

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE PACSYSTEMS RX3i

IC695ACC402

CPE330 ENERGY PACK

Used with the applicable PACSystems RX3i energy packs configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GE official manufacturer documentation

2.2 RX3i CPU Features and Specifications

	CPU310	CPU315	CPU320/ CRU320 ²⁰	CPE302 ²¹ / CPE305	CPE310	CPE330	CPE400/ CPL410
Lifecycle Phase	Discontinued - use CPE310	Discontinued - use CPE310 or CPE330	Discontinued - use CPE330	Active	Active	Active	Active
Operating System	VxWorks	VxWorks	VxWorks	VxWorks	VxWorks	VxWorks	VxWorks
#RX3i Slots Occupied	2	2	2	1	2	2	N/A
Backplane	<-----Supports High-Speed PCI IC695* and Serial IC694* Modules ----->						Field Agent (CPE400) / Linux (CPL410)
Temperature Range							
RX3i	0°C to 60°C	0°C to 60°C	0°C to 60°C	0°C to 60°C ²²	0°C to 60°C ¹⁵	0°C to 60°C	-40°C to 70°C ²³
Power Requirements							
RX3i +3.3Vdc	1.25 A	1.0 A	1.0 A	1.0 A	1.0 A	0 A	N/A
RX3i +5 Vdc	1.0 A	1.2 A	1.2 A	1.0 A (up to 1.5 A if USB draws 0.5A)	1.0 A (up to 1.5 A if USB draws 0.5A)	0 A	N/A
RX3i +24Vdc Relay with Energy Pack				0.5 A at start-up; 0.1 A otherwise	0.5 A at start-up; 0.1 A otherwise	0.750 A	N/A
RX3i +24Vdc Relay w/o Energy Pack						0.625 A	N/A
Input Power (Max)							20 W
Input Voltage (Min)							18 Vdc
Input Voltage (Max)							30 Vdc
Memory Backup Mechanism ²⁴	Battery see GFK-2741	Battery see GFK-2741	Battery see GFK-2741	Energy Pack: IC695ACC400	Energy Pack: IC695ACC400	Energy Pack: IC695ACC402	Energy Pack: IC695ACC403
Display							
	LEDs	LEDs	LEDs	LEDs	LEDs	LEDs	LEDs & OLED

²⁰ For CRU-type CPUs, see Redundancy section at bottom of this table.

²¹ Where different, CPE302 value is shown in parentheses (). Also note that first Firmware Version of CPE302 was FW 9.40.

²² LT versions of the hardware are rated from -40°C to 60°C.

²³ The maximum operating temperature varies according to installation altitude: 70 °C at 0m to 2000m, 65 °C at 2000m to 3000m, and 60 °C at 3000m to 4000m.

²⁴ See Battery Compatibility and Memory Retention (Time in Days at 20°C) in GFK-2741

1.5 Migrating Series 90 Applications to PACSystems

The PACSystems control system provides cost-effective expansion of existing systems. Support for existing Series 90 modules, expansion racks and remote racks protects your hardware investment. You can upgrade on your timetable without disturbing panel wiring.

- The RX3i supports most Series 90-30 modules, expansion racks, and remote racks. For a list of supported I/O, Communications, Motion, and Intelligent modules, see the *PACSystems RX3i System Manual*, GFK-2314.
- The supports most existing Series 90-70 modules, expansion racks and Genius networks. For a list of supported I/O, Communications, and Intelligent modules, see the *PACSystems Installation Manual*, GFK-2223.
- Conversion of Series 90-70 and Series 90-30 programs preserves existing development effort.
- Conversion of VersaPro and Logicmaster applications to Machine Edition allows smooth transition to PACSystems.

1.6 Documentation

1.6.1 PACSystems Manuals

PACSystems RX3i and RSTi-EP CPU Reference Manual	GFK-2222
PACSystems RX3i and RSTi-EP CPU Programmer's Reference Manual	GFK-2950
PACSystems RX3i and RSTi-EP TCP/IP Ethernet Communications User Manual	GFK-2224
PACSystems TCP/IP Ethernet Communications Station Manager User Manual	GFK-2225
C Programmer's Toolkit for PACSystems	GFK-2259
PACSystems Memory Xchange Modules User's Manual	GFK-2300
PACSystems Hot Standby CPU Redundancy User Manual	GFK-2308
PACSystems Battery and Energy Pack Manual	GFK-2741
PAC Machine Edition Logic Developer Getting Started	GFK-1918
PAC Process Systems Getting Started Guide	GFK-2487
PACSystems RXi, RX3i Controller Secure Deployment Guide	GFK-2830

1.6.2 RX3i Manuals

PACSystems RX3i System Manual	GFK-2314
PACSystems RX3i IC695CPL410 1.2GHz 64MB Rackless CPU w/Linux QSG	GFK-3053
PACSystems RX3i IC695CPE400 1.2GHz 64MB Rackless CPU w/Field Agent QSG	GFK-3002
PACSystems RX3i IC695ACC403 Rackless Energy Pack Quick Start Guide	GFK-3000
PACSystems RX3i IC695CPE330 1GHz 64MB CPU w/Ethernet Quick Start Guide	GFK-2941
PACSystems RX3i Sequence of Events User Manual	GFK-3050
PACSystems RX3i IC695ACC402 Energy Pack Quick Start Guide	GFK-2939
PACSystems RX3i IC695ACC400 Energy Pack Data Sheet	GFK-2724
DSM324i Motion Controller for PACSystems RX3i and Series 90-30 User's Manual	GFK-2347
PACSystems RX3i PROFIBUS Modules User's Manual	GFK-2301
PACSystems RX3i Max-On Hot Standby Redundancy User's Manual	GFK-2409

System power-down occurs when the power supply detects that incoming power has dropped for more than 15ms.

4.10.3.3 Power Cycle Operation with an Energy Pack

Energy Packs offer distinct advantages over batteries:

- a) significantly longer life cycles
- b) they are more reliable
- c) flammability during shipment is not an issue
- d) in their end-of-life phase, their decline is a lot more gradual.

The system design includes the ability of the CPU and the Energy Pack to monitor each other in real time. This permits the user to monitor alarms and thereby determine when to replace a capacitor pack. The capacitor pack is normally replaced while the CPU is powered on, giving it time to charge up before any subsequent loss of power. Users should target periods which are expected to be free from electrical events, such as thunderstorms, to carry out such work. Capacitor packs may also be replaced while power is off.

When power is lost, the Energy Pack supplies current and maintains voltage levels for a period of time sufficient to permit the connected CPU to save all dynamic memory to non-volatile memory.

When power is restored, the CPU will not start running its application until the Energy Pack signals that it is fully charged. The CPU will then resume operation using the contents of memory retained at the previous loss of power event. The Energy Pack charges continuously during normal operation.

The RX3i product lines encompass several different Energy Packs, so it is important to use compatible products:

CPU	IC695CPE400 IC695CPL410	IC695CPE330	IC695CPE302 IC695CPE305 IC695CPE310	ICRXICTL000
Energy Pack	IC695ACC403	IC695ACC402	IC695ACC400	ICRXIACCEPK01
Capacitor Pack	IC695ACC413	IC695ACC412	IC695ACC400	ICRXIACCCPK01
Connecting Cable	IC695CBL003	IC695CBL002	IC695CBL001	ICRXIACCCBL01
Documentation	GFK-3000	GFK-2939	GFK-2724	GFK-2741

User memory is preserved only if the compatible Energy Pack is connected (and charged) at power-down.

If the Energy Pack is connected at power-up, the CPU waits for it to charge up before beginning normal operations. For CPE330/CPE400/CPL410, this typically takes up to 90 seconds.

In the event the Energy Pack fails to charge up in a reasonable amount of time, or is absent, the CPU will time out the wait period and will then commence operations without the Energy Pack. When this occurs, the CPU is vulnerable to loss of memory, should another power failure occur. It is critical to monitor the status bits shown in *Energy Pack Status Bit Operation* so that human intervention can be summoned.

Removing or reconnecting the Energy Pack while the connected CPU is powered off has no effect on the preservation of user memory.