Q.brixx A127 BNC

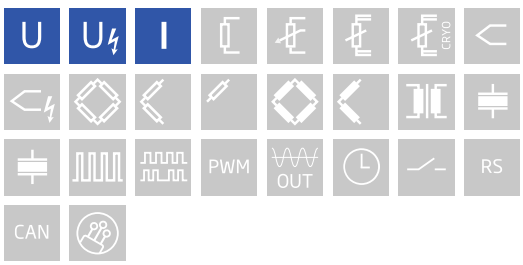
Module for Measuring Electrical Power

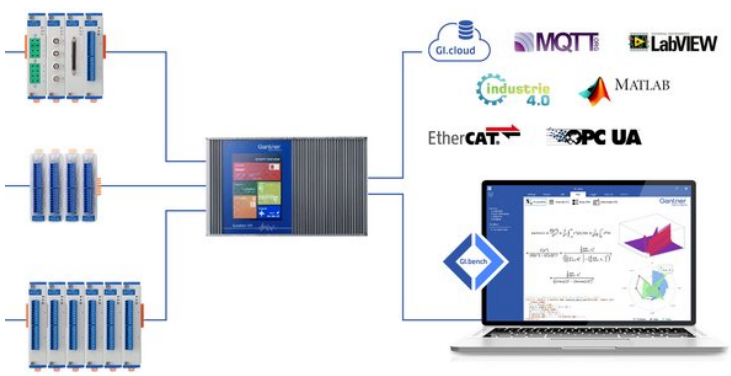
Q.brixx brings the performance and functionality of Q.bloxx into a scalable, portable, and rugged form factor. Q.brixx DAQ systems can consist of up to 16 measurement modules and an integrated, high-performance controller for communication, control, and data logging purposes. With a robust aluminum housing capable of withstanding severe shock and vibration, Q.brixx is ideal for on-the-go applications in potentially harsh environments.

- Ectromagnetic compatibility according EN 61000-4 and EN 55011
- Robust and reliable
  stable and compact aluminum housing, easy to carry
- Power supply 10 ... 30 VDC
- Temperature range -20 up to +60°C
- High density and flexibility
  up to 16 modules in one system in any constellation

Key Features

- **4 voltage input channels**
  2 inputs for voltage measurement
  measuring ranges ±40 V, ±120 V, ±400 V, ±1200 V
  2 inputs for current measurement via shunt resistors measuring ranges ±80 mV, ±240 mV, ±800 mV, ±2400 mV
- **Signal conditioning**
  linearization, digital filter, average, scaling, min/max storage, RMS, alarm
- **Fast high accuracy digitalization**
  24 bit ADC, 100 kHz sample rate per channel
- **Galvanic isolation**
  channel to channel to power supply and to interface isolation voltage
  1200 VDC / 848 VACrms test voltage 5 kVDC over 1 minute
- **Categories**
  1000 V CAT II and 600 V CAT III

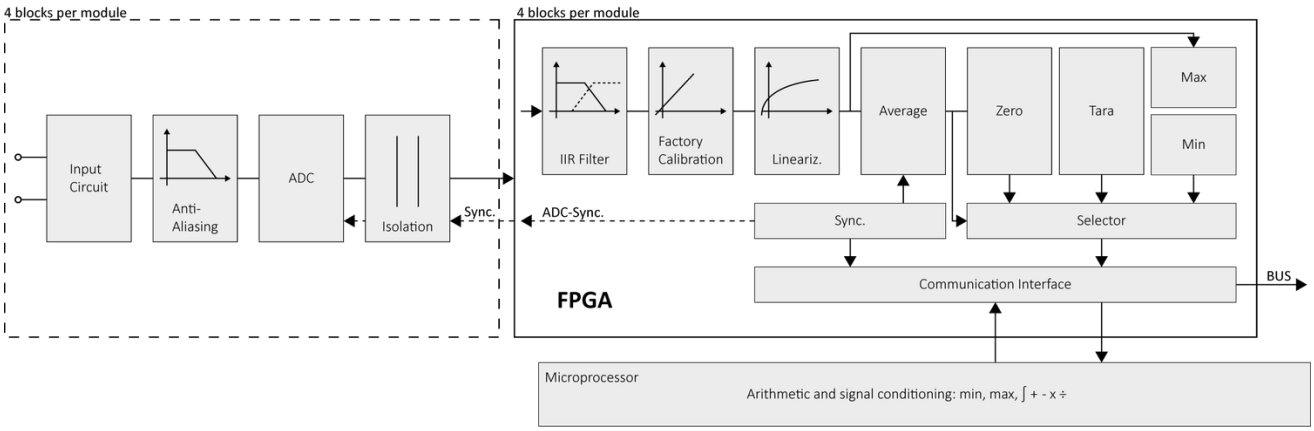




Q.brixx A127 BNC

Module for Measuring Electrical Power

Block diagram



Technical Data

Analog Inputs

Channels	4
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	1200 VDC continuous, channel to channel to power supply channel to bus[3]

1 according to EN 61326 2006: appendix B
2 according to EN 61326 2006: appendix A
3 High voltage lifetime (TDDB E Model). Time to fail approx.. 4 years at 1200 VDC and 60 °C continuous

Measurement Mode Voltage AI1 + AI3

Range	± 1200 V	± 400 V	± 120 V	± 40 V
Accuracy	± 300 mV	± 100 mV	± 30 mV	± 10 mV
Resolution	6 mV	2 mV	600 µV	200 µV
Long-term offset stability	30 mV / 24 h	10 mV / 24 h	3 mV / 24 h	1 mV / 24 h
	100 mV / 8000 h	30 mV / 8000 h	10 mV / 8000 h	3 mV / 8000 h
Offset temperature influence	100 mV / 10k	30 mV / 10 k	10 mV / 10 k	3 mV / 10
temperature influence	0.025 % / 10K			

Measurement Mode Voltage AI2 + AI4

Range	± 2.4 V	± 800 mV	± 240 mV	± 80 mV
Accuracy	± 600 µV	± 200 µV	± 60 µV	± 20 µV
Resolution	12 µV	4 µV	1.2 µV	0.4 µV
Long-term offset stability	60 µV / 24 h	20 µV / 24 h	6 µV / 24 h	2 µV / 24 h
	200 µV / 8000 h	60 µV / 8000 h	20 µV / 8000 h	10 µV / 8000 h
Offset temperature influence	200 µV / 10k	60 µV / 10 k	20 µV / 10 k	10 µV / 10 k
temperature influence	0.025 % / 10K			

Q.brixx A127 BNC

Module for Measuring Electrical Power

Measurement Mode Current

Via Shunt Channel 2 and 4	range	max. error	resolution
	±2400 mV	±600 µV	12 µV
	±800 mV	±200 µV	4 µV
	±240 mV	±60 µV	1,2 µV
	±80 mV	±20 µV	0,4 µV
Long-term drift	<20 µV / 24 h	<200 µV / 8000 h	
Temperature influence	Offset drift	Gain drift	
	<50 µV / 10 K	<0.02 % / 10 K	

Analog/Digital-Conversion

Resolution	24-bit
Update rate	100 kHz
Modulation method	Sigma-Delta
Anti-aliasing filter	20 kHz, 3rd order
Digital filters	Infinite impulse response (IIR), low-pass, high-pass, band-pass, Butterworth or Bessel (2nd, 4th, 6th or 8th order), frequency range 0.1 Hz to 10 kHz (adjustable via software)
Averaging	configurable or automatic according to the selected 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

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

High Voltage Warnings

- Attention High voltage device, Danger for life and health in case of non regular use.
- Only special and sufficient educated persons are permitted to handle this device only.
- all metal housing parts must be safely and continuous connected to protected earth (PE)
- Only contact protection plugs and cables may be used. All parts must be approved for voltages up to 1200 VDC.
- During installation, the whole system must be without voltage and safely be disconnected from the mains.
- All relevant safety regulations must be considered.

Base is the european standard EN61010-1

Mechanical information

Material	Aluminum
Measurements (W x H x D)	30 x 125 x 155 mm
Weight	approx. 200 g

Ordering Information

Article number	847435

Gantner Instruments

Austria | Germany | France | Sweden | India | USA | China | Singapore
Montafonerstraße 4 · A-6780 Schruns · T +43 55 56 · 77 463-0

office@gantner-instruments.com
www.gantner-instruments.com