ProSoft® TECHNOLOGY

DATASHEET

Modbus Master/Slave Communication Module, non-CE
MVI71-MCM

The MVI71-MCM Modbus Master/Slave Communication Module allows PLC® processors to interface easily with other Modbus protocol compatible devices.

The module acts as an Options module between the Modbus network and the PLC backplane. Compatible devices include not only Modicon® PLCs (almost all support the Modbus protocol) but also a wide range of process and control devices from a variety of manufacturers. Many SCADA packages also support the Modbus protocol.

General Specifications

- Single Slot - 1771 backplane compatible
- The module is recognized as an Input/Output module and has access to processor memory for data transfer between processor and module
- Ladder Logic is used for data transfer between module and processor.
- Configuration data obtained through user-defined ladder. Sample ladder file included

General Specifications - Modbus Master/Slave

Communication Parameters	Baud rate: 110 to 115K baud Stop bits: 1 or 2 Data size: 7 or 8 bits Parity: None, Even, Odd RTS timing delays: 0 to 65535 milliseconds
Modbus Modes	RTU mode (binary) with CRC-16 ASCII mode with LRC error checking
Floating-Point Data	Floating-point data movement supported, including configurable support for Enron, Daniel®, and other implementations
Modbus Function Codes Supported	1: Read Coil Status 2: Read Input Status 3: Read Holding Registers 4: Read Input Registers 5: Force (Write) Single Coil 6: Preset (Write) Single Holding Register 8: Diagnostics (Slave Only, Responds to Subfunction 00) 15: Force(Write) Multiple Coils 16: Preset (Write) Multiple Holding Registers 17: Report Slave ID (Slave Only) 22: Mask Write Holding Register (Slave Only) 23: Read/Write Holding Registers (Slave Only)

Functional Specifications

Modbus Master

A port configured as a virtual Modbus Master actively issues Modbus commands to other nodes on the Modbus network. The Master ports have an optimized polling characteristic that polls slaves with communication problems less frequently.

Specification	Description
Command List	Up to 100 commands per Master port, each fully configurable for function, slave address, register to/from addressing and word/bit count.
Polling of Command List	Configurable command list, including continuous and on change of data, and user or conditionally enabled.
Status Data	Error codes available on an individual command basis. In addition, a slave status list is maintained per active Modbus Master port.

Modbus Slave

A port configured as a Modbus slave permits a remote Master to interact with all data contained in the module. This data can be derived from other Modbus slave devices on the network, through a Master port, or from the module.

Specification	Description
Node Address	1 to 247 (software selectable)
Status Data	Error codes, counters and port status available per configured slave port

Hardware Specifications

Specification	Description
Form Factor	Single Slot 1771 chassis compatible BTR/BTW data transfer Local or remote rack
Backplane current load	800 mA @ 5 V
Operating temperature	0 to 60°C (32 to 140°F)
Storage temperature	-40 to 85°C (-40 to 185°F)
Shock	30g operational 50g non-operational
Vibration	5 g from 10150 Hz
Relative humidity	5% to 95% (non-condensing)
LED Indicators	Module status Backplane transfer status Application status Serial activity and error LED status
Debug/Configuration port (CFG)	
CFG Port (P1)	RJ45 (DB-9M with supplied cable) RS-232 only
Configuration Connector	RJ45 RS-232 Connector (RJ45 to DB-9 cable included)
Application Ports	
Application Serial ports	Two RJ45 RS-232/422/485 Application ports

Agency Approvals and Certifications

cULus	7R16 Class I Div 2 Groups A,B,C,D
CB Certified	IEC61010
ATEX	EN60079-0 Category 3, Zone 2 EN60079-15