

JUL 10 1869

FM 390 Series

The First Photo-Optical Random Access Mass Memory with multi-billion bit capacity



The Foto-Mem FM 390 Photo-Optical Random Access Mass Memory features larger capacity and faster access time — while requiring less space than any other presently available memory system.

Concept

Employing a completely new photo-optical Write/Read technique on a Photo Data Card^(TM) (PDC), FM 390 significantly reduces material costs by 100:1 or greater, space by 150:1 and features 50 millisecond access time.

Economics

The FM 390 Photo Data Card stores at 1/500th (or less) the cost of disc pack techniques, yet holds the equivalent amount of information.

Operations

Use of the FM 390 is extremely simple. Only four front panel controls are required to operate the System. In addition, the FM 390 is completely modular and plugs into any computer with appropriate interface.

Technique

The FM 390 utilizes the latest Photo-Electro-Optical technology to Write information on the PDC which is stored in the 100 card capacity Foto-Data Cell^(TM). An Ejection System positions the PDC onto a surface. After Write/Read functions, the PDC drops into a second Cell for later recall. Many cells can be stored in each System, providing multi-billion bit on-line capacity.

Expansion

FM 390 can be expanded in two ways: 1) storing one to 250 Cells on-line in each System and using automatic Cell positioning; or 2) employing external storage racks to hold virtually an unlimited number of Photo Data Cells, each with 1 to 3 billion bits of information.

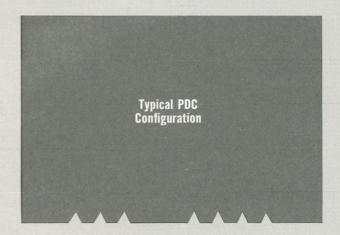
- (TM) Foto-Data Cell is a Trade (Service) Mark of Foto-Mem, Inc.
- (TM) Photo Data Card is a Trade (Service) Mark of Foto-Mem, Inc.

On-Line, Off-Line

The FM 390 may be used both On-Line or Off-Line. The System can Read or Write directly from a computer. Off-line, FM 390 may be used with magnetic tape, disc pack, high speed printers, other input/output devices or another FM 390.

High Storage Capacity

The specially designed Photo Data Card provides extremely high storage with densities of 100X (or greater) than the density of magnetic recording.

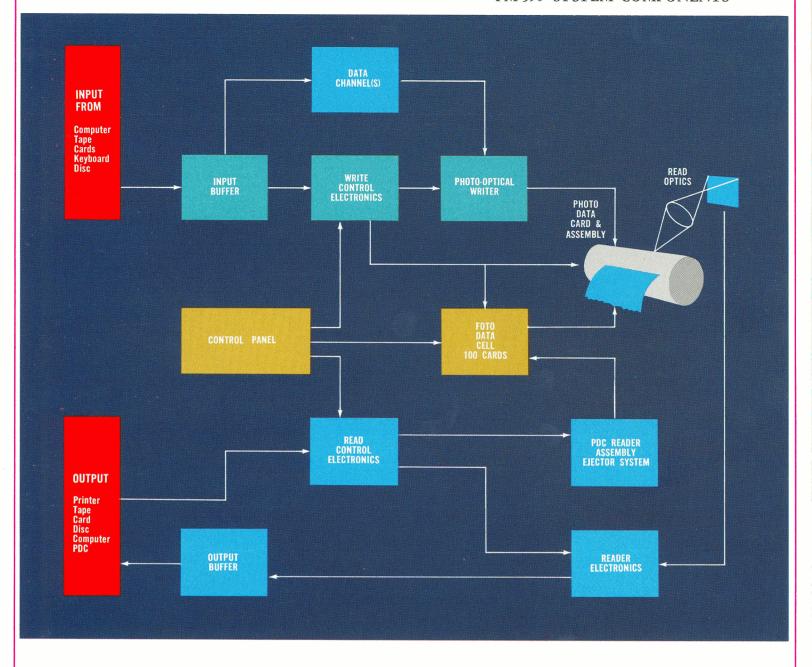


Faster Retrieval

Similar to disc pack operations, the FM 390 performs Read functions from a particular or random location on the PDC, reading bytes in parallel and transferring in parallel or serial. A small optical scanning head, operating at high speeds, features a 50 millisecond access time for the System.

Simple to Install

The FM 390 is compatible with virtually all computers. Foto-Mem will supply the interface modules to couple with other devices as required.



The diagram above outlines Write/Read functions, storage and controls for the FM 390 System. An Electro-Optical subsystem is used to perform the Write operation. Data is recorded on the Photo Data Card, stored in 100 card capacity Foto Data Cells. (The FM 390 may be operated with multi-Data Cells, on-line.) A pneumatic Ejector System expels the PDC from the Cell onto a Read/Write surface with interlocks for positioning. Photo

Sensors READ information directly from the PDC and are designed to allow Write/Read functions simultaneously.

There are two control panels (Operator and Maintenance) for controlling all system functions — Read, Write, On/Off, Stop, Go to Initial Home Positions, Go to Particular Address, Off/Line and Diagnostic test, etc.



Operation of the FM 390 is extremely simple. The associated computer controls the functions of the System. Internally, a maintenance Control Panel enables operation of the other functions previously listed under System Components. The FM 390 is designed for easy access to the electronics in the bottom section by means of doors. The top of the unit swings back to enable access to both READ and WRITE components.

Foto-Mem's Foto Data CellTM stores 100 individual Photo Data CardsTM, providing multibillion bits of information each. Multiple Cells may be ON-LINE simultaneously with extremely large bit capacity.

Foto Data Cells are easily slipped into position in the READ/WRITE section in a matter of seconds. Facility for convenient storage of additional FDC's is provided.

Foto-Mem Products for Information Storage-Retrieval

- ☐ Microfiche-Ultrafiche Viewers
- ☐ Multiplex Viewer-Display Terminal Systems (Data-Vision Systems)
- ☐ Photo-Optical Random Access Mass Memories
- ☐ Automatic Microform Storage-Retrieval Systems
 - ☐ Microfiche Reproduction Systems

Send for Further Information

Archival Records

Inquiry Memory

Customer Credit Files

Inventory Control

Actuarial Statistics

Social Security Systems

Payrolling

Scientific Data

Any External Auxiliary Memory

(Random or Otherwise)

Introducing the FM-390 into your System can provide a Customer Relations Department direct access to your records. The current status of invoices — partial shipments, receivables, delivery information, payments received, as well as customer discounts may be rapidly and economically obtained for maximum customer servicing and in-house control.

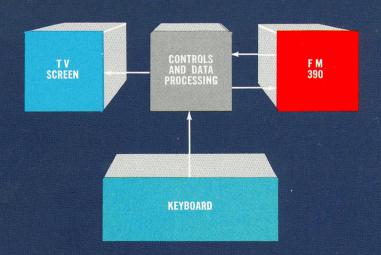
In lieu of tapes or discs, the FM-390 is interfaced to your computer, video screens, keyboards, or other Input/Output devices.

To obtain information, the employee merely types a customer account number on a keyboard. Instantly, the latest account information pertaining to the customer is clearly displayed on the video screen.

Total System

Foto-Mem supplies a unique system of video screens, keyboards and the FM-390, complete with interfaces. This allows a virtually limitless number of terminals — on-line — in your system. Paper duplicates are no longer necessary . . . saving valuable space, material and time costs.

TYPICAL APPLICATION—Sales Or Service



102646220

1. Equipment Specifications

- 1.1 Memory (Photo Data Card, PDC) photographic film cards
- 1.2 Method of Recording non-contact photo-optical means
- 1.3 Method of Reading non-contact photo-optical
- 1.4 Storage Capacity 1 to multibillion bit on-linea. PDC 10 to 30 million bits
- 1.5 Operational Characteristics
 - a. Average access time within the PDC 40 milliseconds
 - b. Data transfer rate 100,000 Bytes/second (Interface available for faster or slower transfer rates)
- 1.6 Power into the unit 110/120V, 60CPS
- 1.7 Dimensions 30" x 60" x 44"

2. Modes of Operation & Control Signals

- 2.1 Signals to Unit
 - a. Track address serial or parallel 8 binary bits
 - b. Write enable control signal
- 2.2 Signals from Unit
 - a. Busy
 - b. Command Acknowledge
 - c. Read/Write Ready
 - d. 8 Data Bits

3. Environmental Specifications

- 3.1 Operating
 - a. Temperature Range +40°F to 110°F
 - b. Humidity Range 30% RH to 95% RH, no condensation
- 3.2 Storing and Transporting
 - a. Temperature Range -20° F to $+140^{\circ}$ F

4. Others

4.1 Other required specifications may be incorporated to meet particular applications.

ORDERING INFORMATION

When requesting a System proposal and price quotation or when placing an order, the following information should be provided.

- 1. Storage capacity required in number of bits and word length.
- 2. Exact model of computer or interface requirements.
- 3. Data transfer rate desired in bits or bytes per second (minimum and maximum).
- 4. Data input rate in bits or bytes per second (minimum and maximum).
- 5. Environmental requirements.
- 6. Space or weight limitations (if any).
- 7. Other:



ACTION REQUEST

Foto-Mem will be pleased to quickly respond to your requirements for information or technical assistance. Please supply the following information for your system requirements:

Technical	
1. What capacity do you require? Bits	
Word Length	
2. What computer will you interface?	
3. Data transfer rate required. In bits	
bytes	
4. Data input rate. In bits bytes	
5. Special environmental conditions; Plea	ise ex-
plain:	
6. Space or weight limitations, if any:	
Please fold and staple before mailing	
Application	
1. Use:	
Action Required Send Application Information	
Send Price Quotation and Delivery	
Send additional data on:	
Title Title	
My Name Title	
Company	
Address	
CityStateZip_	
Telephone #	
Others in my organization to receive inform	ation:
Name Title _	
Name Title _	
My Requirement is ☐Immediate ☐Six	Months
for information only	

BUSINESS REPLY MAIL

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

FOTO-MEM, INC.

2 Mercer Rd.

Natick, Massachusetts 01760