



e.bloxx A6-1 CF

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.

Universal bridge input

Strain gauge full, half and quarter bridge, inductive bridge, LVDT, etc.

1 digital input and 1 digital output

Definition of the functionality (e.g. tare, alarm, limit value, tolerance band)

1 analog output

± 10 V, user configurable (e.g. maximum, envelope curve, etc.)

Signal conditioning

Linearization, digital filter, scaling, taring, minimum/maximum store, envelope curve, arithmetic, alarm, limit value, tolerance band

RS 485 fieldbus interface

Profibus-DP, Modbus-RTU, ASCII

Order Information

Product	Article No.
e.bloxx A6-1CF	313777
Accessories	
Configuration Software	
ICP 100	633214
Terminal for connection of	
Single Strain Gauges	
B14 120 Ω	177886
B14 350 Ω	177987
B14 700 Ω	178079
Interface Converter	
RS232 / RS485	
ISK 200	229682
ISK 101	689326

Additional Features

- Accuracy 0.05 %
- Supports 3, 4, 5, and 6 lead transducer connection (excitation sense)
- Wide measurement range 2.5, 100, and 1000 mV/V
- Frequency range 0 to 100 Hz (-3 dB)
- ADC resolution and internal calculation accuracy of 19 bits (500 samples/sec)
- 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

e.bloxx A6CF Technical Data

Analog Input

Accuracy	0.05 % typical 0.1 % in controlled environment ¹ 0.5 % in industrial area ²
Carrier frequency	4800 Hz
Connectable sensors	Strain gauges, inductive, LVDT Quarter- half- and full bridge
Cable length	max. 250 m
Repeatability	0.005 % typical (within 24 h)
Transducer excitation Uexc	±2.5 Veff
Min. transducer resistance	175 Ω
Measuring range	±2.5 mV/V
Temperature influence	
on zero (TC0)	10 µV/V / 10 K
on sensitivity (TCC)	0.05 % / 10K
noise voltage at 10 Hz	0.2 µV/V input related
Measuring range	±100 mV/V
Temperature influence	
on zero (TC0)	20 µV/V / 10 K
on sensitivity (TCC)	0.05 % / 10K
noise voltage at 10 Hz	4 µV/V input related
Measuring range	±1000 mV/V
Temperature influence	
on zero (TC0)	50 µV/V / 10 K
on sensitivity (TCC)	0.05 % / 10K
noise voltage at 10 Hz	10 µV/V input related
Input resistance	> 10 MΩ
Long time drift	1 µV/V / 48 h
Common mode voltage	100 V permanent
Linearity deviation	0.02 % of final value

A/D Conversion / Signal Conditioning

Resolution ADC	19 bit
Sample rate	500 samples/sec
Sample method	Sigma-Delta
Filter	Variable digital low pas filter 5 th order Averaging
Signal conditioning	Tare, minimum, maximum, envelope curve, arithmetic, limits

Analog Output

Output voltage	±10.2 V, freely scalable
Max. load resistance	> 5 kΩ
Resolution DAC	16 bit
Frequency range	0 to 100 Hz (-3 dB)
Signal source	each variable
Temperature influence	
on zero (TC0)	2 mV / 10 °K
on sensitivity (TCC)	0.05 % / 10 °K
Noise voltage for ranges	
0 ... 10 Hz	2 mV
Long time drift	1 mV / 48 h
Linearity deviation	0.01 %

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	approx. 2.5 W
Influence of the voltage	0.001 %/V

Mechanical

Case	Aluminium and ABS
Dimensions (W x H x D)	50 x 90 x 83 mm (1.77 x 3.54 x 3.27 in)
Weight	170 g (0.38lb)
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.

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