

Modbus TCP/IP to PROFIBUS DPV1 Master SE Gateway 5204SE-MNET-PDPMV1

Automating integration for Schneider Electric® Modicon® processors and maximizing ease-of-use are the hallmark design criteria behind the new ProLinX® SE line of communication gateways. The first SE gateway, the 5204SE-MNET-PDPMV1 Modbus TCP/IP to PROFIBUS DP-V1 Master gateway, easily turns a Modicon M340™ or Quantum™ Programmable Automation Controllers (PAC) into a PROFIBUS DP-V1 Master. The new Application Communication Logic functions built into ProSoft Configuration Builder (PCB) automatically generate all the Unity™ Pro data types, variables, and logic required for the M340 or Quantum to perform PROFIBUS DP-V1 cyclic and acyclic communication.

PCB automatically generates customized export files based on the gateway's PROFIBUS DP network configuration. These files import into Unity Pro version 4 software without modification, eliminating the need to write additional communications message logic.

Automatically-generated Derived Function Block logic also provides advanced PROFIBUS DP-V1 acyclic message pass-through capability. Acyclic messaging allows access to extended slave data and diagnostics, as well as access to slave-specific special functions.

Whenever the PROFIBUS DP network configuration changes, new logic files can be automatically created, exported, and imported into an existing Unity Pro project, reducing engineering demands and cutting deployment time. Changes to the gateway's configuration can be password protected.



Features	Benefits
New Application Communication Logic functions for use with Modicon M340 and Quantum PACs	- Designed specifically to enable a Modicon M340 or Quantum PAC using Modbus TCP/IP to act as a PROFIBUS DP-V1 Master - Generates Unity Pro version 4.0 DFB logic and variable files from gateway configuration - Automates the creation of application communication logic - Ease-of-use means faster deployment, less engineering effort, fewer programming errors
Acyclic Pass-Through Capability	- Automatically generated DFBs enable advanced PROFIBUS DP-V1 acyclic messaging with minimal engineering and programming effort - Acyclic messaging allows a M340 or Quantum PAC to communicate directly with PROFIBUS DP slaves, to access special slave features, and to get extended slave diagnostics and process data
Backed by ProSoft Technology®	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

ProSoft Configuration Builder (PCB), with new Application Communication Logic functions, provides a PC-based software configuration solution for managing gateway configuration files, viewing communication status, and monitoring network diagnostics, as well as password-protected configuration downloads. The 5204SE-MNET-PDPMV1 User Manual provides step-by-step instructions on how to move data from one network to the other.

General Specifications – ProLinx Gateways

ProLinx® 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.

General Specifications - SE Modbus TCP/IP

The ProSoft Technology® special SE Modicon® 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 devices on other networks.

This special version of the protocol, the first of its kind, has been developed to add PROFIBUS DP-V1 Master capability to Modicon PACs using their native Modbus TCP/IP communications capabilities and Unity™ Pro version 4.0 programming software.

Modbus TCP/IP Server (Slave)

The Modbus TCP/IP (MNET) server driver in the 5204SE-MNET-PDPMV1 is a special adaptation of the standard ProSoft Technology MNET driver, enhanced with Application Communication Logic functions for Unity Pro version 4. This special 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 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 4000-register memory database for read requests from remote Modbus TCP/IP Clients
- The special version of the MNET server accepts write requests from remote Modbus TCP/IP Clients only when those requests write to register memory database addresses in the range specified for PROFIBUS Output data to be sent to slave devices on the PROFIBUS DP network
- Supports five independent server connections for Service Port 502 (MBAP)
- Supports five independent server connections for Service Port 2000 (Encapsulated)
- 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)

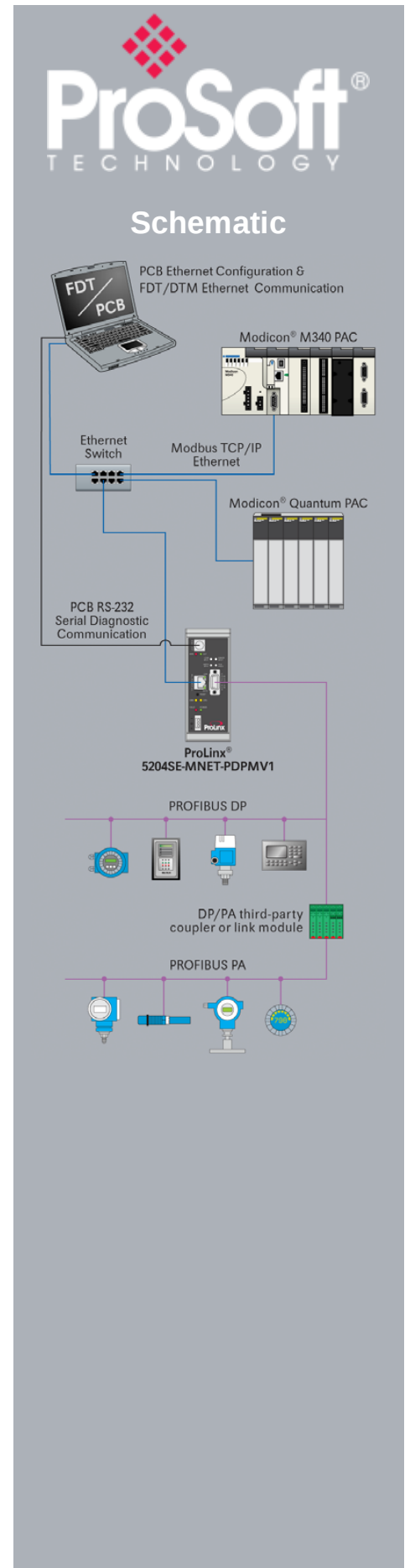
- Actively reads data from and writes data to Modbus TCP/IP devices, using MBAP or Encapsulated Modbus message formats
- Offers one Client connection with up to 100 commands to talk to multiple servers

Status Data

Error codes, counters, and port status available through automatically-created Application Communication Logic DFBs and variables

General Specifications - PDPMV1

The module supports Master specifications according to IEC 61158. Cyclic I/O data and acyclic message parameter data can be transferred with PROFIBUS DP-V1 Class 1 or Class 2 services, allowing processors to easily communicate with slave devices supporting PROFIBUS DP-V0 or DP-V1 protocol.



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	
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	

Functional Specifications - SE PROFIBUS DP-V1 Master

Application Communication Logic functions in PCB automatically generate Unity Pro v4.0 DFB communication logic and variables for Modicon M340 and Quantum PAC systems from the PROFIBUS DP-V1 Master configuration

Easy-to-use drag and drop Master Busview configuration interface via ProSoft Configuration Builder software

Project-unique GSD file import library

Automatic Bus Parameter calculation

Online slave diagnostics through PCB

Supports all standardized baud rates, up to 12 Mbps

Supports extended diagnostic data (DP-V1 only)

Auto baud detection at all valid PROFIBUS DP-V1 rates

CRC checksum determination of slave to processor configuration consistency

LED indicators for network Communication Status, Master Status, Token-Hold status, and Database (Configuration) Status

FDT/DTM PROFIBUS DP Master transport communication DTM software included (see PSW-CDTM-PDPM)

Up to 125 total slaves can be connected when using repeaters (up to 32 total nodes per network segment between repeaters)

Up to 1536 cyclic bytes input and 1536 bytes output data

Optically-isolated PROFIBUS DP interface with on-board DC-DC converter

Modbus TCP/IP pass-through of acyclic read and write messages (DP-V1 only)

Supports Sync and Freeze commands



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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	Standard: 5.20 H x 2.07 W x 4.52 D inches (13.2 cm H x 5.25 cm W x 11.48cm D) Extended: 5.20 H x 2.73 W x 4.52 D inches (13.2 cm H x 6.934 cm W x 11.48cm D)
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 Port(s) (Serial protocol gateways only)	RS-232/422/485 RS-232 handshaking configurable RS-422/485 DB-9 to Screw Terminal Adaptor Note: The number of serial application ports depends on the module type, and the combination of protocols.
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 for each serial application port (serial protocols only)

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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Ordering Information

To order this product, please use the following:

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5204SE-MNET-PDPMV1

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