INTRODUCING

PhD™

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AN ADVANCED DEGREE IN DISK PERFORMANCE

FOR PERSONAL COMPUTERS & NETWORKS

- 20.5 megabyte removable cartridges
- 82 megabytes on-line storage
- Ultra-fast 25 msec access
- Comprehensive SCSI command set

AVAILABLE FOR IBM® PC-AT™ & COMPATIBLES AND APPLE® MACINTOSH™

Today's personal computers and LANs have the same power that mainframe computer systems had just a few years ago. Now PCs run multiuser applications, networks, large database programs and applications for operation and control that used to be possible only on much larger computers. What has been missing up to now is a high-performance storage subsystem that can keep pace with these advanced applications.

The PhD from Amcodyne is a true high-performance storage subsystem with a significant advantage—removable disk cartridges. Because of its removable cartridges and the PhD's advanced performance features, you can also completely eliminate the need for tape backup systems.

The PhD sets a new standard of convenience and performance for serious R&D, business and engineering applications.

● **Superior File Access Speeds**
It's not just access time, but real mainframe-level features like our 16 Kbyte full-track buffer, 8.5 msec rotational latency and 1 to 1 interleaving that make the PhD the fastest and most efficient storage product available for PCs.

● **Backup That's Convenient, Fast and Efficient**
Removable 20.5 megabyte cartridges offer the ability to backup or store data without having to buy additional backup peripherals. That means you realize significant advantages in speed, performance and convenience. For example, by using the PhD's direct internal copy feature users can **copy or backup a full 20.5 megabytes in just 90 seconds!** And, your backup can be back on-line simply by reinserting the cartridge.

● **Mainframe System Reliability**
Amcodyne's patented Dynamic Head Loading system adds a new dimension to disk reliability. In fact, the PhD is so rugged, it is used in mobile military applications where traditional drives cannot survive the shock, vibration and humidity conditions. So, if you are entrusting more and more valuable data to your system, the PhD will provide you with truly superior durability and reliability.

Optimize your valuable computer-intensive time and increase your productivity. Contact your Amcodyne representative today and ask for a demonstration of the **PhD**.

● Century Data Systems
Amcodyne Division

PhD ™

THE REMOVABLE CARTRIDGE IS THE KEY TO EXPANDABILITY AND SECURITY

Fast, Convenient and User Friendly

File management, transfer of data and data backup procedures are easy and fast with the PhD. DOS, for example, treats each 20.5 megabyte disk as a matched, separate disk volume. And, since our cartridges are matched in performance as well as size, that means PC's can take full advantage of the spectacular access speed of the PhD. You can transfer data directly from fixed disk to cartridge and back, quickly and simply, making this one of the fastest and easiest to use storage subsystem on the market today. No matter where data is stored—on cartridges off-line, or on the fixed disks, you can get to it fast.

Most importantly, the PhD lets you decide how and when to manage your data. **Backups or transfers of a full 20.5 megabyte cartridge can be accomplished through a single SCSI command in 90 seconds**—a fraction of the time it takes to copy the same data through memory or onto tape.

The PhD makes PCs easier to use and increases system availability through unsurpassed speed, convenience and reliability.

● **FLEXIBILITY**
Keep customer files on removable cartridges while applications programs and working files are maintained on the fixed disks.

● **SECURITY**
Confidential databases such as financial spreadsheets and analytical files can be kept on cartridges, completely removed and externally secured as required per application.

● **CONVENIENCE**
Engineers can keep their project data on cartridges while CAE/CAD/CAM programs that are shared can be stored in the fixed area.

● **EXPANDABILITY**
Increase your storage capacity without limitation by simply adding cartridges. You can get on-line fast with the **PhD**.

SUMMARY SPECIFICATIONS

CAPACITY	Per Drive	82.2 Mbytes formatted
	Fixed Disks	61.7 Mbytes formatted
	Cartridge	20.5 Mbytes formatted
CONFIGURATION	Disks	3 fixed/1 removable
	Data Heads	8
	Servo	Embedded
	Recording Density	10,986 bpi
	Recording Method	2 of 7 RLLC
	Track Density	555 tpi
	Tracks per Drive	3864 fixed/1288 removable
PERFORMANCE	Rotation Speed	3522.9 rpm
	Average Latency	8.5 msec
	Access Time	25 msec average
	Data Transfer Rate	1.229 Mbytes/sec
RELIABILITY AND MAINTAINABILITY	Error Rate	1 in 10^{10} bits recoverable, 1 in 10^{12} bits non-recoverable, 1 in 10^6 seeks
	MTBF	>20,000 hours
	MTTR	30 minutes
	PM	None
	Service Life	5 years

POWER REQUIREMENTS	AC	None
	DC	+24 Vdc; −12 Vdc; +5 Vdc; −5 Vdc
	Power Dissipation	98 watts (read/write), 180 watts (seek)
ENVIRONMENTAL	Temperature	50°F to 104°F operating (10°C to 40°C), −40°F to 140°F storage (−40°C to 60°C)
	Humidity	20% to 80% RH operating (non-condensing), 5% to 95% RH storage (non-condensing)
	Altitude	To 10,000 feet (3,048 m) operating to 40,000 feet (12,192m) storage
	Shock	Non-operating 30 G max.
	Vibration	Operating 0.25 G max. (10-2000 Hz), non-operating 1.0 G max. (10-500 Hz)
PHYSICAL	Drive	Height 6.25 in. (158.8 mm) Width 8.50 in. (215.9mm) Depth 20.0 in. (508.0mm) Weight 36.5 lbs. (16.6 kg)
	Cartridge	ANSI standard

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