INGECON SUN

Power U B Series
1,000 Vdc

TRANSFORMERLESS CENTRAL INVERTERS WITH A SINGLE POWER BLOCK

# B Series inverter 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.

**Improved AC connection**
The output connection has been designed in order to facilitate a direct close-coupled connection with the MV transformer.

**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, 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.

**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 UL1741, 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.

### 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 (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 15 pairs of fuse holders.
- 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.

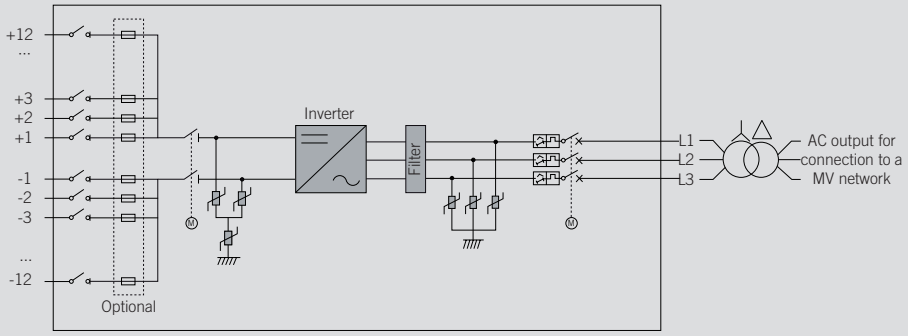
OPTIONAL ACCESSORIES

- Insulation failure AC.
- Grounding kit.
- Heating kit, for expanding the temperature range down to -40 ºF.
- DC fuses.
- Lightning induced DC surge arresters, type I+II.
- Monitoring of the group currents at the DC input.
- Extendable up to 15 fuse holders per inverter.
- PID prevention kit (PID: Potential Induced Degradation).
- Night time reactive power injection.
- Sand trap kit.

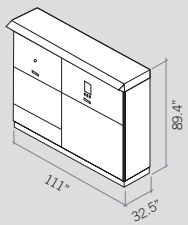
ADVANTAGES OF THE MONOBLOCK VERSION

- 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)

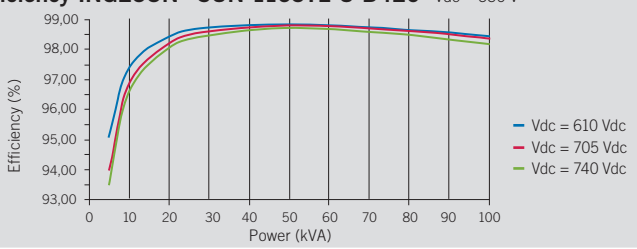



3,440 pounds

| | 750TL U B270 | 830TL U B300 | 1000TL U B360 | 1110TL U B400 | 1140TL U B410 |
|---|---|---|---|---|---|
| **Input (DC)** | | | | | |
| Recommended PV array power range[1] | 701 - 898.6 kWp | 775.8 - 994.4 kWp | 1,011.9 - 1,297 kWp | 1,034.3 - 1,325.7 kWp | 1,150 - 1,477 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 | | | | |
| Nº inputs with fuse-holders | 5 up to 12 (up to 15 if the combiner box is not integrated) | | | | |
| Fuse dimensions | 63 A / 1,000 V to 630 A / 1,000 V fuses (optional) | | | | |
| Type of connection | Connection to copper bars | | | | |
| Power blocks | 1 | | | | |
| MPPT | 1 | | | | |
| **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 @95 °F / @122 °F[4] | 748.3 kVA / 688.4 kVA | 831.4 kVA / 764.9 kVA | 997.7 kVA / 917.8 kVA | 1,108.5 kVA / 1,019.8 kVA | 1,136 kVA / 1,046 kVA |
| Current @95 °F / @122 °F[4] | 1,600 A / 1,472 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, 0-1 (leading / lagging) | | | | |
| THD (Total Harmonic Distortion)[6] | <3% | | | | |
| **Output protections** | | | | | |
| Overvoltage protections | Type II surge arresters | | | | |
| 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% | | | | |
| CEC | 98.5% | | | | |
| Max. consumption aux. services | 4,250 W | | | | |
| Stand-by or night consumption[7] | 60 W | | | | |
| Average power consumption per day | 2,000 W | | | | |
| **General Information** | | | | | |
| 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 ft³/s (0 - 7,800 m³/h) | | | | |
| Average air flow | 42 ft³/s (4,200 m3/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, UL1741, IEEE1547, IEEE1547.1, NEC CODE, Electric Rule 21: 2015, 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.

**Efficiency INGECON® SUN 1165TL U B420** Vdc = 650 V



| | 1165TL U B420 | 1190TL U B430 | 1220TL U B440 | 1250TL U B450 | 1275TL U B460 |
|---|---|---|---|---|---|
| **Input (DC)** | | | | | |
| Recommended PV array power range[1] | 1,084.9 - 1,392 kWp | 1,206 - 1,549 kWp | 1,234 - 1,585 kWp | 1,262 - 1,621 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 | | | | |
| Nº inputs with fuse-holders | 5 up to 12 (up to 15 if the combiner box is not integrated) | | | | |
| Fuse dimensions | 63 A / 1,000 V to 630 A / 1,000 V fuses (optional) | | | | |
| Type of connection | Connection to copper bars | | | | |
| Power blocks | 1 | | | | |
| MPPT | 1 | | | | |
| **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 @95 °F / @122 °F[4] | 1,163.9 kVA / 1,070.8 kVA | 1,192 kVA / 1,097 kVA | 1,217 kVA / 1,122 kVA | 1,247 kVA / 1,147 kVA | 1,275 kVA / 1,173 kVA |
| Current @95 °F / @122 °F[4] | 1,600 A / 1,472 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, 0-1 (leading / lagging) | | | | |
| THD (Total Harmonic Distortion)[6] | <3% | | | | |
| **Output protections** | | | | | |
| Overvoltage protections | Type II surge arresters | | | | |
| 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% | | | | |
| CEC | 98.5% | | | | |
| Max. consumption aux. services | 4,250 W | | | | |
| Stand-by or night consumption[7] | 60 W | | | | |
| Average power consumption per day | 2,000 W | | | | |
| **General Information** | | | | | |
| 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 ft³/s (0 - 7,800 m³/h) | | | | |
| Average air flow | 42 ft³/s (4,200 m³/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, UL1741, IEEE1547, IEEE1547.1, NEC CODE, Electric Rule 21: 2015, 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.

**Efficiency INGECON® SUN 1165TL U B420** Vdc = 650 V