string.bloxx 124

String Monitoring Solution

Key features:

- **24 Analog input channels for current measurement**
  ± 13 A String current (calibrated), ± 312 A summary @ 60°C
- **1 Analog input channel for voltage**
  0-1000 VDC string voltage
- **2 Input channels for temperature**
  Panel and switch cabinet temperature
- **3 Digital inputs**
  Monitoring of overvoltage protection and main switch
- **1 Digital output**
  Actuation of main switch
- **Signal conditioning**
  calculated DC Power, linearization, mean value, scaling, alarm
- **Integrated LC display**
  Display of all readings, configuration
- **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
- **Electromagnetic Compatibility**
  according to EN 61000-4 and EN 55011
- **Power Supply 10 .. 55 VDC**
- **DIN rail or wall mounting according to DIN 50022**

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.

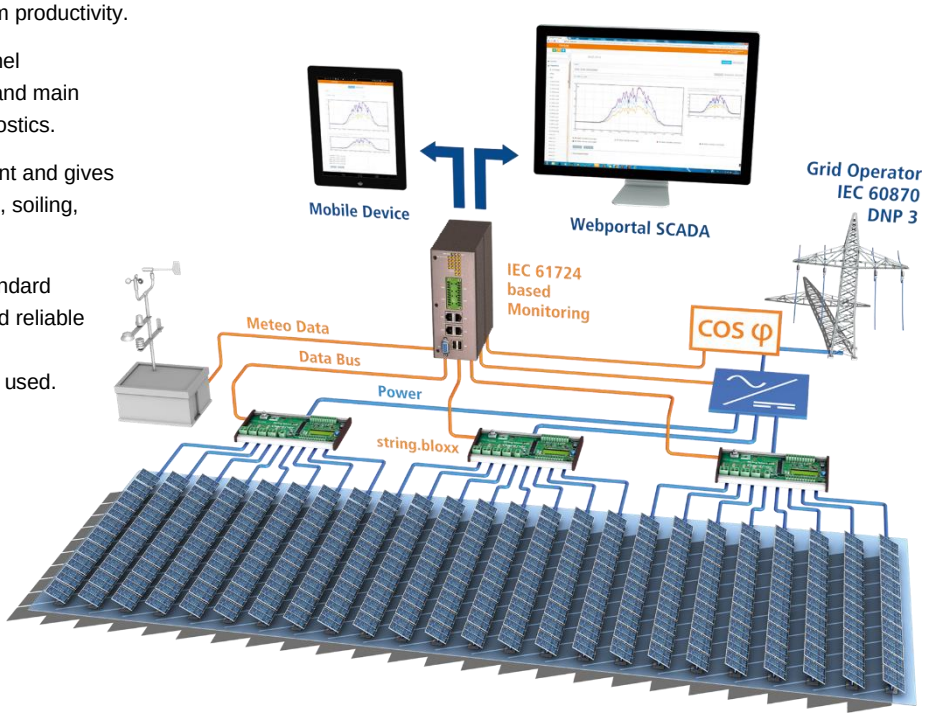
With the monitoring of PV Module strings, design and production errors will be recognized on the DC side with high resolution down to PV Module level.

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.

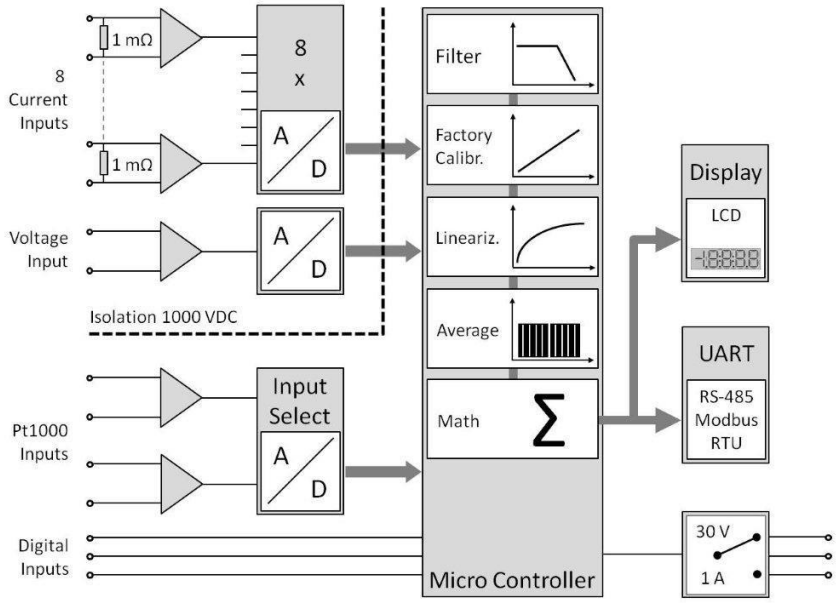
This accurate measurement is inverter independent and gives feedback about losses due to inverter malfunction, soiling, shading, PV Module degradation etc. .

The string.bloxx communication uses industry standard Modbus protocols for easy and fast integration and reliable data exchange with the data logger. For longer communication distances fiber optic technology is used.



Gantner Instruments Environment Solutions GmbH · www.gantner-environment.com · office@gantner-environment.com
Am Mühlgraben 8 · D-08297 Zwönitz/Germany · Tel. +49 (0) 37754 3351-0 · Fax +49 (0) 37754 3351-20

Block diagram



Input Current	
Max. Number	24
Range	± 13 A
Accuracy	0.25 %
Connection	0.25 mm² - 6 mm² push-in spring-cage connection
Current measurement	
Max.	312 A
Connection	M8 bolt connector for cable ring terminals
Voltage measurement	
Number	1
Range	0-1000 VDC
Accuracy	0.2 %
Connection	0.25 mm² - 6 mm² push-in spring-cage connection
Input Temperature	
Number	2
Type	Pt1000, 2- and 4-wire
Range	-40 till +160°C
Accuracy	0.5 %
Connection	0.25 mm² - 1.5 mm² push-in spring-cage connection
Digital Inputs	
Number	3
Input	State
Connection	0.25 mm² - 1.5 mm² push-in spring-cage connection

Gantner Instruments Environment Solutions GmbH · www.gantner-environment.com · office@gantner-environment.com
Am Mühlgraben 8 · D-08297 Zwönitz/Germany · Tel. +49 (0) 37754 3351-0 · Fax +49 (0) 37754 3351-20

Digital Output	
Number	1
Output	State, alarm
Contact	Relay change
Load	30 VDC/1000 mA (ohmic load)
Connection	0.25 mm² - 1.5 mm² push-in spring-cage connection

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	0.25 mm² - 1.5 mm² push-in spring-cage connection
Communication Interface	
Standard	RS-485, 2-wire
Data format	8e1
Protocols	Modbus-RTU, ASCII: 19.200 bps up to 115.200 bps
Number of devices on the bus	max. 250
Connection	0.25 mm² - 1.5 mm² push-in spring-cage connection

Environmental	
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	
Case	Polycarbonate
Dimensions (L x W x D)	(384 x 142 x 55) mm
Weight	approx. 800 g
Mounting	DIN EN-rail or wall mounting

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.
DB_string.bloxx_124_E_1501.docx

Gantner Instruments Environment Solutions GmbH · www.gantner-environment.com · office@gantner-environment.com
Am Mühlgraben 8 · D-08297 Zwönitz/Germany · Tel. +49 (0) 37754 3351-0 · Fax +49 (0) 37754 3351-20