Communications Modules

Provide Connection, Power, Interface

DESCRIPTION

The MAQ®20 communications module is offered in two models and provides the connection between a host computer and a MAQ20 Data Acquisition System. MAQ20-COM4 communicates using Ethernet, USB, or RS-485; MAQ20-COM2 uses Ethernet, USB, or RS-232. Ethernet communications use the Modbus® TCP protocol and USB communications are based on the Modbus RTU protocol, which RS-485 and RS-232 communications also use. Serial communications over RS-485 can be either 2-wire or 4-wire.

When using the Ethernet interface, up to four simultaneous socket connections are supported. Serial communications over RS-232 or RS-485 can be run at baud rates as fast as 921.6kbps.

A very useful feature of the MAQ20 system is the capability to store acquired data locally for later analysis. This is provided by the easily accessible and removable 4GB micro-SD memory card that is in the MAQ20-COMx module and can be used to log data acquired from all input modules.

Each MAQ20-COMx module can interface to up to 24 I/O modules in any combination, allowing high channel counts and great lexibility in system configuration.

To power the system, a 7-34VDC power source is connected to the communications module. Regulated and protected supplies within the module then provide power both to the internal circuits and to all I/O modules in the system. When many high power I/O modules are used in a system, MAQ20-PWR3 load share power supply modules can be installed in standard I/O module slots to provide the necessary additional power.

To ensure robustness, the communications interface-to-bus isolation is 50VDC and power input terminals are protected against overvoltage, transient, and reverse connections.

At a minimum, a MAQ20 Data Acquisition System must have a communications module, a backbone, and one I/O module.

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

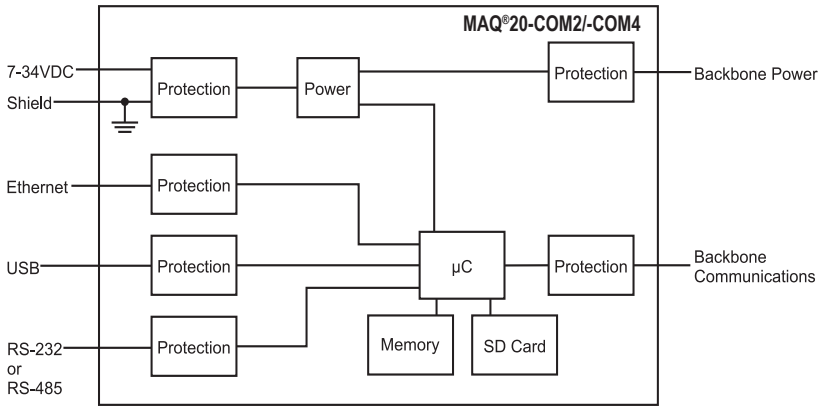
- Connect Host Computer and MAQ20 System
- Communicate Using Ethernet, USB, RS-485 or RS-232
- Up to 4 Simultaneous Socket Connections with Ethernet
- Baud Rates to 921.6kbps with RS-232/RS-485
- Follow Modbus® TCP or RTU Protocols
- Store Acquired Data Locally
- Interface to up to 24 I/O Modules
- 50VDC Comm. Interface-to-Bus Isolation
- 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 IoT Enabled, Ready-to-Use
- 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



MAQ20 Communications Module Block Diagram

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Specifications

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

Module	Description
MAQ20-COM4 MAQ20-COM2	Ethernet, USB, RS-485 Ethernet, USB, RS-232
Communications Ethernet USB RS-485 RS-232	 10/100 Base-T (1000 Base-T Compatible) RJ-45, Modbus® TCP USB 2.0, Type B, Proprietary Modbus Over USB 2-wire or 4-wire, up to 921.6kbps, Up to 4000 ft, RJ-45, Modbus RTU Up to 921.6kbps, RJ-45, Modbus RTU
CMV Power-to-Bus Communication Port-to-Bus Transient	 50VDC 50VDC ANSI/IEEE C37.90.1
Power Supply Input Power Power to Bus Power Conversion Efficiency Quiescent Current	 7-34VDC at 2A (max) 5VDC at 3A (max) 76% 100mA
Dimensions (h)x(w)x(d)	 4.51" x 1.11" x 3.26" (114.6mm x 28.2mm 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 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.

Power Input Terminal Block Position (top to bottom)	Input Connections	
1	7 - 34 VDC	+
2	7 - 34 VDC	–
3		SHIELD

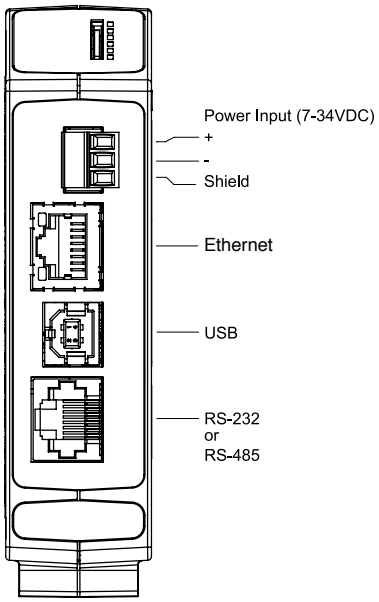
For input connections and full details on module operation, refer to:
MA1040 – MAQ20 Communications Module Hardware User Manual

Ordering Information

Model	Description
MAQ20-COM4	Ethernet, USB, RS-485
MAQ20-COM2	Ethernet, USB, RS-232



Communications Module



Communications Module Input Connections

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