Smart Level 1 Combiner Box

Smart PV Combiner Box Level 1 to bundle the output lines of individual strings and to connect them to the inverter or optionally to a Level 2 Combiner Box. Smart design customized for each customers application.

Advanced surge-protection devices, fuse links and switch disconnector keep the correct operation and protection of the system. Integrated power monitoring provided by Transclinic monitoring system (optionally self-supplied from string voltage) allows to do the right surveillance of the PV site to guarantee the best performance of the system.

Additionally, PV Combiner Box fulfill the standard IEC/EN 61439-2 to offer a high reliability on the units supplied.

- 14 string input

- fuse holders in string input (+/-) including fuse links

- single string monitoring

- self powered by taking the required power directly from the DC strings

- surge protection device for DC system voltage

- string input with cable glands

- direct wall mount + plastic wall mount lugs

(Example of Combiner Box. Picture may differ from product)

PV 214S0F0V0O0T2P010KO

| Order reference | 8000035463 | Rev 0 |

Technical Data

APPLICATION DATA

Operating ambient temperature range	-25 °C to +45 °C
Intended installation location	protected outdoors (≤ 1 km from sea)
Degree of protection (acc. to IEC 60529)	IP65
Conformity with norms	IEC 61439-2 ed 2.0 / EN 61439-2:2011

ELECTRICAL CHARACTERISTICS

Rated DC voltage (Un)	1000 VDC
Rated DC current per input (Inc)	9.4 A at 45 °C ambient
Rated DC current per input (10h short-circuit at main output)	$1.25 \cdot Inc$
Switch disconnector breaking & making capacity (acc. to IEC 60947-3)	400 A (DC21B 1000 V)
Circuit breaker breaking & making capacity (acc. to IEC 60947-2)	N/A
Contactor breaking & making capacity (acc. to IEC 60947-4-1)	N/A
Switch-disconnector / Circuit breaker / Contactor handle location	direct handle (inside enclosure)
DC earthing system	floating positive and negative
Surge protection on DC ports	1000V DC, type II, Imax = 40 kA, Up ≤ 3.8/3.8 kV, aux. contact
Surge protection on monitoring supply ports	N/A
Surge protection on EIA RS-485 ports	N/A

ENCLOSURE

Enclosure dimensions (H x W x D)	847 x 636 x 300 mm
Form factor	cabinet with hinged door(s)
Material	glass-fiber reinforced polyester (GFRP)
Fixing system	direct wall mount + plastic wall mount lugs

INPUTS

Number of DC inputs (+ & − being one input)	14
Positive DC input wires' to be connected to / cross-section (stranded)	screw connection / 0.75 - 25 mm²
Negative DC input wires' to be connected to / cross-section (stranded)	screw connection / 0.75 - 25 mm²
Positive / Negative DC input wires' outer diameter	5 - 10 mm
Fuses	fuse-links and fuse-disconnectors
Fuse form factor	10 x 38 mm
Location of fuses	positive and negative inputs
Fuse-link rated current (In)	15 A
Fuse-link time-current characteristic	gPV (EN 60269-6)
Earth wire to be connected to / cross-section (stranded)	screw connection / 1.5 - 25 mm²
Earth wire outer diameter	6 - 12 mm
Auxiliary monitoring supply cable(s) wires' to be connected to / cross-section (stranded)	N/A
Auxiliary monitoring supply cable(s) wires' outer diameter	N/A

OUTPUTS

Number of DC outputs (+ & − being one output)	1
DC output wires' to be connected to / cross-section (stranded)	switch-disconnector, M10 bolt and nut connection (≤ 240 mm²)
DC output wires' outer diameter	18 - 25 mm
EIA RS-485 cables wires' to be connected to / cross-section (stranded)	0.22 - 2.5 mm²
EIA RS-485 cables wires' outer diameter	5 - 10 mm

MONITORING

Monitoring system included	1 x Transclinic 16i+
Monitoring system powered by	self-powered (300 - 1000 VDC input PSU)
Input current monitoring	individual (1% error full-scale)
System voltage monitoring	yes (1% error full-scale)
Internal temperature monitoring	yes (-20 °C to 80 °C)
Switch-disconnector / Circuit breaker / Contactor monitoring	yes (closed / open) via Transclinic's digital inputs
DC and AC surge protection monitoring	yes (healthy / needs replacement)

OTHERS

Notes	Fuseholders with LED