INGECON SUN

TRANSFORMERLESS CENTRAL INVERTERS WITH A SINGLE POWER BLOCK

B Series inverter up to 1.8 MVA at 1500 V

Maximum power density

These PV central inverters feature more power per cubic foot. Thanks to the use of highquality 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 ridethrough 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.





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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.

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 (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.

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.

OPTIONAL ACCESSORIES

- Auxiliary services feeder.
- Grounding kit.
- Sand trap kit.
- Heating kit, for expanding the temperature range down to -40 °F.
- DC fuses.
- 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.

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.

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.



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Power B Series 1,500 Vdc

	1170TL U B450	1245TL U B480	1400TL U B540	1500TL U B578	1560TL U B600	1600TL U B615			
Input (DC)									
Recommended PV array power range ⁽¹⁾	1,157 - 1,520 kWp	1,234 - 1,622 kWp	1,389 - 1,824 kWp	1,486 - 1,952 kWp	1,543 - 2,027 kWp	1,581 - 2,077 kWp			
Voltage Range MPP ⁽²⁾	645 - 1,300 V	686 - 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			1,8	70 A					
N° inputs with fuse-holders		6	up to 12 (up to 15 if the co	ombiner box is not integrate	ed)				
Fuse dimensions				/ 1,500 V fuses (optional)					
Type of connection			Connection t	o copper bars					
Power blocks				1					
MPPT				1					
Input protections									
Overvoltage protections			Type II sur	ge arresters					
DC switch				d break disconnect					
Other protections	Integrated DC combiner t	pox / Up to 12 pairs of DC fus	ses (optional) / Reverse polari		ring / Anti-islanding protectio	n / Emergency pushbutton			
Output (AC)									
Power @86 °F / @122 °F	1,169 kVA / 1,052 kVA	1,247 kVA / 1,122 kVA	1,403 kVA / 1,263 kVA	1,502 kVA / 1,352 kVA	1,559 kVA / 1,403 kVA	1,598 kVA / 1,438 kVA			
Current @86 °F / @122 °F			1,500 A	/ 1,350 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, 0-1 (leading / lagging)								
THD (Total Harmonic Distortion) ⁽⁵⁾			<	3%					
Output protections									
Overvoltage protections			Type II sur	ge arresters					
AC breaker	Type II surge arresters Motorized AC circuit breaker								
Anti-islanding protection									
Other protections	Yes, with automatic disconnection AC short-circuits and overloads								
Features									
Maximum efficiency	98.9%								
CEC	98.5%								
Max. consumption aux. services	4,700 W (25 A)								
Stand-by or night consumption ⁽⁶⁾	90 W								
Average power consumption per day			2,00	W 00					
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 - 84 ft ³ /s (0 - 7,800 m ³ /h)								
Average air flow	- 45 ft³/s (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								
0	UL1741, FCC Part 15, IEEE C37.90.1, IEEE C37.90.2, CSA22.2 No107								
EMC and security standards		UL174	1, FCC Part 15, IEEE C37.90	0.1, IEEE C37.90.2, 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) and floating PV systems ⁽³⁾ Consider the voltage increase of the 'Voc' at low temperatures ⁽⁴⁾ For Powt>25% of the rated power ⁽⁵⁾ For Powt>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.

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Power B Series 1,500 Vdc

	1640TL U B630	1665TL U B640	1690TL U B650	1715TL U B660	1740TL U B670	1800TL U B690			
Input (DC)									
Recommended PV array power range ⁽¹⁾	1,620 - 2,128 kWp	1,646 - 2,162 kWp	1,672 - 2,195 kWp	1,698 - 2,229 kWp	1,723 - 2,263 kWp	1,775 - 2,331 kWp			
Voltage Range MPP ⁽²⁾	894 - 1,300 V	908 - 1,300 V	922 - 1,300 V	935 - 1,300 V	950 - 1,300 V	978 - 1,300 V			
Maximum voltage ⁽³⁾	1,500 V								
Maximum current			1,8	70 A					
N° inputs with fuse-holders		6	up to 12 (up to 15 if the co	ombiner box is not integrate	ed)				
Fuse dimensions			63 A / 1,500 V to 500 A	/ 1,500 V fuses (optional)					
Type of connection			Connection t	o copper bars					
Power blocks				1					
MPPT				1					
Input protections									
Overvoltage protections			Type II sur	ge arresters					
DC switch				d break disconnect					
Other protections	Integrated DC combiner b	pox / Up to 12 pairs of DC fus	ses (optional) / Reverse polar		ring / Anti-islanding protectio	n / Emergency pushbutton			
					0				
Output (AC)									
Power @86 °F / @122 °F	1,637 kVA / 1,473 kVA	1,663 kVA / 1,497 kVA	1,689 kVA / 1,520 kVA	1,715 kVA / 1,543 kVA	1,741 kVA / 1,567 kVA	1,793 kVA / 1,613 kVA			
Current @86 °F / @122 °F				/ 1,350 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, 0-1 (leading / lagging)								
THD (Total Harmonic Distortion) ⁽⁵⁾			<	3%					
Output protections									
Overvoltage protections			Type II sur	ge arresters	<u>.</u>				
AC breaker	Type II surge arresters Motorized AC circuit breaker								
Anti-islanding protection	Yes, with automatic disconnection								
Other protections	AC short-circuits and overloads								
F I									
Features									
Maximum efficiency	98.9%								
CEC	98.5%								
Max. consumption aux. services	4,700 W (25 A)								
Stand-by or night consumption ⁽⁶⁾	90 W								
Average power consumption per day			2,00	W 00					
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)								
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Cooling system	Air forced with temperature control (230 V phase+ neutral power supply)								
Air flow range	0 - 84 ft³/s (0 - 7,800 m³/h)								
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