

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE PACSYSTEMS RX3i

IC695PNS001

PROFINET SCANNER MODULE

Used with the applicable PACSystems RX3i communications configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

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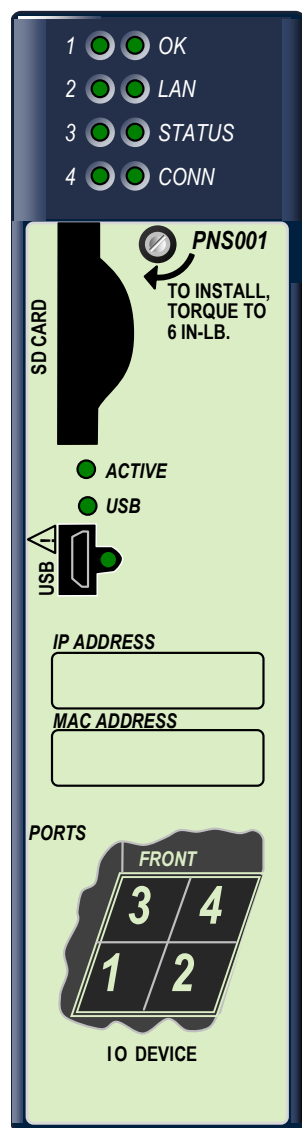
PACSystems* RX3i

IC695PNS001-ABAC

PROFINET Scanner Module

GFK-2738C

July 2013



The PACSystems* RX3i PROFINET Scanner (PNS) module, IC695PNS001, connects a remote universal RX3i I/O rack of Series 90-30 or RX3i modules to a PROFINET IO-Controller. The PROFINET Scanner scans the modules in its rack, retrieving input data and providing output data, and exchanges that data on the PROFINET IO LAN at the configured production rate.

The PNS manages PROFINET communication and module configuration between an IO-Controller and modules in the remote rack. If network communications are lost, the PNS manages IO states according to the individual module configurations.

The PNS supports 10/100/1000 Mbps Copper, 100/1000 Mbps Multi-mode Fiber, and 100/1000 Mbps Single-mode Fiber. PROFINET communications on the network require 100 or 1000 Mbps link speed. Although 10 Mbps cannot be used for PROFINET communications, 10 Mbps can be used for other types of Ethernet traffic such as PING.

Features of the RX3i PNS include:

- Programming and configuration services for all supported Series 90-30 and RX3i IO Modules using Proficy Machine Edition. For a list of currently supported IO modules, see "Supported Modules, Power Supplies and Backplanes," on page 9.
- Support for daisy-chain/line, star, or ring (redundant media) topologies.
- Four switched Ethernet ports - two 8-conductor RJ-45 shielded twisted pair 10/100/1000 Mbps copper interfaces and two Small Form-factor Pluggable (SFP) cages for user-supplied SFP devices.
- The network can include media interfaces of more than one type.
- Support for transfer of IO-Device Name to another PNS module using an SD card. This eliminates the need to connect a configuration tool, such as Proficy Machine Edition when replacing a module.
- A USB port for field updates of firmware using WinLoader.

Note: The USB port is for firmware upgrades only. It is not intended for permanent connection.

Ordering Information

IC695PNS001	PACSystems RX3i PROFINET Scanner Module 10/100/1000 with four Ports (two SFP connections, two Copper) Includes a blank SD card, two mounting screws and a USB port cover
IC695SPC100	RX3i 10/100/1000Base-T copper SFP
IC695SPF002	RX3i 100Base-FX (fiber 2 km) SFP (Multi mode fiber - MMF)
IC695SPF550	RX3i 1000Base-SX (fiber 550 m) SFP (MMF)
IC695SPF010	RX3i 1000Base-LX (fiber 10 km) SFP (Single mode fiber - SMF)

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GFK-2738C

PNS Specifications

PROFINET Support	PROFINET Version 2.3 Class A IO-Device	
Controller CPU Version Required	CPU315/CPU320 with firmware version 7.10 or later CPE305/CPE310 with firmware version 7.10 or later RXi Controller firmware with version 7.80	
Proficy Machine Edition Version Required	Version 8.0 or later	
Power Requirements	3.3V:	1.2A with no SFP devices installed 1.9A maximum (two SFP devices installed, 0.35A per SFP)
	5V:	1.1A maximum
Operating Temperature Range	0 to 60°C Derated to 57°C: • If 100MB Fiber SFPs installed, or • If Copper SFPs operating at 1GB	
Number of Port Connectors	Two RJ-45 and Two SFP Cages (SFP devices not included, available separately.)	
USB Connector (for firmware upgrades)	One Micro-B connector. USB 2.0 compliant running at Full-speed (12 MHz)	
SD Card	Supports SD and SDHC cards.	
PNS Status and Control Bits	32 input status bits and 32 output control bits	
PROFINET IO production rate (IO Update Rate)	Configurable selections: 1ms, 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms or 512ms	
Number of IP addresses	One. Supports Classless Inter-Domain Routing (CIDR)	
Number of MAC Addresses	Five. One per external port and one internal.	
IO Station Maximum Limits	Number of IO Modules per station	Number of backplane slots minus one for PNS and at least one for a power supply
	IO data per station	2880 bytes total 1440 bytes of input data 1440 bytes of output data
Configuration	V2.3 GSDML file is included with Proficy Machine Edition; available for import into 3 rd -Party tools. Note: Configuration software that supports GSDML V2.3 MenuList elements (such as Proficy Machine Edition 8.0 or later) is required to display the configuration parameters of most IC695xxx I/O modules.	

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

Additional Information

For additional information, please refer to the manuals listed below. Manuals can be downloaded from the Support website, <http://support.ge-ip.com>.

PACSystems RX3i PROFINET Scanner Manual, GFK-2737

PACSystems RX3i PROFINET Controller Manual, GFK-2571

PACSystems RX3i PROFINET Controller Command Line Interface Manual, GFK-2572

PACSystems CPU Reference Manual, GFK-2222

PACSystems RX3i System Manual, GFK-2314

General Installation Requirements

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. As a minimum, the enclosure shall provide a degree of protection against solid objects up to 12mm (e.g. fingers). This equates to a NEMA/UL Type 1 enclosure or an IP20 rating (IEC60529) providing at least a pollution degree 2 environment.

Installation in Hazardous Areas

The system containing the RX3i PNS001 module must be mounted within an ultimate enclosure that can be accessed only by the use of a tool.

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

- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 OR ZONE 2 HAZARDOUS LOCATIONS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D, ZONE 2 OR NON-HAZARDOUS LOCATIONS ONLY
- WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2 OR ZONE 2;
- WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND
- WARNING - EXPLOSION HAZARD - DO NOT CONNECT OR DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

PROFINET Scanner Status and Control Data

The RX3i PROFINET Scanner provides 32 bits of input status data and receives 32 bits of output control data. The application program in the IO-Controller system can monitor the input status bits for the PNS module. The output control bits are reserved for future use and have no function at this time.

Output Control Bits: The PROFINET Scanner's 32 bits of control output are reserved for future use.

Input Status Bits The PROFINET Scanner's 32 bits of input status provide information about the scanner. All status bits are active high.

Status Bits	Name	Description
1	Module OK	Indicates the health of the module. A value of 0 indicates the module is powering up or has failed. A value of 1 indicates the module is functioning properly.
2	Reserved	Set to 0
3	Port1 Link Up	1 = port is connected to another device and is communicating. 0 = port is not connected to another device, or the port has some sort of error preventing communications.
4	Port2 Link Up	
5	Port3 Link Up	
6	Port4 Link Up	
7-10	Reserved	Set to 0
11	MRP Enabled	Indicates whether MRP has been enabled or not. A value of 0 indicates that MRP is not enabled. A value of 1 indicates that MRP is enabled.
12	MRP Role	Indicates the MRP role the PNS is operating as when MRP is enabled. A value of 0 indicates that the PNS is currently an MRP Client. A value of 1 indicates that the PNS is currently an MRP Manager, however the PNS does not currently support MRP Manager configuration. If MRP is not enabled, then this bit will be set to zero.
13-32	Reserved	Set to 0