

# Q.bloxx XL A121 2xLEMO 2P8

High Isolation Multi-Purpose Module

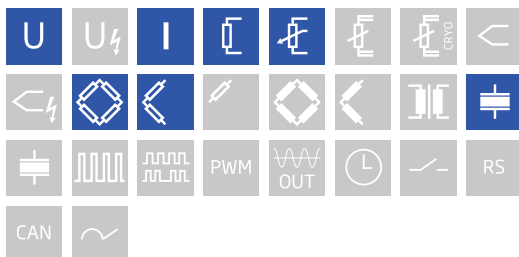
Q.bloxx XL is a new addition to the Q.series product family - the ideal DAQ solution for widely distributed installations that require higher performance and custom sensor terminations. Q.bloxx XL products are packaged in modular, DIN Rail mountable enclosures that easily snap together for system expansion. 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
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Connectable to Controller Q.station X
- Power supply 10 ... 30 VDC
- DIN rail mounting (EN60715)



## Key Features

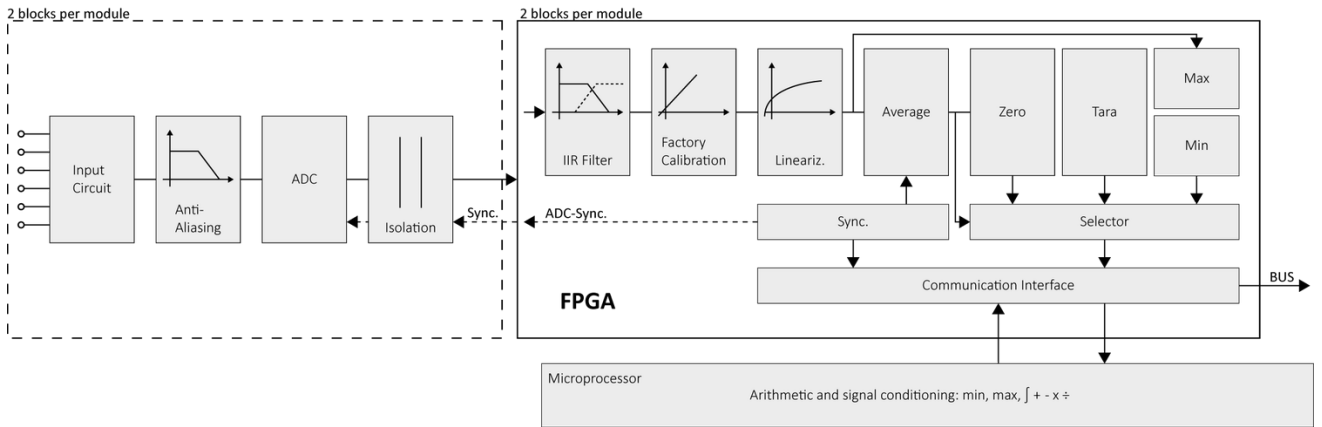
- Fast high accuracy digitalization  
24 bit ADC, 100 kHz sample rate each channel
- Categories  
1000 V CAT II and 600 V CAT III
- 2 high galvanic isolated input channels  
Pt100, PT1000, resistance 2- and 4 wire, isolation voltage 1200 VDC permanent
- Signal conditioning  
linearization, digital filter, average, scaling, min/max storage, arithmetic, alarm
- Galvanic isolation  
channel to channel to power supply and to interface



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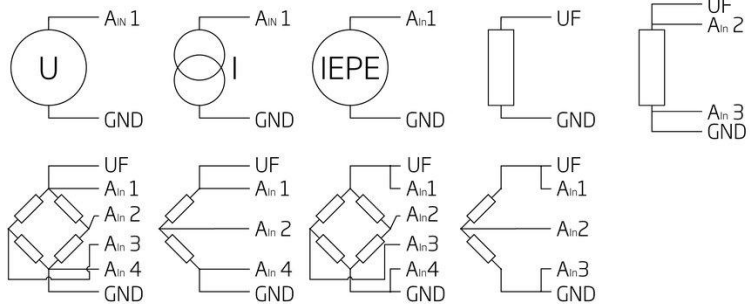
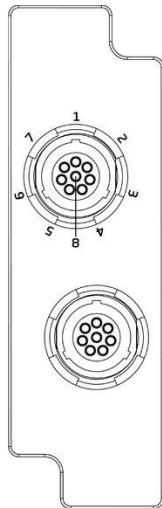
## Block diagram



## Technical Data

### Terminal assignment LEMO 2P 8pole

- |   |                   |
|---|-------------------|
| 1 | -                 |
| 2 | -                 |
| 3 | UF                |
| 4 | A <sub>in</sub> 1 |
| 5 | A <sub>in</sub> 2 |
| 6 | A <sub>in</sub> 3 |
| 7 | A <sub>in</sub> 4 |
| 8 | GND               |



Mounting socket: LEMO CKC.H08.SLLG Type C coding

### Analog Inputs

Channels	2
Isolation voltage	1200 VDC continuous, channel to channel to power supply channel to bus

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## Measurement Mode Voltage

Error	range	max. error	resolution
	±10 V	±2 mV	1.2 µV
	±1 V	±0,2 mV	120 nV
	±100 mV	±20 µV	12 nV
Input impedance	> 10 MΩ		
Long-term drift	< 20 µV / 24 h	< 200 µV / 8000 h	
Temperature influence	Offset drift	Gain drift	
	< 50 µV / 10 K	< 0.02 % / 10 K	
Signal-to-noise ratio	> 100 dB at 100 Hz		

## Measurement Mode Current

Error	range	max. error	resolution
	Internal shunt resistor 50 Ω	±25 mA	±5 µA
Long-term drift	< 0.5 µA / 24 h	< 5 µA / 8000 h	
Temperature influence	Offset drift	Gain drift	
	< 1 µA / 10 K	< 0.025 % / 10 K	

## Measurement Mode Resistance / RTD

Error	range	max. error	resolution
Resistance, 2-wire	100 kΩ	±100 Ω	12 mΩ
Resistance, 2- and 4-wire	4 kΩ	±1 Ω	0.5 mΩ
Resistance, 2- and 4-wire	400 Ω	±0.1 Ω	48 µΩ
Pt100, 2- and 4-wire	-200 to +850°C	±0.25°C	0.2 m°C
Pt1000, 2- and 4-wire	-200 to +850°C	±1°C	0.2 m°C
Long-term drift	< 0.01°C / 24 h	< 0.1°C / 8000 h	
Temperature influence	Offset drift (range 400 Ω)	Gain drift	
	< 10 mΩ / 10 K	< 0.025 % / 10 K	

## Measurement Mode Potentiometer

Allowable potentiometer resistance	1 kΩ to 10 kΩ		
Long-term drift	< 0.01 % / 24 h	< 0.1 % / 8000 h	
Temperature influence	Offset drift	Gain drift	
	< 0.0001 / 10 K	< 0.02 % / 10 K	

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### Measurement Mode Bridge

Bridge configuration(s)	half- and full-bridge, 5-/6-wire	
Accuracy class	0.05	
Bridge resistance	>100 Ω	
Bridge excitation	2.5 VDC, nominal	
Measurement range	±2.5 mV/V, ±5 mV/V, ±10 mV/V, ±25 mV/V, ±500 mV/V	
Long-term drift	<0.12 μV/V / 24 h	<1.2 μV/V / 8000 h
Temperature influence	Offset drift	Gain drift
	<0.2 μV/V / 10 K	<0.05 % / 10 K

### Measurement Mode IEPE Sensor

	range	max. error	resolution
Error	±10 V	±10 mV	1.2 μV
	±1 V	±1 mV	120 nV
Supply	constant current 4 mA		
Input frequency range	0.5 Hz to 10 kHz		
Temperature influence	Offset drift (range 10 V)	Gain drift	
	<10 μV / 10 K	<0.025 % / 10 K	

### Analog/Digital Conversation

Resolution	24-bit
Update rate	100 kHz (measurement thermocouple 8 Hz)
Modulation method	Sigma-Delta
Anti-aliasing filter	20 kHz, 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 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	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
Pollution degree	1

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## High Isolation Multi-Purpose Module

### Remarks

Are subject to a warm-up period of at least 45 minutes

in a controlled electromagnetic environment<sup>1</sup>

With configuration: Low-pass 10Hz<sup>2</sup>

Specifications subject to change without notice

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

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

### High Voltage Warnings



- Attention! High voltage device! - Danger to life and health in case of non regular use.
- Only special and sufficient educated persons are permitted to handle this device only.
- All metal housing parts must be safe and permanently connected to protected earth PE.
- Only contact protection plugs and cables may be used. All parts must be approved for voltages up to 1200 VDC.
- During installation, the whole system must be without voltage and safely be disconnected from the mains.
- All relevant safety regulations must be considered.
- Do not operate with damaged casing.

Base is the european standard EN61010-1

### Mechanical Information

Material	Aluminum and ABS
Measurements (W x H x D)	30x 145 x 160mm
Weight	approx. 500 g
Protection class	IP20

### Ordering Information

Article number	778232
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