Apter Power

ProSoft TECHNOLOGY

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PS69-DPM

CompactLogix or MicroLogix Platform

PROFIBUS DPV1 Master

Apter Power

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USER MANUAL

6 Reference

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6.1 Specifications

The PS69 PROFIBUS DP Master module expands the functionality of Rockwell Automation's CompactLogix or MicroLogix family of processors to include PROFIBUS. This module supports both I/O control and messaging, thus integrating DPV0 and DPV1 functionality into CompactLogix or MicroLogix.

The PS69-DPM is a CompactLogix or MicroLogix compatible, PROFIBUS certified module, which enables controllers to communicate with a PROFIBUS network. The configuration and diagnostic of the PROFIBUS system is done via the serial diagnostic interface of the module using the System Configuration tool PROSOFT.fdt (SYCON.net). The data exchange between controller and module is done via the I/O process data image using CompactLogix or MicroLogix backplane technology.

DPV0 Services Supported

- Fail Safe Mode
- Global Control
- Sync and Freeze
- Watchdog

DPV1 Services Supported

- Read Request
- Write Request
- Alarm Indication
- Extended Device Diagnostics

6.1.1 General Specifications

- Single Slot – 1769 backplane compatible
- The module is recognized as an Input/Output module and has access to processor memory for data transfer between processor and module
- Ladder Logic is used for data transfer between module and processor. Sample ladder file included.
- Supports CompactLogix processors with 1769 I/O bus capability.
- Also supports MicroLogix 1500 LRP

6.1.2 PROFIBUS Interface

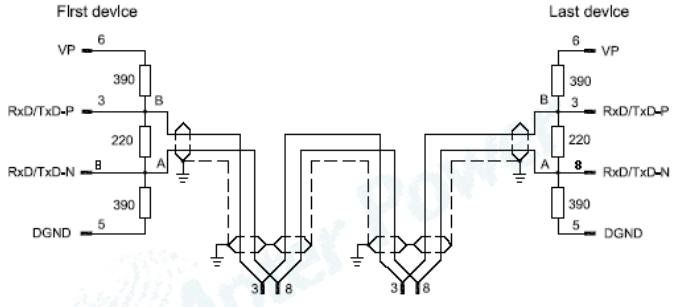
Isolated RS-485 interface per EN 50170.

3	RxD/TxD-P	Receive/Send Data-P respectively connection B plug
5	DGND	Reference potential
6	VP	Positive power supply
8	RxD/TxD-N	Receive/Send Data-N respectively connection A plug

Please ensure that termination resistors are available at both ends of the cable. If special PROFIBUS connectors are being used, these resistors are often found inside the connector and must be switched on. For baud rates above 1.5 MBaud use only PROFIBUS connectors, which also include additional inductance. It is not permitted to have T stubs at high baud rates.

Use only a special cable which is approved for PROFIBUS-DP. Make a solid connection from the cable shield to ground at every device and make sure that there is no potential difference between the grounds at the devices.

If the PS69 is linked with only one other device on the bus, both devices must be at the ends of the bus line. The reason is that these devices must deliver the power supply for the termination resistors. Otherwise the Master can be connected at any desired position.



6.1.3 Functional Specifications

Specification	Description
Slaves	max. 125
Input/Output	max. 244 Bytes per Slave
Input Data	max. 408 Bytes (*)
Acyclic Data	DPV1
Status data	88 Bytes
Output data	max. 480 Bytes (*)
Command data	16 Bytes
DPV1 services	Read / Write class 1, Alarm
Services	Global-Control, Slave-Diag, Set-Parameter
Sync, Freeze Command	supported

Up to 32 PROFIBUS devices can be connected to one bus segment. If several bus segments are linked to each other with repeaters, there can be up to 127 devices on the network.

The maximum length of a bus segment depends on the baud rate used. Only PROFIBUS certified cable, preferably the cable type A, should be used.

Baud rate in kBit/s	Max. Distance
9.6	1,200 m / 4000 ft
19.2	1,200 m / 4000 ft
93.75	1,200 m / 4000 ft
187.5	1,000 m / 3280 ft
500	400 m / 1300 ft
1,500	200 m / 650 ft
3,000	100 m / 325 ft
6,000	100 m / 325 ft
12,000	100 m / 325 ft

Parameter	Value
Impedance	135 to 65 Ohm
Capacity	< 30 pF/m
Loop resistance	110 Ohm/km
Wire gauge	0.64 mm

6.1.4 Hardware Specifications

Specification	Description
Processor	EC1-160P with integrated ASPC2
PROFIBUS Interface	RS-485, max. 12 MBaud, potential free, according EN 50170
Diagnostic Interface	RS232, PS/2 Mini DIN female connector, 9600 Baud, non isolated
Power Supply	+5 V ±5 % / 260 mA
Max. Distance Rating	max. 6 modules to the power supply module
Dimensions	Standard 1769 Single-slot module
Burst	EN 61000-4-4, 2 kV, 5 kHz
Surge	EN 61000-4-5, 2 kV common mode, 1 kV differential mode
ESD	EN 61000-4-2, 4 kV contact, 8 kV air, 4 kV indirect
Radiated/ Conducted Immunity	EN 61000-4-3, 10 V/m, 30...1000 MHz, 80% AM, 1 kHz sinewave EN 61000-4-6, 10 V, 0,15...30 MHz
Radiated/ Conducted Emission	EN 55011 Class A
Vibration/Shock	IEC 600068-2-6, 10-150 Hz, ± 0,75 mm, ± 1 g, 1 Octave/min IEC 600068-2-27, 15 g, 11 ms
Operating Temp.	0 to 60°C (32 to 140°F)
Relative Humidity	5 to 95% (non-condensing)