

Q.raxx XE A124

High Isolation Module for Thermocouples

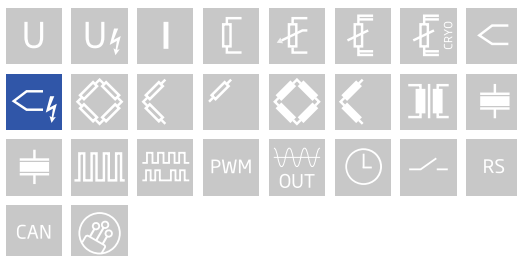
Q.raxx XE is an new addition to the Q.series product family - the ideal 19" rackmount EtherCAT DAQ solution for applications that require high channel density and custom sensor terminations. Q.raxx XE DAQ systems can consist of an integrated EtherCAT bus coupler for communication and 10 measurement modules capable of up to 100 kHz sampling per channel with short cycle times and low jitter for accurate synchronization

- According 19"-standard IEC
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- High density and flexibility with 13 modules in one system in any constellation
- FoE (file access over EtherCAT, ETG.1000.5) and CoE (CAN over EtherCAT, ETG.50001.1)



Key Features

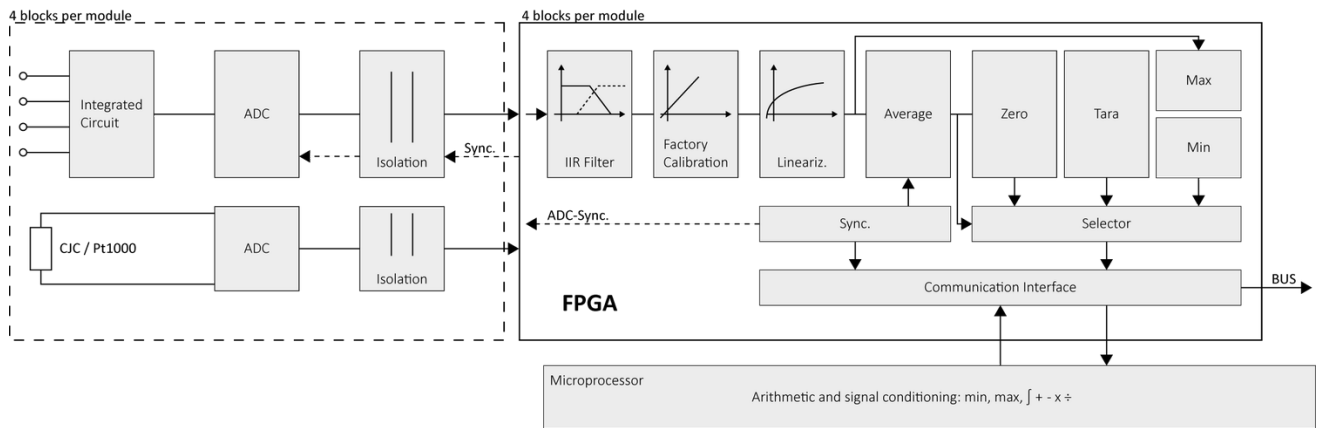
- 4 galvanically isolated input channels for non-insulated thermocouples at high potential
- Cold junction compensation
- Signal conditioning digital filter, average, scaling, min/max storage, arithmetic, alarm
- Dynamic linearization Optimum positioning of interpolation points in selected range, types B, E, J, K, L, N, R, S, T, U
- High accuracy digitalization 24 bit ADC, 20 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 kVrms 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 ¹
	0.05 % in industrial area ²
Linearity error	0.01 % typical full-scale
Repeatability	0.003 % typical (within 24 h)
Isolation voltage	1200 VDC continuous, channel to channel to power supply channel to bus ³

¹ according to EN 61326 2006: appendix B

² according to EN 61326 2006: appendix A

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

Measurement Mode Thermocouple

	Type	Range	error
	Type B	400 °C to 1820 °C	< ± 1.5 °C
	Type E, J, K	-100 °C to 1000 °C	< ± 0.5 °C
	Type E	-270 °C to 1000 °C	< ± 0.8 °C
	Type K	-270 °C to 1372 °C	< ± 0.8 °C
	Type L	-200 °C to 900 °C	< ± 0.5 °C
	Type N	-100 °C to 1000 °C	< ± 0.5 °C
	Type N	-270 °C to 1300 °C	< ± 0.8 °C
	Type R, S	-50 °C to 1768 °C	< ± 1 °C
	Type T, U	-100 °C to 400 °C	< ± 0.5 °C
	Type T	-270 °C to 400 °C	< ± 0.8 °C
Input impedance	> 100 MΩ		
Long-term drift	< 0.05 °C / 24 h		< 0.5 °C / 8000 h
Temperature influence	Offset drift		Gain drift
	< 0.02 °C / 10 K		< 0.025 % / 10K
Uncertainty cold junction compensation	< 0.5 °C		

Analog/Digital Conversion

Resolution	24-bit
Update rate	20 kHz
Modulation method	Sigma-Delta
Anti-aliasing filter	1000 Hz, 2nd 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 100 Hz (adjustable via software)
Averaging	configurable or automatic according to the selected data rate

Communication Interface EtherCAT

Electrical standard	RS-485, 2-wire
Protocols	EtherCAT (LVDS)

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

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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

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 120mm
Weight	approx. 200 g

Ordering Information

Article number	512521
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