

Features

- 24,30,36,42 Column Mechanisms
- 6 Horizontal Needles
- Fast Printing, 1.6-1 Lines/Second
- Fast Paper Feed Mode
- Dot Graphics Capability
- Uses Standard Paper
- Cassette Ribbon
- Compact Size, Low Profile
- Horizontal or Vertical Mounting
- 5Vdc Supply
- Wide Range of Interfaces
- Industry Standard Mechanisms
- High Reliability
- Low Cost

Applications

- Industrial Control
- Cash Dispensers
- Vending Machines
- Gaming Machines
- Hand Held/Portable Terminals
- Automatic Test Equipment
- Alarm Monitoring
- Data Logging
- Ticket Issuing



Introduction

The M180 series are Epson industry standard miniature printer mechanisms using impact dot matrix method. They are later versions of the popular 4 needle M150/M160/M164 range of mechanisms but have 6 needles. They operate 2 at a time to double the print speed. They also have a separate fast paper feed operation. The increased printing speed increases the power requirements.

Their increased speed makes them ideal for receipt or ticket issuing. Their compact lightweight design enables them to be used in hand held terminals. The low cost D193 interfaces enable them to be easily run from serial and parallel sources. The D193 accepts data while printing to maximize the mechanisms print speed. The D165 and D211 plastic assemblies utilise the mechanisms.

The mechanisms can be mounted vertically for panel mount applications. All versions are the same size with the same paper width hence as the number of columns increases the character width decreases.

Operation

The mechanisms consist of 6 horizontal solenoids on a head which shuttles sideways so that each solenoid prints 1/6 the characters. A +5Vdc signal applied to the single motor activates the shuttle movement. As the head moves, timing signals from a tachometer fitted to the motor are generated. For each timing signal two of the solenoids can be fired causing needles to be propelled outward. The needle hits the inked ribbon onto the paper causing a dot to be printed.

The 6 needles in groups of 2 are fired in turn until the specified number of dots across the paper has been counted. The motor continues operating and a cam is triggered which causes the paper to advance 1 dot line. The cassette ribbon is also advanced. Fast paper feeding can be achieved by activating a separate solenoid. This causes 3 dot lines to be advanced for each head movement. At the beginning of each dot line a reed switch closes to indicate the start of a dot line.

Typically 7 dot lines are used to print characters with a further 3 dot line spacing. As each dot is directly addressable full graphics can be printed.

13 wires must be soldered to the leaf connector to control the mechanism. The mechanisms are fixed via 2 slotted screw holes.

SPECIFICATIONS

Printing System: Impact Dot Matrix

	M180	M181	M182	M183
Characters/Line:	24	30	36	42
Dots per Line:	144	180	216	252
Print Speed:	1 Dot Line: 75 1 Char Line (5x7 10 Dot Lines): 1.7	94 1.3	112 1.1	131mS 0.9Line/Sec
Paper Feed:	Normal: Fed Automatically per Dot Line Fast: 3.7	3.2	2.7	2.3 Line/Sec
Dot Size:	Width: 0.33 Height: 0.37	0.26 0.37	0.22 0.37	0.19mm 0.37mm
Dot Line Pitch:	0.37	0.37	0.37	0.37mm
Character Size: (5x7 Format)	Width: 1.7 Height: 2.6	1.4 2.6	1.2 2.6	1.1mm 2.6mm
Paper:	Type: Standard Width: 57.5mm Thickness: 0.06 to 0.085 mm Weight: 47 to 64gsm			
Inking:	Type: Cassette Operation: Automatically fed by motor Life: 250,000 characters Approx			
Motor:	Voltage: 4.8 +0.7 -0.7Vdc Currents: 0.2A (Average) 1.0A (Peak)			
Print Solenoids:	Number: 6 Voltage: 4.8 +0.7 -1.5Vdc Peak Current: 3A Pulse Width: 1 Timing Pulse Width (0.2 to 0.6mS) Duty Cycle: 1 in 3			

Timing Detector: Tachometer Connected to Motor

Reset Detector: Reed Switch. Closes at Home Position

Operating Temp: 0°C to 50°C

Reliability: Char Lines 700K 700K 600K 500K

Dimensions: 91(W) x 46.9(D) x 15.8(H)mm

Weight: 95grams

Connection: PCB with 0.1" pitch pads fitted to mechanism

Power Supply: Text only: 0.6A (Average), 3.0A (Maximum)
Full Graphics: 3.3A (Average), 4.0A (Maximum)

ORDER CODE

M180: 24 Column Mechanism, Cassette
M181: 30 Column Mechanism, Cassette
M182: 36 Column Mechanism, Cassette
M183: 42 Column Mechanism, Cassette

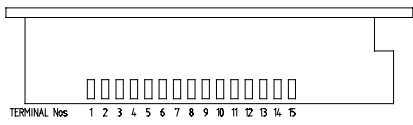
ACCESSORIES

Cassette Ribbon: Stock No: 553-160
Paper Roll: Stock No: 552-057
D193: Serial and Parallel Interface, 2K Ram, Clock
D167: Power Supply
D165: Panel Mount Plastic Assembly
D130: Rewinds
D175: Paper Holder

D211: 3U High Mounting Assembly

CONNECTIONS

FUNCTION	PRINT HEAD PIN No
Fast Feed	1
Fast Feed	2
Reset Detector	3
Reset Detector	4
Motor-	5
Motor+	6
Print Solenoid B	7
Print Solenoid C	8
Print Solenoid D	9
Print Solenoid E	10
Print Solenoid F	11
Print Solenoid Common	12
Print Solenoid A	13
Timing Detector	14
Timing Detector	15



PRINT SAMPLES

M180

```

2K BUFFER
IBM2 CHAR. SET

!"#$%&'()*+,-./01234567
89:;<=>?@ABCDEFGHIJKLMNO
PQRSTUVWXYZ[\]^_`abcdefg
    
```

M181

```

!"#$%&'()*+,-./0123456789:;<=
>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ
[\]^_`abcdefghijklmnopqrstuwxzy
    
```

M182

```

!"#$%&'()*+,-./0123456789:;<=>?@ABC
DEFGHIJKLMNPOQRSTUVWXYZ[\]^_`abcdefg
hijklmnopqrstuvwxyz()*+,-./0123456789:;<=
    
```

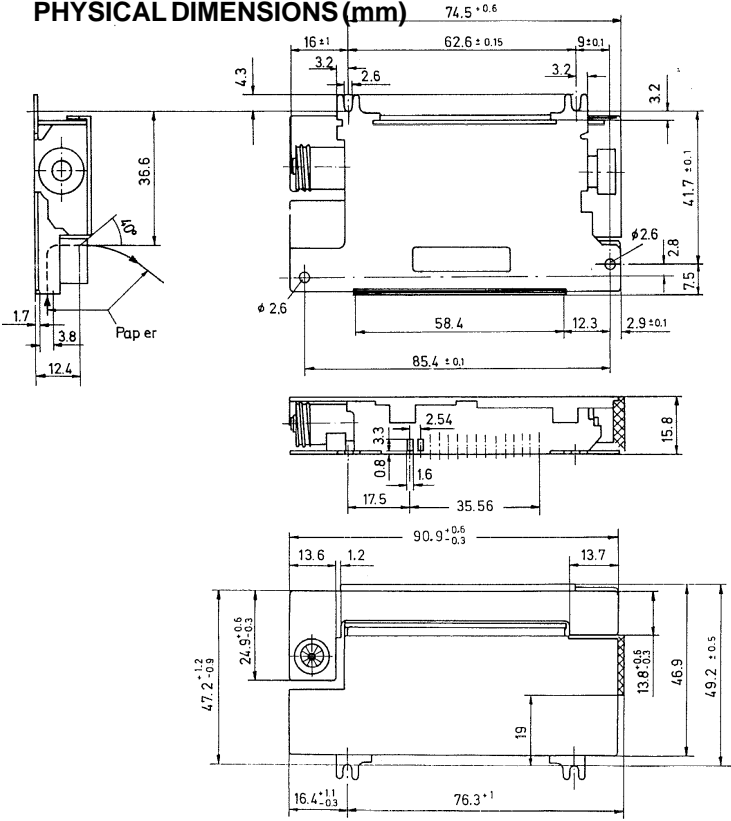
M183

```

2K BUFFER
IBM2 CHAR. SET

!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHI
JKLMNPOQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
tuwxzy()*+,-./0123456789:;<=
    
```

PHYSICAL DIMENSIONS (mm)



Publication No D92-A

Specifications are subject to change without notice



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