

Q.bloxx XE A103

Multi-Channel Module for Voltages

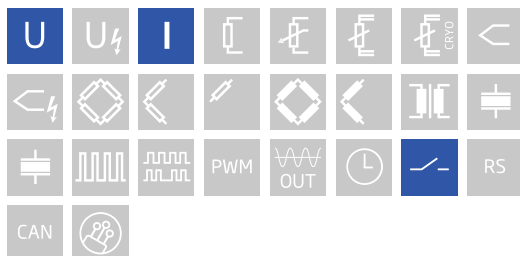
Q.bloxx XE is a new addition to the Q.series product family - the ideal EtherCAT DAQ solution for widely distributed installations that require higher performance and custom sensor terminations. Q.bloxx XE measurement modules possess integrated signal conditioning and arithmetic functions, packaged in modular, DIN Rail mountable enclosures that easily snap together for system expansion and are capable of measuring up to 100 kHz per channel with short cycle times and low jitter for accurate synchronization.

- RS-485, 2-wire, EtherCAT (LVDS)
- FoE (file access over EtherCAT, ETG.1000.5) and CoE (CAN over EtherCAT, ETG.50001.1)
- Configurable PDO mapping to optimize the data throughput
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Power supply 10 ... 30 VDC and DIN rail mounting (EN60715)



Key Features

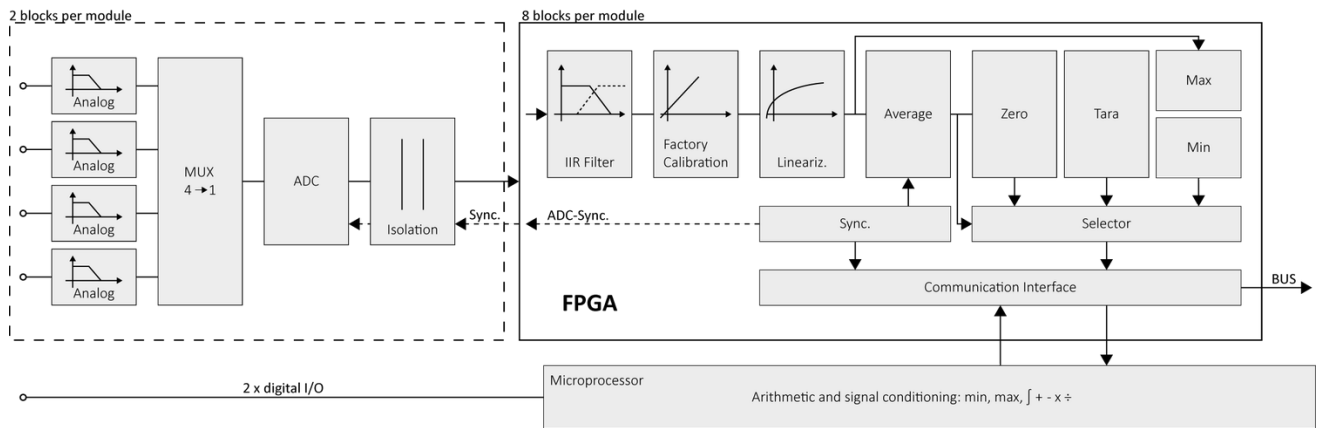
- 8 galvanic isolated input channels
differential voltage, current via shunt connector Isolation voltage 100 VDC
- High accuracy digitalization
24 bit ADC, 100 Hz sample rate per channel
- 2 digital in and 2 outputs
input: state, tare, memory reset
output: state, alarm, threshold
- Signal conditioning
linearization, digital filter, average, scaling, min/max storage, arithmetic, alarm
- Galvanic isolation
channel to channel, isolation voltage 100VDC, power supply and interface, isolation voltage 500 VDC



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Block diagram



Technical Data

Analog Input

Channels	8
Accuracy	0.01 % typical
	0.025 % in controlled environment ¹
	0.05 % in industrial area ²
Linearity error	0.01 % typical full-scale
Repeatability	0.003 % typical (within 24 h)
Isolation voltage	500 VDC channels to power supply channel to bus ³
	100 VDC continuous, channel to channel

¹ according to EN 61326 2006: appendix B

² according to EN 61326 2006: appendix A

³ noise pulses up to 1000 VDC, continuous up to 250 VDC

Measurement Mode Voltage

Error	Range	max. Error	Resolution
	±10 V	±2 mV	40 μV
Input impedance	>1 MΩ		
Long-term drift	<50 μV / 24 h	<500 μV / 8000 h	
Temperature influence	Offset drift	Gain drift	
	<50 μV / 10 K	<0.025 % / 10 K	
Signal-to-noise ratio	>100 dB at 100 Hz	>120 dB at 1 Hz	
Overvoltage protection	± 200 V		

Measurement Mode Current (Only with Q.series Terminal SR [791989])

Input range	±25 mA
Margin of error	±22 µA
Resolution	400 nA
Long-term stability	500 nA / 24 hrs
Temperature drift	< 75 ppm / 10 K
Input impedance	100 Ω

Analog/Digital-Conversion

Resolution	24-bit
Update rate	100 Hz per channel
Modulation method	Sigma-Delta
Anti-aliasing filter	20 Hz, 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 10 Hz (adjustable via software)
Averaging	configurable or automatic according to the user-defined data rate

Digital In-/Outputs

Channels	4, 2 digital inputs and 2 digital outputs
Input	status, tare, reset
Input voltage / input current	max. 30 VDC / max. 0,5 mA
Lower / upper threshold	< 2.0 V (low) / > 10 V (high)
Output	status, alarm
Contact	open drain p-channel MOSFET
Load capacity	30 VDC / 100 mA (ohmic load)

Communication interface EtherCAT

Electrical standard	RS-485, 2-wire
Protocols	EtherCAT (LVDS)

Power Supply

Input voltage	10 to 30 VDC, overvoltage and overcurrent protection
Power consumption	approx. 2 W
Input voltage influence	< 0.001 % / V

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

Remarks

Warm-up time	Validity of all listed specifications are subject to a warm-up period of at least 45 minutes
	Specifications subject to change without notice

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Mechanical information

Material	Aluminum and ABS
Measurements (W x H x D)	30x 145 x 135mm
Weight	approx. 500 g

Ordering Information

Article number	541119
Accessories	Terminal SR, article number 791989

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