

ELLIOTT

9000

Volume 1: FUNCTIONAL SPECIFICATION
Part 3: OPTIONAL UNITS
Section 5: STORE ACCESS CONTROL UNIT (PART OF DPA 122),
SPECIFICATION NUMBER 1032

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Chapter 1: INTRODUCTION

The Store Access Control Unit can be fitted to a 903 System with extra core storage to provide two channels for shared access to all or part of the extra store. The central processor has access through one channel, and the other channel provides a set of connections through which a peripheral device with facilities for generating store address and control signals, or another central processor, may have access to the same area of extra store.

The Access Control Unit has logic to allow the selection of either channel by the device connected to it for one store cycle, on a priority basis.

Chapter 2: SYSTEM CONFIGURATION

The logic for the Access Control is fitted within an extra store module.

Connection of the central processor or previous extra store module is made through the normal extra store module interconnection plugs.

Connection of the peripheral device or second central processor to the Access Control Unit is made through three plugs on the extra store module which houses the unit. The maximum length of each of the cableforms making the connection is six feet.

Power for the Access Control Unit is supplied from the extra store power supply unit, through the normal power input plug on the extra store module.

Chapter 3: OPERATION

3.1 Area of Store Shared

When an extra store module is fitted with Access Control, the two devices connected to the Access Control Unit have shared access to that module and all subsequent modules of higher address.

Two central processors which share an area of extra store through an Access Control Unit may each have their own extra store in addition. If the amounts of extra store unique to each central processor differ, then the extra store module with the Access Control Unit must have its address control lines connected to those of the module of highest address unique to either central processor. Thus the addresses of the shared part of extra store will follow from the highest address of this module.

A system may have several devices with shared access to extra store through Access Control Units. However, as the Access Control Unit for each device must be fitted in a different extra store module, the devices will share different overlapping areas of store.

3.2 Allocation of Store Cycles

When a store cycle is initiated by either device connected to the store via the Access Control Unit, the address, data and control signals to and from the store are routed through the channel to which the device initiating the cycle is connected. Any signals from the device connected to the other channel to initiate a store cycle are held up until the current cycle is complete. In the case of simultaneous demands for a store cycle from both devices, priority is given to the peripheral device or second central processor. While the shared area of store is being accessed by the peripheral device or second central processor, the central processor can access its internal store or extra store not in the shared part.

3.3 Operation of Store through Access Control Unit

A store accessed through an Access Control Unit subject to the conditions above functions exactly as in normal operation, connected directly to the central processor. The same address, data and control signals are required for the Access Control Unit as for direct operation of the store.

Chapter 4: INSTALLATION REQUIREMENTS

4.1 Ambient Conditions

The operating temperature range for the Access Control Unit is 10°C to 30°C.

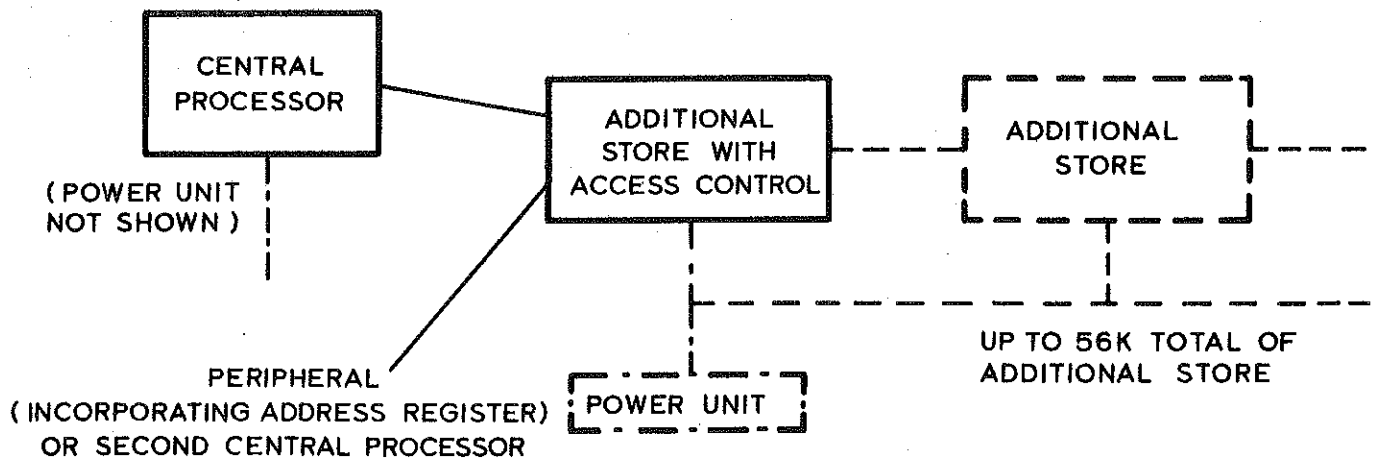
The humidity range is 20% to 95% R. H. without condensation.

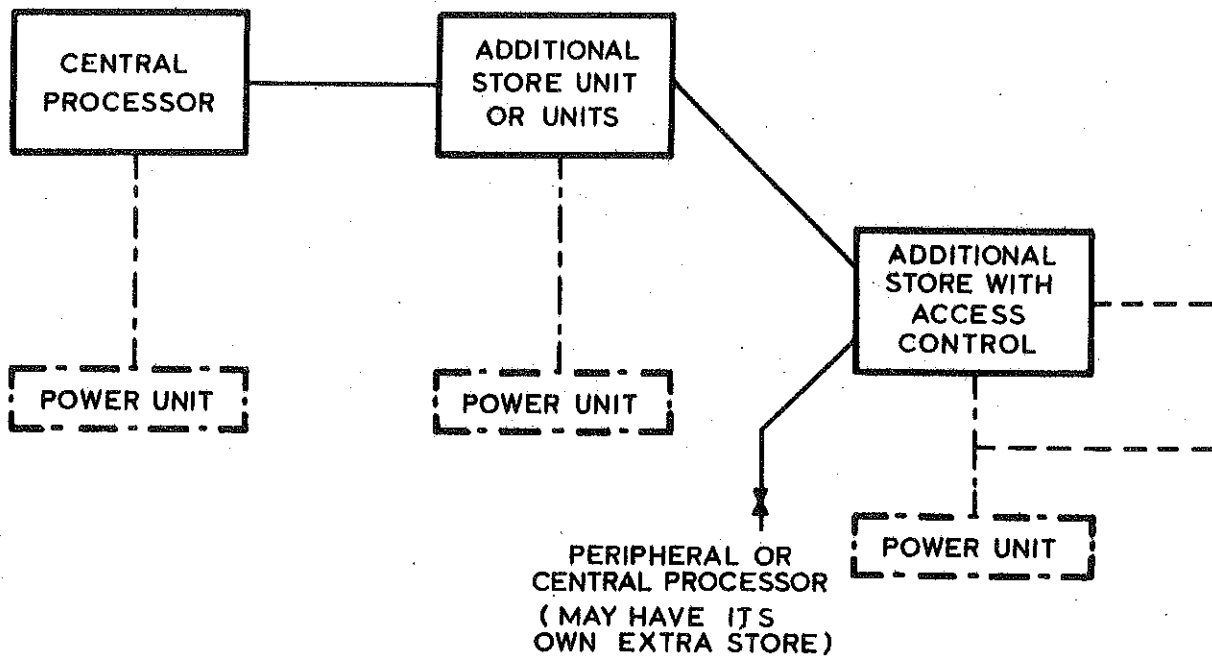
No specific dust control is required, other than normal standards of cleanliness.

4.2 Power Requirements

Each extra store module with Access Control Unit in a system requires its own Computer and Store Power Supply (DPA 621). This power unit when used to supply an extra store module with Access Control can also supply further extra store modules without Access Control up to a total of 24,576 words of store including the module with Access Control. However a number of modules of store can be supplied from a single power unit only if no two of the modules can be accessed simultaneously.

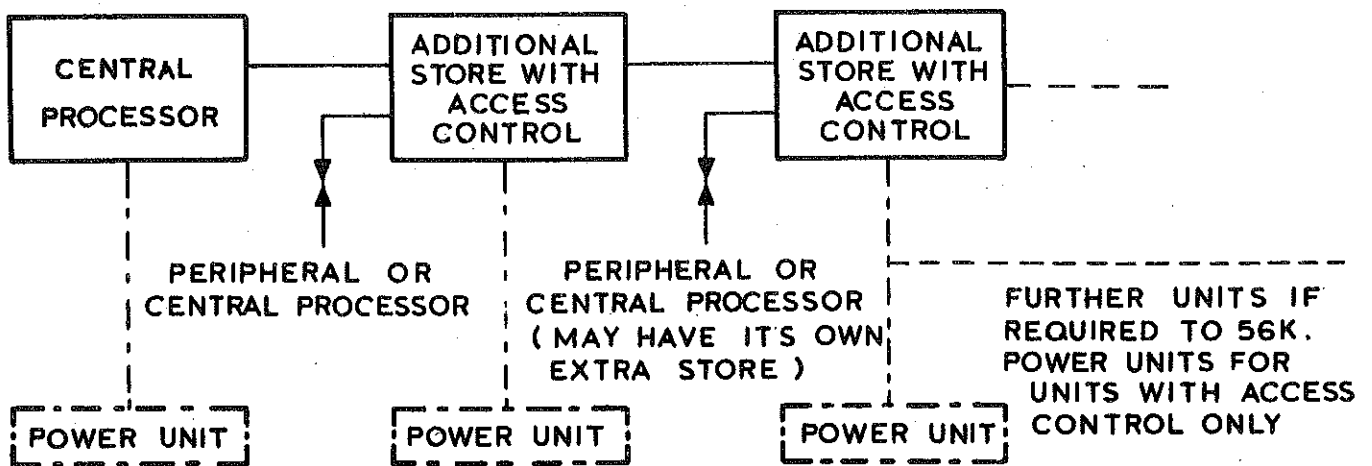
The mains input required for the Computer and Store Power Supply (DPA 621) is 230 volts $\pm 10\%$ at 50 ± 1 c/s.

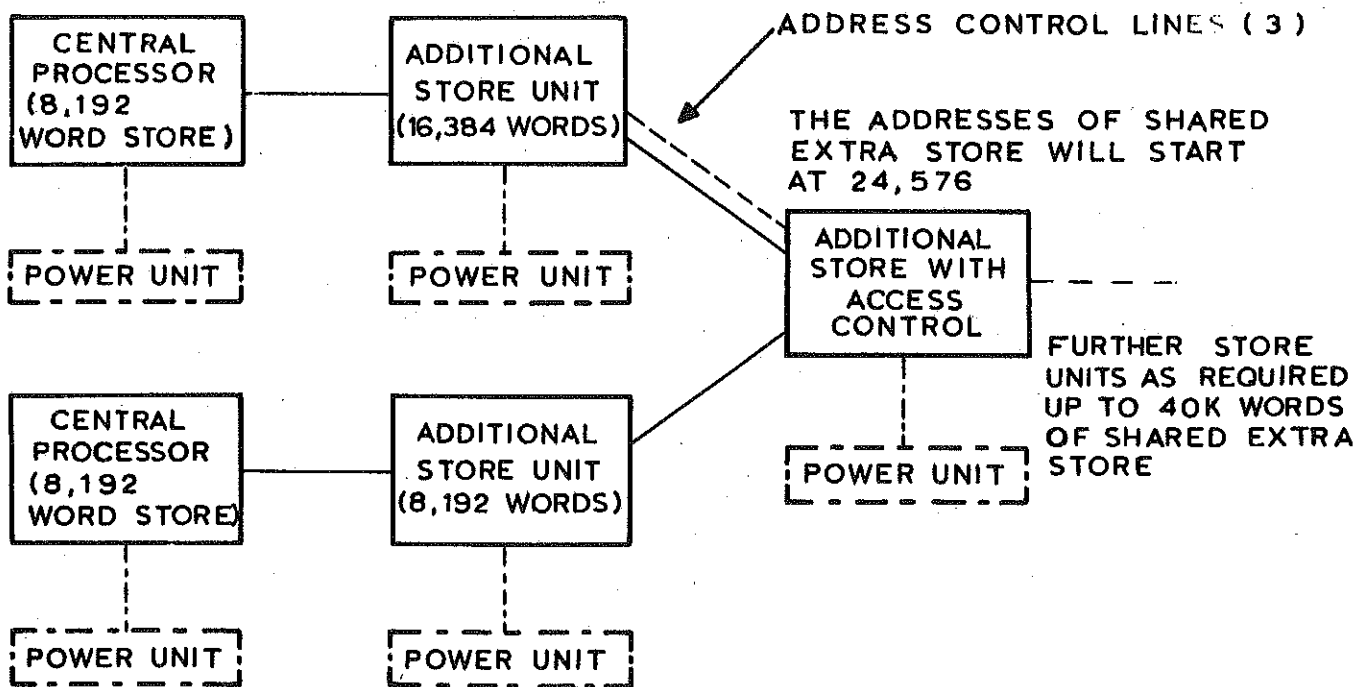




ACCESS CONTROL UNIT GIVING SHARED ACCESS TO
PART OF EXTRA STORE

Figure 2 (Issue 1)





2 COMPUTERS WITH SHARED PART OF EXTRA STORE
(EXAMPLE TO SHOW ADDRESSING)

Figure 4(Issue 1)