

9/90

FEB 7 1991

THE MAXTOR XT-8000S™ FAMILY



**769- and 410-Megabyte
5.25-inch Disk Drive
with High-performance
Embedded SCSI Controller**

This high-capacity 5.25-inch disk drive with 15 Mbits/sec disk transfer rate features an embedded high-performance SCSI or Macintosh®-compatible controller with a superior SCSI-Bus transfer rate of up to 4.8 Mbytes/sec (asynchronous or synchronous). Fast seek times of 16.5 and 14.5 msec provide the high performance necessary for today's systems applications. The XT-8000S family offers size and cost reduction opportunities relative to larger-sized, high-capacity disk drives.

Maxtor®

THE MAXTOR XT-8000S™ FAMILY

769- and 410-Megabyte 5.25-inch Disk Drive with High-performance Embedded SCSI Controller

KEY FEATURES

- Capacities of 769 and 410 Mbytes (unformatted)
- High-performance with 16.5 and 14.5 msec seek times
- 15 Mbit/sec internal transfer rate
- Embedded SCSI or Macintosh®-compatible Controller
- Separate microprocessors for spindle control, servo control, and SCSI interface
- High-performance MAXTORQ™ rotary voice-coil actuator with microprocessor-controlled closed-loop track-following servo system
- Maxtor (patented) brushless DC spindle motor inside disk hub
- Dynamic braking during power-down cycle
- Dedicated landing/shipping zone
- Fully automatic, positive actuator latch

- Surface-mounted components allow a single MAXPAK™ printed circuit board for improved reliability
- Standard power requirements
- Physical dimensions and mounting holes identical to industry standards

Key SCSI Features

- Very low command overhead achieved through state machine (hardware) processing
- Super fast DMA data transfer, either in asynchronous or synchronous transfer mode. Data transfers in excess of 4 Mbytes/sec with comparable fast SCSI host
- Synchronous offsets up to 16 bytes
- 45 Kbyte read-ahead caching buffer maximizes performance in sequential data transfers
- Automatic reallocation (selectable)
- Sector sizes of 256 to 4096 bytes with 1-byte granularity

- Full cylinder in-line sector sparing
- Programmable cylinder skewing
- Dual-ported data buffer maintains simultaneous transfers to SCSI bus and to the drive
- Programmable alternates/zones for sparing flexibility

Maxtor SCSI Implementation

- ANSI SCSI Standard X3.131-1986 Level 2 Conformance
- Full implementation of Common Command Set
- Programmable 48-bit ECC
- Programmable automatic retry on read errors
- Interleave of 1:1 supported
- Full disconnect/reconnect capability
- SCSI implementation compatible with Maxtor's 5.25-inch magnetic and optical drives

SPECIFICATIONS

PERFORMANCE

| | XT-8760S | XT-8380S |
|--|----------|----------|
| Capacity, unformatted | | |
| Per drive (Mbytes)..... | 768.92 | 410.09 |
| Per surface (Mbytes)..... | 51.26 | 51.26 |
| Per Track (bytes)..... | 31,410 | 31,410 |
| Capacity, typical format | | |
| Per drive (Mbytes)*..... | 675.58 | 360.31 |
| Per surface (Mbytes)*..... | 45.04 | 45.04 |
| Per track (bytes)..... | 27,648 | 27,648 |
| Per sector (bytes)..... | 512 | 512 |
| SCSI bus transfer rate (Mbytes/sec)..... | ≤4.8 | ≤4.8 |
| Disk transfer rate (Mbits/sec)..... | 15 | 15 |
| Seek** time (msec), typical | | |
| Average..... | 16.5 | 14.5 |
| Track-to-track..... | 2.5 | 2.5 |
| Maximum..... | 30 | 29 |
| Rotational speed (rpm)..... | 3,600 | 3,600 |
| Average latency (msec)..... | 8.33 | 8.33 |

FUNCTIONAL

| | | |
|--------------------------|--------|--------|
| Bit density (bpi)..... | 31,596 | 31,596 |
| Flux density (fci)..... | 21,064 | 21,064 |
| Track density (tpi)..... | 1,376 | 1,376 |
| Disks..... | 8 | 5 |
| Data heads..... | 15 | 8 |
| Servo heads..... | 1 | 1 |
| Tracks..... | 24,480 | 13,056 |
| Sectors/track..... | 54 | 54 |
| Cylinders..... | 1,632 | 1,632 |

* 1629 available cylinders
** Includes settling

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RELIABILITY

| | |
|--------------------------|-------------------------|
| MTBF | 150,000 hours |
| PM | Not required |
| MTTR | 30 minutes |
| Recoverable error rate | ≤10 in 10 ¹¹ |
| Unrecoverable error rate | ≤10 in 10 ¹⁵ |
| Undetected error rate | ≤10 in 10 ²¹ |

PHYSICAL

Dimensions

| | |
|--------|----------------------|
| Height | 3.25 in. (82.55 mm) |
| Width | 5.75 in. (146.05 mm) |
| Depth | 8.20 in. (208.28 mm) |
| Weight | 7.1 lb. (3.2 Kg) |

Temperature limits

| | |
|-----------|-------------------------------|
| Operation | 10° to 50°C (50° to 122°F) |
|-----------|-------------------------------|

Relative humidity limits

| | |
|---------------------|-----------|
| (Non-condensing) | |
| Operating | 8% to 80% |
| Maximum gradient/hr | 10% |
| Maximum wet bulb | 26.7°C |

Power dissipation

| | |
|---------|----------|
| Typical | 27 watts |
| Maximum | 35 watts |

Power requirements

| |
|------------------------------|
| +12 VDC ±5%, 1.57A (typical) |
| 4.5A (maximum) |
| +5 VDC ±5%, 1.7A (typical) |
| 1.9A (maximum) |

SCSI COMMAND SET

| | |
|---------------------|-------------------|
| Format Unit | Reserve Unit |
| Inquiry | Rezero Unit |
| Mode Select | Seek |
| Mode Sense | Seek(Extended) |
| Read | Send Diagnostic |
| Read Capacity | Start/Stop Unit |
| Read Data Buffer | Test Unit Ready |
| Read Defect Data | Verify |
| Read (Extended) | Write |
| Read Long | Write and Verify |
| Reassign Blocks | Write Data Buffer |
| Receive Diagnostics | Write (Extended) |
| Release Unit | Write Long |

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Printed in U.S.A. 9/90
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