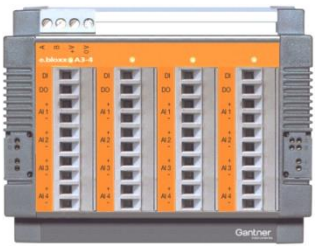
e.bloxx A3

Multi-Channel Voltage and Current Module

e.bloxx A3-1

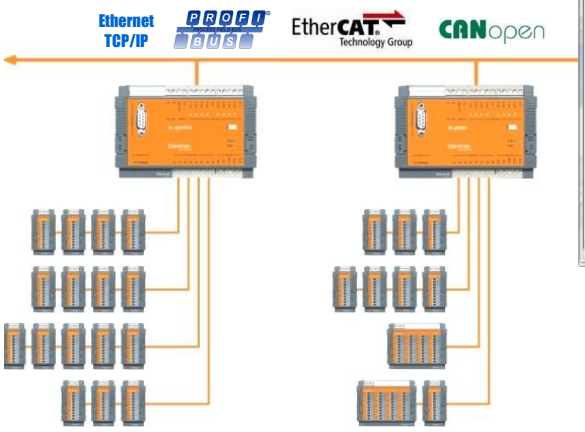


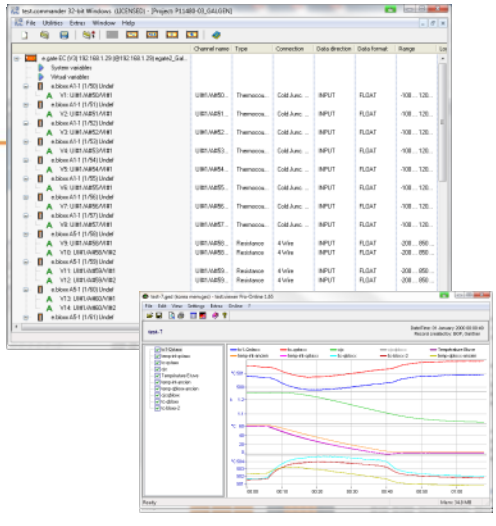
e.bloxx A3-4

Most important features:

- **Accuracy 0.01**
- **4 or 16 galvanic isolated input channels**
  Differential voltage, current over shunt terminal
- **High accuracy digitalization**
  19 bit ADC, 100 Hz sampling rate per channel, total rate 400 Hz
- **1 digital input and 1 digital output**
  Status, tare, reset peak hold
  Status, alarm, limit value, tolerance band
- **Differential inputs**
  Common mode voltage 100 VDC
- **Signal conditioning**
  Linearization, digital filtering, averaging, scaling, minimum/maximum, arithmetic, alarm
- **RS 485 fieldbus interface**
  Profibus-DP, Modbus-RTU, ASCII
  as well as connectable to any e.series Test Controller
- **Galvanic isolation**
  of I/O-signals, power supply and interface
  Isolation voltage 500 VDC
- **Electromagnetic Compatibility**
  according EN 61000-4 and EN 55011
- **Power supply 10…30 VDC**
- **DIN rail mounting (EN500022)**

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 1000 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 CANopen.





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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

Current	using shunt terminal
Input resistance	800 kΩ
Common mode voltage	100 VDC 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	50 µV / 10 K
on sensitivity	0.005 % / 10 K
Long-time drift	1 µV / 24 h 2.5 µV / 8000 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. 1.5 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, 160 g
e.bloxx A3-4	104 x 90 x 83 mm, 500 g
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 Nov. 2010. Specification subject to change without notice.
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