

Q.bloxx XL A111

Measurement Module for IEPE Sensors and Voltages

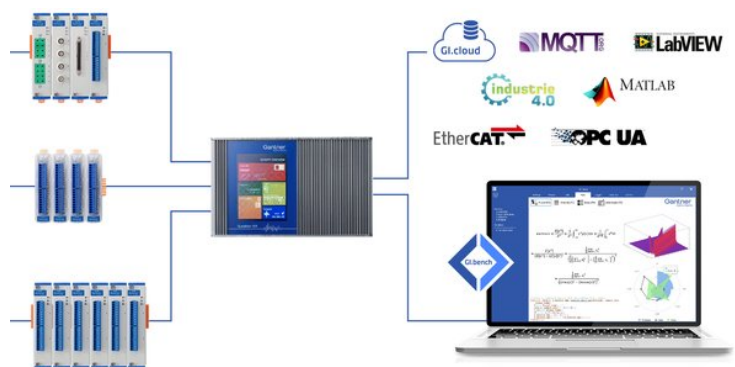
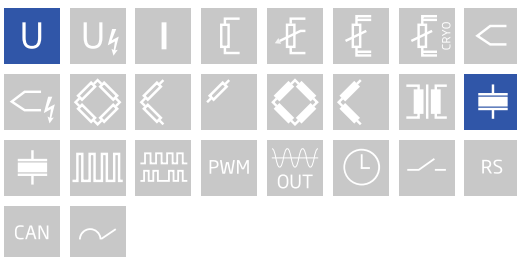
Q.bloxx XL is a new addition to the Q.series product family - the ideal DAQ solution for widely distributed installations that require higher performance and custom sensor terminations. Q.bloxx XL products are packaged in modular, DIN Rail mountable enclosures that easily snap together for system expansion. 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

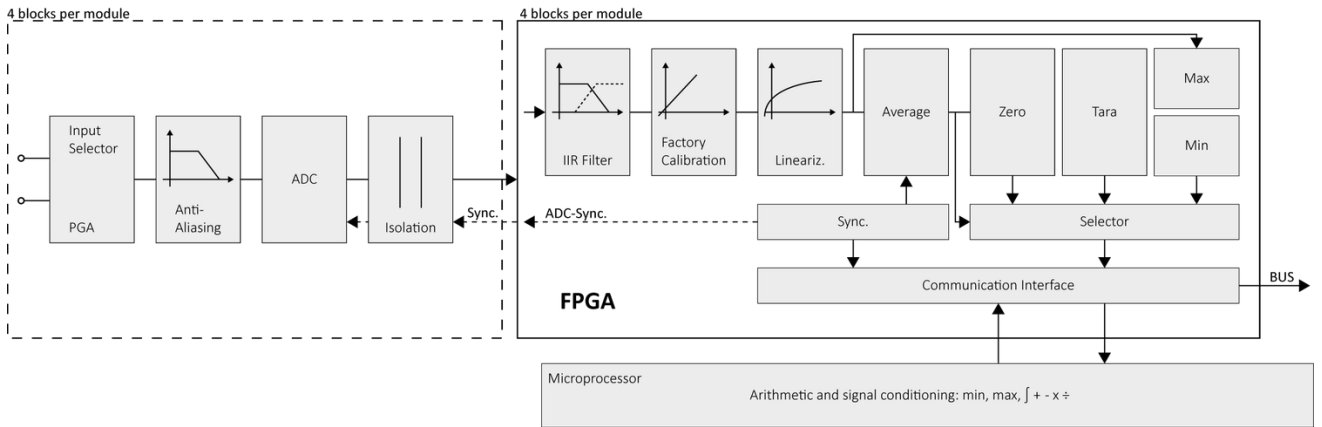
- 4 galvanic isolated analog input channels
IEPE sensors, voltage
- Configurable input ranges
 ± 100 mV, ± 1 VDC, ± 10 VDC
- High-accuracy digitization
24-bit ADC, 100 kHz sample rate per channel
- Signal conditioning
16 virtual channels, linearization, digital filter, average, scaling, min/max storage,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



Q.bloxx XL A111

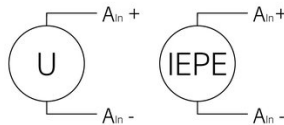
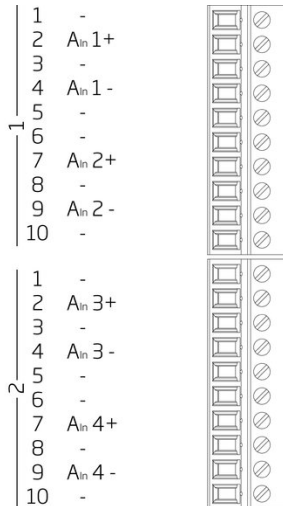
Measurement Module for IEPE Sensors and Voltages

Block diagram



Technical Data

Terminal assignment 10pole screw



Analogue Input

Channels	4
Isolation voltage	500 VDC channels, to power supply, channel to bus ¹
Oversvoltage protection	±30 V
Max. Common-mode voltage (CMV)	250 VDC

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

Q.bloxx XL A111

Measurement Module for IEPE Sensors and Voltages

Measurement Mode Voltage

Range	±10 V	±1 V	±100 mV
Max. Error	±2 mV	±200 µV	±20 µV
Resolution	1.2 µV	120 nV	12 nV
Input impedance	> 1 MΩ		
Temperature influence offset drift	< 50 µV / 10 K		
Temperature influence gain drift	< 0.01 % / 10 K		
Dynamic range	109 dB @ ± 10 V		
Signal-to-noise ratio	> 90 dB at 1 kHz		
	> 120 dB at 1 Hz		
Long-term stability	< 20 µV / 24 h		
	< 200 µV / 8000		

Measurement Mode IEPE

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	24 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/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 1 Hz to 10 kHz (adjustable via software)
Averaging	Configurable or automatic according to the selected data rate

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	2.5 W (approx.)
Input voltage influence	< 0.001 % / V

Q.bloxx XL A111

Measurement Module for IEPE Sensors and Voltages

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

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	495733
----------------	--------

Gantner Instruments

Austria | Germany | France | Sweden | India | USA | China | Singapore
Montafonerstraße 4 · A-6780 Schruns · T +43 55 56 · 77 463-0

office@gantner-instruments.com
www.gantner-instruments.com