



PROFIBUS MASTER

Products Specifications and Installation Data

The following information is taken from the *Profibus Master User Manual* (MAN0219). To obtain user manual updates for **HE693PBM101 / HE693PBM101-12**, visit our web site at www.heapg.com.

The PBM101/PBM101-12 function similarly except that PBM101 operates at 24MHz while the PBM101-12 operates at 48MHz.

1 INTRODUCTION

1.1 Specifications

Table 1 – Specifications									
Maximum Connections in one segment (Masters or Slaves)	Without Repeaters:		Up to 32 devices		Maximum Network Data Note: Maximum Data produced and consumed can reduce maximum number of slaves.			<ul style="list-style-type: none"> • Data Produced: 504 • Data Diagnostic plus Consumed: 504 • 128 Modules (Areas) • 64 Slaves 	
	With Repeaters:		Up to 64 devices						
CPU Required	CPU350 or higher				Maximum Number of Slave Areas	128			
Firmware Version Required	Version 8.0 or higher				Processor Speed:				
					PBM101		24MHz.		
PBM101-12		48MHz.							
Software Required for Configuration	VersaPro Software (1.10 or higher)				Status LEDs	OK , RUN, POWER			
Baud/Distance Rates									
Baud Rate(bit/sec)	9.6K	19.2K	93.75K	187.5K	500K	1.5M	3M	6M	12M
Distance/Segment	1200m	1200m	1200m	600m	200m	200m	200m	200m	100m
General Specifications									
Required Power (Steady State)	4W @ 5VDC			CE	See Compliance Table at http://www.heapg.com/Support/compliance.htm (PBM101 and PBM101-12)				
Operating Temperature	0° to 60° Celsius			UL	See Compliance Table at http://www.heapg.com/Support/compliance.htm Class 1, Groups A, B, C, D, Division 2 (PBM101 Only)				
Relative Humidity	5 to 95% Non-condensing								
Note: Specifications are subject to change in accordance with Profibus DP Hardware and VersaPro Software specifications. It is the responsibility of the user to review the manufacturer's user manuals and other appropriate reference materials for current updates.									

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1.2 Physical View

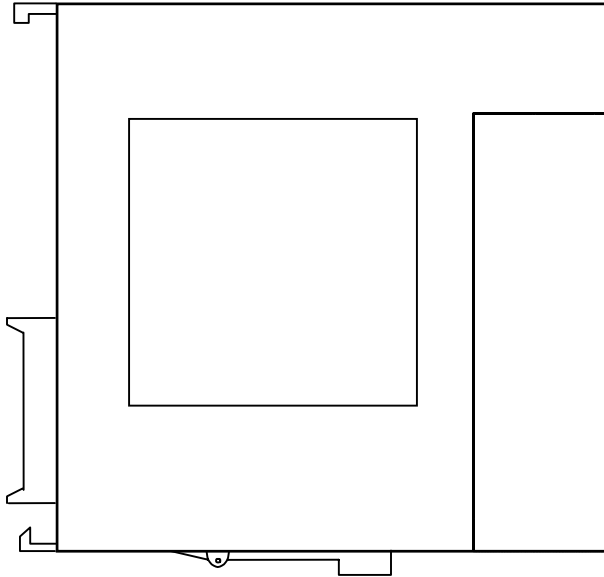


Figure 1 - Front Cover

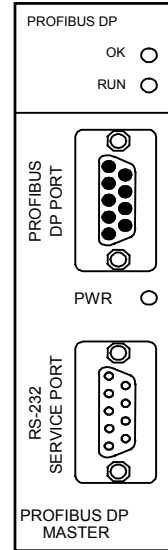


Figure 2 – Side View

2 INSTALLATION

2.1 Profibus DP Connectors and Wiring

2.1.1 Assembling Cable for Use with DP Port on the PBM101/PBM101-12

- a. The PBM101/PBM101-12 uses a 9-pin D-sub plug connector for its DP port. The DP connector is used for the physical connection between slaves and the master. The pin assignment of the plug connector and the wiring are shown below (Figure 3).

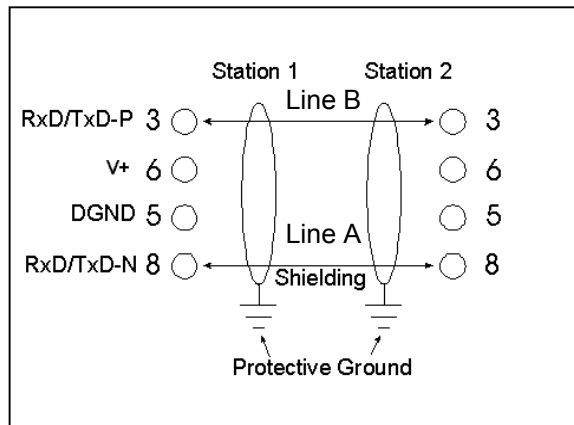


Figure 3 - Wiring

- b. It is necessary to terminate both ends of the network. Both terminations must have power to them to insure proper operation of the network. Figure 4 illustrates the correct connection for the termination resistors.

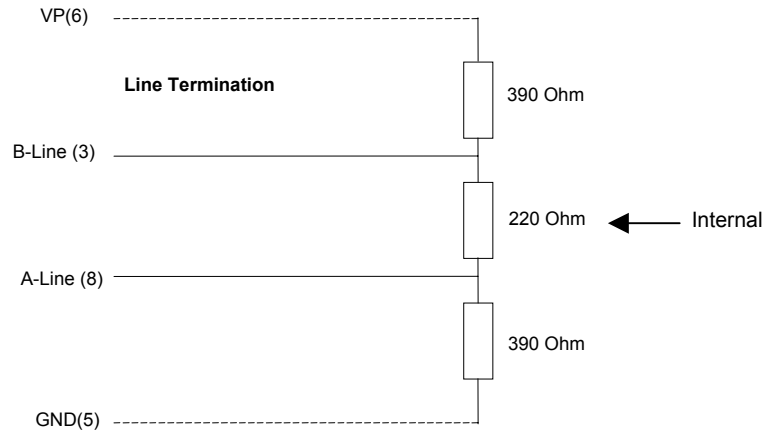


Figure 4 – Termination

NOTE: The above wiring diagram (Fig. 4) is for illustrative purposes only. Cabling and connectors need to be PTO-approved to achieve the desired performance results. See **Section 2.1.3** for recommended part numbers.

- c. The shield braiding (and if present, the shield foil) must be connected to protective ground on both sides and must have good conductivity via shield clamps that cover as large an area as possible. In addition, it is recommended that the data lines be kept separate from all high-voltage cables.

2.1.2 Other Considerations When Wiring Profibus Network

- a. In the Profibus network, up to 32 stations (master or slaves) can be connected per segment without the addition of repeaters. If more than 32 stations are desired, repeaters must be used. The repeaters are used to connect individual bus segments together.
- b. The maximum cable length depends on the transmission speed. The specified cable length can be increased by the use of repeaters. However, the use of more than three repeaters in series is not recommended.
- c. Cable length specifications are based on type-A cable with a 135 to 165 Ohm impedance; less than 30 pf/m capacity; a loop resistance of 110 Ohms/Km, a wire gauge of .64mm; and a conductor area of 0.34mm². Refer to **Table 1: Specifications** for Baudrate and Distance rates.
- d. For data transmission speeds of greater than 500 kbit/sec., stub lines (free hanging ends of the cable) must be avoided. There are plug connectors available on the market that permit data line A and data line B to be connected directly to the plug connector.

2.1.3 Recommended Part Numbers

It is highly recommended that the following cable and connectors be used for high-speed data transmissions. Both cable and connector part numbers are Siemens part numbers.

a. Connectors:

Extra 9-pin DSUB for easy cable stacking.



Figure 5 - Connectors

b. Cable: Part Number 6XV1-830-OAH10

2.2 RS-232 Connector

The RS-232 Service Port is used to upgrade the firmware specific to the slave. This port uses a standard RS-232 9-pin connector.

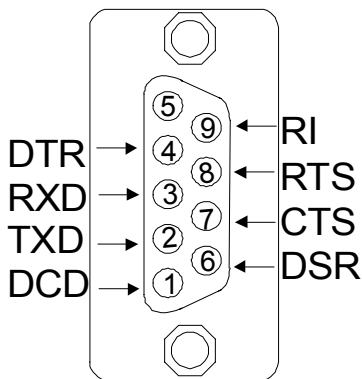


Figure 6

3 SAFETY

All applicable codes and standards need to be followed in the installation of this product.

4 TECHNICAL ASSISTANCE

For assistance, contact Technical Support at the following locations:

North America:
(317) 916-4274
www.heapg.com

Europe:
(+) 353-21-4321-266
www.horner-apg.com

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