

Q.raxx XL A111 HB

Measurement Module for IEPE Sensors and Voltages

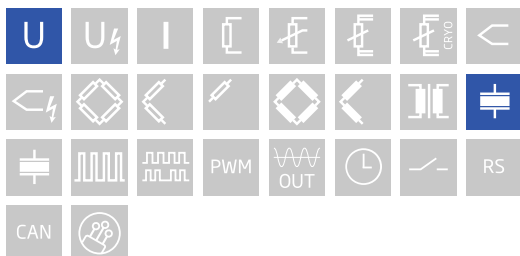
Q.raxx XL is a new addition to the Q.series product family - the ideal 19" rackmount DAQ solution for applications that require high channel density and custom sensor terminations. Q.raxx XL DAQ systems can utilize an integrated, high-performance controller for communication, control, and data logging 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 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, 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 ¹
	0.05 % in industrial area ²
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 ³
Overvoltage protection	±30 V
Max. Common-mode voltage (CMV)	250 VDC

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

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		
Temperature drift (range ±1 V)	<50 μV / 10 K Offset drift		
Signal-to-noise ratio	>90 dB at 1 kHz		
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	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

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
Measurements (W x H x D)	30x 128 x 120mm
Weight	approx. 200 g

Ordering Information

Article number	694734
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