This Datasheet is for the

IC693PBM200

Profibus DP Master Module

http://www.qualitrol.com/shop/p-14682-ic693pbm200.aspx

Provides the wiring diagrams and installation guidelines for this GE Series 90-30 module.

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IMPORTANT PRODUCT INFORMATION

READ THIS INFORMATION FIRST

Product: PROFIBUS DP Master for IC693 PLCs
IC693PBM200-AA and later with Firmware Release 1.12

Introduction

This module allows an IC693 PLC to send and receive I/O data from a PROFIBUS DP network. The feature set includes:

- Support for all standard data rates (9600 – 12M)
- Support for up to 125 DP slaves
- Support for 244 bytes input and 244 bytes output for each slave
- Support for Sync and Freeze modes
- PROFIBUS-compliant COM and SYS LED indicators
- Firmware update via service port on module

Configuration Requirements

PLC Software Requirement

Only ME Logic Developer PLC programming software version 3.0 or later can be used to configure the IC693PBM200 PROFIBUS DP Master module.

Computer System Requirements

Consult the ME Logic Developer manual for current computer system requirements. At this time, the programmer requires:

Development Environment

Windows® NT™ version 4.0 with service pack 4 or later, OR

Windows 2000 Professional, OR Windows XP, OR Windows 98 SE

Internet Explorer™ version 5.0 or later (version 5.5 is required for Motion)

200 MHz Pentium®-based workstation

128 MB RAM

107-336 MB hard disk space, depending on the selected products

220 MB hard disk space for sample projects (optional)

Additional hard disk space for projects and temporary files

Windows NT Runtime

Windows NT version 4.0 with service pack 4 or later OR Windows 2000 Professional

200 MHz Pentium-based workstation

64 MB RAM

200 MB free hard disk space

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CPU Firmware Requirement

CPU Release 8.00 or later is required; however, if configuring very large networks, CPU Release 10.60 or later is required.

Certification

This product meets the following certifications:

- PTO
- CE
- CUL, Class 1, Div. 2, Group ABCD

Product Documentation

IC693 PROFIBUS Modules User's Manual

Operating Notes

Users migrating from the HE693PBM101 PROFIBUS Master Module

The following issues should be considered when attempting to migrate applications that used the HE693PBM101 to the IC693PBM200:

- The size of the slave status area for the IC693PBM200 is 128 points by default, compared to the 64 points used by the HE693PBM101. The user may need to consider reducing the size of the slave status area to match the previous module's usage.
- When the PLC is not scanning its I/O, the IC693PBM200 enters Clear Mode. The HE693PBM101 does not.
- In the HE693PBM101, the slave status bits are arranged by the order in which they appeared in the configuration. In the IC693PBM200, the slave status bits are arranged in order by bus address.
- With the HE693PBM101, separate bits and data areas for each slave are used to detect and retrieve diagnostic data from the slaves. A word of optional input data in the IC693PBM200 informs the application program that a slave has diagnostic data. The data is then retrieved from the slave using a COMM_REQ function block. So the Diagnostic Flag area, the Diag_Data Slave Addr area, and the Diag Data area used by the HE693PBM101 are not present in the IC693PBM200.
- The HE693PBM101 has one Module Revision input word. In the IC693PBM200, this input word has been combined with the new Slave Diag ID input word to form an optional 2-word input area.
- The IC693PBM200 uses 16 fewer sync/freeze control bits and these bits are now optional.
- The user may wish to disable fault reporting in the IC693PBM200 to match the behavior of the HE693PBM101.

PLC Modes

While the PLC is in either of Run or Stop IOScan modes, the IC693PBM200 scans all configured slaves, sending outputs and reading inputs. When the PLC is not scanning I/O, the module continues to scan all I/O but enters Clear mode. In Clear mode, zeroed data is sent to all of the configured slaves. When the PLC again transitions to either *Run* or *Stop IOScan* mode, output transmission resumes using the most recently-supplied output data.

Restrictions and Open Problems

Network Configuration Limitations

The number and type of slave devices and the amount of data they can exchange with the master is constrained by the various memory resources within the PLC. Three types of PLC memory resources may constrain network configuration: Total Hardware Configuration Size, Individual Module Configuration Size, and Data Transfer Size Per Module.

Limitations on the Size of the Total Configuration

The amount of memory available for the PROFIBUS configuration is affected by the CPU model being used, the version of the CPU firmware, the number and type of other modules in the configuration, the number and type of slave devices configured, and the amount and type of communication in progress with an external programmer or HMI devices.

To check the current configuration size in Logic Developer PLC:

- In Logic Developer-PLC, select "Data View" for the hardware configuration (right click on hardware configuration and select Data View).
- On the Summary Tab, add up the "Data Size" fields of the components listed.

Logic Developer-PLC will not allow hardware configurations to be created that exceed 65,535 bytes. The hardware configuration size is further limited by the size of the user hardware configuration space available in each CPU model as specified in the following table:

Table 1. User Memory Limitations

CPU Model	Maximum User Memory Available for Hardware Configuration (Bytes)
311/313/323	4,736
331	4,673
341	8,192
350	16,512
351	81,920*
352, 360, 363, 364	245,760*

*This memory must also contain the user program and the register, analog input, and analog output tables.

Limitations on Individual Master Module Configurations

For applications that meet the requirements specified in Table 1, an additional limitation must be considered for certain model CPUs pertaining to configuration size of individual Profibus master modules. If a configuration is stored to the PLC that includes a configuration size for an individual IC693PBM200 master module that exceeds the limit shown in Table 2 below, then a System Mismatch fault will be entered into the PLC fault table if the module is physically present in the PLC rack. No indication of the failure is given if the module is not physically present.

Table 2. System Memory Limitations

CPU Model	Maximum System Memory Available for Each Individual PROFIBUS Master Module (Bytes)
341	7,378
351	16,572
352, 360, 363, 364†	16,384

† The CPU364 can be updated to firmware revision 10.60 or later, which is not subject to this limitation

To check the master module configuration size with Logic Developer-PLC:

- On the I/O Config TAB, select "Data View for the hardware configuration " (right click on Hardware Configuration and select Data View).
- Scan down the file until you find the Rack and Slot location of the module (it is in the middle of a line). About 12 lines below this you will find "Actual size is xxxx bytes" which is the module configuration size. The size of the module configuration must not exceed the amount of system memory available.

System memory is also used for communication and real-time update processes, so that the amount available at any one time varies.

Data Size Limitations

The amount of data that can be exchanged between the CPU and the IC693PBM200 module is limited to 3,972 bytes of input data (data going from the IC693PBM200 module to the CPU) and 3,972 bytes of output data (data going from the CPU to the IC693PBM200 module).

HHP Support

The Hand-Held Programmer (IC693PRG300) **cannot** be used to configure the IC693PBM200 modules.