GE RX3i PacSystem Series Service Manual

IC695GCG001

1. Description

The IC695GCG001 is a PACSystems RX3i Genius communication gateway. This is manufactured by Emerson Automation, formerly by GE Intelligent Platforms (GE IP). This controller functions as Profinet and Genius I/O gateway, featuring Two (2) RJ45 communication interface and Two (2) Genius communication interface. It supports up to 31 Genius Block or devices and accommodates 1024 bytes of input data and 1024 bytes of output data per GCG. This gateway supports RTC – Real Time Cyclic Protocol, Class 1 a

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**PACSystem RX3i**
Manufacturer	**Emerson Automation**
Part	**Number IC695GCG001**
Product	**Description Genius communication gateway**
Product	**Type Genius communications gateway module**
Input	**power 24 VDC; 0.19 A maximum**
Compatibility	**PACSystems RX3i**
Communication	**interface Two (2) Ethernet port; Two (2) Serial Genius ports**
Max	**I/O Devices 31 Genius I/O devices**
Ethernet	**Ports 2**
I/O	**production rate 2ms, 4ms, 8ms, 16ms, 32ms, 128ms, 256ms, or 512ms**
Ethernet	**Media Redundancy Protocol (MRP) Yes**
Maximum	**no. of I/O Station Up to 31 GENIUS blocks or devices**
External	**Power Supply Rating 0.2 Amps at 24 Volts DC**
Maximum	**I/O data per station - 1024 bytes of input data - 1024 bytes of output data**
Hot-swappable	**Yes**
Genius	**Bus speed 153.6 Kbps Standard; 153.6 Kbps Extended**
Operating	**Temperature 0degrees C to 60degrees C**
Supported	**protocols: RTC - Real Time Cyclic Protocol, Class 1 and 2 (unsynchronized); RTA - Real Time Acyclic Protocol; DCP - Discovery and configuration Protocol; CL-RPC - Con**

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Technical specifications for IC695GCG001

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Manufacturer Emerson Automation

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Input power 24 VDC; 0.19 A maximum

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Hot-swappable Yes

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Supported protocols: RTC – Real Time Cyclic Protocol, Class 1 and 2 (unsynchronized); RTA – Real Time Acyclic Protocol; DCP – Discovery and configuration Protocol; CL-RPC – Connectionless Remote Procedure Call; LLDP – Link Layer Discovery Protocol; MRP – Media Redundancy Protocol; SNMP – Simple Network Management Protocol.

Module Hot swap capability Supported

Compatible controllers RX3i CPE330, RX3i CPE302/CPE305/CPE310, RX3i CPU315/CPU320/CRU320, RX3i CPE302

Description

The IC695GCG001 is a Genius communication gateway. This module is part of the PACSystem RX3i that is primarily used to provide ethernet connectivity to any legacy, existing Genius bus system. This module is used to retain the functionalities of legacy modules that utilize the Genius bus and safely migrate the devices to modern control systems without totally decommissioning those. The IC695GCG001 is provided with Two (2) RJ45 communication interface that supports PROFINET and Two (2) Genius communication interface. Genius bus adapters from the existing I/O system are terminated to the IC695GCG001's Genius ports. The PROFINET interface then virtually connects or bridges the connection between the PROFINET network and connected Genius capable modules. This module acts as the gateway between the 2 protocols, supporting up to 31 Genius blocks or devices and permitting 2048 bytes worth of I/O data, specifically, 1024 Input data and 1024 output data. This module supports standard and extended Genius Bus speeds, specifically, 153.6 kbps. Supported protocols by the IC695GCG001 are RTC – Real Time Cyclic Protocol, Class 1 and 2 (unsynchronized); RTA – Real Time Acyclic Protocol; DCP – Discovery and configuration Protocol; CL-RPC – Connectionless Remote Procedure Call; LLDP – Link Layer Discovery Protocol; MRP – Media Redundancy Protocol; SNMP – Simple Network Management Protocol. It also supports subset protocols including UDP, IP, ARP, and ICMP (Ping). Additionally, this module supports VLAN and priority tagging. The IC695GCG001 has configurable I/O update or production rate. Available software configurable time settings are 2ms, 4ms, 8ms, 16ms, 32ms, 128ms, 256ms, or 512ms. This module has maximum current draw of 24 VDC; 0.19 A and operating temperature of 0degrees C to 60degrees C.

The IC695GCG001 module is a GE Fanuc RX3i PacSystems communications gateway module. The IC695GCG001 module enables interfacing between GE Profinet I/O controllers and Genius I/O devices on a Genius serial bus. The IC695GCG001 module scans connected Genius I/O devices, retrieves input data, and sends output data. The IC695GCG001 module then exchanges the I/O data with the Profinet I/O controller over Ethernet links. The IC695GCG001 module can manage up to 31 Genius I/O devices on any particular Genius I/O bus. The IC695GCG001 module can also operate as an I/O device which allows it to be controlled by RX3i Profinet controllers. In such instances, the IC695GCG001 module is able to control PLC. The IC695GCG001 module is only compatible with the GE Profinet I/O controllers. The IC695GCG001 module can be set up in a redundant configuration. Two Ethernet ports with RJ-45 interfaces are provided on the IC695GCG001 module. The module supports both star and linear network topologies. The IC695GCG001 module supports Ethernet Media Redundancy Protocol (MRP). The IC695GCG001 module is typically installed in a panel mount. An optional mounting kit for RX3i expansion slots is also available. The module requires an external 24 Volts DC power supply and it draws 0.2 Amps of current. The IC695GCG001 module supports hot-swapping. However, hot-swapping requires the disconnection of the external power supply. The recommended ambient operating temperature range is 0 to 60 degrees Celsius. An SD card is supported on the module and it can be used for 2 applications, including the backup of the Ethernet configuration data and loading new module firmware. The IC695GCG001 module supports one Genius bus and the ports that are the Serial 1, Serial 2, Shield In, and Shield Out ports are marked on the module's front panel.