

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE 90-30 SERIES PLC

IC693CPU374-KZ

CPU 374 ETHERNET CONTROLLER

Used with the applicable Series 90-30 controllers configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GE official manufacturer documentation

GFK-2123C

CPU Functional Compatibility

HHP Compatibility

The CPU374 does not support the Hand Held Programmer.

Programmer Version Requirements

Control software version 2.50 or later, CIMPLICITY® Machine Edition Logic Developer 2.60 or later, or VersaPro™ 2.03 or later must be used to configure and program the CPU374.

C Toolkit Compatibility

Version 4.00 or later of the C toolkit must be used for C programming.

IC693CMM321 Ethernet Option Module Version Requirements

All Series 90-30 Ethernet Interface (IC693CMM321) modules used with this CPU should be updated to IC693CMM321 firmware release 1.10 or later.

FBC Compatibility

FIP Bus Controller version 3 or later is required for this CPU.

Power Supply Compatibility and Requirements

The CPU374 is compatible with any of the Series 90-30 power supplies, except Revisions A through J, Revision W, and Revision X of Power Supply IC693PWR321. If the IC693PWR321 is used, it must be Revision K through V, or Revision Y or later.

- If a Release 11.01 or later CPU374 is used with Revision X or W of the IC693PWR321, it will always power up in a cleared state – Program, Configuration, Stored Values, Override Tables, and Fault Tables are all cleared.
- If a Release 11.00 CPU374 is used with Revision X or W of the IC693PWR321, it may exhibit the problem described in “CPU Problems Resolved by this Upgrade” on page 6.

A **High Capacity Power Supply** is **strongly** recommended. Power consumption of the CPU374 and its supporting devices are listed below:

- CPU374 requires 1.48A @ +5VDC (= 7.4 Watts).
- If used, the converter in the IC690ACC901 serial cable assembly requires 100mA at 5VDC (=0.5 Watts).
- If used, the IC690ACC900 RS-422/RS-485 to RS-232 converter requires 170 mA at 5 VDC (=0.85 Watts).

IC693ALG220/221 Analog Input Module Version Requirements

90-30 CPUs 35x/36x/37x are not compatible with versions F and earlier of the IC693ALG220/221 Analog Input Modules. Version G or later of the IC693ALG220/221 must be used with these CPUs. If a version F or earlier IC693ALG220/221 module is used with a 35x/36x/37x CPU, the %AI values reported by the module may exhibit erratic behavior.

Ethernet Functional Compatibility

The following features on the CPU364 are not supported in the CPU374:

- SRTP Channels (COMMREQs for Ethernet messages.)
- Name Resolution
- BOOTP
- AAUI Port

IC693CPU374 Data

Controller Type	Single slot CPU module with embedded Ethernet Interface
Processor	
Processor Speed	133 MHz
Processor Type	Embedded 586
Execution Time (Boolean Operation)	0.15 μ sec per boolean instruction
Type of Memory Storage	RAM and Flash
Memory	
User Memory (total)	240KB (245,760) Bytes. Note: Actual size of available user program memory depends on the amounts configured for %R, %AI, and %AQ configurable word memory types.
Discrete Input Points - %I	2,048 (fixed)
Discrete Output Points - %Q	2,048 (fixed)
Discrete Global Memory - %G	1,280 bits (fixed)
Internal Coils - %M	4,096 bits (fixed)
Output (Temporary) Coils - %T	256 bits (fixed)
System Status References - %S	128 bits (%S, %SA, %SB, %SC - 32 bits each) (fixed)
Register Memory - %R	Configurable 128 to 32,640 words
Analog Inputs - %AI	Configurable 128 to 32,640 words
Analog Outputs - %AQ	Configurable 128 to 32,640 words
System Registers - %SR	28 words (fixed)
Timers/Counters	>2,000 (depends on available user memory)
Hardware Support	
Battery Backed Clock	Yes
Battery Back Up (Number of months with no power)	1.2 months for internal battery (installed in the power supply) 15 months with external battery (IC693ACC302)
Load Required from Power Supply	7.4 watts of 5VDC. High Capacity power supplies recommended.
Hand Held Programmer	CPU374 does not support Hand Held Programmer
EZ Program Store Device	Yes
Total Baseplates per System	8 (CPU baseplate + 7 expansion and/or remote)
Software Support	
Interrupt Support	Supports the periodic subroutine feature.
Communications and Programmable Coprocessor Compatibility	Yes
Override	Yes
Floating Point Math	Yes, Hardware Floating Point Math
Programming Support	VersaPro™ 2.03 or later. CIMPLICITY® Machine Edition Logic Developer 2.60 or later. Control software version 2.50 or later.
Communications Support	
Built-in Serial Ports	No serial ports on CPU374. Supports RS-485 port on power supply.
Protocol Support	SNP and SNPX on power supply RS-485 port
Built-in Ethernet Communications	Ethernet (built-in) – 10/100 base-T/TX Ethernet Switch
Number of Ethernet Ports	Two, both are 10/100baseT/TX ports with auto sensing. RJ-45 connection
Number of IP Addresses	One
Protocols	SRTP and Ethernet Global Data (EGD). No channel support.
Web Server Support	None
Environmental and Agency Specifications	
Operating Temperature	0 to 60°C (32 to 140°F) ambient
Storage Temperature	-40°C to +85°C
Agency Approvals	UL508, C-UL (Class I, DIV II, A, B, C, D), CE Mark
Low Temperature (LT) Testing	Yes. The CPU374 is available for -40° to 60°C operation.

IMPORTANT PRODUCT INFORMATION

READ THIS INFORMATION FIRST

Product: IC693CPU374 CPU Module with Ethernet Interface

IC693CPU374-BD (and later) with CPU Firmware Release 11.02

Introduction

This document contains information that is not available in any other publication; therefore, we recommend you save it for future reference.

This release of the Series 90™-30 PLC CPU374 makes the following changes to the CPU firmware. There are no changes to the Ethernet daughter board firmware or the hardware. The following problems are corrected by this upgrade (for details see page 6):

- “CPU374 Program Block Checksum Failure after Power-cycle and Stop to Run Transition with C.”
- “CPU374 Clears All Memory after Run to Stop Transition with Multiple Power Cycles.”
- “CPU374 Clears Memory when Power is Lost in Run Mode with C.”

Hardware Identification

The following table shows the revision level of the circuit boards used in this version of the IC693CPU374.

CPU Model (Version)	Circuit Board ID	Circuit Board Version
IC693CPU374-BD and later	CY3A1 (CPU)	44A747988-G01R04
	E35A1 (Ethernet)	44A747984-G01R04 (and later)

Firmware Identification

CPU Catalog Number	Revision	
	CPU Firmware	Daughterboard Firmware
IC693CPU374-AC and later	Main: 11.02 (51A1) Boot: 11.00 (10A2)	Main: 1.01 (20A1) Boot: 1.00 (15A2)

Note: The new firmware is compatible with all previous firmware and hardware versions of the IC693CPU374.

Firmware Upgrade

To upgrade a CPU374 to the latest firmware version (11.02), you must purchase the field upgrade kit 44A751579-G02 or download it at no charge from the web (<http://www.gefanuc.com/support/plc/r-s9030.htm>). Firmware upgrades require the IC690ACC901 Miniconverter and Cable Kit.

Documentation

GFK- 0356, *Installation and Hardware Manual*

GFK-0467, *PLC CPU Instruction Set Reference Manual*

GFK-1541, *TCP/IP Ethernet Communications for the Series 90 PLC User's Manual*,

GFK-1186, *TCP/IP Ethernet Communications for the Series 90 PLC Station Manager Manual*