

Programmable Controller IC697CPU732

GFK-0581B
August 1995

Central Processing Unit, 12 MHz
Fixed, Floating Point

Features

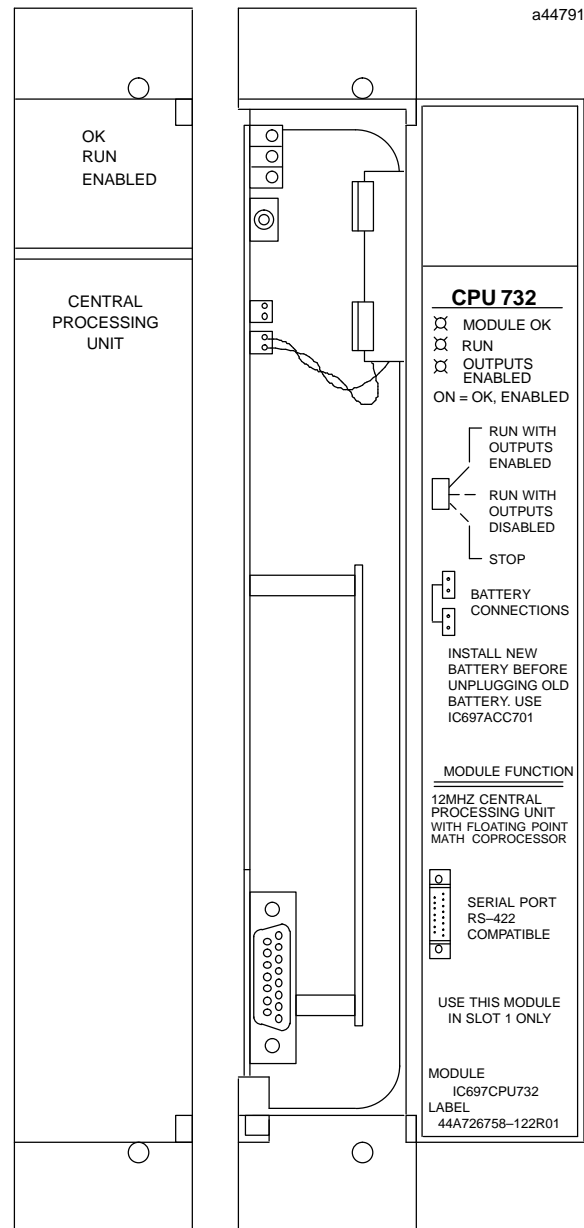
- Supports floating point calculations.
- Single slot CPU.
- 512 inputs and outputs (any mix).
- Up to 8K analog I/O.
- 0.4 microseconds per boolean function.
- 12 MHz, 80C186 microprocessor.
- Supports IC66* and IC697 I/O.
- Programmed by IC641 software products.
- Configurable data and program memory.
- Battery-backed calendar clock.
- Three position operation mode switch.
- Password controlled access.
- Three status LEDs.
- Software configuration (No DIP switches or jumpers to set).
- Reference information inside front door.

Functions

The CPU 732 is a single slot PLC CPU which allows floating point calculations. The CPU 732 is programmed and configured by IC641 programming software to perform real time control of machines, processes and material handling systems. The CPU 732 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 IC697 LAN interface modules, several Coprocessor modules, Bus Controller for IC66* I/O products, Communications modules, I/O Link Interface, and all of the IC697 family of discrete and analog I/O modules.

Program and data memory for the CPU 732 is stored on the module in battery-backed CMOS RAM.



GFK-0581B

Operation of this module may be controlled by the three position switch or remotely by an attached programmer and IC641 software. CPU status is indicated by three green LEDs on the front of the module.

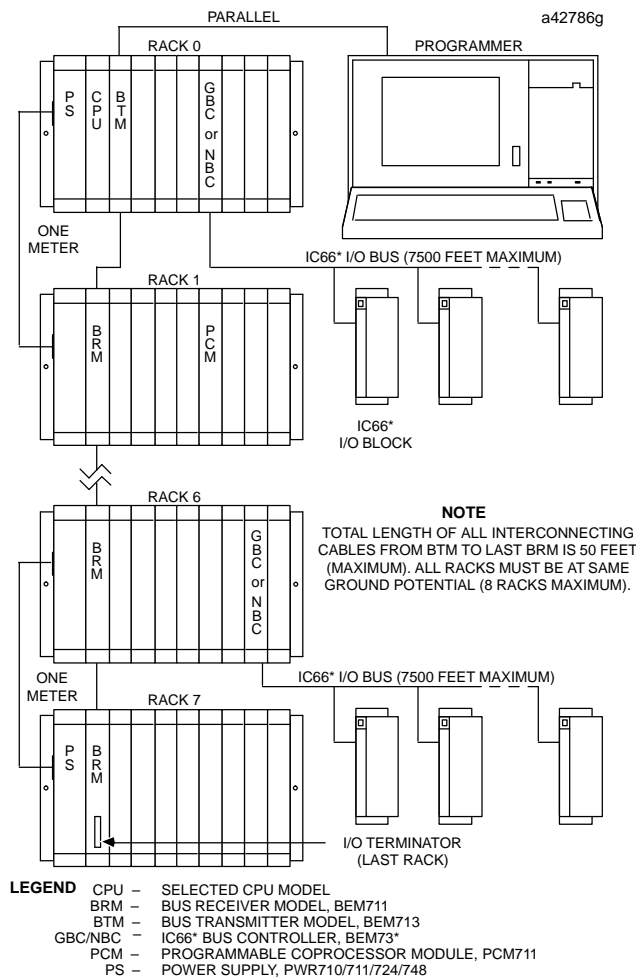


Figure 1. Typical PLC System Diagram

Installation

Installation should not be attempted without referring to the applicable *Programmable Controller Installation Manual*.

- Be sure that power to the PLC is turned off before installing the CPU 732 module.
- Connect the battery to either of the battery connectors on the module.
- Put toggle switch in the STOP position.
- Install in slot 1 of rack 0. (See Figure 1).
- Turn on power.

The module should power up and blink the top LED. 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. 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 and the state of the program.

The following figure shows the features of the CPU 732 Central Processing Unit.

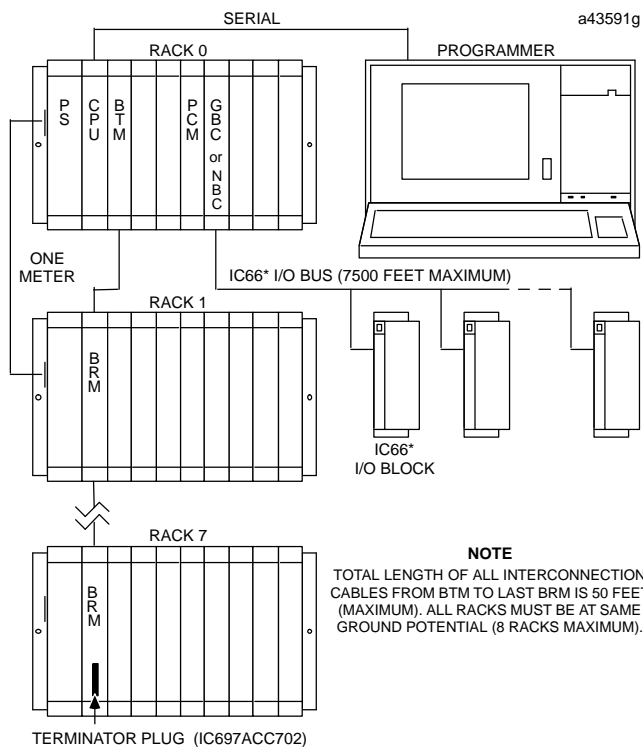
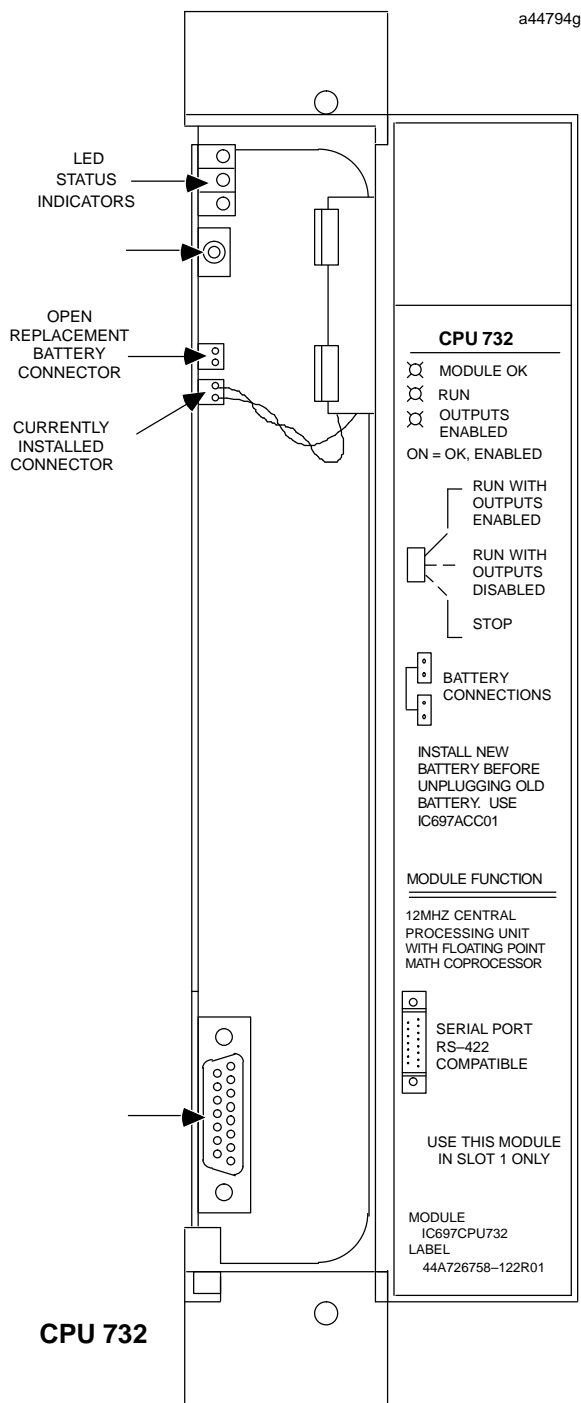


Figure 3. System Configuration, Serial Connection to Programmer

GFK-0581B

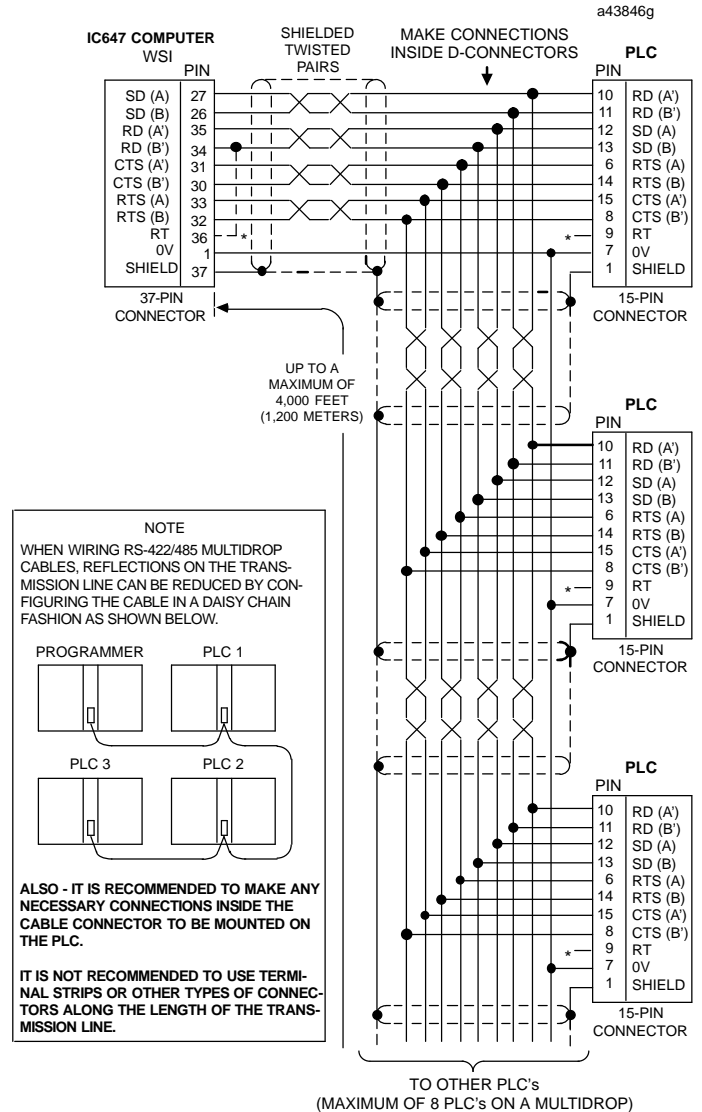
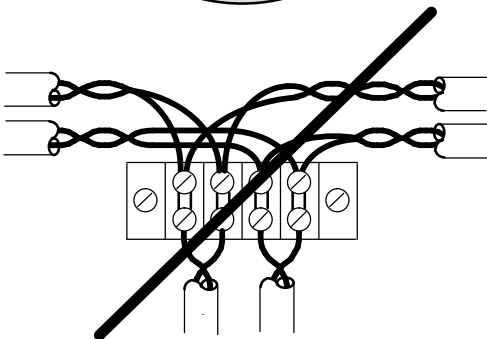
Multidrop Configuration

Following are the cable and connector requirements, and a wiring diagram for connecting the IC647 programmer, or a compatible computer to the programmable controller in an 8-wire multidrop, serial data configuration.

The maximum number of programmable controllers that may be included in a multidrop configuration is dependent on the length of the link. A multidrop configuration may include 8 PLCs in a link that has a total cable length of 4000 feet (1200 meters), 16 PLCs with a total cable length of 2000 Feet (600 meters), or 32 PLCs with a total cable length of 1000 feet (300 meters). The 15-pin serial port connector for the programmable controller is located on the CPU module. The 37-pin serial port connector is located on the Work Station Interface board installed in the computer. The cable type that is used for these connections should be 24 AWG (0.22 mm²), 30V computer grade. Extra flexible construction is recommended for short lengths.

IMPORTANT !

DO NOT
USE TERMINAL STRIPS
OR OTHER TYPES OF
CONNECTORS ALONG THE
LENGTH OF THE TRANSMISSION
LINE WHEN WIRING A
MULTIDROP SERIAL DATA
CONFIGURATION.



CAUTION

GROUND POTENTIAL: MULTIPLE UNITS, NOT CONNECTED TO THE SAME POWER SOURCE, MUST HAVE GROUND POTENTIAL WITHIN * 7V FOR PROPER OPERATION OF THIS SYSTEM. FAILURE TO PROVIDE A COMMON GROUND MAY CAUSE DAMAGE TO PLC COMPONENTS.

Figure 4. Example of 8-Wire Multidrop, Serial Data Configuration

Configuration

The IC697 CPU and I/O system is configured with IC641 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 be-

fore removing the old battery. Specific indication of a low battery state is detailed in Reference 2.

Removing a Module

The following instructions 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	ProgrammingSoftware User's Manual
2	ProgrammableControllerReferenceManual
3	ProgrammableControllerInstallationManual

GFK-0581B

Table 2. Specifications for IC697CPU732 †

Battery ShelfLife	10 months at 20° C (68° F)
Memory Retention	6 months nominal without applied power
Current required from 5V Bus	1 Amp
Time of Day Clock (internal timing) Accuracy	± 3.5 seconds per day
ElapsedTime (internal timing) Clock	± .01% maximum
Serial Port	RS422/485 compatible, Programmer Serial Attachment
VME	System designed to support the VME standard C.1

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

Table 3. Ordering Information

Description	Catalog Number
CPU 732, 12 MHz, Fixed, Floating Point	IC697CPU732
Lithium Battery	IC697ACC701