

Q.bloxx XE A142

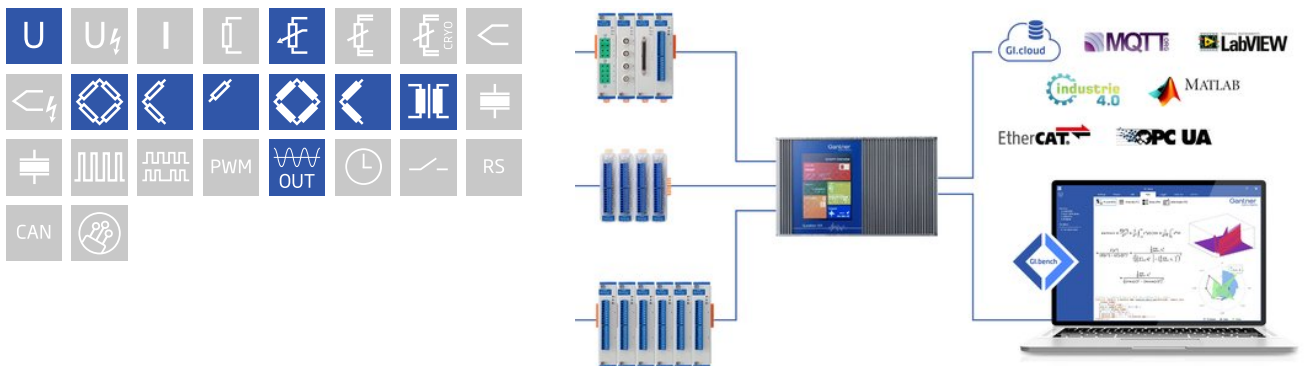
Measurement module for analog inputs and SSI

Q.bloxx XE is a new addition to the Q.series product family - the ideal EtherCAT DAQ solution for widely distributed installations that require higher performance and custom sensor terminations. Q.bloxx XE measurement modules possess integrated signal conditioning and arithmetic functions, packaged in modular, DIN Rail mountable enclosures that easily snap together for system expansion and are capable of measuring up to 100 kHz per channel with short cycle times and low jitter for accurate synchronization.

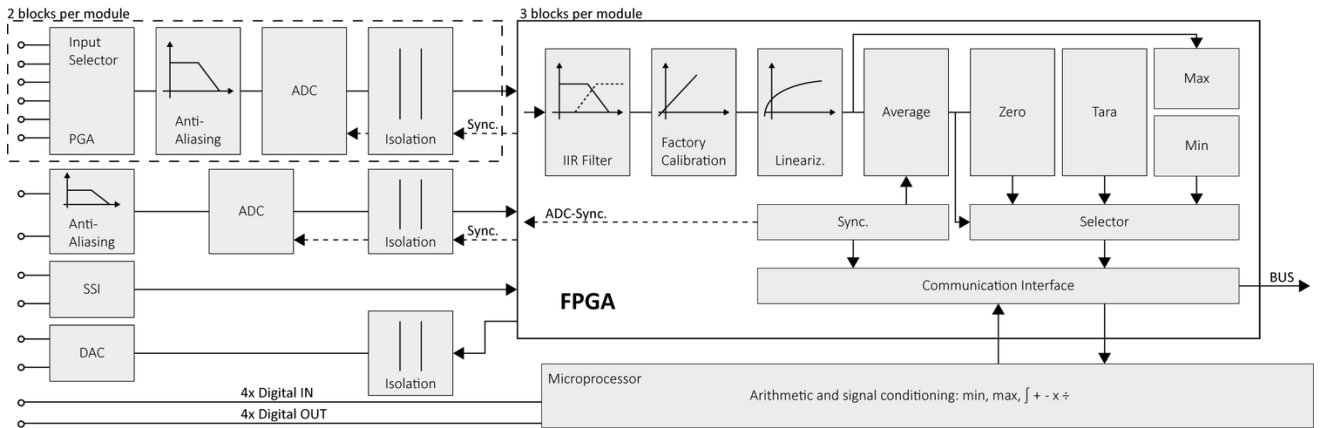
- RS-485, 2-wire, EtherCAT (LVDS)
- FoE (file access over EtherCAT, ETG.1000.5) and CoE (CAN over EtherCAT, ETG.50001.1)
- Configurable PDO mapping to optimize the data throughput
- Electromagnetic Compatibility according to EN61000-4 and EN55011
- Power supply 10 ... 30 VDC and DIN rail mounting (EN60715)

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
- Synchronus 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

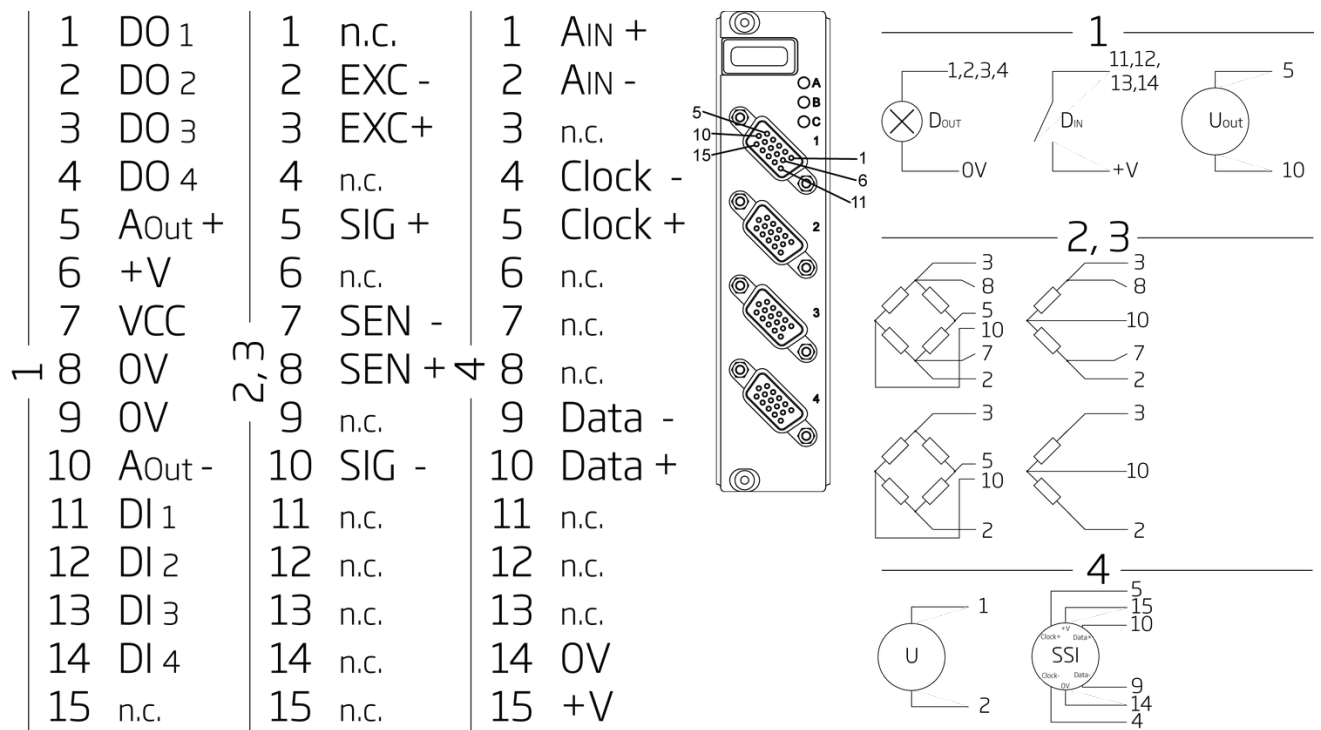


Block diagram



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 and ABS
Measurements (W x H x D)	30x 145 x 135mm
Weight	approx. 500 g

Ordering Information

Article number	702118
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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