



M-190G PRINTER MECHANISM 24 COLUMNS ALPHANUMERIC

GENERAL SPECIFICATIONS

1.1 Printing Specifications

- 1.1.1 Print Method : Impact dot matrix printer (8 print solenoids)
- 1.1.2 Printing Speed :
- 1) Line Printing : 2.7 lines/sec \pm 20% (typical)
(5x7 font + 3-dot line spacing)
(Motor terminal voltage at 4.8 VDC constant, 25°C (77°F), continuous printing)
 - 2) 1 dot line : 21.6 dot lines/sec \pm 20% (typical)
(Motor terminal voltage at 4.8 VDC constant, 25°C (77°F), continuous printing)
- 1.1.3 Inking :
Ribbon Cassette Possible to use ERC-22 or ERC-09
- 1.1.4 Print Format
- 1) Total number of dots : Maximum 144 dots/dot line
 - 2) Number of columns : Maximum 24 (5x7 font and 1 dot column space) (3 columns/print solenoid x8)
- 1.1.5 Character Size
- 1) Dot pitch : Horizontal : 0.33 mm; Vertical : 0.37 mm
(0.013";0.015")
 - 2) 5 x 7 font : 1.7 mm (W) x 2.6 mm (H) (0.067" x 0.102")
- 1.1.6 Coping Capability : 1 original + 1 copy

1.2 Paper Feeding Specification

- 1) Feeding method : Friction method
Paper is automatically fed very dot line.
Possible to feed paper with a trigger solenoid for fast paper feeding with paper release mechanism.
- 2) Paper feeding pitch : When feeding automatically; 1-dot line pitch (0.37 mm (0.015"))
During fast feeding : 3-dot line pitch (1.11 mm (0.044"))
- 3) Fast paper feeding speed : 6.5 lines/sec \pm 20%
(Motor terminal voltage at 4.8 VDC constant, 25°C (77°F), continuous printing)
- 4) Paper specification : Width : 57.5 \pm 0.5 mm (2.26" \pm 0.02")

Note : Motor terminal voltage is potential difference between + (plus) and -(minus) terminals on PCB when the motor is energized.

1.3 Paper Specifications :

- 1) Paper type : Single-ply paper roll or Two-ply pressure sensitive paper
(Paper roll type or cut sheet type)
- 2) Size : 57.5 \pm 0.5 mm (Paper width)

1.4 Power Supply Voltage :

- 1) Printer Driving Voltage : 5.0 + 0.8/-0.5 VDC (Ni-Cd battery, nominal voltage 4.8V)
5.0 ± 0.5 VDC (when stabilized power supply is used)

NOTES :

- Can be applied to motor, print solenoid, and fast paper feed trigger solenoid
- Use the same power supply.
- In all printing pattern used, even during sending of current to print solenoids, the voltage drop by the power supply voltage and from wiring resistance must be 0.8 V or less. Also, voltage loss in the driver circuitry (driver saturation voltage) must be 0.4 V or less.

- 2) Detector Input Voltage : 5.0 + 8/-1.7 VDC

NOTES :

- Can be applied to reset detector, timing detector.
- Can be used with the same printer driver power supply.

1.5 Reliability :

MCBF : 1,500,000 lines (including print solenoid)

Printer life : 2,250,000 lines

NOTES :

- See Section 2.14 for confirmation conditions of reliability.
- End of life is defined as the point at which the print head, motor unit, or cam trigger set is worn out.

1.6 Environmental Conditions for Operating :

- 1) Operating ambient temperature :

a) Using with the ERC-22 : -10° to 50°C (14° to 122°F)
(The assured temperature for printing is 0° to 50° C
(32° to 122°F))

b) Using with the ERC-09 : 0° to 50°C (32° to 122°F)

- 2) Operating ambient humidity : 10 to 90% RH (non-condensing)

3) Vibration resistance : Frequency : 10-150-10 Hz
Sweep : 20 minutes for coming and returning
(One hour for each direction)
Acceleration : 0.5G (X, Y, and Z directions)
Center of vibration : Any mechanism installed part

EPSON confirmed that no unexpected conditions will occur in operation of the mechanism after vibration under the above conditions.

1.7 Environmental Conditions for Storage :

- 1) Storage high temperatures and high humidity :

Temperature : 50°C (122°F)

Humidity : 90% RH

Total time : 240 hours

EPSON confirmed that no unexpected conditions will occur in operation of the mechanism at 25°C (77°F), 60% RH after being left for two hours past storage in the above conditions.

- 2) Storage at high temperatures :

Temperature : 70°C (158°F)

Total time : 240 hours

EPSON confirmed that no unexpected conditions will occur in operation of the mechanism at 25°C (77°F) after being left for two hours past storage in the above conditions.

- 3) Storage at low temperatures :

Temperature : -25°C (-13°F)

Total time : 240 hours

EPSON confirmed that no unexpected conditions will occur in operation of the mechanism at 25°C (77°C) after being left for two hours past storage inn the above conditions.

4) Vibration resistance :

Frequency : 10 - 15 - 10 Hz
Sweep : 20 minutes for coming and returning
(One hour for each direction)
Acceleration : 2G (X,Y, and Z directions)
Center of vibration : Any mechanism installed part

EPSON confirmed that no unexpected conditions will occur in operation of the mechanism after vibration under the above conditions.

5) Impact resistance :

Impact acceleration : 100 G
Total operation time : 6 msec
Direction : 3 times each for X,Y, and Z directions
Impact operation point : Any mechanism installed part

EPSON confirmed that no unexpected conditions will occur in operation of the mechanism after impact under the above conditions.

NOTE : Refer to the specification for each ribbon cassette individually for the environmental conditions for storage of usable ribbon cassettes.

1.8 Connection

1) Printer side : PCB fixed to the frame (with 2.5mm (0.098") pitch copper pattern)
2) Circuit side : Flat cables or lead wires

1.9 Insulation Resistance : 1 M or more at initial (100 VDC)

1.10 Overall Dimensions : See 2.13 Overall Dimensions

1.11 Weight : Appro. 100 g (app. 0.23 lb) except ribbon cassette.

1.12 Acceptable for TSCA : All EPSON ink ribbons, grease and oil which are used for this printer meet acceptable standard for TSCA (Toxic Substance Control Act).

1.13 Factory Options

- Manual feed knob : Horizontal type. Outside diameter : 20 mm (0.79")
- Ribbon Cassette : ERC-22, ERC-09.