Discrete Input Modules: High Density Voltage

20 Input Channels with or without Compliance Voltage

DESCRIPTION

The MAQ®20-DIV20 and MAQ20-DIVC20 are two versions of the same module, offering 20 discrete input channels. The MAQ20-DIV20 interfaces to 10-120VDC/VAC signals. The MAQ20-DIVC20 interfaces to 10-24VDC signals and has a 24VDC compliance voltage source on each channel for interfacing to relay contacts, solid state switches, or other devices that require an excitation. Discrete input states can be read individually or as a block. Logic polarity can be user defined as standard or inverted. The field inputs are designed for harsh industrial environments and have fast switching times. Pulses as narrow as 200µs can be measured. Field input connections are made through high-density spring-cage terminal blocks.

Input-to-bus isolation is a robust 1500Vrms and each individual channel is protected up to 150Vrms continuous overload in case of inadvertent wiring errors.

The high channel count within the narrow module package gives exceptional functionality while preserving valuable mounting space. The high density minimizes cost per channel resulting in economical monitoring solutions.

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

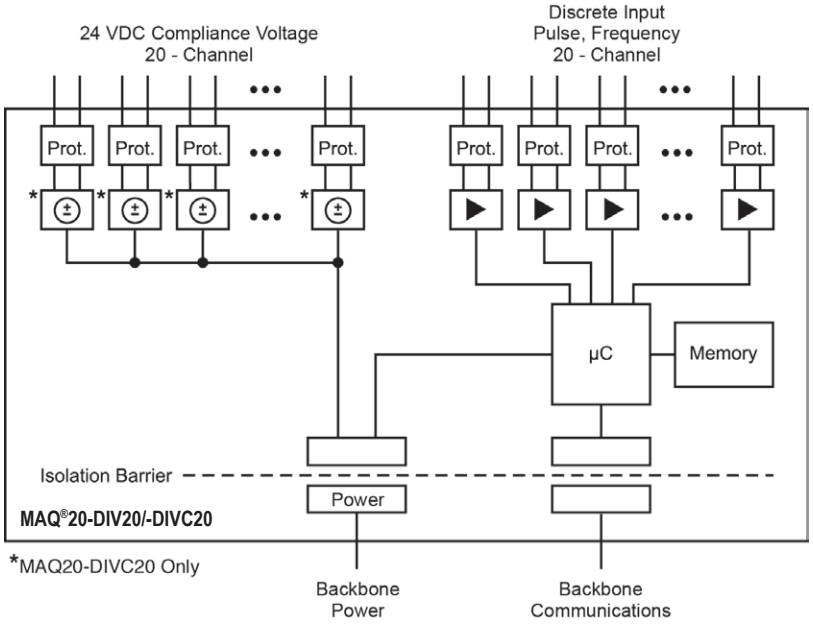
- 20 Discrete Input Channels
- Interfaces to 10-120VDC/VAC Signals (MAQ20-DIV20)
- 24VDC Compliance Voltage for Interface to Relay Contacts, Solid State Switches and Other Devices Requiring Excitation (MAQ20-DIVC20)
- 1500Vrms Input-to-Bus Isolation
- Each Channel Protected up to 150Vrms Continuous Overload
- User-defined Logic Polarity
- Fast Switching Times
- Field Input Connections Use Spring Cage Terminal Blocks
- Most Affordable Price per Channel
- Heavy Industrial CE Compliant
- UL/cUL (Class I, Div 2, Groups A, B, C, D) File E232858
- ATEX Compliance Pending
- Manufactured per RoHS III Directive 2015/863

BENEFITS

- Highly Compact
- Low Cost per Channel
- Modular
- On-vehicle/-mobile Use Possible (Wide Power Supply Voltage)
- Open Software Platform Options
- Easy and Fast Setup/Installation

APPLICATIONS

- Process Control
- Factory Measurement and Control
- Machine Automation
- Military and Aerospace
- Scientific Measurement and Monitoring
- Battery Management



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MAQ20-DIV20/-DIVC20 Discrete Input Voltage Modules Block Diagram

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Specifications

Typical* at T_A =+25°C and +24VDC System Power

Module	Description
MAQ20-DIV20 MAQ20-DIVC20	10-120VDC/VAC-input, 24VDC Nominal 10-24VDC-input, 24VDC Compliance Voltage per Channel
Number of Channels Input Resistance	20 77kΩ
Switching Characteristics Turn-on/Turn-off Time Switching Threshold, Turn-on/Turn-off	 50µs / 50µs 9.0V / 5.5V
Input Protection Continuous Transient CMV Channel-to-Bus Channel-to-channel Transient	 150Vrms (max) ANSI/IEEE C37.90.1 1500Vrms, 1 Minute 0V ANSI/IEEE C37.90.1
Input Functions Logic Selection Block Read	 Standard / Inverted 20 Channel
Scan/Update Rate Power Supply Current	1300 Ch/s Net, 65 Ch/s at 20-ch Simultaneous 50mA
Dimensions (h)x(w)x(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 Performance B
Certifications	Heavy Industrial CE Compliant UL/cUL (Class I, Division 2, Groups A, B, C, D) File E232858 ATEX Compliance Pending

NOTES:
*Contact factory or your local Dataforth sales office for maximum values.

For input connections and full details on module operation, refer to:
MA1059 – MAQ20-DIV20/-DIVC20 Discrete Input Module Hardware User Manual

Ordering Information

Model	Description
MAQ20-DIV20	Analog Input Module; Discrete Input Voltage, 20-ch
MAQ20-DIVC20	Analog Input Module; Discrete Input 24VDC Compliance Voltage, 20-ch

Field Connection (MAQ20-DIV20/ -DIVC20)	Terminal	Terminal	Field Connection (MAQ20-DIV20)	Field Connection (MAQ20-DIVC20)
CH0 +IN	1	2	CH0 –IN	CH0 VC*
CH1 +IN	3	4	CH1 –IN	CH1 VC*
CH2 +IN	5	6	CH2 –IN	CH2 VC*
CH3 +IN	7	8	CH3 –IN	CH3 VC*
CH4 +IN	9	10	CH4 –IN	CH4 VC*
CH5 +IN	11	12	CH5 –IN	CH5 VC*
CH6 +IN	13	14	CH6 –IN	CH6 VC*
CH7 +IN	15	16	CH7 –IN	CH7 VC*
CH8 +IN	17	18	CH8 –IN	CH8 VC*
CH9 +IN	19	20	CH9 –IN	CH9 VC*
CH10 +IN	21	22	CH10 –IN	CH10 VC*
CH11 +IN	23	24	CH11 –IN	CH11 VC*
CH12 +IN	25	26	CH12 –IN	CH12 VC*
CH13 +IN	27	28	CH13 –IN	CH13 VC*
CH14 +IN	29	30	CH14 –IN	CH14 VC*
CH15 +IN	31	32	CH15 –IN	CH15 VC*
CH16 +IN	33	34	CH16 –IN	CH16 VC*
CH17 +IN	35	36	CH17 –IN	CH17 VC*
CH18 +IN	37	38	CH18 –IN	CH18 VC*
CH19 +IN	39	40	CH19 –IN	CH19 VC*

NOTES: *VC = $V_{COMPLIANCE}$

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