Analog Input Modules: Process Voltage & Process Current◈

Isolated Channel-to-Channel, High Resolution Conversion, Wide Bandwidth

Description

The MAQ20-ISOMV and MAQ20-ISOV voltage input modules and MAQ20-ISOI current input module offer 8 isolated input channels with multiple signal ranges and high resolution conversion for precise measurement of a wide range of analog voltage and current signals. All channels are individually configurable for range, alarm limits, averaging, and high-speed burst scan to match the most demanding applications. High, Low, High-High and Low-Low alarms provide essential monitoring and warning functions to ensure optimum process flow and fail-safe applications. Signal bandwidth is 5kHz for voltage input and 1.5kHz for current input. The burst scan mode allows up to 10kS/s per channel to be captured simultaneously. Field I/O connections are made through a pluggable terminal block with four positions provided for the termination of wiring shields.

Input-to-bus isolation is a robust 1500Vrms and each individual channel is protected up to 240Vrms continuous overload in case of inadvertent wiring errors. In addition, the MAQ20-ISOMV, -ISOV, and -ISOI modules have 300Vrms continuous channel-to-channel isolation. Overloaded channels do not adversely affect other channels in the module, thereby preserving data integrity.

Signal ranges for the voltage input modules are from ±100mV to ±10V, and for the current input module, 0 to 20mA.

All MAQ20 modules are designed for installation in Class I, Division 2 hazardous locations and have a high level of immunity to environmental noise commonly present in heavy industrial environments.

Features

- 8 Isolated Input Channels with Multiple Ranges and High Resolution Conversion
- Precise Measurement of Wide Range of Analog Voltage and Current Signals
- Channels Individually Configurable for Range, Alarm Limits, Averaging, and High-speed Burst Scan Mode
- 1500Vrms Input-to-Bus Isolation
- 300Vrms Channel-to-Channel Isolation
- Each Channel Protected up to 240Vrms Continuous Overload
- Overloaded Channels Do Not Adversely Affect Other Channels

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

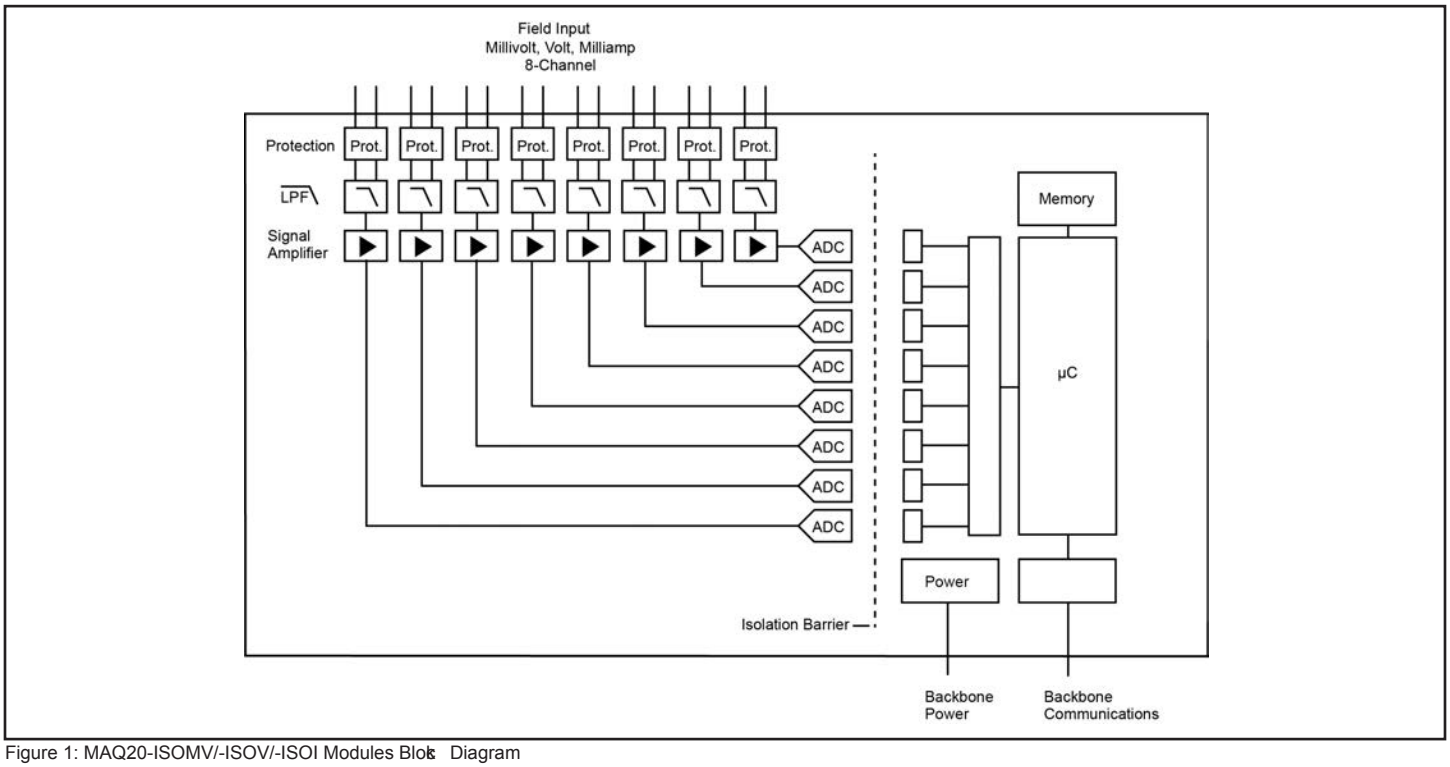

Figure 1: MAQ20-ISOMV/-ISOV/-ISOI Modules Block Diagram

Specifications

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

Module	Description
MAQ20-ISOMV1◇ MAQ20-ISOV1◇ MAQ20-ISOV2◇ MAQ20-ISOI1◇	0 to +100mV, ±100mV (Default) 0 to +1V, ±1V (Default) 0 to +10V, ±10V (Default) 0-20mA (Default), 4-20mA, ±20mA
Per Channel Setup Input Protection Continuous Transient CMV Channel-to-Bus Channel-to-Channel Transient CMR NMR	Individually configurable for range, alarms, averaging, burst scan 240Vrms max ANSI/IEEE C37.90.1 1500Vrms, 1 min 300Vrms, 425V peak ANSI/IEEE C37.90.1 100dB at 50/60Hz 20dB/decade
Accuracy(1) Linearity / Conformity Resolution Stability Zero Span	±0.035% span ±0.02% span 0.0015% span 15ppm/ºC 35ppm/ºC
Bandwidth Scan Rate Continuous Burst Alarms Open Input Response mV Input Detection Time Power Supply Current	5kHz Voltage Input, 1.5kHz Current Input 500 Ch/s net, 65 Ch/s at 8-Ch Simultaneous 10kS/s per channel High / High-High / Low / Low-Low Upscale § s 270mA
Dimensions (h)(w)(d)	3.27” x 4.51” x 0.60” (83.1mm x 114.6mm x 15.3mm)
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 Compliant ATEX Compliance Pending UL/CUL Listing Pending (Class I, Division 2, Groups A, B, C, D)

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

Ordering Information

Model	Description
MAQ20-ISOMV1◇	Isolated Analog Voltage Input Module; ±100mV
MAQ20-ISOV1◇	Isolated Analog Voltage Input Module; ±1V
MAQ20-ISOV2◇	Isolated Analog Voltage Input Module; ±10V
MAQ20-ISOI1◇	Isolated Analog Current Input Module; ±20mA

Terminal Block Position (Top to Bottom)	Input Connections
1	CH0 +IN
2	CH0 -IN
3	SHIELD
4	CH1 +IN
5	CH1 -IN
6	CH2 +IN
7	CH2 -IN
8	SHIELD
9	CH3 +IN
10	CH3 -IN
11	CH4 +IN
12	CH4 -IN
13	SHIELD
14	CH5 +IN
15	CH5 -IN
16	CH6 +IN
17	CH6 -IN
18	SHIELD
19	CH7 +IN
20	CH7 -IN

For input connections and full details on module operation, refer to MA1062 – MAQ20 Ch-Ch Isolated mV-V-mA Input Module Hardware User Manual, available for download at: www.dataforth.com/maq20_download.aspx