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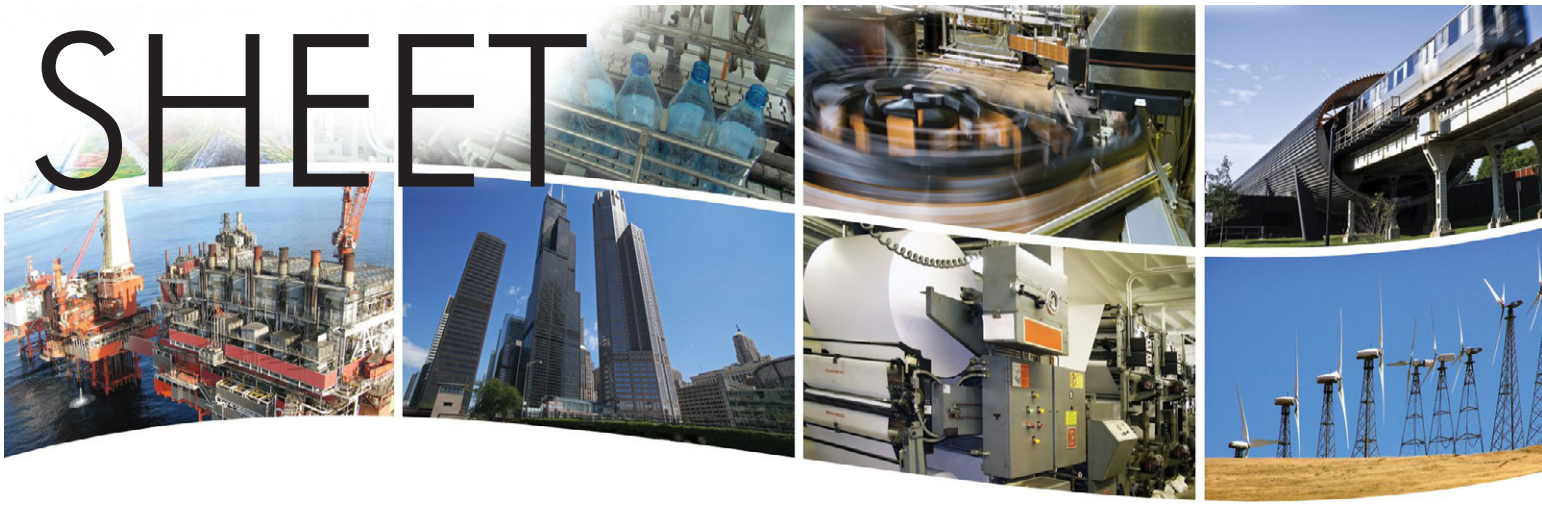


PCI20EX Series — PCI Express® ARCNET® Card

The PCI20EX Series of cards from Contemporary Controls provide ARCNET functionality for the PCI Express (PCIe) bus — demonstrating a continuing commitment to ARCNET technology and customer requirements.

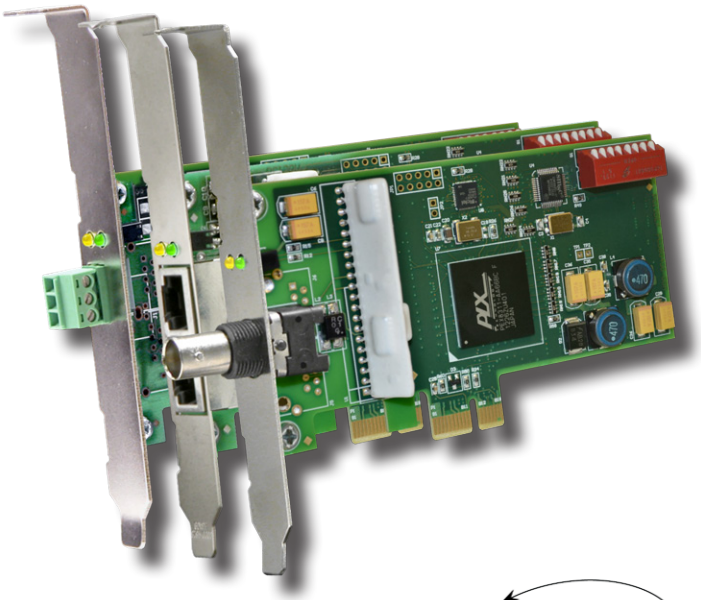
PCI20EX boards incorporate the COM20022 ARCNET controller chip which supports command chaining, sequential access to internal RAM, and duplicate node ID detection. Bus contention problems are minimized since the module's interrupt level and I/O base address are assigned through Plug-and-Play (PnP) operation.

The PCI20EX Series supports high speed communications Using EIA-485 transceivers — DC-coupled and AC-coupled (transformer) variants. Conventional 2.5 Mbps dipulse signalling is also supported on the traditional coaxial and twisted-pair models.

Each PCI20EX card provides two LEDs for monitoring network operation and PCI bus access to the unit. It is equipped with an 8-position, general-purpose DIP switch which could be used to assign the ARCNET node address. Ultimately, the node address is configured via software so the DIP switch can be used for special purpose user-defined configuration options.

Features

- Interfaces ARCNET with PCI Express capable computers
- Automatic configuration of I/O and interrupt
- High-speed I/O access to its ARCNET controller
- Supports coaxial and twisted-pair cabling including EIA-485
- CE Mark
- RoHS compliant
- Enhanced software capabilities over earlier generation ARCNET controllers
- Suitable with all Contemporary Controls MOD HUB and AI Series active hubs
- Variable data rates up to 10 Mbps utilising the various EIA-485 transceiver options



ARCNET®

Transceiver Options

Dipulse (Analogue) Signals

Coaxial Bus Topology (PCI20EX-CXB)

Cards with ***-CXB*** transceivers accept RG-62/u cable via BNC Tee connectors. Each node maintains 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 (PCI20EX-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. No more than two cards can exist on a cabling segment — because a ***-CXS*** card provides the 93Ω of termination *internally*.

Twisted-Pair Bus Topology (PCI20EX-TB5)

Using dual RJ-45 jacks, a ***-TB5*** dipulse transceiver supports up to 8 devices and 122 metres of shielded or unshielded twisted-pair. RJ-45 style 93Ω terminators must be applied at each end of the bus.

EIA-485 (Digital) Signals

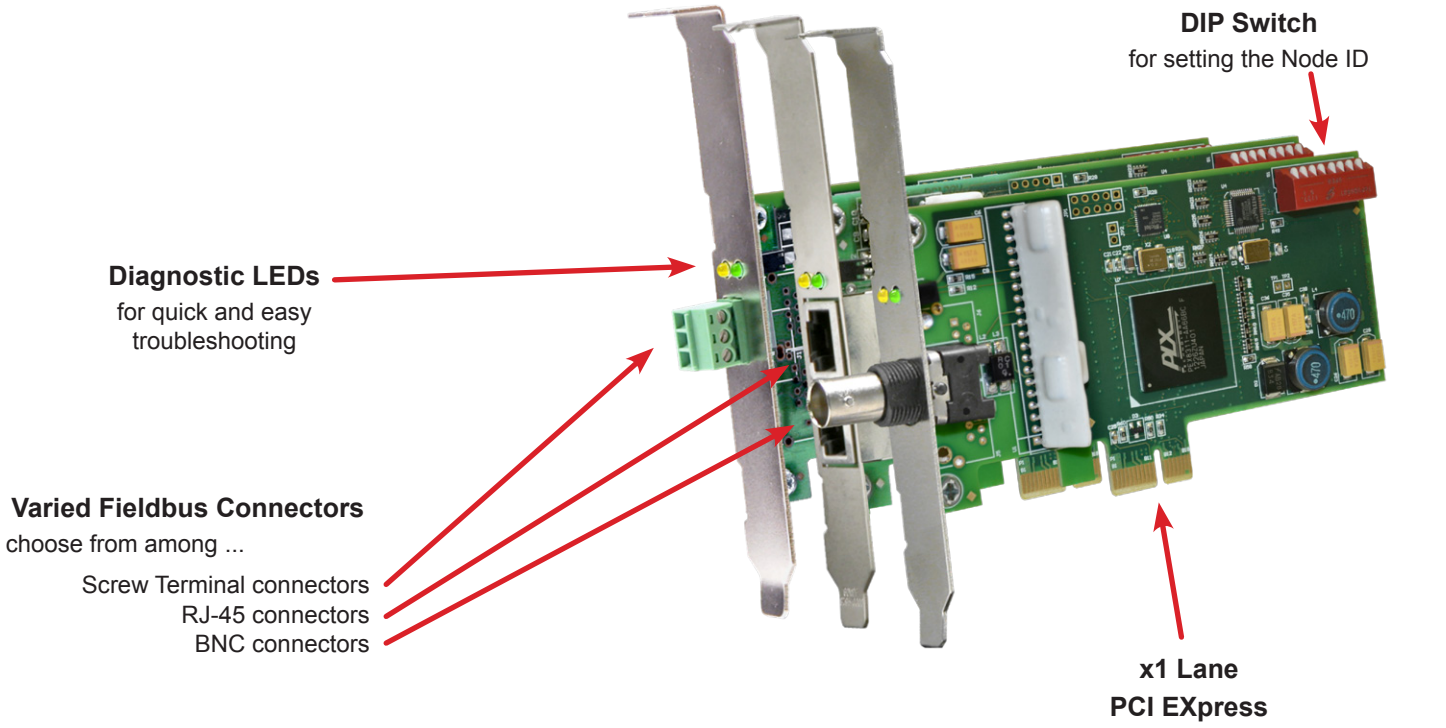
DC-coupled EIA-485 (PCI20EX-485 or PCI20EX-485D)

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 uses a 3-terminal screw connector* for 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 (PCI20EX-4000 or PCI20EX-485X)

EIA-485 backplane mode is invoked in the ***-4000*** card via user software for segments up to 80 metres in length and up to 8 nodes. Backplane mode is invoked by the hardware in the ***-485X*** card which supports up to 13 devices and a segment length of 213 metres. The ***-4000*** card uses dual RJ-45 jacks. The -485X card uses a 3-terminal screw connector*. Apply 120Ω termination at each end of the bus.

* Dual RJ-45 sockets replace the 3-pin connector if the ***/J*** model is specified (see Ordering Information).



Specifications

Environmental/Mechanical

Operating temperature	0°C to 60°C
Storage temperature	–40°C to +85°C
Relative humidity	10–95%, non-condensing
Protection	IP30

Functionality

Data rate	
PCI20EX-CXB, -CXS, -TB5	2.5 Mbps
PCI20EX-485, -485D	10 Mbps, 5 Mbps, 2.5 Mbps, 1.25 Mbps, 625 kbps, 312.5 kbps, 156.25 kbps
PCI20EX-485X, -4000	10 Mbps, 5 Mbps, 2.5 Mbps, 1.25 Mbps
I/O mapping	Requires 16 bytes of I/O space for COM20022 controller
Interrupts	Virtual wire interrupts are used to support onboard interrupt events using Assert-INTA # and Deassert-INTA messages
Compliance	ATA 878.1-1999 x1 Lane PCI Express

LED indicators

Green — flashes when the unit transmits or receives on the ARCNET 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	+12 V	+3.3 V
PCI20EX-CXB	475 mA	150 mA
PCI20EX-CXS	475 mA	150 mA
PCI20EX-TB5	475 mA	150 mA
PCI20EX-485	475 mA	150 mA
PCI20EX-485D	475 mA	150 mA
PCI20EX-485X	475 mA	150 mA
PCI20EX-4000	475 mA	150 mA

Fieldbus Connectors and Cabling

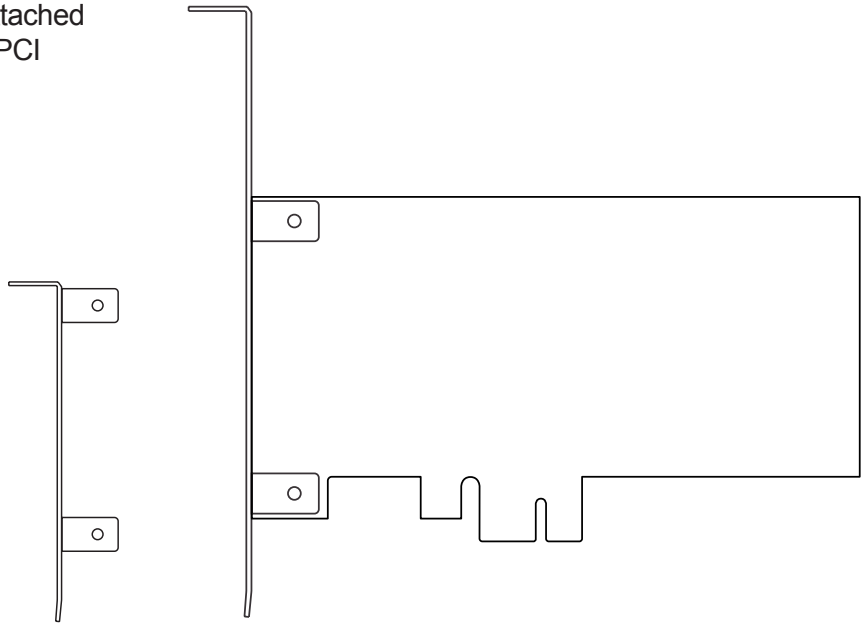
Connector	Cable	Segment Length Min[1]	Segment Length Max	Max Nodes per Segment
BNC	RG-62/u	2m (6ft)	305m (1000ft)	8
BNC	RG-62/u	0	610m (2000ft)	2
Dual RJ-45	T-P[2]	2m (6ft)	122m (400ft)	8
3-pin[3]	T-P[2]	0	274m (900ft)	17
3-pin[3]	T-P[2]	0	274m (900ft)	17
3-pin[3]	T-P[2]	0	213m (700ft)	13
Dual RJ-45	T-P[2]	0.5m (1.6ft)	80m (262ft)	8

[1] Minimum distance between any two network devices.
[2] T-P = Twisted-pair, IBM Type 3
[3] Dual RJ-45 jacks if the characters “**/J**” are added to the model number .

Mounting Brackets

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

A half-height mounting bracket is included in the event that the NIM must be installed in a miniature desktop PC. Unfasten the two screws which secure the traditional height bracket to the NIM, and fasten the smaller bracket to the NIM with the same screws.



Ordering Information

Model	*Description*	*Fieldbus Connector*
PCI20EX-CXB	20022 coaxial bus NIM*	BNC
PCI20EX-CXS	20022 coaxial star NIM	BNC
PCI20EX-TB5	20022 twisted-pair bus NIM	Dual RJ-45
PCI20EX-485	20022 DC-coupled EIA-485 NIM (backplane invoked by software)	3-pin screw terminal
PCI20EX-485/J	20022 DC-coupled EIA-485 NIM (backplane invoked by software)	Dual RJ-45
PCI20EX-485D	20022 DC-coupled EIA-485 NIM (backplane invoked by hardware)	3-pin screw terminal
PCI20EX-485D/J	20022 DC-coupled EIA-485 NIM (backplane invoked by hardware)	Dual RJ-45
PCI20EX-485X	20022 AC-coupled EIA-485 NIM (backplane invoked by hardware)	3-pin screw terminal
PCI20EX-485X/J	20022 AC-coupled EIA-485 NIM (backplane invoked by hardware)	Dual RJ-45
PCI20EX-4000	20022 AC-coupled EIA-485 NIM (backplane invoked by software)	Dual RJ-45

* NIM is an abbreviation for *network interface module*

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