5 Reference

5.1 Product Specifications

The MVI56E Modbus TCP/IP Client/Server Communication Module allows Rockwell Automation ControlLogix processors to interface easily with other Modbus compatible devices.

Compatible devices include Modicon Programmable Automation Controllers (PACs), as well as a wide variety of instruments and devices. A 5000-word register space in the module exchanges data between the processor and the Modbus TCP/IP network.

The MVI56E-MNET and MVI56E-MNETXT are functionally the same. The MVI56E-MNET is designed for standard process applications. The MVI56E-MNETXT is designed for the Logix-XT™ control platform, allowing it to operate in extreme environments and at higher operating temperatures. It has a conformal coating to protect it from harsh or caustic conditions.

5.1.1 General Specifications

- Backward compatible with previous MVI56-MNET versions
- Single-slot 1756 ControlLogix backplane compatible
- 10/100 Mbps auto crossover detection Ethernet configuration and application port
- User-definable module data memory mapping of up to 5000 16-bit registers
- CIPconnect-enabled network configuration and diagnostics monitoring using ControlLogix 1756-ENxT and 1756-CNB modules and EtherNet/IP pass-through communication
- ProSoft Configuration Builder (PCB) software supported, a Windows-based graphical user interface providing simple product and network configuration
- Sample ladder logic and Add-On Instructions (AOI) are used for data transfer between module and processor
- 4-character, alpha-numeric, scrolling LED display of status and diagnostics data in plain English – no cryptic error or alarm codes to decipher
- ProSoft Discovery Service (PDS) software used to locate the module on the network and assign temporary IP address
- Personality Module - a non-volatile, industrial-grade Compact Flash (CF) card used to store network and module configuration, allowing quick in-the-field product replacement by transferring the CF card

5.1.2 Modbus TCP/IP Specifications

- ProSoft Technology's Modbus TCP/IP implementation (MNET) includes both Client (Master) and server (slave) capabilities
- Modbus data types overlap in the module's memory database, so the same data can be conveniently read or written as bit-level or register-level data.
- Configurable floating-point data movement is possible, including support for Enron or Daniel® floating-point formats

Modbus TCP/IP Server (Slave)

- Supports ten independent server connections for Service Port 502 (MBAP)
- Supports ten independent server connections for Service Port 2000 (Encapsulated)
- Accepts Modbus Function Codes 1, 2, 3, 4, 5, 6,7, 8, 15, 16, 17, 22 and 23
- Module data can be derived from other Modbus server devices on the network through the Client or from the ControlLogix processor

Modbus TCP/IP Client (Master)

- Actively reads data from and writes data to Modbus TCP/IP devices, using MBAP or Encapsulated Modbus message formats
- Transmit Modbus Function Codes 1, 2, 3, 4, 5, 6, 7, 15, and 16
- Offers one Client connection with up to 100 commands to talk to multiple servers
- ControlLogix processor can be programmed to use special functions to control the activity on the Client by actively selecting commands to execute from the command list (Command Control) or by issuing commands directly from the ladder logic (Event Commands)

Status Data

- Error codes, counters, and module status available from module memory through the server, through the Client, or through the ladder logic and controller tags in RSLogix™ 5000

5.1.3 Hardware Specifications

Specification	Description
Backplane Current Load	800 mA @ 5 Vdc 3 mA @ 24 Vdc
Operating Temperature	0°C to 60°C (32°F to 140°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Shock	30 g operational 50 g non-operational Vibration: 5 g from 10 Hz to 150 Hz
Relative Humidity	5% to 95% (without condensation)
LED Indicators	Application Status (APP) Module Status (OK)
4-Character, Scrolling, Alpha-Numeric LED Display	Shows Module, Version, IP, Application Port Setting, Port Status, and Error Information
Debug/Configuration/Application Ethernet port (E1)	
Ethernet Port	10/100 Base-T, RJ45 Connector, for CAT5 cable Link and Activity LED indicators Auto-crossover cable detection