

**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

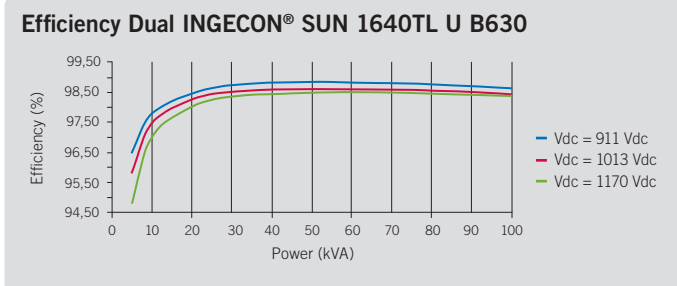
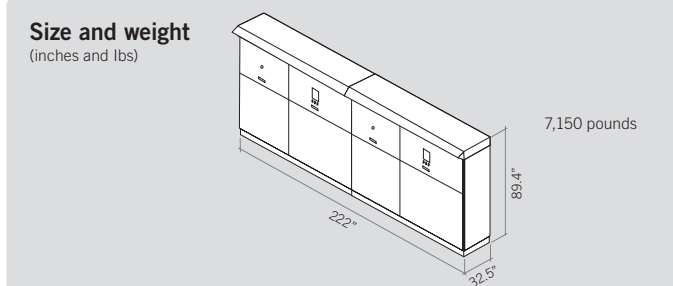
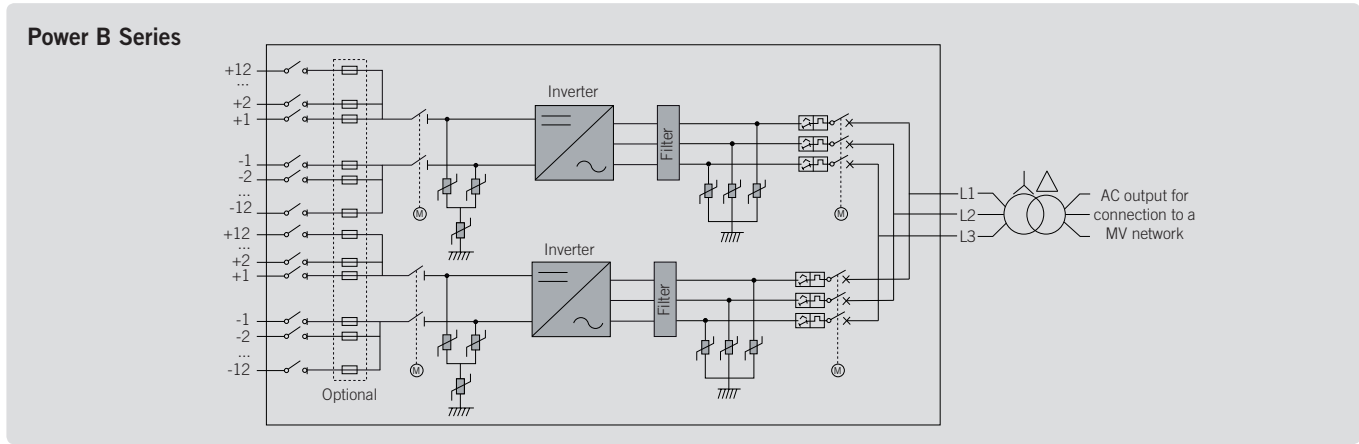
- Integrated combiner box with DC isolators.
- DC Reverse polarity.
- Short-circuits and overloads at the output.
- Anti-islanding with automatic disconnection.
- Insulation failure DC.
- Up to 12 pairs of fuse holders per power block (up to 15 if the combiner box is not integrated).
- Lightning induced 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 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 @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 @86 °F / @122 °F | 3,000 A / 2,700 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 (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 - 84 ft³/s per power block (0 - 7,800 m³/h per power block) | | | | | |
| Average air flow | 2 x 45 ft³/s (2 x 4,200 m³/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 MPPT ⁽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 @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 @86 °F / @122 °F | 3,000 A / 2,700 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% | | | | | |
| 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 | | | | | |
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| 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 - 84 ft³/s per power block (0 - 7,800 m³/h per power block) | | | | | |
| Average air flow | 2 x 45 ft³/s (2 x 4,200 m³/h) | | | | | |
| Acoustic emission (100% / 50% load) | <66 dB(A) at 33 ft / <54.5 dB(A) at 33 ft | | | | | |
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