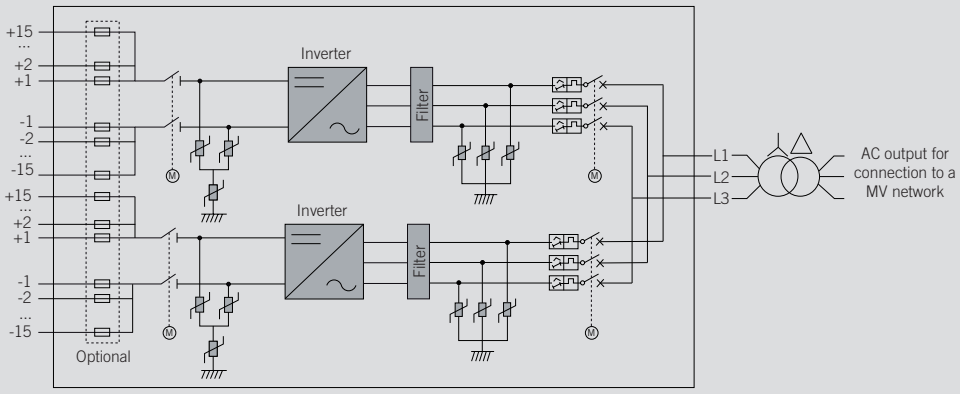
OPTIONAL ACCESSORIES

- Auxiliary services feeder.
- Grounding kit.
- Heating kit, for operating at an ambient temperature of down to -30 ºC.
- DC surge arresters type I+II.
- 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.

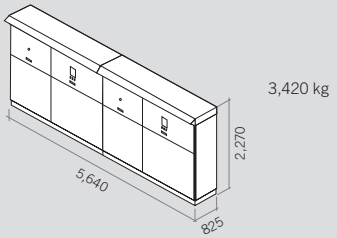
ADVANTAGES OF THE B SERIES

- 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.

Power B Series

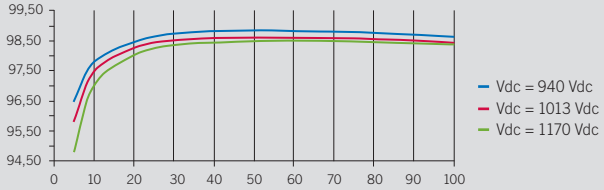


Size and weight (mm and kg)



3,420 kg

Efficiency DUAL INGECON® SUN 1690TL B650



	2340 kVA DUAL INGECON® SUN 1170TL B450	**2800 kVA** DUAL INGECON® SUN 1400TL B540	**3000 kVA** DUAL INGECON® SUN 1500TL B578	**3120 kVA** DUAL INGECON® SUN 1560TL B600	**3200 kVA** DUAL INGECON® SUN 1600TL B615
Input (DC)					
Recommended PV array power range[1]	2,314 - 3,040 kWp	2,778 - 3,648 kWp	2,974 - 3,904 kWp	3,086 - 4,052 kWp	3,164 - 4,154 kWp
Voltage Range MPP[2]	645 - 1,300 V	769 - 1,300 V	822 - 1,300 V	853 - 1,300 V	873 - 1,300 V
Maximum voltage[3]	1,500 V				
Maximum current	1,870 A per power block				
Nº inputs with fuse-holders	6 up to 15 per power block (up to 12 with the combiner box)				
Fuse dimensions	63 A / 1,500 V to 500 A / 1,500 V fuses (optional)				
Type of connection	Connection to copper bars				
Power blocks	2				
MPPT	2				
Input protections					
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				
Output (AC)					
Power IP54 @30 °C / @50 °C	2,338 kVA / 2,104 kVA	2,806 kVA / 2,525 kVA	3,004 kVA / 2,703 kVA	3,118 kVA / 2,806 kVA	3,196 kVA / 2,876 kVA
Current IP54 @30 °C / @50 °C	3,000 A / 2,700 A				
Power IP56 @27 °C / @50 °C[4]	2,338 kVA / 2,070 kVA	2,806 kVA / 2,484 kVA	3,004 kVA / 2,660 kVA	3,118 kVA / 2,760 kVA	3,196 kVA / 2,830 kVA
Current IP56 @27 °C / @50 °C[4]	3,000 A / 2,656 A				
Rated voltage[5]	450 V IT System	540 V IT System	578 V IT System	600 V IT System	615 V IT System
Frequency	50 / 60 Hz				
Power Factor adjustable	0-1 (leading / lagging)				
THD (Total Harmonic Distortion)[6]	<3%				
Output protections					
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				
Features					
Operating efficiency	98.9%				
CEC	98.5%				
Max. consumption aux. services	9,400 W (50 A)				
Stand-by or night consumption[7]	< 180 W				
Average power consumption per day	4,000 W				
General Information					
PV inverters included	Two units of the INGECON® SUN 1170TL B450	Two units of the INGECON® SUN 1400 B450	Two units of the INGECON® SUN 1500TL B578	Two units of the INGECON® SUN 1560TL B600	Two units of the INGECON® SUN 1600TL B615
Ambient temperature	-20 °C to +57 °C				
Relative humidity (non-condensing)	0-100% (Outdoor)				
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 solar sales department)				
Cooling system	Air forced with temperature control (230 V phase+ neutral power supply)				
Air flow range	0 - 7,800 m^3/h per power block				
Average air flow	2 x 4,200 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, UE 2016/631, Arrêté du 9 juin 2020, CEI 0-16, V1:2020-12, Terna A68, G99, VDE-AR-N 4110, P.O.12.2 (NTS), P.O. 12.3, South African Grid Code, 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, RETIE Colombia				

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) and floating systems [3] Consider the voltage increase of the 'Voc' at low temperatures [4] With the sand trap kit [5] Other AC voltages and powers available upon request [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.

	3280 kVA DUAL INGECON® SUN 1640TL B630	**3350 kVA** DUAL INGECON® SUN 1675TL B645	**3430 kVA** DUAL INGECON® SUN 1715TL B660	**3510 kVA** DUAL INGECON® SUN 1755TL B675	**3600 kVA** DUAL INGECON® SUN 1800TL B690
Input (DC)					
Recommended PV array power range[1]	3,240 - 4,256 kWp	3,318 - 4,358 kWp	3,396 - 4,458 kWp	3,472 - 4,560 kWp	3,550 - 4,662 kWp
Voltage Range MPP[2]	894 - 1,300 V	915 - 1,300 V	935 - 1,300 V	957 - 1,300 V	978 - 1,300 V
Maximum voltage[3]	1,500 V				
Maximum current	1,870 A per power block				
Nº inputs with fuse-holders	6 up to 15 per power block (up to 12 with the combiner box)				
Fuse dimensions	63 A / 1,500 V to 500 A / 1,500 V fuses (optional)				
Type of connection	Connection to copper bars				
Power blocks	2				
MPPT	2				
Input protections					
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				
Output (AC)					
Power IP54 @30 °C / @50 °C	3,274 kVA / 2,946 kVA	3,352 kVA / 3,016 kVA	3,430 kVA / 3,086 kVA	3,508 kVA / 3,156 kVA	3,586 kVA / 3,226 kVA
Current IP54 @30 °C / @50 °C	3,000 A / 2,700 A				
Power IP56 @27°C / @50°C[4]	3,274 kVA / 2,898 kVA	3,352 kVA / 2,967 kVA	3,430 kVA / 3,036 kVA	3,508 kVA / 3,105 kVA	3,586 kVA / 3,174 kVA
Current IP56 @27°C / @50°C[4]	3,000 A / 2,656 A				
Rated voltage[5]	630 V IT System	645 V IT System	660 V IT System	675 V IT System	690 V IT System
Frequency	50 / 60 Hz				
Power Factor adjustable	0-1 (leading / lagging)				
THD (Total Harmonic Distortion)[6]	<3%				
Output protections					
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				
Features					
Operating efficiency	98.9%				
CEC	98.5%				
Max. consumption aux. services	9,400 W (50 A)				
Stand-by or night consumption[7]	< 180 W				
Average power consumption per day	4,000 W				
General Information					
PV inverters included	Two units of the INGECON® SUN 1640TL B630	Two units of the INGECON® SUN 1665TL B640	Two units of the INGECON® SUN 1690TL B650	Two units of the INGECON® SUN 1740TL B670	Two units of the INGECON® SUN 1800TL B690
Ambient temperature	-20 °C to +57 °C				
Relative humidity (non-condensing)	0-100% (Outdoor)				
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 solar sales department)				
Cooling system	Air forced with temperature control (230 V phase+ neutral power supply)				
Air flow range	0 - 7,800 m^3/h per power block				
Average air flow	2 x 4,200 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, UE 2016/631, Arrêté du 9 juin 2020, CEI 0-16, V1:2020-12, Terna A68, G99, VDE-AR-N 4110, P.O.12.2 (NTS), P.O. 12.3, South African Grid Code, 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, RETIE Colombia				

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