Q.bloxx XL A141

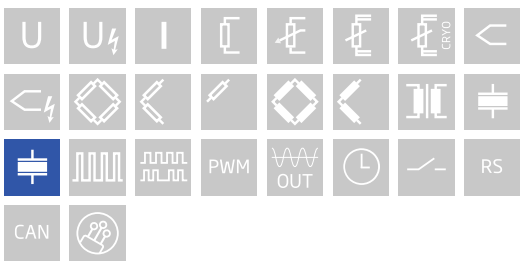
Charge Amplifier Module for Piezoelectrical Sensors

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
- Connectable to Controller Q.station X
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Power supply 10 ... 30 VDC
- DIN rail mounting (EN60715)

Key Features

- **Engineered with Kistler**
- **Galvanic isolation**
  500 VDC channel to channel, channel to power supply, and channel to bus
- **4 channels charge amplifier**
  For piezoelectric sensors
  Measuring ranges: 1000...1000000 pC
- **Fast high accuracy digitalization**
  24 bit ADC 100 kHz samlpe rate per channel
- **Signal conditioning**
  linearization, digital filter, average, scaling, min/max storage, arithmetic, alarm



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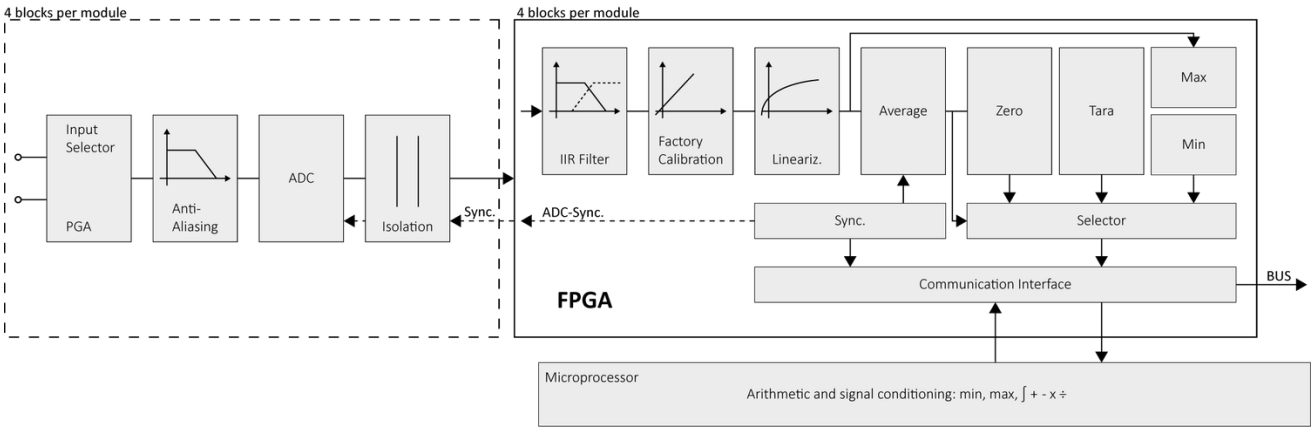
Block diagram



Technical Data

Analog Inputs

Channels	4
Linearity error	0.01 % typical
Repeatability	0.003 % typical (within 24 h)
Isolation voltage	500 VDC channel to channel to power supply channel to bus

Measurement Mode Charge

Input range	1000 to 1000000 pC		
Error	< ± 1 % FSO		
Temperature coefficient	< 500 ppm / 10K		
Long term drift	< 20 µV / 24h	<200 µV / 8000h	
Drift	0,5 pCpp		
Frequency range	0 to 20000 Hz		
Reset-Measure-jump	< ± 0.3 pC		
Min. sensor impedance	> 10^{11} Ω		
Overload	± 105 % FS		
Crosstalk between channels	< 0.5 pC		
Time constant	Range [pC]	long [s]	short [s]
	± 1000	> 10000	1.3
	± 10000	> 100000	1.3
	± 100000	> 100000	123
	± 1000000	> 100000	123

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Analog/Digital-Conversion

Resolution	24-bit
Update rate	100 kHz
Modulation method	Sigma-Delta (group delay time 380 µs)
Anti-aliasing filter	20 / 2 kHz, 2nd order
Digital filters	Infinite impulse response (IIR), low-pass, high-pass, band-pass, band-stop, Butterworth or Bessel (2nd, 4th, 6th or 8th order), frequency range 0.1 Hz to 1 kHz in steps of 0.1 (adjustable via software)
Averaging	configurable or automatic according to the selected data rate

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

Communication Interface Localbus

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

Power Supply

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

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

Mechanical information

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

Ordering Information

Article number	519730

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