

Q.raxx slimline RS A104 -16

Thermocouple and Low Voltage Measurement Module

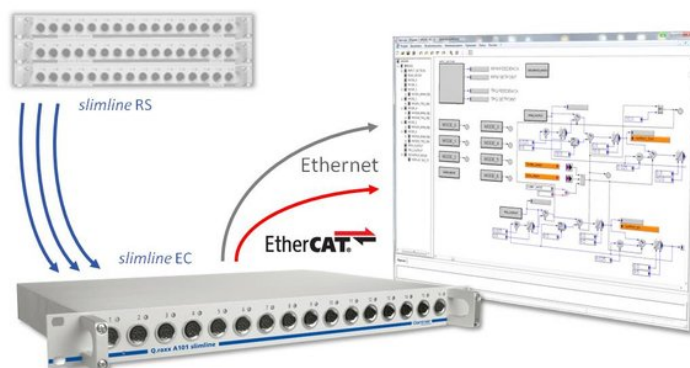
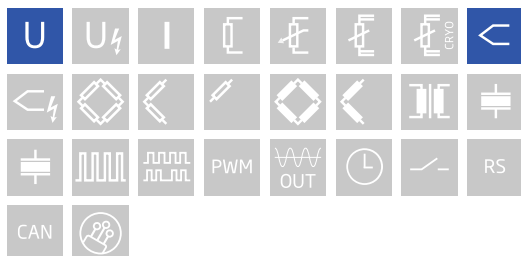
Q.raxx slimline RS is Q.series' highest density 19" 1U rackmount DAQ system - the ideal solution for boom box installations or applications that require maximum channel density and custom sensor terminations. Q.raxx slimline RS DAQ systems utilize an external high-performance controller for communication, control, and data logging purposes. Multiple systems can be synchronized to each other allowing for efficient DAQ distribution with low jitter and gradual expansion up to thousands of channels. In addition to available variations, the Q.raxx slimline RS is fully customizable to your specific measurement needs.

- RS485 fieldbus interface up to 24 Mbps
- Power supply 10 up to 30 VDC
- Rack standard, 1 high unit (1 HU)
- Connectable to any Controller, e. g. Q.gate or Q.pac



Key Features

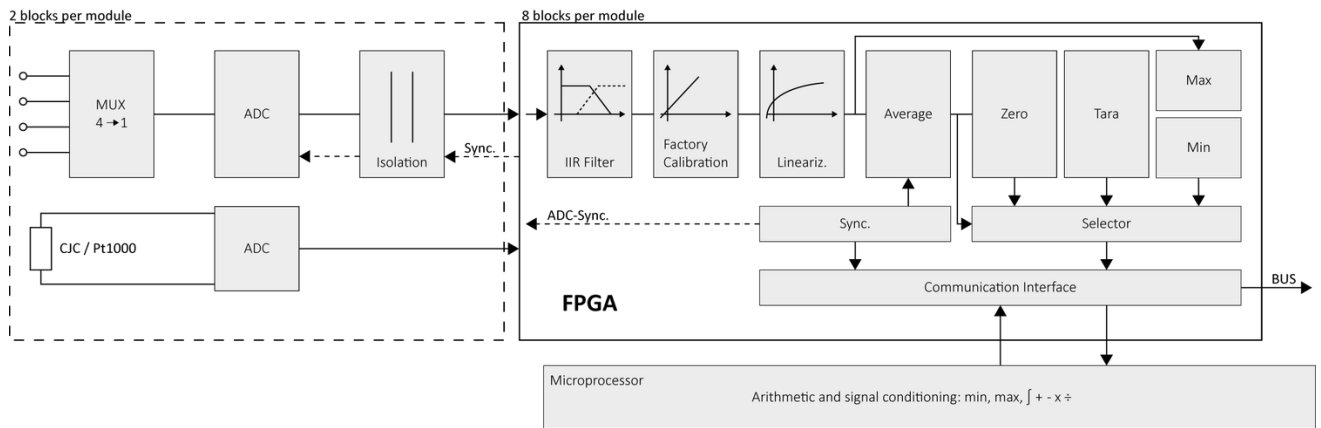
- **16 analog input channels**
thermocouple (type B / E / J / K / L / N / R / S / T / U), voltage (± 80 mV)
- **High-accuracy digitization**
24-bit ADC, 100 Hz sample rate per channel, 50/60 Hz mains rejection
- **Automatic linearization correction**
optimal position of the interpolation points adjusted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

Channels	16
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	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

Voltage Measurement

Input range	±80 mV	
Margin of error	±10 µV	
Resolution	10 nV	
Long-term stability	<1 µV / 24 hrs	<10 µV / 8000 hrs
Temperature drift	<2 µV / 10 K Offset drift	<0.02 % / 10 K Gain drift
Signal-to-noise ratio	>100 dB at 100 Hz	

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Thermocouple Measurement

Deviation in the relevant Temperature range The specifications are valid with enabled mains frequency rejection 50 Hz resp. 60 Hz	Type	Range	Adjusted with cold junction compensation	Not adjusted, with CJC terminal
	Type B	400°C to 1820°C	< ±1.5 °C	< ±2.5°C
	Type E, J, K	-100°C to 1000°C	< ±0.5°C	< ±1°C
	Type E	-270°C to 1000°C	< ±0.8°C	< ±1°C
	Type K	-270°C to 1372°C	< ±0,8°C	< ±1°C
	Type L	-200°C to 900°C	< ±0.5°C	< ±1°C
	Type N	-100°C to 1000°C	< ±0.5°C	< ±1°C
	Type N	-270°C to 1300°C	< ±0.8°C	< ±1°C
	Type R, S	-50°C to 1768°C	< ±1°C	< ±1.5°C
	Type T, U	-100°C to 400°C	< ±0.5°C	< ±1°C
Type T	-270°C to 400°C	< ±0.8°C	< ±1°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			

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

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)

Mechanical information

Type	19" Standard, 1 Unit
Measurements (W x H x D)	444 x 44 x 260 mm
Weight	approx. 2000 g

Ordering Information

Article number	868085
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