



Key features:

- **Unifies DC measurement, fuses, overvoltage protection & communication leading to improved ROI**
- **Cost reduction by 30% vs. standard concepts**
- **Format Factor reduced by 35% with up to 312kWp DC power per Unit**
- **Significant reduction of interfaces leads to reduced risk and faster plant installation time**
- **24 Input Channel per board,**
± 13 A String current, ± 312 A summary @ 60°C
- **12 Analog inputs for current measurement**
± 26 A string current (calibrated)
- **1 On board temperature sensor**
Cabinet temperature
- **On board 1000 VDC SPD**
- **2 Digital inputs**
Monitoring of overvoltage protection and main switch
- **Signal conditioning**
calculated DC power, linearization, mean value, scaling, alarm
- **RS485 fieldbus interface**
up to 115.2 kbps: Modbus-RTU, ASCII (optional OEM protocols)
- **Connectivity**
Data logger (e. g. Q.reader) and gantner.webportal for worldwide access or other 3rd party applications
- **DC main switch 315 A**
- Connection column (CC) configuration available as well

Effective PV Monitoring requires constant, solid and traceable PV Plant monitoring data in order to determine actual performance and fulfil owner/investor expectations.

Operators are interested to identify errors and losses in a reliable way to trigger appropriate actions for maximizing energy harvest during the total system lifetime.

With the monitoring of PV Module strings, design and production errors will be recognized on the DC side with high resolution down to PV Module level.

Using DC shunts (vs. Hall Effect sensors) the string.bloxx provides current measurements typically 10 times more accurate and not susceptible to temperature variance. This equates to higher accuracy measurements and better understanding of true system performance. In addition, string voltage (up to 1000V) and DC power on every string can be continuously monitored ensuring maximum system productivity.

Continuous measurement of both cabinet and panel temperatures, along with overvoltage monitoring and main switch control greatly and improves system diagnostics.

This accurate measurement is inverter independent and gives feedback about losses due to inverter malfunction, soiling, shading, PV Module degradation etc. .



string.CB AIO 24/12

PV Generator Connection Box

Configuration		string.CB AIO24/12
DC Input		
Max. number		24
Max. current		±13 A
Connection		0.25 – 6.0 mm ² push-in spring-cage connection
Max. DC Input voltage		1000 VDC
Nominal current of string fuses		15A (typical) or based on customer requirements; positive and negative side
Fuse dimensions		10 x 38 mm
Grounding terminal		35 mm ²
Current measurement		
Max. Number		12
Range		± 26 A
Accuracy		0.25 %
Voltage measurement		
Number		1
Range		0-1000 VDC
Accuracy		0.2 %
Connection		0.25 – 6.0 mm ² push-in spring-cage connection
DC Output		
Max. total current		312 A
Max. voltage		1000 VDC
Output terminal		Cage clamp 50-240 mm ² or based on customer requirements
Max. cable dimensions		SM 70-240 mm ² , RM 50–185 mm ² , RE 70-240 mm ²
Input cabinet temperature		
Number		1
Type		Digital, onboard
Range		-40 °C till +160 °C
Accuracy		± 0.5 K
Digital Inputs		
Number		2
Utilization		Supervision of main switch, DC over-voltage-protection



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PV Generator Connection Box

Configuration	string.CB AIO 24/12
Power Supply	
Power supply	10 up to 55 VDC, overvoltage and overload protection
Power consumption	approx. 1.5 W (0.4W at a sampling rate of 30 seconds)
Connection	0.2 mm ² - 2.5 mm ² push-in spring-cage connection
Communication Interface	
Standard	RS-485, 2-wire
Data format	8e1
Protocols	Modbus-RTU: 19.200 bps (default), range: 9.600 bps up to 115.200 bps
Number of devices per bus	32 (recommended), max. 99
Connection	0.2 mm ² - 2.5 mm ² push-in spring-cage connection
Max. cable length	500 (recommended), max. 1200 m; expandable with active repeaters
Protection	
Overvoltage protection PV section	Overvoltage arrester 2 / II acc. to EN 61643-11 / IEC 61643-1/-11 Nominal surge current: (8/20) 20 kA with 3-stage DC- switch for PV Power Plants, up to 1000VDC
Overvoltage protection Communication (RS485)	Gas Discharge Tube - GDTs / Gas-Plasma-arrester mini trigard symmetrical SMT; Peak-impulse-current: 10 kA, 600 Watt Transient Voltage Suppressors
Protection class acc. to EN 60529	IP 66
Environmental	
Protection class acc. to EN 61140	Class II, double insulated protection
Operating temperature	-20 °C up to +60 °C @ max 312 A current
Storage temperature	-40 °C up to +85 °C
Relative humidity	5 % up to 95 % at 50 °C, non-condensing
Mechanical	
Height w/o mounting socket	847 mm
Width	636 mm
Depth	300 mm
Cable gland	49xM12, 2xM50, 2xM25
Weight	35 kg
Housing	UV- and weatherproof, fiber glass reinforced polyester (e.g. Schneider Electric); RAL 7035 (light gray)

Warm Up Time

All declarations are valid after a warm up time of 45 minutes.

Valid from January 2015. Specification subject to change without prior notice.

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