

Q.brixx XL A142

Measurement module for analog inputs and SSI

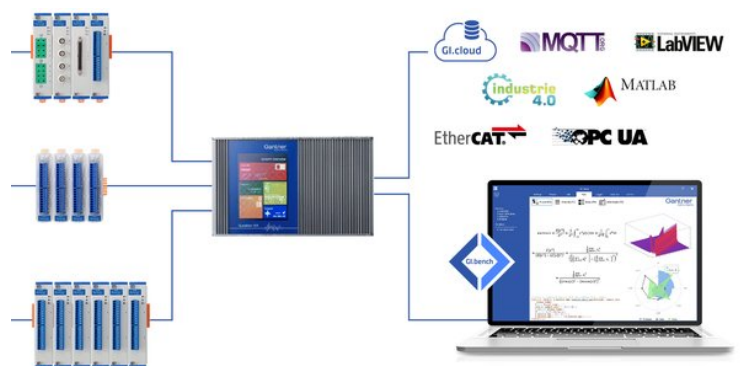
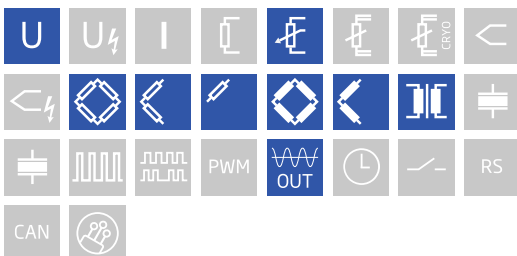
Q.brixx XL is a new addition to the Q.series product family - the ideal DAQ solution for on-the-go applications requiring higher performance in potentially harsh environments. Q.brixx XL DAQ systems consist of up to 16 measurement modules and an integrated, high-performance controller for communication, control, and data logging purposes, all within a robust aluminum housing capable of withstanding severe shock and vibration without sacrificing performance.

- High density and flexibility with 16 modules in one system in any constellation
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Connectable to Controller Q.station
- Power supply 10 ... 30 VDC

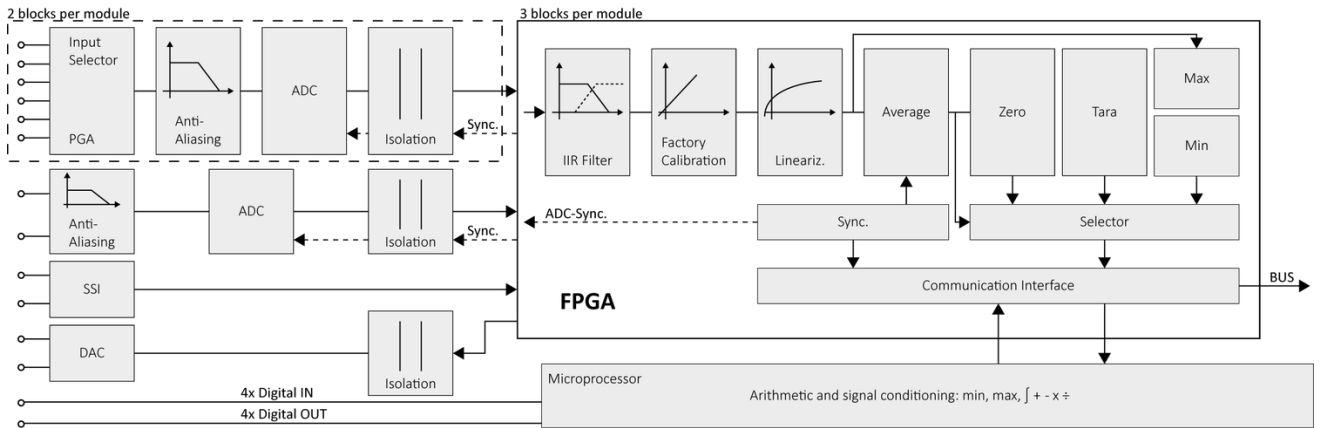


Key Features

- 2 galvanic isolated universal input channels
strain gage and inductive half- and full-bridges, LVDT, RVDT quarter-bridge with completion terminal
- 1 galvanic isolated analog input channel
10 VDC voltage measurement
- Synchronous Serial Interface (SSI)
for absolute Encoder or Temposonics®
- 1 Analog output channel
voltage (± 10 VDC) configurable
- 4 digital inputs and outputs
status, trigger, tare, alarm, command
- Galvanic isolation
500 VDC channel-to-channel-to-power for all analogue inputs

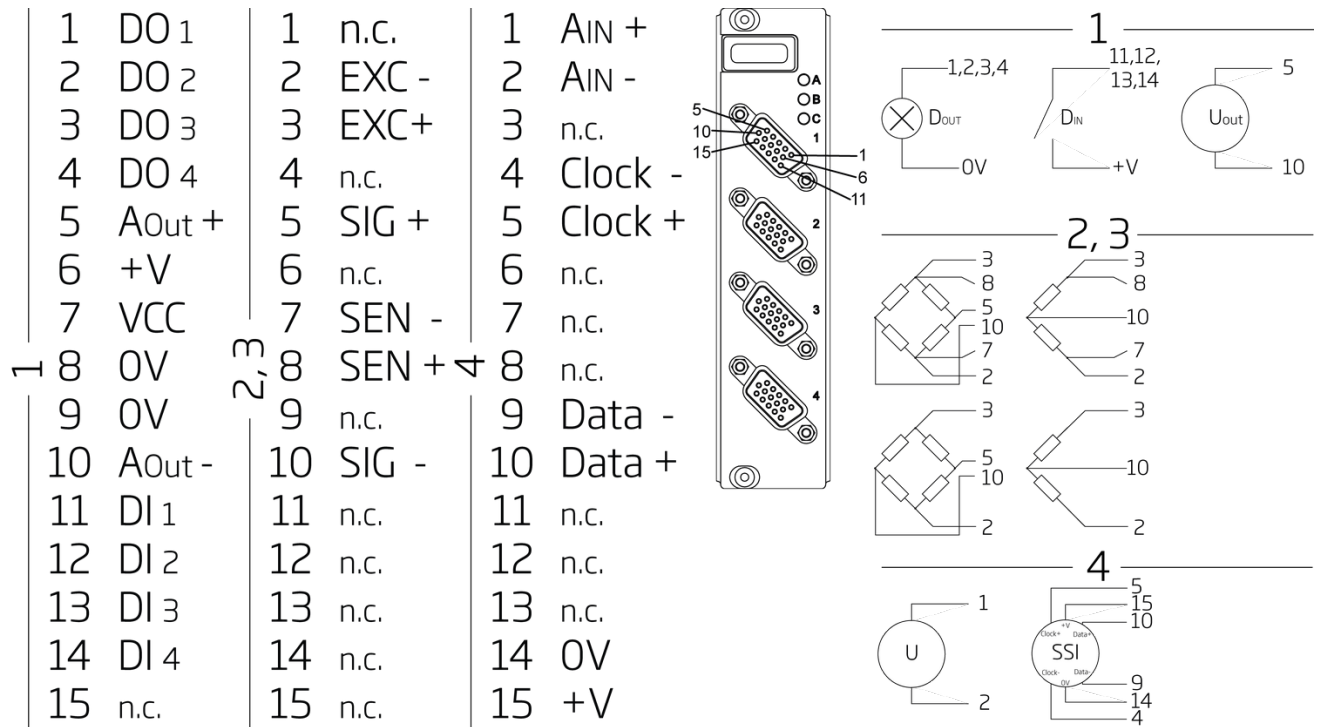


Block diagram



Technical Data

Terminal assignment DSUB 15 HD female



Signal Conditioning

Anti-aliasing filter	5 kHz 5th order (DC excitation)	1 kHz 5th order (CF excitation)
Digital filters	IIR, low-pass, band-pass, 4th order, 1 Hz to 1 kHz in steps 1, 2, 5	
Averaging	configurable or automatic according to the user-defined sample rate	

Universal Input

Channels	2			
Accuracy	0.02 % typical			
	0.05 % in controlled environment			
	0.1 % in industrial area			
Repeatability	0.01 % typical (within 24 h)			
Input impedance	> 10 MΩ			
Isolation voltage	500 VDC channel to channel to power			
Sensor type	DC resistive full-, quarter- and half-bridge, pressure sensor 4.8 kHz carrier frequency mode inductive full-, quarter- and half-bridge, LVDT and RVDT			
Sensor connection	quarter-bridge	3-wire with internal 350 Ω bridge completion		
	half-bridge	3- or 5-wire for cable-length compensation		
	full-bridge	4- or 6-wire for cable-length compensation		
internal Shunt resistor	100 kΩ, Vexc+ - Vsig+			
Sensor excitation (selectable)	DC: 5 VDC	CF: 5 Veff	DC: 2.5 VDC	CF: 2.5 VDC
Allowable sensor resistance	> 300 Ω	> 300 Ω	> 100 Ω	> 100 Ω
Input range (user selectable)	±1.25 mV/V	±1.25 mV/V	±2.5 mV/V	±2.5 mV/V
	±2.5 mV/V	±2.5 mV/V	±10 mV/V	±10 mV/V
	±10 mV/V	±10 mV/V	±20 mV/V	±20 mV/V
	±20 mV/V	±20 mV/V	±50 mV/V	±50 mV/V
	±50 mV/V	±50 mV/V	±100 mV/V	±100 mV/V
	±100 mV/V	±100 mV/V	±200 mV/V	±200 mV/V
	±200 mV/V	±200 mV/V	±1000 mV/V	±1000 mV/V
	±1000 mV/V	±1000 mV/V	±2000 mV/V	±2000 mV/V
Temperature influence Offset drift	< 0.2 μV / 10 K (2.5 mV/V input range)			
Temperature influence Gain drift	< 0.05 % / 10 K			
Long-term drift	< 0.2 μV/V / 24 h			
	< 2 μV/V / 8000 h			
Linearity error	< 0.02 % FS			
Noise voltage at 10 Hz	< 0.3 μV/V			
Noise voltage at 100Hz	< 1 μV/V			

Voltage Input

Channels	1		
Measurement voltage	Range	Accuracy	Resolution
	±10 V	±2 mV	±1,2 µV
Accuracy	0.02 % typical		
	0.05 % in controlled environment		
	0.1 % in industrial area		
Repeatability	0.01 % typical (within 24 h)		
Input impedance	>1 MΩ		
Isolation voltage	500 VDC channel to channel-to-power		
Temperature influence Offset drift	<0.2 µV / 10 K (2.5 mV/V input range)		
Temperature influence Gain drift	<0.05 % / 10 K		
	long-term drift	<0.2 µV/V / 24 h	
	<2 µV/V / 8000 h		
linearity error	<2.00 % FS		
Noise voltage at 10 Hz	<0.3 µV/V		
Noise voltage at 100 Hz	<1 µV/V		

Voltage Output

Channels	1		
Galvanic isolation	250 VDC channel to channel-to-power		
Output voltage	±10 VDC		
Accuracy	0.02 %		
Resolution	16-bit		
Sample rate	20 kHz		
Allowable load resistance	> 2kΩ		
Temperature influence Offset drift	< 1 mV / 10 K		
Temperature influence Gain drift	<0.05% / 10 K		
Noise voltage at 10 Hz	<2mV at 10 hZ		
Long-term drift	<1 mV / 24 h		
	<2.5 mV / 8000h		

Analog/Digital-Conversion

Resolution	18-bit		
Sample rate	20 kHz		
Modulation method	SAR		

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Digital Inputs

Channels	4
Type	status
Input voltage	max. 30VDC
Input current	max 2 mA
Threshold (Programmable)	TTL or EN61131-2, Type 1
Logic voltage "0"	-3 to 5 VDC (EN61131-2, Type 1)
Logic voltage "1"	11 to 30 VDC (EN61131-2, Type 1)

Digital Outputs

Channels	4
Type	Status
Contact	Open drain p-channel MOSFET (short circuit proof)
Output voltage	5 to 30 VDC (external supply required)
Load capacity	30 VDC / 500 mA (resistive load capacity)

Power Supply

Input voltage	10 to 30 VDC, overvoltage and overcurrent protection
Power consumption	approx.. 6 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

Mechanical information

Material	Aluminum
Measurements (W x H x D)	30x 137 x 135mm
Weight	approx. 500 g

Ordering Information

Article number	657632
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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