

# Q.bloxx XL A111 HB

Measurement Module for IEPE Sensors and Voltages

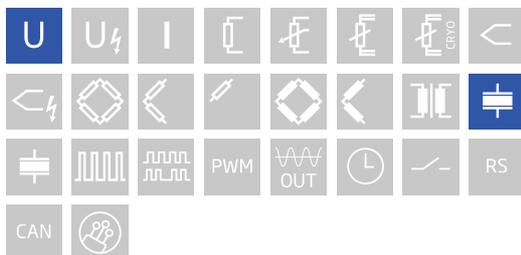
Q.bloxx XL is a new addition to the Q.series product family - the ideal DAQ solution for widely distributed installations that require higher performance and custom sensor terminations. Q.bloxx XL products are packaged in modular, DIN Rail mountable enclosures that easily snap together for system expansion. 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  
 $\pm 100\text{ mV}$ ,  $\pm 1\text{ VDC}$ ,  $\pm 10\text{ VDC}$
- High-accuracy digitization  
24-bit ADC, 100 kHz sample rate per channel, high bandwidth 45 kHz
- Signal conditioning  
16 virtual channels, linearization, digital filter, average, scaling, min/max storage, RMS, arithmetic, alarm
- Galvanic isolation  
500 VDC channel to channel, channel to power supply, and bank



### Technical Data

#### Analog Input

Channels	4
Accuracy	0.01 % typical
	0.025 % in controlled environment <sup>1</sup>
	0.05 % in industrial area <sup>2</sup>
Linearity error	0.01 % typical full-scale
Repeatability	0.003 % typical (within 24 hrs)
Input impedance	>10 MΩ (unless otherwise stated)
Isolation voltage	500 VDC channels, to power supply, channel to bus <sup>3</sup>
Overvoltage protection	±30 V
Max. Common-mode voltage (CMV)	250 VDC

<sup>1</sup> according to EN 61326 2006: appendix B

<sup>2</sup> according to EN 61326 2006: appendix A

<sup>3</sup> noise pulses up to 1000 VDC, continuous up to 250 VDC

#### Measurement Mode Voltage

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	
Dynamic range	109 dB @ ±10 V		
Input impedance	1.2 MΩ    50 pF		

#### 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 45 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
Bandwidth	45 kHz, ±3 db
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

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## Communication Interface Localbus

Protocols	proprietary Localbus (115200 bps to 48 Mbps, latency <100 ns) ASCII (19200 bps to 115200 bps) Modbus RTU
Data format	BE1
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

## 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

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	694936
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