

Q.raxx EC slimline A104 -16

Thermocouple and Low Voltage Measurement Module

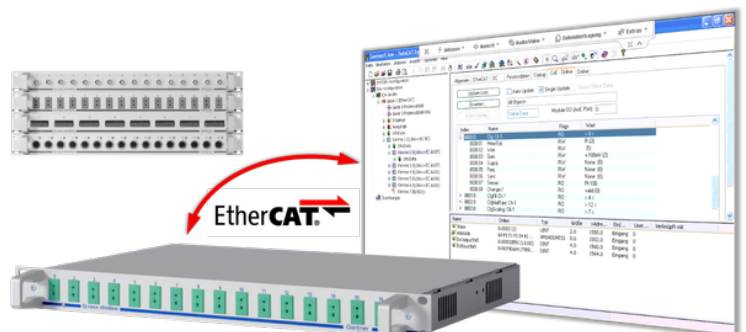
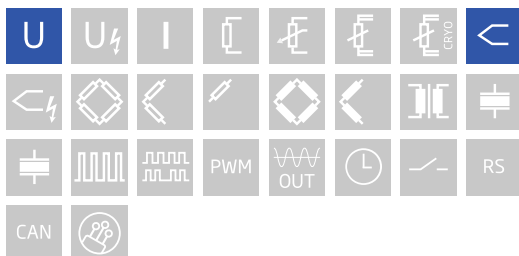
Q.raxx EC slimline is Q.series' highest density 19" 1U rackmount EtherCAT DAQ system - the ideal solution for boom box installations or applications that require maximum channel density and custom sensor terminations. The Q.raxx EC slimline utilizes an integrated EtherCAT bus coupler for communication 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

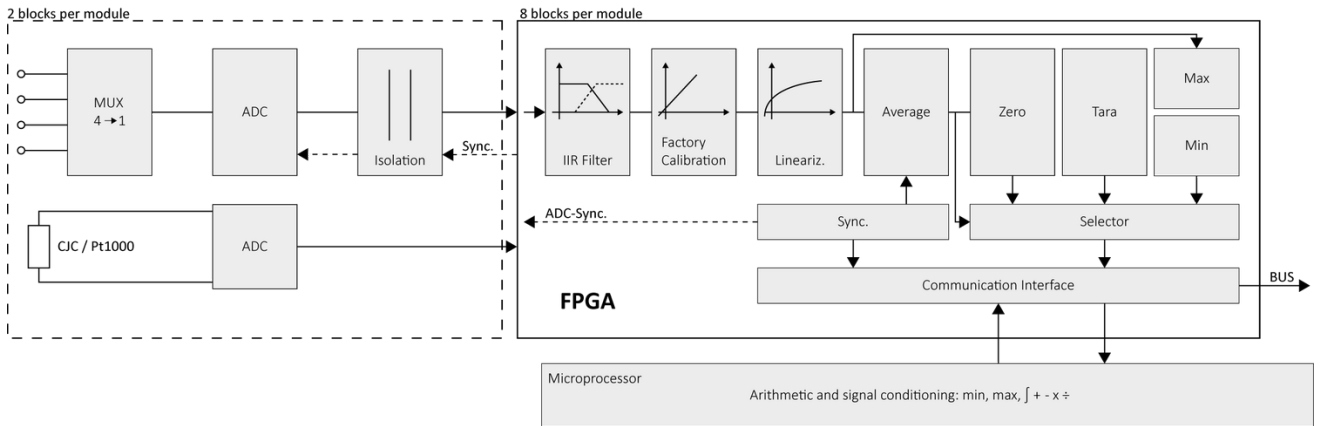
- 16 analog input channels thermocouple (type B / E / J / K / L / N / R / S / T / U), voltage (± 80 mV)
- High-accuracy digitization 24-bit ADC, 100 Hz sample rate per channel, 50/60 Hz mains rejection
- Automatic linearization correction optimal position of the interpolation points adjusted to the input range
- Open thermocouple detection detect broken wire, loose connection or thermocouple burnout
- 3-Way galvanic isolation 100 VDC channel to channel, 500 VDC channel to power supply and bank
- Electromagnetic compatibility (EMC) according to IEC 61000-4 and EN 55011



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Block diagram



Technical Data

Analog Inputs 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 h)
Isolation voltage	500 VDC channels to power supply channel to bus ³
	100 VDC continuous, channel to channel

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	±80 mV	
Margin of error	±10 µV	
Resolution	10 nV	
Long-term stability	<1 µV / 24 hrs	<10 µV / 8000 hrs
Temperature drift	<2 µV / 10 K Offset drift	<0.02 % / 10 K Gain drift
Signal-to-noise ratio	>100 dB at 100 Hz	

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Thermocouple Measurement

	Type	Range	Adjusted with cold junction compensation	Not adjusted, with CJC terminal
Deviation in the relevant Temperature range The specifications are valid with enabled mains frequency rejection 50 Hz resp. 60 Hz	Type B	400°C to 1820°C	< ±1.5 °C	< ±2.5°C
	Type E, J, K	-100°C to 1000°C	< ±0.5°C	< ±1°C
	Type E	-270°C to 1000°C	< ±0.8°C	< ±1°C
	Type K	-270°C to 1372°C	< ±0,8°C	< ±1°C
	Type L	-200°C to 900°C	< ±0.5°C	< ±1°C
	Type N	-100°C to 1000°C	< ±0.5°C	< ±1°C
	Type N	-270°C to 1300°C	< ±0.8°C	< ±1°C
	Type R, S	-50°C to 1768°C	< ±1°C	< ±1.5°C
	Type T, U	-100°C to 400°C	< ±0.5°C	< ±1°C
	Type T	-270°C to 400°C	< ±0.8°C	< ±1°C
Long-term drift	< 0.025°C / 24 h		< 0.05°C / 8000 h	
Temperature influence	Offset drift		Gain drift	
	< 0.05°C / 10 K		< 0.02% / 10 K	
Uncertainty CJC	< 0.3°C			

Analog-to-Digital Conversion

Resolution	24-bit
Sample rate	100 Hz per channel fast mode 10 Hz per channel with 60 Hz mains frequency rejection 6 Hz per channel with 50 Hz mains frequency rejection
Modulation method	sigma-delta
Digital filters	Infinite impulse response (IIR), low-pass, Butterworth or Bessel (2nd, 4th, 6th or 8th order), frequency range 0.1 Hz to 10 Hz (adjustable via software)
Averaging	configurable or automatic according to the user-defined data rate

Environmental Specifications

Operating temperature	-20°C to +60°C
Storage temperature	-40°C to +85°C
Relative humidity	5 - 95 % at 50°C (non-condensing)

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	462828
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