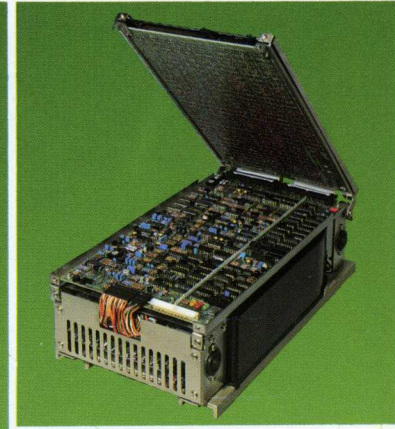


OEM MICRODISK DRIVES

APR 1984

M2311K M2312K

8-inch Winchester-type fixed disk drives with 48- and 84-megabyte capacities, and 20-millisecond average positioning time.



M2312K



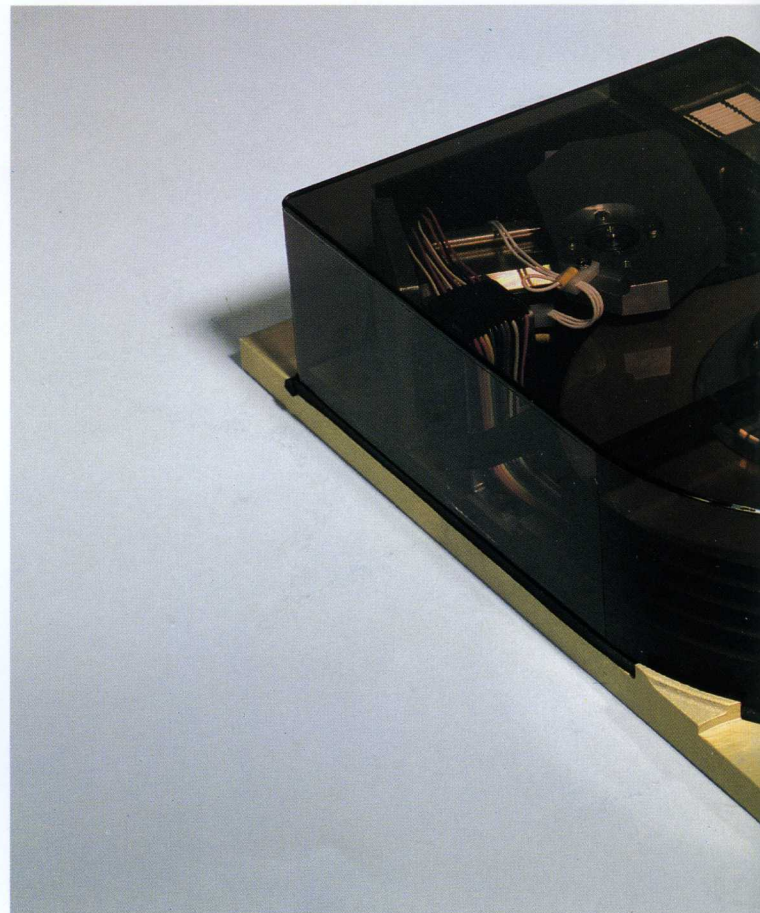
The M2311K and M2312K are 8-inch Winchester-type fixed disk drives designed to provide cost-effective storages for small computer systems and intelligent terminals in a broad spectrum of applications. Each drive consists mainly of a disk enclosure and three printed circuit boards. The disk enclosure integrates three or four disks, five or eight Winchester-type contact start/stop heads, a rotary actuator, a DC spindle motor, and IC read preamplifiers all in a small completely sealed package.

Large capacities, high performance

The M2311K provides 48 megabytes on three disks, and the M2322K provides 84 megabytes on four disks. The average positioning time is 20 milliseconds, and the data transfer rate is 1.2 megabytes per second.

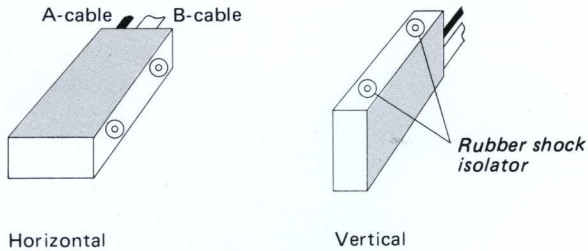
Reliable, maintenance free

Reliability is superb. A completely sealed disk enclosure, comprising a breathing filter and an absolute recirculation filter, provides a contamination-free environment. Winchester-type contact start/stop heads eliminate moving parts for head loading and unloading. The head IC prevents read errors caused by external electrical noises. With these features, the M2311K and M2312K assure a mean-time-between-failures (MTBF) exceeding 10,000 power-on hours. Also, no preventive maintenance is required, and a mean-time-to-repair (MTTR) is less than 30 minutes.



Compact, economical

The M2311K and M2312K can be mounted horizontally (two, side by side) in a standard 19-inch rack, or independently in either horizontally, or vertically. The drives each consume less than 130 watts.



Dual channel option

With the dual channel option, two controllers can access the M2311K and M2312K. The option is provided on a separate printed circuit board which can be mounted either on the drive or on an optional DC power supply.

Standard and optional DC power supply

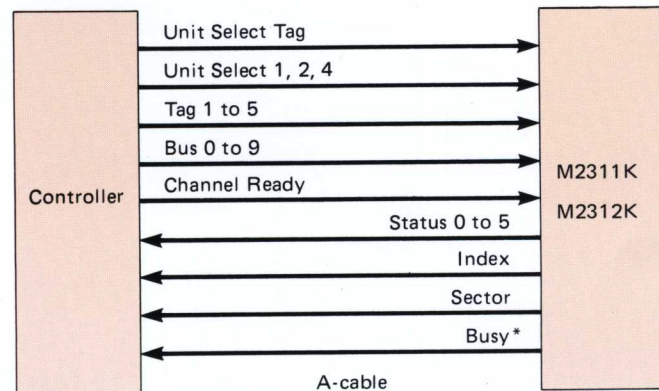
The M2311K and M2312K operate on +24V, +5V, and -12V low voltage DC power, providing flexibility for use anywhere in the world. An optional DC power supply for converting input power of 100, 115, 120, 220, or 240VAC is also available. The 100/115/120 voltage or the 220/240 voltage is switchable.

SMD interface

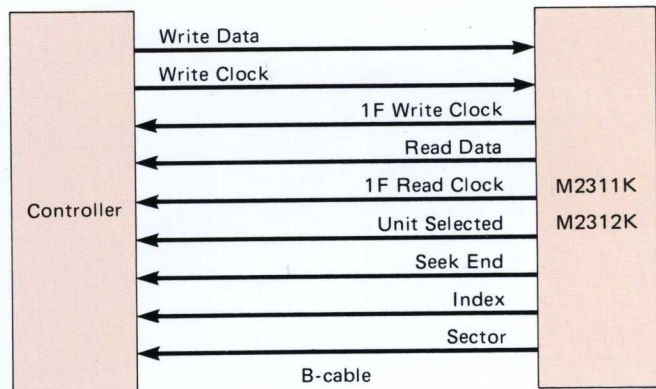
The industry standard SMD interface is provided as part of the on-board electronics.



SMD interface



*Busy signal is used with the dual channel option.



FUNCTIONAL SPECIFICATIONS

		M2311K	M2312K
Storage capacity (unformatted)		48.25 megabytes	84.44 megabytes
Disks (8-inch)		3	4
Heads	Read/write	4	7
	Servo	1	1
Track capacity (unformatted)		20,480 bytes	
Tracks per cylinder		4	7
Cylinders		589	
Sectors	Fixed	2 or more	
	Variable	Available	
Positioning time	Track-to-track	5 milliseconds	
	Average	20 milliseconds	
	Maximum	40 milliseconds	
Average latency time		8.3 milliseconds	
Rotational speed		3,600 rotations/minute	
Recording density		9,550 bits/inch	
Track density		720 tracks/inch	
Data transfer rate		1,229 kilobytes/second	
Recording code		MFM (Modified Frequency Modulation)	
Interface code		NRZ (Non-Return-to-Zero)	
Interface		SMD (Storage Module Drive)	
Head positioning method		Servo-controlled track-following	
Start time		Less than 20 seconds	
Stop time		Less than 40 seconds	
Options		Dual channel, A-cable, B-cable, DC power supply with AC input, cooling fan, mounting tray for standard 19-inch rack, operator panel	

PHYSICAL SPECIFICATIONS

		M2311K/M2312K
Power requirements		24VDC±10%, 3A (max. 6A) 5VDC±5%, 3.5A -12VDC±5%, 3A
Dimensions	Height	127 mm (5.0 in)
	Width	216 mm (8.5 in)
	Depth	380 mm (15.0 in)
Weight		11 kg (24.2 lb)
Ambient temperature	Operating	5°C to 40°C (41°F to 104°F)
	Not operating	-40°C to 60°C (-40°F to 140°F)
	Gradient	Less than 15°C (27°F)/hour
Relative humidity	Operating	20% to 80% (non condensing)
	Not operating	5% to 95% (non condensing)
Vibration and shock resistance	Operating	Max. 0.2G (3Hz to 60Hz) Shock: max. 2G (10 ms)
	Not operating	Max. 0.4G (3Hz to 60Hz) Shock: max. 3G (10 ms)
	In storage or transport	Shock: max. 5G (30 ms)
Altitude	Operating	3,000 m (10,000 ft)
	Not operating	12,000 m (40,000 ft)

RELIABILITY SPECIFICATIONS

		M2311K/M2312K
Mean-time-between-failures (MTBF)		More than 10,000 power-on hours
Mean-time-to-repair (MTTR)		Less than 30 minutes
Component life		5 years
Error rates	Recoverable errors	10 per 10 ¹¹ bits read
	Unrecoverable errors	10 per 10 ¹⁴ bits read
	Seek errors	10 per 10 ⁸ seeks

Specifications are subject to change without notice. For the latest information, contact your local Fujitsu representative.
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