

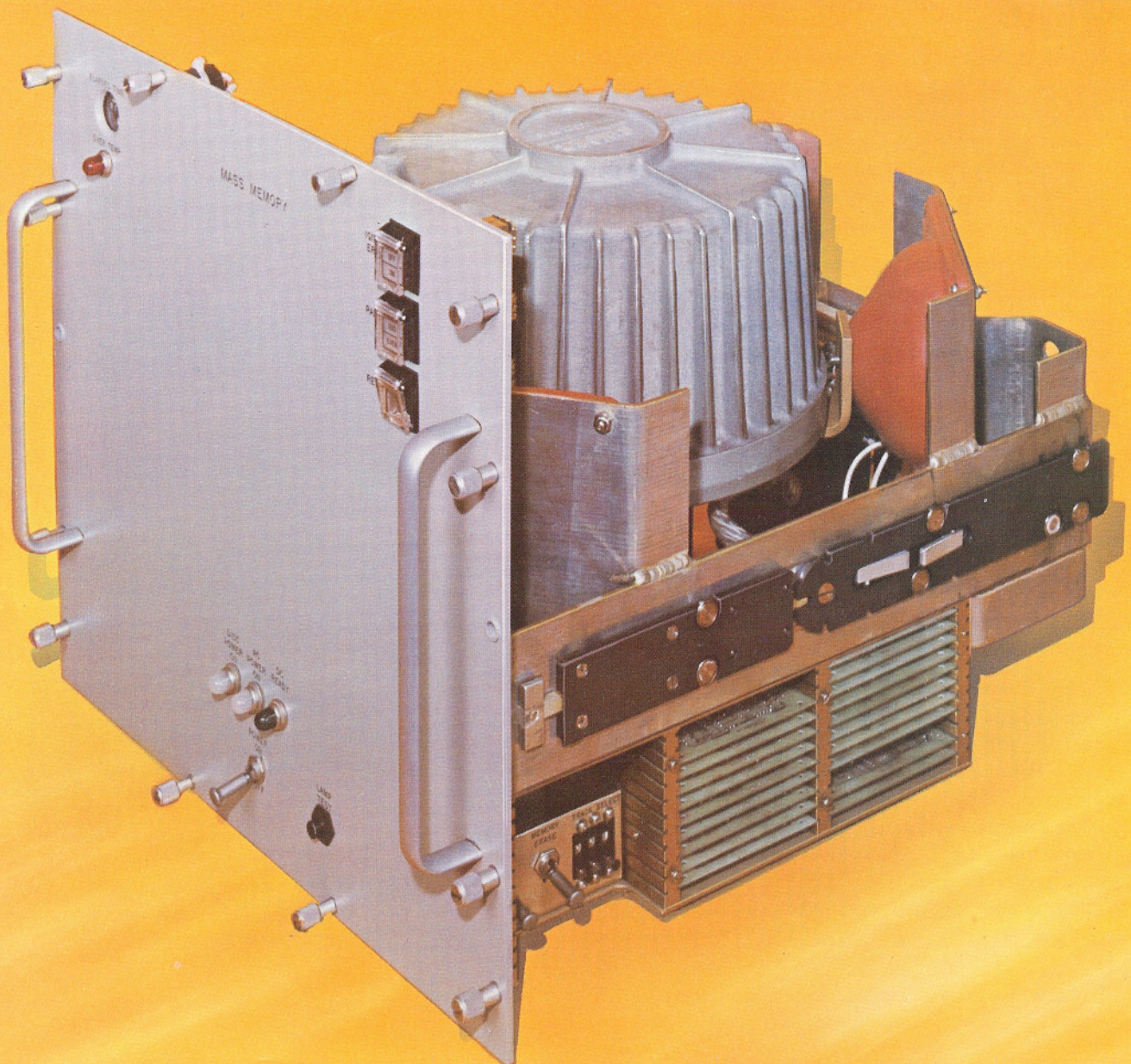
CL107

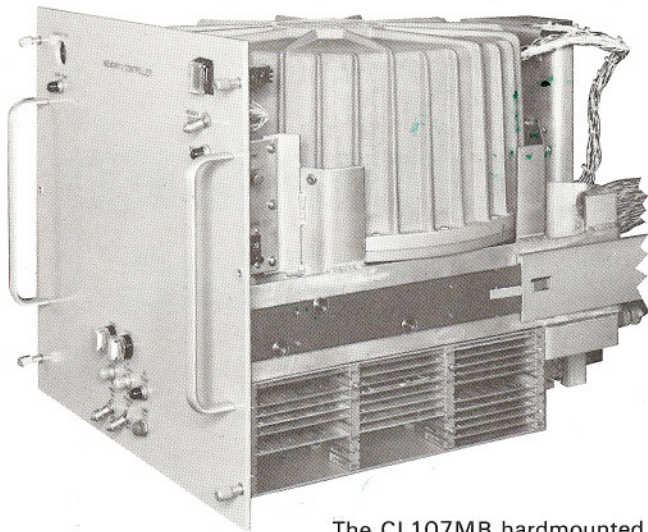
FULLY MILITARIZED CONTROLLER AND ROTATING DISC MEMORY

Librascope

a division of The SINGER Company

Updated December 1980





The CL107MB hardmounted

TECHNICAL DATA

Disc Memory

The Model CL107 Controller and Memory is supplied with either the Librascope Model L107MA or the L107MB militarized rotating disc memory, and is designated the CL107MA and CL107MB, respectively.

The L107MA has 100 tracks providing storage for 409,600 16-bit data words—4096 words per track. Weight of this Mass Memory Subsystem is 90 pounds.

The L107MB has 256 tracks providing storage for 1,048,576 16-bit data words—4096 words per track. Weight of this Mass Memory Subsystem is 130 pounds.

The data rates are nominally 125 K words per second. The rotating disc memories are constructed in hermetically sealed enclosures. Cross temperature range is 55°C (data can be written at 0°C and read at 55°C and vice versa). The memories will operate in any mounting attitude.

Disc Controller

The disc controller provides the interface processing necessary for communication between two computers and up to eight disc memories. It consists of two basic parts, the input/output and control logic to the computer and the disc formatter logic.

Compatibility

NTDS FAST INTERFACE

The mass memory subsystem operates with the MIL-STD-1397, Type B, Category I (NTDS Fast) I/O interface of

FULLY MILITARIZED CONTROLLER AND ROTATING DISC MEMORY

The Model CL107 Controller and Memory, designed and manufactured by Librascope Division of The Singer Company, is a militarized, nondestructive readout Mass Memory Subsystem consisting of a head-per-track disc memory, disc controller and power supplies. The Mass Memory Subsystem is packaged in a single, free-air-cooled chassis with slides to mount in a standard 19-inch rack.

CL107 interfaces available are:

- The NTDS Fast input/output interface for AN/UYS-20, AN/AYK-14, and AN/UYK-7 computers.
- The AN/UYK-19 and AN/UYK-27 interfaces. (Rolm 1602 and 1603 computers.)

The CL107 features fast access storage from 800,000 bytes to more than 16 million bytes capacity. Two 16-bit computer ports are available in the CL107 controllers, with 16 bits per port. A single computer port of 32 bits is an available option. The Rolm 1602 and 1603 interface is completely compatible with Data General's Real-Time Disc Operating System (RDOS). A non-RDOS mode of operation, switch selectable, provides for an Expanded Memory mode of operation.

The CL107 has undergone Qualification Testing to the requirements of MIL-E-16400 and is designed and fabricated to MIL-E-16400 and MIL-E-5400. MIL-STD-883, Level B components, screened and burned-in, are used throughout the system. High reliability without any preventative maintenance requirements in severe military environments make Librascope's Mass Memory Subsystems the ideal choice for installation aboard submarines and surface ships, aircraft, rugged terrain vehicles and transportable shelters.

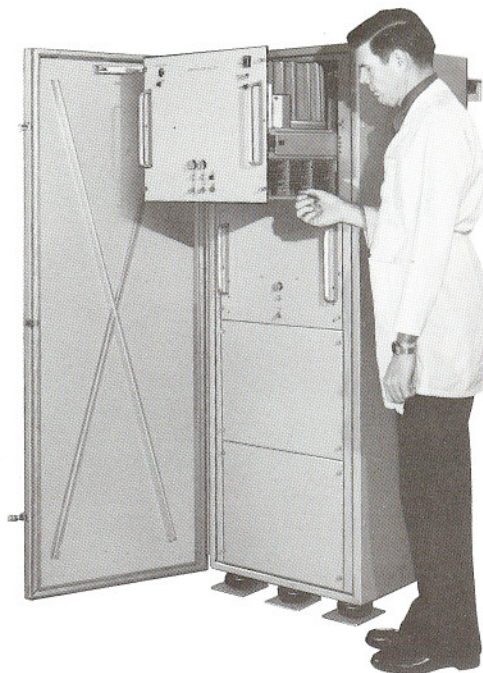


Figure 1. This EMI/RFI secure, shock isolated and drip proof cabinet can be provided either air or water cooled.

standard Navy computers. The I/O is buffered to accommodate slow transfers by the processor. I/O's are available utilizing External Function Request or Forced External Function operation. Interrupts are performed thru the computer I/O as well as is CL107 status data.

AN/UYK-19, AN/UYK-27 INTERFACE

The disc controller provides the AN/UYK-19 and AN/UYK-27 (Rolm 1602 or 1603 Ruggednova) with access from one to eight L107 disc memories. The disc controller interfaces directly with the computer's input/output bus through a Model 3561 I/O Bus Expander.

Complete RDOS compatibility is available to a maximum of 2,097,152 words. When more than this capacity is used (up to eight memories with more than eight megawords total capacity may be connected) a non-RDOS compatible mode of operation is required.

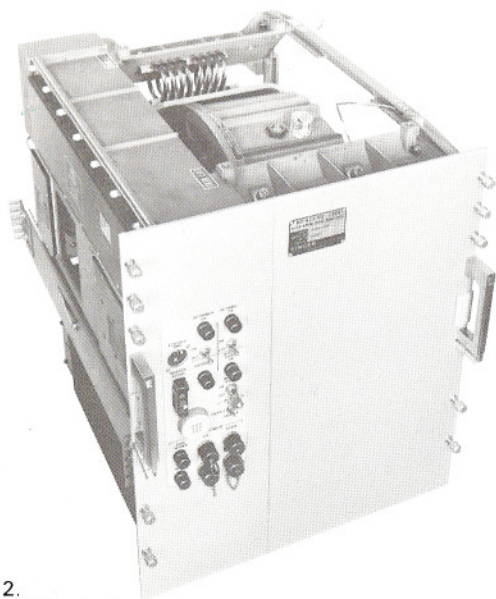


Figure 2.
The RD-433, shock isolated, drip proof, EMI/RFI secure, and Approved for Service Use

Power

The CL107 is designed to accept Type I power per MIL-STD-1399, section 103. The mass memory power is enabled and disabled in a predetermined sequence that precludes destruction of data stored in the memory under all normal and abnormal conditions.

The disc memory is completely fail safe without any interlocking controls.

Controls

Various available are guarded controls on the front panel including Power on-off, Lamp Test on-off, Memory Erase, Battle Short and Reset. The front panel also features DC Ready, Over Temp, AC Power On and Disc Power On lights and the Elapsed Time meter.

The protected area Write Lockout and Address Select switches are located inside the mass memory drawer.

Environmental Capabilities

The CL107 drawer is designed for continuous operation over a free air ambient temperature range in excess of MIL-E-16400 Class 4 equipment, -20°C to $+55^{\circ}\text{C}$. Operation at relative humidities up to 95% with condensation does not affect performance.

The CL107MA (see cover) is provided standard with shock isolation and withstands shock loads to the drawer as specified in MIL-S-901C for Grade A, Class 2, light weight, Type A equipments.

When required to meet MIL-S-901C the CL107MB is optionally available with shock isolation as in Figure 2 (RD-433, military designation), for mounting in a standard 19-inch rack or mounted as in Figure 1 in a shock isolated cabinet.

All equipment meets the vibration requirements of MIL-STD-167B, Type 1.

The equipment is not affected by ambient steady state magnetic fields to 20 oersteds and transient magnetic fields of 20 oersteds per second.

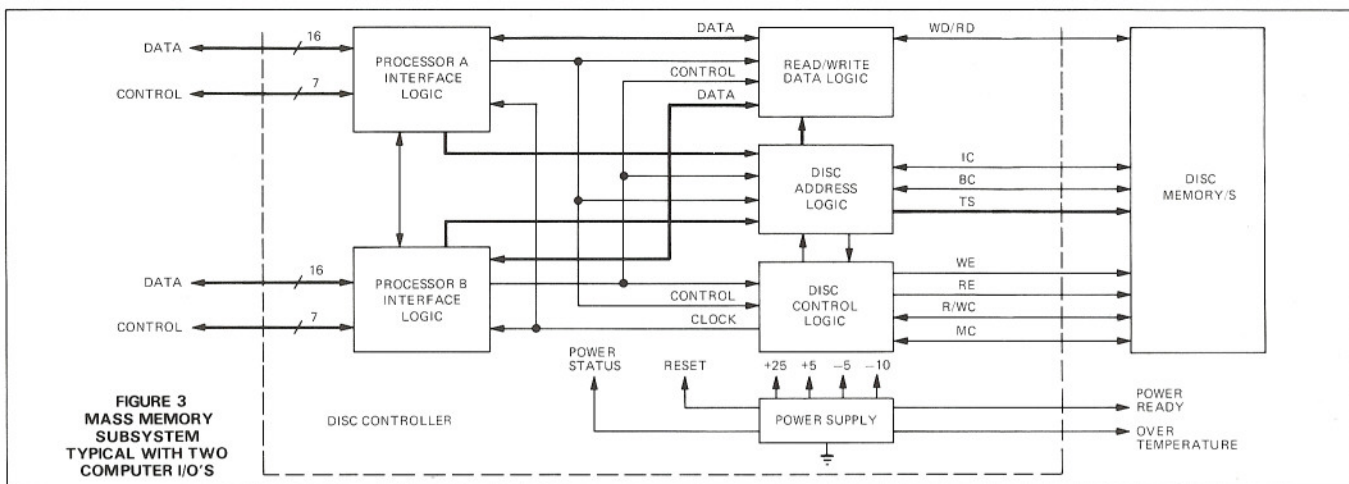
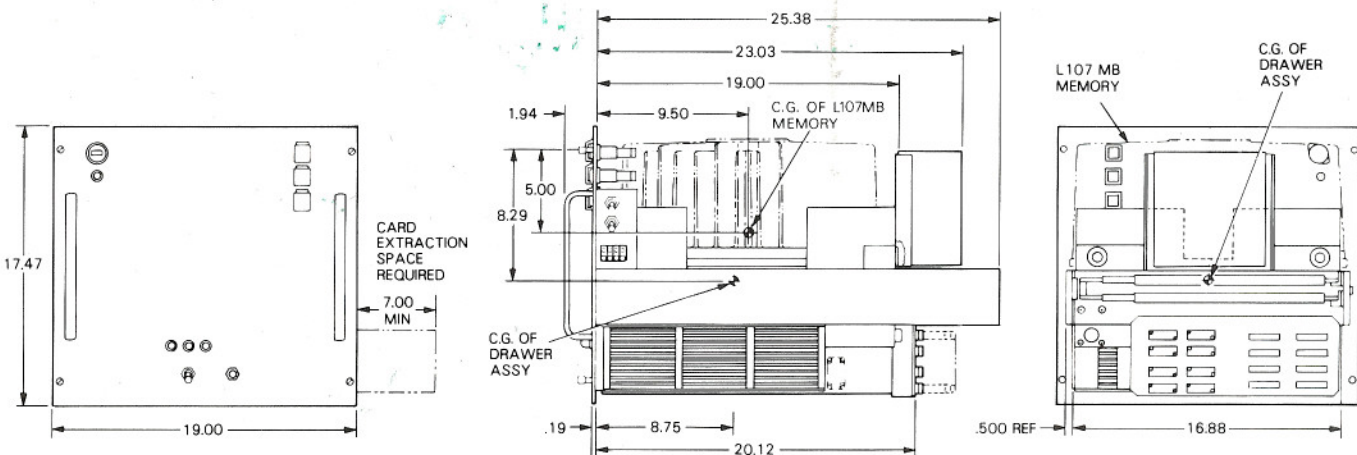


FIGURE 3
MASS MEMORY
SUBSYSTEM
TYPICAL WITH TWO
COMPUTER I/O'S

TYPICAL MECHANICAL INTERFACE



CL107MA/CL107MB

Designed and fabricated to full military specifications and standards.

General Specifications

Access Time: 17 msec average
Error Rate: Less than one error in 10^{10} bits

Physical Specifications

Dimensions: 19"W x 17-1/2"H x 23"D
Weight: 90 lbs./125 lbs.
Integrated Circuits: 5400 series, MIL-STD-883 Level B

General Operating Environment

Temperature: -20°C to +55°C ambient and MIL-E-16400, Class 4 requirement
Temperature Shock: 20°C per 10 min.
Humidity: 95% with condensation, MIL-E-16400

Shock*

Vibration:
EMI/RFI

Voltage, Frequency:

Inclination:
Inclination Rate:
Acoustic Noise:

MIL-S-901C, Grade A, Class 2

MIL-E-16400

MIL-STD-461 and MIL-STD-462
in cabinet or per Fig. 1

MIL-STD-1399, section 103

MIL-E-16400G and MIL-E-5400R

2 radians per second

MIL-STD-740, Grade A

Power Requirements

CL107MA

Voltage:

Power:

CL107MB

Voltage:

Power:

115 V, 60 or 400 Hz

183 Watts @ 60 Hz, P.F. .65

115 V, 60 or 400 Hz

255 W @ 60 Hz, P.F. .8

*Where shock isolation is incorporated.

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