

### Network Interface Modules for USB Computers



- **USB interface to the ARCNET network**
- **Send/receive ARCNET packets from USB connected computer**
- **Compatible with the baseband ARCNET network**

- **Supports coaxial and twisted-pair networks including AC- and DC-coupled EIA-485**
- **Operates with either the USB 1.1 or 2.0 standard**
- **Incorporates a COM20022 ARCNET controller**
- **Embedded microcontroller provides 128 Kbytes of receiver buffering**
- **LEDs indicate USB status and port activity**
- **Powered from USB port on computer**
- **CE Mark**
- **RoHS**

### PRODUCT OVERVIEW

**In an effort to overcome the inherent non-real-time response associated with today's traditional operating systems such as Windows®, Contemporary Controls released the USB22 Series of USB 2.0 to ARCNET adapters.** ARCNET's determinism has been compromised with traditional PCMCIA interface products because typical operating systems cannot service these devices in a timely fashion, resulting in lost or missed messages. The USB22 incorporates a deep memory buffer to hold messages until the OS can service the device via its high-speed USB 2.0 connection. Using this approach, missed messages are rare — even while operating at 10 Mbps which is four times the standard ARCNET data rate of 2.5 Mbps.

**The Universal Serial Bus (USB) has become a well-known method for connecting either desktop or laptop computers to peripherals because it provides a very high-speed interface (up to 480 Mbps).**

Designed with the COM20022 controller, the USB22 represents the latest ARCNET technology — supporting data rates as high as 10 Mbps. Models exist for most recognized ARCNET physical layers. A high-performance microcontroller handles the transfer of data between ARCNET and USB. The NIM is powered from the USB port on the computer.

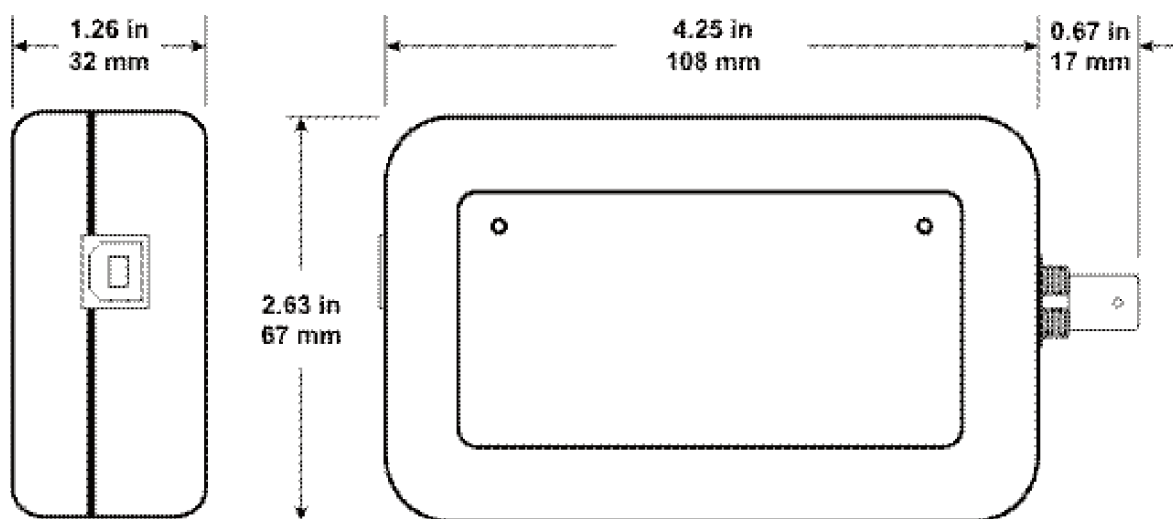
This product is compatible with the USB 2.0 standard, thereby allowing an extremely fast and convenient means of accessing an ARCNET network without the need to install a NIM into a computer. Since most modern computers are sold equipped with a USB port, it is only necessary to directly connect between the computer and the USB22. The USB22 will also operate with the earlier lower-speed USB 1.1 standard.

**When the USB cable is first attached to a Windows 2K/XP machine, the user is prompted for a driver on a disk.** Contemporary Controls provides a USB driver and DLL with an Application Programming Interface (API) that is similar to our Null Stack Driver API. By not employing a protocol stack, a null stack driver allows superior performance over a layered protocol stack by directly linking the application to the ARCNET hardware.

This approach is beneficial when a timely logon to a real-time network like ARCNET is required. To aid the customer, the company offers some utility programs such as *Talk* that demonstrate how to communicate with the API.

The USB22 receives its power from the USB port on the USB computer. It is available in several models that will support DC- or AC-coupled EIA-485, coaxial bus or twisted-pair networks. It is shipped with a CD containing a Windows 2K/XP compatible DLL and driver, along with a USB cable.

## Mechanical



## Specifications

### Environmental

Operating temperature	0°C to +60°C
Storage temperature	-40°C to +85°C

### Functionality

Data rate	
USB22-4000	10 Mbps, 5 Mbps, 2.5 Mbps, 1.25 Mbps
USB22-485	10 Mbps, 5 Mbps, 2.5 Mbps, 1.25 Mbps, 625 kbps, 312.5 kbps, 156.25 kbps
USB22-CXS, -TB5	2.5 Mbps
Dimensions	4.25" x 2.63" x 1.26" (108 mm x 67 mm x 32 mm)
Shipping weight	1 lb. (0.45 kg)
Compatibility	USB 2.0 and USB 1.1 compliant
<b>Regulatory Compliance</b>	CE Mark, CFR 47, Part 15 Class A

### Transceiver Specifications

Transceiver	Description	Backplane Set by	Cable	Conn.	Cable Length		Max Nodes/Bus Segments
					Min	Max	
-4000	AC-coupled EIA-485	Software	IBM Type 3	RJ-45	1.6ft/5m <sup>1</sup>	262ft/80m	8
-485	DC-coupled EIA-485	Software	IBM Type 3	RJ-45	0	900ft/274m	17
-CXB	Coaxial bus	N/A	RG-62/u	BNC	6ft/2m <sup>1</sup>	1000ft/305m	8
-TB5	Twisted-pair bus	N/A	IBM Type 3	RJ-45	6ft/2m <sup>1</sup>	400ft/122m	8

<sup>1</sup> This represents the minimum distance between any two nodes or between a node and a hub.

### Power Requirements

Model	+5 V
USB22-4000	350 mA
USB22-485	350 mA
USB22-CXB	400 mA
USB22-TB5	400 mA

### Ordering Information

Model	Description
USB22-4000	20022 USB AC-coupled EIA-485 NIM (backplane controlled by software)
USB22-485	20022 USB DC-coupled EIA-485 NIM (backplane controlled by software)
USB22-CXB	20022 USB coaxial bus NIM
USB22-TB5	20022 USB twisted-pair bus

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**CONTEMPORARY** CONTROLS®  
www.ccontrols.com

Contemporary Control Systems, Inc.  
2431 Curtiss Street  
Downers Grove, Illinois 60515 USA

Telephone (630) 963-7070  
Fax (630) 963-0109