▷ DATAFORTH®	Data Acquisition Systems	MAQ20

Analog Input Module: Strain Gage◇
Interface to Full, Half, and Quarter Bridge Sensors

Description

The MAQ20 strain gage input module offers 4 input channels and can interface to full, half, and quarter bridge sensors using 4-wire or 6-wire connections. All channels are individually configurable for range, alarms, and averaging to match the most demanding applications. In addition, sampling rate, resolution, bandwidth, excitation voltage, and shunt calibration are user settable parameters. Input signals are sampled simultaneously and burst mode can be used to capture fast events. High, Low, High-High and Low-Low alarms provide essential monitoring and warning functions to ensure optimum process flow and fail-safe applications. Hardware low-pass filtering in each channel provides rejection of unwanted frequencies. Field I/O connections are made through spring cage terminal blocks with positions designated for the termination of wiring shields.

Input-to-bus isolation is a robust 1500Vrms and each individual channel is protected up to 30Vrms continuous overload in case of inadvertent wiring errors. Overloaded channels do not adversely affect other channels in the module, which preserves data integrity.

Input ranges are selectable on a per-channel basis. Four ranges are available. Over-range and under-range up to 2% beyond the specified input values is allowed, and accuracy is guaranteed to ±fs.

◇ Preliminary at date of printing.
   Contact factory for availability.

▶ Features

- 4 Input Channels for 4-Wire or 6-Wire Sensors
- Interface to Full, Half and Quarter (with external bridge completion) Sensors
- All Channels Individually Configurable for Range, Alarms, Averaging
- Programmable Sampling Rate & Resolution
- Simultaneous Sampling of Input Signals
- Burst Mode for Capturing Fast Events
- Programmable Bandwidth, Excitation, Shunt Calibration
- 1500Vrms Input-to-Bus Isolation
- Each Channel Protected up to 30Vrms Continuous Overload
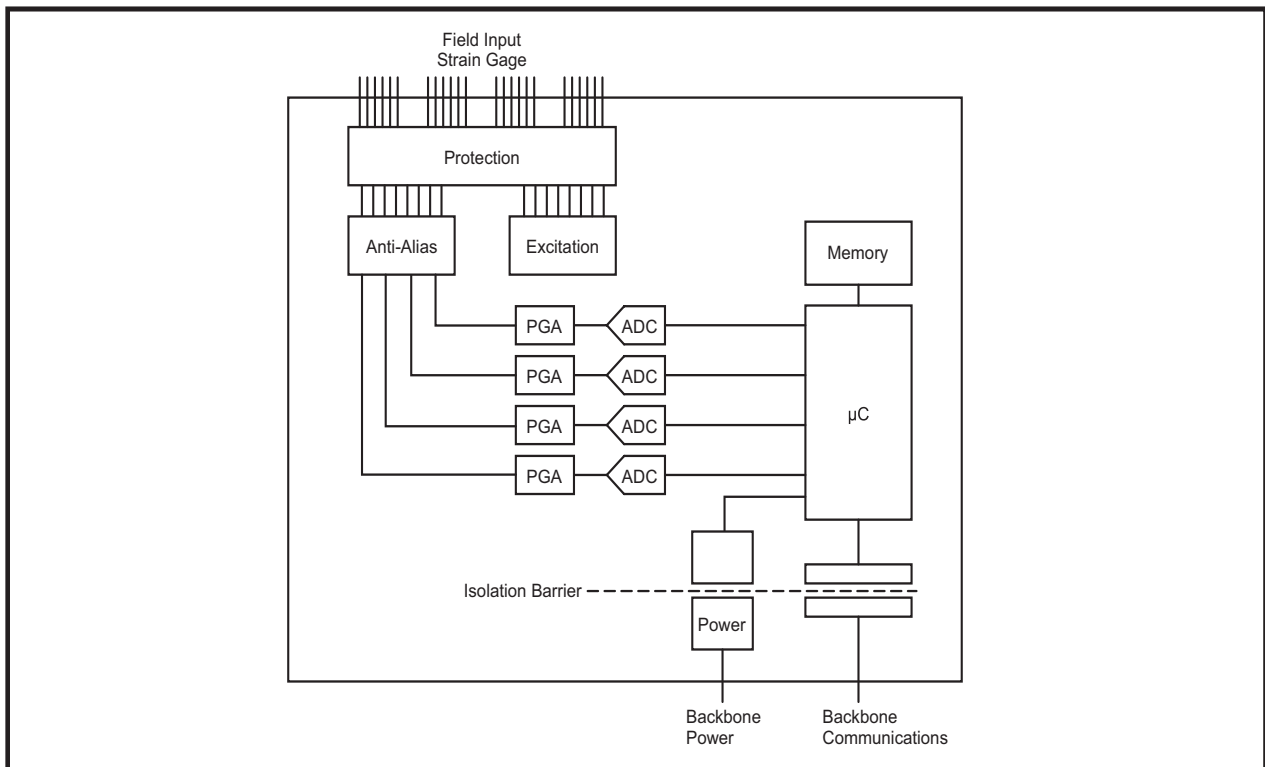
Figure 1: MAQ20 Strain Gage Input Module Block Diagram

For information call **800-444-7644**

ASSURED SYSTEMS

DATAFORTH®

Data Acquisition Systems	MAQ20

MAQ20

Specifications Typical* at T_A=+25°C and +24VDC system power

Module	Description
MAQ20-BRDG1◇ Input Range Excitation Voltage Shunt Calibration	4-channel, Full, Half, Quarter Bridge (w/ Ext. Bridge Compl.) 4-wire or 6-wire connection 1.25mV/V, 2.5mV/V, 5mV/V, 10mV/V Sensitivity 2.5V, 3.333V, 5.0V, 10.0V 14.7kΩ, 43.2kΩ

Per Channel Setup
Input Protection
  Continuous
  Transient
CMV
  Channel-to-Bus
  Channel-to-Channel
  Transient
CMR
NMR
	Individually configurable for range, alarms, averaging
	
	30Vrms max
	ANSI/IEEE C37.90.1
	
	1500Vrms, 1 min
	±3V peak
	ANSI/IEEE C37.90.1
	100dB at 50/60Hz
	60dB/decade

Accuracy[1]
Linearity
Resolution
Stability
  Zero
  Span
	±0.03% span
	±0.01% span
	0.0005% to 0.005% span
	
	±50ppm/°C
	±75ppm/°C

Bandwidth, –3dB Sampling Rate, Simultaneous Alarms Power Supply Current	Programmable to 10kHz 1kS/s to 64kS/s burst High / High-High / Low / Low-Low 600mA
Dimensions (h)(w)(d)	4.51" x 0.60" x 3.26" (114.6mm x 15.3mm x 82.8mm)

Environmental
  Operating Temperature
  Storage Temperature
  Relative Humidity
Emissions, EN61000-6-4
  Radiated, Conducted
Immunity EN61000-6-2
  RF
  ESD, EFT
	
	–40°C to +85°C
	–40°C to +85°C
	0 to 95% Noncondensing
	ISM Group 1
	Class A
	ISM Group 1
	Performance A ±0.5% Span Error
	Performance B

Certifications	Heavy Industrial CE, ATEX Pending UL Class I, Division 2, Groups A, B, C, D Pending

NOTES:
* Contact factory or your local Dataforth sales office for maximum values.
◇ Preliminary at date of printing. Contact factory for availability.
(1) Includes conformity, hysteresis and repeatability.

Ordering Information

Model	Description
MAQ20-BRDG1◇	Analog Input Module; Bridge/Strain Gage, 4-ch

For input connections and full details on module operation, refer to MA1046 – MAQ20 Strain Gage Input Module Hardware User Manual, available for download at: www.dataforth.com/maq20_download.aspx

Assured Systems

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US

sales@assured-systems.com

Sales: +1 347 719 4508
Support: +1 347 719 4508

1309 Coffeen Ave
Ste 1200
Sheridan
WY 82801
USA

EMEA

sales@assured-systems.com

Sales: +44 (0)1785 879 050
Support: +44 (0)1785 879 050

Unit A5 Douglas Park
Stone Business Park
Stone
ST15 0YJ
United Kingdom

VAT Number: 120 9546 28
Business Registration Number: 07699660