



### Key features:

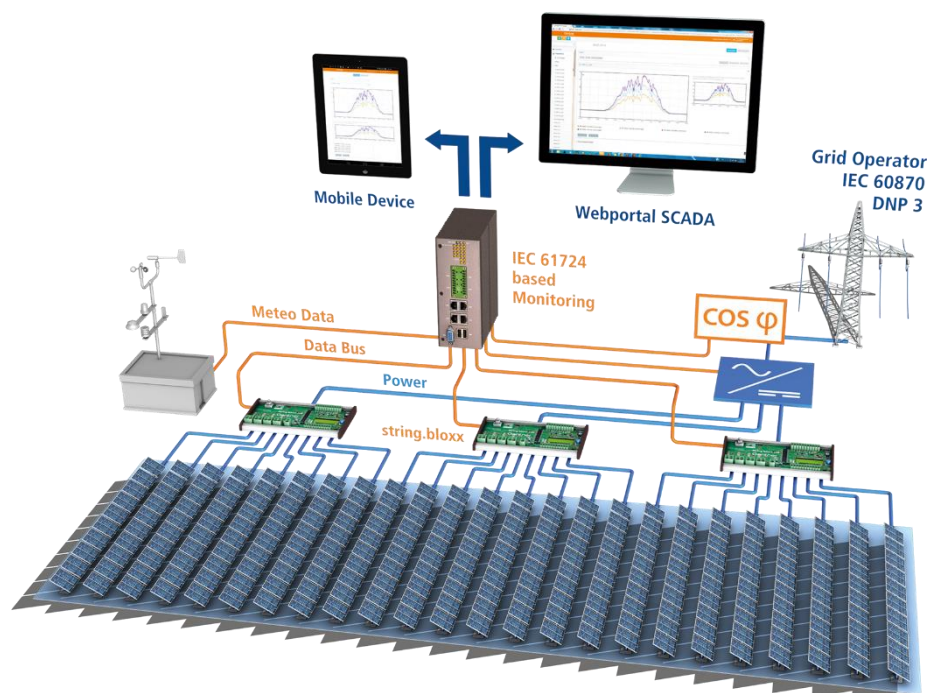
- **6 Digital Inputs**
- **1 Digital Counter Input (S0) up to 1kHz**
- **4 Relay Outputs**
- **RS485 fieldbus interface**  
up to 115,2 kbps: Modbus-RTU, (optional OEM protocols)
- **Connectivity**  
Data logger (e. g. Q.reader) and [www.gantner-webportal.com](http://www.gantner-webportal.com)  
for worldwide access or other 3<sup>rd</sup> party applications
- **Electromagnetic Compatibility**  
according to EN 61000-4 and EN 55011
- **Power Supply 18 .. 36 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 fulfill 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 and control of digital inputs and outputs operators are able to see e.g UPS state, CB state, ... and also control functions are easy to implement by using the relay outputs.

The z.bloxx communication uses industry standard Modbus protocols for easy and fast integration and reliable data exchange with the data logger.



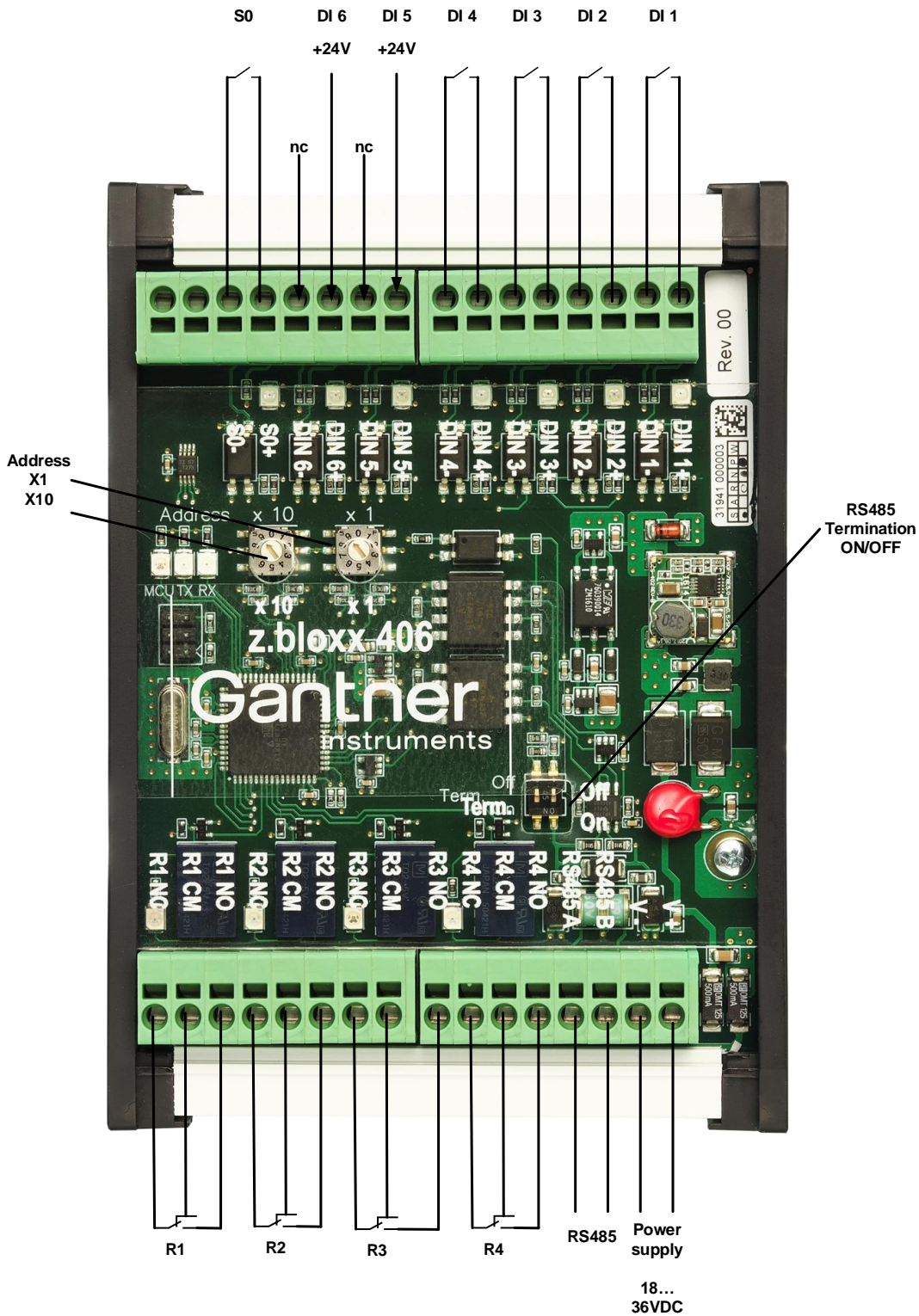


<b>Digital Inputs</b>	
Number	6
Input	State
Connection	0.25 mm <sup>2</sup> - 1.5 mm <sup>2</sup> push-in spring-cage connection
<b>Digital Counter</b>	
Number	1
Input	Counter/S0 up to 1 kHz
Connection	0.25 mm <sup>2</sup> - 1.5 mm <sup>2</sup> push-in spring-cage connection
<b>Digital Outputs</b>	
Number	4
Input	Relays C/NC/NO
Connection	0.25 mm <sup>2</sup> - 1.5 mm <sup>2</sup> push-in spring-cage connection
Nominal switching capacity	1 A / 30 V DC
<b>Power Supply</b>	
Power supply	10 up to 36 VDC, overvoltage and overload protection
Power consumption	approx. 0.5 W
Connection	0.25 mm <sup>2</sup> - 1.5 mm <sup>2</sup> push-in spring-cage connection
<b>Communication Interface</b>	
Standard	RS-485, 2-wire
Data format	8n1 Default, 8e1
Protocols	Modbus-RTU, 19k2 bps up to 115k2 bps
Number of devices on the bus	max. 32
Connection	0.25 mm <sup>2</sup> - 1.5 mm <sup>2</sup> push-in spring-cage connection
<b>Environmental</b>	
Storage temperature	-40°C up to +85°C
Relative humidity	5 % up to 95 % at 50°C, non-condensing
Electromagnetic Compatibility	according to EN 61000-4 and EN 55011
Maximum operating altitude	6000 m
<b>Mechanical</b>	
Case	Polycarbonate
Dimensions (W x H x D)	(103 x 143 x 46) mm
Weight	approx. 150 g
Mounting	DIN EN-rail or wall mounting

**z.bloxx 406**

Digital I/O Module

**Connection diagram:**



**Modbus RTU:**

Protocol: Modbus RTU  
 Speed: 1200 -115.2K Baud (siehe Register 30210)  
 Formate: 8n1, 8e1, 8o1 (siehe Register 30211)  
 Byte Ordering: MSB, Word Ordering:LSB, Maximum Frame Length: 128 Bytes

Register	Data type	Channel (Description)	Values	Unit	R/W
30001	Unit16	digital input 01	0,1 (OFF,ON)		R
30002	Unit16	digital input 02	0,1 (OFF,ON)		R
30003	Unit16	digital input 03	0,1 (OFF,ON)		R
30004	Unit16	digital input 04	0,1 (OFF,ON)		R
30005	Unit16	digital input 05	0,1 (OFF,ON)		R
30006	Unit16	digital input 06	0,1 (OFF,ON)		R
30007	Unit16	S0-input	counter value		R
30008	Unit16	S0-input	frequency [Hz]		R
30043, 30044	Float32	temperature 1	-40,0 +160,0	°C	R
30051, 30052	UINT32	firmware date	0xDDMMYYYY example: 0x0405.07DB 04.05.2011		R
30053, 30054	UINT32	software version	0xBMMNN example: 0x1251.0100 V100.1251		R
30150	Unit16	relay out 1	0 OFF 1 ON		R/W
30151	Unit16	relay out 2	0 OFF 1 ON		R/W
30152	Unit16	relay out 3	0 OFF 1 ON		R/W
30153	Unit16	relay out 4	0 OFF 1 ON		R/W
30201	Unit16	device identification	Stringbloxx z.bloxx 406: 2016		R
30203	Unit16	serial-number Low	34		R
30204	Unit16	serial-number High	1		R
30206	Unit16	modbus address	1-254 (0 broadcast address)		R/W
30209	Unit16	response delay, [ms]	0 – 250ms		R/W
30210	Unit16	parity / baudrate, [bps]	values decimal: 0 – 5 -> 8n1 100 – 105 -> 8e1 200 – 205 -> 8o1 baudrates 0 100 200 = 1200, 1 101 201 = 2400, 2 102 202 = 4800, 3 103 203 = 9600, 4 104 204 = 19.2k, 5 105 205 = 38.4k, 6 106 206 = 57k, 7 107 207 = 115.2k,  4 = default		R/W

Supported Function-Codes:

- 03: read register data (Single/Multiple Access)
- 04: read register data (Single/Multiple Access)
- 06: write to R/W register (Single Register Access)

Register Access: R = read only, R/W = read + write,  
 R/W+P = read + write + store permanently