

PDP-10 Disk Packs provide on-line, rapid access, file storage fully compatible with, and supported by, system software. Capacities range from 1,300,000 to 5,100,000 words per single pack. A single control can handle up to eight disk pack drives, and, because of their removable nature, many packs may be stored off-line for use as desired. Disk packs provide great flexibility and economy while offering high performance. Transfer rates reach 15 microseconds per 36-bit word; average access time, including seek time, is 62.5 milliseconds.

All PDP-10 Monitors take advantage of disk pack storage systems. In many applications, disk pack systems can be used for swapping user jobs in a time-shared system. In all cases, disk packs provide economical, modularly expandable file storage.

RP10 DISK PACK DRIVE CONTROLLER

The RP10 Disk Pack Drive Controller provides control of up to eight RP01 or RP02 Disk Pack Drives (no intermixing is allowed). The RP10 (through the DF10 Data Channel) provides direct memory transfers between the disk pack drives and the PDP-10 memory system.

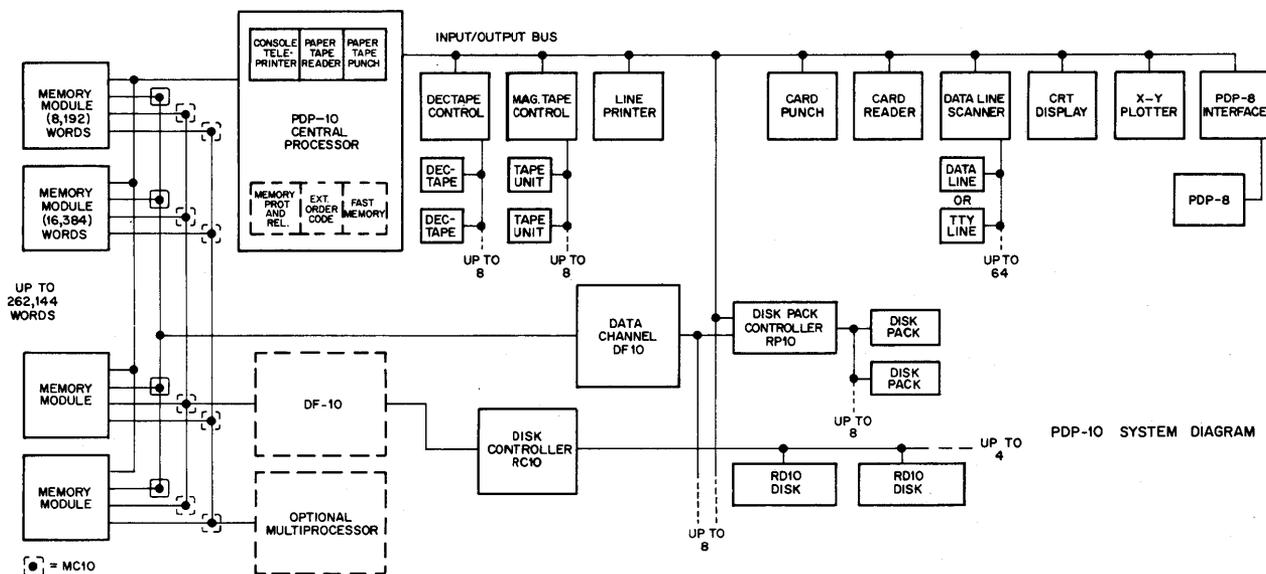


Figure 1 PDP-10 System With Up to 8 Disk Packs

Overlapped positioner operation provides the programmer with the ability to minimize the effects of access time by "simultaneously" operating two or more disk pack drives.

With RP02 Disk Pack Drives, the RP10 provides on-line storage capacity of up to 40,800,000 36-bit words.

RP01 DISK PACK DRIVE

The RP01 Disk Pack Drive provides storage capacity, transfer rate, and access times intermediate to the RD10 Fixed Head Swapping Disk and the RB10 Disk File. Operating in conjunction with the RP10 Disk Drive Controller and through a DF10 Data Channel, each RP01 provides nearly 1,300,000 36-bit words of storage on removable, industry compatible, 10 recording surface disk packs.

The RP01 has the fastest access time in the industry due to a technological breakthrough in head positioner design. A servo-controlled linear motor converts electrical energy directly into linear motion thereby eliminating hydraulics, rotary-to-linear motion conversions, rack and pinions, high drive-current motors, and other complex mechanisms requiring frequent adjustment. Other advantages include reduced mass of moving parts (2.25 lb), low drive current for the positioning motor (5 amps), low heat dissipation of the positioner, and shorter access time. A single access can result in a transfer of up to 6400 36-bit words at a rate of 30 microseconds per word.

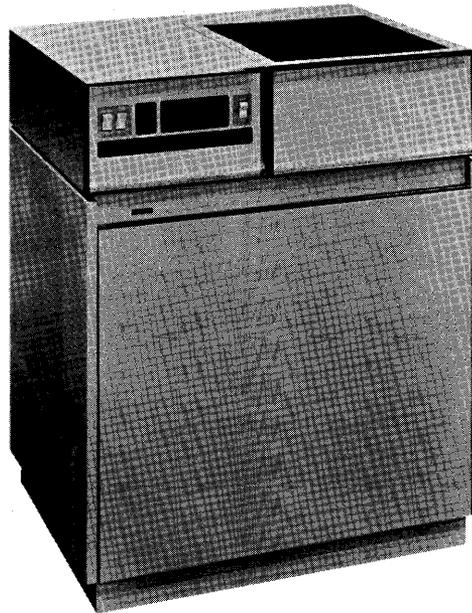


Figure 2 RP01, RP02 Disk Pack Drives

SPECIFICATIONS

Size:	30 in. wide, 24 in. deep, 38 in. high 762 mm 610 mm 966 mm
Weight:	295 lb
Number of Disk	
Recording Surfaces:	10
Number of Heads:	10
Rotational Speed:	2400 rpm
Disk Pack Capacity:	1,292,800 36-bit words
Data Transfer Rate:	33,333 words/s (30 μ s/word)
Access Time	
Track-to-Track:	20 ms*
Average:	50 ms*
Maximum:	80 ms*

*Plus 12.5 ms average rotational latency.

Operating Environment:	60° to 90°F (15° to 32°C) 10 to 80% Relative Humidity
Power Requirements:	3-phase 60 Hz 4.5A/phase running; 25A/phase starting surge 3-phase 50 Hz 4.5A running; 25A starting surge (Each drive uses one phase; system uses 3-phase.)

In order to minimize power line transients, the RP01 is arranged for sequential power up when operating in conjunction with other RP01's.

Organization:

128 words/sector
5 sectors/track
10 tracks/cylinder
203 cylinders/disk pack

One removable RP01P pack is included with each drive. Additional packs are available to provide additional off-line storage capacity.

RP02 DISK PACK DRIVE

The RP02 Disk Pack Drive provides storage capacity intermediate to the RD10 Swapping Disk and the RB10 Disk File. It has four times the capacity per drive of the RP01.

The PDP-10 RP02 Disk Pack Drive (operating in conjunction with the RP10 Disk Pack Drive Controller and the DF10 Data Channel) provides nearly 5,200,000 36-bit words of storage on interchangeable, 20 recording surface, removable, disk packs. The RP02 features a high-speed linear positioner and dynamic disk brake to facilitate fast operation and disk changing (rather than hydraulic or rack and

pinion positioners and coasting stop often provided) to minimize moving parts and time wasted changing disk packs.

The RP02 can transfer up to 25,600 words in a single access at a rate of 15 μ s per 36-bit word. Average access time is 63 ms.

SPECIFICATIONS

Number of Recording Surfaces:	20
Number of Heads:	20
Rotational Speed:	2400 rpm
Disk Pack Capacity:	5,171,200 36-bit words
Data Transfer Rate:	66,666 words/s (15 μ s/word)
Access Time	
Track-to-Track:	20 ms*
Average:	50 ms*
Maximum:	80 ms*

*Plus 12.5 ms average rotational latency

Operating Environment:	60° to 90°F, 10° to 32°C 10 to 80% Relative Humidity
Power Requirements:	3 phase 60 Hz 4.5A/phase running 25A/phase starting surge 1-phase 50 Hz 4.5A running; 25A starting surge

ORGANIZATION

The RP02 is arranged for sequential power-up in order to minimize power line surges when starting more than one disk pack drive.

128 words/sector
10 sectors/track
20 tracks/cylinder
203 cylinders/disk pack

The RP02P removable Disk Pack is available to provide added storage capacity. One pack is included with each drive.

ADDITIONAL PACKS

The RP01P and RP02P provide additional interchangeable disk packs for use on the RP01 and RP02 Disk Pack Drives, respectively.

The RP01P provides 10 recording surfaces organized as

128 words/sector
5 sectors/track
10 tracks/cylinder
203 cylinders/disk pack

for a total of

1,292,800 36-bit words

The RP02P provides 20 useable surfaces organized as

128 words/sector
10 sectors/track
20 tracks/cylinder
203 cylinders/disk pack

for a total of

5,171,200 36-bit words

NOTE

RP01P is industry standard in size. It is MEMOREX "Perfect Pack" with no bad tracks. RP02P is currently available through DIGITAL only.

