



## Networks and Distributed I/O Systems

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	IC695ETM001	IC695PNC001	IC695PNS001	IC695CMX128
<b>Product Name</b>	PACSystems RX3i Ethernet TCP/IP 10/100Mbps, two RJ-45 ports with built-in switch	PROFINET Controller (PNC) module, connects a PACSystems RX3i controller to a high-speed PROFINET local area network. It enables the RX3i controller to communicate with IO-Devices on the LAN.	PACSystems RX3i PROFINET Scanner (PNS) module, connects a remote node of 90-30 or RX3i modules to a PROFINET IO-Controller	RX3i Control Memory Xchange Module for Peer to Peer network. 128Megabytes of user shared memory.
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Ethernet	PROFINET Controller	PROFINET Scanner	Reflective Memory
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Protocol Support</b>	SRT, Ethernet Global Data (EGD), Channels (Client and Server), Modbus TCP (Client and Server)	PROFINET	PROFINET	None Required
<b>Entity Type</b>	Client/Server	Master	I/O Device (Scanner)	Deterministic Peer to Peer. Programmable Interrupt support.
<b>Communication Ports</b>	Two RJ-45 ports one MAC Address	Two RJ-45 and Two SFP Cages (SFPs not included, available separately). 5 MAC addresses.	Two RJ-45 and Two SFP Cages (SFPs not included, available separately). 5 MAC addresses.	
<b>Bus Speed</b>	10/100Mbps	10/100/1000Mbps	10/100/1000Mbps	Network link speed of 2.1 Gigabits/sec. Network transfer rate of 43 Mbyte/s (4 byte packets) to 174 Mbyte/s (64 byte packets)
<b>I/O Device Update Rate</b>	N/A	Configurable: 1 ms to 512 ms	Configurable: 1 ms to 512 ms	
<b>Maximum I/O Memory</b>	N/A	128 Kbytes of combined input/ output memory per PROFINET Controller	2880 bytes total: 1440 bytes of input data, 1440 bytes of output data	
<b>System Maximum Limits</b>	N/A	Up to 4 PNC001 per CPU IO 64 IO-Devices per Network 255 IO-Devices across 4 PROFINET controllers per CPU 256 PROFINET Slots per device 2048 Number of PROFINET Submodules per CPU	1 PNS per rack 32 input status bits and 32 output control bits	
<b>Network Distance</b>	Network Dependent	100 meters for copper Up to 70,000 meters with Fiber	100 meters for copper Up to 70,000 meters with Fiber	Multimode Fiber up to 300 meters between nodes. 10Km when HUB is used
<b>Bus Diagnostics</b>	Yes	Yes	Yes	Network error detection.
<b>Number of Drops Supported</b>	Network Dependent	64 Drops 256 Subslots	Supports number of modules allowed per rack Does not support LRE for Series 90-30 expansion racks	256
<b>Message Size</b>	N/A	N/A	N/A	Up to 128 Mbytes reflective memory with parity. Dynamic packet sizes of 4 to 64 bytes, automatically controlled by the CMX module
<b>Connector Type</b>	Two RJ-45	Two RJ-45 and two optional SFP plug connectors for copper or fiber (single or multimode) connections	Two RJ-45 and two optional SFP plug connectors for copper or fiber (single or multimode) connections	Fiber optic LC type, conforms to IEC 61754-20; Zirconium ceramic ferrule; Insertion loss 0.35 dB (maximum); Return loss -30 dB
<b>Internal Power Used</b>	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	3.3 V: 0.5 A with no SFP devices installed 1.2 A maximum (two SFP devices installed, 0.35 A per SFP device) 5 V: 1.5 A maximum	3.3 V: 0.5 A with no SFP devices installed 1.2 A maximum (two SFP devices installed, 0.35 A per SFP device) 5 V: 1.5 A maximum	660 mA @ 3.3 VDC; 253 mA @ 5 VDC



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	IC695PBM300	IC695PBS301	IC694BEM331	IC694DNM200
<b>Product Name</b>	<b>PACSystems RX3i PROFIBUS Master Module, Supports DPV1 Class 1 and Class 2.</b>	<b>PACSystems RX3i PROFIBUS Slave Module, Supports DPV1 Class 1 and Class 2.</b>	<b>PACSystems RX3i Genius Bus Controller</b>	<b>PACSystems RX3i DeviceNet Master Module</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	PROFIBUS Master	PROFIBUS Slave	Genius Bus Controller	DeviceNet Master
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions	CPU Rack Only
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Protocol Support</b>	PROFIBUS DPV1	PROFIBUS DPV1	Genius	DeviceNet
<b>Entity Type</b>	Master	Slave	Master	Master
	PROFIBUS DB-9 connector	PROFIBUS DB-9 connector	Screw Terminal	Screw Terminal
<b>Communication Ports</b>				
<b>Bus Speed</b>	12Mbaud	12Mbaud	153.6Kbaud	500Kbaud
<b>I/O Device Update Rate</b>				
<b>Maximum I/O Memory</b>				
<b>System Maximum Limits</b>				
<b>Network Distance</b>	Baud Rate Dependent. Supports all standard data rates (9.6 kBit/s, 19.2 kBit/s, 93.75 kBit/s, 187.5 kBit/s, 500 kBit/s, 1.5 MBit/s, 3 MBit/s, 6 MBit/s and 12 MBit/s)	Baud Rate Dependent. Supports all standard data rates (9.6 kBit/s, 19.2 kBit/s, 93.75 kBit/s, 187.5 kBit/s, 500 kBit/s, 1.5 MBit/s, 3 MBit/s, 6 MBit/s and 12 MBit/s)	7500 feet (2286 meters) at 38.4 Kbaud; 4500 feet (1371 meters) at 76.8 Kbaud; 3500 feet (1066 meters) at 153.6 Kbaud extended; 2000 feet (609 meters) at 153.6 Kbaud standard. Maximum length at each baud rate also depends on cable type.	500Kbaud 100 meters to 125Kbaud 500 meters. Maximum length at each baud rate also depends on cable type.
<b>Bus Diagnostics</b>	Yes, Slave Status Bit Array Table, Network Diagnostic Counters, DP Master Diagnostic Counters, Firmware Module Revision, Slave Diagnostic Address	Yes, Alarms	Yes	Yes
<b>Number of Drops Supported</b>	Up To 125 (Requires repeater every 25 nodes)	N/A	32	64
<b>Message Size</b>	244 bytes of input and 244 bytes of output for each slave. Not to exceed 3584 bytes input and 3584 bytes outputs total for the system.	244 bytes of input and 244 bytes of output	128 bytes	127 bytes
<b>Connector Type</b>	PROFIBUS Connector	PROFIBUS Connector	Screw Terminal	Screw Terminal
<b>Internal Power Used</b>	420 mA @ 5 VDC	420 mA @ 5 VDC	300 mA @ 5 VDC	300 mA @ 5 VDC



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	<b>IC695EDM001</b> PACSystems RX3i DNP3 Ethernet Master	<b>IC695EDS001</b> PACSystems RX3i DNP3 Ethernet Outstation	<b>IC695EIC001</b> PACSystems RX3i IEC60870-5-104 Ethernet Client	<b>IC695EIS001</b> PACSystems RX3i IEC60870-5-104 Ethernet Server	<b>IC695E61850</b> PACSystems RX3i IEC61850 Client
<b>Product Name</b>					
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1	1
<b>Protocol Support</b>	IC695ETM plus DNP3 Master	IC695ETM plus DNP3 Outstation	IC695ETM plus IEC60870-5-104 Client	IC695ETM plus IEC60870-5-104 Server	IEC61850 Client: MMS, GOOSE (under development)
<b>Entity Type</b>	Master	Slave	Master	Slave	Master
<b>Communication Ports</b>	Two RJ-45 ports one MAC Address	Two RJ-45 ports one MAC Address	Two RJ-45 ports one MAC Address	Two RJ-45 ports one MAC Address	Two RJ-45 and Two SFP Cages (SFPs not included, available separately). 5 MAC addresses.
<b>Bus Speed</b>	10/100Mbaud	10/100Mbaud	10/100Mbaud	10/100Mbaud	10/100/1000Mbaud
<b>I/O Device Update Rate</b>	Configurable: 100 ms to 64 sec	Configurable: 10 ms to 3200 ms	Configurable: 100 ms to 64 sec	Configurable: 10 ms to 3200 ms	less than 1 second
<b>Maximum I/O Memory</b>	10,000 points	12,072 points, 20000 events	10,000 points	12,072 points, 20000 events	5000 variables
<b>System Maximum Limits</b>	N/A	N/A	N/A	N/A	Up to 4 per CPU
	Network Dependent	Network Dependent	Network Dependent	Network Dependent	100 meters for copper Up to 70,000 meters with Fiber

### Network Distance

	Yes	Yes	Yes	Yes	Yes
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### Bus Diagnostics

<b>Number of Drops Supported</b>	Up to 64 DNP3 Outstations	Up to 4 DNP3 Masters	Up to 64 Servers	Up to 4 clients	32 devices
	N/A	N/A	N/A	N/A	N/A

### Message Size

<b>Connector Type</b>	Two RJ-45	Two RJ-45	Two RJ-45	Two RJ-45	Two RJ-45 and two optional SFP plug connectors for copper or fiber (single or multimode) connections
	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	3.3 V: 0.5 A with no SFP devices installed 1.2 A maximum (two SFP devices installed, 0.35 A per SFP device) 5 V: 1.5 A maximum
<b>Internal Power Used</b>					