

Q.bloxx XL A104 TCK

Thermocouple and Low Voltage Measurement Module

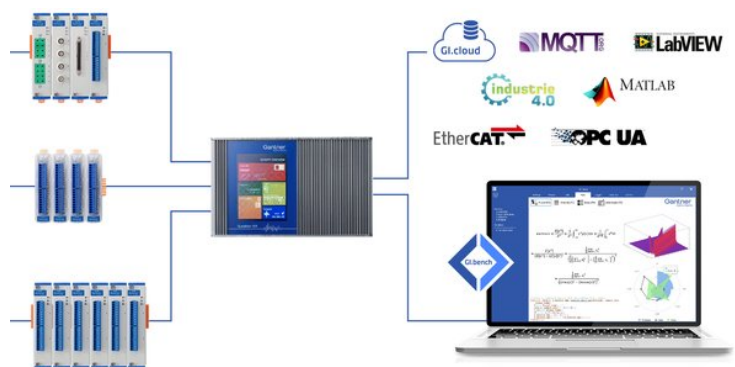
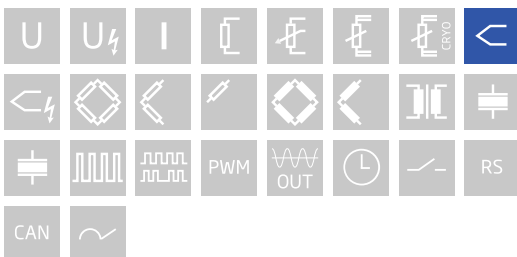
Q.bloxx XL is a new addition to the Q.series product family - the ideal DAQ solution for widely distributed installations that require higher performance and custom sensor terminations. Q.bloxx XL products are packaged in modular, DIN Rail mountable enclosures that easily snap together for system expansion. Flexibility in distribution allows for highly synchronized data that is less prone to noise due to shorter sensor cable runs to the subject.

- RS485 fieldbus interface up to 48 Mbps: LocalBus, up to 115.2 kbps: Modbus-RTU, ASCII
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Connectable to Controller Q.station X
- Power supply 10 ... 30 VDC
- DIN rail mounting (EN60715)



Key Features

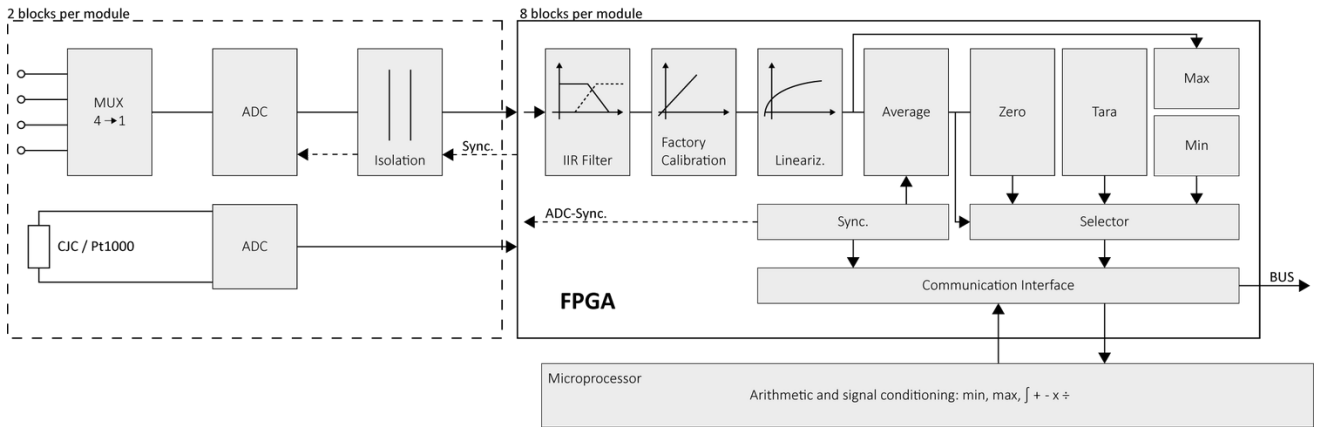
- 8 analog input channels
Thermocouple (type K), voltage (± 80 mV)
- High-accuracy digitization
24-bit ADC, 100 Hz sample rate per channel, 50/60 Hz mains rejection
- Automatic linearization correction
Optimal position of the interpolation points adjusted to the input range
- Simplified wiring
Direct connectivity with mini-TC plugs, built-in cold junction compensation
- 3-Way galvanic isolation
Channel to channel, channel to power supply and bank
- Electromagnetic compatibility (EMC)
According to IEC 61000-4 and EN 55011



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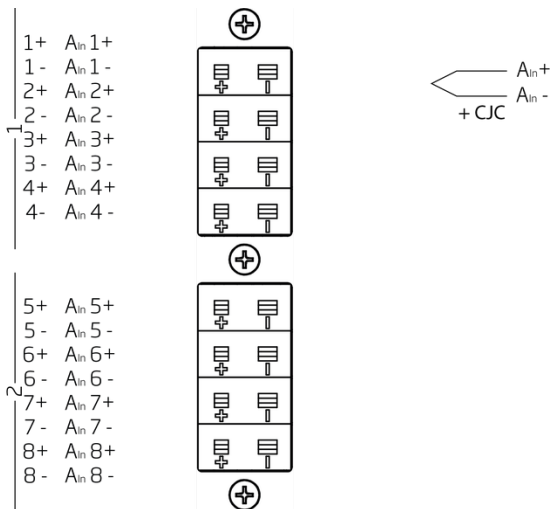
Thermocouple and Low Voltage Measurement Module

Block diagram



Technical Data

Terminal assignment Thermocouple Type K



Analog Input

Channels	8
Input impedance	> 10 MΩ
Isolation voltage	100 VDC channel to channel 500 VDC to power supply, channel to bus ¹

¹ noise pulses up to 1000 VDC, continuous up to 250 VDC

Measurement Mode Thermocouple

	Type	Range	Accuracy ¹	
	Type K	-270 °C to 1372 °C	-250 °C to -100 °C	-250 °C to -100 °C
-100 °C to 1372 °C				< ±1.0 °C
-200 °C to 1200 °C		-200 °C to -100 °C	< ±1.5 °C	
		-100 °C to 1200 °C	< ±0.8 °C	
Uncertainty CJC	< 0.3 °C			
Temperature influence gain drift	< 0.02 % / 10 K			
Input impedance	> 10 MΩ			
long-term stability	< 0.1 °C / 24 h			
	< 0.2 °C / 8000 h			

¹ The specifications are valid with activated mains suppression 50 Hz or 60 Hz

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 1 Hz to 10 kHz (adjustable via software)
Averaging	Configurable or automatic according to the user-defined 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	2 W (approx.)
Input voltage influence	< 0.001 % / V

Environmental Specifications

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

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Remarks

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

In a controlled electromagnetic environment¹

With configuration: Low-pass 10Hz²

Specifications subject to change without notice

¹ according to IEC 61326-1:2020

² unless otherwise stated

Mechanical information

Material	Aluminium and ABS
Measurements (W x H x D)	30 x 145 x 135mm
Weight	approx. 500 g
Protection class	IP20

Ordering Information

Article number	506827
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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