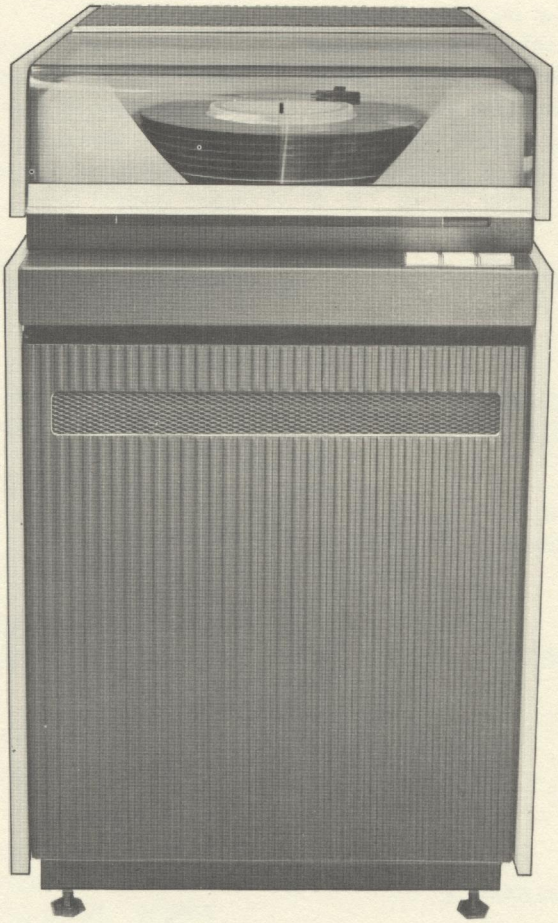
RC 4000 COMPUTER®

SPECIFICATION

HARDWARE

RC 433 MAGNETIC DISC STORE AND RC 4314 MAGNETIC DISC STORE CONTROLLER



The magnetic disc store employs a removable disc pack with a capacity of 2,048,000 words of 24 bits. The disc pack, which is internationally compatible and can be replaced by other packs, has 10 recording surfaces and 200 cylinders (discrete positionings of the head cam).

As the disc store controller can control up to 6 disc stores, the capacity can be increased simply by connecting additional stores. Whereas reading and writing can only be performed by one disc store at a time, head cam positioning can be performed simultaneously. With each store having a capacity of 2,048,000 words, the maximum capacity of a disc store system based on one controller is 12,288,000 words. The capacity can be further increased by connecting additional controllers to the RC 4000.

Data is transferred via the high-speed data channel directly to or from the internal store by means of cycle stealing. The transfer rate

is 40,000 words/second. The mean access time within a selected cylinder is 13 milliseconds. The access (positioning) time for a cylinder is 33 to 150 milliseconds.
The disc store is housed in a separate cabinet. The controller must be placed in the input/output controller cabinet. The disc store and controller are connected by means of a multicable, maximum 12 m in length.

Operation
The disc store is operated by the standard input/output instruction, which initiates data block transfers. The controller executes a transfer operation without engaging the computer and generates an interrupt signal when the operation is completed. During transfer operations, data is transferred via the high-speed data channel to or from the internal store of the RC 4000 on a cycle-stealing basis.

Initiation of a block transfer requires instructions to specify block size, disc store location, internal store location, and input/output operation. After a block transfer, a status word can be sensed. The status word indicates whether a parity or synchronization error has occurred.

Data Formats
The disc store is divided into segments, each containing 256 words and 1 parity word. Each word has 24 bits. A block transfer includes one or more consecutive segments, the number of which is specified in an instruction.
The parity word includes 24 individual parity bits. Parity bit number q is the parity bit for bit number q in each of the 256 words in the segment. This means of parity checking is far more effective than simple parity checking of each word.

CHARACTERISTICS

Disc Pack
internationally compatible
equivalent to IBM 1316

Capacity
2,048,000 words/store
max. 6 stores/controller

Transfer Rate
40,000 words/sec
120,000 8-bit char/sec

Word Size
24 bits

Segment Size
256 words

Block Size
variable number of segments

Cylinder Access Time
positioning time: min. 33 ms,
max. 150 ms

Mean Access Time within a Cylinder
13 ms

Transfer Time
mean time for access and transfer of n consecutive segments including m cylinder shifts:
(100 + n x 6.2 + m x 52) ms

Power
3 x 220/380 V ± 10 %, 50 Hz + 1 %, – 2 %.
The controller is supplied from the power supply in the controller cabinet.

Ambient Air
temperature: 16 to 30°C
relative humidity: 30 to 70 %

Size and Weight
width: 61.0 cm
depth: 91.5 cm
height: 103.5 cm
weight: 220.0 kg
The controller is placed in the controller cabinet.

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