![Gantner instruments logo]
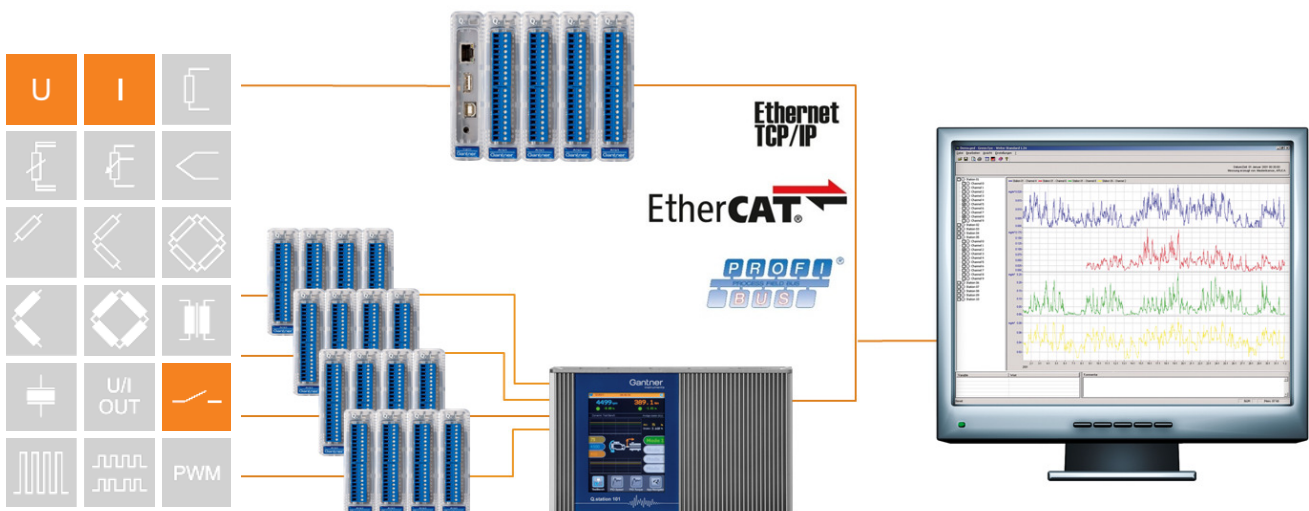
Q.bloxx A103

Multi Channel Module for Voltages

The Q.series has been designed for demanding measurements found in todays 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,

- **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 24 Mbps: LocalBus
  up to 115.2 kbps: Modbus-RTU, ASCII

- **Connectable to any Test Controller**
  e.g. Q.station, Q.gate or Q.pac

- **Galvanic isolation**
  I/O-signals to power supply and to interface
  Isolation voltage 500 VDC

- **Electromagnetic Compatibility**
  according EN 61000-4 and EN 55011

- **Accuracy class 0.01**

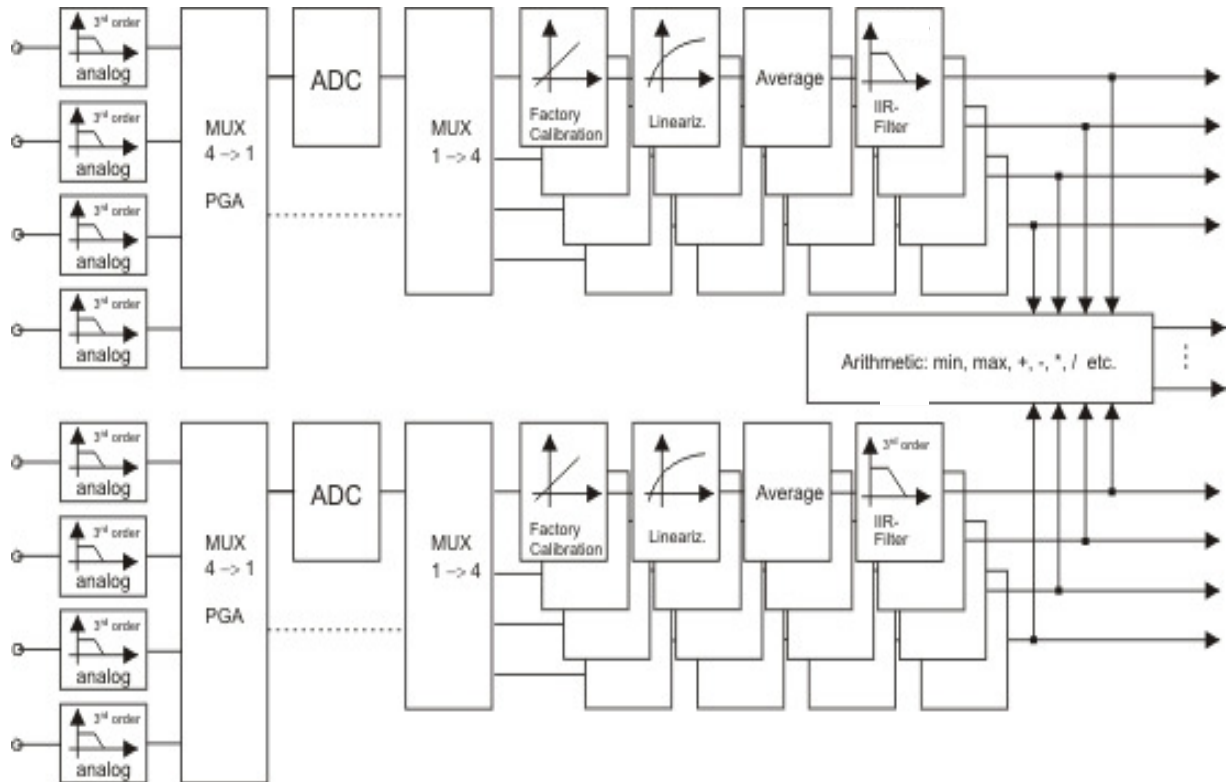- **Power supply 10…30 VDC**

- **DIN rail mounting (EN 60715)**

Block Diagram

Analog Inputs	
Number	8
Accuracy	0.01 % typical
	0.025 % 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	100 VDC permanent, channel to channel
	500 VDC channels to power supply to interface[3]

Measurement Voltage	Range	max. Deviation	Resolution
	±10 V	±2 mV	40 µV
Input resistance	>1 MΩ		
Long term drift	<50 µV / 24 h; < 500 µV / 8000 h		
Temperature influence	on zero		on sensitivity
	<50 µV / 10 K		<0.025 % / 10 K
Signal-noise-ratio	>100 dB at 100 Hz		>120 dB at 1 Hz

[1] according EN 61326: 2006, appendix B
[2] according EN 61326: 2006, appendix A
[3] noise pulses up to 1000 VDC, permanent up to 250 VDC

Analog/Digital-Conversion

Resolution	24 bit
Sample rate	100 Hz at 8 active channels
Conversion method	Sigma-Delta
Anti-aliasing filter	20 Hz, 3rd order per channel
Digital filter	IIR, low pass, high pass, band pass, 4th order, 1 Hz up to 10 Hz in steps 1, 2, 5
Averaging	configurable or automated according the selected data rate

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 24 Mbps
	Modbus-RTU, ASCII: 19200 bps up to 115200 bps

Gantner Instruments GmbH ■ **www.gantner-instruments.com** ■ **office@gantner-instruments.com**

Montafonerstr. 4   6780 Schruns / Austria   T +43 (0) 5556 77463-0   F +43 (0) 5556 77463-300
Heidelberger Landstraße 74   64297 Darmstadt / Germany   T +49 (0) 6151 95136-0   F +49 (0) 6151 95136-26

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

Accessory **Shunt for measuring current**	Connection terminal for 4 currents, shunt resistor 100 Ω, module inputs: using standard terminals: 8 voltage in, using 1 shunt terminal: 4 voltage in and 4 current in, using 2 shunt terminals: 8 current in

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