# Q.bloxx A103

Multi Channel Module for Voltages

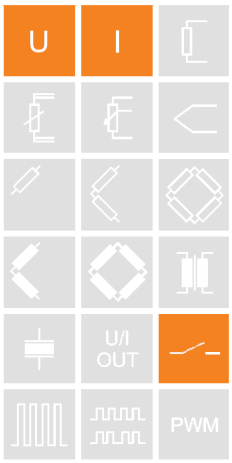
The Q.series has been designed for demanding measurements found in today's most industrial measuring and testing environments. The range of applications starts from single stand-alone solutions up to networked multi-channel applications in the field of component testing, engine testing, process performance testing and structural monitoring.

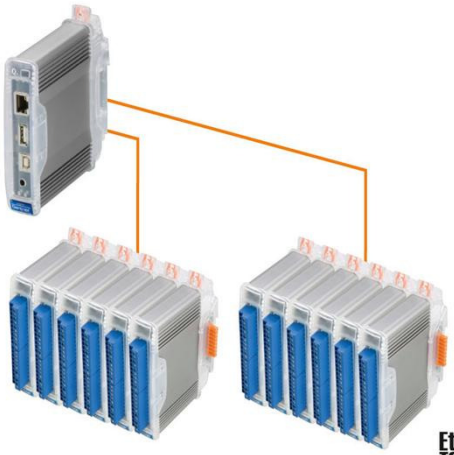
The range and flexibility of the modules allows an optimized solution for each single task:
Dynamic signal acquisition up to 100 kHz, inputs and outputs for all types of signals, galvanic isolation of inputs and outputs, multi-channel solutions, high density packaging and intelligent signal conditioning.

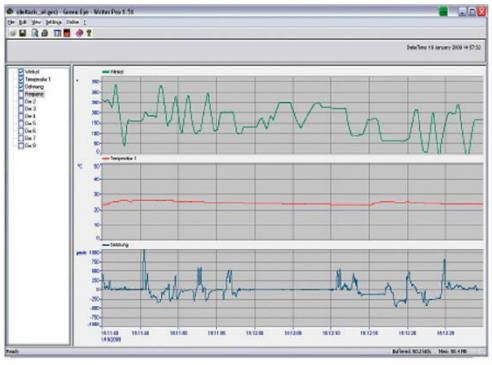
Data exchange between Test Controller and automation level is communicated via Ethernet TCP/IP or fieldbus systems like EtherCAT or Profibus-DP and additional Ethernet-based industrial standards.

## Most important features:

- **8 galvanic isolated input channels**
  differential voltage, current via shunt connector
  Isolation voltage 100 VDC
- **High accuracy digitalization**
  24 bit ADC, 100 Hz sample rate per channel with 8 active channels, sum sample rate 800 Hz
- **2 digital in and 2 outputs**
  input: state, tare, memory reset
  output: state, alarm, threshold
- **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**
  of I/O-signals, power supply and interface
  Isolation voltage 500 VDC
- **Electromagnetic Compatibility**
  according EN 61000-4 and EN 55011
- **Accuracy class 0.01**
- **Power supply 10…30 VDC**
- **DIN rail mounting (EN 50022)**





Ethernet TCP/IP EtherCAT PROFIBUS USB UNIVERSAL SERIAL BUS

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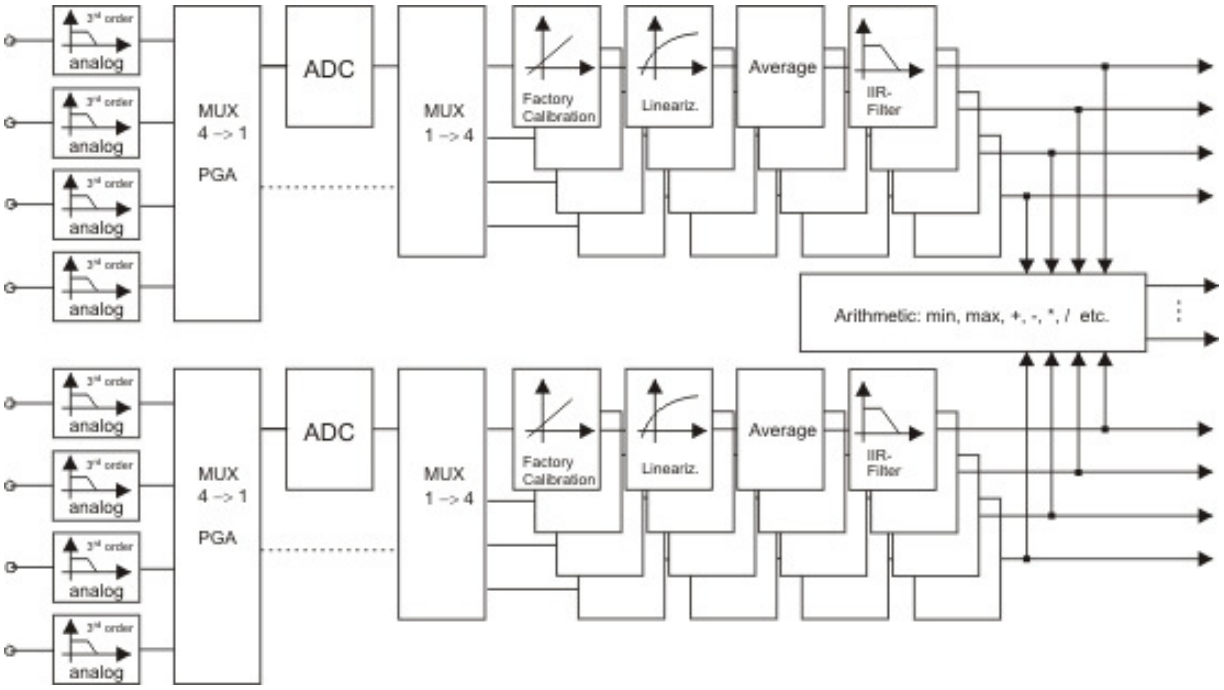
## Block Diagram




| Analog Inputs | | | |
|---|---|---|---|
| Number | 8 | | |
| 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) | | |
| **Measurement Voltage** | **Range** | **max. Deviation** | **Resolution** |
| | ±10 V | ±2 mV | 40 µV |
| Input resistance | >10 MΩ | | |
| Long term drift | <1 µV/24 h | | |
| Perm. common mode voltage | 100 V permanent | | |
| Temperature influence | on zero | on sensitivity | |
| | 50 µV/10 K | 0.05 %/10 K | |
| Signal-noise-ratio | >100 dB at 100 Hz | >120 dB at 1 Hz | |

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

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| | |
|---|---|
| **Analog/Digital-Conversion** | |
| Resolution | 24 bit |
| Sample rate | 100 Hz at 8 active channels |
| Conversion method | Sigma-Delta |
| Antialiasing filter | low pass 3rd order per channel (-3 dB at 20 Hz) |
| Digital filter | variable digital low pass filter 1st order |
| | averaging |
| **Digital In/Outputs** | |
| Number | 4, 2 digital inputs and 2 digital outputs |
| Input | state, tare, reset |
| Input voltage | max. 30 VDC |
| Input current | max. 0,5 mA |
| Upper threshold | >10 V (high) |
| Lower threshold | <2.0 V (low) |
| Output | state, alarm |
| Contact | open drain p-channel MOSFET |
| Load | 30 VDC / 100 mA (ohmic load) |
| **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 |

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

Valid from April 15th 2010. Specification subject to change without notice
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