INGECON

SUN

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 ridethrough 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.







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.

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.

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.

OPTIONAL ACCESSORIES

- Insulation failure AC.
- Grounding kit.
- Heating kit, for expanding the stand-by 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.

Monitoring and communication

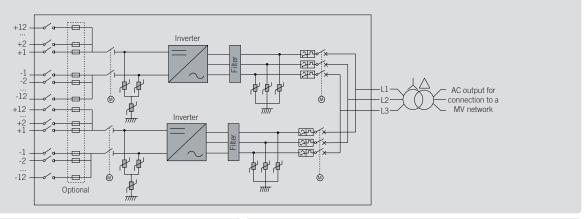
Ethernet communications supplied as standard. The following applications are included at no extra cost: INGECON® SUN Manager, INGECON® SUN Monitor and its Smartphone version Web Monitor, available on the App Store. These applications are used for monitoring and recording the inverter's internal operating variables through the Internet (alarms, real time production, etc.), in addition to the historical production data.

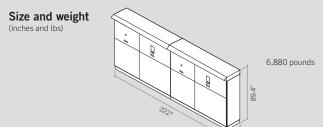
Two communication ports available for each inverter (one for monitoring and one for plant controlling), allowing fast and simultaneous plant control.

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









	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		
N° inputs with fuse-holders		5 up to 12 per power	r 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		Tunc	all ourge errectors (type Lill enti	ional	
DC switch			e II surge arresters (type I+II opti lotorized DC load break disconne		
Other protections	Integrated DC combiner box / LL		I) / Reverse polarity / Insulation fail		tection / Emergency pushbuttor
	micgrated Do combiner box7 o	p to 12 pairs of 50 ruses (optiona	in increase polarity i insulation fail	are monitoring / Anti-Islanding pro	tection / Emergency pushbuttor
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					
Output protections Overvoltage protections			Type II surge arresters		
		Motori	Type II surge arresters	control	
Overvoltage protections					
Overvoltage protections AC breaker			zed AC circuit breaker with door	on	
Overvoltage protections AC breaker Anti-islanding protection			zed AC circuit breaker with door	on	
Overvoltage protections AC breaker Anti-islanding protection Other protections			zed AC circuit breaker with door	on	
Overvoltage protections AC breaker Anti-islanding protection Other protections Features			zed AC circuit breaker with door fes, with automatic disconnection AC short-circuits and overloads	on	
Overvoltage protections AC breaker Anti-islanding protection Other protections Features Operating efficiency			zed AC circuit breaker with door fes, with automatic disconnectic AC short-circuits and overloads 98.9%	on	
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Overvoltage protections AC breaker Anti-islanding protection Other protections Features Operating efficiency CEC Max. consumption aux. services Stand-by or night consumption or day Average power consumption per day	Two units of the INGECON® SUN 610TL U B220		zed AC circuit breaker with door fes, with automatic disconnectic AC short-circuits and overloads 98.9% 98.5% 8,500 W 120 W	on	Two units of the INGECON ^o SUN 1140TL U B410
Overvoltage protections AC breaker Anti-islanding protection Other protections Features Operating efficiency CEC Max. consumption aux. services Stand-by or night consumption oper day General Information		Two units of the INGECON® SUN 830TL U B300	zed AC circuit breaker with door fes, with automatic disconnectic AC short-circuits and overloads 98.9% 98.5% 8,500 W 120 W 4,000 W	Two units of the INGECON® SUN 1110TL U B400	
Overvoltage protections AC breaker Anti-islanding protection Other protections Features Operating efficiency CEC Max. consumption aux. services Stand-by or night consumption or day General Information PV inverters included		Two units of the INGECON® SUN 830TL U B300	zed AC circuit breaker with door fes, with automatic disconnectic AC short-circuits and overloads 98.9% 98.5% 8,500 W 120 W 4,000 W Two units of the INGECON® SUN 1000TL U B360	Two units of the INGECON® SUN 1110TL U B400	
Overvoltage protections AC breaker Anti-islanding protection Other protections Features Operating efficiency CEC Max. consumption aux. services Stand-by or night consumption or day General Information PV inverters included Operational temperature range		Two units of the INGECON® SUN 830TL U B300 -4 °F to +149 °F	zed AC circuit breaker with door fes, with automatic disconnectic AC short-circuits and overloads 98.9% 98.5% 8,500 W 120 W 4,000 W Two units of the INGECON® SUN 1000TL U B360 (stand-by range expandable from	Two units of the INGECON® SUN 1110TL U B400 m -40 °F to -4 °F)	
Overvoltage protections AC breaker Anti-islanding protection Other protections Features Operating efficiency CEC Max. consumption aux. services Stand-by or night consumption per day Average power consumption per day General Information PV inverters included Operational temperature range Relative humidity (non-condensing)		Two units of the INGECON® SUN 830TL U B300 -4 °F to +149 °F NEM	zed AC circuit breaker with door fes, with automatic disconnectic AC short-circuits and overloads 98.9% 98.5% 8,500 W 120 W 4,000 W Two units of the INGECON® SUN 1000TL U B360 (stand-by range expandable from 0-100%	Two units of the INGECON® SUN 1110TL U B400 m -40 °F to -4 °F)	
Overvoltage protections AC breaker Anti-islanding protection Other protections Features Operating efficiency CEC Max. consumption aux. services Stand-by or night consumption per day Average power consumption per day General Information PV inverters included Operational temperature range Relative humidity (non-condensing) Protection class		Two units of the INGECON® SUN 830TL U B300 -4 °F to +149 °F NEM 14,770 ft (for installations beyon)	zed AC circuit breaker with door fes, with automatic disconnectic AC short-circuits and overloads 98.9% 98.5% 8,500 W 120 W 4,000 W Two units of the INGECON® SUN 1000TL U B360 (stand-by range expandable from 0-100% A 3R (NEMA 3 with the sand-tree	Two units of the INGECON® SUN 1110TL U B400 m -40 °F to -4 °F) ap kit) eteam's solar sales department)	
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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 Pout>25% of the rated power (6) For Pout>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.



Imput (OC) Co.		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			
Recommended Privary power range 2,700 - 2,784 My 2,412 - 3,008 My 2,488 - 3,170 My 2,281 - 3,242 My 2,380 - 3,314 My	Input (DC)								
Value Val		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			
Maximum onitalization	Voltage Range MPP ⁽²⁾	610 - 820 V	623.5 - 820 V	638 - 820 V					
No content									
Figue demonstration Figue demonstration Figure demonstration									
Page Connection Connecti			5 up to 12 per powe		box is not integrated)				
Power Dicks 2 2									
Power Foot and protections			037171		Орионан				
Input protections									
Property									
Display Disp				_					
Other protections									
Other protections Integrated DC combiner box / Up to 12 pairs of DC fuses (optionall) / Reverse polarity / Insulation failure monitoring / Anti-Islanding protection / Energency pushbutter Output (AC) Power 695 * F / 9122***** 2,327.8 kWA / 2,141.6 kWA 2,383 kWA / 2,193 kWA 2,434 kWA / 2,244 kWA 2,494 kWA / 2,294 kWA 2,550 kWA / 2,346 kWA Rated voltage 420 V IT System 440 V IT System 460 V IT									
Output (AC) Power 995 °F / 9122 °P** 2,327,8 kWA / 2,141,6 kWA 2,383 kWA / 2,193 kWA 2,434 kWA / 2,244 kWA 2,494 kWA / 2,294 kWA 2,550 kWA / 2,346 kWA Current 995 °F / 9122 °P** 3,200 A / 2,944 kWA 450 V IT System 460 V IT System<									
Power Pottor Q95 %F / @122 %FPP	Other protections	Integrated DC combiner box / C	Jp to 12 pairs of DC fuses (optiona	il) / Reverse polarity / Insulation fai	lure monitoring / Anti-islanding pro	tection / Emergency pushbuttor			
Relect voltage	Output (AC)								
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 1 400 V IT System 460 V IT System 460 V IT System 1 700 V IT System 70	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			
Prove Factor	Current @95 °F / @122 °F(4)			3,200 A / 2,944 A					
Power Factor® Yes. Smax=2,327.8 kWA Yes. Smax=2,383 kWA Yes. Smax=2,434 kWA Yes. Smax=2,494 kWA Yes. Smax=2,550 kWA THO ICIDA Harmonic Distortion)® Supervision of Supervision o	Rated voltage	420 V IT System	430 V IT System	440 V IT System	450 V IT System	460 V IT System			
Power Factor adjustable Yes Smax=2,327.8 kVA	Frequency			50 / 60 Hz					
Column Distortion)® Output protections Type II surge arresters AC breaker Motorized AC circuit breaker with door control AC breaker AC breaker Motorized AC circuit breaker with door control Anti-islanding protection Type III surge arresters Act short-circuits and overloads Features Operating efficiency 98.9% CEC 98.9% Max. consumption aux. services 8,500 W Stand-by or night consumption per day A year on sight colspan="2">A year on sight	Power Factor ⁽⁵⁾			1					
Output protections Overvoltage protections AC breaker AC breaker AC circuit breaker with door control Anti-islanding protection Other protections AC breaker Anti-islanding protection Other protections AC short-circuits and overloads Features Operating efficiency CEC Max. consumption aux. services Stand-by or night consumption in Protection Average power consumption per day Average power consumption per day Privater sincluded Operating efficiency Ceperating Information PV inverters included Operating at the protection Sun 1165TL U B420 Operational temperature range Relative humidity (non-condensing) Protection class Anti-information Anti-informa	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			
Overvoltage protections Type II surge arresters AC breaker Motorized AC circuit breaker with door control Anti-islanding protection Yes, with automatic disconnection Other protections Sex with automatic disconnection Features Sex	THD (Total Harmonic Distortion)(6)			<3%					
Overvoltage protections Type II surge arresters AC breaker Motorized AC circuit breaker with door control Anti-islanding protection Yes, with automatic disconnection Other protections Sex with automatic disconnection Features Sex	Output protections								
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The protections	AC breaker								
The protections	Anti-islanding protection			Yes, with automatic disconnection	on				
Operating efficiency CEC 98.5% Max. consumption aux. services Stand- by or night consumption per day Average power consumption per day 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 1220TL U B450 Two units of the INGECON® SUN 1250TL U	Other protections			AC short-circuits and overloads	3				
Operating efficiency CEC 98.5% Max. consumption aux. services Stand- by or night consumption per day Average power consumption per day 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 1220TL U B450 Two units of the INGECON® SUN 1250TL U	Features								
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	Grid connection standards	IEC 62116, UL1/41SA, IEEE154/, IEEE154/.1, NEC CODE, Rule 21, Rule 14H, CSA22.2 No10/							

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 Pout>25% of the rated power (6) For Pout>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.