Q.bloxx A123

High Isolation Module for Voltages

The Q.series has been designed for the demanding measurements found in today's industrial measuring and testing environments. Applications range from single, stand-alone solutions to networked, multi-channel systems in real-world areas such as component testing, engine testing, materials testing and structural monitoring.

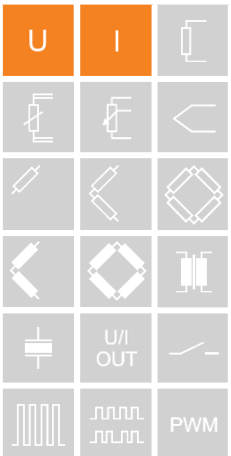
The range and flexibility of the modules allows for an optimized solution for each and every measurement and control point:

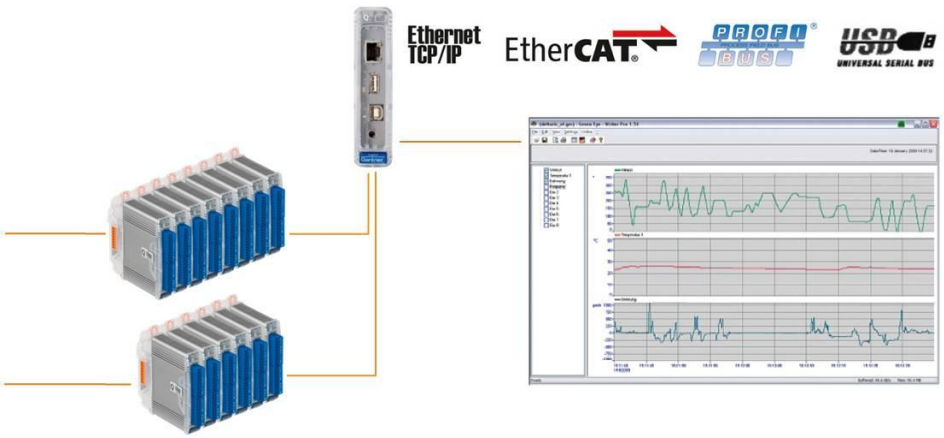
- Dynamic signal acquisition up to 100 kHz per channel
- inputs and outputs for all types of signals and sensors
- Galvanic isolation (up to 1200V) of inputs and outputs
- Multi-channel, High-density packaging
- Intelligent signal conditioning on every channel.

All modules connect to a Q.series test controller (Q.gate, Q.pac, or Q.station) for synchronization and buffering, and data exchange between the test controller and automation system is handled via Ethernet TCP/IP, EtherCAT, Profibus-DP, CANopen, or through additional industrial fieldbus standards.

Key Features:

- **4 high galvanic isolated input channels**
  differential voltage, current via shunt connector ,
  isolation voltage 1200 VDC permanent
- **3 measuring ranges selectable each channel**
  ±10 V, ±1.25 V, ±100 mV
- **Fast high accuracy digitalization**
  24 bit ADC, 10 kHz sample rate per channel
- **Signal conditioning**
  linearization, digital filter, average, scaling,
  min/max storage, arithmetic, alarm
- **RS485 fieldbus interface**
  up to 48 Mbps: LocalBus
  up to 115.2 kbps: Modbus-RTU, ASCII
- **Connectable to any Test Controller**
  e.g. Q.gate or Q.pac
- **Galvanic isolation**
  channel to channel to power supply and to interface
  isolation voltage 1200 VDC / 858 VACrms
  test voltage 5 kVrms over 1 minute
- **Electromagnetic Compatibility**
  according EN 61000-4 and EN 55011
- **Power supply 10…30 VDC**
- **DIN rail mounting (EN 50022)**





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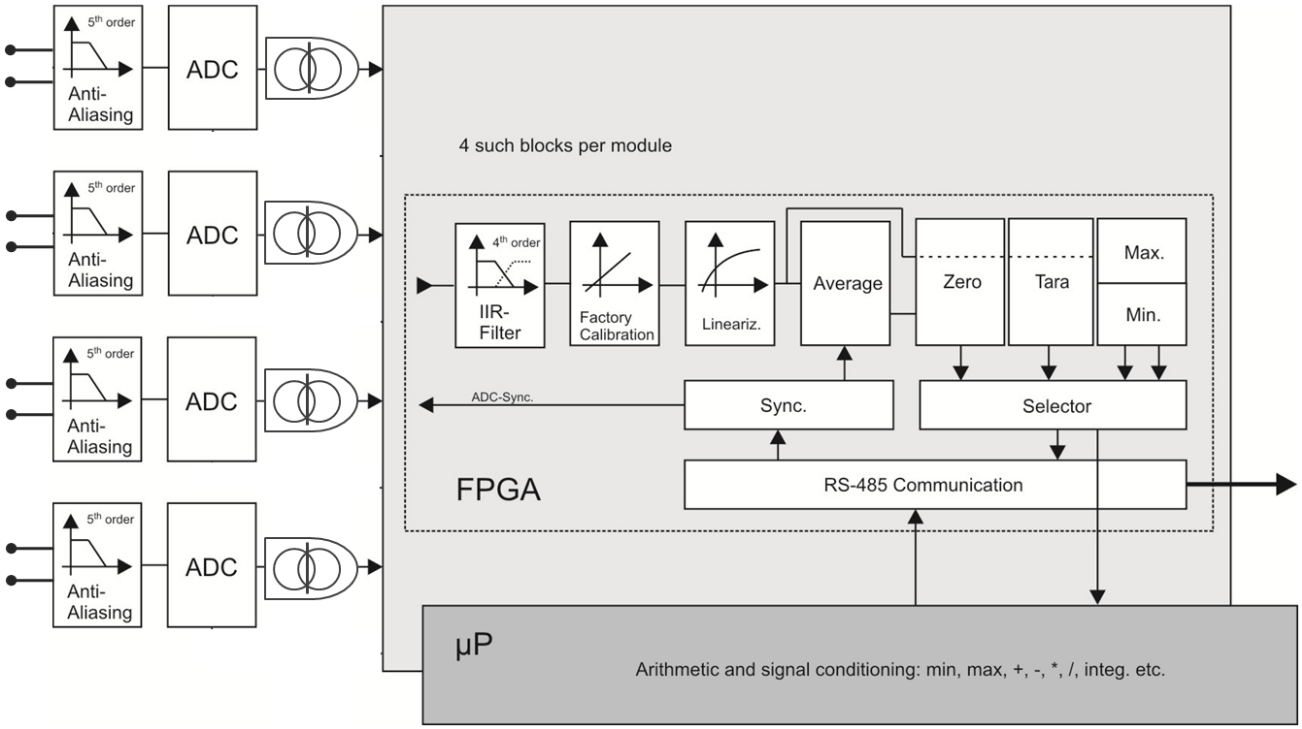
Block Diagram



Analog Inputs			
Number	4		
Accuracy	0.01 % typical		
	0.02 % in controlled environment[1]		
	0.05 % in industrial area[2]		
Linearity error	0.01 % of the final value typical		
Repeatability	0.003 % typical (within 24 h)		
Isolation voltage	1200 VDC permanent, channel to channel to power supply to interface[3]		
Measurement Voltage	**Range**	**max. Deviation**	**Resolution**
	±10 V	±2 mV	1.2 µV
	±1.25 V	±0.2 mV	120 nV
	±100 mV	±20 µV	12 nV
Input resistance	>10 MΩ		
Long term drift	<1 µV / 24 h; <2.5 µV / 8000 h		
Temperature influence	on zero	on sensitivity	
	<50 µV / 10 K	<0.05 % / 10 K	
Signal-noise-ratio	>100 dB at 100 Hz		

[1] according EN 61326: 1997, appendix B
[2] according EN 61326: 1997, appendix A
[3] High Voltage lifetime (TDDB E Model): Time to fail approx. 4 years at 1200 VDC and 60 °C permanent

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Analog/Digital-Conversion	
Resolution	24 bit
Sample rate	10 kHz each channel
Conversion method	Sigma-Delta (group delay time 600 µs)
Anti-aliasing filter	2 kHz, 5th order
Digital filter	IIR, low pass, high pass, band pass, 4th order, 1 Hz up to 1 kHz in steps 1, 2, 5
Averaging	configurable or automated according the selected data rate
Power Supply	
Power supply	10 up to 30 VDC, overvoltage and overload protection
Power consumption	approx. 2 W
Influence of the voltage	<0.001 %/V
Environmental	
Operating temperature	-20°C up to +60°C
Storage temperature	-40°C up to +85°C
Relative humidity	5 % up to 95 % at 50°C, non condensing
Communication Interface	
Standard	RS-485, 2-wire
Data format	8e1
Protocols	Local-Bus: 115200 bps up to 48 Mbps
	Modbus-RTU, ASCII: 19200 bps up to 115200 bps
Connectable devices	max. 32
Mechanical	
Case	Aluminum and ABS
Dimensions (W x H x D)	(27 x 120 x 105) mm
Weight	approx. 200 g
Mounting	DIN EN-rail

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

Specification subject to change without notice
gantner-q.bloxx-a123.pdf (Version 0511)

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