

Q.brixx XL A104 TCx

Thermocouple Measurement Module

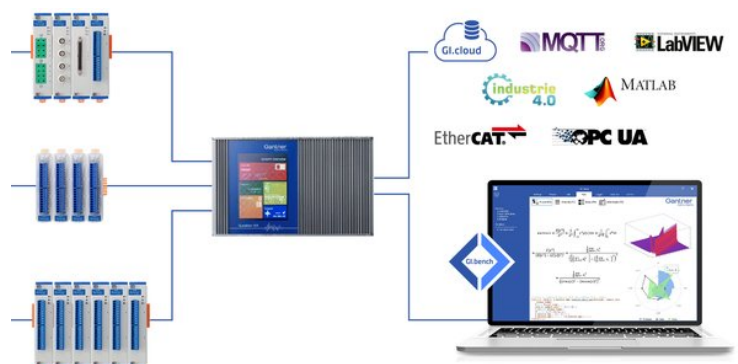
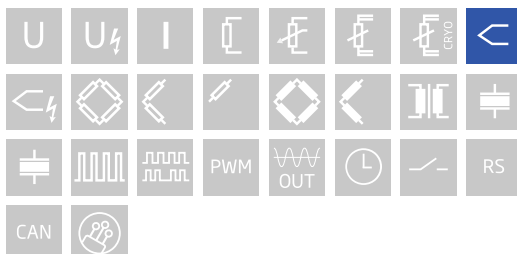
Q.brixx XL is a new addition to the Q.series product family - the ideal DAQ solution for on-the-go applications requiring higher performance in potentially harsh environments. Q.brixx XL DAQ systems consist of up to 16 measurement modules and an integrated, high-performance controller for communication, control, and data logging purposes, all within a robust aluminum housing capable of withstanding severe shock and vibration without sacrificing performance.

- High density and flexibility with 16 modules in one system in any constellation
- Connectable to Controller Q.station
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Power supply 10 ... 30 VDC



Key Features

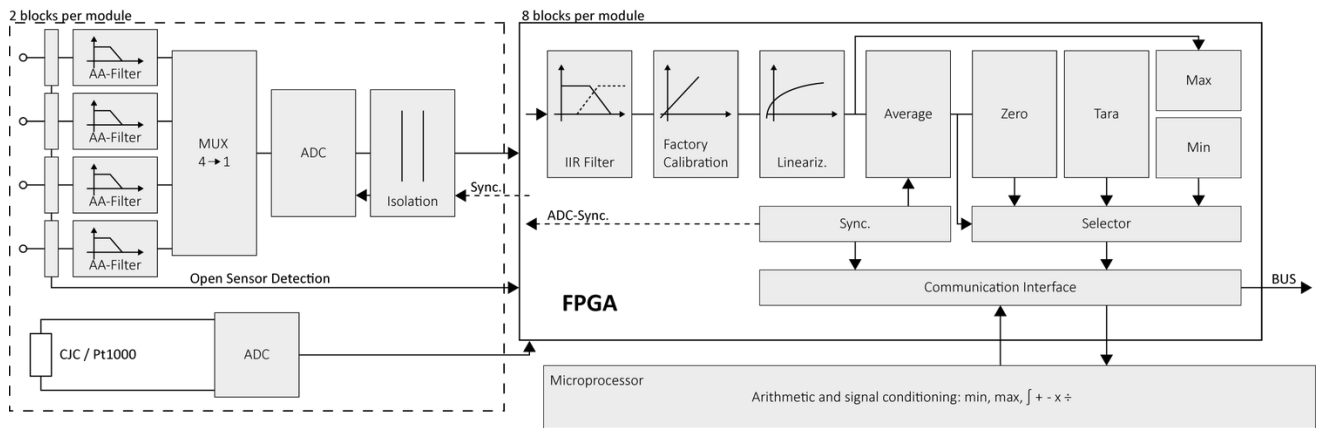
- 8 analog input channels
thermocouple (type B / E / J / K / L / N / R / S / T / U), voltage (± 80 mV)
- High-accuracy digitization
24-bit ADC, 100 Hz sample rate per channel, 50/60 Hz mains rejection
- Automatic linearization correction
optimal position of the interpolation points adjusted to the input 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 Input

Channels	8
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)
Input impedance	>10 MΩ
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

Thermocouple Measurement

	Type	Range	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	< ±2.5°C
	Type E, J, K	-100°C to 1000°C	< ±1.5°C
	Type E	-270°C to 1000°C	< ±1.5°C
	Type K	-270°C to 1372°C	< ±1.5°C
	Type L	-200°C to 900°C	< ±1.5°C
	Type N	-100°C to 1000°C	< ±1.5°C
	Type N	-270°C to 1300°C	< ±1.5°C
	Type R, S	-50°C to 1768°C	< ±1.5°C
	Type T, U	-100°C to 400°C	< ±1.5°C
	Type T	-270°C to 400°C	< ±1.5°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		

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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

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

Input Power

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 - 95 % at 50°C (non-condensing)

Remarks

Validity of all listed specifications are subject to a warm-up period of at least 45 minutes

Specifications subject to change without notice

Mechanical information

Material	Aluminum
Measurements (W x H x D)	30x 137 x 135mm
Weight	approx. 500 g

Ordering Information

Article number	643930
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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