INGECON SUN

PowerMax B Series
420 Vac

1165TL B420 Outdoor

TRANSFORMERLESS CENTRAL INVERTERS WITH A SINGLE POWER BLOCK

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 DC and AC connections
The input and output connections are integrated into the same cabinet, facilitating connection, maintenance and repair work.

Maximum protection
These three phase inverters are equipped with a motorized DC switch to decouple the PV generator from the inverter. Optionally, these inverters can be supplied with DC fuses, input current monitoring, grounding kit and an AC circuit breaker.

Maximum efficiency values
Through the use of innovative electronic conversion topologies, efficiency values of up to 99% can be achieved.

A complete range of equipment for all types of projects
Versions available:

- Indoor inverters.
- Outdoor inverters.
- Symmetrical inverters, with the connection cabinet on the opposite side, to make it possible to install two inverters facing each other, with a common power supply point.

Enhanced functionality
This new INGECON® SUN PowerMax range features a revamped, improved enclosure which, together with its innovative air cooling system, makes it possible to increase the ambient operating temperature.

www.ingeteam.com
solar.energy@ingeteam.com

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Long-lasting design
The inverters have been designed to guarantee a service life of more than 20 years, as demonstrated by the stress tests they are subjected to. Standard 5 year warranty, extendable for up to 25 years.

Grid support
The INGECON® SUN PowerMax B Series has been designed to comply with the grid connection requirements in different countries, 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 PowerMax 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 and RS-485 communications supplied as standard. The following applications are included at no extra cost: INGECON® SUN Manager, INGECON® SUN Monitor and its Smartphone version iSun 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

- 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 2 (type 1 also available).
- Motorized DC switch to automatically disconnect the inverter from the PV array.
- Low voltage ride-through capability.
- Hardware protection via firmware.

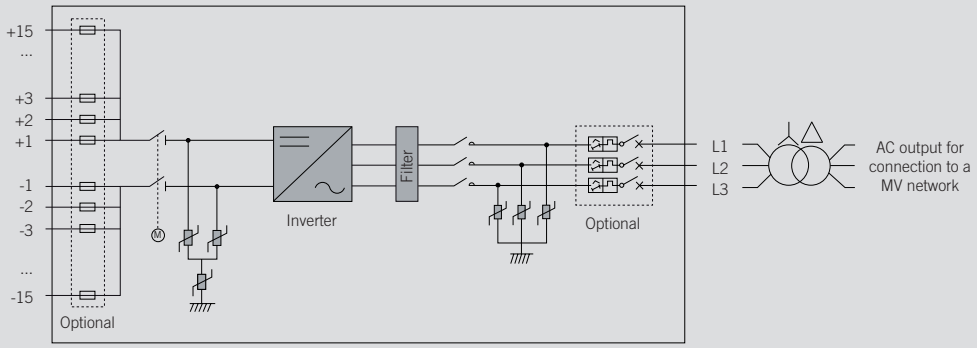
OPTIONAL ACCESSORIES

- AC circuit breaker with remote tripping.
- Motorization kit for the AC circuit breaker.
- Insulation failure AC.
- Grounding kit.
- Heating kit, for operating at an ambient temperature of down to -30 ºC.
- DC fuses.
- Monitoring of the group currents at the DC input.
- Wattmeter on the AC side.
- PID prevention kit (PID: Potential Induced Degradation).
- Nighttime reactive power injection.

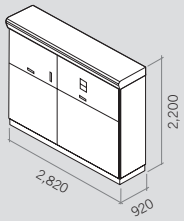
ADVANTAGES OF THE MONOBLOCK VERSION

- 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.

PowerMax B Series



Size and weight (mm)



1165TL B420 Outdoor
1,920 kg.

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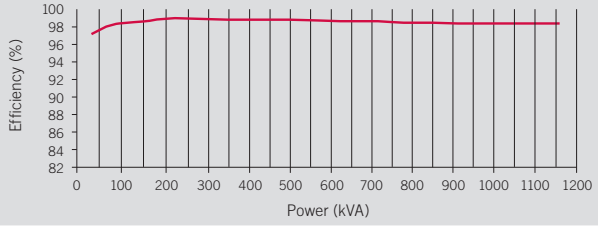
Input (DC)	
Recommended PV array power range[1]	1,179.3 - 1,513.2 kWp
Voltage Range MPP	610 - 820 V
Maximum voltage[2]	1,050 V
Maximum current	2,000 A
N° inputs with fuse holders	15
Fuse dimensions	63 A / 1,000 V to 630 A / 1,000 V fuses
Type of connection	Connection to copper bars
Number of power blocks	1
MPPT	1
Max. current at each input	From 40 A to 410 A for positive and negative poles
Inputs protection	
Overvoltage protections	Type 1-2 surge arresters
DC switch	Yes, motorized DC switch
Other protections	Reverse polarity / Insulation failure monitoring / Anti-islanding protection
Output (AC)	
Power @35 °C / @50 °C[3]	1,163.9 kVA / 1,071 kVA
Current @35 °C / @50 °C	1,600 A / 1,472 A
Rated voltage	420 V IT System
Frequency	50 / 60 Hz
Phi Cosine[4]	1
Phi Cosine adjustable	Yes. Smax=1,163.9 kVA
THD (Total Harmonic Distortion)[5]	<3%
Output protections	
Overvoltage protections	Type 1-2 surge arresters
AC breaker	Optional AC circuit breaker with door control and remote trip or motorization
Anti-islanding protection	Yes, with automatic disconnection
Other protections	AC short circuits and overloads
Features	
Maximum efficiency	99%
Euroefficiency	98.7%
Stand-by consumption[6]	50 W
Consumption at night	50 W
General Information	
Ambient temperature	-20 °C to +65 °C
Relative humidity (non-condensing)	0 - 95%
Protection class	IP54
Maximum altitude[7]	3,000 m
Cooling system	Air forced with temperature control (230 V phase + neutral power supply)
Air flow	7,200 m³/h (fans: 2,500 VA)
Acoustic emission	<70 dB (A) at 1 m
Marking	CE
EMC and security standards	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, EN 61000-3-11, EN 61000-3-12, EN 62109-1, EN 62109-2, IEC62103, EN 50178, FCC Part 15, AS3100
Grid connection standards	IEC 62116, Arrêté 23-04-2008, CEI 0-16 Ed. III, Terna A68, G59/2, BDEW-Mittelspannungsrichtlinie:2011, P.O.12.3, South African Grid code (ver 2.6), Chilean Grid Code, Ecuadorian Grid Code, Peruan Grid code, Thailand PEA requirements, IEC61727, UNE 206007-1, ABNT NBR 16149, ABNT NBR 16150, IEEE 1547, IEEE1547.1, GGC&CGC China, DEWA (Dubai) Grid code, Jordan Grid Code

Notes: [1] Depending on the type of installation and geographical location. Data for STC conditions [2] Consider the voltage increase of the 'Voc' at low temperatures [3] For each °C of increase between 35 °C and 50 °C, the output power will be reduced at the rate of 0.53%. Over 50 °C, the output power will be reduced at the rate of 1.8% / °C [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 [7] Over 1,000 m temperature for rated power is reduced at the rate of 4.5 °C for each 1,000 m.

Efficiency INGECON® SUN 1165TL B420 Vdc = 650 V



Ingeteam Power Technology, S.A.
Avda. Ciudad de la Innovación, 13
31621 SARRIGUREN (Navarra) - Spain
Tel.: +34 948 288 000 / Fax: +34 948 288 001
e-mail: solar.energy@ingeteam.com

Ingeteam S.r.l.
Via Emilia Ponente, 232
48014 CASTEL BOLOGNESE (RA) - Italy
Tel.: +39 0546 651 490 / Fax: +39 054 665 5391
e-mail: italia.energy@ingeteam.com

Ingeteam GmbH
Herzog-Heinrich-Str. 10
80336 MUNICH - Germany
Tel.: +49 89 99 65 38 0 / Fax: +49 89 99 65 38 99
e-mail: solar.de@ingeteam.com

Ingeteam SAS
La Naurouze B - 140 rue Carmin
31670 Labège - France
Tel: +33 (0)5 61 25 00 00 / Fax: +33 (0)5 61 25 00 11
e-mail: france@ingeteam.com

Ingeteam INC.
3550 W. Canal St.
MILWAUKEE, WI 53208 - USA
Tel.: +1 (414) 934 4100 / +1 (855) 821 7190 / Fax: +1 (414) 342 0736
e-mail: solar.us@ingeteam.com

Ingeteam, a.s.
Technologická 371/1
70800 OSTRAVA - PUSTKOVEC
Czech Republic
Tel.: +420 59 732 6800 / Fax: +420 59 732 6899
e-mail: czech@ingeteam.com

Ingeteam Shanghai, Co. Ltd.
Shanghai Trade Square, 1105
188 Si Ping Road
200086 SHANGHAI - P.R. China
Tel.: +86 21 65 07 76 36 / Fax: +86 21 65 07 76 38
e-mail: shanghai@ingeteam.com

Ingeteam, S.A. de C.V.
Ave. Revolución, nº 643, Local 9
Colonia Jardín Español - MONTERREY
64820 - NUEVO LEÓN - México
Tel.: +52 81 8311 4858 / Fax: +52 81 8311 4859
e-mail: northamerica@ingeteam.com

Ingeteam Ltda.
Estrada Duílio Beltramini, 6975
Chácara Sao Bento
13278-078 VALINHOS/SP - Brazil
Tel.: +55 19 3037 3773 / Fax: +55 19 3037 3774
e-mail: brazil@ingeteam.com

Ingeteam Pty Ltd.
Unit 2 Alphen Square South
16th Road, Randjiespark
Midrand 1682 - South Africa
Tel.: +2711 314 3190 / Fax: +2711 314 2420
e-mail: southafrica@ingeteam.com

Ingeteam SpA
Los militares 5890, Torre A, oficina 401
7560742 - Las Condes
Santiago de Chile - Chile
Tel.: +56 2 29574531
e-mail: chile@ingeteam.com

Ingeteam Power Technology India Pvt. Ltd.
2nd Floor, 431
Udyog Vihar, Phase III
122016 Gurgaon (Haryana) - India
Tel.: +91 124 420 6491-5 / Fax: +91 124 420 6493
e-mail: india@ingeteam.com

Ingeteam Sp. z o.o.
Ul. Koszykowa 60/62 m 39
00-673 Warszawa - Poland
Tel.: +48 22 821 9930 / Fax: +48 22 821 9931
e-mail: polska@ingeteam.com

Ingeteam Australia Pty Ltd.
Suite 112, Level 1, Mike Codd Biulding 232
Innovation Campus, Squires Way
North Wollongong, NSW 2500 - Australia
Tel.: +61 499 988 022
e-mail: australia@ingeteam.com

Ingeteam