



Q.bloxx A111

Measurement Module for IEPE Sensors and Voltages



The Q.series has been designed for demanding measurements found in today's most industrial measuring and testing environments. The range of applications starts from single stand-alone solutions up to networked multi-channel applications in the field of component testing, engine testing, process performance testing and structural monitoring.

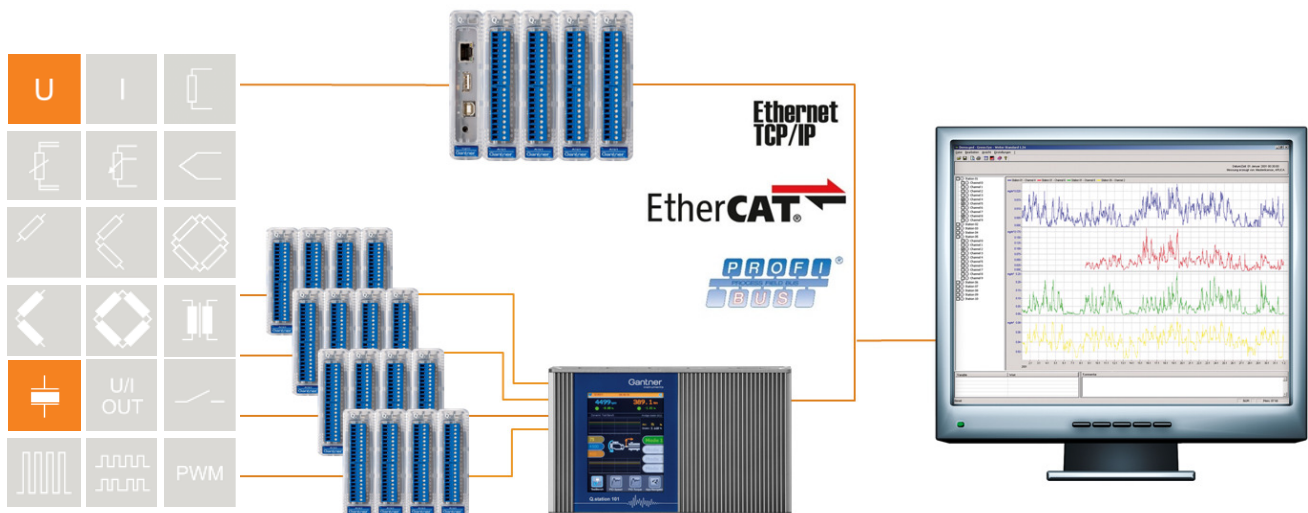
The range and flexibility of the modules allows an optimized solution for each single task:

Dynamic signal acquisition up to 100 kHz, inputs and outputs for all types of signals, galvanic isolation of inputs and outputs, multi-channel solutions, high density packaging and intelligent signal conditioning.

Data exchange between Test Controller and automation level is communicated via Ethernet TCP/IP or fieldbus systems like EtherCAT or Profibus-DP and additional Ethernet-based industrial standards.

Most important features:

- **4 galvanic isolated analog input channels**
IEPE sensors, voltages
- **Fast high accuracy digitalization**
24 bit ADC, 100 kHz sample rate per channel
- **Signal conditioning**
16 virtual channels, linearization, digital filter, average, scaling, min/max storage, RMS, arithmetic, alarm
- **RS485 fieldbus interface**
up to 48 Mbps: LocalBus
up to 115.2 kbps: Modbus-RTU, ASCII
- **Connectable to any Test Controller**
e.g. Q.station, Q.gate or Q.pac
- **Galvanic isolation**
channel to channel to power supply and to interface
Isolation voltage 500 VDC
- **Electromagnetic Compatibility**
according EN 61000-4 and EN 55011
- **Power supply 10...30 VDC**
- **DIN rail mounting (EN 60715)**

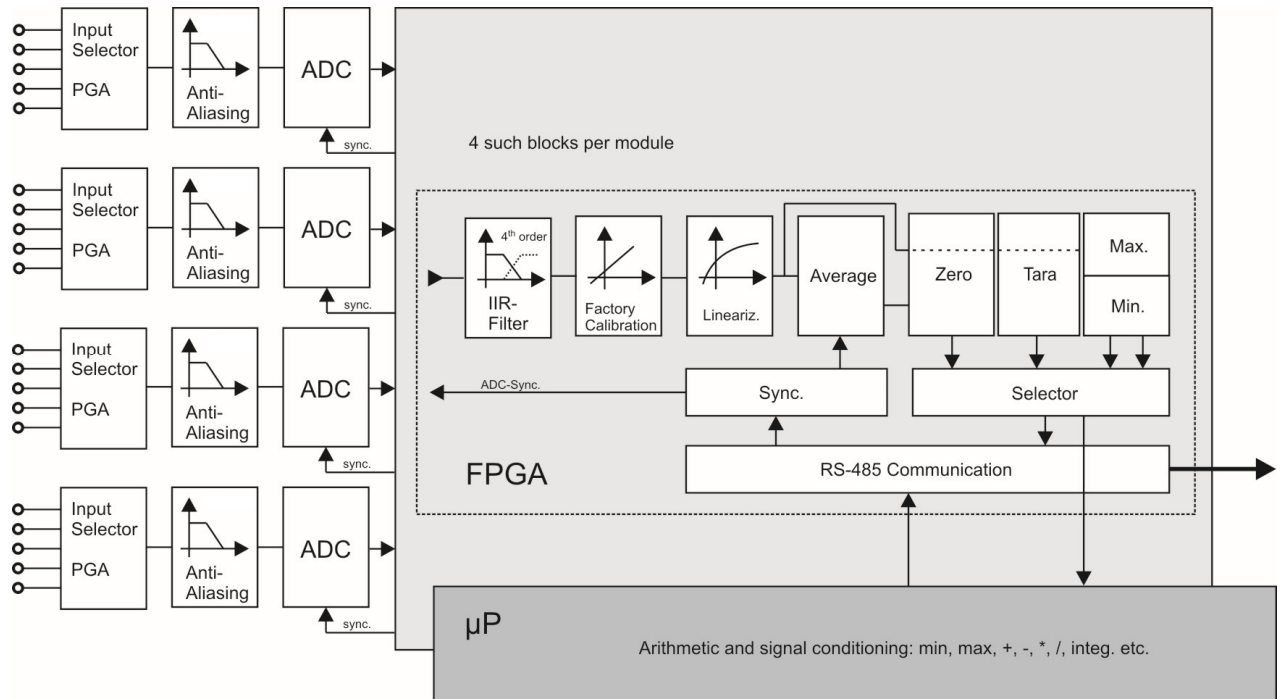




Q.bloxx A111

Measurement Module for IEPE Sensors and Voltages

Block Diagram



Analog Inputs			
Number	4		
Accuracy	0.01 % typical		
	0.025 % in controlled environment ¹		
	0.05 % in industrial area ²		
Linearity error	0.01 % of the final value typical		
Repeatability	0.003 % typical (within 24 h)		
Isolation voltage	500 VDC channel to channel to power supply to interface ³		
Measurement Voltage	Range	max. Deviation	Resolution
	±10 V	±2 mV	1.2 µV
	±1 V	±0.2 mV	120 nV
	±100 mV	±20 µV	12 nV
Input resistance	>1 MΩ		
Long term drift	<20 µV / 24 h, <200 µV / 8000 h		
Temperature influence	on zero	on sensitivity	range ±1 V
	<50 µV / 10 K	<0.01 % / 10 K	
Signal-noise-ratio	> 90 dB at 1 kHz	>120 dB at 1 Hz	

¹ according EN 61326: 2006, appendix B

² according EN 61326: 2006, appendix A

³ noise pulses up to 1000 VDC, permanent up to 250 VDC



Q.bloxx A111

Measurement Module for IEPE Sensors and Voltages

Measurement IEPE sensor	Range	max. Deviation	Resolution
	±10 V	±10 mV	40 µV
	±1 V	±1 mV	4 µV
	±100 mV	±0,1 mV	0,4 µV
Supply	Constant current 4 mA		
Minimum input frequency	0.5 Hz		
Limit frequency	20 kHz		
Temperature influence	on zero		on sensitivity
	<10 µV / 10 K		<0.025 % / 10 K

Analog/Digital-Conversion	
Resolution	24 bit
Sample rate	100 kHz
Conversion method	Sigma-Delta (group delay time 380 µs)
Anti-aliasing filter	20 kHz, 3 rd order
Digital filter	IIR, low pass, high pass, band pass, 4 th order, 1 Hz up to 10 kHz in steps 1, 2, 5
Averaging	configurable or automated according the selected data rate
Power Supply	
Power supply	10 up to 30 VDC, overvoltage and overload protection
Power consumption	approx. 2.5 W
Influence of the voltage	<0.001 %/V
Environmental	
Operating temperature	-20°C up to +60°C
Storage temperature	-40°C up to +85°C
Relative humidity	5 % up to 95 % at 50°C, non condensing
Communication Interface	
Standard	RS-485, 2-wire
Data format	8e1
Protocols	Local-Bus: 115200 bps up to 48 Mbps
	Modbus-RTU, ASCII: 19200 bps up to 115200 bps
Mechanical	
Case	Aluminum and ABS
Dimensions (W x H x D)	(27 x 120 x 105) mm
Weight	approx. 200 g
Mounting	DIN EN-rail



Q.bloxx A111

Measurement Module for IEPE Sensors and Voltages

Warm Up Time

All declarations are valid after a warm up time of 45 minutes.

Valid from March 2015. Specification subject to change without notice
DB_Q.bloxx_A111_E_22.docx