Q.raxx XL A108 BNC

## Voltage Measurement Module

Gantner
instruments

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

- **8 Analog input channels**
  differential voltage, current (with shunt resistor)

- **High-accuracy digitization**
  24-bit ADC, 20 kHz sample rate per channel

- **Signal conditioning**
  linearization, filtering, average, scaling, min/max, RMS, arithmetic, alarm

- **3-Way galvanic isolation**
 500 VDC channel to channel, channel to power supply, and channel to bus
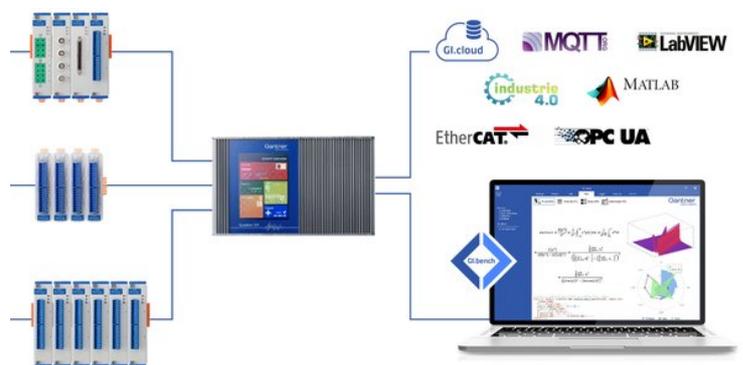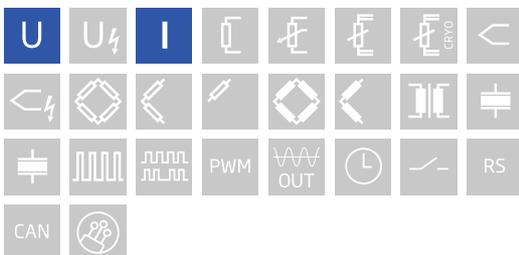
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Block diagram
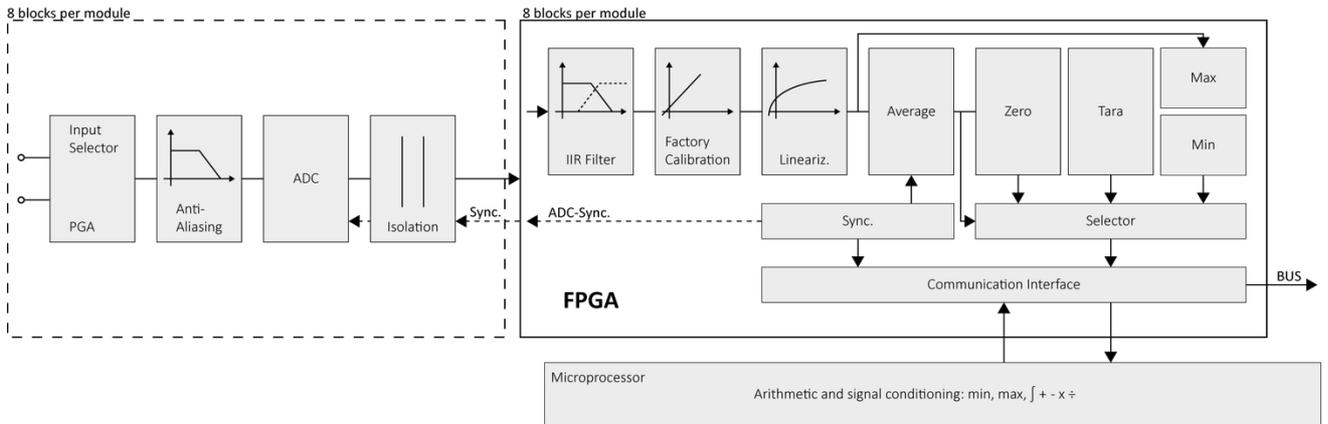
Technical Data

Terminal assignment BNC

1   A_{IN} +
2   A_{IN} -

1 = BNC Soul
2 = BNC Hull
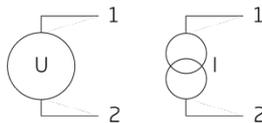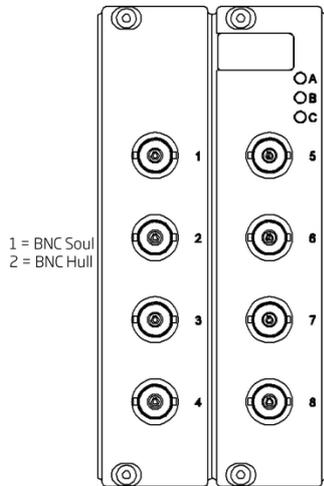
Analog Input

Channels	8
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)
Isolation voltage	500 VDC channel to channel, to power supply, and 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

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Voltage Measurement

Input range	±10 VDC	
Margin of error	±2 mV	
Resolution	1.5 µV	
Long-term stability	<50 µV / 24 hrs	<200 µV / 8000 hrs
Temperature drift	<200 µV / 10 K Offset drift	<100 ppm / 10 K Gain drift
Signal-to-noise ratio	>100 dB at 100 Hz	>120 dB at 1 Hz
Input impedance	> 1 MΩ	
Overvoltage protection	± 200 V	

Measurement Mode Current (Only with Q.series Terminal SR)

Input range	±25 mA
Margin of error	±22 µA
Resolution	15 nA
Long-term stability	<500 nA / 24 hrs
Temperature drift	<150 ppm / 10 K
Input impedance	100 Ω

Analog-to-Digital Conversion

Resolution	24-bit
Sample rate	20 kHz per channel
Modulation method	sigma-delta
Anti-aliasing filter	2 kHz, 3rd order
Digital filters	Infinite impulse response (IIR), low-pass, high-pass, band-pass, band-stop, Butterworth or Bessel (2nd, 4th, 6th or 8th order), frequency range 0.1 Hz to 1 kHz (adjustable via software)
Averaging	configurable or automatic according to the user-defined 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

Input Power

Input voltage	10 to 30 VDC, overvoltage and overcurrent protection
Power consumption	2 W (approx.)
Input voltage influence	<0.001 % / V

Environmental Specifications

Electromagnetic compatibility (EMC)	according to IEC 61000-4 and EN 55011
Operating temperature	-20°C to +60°C
Storage temperature	-40°C to +85°C
Relative humidity	5 - 95 % at 50°C (non-condensing)

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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)	60x 128 x 120mm
Weight	approx. 300 g

Ordering Information

Article number	593025

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