

TRANSFORMERLESS DUAL SOLUTION WITH TWO B SERIES INVERTERS

Dual inverter 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 are supplied with the combiner box already integrated. Thus, they can guarantee the maximum protection thanks to 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.



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

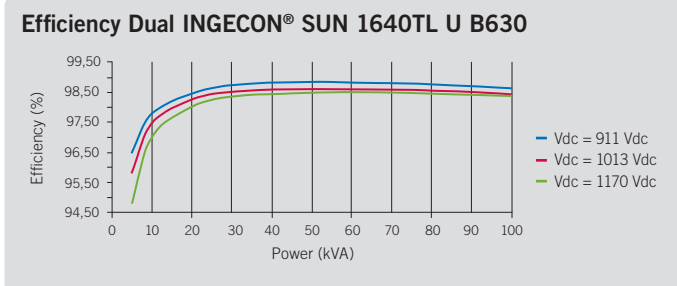
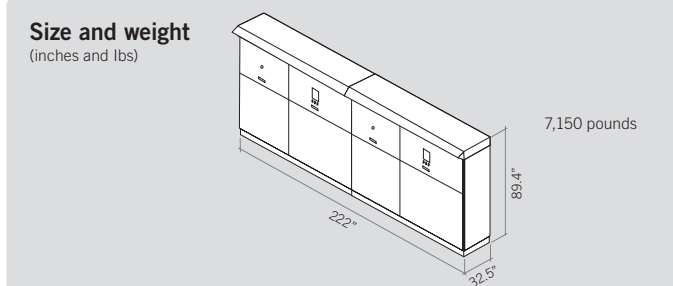
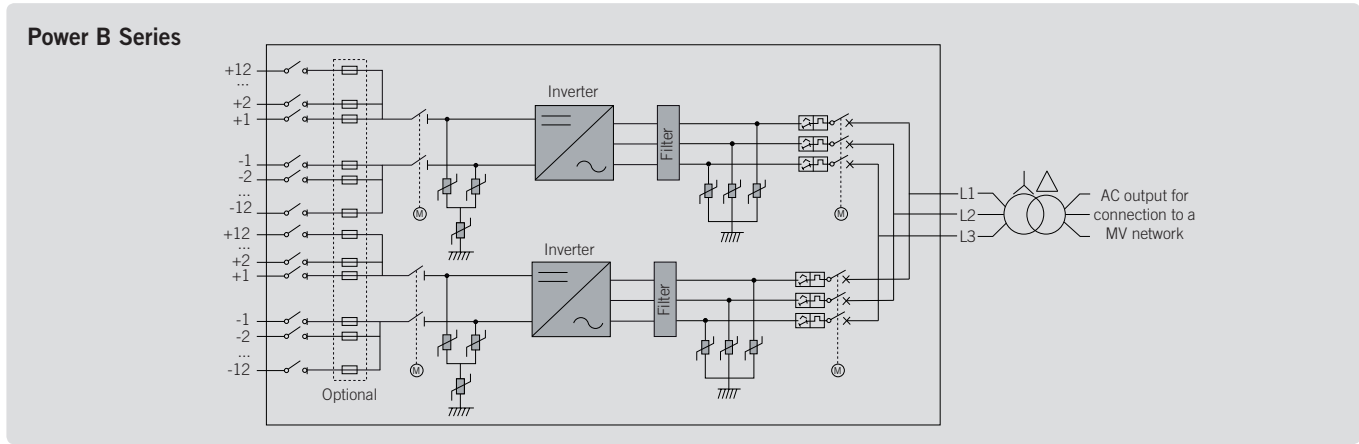
- Integrated combiner box with DC isolators.
- DC Reverse polarity.
- Short-circuits and overloads at the output.
- Anti-islanding with automatic disconnection.
- Insulation failure DC.
- Up to 12 pairs of fuse holders per power block (up to 15 if the combiner box is not integrated).
- Lightning induced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

- Auxiliary services feeder.
- Grounding kit.
- Heating kit, for expanding the stand-by temperature range down to -40 °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.

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.



	2340 kVA DUAL INGECON® SUN 1170TL U B450	2495 kVA DUAL INGECON® SUN 1245TL U B480	2800 kVA DUAL INGECON® SUN 1400TL U B540	3000 kVA DUAL INGECON® SUN 1500TL U B578	3120 kVA DUAL INGECON® SUN 1560TL U B600	3200 kVA DUAL INGECON® SUN 1600TL U B615
Input (DC)						
Recommended PV array power range ⁽¹⁾	2,314 - 3,040 kWp	2,468 - 3,244 kWp	2,778 - 3,648 kWp	2,972 - 3,904 kWp	3,086 - 4,054 kWp	3,162 - 4,154 kWp
Voltage Range MPP ⁽²⁾	655 - 1,300 V	697 - 1,300 V	782 - 1,300 V	837 - 1,300 V	868 - 1,300 V	889 - 1,300 V
Maximum voltage ⁽³⁾	1,500 V					
Maximum current	1,850 A per power block					
N° inputs with fuse-holders	6 up to 12 per power block (up to 15 if the combiner box is not integrated)					
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					
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 NEMA 3R @86 °F / @122 °F	2,338 kVA / 2,104 kVA	2,494 kVA / 2,244 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 NEMA 3R @86 °F / @122 °F	3,000 A / 2,700 A					
Power NEMA 3 @80.5 °F / @122 °F	2,338 kVA / 2,070 kVA	2,494 kVA / 2,208 kVA	2,806 kVA / 2,484 kVA	3,004 kVA / 2,704 kVA	3,118 kVA / 2,760 kVA	3,196 kVA / 2,830 kVA
Current NEMA 3 @80.5 °F / @122 °F	3,000 A / 2,656 A					
Rated voltage	450 V IT System	480 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 ⁽⁴⁾	1					
Power Factor adjustable	Yes. S _{max} =2,338 kVA	Yes. S _{max} =2,494 kVA	Yes. S _{max} =2,806 kVA	Yes. S _{max} =3,004 kVA	Yes. S _{max} =3,118 kVA	Yes. S _{max} =3,196 kVA
THD (Total Harmonic Distortion) ⁽⁵⁾	<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 ⁽⁶⁾	180 W					
Average power consumption per day	4,000 W					
General Information						
PV inverters included	Two units of the INGECON® SUN 1170TL U B450	Two units of the INGECON® SUN 1245TL U B480	Two units of the INGECON® SUN 1400TL U B540	Two units of the INGECON® SUN 1500TL U B578	Two units of the INGECON® SUN 1560TL U B600	Two units of the INGECON® SUN 1600TL U B615
Operational temperature range	-4 °F to +135 °F (stand-by range expandable from -40 °F to -4 °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 - 84 ft ³ /s per power block (0 - 7,800 m ³ /h per power block)					
Average air flow	2 x 45 ft ³ /s (2 x 4,200 m ³ /h)					
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⁾ V_{mp}.min is for rated conditions (V_{ac}=1 p.u. and Power Factor=1) ⁽³⁾ Consider the voltage increase of the 'V_{oc}' at low temperatures ⁽⁴⁾ For P_{out}>25% of the rated power ⁽⁵⁾ For P_{out}>25% of the rated power and voltage in accordance with IEC 61000-3-4 ⁽⁶⁾ Consumption from PV field when there is PV power available.

	3280 kVA DUAL INGECON® SUN 1640TL U B630	3330 kVA DUAL INGECON® SUN 1665TL U B640	3380 kVA DUAL INGECON® SUN 1690TL U B650	3430 kVA DUAL INGECON® SUN 1715TL U B660	3480 kVA DUAL INGECON® SUN 1740TL U B670	3600 kVA DUAL INGECON® SUN 1800TL U B690
Input (DC)						
Recommended PV array power range ⁽¹⁾	3,240 - 4,256 kWp	3,292 - 4,324 kWp	3,344 - 4,390 kWp	3,396 - 4,390 kWp	3,446 - 4,526 kWp	3,550 - 4,660 kWp
Voltage Range MPP ⁽²⁾	911 - 1,300 V	925 - 1,300 V	939 - 1,300 V	953 - 1,300 V	968 - 1,300 V	996 - 1,300 V
Maximum voltage ⁽³⁾	1,500 V					
Maximum current	1,850 A per power block					
N° inputs with fuse-holders	6 up to 12 per power block (up to 15 if the combiner box is not integrated)					
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					
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 NEMA 3R @86 °F / @122 °F	3,274 kVA / 2,946 kVA	3,326 kVA / 2,994 kVA	3,378 kVA / 3,040 kVA	3,430 kVA / 3,086 kVA	3,482 kVA / 3,134 kVA	3,586 kVA / 3,226 kVA
Current NEMA 3R @86 °F / @122 °F	3,000 A / 2,700 A					
Power NEMA 3 @80.5 °F / @122 °F	3,274 kVA / 2,898 kVA	3,326 kVA / 2,944 kVA	3,378 kVA / 2,990 kVA	3,430 kVA / 3,036 kVA	3,482 kVA / 3,082 kVA	3,586 kVA / 3,174 kVA
Current NEMA 3 @80.5 °F / @122 °F	3,000 A / 2,656 A					
Rated voltage	630 V IT System	640 V IT System	650 V IT System	660 V IT System	670 V IT System	690 V IT System
Frequency	50 / 60 Hz					
Power Factor ⁽⁴⁾	1					
Power Factor adjustable	Yes. Smax=3,274 kVA	Yes. Smax=2,494 kVA	Yes. Smax=3,378 kVA	Yes. Smax=3,430 kVA	Yes. Smax=3,482 kVA	Yes. Smax=3,586 kVA
THD (Total Harmonic Distortion) ⁽⁵⁾	<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%					
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Operational temperature range	-4 °F to +135 °F (stand-by range expandable from -40 °F to -4 °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)					
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