

ProDrive 40S/80S 3½ inch Disk Drives

42 and 84 Megabyte Formatted Capacity, 3½-inch Disk Drives with Integrated SCSI Controller

The ProDrive 40S and 80S are two drives in the ProDrive Series from Quantum, a broad family of 3½-inch disk drives with formatted capacities from 42 to 168 megabytes. Available with a choice of interfaces, all drives in the ProDrive Series provide the high performance and exceptional reliability you expect from Quantum products.

Quantum's ProDrive Series disk drives are the fourth generation of 3½-inch products from Quantum. With its subsidiary, Plus Development Corporation, Quantum pioneered the 3½-inch hard-disk-on-a-card product concept and successfully marketed the resulting Hardcard™ products through retail channels. With more than 300,000 shipped since 1986, these 3½-inch drives have earned a reputation for quality and reliability. The field proven Mean-Time-Between-Failure of the Hardcard products exceeds 70,000 hours.

The Quantum ProDrive Series combines the premier features of Quantum's Q200 Series™ of 5¼-inch intelligent disk drives, proven Hardcard technology, and Plus Development's design experience and manufacturing expertise in 3½-inch products. With features such as Quantum's proprietary DisCache™ buffer management system for faster access times, and patented AIRLOCK® automatic shipping lock, Quantum's ProDrive Series is again setting the standard.

High performance and exceptional reliability... the ProDrive Series from Quantum.

Performs Like a Pro

- 19 ms typical seek time
- DisCache™: 64K-byte Look Ahead Disk Caching with user programmable options
- Synchronous (4 Mbytes/sec) and asynchronous (2 Mbytes/sec) SCSI data transfer rates
- 1:1 Interleave
- Track and cylinder skewing to minimize rotational latencies
- Multiple block transfer up to 64K blocks

Runs Like A Pro

- 50,000 hour Mean-Time-Between-Failure
- Defect handling with user selectable options
 - In-line sector defect skipping
 - Reassignment of new defective sectors with no reformatting required
- Automatic retry for read errors
- Unrecoverable data error rate of 1 per 10¹⁴ bits read
- 48-bit ECC (Error Correcting Code) polynomial
- Patented AIRLOCK® shipping lock and dedicated landing zone
- 2 year warranty



SCSI COMMANDS

Format Unit	Request Sense
Inquiry	Reserve
Mode Select	Rezero Unit
Mode Sense	Seek
Read	Seek Extended
Read Buffer	Send Diagnostics
Read Capacity	Start/Stop Unit
Read Defect Data	Test Unit Ready
Read Extended	Verify
Read Long	Write
Reassign Block	Write Buffer
Release	Write and Verify

SPECIFICATIONS

Disk Drive Architecture	ProDrive 40S	ProDrive 80S
Capacity (formatted)	42 MB	84 MB
Heads	3	6
Disks	2	3
Track Format	28 and 35 sectors x 512 bytes	
Number of Data Zones	2	2
Tracks	2502	5004
Track Density (TPI)	1000	1000
Flux Density (FCI)	14,700	14,700
Recording Density (BPI)	22,050	22,050
Encoding Scheme	RLL 2,7	RLL 2,7

PERFORMANCE SPECIFICATIONS

Transfer Rates 2.0 Mbytes/sec Asynchronous
4.0 Mbytes/sec Synchronous

Seek Time (msec)	Typical
Average	19
Track-to-Track	6
Full Stroke	40

Seek times are at nominal environmental conditions and include settling.

DisCache™: 64K-byte Look Ahead Disk Cache with user programmable options.

Effective access time with DisCache: 12 msec*

RELIABILITY SPECIFICATIONS

MTBF: 50,000 POH
PM: Not required
MTTR: 30 minutes
Component design life: 5 years

ERROR RATES

Soft Read Errors: *1 per 10¹⁰ bits read
Defect Read Errors: 1 per 10¹² bits read
Unrecoverable Data Errors: 1 per 10¹⁴ bits read
Seek errors: 1 per 10⁶ seeks
*exclusive of ECC or retries

PHYSICAL SPECIFICATIONS

Mechanical Specifications:

Height: 1.625 in./41.3 mm
Width: 4.0 in./101.6 cm
Depth: 5.75 in./146.2 mm
Weight: 1.9 lbs./0.9 kg
50 pin dual in-line SCSI connector
4 pin industry standard power connector

Environmental Conditions:

	Operating	Non-operating
Temperature	4 to 50°C	-40 to 65°C
Humidity (non-condensing)	8 to 85% RH	5 to 95% RH
Altitude	up to 10,000 ft.	up to 40,000 ft.
Shock (11 ms)	10 G	60 G
Vibration (peak to peak)	0.5 G	2.0 G

Power Requirements:

+5 VDC at: 0.5 A Idle
0.6 A 100% Seek
+12 VDC at: 0.5 A Idle
0.8 A 100% Seek
1.6 A Maximum at power on

Power Consumption:

Idle: 8 Watts
100% Seek: 10.5 Watts
Typical (30% seek): 9 Watts

*As with any caching scheme, actual performance depends on the application.

DOMESTIC OPERATIONS: Quantum Corporation, 1804 McCarthy Blvd., Milpitas, CA 95035, (408) 432-1100, TWX 910-338-2203, Fax (408) 943-0689; **Western Regional Office**, 4633 Old Ironsides Drive, Suite 270, Santa Clara, CA 95054, (408) 980-8555; **Southwest Sales**, 2659 Townsgate Road, Suite 101, Westlake Village, CA 91361, (805) 495-7955; **Eastern Regional Office**, 18 Pelham Road, Salem, NH 03079, (603) 893-2672; **Southeast Sales**, 2710 Jefferson Street, Austell, GA 30001, (404) 944-7442;

EUROPEAN OPERATIONS: Quantum GmbH, Hahnstrasse 70, D-6000 Frankfurt/M. 71, West Germany, (49)69-666-6167, Telex 417166, Fax (49)69-666-1043. **Quantum Peripheral Products Ltd.**, Runnymede Malt House, Runnymede Road, Egham, Surrey, TW20 9BO, England, (011) 44-784-34377, Telex 919778, Fax (44) 784-31923.

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