

Modbus TCP/IP to 'C' Programmable Serial 4 Port Gateway 5202-MNET-ADM4

The ProLinx® 'C' Programmable Application Development Module to Modbus TCP/IP creates a powerful platform for developing and running 'C' applications to communicate with Modbus TCP/IP networks and devices. The gateway provides one Ethernet port and four serial ports.

The Modbus TCP/IP protocol driver supports Schneider Electric processors as well as most other devices that use Modbus TCP/IP for communicating over Ethernet networks. The gateway offers both Client (Master) and Server (Slave) configurations that use standard Ethernet TCP/IP connections. The driver recognizes both Modbus TCP/IP MBAP and Encapsulated Modbus messages.

The ADM functionality allows the module to be programmed to accommodate devices with unique serial protocols. The module includes General Software Embedded DOS 6-XL. This operating system provides DOS compatibility along with real-time multitasking functionality. DOS compatibility allows user applications to be developed using standard DOS tools, such as DigitalMars and Borland compilers.



Features	Benefits
Powerful network integration	<ul style="list-style-type: none"> Communicate between dissimilar networks Shared database exchanges information from devices on both networks View diagnostics between both networks
Modbus TCP/IP protocol interface	<ul style="list-style-type: none"> Modbus TCP/IP adds Ethernet capability to one of the most widely used industrial protocols Suitable for SCADA and "foreign device" interface applications Floating point data movement supported, including configurable support for Enron and Daniel® floating point applications Communicate with programmable controllers, intelligent devices, sensors and instruments Allows PCs and HMIs to monitor field devices
'C' Programmable	<ul style="list-style-type: none"> Develop and deploy 'C' applications for a custom implementation, or to protect a proprietary algorithm Interface Modbus TCP/IP devices to serial devices such as bar code scanners, alarm/status printers, terminal port emulation, and legacy serial protocols Up to four fully programmable serial ports available Rapidly create specialized applications using a familiar programming language Libraries include functions for backplane, ports, configuration, and data communication
Backed by ProSoft Technology®	<ul style="list-style-type: none"> 20-year history of delivering high-quality, reliable solutions designed with you in mind Free, unlimited, worldwide Technical Support by phone for pre-sale, set-up, or troubleshooting support helps you get going sooner and stay running longer Three-Year Warranty ensures reliability and protects against equipment failures Free ProSoft Software tools tightly integrate with our hardware...a simple and quick, total solution to help you make our products fit your applications

Configuration

The 'C' Programmable modules are completely configurable. The included API offers the option of text or binary configuration files, configuration through ladder logic, or hard-coded configuration within the application.

General Specifications

ProLin[®] Communication Gateways provide connectivity for two or more dissimilar network types. The gateways, encased in sturdy extruded aluminum, are stand-alone DIN-rail mounted solutions that provide data transfer between many of today's most widely used industrial automation protocols.

Modbus TCP/IP

ProSoft's Modbus TCP/IP implementation uses the gateway's shared internal memory database for data transfer. Sharing the memory database with another protocol driver allows the gateway to transfer data between Modbus TCP/IP devices and other devices on other networks.

Configurable floating point data movement is supported, including support for Enron or Daniel[®] floating point applications.

Modbus TCP/IP Server (Slave)

The server driver accepts incoming connections on Service Port 502 for clients using Modbus TCP/IP MBAP messages and from clients on Service Port 2000 (or other Service Ports) for clients using Encapsulated Modbus messages..

- Supports five independent server connections for Service Port 502 (MBP)
- Supports five independent server connections for Service Port 2000 (Encapsulated)
- Supports a total Modbus TCP/IP data transfer capacity of up to 4000 registers or up to 64,000 bits in any combination of data types throughout the memory database
- Modbus data types overlap in the gateway's memory database, so the same data can be conveniently read or written as bit-level or register-level data.

Modbus TCP/IP Client (Master)

- Actively reads data from and writes data to Modbus TCP/IP devices, using MBAP or Encapsulated Modbus message formats
- Offers one client connection with up to 100 commands to talk to multiple servers

Status Data

Error codes, counters, and port status available

'C' Programmable

The ADM API Suite allows software developers to access the serial ports without needing detailed knowledge of the module's hardware design. The ADM API Suite consists of two distinct components: the Serial Port API and the ADM API.

Applications for the ADM module may be developed using industry-standard DOS programming tools and the appropriate API components.

Development Environment

- Operating system: General software DOS 6-XL
- Compatible compiler (16-bit DOS target)
 - Digital Mars C++ V8.49 (included)
 - Borland C++ V5.02

SDK Includes

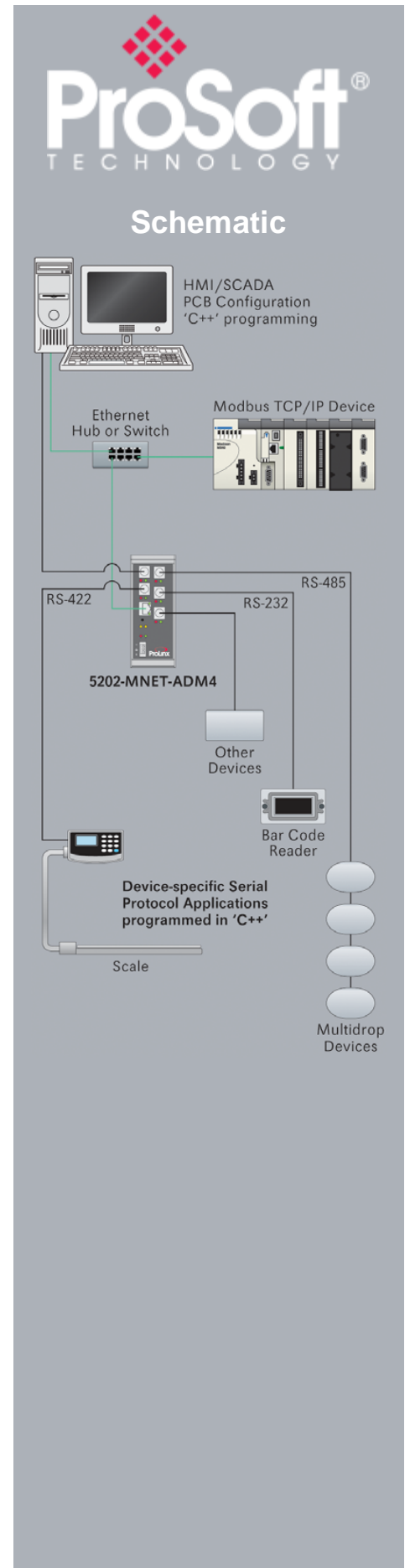
- ADM API LIB (library) File
- Complete API Documentation
- Image file download utility
- General software DOS 6-XL
- ADM API Header File
- Image file creation utility
- DigitalMars 'C' compiler
- Example Code Files

Functional Specifications

Modbus TCP/IP

Modbus Commands Supported (Client and Server)	1: Read Coils Status	6: Preset (Write) Single Holding Register
	2: Read Input Status	15: Force (Write) Multiple Coils
	3: Read Holding Registers	16: Preset (Write) Multiple Holding Registers
	4: Read Input Registers	
	5: Force (Write) Single Coil	

Configurable Parameters: (Client and Server)	Gateway IP Address, Modbus data type starting address offsets, Floating point start address and database offset
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Modbus TCP/IP (continued)

Configurable Parameters: Client Only	Minimum Command Delay, Response Timeout, Retry Count, Command Error Pointer
Command List	Up to 100 fully-configurable Client commands
Status Data	Error codes reported individually for each command
Command List Polling	Each command can be individually enabled or disabled; write-only-on-data-change is available

'C' Programmable

Each API provides a library of function calls. This library supports any programming language that is compatible with the 'C' calling convention.

Initialization	Open and close the API
Debug Port	Debug port user interface
Database	Read and write data to database
Timer	Start and check timers
LED	Set user LED indicators
Flash	Parse configuration files

Hardware Specifications

Specification	Description
Power Supply	24 VDC nominal, 18 to 32 VDC allowed Positive, Negative, GND Terminals 2.5 mm screwdriver blade
Current Load	500 mA max@ 32 VDC max
Operating Temperature	-20 to 50°C (-4 to 122°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Relative Humidity	5% to 95% (non-condensing)
Dimensions	5.20H x 2.07W x 4.52D in. (13.2cmH x 5.25cmW x 11.48cmD)
LED Indicators	Power and Module Status, Application Status, Serial Port Activity LED, Serial Activity and Error LED Status
Configuration Serial Port	DB-9M RS-232 only, No hardware handshaking
Ethernet Port (Ethernet protocol gateways only)	10Base-T half duplex RJ45 Connector Link and Activity LED indicators Electrical Isolation 1500 V rms at 50 Hz to 60 Hz for 60 s, applied as specified in section 5.3.2 of IEC 60950: 1991 Ethernet Broadcast Storm Resiliency = less than or equal to 5000 [ARP] frames-per-second and less than or equal to 5 minutes duration
Application Serial Ports	RS-232/422/485 RS-232 handshaking configurable RS-422/485 screw termination included
Serial Port Isolation	2500V RMS port signal isolation per UL 1577 3000V DC min. isolation port to ground and port to logic
Shipped with Each Unit	Mini-DIN to DB-9M serial cables 4 ft RS-232 configuration cable 2.5mm screwdriver CD (docs and Configuration utility) RS-422/485 DB-9 to Screw Terminal Adaptor (1 or 4, depending on ports)

Agency Approval & Certification

UL/cUL	ISA 12.12.01 Class I, Div 2 Groups A, B, C, D
cUL	C22.2 No. 213-M1987



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Additional Products

ProSoft Technology® offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms.

For a complete list of products, visit our web site at:
www.prosoft-technology.com

Ordering Information

If you are unsure which product to select, please contact your local distributor. To order this product, please use the following:

Modbus TCP/IP to 'C' Programmable Gateway

5202-MNET-ADM4

To place an order, please contact your local ProSoft Technology distributor. For a list of ProSoft Technology distributors near you, go to:
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