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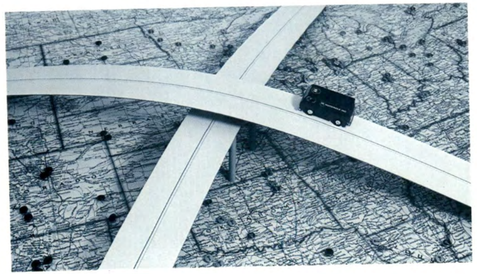
Motorola Inc.

THE COMPUTER HISTORY MUSEUM
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INPUT SOURCE DATA

- SNAP-OUT FORMS
- PENCIL-MARKED CARDS
- KEY-PUNCHED CARDS
- COMBINATION PENCIL-MARKED/KEY-PUNCHED CARDS
- PENCIL-MARKED FORMS



SERVICE ASSURED Motorola equipment is backed by a nation-wide maintenance organization. You get prompt service locally from one of more than 800 Motorola Service Stations located throughout the country.

Skilled, factory trained technicians are ready to assist you with your installation and operating start-up procedures. This same national service organization offers swift maintenance service to Motorola customers anywhere in the United States.

TYPICAL APPLICATIONS

- Airline Ticket Reservations
- Credit Reports
- Computer Programming
- Department Store Inventory Control
- Engineering Calculations
- Financial Records
- Governmental Reports & Records
- Health Statistics & Analysis
- Inventory Control
- Library Records
- Medical Reports
- Market Analysis
- Order Entry
- Police Records
- Patient Billing
- Payroll Deductions
- Production Control
- Parts Inspection
- Quality Assurance
- Railroad Freight Routing
- Service Reporting
- Student Records
- Telephone Time & Charge Reporting
- Utility Meter Reading
- Wage & Salary Administration
- Warranty Records

SALES OFFICES

WESTERN REGION

El Segundo, California 90245
2333 Utah Avenue
Phone: (213) 772-3411

Sausalito, California 94965
3030 Bridgeway Blvd.
Phone: (415) 332-5070

Denver, Colorado 80222
2120 South Birch Street
Phone: (303) 756-1563

Bellevue, Washington 98004
Carlson Building
808-106th Avenue, N.E.
Phone: (206) 454-3322

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Phone: (201) 447-2100

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134 North Narberth Avenue
P.O. Box 327
Phone: (215) 839-6344

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Phone: (504) 737-5106

Tulsa, Oklahoma 74105
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4835 S. Peoria
Phone: (918) 743-8088

Houston, Texas 77036
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Phone: (713) 774-2513

CANADA

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Telex: 066-777 MOTORLIC PHX
Cable: MOTOL

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Stotfold, Hitchin, Herts.
England
Cable: CONTRONIC HITCHIN

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P.O. BOX 5409 • PHOENIX, ARIZONA 85010 • PHONE (602) 959-1000

3513-10M-1268-MP-Printed in U.S.A.

MDR-1000



MOTOROLA'S Indiscriminate Reader...



MOTOROLA'S Indiscriminate Reader

Industry's first truly low-cost answer to your data-input bottlenecks: a versatile, "makes sense" mark-sense document reader from Motorola.

The MDR reader, an ordinary pencil and ordinary source documents . . . punched, preprinted or pencil-marked cards or pages . . . represent your capital equipment investment. The return is an advanced, highly improved data-entry capability with added premiums of operational cost savings and system flexibility. Raw data is translated directly to computer language and entered in your information processing system. Eliminated, are the intermediate steps of keypunching and keyverifying.

Operation of the MDR Series document reader is entirely automatic — no special skills or training required — and, it is compatible with commonly used I/O hardware. The machine output can be fed directly to teletypewriters, punched or magnetic tape, key punches . . . or directly into the computer.

This remarkable machine leases for less than $100 a month, or can be purchased at prices starting at $2,725.

The Motorola MDR-1000 will read practically anything you put under its nose: punched cards, pencil-marked cards, punched or mark-sense data columns on page-size documents of any length. Even punched and mark-sense data combined.

Cards can be entered into the reader manually or automatically with hopper feed. Attended or unattended. Card or page format is flexible; you arrange column spacing and data blocks to satisfy task requirements, not our machine.

The MDR reads and translates the raw data into standard USASCII language output or, optionally, into other binary decimal codes. Output data can be transmitted in either bit serial or bit parallel form.

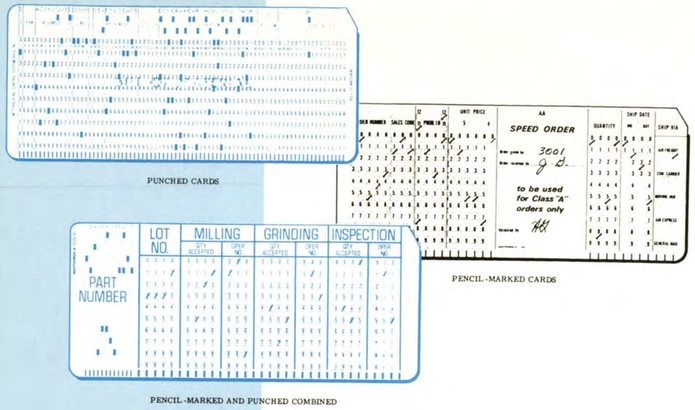
The reader output can drive acoustic couplers, common carrier transmission circuits (either voice grade or 150-baud channels), and telephone data sets, including DATA-PHONE Data Sets 103A, 202C, 402C or their equivalents.

The MDR-1000 is small enough to fit on one corner of a desk top, versatile enough to take on tasks of virtually any scope or magnitude. Until now, data entry has been a complicated process, often requiring highly skilled operators and a significant financial investment. The simplicity, versatility and all-around economy of the MDR overcomes these objections, actually allows expansion of data collection while simplifying data entry routines. Unlike keyboard or pushbutton entry devices it provides a convenient audit trail after data has been entered.

The Motorola concept permits the data originator to achieve one-step data transfer — document to machine language — bypassing intermediate keypunching, keyverifying, and other specialized equipment operations.

MDR-1000 FACTS

Input Language	Hollerith code
Output Language	USASCII code
Parity	Odd, even, or none
Feed	Manual (card or page) or Automatic (cards using hopper)
Hopper Size	250-card capacity, hoppers available for 51-column and 80-column size tab cards
High Speed Card Eject	Code is marked, punched, or printed on tab card for automatic fast eject at end of card data
Transmission Rate & Modems	Low speed — 110 bits/sec (Teletype or DATA-PHONE® Data Set 103A) High Speed — 1050 bits/sec (DATA-PHONE® Data Sets 202C or 202E)
Reading Rate	
Manual:	
Low Speed	40 column card 6 sec/card 80 column card 12 sec/card
High Speed	40 column card 0.6 sec/card 80 column card 1.2 sec/card
Auto Feed (no eject):	
Low Speed	40 column card 6 cards/min 80 column card 3 cards/min
High Speed	40 column card 60 cards/min 80 column card 30 cards/min
Auto Feed (with eject):	
Low Speed	40 column card $14 - \frac{N}{5}$ cards/min 80 column card $7 - \frac{N}{20}$ cards/min
High Speed	40 column card $140 - 2N$ cards/min 80 column card $70 - \frac{N}{2}$ cards/min (Where N is eject column number or "40" if no eject and N' is eject column number or "80" if no eject.)
Communications Interface	Voice grade circuit or 150-baud data channel
Electronic Interface	Circuit per EIA Standard RS-232B or dry contact (20 mA or 60 mA)
Hopper Empty Alarm	Attended: both audible and visible Unattended: code transmitted to receiving data terminal
Power	115V, 60Hz
Dimensions	16¼" W by 17¾" D by 10" H
Weight	45 lb.
Color	Beige



PUNCHED CARDS

PENCIL-MARKED CARDS

PENCIL-MARKED AND PUNCHED COMBINED

FORMATS FOR EVERY USE

With the Motorola MDR, you are free to design each document for optimum human intelligibility and accuracy. The MDR will handle standard punched cards or documents up to 8½" wide by any length. The cards can contain information that has been pencil marked, punched or both on one card. Format of the marks and punching conforms to normal Hollerith coding with a maximum of 12 data positions per column. Formats are identical for documents and cards. This is made possible by holding the width of the reading area to a strip 3¼" wide — the industry standard for tab cards.

The 3¼" strip runs the length of the card or page and is positioned along the right-hand edge of the document. The remainder of the document may be used for whatever purpose the user's application calls for.

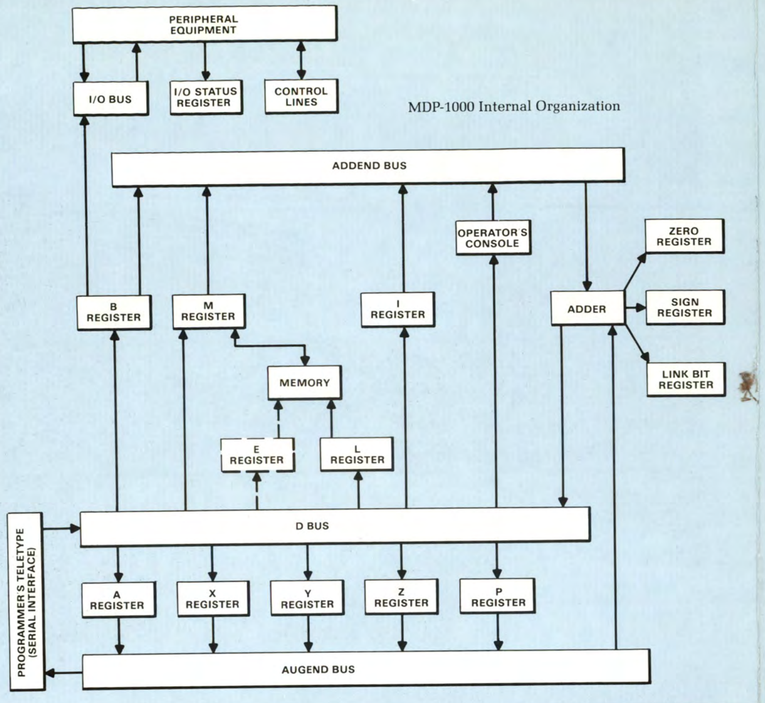
BENTON Auto Parts Centers
Serving Dealers Since 1927

CUSTOMER | CUST. NO. | ORDER APPROVED BY

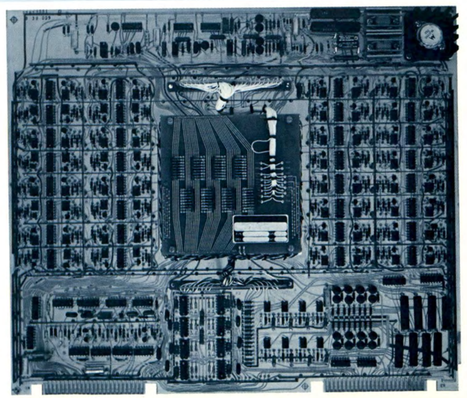
CATEGORY
OIL FILTER CARTRIDGES FOR IMPORTED CARS

Type	Year	Model	Stock No.
ALFA-ROMEO	54-67	EXEC. SPRITE 67	74-5298
	64-67	SPRITE GT	16-001
AUSTIN	55-57	A40, A50	74-5292
	55-60	A95	74-5291
	56-58	A35	74-5295
	57-62	A55	74-5296
	59-67	FARINA	74-5293
	59-67	MINI & COOPER	74-5297
AUSTIN-HEALEY	54-67	EXEC. SPRITE	74-5294
	57-67	SPRITE	74-5291
BORGWARD	54-61	ISABELLA, TS	43-485
DATSUN	64-65	SEDAN	89-4447
	63-67	SPORTS	89-4448
FIAT	53-67	1100	43-485
	57-67	600, 600D	73-610
	59-67	1500	74-790

CUST. NO. | PAGE NO. | Quantity Ordered



MDP-1000 Internal Organization



MDP-1000 I/C Construction Detail

SALES OFFICES

WESTERN REGION

El Segundo, California 90245
2333 Utah Avenue
Phone: (213) 772-3411

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Phone: (215) 839-6344

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Cable: MOTOL

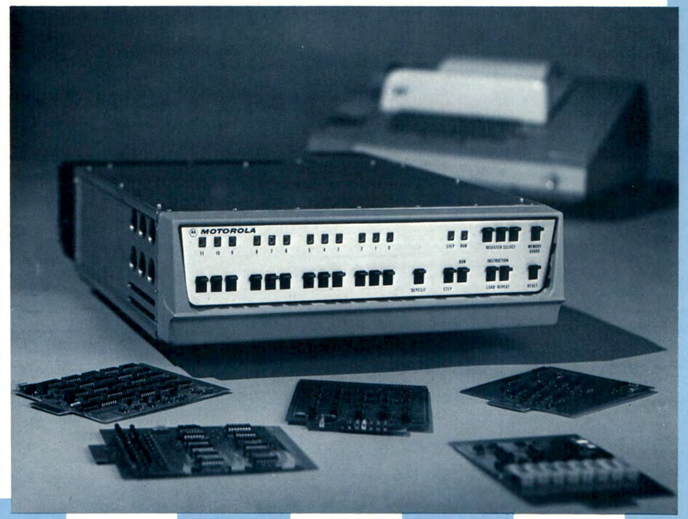
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Stotfold, Hitchin, Herts.
England
Cable: CONTRONIC HITCHIN

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M D P - 1 0 0 0



MOTOROLA'S Indispensable Computer...

FEATURES

Silicon monolithic integrated circuits

Five accumulators

Three index registers

Automatic indexing

12 hardware registers

Six addressing modes

Over 400 basic commands

Expandable memory to 16,384 words

Shared byte capability

Party line I/O facility

Wire-free construction

Less than 40 lbs.

Less than 60 watts A.C.

Plug-in expandability

Priority interrupt facilities

Wide temperature operating range — more than 90° C span



MDP-1000.....the indispensable addition to digital systems design

The Motorola MDP-1000 is an extremely compact, versatile, stored program digital computer exhibiting many features found only in much larger machines in a much higher price range. Weighing only 30 lbs. and requiring only 60 watts of power, the MDP employs silicon monolithic integrated circuits with printed circuit boards replacing conventional wiring techniques.

Originally conceived as a system component to complement Motorola's established lines of supervisory control and industrial automation products, the MDP is directly applicable to many other user requirements as well. In fact, provides a better solution, in terms of cost effectiveness, than any of the presently available processors of this type.

Among its system-oriented design features you will note the following:

- 8-bit byte orientation for more efficient and more economical information handling.
- Wire-free construction for greater reliability (a designed MTBF of more than 10,000 hours).
- Minimum number of circuit cards (3 cards for 4K memory) to simplify maintenance and spares problems.
- Wide environmental operating range: 0-50° C. temperature, 0-99% humidity.
- Extremely compact size: 9″ x 19″ x 21″; 30 lbs.
- TTL logic; silicon monolithic I/C construction.

With the advent of the MDP many small, special purpose, black box applications will find a ready, "off-the-shelf" answer to systems requirements, obviating a need for costly customized developments on the part of the manufacturer. Among its many possible applications are the following:

- A controller for high-speed computer peripherals.
- A message concentrator for multiple teletype systems.
- A data acquisition center for laboratory and analytical equipment.
- A data collection and production control unit for manufacturing operations. (Here, it may be used in conjunction with the Motorola MDR-1000 Document Reader to provide an entirely new and more efficient approach to these problems.)

SPECIFICATIONS

MDP-1000

TYPE

A digital, general-purpose, binary, parallel, magnetic-core-memory data processor.

MEMORY

Random-access, magnetic-core, 2.16-microseconds full cycle time, 8-bit words, 4,096 words (expandable to 16,384 words maximum).

ADDRESSING MODES

Direct
Indirect
Index Address Modification
Automatic Index Incrementing
Immediate

ARITHMETIC

Parallel, binary, fixed-point, two's complement

INSTRUCTIONS

Comprehensive repertoire, including:

Load
Store
Add
Subtract
Logical AND
Logical OR
Exclusive OR
Register Transfer
Register Shift
Jump
Input Output Control

INSTRUCTION EXECUTION TIMES (typical)

Load/Store from/to Memory. . . 6.48 microseconds
Add/Subtract 4.32 microseconds
Input/Output Bus Data Transfer. . 19.44 microseconds

INTEGRAL POWER SUPPLY

Choice of ac or dc-input supply — supplies are regulated and require no external regulation if input is within the following limits:

Ac-Input Power Supply:
Voltage. . . . . 105 to 125 Vac, single phase
Frequency. . . . . 47 to 63 Hz
Power. . . . 60 watts (4K memory)

Dc-Input Power Supply:
Voltage. . . . . 22 to 29 Vdc
Power. . . . 60 watts (4K memory)

PHYSICAL CHARACTERISTICS
Height. . . . . 21 inches
Depth. . . . . 9 inches
Width. . . . . 19 inches
Weight. 30 pounds (4K memory)
Mounting. . 19 inch relay rack or table top

ENVIRONMENTS
Temperature. . . . . 0 to 50° C (−30 to +60° C optional)
Relative Humidity. . . . . 0 to 90%

OPTIONS
Automatic/Priority Interrupt Facility
Relative Time Clock
Direct Memory Transfer
Power Failure Detection/Restart

I/O SUBSYSTEM
INPUT/OUTPUT FACILITY
Input/Output Bus for Parallel Data Transfer
Parallel Input and Output Channels
Output Control Facility
External Test Facility

I/O POWER SUPPLY
Input
Two models with same specifications as MDP power supply described above.
Output

Ac-Input Power Supply. .	+15 Vdc at 3.5 A −15 Vdc at 2.5 A + 5 Vdc at 5.0 A
Dc-Input Power Supply. .	+15 Vdc at 3.5 A −15 Vdc at 2.5 A + 5 Vdc at 5.0 A 115 Vac, 60 Hz, at 0.8 A

Physical Characteristics
Height. . . . . 5¼ inches
Depth. . . . . 6 inches
Width. . . . . 19 inches (rack mounting)

I/O MODULE OPTIONS
ANALOG MODULES
Analog to Digital Converter, twelve bit
Analog to Digital Gain and Control
Sample and Hold Analog Outputs
Single Ended Electronic Multiplexer
Differential Electronic Input Multiplexer
Buffered Digital to Analog Converter, twelve bit

INTERFACE MODULES
Functional Interface Translator
Cable and Cable Interface Translator
Serial to Parallel Communication Interface
202C2 Modem Controller, half duplex
103A2 Modem Controller, half duplex
Parallel TTY Controller, half duplex

DIGITAL SYSTEM MODULES
Buffered Electronic Driver Outputs
Electronic Isolated Inputs
Buffered Electronic Isolated Inputs
Relay Isolated Inputs
Buffered Contact Outputs
Minus to Plus Converters
Plus to Minus Converters

ANCILLARY ITEMS
Mounting Hardware for modules
Power Supply for Functional System Modules



PERIPHERAL EQUIPMENT

Model 33 Automatic Send Receive Set (ASR-33)
Model 33 Keyboard Send Receive Set (KSR-33)
Model 35 Automatic Send Receive Set (ASR-35)
Model 35 Keyboard Send Receive Set (KSR-35)
Model 37 Automatic Send Receive Set (ASR-37)
Model 37 Keyboard Send Receive Set (KSR-37)
Magnetic Tape Units
Card Readers (including Motorola Document Reader MDR-1000)
Paper Tape Equipment
Other peripherals as required

SOFTWARE

Complete, comprehensive MDP system software allows efficient development of customized programs. Basic software packages include an assembler, utility programs, input/output programs, debugging routines, and diagnostics. A library of general purpose programs and experienced programmers assure MDP users of quality programs at lowest cost. Major software packages include:

Assembler
Debug
Multiple Precision Arithmetic
I/O Drivers
Tape Edit
Monitor
Code Conversion
Binary Load/Dump
Fixed Point Arithmetic

MDR-1000 SERIES DOCUMENT READER . . . applicable to systems transmitting at speeds of 110 bps.

The Motorola MDR-1000 Series Document Readers are designed to read pencil-marked, key-punched or pre-printed data, or any combination of the three, appearing on standard-size or elongated tab cards, or on page-size documents of any length.

The optically read data is electronically translated to standard USASCII business machine language and then transmitted via modems and telephone line to a wide variety of optional receivers at a central location. Modems may be DATA-PHONE Data Sets, acoustic couplers, etc. Receivers may be teletypewriters, paper or magnetic tape punches, card punches or a computer.



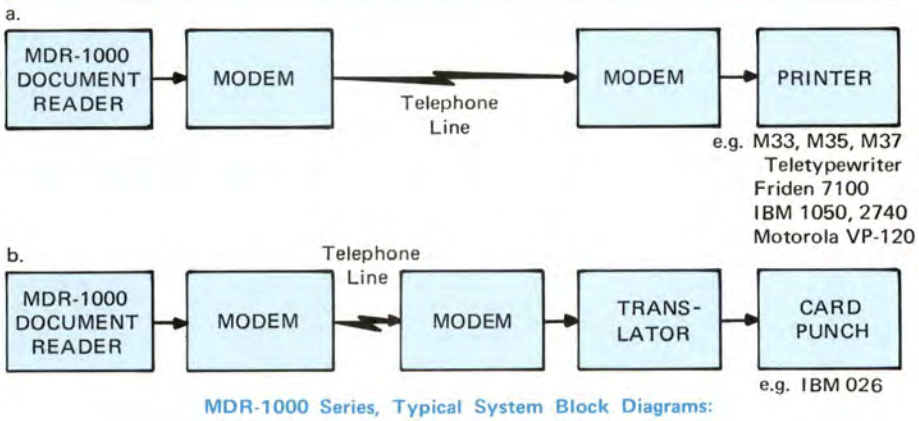
TYPICAL MODELS in the MDR-1000 Series include:

Model MDR-1040A –
Operates unattended. Has automatic feed with card-eject feature. Transmits at 110 bps.

Model MDR-1140A –
Operates attended. Has automatic feed with card-eject. Transmits at 110 bps.

Model MDR-1110A –
Operates attended. Has manual feed only. Transmits at 110 bps.

TYPICAL APPLICATIONS for the Motorola MDR-1000 Series Document Reader include: Time Sharing, Doctor/Hospital Records Processing, Production Test Records, Inventory Control, Payroll Records Keeping, Service Reporting, Utility Reading and Billing Systems, Computer Programming.



MDR-1000 Series, Typical System Block Diagrams:
a.) with print-out device at receiving terminal;
b.) with key punch at receiving terminal.

MODEMS

DATA-PHONE Data Sets: Bell System 103A2, 103F or equivalent.

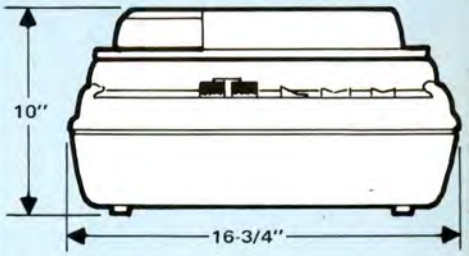
Acoustic Couplers: Omnitec FMF723, Data Communications Systems DAC 337, G.E. TDM 111, TDM 115, or Motorola Coupler (see Data Sheet No. 3600-5).

MDR-1000 SERIES PHYSICAL CHARACTERISTICS

HEIGHT – 10 inches
WIDTH – 16-1/4 inches (less card catcher)
– 24-1/4 inches (with card catcher)
DEPTH – 17-3/4 inches
WEIGHT – 45 pounds
COLOR – Beige
POWER
117 VAC ±10%, 50-60 Hz, 1.5 A

MOTOROLA'S Indiscriminate Reader

MDR-1000 SERIES DOCUMENT READER



FEATURES

The MDR-1000 Series provides all of the following features:

Vertical parity –
Odd, even (or none) at user's option, to preclude errors in code transmission.

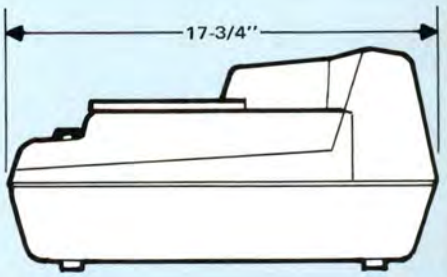
Control codes –
Programmable in the field to provide signal indication to the receiver of document entry and document exit to and from the Reader.

Automatic End-of-Data Card Ejection –
Available on hopper-fed units to accelerate reading cycle.

Alarms –
Both audible and visual alarms provided to indicate "Hopper Empty" and "Card Jam."

Hopper-Empty Signal –
BEL code generated and transmitted automatically to the receiver.

Automatic Power Shutdown – controlled from the receiver for unattended units.



MOTOROLA/ *Information Systems*

MDR-1000 SERIES TECHNICAL SPECIFICATIONS

INPUT LANGUAGE
Hollerith (85 characters)
USASCII (128 characters)

OUTPUT LANGUAGE
USASCII

TRANSMISSION RATE
110 bps

ENVIRONMENTAL
Operating and Storage: 40° F to 120° F. 10% to 95% relative humidity.

Note: Environmental specs apply only to Document Reader; not to Modems or documents.

MDR-1000 SERIES READING RATES		
FEED	40-Column Card	80-Column Card
Manual	6 sec/card	12 sec/card
Automatic (no eject)	6 cards/min	3 cards/min
Automatic (w/eject)	$14-\frac{N}{5}$ cards/min	$7-\frac{N'}{20}$ cards/min
(Where N is eject column number or "40" if no eject; N' is eject column no. or "80" if no eject)		

MODEM INTERFACE

The MDR-1000 Series Interface conforms to EIA Standard RS-232B; pin connections and corresponding functions shown below.

PIN	CIRCUIT	FUNCTION	LEVELS	
			Control Off Data "1"	Control On Data "0"
1	AA	Protective Gnd	Not Used	Not Used
2	BA	Data Output	-16V	+12V
4	CA	Request to Send	-16V	+12V
5	CB	Clear to Send	-6V to -25V	+3V to +25V
6	CC	Data Set Ready	-5V to -25V	+5V to +25V
7	AB	Signal Gnd	Gnd	Gnd
8	CF	Data Carrier Detect	-5V to -25V	+5V to +25V
20	CD	Data Terminal Ready	-16V	+12V

NOTE: Inputs have 3.3K limiting resistor.

CONTROL CODES: To provide Record-Separation data to the receiver, ten field-programmable codes are available:

To Indicate Document Entry – use any 2 from list below

To Indicate Document Exit – use 1 from list below

NUL	DEL
CR	US
LF	FS
HT	GS
FF	RS

ACCESSORIES SUPPLIED

All MDR-1000 Series Document Readers are supplied with: Card Weight, Deck of Test Cards, Power Cord (6', 3-prong plug), Interface Cable (9', terminated at each end with Cinch or Cannon DBM-25P plug), Dust Cover and Operator's Manual.

OPTIONS AVAILABLE

The following options are available with the MDR-1000 Series Readers:

Unattended Operation
PTTC/BCD or EBCDIC output languages
Numeric-only Output

For further information, call or write:

MOTOROLA Instrumentation and Control Inc.
A SUBSIDIARY OF MOTOROLA INC.
P. O. BOX 5409 • PHOENIX, ARIZONA 85010 • PHONE (602) 959-1000

3600-1–10M–1268–DGP–PRINTED IN U.S.A.

MDR-2000 SERIES DOCUMENT READER . . . applicable to systems transmitting at speeds of 1050 bps.

The Motorola MDR-2000 Series Document Readers are designed to read pencil-marked, key-punched or pre-printed data, or any combination of the three, appearing on standard-size or elongated tab cards, or on page-size documents of any length.

The optically read data is electronically translated to standard USASCII business machine language and then transmitted via modems and telephone line to a wide variety of optional receivers at a central location. Modems may be DATA-PHONE Data Sets, acoustic couplers, etc. Receivers may be teletypewriters, magnetic tape units, or a computer.



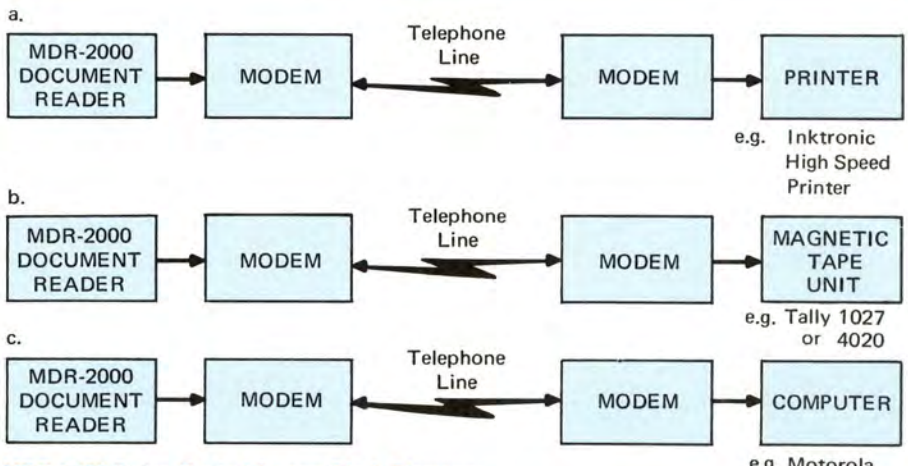
TYPICAL MODELS in the MDR-2000 Series include:

Model MDR-2040B –
Operates unattended. Has automatic feed with card-eject feature. Transmits at 1050 bps.

Model MDR-2140B –
Operates attended. Has automatic feed with card-eject. Transmits at 1050 bps.

Model MDR-2110B –
Operates attended. Has manual feed only. Transmits at 1050 bps.

TYPICAL APPLICATIONS for the Motorola MDR-2000 Series Document Reader include: Doctor/Hospital Records Processing, Production Test Records, Inventory Control, Payroll Records Keeping, Service Reporting, Utility Reading and Billing Systems, Computer Programming.



MDR-2000 Series, Typical System Block Diagrams:
a.) with print-out device at receiving terminal;
b.) with magnetic tape unit at receiving terminal.
c.) with computer at receiving terminal.

MODEMS

DATA-PHONE Data Sets: Bell System 202C2, 202E9 or equivalent.

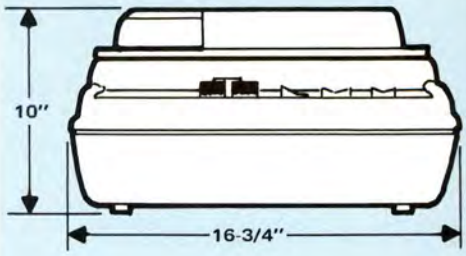
MDR-2000 SERIES PHYSICAL CHARACTERISTICS

HEIGHT – 10 inches
WIDTH – 16-1/4 inches (less card catcher)
– 24-1/4 inches (with card catcher)
DEPTH – 17-3/4 inches
WEIGHT – 45 pounds
COLOR – Beige

POWER
117 VAC ±10%, 50-60 Hz, 1.5 A

MOTOROLA'S Indiscriminate Reader

MDR-2000 SERIES DOCUMENT READER



FEATURES

The MDR-2000 Series provides all of the following features:

Vertical parity –
Odd, even (or none) at user's option, to preclude errors in code transmission.

Control Codes –
Programmable in the field to provide signal indication to the receiver of document entry and document exit to and from the Reader.

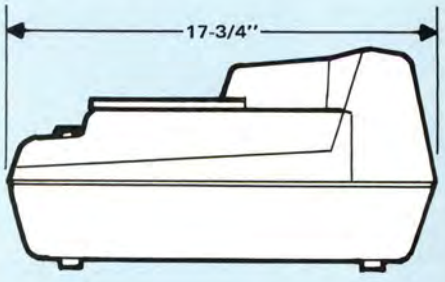
Automatic End-of-Data
Card Ejection –
Available on hopper-fed units to accelerate reading cycle.

Alarms –
Both audible and visual alarms provided to indicate "Hopper Empty" and "Card Jam".

Hopper-Empty Signal –
BEL code generated and transmitted automatically to the receiver.

Automatic Power Shutdown –
Controlled from the receiver for unattended units.

Card Feed –
Controllable by reverse channel (SBB) of modem.



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MDR-2000 SERIES TECHNICAL SPECIFICATIONS

INPUT LANGUAGE
Hollerith (85 characters)
USASCII (128 characters)

OUTPUT LANGUAGE
USASCII

TRANSMISSION RATE
1050 bps

ENVIRONMENTAL
Operating and Storage: 40° F to 120° F. 10% to 95% relative humidity.

Note: Environmental specs apply only to Document Reader; not to Modems or documents.

MODEM INTERFACE
The MDR-2000 Series Interface conforms to EIA Standard RS-232B; pin connections and corresponding functions shown below.

MDR-2000 SERIES READING RATES		
FEED	40-Column Card	80-Column Card
Manual	0.6 sec/card	1.2 sec/card
Automatic (no eject)	60 cards/min	30 cards/min
Automatic (w/eject)	140-2N cards/min	$70-\frac{N'}{2}$ cards/min
(Where N is eject column number or "40" if no eject; N' is eject column no. or "80" if no eject)		

PIN	CIRCUIT	FUNCTION	LEVELS	
			Control Off Data "1"	Control On Data "0"
1	AA	Protective Gnd	Not Used	Not Used
2	BA	Data Output	-16V	+12V
4	CA	Request to Send	-16V	+12V
5	CB	Clear to Send	-16V to -25V	+3V to +25V
6	CC	Data Set Ready	-5V to -25V	+5V to +25V
7	AB	Signal Gnd	Gnd	Gnd
8	CF	Data Carrier Detect	-5V to -25V	+5V to +25V
12	SBB	Reverse Channel	-5V to -25V	+5V to +25V
20	CD	Data Terminal Ready	-16V	+12V

NOTE: Inputs have 3.3K limiting resistor.

CONTROL CODES: To provide Record-Separation data to the receiver, ten field-programmable codes are available:

To Indicate Document Entry – use any 2 from list below

To Indicate Document Exit – use 1 from list below

NUL	DEL
CR	US
LF	FS
HT	GS
FF	RS

ACCESSORIES SUPPLIED
All MDR-2000 Series Document Readers are supplied with: Card Weight, Deck of Test Cards, Power Cord (6', 3-prong plug), Interface Cable (9', terminated at each end with Cinch or Cannon DBM-25P plug), Dust Cover and Operator's Manual.

OPTIONS AVAILABLE
The following options are available with the MDR-2000 Series Readers:

Unattended Operation – for polling systems
PTTC/BCD or EBCDIC output languages
Numeric-only input

For further information, call or write:

MOTOROLA Instrumentation and Control Inc.
A SUBSIDIARY OF MOTOROLA INC.
P.O. BOX 5409 • PHOENIX, ARIZONA 85010 • PHONE (602) 959-1000

3600-2–10M–1268–DGP–PRINTED IN U.S.A.

MDR-9000 SERIES DOCUMENT READER . . . applicable directly to teletypewriter systems transmitting at speeds of 110 bps.

The Motorola MDR-9000 Series Document Readers are designed to read pencil-marked, key-punched or pre-printed data, or any combination of the three, appearing on standard-size or elongated tab cards, or on page-size documents of any length.

The optically read data is electronically translated to standard USASCII business machine language and then transmitted via modems and telephone line to a wide variety of optional receivers at a central location. Modems may be DATA-PHONE Data Sets, acoustic couplers, etc. Receivers may be teletypewriters, paper or magnetic tape punches, card punches or a computer.

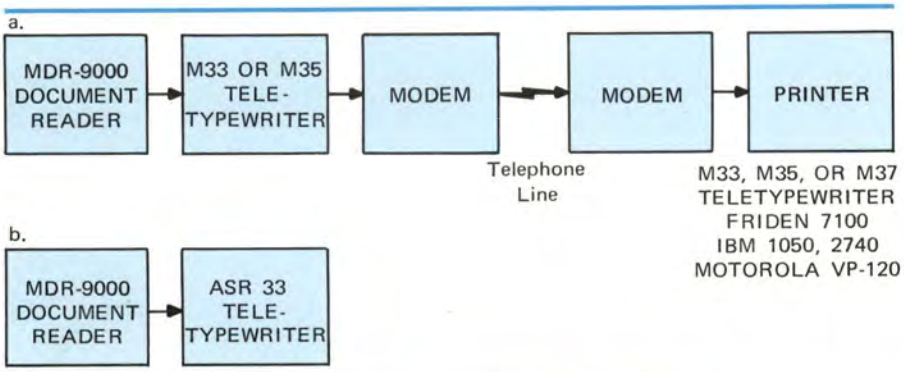


TYPICAL MODELS in the MDR-9000 Series include:

Model MDR-9240A –
Operates attended. Has automatic feed with card-eject. Transmits at 110 bps.

Model MDR-9210A –
Operates attended. Has manual feed only. Transmits at 110 bps.

TYPICAL APPLICATIONS for the Motorola MDR-9000 Series Document Reader include: Time Sharing, Doctor/Hospital Records Processing, Production Test Records, Inventory Control, Payroll Records Keeping, Service Reporting, Utility Reading and Billing Systems, Computer Programming, Specialized Accounting Systems and Private-Line Communication systems.



MDR-9000 Series, Typical System Block Diagram.
a.) communications or time-sharing system
b.) system for generating hard copy or punch tape

MODEMS

DATA-PHONE Data Sets: Bell System 101C or equivalent.

Acoustic Couplers: Omnitec FMF723, Data Communications Systems DAC 337, or G.E. TDM 111 or TDM 115.

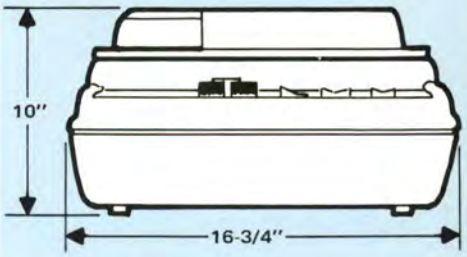
MDR-9000 SERIES PHYSICAL CHARACTERISTICS

HEIGHT – 10 inches
WIDTH – 16-1/4 inches (less card catcher)
– 24-1/4 inches (with card catcher)
DEPTH – 17-3/4 inches
WEIGHT – 45 pounds
COLOR – Beige

POWER –
117 VAC ±10%, 50-60 Hz, 1.5 A

MOTOROLA'S Indiscriminate Reader

MDR-9000 SERIES DOCUMENT READER



FEATURES

The MDR-9000 Series provides all of the following features:

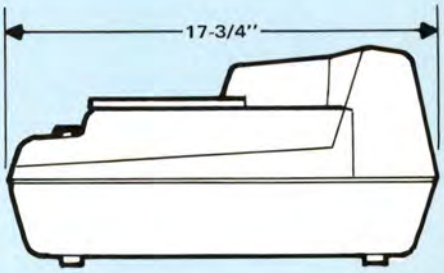
Vertical parity –
Odd, even (or none) at user's option, to preclude errors in code transmission.

Control Codes –
Programmable in the field to provide signal indication to the receiver of document entry and document exit to and from the Reader.

Automatic End-of-Data Card Ejection –
Available on hopper-fed units to accelerate reading cycle.

Alarms –
Both audible and visual alarms provided to indicate "Hopper Empty" and "Card Jam."

Hopper-Empty Signal –
BEL code generated and transmitted automatically to the receiver.



MOTOROLA/
Information Systems

MDR-9000 SERIES TECHNICAL SPECIFICATIONS

INPUT LANGUAGE
Hollerith (85 characters)
USASCII (128 characters)

OUTPUT LANGUAGE
USASCII

TRANSMISSION RATE
110 bps

ENVIRONMENTAL
Operating and Storage: 40° F to 120° F. 10% to 95% relative humidity.

Note: Environmental specs apply only to Document Reader; not to Modems or documents.

INTERFACE

Dry contact (applicable in 20 mA or 60 mA DC circuit).

MDR-9000 SERIES READING RATES		
FEED	40-Column Card	80-Column Card
Manual	6 sec/card	12 sec/card
Automatic (no eject)	6 cards/min	3 cards/min
Automatic (w/eject)	$14-\frac{N}{5}$ cards/min	$7-\frac{N'}{20}$ cards/min

(Where N is eject column number of "40" if no eject; N' is eject column no. or "80" if no eject)

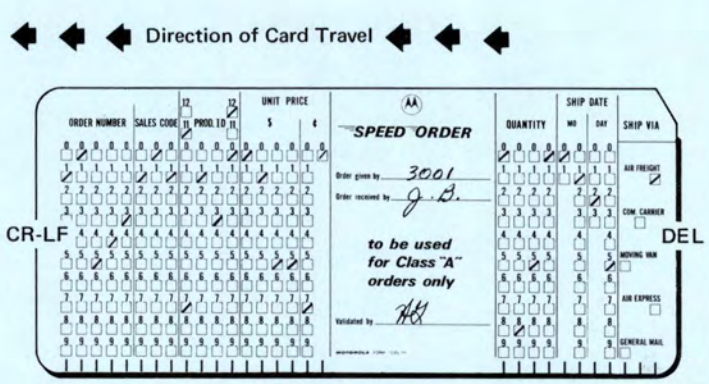
CONTROL CODES: To provide Record-Separation data to the receiver, ten field-programmable codes are available:

To Indicate Document Entry – use any 2 from list below.

To Indicate Document Exit – use 1 from list below

NUL	DEL
CR	US
LF	FS
HT	GS
FF	RS

Example:



ACCESSORIES SUPPLIED

All MDR-9000 Series Document Readers are supplied with: Card Weight, Deck of Test Cards, Power Cord (6', 3-prong plug), Interface (2-point terminal block), Dust Cover and Operator's Manual.

OPTIONS AVAILABLE

MDR-9000 Series Readers are available with Numeric-only Input

For further information, call or write:

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