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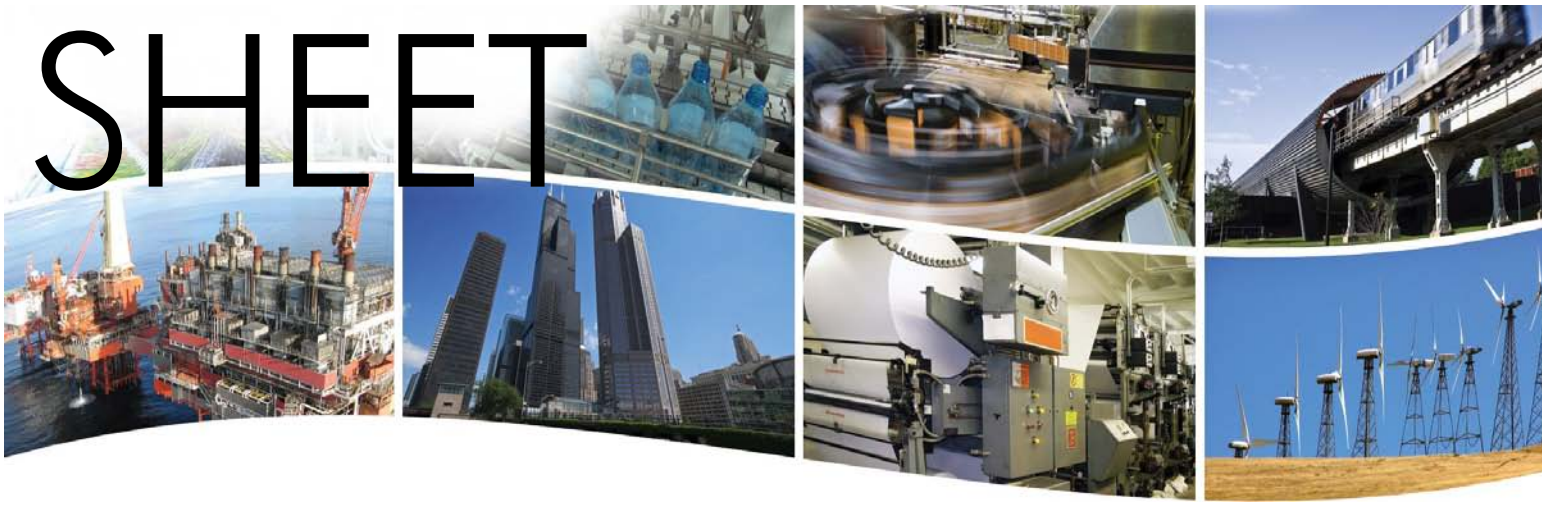


PCX20 Series — ARCNET® Adapters for PC/XT/AT Bus Computers

The PCX20 Series of Network Interface Modules (NIMs) offers dependable ARCNET connectivity for XT/AT compatible computers.

This product is designed with the COM20020 ARCNET controller chip. Features include command chaining, sequential access to internal RAM, duplicate node ID detection, and variable data rates up to 5 Mbps. There is no requirement for wait-state arbitration.

Each PCX20 module has two LEDs on the board for monitoring network operation and bus access to the module. It also has an external DIP switch so that node addresses can be easily reassigned without removing the module or opening the computer case.

There are several models in the PCX20 Series. The PCX20-CXS supports coaxial star configurations requiring external hubs if other than point-to-point communication is needed. The PCX20-CXB accommodates a multidrop or coaxial bus configuration, typically without any hubs. Other versions include the PCX20-FOG-ST for fibre optic cable with ST connectors. The PCX20-TPB supports multidrop twisted-pair cabling using RJ-11 and screw terminal connectors. Two units provide DC-coupled EIA-485 operation: the PCX20-485 allows backplane mode to be controlled by the user's software, while the PCX20-485D forces backplane mode via hardware for those users having legacy software that is incapable of invoking backplane control. The PCX20-485X offers transformer-coupled EIA-485 operation with the backplane mode forced through hardware.

Features

- No requirement for wait-state arbitration
- Enhanced software capabilities over earlier generation ARCNET controllers
- Supports coaxial, fibre optic, and twisted-pair cabling including EIA-485
- Node address switch selects one of 255 possible station addresses
- Variable data rates up to 5 Mbps
- Suitable with all Contemporary Controls
- MOD HUB and AI Series active hubs
- CMOS design for low-power consumption
- CE Mark
- RoHS
- Utilises COM20020 ARCNET controller
- Interfaces ARCNET with XT/AT (ISA) bus computers
- I/O-only mapping reduces bus contention problems

ARCNET®

Transceiver Options

Dipulse (Analogue) Signals

Coaxial Bus Topology (PCX20-CXB)

Cards with ***-CXB*** transceivers accept RG-62/u cable via BNC Tee connectors. Each node is a high-impedance in both powered and unpowered states. BNC-style 93Ω terminators must be applied to both ends of a bus segment. The maximum segment length is 305 metres and up to 8 devices can share the segment.

Coaxial Star Topology (PCX20-CXS)

In a ***-CXS*** coaxial star system, devices connect in a point-to-point fashion with RG-62/u coaxial cabling not exceeding 610 metres. If more than two cards share the cabling, a hub is needed. A ***-CXS*** card provides the 93Ω of termination *internally*.

Twisted-Pair Bus Topology (PCX20-TPB)

A ***-TPB*** dipulse transceiver supports up to 8 devices and 122 metres of shielded or unshielded twisted-pair. Apply terminators at each end of the bus.

EIA-485 (Digital) Signals

DC-coupled EIA-485 (PCX20-485 or PCX20-485D)

EIA-485 backplane mode is invoked in the ***-485*** card via user software and in the ***-485D*** card via the card's own hardware. Either card supports twisted-pair up to 274 metres in length and up to 17 nodes. Use proper cable and maintain wiring phase integrity among all nodes. Use 120Ω termination and proper bias at each end of the bus.

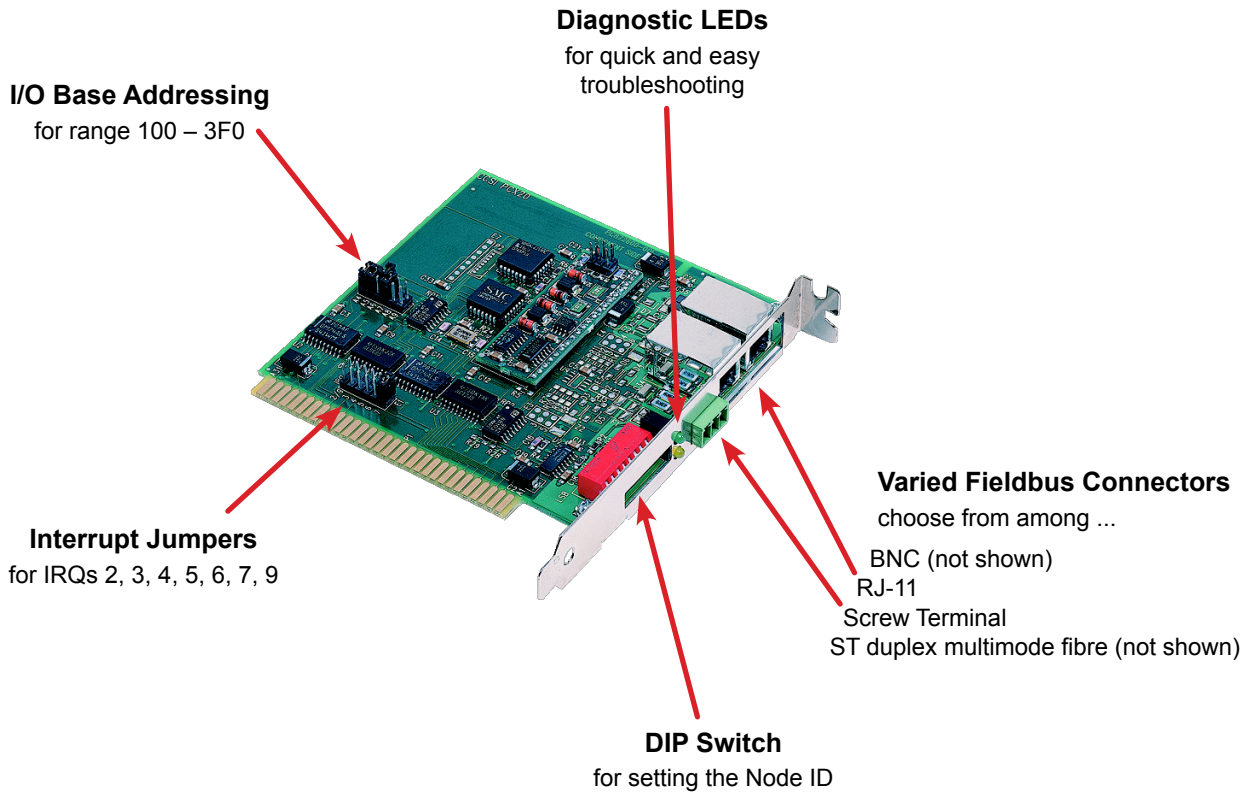
AC-coupled EIA-485 (PCX20-485X)

Backplane mode is invoked by the hardware in the ***-485X*** card which supports up to 13 devices and a segment length of 213 metres. Apply 120Ω termination at each end of the bus.

Multimode Fibre Optic Signals

ST-connected Duplex Fibre (PCX20-FOG-ST)

Fibre models use the ST style connector to support duplex cable of 50, 62.5 or 100 micron diameter.



Specifications

Environmental/Mechanical

Operating temperature	0°C to 60°C
Storage temperature	–40°C to +85°C
Relative humidity	10–95%, non-condensing

Functionality

Data rate	
PCX20-CXB, -CXS, -TPB	2.5 Mbps
PCX20-485, -485D	5 Mbps, 2.5 Mbps, 1.25 Mbps, 625 kbps, 312.5 kbps, 156.25 kbps
PCX20-485X	5 Mbps, 2.5 Mbps, 1.25 Mbps
Dimensions	3.9” x 4.3” (99 mm x 109 mm)
I/O mapping	Supports I/O mapping on any 16-byte boundary
Interrupts	Supports strapping of IRQ 2/9, 3, 4, 5, 6 or 7
Compliance	ATA 878.1-1999

LED indicators

Green — flashes when the unit receives ARCNET traffic from the network
Yellow — flashes when the unit is communicating with its host computer

Dimensions

64 mm x 95 mm (2.50” x 4.72”)

Shipping Weight

0.45 kg (1 lb.)

Regulatory Compliance

CE Mark
RoHS
CFR 47, Part 15 Class A

Power Requirements

Model	+5 V	–12 V
PCX20-485[2]	200 mA	N/A
PCX20-485D	200 mA	N/A
PCX20-485X	200 mA	N/A
PCX20-CXB	200 mA	50 mA
PCX20-CXS	200 mA	20 mA
PCX20-FOG-ST	300 mA	N/A
PCX20-FOG-ST	300 mA	N/A
PCX20-FOG-ST	300 mA	N/A
PCX20-TPB	200 mA	50 mA

Fieldbus Connectors and Cabling

Connector	Cable	Segment Length Min[1]	Segment Length Max	Max Nodes per Segment
RJ-11, 3-pin[3]	T-P[4]	0	274m (900ft)	17
RJ-11, 3-pin[3]	T-P[4]	0	274m (900ft)	17
RJ-11, 3-pin[3]	T-P[4]	0	213m (700ft)	13
BNC	RG-62/u	2m (6ft)	305m (1000ft)	8
BNC	RG-62/u	0	610m (2000ft)	2
ST	50/125 duplex fibre optic	0[5]	915m (3000ft)	2
ST	62.5/125 “ “ “	0[5]	1825m (6000ft)	2
ST	100/140 “ “ “	0[5]	2740m (9000ft)	2
RJ-11, 3-pin[3]	T-P[4]	2m (6ft)	122m (400ft)	8

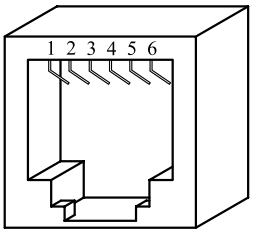
[1] Minimum distance between any two network devices.
[2] Backplane mode operation.
[3] One three-position screw terminal and two RJ-11 connectors are on each NIM.
[4] T-P = Twisted-pair, IBM Type 3
[5] This minimum is achieved by removing a jumper on the transceiver circuitry.

Mounting Bracket

Each NIM (network interface module) is pre-attached to a traditional sized mounting bracket for the ISA bus.

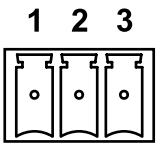
RJ-11 Pin Assignments

Modular Connector Pin Assignments	
6-Contacts	
Pin	Usage
1	Not Available
2	Not Used
3	Line+
4	Line–
5	Not Used
6	Not Available



Screw Connector Pin Assignments

	TRANSCEIVER			
	-485	-485D	-485X	-TB5
PIN				
1	LINE+	LINE+	LINE	LINE+
2	LINE–	LINE–	LINE	LINE–
3	SHIELD	SHIELD	SHIELD	SHIELD



Ordering Information

Model	*Description*	*Fieldbus Connector*
PCX20-485	20020 DC-coupled EIA-485 NIM allows software control of backplane mode	RJ-11, screw
PCX20-485D	20020 DC-coupled EIA-485 NIM forces backplane mode via hardware	RJ-11, screw
PCX20-485X	20020 AC-coupled EIA-485 NIM forces backplane mode via hardware	RJ-11, screw
PCX20-CXB	20020 coaxial bus NIM	BNC
PCX20-CXS	20020 coaxial star NIM	BNC
PCX20-FOG-ST	20020 ST fibre optic NIM	ST
PCX20-TPB	20020 twisted-pair bus NIM	RJ-11, screw

* NIM is an abbreviation for *network interface module.*

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