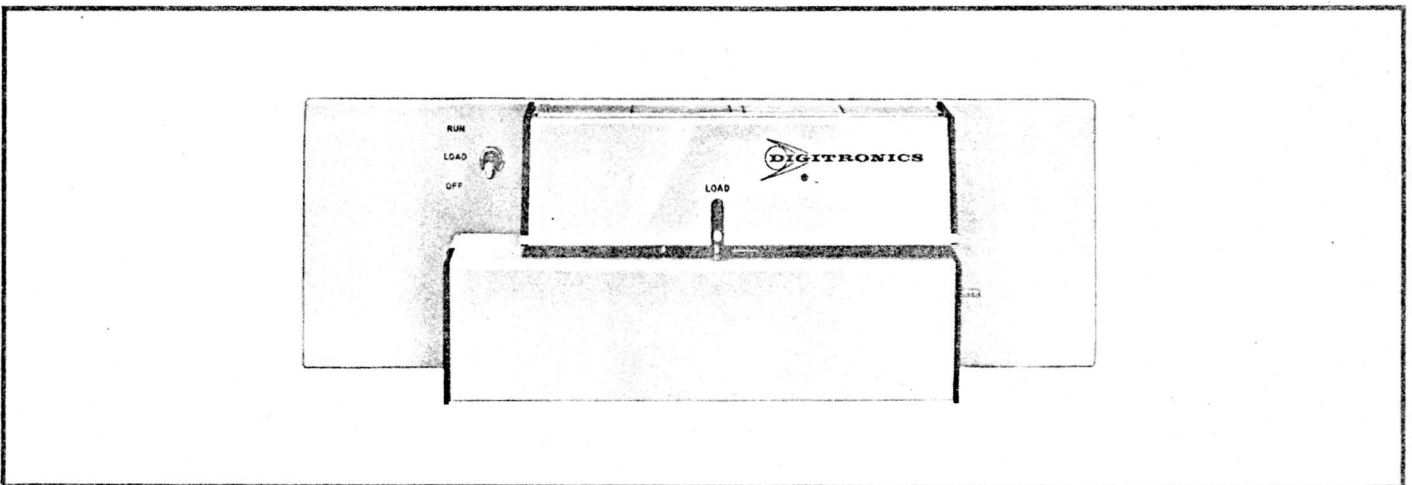
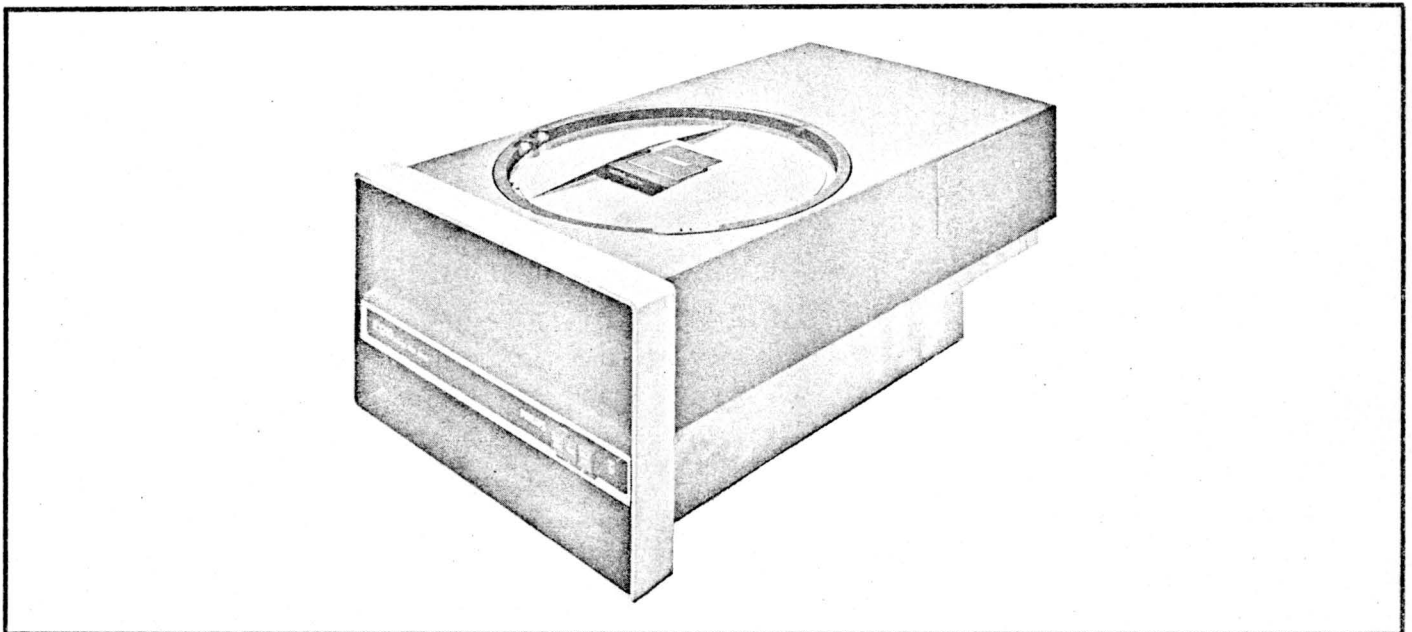


PHILIPS



data systems

O.E.M. PERIPHERALS



Mono Disk Drive
Tape Readers
Tape Handlers

Paper Tape Punches
Magnetic Tape Transports

Mono Disk Drive X 1210

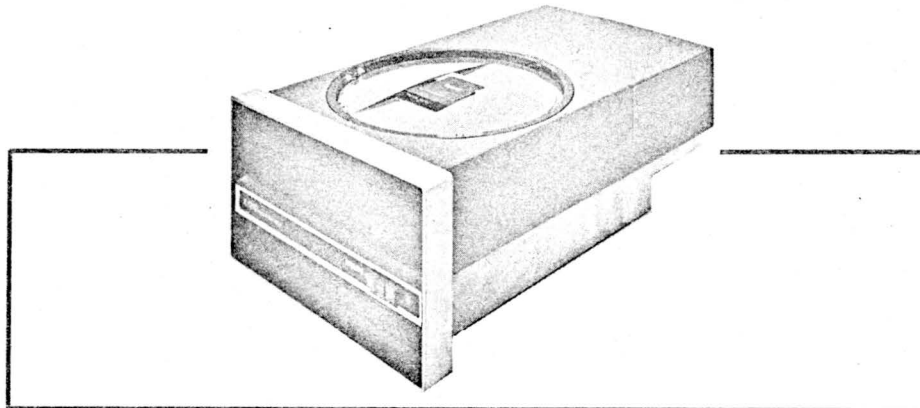
Introduction

The trend in automation today is the progressive introduction of small electronic data processing equipment to the industrial and business environment. The X 1210 was conceived to meet the requirements of this fast expanding market and has been designed to provide a low cost, random access mass storage device capable of operation in on-line or off-line configurations.

The most important characteristics of this small single disk drive unit are:

- Storage Capacity 20 million bits
- Average Head Positioning Time 125 milliseconds
- Data Transfer Rate 833 kilobits/sec

The X 1210 uses the Philips mono disk cartridge as the storage medium. This cartridge comprises an industry standard 14 inch magnetic oxide coated disk sealed in a dustproof plastic envelope.



Construction

The X 1210 comprises a cast aluminium alloy chassis which supports all the sub-assemblies. The upper surface supports the precisely aligned spindle, head positioning mechanism and index/sector unit. The cartridge fits into a holder on top of the drive.

To facilitate top loading of the Philips mono disk cartridge, the X 1210 has a drawer type construction which can be mounted in a standard 19 inch rack.

Cartridge exchange consists of simple operations, thus minimising human error. Operator time is saved by particular short start (10 seconds) and stop (5 seconds) sequences. The robust and dustproof design of the cartridge makes it virtually impossible to damage or contaminate the magnetic disk while handling. The design philosophy has been oriented towards creating a disk unit which is simple and economic to service whilst requiring minimal preventive maintenance. This concept has been achieved by designing the mechanical and electronic components in the unit as modular replaceable assemblies.

A closed loop filtered air system is used to maintain the magnetic recording media within a stringently clean environment.

The X 1210 contains all the functional electronics necessary for operation.

Interface

The interface has been tailored to the needs of small computer systems. These systems often require connection of several disk drives. Economy, inherent simplicity and trouble free operation have been the guiding principles to adopt the star type interface. Connection of the power supplies and control signals is effected by means of multicore circular and flat cables which enter the rear of the drive via two connectors.

Accessories

XXM 1405 rack unit slides, with brake to provide smooth gliding and to maintain the X 1210 in three positions for operation, cartridge exchange and servicing.

XXM 1406 rack unit cable guide with 3 meters of power and I/O cables. Connectors are provided at the power supply and X 1210 sides of the cables.

XXM 1407 power supply unit mountable in a 19 inch rack.

XXM 1408 test module, which plugs into a reserved location in the electronics rack to allow simulation of the interface track and head selection instructions.

XXM 1409 mono disk drive exerciser to test the drive by simulating positioning and read/write instructions.

XXM 1410 mono disk cartridge which contains reference tracks for alignment of read/write heads.

Magnetic Tape Transports

Specifications

Transport Mechanism

Operation

Bidirectional, Continuous

Standard Speeds:

Read/Write - 37.5ips

Maximum Deviation - 1.5%

Rewind - 150ips

Start/Stop Time: 10 milliseconds

Tape displacement during Start/Stop:

0.19 inches

Interrecord Gap: 0.6 inches

Beginning/End of Tape: detected from

markers on the tape

Tape Handling

Supply & Take Up Reels:

N.A.B. compatible 10½ inches in diameter

Capacity: 2400 feet, ½ inch computer

grade magnetic tape

Magnetic Tape Head

Compatible with following tape formats:

9 channel, 800cpi, NRZI

9 channel, 1600cpi, P.E.

IBM compatible

Compatible with:

A.N.S.I. x 3.2.2. requirements for 800cpi

NRZI recording

A.N.S.I. x 3.2.1/400 requirements for 1600

cpi P.E. recording

Electronics

Logic Levels:

True: 0 volts, False: + 3.0 volts

Power Requirements:

95 to 135/190 to 270 volts ac

48 to 400 Hz

Formatter

Used with 9 channel, 1600cpi, P.E. tape

format

Detects single and multiple track dropout

Corrects single track dropout

Environmental Conditions

Temperature: Ambient: 10 °C to +55 °C

Storage: -10 °C to +60 °C

Humidity:

Operational: 20% to 80% without

condensation

Storage: 0% to 95% without condensation

Fungus and Rustproof

Physical Dimensions

Width: 19 inches, Height: 24 inches

Extension in front of panel: 3 inches

Depth behind front panel (without

electronics): 9 inches

Depth behind front panel (with electronics):

12.5 inches

Options

Transport:

25ips, 18.75ips, 12.5ips tape speeds

File Protect: interlocks system to prevent

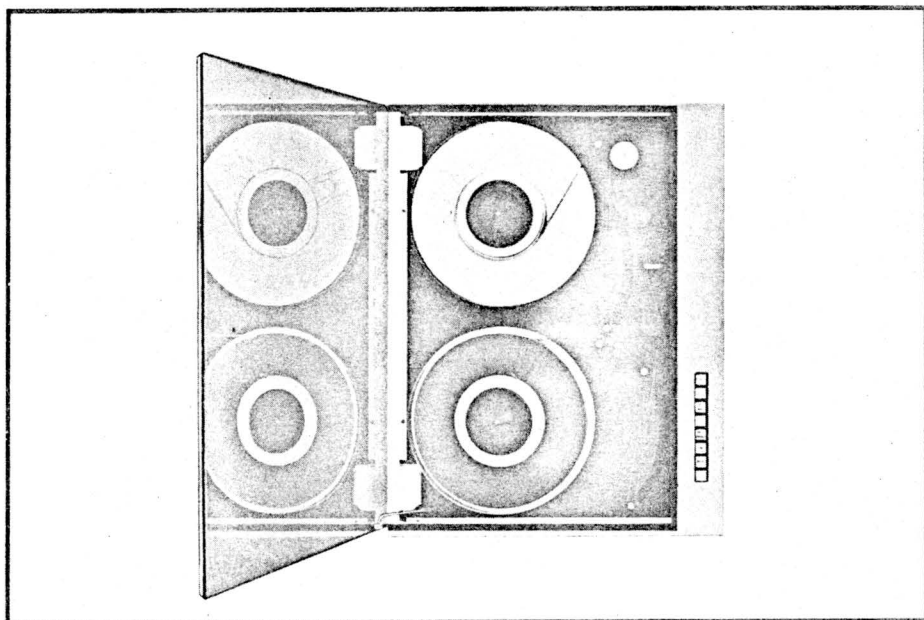
writing when write-ring is removed from

the supply reel

Electronics:

Daisy Chain; up to four transports may be

driven in this manner by the formatter



Model 1600 magnetic tape transport

The proven superiority of a single capstan is combined with a spring tension arm buffer system. Pinch rollers are eliminated and the capstan never touches the oxide-coated side of the tape to prolong tape life. A high quality dual-gap head that reads 9 channel data 800cpi or 1600cpi.

Another feature that makes the 1600 Series a truly unique new product is direct-reel drive.

Gear-ups, belt drives, pulleys, and additional bearing assemblies are completely eliminated. No adjustments and alignments of the mechanical reel drives are required.

The transport is bidirectional with a maximum speed of 37½ips and optional speeds of 25 ips, 18.75ips, and 12.5ips. Rewind speed is 150ips.

The electronics package is available in read-after-write, read/write, read only, or write only versions. The modular electronics package substantially reduces repair costs and down time. Four easy-to-repair, plug-in circuit cards, arranged by function, contain all of the read, write, and control electronics.

A phase-encoded formatter, for 9 channel, 1600cpi operation, detects single and multiple track dropout, and presents an error signal to the interface. Single track dropouts are automatically corrected.

The formatter is contained in five plug-in printed circuit cards that are inserted in the same cage as the basic electronics package. No additional rack space or power is required.

PDP 8E interface to 1600 Series Tape Transport available.

Tape Readers

Specifications

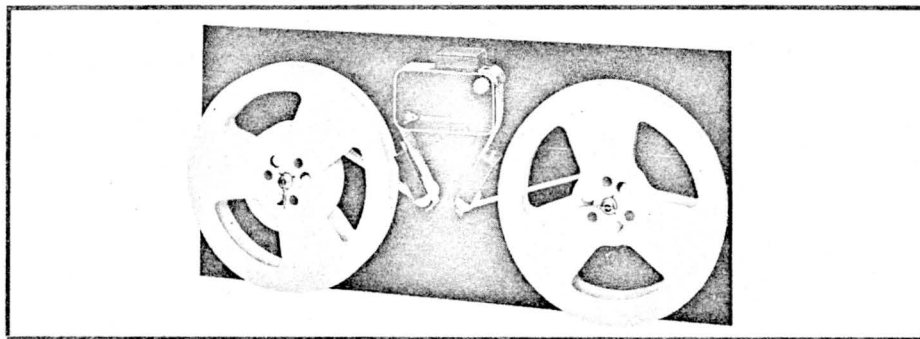
Read Speed
0 to 60 characters per second
asynchronously

Tape:
Thickness 0.002" to 0.006" without adjustment
Width $\frac{1}{16}$ " to 1 inch (5 to 8 channel)
Composition Paper, paper-mylar, aluminized
mylar or solid mylar
Punching According to EIA standards

Output
Form A switches; closed for hole condition,
open for no-hole condition

Switch Contacts
Palladium alloy, bifurcated contacts for
extra reliability

Dimensions
6" wide x 3" high x $4\frac{1}{16}$ " deep



Model 2060 Tape Reader

Low-cost, compact mechanical sensing tape reader is one of the most reliable and economical means of reading perforated tape. Unit operates asynchronously at speeds to 60 characters per second and is ideally suited for use in automatic test systems, business machines, machine tool control and data communications equipment. The Model 2060 reads 5- to 8-channel ($\frac{1}{16}$ to 1 inch) tapes in thickness from 0.002 to 0.006 inches without adjustment. Unit features a unique sensing element consisting of steel ball which rolls along tape causing minimum tape wear and drag. Simple solenoid actuated tape drive moves tape one character per input step pulse with positive indexing on characters. Unit is electrically and mechanically at rest in-between read operations thereby making it ideal for applications where long periods exist between readings since mechanical wear is at zero and no power is consumed during this time.

Specifications

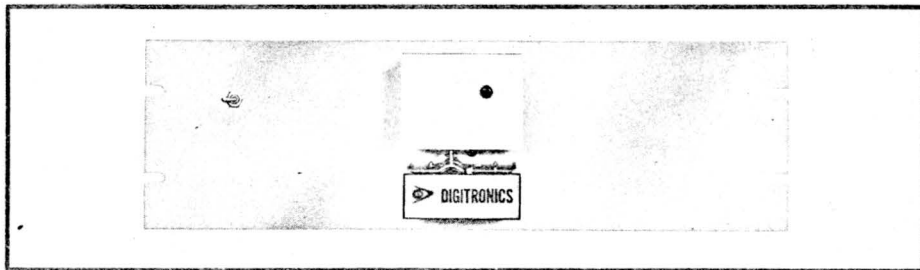
Read Mode
Unidirectional or bidirectional

Speeds
0 to 300 characters per second
asynchronously; 400 characters per
second synchronously

Tape Type
Paper, paper-mylar, metalized
mylar 0.002" to 0.005" thick with butt or
lapped splices to 0.010"

Outputs:
Hole: +5 volts $\pm 5\%$ through 1,000 ohms
No Hole less than +0.4 volts, 10 milli-
amperes current sink (maximum)

Dimensions
19" wide x $5\frac{1}{2}$ " or 7" high x $8\frac{1}{4}$ " deep
(maximum)



Model 2030 tape reader

Solid-state 300 characters per second asynchronously perforated tape reader with only a single moving part, a stepping motor. The unit is able to read perforated tape on a demand basis at speeds to 300 characters per second, or synchronously at 400 characters/second.

The photoelectric sensing system is designed for reliable reading of all commercially available tapes - opaque or translucent. Both unidirectional and bi-directional units are available.

Tape Readers

Specifications

Read Mode

Unidirectional or bidirectional

Speeds

To 600 characters per second.
(Asynchronous stepping to 150 characters per second).

Start Response

10 milliseconds maximum (speeds greater than 300 characters per second).

Stop Response

On character at speeds to 400 characters per second.

Type of Tape

Paper, paper-mylar, aluminized mylar, or solid mylar, .0025 to .005 inch thick with no adjustments. Tapes with up to 40% transmissivity are acceptable without electrical adjustment.

Tape Guides

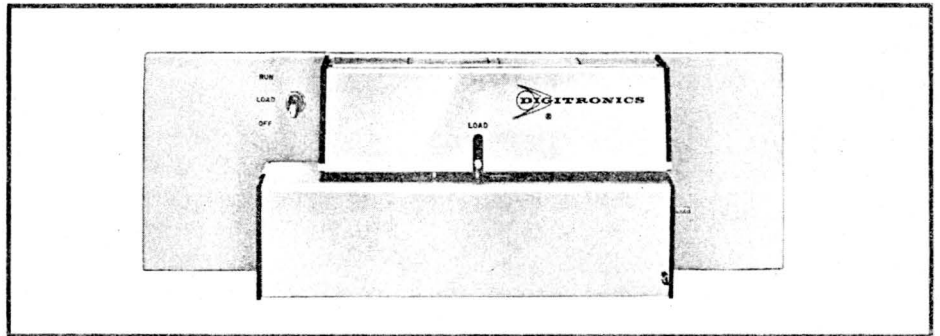
Adjustable three-position tape guides enable reading $\frac{1}{16}$ - to 1-inch tapes (5- to 8-channel) interchangeably.

Outputs:

Hole: Pulls to +5 volts
No Hole: 0 volts

Dimensions

10" or 19" wide x 5 $\frac{1}{4}$ " high x 8" deep



Model 2540 Series tape readers

All solid-state, unidirectional or bidirectional at slow speeds to 600 characters per second and asynchronous stepping to 150 characters per second with I/C compatible outputs. Unique modular design affords increased versatility. Basic reader is a unidirectional or bidirectional tape transport, on a 10- or 19-inch wide panel which includes a low-impedance read head with built-in preamplifiers providing I/C compatible outputs, to which can be added: an electronics unit featuring I/C channel amplifiers and discrete component control and drive circuits; a power supply which supplies all the required voltages for the transport and electronics unit; a rack adapter for mounting the 10-inch wide reader in a 19-inch RETMA rack.

Reads the widest range of commercially available tapes (up to 40% transmissivity) 0.002- to 0.006-inch thick, without electrical or mechanical adjustments.

Specifications

Read Mode

Bidirectional

Speeds

To 1000 characters per second.

Tape Guides

Fixed; 5-, 6-, 7-, or 8-channel tapes.

Stop Response

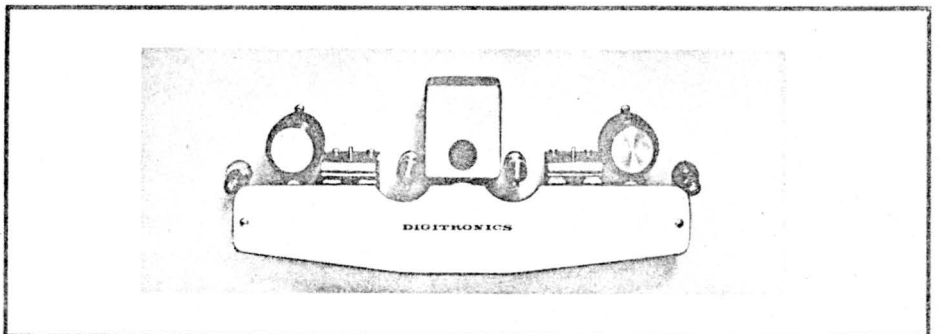
On character at speeds to 500 characters per second; before following character at speeds above 500 characters per second.

Outputs

(+) or (-) 10 volts, hole; 0 volts, no hole.

Dimensions

19" wide x 7" high x 8 $\frac{3}{4}$ " deep.



Model B3000 tape reader

High speed photoelectric reader available in bidirectional model at speeds to 1000 characters per second. Unit has silicon photodiode read head and contains all electronics for transport control and channel amplifiers. Available with standard fixed tape guides for reading 5-, 6-, 7-, or 8-channel tapes. Optional variable tape guides enable reading 5- through 8-channel tape interchangeably.

Tape Handlers

Specifications

Tape Servo
Unidirectional, right to left

Servo Speed
300 characters per second (30 ips) maximum

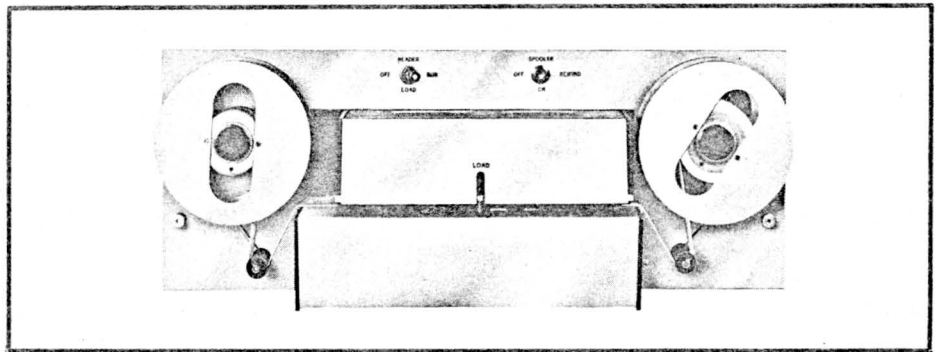
Rewind Unidirectional, left to right
Rewind Speed 400 characters per second (40 ips) average

Tape width
1¹/₁₆ to 1 inch. Standard 5-, 6-, 7- and 8-channel tapes may be used interchangeably.

Reel Size
5 inch outside diameter

Reel Capacity
320 feet of 4.5 mil. tape or 580 feet of 2.5 mil. tape.

Dimensions
19" wide x 7" high x 7" deep.



Model 6012 tape handler

Low-cost unidirectional tape handler designed for use with Digitronics Model 2540 Series Tape Readers. The 6012 has a maximum tape servo speed of 300 characters per second and handles up to 320 feet of 4.5 mil. tape or 580 feet of 2.5 mil. tape in widths from 1¹/₁₆ to 1 inch (5 to 8 channel) interchangeably on 5-inch reels. Tape rewind is unidirectional at 400 characters per second (40 ips) average and can be controlled locally via a panel mounted switch or remotely.

Specifications

Tape Servo
Bidirectional

Servo Speed
700 characters per second (70 ips) or 1000 characters per second (100 ips).

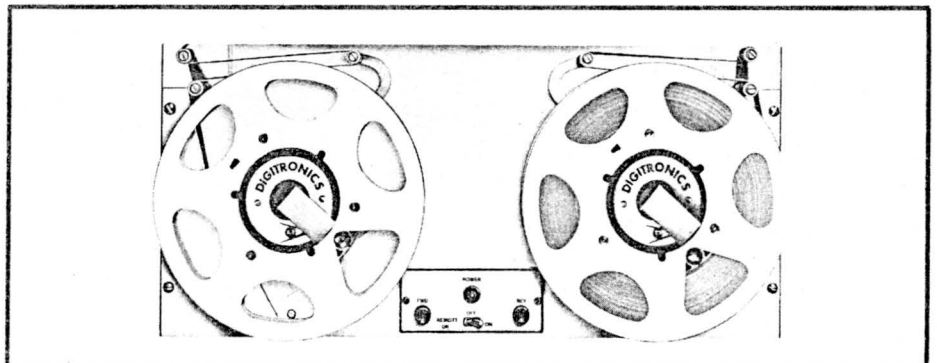
Rewind
Bidirectional, reel to reel

Rewind Speed
1800 characters per second (180 ips) average

Reel Size
8 inch and 10¹/₂ inch NAB

Tape Width
1¹/₁₆ to 1 inch. Standard 5-, 6-, 7- and 8-channel tapes may be used interchangeably.

Dimensions
19" wide x 8³/₄" to 14" high (depending on model) x 8" deep.



Model 6040 Series tape handlers

Economical high-speed tape handlers available in models with tape servo speeds of 700 or 1000 characters per second using 8- or 10¹/₂-inch NAB reels. Handle all standard 5-, 6-, 7- and 8-channel perforated tapes ranging in width from 1¹/₁₆ to 1 inch interchangeably. Units have bidirectional reel to reel rewind at greater than 1800 characters per second (180 ips). Broken or no tape interlocks remove ac power from unit when broken tape or no tape condition occurs. Optional remote rewind circuit allows remote control of rewind function.

Paper Tape Punches

Specifications

Speed
0 to 60 characters per second,
asynchronous.

Tape Width
 $1\frac{1}{16}$ to 1 inch (5 to 8 channel)

Tape Thickness
0.0045 inch nominal

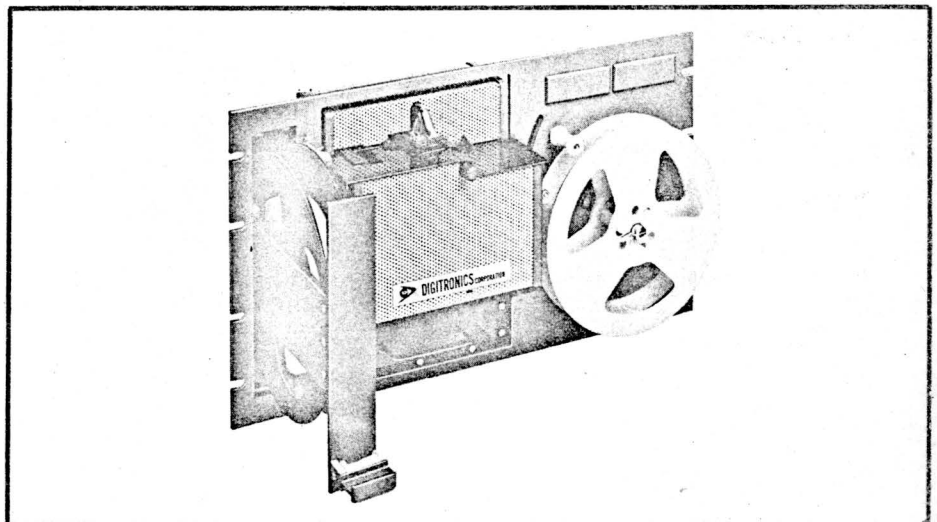
Tape Composition
Paper, paper-mylar, aluminized mylar, or
solid mylar.

Tape Punching
Exceeds EIA requirements

Input
Parallel by bit, serial by character

Output
8 channels plus sprocket

Dimensions
 $7\frac{9}{16}$ " wide x $6\frac{3}{4}$ " high x $5\frac{3}{32}$ " deep.



Model 1560 paper tape punch

Low cost, solenoid actuated tape perforator punches 5-, 6-, 7- and 8-channel tapes asynchronously at speeds to 60 characters per second. Unit has solenoid actuated tape punch and drive mechanism which result in simplified interface requirements and long service life. Punch is equipped with retractable hold-down clamp for easy in-line loading of tape and has adjustable guides for accommodating 5- through 8-channel ($1\frac{1}{16}$ " to 1") tapes. Available in a wide variety of package styles. Optional control electronics and power supply are also available.



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