PACSystems™ RX3i PROFINET Scanner & Advanced PROFINET Scanner

Firmware Version 3.40

RX3i PROFINET Scanner

IC695PNS001-BHBF[1] [2]

RX3i Advanced PROFINET Scanner

IC695PNS101-AFAD[1] [2]

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[1] *Includes conformal coat and low temperature module variants, if available.*

[2] *The last two characters of the catalog number suffix may not increment with every firmware release beginning with IC695PNS001-BDBE & IC695PNS101-ACAC Release 3.20.*

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Warnings and Caution Notes as Used in this Publication

⚠ WARNING

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

⚠ CAUTION

Caution notices are used where equipment might be damaged if care is not taken.

> **Note:** Notes merely call attention to information that is especially significant to understanding and operating the equipment.

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Overview

The PACSystems™ IC695PNS001 RX3i PROFINET Scanner and IC695PNS101 RX3i Advanced PROFINET Scanner modules connect a remote universal RX3i I/O rack of RX3i modules to a PROFINET I/O Controller. The PROFINET Scanner scans the modules in its rack, retrieving input data and providing output data, and exchanges that data on the PROFINET I/O LAN at the configured production rate.

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

The PNS001 and PNS101 support 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 PNS001 PROFINET Scanner include:

- Configuration services for all supported Series 90-30 and RX3i I/O Modules using PAC Machine Edition (PME). For a list of currently supported I/O modules, refer to the section entitled Supported Modules, Power Supplies, and Backplanes.
- Support for daisy-chain/line, star, or ring (PROFINET Media Redundancy Protocol (MRP)) 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 I/O Device Name to another PNS module using an SD card. This eliminates the need to connect a configuration tool, such as PAC Machine Edition when replacing a module.
- A front panel Ethernet RJ-45 port for field firmware updates.

The RX3i PNS101 Advanced PROFINET Scanner includes all features of the PNS001 PROFINET Scanner and adds:

- Support for Sequence of Events recording with IRIG-B time synchronization of events accurate to 1ms. The PNS101 buffers up to 4000 events from up to four IC694MDL660 or IC694MDL655 32 Circuit Discrete Input modules at a maximum rate of 400 events per second. Unmodulated IRIG-B time signals are decoded using either an IC695HSC304 or IC695HSC308 High-Speed Counter Module. The PNS101 may also be used as a standard PROFINET scanner when Sequence of Events is disabled.

Current Release Information

PACSystems RX3i *PROFINET Scanner* (PNS), IC695PNS001, and *Advanced PROFINET Scanner* IC659PNS101 Release 3.40 adds support for MRP Fiber SFP Ring break detection during a single fiber break and -JC or later IC695CHS007/CHS012/CHS016 7/12/16-slot backplanes. This release also resolves issues found in Section *Problems Resolved by this Revision*.

Firmware Version Numbers

Firmware Component	Version Number
PNS001-Bxxx / PNS101-Axxx Primary Firmware	Release 3.40 Build ELTH
PNS001-Bxxx / PNS101-Axxx Boot Firmware	Release 1.08 Build EKJU

New Features and Enhancements

New Feature	Descrption
MRP Fiber SFP Ring break detection during a single fiber break	The Rx3i Rack-based IC695PNC001-Bxxx PROFINET Controller and IC695PNS001-Bxxx/IC695PNS101 PROFINET Scanners can detect a ring break on a single fiber of the network fiber pair on a fiber SFP. All the supported Fiber SFP modules use LC connector type fiber optic cables. These cables consist of a pair of fibers that connect the TX/RX of two fiber SFP modules. The modules detect a break when the RX signal is no longer detected. In practice, that means that if only one fiber of the pair is broken, only one of the SFP modules detects that the ring is broken. On the RX3i PNS001-Bxxx, PNS101-Axxx, and PNC001-Bxxx, when one of the fibers of the pair is broken between two SFP modules, the ring indicates that it is open and self-heals. Since only one of the SFP modules detects the lost RX signal, only one of them indicates that the Link is down on the front panel Link LED and in the module's port Link status bit. **Note:** The feature requires the IC695PNC001-Bxxx and IC695PNS001-Bxxx/IC695PNS101. It is not available on the IC695PNC001-Ax PROFINET Controller, the IC695PNS001-Axxx PROFINET Scanner, and the IC200PNS001/IC200PNS002 VersaMax PROFINET Scanners.
Support for -JC or later backplanes	Adds support for IC695CHS007/CHS012/CHS016-JC or later 7/12/16-slot backplanes

Ordering Information

Part Number	Description
IC695PNS001	PACSystems RX3i PROFINET Scanner Module 10/100/1000 with four Ports (two SFP connections, two RJ45 connections) Includes a blank SD card
IC695PNS001CA	Conformal Coated PACSystems RX3i PROFINET Scanner Module 10/100/1000 with four Ports (two SFP connections, two RJ45 connections) Includes a blank SD card
IC695PNS101	PACSystems RX3i Advanced PROFINET Scanner Module 10/100/1000 with four Ports (two SFP connections, two RJ45 connections) Includes a blank SD card
IC695PNS101CA	Conformal Coated PACSystems RX3i Advanced PROFINET Scanner Module 10/100/1000 with four Ports (two SFP connections, two RJ45 connections) Includes a blank SD card
IC695SPC100	RX3i 10/100/1000 Base-T copper SFP
IC695SPF002	RX3i 100Base-FX (fiber 2 km) SFP (Multi-mode fiber - MMF)
IC695SPF550	RX3i 1000 Base-SX (fiber 550 m) SFP (MMF)
IC695SPF010	RX3i 1000 Base-LX (fiber 10 km) SFP (Single-mode fiber - SMF)

Specifications

Specifications	Descriptions	
PROFINET Support	PROFINET Version 2.3 Class A I/O Device Redundantly controlled operation implements PROFINET V2.3 Type S-2 System Redundancy	
PAC Machine Edition Version Required	PNS001 & PNS101: Version 8.50 SIM 2 or later	
Power Requirements	PNS001-Bxxx or later: PNS101-Axxx or later: • 3.3 Vdc • 0.6 A with no SFP devices installed • 1.3 A maximum (two SFP devices installed, 0.35A per SFP)	PNS001-Axxx: • 3.3 Vdc • 1.2 A with no SFP devices installed • 1.9 A maximum (two SFP devices installed, 0.35A per SFP)
	PNS001-Bxxx or later: PNS101-Axxx or later: 5Vdc: 0.7 A maximum	PNS001-Axxx: 5Vdc: 1.1 A maximum

Specifications	Descriptions	
Operating Temperature Range	PNS001-Bxxx or later: PNS101-Axxx or later: -25°C to 60°C Derated to 57°C: • If 100MB Fiber SFPs are installed, or • If Copper SFPs operating at 1GB	PNS001-Axxx: 0°C to 60°C Derated to 57°C: • If 100MB Fiber SFPs are 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)	
FW Upgrade Connector	PNS001-Bxxx & PNS101-Axxx: One RJ-45 Ethernet connector on the front panel	PNS001-Axxx: One USB connector on the front panel
SD Card	Supports SD and SDHC cards.	
PNS001 Status and Control Bits	32 input status bits and 32 output control bits	
PROFINET I/O production rate (I/O Update Rate)	Configurable selections: 1ms, 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms or 512ms	
Number of IP addresses	PNS001-Bxxx & PNS101-Axxx: Two One for PROFINET ports. One for the front panel port. Supports Classless Inter-Domain Routing (CIDR)	PNS001-Axxx: One One for PROFINET ports.
Number of MAC Addresses	PNS001-Bxxx & PNS101-Axxx: Six One front panel port, one for each of the four external ports, and one internal port.	PNS001-Axxx: Five One for each of the four external ports, and one internal port.
I/O Station Maximum Limits	Number of I/O Modules per station	Number of backplane slots minus one for the PNS and at least one for a power supply
	I/O data per station	2880 bytes total 1440 bytes of input data 1440 bytes of output data
Configuration	V2.3 GSDML file is available for download and import into PAC Machine Edition. Please see the support link at the end of this document. The GSDML supporting a firmware release is part of the firmware upgrade kit available on the Support website.	

For installation and maintenance requirements, refer to PACSystems RX3i Installation and Maintenance Requirements, GFK-2975.

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 I/O 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

PNS001-Axxx hardware: The 32 bits of control output assigned to the PNS module are reserved for future use.

PNS001-Bxxx or later and PNS101-Axxx hardware: The 32-bits of control output assigned to the PNS module allows the IO Controller to dynamically control aspects of the scanner's operation. All control bits are active high. Bit 1 is the least significant.

Bit #	Name	Description
1	FW Update in Run	A value of 1 allows the webpage firmware update to continue (and restart the PNS disrupting IO) while the PNS IO is actively controlled.
2–32	Reserved	Set to 0

Input Status Bits

The PROFINET Scanner's 32 bits of input status provide information about the scanner. All status bits are active high.   Bit 1 is the least significant.

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
4	Port2 Link Up	
5	Port3 Link Up	0 = port is not connected to another device, or the port has some sort of error preventing communications
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	Clock Sync'd	PNS101: The internal clock has been synced to the IRIG-B clock source. This bit may take up to 90 seconds to turn on after the IRIG-B clock is available. PNS001: Set to 0

| Status Bits	Name	Description
14	SoEs Avail	PNS101: SoE Records are available for upload. PNS001: Set to 0
15-32	Reserved	Set to 0

LEDs on the PROFINET Scanner Module

Power-Up LED Patterns

At power-up, the LEDs show the patterns described in the following table. The LEDs also blink diagnostic patterns for certain operating errors and module identification.

Step	LED/ Blink pattern	Description
1	All LEDs off	Initial state
2	ACTIVE LED solid green	Normal operation
3	CONNECT LED solid green	Normal operation
4	STATUS LED solid green	Normal operation
5	LAN LED solid green	Normal operation
	OK LED blinks amber with a special blink code	Fatal initialization or diagnostics failure; H/W Module Identity Information not available
	STATUS LED blinks amber with a special blink code	Fatal initialization failure
	STATUS and LAN LEDs blink green in unison (0.5 seconds ON/ 0.5 seconds OFF)	Internal update in the process following a firmware update. The unit should complete update and restart automatically
6	OK LED solid green	Normal operation. Power-up completed

Figure 1: PNS101
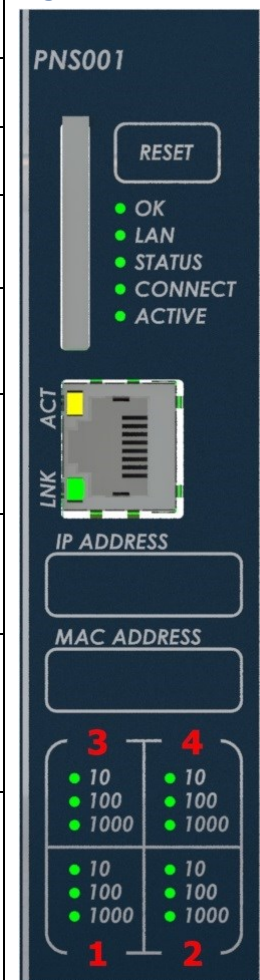
Note: Under certain ambient operating temperatures, the PROFINET Scanner could momentarily display the over-temperature pattern during power-up, while it is calibrating its thermal protection functions. This indication can be ignored. For details, refer to the section entitled *Microprocessor Over-Temperature* in *PACSystems RX3i PROFINET Scanner Manual,* GFK-2737.

Normal Operation of Individual LEDs

The PNS's LEDs can operate in tandem to indicate a fatal error, module location/identification, microprocessor over-temperature, and update conditions. For details on these blink patterns, refer to *PACSystems RX3i PROFINET Scanner Manual,* GFK-2737.

OK LED

The OK LED indicates whether the module can perform a normal operation.

LED	Color	Description
🟢	Green, on	OK
⚪	Off	Not OK

LAN LED

The LAN LED indicates access to and activity on the PROFINET network. The LAN LED indicates network packets are being processed by the network interface (not just passing through the embedded switch).

LED	Color	Description
🟢	Blinking on	The module's network interface is active
⚪	Off	No activity

STATUS LED

The STATUS stays Green during normal operation.

LED	Color	Description
🟢	Green, on	Normal Operation
🔴	Red, blinking	A MAC address read from nonvolatile memory is invalid. Ports with invalid MAC addresses remain disconnected from the Ethernet network.

CONNECT LED (CONN on -AXXX versions)

The CONN LED indicates the status of PROFINET connections.

LED	Color	Description
🟢	Green, on	At least one PROFINET connection (AR) exists with an I/O Controller.
🟡	Amber, blinking	No device name is configured.
⚪	Off	No PROFINET connection (AR) exists.

Port LEDs

The PROFINET Scanner has four LEDs that indicate link speed, link connection, and link activity corresponding to the four possible external Ethernet ports.

Port Number LED

LED	Color	Description
🔴	Red, on	Port 3 and 4 only: Error such as incompatible SFP.
⚪	Off	No Port error.

1000 Speed LED

LED	Color	Description
🟢	Green, on	Link connected, 1000 Mbps
◐	Green, blinking	Port active, 1000 Mbps
⚪	Off	The associated Ethernet port is not connected to an active link at 1000Mbps

100 Speed LED

LED	Color	Description
🟢	Green, on	Link connected, 100 Mbps.
◐	Green, blinking	Port active, 100 Mbps
⚪	Off	The associated Ethernet port is not connected to an active link at 100Mbps

10 Speed LED

LED	Color	Description
🟢	Green, on	Link connected, 10 Mbps.
◐	Green, blinking	Port active, 10 Mbps
⚪	Off	The associated Ethernet port is not connected to an active link at 10Mbps

ACTIVE LED

The active LED indicates the Scanner is connected to a PROFINET I/O Controller that is controlling the I/O data for the PNS's I/O modules.

LED	Color	Description
🟢	Green, on	PNS is connected to a PROFINET I/O Controller that is controlling I/O Module IO data.
⚪	Off	PNS is not connected to a PROFINET I/O Controller.

Front Panel LNK LED

The Front Panel LNK LED indicates the link established on the front Ethernet port.

LED	Color	Description
🟢	Green, on	Ethernet link established.
⚪	Off	No Ethernet link

Front Panel ACT LED

The front panel ACT LED indicates activity on the front Ethernet port when blinking.

LED	Color	Description
◐	Amber, blinking	Activity on front panel Ethernet port.
🟠	Amber, On	No activity on the front Ethernet port, but the link is connected
⚪	Off	No link is connected.

Quick Start Guide

Installation and initial startup procedures for the PNS include the following steps. Before installing and operating the PNS, refer to *PACSystems RX3i PROFINET Scanner Manual,* GFK-2737, for detailed information.

Pre-Installation Check

Upon receiving your RX3i equipment, carefully inspect all shipping containers for damage. If any part of the system is damaged, notify the carrier immediately. The damaged shipping container should be saved as evidence for inspection by the carrier.

As the consignee, it is your responsibility to register a claim with the carrier for damage incurred during shipment. However, Emerson will fully cooperate with you, should such action be necessary.

After unpacking the RX3i equipment, record all serial numbers. Serial numbers are required if you should need to contact Customer Care during the warranty period. All shipping containers and all packing material should be saved should it be necessary to transport or ship any part of the system.

Installing the PNS in an RX3i Backplane

1. The Scanner can be installed in slot 1 or 2 of a 7, 12, or 16-slot RX3i Universal Backplane, or slot 6 of a 7-slot RX3i Universal Backplane. The installation slot must match the slot that is selected in the module's hardware configuration.

2. RX3i rack power must be turned off. The PNS does not support insertion/removal while power is applied to the system (hot-swap).

3. Holding the module firmly, align the module with the correct slot and connector.

4. Engage the module's rear pivot hook in the notch on the top of the backplane (Arrow 1, **Error! Reference source not found.**).

5. Swing the module down (Arrow 2, **Error! Reference source not found.**) until the module's connector engages the backplane's backplane connector.

6. Visually inspect the module to be sure it is properly seated.

7. Secure the bottom of the module to the backplane using the machine screws provided with the module (Arrow 3, **Error! Reference source not found.**).

Figure 2: Installing the PNS Module into a Backplane
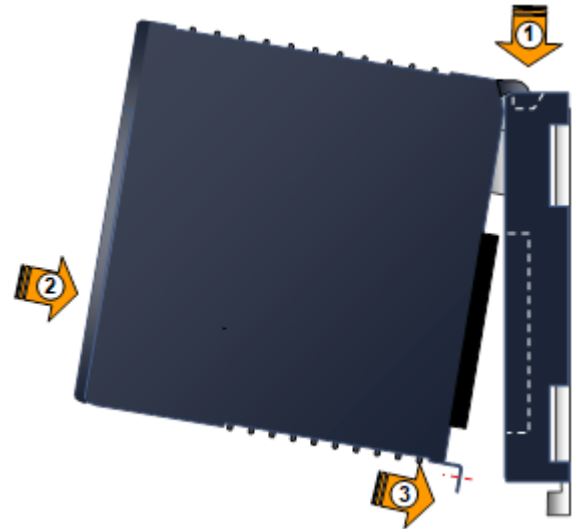
Connecting the PNS to the PROFINET network and a 10BaseT, 100BaseTX, or 1000BaseT IEEE 802.3 network for general Ethernet communications

Each port on an RX3i PNS module (Figure 3) operates independently, so devices that operate at different speeds and/or duplex modes may be attached to the ports. By default, all ports, including empty, unconfigured SFP cages, are set for Automatic, which enables auto-negotiation for the widest range of options supported by the port. For other options, refer to *PACSystems RX3i PROFINET Scanner Manual,* GFK-2737.

Figure 3: Anatomy of the Module
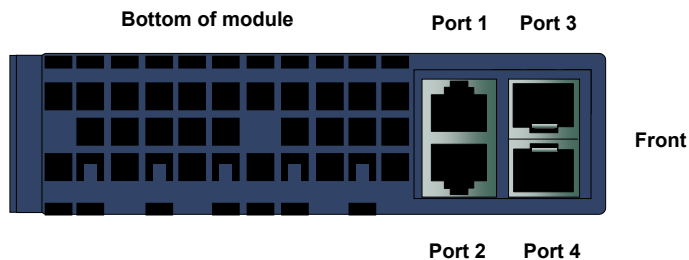
• CAUTION

Do not connect two or more ports on the PNS to the same device, either directly or indirectly.

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1. Installing SFP devices

• WARNING

Optical SFPs use an invisible laser to generate a fiber-optic signal. Always keep the port covered if a cable is not installed. Do not look into the open port if a cable is not installed.

• WARNING

If the surrounding air operating temperature of the PNS is greater than 40 °C, SFP devices could have operating temperatures over 70°C (158 °F). Under these conditions, for your safety, do *not* use bare hands to remove an SFP device from the SFP cage. Use protective gloves or a tool (needle-nose pliers) to avoid handling the hot SFP device directly when removing the SFP device.

For a list of SFP module types and network cabling details, refer to the section entitled *SFP Modules for Ethernet Ports in PACSystems RX3i PROFINET Scanner Manual,* GFK-2737.

2. Assigning an I/O Device Name to the PNS

    Before attempting to connect to or configure the RX3i PNS, the I/O Device Name must be set with a Discovery and Configuration Protocol (DCP) tool, such as the PAC Machine Edition Discovery Tool.

3. Configuring the PNS and its I/O Modules on a PROFINET network

    PAC Machine Edition is the primary tool used to configure an RX3i PROFINET network. The PNS must be installed in the slot that is selected in the module's hardware configuration. The GSDML file for the RX3i PNS is included in the firmware upgrade kit. If the version of the GSDML file in the firmware upgrade kit is not already present in the PAC Machine Edition tool chest, import the newer GSDML into PME to enable new features.

Supported Modules, Power Supplies, and Backplanes

The following modules can be used with this release of the RX3i PROFINET Scanner I/O Device:

Catalog Number	Module Description	Distinguishing Classes[3]
Discrete Input Modules		
IC693ACC300	Input Simulator Module (8pt & 16pt operation)	8 in, 16 in
IC693MDL230	8 Circuit Input 120 Vac Isolated	8 in
IC693MDL231	8 Circuit Input 240 Vac Isolated	8 in
IC693MDL240	16 Circuit Input 120 Vac	16 in
IC693MDL241	16 Circuit Input 24 Vac / Vdc	16 in
IC693MDL250	16 Circuit Isolated Input 120 Vac, Input Filtering Off	16 in
IC693MDL250	16 Circuit Isolated Input 120 Vac, Input Filtering On	none
IC693MDL260	32 Circuit Input 120 Vac, Input Filtering Off	32 in
IC693MDL260	32 Circuit Input 120 Vac, Input Filtering On	32 in/out
IC693MDL632	8 Circuit Input 125 Vdc Positive / Negative Logic	8 in
IC693MDL634	8 Circuit Input 24 Vdc Positive / Negative Logic	8 in
IC693MDL635	16 Circuit Input 125 Vdc Positive / Negative Logic	16 in
IC693MDL645	16 Circuit Input 24 Vdc Positive / Negative Logic	16 in
IC693MDL646	16 Circuit Input 24 Vdc Positive / Negative Logic Fast	16 in
IC693MDL648	16 Circuit Input 48 Vdc Positive / Negative Logic Fast	16 in
IC693MDL654	32 Circuit Input 5/12 Vdc Positive / Negative Logic	32 in
IC693MDL655	32 Circuit Input 24 Vdc Positive / Negative Logic Fast	32 in

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[3] *The PNS cannot distinguish between modules within the same Distinguishing Class type. This means that any module physically present that is within the same class as the one configured will not alert the user with a System Configuration Mismatch fault on the Controller Fault Table. Refer to the section entitled CPU operation during System Configuration Mismatch Faults in PACSystems and RX3i CPU Reference Manual, GFK-2222.*

Catalog Number	Module Description	Distinguishing Classes[3]
IC693MDL660	32 Circuit Input 24 Vdc Positive / Negative Logic, Input Filtering Off	32 in
IC693MDL660	32 Circuit Input 24 Vdc Positive / Negative Logic, Input Filtering On	32 in/out
IC694ACC300	Input Simulator Module (8pt & 16pt Mode)	8 in, 16 in
IC694MDL230	8 Circuit Input 120 Vac Isolated	8 in
IC694MDL231	8 Circuit Input 240 Vac Isolated	8 in
IC694MDL240	16 Circuit Input 120 Vac	16 in
IC694MDL241	16 Circuit Input 24 Vac / Vdc	16 in
IC694MDL250	16 Circuit Input 120 Vac Isolated	none
IC694MDL260	32 Circuit Input 120 Vac	none
IC694MDL632	8 Circuit Input 125 Vdc Positive / Negative Logic	8 in
IC694MDL634	8 Circuit Input 24 Vdc Positive / Negative Logic	8 in
IC694MDL635	16 Circuit Input 125 Vdc Positive / Negative Logic	16 in
IC694MDL645	16 Circuit Input 24 Vdc Positive / Negative Logic	16 in
IC694MDL646	16 Circuit Input 24 Vdc Positive / Negative Logic Fast	16 in
IC694MDL648	16 Circuit Input 48 Vdc Positive / Negative Logic Fast	16 in
IC694MDL654	32 Circuit Input 5/12 Vdc Positive / Negative Logic	32 in
IC694MDL655	32 Circuit Input 24 Vdc Positive / Negative Logic Fast	32 in
IC694MDL658	32 Circuit Input 48 Vdc Positive / Negative Logic Fast	32 in
IC694MDL660	32 Circuit Input 24 Vdc Positive / Negative Logic	none
IC695MDL664	16 Circuit Smart Input 24 Vdc Positive Logic[4]	none
Discrete Output Modules		
IC693MDL310	12 Circuit Output 120 Vac 0.5A	16 out
IC693MDL330	8 Circuit Output 120/240 Vac 2A	8 out
IC693MDL340	16 Circuit Output 120 Vac 0.5A	16 out
IC693MDL350	16 Circuit Output 120/240 Vac Isolated	16 out
IC693MDL390	5 Circuit Output 120/240 Vac 2A Isolated	8 out
IC693MDL730	8 Circuit Output 12/24 Vdc 2A Positive	8 out
IC693MDL731	8 Circuit Output 12/24 Vdc 2A Negative	8 out
IC693MDL732	8 Circuit Output 12/24 Vdc 0.5A Positive	8 out
IC693MDL733	8 Circuit Output 12/24 Vdc 0.5A Negative	8 out
IC693MDL734	6 Circuit Output 125 Vdc 1A Positive/Negative	8 out
IC693MDL740	16 Circuit Output 12/24 Vdc 0.5A Positive	16 out
IC693MDL741	16 Circuit Output 12/24 Vdc 0.5A Negative	16 out
IC693MDL742	16 Circuit Output 12/24 Vdc 1A Positive	16 out
IC693MDL748	8 Circuit Output 48 Vdc 0.5A Positive	8 out
IC693MDL752	32 Circuit Output 5/24 Vdc 0.5A Negative	32 out
IC693MDL753	32 Circuit Output 12/24 Vdc 0.5A Positive	32 out

[4] *The PNS currently does not support Fault Reporting from this module.*

Catalog Number	Module Description	Distinguishing Classes[3]
IC693MDL754	32 Circuit Output 24 Vdc 0.75A Positive with ESCP, Diagnostics Off	32 out
IC693MDL754	32 Circuit Output 24 Vdc 0.75A Positive with ESCP, Diagnostics On	32 in/out
IC693MDL758	32 Circuit Output 12/24 Vdc 0.5A Positive with ESCP[2]	32 out
IC693MDL760	Solenoid Valve Output Module	16 out
IC693MDL916	16 Circuit Output 4A Relay	16 out
IC693MDL930	8 Circuit Output 4A Relay Isolated	8 out
IC693MDL931	8 Circuit Output Relay Form BC Isolated	8 out
IC693MDL940	16 Circuit Output 2A Relay	16 out
IC694MDL310	12 Circuit Output 120 Vac 0.5A	16 out
IC694MDL330	8 Circuit Output 120/240 Vac 2A	8 out
IC694MDL340	16 Circuit Output 120 Vac 0.5A	16 out
IC694MDL350	16 Circuit Output 120/240 Vac Isolated	none
IC694MDL390	5 Circuit Output 120/240 Vac 2A Isolated	8 out
IC694MDL730	8 Circuit Output 12/24 VDC 2A Positive	8 out
IC694MDL732	8 Circuit Output 12/24 Vdc 0.5A Positive	8 out
IC694MDL734	6 Circuit Output 125 Vdc 1A Positive/Negative	8 out
IC694MDL740	16 Circuit Output 12/24 Vdc 0.5A Positive	16 out
IC694MDL741	16 Circuit Output 12/24 Vdc 1A Negative	16 out
IC694MDL742	16 Circuit Output 12/24 Vdc 1A Positive	16 out
IC694MDL752	32 Circuit Output 5/24 Vdc 0.5A Negative	32 out
IC694MDL753	32 Circuit Output 12/24 Vdc 0.5A Positive	32 out
IC694MDL754	32 Circuit Output with ESCP	none
IC694MDL758	32 Circuit Output 12/24 Vdc 0.5A Positive with ESCP[2]	none
IC694MDL916	16 Circuit Output 4A Relay	none
IC694MDL930	8 Circuit Output 4A Relay Isolated	8 out
IC694MDL931	8 Circuit Output Relay Form BC Isolated	8 out
IC694MDL940	16 Circuit Output 2A Relay	16 out
IC695MDL765	16 Circuit Smart Output 24/125 Vdc 2A Positive Logic[4]	None
Discrete Mixed Modules		
IC693MAR590	8 Circuit Mixed 120 Vac Input / Relay Output	8 in/out
IC693MDR390	8 Circuit Mixed 24 Vdc Input / Relay Output	8 in/out
IC694MDR390	8 Circuit Mixed 24 VDC Input / Relay Output	8 in/out
Analog Input Modules		
IC693ALG220	4 Point Analog Voltage Input	ALG IN 4
IC693ALG221	4 Point Analog Current Input	ALG IN 4
IC693ALG222	16 Point Analog Voltage Input	ALG IN 16
IC693ALG223	16 Point Analog Current Input	ALG IN 16
IC694ALG220	4 Point Analog Voltage Input	ALG IN 4
IC694ALG221	4 Point Analog Current Input	ALG IN 4
IC694ALG222	16 Point Analog Voltage Input	ALG IN 16

Catalog Number	Module Description	Distinguishing Classes[3]
IC694ALG223	16 Point Analog Current Input	ALG IN 16
IC695ALG106	6 Point Isolated Analog Input Current/Voltage[5]	none
IC695ALG112	12 Point Isolated Analog Current/Voltage Input[5]	none
IC695ALG600	8 Point Universal Analog Input Module[5]	none
IC695ALG608	8 Point Analog Input Current / Voltage Input[5]	none
IC695ALG616	16 Point Analog Current / Voltage Input[5]	none
IC695ALG626	16 Point Analog Current / Voltage Input[5] (HART[6] Support)	none
IC695ALG628	8 Point Analog Current / Voltage Input[5] (HART[4] Support)	none
Analog Output Modules		
IC693ALG390	2 Point Analog Voltage Output	ALG OUT 2
IC693ALG391	2 Point Analog Current Output	ALG OUT 2
IC693ALG392	8 Point Analog Current / Voltage Output	ALG OUT 8
IC694ALG390	2 Point Analog Voltage Output	ALG OUT 2
IC694ALG391	2 Point Analog Current Output	ALG OUT 2
IC694ALG392	8 Point Analog Current / Voltage Output	ALG OUT 8
IC695ALG704	4 Point Analog Current / Voltage Output[5]	none
IC695ALG708	8 Point Analog Current / Voltage Output[5]	none
IC695ALG728	8 Point Analog Current / Voltage Output[5] (HART[6] Support)	none
IC695ALG808	8 Point Isolated Analog Current / Voltage Output[5]	none
Analog Mixed Modules		
IC693ALG442	4 Input / 2 Output, Current / Voltage	ALG IN 4, ALG OUT 2
IC694ALG442	4 Input / 2 Output, Current / Voltage	ALG IN 4, ALG OUT 2
RTD Input Modules		
IC695ALG508	8 Channel Isolated RTD Input[5]	none
Thermocouple Input Modules		
IC695ALG312	12 Point Isolated Thermocouple Input[3]	none
IC695ALG412	12 Point Isolated High-Speed Thermocouple Input[3]	none
High-speed Counter Modules		
IC695HSC304	High-speed Counter Module - 4 Counters[5]	None
IC695HSC308	High-speed Counter Module - 8 Counters[5]	None
Specialty Modules		
IC694PSM001	Power Sync and Measurement Module	none
Communications Modules		
IC695CMM002	RX3i Serial Communications Module (2 ports)[7]	none

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[5] *PNS currently does not support Fault Reporting or Interrupts from this module. Also, only Type A and Type B counters are supported.*

[6] *PNS firmware version 2.30 or later supports the HART® Pass Through capabilities of this module. PNS firmware version 2.41 or later supports Remote Get HART Device Information COMMREQ support only (no HART variables in IO Data). HART-compatible CPU and PNC001 versions are required.*

[7] *Requires IC695CMM002/004-EJ or later hardware.*

Catalog Number	Module Description	Distinguishing Classes[3]
IC695CMM004	RX3i Serial Communications Module (4 ports)[7]	none
Power Supply Modules		
IC695PSA040	Universal 120/240 Vac, 125Vdc 40W Power Supply	none
IC695PSA140	Multifunctional 120/240 Vac, 125Vdc 40W Power Supply	none
IC695PSD040	24Vdc 40W Power Supply	none
IC695PSD140	Multifunctional 24Vdc 40W Power Supply	none
IC695PSD180	Multifunctional 24VDC 80W Power Supply	none
Small Form-factor Pluggable (SFP) Modules		
IC695SPC100	10/100/1000Base-T Copper SFP	none
IC695SPF002	100Base-FX (fiber 2km) SFP	none
IC695SPF010	1000Base-LX (fiber 10km) SFP	none
IC695SPF550	1000Base-SX (fiber 550m) SFP	none

The RX3i PROFINET Scanner can be used in the following PACSystems backplanes:

Catalog Number	Backplane Type[8]
IC695CHS007	7-Slot RX3i Universal Backplane
IC695CHS012	12-Slot RX3i Universal Backplane
IC695CHS016	16-Slot RX3i Universal Backplane

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[8] *The PNS001 cannot distinguish between the different rack sizes. Choosing the wrong type will not generate a System Configuration Mismatch fault on the Controller Fault Table.*

Release History

Version	Firmware Revision	Date	Comments
IC695PNS001-BHBF IC695PNS101-AFAD	3.40	May 2023	MRP Fiber SFP Ring break detection during a single fiber break Support for -JC or later backplanes
IC695PNS001-BHBF IC695PNS101-AFAD	3.36	Sep 2022	Manufacturing component issues.
IC695PNS001-BGBE IC695PNS101-AEAC	3.35	July 2022	Adds support for MODBUS Master and Slave exchanges using up to four IC695CMM002/004 RX3i Serial Communications Modules. Adds support for the IC695PSD180 Multifunctional 24VDC 80W Power Supply.
IC695PNS001-BGBE IC695PNS001CA-BGBE IC695PNS001LT-BGBE IC695PNS101-AEAC IC695PNS101CA-AEAC IC695PNS101LT-AEAC	3.30	Oct 2021	The product's labels have been updated to show compliance with new certifications. For updated certifications, please refer to https://emerson-mas.my.site.com/communities/en_US/Article/Certifications-and-Agency-Approvals-Landing-Page.
IC695PNS001-BFBE IC695PNS101-ADAC	3.30	May 2021	Enhances Sequence of Events recording to support up to five PNS101s when used with the IC695CPE330 64MB CPU w/Ethernet, IC695CPE400 64MB Rackless CPU, or IC695CPL410 64MB Rackless CPU. This release also resolves the issues found in Problems Resolved by this Revision
IC695PNS001-BFBE IC695PNS101-ADAC	3.26	Jan 2021	Resolves quality issues.
IC695PNS001-BFBE IC695PNS101-ADAC	3.25	Sep 2020	Manufacturing update. No change to fit, form, or function.
IC695PNS001-BDBE IC695PNS101-ACAC	3.25	Mar 2020	Adds support for Sequence of Events capture from IC694MDL655 modules in the PNS101 rack. Resolves issues described in the section entitled Problems Resolved by this Revision
IC695PNS001-BDBE[2] IC695PNS101-ACAC	3.20	Oct 2019	Added support for the IC694MDL730 & IC694MDR390, rebranded the PNS001/PNS101 and GSDML to Emerson, and applied patches for VxWorks URGENT/11 vulnerabilities. Resolves issues described in the section entitled Problems Resolved by this Revision.
IC695PNS001-BBBD IC695PNS101-AAAB	3.15	Oct 2018	Updates to enhance cyber security.
IC695PNS001-BBBC IC695PNS101-AAAA	3.10	Aug 2018	Initial release of the IC695PNS101 Advanced PROFINET Scanner. Added support for the IC695HSC304 High-Speed Counter Module with 4 Counters.

Version	Firmware Revision	Date	Comments
IC695PNS001-BBBB	3.01	Jan 2018	Hardware change increases isolation between Earth ground and signal ground. Removes incorrect statement in IPI revision N regarding RX3i backplane compatibility.
IC695PNS001-BABB	3.01	Aug 2017	Addresses issues with SDcard communication on some assemblies.
IC695PNS001-BABA	3.00	Feb 2017	New hardware platform with a new layout of front panel LEDs and Ethernet connector replaces front-panel USB for firmware update. Firmware is not compatible with previous hardware revisions (-AXXX). IC695PNS001-BABA is Achilles Level 1 Certified.
IC695PNS001-ABAK	2.41	Jun 2016	Added support for the Remote Get HART Device Information COMMREQ. Information from a HART device connected to an RX3i Analog Module in an IC695PNS001 RX3i PROFINET Scanner may be read into the user application using the Remote Get HART Device Information COMMREQ.
IC695PNS001-ABAJ	2.40	Nov 2015	Added support for additional RX3i I/O modules (ALG106, ALG312, ALG314, ALG608, ALG628, ALG704, and MDL758)
IC695PNS001-ABAH	2.30	May 2015	Added support for HART® Pass-Through feature set using HART-capable RX3i Analog modules. Also added support for I/O Module Version information via Explore PROFINET Networks in PME.
IC695PNS001-ABAG	2.20	Jun 2014	Added support for IC695ALG600 (Universal Analog Input Module) and IC694PSM001 (Power and Sync Measurement Module).
IC695PNS001-ABAF	2.10	Apr 2014	Added support for IC695HSC308 (High-speed Counter – 8 Counters). Resolution of ALG508, ALG616, and ALG708 modules larger configuration causing an IOC Software - Module Firmware Fault when more than three were placed in a PNS001 rack.
IC695PNS001-ABAE	2.00	Mar 2014	Added PROFINET System Redundancy (S2 NAP – supports Redundant connections from two IO Controllers). Resolution of PROFINET connection losses and RX3i PNS001 connection issues described hieronder. Added support for additional RX3i I/O modules (ALG112, ALG626 (No HART), ALG728 (No HART), and ALG808)
IC695PNS001-ABAD	1.11	Nov 2013	Resolution to Analog Output Anomaly issue, described in *PACSystems RX3i PROFINET Scanner IPI*, GFK-2738D.
IC695PNS001-ABAC	1.10	Jul 2013	Support for additional RX3i I/O modules (MDL664, MDL765, ALG508, ALG616, ALG708).

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Version	Firmware Revision	Date	Comments
IC695PNS001-ABAA	1.00	Jun 2013	Hardware update for improved manufacturability. No changes to features, functions, or compatibility
IC695PNS001-AAAA	1.00	Mar 2013	Initial release.

Field Upgrade

Upgrade Kit

Part Number: 41G2416-FW01-000-A10

File Name: 41G2416-FW01-000-A10.zip

Only IC695PNS001-Bxxx and IC695PNS101-Axxx or later revisions are field upgradable to this release using the upgrade kit listed above. IC695PNS001-Axxx modules cannot be upgraded with this kit due to hardware and firmware design changes in the PNS001-Bxxx revision.

Release in line with software license compliance requirements.

Problems Resolved by this Revision

Subject	Defect	Description
LED Blink Code After Hot Removal of IC695xxx IO Module	DE9150 DE9242 SFDC01942715	With the IC695PNS001-Bxxx or IC695PNS101, it was possible to get a system blink trap 9-1-2-1 on hot removal of IC695xxx IO modules in the rack. This has been fixed.

Functional Compatibility

The following CPU firmware, programming software, and backplane hardware versions are required to use the features introduced in the most recent PNS release:

Subject	Description		
	Feature	Minimum PNS Version Required	Minimum Version Required
Firmware Version	Single fiber break detection	PNS001-Bxxx/PNS101 Release 3.40	CPE330 Release 10.30 CPE400/CPL410 Release 10.30 CPE302/305/310 Release 10.30
	IC695CMM002/004, IC695PSD180 support	PNSx01-Bxxx/PNS101 Release 3.35	CPE330 Release 10.30 CPE400/CPL410 Release 10.30 CPE302/305/310 Release 10.30
	Sequence of Events with Five PNS101s	PNS101 Release 3.30	CPE330 Release 10.15 CPE400/CPL410 Release 10.15
	PNS101 & CPE400/CPL410 Sequence of Events with MDL655/MDL660	PNS101 Release 3.26	CPE400/CPL410 Release 10.10
	PNS101 & CPE330 Sequence of Events with MDL655	PNS101 Release 3.25	CPE330 Release 9.60
	PNS101 & CPE330 Sequence of Events with MDL660	PNS101 Release 3.10	CPE330 Release 9.60
	PNS001-Bxxx	PNS001-Bxxx Release 3.00	CPU320/CPU315 Release 8.95 CPE310/CPE305 Release 8.95 CRU320 Release 8.95 CPE330 Release 8.95 CPE400 Release 9.00 CPL410 Release 9.55 CPE100 Release 9.15 CPE115 Release 9.45 RXi Controller Release 7.80[9]
	PNS001-Axxx (Most Recent Release)	PNS001-Axxx Release 2.41	CPU320/CPU315 Release 8.95 CPE310/CPE305 Release 8.95 CRU320 Release 8.95 CPE330 Release 8.95

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[9] *HART Pass Through COMMREQ feature not supported on RXi Controller. Refer to future RXi Controller IPI for updates.*

Subject	Description		
	Feature	Minimum PNS Version Required	Minimum Version Required
			CPE400 Release 9.00 CPL410 Release 9.55 CPE100 Release 9.15 CPE115 Release 9.45 RXi Controller Release 7.80[9]
Programmer software	PNS001 & PNS101	PAC Machine Edition version 8.50 SIM 2 or later	
	IC695CMM002/004	PAC Machine Edition version 10.0 or later	
GSDML Version	IC695CMM002/004, IC695PSD180	PNS001-Bxxx Release 3.35 PNS101 Release 3.35	GSDML-V2.3-IntelligentPlatformsLLC-RX3iPNS-20210817.xml
	IC694MDL655 SoE	PNS001-Bxxx Release 3.25 PNS101 Release 3.25	GSDML-V2.3-IntelligentPlatformsLLC-RX3iPNS-20191010.xml
	IC694MDL730, IC694MDR390, Emerson rebranding	PNS001-Bxxx Release 3.20 PNS101 Release 3.20	GSDML-V2.3-IntelligentPlatformsLLC-RX3iPNS-20190820.xml
	PNS101	PNS101 Release 3.10	GSDML-V2.3-GEIP-RX3iPNS-20180724.xml
	IC695HSC304	PNS001-Bxxx Release 3.10 PNS101 Release 3.10	GSDML-V2.3-GEIP-RX3iPNS-20180724.xml
	PNS001-Bxxx	PNS001-Bxxx Release 3.00	GSDML-V2.3-GEIP-RX3iPNS-20170109.xml
	PNS001-Axxx (Most Release Release)	PNS001-Axxx Release 2.41	GSDML-V2.3-GEIP-RX3iPNS-20160602.xml
RX3i PNC001 PROFINET Controller	PNS001-Axxx (Most Recent Release)	PNS001-Axxx Release 2.41	IC695PNC001 Release 2.26
	PNS001-Bxxx	PNS001-Bxxx Release 3.00	
	PNS101 (Sequence of Events Disabled)	PNS101 Release 3.10	
	IC695CMM002/004	PNS001-Bxxx/PNS101 Release 3.35	IC695PNC001-Bxxx Release 3.20
	Single fiber break detection	PNS001-Bxxx/PNS101 Release 3.40	IC695PNC001-Bxxx Release 3.25

Subject	Description		
	Feature	**Minimum PNS Version Required**	**Minimum Version Required**
RX3i backplane hardware	The following *minimum* backplane hardware revision *must* be used: IC695CHS012-BAMP IC695CHS016-BAMP IC695CHS012CA-BAMP IC695CHS016CA-BAMP or IC695CHS012-CA (or later) IC695CHS016-CA (or later) IC695CHS012CA-CA (or later) IC695CHS016CA-CA (or later) or IC695CHS007-AA (or later) When installing, operating, or maintaining the PNS, personnel must ensure any electrostatic charge is discharged through the use of a grounded ESD strap or other means. -JC or later backplanes require R3.40 firmware or later.		
Rx3i AC Power Supply Compatibility	For new installations using AC power supplies, the PNS requires an IC695PSA040H or IC695PSA140D (or higher) revision power supply to ensure compatibility. For retrofit installations using AC power supplies, the PNS may require an IC695PSA040H or IC695PSA140D (or higher) revision power supply depending on the total current load in the backplane. If the total current load exceeds the existing power supply's minimum current threshold, no power supply change is required.		
Small form-factor pluggable modules	IC695SPC100A or later IC695SPF002A or later IC695SPF550A or later IC695SPF010A or later		
RX3i modules	For a complete list, refer to *Supported Modules, Power Supplies, and Backplanes*.		

Restrictions and Open Issues

Subject	Description
None	N/A

Operational Notes

Subject	Description
Invalid Module Configurations will cause the respective RX3i I/O module to fail configuration	When the PNS rejects the configuration of an individual I/O module, that configuration is not delivered to the I/O module, leaving the module in an unconfigured state. In many modules, this is indicated by the OK Led on the I/O Module blinking. In addition, I/O point faults will be asserted for that module's I/O. Correct the configuration of the I/O module and store HWC again. Refer to the section entitled RX3i PROFINET Scanner Configuration Validation in PACSystems RX3i PROFINET Scanner Manual, GFK-2737.
Analog Modules do not configure if Alarms are outside High and Low Scale Value Engineering Units.	For analog input and output modules that support alarms, the PNS limits alarm values to the range specified by the High and Low Engineering Unit values. If the High and Low Scale A/D Unit values are not the full range of the analog signal, runtime values reported in Engineering Units may exceed the High or Low Engineering range. Alarms cannot be configured for this range outside of the Engineering Units range. For example, consider an input channel with Range Type as Voltage/Current and Range selection of -10V to +10V, 16-bit Integer format. If High and Low Scale Eng Units are set to 8500 and -8500 and the High and Low Scale A/D Units are set to 8 and -8, the alarm range will be limited to a range of -8500 to 8500. Analog input signals of -10V and +10V correspond to Engineering Unit values of -10625 and 10625. To support alarm values at all possible values of the analog signal, scaling values should be chosen such that the A/D Units are specified as the high and low limits for the analog signal. In this example, the High and Low Engineering units would be 10625 and -10625 with High and Low A/D Units of 10 and -10.
IOPS of power supplies do not update when a power supply is switched off	The IOPS (status) of a power supply is marked good or bad at the start of each PROFINET I/O connection. The IOPS is not updated when the power supply is turned on and off.
PROFINET Alarms are not supported	PROFINET Alarms are not issued from the RX3i PNS in this release.
Some power supplies use two backplane slots, but this is not indicated in the change module list interface of HWC	Note that the IC695PSA040 and IC695PSA140 each utilize two backplane slots but are shown using only one slot in the Change Module List interface for the RX3i PNS. Configuring a module for the already utilized slot will result in a Loss of I/O Module fault.
PNS module is supported in certain backplane slots only.	The RX3i PROFINET Scanner module is configurable for use in Slot 1, Slot 2, and when installed in the IC695CHS007 backplane, also Slot 6.

Subject	Description
SFP modules do not support hot-swap	SFP modules do not support hot swaps. This means that if an SFP module is hot-inserted into the RX3i PNS, no Fault Table entry will be logged, and configuration parameters will not be applied to the SFP until the RX3i PNS is power cycled. Additionally, the SFP will remain enabled and active with auto-negotiation turned on until the RX3i PNS is power cycled.
I/O modules hot inserted while an invalid configuration is stored require re-insertion or power cycle to recover	If an invalid configuration for an I/O module in the PNS is stored to the CPU, such as a default value outside the engineering units range, and the I/O module using that configuration is hot inserted in the PNS, the hot insertion process fails. No Addition of I/O Module fault is generated, and the module is left at its default operation. The configuration of that module will not be retried until the module is re-inserted or the PNS rack is power cycled, even if the configuration is corrected in the CPU.
Quickly changing data may not be detected in PLC Logic solve	Quickly changing I/O or Module Data such as event flags on a High-Speed Counter module may not be detected in the CPU logic scan. Only event data that is latched and acknowledged or persists for the Update I/O Rate plus the CPU Logic Scan rate is guaranteed to be detectable from logic.
Connecting Ethernet Ports Not Configured as Ring Ports to the MRP Ring May Inhibit Ring-Break Detection	To ensure correct MRP ring-break detection, it is important to connect the correct Ethernet ports of the RX3i PNS to the MRP ring. The ports connected to the ring must be the same ports configured as MRP Ring Ports. Failure to connect the configured ports will prevent the PNS from correctly participating in the MRP ring, may inhibit ring-break detection, and may result in losses of IO Devices upon ring-break events. It is recommended during system commissioning that the physical network connections be verified with the system configuration for ring ports in the system's hardware configuration. Refer to section "Media Redundancy Protocol Support" of PACSystems RX3i PROFINET Scanner Manual, GFK-2737, for details on recommended MRP configuration.
Reset Password returns HTTP ERROR 503, service unavailable, after a restart.	On power-up, the PNS generates a local security certificate to use with HTTPS communications. Until this process has been completed, attempts to enter the secure web pages used to reset the password will fail with error 503. This can take from 15-120 seconds.
ALG616, ALG626, & ALG628 Terminal Block Present Status Bit	IC695ALG616-Fx, IC695ALG626-Fx, and IC695ALG628-Fx (and later hardware revision) analog modules may not set the terminal block present status bit in their module status after a PNS firmware update completes, even if the terminal block is installed. Normal operation of the terminal block present status bit may be restored by removing and reinstalling the terminal block or power cycling the rack.

Subject	Description
MDL660 does not show correct firmware revision after the PNS firmware update	IC694MDL660 may report incorrect primary and boot firmware through the Explore PROFINET Networks dialogs in PAC Machine Edition in a PNS rack after a firmware update of the PNS. Correct versions will be reported after the next power cycle of the MDL660 module either through a power cycle of the entire rack or by removing and reinstalling the MDL660 module.
PNS001-Axxx Reset or Power Supply Fault with PSA140	These issues may occur in a PNS001-Axxx remote IO drop with two IC695PSA140 Multifunctional 120/240 VAC, 125VDC 40W Power Supplies when either of the power supplies is turned off and back on: 1. The PNS001-Axxx resets and does not power back on. 2. The P/S Fault LED on PSA140 that was not powered off and back on turns on and no power is supplied to the modules in the RX3i rack. If this issue occurs, it may be resolved by turning both power supplies off and back on. This issue only applies to the PNS001-Axxx.
RX3i DC Power Supply Wiring Recommendations	The negative side of the 24V input must be connected to the earth ground when using RX3i DC power supplies. Refer to *PACSystems RX3i System Manual,* GFK-2314 for additional information.

Product Documentation

For additional information, please refer to the manuals listed below. Manuals can be downloaded from the support website, http://www.emerson.com/industrial-automation-conrtrols/support

PACSystems RX3i, and RSTi-EP CPU Reference Manual	GFK-2222
PACSystems RX3i & RSTi-EP PROFINET I/O Controller User Manual	GFK-2571
PACSystems RX3i PROFINET Controller Command Line Interface Manual	GFK-2572
PACSystems RX3i PROFINET IO-Scanner User Manual	GFK-2737
PROFINET I/O Devices Secure Deployment Guide	GFK-2904
PACSystems RXi, RX3i, and RSTi-EP Controller Secure Deployment Guide	GFK-2830
PACSystems HART Pass-Through User Manual	GFK-2929
PACSystems RX3i System Manual	GFK-2314
PACSystems RX3i Sequence of Events User Manual	GFK-3050

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