

SIMPLE AND SAFE CONNECTION OF PHOTOVOLTAIC STRINGS

160 / 240 / 320

The new INGECON® SUN StringBox is a cost-effective PV string combiner box series designed for central inverter-based PV systems. The INGECON® SUN StringBox features efficient input and output DC wiring with fully rated DC disconnect switches for safe maintenance. When used in combination with INGECON® SUN PowerMax central inverters, the INGECON® SUN StringBox outputs can be monitored by means of the optional DC input groups monitoring kit available for INGECON® SUN PowerMax B series inverter. Optionally is available the INGECON® SUN StringMonitoring Box a device for measuring and control of each PV string current. The string currents can be monitored through the built-in RS485 communication interface.

A complete range of equipment for all types of projects

Available in models ranging from 16 to 32 inputs and from 1,000 to 1,500 Vdc, the INGECON® SUN StringBox provide the maximum flexibility and expandability in system design. The compact and rugged IP65 enclosure is designed for installation in outdoor environments, such as roof-mounted systems and large-scale solar farms.



Maximum protection

The INGECON® SUN StringBox combiner boxes are equipped with touch-safe DC fuse holders, DC fuses, lightning induced DC surge arresters and load disconnect switch.

MAIN FEATURES

- Built to minimize system costs by providing the maximum flexibility.
- Available in 16, 24 and 32 input configurations.
- 1.500 Vdc maximum voltage.
- Simplifies input and output wiring.
- Capability to connect up to 2 DC output cables per polarity.
- IP65 protection rating.
- Maximum protection to corrosion and pollution thanks to the isolating thermoplastic enclosure.

ADDITIONAL MAIN FEATURES WITH INGECON® SUN STRINGMONITORING BOX

- RS485 communication interface Modbus RTU.
- Current monitoring at string level.
- DC Switch status (open/closed).
- SPD status.

PROTECTIONS

- Up to 32 pairs of DC fuses.
- Available fuses: 10A, 12A, 15A, 16A (15A standard).
- Lightning induced DC surge arresters, type 2.
- Manual DC isolating switch.

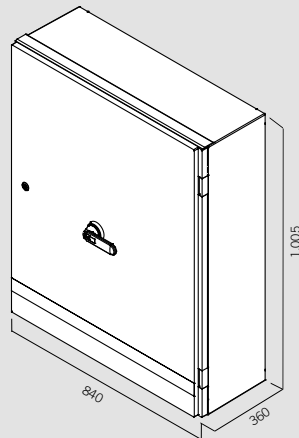
OPTIONAL ACCESSORIES FOR INGECON® SUN STRINGMONITORING BOX

- PT100 input for ambient or module temperature.
- Analog inputs for meteo sensor (i.e. Pyranometers, Solarimeters, wind speed, humidity, rain, etc.

	1,500 V		
	StringBox 160	StringBox 240	StringBox 320
Input			
Maximum number of input strings	16	24	32
Rated current per string	10 A	10 A	10 A
Maximum current per string	12 A	12 A	12 A
Number of protection fuses	2 x 16	2 x 24	2 x 32
Type of fuses	gPV fuses, 10 x 85 mm, 30 kA		
Maximum DC voltage	1,500 V		
Inlet connections	M32 cable glands (n.4 cables entry diameter: 3.5 to 7 mm for each cable gland) with Direct connection on fuse holders		
Output			
Rated total current	160 A	240 A	320 A
Maximum total current ⁽¹⁾	192 A	288 A	360 A
Outlet connections	Up to 2 pairs of M50 cable glands (cable diameter: 27 to 35 mm) with direct connection on copper plates		
DC switch disconnect rating	315 A	315 A	400 A
SPD Grounding			
SPD Grounding connection	M16 cable gland (cable diameter: 4.5 to 10 mm)		
General Information			
Enclosure type	Outdoor use, insulating cabinet (thermoplastic enclosure)		
Protection rating	IP65		
Impact strength	IK10		
Overvoltage protections	Type II DC surge arrester (optional Type I DC surge arrester)		
Operating temperature range	-20 °C to +55 °C		
Relative humidity (non-condensing)	0 to 100%		
Maximum altitude ⁽²⁾	2,000 m a.s.l.		
DC switch handle	External (front) access, lockable in open position		
Consumption	0 W		
Weight	32 kg	46 kg	48 kg
Marking	CE		
LV Switchgear standards	IEC 61439-1, IEC 61439-2		
Electric shock protection	Class II equipment		

Notes: ⁽¹⁾ Over 50 °C ambient temperature, the current will be reduced at the rate of 3.5% every °C up to 55°C. ⁽²⁾ Please contact Ingeteam for altitudes higher than 2,000 m.

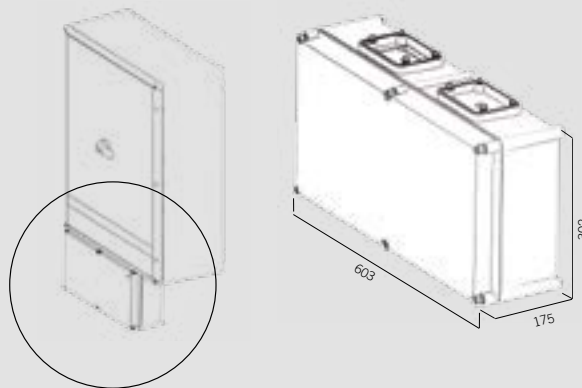
Size (mm)



StringBox 160 / 240 / 320

	1,500 V		
	StringMonitoring Box 16	StringMonitoring Box 24	StringMonitoring Box 32
Input			
Maximum number of input strings	16	24	32
Rated current per string	10 A	10 A	10 A
Maximum current per string	12 A	12 A	12 A
Maximum DC voltage	1,500 V		
Power supply	230Vac 50/60Hz		
Inlet connections	n° 4 M32 cable glands (n.4 cables entry diameter: 3.5 to 8 mm for each cable gland). N° 4 M16 cable glands (for RS485 input/output, PT100 sensor and analog sensor). n° 2 M25 cables gland for power supply.	n° 6 M32 cable glands (n.4 cables entry diameter: 3.5 to 8 mm for each cable gland). N° 4 M16 cable glands (for RS485 input/output, PT100 sensor and analog sensor). n° 2 M25 cables gland for power supply.	n° 8 M32 cable glands (n.4 cables entry diameter: 3.5 to 8 mm for each cable gland). N° 4 M16 cable glands (for RS485 input/output, PT100 sensor and analog sensor). n° 2 M25 cables gland for power supply.
Output			
Interconnections	Interconnection between StringMonitoring and StringBox for the SPD and DC switch status.		
Communication			
Type and protocol	Modbus RTU on RS485		
General Information			
Enclosure type	Outdoor use, insulating cabinet (polyester reinforced with fiberglass)		
Protection rating	IP65		
Impact strength	IK10		
Operating temperature range	-20 °C to +55 °C		
Relative humidity (non-condensing)	0 to 100%		
Maximum altitude ⁽²⁾	4,000 m a.s.l.		
Consumption	5 W	7 W	9 W
Weight	11 kg	11.4 kg	12 kg
Marking	CE		
EMC and security standards	EN 61000-6-4, EN 61000-6-2, EN 50178		
Electric shock protection	Class II equipment		

Size (mm)



StringMonitoring Box 16 / 24 / 32



Ingeteam

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.

5201 Great American Parkway, Suite 320
SANTA CLARA, CA 95054 - USA
Tel.: +1 (415) 450 1869 / +1 (408) 524 2929 / Fax: +1 (408) 824 1327
e-mail: solar.us@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, n° 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 Beltrami, 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

Cerro El Plomo 5630, Piso 9, Oficina 901
7560742 Las Condes - Santiago de Chile - Chile
Tel.: +56 2 26664370
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 Building 232
Innovation Campus, Squires Way
North Wollongong, NSW 2500 - Australia
Tel.: +61 499 988 022
e-mail: australia@ingeteam.com