

Q.raxx EC slimline A108 -16

Voltage Measurement Module

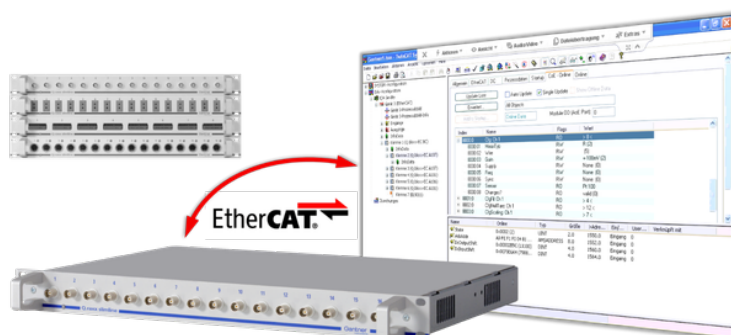
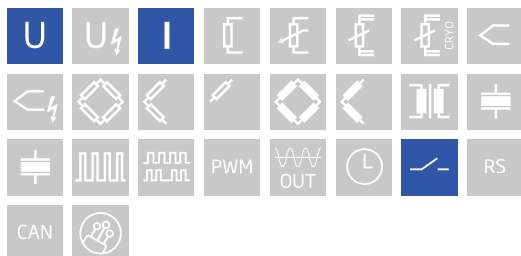
Q.raxx EC slimline is Q.series' highest density 19" 1U rackmount EtherCAT DAQ system - the ideal solution for boom box installations or applications that require maximum channel density and custom sensor terminations. The Q.raxx EC slimline utilizes an integrated EtherCAT bus coupler for communication and is capable of sampling up to 100 kHz with short cycle times and low jitter for accurate synchronization. In addition to available variations, the Q.raxx EC slimline is fully customizable to your specific measurement needs.

- FTP Server and FTP Client functionality configurable function
- Optional fieldbus interface EtherCAT, EtherCAT according specification ETG, 254 read and 254 write variable with 10 kHz
- Ethernet interface for configuration and data output FTP, TCP/IP, UDP
- High data rate over Ethernet, 16 real variables with 10 kHz (block transfer), 64 real variables with 300 Hz (online)
- Data buffer memory dyn. 16 MByte (RAM), stat. 128 MByte (flash) data buffer at block transfer of measurements
- PAC functionality



Key Features

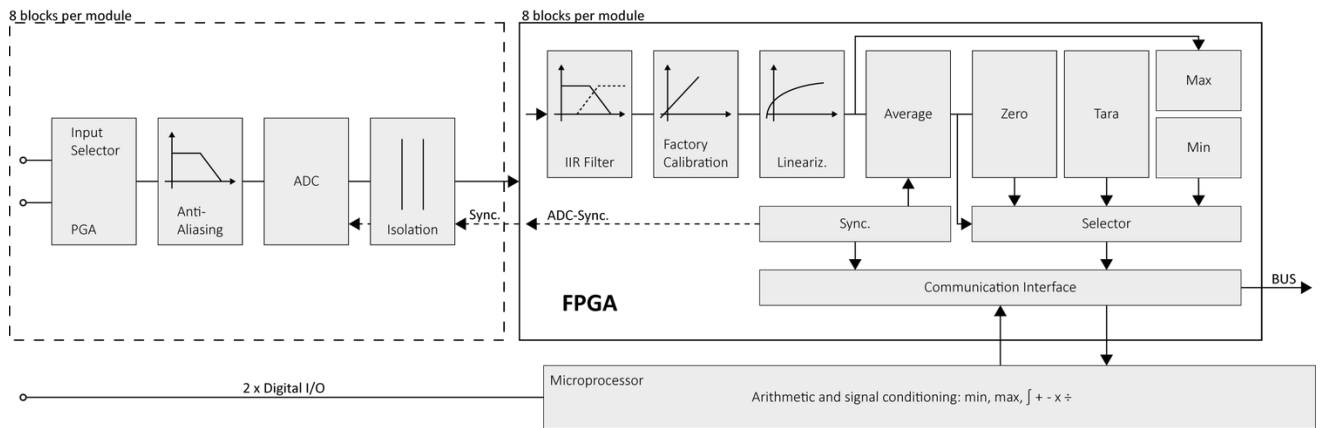
- 16 Analog input channels
differential voltage, current (with shunt resistor)
- 2 Digital inputs and outputs
status, trigger, tare, alarm, command
- High-accuracy digitization
24-bit ADC, 10 kHz sample rate per channel
- Signal conditioning
linearization, filtering, average, scaling, min/max, RMS, arithmetic, 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

Analog Input Slimline

Channels	16
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 channels, to power supply, 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

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 [791989])

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

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Voltage Measurement Module

Digital I/Os

Channels	4 (2 digital inputs and 2 digital outputs)
Mode(s) of operation	status, tare, reset
Input voltage	30 VDC max.
Logic voltage	< 2 VDC (Low) > 10 VDC (High)
Mode(s) of operation	status, alarm
Output voltage	10 to 30 VDC (external supply required)
Contact	open drain p-channel MOSFET
Load capacity	30 VDC / 100 mA (ohmic load)

Analog to Digital Conversion

Resolution	24-bit
Sample rate	10 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
Averaging	configurable or automatic according to the user-defined data rate

Communication Interface

Protocols	proprietary Localbus (115200 bps to 24 Mbps, latency <100 ns) ASCII (19200 bps to 115200 bps) Modbus RTU Profibus-DP (19200 bps to 12 Mbps) (special Firmware required)
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)

Remarks

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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Mechanical information

Type	19" Standard, 1 Unit
Measurements (W x H x D)	444 x 44 x 260 mm
Weight	approx. 2000 g

Ordering Information

Article number	463223
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