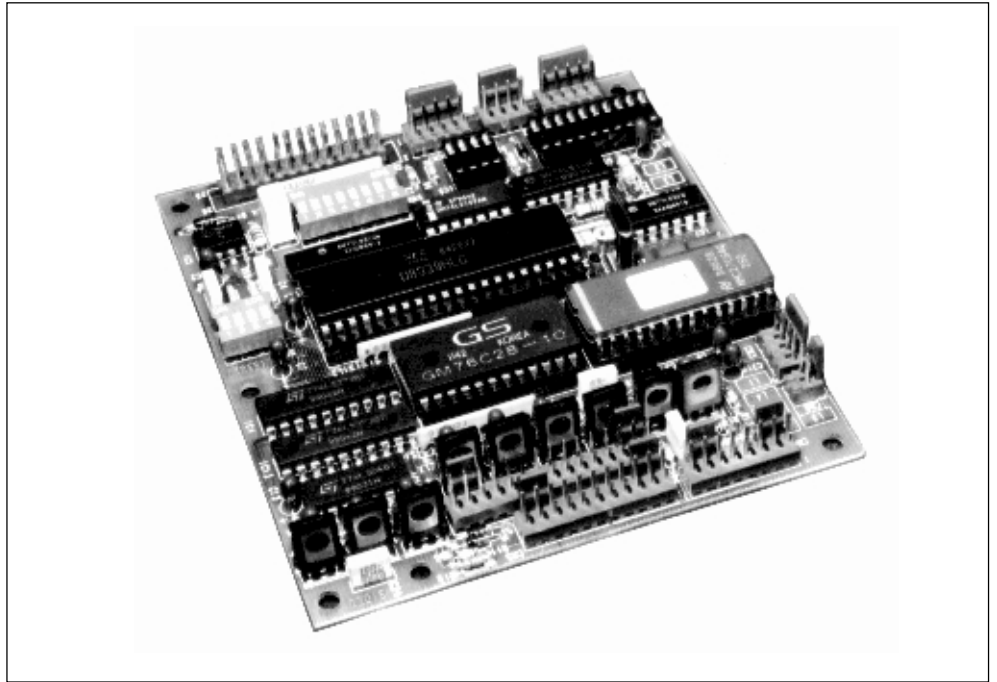


## Features

- Drives 16 to 42 Column Mechanisms
- Drives 4 needle and 6 Needle M150, M160, M180 Mechanisms
- Inputs: Parallel Centronics  
Serial RS232C  
20mA loop  
TTL
- 1500 Character Buffer
- Fast Operation:  
Prints While Receiving Data
- Date and Time Version
- Dot Addressable Graphics
- Small Size: 110mm x 100mm
- 5 Vdc Supply

## Applications

- Data Logging
- Production Control Equipment
- Time Keeping Systems
- Automatic Test Equipment
- Mobile Application
- Instrumentation
- Vending Machines
- Ticket Issuing Equipment
- IBM Compatible



## Introduction

The D193 Series are designed to interface the industry standard M150, M160 and M180 range of miniature print mechanisms to parallel and serial inputs. By using a 1500 byte RAM buffer, data can be received for subsequent lines while one line is being printed. This enables the full speed of the print mechanism to be realised. The M180 range of 6 needle mechanisms print up to 1.7 lines per second.

The date and time version is battery backed in case of power failure. Data can be received from Centronics Parallel sources such as IBM PC or AT. Serial versions accept data up to 9600 Baud and in 2 modes DTR or XON/XOFF. All versions print dot addressable graphics and have a full IBM2 character set.

Print out can be inverted for panel mount applications. A wide range of plastic and metal housings are available for the printer mechanisms.

## Operation

A pin to pin cable needs to be made by the user from the mechanism to the D193. The program automatically detects which mechanism is connected. A self test printout gives details of the D193 setting including the serial format.

The D193 can be mounted on the rear of the D143 and D182 printer assemblies. Printing can be inverted by setting a DIL switch, useful for panel mount applications.

A line is printed once it is full or a print command is received. The graphic mode is entered by software command and is fully dot addressable. Data must be entered sufficiently fast to match print speed. In Serial mode 2400 Baud is required. Parallel data transfer is usually sufficiently fast.

When the RAM becomes full in Serial mode, DTR is set low or XOFF transmitted. In Parallel mode the BUSY signal is set.

Date or time is printed upon receipt of software commands. The clock can be set by software command or using 2 external switches.

A Paper End input can be used to set a signal on the Centronics Parallel Connector, stopping further data transfers. An external LED can be connected and lights when Paper End is detected.

## SPECIFICATION

<b>4 Needle:</b>	Mechanism:	M150	M160	M163	M164
	Characters/Line	16	24	32	40
	Print Speed/Sec	1.0	0.7	0.5	0.4
	Graphics Dots/Line	96	144	192	240

<b>6 Needle:</b>	Mechanism:	M180	M181	M182	M183
	Characters/Line	24	30	36	42
	Print Speed/Sec	1.7	1.3	1.1	0.9
	Graphics Dots/Line	144	180	216	252

**Buffer Length:** 1500 Characters

**Data Transfer:** Modes: Centronics Parallel  
RS232C Serial  
20mA Loop Serial  
TTL Serial

**Serial:** Baud: 150, 300, 600, 1200, 2400, 4800, 9600  
Parity: Odd, Even, None  
Bit Number: 7 or 8  
Protocol: DTR or XON/XOFF

**Character Set:** IBM2

**Countries:** UK  
Also available: Germany, France, International

**Graphics Capability:** Dot addressable. See dots/line above.

**Print Modes:** Invert, Double Width, Double Height

**Date and Times:** Format: Years, Months, Days, Hours, Minutes, Seconds  
Battery Backed: Yes  
Set Up: By software command or via 2 external switches  
Printout: By software commands  
Year 2000 Compatible

**Power Supply:** Print Mechanism: +5Vdc +1.0V -0.5V  
4 Needle: Text only: 0.3A ave. 1.5A max  
1.5A ave. 2.0A max  
6 Needle: Text only: 0.6A ave. 3.0A max  
3.3A ave. 4.0A max  
Standby: 10mA  
Logic Supply: 5Vdc ± 0.25Vdc  
0.17A typical, 0.25A max

**Temperature:** Operating: 5°C to 40°C (20 to 80% humidity)  
Storage: -20°C to 70°C (95% humidity max)

**Physical Size:** 100mm(W) x 110mm(D) x 15mm(H)

**Weight:** 104 grams

## ASSOCIATED PRODUCTS

<b>Mains Power Supply:</b>	D167 Series
<b>Plastic Housing + Mechanism + Paper Low</b>	D240 Series
<b>Plastic Housing + Mechanism + Low Cost:</b>	D220 Series
<b>3U High Plastic Housing + 4 needle Mechanism:</b>	D211 Series
<b>Metal Housing + 4 needle Mechanism:</b>	D218 Series
<b>3U High Metal Housing + Rewind + Mechanism</b>	
<b>+ Paper Low:</b>	D216 Series
<b>DIN Cased 3U High Printer</b>	D238 Series
<b>DIN Cased 3U High Printer &amp; Rewind</b>	D239 Series

**Paper Roll Holders:**

D175 Series

**Rewind Units:**

DAF-220 Series

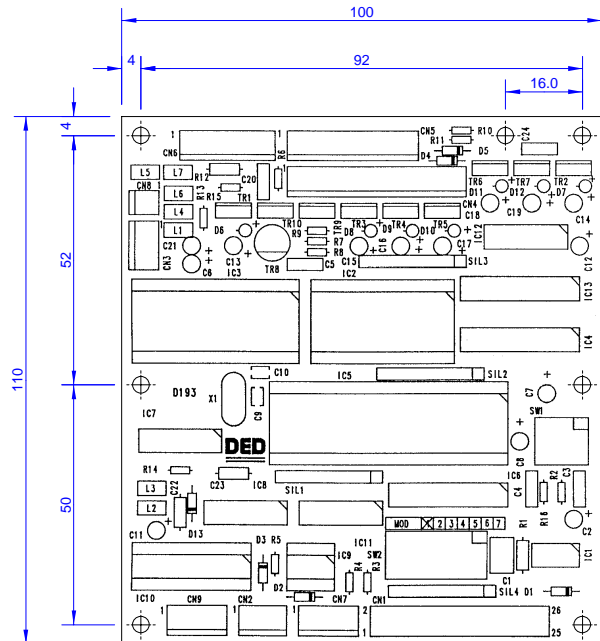
**ORDER CODE** D193-06-CD

Drives all mechanisms. Complete with RAM and all mating connectors.

C=1 Without Clock  
3 With Clock

D=1 RS232C Serial  
4 Centronics Parallel + TTL Serial  
7 20mA Loop Serial

## PHYSICAL DIMENSIONS (mm)



7 Fixing Holes 3.2mm Diameter

## CONNECTIONS

- CN1** Centronics Parallel Connector
- CN2** 20mA Current Loop Connector
- CN3** Power Supply Connector
- CN4** 6 Needle Print Mechanism Connector
- CN5** 4 Needle Print Mechanism Connector
- CN6** Multi Purpose Connector (FEED/REWIND/LED/PEND/RESET)
- CN7** Guillotine/Date and Time Setup Connector
- CN8** Paper End Connector
- CN9** RS232C Serial and TTL Serial Connector

All Mating connectors and crimps are supplied  
CN1 is a 26 way IDC socket for Parallel versions.

Publication No D80-D

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Specifications are subject to change without notice



Technology for the New Century

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