

# Q.brixx XE A124 TCK SAB

High Isolation Module for Thermocouples

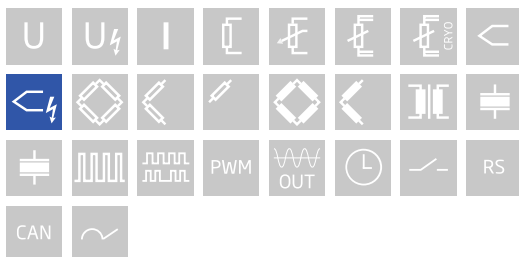
Q.brixx XE is a new addition to the Q.series product family - the ideal EtherCAT DAQ solution for on-the-go applications in potentially harsh environments. Q.brixx XE DAQ systems consist of up to 10 measurement modules capable of up to 100 kHz sampling per channel and an integrated EtherCAT bus coupler providing short cycle times and low jitter for accurate synchronization, all within a robust aluminum housing capable of withstanding severe shock and vibration without sacrificing performance.

- DC (distributed clock) for data synchronization
- FoE (file access over EtherCAT, ETG.1000.5) and CoE (CAN over EtherCAT, ETG.50001.1)
- Configurable PDO mapping to optimize the data throughput
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Power supply 10 ... 30 VDC



## Key Features

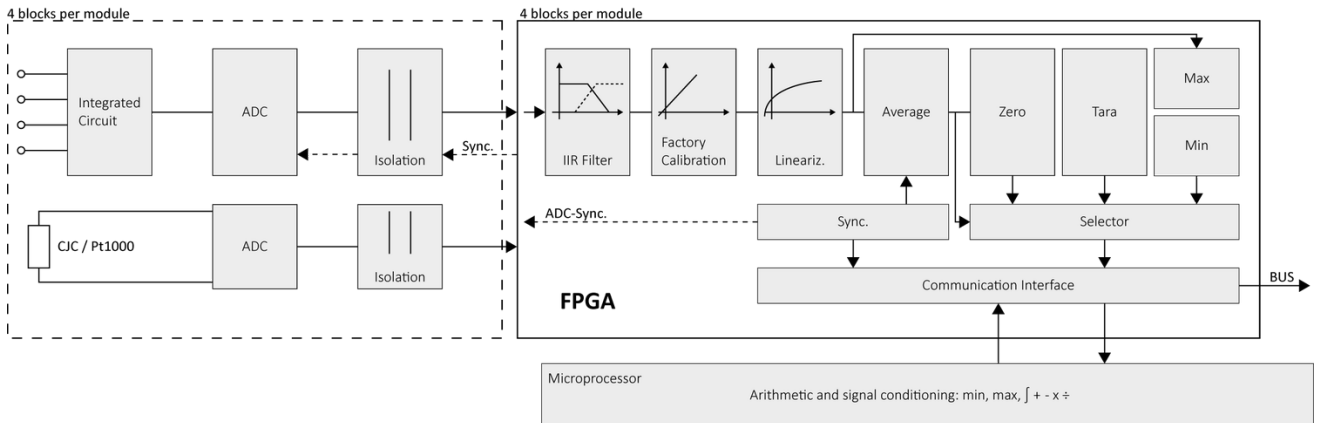
- 4 galvanically isolated input channels for non-insulated thermocouples at high potential
- Signal conditioning: digital filter, average, scaling, min/max storage, arithmetic, alarm
- High accuracy digitalization: 24 bit ADC, 20 kHz sample rate per channel
- Cold junction compensation
- Dynamic linearization: Optimum positioning of interpolation points in selected range, type K
- Galvanic isolation: channel to channel to power supply and to interface
- Categories: 1000 V CAT II and 600 V CAT III



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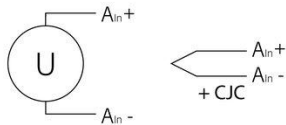
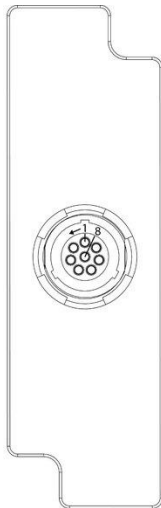
## Block diagram



## Technical Data

### Terminal assignment High voltage LEMO

- 1 A<sub>in</sub> 1+
- 2 A<sub>in</sub> 1-
- 3 A<sub>in</sub> 2+
- 4 A<sub>in</sub> 2-
- 5 A<sub>in</sub> 3+
- 6 A<sub>in</sub> 3-
- 7 A<sub>in</sub> 4+
- 8 A<sub>in</sub> 4-



### Analog Inputs

Channels	4
Isolation voltage	1200 VDC continuous, channel to channel to power supply channel to bus <sup>1</sup>

<sup>1</sup> High voltage lifetime (TDDB E Model): time to fail approx. 4 years at 1200 VDC and 60 °C

### Measurement Mode Thermocouple

	Type	Range	error
	Type K	-270 °C to 1372 °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		

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## 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

## Remarks

Are subject to a warm-up period of at least 45 minutes

in a controlled electromagnetic environment<sup>1</sup>

With configuration: Low-pass 10Hz<sup>2</sup>

Specifications subject to change without notice

<sup>1</sup> according to EN 61326 2006: appendix B

<sup>2</sup> according to EN 61326 2006: appendix A

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## High Voltage Warnings



- Attention! High voltage device! - Danger to 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 safe and permanently 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.
- Do not operate with damaged casing.

Base is the european standard EN61010-1

## Mechanical Information

Material	Aluminum
Measurements (W x H x D)	30x 137 x 160mm
Weight	approx. 500 g
Protection class	IP40

## Ordering Information

Article number	619024
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## Gantner Instruments

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