



Networks and Distributed I/O Systems

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	IC695ETM001	IC695PNC001	IC695PNS001	IC695CMX128
Product Name	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.
Lifecycle Status	Active	Active	Active	Active
Module Type	Ethernet	PROFINET Controller	PROFINET Scanner	Reflective Memory
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1	1	1
Protocol Support	SRT, Ethernet Global Data (EGD), Channels (Client and Server), Modbus TCP (Client and Server)	PROFINET	PROFINET	None Required
Entity Type	Client/Server	Master	I/O Device (Scanner)	Deterministic Peer to Peer. Programmable Interrupt support.
Communication Ports	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.	
Bus Speed	10/100Mbaud	10/100/1000Mbaud	10/100/1000Mbaud	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)
I/O Device Update Rate	N/A	Configurable: 1 ms to 512 ms	Configurable: 1 ms to 512 ms	
Maximum I/O Memory	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	
System Maximum Limits	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	
Network Distance	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
Bus Diagnostics	Yes	Yes	Yes	Network error detection.
Number of Drops Supported	Network Dependent	64 Drops 256 Subslots	Supports number of modules allowed per rack Does not support LRE for Series 90-30 expansion racks	256
Message Size	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
Connector Type	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
Internal Power Used	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
Product Name	PACSystems RX3i PROFIBUS Master Module, Supports DPV1 Class 1 and Class 2.	PACSystems RX3i PROFIBUS Slave Module, Supports DPV1 Class 1 and Class 2.	PACSystems RX3i Genius Bus Controller	PACSystems RX3i DeviceNet Master Module
Lifecycle Status	Active	Active	Active	Active
Module Type	PROFIBUS Master	PROFIBUS Slave	Genius Bus Controller	DeviceNet Master
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions	CPU Rack Only
Number of Slots Module Occupies on Backplane	1	1	1	1
Protocol Support	PROFIBUS DPV1	PROFIBUS DPV1	Genius	DeviceNet
Entity Type	Master	Slave	Master	Master
Communication Ports	PROFIBUS DB-9 connector	PROFIBUS DB-9 connector	Screw Terminal	Screw Terminal
Bus Speed	12Mbaud	12Mbaud	153.6Kbaud	500Kbaud
I/O Device Update Rate				
Maximum I/O Memory				
System Maximum Limits				
Network Distance	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.
Bus Diagnostics	Yes, Slave Status Bit Array Table, Network Diagnostic Counters, DP Master Diagnostic Counters, Firmware Module Revision, Slave Diagnostic Address	Yes, Alarms	Yes	Yes
Number of Drops Supported	Up To 125 (Requires repeater every 25 nodes)	N/A	32	64
Message Size	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
Connector Type	PROFIBUS Connector	PROFIBUS Connector	Screw Terminal	Screw Terminal
Internal Power Used	420 mA @ 5 VDC	420 mA @ 5 VDC	300 mA @ 5 VDC	300 mA @ 5 VDC



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	IC695EDM001	IC695EDS001	IC695EIC001	IC695EIS001	IC695E61850
Product Name	PACSystems RX3i DNP3 Ethernet Master	PACSystems RX3i DNP3 Ethernet Outstation	PACSystems RX3i IEC60870-5-104 Ethernet Client	PACSystems RX3i IEC60870-5-104 Ethernet Server	PACSystems RX3i IEC61850 Client
Lifecycle Status	Active	Active	Active	Active	Active
Module Type	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
Backplane Support	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.
Number of Slots Module Occupies on Backplane	1	1	1	1	1
Protocol Support	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)
Entity Type	Master	Slave	Master	Slave	Master
Communication Ports	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.
Bus Speed	10/100Mbaud	10/100Mbaud	10/100Mbaud	10/100Mbaud	10/100/1000Mbaud
I/O Device Update Rate	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
Maximum I/O Memory	10,000 points	12,072 points, 20000 events	10,000 points	12,072 points, 20000 events	5000 variables
System Maximum Limits	N/A	N/A	N/A	N/A	Up to 4 per CPU
Network Distance	Network Dependent	Network Dependent	Network Dependent	Network Dependent	100 meters for copper Up to 70,000 meters with Fiber
Bus Diagnostics	Yes	Yes	Yes	Yes	Yes
Number of Drops Supported	Up to 64 DNP3 Outstations	Up to 4 DNP3 Masters	Up to 64 Servers	Up to 4 clients	32 devices
Message Size	N/A	N/A	N/A	N/A	N/A
Connector Type	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
Internal Power Used	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