

Q.bloxx XL A108 MEMS-4M1

I/O Module for 4 single-axis MEMS sensors

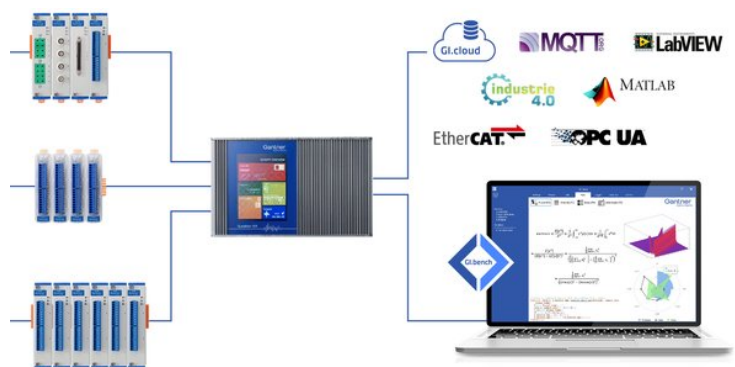
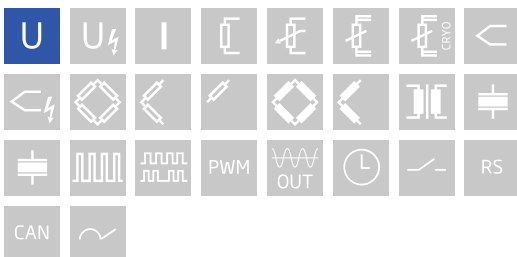
Q.bloxx XL is a new addition to the Q.series product family - the ideal DAQ solution for widely distributed installations that require higher performance and custom sensor terminations. Q.bloxx XL products are packaged in modular, DIN Rail mountable enclosures that easily snap together for system expansion. Flexibility in distribution allows for highly synchronized data that is less prone to noise due to shorter sensor cable runs to the subject.

- RS485 fieldbus interface up to 48 Mbps: LocalBus, up to 115.2 kbps: Modbus-RTU, ASCII
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Connectable to Controller Q.station X
- Power supply 10 ... 30 VDC
- DIN rail mounting (EN60715)



Key Features

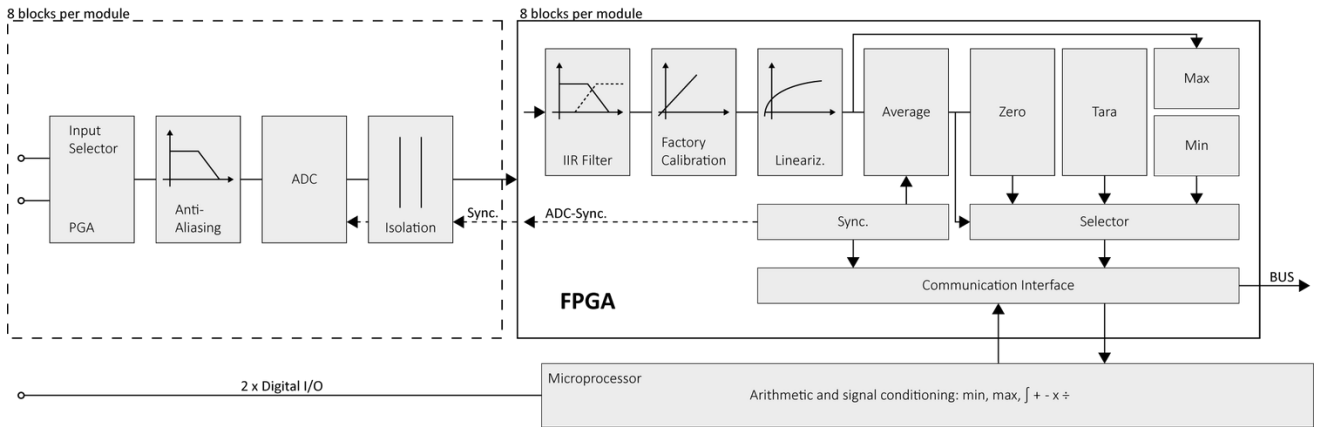
- I/O module for 4 single-axis MEMS sensors
Four 1/4-28 input sockets (4 pole) MicroCom CMR
Sensor supply galvanic isolated
- 4+4 Analog input channels
AI1,AI2,AI3 AI4 differential /single-ended switchable in groups
AI5,AI6,AI7,AI8 single-ended (e.g. for temperature input/compensation)
- High-accuracy digitization
24-bit ADC, 20 kHz sample rate per channel
- Signal conditioning
linearization, filtering, average, scaling, min/max, RMS, arithmetic, alarm
- 3-Way galvanic isolation
Channel to channel, channel to power supply, and channel to bus



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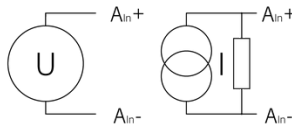
Block diagram



Technical Data

Terminal assignment 4Pole Comtronic

- 1 +15 V
- 2 Return GND
- 3 A_{in} -
- 4 A_{in} +



Analog Input

	Channels	4 + 4
		A1, A2, A3, A4
		A5, A6, A7, A8
	Isolation voltage	500 VDC channel to channel, to power supply, and channel to ground

¹ noise pulses up to 1000 VDC, continuous up to 250 VDC

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Measurement Mode Voltage

Range	±10 VDC
max. Error	±2 mV
Resolution	1.5 µV
Input impedance	> 1 MΩ
Temperature drift offset drift	< 200 µV / 10 K
Temperature drift gain drift	< 100 ppm / 10 K
Signal-to-noise ratio	> 100 dB at 100 Hz > 120 dB at 1 Hz
Long-term stability	< 50 µV / 24 h < 200 µV / 8000 h
Overvoltage protection	±200 V

Analog-to-Digital Conversion

Resolution	24-bit
Sample rate	20 kHz per channel
Modulation method	sigma-delta
Anti-aliasing filter	2 kHz, 3rd order
Digital filters	Infinite impulse response (IIR), low-pass, high-pass, band-pass, Butterworth or Bessel (2nd, 4th, 6th or 8th order), frequency range 0.1 Hz to 1 kHz (adjustable via software)
Averaging	Configurable or automatic according to the user-defined data rate

Sensor excitation

Channels	4
Voltage	15 V
Current	max. 20 mA (short circuit proof)
Accuracy	< 3 %
Load regulation	< 0.1 %
Noise	1.2 mV (RMS)

Communication Interface

Protocols	proprietary LocalBus (115200 bps to 48 Mbps, latency <100 ns) ASCII (19200 bps to 115200 bps) Modbus RTU
Data format	8E1
Electrical standard	ANSI/TIA/EIA-485-A, 2-wire

Input Power

Input voltage	10 to 30 VDC, overvoltage and overcurrent protection
Power consumption	3.5 W (approx.)
Input voltage influence	< 0.001 % / V

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Environmental Specifications

Electromagnetic compatibility (EMC)	according to IEC 61000-4 and EN 55011
Operating temperature	-20°C to +60°C
Storage temperature	-40°C to +85°C
Relative humidity	5 - 95 % at 50°C (non-condensing)

Remarks

Are subject to a warm-up period of at least 45 minutes

In a controlled electromagnetic environment¹

With configuration: Low-pass 10Hz²

Specifications subject to change without notice

¹ according to IEC 61326-1:2020

² unless otherwise stated

Mechanical information

Material	Aluminium and ABS
Measurements (W x H x D)	30 x 145 x 135mm
Weight	approx. 500 g
Protection class	IP20

Ordering Information

Article number	585228
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