

# Q.raxx XL A123

## High Isolation Module for Voltages

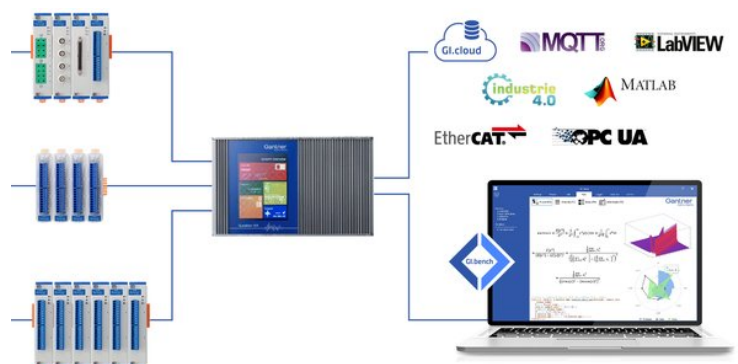
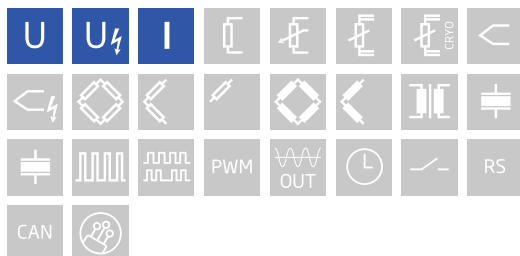
Q.raxx XL is a new addition to the Q.series product family - the ideal 19" rackmount DAQ solution for applications that require high channel density and custom sensor terminations. Q.raxx XL DAQ systems can utilize an integrated, high-performance controller for communication, control, and data logging purposes. With a controller, multiple Q.raxx XL systems can be synchronized to each other allowing for efficient DAQ distribution with low jitter and gradual expansion up to thousands of channels.

- High Density  
up to 13 I/O modules per Q.raxx 3U chassis with up to 16 channels per I/O module
- User Friendly  
front panel indicators for module status, power, and input range error
- Fully Customizable  
multiple front panel termination options available
- Maximum Flexibility  
parallel communication available in TCP/IP, CAN, PROFIBUS, Modbus, and EtherCAT
- Gantner's Quality Standard  
integrated filtering, galvanic isolation & signal/sensor conditioning per channel



### Key Features

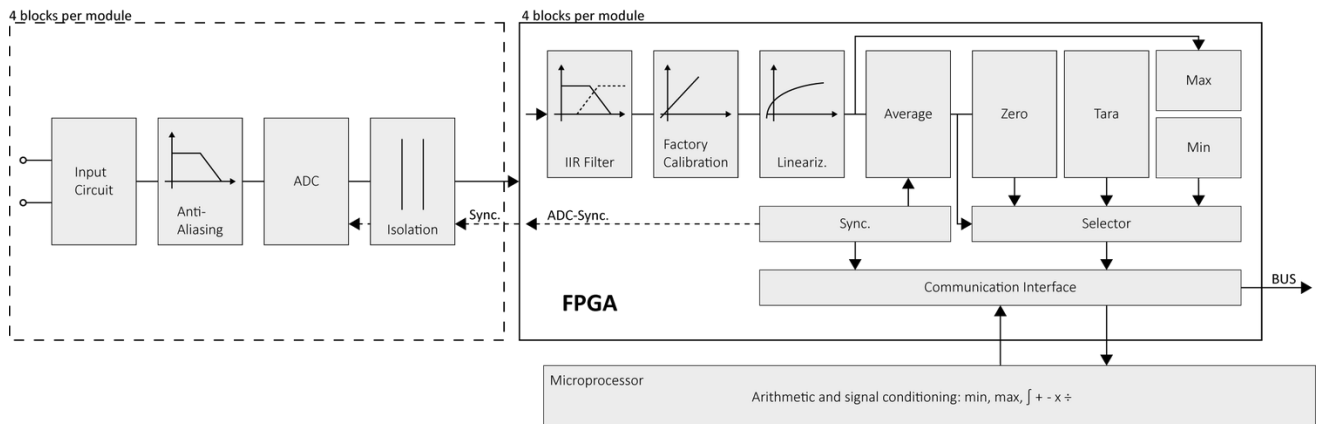
- 4 galvanically isolated input channels  
Voltages at high potential, ranges 100 mV, 1 V, 10 V
- Signal conditioning  
16 virtual channels, linearization, digital filter, average, scaling, min/max storage, RMS, arithmetic, alarm
- Fast high accuracy digitalization  
24 bit ADC, 100 kHz sample rate per channel
- Galvanic isolation  
channel to channel to power supply and to interface  
isolation voltage 1200 VDC / 848 VACrms  
test voltage 5 kVDC over 1 minute
- Categories  
1000 V CAT II and 600 V CAT III



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## Block diagram



## Technical Data

### Analog Inputs

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 h)
Isolation voltage	1200VDC continuous, channel to channel to power supply channel to bus <sup>3</sup>

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

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

<sup>3</sup> High voltage lifetime (TDD B E Model): time to fail approx. 4 years at 1200 VDC and 60 °C

### Measurement Mode Voltage

Input-type	differential		
Error	range	max. error	resolution
	±10 V	±2 mV	1.2 µV
	±1 V	±200 µV	120 nV
	±100 mV	±20 µV	12 nV
Input impedance	> 10 MΩ		
Temperature influence	Offset drift	Gain drift	
	< 200 µV / 10 K (range ±10 V)	<0.01 % / 10 K	
	<50 µV / 10 K (range ±1 V)		
	<50 µV / 10 K (range ±100 mV)		
Long-term stability	at range ±10 V	at range ±1 V and ±100 mV	
	< 50 µV / 24 h	< 10 µV / 24 h	
	< 200 µV / 8000 h	< 40 µV / 8000 h	
Signal-to-noise ratio	>100 dB at 100 Hz		
overvoltage protection	100 VDC continuous	500 VDC max. 100 ms	

### Analog/Digital-Conversion

Resolution	24-bit
Update rate	100 kHz
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

### 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

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## High Voltage Warnings



- Attention High voltage device, Danger for 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 safely and continuous 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.

Base is the european standard EN61010-1

## Mechanical information

Material	Aluminum
Measurements (W x H x D)	30x 128 x 150mm
Weight	approx. 200 g

## Ordering Information

Article number	530824
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