

Q.brixx XL A111 BNC

Measurement Module for Voltages and IEPE Sensors

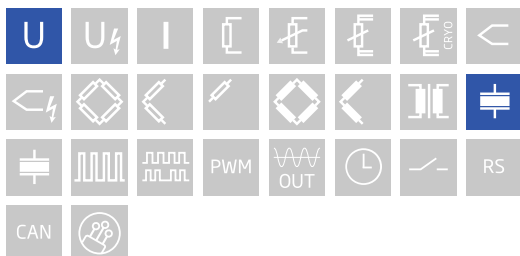
Q.brixx XL is a new addition to the Q.series product family - the ideal DAQ solution for on-the-go applications requiring higher performance in potentially harsh environments. Q.brixx XL DAQ systems consist of up to 16 measurement modules and an integrated, high-performance controller for communication, control, and data logging purposes, all within a robust aluminum housing capable of withstanding severe shock and vibration without sacrificing performance.

- High density and flexibility with 16 modules in one system in any constellation
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Connectable to Controller Q.station
- Power supply 10 ... 30 VDC



Key Features

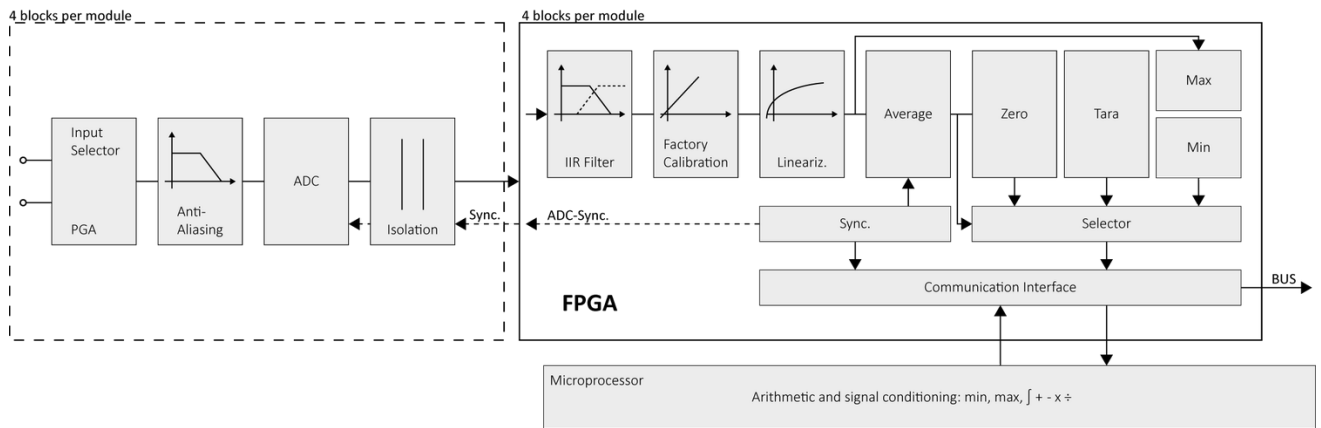
- 4 galvanic isolated analog input channels
IEPE sensors, voltage
- High-accuracy digitization
24-bit ADC, 100 kHz sample rate per channel
- Signal conditioning
16 virtual channels, linearization, digital filter, average, scaling, min/max storage, RMS, arithmetic, alarm
- Configurable input ranges
 ± 100 mV, ± 1 VDC, ± 10 VDC
- Galvanic isolation
500 VDC channel to channel, channel to power supply, and bank



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Block diagram



Technical Data

Analog Input

Channels	4
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 hrs)
Input impedance	>1 MΩ (unless otherwise stated)
Isolation voltage	500 VDC channels, to power supply, channel to bus ³

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

Voltage Measurement

Input range	Margin of error	Resolution	Input impedance
±100 mV	±20 µV	12 nV	>1 MΩ
±1 V	±200 µV	120 nV	>1 MΩ
±10 V	±2 mV	1.2 µV	>1 MΩ
Long-term stability (range ±1 V)	<20 µV / 24 hrs	<200 µV / 8000 hrs	
Temperature drift (range ±1 V)	<50 µV / 10 K Offset drift	<0.01 % / 10 K Gain drift	
Signal-to-noise ratio	>90 dB at 1 kHz	>120 dB at 1 Hz	

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IEPE Measurement

Input range	Margin of error	Resolution	Input impedance
±1 V	±1 mV	120 nV	>1 MΩ
±10 V	±10 mV	1.2 μV	>1 MΩ
Sensor excitation	4 mA ±10% constant current		
Compliance voltage	22 VDC ±10%		
Input frequency range	0.5 Hz to 20 kHz		
Temperature drift (range ±1 V)	<50 μV / 10 K Offset drift	<0.025 % / 10 K Gain drift	

Analog to Digital Conversion

Resolution	24-bit
Sample rate	100 kHz per channel
Modulation method	sigma-delta
Anti-aliasing filter	20 kHz, 3rd order
Digital filters	Infinite impulse response (IIR), low-pass, high-pass, Butterworth or Bessel (2nd, 4th, 6th or 8th order), frequency range 0.1 Hz to 20 kHz (adjustable via software)
Averaging	configurable or automatic according to the selected data rate

Communications 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

Input Power

Input voltage	10 to 30 VDC, overvoltage and overcurrent protection
Power consumption	2.5 W (approx.)
Input voltage influence	<0.001 % / V

Environmental Specifications

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

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
Measurements (W x H x D)	30x 137 x 135mm
Weight	approx. 500 g

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Ordering Information

Article number	523927
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