

142M FLOPPY DISK DRIVE

CalComp's 142M Floppy Disk Drive offers the OEM designer a unique approach to floppy disk drive systems. Featuring 6400 bits-per-inch and 48 tracks-per-inch technologies, the 142M has a 6 msec track-to-track access time and a transfer rate of 500,000 bits per second. The media is a readily available diskette which is a flexible, oxide-coated mylar disk.

Recording methods can be Modified Frequency Modulation (double density) or Double Frequency Modulation (single density) which allow the 142M to be plug compatible for applications using CalComp's 140 or 142 drives.

STANDARD FEATURES

In addition to the high performance features of the earlier CalComp drives, the 142M has the unique capability of switch selecting or jumper-selecting many high performance features. In other floppy disk drives, these features must be determined prior to unit purchase and may be optional at additional cost.

The switch selected features include:

Switch Position	Function
A and B	Separation of "Data" and "Clock" (Single capacity configuration only)
C	Gating of "Write Protect" with "Select"
D	Hard or soft sectoring
E	Control of power to stepper motor
F	Gating of "Ready" with "Select"

The jumper-plug selected features include:

1. Choice of providing "Select Command" at either of two interface connector pins.
2. Output to illuminate optional Activity Light when required for a given application.

Additional no-charge features include a range of power choices, a signal line Terminator Connector and an auxiliary Power Connector to allow ribbon cable interface to the controller.

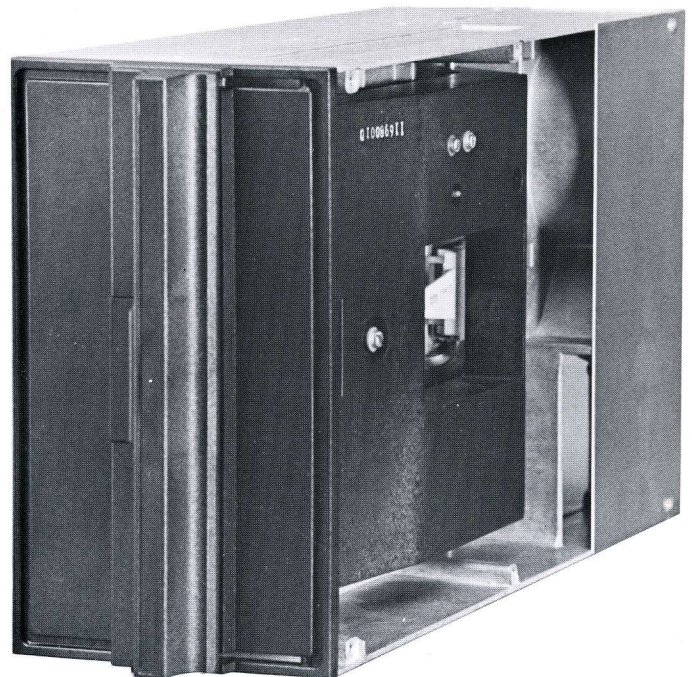
OPTIONAL FEATURES

In addition to the no-charge features, the following options are available at an additional cost.

WRITE PROTECT option inhibits writing on a disk, preventing the accidental overwriting of recorded information. Writing is inhibited when a hole in the flexible jacket is open. A sticker covering the hole will enable writing.

ACTIVITY LIGHT is a multifunction lamp that can be used to indicate one of the following conditions: 1) Drive selected, 2) Write Protect, 3) An interface controlled function.

ACCESSORIES are available to enhance the 142M Disk Drive capabilities. A few significant accessories include PLO boards and full top and bottom covers.



142M FLOPPY DISK DRIVE

MODEL 142M FLOPPY DISK DRIVE SPECIFICATIONS AND CHARACTERISTICS

UNFORMATTED CAPACITY (DOUBLE DENSITY)

Per Flexible Disk: 6.4 Mbits/802 Kbytes
Per Track: 83 Kbits/10 Kbytes

UNFORMATTED CAPACITY (SINGLE DENSITY)

Per Flexible Disk: 6.4 Mbits/802 Kbytes
Per Track: 41.6 Kbits/5.2 Kbytes

HARD SECTOR FORMAT CAPACITY (DOUBLE DENSITY)

Per Flexible Diskette: 5.2 Mbits (650 Kbytes)
Per Track: 67.6 Kbits (8.4 Kbytes)
Per Sector: 2112 bits (32 sectors/264 bytes)

IBM 3740 FORMAT CAPACITY

Per Flexible Disk: 2.0 Mbits/243 Kbytes
Per Track: 26.6 Kbits/3.3 Kbytes
Per Sector: 1 Kbits/128 bytes

OTHER SOFT SECTOR FORMATS

Supported as defined by controller

DATA TRANSFER RATE

500 Kbits per second (double density)
250 Kbits per second (single density)

DENSITIES

Bit density (Inside Track): 6.5 Kbits per inch
Track Density: 48 Tracks per inch (0.013"/0.0308 mm data track width)

NUMBER OF RECORDING TRACKS

77

RECOMMENDED CODING TECHNIQUE

Modified Frequency Modulation (MFM) or
Double Frequency Modulation (FM)

ROTATIONAL SPEED

360 rpm \pm 2.5% (167 msec/rev.)

AVERAGE LATENCY

83 msec

POSITIONING TIMES

Access: 6 msec track-to-track
Head Stabilization: 10 msec
Head Load: 30 msec
Motor Start Time to Ready: 2.5 seconds max.

POSITIONING MECHANISM

Stepping Motor; Electrical Detent

MEDIA

IBM Part No. 2305830 or equivalent (Single Sided)

PHYSICAL DIMENSIONS

4.9" high \times 8.4" wide \times 15" deep (add 3" for cable clearance)
125 mm high \times 213 mm wide \times 381 mm deep (add 76 mm for cable clearance)

WEIGHT

Operating: 16 pounds (7.2 kg)
Shipping: 18 pounds (8.2 kg)

RELIABILITY

Read Error (Soft): Less than 1 in 10^9 bits
Read Error (Hard): Less than 1 in 10^{12} bits
Positioning Errors: Less than 1 in 10^6 accesses
MTBF: Exceeds 7,000 hours for heavy duty applications
MTTR: Less than 30 minutes
Product Life: 5 years or 30,000 hours

POWER RANGES

90 to 127 vac, 60 Hz, 1.7 amps
187 to 253 vac, 60 Hz, 0.9 amps
90 to 110 vac, 50 Hz, 1.7 amps
187 to 264 vac, 50 Hz, 0.9 amps
DC: \pm 24v, 1.5 amps; +5v, 1.0 amp

ENVIRONMENTAL REQUIREMENTS (AMBIENT)

Operating Temperature: 50° to 100°F (10° to 37.7°C)
Maximum Gradient: 20°F (11.1°C) per hour
Humidity: 10% to 80% [85°F (30°C) max. wet bulb]

HEAT DISSIPATION

275 BTU/hour max.

Signal Name	Signal Pin Number	Ground Pin Number
+5 VDC	2	1
+5 VDC	4	3
Direction	6	5
Step/	8	7
+24 VDC	10	9
+24 VDC	12	11
+24 VDC	14	13
Select/	16	15
Track 00/	18	17
Head Load/	20	19
Ready/	22	21
Above Track 43/	24	23
Index/	26	25
Sector/	28	27
Write Enabled/	30	29
Write Data/	32	31
Write Enable/	34	33
*Sep Data/	36	35
*Raw Data/ or Sep Clock/	38	37
Option/	40	39

142M INTERFACE

*Customer switch selectable functions



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