DATASHEET

PROFIBUS DP Slave to EtherNet/IP™, Modbus® TCP/IP, or Modbus® Serial Gateway
PLX51-PBS

The PLX51-PBS gateway provides connectivity to EtherNet/IP™, Modbus® TCP/IP, or Modbus® Serial networks for PROFIBUS DP networks by operating as a PROFIBUS DP slave.

For easy integration to a Rockwell Automation Controller, the gateway and configuration software create dynamic AOI's based on the user configuration to add logical tag names to the PLC project file. Thus, reducing programming time.

For configuration of Modbus TCP/IP or Modbus Serial Networks, the module will automatically map PROFIBUS DP data points to registers on a Modbus network.

With advanced tools such as a built in PROFIBUS DP packet capture utility, PROFIBUS DP network commissioning time can be greatly reduced.

Dual Ethernet ports of the module can support either DLR (Device Level Ring) topology, or can be used as an embedded switch for flexible installation options.

With support for up to 1536 bytes of Input and Output data, and up to 4 EtherNet/IP connections back to the processor, this module provides performance and data throughput for even the most demanding of PROFIBUS applications.

As a PROFIBUS DP slave device, the module can emulate from 1 to as many as 10 slave DP nodes, providing up to 1536 bytes of Input and Output Cyclic I/O data between EtherNet/IP devices and a PROFIBUS DP master. This eliminates the need for using DPV1 messaging when more than 244 bytes of data needs to be exchanged between a PROFIBUS master and an EtherNet/IP network.

Features

- Supports DLR for EtherNet/IP networks
- Support for either EtherNet/IP, Modbus TCP/IP, or Modbus Serial Communication networks.
- PROFIBUS slave OR multi-slave support
- PROFIBUS packet capture tool built in

Configuration

The PLX50 Configuration Utility software is used for configuration and troubleshooting of the module. The stand-alone configuration utility allows users to define the setup and configuration of the PROFIBUS DP module, connections with Rockwell Automation controllers and devices over EtherNet/IP, and build custom Add-On Instructions (AOIs) to be imported into Studio 5000 applications.

With the ability to import custom AOI's into the Studio 5000 environment and advanced PROFIBUS DP tools such as the packet capture utility, commissioning time of a network can be greatly reduced.

EtherNet/IP™ Server

As an EtherNet/IP server, the gateway can support up to 4 Class 1 I/O connections back to a Controller on an EtherNet/IP network. Additionally, the server can respond to Class 3 messages from an EtherNet/IP client for the transfer of Status and PROFIBUS DP data.

Modbus TCP/IP

On a Modbus TCP/IP network, the module will operate as either a Modbus TCP/IP Client or Server device.

As a Modbus TCP/IP client the module can be configured to automatically read/write all PROFIBUS DP data with a slave device for easy setup and configuration, or the Modbus Auxiliary Map feature will allow you to configure data transfer to customize the mapping to meet specific application requirements.

As a Modbus TCP/IP Server all information from the PROFIBUS DP network is stored in continuous registers in the module for easy configuration and efficient mapping of data to a Modbus TCP/IP client.

Modbus Serial

On a Modbus Serial network the module will operate as either a Master or a Slave device supporting either RS232 or RS485 communication networks.

As a Modbus Serial Master the module can be configured to automatically read/write all PROFIBUS DP data with a slave device for easy setup and configuration, or the Modbus Auxiliary Map feature will allow you to configure data transfer to customize the mapping to meet specific application requirements.

As a Modbus Serial Slave all information from the PROFIBUS DP network is stored in continuous registers in the module for easy configuration and efficient mapping of data to an attached master device.

PROFIBUS DP Slave

The PROFIBUS DP Slave driver provides a powerful and easy-to-use interface between a PROFIBUS DP network and other networks.

This slave implementation emulates up to 10 individual nodes on a PROFIBUS DP network. It allows access to up to 1536 bytes of cyclic PROFIBUS Input data and up to 1536 bytes of cyclic PROFIBUS Output data.

For installations that require more than the 244 byte max cyclic PROFIBUS DP data exchange, this module allows users to emulate up to 10 nodes, eliminating the need for complex DPV1 Read/Write messages to a PROFIBUS DP node while improving data throughput.

Specifications

Physical

Enclosure Rating	IP20, NEMA/UL Open Type
Temperature	-20 to 70 °C
Earth Connection	Yes, terminal based
Dimensions (H x W x D)	5.86 x 1.33 x 4.56 in 149 x 34 x 116 mm
Power Requirements	Input: 10 to 36V DC
Power Consumption	85mA @ 24V => 2.04W
Power Connector	3-way terminal
Conductors	24 to 18 AWG

Functions

EtherNet/IP™	
Connector	RJ45
Conductors	CAT5 STP/UTP
ARP Connections	Max 40
TCP Connections	Max 40
CIP Connections	Max 10
Communication Rate	10/100Mbps
Duplex Mode	Full / Half / Auto Negotiate
Auto MDIX	Yes
Modbus TCP/IP	
Mode	Client or Server
Connector	RJ45
Conductors	CAT5 STP/UTP
ARP Connections	Max 40
Communication Rate	10/100 Mbps
Duplex Mode	Full / Half / Auto Negotiate
Auto MDIX	Yes
Modbus Serial	
Mode	Master or Slave
Media	RS232 or RS485
Baud Rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Data Bits	8
Stop Bits	1
Parity	None, Odd, Even
PROFIBUS DP	
Protocol	PROFIBUS DP Slave
Baud Rate	9600, 19.200, 45.5 kbps, 93.75 kbps, 187.5 kbps, 500 kbps, 1.5 Mbps, 3 Mbps, 6 Mbps, 12 Mbps
Support	DPV0 or DPV1
Cyclic I/O data	Input: 1536 bytes Output: 1536 bytes
Stop bits	1

Hardware Specifications

Specification	Description
Emissions	IEC 61000-6-4
ESD Immunity	EN 61000-4-2
Radiated RF Immunity	IEC 61000-4-3
EFT/B Immunity	IEC 61000-4-4
Surge Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

Agency Approvals & Certifications

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PLX51-PBS

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