

# FSD 9-inch Fixed Storage Drive

6/11/84



Designed for Original Equipment Manufacturers (OEM)

The Control Data 9715 FSD Fixed Storage Drive is a 9-inch rigid disk drive that provides up to 516 megabytes of storage in a sealed module. Two FSDs can be mounted side-by-side in a standard 19-inch RETMA rack.

The FSD 9715-300 is a plug-compatible replacement for the 300-megabyte model 9766 Storage Module Drive (SMD). The FSD-300 has the same capacity as the 9766 SMD but fits in one fourth of the space, consumes only half as much power and has three times the Mean Time Between Failure.

There are three FSD models:

- 9715-300 315 megabytes
- 9715-340 344 megabytes
- 9715-500 516 megabytes

### Features

- 30,000-hour MTBF
- 3-year limited warranty on head/disk assembly
- Thin-film heads
- Detachable or integral power supply
- Low maintenance cost
- Low power consumption
- Automatic carriage and spindle lock
- Phase-locked data separation
- Fixed or variable sectoring (address mark)
- Daisy-chain interface compatibility
- Dual channel option
- FCC, UL, CSA and VDE standards

### Interface

The 9715-300 and -340 use the industry standard SMD interface. The 9715-500 operates with a high-performance SMD interface.



The SMD-E is an optional interface for the FSD-500. It provides rotational position sensing, extended fault status, extended cylinder addressing and added diagnostic capability.

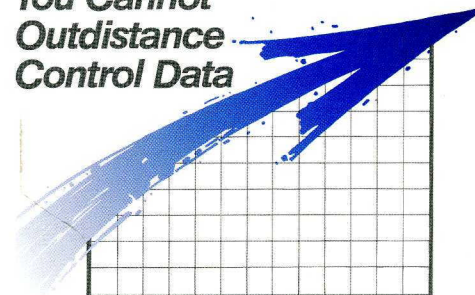
### Heads and Disks

The FSD's disks, heads, and actuator are contained in an environmentally sealed module. The actuator and spindle automatically lock when power is off for damage-free shipment.

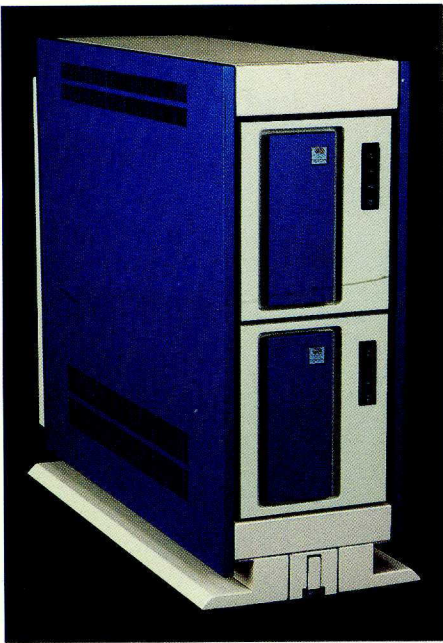
### Diagnostics

On-board diagnostics provide simplified troubleshooting and fault isolation without external test equipment.

**You Cannot  
Outdistance  
Control Data**







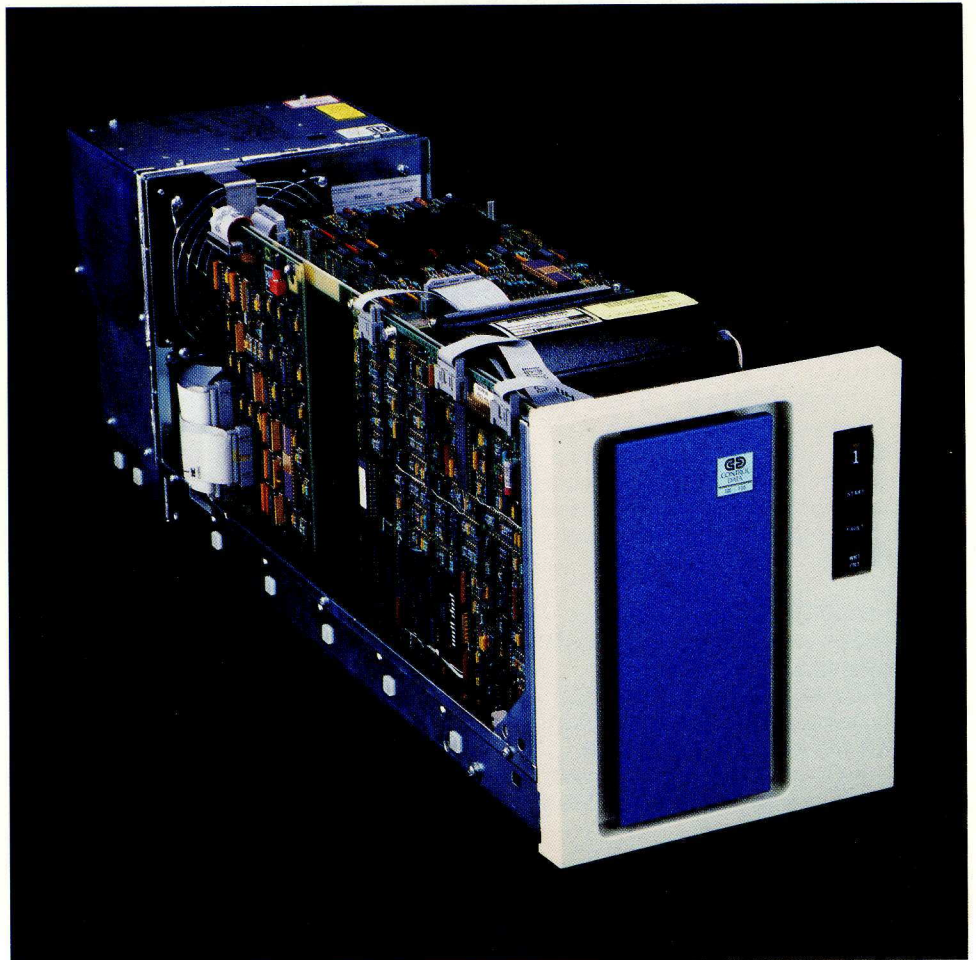
Two FSDs in a widely available cabinet can provide more than a gigabyte in a tower.



Maintenance panel provides access to powerful diagnostics.

### Electronics

The 9715 uses extensive Large Scale Integration (LSI) for read/write, transmitter/receiver and microprocessor controlled servo electronics. A universal 120- to 240-volt power supply attached or remote makes the FSD easy to integrate into systems anywhere in the world. Total power consumption is less than 260 watts.



### Applications

- Small business systems
- Large terminal systems
- Business control systems
- Scientific, medical and instrumentation systems
- CAD/CAM automation systems
- Seismic systems
- Communications systems
- Word processing
- Non-computer room environments

### Options/Accessories

- Power supply
- Dual-access feature
- Rack-mount kit
- Front panel in color
- Single unit filler panel
- Terminator
- Input/output cables
- DC cables in 5 and 8 ft. lengths
- Mounting kit
- Address select plugs (0-7)
- Maintenance manual
- Installation and operation manual

### Maintenance and Spares

All Control Data products are backed by comprehensive maintenance and spare parts support programs.

## SPECIFICATIONS

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Capacity (unformatted)	9715-300	9715-340	9715-500
Per Drive (Mb)	315	344	516
Per Surface (Mb)	28.6	28.6	43
Per Track (bytes)	20,160	20,160	30,240

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### Configuration

Number of Disks	7	7	7
Data Surfaces	10	12	12
Heads Per Surface	2	2	2
Servo Surfaces	1	1	1
Tracks Per Head	823	711	711
Track Density (tracks/in)	1,040	960	960
Recording Density (bits/in)	10,000	10,000	15,000
Recording Method	MFM	MFM	RLL 2,7

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### Interface

Type	SMD	SMD	SMD, SMD-E, IPI-2
Transfer Rate (MHz) (Mbytes/sec)	9.67 (1.2)	9.67 (1.2)	14.52 (1.8)
Data Code	NRZ	NRZ	NRZ

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### Performance

Rotation Speed	3,600	3,600	3,600
Average Latency (ms)	8.33	8.33	8.33
Seek Time			
Track-to-Track (ms)	5	5	5
Average (ms)	20	18	18
Maximum (ms)	45	45	45
Start Time (sec)	30	30	30
Stop Time (sec)	35	35	35

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### Reliability and Maintainability

Error Rate			
Recoverable		1 in 10 <sup>10</sup>	
Unrecoverable		1 in 10 <sup>12</sup>	
Seek		1 in 10 <sup>6</sup>	
MTBF (hours)			
Drive		30,000	
Drive and Power Supply		24,000	
MTRR (hours)		.5	
Preventive Maintenance		None	
Service Life (years)		5	

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### Power Requirements

AC	100, 120, 208, 220, 230 and 240 V; 50 or 60 Hz
Power Consumption	260 W (887 Btu/h) at 120 V

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### Environmental

Temperature	10°C to 40°C (50°F to 104°F)
Humidity	20% to 80% RH
Altitude	-300 m to 3000 m (-1000 ft to 10,000 ft)

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### Physical

Drive			
Height		259 mm (10.2 in)	
Width		216 mm (8.5 in)	
Depth		610 mm (24 in) without power supply	
		749 mm (29.5 in) with power supply	
Weight		31 kg (70 lbs) less power supply	
		The power supply weighs approximately 5.5 kg (12 lbs)	

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Distributed by:

Specifications subject to change  
without notice.

Control Data sales offices are located  
in principal cities throughout the  
world.

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