e.bloxx A3

Multi-Channel Voltage Module

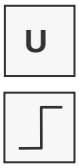
Gantner instruments

Ethernet TCP/IP | PROFIBUS | EtherCAT Technology Group | USB

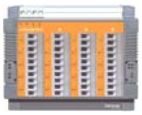
The e.bloxx series is designed for industrial and experimental test systems requiring precise high speed measurement of electrical, thermal, and mechanical quantities in engine and component test beds.

All units are based on a clean modular design, and easily connect to the wide variety of field devices used in today's test beds. Sample rates up to 5000 Hz and resolutions up to 19 bit are possible depending on the module and signal type used. Standardized communication protocols (Profibus-DP and Modbus-RTU) allow the e.bloxx family to work with a wide variety of application hardware and software.

Adding an e.series Test Controller dramatically increases the system's throughput and connectivity options. An e.series Test Controller is a data concentrator, communication gateway, and optionally a Programmable Automation Controller (PAC) with 100Mbps Ethernet, Profibus-DP, EtherCAT, or USB ports.



e.bloxx A3-1TC



e.bloxx A3-4 TC

4 analog, galvanic isolated input channels

Differential voltage (±10 V and ±2 V range)

Measuring rate 100 samples/sec with 4 active channels

Total rate 400 samples/sec

Differential inputs

Common mode voltage 100 VDC

Signal conditioning

Digital filtering, averaging, scaling, minimum/maximum, arithmetic, alarm

RS 485 fieldbus interface

Profibus-DP, Modbus-RTU, ASCII

Order Information:

Product	Article No.
e.bloxx A3-1	235477
e.bloxx A3-4	237075
Accessories	
e.bloxx Terminal 4C for the connection of current signals	229884
Configuration Software ICP 100	633214
Interface Converter RS232 / RS485 ISK 200	229682
ISK 101	689326

Additional features

- Accuracy 0.01 %
- ADC resolution and internal calculation accuracy of 19 bits
- Measuring rate 100 samples/sec per channel (4 active channels)
- Filtering, scaling, and data formatting

- Data transmission up to 1.5 Mbps
- Up to 32 modules on a single two wire RS-485 interface
- PC-Software (ICP 100) for easy configuration of the modules

- Galvanic isolation of I/O-signals, power supply, and communication interface
- Power supply 10 to 30 VDC
- DIN rail mounting (EN 50022 rail)
- Pluggable screw terminals for field, power, and communication connections
- Electromagnetic Compatibility according to EN 61000-4 and EN 55011

Gantner Instruments Test & Measurement GmbH ■ www.gantner-instruments.com ■ office@gantner-instruments.com
Montafonerstraße 8 ■ A-6780 Schruns / Austria ■ T +43 (0) 5556 73784-410 ■ F +43 (0) 5556 73784-419
Industriestraße 12 ■ D-64297 Darmstadt / Germany ■ T +49 (0) 6151 95136-0 ■ F +49 (0) 6151 95136-26

e.bloxx A3 Technical Data

Analog Input

Accuracy	0.01 % typical
	0.02 % in controlled environment[1]
	0.05 % in industrial area[2]
Repeatability	0.003 % typical (within 24 h)

Measurement	Range	Accuracy	Resolution
Voltage	±10 V	±2 mV	40 µV
	±2 V	±0.4 mV	8 µV

Input resistance	800 kΩ
Common mode voltage	100 V permanent
Linearity deviation	0.01 % of the final value
Signal to noise ratio	
100 Hz	100 dB
1 Hz	120 dB
Temperature influence	
on zero	50µV / 10 K
on sensitivity	0.005 % / 10 K
Long-time drift	1 µV / 24 h

Analog/Digital Conversion

Resolution	19 bit
Sample rate	100 samples/sec (4 active channels)
	400 samples/sec (1 active channel)
Conversion method	Sigma-Delta
Filter	Variable digital low pass filter 1st order averaging

Digital In/Output

Input	Status, tare, reset
Input voltage	max. 30 VDC
Input current	max. 6 mA
Upper switching threshold	> 10 V (high)
Lower switching threshold	< 2.0 V (low)
Output	Process or host controlled
Type of output	Open Collector
Output voltage	max. 30 V
Output current	max. 100 mA

Communication Interface

Standard	RS 485, 2-wire
Data format	8E1
Protocols	ASCII, Modbus-RTU, Profibus-DP
	Local-Bus
Baud rate	
ASCII and ModBus-RTU	19.2; 38.4; 57.6; 93.75; 115.2 kBaud
Profibus-DP	19.2; 93.75; 187.5; 500; 1500 kBaud
Local-Bus	19.2; 38.4; 57.6; 93.75; 115.2; 187.5; 500; 1500 kBaud
Connectable devices	up to 32
Galvanic isolation	500 V

Power Supply

Power supply	10 to 30 VDC
	overvoltage and overload protection
Power consumption	
e.bloxx A3-1	approx. 1.5 W
e.bloxx A3-4	approx. 6 W
Influence of the voltage	0.001 %/V

Mechanical

Case	Aluminium and ABS
Dimensions (W x H x D) and weight	
e.bloxx A3-1	45 x 90 x 83 mm (1.77 x 3.54 x 3.27 in), 160 g (0.35 lb)
e.bloxx A3-4	104 x 90 x 83 mm (4.10 x 3.54 x 3.27 in), 500 g (1.1 lb)
Protective system	IP20
Mounting	DIN EN-Rail

Environmental

Operating temperature	-20 °C to +60 °C
Storage temperature	-40 °C to +85 °C
Relative humidity	5 % to 95 % at 50 °C
	non condensing

Warm Up Time

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

[1] according to EN 61326: 1997, appendix B
[2] according to EN 61326: 1997, appendix A

Valid from January 2008. Specification subject to change without notice.
DB_EBLOXX_A3_E_12.doc

Gantner Instruments Test & Measurement GmbH ■ www.gantner-instruments.com ■ office@gantner-instruments.com
Montafonerstraße 8 ■ A-6780 Schruns / Austria ■ T +43 (0) 5556 73784-410 ■ F +43 (0) 5556 73784-419
Industriestraße 12 ■ D-64297 Darmstadt / Germany ■ T +49 (0) 6151 95136-0 ■ F +49 (0) 6151 95136-26