

Q.raxx D107

Digital Measurement Module

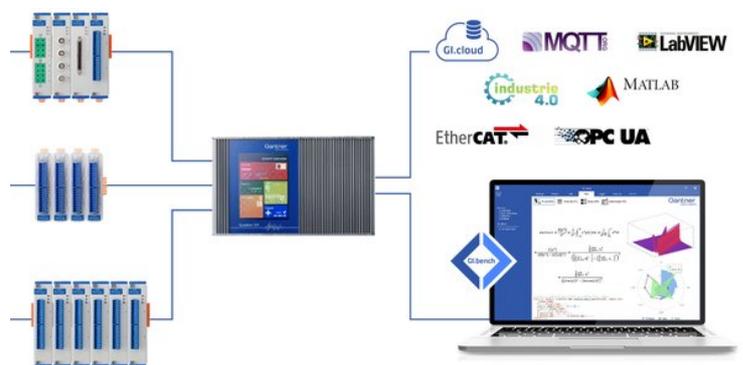
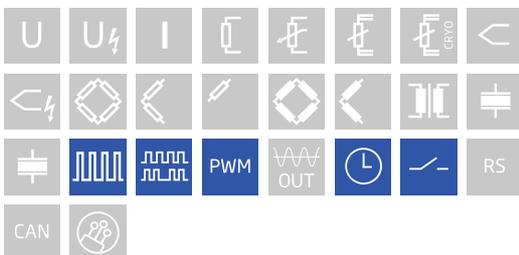
Q.raxx is the ideal 19" rackmount DAQ solution for applications that require high channel density. Q.raxx DAQ systems can utilize an integrated, high-performance controller for communication, control, and data logging purposes. With a controller, multiple Q.raxx systems can be synchronized to each other allowing for efficient DAQ distribution with low jitter and gradual expansion up to thousands of channels.

- High Density
up to 13 I/O modules per Q.raxx 3U chassis with up to 16 channels per I/O module
- User Friendly
front panel indicators for module status, power, and input range error
- Fully Customizable
multiple front panel termination options available
- Maximum Flexibility
parallel communication available in TCP/IP, CAN, PROFIBUS, Modbus, and EtherCAT



Key Features

- 2 to 6 configurable digital inputs
number of channels depend on configuration, counter, frequency, PWM, differential or single ended
- Adjustable thresholds in 256 steps
Differential inputs: -20 V up to + 20 V
single-ended Inputs: 0 V up to +26 V
- Frequency inputs
frequency measurement up to 1 MHz (Chronos method), direction detection
- State Inputs
Adjustable Threshold Values
- Counter
for/backward counter, quadrature counter with reference zero recognition and missing teeth detection, up to 1 MHz
- PWM inputs
measurement of duty cycle and frequency, output with variable frequency and/or duty cycle
- Galvanic isolation
function group 1 to function group 2 to power supply and to interface
Isolation voltage 500 VDC



Technical Data

Digital Inputs

Channels	2 to 6 galvanic isolated inputs, configurable as differential or single ended	
Input voltage	max. 30 VDC	
Input impedance	differential	single ended
	20 k Ω	10 k Ω
Threshold adjustable in 256 steps	-20 V to +20 V	0 V to +26 V
Threshold accuracy	$\pm 1\%$	
Isolation voltage	500 VDC input 1 to input 2 to input voltage and to interface	

Function Digital Inputs

Status	
Response time	10 μ s
Frequency measurement	
Method	Chronos optimized by combination of the time measurement and pulse counting, recognition of direction of rotation (0 deg./90 deg.)
Frequency range	0.1 Hz to 1 MHz
Time base	0.001 s to 10 s
Reference frequency	288 MHz
Accuracy	0.01% at timebase > 1ms (-20°C to +60°C)
Frequency measurement with recognition of direction of rotation	specification like frequency measurement, for the recognition of the rotation direction the phasing of both inputs is being used
Pulse counting	
Counter depth	32-bit (± 31 -bit)
Counter frequency	max 1 MHz
Up/down counter	with an additional input for the direction of counting
Quadrature counter	with an additional input for the direction recognition for phasing the inputs
Quadrature counter with zero reference and reset/enable	like quadrature counter but with two additional inputs for the 0-reference recognition and enabling the 0-reference recognition
PWM measurement (duty cycle)	
Input frequency	0.1 Hz to 1 MHz
Accuracy	0.01% Freq < 2 kHz, 0.1% 2 kHz to 20 kHz, 3% > 20 kHz (-20°C to +60°C)
Resolution	3.5 ns
Time measurement	
Function	Measuring of time between two edges, measuring of high time, low time and high/low relation
Time range	1 μ s to 32 s
Resolution	3.5 ns

Sensor Excitation

Channels	2
Voltage	5 VDC
Current	<150 mA

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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

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

Remarks

Warm-up time	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)	30 x 128 x 118 mm
Weight	approx. 100 g

Ordering Information

Article number	900223
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