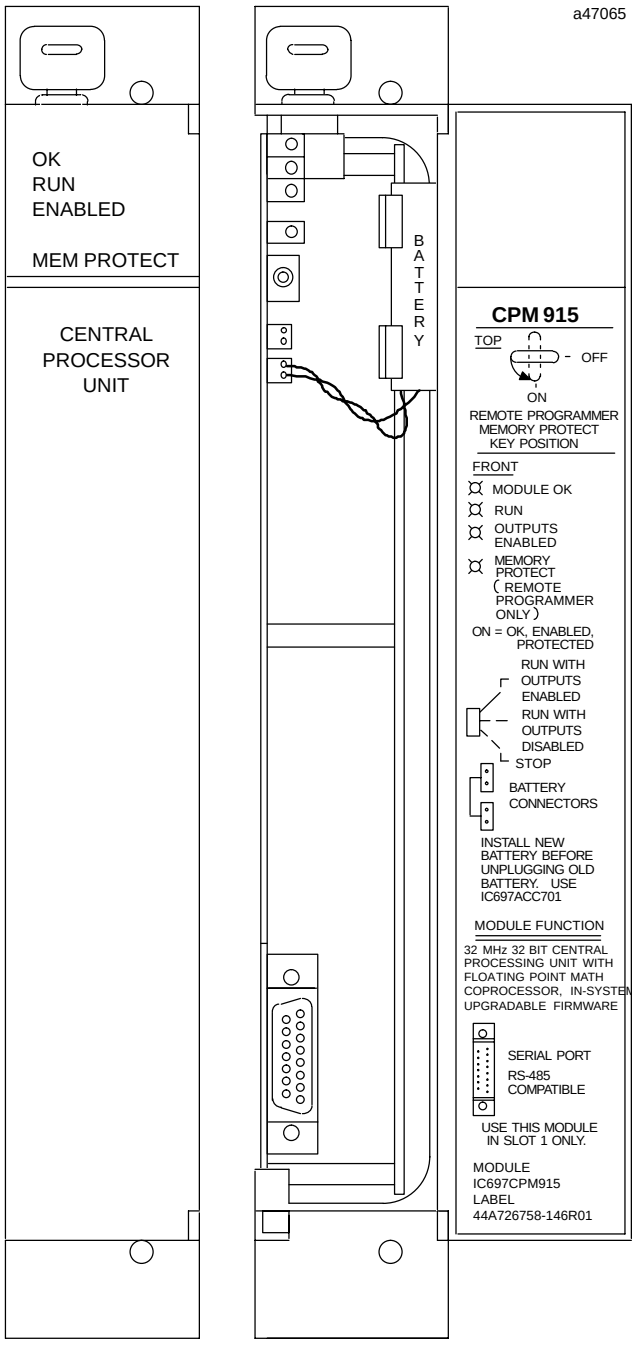
GFK-1119B
August 1997

32 MHz 32-Bit Floating Point Central Processing Unit, 1 Mbyte Memory

Features

- Single slot CPU
- Provides 1 Mbyte of battery-backed memory in the same slot
- Supports floating point calculations
- 12K inputs and outputs (any mix)
- Up to 8K analog I/O
- 0.4 microseconds per boolean function
- 32 MHz, 80486DX microprocessor
- Supports IC660/IC661 and IC697 I/O)
- Programmed by MS-DOS® or Windows® software products running on Windows® 95 or Windows NT® over Ethernet TCP/IP or through the SNP port.
- Configurable data and program memory
- Battery-backed calendar clock
- Three position operation mode switch
- Password controlled access
- Remote programmer keyswitch memory protection
- Four status LEDs
- Software configuration (No DIP switches or jumpers)
- Reference information inside front door
- In-system upgradable firmware



Functions

The CPM 915 Central Processing Unit (CPU) is a single slot programmable controller CPU which allows floating point calculations. The CPM915 is programmed and configured by MS-DOS or WIndows based programming software to perform real time control of machines, processes and material handling systems. It communicates with I/O and smart option modules over the rack mounted backplane (IC697CHS750, 782, 783, 790, 791) by way of the VME C.1 Standard format.

Supported option modules include all IC697 LAN interface modules, several Coprocessor modules, Bus ControllerforIC660/IC661I/O, Communications modules, and all of the IC697 family of discrete and analog I/Omodules.

® MS-DOS, Windows, Windows 95, and Windows NT are registered trademarks of Microsoft Corporation.

GFK-1119B
August 1997

32 MHz 32-Bit Floating Point Central Processing Unit, 1 Mbyte Memory

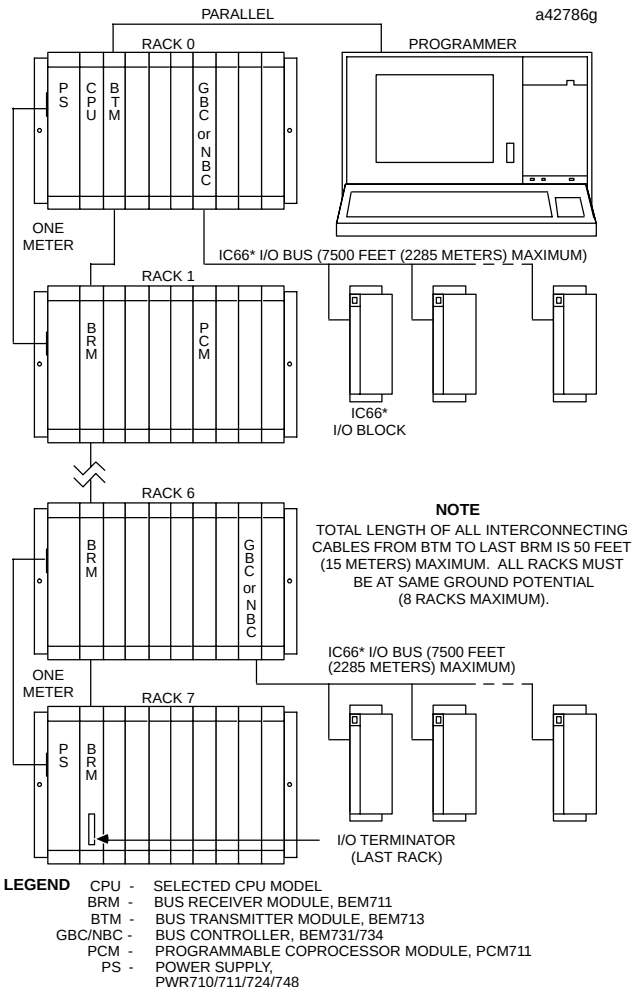


Figure 1. Typical Programmable Controller System Configuration

User Memory

Program and data memory for the CPM 915 is provided by a memory board with 1M byte of battery-backed CMOS RAM. This memory board is an integral part of the CPM 915 module and does not need to be ordered separately.

Flash Memory

This module uses flash memory for storage of the operating system firmware *(Note that this module does not support storage of user program in the flash memory).* This allows updates of the firmware without disassembling the module or replacing EPROMs. The operating system firmware is updated by connecting a PC compatible computer to the serial port of the module and running the Loader software included with the firmware floppy disk.

Operation, Protection, and Module Status

Operation of this module can be controlled by the three-position RUN /STOP switch or remotely by an attached programmer and programming software. Program and configuration data can be locked through software passwords or manually by the memory protect keyswitch. When the key is in the *protected* position, program and configuration data can only be changed by a programmer connected parallel only (to the Bus Transmitter module). The status of a CPU is indicated by the four green LEDs on the front of the module.

Installation

It is the responsibility of the OEM, system integrator, or end user to properly install the PLC equipment for safe and reliable operation. Product manuals provide detailed information about installation, startup, and proper use of the PLC equipment. The installation manual, shipped with your PLC programming software, describes how to properly install the equipment. If the PLC installation must comply with supported standards, such as FCC or CE Directives, please refer to the *Installation Requirements for Conformance to Standards,* shipped with the PLC programming software, for additional guidelines.

- Installation should not be attempted without referring to the applicable programmable controller hardware installation manual.
- Connect the battery to either of the battery connectors on the module (see Figure 2).
- Put the toggle switch in the STOP position.
- Put the keyswitch in *Memory Protection OFF* position.
- Make sure that rack power is off.
- Install the CPM 915 module in slot 1 of rack 0 (see Figure 1).
- Turn on power.

The module should power up and the top LED should blink. When the diagnostics have completed successfully, the top LED stays on and the second and third LEDs are off. The fourth LED is off if the keyswitch is in the OFF position. The CPU is now ready to be programmed (if connected parallel, the CPU can be programmed regardless of key position).

32 MHz 32-Bit Floating Point Central Processing Unit, 1 Mbyte Memory

GFK-1119B
August 1997

After the program has been verified the toggle switch may be moved to the appropriate operation mode position. The LEDs indicate the position of the toggle switch, memory protection status, and the state of the program.

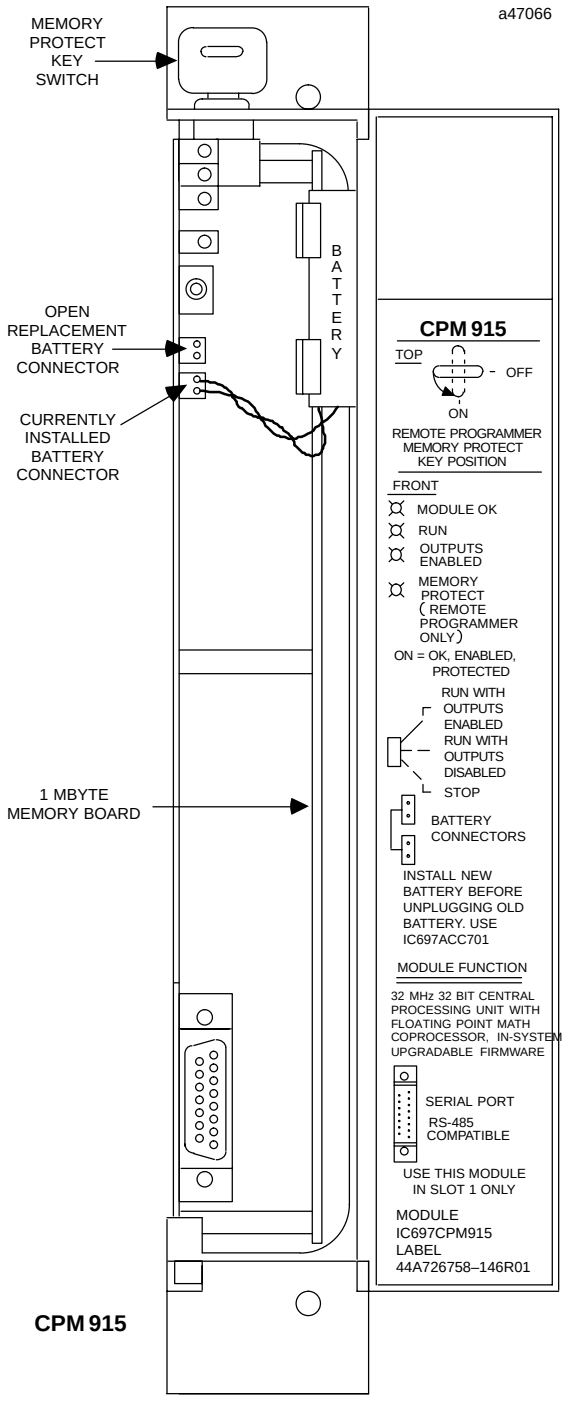


Figure 2. CPM 915 - Location of Major Features

Programmer Connection, Parallel

For a parallel interface (MS-DOS based programmer only) the programmer is connected to the top port on the Bus Transmitter Module (IC697BEM713) as shown in Figure 1. Consult Reference 1 for a description of programming functions.

Serial Port

The 15-pin D-connector provides the connection to an RS-485 compatible serial port on the CPU as shown in Figure 3. This port provides a serial connection to a Work Station Interface board installed in the programming computer.

The serial connection can also be made from the serial port on the CPU to the serial port on the programming computer, or other serial device, through the RS-422 / RS-485 to RS-232 Converter (IC690ACC900) or RS-232 to RS-422 Miniconverter (IC690ACC901). This connection can be made with available cables or you may build cables to fit the needs of your particular application. See reference 3 for more information on serial communications.

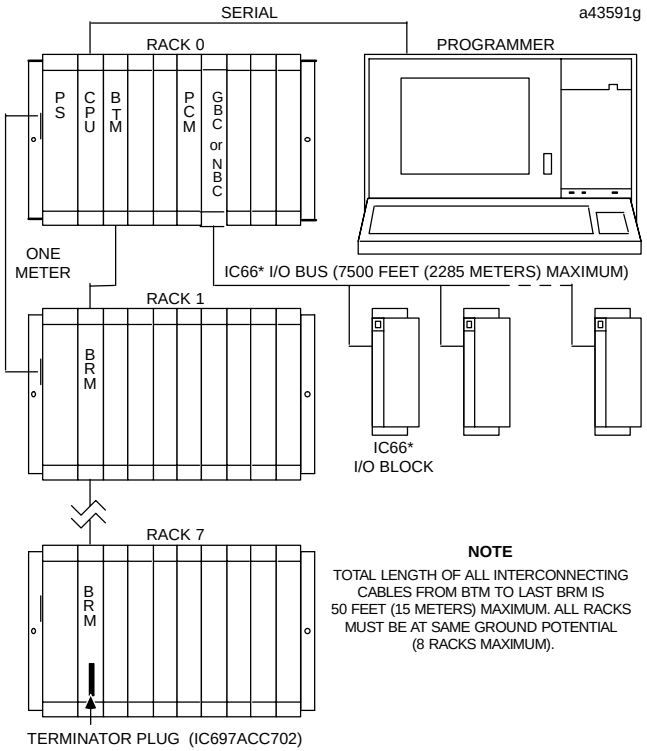


Figure 3. System Configuration, Serial Connection to Programmer

GFK-1119B
August 1997

32 MHz 32-Bit Floating Point Central Processing Unit, 1 Mbyte Memory

Programmer Connection, Ethernet TCP/IP

Connecting your programmer via an Ethernet TCP/IP network requires installation of an Ethernet Interface module in the PLC. This can be either the Ethernet Controller, IC697CMM741, or Ethernet Interface (Type 2), IC697CMM742. Before connecting your programmer and PLC to the Ethernet TCP/IP network you must set the IP address in the Ethernet Interface. After setting the IP address, connect the PLC and the programmer running Windows software to the Ethernet Interface. For more detailed information on Ethernet TCP/IP, refer to the *TCP/IP Ethernet Communications (Type 2) User's Manual*, and the Windows programming manual, GFK-1295.

Configuration

The IC697 CPU and I/O system is configured with MS-DOS or Windows based programming software. There are no DIP switches or jumpers used to configure the system. The CPU verifies the actual module and rack configuration at power-up and periodically during operation. The actual configuration must be the same as the programmed configuration. Deviations are reported to the CPU alarm processor function for configured fault response. Consult Reference 1 for a description of configuration functions.

Batteries

A lithium battery (IC697ACC701) is installed as shown in Figure 2. This battery maintains program and data memory when power is removed and operates the calendar clock. Be sure to install the new battery before removing the old battery. Specific indication of a low battery state is detailed in Reference 2.

Removing a Module

The instructions below should be followed when removing a module from its slot in a rack.

- Grasp the board firmly at the top and bottom of the board cover with your thumbs on the front of the cover and your fingers on the plastic clips on the back of the cover.
- Squeeze the rack clips on the back of the cover with your fingers to disengage the clip from the rack rail and pull the board firmly to remove it from the backplane connector.
- Slide the board along the card guide and remove it from the rack.

Table 1. References

Reference	Title
1	Programming Software User's Manual
2	Programmable Controller Reference Manual
3	Programmable Controller Installation Manual

32 MHz 32-Bit Floating Point Central Processing Unit, 1 Mbyte Memory

GFK-1119B
August 1997

Table 2. Specifications for IC697CPM915 †

Battery	
Shelf life	10 years at 20° C (68° F)
Memory retention	6 months nominal without applied power.
Current required from 5V bus	2.8 Amps nominal
Time of Day Clock accuracy	" 3.5 seconds per day maximum
Elapsed Time Clock (internal timing) accuracy	" .01% maximum
Serial Port	
RS422/485 compatible	Programmer Serial Attachment
VME	System designed to support the VME standard C.1

† Refer to GFK-0867B, or later for product standards and general specifications.

Table 3. Ordering Information

Description	Catalog Number
Central Processing Unit 32 MHz, 32-Bit, Floating Point, 1 Mbyte Memory	IC697CPM915
Lithium Battery	IC697ACC701

Note: For Conformal Coat option, or Low Temperature Testing option please consult the factory for price and availability.