Q.raxx slimline RS A108 -16

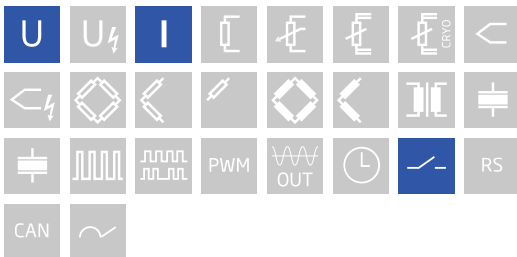## Voltage Measurement Module

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
- Rack standard, 1 hight unit (1 HU)
- Power supply 10 up to 30 VDC
- Connectable to any Controller, e. g. Q.gate or Q.pac

Key Features

- **16 Analog input channels**
  differential voltage, current (with shunt resistor)

- **2 Digital inputs and outputs**
  status, trigger, tare, alarm, command

- **High-accuracy digitization**
  24-bit ADC, 10 kHz sample rate per channel

- **Signal conditioning**
  linearization, filtering, average, scaling, min/max, RMS, arithmetic, alarm

- **3-Way galvanic isolation**
  Channel to channel, channel to power supply, and channel to bus
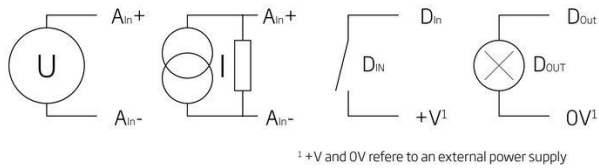
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Voltage Measurement Module

Block diagram
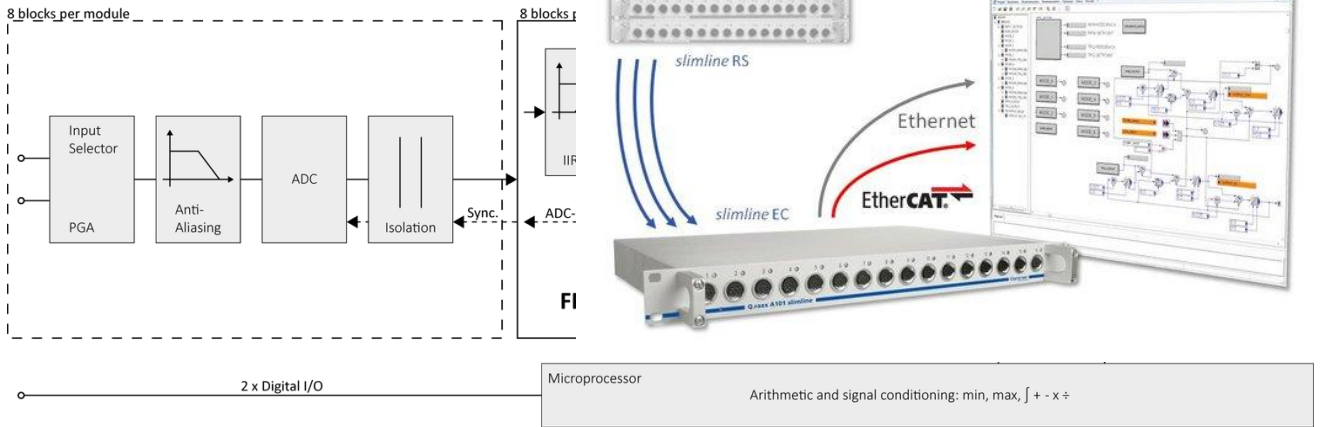
Technical Data

Terminal assignment 10pole screw

[1] +V and 0V refere to an external power supply
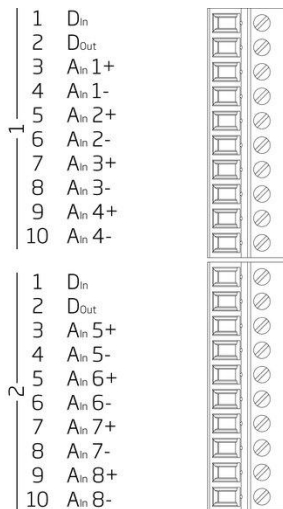
Analog Input Slimline

Channels	16
Isolation voltage	500 VDC channels, to power supply, channel to bus[1]

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

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Voltage Measurement Module

Voltage Measurement

Input range	±10 VDC	
Margin of error	±2 mV	
Resolution	1.5 µV	
Long-term stability	<50 µV / 24 hrs	<200 µV / 8000 hrs
Temperature drift	<200 µV / 10 K Offset drift	<100 ppm / 10 K Gain drift
Signal-to-noise ratio	>100 dB at 100 Hz	>120 dB at 1 Hz
Input impedance	> 1 MΩ	
Overvoltage protection	± 200 V	

Measurement Mode Current (Only with Q.series Terminal SR [791989])

Input range	±25 mA
Shunt resistance	100 Ω
Shunt tolerance	0.1 %
Resolution	15 nA
Long-term stability	<500 nA / 24 hrs
Temperature drift	<150 ppm / 10 K

Digital I/Os

Channels	4 (2 digital inputs and 2 digital outputs)
Mode(s) of operation	status, tare, reset
Input voltage	30 VDC max.
Logic voltage	<2 VDC (Low) >10 VDC (High)
Mode(s) of operation	status, alarm
Output voltage	10 to 30 VDC (external supply required)
Contact	open drain p-channel MOSFET
Load capacity	30 VDC / 100 mA (ohmic load)

Analog-to-Digital Conversion

Resolution	24-bit
Sample rate	10 kHz per channel
Modulation method	sigma-delta
Anti-aliasing filter	2 kHz, 3rd order
Digital filters	Infinite Impulse Response (IIR), low-pass, high-pass, band-pass, band-stop, Butterworth or Bessel (2nd, 4th, 6th or 8th order), frequency range 0.1 Hz to 1 kHz
Averaging	configurable or automatic according to the user-defined data rate

Communication Interface

Protocols	proprietary Localbus (115200 bps to 24 Mbps, latency <100 ns) ASCII (19200 bps to 115200 bps) Modbus RTU Profibus-DP (19200 bps to 12 Mbps) (special Firmware required)
Data format	8E1
Electrical standard	ANSI/TIA/EIA-485-A, 2-wire

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Voltage Measurement Module

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

Electromagnetic compatibility (EMC)	according to IEC 61000-4 and EN 55011
Operating temperature	-20°C to +60°C
Storage temperature	-40°C to +85°C
Relative humidity	5 - 95 % at 50°C (non-condensing)

Remarks

Are subject to a warm-up period of at least 45 minutes
in a controlled electromagnetic environment[1]
With configuration: Low-pass 10Hz[2]
Specifications subject to change without notice

[1] according to EN 61326 2006: appendix B
[2] according to EN 61326 2006: appendix A

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	868388

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