

Q.raxx XL A124

High Isolation Module for Thermocouples

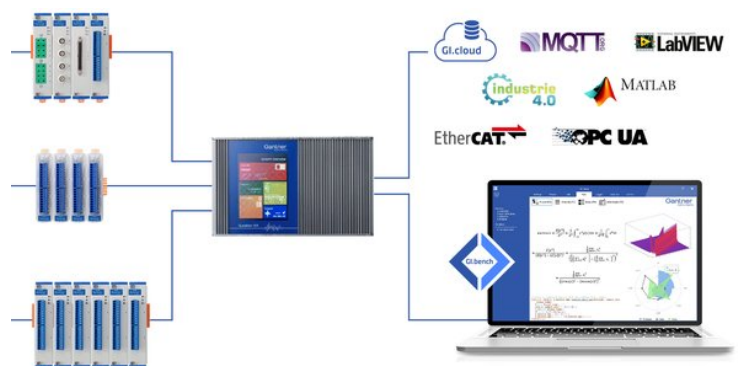
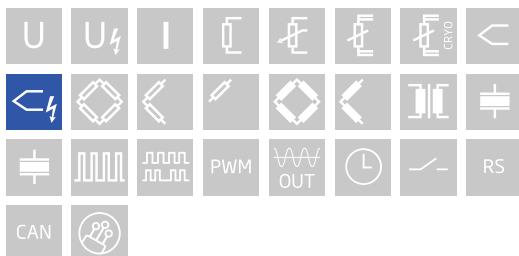
Q.raxx XL is a new addition to the Q.series product family - the ideal 19" rackmount DAQ solution for applications that require high channel density and custom sensor terminations. Q.raxx XL DAQ systems can utilize an integrated, high-performance controller for communication, control, and data logging 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

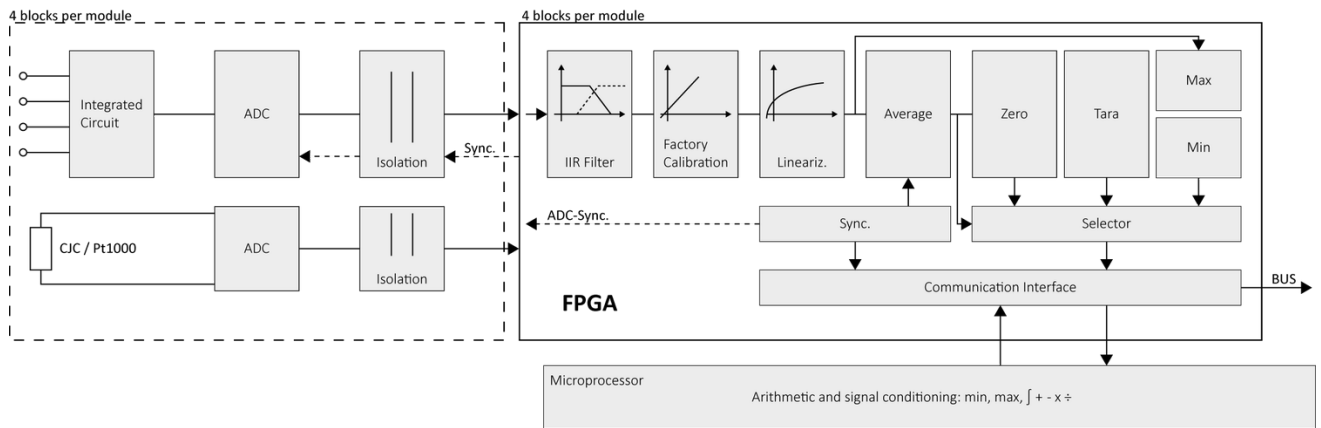
- 4 galvanically isolated input channels
for non-insulated thermocouples at high potential
- Cold junction compensation
- Signal conditioning
digital filter, average, scaling, min/max storage, arithmetic, alarm
- Dynamic linearization
Optimum positioning of interpolation points in selected range, types 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



Q.raxx XL A124

High Isolation Module for Thermocouples

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 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	approx.. 2 W
Input voltage influence	< 0.001 %/V

Q.raxx XL A124

High Isolation Module for Thermocouples

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

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	531219
----------------	--------

Gantner Instruments

Austria | Germany | France | Sweden | India | USA | China | Singapore
Montafonerstraße 4 · A-6780 Schruns · T +43 55 56 · 77 463-0

office@gantner-instruments.com
www.gantner-instruments.com