

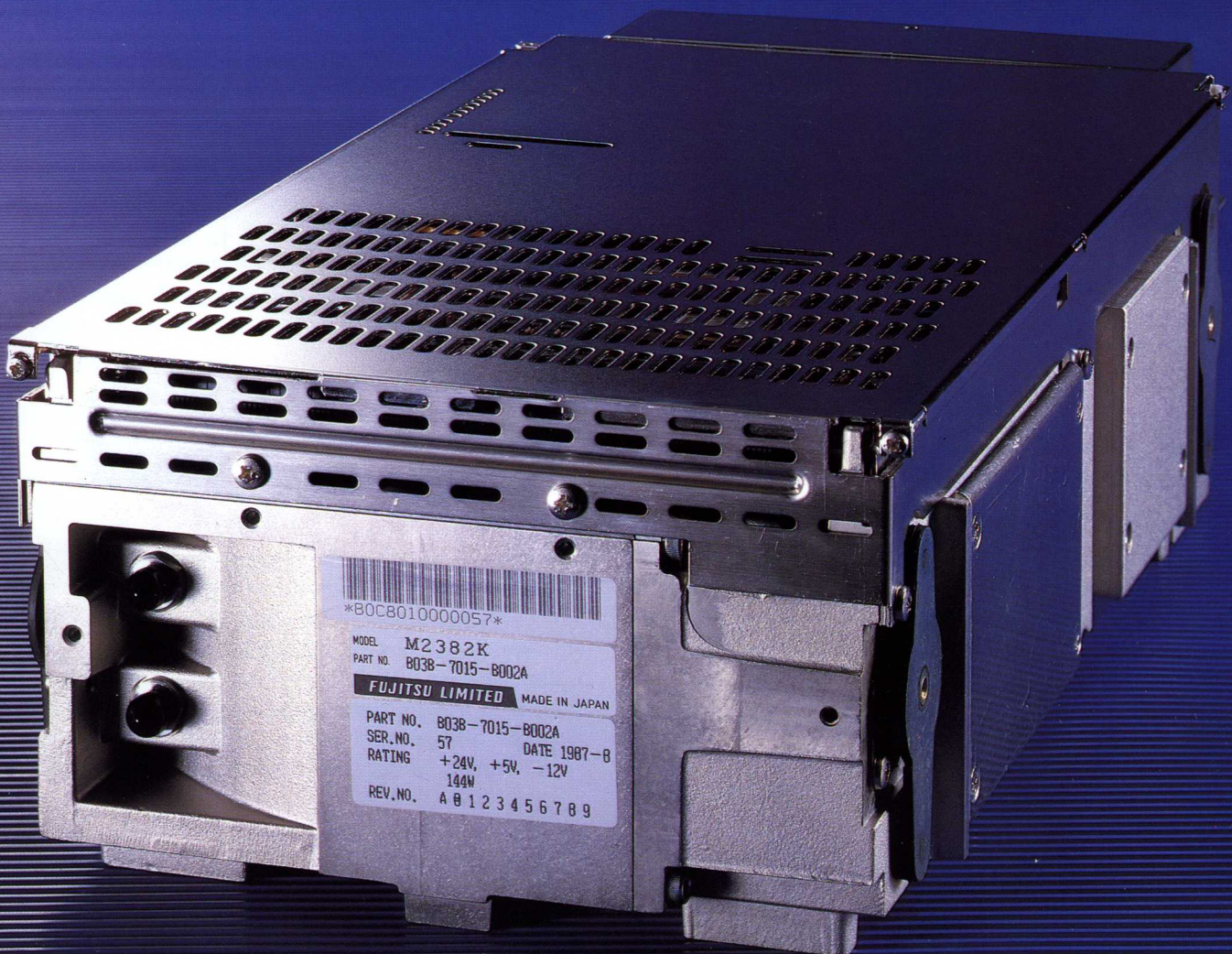
FUJITSU

Quality OEM Products

MAR 18 1988

8-inch magnetic disk drives

M2381K / P
M2382K / P



The M2381 and M2382 are Fujitsu's 8-inch disk drives featuring new large storage capacities and a fast positioning time. Two types are provided, K and P. The K type has an ESMD interface, and the P type has an IPI-2 interface. Each of the M2381 and M2382 models consists mainly of a disk enclosure and three printed circuit boards. The disk enclosure integrates five or eight disks, sixteen or twenty-eight Whitney heads, a rotary actuator, a DC spindle motor, and IC read preamplifiers, all in a small completely sealed disk enclosure. These drives provide superior cost effectiveness, setting a new standard for small computer systems and intelligent terminals across a broad range of applications.

1-gigabyte large capacity and high performance

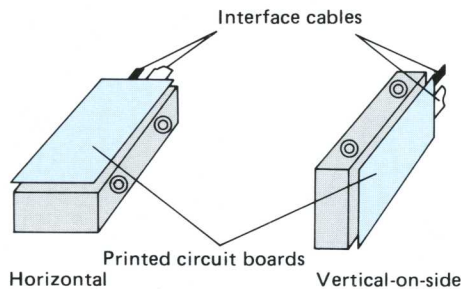
The M2381 provides 556 megabytes of unformatted capacity on five disks, and the M2382 provides 1 gigabyte on eight disks. Average positioning time is 16 milliseconds and the data transfer rate is 3.0 megabytes per second.

Reliable, maintenance free

High reliability is assured by providing a contamination-free environment through a completely sealed casting frame, a breathing filter, and an absolute recirculation filter. Advanced Winchester technology simplifies the disk mechanism, and the head IC prevents read errors caused by external electrical noise. With these features, the M2381 and M2382 assure a mean time between failures (MTBF) exceeding 35,000 power-on hours. Also no preventive maintenance is required, and mean time to repair (MTTR) is less than 30 minutes.

Compact, economical

The M2381 and M2382 provide large capacity storages in compact modules no larger than those of the M2331 and M2333, Fujitsu's field-proven Winchester 8-inch disk drives with 168 and 337 megabyte capacities. The M2381 and M2382 each consume 150 watts (K type) or 168 watts (P type). The drives can be mounted horizontally (two, side by side) in a standard 19-inch rack, or independently in either horizontal or vertical-on-side direction.



Enhanced SMD or IPI-2 interface

Enhanced SMD interface (K type) and IPI-2 interface (P type) are provided as part of the on-board electronics.

Dual-channel

The M2381 and M2382 each have a dual-channel as a standard feature.

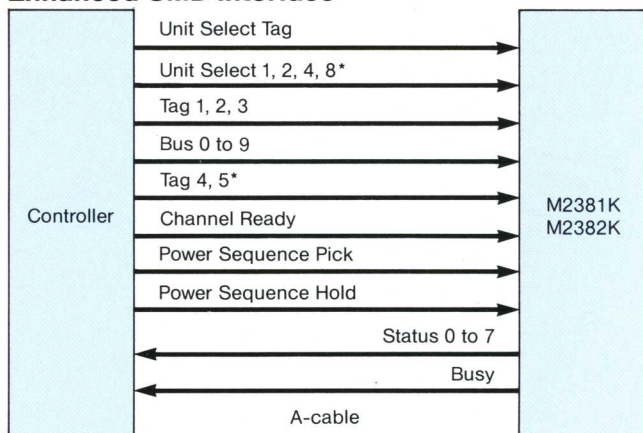
Standard and optional DC power supply

The M2381 and M2382 operate on +24V, +5V, -5.2V, 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 240 VAC, is also usable. The 100/115/120 voltage or the 220/240 voltage is switchable.

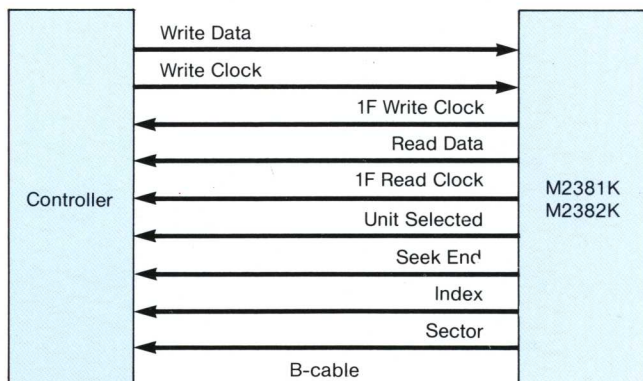
Enhanced serviceability

Each of the M2381 and M2382 has a unique rotary actuator lock with plunger magnet, which locks the rotary actuator when the power is not supplied to the drive, and automatically releases the lock when the power is turned on. With this feature, the customer engineer is freed from manually locking the rotary actuator for drive transportation and releasing the lock at the installation site — operations which were needed with conventional drives.

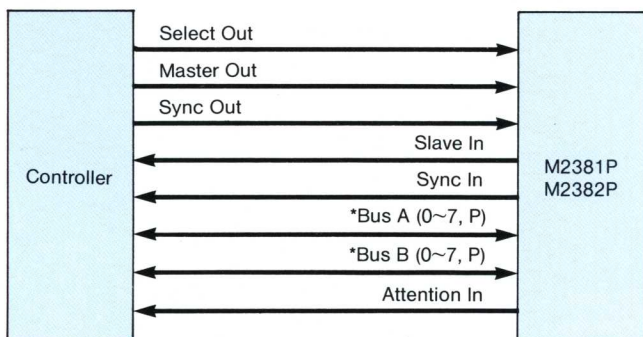
Enhanced SMD interface



* Unit select 8 and Tag 5 are defined in the same line.



IPI-2 interface



*2-byte mode

FUNCTIONAL SPECIFICATIONS

	M2381K/P	M2382K/P
Storage capacity (unformatted)	556 megabytes	1000 megabytes
Disks (8-inch)	5	8
Heads	Read/write	15
	Servo	27
Track capacity (unformatted)	49,728 bytes	
Tracks per cylinder	15	27
Cylinders	745	
Sectors (fixed)/track	2 or more (max. 128) (K type) 1 to 128 (P type)	
Positioning time	Track-to-track	4 milliseconds
	Average	16 milliseconds
	Maximum	33 milliseconds
Average latency time	8.3 milliseconds	
Rotational speed	3,620 rotations/minute	
Data transfer rate	3.0 megabytes/second	
Recording code	RLL (1/7)	
Interface	ESMD (K type), IPI-2 (P type)	
Start time	Less than 50 seconds	
Stop time	Less than 50 seconds	
Dual-channel	Standard	
Options	A-cable (K type only), B-cable (K type only), DC power supply with AC input, cooling fan, mounting tray for standard 19-inch rack, operator panel	

PHYSICAL SPECIFICATIONS

	M2381K M2382K	M2381P M2382P	
Power requirements	5VDC±5%	3.5A	6.5A
	-5.2VDC±5%	4.0A	2.0A
	-12VDC±5%	1.5A	2.0A
	24VDC±10%	4.5A (max. 9.0A)	
Dimensions	Height	127 mm (5.0 in)	
	Width	216 mm (8.5 in)	
	Depth	380 mm (15.0 in)	
Weight	17 kg (31 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% (no condensing)	
	Not operating	5% to 95% (no condensing)	
Vibration	Operating	Max. 0.2G (3Hz to 60Hz)	
	Not operating	Max. 0.4G (3Hz to 60Hz)	
Shock resistance	Operating	Max. 2G (10ms)	
	Not operating	Max. 15G (10ms)	
Altitude	Operating	3,000 m (10,000 ft)	
	Not operating	12,000 m (40,000 ft)	

RELIABILITY SPECIFICATIONS

	M2381K/P, M2382K/P	
Mean time between failures (MTBF)	More than 35,000 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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