GE Fanuc Automation

Series 90™ - 30 PLCs

The Series 90-30 is one of the world’s most versatile PLCs on the market today.

Versatility and Power in One Small Package

GE Fanuc’s Series 90-30 PLCs are a family of controllers, I/O systems, and specialty modules designed to meet the demand for a versatile industrial control. The variety and flexibility of I/O and specialty modules make automation integration easy. There are 14 powerful CPUs to choose from, over 100 different I/O module types, a wide range of intelligent modules, high level communications options, and a variety of bus interfaces.

Programming options for the Series 90-30 are Ladder Logic, SFC, “C”, or State Logic®. “C” programming enables users to handle complex calculations that were once only handled by large PLCs.

GE Fanuc uses industry standards, such as Ethernet TCP/IP for the Series 90-30 family. The Ethernet interface allows you to attach the Series 90-30 PLC directly to an Ethernet LAN and upload or download Ladder Logic. In addition, data can be transferred between PLCs and PCs simultaneously. Access can also be handled over the Internet.

The Series 90-30 is suited for applications requiring as little as 32 I/O or as much as 4,000 I/O. Remote I/O is handled easily using industry standards like Genius® Bus, World FIP, Profibus-DP®, Interbus-S®, LonWorks®, DeviceNet®, or SDS®.

To ensure that the Series 90-30 PLC provides a full range of application solutions, GE Fanuc works closely with third-party manufacturers of peripherals, modules, and software packages to provide complex automation solutions. Application tools are available for redundancy, Sequence of Event Recording, injection molding, chemical delivery, and much more.

GE Fanuc also offers a full line of Operator Interfaces, Human Machine Interfaces, Motion Control products, and various integration services. In addition, the Series 90-30 integrates easily with GE Fuji Variable Frequency Drives, GE Motor Control Centers, and other automation products.
**Powerful CPUs**

**Standard Models CPU311, CPU313, CPU323**
Entry level applications with low I/O counts are ideal for these CPUs. The CPU is embedded into the backplane allowing all slots available for I/O. These models are compatible with advanced modules such as Ethernet, the various bus modules, and motion control.

**Standard Models CPU331, CPU341**
These are the mid-range models for the Series 90-30 family. Each CPU model is modular and comes in various memory sizes, performance capability and increased functionality such as overrides, battery backed clock, and Programmable Coprocessor module support.

**High Performance Models CPU350, CPU351, CPU352, CPU360, CPU363, CPU364**
If high performance is required, then these are the CPUs of choice. Each CPU is based on the Intel 386EX processor for fast computation and high throughput. They can handle up to 4,096 I/O and start at 32K of memory and can be programmed in ladder logic, SFC, “C” or all of these. These high performance CPUs are ideal for complex applications that were once reserved for large controllers.

These CPUs are also supported by CIMPPLICITY® Control, Windows® 95 and Windows NT® programming.

**Models CSE311, CSE313, CSE323, CSE331, CSE340**
State Logic Programming is a practical alternative to traditional control languages, and is used for machine systems and processes. State Logic works the way an engineer thinks. It gives the user the ability to break a large application into smaller, more manageable “Tasks” and “Steps” utilizing Natural Language Processing technology.

**Communication Options**
The Series 90-30 has a variety of communications options available including Ethernet, Genius, Series 90 Protocol (SNP), and RTU.

**Ethernet TCP/IP**
The Ethernet Interface can transfer data between PLCs, communicate simultaneously with multiple devices, and program upload and download the PLC over the LAN. The Ethernet Interface allows you to attach the Series 90-30 directly to an Ethernet LAN. The module can operate on media specified by IEEE802.3.

**Genius Communications Modules**
The GCM+ is an intelligent module that provides automatic global data communications between Series 90-30, Series 90-70 and other devices. Up to 32 devices can be on a Genius Bus.

**Communication Coprocessor Module**
The CMM provides two serial communications ports with a variety of built-in selectable protocols such as SNP/ SNPX (Master/ Slave), CCM, and Modbus RTU.

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**Basic features of all CPU models:**
- Four level password protection
- Online programming changes
- I/O and CPU diagnostics
- Full function double precision math (floating point on selected models)
- PID function
- Program block moves, arrays
- Indirect addressing
- Structured programming
- Advanced module support for Temperature Control, Motion Control, Ethernet, Bus Controllers and others

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**Part Number** | **IC693CPU311** | **IC693CPU313** | **IC693CPU323** | **IC693CPU331**
--- | --- | --- | --- | ---
Total I/O Discrete | 160 | 160 | 320 | 1024
Total Analog | 64 In/32 Out | 64 In/32 Out | 64 In/32 Out | 128 In/64 Out
User Logic Memory | 6K bytes | 12K bytes | 12K bytes | 16K bytes
Registers | 512 | 1024 | 1024 | 2048
Programming Language | Ladder Logic and SFC | Ladder Logic and SFC | Ladder Logic and SFC | Ladder Logic and SFC
Boolean Execution Speed | 18ms/K | 0.6ms/K | 0.6ms/K | 0.4ms/K
Built In Serial Ports | 1 | 1 | 1 | 1
Max. I/O Module Slots | 5 | 5 | 10 | 49
Floating Point Math | No | No | No | No
Battery Backed Clock | No | No | No | Yes

*Supported by CIMPPLICITY Control only*
**Over 100 I/O Module Types**

The power of the Series 90-30 is in its I/O. GE Fanuc offers one of the widest selections of I/O on the market. There are over 38 different discrete I/O types, 17 analog I/O types and a wide variety of specialty modules to choose from.

**High Speed Counter Module**

This module accepts type A, B and C inputs. It has four inputs up to 80Khz, and can control four outputs.

**I/O Processor Module**

The I/O Processor module provides direct processing of rapid pulse signals from parallel output Gray Code Encoders, or an AQUADB Encoder. It reports encoder position and velocity to the PLC.

**Programmable Coprocessor Module**

The Programmable Coprocessor is a high-performance microcomputer that is programmed in either MegaBasic or “C”. It is ideal for interfaces to Bar Code Readers, RTUs and other ASCII devices.

**Temperature Control Module**

The Temperature Control Module is a high performance control module providing eight channels of thermocouple input and eight channels of control output in a single Series 90-30 module. Each channel can operate in closed or open loop mode, relieving the PLC of providing the temperature control functions. The module also provides Auto-Tuning.

**Servo Motion Control Modules**

GE Fanuc offers several options for motion control. The DSM module is a two axis high performance digital system that includes GE Fanuc PLC control module, servos and amplifiers. The APM module comes in either one or two axis of analog control. Multi-axis Stepper module and Absolute Resolvers/Encoder modules are also available.

**PC Coprocessor**

The PC Coprocessor module from Horner Electric can be placed in any Series 90-30 PLC. A PC Processor is also available as a slot one controller (available in 386SL or 486DX versions).

**Other Specialty Modules include:**
- Thermocouple
- RTD
- Millivolt/ Strain Gauge
- Sequence of Event Recorder
- Isolated Analog
- Modem Module

**Field Bus Interfaces**

The Series 90-30 supports a variety of Field Bus networks. These busses can easily be integrated into a Series 90-30 system.

**Genius Bus**

The Genius Bus Controller is a communication and single-channel distributed I/O controller module all in one. It supports global data communications and provides datagrams, a direct peer-to-peer messaging system. The module also supports many third party interfaces such as PCs, RF tag readers, pneumatic valves, VFDs, and more.

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**Other popular bus networks available include:**
- World FIP (Master and Slave)
- Profibus-DP (Master and Slave)
- Interbus-S (Slave)
- LonWorks (Master)
- DeviceNet (Master)
- SDS (Master)
- CAN Open (Master)
- Modbus RTU (Master and Slave)

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<table>
<thead>
<tr>
<th>IC693CPU341</th>
<th>IC693CPU350</th>
<th>IC693CPU351</th>
<th>IC693CPU352</th>
<th>IC693CPU360</th>
<th>IC693CPU364**</th>
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<tbody>
<tr>
<td>1024</td>
<td>2048 In/</td>
<td>2048 In/</td>
<td>2048 In/</td>
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<tr>
<td></td>
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<tr>
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<td>Yes***</td>
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**CPU363 and CPU364 available third quarter 1998.**

**Memory will be increased to 246K (except CPU350) and all models will have Floating Point Math third quarter 19998.**
With its innovative architecture and modular design, the Series 90-30 family of PLCs offer a low-cost solution to a surprisingly wide range of PLC applications, from simple relay replacement to sophisticated mid-range processes and discrete automation.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1C693HS391</td>
<td>Base, CPU, 10 Slots</td>
</tr>
<tr>
<td>1C693HS392</td>
<td>Base, Expansion, 10 Slots</td>
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<tr>
<td>1C693HS393</td>
<td>Base, Remote Expansion, 10 Slots (700 ft.)</td>
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<tr>
<td>1C693HS397</td>
<td>Base, CPU, 5 Slots</td>
</tr>
<tr>
<td>1C693HS398</td>
<td>Base, Expansion, 5 Slots</td>
</tr>
<tr>
<td>1C693HS399</td>
<td>Base, Remote Expansion, 5 Slots (700 ft.)</td>
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</table>

Series 90-30 Communications Modules

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>1C693CM301</td>
<td>Genius Communications Module, GCM (256 bits)</td>
</tr>
<tr>
<td>1C693CM302</td>
<td>Genius Communications Module, (1K byte) GCM+</td>
</tr>
<tr>
<td>1C693CM311</td>
<td>Communications Module, CCM, RTU, SNP, SNPX</td>
</tr>
</tbody>
</table>

Ethernet Interface Module

- HTM693R230: Various RTU/Modbus Modules

Series 90-30 Power Supplies

- HTM693R231: Power Supply, 120/240VAC, 125VDC, Standard
- HTM693R232: Power Supply, 24/48VDC, Standard
- HTM693R233: Power Supply, 24VDC, High Capacity

Series 90-30 Specialty Modules

- IC693BU300 | Input Simulator Module |
- IC693BU302 | High Speed Counter (HSC) |
- IC693BU303 | Axis Positioning Module (APM), 1 Axis Analog |
- IC693BU305 | Axis Positioning Module (APM), 2 Axis Analog |
- IC693BU310 | Digital Servo Module, 2 Axis |

Series 90-30 Specialty Software

- IC693BU319 | Various Stepper Positioning Modules |
- IC693BU320 | Various Step Processor Modules |
- IC693BU321 | Various Step Processor Modules (reads parallel Gray Code Encoder) |
- IC693BU322 | Various Step Processor Modules |

Series 90-30 Bus Networks

- IC693BU330 | Various Standalone Modules |
- IC693BU331 | Various Standalone Modules |
- IC693BU332 | Various Standalone Modules |
- IC693BU333 | Various Standalone Modules |
- IC693BU334 | Various Standalone Modules |

Series 90-30 Bus Networks

- IC693BU335 | Various Standalone Modules |
- IC693BU336 | Various Standalone Modules |
- IC693BU337 | Various Standalone Modules |
- IC693BU338 | Various Standalone Modules |
- IC693BU339 | Various Standalone Modules |

Series 90-30 Specialty Software

- HTM693S213 | Sequence of Events Software—256 Inputs, 1ms resolution |
- HTM693S214 | Sequence of Events Software—256 Inputs, 10ms resolution |
- HTM693S215 | Sequence of Events Software—256 Inputs, 100ms resolution |
- HTM693S216 | Sequence of Events Software—256 Inputs, 1s resolution |
- HTM693S217 | Sequence of Events Software—256 Inputs, 10s resolution |
- HTM693S218 | Sequence of Events Software—256 Inputs, 100s resolution |
- HTM693S219 | Sequence of Events Software—256 Inputs, 1000s resolution |

For every great solution, there is a better one.

GE Fanuc Automation

For the location of your nearest GE Fanuc representative or authorized distributor contact:

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