Expansion Modules for Local and Remote I/O

The RX3i supports various expansion options for local and remote I/O to optimize configurations. The RX3i can be expanded up to 8 expansion bases using local remote expansion module. The RX3i also supports Ethernet remote I/O using the RX3i Ethernet Network Interface module (IC695NKT001) Series 90-30 Ethernet Network Interface module (IC693NIU004) for more distributed I/O.

	IC695NKT001	IC693NIU004	IC695LRE001
Product Name	PACSystems RX3i Ethernet Remote I/O Expansion Kit. Kit includes a NIU001 with two built-in serial ports and ETM001	PACSystems RX3i Ethernet Remote I/O Expansion (Slave)	PACSystems RX3i Expansion Module
Lifecycle Status	Active	Active	Active
Module Type	Ethernet Communications (Supports redundant Ethernet modules)	Ethernet Communications	High Speed Serial Expansion Module
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Compatible with Series 90-30 bases only	Universal Backplane Only
Number of Slots Module Occupies on Backplane	3 (2 for NIU and 1 for Ethernet module)	N/A	No I/O slot used
Built-in Communication Ports	RJ-45 with built-in switch. 1 RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master	N/A	N/A
I/O Discrete Points	2048 Inputs/2048 Outputs maximum	2048 Inputs/2048 Outputs maximum	N/A
I/O Analog Points	1264 Inputs and 512 Outputs maximum	1264 Inputs and 512 Outputs maximum	N/A
User Logic Memory	5Kbytes of local logic	No local logic	N/A
Network Data Rate	10/100Mbit ports (RJ-45)	10/100Mbit ports (RJ-45)	1 Mbaud
Entity Type	Slave	Slave	Master
Network Distance	Network Dependent	Network Dependent	Up to 700 feet (213 meters)
Bus Diagnostics	Supported	Supported	Yes
Number of Drops Supported	Network Dependent Each Ethernet NIU can also support up to 7 additional local I/O racks (IC694CHSxxx)	Network Dependent Each Ethernet NIU can also support up to 7 additional local I/O racks (IC694CHSxxx)	Supports 7 local expansion racks. Discrete I/O: Maximum 320 In, 320 Out, Analog I/O: Maximum 160 In, 80 Out per base
Internal Power Used	1250 mA @ 3.3 VDC; 1000 mA @ 5 VDC for NIU controller and 840 mA @ 3.3 VDC; 614 mA @ 5 VDC for each Ethernet module	1.4 Amps @ 5 VDC	132 mA @ 5 VDC

RX3i CEP Carriers

The PACSystems* RX3i Carrier IC695CEP001 interfaces a remote node, consisting of one RX3i I/O module, to a PROFINET I/O Local Area Network (LAN).

The optional RX3i Expansion Carrier IC694CEE001 attaches to the RX3i CEP001 Carrier and provides the ability to add one additional RX3i IC694 I/O module to the remote node.

The RX3i CEP001 Carrier functions as a PROFINET IO-Device.

	IC695CEP001	IC694CEE001
Product Name	RX3i CEP001 Carrier with RJ-45 Copper Ethernet Interface	RX3i CEE001 Expansion Carrier
Lifecycle Status	Active	Active
PROFINET support	PROFINET Version 2.3 Class A IO-Device	PROFINET Version 2.3 Class A IO-Device
RX3i Controller version required	IC695CPU315/CPU320/CPE305/CPE310/ CPE330/CRU320, firmware v8.50 or later	IC695CPU315/CPU320/CPE305/CPE310/ CPE330/CRU320, firmware v8.50 or later
	IC69PNC001 PROFINET IO-controller with firmware version 2.20 or later	IC69PNC001 PROFINET IO-controller with firmware version 2.20 or later
RXi Controller version required	RXi Controller, ICRXICTL000, with firmware version 7.80 or later is compatible with CEP001 up to version 2.01, but is not compatible with CEP001 version 2.30.	
Proficy Machine Edition version required	Version 8.6 with SIM 3 or later	Version 8.6 with SIM 3 or later
Power requirements[1]	IC695CEP001: 5.25W (0.22 A) at 24 Vdc with or without Expansion Carrier (IC694CEE001)	IC695CEP001: 5.25W (0.22 A) at 24 Vdc with or without Expansion Carrier (IC694CEE001)
	DC power supply input range: 19.2 to 30 Vdc	DC power supply input range: 19.2 to 30 Vdc
Module dimensions mm(in)	177.2 x 51 x 35 mm (6.98" x 2.01" x 1.38").	177.2 x 51 x 35 mm (6.98" x 2.01" x 1.38").
Operating temperature	0°C to 60°C (32°F to 140°F) maximum surrounding air temperature	0°C to 60°C (32°F to 140°F) maximum surrounding air temperature
Number of Ethernet port connectors	Two RJ-45 10/100Base-TX receptacles	None
USB connector (for firmware upgrades)	One Micro-B connector. USB 2.0 compliant running at full-speed (12 MHz) in device mode	None
PNS status and control bits	32 input status bits and 32 output control bits	32 input status bits and 32 output control bits
I/O data update on the PROFINET LAN	Configurable: 1ms, 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms and 512ms	Configurable: 1ms, 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms and 512ms
Number of IP addresses	One; supports Classless Inter-Domain Routing (CIDR)	One; supports Classless Inter-Domain Routing (CIDR)
Number of MAC addresses	Three; one per external port and one internal. External MAC addresses are only used for specialized Ethernet protocols such as MRP or LLDP.	Three; one per external port and one internal. External MAC addresses are only used for specialized Ethernet protocols such as MRP or LLDP.
I/O station maximum limits		
Number of I/O modules per station	1 ; 2 (with IC694CEE001)	
I/O data per station	1024 bytes total 512 bytes of input data 512 bytes of output data	1024 bytes total 512 bytes of input data 512 bytes of output data
Configuration	Configured using Proficy Machine Edition when used with a PACSystems RX3i PROFINET Controller module as part of an RX3i High-speed I/O LAN system. V2.3 GSDML file available for import into 3rd-Party tools.	Configured using Proficy Machine Edition when used with a PACSystems RX3i PROFINET Controller module as part of an RX3i High-speed I/O LAN system. V2.3 GSDML file available for import into 3rd-Party tools.

[1]Value does not include the power consumption of the installed I/O modules. When calculating the total power requirements, add the power consumption of the I/O modules according to the I/O module datasheet.