

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE PACSYSTEMS RX3I

IC695CPU315-CG

RX3I CPU CONTROLLER

Used with the applicable PACSystems RX3i controllers configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GE official manufacturer documentation

Important Product Information

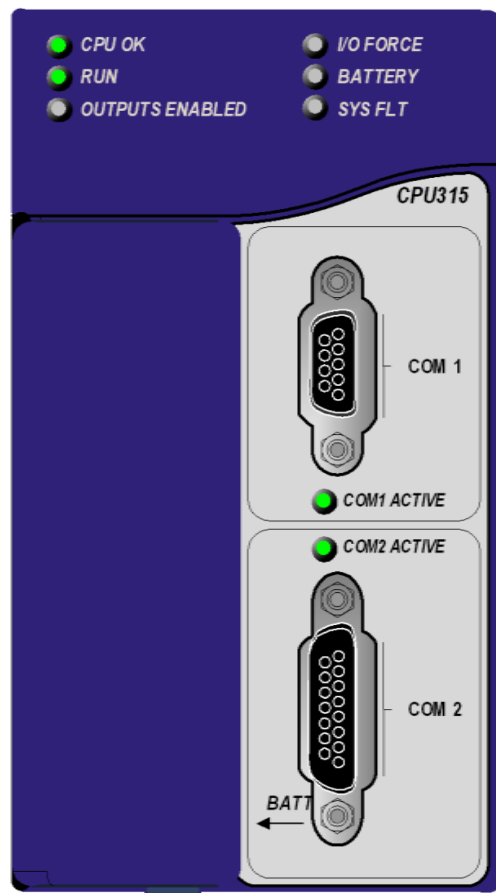
PACSystems* RX3i

IC695CPU315-CR

PACSystems* RX3i CPU

GFK-2586T

April 2016



The PACSystems* RX3i CPU can be used to perform real time control of machines, processes, and material handling systems. The CPU communicates with the programmer and HMI devices via a serial port using SNP Slave protocol. It communicates with I/O and smart option modules over a dual backplane bus that provides:

- High-speed PCI backplane for fast throughput of new advanced I/O.
- Serial backplane for easy migration of existing Series 90*-30 I/O.

Features

- Contains 20 Mbytes of battery-backed user memory and 20 Mbytes of non-volatile flash user memory.
- Provides access to bulk memory via reference table %W.
- Configurable data and program memory.
- Programming in Ladder Diagram, Structured Text, Function Block Diagram, and C. Refer to *PACSystems RX7i & RX3i CPU Programmer's Reference Manual*, GFK-2950.
- Supports auto-located Symbolic Variables that can use any amount of user memory.
- Reference table sizes include 32Kbits for discrete %I and %Q and up to 32K words each for analog %AI and %AQ.
- Supports most Series 90-30 modules and expansion racks. For a list of supported I/O, Communications, Motion, and Intelligent modules, refer to the *PACSystems RX3i System Manual*, GFK-2314F or later.
- Supports up to 512 program blocks. Maximum block size is 128KB.
- CPU firmware may be upgraded in the field.
- CPU supports firmware upgrades of modules in its backplane.
- Two serial ports: an RS-485 serial port and an RS-232 serial port.
- Ethernet communications via the rack-based Ethernet Interface module (IC695ETM001). For details on Ethernet capabilities, refer to *PACSystems RX7i & RX3i TCP/IP Ethernet Communications User Manual*, GFK-2224.
- Time Synchronization to SNTP Time Server on Ethernet network when used with Ethernet Release 5.0 or later module.
- Compliant with EU RoHS Directive 2002/95/EC using the following exemptions identified in the Annex: 7(a), 7(c)-I, & 7(c)-III

Ordering Information

Catalog Number	Description
IC695CPU315	RX3i 1GHz Celeron M CPU with 20MB User Memory
IC695ACC302	Smart Auxiliary Battery for Memory Retention
IC693ACC302	Auxiliary Battery for Memory Retention
IC690RBT001	Rechargeable Battery for Memory Retention



Warning – Use only GE approved auxiliary battery packs listed above. Use of another battery may present a risk of fire or explosion.

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Specifications: CPU315

CPU Performance	For CPU315 performance data, refer to Appendix A of the <i>PACSystems CPU Reference Manual</i> , GFK-2222V or later.
Battery: Memory retention	For battery selection, installation and estimated life, refer to the <i>PACSystems RX3i and RX7i Battery Manual</i> , GFK-2741
Program storage	Up to 20 MB of battery-backed RAM 20 MB of non-volatile flash user memory
Power requirements	+3.3 Vdc: 1.0 Amps nominal +5 Vdc: 1.2 Amps nominal
Operating Temperature	0 to 60°C (32°F to 140°F)
Floating point	Yes
Time of Day Clock accuracy	Maximum drift of 2 seconds per day
Elapsed Time Clock (internal timing) accuracy	0.01% maximum
Embedded communications	RS-232, RS-485
Serial Protocols supported	Modbus RTU Slave, SNP, Serial I/O
Backplane	Dual backplane bus support: RX3i PCI and high-speed serial bus
PCI compatibility	System designed to be electrically compliant with PCI 2.2 standard
Program blocks	Up to 512 program blocks. Maximum size for a block is 128KB.
Memory	%I and %Q: 32Kbits for discrete %AI and %AQ: configurable up to 32Kwords %W: configurable up to the maximum available user RAM Symbolic: configurable up to 20 Mbytes

For product standards, general operating specifications, and installation requirements, refer to *PACSystems RX3i System Manual*, GFK-2314.

Installation Location

This product is intended for use with the RX3i system. Its components are considered open equipment (having live electrical parts that may be accessible to users) and must be installed in an ultimate enclosure that is manufactured to provide safety. At a minimum, the enclosure shall provide a degree of protection against solid objects as small as 12mm (fingers, for example). This equates to a NEMA/UL Type 1 enclosure or an IEC60529 IP20 rating providing at least a pollution degree 2 environment. For details about installing RX3i rack systems, refer to *PACSystems RX3i System Manual*, GFK-2314.

Installation in Hazardous Areas

The following information is for products bearing the UL marking for Hazardous Areas or ATEX marking for explosive atmospheres:

CLASS 1 DIVISION 2 GROUPS ABCD

- This equipment is an open-type device and is meant to be installed in an enclosure suitable for the environment that is only accessible with the use of a tool.
- Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations, or nonhazardous locations only.



Warning – EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.



Warning – WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES.



Warning – EXPLOSION HAZARD - BATTERIES MUST ONLY BE CHANGED IN AN AREA KNOWN TO BE NON-HAZARDOUS.

ATEX Zone 2

This module must be mounted in an enclosure certified in accordance with EN60079-15 for use in Zone 2, Group IIC and rated IP54. The enclosure shall only be able to be opened with the use of a tool.

Release History

Catalog Number	Firmware Revision	Date	Comments
IC695CPU315-CR	8.75	Apr 2016	Several security enhancements were made to various PACSystems Controllers to harden the product against an attacker with local area network access. Refer to https://ge-ip.force.com/communities/articles/en_US/Article/Security-Enhancements?Type=Article
IC695CPU315-CP	8.70	Nov 2015	Supports extended PROFINET device Subslot Numbers in order to support additional 3 rd party devices. The maximum Subslot Number for PROFINET devices has been increased from 255 to 21845.
IC695CPU315-CN	8.50	May 2015	Add support for HART® Pass Through feature. Refer to <i>PACSystems RX3i HART Pass Through User Manual</i> , GFK-2929.
IC695CPU315-CM	8.15	May 2014	Adds support for IC695RMX228 128 MB Reflective Memory Module with Single Mode Transceiver. Adds ability to read reflective memory status bits for IC695CMX128, IC695RMX128, and IC695RMX228 (reflective memory modules). Resolves issue of Serial I/O Read Bytes COMMREQ (4402) always returning error code 100Dh in the event of an error, regardless of the error.
IC695CPU315-CL	8.05	Feb 2014	Adds support for the new IC695ECM850 (IEC 61850 Ethernet Communication Module), which operates as an IEC 61850 Client and provides connectivity to IEC 61850 Server devices. Resolves issue of CPU halting when the inner FOR_LOOP's Start is greater than End input in a nested FOR_LOOP.
IC695CPU315-CK	7.80	Sep 2013	Adds remote PROFINET IO to PACSystems RX3i Hot Standby Redundancy systems. Resolves issue with LREAL operands within complex relational expressions.
IC695CPU315-CJ	7.75	May 2013	Corrects an issue in versions 7.15 – 7.70 that required setting OEM lock in Enhanced Security in order to preserve the OEM lock through a power cycle. Adds support for RX3i CMX/RMX modules version -CG (hardware version -Cx with firmware version 2.00 and later).
IC695CPU315-CH	7.70	Feb 2013	Adds support for the following new modules: IC694MDL758, IC695CNM001 and IC694PSM001.
IC695CPU315-CG	7.18	Nov 2012	Adds the ability to monitor a new interface between the CPU and the CMX/RMX Memory Xchange modules (CMX/RMX Memory Xchange module firmware 1.06 and later). In the rare occasion the CMX/RMX Memory Xchange module detects a failure in a read operation, the CMX/RMX Memory Xchange module will indicate the last read is invalid. The CPU will then retry the previous read operation.
IC695CPU315-CF	7.15	Jul 2012	Adds native support for the new Power Sync and Measurement module (IC694PSM001) and resolves several issues. Also introduces new features to augment security in the CPU firmware and Proficy Machine Edition software. For details, see New Features and Enhancements and Problems Resolved in Release 7.15 in <i>PACSystems RX3i CPU IC695CPU315 IPI</i> , GFK-2586L.
IC695CPU315-CE	7.14	Jun 2012	Corrects an issue where executing a Run Mode Store, displaying the Proficy Machine Edition Show Status window, or requesting data using the PACSAnalyzer tool could cause discrete output modules to unexpectedly change state momentarily (up to one PLC scan).
IC695CPU315-CE	7.13	Apr 2012	Corrects issues with <i>Logic Write to Flash</i> (Service Request 57).
IC695CPU315-CD	7.00	Oct 2011	Hardware revision to correct an issue with the RS-485 (COM2) serial port.
IC695CPU315-BD	7.00	Jul 2011	Adds support for the PROFINET Controller module, IC695PNC001.
IC695CPU315-BC	6.71	May 2011	Corrects the behavior of the <i>Logic Driven Read/Write to Flash</i> service requests, SVC_REQ56 and SVC_REQ 57.
IC695CPU315-BB	6.70	Mar 2011	Implements a hardware design update that improves the noise immunity of the CPU module during power up from flash operations.
IC695CPU315-AB	6.70	Dec 2010	Introduces support for new modules, enhancements to the Modbus RTU protocol, improved Run signal handling in the expansion rack and other improvements. Resolves several problems found in earlier releases.
IC695CPU315-AA	6.02	Jul 2010	Initial release. For details, see <i>PACSystems RX3i CPU IC695CPU315 IPI</i> , GFK-2586.

Important Product Information for this Release

Field Upgrade

Upgrade Kit: 82A1715-MS10-000-A15

When upgrading for HART Pass Through functionality, the supporting RX3i Analog I/O modules must contain HART-compatible firmware. If used for HART Pass Through, the PROFINET Controller (PNC001) and PROFINET Scanner (PNS001 or CEP001) must also contain HART-compatible firmware (see below).

New Features and Enhancements

<i>Subject</i>	<i>Description</i>
None	N/A

Problems Resolved by this Revision

<i>Subject</i>	<i>ID Code</i>	<i>Description</i>
Cyber Security Updates	N/A	Several security enhancements were made to various PACSystems Controllers to harden the product against an attacker with local area network access. Refer to https://ge-ip.force.com/communities/articles/en_US/Article/Security-Enhancements?Type=Article