INGECON SUN

Power UL Dual B Series
1,000 Vdc

TRANSFORMERLESS DUAL SOLUTION WITH TWO B SERIES INVERTERS

Dual inverter 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 are supplied with the combiner box already integrated. Thus, they can guarantee the maximum protection thanks to the their DC load break switches and the 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.

UL 1741 SA COMPLIANT

www.ingeteam.com
solar.us@ingeteam.com

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 UL1741SA, IEEE1547 and RULE21, 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

- Integrated combiner box with DC isolators.
- DC Reverse polarity.
- Short-circuits and overloads at the output.
- Anti-islanding with automatic disconnection.
- Insulation failure DC.
- Up to 12 pairs of fuse holders per power block (up to 15 if the combiner box is not integrated).
- Lightning induced DC and AC surge arrestors, 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.

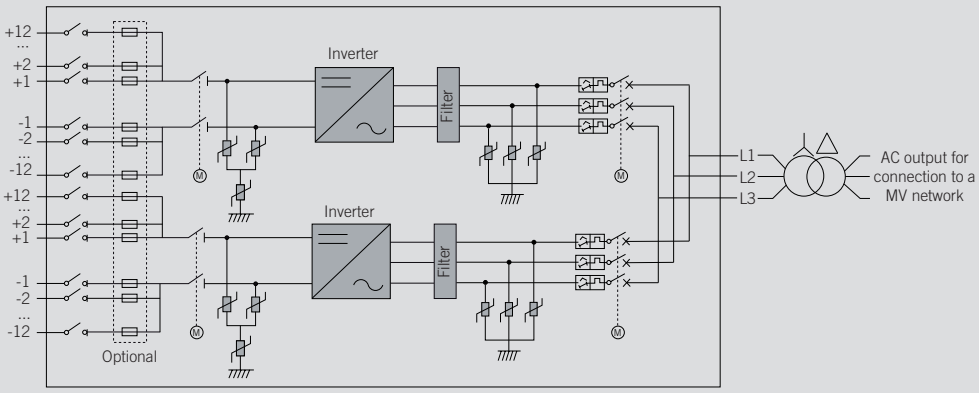
OPTIONAL ACCESSORIES

- Insulation failure AC.
- Grounding kit.
- Heating kit, for expanding the temperature range down to -40 °F.
- Lightning induced 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.

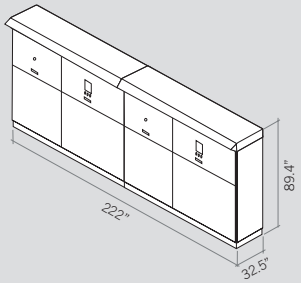
ADVANTAGES OF THE B SERIES

- 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

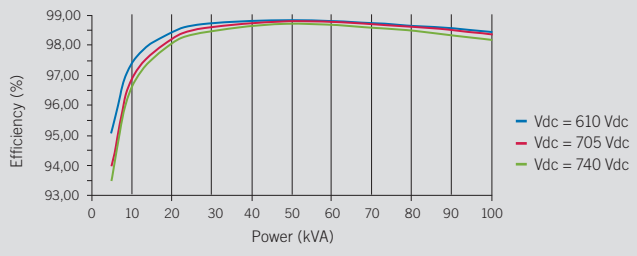


Size and weight
(inches and lbs)



6,880 pounds

Efficiency INGECON® SUN 1165TL U B420



	1500 kVA DUAL INGECON® SUN 750TL U B270	**1660 kVA** DUAL INGECON® SUN 830TL U B300	**2000 kVA** DUAL INGECON® SUN 1000TL U B360	**2220 kVA** DUAL INGECON® SUN 1110TL U B400	**2280 kVA** DUAL INGECON® SUN 1140TL U B410
Input (DC)					
Recommended PV array power range[1]	1,402 - 1,797.2 kWp	1,551 - 1,989 kWp	2,024 - 2,594 kWp	2,068 - 2,651 kWp	2,300 - 2,954 kWp
Voltage Range MPP[2]	397 - 820 V	440 - 820 V	524 - 820 V	580 - 820 V	595 - 820 V
Maximum voltage[3]	1,050 V				
Maximum current	2,000 A per power block				
Nº inputs with fuse-holders	5 up to 12 per power block (up to 15 if the combiner box is not integrated)				
Fuse dimensions	63 A / 1,000 V to 400 A / 1,000 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	Integrated DC combiner box / Up to 12 pairs of DC fuses (optional) / Reverse polarity / Insulation failure monitoring / Anti-islanding protection / Emergency pushbutton				
Output (AC)					
Power @95 °F / @122 °F[4]	1,496.6 kVA / 1,376.8 kVA	1,662.8 kVA / 1,529.8 kVA	1,995.4 kVA / 1,835.6 kVA	2,217 kVA / 2,039.6 kVA	2,272.5 kVA / 2,091 kVA
Current @95 °F / @122 °F[4]	3,200 A / 2,944 A				
Rated voltage	270 V IT System	300 V IT System	360 V IT System	400 V IT System	410 V IT System
Frequency	50 / 60 Hz				
Power Factor[5]	1				
Power Factor adjustable	Yes. Smax=1,496.6 kVA	Yes. Smax=1,662.8 kVA	Yes. Smax=1,995.4 kVA	Yes. Smax=2,217 kVA	Yes. Smax=2,272.5 kVA
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	8,500 W				
Stand-by or night consumption[7]	120 W				
Average power consumption per day	4,000 W				
General Information					
PV inverters included	Two units of the INGECON® SUN 610TL U B220	Two units of the INGECON® SUN 830TL U B300	Two units of the INGECON® SUN 1000TL U B360	Two units of the INGECON® SUN 1110TL U B400	Two units of the INGECON® SUN 1140TL U B410
Operational temperature range	-4 °F to +135 °F (operational temperature range expandable from -40 °F to +135 °F)				
Relative humidity (non-condensing)	0-100%				
Protection class	NEMA 3R (NEMA 3 with the sand-trap kit)				
Maximum altitude	14,770 ft (for installations beyond 3,300 ft, please contact Ingeteam's solar sales department)				
Cooling system	Air forced with temperature control (230 V phase+ neutral power supply)				
Air flow range	0 - 78 ft^3/s per power block (0 - 7,800 m^3/h per power block)				
Average air flow	42 ft^3/s per power block (4,200 m^3/h per power block)				
Acoustic emission (100% / 50% load)	<66 dB(A) at 33 ft / <54.5 dB(A) at 33 ft				
Marking	CE, SGS				
EMC and security standards	UL1741, FCC Part 15, IEEE C37.90.1, IEEE C37.90.2, CSA22.2 No107				
Grid connection standards	IEC 62116, UL1741SA, IEEE1547, IEEE1547.1, NEC CODE, Rule 21, Rule 14H, CSA22.2 No107				

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] With the sand trap kit, these values will be for 89.6 °F and 116.6 °F, respectively [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.

	2330 kVA DUAL INGECON® SUN 1165TL U B420	**2380 kVA** DUAL INGECON® SUN 1190TL U B430	**2440 kVA** DUAL INGECON® SUN 1220TL U B440	**2500 kVA** DUAL INGECON® SUN 1250TL U B450	**2550 kVA** DUAL INGECON® SUN 1275TL U B460
Input (DC)					
Recommended PV array power range[1]	2,170 - 2,784 kWp	2,412 - 3,098 kWp	2,468 - 3,170 kWp	2,524 - 3,242 kWp	2,580 - 3,314 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 per power block				
Nº inputs with fuse-holders	5 up to 12 per power block (up to 15 if the combiner box is not integrated)				
Fuse dimensions	63 A / 1,000 V to 400 A / 1,000 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	Integrated DC combiner box / Up to 12 pairs of DC fuses (optional) / Reverse polarity / Insulation failure monitoring / Anti-islanding protection / Emergency pushbutton				
Output (AC)					
Power @95 °F / @122 °F[4]	2,327.8 kVA / 2,141.6 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 @95 °F / @122 °F[4]	3,200 A / 2,944 A				
Rated voltage	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. Smax=2,327.8 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)[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	8,500 W				
Stand-by or night consumption[7]	120 W				
Average power consumption per day	4,000 W				
General Information					
PV inverters included	Two units of the INGECON® SUN 1165TL U B420	Two units of the INGECON® SUN 1190TL U B430	Two units of the INGECON® SUN 1220TL U B440	Two units of the INGECON® SUN 1250TL U B450	Two units of the INGECON® SUN 1275TL U B460
Operational temperature range	-4 °F to +135 °F (operational temperature range expandable from -40 °F to +135 °F)				
Relative humidity (non-condensing)	0-100%				
Protection class	NEMA 3R (NEMA 3 with the sand-trap kit)				
Maximum altitude	14,770 ft (for installations beyond 3,300 ft, please contact Ingeteam's solar sales department)				
Cooling system	Air forced with temperature control (230 V phase+ neutral power supply)				
Air flow range	0 - 78 ft^3/s per power block (0 - 7,800 m^3/h per power block)				
Average air flow	42 ft^3/s per power block (4,200 m^3/h per power block)				
Acoustic emission (100% / 50% load)	<66 dB(A) at 33 ft / <54.5 dB(A) at 33 ft				
Marking	CE, SGS				
EMC and security standards	UL1741, FCC Part 15, IEEE C37.90.1, IEEE C37.90.2, CSA22.2 No107				
Grid connection standards	IEC 62116, UL1741SA, IEEE1547, IEEE1547.1, NEC CODE, Rule 21, Rule 14H, CSA22.2 No107				

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] With the sand trap kit, these values will be for 89.6 °F and 116.6 °F, respectively [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.