DATASHEET

Modbus Serial to PROFIBUS DPV1 Master Gateway

5104-MCM-PDPMV1

The ProLinx Modbus Master/Slave to PROFIBUS DPV1 Master gateway creates a powerful connection between devices on a Modbus serial network and PROFIBUS DP slave devices. This stand-alone DIN-rail mounted protocol gateway provides one serial port and one PROFIBUS Master DB9F port.

The Modbus protocol supports both Master and Slave implementations. All Modbus serial ports are individually configurable, providing a choice of Modbus RTU or Modbus ASCII serial protocol support.

The PROFIBUS DPV1 Master protocol supports complete Master specifications according to IEC 61158 Version 1 on either a single or multiple Master network. The gateway offers both cyclic and acyclic data transfers from PROFIBUS DPV1 slaves, as well as cyclic data transfers from DPV0 slaves.

Features	Benefits
Powerful network integration	♦ Allows movement of data between dissimilar networks using two communication protocols on one gateway ♦ Protocols share access to a common memory database to exchange data between networks ♦ View diagnostic data for both networks from a single configuration/debug port
Modbus slave protocol interface	♦ Emulate Modbus slave device on each individually-configurable application port ♦ Supports Modbus RTU and Modbus ASCII protocol versions ♦ Floating point data movement supported, including support for Enron, Daniel®, and other implementations ♦ Suitable for SCADA and field device interface applications
PROFIBUS DPV1 Master protocol interface	♦ Supports cyclic communications in V0 and both cyclic and acyclic communications in V1
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) provides a PC-based software configuration solution for quick and easy management of gateway configuration files, as well as viewing communication and network diagnostics.

PCB is not only a powerful solution for new configuration files, but also allows you to import information from previously installed (known working) configurations into new projects.

Modbus Serial Port Specifications - PLX

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	
Modbus Function Codes	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 Register15: Force(Write) Multiple Coils 16: Preset (Write) Multiple Holding Registers

General Specifications - PDPMV1

Cyclic or acyclic data can be transferred with Class 1 or Class 2 DPV1 services, allowing communication with slave devices supporting PROFIBUS DPV0 or V1 protocols. The gateway acts as a link between the PROFIBUS network and the other gateway protocol. Data transfer by the other protocol is asynchronous from data transfer on the PROFIBUS network.

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.

Command List	Up to 100 command per Master port, each fully configurable for function, slave address, register to/from addressing and word/bit count.
Polling of command list	Configurable polling of command list, including continuous and on change of data, and dynamically user or automatic 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 gateway.

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

Functional Specifications - PROFIBUS DP Master V1

Cyclic or acyclic data can be transferred with Class 1 or Class 2 DPV1 services, allowing communication with slave devices supporting PROFIBUS DPV0 or V1 protocols. The gateway acts as an input/output link between the PROFIBUS network and the other gateway protocol. Data transfer by the other protocol is asynchronous from data transfer on the PROFIBUS network.

- Easy-to-use drag and drop Master Busview configuration interface via ProSoft Configuration Builder software
- Project-unique GSD file import library
- Monitoring and Modification of process data and DPV1 acyclic data
- Multi-drop on a PROFIBUS DPV1 network with other compatible devices
- Automatic project documentation, and Bus Parameter calculation
- Supports online slave diagnostics, and extended diagnostic data (DPV1)
- Auto baud detection at all valid PROFIBUS DPV1 rates up to 12Mbps
- CRC checksum determination of slave configuration consistency to processor
- Master Status LED Indicators for Operations, Network Communication, Master Token-Hold and Network Configuration.
- Up to 125 Slaves can be connected with a repeater
- Up to 1536 cyclic bytes input and 1536 bytes output data
- Supports Extended Diagnostic Data
- RS-485 optically isolated PROFIBUS Interface with on board DC-DC converter
- Alarm Handling (DPV1)
- Supports Sync and Freeze commands
- Supports PROFIdrive 3.1 compliant parameter read and write operations

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 maximum @ 32 Vdc maximum
Operating Temperature	-4°F to 122°F (-20°C to 50°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Relative Humidity	5 to 95% (with no condensation)
Dimensions (Height x Width x Depth)	Standard: 5.20 in x 2.07 in x 4.52 in (13.2 cm x 5.25 cm x 11.48 cm) Extended: 5.20 in x 2.73 in x 4.52 in (13.2 cm x 6.934 cm x 11.48 cm)
LED Indicators (On all gateways)	Power and Hardware Fault Configuration and Application Communication Status Serial Configuration Port Activity and Error
Configuration Serial Port	DB-9M RS-232 only No hardware handshaking
Ethernet Port (Ethernet protocol gateways only)	10 Base-T half-duplex RJ45 Connector Link LED and Activity LED indicators Electrical Isolation 1500 Vrms 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 Adapter **Note:** The number of serial application ports depends on the gateway type, and the combination of protocols.
Serial Port Isolation	2500 Vrms port signal isolation per UL 1577 3000 Vdc min. isolation port to ground and port to logic
Shipped with Each Unit	Mini-DIN to DB-9M serial cables 4-foot RS-232 configuration cable 2.5mm screwdriver CD (docs and configuration utility) RS-422/485 DB-9 to Screw Terminal Adapter for each serial application port (serial protocols only)

Agency Approvals & Certifications

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

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5104-MCM-PDPMV1

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