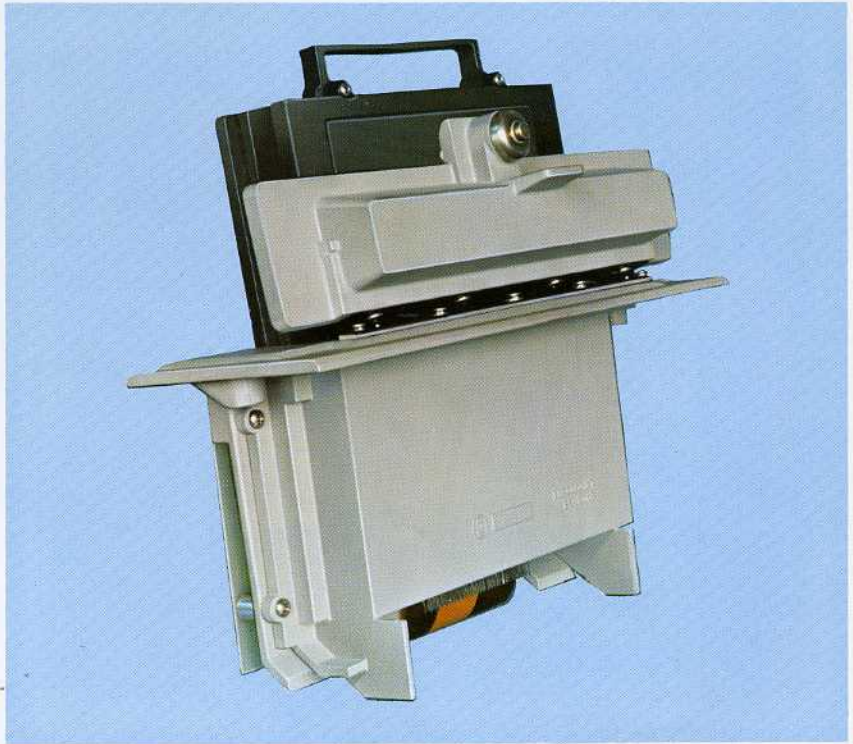


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Militarized Magnetic Bubble Memory/replaceable Cartridge Sub-system (MBMC)



DESCRIPTION

The Magnetic Bubble Memory Cartridge Sub-system is a **Fully Militarized** removable media storage device. Each removable cartridge contains storage capacity in excess of 2 million bits, or 250,000 bytes, of non-volatile formatted digital data. The MBMC single I/O port sub-system is expandable to 1,048,576 bytes utilizing 4 interconnected cartridges.

Three interfaces to the host computer are available:

Mil-Std-188-114 (EIA RS-232C)

Mil-Std-1553

Micro-processor bus compatible

The MBMC is comprised of a bubble memory cartridge, a receptacle (for rapid insertion and removal of the bubble cartridge), a micro-processor based controller and buffer, and support electronics. The micro-processor, buffer, and support electronics, which may support up to 3 additional cartridges, are contained on printed circuit boards firmly affixed to the receptacle.

FEATURES

- Military temperature, humidity, vibration, and shock environment ranges
- Instantly insertable and removable cartridge
- Low power consumption
- Small space and low weight
- Provisions for EMI, RFI and TEMPEST security
- Mechanical Write Protect
- Fault Isolation
- Buffered I/O to and from host
- RAM capacity for customer's file management program downloaded from host

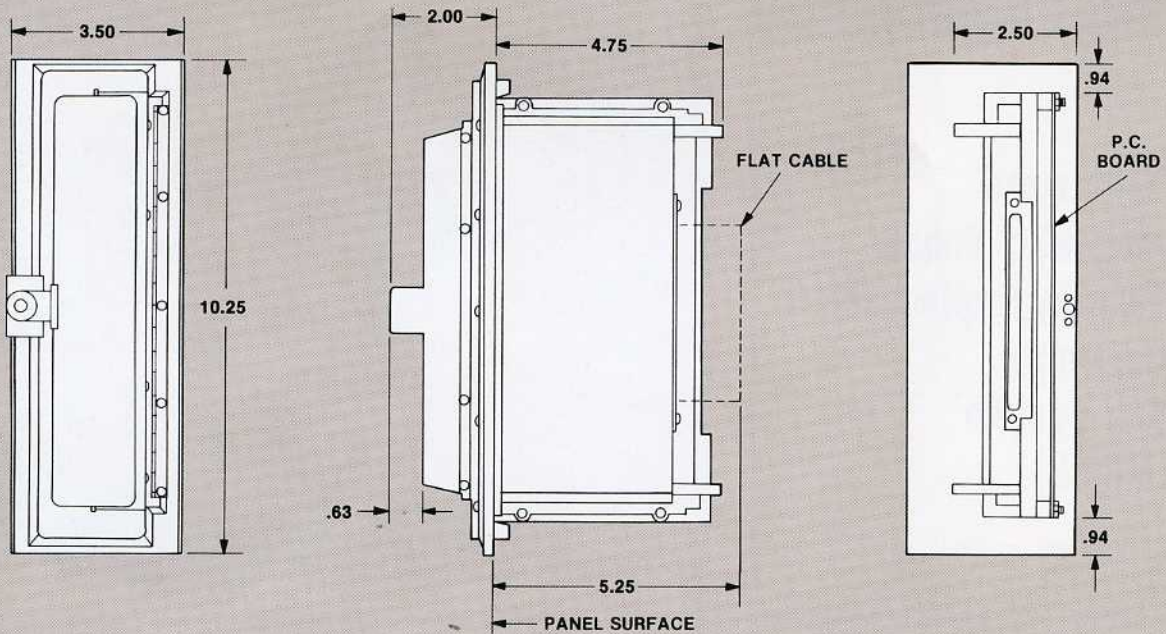
- Write commands completed independent of host
- Error detection and correction

OPERATIONAL CHARACTERISTICS

- Addressable down to any byte
- Maximum Read/Write I/O burst rate - 1 Megahertz, serial by bit
- With 128 byte Page: See note (1)
 - Average Read Cycle time - 48.4 milliseconds
 - Average Write Cycle time (buffer capacity available) - 1.3 milliseconds
- 16K byte RAM available to buffer any transfer rate differences between MBMC and host CPU. Balance of RAM may be used for customer's file management program downloaded from the host.
- Residual Error Rate is 1 in 10^{14} bits.
- Selectable Write Protect mechanically enabled on each cartridge, which protects the complete cartridge capacity. Less than a full cartridge memory protect within the MBMC must be in a downloaded program from the host.
 - The mechanical Write Protect status of the cartridge is electro-mechanically detected and signaled through optionally available means within the receptacle.
- Fault isolation routine within the MBMC initiated by the host.

Note (1) The net data throughput, or the Throughput Rate of Information Bits (TRIB), and the efficiency of the user's system as interfaced to the various type peripheral storage devices no longer can be determined from data transfer rates and access times alone. The storage sub-system performance must also take into account record size, special sub-system functions and the storage device architecture.

RECEPTACLE INSTALLATION ENVELOPE



ENVIRONMENTAL SPECIFICATIONS

Altitude:	To 50,000 ft.
Temperature:	Mil-Std-810B, Method 501, Procedure II. Operational -54°C to +60°C. Storage -57°C to +71°C.
Humidity:	Mil-Std-810C, Method 507, Procedure III.
Vibration:	Mil-Std-810C, Method 514, Procedure I, Figure 514-2, Curve J (5g to 2000 Hz).
Shock:	Mil-Std-810C, 40g, 11 milliseconds shocks on three mutually perpendicular axes.
Fungus:	Mil-Std-810C, Method 508.1, Procedure I.
Nuclear:	Survivable.
Installation Adaptability for:	Rain, Drip Proof, Sand and Dust, Salt Fog, EMI/RFI and TEMPEST Military Standard.

SIZE AND WEIGHT

Receptacle:	
Size:	See Above.
Weight:	3 lbs max. (w/o Cartridge).
Cartridge:	
Size:	1 - 1/8 X 4 1/2 X 7 inches.
Weight:	1 lb. 8 oz.

POWER REQUIREMENTS

Voltage:	+5V, -5V, and 12V DC - Approximately 60 watts. 18V to 32V unregulated DC - 10 watts maximum. (Only used when operating below -20°C).
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For additional information, write or telephone:
Librascope Division, The Singer Company
833 Sonora Ave., Glendale, CA 91201
Telephone: (213) 244-6541
TWX 910-497-2266 • Telex 674912