RC 4000 COMPUTER®

SPECIFICATION

RC 433 MAGNETIC DISC STORE AND RC 4318 MAGNETIC DISC STORE CONTROLLER

The magnetic disc store employs a removable disc pack with a capacity of 2,078,720 words of 24 bits. The disc pack, which is internationally compatible and can be replaced by other packs, has 10 recording surfaces and 203 cylinders (discrete positionings of the head cam).

The disc store controller controls one disc store, providing a capacity of 2,078,720 24-bit words. Capacity is increased by connecting additional stores via 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 cabi-

RCSL 82-Q 0028 (AUG /70) REPLACES RCSL 82-H 0047

net. 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
exchangeable
equivalent to IBM 1316

Capacity
2,078,720 24-bit words

Block Format
variable number of segments
256 words/segment
40 segments/cylinder
203 cylinders/disc pack

Access Time
cylinder access: 33–150 milliseconds
mean acces within cylinder:
13 milliseconds

Transfer Rate
1,000,000 bits/second
(40,000 words/second)

Transfer Time
mean time for access to and transfer of n consecutive segments including m cylinder shifts: (100 + n x 6.2 + m x 39) milliseconds

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.