# Q.bloxx D107

Digital Measurement Module

Q.bloxx is the ideal DAQ solution for widely distributed installations, electrical panels, and environmental enclosures. Q.bloxx measurement modules provide integrated signal conditioning and arithmetic functions, packaged in modular, DIN Rail mountable enclosures that easily snap together for quick system expansion. Flexibility in distribution allows for highly synchronized data that is less prone to noise due to shorter sensor cable runs to the actual point of measurement.

- RS 485 fieldbus interface up to 24 Mbps: LocalBus up to 115.2 kbps: Modbus-RTU, ASCII

- Connectable to any Controller, e.g. Q.station, Q.gate or Q.pac

- Electromagnetic Compatibility according to EN61000-4 and EN55011

- Power supply 10 ... 30 VDC

- DIN rail mounting (EN60715)

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

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Digital Measurement Module
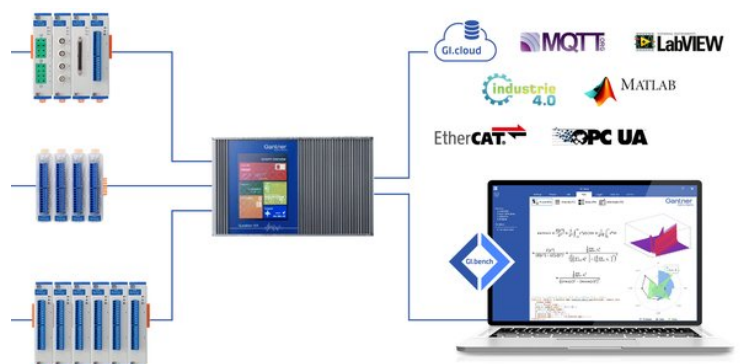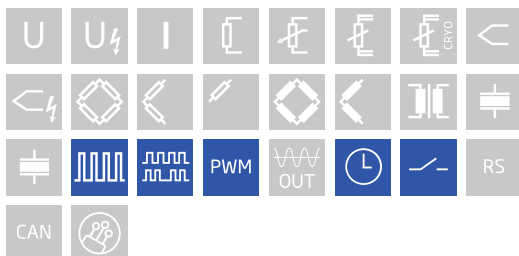
Technical Data

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 kΩ	10 kΩ
Threshold adjustable in 256 steps	-20 V to +20 V	0 V to +26 V
Isolation voltage	500 VDC input 1 to input 2 to input voltage and to interface	

Function Digital Inputs

Status	
Response time	10 µs
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 µs to 32 s
Resolution	3.5 ns

Sensor Exitation

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 and ABS
Measurements (W x H x D)	27 x 120 x 105 mm
Weight	approx. 200 g

Ordering Information

Article number	794840