GE RX3i PacSystem Series Service Manual

IC695CMM004

1. Description

The IC695CMM004 is a PACSystem RX3i Serial Communication module that is formerly manufactured by GE Intelligent Platforms (GE IP) now under Emerson Automation. This module comes with Four (4) independent RJ-45 serial ports that support RS-232 or RS-485/22 communication, configurable for 4-wire (full duplex) or 2-wire (half-duplex) operation. Up to Six (6) instances of this module is permitted in the CPU backplane. Each port of this module are configurable for MODBUS Master, MODBUS Slave, CCM Sla

2. Specifications

Specification	Value
Brand	**GE Fanuc**
Series	**PACSystem RX3i**
Manufacturer	**Emerson Automation**
Part	**Number IC695CMM004**
Product	**Description Serial Communications Module**
Product	**Type Communications module**
No	**of ports Two (2) RS232 / RS422 / RS485**
Serial	**Ports 4**
Supported	**Protocols MODBUS Master, MODBUS Slave, CCM Slave, DNP3 Master, DNP3 Slave, or Serial I/O protocol**
Physical	**Interface RJ-45**
Selectable	**Baud rates 1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K**
Power	**Requirements 0.7 Amps at 3.3 Volts DC, 0.15 Amps at 5 Volts DC**
Connectors	**RJ45**
Supported	**Configurations RS-232, RS-422/485**
No.	**of installations per rack Up to Six (6) modules**
Baud	**Rates 1200 baud to 115.2 kilobaud**
Status	**LED indicators Module OK, Port Fault, Port Status**
Certifications	**CE, UL/CUL 508, ATEX**
Current	**rating 0.7 mA at 3.3 VDC, 0.150 mA at 5 VDC**
Operating	**Temperature 0 to 60 degrees Celsius**
Parity	**Even, odd, none**
Data	**bits 7, 8**
Stop	**bits 1, 2**
Isolation	**rating Port to Backplane and to frame ground: 250Vac continuous; 1500Vac for 1 minute**

3. Product Information

The IC695CMM004 is a PACSystem RX3i Serial Communication module that is formerly manufactured by GE Intelligent Platforms (GE IP) now under Emerson Automation. This module comes with Four (4) independent RJ-45 serial ports that support RS-232 or RS-485/22 communication, configurable for 4-wire (full duplex) or 2-wire (half-duplex) operation. Up to Six (6) instances of this module is permitted in the CPU backplane. Each port of this module are configurable for MODBUS Master, MODBUS Slave, CCM Slave, DNP3 Master, DNP3 Slave, or Serial I/O protocol and comes with 500 VDC, continuous and 710 VDC for 1 minute isolation rating.

Technical specifications for IC695CMM004

Brand GE Fanuc

Series PACSystem RX3i

Manufacturer Emerson Automation

Part Number IC695CMM004

Product Description Serial Communications Module

Product Type Communications module

No of ports Two (2) RS232 / RS422 / RS485

Serial Ports 4

Supported Protocols MODBUS Master, MODBUS Slave, CCM Slave, DNP3 Master, DNP3 Slave, or Serial I/O protocol

Physical Interface RJ-45

Selectable Baud rates 1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K

Power Requirements 0.7 Amps at 3.3 Volts DC, 0.15 Amps at 5 Volts DC

Connectors RJ45

Supported Configurations RS-232, RS-422/485

No. of installations per rack Up to Six (6) modules

Baud Rates 1200 baud to 115.2 kilobaud

Status LED indicators Module OK, Port Fault, Port Status

Certifications CE, UL/CUL 508, ATEX

Current rating 0.7 mA at 3.3 VDC, 0.150 mA at 5 VDC

Operating Temperature 0 to 60 degrees Celsius

Parity Even, odd, none

Data bits 7, 8

Stop bits 1, 2

Isolation rating Port to Backplane and to frame ground: 250Vac continuous; 1500Vac for 1 minute, 2550Vdc for one second. Port to port: 500Vdc continuous, 710Vdc for one minute.

The IC695CMM004 is a serial communication module from the PACsystem RX3i product family that is manufactured by Emerson Automation, formerly by GE. This provides Four (4) individually operating and isolated Serial ports using RJ45 connector. Each port of the module supports MODBUS Master, MODBUS Slave, CCM Slave, DNP3 Master, DNP3 Slave, or Serial I/O protocol. The IC695CMM004 has selectable baud rates such as 1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K and hardware handshaking for RS232 setting such as RTS/CTS, RFR/CTS. The serial interfaces may be set to RS232 for point to point communication and RS422 / RS485 for daisy-chain, multi-drop communication topology. Up to Six (6) serial communication modules may be hosted by a single RX3i CPU. With this, up to a maximum of 24 Serial ports may be enabled and operated simultaneously by a single controller. This module can be used to communicate with Power metering devices, substation devices, Variable Frequency Drives (VFD), gateways, protocol converters and other devices. The IC695CMM004 is capable of reporting module error locally and to the CPU. For local indication, the Module OK LED may blink Once to depict watchdog expired; Two (2) for RAM error; Six (6) for invalid CPU configuration; Seven (7) for CPU heartbeat failure and Eight (8) for failure to get semaphore. Port isolation is rated at 500Vdc continuous and 710Vdc for one minute while the module's Port to backplane and frame ground isolation rating is 250 VAC continuous and 1500 VAC for 1 minute and 2550 VDC for 1 second.

The GE Fanuc IC695CMM004 module is a 4-port communications module. There are 4 independent serial ports on the module. Each serial port has a standard female RJ-45 interface with a corresponding status LED. If a serial port is configured for Modbus applications, then custom cables will be required because the pin assignments for Modbus applications are different from the standard pin assignments. Additionally the IC695CMM004 module has 2 status LEDs which are the Port Fault and the Module OK LED. The IC695CMM004 module can be upgraded to firmware version 1.34 by using the GE Fanuc 44A753278-G06 upgrade kit. When installed in hazardous locations, the module should be powered off before it is replaced or before the wiring is connected to it. Furthermore, equipment should be not be connected or disconnected unless the power has been switched off or the locations is known to be nonhazardous. At 3.3 Volts DC voltage, the IC695CMM004 module draws 0.7 Amps of maximum current, and at 5 Volts DC, the module draws 0.150 Amps of maximum current. The serial ports on the module support RS-232 and RS-422/485 configurations. Both 4-wire full-duplex operation and 2-wire half-duplex operation are supported with the RS-422/485 configuration. The supported baud rates range from 1200 baud to 115.2 kb. Even, odd, and none parity setups are supported. The port to port isolation rating is 500 Volts DC continuous and it is 710 Volts DC for one minute. The input impedance for the RS-232 configuration ranges between 3 and 7 kiloohms. The recommended ambient temperature range for the IC695CMM004 module is 0 to 60 degrees Celsius. The IC695CMM004 module complies with the CE and UL/CUL 508 requirements.