

# CAELUS 100 SERIES DISK DRIVE



## FEATURES

- 24 MILLION BITS STORAGE
- DUST PROOF SEALED ENCLOSURE WITH FILTERED, RECIRCULATED AIR FLOW
- COMPACT DESIGN — 5¼ INCHES HIGH WITH POWER SUPPLY
- VOICE COIL SERVO RAMP HEAD LOADING
- OPTICAL DETENT
- LOW POWER CONSUMPTION

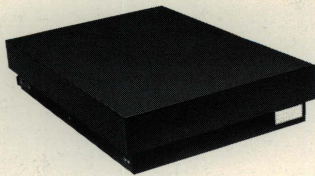
The Caelus 100 Series Drive is a sealed, fixed disk drive that provides on-line memory for general purpose mini-computers and intelligent terminals. This convenient, reliable drive does not require operator controls, operator adjustments or preventive maintenance.

The 100 Series is totally self-contained within a sealed, dust-proof enclosure that is only

5¼ inches high, lending itself to rack, console or table top operation in almost any attitude or position. The sealed enclosure keeps the drive dust free under even the most adverse operating environments, virtually eliminating the most common cause of drive failure, i.e. head-to-disk interference due to contaminants. No external air flow is required, the air within the drive being circulated

and filtered. Changing of the air filter, cleaning of heads and other preventive maintenance practices are recommended on a yearly basis.

Human operating errors have also been eliminated by the absolute simplicity of the 103 Drive — no operating controls or indicators. Just plug it in and let it run. All of these features contribute to a designed reliability of 4000 hours (MTBF) without failure.



## CHARACTERISTICS

The Fixed Disk Drive is a high performance, economical drive capable of storing 24 million data bits (3 million bytes) utilizing a single fixed magnetic disk and movable read/write heads. Data is recorded at 2200 bits per inch at a transfer rate of 1.5 MHz on 204 data tracks per each of the two disk surfaces. The addition of optional fixed heads on one data track per

surface provides rapid access to 127,000 bits of data that are frequently addressed.

The 100 Series Disk Drives are plug compatible with the front-loading 200 Series and the top-loading 300 Series Disk Cartridge Drives. Controller and interface requirements for the entire Caelus family of drives are identical. Single configuration or mixed daisy chaining of up to four drives is accomplished without the need for non-standard interface cables, etc.

The integral power supply contains a multi-tap transformer that permits the drive to be field adapted to all standard international line voltages. Line frequency of 50 Hz is optional at no additional charge.

## ACCESSORIES

- DTU-1A Drive Test Unit mounted in an attache case. Provides the controls and indicators for head positioning and checking read/write operations of the drive.
- DTU-2 hand-sized Drive Test Unit used for head positioning and activating read and write enable.

## OPTIONS

- Daisy-chain operation allows up to four drives to be connected to operate in serial (daisy-chain) configuration. Interconnecting cables and terminator block available.
- Input/Output connector or cable with connector available.
- Sector formatting for handling up to 32 sector formats.
- Special interfaces adapt the 103 Drive to operate with most common controllers which have been designed to interface with other drives.
- 50-Hz line frequency accommodated with a simple pulley change.
- Special name plates available on quantity orders.
- Fixed heads providing 127K bits of data.

## SPECIFICATIONS

|                                           |                                                                                                                                                              |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Storage Capacity:                         | 3,000,000 data bytes (24 million bits);<br>7,500 data bytes per track.                                                                                       |
| Number of Tracks:                         | 204 per surface.                                                                                                                                             |
| Number of Sectors:                        | Index plus 24 sector marks standard, others optional.                                                                                                        |
| Disk Rotational Speed:                    | 1500 rpm $\pm 2\%$ ( $\pm 1\%$ line frequency deviation).                                                                                                    |
| Data Transfer Rate:                       | 1588.5 kHz at 1500 rpm.                                                                                                                                      |
| Access Time:<br>(including head settling) |                                                                                                                                                              |
| Track-to-Track:                           | 24 milliseconds maximum.                                                                                                                                     |
| Average Random:                           | 75 milliseconds.                                                                                                                                             |
| Maximum:                                  | 125 milliseconds (204 tracks).                                                                                                                               |
| Data Reliability:                         | Recoverable (soft) errors: $1 \times 10^{10}$<br>Unrecoverable (hard) errors: $1 \times 10^{12}$                                                             |
| Head Positioning System:                  | Voice coil (linear motor) with closed loop servo utilizing a linear position transducer and electro-optical detent.                                          |
| Emergency Head Retraction:                | Heads automatically retract to home position in case of line power failure.                                                                                  |
| Mean Time Between Failure:                | 4000 hours minimum.                                                                                                                                          |
| Periodic Maintenance:                     | Changing of air filter, cleaning of heads and disk, and other minor preventive maintenance practices are recommended on a yearly schedule.                   |
| Cooling:                                  | Convection.                                                                                                                                                  |
| Power Requirements:                       | 117 volts $\pm 10\%$ , 60 Hz $\pm 1\%$ , 2 amps (standard).<br>Voltages from 100v to 240v are selectable by taps on the power transformer. (50 Hz optional). |
| Operating Environment:                    |                                                                                                                                                              |
| Temperature Range:                        | 50°F to 100°F.                                                                                                                                               |
| Relative Humidity:                        | 10 to 80% at a maximum wet bulb temperature of 85°F.                                                                                                         |
| Shipping and Storage Environment:         |                                                                                                                                                              |
| Temperature Range:                        | 40°F to 150°F.                                                                                                                                               |
| Relative Humidity:                        | 10 to 90% (non-condensing).                                                                                                                                  |
| Physical Dimensions:                      |                                                                                                                                                              |
| Length:                                   | 25.75 inches (less I/O cover).                                                                                                                               |
| Rack Depth:                               | 28.50 inches.                                                                                                                                                |
| Rack Height:                              | 5.25 inches minimum.                                                                                                                                         |
| Width:                                    | 17.50 inches (less slide).                                                                                                                                   |
| Rack Width:                               | 17.75 inches (with slide).                                                                                                                                   |
| Weight:                                   | 33 pounds (less slides).                                                                                                                                     |

## INTERFACE DATA

| CONTROLLER                                  |        | DISK DRIVE |
|---------------------------------------------|--------|------------|
| <b>Input</b>                                |        |            |
| Unit Select                                 | 4      | Level      |
| Cylinder Address                            | 8      | Level      |
| Fixed Head Select (optional)                |        | Level      |
| Head Select                                 |        | Level      |
| Cylinder Seek                               |        | Pulse      |
| +5 Volts (termination voltage)              |        | Level      |
| Write Enable                                |        | Level      |
| Read Enable (optional)                      |        | Level      |
| Write Data, Double Frequency (NRZ optional) |        | Pulse      |
| <b>Output</b>                               |        |            |
| Drive Ready                                 |        | Level      |
| Seek Complete                               |        | Level      |
| Read Data Double Frequency (NRZ optional)   |        | Pulse      |
| Data Clock (optional)                       |        | Pulse      |
| Index                                       |        | Pulse      |
| Sector                                      |        | Pulse      |
| Seek Incomplete                             |        | Level      |
| Illegal Address                             |        | Level      |
| <b>LEGEND</b>                               |        |            |
| Data                                        | Timing | Control    |



**CAELUS MEMORIES**

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