

EPSON®



Printing Product Guide 2003-2004

MINI PRINTER MECHANISM **MPM**

EMBEDDED UNIT **EU**

Standard

The history for EPSON is, in a sense, a history of standards. EPSON unveiled the world's first miniprinter, for calculators, all the way back in 1968. And for more than three decades EPSON has used its outstanding engineering ability and know-how to turn innovative ideas into creative, useful products. We at EPSON have always believed that communicating with customer is critical. We listen to your voices, uncover your needs, and develop products and proposals designed to earn true customer satisfaction. EPSON has created, and will continue to create new, industry-leading standards. Best Printing Solution for Your Needs.



Global Network

Today, EPSON, the creator of the mini printer, is a truly global company with an extensive lineup of products. Our commitment to innovation and to our customers is backed up by a network of sales and service support offices in 36 sites around the globe. Each site stays in close contact with customers and share a variety of information and know-how. We offer you're the best printing solution by closely monitoring the latest market trends and building high-value-added products that directly address your needs.

- Epson Electronic Technology Development(Shenzhen)Co., Ltd.
- Epson Engineering(Shenzhen) Ltd.
- Epson Precision(Hong Kong) Ltd.
- Shanghai Epson Magnetics Co., Ltd.
- Shanghai Epson Electronics Co., Ltd.
- Tianjin Epson Co., Ltd.
- Suzhou Epson Co., Ltd.
- Beijing Epson Electronics Co., Ltd.
- Epson Portland Inc.
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- Palo Alto Laboratory
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- Seiko Epson Corporation
- Representative Offices
- [U.K.] Ltd. Denmark Office
- Epson Italia s.p.a.
- Seiko Epson Milan
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- Epson European Sales B.V.
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- Epson Europe
- Electronics GmbH
- Epson Deutschland GmbH
- Vienna Branch Office
- Epson [U.K.] Ltd.
- Epson Europe Electronics
- GmbH UK Branch Office
- Epson France Ltd.
- Epson Europe Electronics
- GmbH French Branch Office
- Epson [U.K.] Ltd. Ireland Office
- Epson Portugal Informatica, S.A.
- Epson Iberica S.A.



EP-101

EPSON Roots

EPSON first made its mark with a digital watch featuring micromechanics and electronic technology. It later developed a printing timer that was chosen as the official timekeeper at the 1964 Olympics. Following this EPSON began to diversify, and four years later, started selling the EP-101, the worlds' first mini printer for electronic calculator applications. Vastly superior to its bulky competitors, this ultra-compact printer proved to be a huge hit across the world. The EP-101 heralded the start of EPSON's multi-faceted business expansion, giving rise to many other products or "sons". In fact, the name EPSON is a combination of the EP from the EP-101 and SON, EPSON, a name associated with unique high quality products around the world.

Co-Existence

In Harmony With The Environment

In line with its commitment to maintaining harmony with nature, EPSON has implemented a wide range of measures to protect the environment.

These began more than ten years ago, with the declaration that the company would stop using CFCs. Other examples include the reduction of CO₂ emissions at factories and facilities, reduction of waste materials, and recycling.

This careful attention to the environment has enabled a number of EPSON factories to acquire ISO14001 certification.



Quality

Unrivalled Quality

All EPSON products have one thing in common – outstanding quality.

This is the result of the careful attention we pay to customers' particular requirements. Thanks to this superior quality, EPSON was the first mini printer manufacturer to acquire accreditation for ISO9001, the strictest of the ISO9000 international quality standards, covering every aspect of quality control, from quality assurance systems to services.

Approved by the Japan Quality Assurance Organization, ISO9001 compliance is just another example of the measures EPSON takes to bring you total product satisfaction.



JMI-0028

S MOS Systems Inc.
U.S. Epson Inc.
Epson Electronics America, Inc.
Epson Canada Ltd.
Epson America Inc.
Epson Accessories, Inc.
Epson Latin America Inc.
Epson Venezuela S.A.
Epson Colombia Ltda.
Epson Costa Rica S.A.
Epson Mexico, S.A. de C.V.
Epson do Brasil Industria e Comercio Ltda.
Epson Argentina S.A.
Epson Chile S.A.
Epson Peru, S.A.
Epson Korea Co., Ltd.
Seiko Epson Corporation Korea Office
JAPAN
Seiko Epson Corporation Beijing Representative Office
Epson (China) Co., Ltd.
Epson New Zealand Ltd.
Epson Australia Pty. Ltd.
Epson Taiwan Technology & Trading Ltd.
Epson Hong Kong Ltd.
Epson Philippines Corporation
Epson Electronics (Thailand) Co., Ltd.
Epson Trading (Malaysia) Sdn. Bhd.
Epson Singapore Pte. Ltd.

Best Printing Solution for Your Needs

EPSON's extensive line of Thermal and Impact (both serial dot and shuttle dot) printers cover a wide range of user needs. Our models range from compact, low-power units on the low end to powerful, heavy-duty units on the high end. From such applications as Hand-held terminals, CAT/EFT, to ATM/CD, and Kiosks etc., we fully answer your most advanced needs.



EPSON Printing Technologies

Impact

The history of the impact printer began more than thirty years ago, with the EP-101. Over the decades, impact printers have steadily evolved. Never complacent as the frontrunner, EPSON has continued to innovate and refine its impact printer technology. Our impact models are highly reliable, cost effective, and compact. These characteristics have helped EPSON win an overwhelming and lasting share of the business printer market.

Thermal

The advanced technology, know-how, and experience EPSON gained in impact printing has been transferred to a mastery of thermal printing. Like our impact printers, our thermal printers boast extremely high reliability, an EPSON hallmark. Add to that the quiet operation and attractive print of the thermal printer line, and it is easy to see why these products continue to rapidly grow into new applications in a variety of fields.

Inkjet

Widely acknowledged as the ideal for printing high quality color images from a PC, inkjet technology offers customer benefits such as fast, silent, graphic-rich printout. Even more interesting is the fact that inkjet printers can use plain paper rolls, and offer the possibility of color output (not just black, red, or purple, as is the case today). EPSON's expertise in inkjet technology, combined with its understanding of the demands of the customer's environment, means that it is in a unique position to meet this challenge.

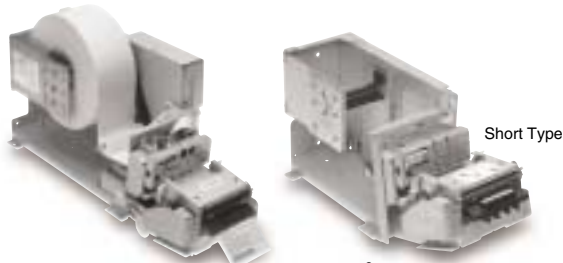
You Can Get The Ideas and Power in EPSON Mini Printers

Mini Printer Mechanism and TMs let you easily create new system architecture for a wide range of applications and technologies. Just look on the charts, and you can find the best one.

Printing Technology	Application Examples								Models	
	Hand-held terminal	CAT/EFT	POS/ECR	Ticket machine	ATM/CD	Kiosk	Gaming machine	Teller machine		
Embedded Unit				●	●	●	●		EU-T500 Series	6 ~ 9
				●	●	●	●		EU-T400 Series	6 ~ 9
			●	●	●	●	●		M/BA-T500 Series	6 ~ 9
Thermal			●						M-T203 Series	10
	●	●	●						M-T511II/T531II/T123/T56	11
	●	●			●				M/BA-T100 Series	12
			●	●		●	●		M/BA-T300 Series	12
			●						M-T245	12
Impact	●	●							M-150 Series	13
	●	●	●						M-180/190/190G Series	13
		●			●				M-260 Series	14
			●						M-290	14
		●	●						M-U110 Series	15
			●						M-780	16
			●						M-U420 Series	16
TM Series			●					●	SPECIFICATIONS	22

Embedded Unit

EPSON Embedded Units offer a whole new dimension of self-service terminal design. They feature high printing speeds, high quality and reliability, a wide variety of module configuration selections, an original EPSON Advanced Printer Drivers, and many new ideas and functions. EPSON Embedded Units are sure to provide you with a rich environment for self-service terminal design innovation in both hardware and applications.



EU-T500 Series



EU-T400 Series



M/BA-T500 Series

ATM



- Big paper roll diameter (Max. 10 inches)
- Durable and reliable
- Flexibility in placement

CD



- Slim unit
- Durable and reliable
- Big paper roll diameter (Max. 8 inches)

Lottery



- Quick receipt issuance
- Durable and reliable
- Low sensitive paper can be used

Ticket



- Thick paper can be used
- Low sensitive paper can be used
- Slim unit

Kiosk



- PC connectivity
- Quick receipt issuance
- Slim unit

Gas Pump



- Durable and reliable
- Used in heavy circumstances (Dust, ESD or Temperature)

EPSON Advanced Printer Drivers

(for EU-T500 series, EU-T400 series and M/BA-T500 series)

EPSON advanced printer drivers make it easy. Available for Windows® 95/98/NT 4.0 / 2000 and XP, and Linux®, the ever-adaptable EPSON advanced printer drivers make it so easy to develop applications software, saving you time and money. And that's not all. In addition to printer drivers, the EPSON Advanced Printer Drivers help keep your system running with an invaluable status monitor and maintenance counter.

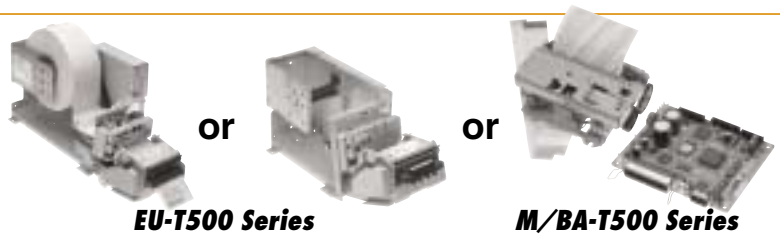
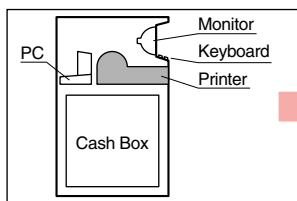
Allowing you to check the current status of your equipment, the status monitor is an essential tool that helps you to monitor consumables and solve errors. And for remote terminal use, EPSON provides software that allows printer status monitoring from the PC side. The maintenance counter, on the other hand, informs you of operating data about parts such as the autocoder, retractor and print head. This reduces time by helping you determine when maintenance is needed - before it is needed. EPSON advanced printer drivers for efficient system operation.



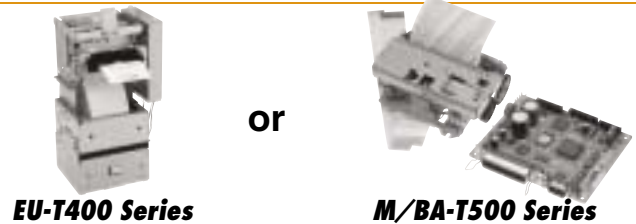
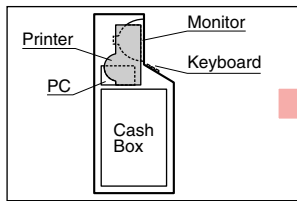
■ EPSON Advanced Printer Drivers-Status Monitor (Sample program)

Solution proposal from EPSON

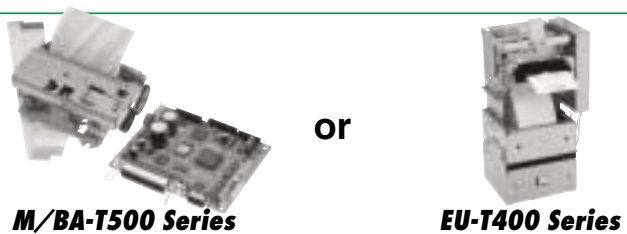
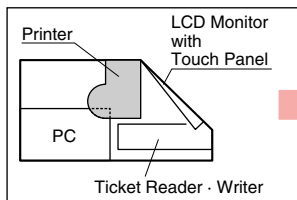
Typical Terminal Construction



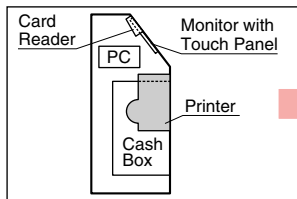
Typical Terminal Construction



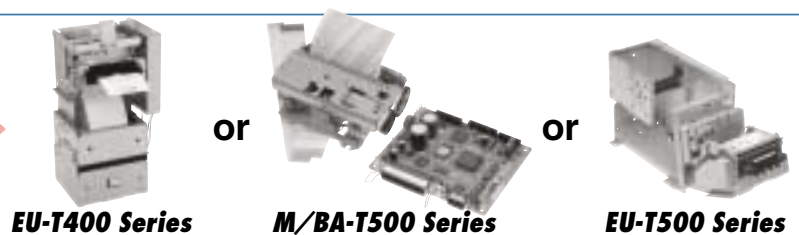
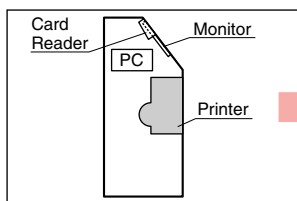
Typical Terminal Construction



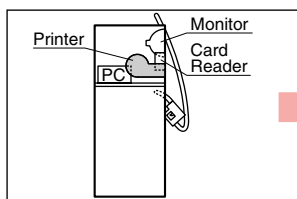
Typical Terminal Construction



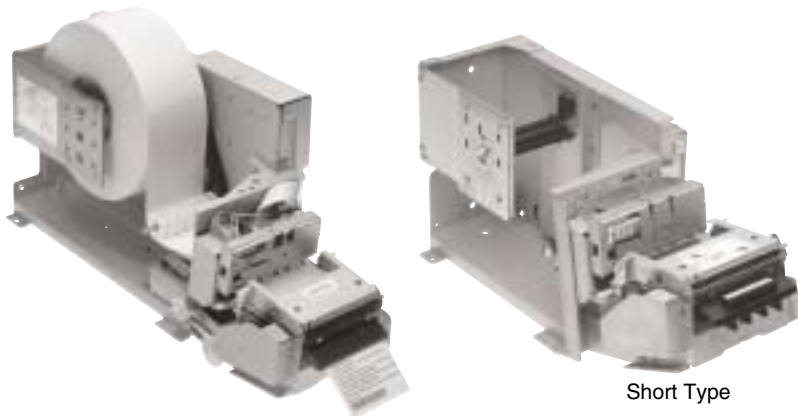
Typical Terminal Construction



Typical Terminal Construction



Embedded Unit
EU-T500 Series (EU-T532/T542)
 for self-service terminal



High Reliability and Security

High reliability – MCBF: 37 million lines

EPSON's superb reliability provides long-term maintenance-free operation with an MCBF of 37 million lines.

Automatic retracting function

The optional Cut Sheet Retracting Module can prevent loss of personal data and enables safer coupon and receipt issuing.

High speed printing

The EU-T532 achieves very fast throughput. The highest printing speed is an incredible 150mm/sec., even with graphics.

Large-diameter roll paper available - up to 254 mm (10 inches)

TCO can use 254-mm (10-inch) diameter roll paper, which reduces the frequency of paper replacement.

Easy paper handling and maintenance

Semi-automatic paper loading enables easy and fast replacement of paper rolls. Also, the printer module and cut sheet retracting function have opening mechanisms for easy maintenance.



Flexible module configuration

For the best self-terminal design, this offers the choice of the paper roll supply modules and the cut sheet-retracting function to meet customer needs and environmental requirements.

Multi-language support

In addition to the alphanumeric standard character set, Japanese (including Kanji), Korean, Simplified Chinese and Traditional Chinese are available as factory options.

SPECIFICATIONS

	EU-T532	EU-T542
Paper Dimensions	79.5 ± 0.5mm x dia.254mm max	82.5 ± 0.5mm x dia.254mm max
Print Method	Thermal line printing	
Paper Path	Straight	
Print Speed	150 mm / sec.	
Paper Thickness	0.06~0.15 mm	
Power	24 VDC ± 2.4 V	
Reliability		
MCBF	Mechanism : 37 x 10 ⁶ lines	
Receipt printing	6 x 10 ⁵ times	
Printer life	Mechanism: 15 x 10 ⁶ lines / Thermal head: 100 km (62.14 miles)	
Overall Dimensions	176 (W) x 520.7 (D) x 231.4 (H) mm (Full modular type)	
Mass	Approx. 5.5 kg (Full module type)	

*Please contact your EPSON representative for unit configuration.

Embedded Unit
EU-T400 Series
 for kiosk applications



Efficiency and versatility

Compact

Designed to fit into terminals of all sizes, compact dimensions and a small footprint make the EU-T400 series perfect for smaller terminals. And with the paper roll inside, the dimensions are almost the same.

High-speed and versatile printing

The EU-T400 series allows faster transactions for customers with the highest printing speed in its class. Text, barcodes, logos and Windows® fonts can all be printed with ease. Users can adjust the paper size by simply changing the printer and paper guide.

Full front operation

Downtime is reduced with paper loading, maintenance and sensor adjustments all carried out at the front.

Worry-free paper handling

It's simple to replace the paper roll with the EU-T400 series. A semiautomatic loading function saves recovery time and increases the speed of maintenance.

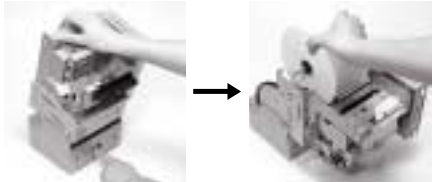
Highly durable

High durability reduces cost of ownership. The EU-T400 series allows printing of up to 300,000 receipts.

Asian language options

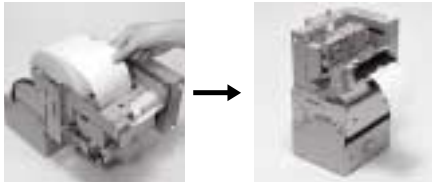
Japanese, Chinese (simplified and traditional) and Korean fonts are available as factory options for local markets.

(EU-T412/T422 T432/T442)



Step 1 : Push the lever, open and pull down the top frame until it is fully open.

Step 2 : Set the paper roll



Step 3 : Put the paper in the paper guide. The paper will load automatically.

Step 4 : Return the frame to its previous position.

SPECIFICATIONS

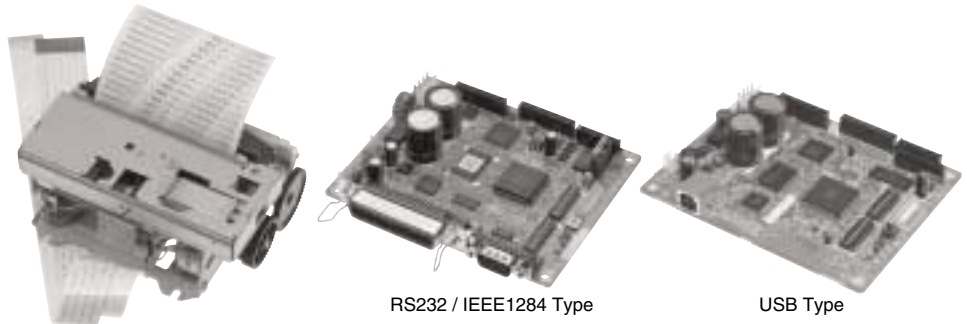
	EU-T412	EU-T422
Paper Dimensions	57.5 ± 0.5mm x dia.203mm max	59.5 ± 0.5mm x dia.203mm max
Print Method	Thermal line printing	
Paper Path	Straight	
Print Speed	150 mm / sec.	
Paper Thickness	0.06~0.15 mm	
Power	24 VDC ± 2.4 V	
Reliability		
MCBF	Mechanism : 37 x 10 ⁶ lines	
Receipt printing	3 x 10 ⁵ times	
Printer life	Mechanism: 15 x 10 ⁶ lines	
	Thermal head: 100 km (62.14 miles)	
Overall Dimensions	194.7 (W) x 170.6 (D) x 350 (H) mm (8" type)	
Mass	Approx. 3.9 kg (8" type)	

SPECIFICATIONS

	EU-T432	EU-T442
Paper Dimensions	79.5 ± 0.5mm x dia.203mm max	82.5 ± 0.5mm x dia.203mm max
Print Method	Thermal line printing	
Paper Path	Straight	
Print Speed	150 mm / sec.	
Paper Thickness	0.06~0.15 mm	
Power	24 VDC ± 2.4 V	
Reliability		
MCBF	Mechanism : 37 x 10 ⁶ lines	
Receipt printing	3 x 10 ⁵ times	
Printer life	Mechanism: 15 x 10 ⁶ lines	
	Thermal head: 100 km (62.14 miles)	
Overall Dimensions	194.7 (W) x 170.6 (D) x 350 (H) mm (8" type)	
Mass	Approx. 3.9 kg (8" type)	

*Please contact your EPSON representative for unit configuration.

Embedded Unit M/BA-T500 Series



RS232 / IEEE1284 Type

USB Type

New-standard high performance thermal printer

Super-fast printout

The blazingly fast M-T500 series prints up to 150 mm (5.9 inches) per second. These printers also deliver fast throughput even in Full-Graphic Mode (uses BA-T500).

Flexible paper choice for various applications

These printers can easily handle thick paper and tickets. They can also handle large diameter paper rolls of up to 254 mm (10 inches) with an additional feed assist mechanism.

Three types of paper path

Curved, straight and drop-in paper paths are available.

Standard autocutter

A durable autocutter is standard equipment. Sharp and reliable, the autocutter can even be used for heavy paper. There are two models of autocutter available: a full-cut model and a partial-cut (1 point left uncut) model. A high-speed cutter is also available.

Standard interface

RS-232 serial, IEEE 1284 bi-directional and USB 1.1 interfaces are also available in separate models for direct connection to standard PCs.

PS-180 available

By attaching the optional connector cable unit DC-T500, the printer works with the PS-180 power supply unit.

Multi-language type ready

In addition to the to Alphanumeric standard character set, Japanese (including Kanji), Simplified Chinese and Traditional Chinese and Korean are available as factory options.

DC12 V operation

DC 12 V operation is possible through a standard power source for PC environments by using M-T505 / BA-T505.

BA-T500 / BA-T505 SPECIFICATIONS

	M-T500 Series	M-T505 Series
Supported Printer	M-T500 Series	M-T505 Series
Printing Speed	150 mm / sec. max.	100 mm / sec. max.
Printing Character	Text (Euro Symbol available), Barcode, Graphics	
Barcode Type	UPC-A, UPC-E, EAN 13(JAN), EAN 8(JAN), ITF, CODE 39, CODABAR, CODE 93 and CODE 128, Two-dimensional code: PDF417	
Interface	Parallel (IEEE 1284 bidirectional), RS-232 or USB	Parallel (IEEE 1284 bidirectional) or RS-232
Operating Temperature	0 to 55 °C	
Driver	Windows® 95/98, Windows NT4.0, 2000, XP, Linax®	
Operating voltage	24 VDC ± 10%	10~16 VDC
Other Function		
HEX dump	User can use Hexadecimal dump print for debugging	
Self-test	Configuration printout and test pattern	
Download	Flash ROM (graphics)	
Option	Japanese Kanji, Traditional Chinese, Simplified Chinese Character, Korean	

SPECIFICATIONS

	M-T511A*	M-T512A*	M-T521A*	M-T522A*	M-T531A*	M-T532A*	M-T532HF*	M-T537A*	M-T533A*	M-T541A*	M-T542A*	M-T542HF*
Paper Width	57.5 ± 0.5 mm	59.5 ± 0.5 mm	79.5 ± 0.5 mm						82.5 ± 0.5 mm			
Paper path	Curve	Straight	Curve	Straight	Curve	Straight	Straight	Straight	Drop in	Curve	Straight	Straight

Note: Autocutter is selectable as follows; AF: full cut type, AP: partial cut type HF: High Speed Cutter (full cut only)
See the specifications on page 17 for details.

OPTIONS

Connector Cable Unit DC-T500

The DC-T500 enables the printer to use power supply unit PS-180. By attaching the connector cable unit DC-T500, you can use the EPSON standard power supply unit PS-180. This means that you do not have to design a new power supply unit for the EU and BA series by yourself.



Paper Near End Sensor Unit NE-T500

Paper Near End Sensor Available
Paper near-end sensor unit connects to the EU-T500 series and EU-T400 series and BA-T500.

Low Paper Supply Detection Function

This highly efficient microswitch informs you when the paper roll is about to run out.

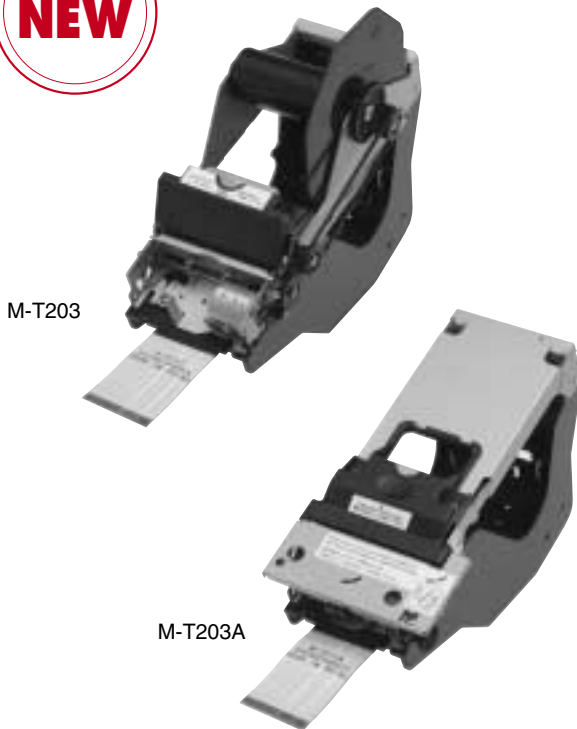


Thermal Printers

Thermal printers feature quiet operation and high throughput. Excellent for high-resolution graphics, our thermal printers render beautifully crisp, clear logo marks and barcodes. The simplicity of the paper path mechanism makes paper refills and maintenance easy. EPSON offers a wide variety of thermal printers. You're sure to find one for your application needs.

1-STATION PRINTER

Thermal Line **M-T203 Series**



Best fit for ECR

Well fitted for ECR application

Through over 30 years experiences in ECR application of mini-printers, M-T203 and T203A are designed to fit ECR usage. Print speed of 100 mm/sec. is high enough for receipt issuance. Durability of metal frame have ECR's quite reliable.

Drop in, but ease of design

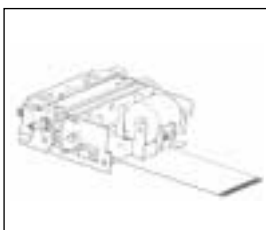
M-T203 and T203A have drop-in paper set mechanism with hinge. Users do not have to be worry about designing drop-in paper set by themselves, you can have best matching in design of paper loading mechanism totally.

Ultra thin autocutter (M-T203A only)

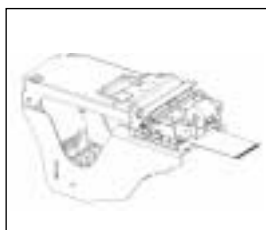
EPSON's new autocutter is extremely thin, only 6 mm. It keeps mechanism height as without. Durability of the autocutter is 0.6 million cuts.

Variety of configuration

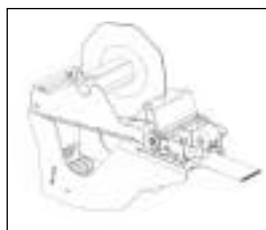
M-T203 series are provided with 5 standard configurations (factory option) which help users to design ECR or other kinds of terminals quite easily (see below). Full modular type will give you quick placement of whole printer related mechanism in one time.



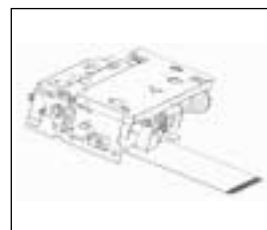
M-T203
Base Mechanism



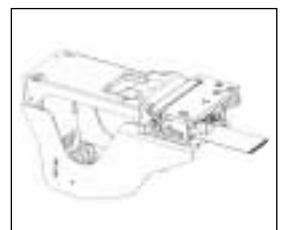
M-T203
with Paper Roll Holder



M-T203
with Journal Unit



M-T203A
Base Mechanism



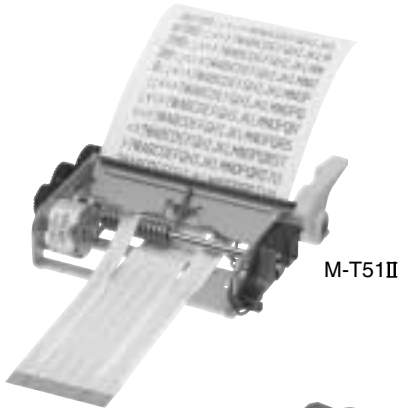
M-T203A
with Paper Roll Holder

SPECIFICATIONS

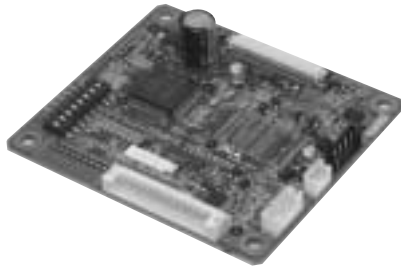
	M-T203	M-T203A
Paper Width	57.5 ± 0.5 mm	
Resolution	8 dots / mm	
Printing Speed	80 mm / sec. max. (at 24 V)	100 mm / sec. max. (at 24 V)
Voltage	24 VDC ± 2.4 V	
Reliability (MCBF)	15 x 10 ⁶ lines	
Overall Dimensions	77.3 (W) x 174.5 (D) x 164.8 (H) mm	83.1 (W) x 176 (D) x 113.8 (H) mm
Mass	Approx. 350 g (Take-up Paper Holder)	Approx. 370 g (Paper Holder)

1-STATION PRINTER

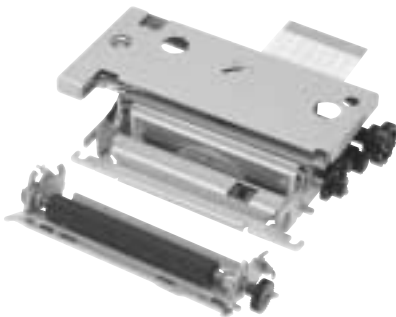
Thermal Line
M-T51II
M-T53II/T123(A)/T56
BA/LA-T51



M-T51II



BA-T51



M-T53II / T123(A)

New Thermal Printer

Easy-to-read printing

Compared to other thermal printers using the same font, text printed with the M-T51II / T53II / T56 is larger - and receipts easier for customers to read.



M-T51II print sample



Other Thermal Printers print sample

Effective use of existing resources

With the installation position the same as EPSON's best selling printer mechanism, the M-180/190 series*, there's little need for extensive changes to the terminal casing design.

*Mounting Attachment (factory option) is needed

Sharing of some fonts with the M-180/190 series is possible (ask your local EPSON sales company for details).

Improved lineup

Users have the benefit of a wide range of paper paths, all designed with usability in mind. The drop in mechanism is more convenient than ever before.

Ultra thin autocutter (M-T53IIA / T123A only)

EPSON's new autocutter is extremely thin, only 6 mm. It keeps mechanism height as without. Durability of the autocutter is 0.3 million cuts.

SPECIFICATIONS (with LSI)

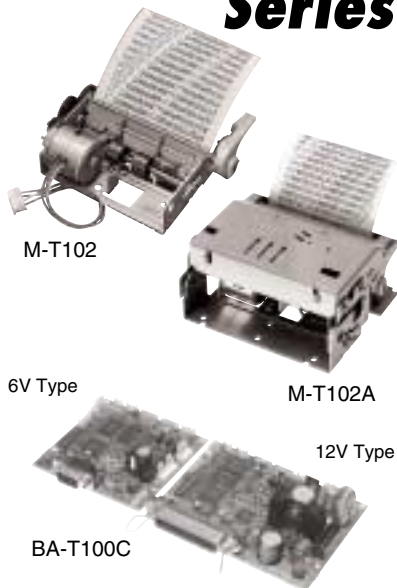
	BA-T51	LA-T51
Power	5 V ± 0.25 V (VD), 5 V ~ 7.5 V (VP)	5 V ± 0.25 V (VD), 5 V ~ 7.5 V (VD)
Character	Font A : 12 x24, Font B : 9 x17	
Printing	95 Alphanumeric, 37 International, 128 x 3 Graphic	
Dimensions	80 x 70 x 15	QFP 100 pin
Interface	Parallel Centronics, Serial RS-232C	
Support Models	M-T51 / T53	M-T51 / T53 / T51II / T53II

SPECIFICATIONS

	M-T51II	M-T53II	M-T123	M-T53IIA	M-T123A	M-T56
Paper Width	57.5 ± 0.5 mm					
Resolution	6 dots / mm		8 dots / mm	6 dots / mm	8 dots / mm	6 dots / mm
Printing Speed	52 mm / sec. max. (at 7.5 V)		50 mm / sec. max. (at 7.5 V)		100 mm / sec. max. (at 24 V)	
Voltage	5.0 to 8.0 VDC			6.0 to 8.0 VDC		24 V ± 1.7 V
Reliability (MCBF)	15 x 10 ⁶ lines					
Overall Dimensions	69.15 (W) x 51.2 (D) x 17.3 (H) mm	82.4 (W) x 50.2 (D) x 14 (H) mm		90 (W) x 53 (D) x 20 (H) mm		69.15 (W) x 51.2 (D) x 17.3 (H) mm
Mass	Approx. 70 g		Approx. 65 g		Approx. 70 g	

1-STATION PRINTER

Thermal Line **M/BA-T100 Series**



Control LSI for M-T100 Series **LA-T101**

Compact 5 V Thermal Line Printer

Choice of paper path

Both curved and straight paper paths are available, enabling the printer to be laid out in either configuration.

High reliability in a small package

Withstands heavy usage due to its sturdy steel frame. The exceptionally quiet thermal head quickly produces quality text.

Mount-compatible with M-180, M-190

Mount-compatible (fixing points), with optional attachment.

5 V autocutter available

Available with a 5 V autocutter option (M-T102A / T103A).

Controls the entire M-T100 series.

The BA-T100C controls the M-T102, T102A, T103 or T103A without changing hardware. Two types of driving voltage (6 V or 12VDC) are available to match market requirements.

Printer driver-ready

The printer driver of the BA-T100C enables users to print barcodes, graphics and text quite easily from the Windows® OS.

Multi-language type ready

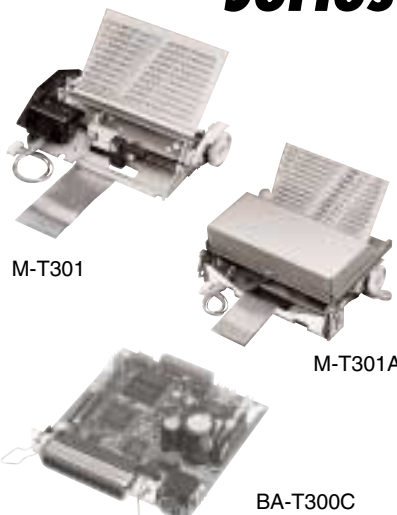
In addition to the to Alphanumeric standard character set, Japanese (including Kanji), Simplified Chinese and Traditional Chinese are available as factory options.

DC12 V operation

DC 12 V operation is possible through a standard power source for PC environments by using BA-T100C.

A middle-range printer with a wealth of applications

Thermal Line **M/BA-T300 Series**



Choice of paper path

Both curved and straight paper paths are available to fit your applications.

Small, light, powerful

The compact, lightweight design of these printers gives them the flexibility to adapt to a variety of environments. Further enhanced reliability means they can withstand the most demanding use.

Easy Maintenance

A head-open mechanism makes it fast and easy to remove paper jams and clean the print head.

Available with an autocutter

The M-T301A features an integrated autocutter. Two paper cutting types are available: full cut and partial cut (1 or 3 points left uncut).

Controls the entire M-T300 series.

The BA-T300C controls the M-T301, T301A, T303 or T303A without changing hardware.

Printer driver-ready

The printer driver of the BA-T300C enables users to print barcodes, graphics and text quite easily from the Windows® OS.

Multi-language type ready

In addition to the to Alphanumeric standard character set, Japanese (including Kanji), Simplified Chinese and Traditional Chinese are available as factory options.

2-STATION PRINTER

Thermal Line **M-T245**



Standard thermal printer for receipts

High print quality and high speed

This printer incorporates a high-density line thermal head (8 dots/mm) that ensures high quality printing. It prints faster than dot-matrix printers and makes less operating noise.

Easy paper removal and print head cleaning

The M-T245's print head-lifting mechanism makes both removal of jammed paper and cleaning easy.

Extensive selection of options

Select from an extensive number of options, including an autocutter, to customize the printer for your needs.

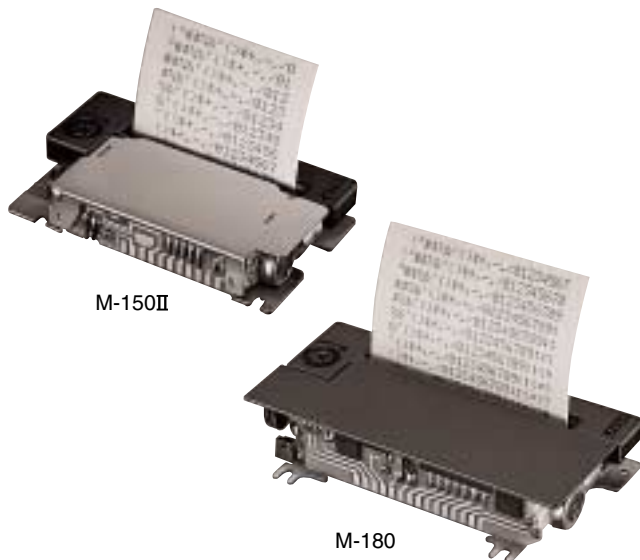
See the specifications on page 18 for details.

Impact Printers

High speed, simultaneous printing of multiple copies, low running costs, easy maintenance: these are just some of the features of impact printers. Impact printers are especially suited to check endorsement and validation applications. With an extensive impact printer product line, EPSON can offer you the best model for your application.

1-STATION PRINTER

Shuttle Impact Dot **M-150 Series** **M-180/190 Series** **190G Series**



M-150II

M-180

Model	Options
M-150 Series	—
M-180	Manual feed knob
M-181	
M-182	
M-183	
M-185	
M-186	—
M-190 Series	Manual feed knob
M-190G Series	Manual feed knob

See the specifications on pages 18 and 19 for details.

M-150 Series	M-150 II	M-160	M-163	M-164		
M-180 Series	M-180	M-181	M-182	M-183	M-185	M-186
M-190 Series	M-190	M-191	M-192	M-195		
M-190G Series	M-190G	M-192G				

M-150 Series: Smallest shuttle dot printer in the world

Ultra-compact, yet highly reliable

The M-150 series of impact dot matrix printers is the world's most compact. They weigh less than 80 grams yet offer extremely high performance.

Perfect for compact devices

Because they are so compact and require so little power, the M-150 series is ideal for numerous printing applications, from handy terminals to laptop computers and compact measuring instruments.

Battery operation

This battery-operated printer runs on extremely low power.

M-180/190: Best-selling shuttle dot printers

Faster, stronger

The M-180/190 series offers even better performance than the M-150 series. A dramatic improvement in printing speed brings new advances to applications such as CAT/EFT and measuring instruments.

High reliability

These printers also offer outstanding reliability for peace of mind.

Compact, lightweight

The series provides high performance in an ultra-compact, lightweight body and support for a wide variety of applications.

Mount compatible

The M-180 series and M-190 series have compatible mounts, enabling easy printer exchange and upgrades.

M-190G: upgrade from the M-190 series

Clear and speedy printouts

The M-190G series has a higher printing speed than the earlier M-190 series. This impact dot-matrix printer delivers crisp printouts.

Improved handling of poor-quality paper

Handles poor-quality paper well.

Capable of accepting ERC-40 long-life ribbon

The M-190G Series accepts the new ERC-40 long-life ribbon, which is capable of printing two million characters.

1-STATION PRINTER

Shuttle Impact Dot **M-260 Series**



Control LSI / board	Options
LA-260A BA-260III	Take-up device TU-260

Small, light, thin journal printer

Compact, light and thin

The M-260 series is amazingly small and light. In addition, these printers have a very low profile, so they are extremely easy to incorporate in various products.

Operates on 12V battery current

The M-260 is built to draw current from any 12-volt battery, making it possible to use in virtually any situation or environment.

Full-graphic red/black Printing

With the M-260, you can enjoy a wide variety of graphic functions as well as two-color red/black printing capability.

Autocutter available

A durable autocutter is available for all models.

SPECIFICATIONS

	M-260	M-262	M-265	M-267
Paper Width	76 ± 0.5 mm			
Feature	Single color	Two color	Single color	Two color
Column Capacity	42 columns			
Printing Speed	2.3 lines / sec.(at 13.2 VDC)		2.3 lines / sec.(at 26.4 VDC)	
Voltage	12 VDC ± 10%		24 VDC ± 10%	
MCBF	1.5 X 10 ⁶ lines			
Overall Dimensions	122.0 (W) x 83.6 (D) x 25.4 (H) mm (Single color) / 122.0 (W) x 83.6 (D) x 33 (H) mm (Two color)			
Mass	Approx. 340 g (Single color) / Approx. 340 g (Two color)			

SLIP PRINTER

Shuttle Impact Dot **M-290**



Options
Mechanical form stopper, TOF sensor BOF sensor, Document table, PC board insulation cover

World's smallest slip printer

Easy terminal design

The M-290 is smaller and thinner than any other slip printer in the world. For terminal designers, this means greater ease and freedom of design and superior product innovation.

Beautiful print quality

The high-quality print is extremely clear and legible every time. And in the full graphic mode, up to 42 separate columns can be formatted.

No limit to slip design

The slip can be designed in limitless ways thanks to the use of a stepping motor and numerous advanced features such as forward and reverse paper feed, 25-line fast feed and single-dot feed. Create precisely the slip design that best suits your product.

SPECIFICATIONS

Paper Width	80 (W) x 80 (L) mm minimum to 182 (W) x 257 (L) mm maximum
Column Capacity	42 columns
Printing Speed	Approx. 2.1 lines / sec. (at 24 VDC)
Voltage	24 VDC ± 10%
MCBF	1.5 x 10 ⁶ lines
Overall Dimensions	138.0 (W) x 70.5 (D) x 59.5 (H) mm
Mass	Approx. 550 g

1-STATION PRINTER

Serial Impact Dot **M-U110 Series**

High-performance printer for ECR and CAT applications

Fast printing

Bi-directional and logic-seeking control are capable of delivering high-speed output of 4.2 lines per second (lps) for 30 columns (58mm) or 3.3 lps for 42 columns (76mm).

Reliability and options

Boasts superb reliability: MCBF: 5 million lines.

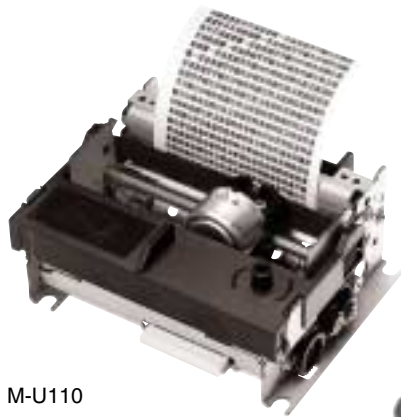
The M-U110 also offers a wide range of convenient options: paper take up device, mark sensor, etc.

Variation of- paper stock

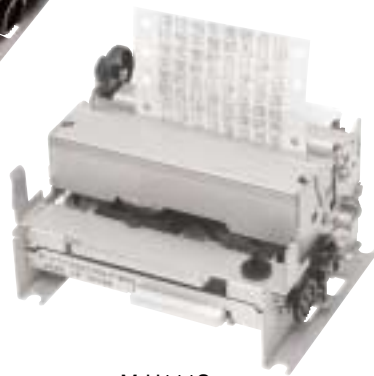
The M-U110 series supports various type of paper stock. M-U110 can handle two paper widths: 58 mm and 76mm. M-U112 is for 58 mm width paper only but has a smaller footprint. M-U111S is for the very popular sprocket type paper.

Multiple Copy Capability

The M-U110 has the capability to provide one original with two precise copies.



M-U110



M-U111S



M-U112



M-U110A

SPECIFICATIONS

	M-U110	M-U112	M-U111S	M-U110A
Paper Type	Friction		Sprocket	
Paper Width	76.2 ± 0.7 mm / 57.5 ± 0.5 mm	57.5 ± 0.5 mm	89.0 ± 0.5 mm / 76.2 ± 0.7 mm	76.2 ± 0.7 mm / 57.5 ± 0.5 mm
Column Capacity	42 columns (76 mm) / 30 columns (58 mm)	30 columns	40 columns (89 mm) / 28 columns (76 mm)	42 columns (76 mm) / 30 columns (58 mm)
Font	7 x 9			
Printing Speed	3.3 lines / sec. (76 mm) / 4.2 lines / sec. (58 mm)	4.2 lines / sec.	3.4 lines / sec. (89 mm) / 4.4 lines / sec. (76 mm)	3.3 lines / sec. (76 mm) / 4.2 lines / sec. (58 mm)
Voltage	24 ± 2.4 VDC			
MCBF	5.0 x 10 ⁶ lines			
Overall Dimensions	127 (W) x 96 (D) x 53 (H) mm	108 (W) x 96 (D) x 53 (H) mm	127 (W) x 96 (D) x 61 (H) mm	128.6 (W) x 98.8 (D) x 77.3 (H) mm 127.6 (W) x 98.8 (D) x 77.3 (H) mm
Mass	Approx. 430 g	Approx. 400 g	Approx. 460 g	Approx. 700 g

2-STATION PRINTER

Serial Impact Dot **M-780**



Options
Validation sensor Near-end sensor Autocutter

Fastest two-station printer

The fastest printing in the two-station printer class

The highly reliable M-780 is the fastest printer in the two-station printer class.

Saves end-user's running cost

Helps save end-user running costs by using inexpensive 38-mm roll paper.

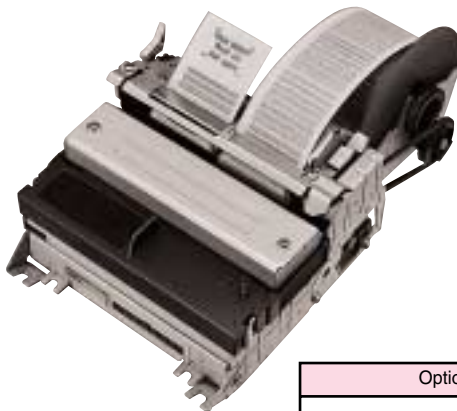
Convenient design

Designed with a paper-holding mechanism that prevents paper jams.

SPECIFICATIONS

Paper Width	Roll paper: 37.5 ± 0.5 mm Validation : 134 mm or more (W) x 70 mm or more (H)
Column Capacity	18 columns x 2, Validation: 42 columns
Printing Speed	3.3 lines / sec. (at 24 VDC)
Voltage	24 VDC ± 10%
MCBF	3 x 10 ⁶ lines
Overall Dimensions	135 (W) x 227.7 (D) x 150.5 (H) mm
Mass	Approx. 1.0 kg

Serial Impact Dot **M-U420 Series**



Options
Validation sensor Near-end sensor (R / J) Autocutter Taiwan Mark Sensor (M-U420B)

(R / J): Receipt / Journal

Industry-wide Standard For ECR/POS Applications

Easy operating design

The clamshell design makes it easier for the operator to insert paper and remove jammed paper.

Excellent cost-performance ratio

The M-U420 provides the highest cost-performance ratio to customers.

Taiwan "Mark Sensor" available with the M-U420B

Users can set up the ECR/POS to fit special requirements for the Taiwanese market.

SPECIFICATIONS

Paper Width	Roll paper : 44.5 ± 0.5 mm Validation : 135 to 210 (W) x 70 (H) mm minimum
Column Capacity	Receipt : 24 columns Journal : 24 columns Validation : 55 columns
Printing Speed	3 lines / sec. (at 24 VDC)
Voltage	24 VDC ^{+5%} / _{-10%}
MCBF	4 x 10 ⁶ lines
Overall Dimensions	150.7 (W) x 251.5 (D) x 103.5 (H) mm
Mass	Approx. 1.0 kg

AUTOCUTTER

Versatile Autocutter **AU-100 Series**



The AU-100 series detects the position of the cutter blade by means of a mechanical contact and controls the rotating direction of the motor. This allows the AU-100/AU-110 to achieve both partial and full cutting of paper.

SPECIFICATIONS

	AU-100	AU-110
Paper Type	Normal Paper, Recommended Thermal Paper	
Width	37.5 to 89.5 mm	
Thickness	Normal Paper: 0.06 to 0.085 mm, Thermal Paper: 0.065 mm	
Reliability (MCBF)	3 x 10 ⁵ cuts (incl. full & partial)	
Voltage	12 VDC ± 10 %	24 VDC ± 10 %
Peak Current	Approx. 3 A	Approx. 2 A
Mean Current	Approx. 800 mA	Approx. 500 mA
Ambient temperature	0 to 50°C	
Dimensions	103.0 (W) x 71.5 (D) x 21.5 (H) mm	
Mass	Approx. 400 g	

SPECIFICATIONS

Item	Model	Embedded Unit					
		EU-T532 / T542	EU-T400	M/BA-T500 Series			
				M-T510 Series	M-T520 Series	M-T530 Series	M-T540 Series
Printing Method	Thermal line						
Paper Path	Straight		Curve or Straight	Curve or Straight	Curve or Straight or Drop in	Curve or Straight	Straight
Print Font	Font A : 12 x 24 / Font B : 9 x 17 / Kanji : 24 x 24						
Font	Font A : 12 x 24 / Font B : 9 x 17 / Kanji : 24 x 24						
Column capacity	Font A : 48 columns / Font B : 64 columns / kanji 24 columns		Font A : 36 columns	Font A : 37 columns	Font A : 48 columns	Font A : 53 columns	Font A : 48 columns
Character size	1.25 (W) x 3.0 (H) mm (Font A) / 0.88 (W) x 2.13 (H) mm (Font B)						
Character set	95 Alphanumeric, 37 International, 128 x 11 Graphic						
Interface	RS-232 / IEEE 1284 Bi-directional parallel		RS-232 / IEEE 1284 Bi-directional parallel, USB			← (without USB)	
Data buffer	4KB						
Print Speed (Max.)	150 mm / sec.					100 mm / sec.	
Paper Dimensions	79.5 / 82.5 ± 0.5 mm x dia. 254 mm max.	57.5 / 59.5 / 79.5 / 82.5 ± 0.5 mm x dia. 203 mm max.	57.5 ± 0.5 mm x dia. 254 mm max.	59.5 ± 0.5 mm x dia. 254 mm max.	79.5 ± 0.5 mm x dia. 254 mm max.	82.5 ± 0.5 mm x dia. 254 mm max.	79.5 ± 0.5 mm x dia. 254 mm max.
Paper Thickness	0.06~0.15 mm		0.06~0.15 mm (~ 0.18 mm for HF)				
Power	24 VDC ± 2.4 V					10 ~ 16 VDC	
Power consumption	Approx. 2.1 A (print duty 25%)		Approx. 1.25 A (print duty 25%)		Approx. 1.75 A (print duty 25%)	Approx. 1.5 A (print duty 25%)	
Operating Temperature	0 to 50°C		-15 to 70°C (without BA-T500 Series)				
Reliability	MCBF	Mechanism : 37 x 10 ⁶ lines		37 x 10 ⁶ lines			
	Receipt printing	6 x 10 ⁵ times	3 x 10 ⁵ times	-			
	Printer life	Mechanism : 15 x 10 ⁶ lines, Thermal head : 100 km (62.14 miles)					
Overall Dimensions	176 (W) x 520.7 (D) x 231.4 (H) mm (Paper Roll Equipped Model)	194.7 (W) x 170.6 (D) x 350 (H) mm (8" type)	102.9 (W) x 91.9 (D) x 57.5 (H) mm	126.9 (W) x 91.9 (D) x 57.5 (H) mm			
Mass	Approx. 5.5 kg	Approx. 3.9 kg (8" type)	Approx. 460 g		Approx. 550 g		
Power Supply (option)	PS-180					-	
Factory Options	Cut Sheet retracting function Multilingual Font Set DC-T500	Loop Guide (for 600 mm Receipt issuance), Paper Supply Spacer, Multilingual Font Set, Paper Near-end Sensor	Mark sensor, Autocutter Type				

*Please contact your EPSON representative for unit configuration.

Item	Model	1 Station Printer					
		M-T203	M-T203A	M-T102	M-T51 II	M-T53 II	M-T123
Printing Method	Thermal line						
Number of total dots	432 dots / line	432 dots / line	384 dots / line	288 dots / line	288 dots / line	384 dots / line	
Resolution	8 dots / mm	8 dots / mm	8 dots / mm	6 dots / mm	6 dots / mm	8 dots / mm	
Printing width	54 mm	54 mm	48 mm	48 mm	48 mm	48 mm	
Printing Speed	80 mm / sec. max. (at 24 V)	100 mm / sec. max. (at 24 V)	60 mm / sec. max. (at 7.0 V)	52 mm / sec. max. (at 7.5 V)	50 mm / sec. max. (at 7.5 V)	50 mm / sec. max. (at 7.5 V)	
Paper feeding pitch	0.063 mm	0.063 mm	0.0625 mm	0.087 mm	0.083 mm	0.0637 mm	
Paper feeding speed	80 mm / sec. max. (at 24 V)	100 mm / sec. max. (at 24 V)	60 mm / sec. max. (at 7.0 V)	52 mm / sec. max. (at 7.5 V)	50 mm / sec. max. (at 7.5 V)	50 mm / sec. max. (at 7.5 V)	
Sensor	Paper end	Photosensor	Photosensor	Photosensor	Photosensor	Photosensor	Photosensor
	Printhead temperature	Thermistor	Thermistor	Thermistor	Thermistor	Thermistor	Thermistor
	Printhead unload	Microswitch	Microswitch	Microswitch	Microswitch	Microswitch	Microswitch
Power Supply Voltage	Printhead & Motors	24 VDC ± 2.4 V	24 VDC ± 2.4 V	5.0 to 7.5 VDC	5.0 to 8.0 VDC	5.0 to 8.0 VDC	5.0 to 8.0 VDC
	Logistic	5 ± 0.25 VDC	5 ± 0.25 VDC	5 VDC ± 5 %	5 ± 0.25 VDC	5 ± 0.25 VDC	5 ± 0.25 VDC
Connector	Printhead	FFC	FFC	Pin connector	FFC	FFC	FFC
	Motor						
Paper Dimensions	57.5 ± 0.5 mm (W) x dia.83 mm	57.5 ± 0.5 mm (W) x dia.83 mm	57.5 ± 0.5 mm (W) x dia. 127 mm	57.5 ± 0.5 mm (W) x dia. 80 mm	57.5 ± 0.5 mm (W) x dia.80 mm	57.5 ± 0.5 mm (W) x dia.80 mm	
Paper Thickness	60 μm ~ 75 μm	60 μm ~ 75 μm	65.0 μm ± 5 μm	65.0 μm ± 5 μm	65 μm ± 5 μm	65 μm ± 5 μm	
Operating Temperature	0 to 50°C						
Reliability	Print head Life	50 km, 5 x 10 ⁷ pulses	50 km, 5 x 10 ⁷ pulses	50 km, 1 x 10 ⁸ pulses	-	-	-
	MCBF	15 x 10 ⁶ lines	15 x 10 ⁶ lines	15 x 10 ⁶ lines	15 x 10 ⁶ lines	15 x 10 ⁶ lines	15 x 10 ⁶ lines
	Printer life	6 x 10 ⁶ lines	6 x 10 ⁶ lines	6 x 10 ⁶ lines	6 x 10 ⁶ lines	6 x 10 ⁶ lines	6 x 10 ⁶ lines
Overall Dimensions	77.3 (W) x 174.5 (D) x 164.8 (H) mm	83.1 (W) x 176 (D) x 113.8 (H) mm	69.15 (W) x 51.2 (D) x 20 (H) mm	69.15 (W) x 51.2 (D) x 17.3 (H) mm	82.4 (W) x 50.2 (D) x 14 (H) mm	82.4 (W) x 50.2 (D) x 14 (H) mm	
Mass	Approx. 350 g (Take-up Paper Holder)	Approx. 370 g (Paper Holder)	Approx. 85 g	Approx. 70 g	Approx. 65 g	Approx. 65 g	
Connector (A/C sensor)	-						
A/C life	-		600.000 cuts	-			
A/C method	-		Scissors type	-			
A/C duration	-		Approx. 400 ms	-			

SPECIFICATIONS

Item \ Model	1 Station Printer				2 Station Printer
	M-T53II A	M-T123A	M-T56	M-T300 Series	M-T245
Printing Method	Thermal line	Thermal line	Thermal line	Thermal line	Thermal line
Number of total dots	288 dots / line	384 dots / line	288 dots / line	576 dots / line	R / J : 288 dots / line
Resolution	6 dots / mm	8 dots / mm	6 dots / mm	8 dots / mm	8 dots / mm
Printing width	48 mm	48 mm	48 mm	72 mm	R / J : 36 mm
Printing Speed	50 mm / sec. max. (at 7.5 V)	50 mm / sec. max. (at 7.5 V)	100 mm / sec. max. (at 24 V)	Max. 60 mm / sec.	Approx. 50 mm / sec.
Paper feeding pitch	0.083 mm	0.0637 mm	0.087 mm	0.0625 mm	0.125 mm
Paper feeding speed	50 mm / sec. max. (at 7.5 V)	50 mm / sec. max. (at 7.5 V)	100 mm / sec. max. (at 24 V)	Max. 60 mm / sec.	Approx. 50 mm / sec.
Sensor	Paper end	Photosensor	Photosensor	Photosensor	Reflecting photo
	Printhead temperature	Thermistor	Thermistor	Thermistor	Thermistor
	Printhead unload	Microswitch	Microswitch	Microswitch	Micro switch
Power Supply Voltage	Printhead & Motors	6.0 to 8.0 VDC	6.0 to 8.0 VDC	24 VDC ± 1.7 V	24 VDC ± 7 %
	Logistic	5 ± 0.25 VDC	5 ± 0.25 VDC	5 ± 0.25 VDC	5 VDC ± 5 %
Connector	Printhead	FFC	FFC	FFC	FPC
	Motor	FFC	FFC	FFC	Pin connector
Paper Dimensions	57.5 ± 0.5 mm (W) x dia.80 mm	57.5 ± 0.5 mm (W) x dia.80 mm	57.5 ± 0.5 mm (W) x dia.80 mm	79.5 ± 0.5 mm (W) x dia. 100 mm	44.5 ± 0.5 mm (W) x dia. 83 mm max.
Paper Thickness	65.0µm ± 5µm	65.0µm ± 5µm	65.0µm ± 5µm	65.0 µm ± 5 µm	65.0µm ± 5µm
Operating Temperature	0 to 50°C	0 to 50°C	0 to 55°C	0 to 50°C	0 to 40°C
Reliability	Print head Life	–	–	–	50 km, 1 x 10 ⁸ pulses
	MCBF	15 x 10 ⁶ lines	15 x 10 ⁶ lines	15 x 10 ⁶ lines	16 x 10 ⁶ lines
	Printer life	6 x 10 ⁶ lines	6 x 10 ⁶ lines	6 x 10 ⁶ lines	5 x 10 ⁶ lines
Overall Dimensions	90 (W) x 53 (D) x 20 (H) mm	90 (W) x 53 (D) x 20 (H) mm	69.15 (W) x 51.2 (D) x 17.3 (H) mm	M-T301: 110.6 (W) x 54.0 (D) x 22.8 (H) mm M-T301A: 110.6 (W) x 81.5 (D) x 47.9 (H) mm	144 (W) x 213.1 (D) x 159.2 (H) mm (with full options)
Mass	Approx. 120 g	Approx. 120 g	Approx. 70 g	M-T301: Approx.180 g M-T301A: Approx. 500 g	Approx. 920 g (without options)
Connector (A/C sensor)	Pin connector	Pin connector	–	–	–
A/C life	300,000 cuts	300,000 cuts	–	–	–
A/C method	Scissors type	Scissors type	–	–	–
A/C duration	Approx. 0.9 sec	Approx. 0.9 sec	–	–	–

(*) (R / J) : Receipt / Journal

Item \ Model	1 Station Printer			
	M-150 Series			
	M-150II	M-160	M-163	M-164
Printing Method	Shuttle impact dot matrix			
Printing Format				
Font	5 x 7			
Column capacity	16 columns	24 columns	32 columns	40 columns
Character size	1.8 (W) x 2.5 (H) mm	1.7 (W) x 2.4 (H) mm	1.3 (W) x 2.4 (H) mm	1.1 (W) x 2.4 (H) mm
Line spacing	* 3.5 mm		* 3.3 mm	
Column spacing	2.1 mm	2.0 mm	1.5 mm	1.2 mm
Number of total dots	96 dots / line	144 dots / line	192 dots / line	240 dots / line
Printing Speed	1.0 line / sec. (at 4.5 VDC)	0.7 line / sec. (at 4.5 VDC)	0.5 line / sec. (at 4.5 VDC)	0.4 line / sec. (at 4.5 VDC)
Print head				
Voltage	3.3 to 5.0 VDC			
Peak current	Approx. 3 A / solenoid (at 4.5 VDC)			
Motor				
Voltage	3.8 to 5.0 VDC			
Mean current	Approx. 0.17 A (at 4.5 VDC)	Approx. 0.2 A (at 4.5 VDC)		
Paper	Roll paper			
Dimensions	44.5 ± 0.5 mm (W) x dia. 50 mm max.	57.5 ± 0.5 mm (W) x dia. 50 mm max.		
Total Thickness	0.07 mm			
Copy Capability	Original and One copy			
Ribbon Cassette	ERC-05	ERC-09		
Operating Temperature	0 to 50°C			
Reliability				
Print head Life	–			
MCBF	0.5 x 10 ⁶ lines			0.4 x 10 ⁶ lines
Printer Life	–			
Overall Dimensions	73.2 (W) x 42.6 (D) x 12.8 (H) mm	91.0(W) x 42.6(D) x 12.8 (H) mm		
Mass (without options)	Approx. 60 g	Approx. 75 g		

(*) For a 5 x 7 font and 3 dots per line paper feed.

Item	Model	1 Station Printer					
		M-180 Series					
		M-180	M-181	M-182	M-183	M-185	M-186
Printing Method		Shuttle impact dot matrix					
Printing Format							
Font		5 x 7					
Column capacity		24 columns	30 columns	36 columns	42 columns	18 columns	20 columns
Character size		1.7 (W) x 2.6 (H) mm	1.4 (W) x 2.6 (H) mm	1.2 (W) x 2.6 (H) mm	1.1 (W) x 2.6 (H) mm	1.7 (W) x 2.6 (H) mm	1.7 (W) mm
Line spacing		3.7 mm (In case of 5 x 7 font and 3 dots / line paper feed)					
Column spacing		2.0 mm	1.6 mm	1.3 mm	1.2 mm	2.0 mm	
Number of total dots		144 dots / line	180 dots / line	216 dots / line	252 dots / line	108 dots / line	120 dots / line
Printing Speed		1.7 lines / sec. (at 4.8 VDC)	1.3 lines / sec. (at 4.8 VDC)	1.1 lines / sec. (at 4.8 VDC)	1.0 lines / sec. (at 4.8 VDC)	1.7 lines / sec. (at 4.8 VDC)	Type 83 ms / dotline (at 4.8 VDC)
Print head							
Voltage		3.3 to 5.5 VDC					5.0 to 6.0 VDC
Peak current		Approx. 3 A / solenoid (at 4.8 VDC)					3.5 A / solenoid (at 5.5 VDC)
Motor							
Voltage		3.8 to 5.5 VDC					
Mean current		Approx. 0.2 A (at 4.8 VDC)					
Paper		Roll paper					
Dimensions		57.5 ± 0.5 mm (W) x dia. 83 mm max.				44.5 ± 0.5 mm (W)	*Card Type
Total Thickness		0.06 to 0.085 mm					0.21 to 0.25 mm
Copy Capability		Original and One copy					
Ribbon Cassette		ERC-09 / 22					ERC-24
Operating Temperature		0 to 50°C					
Reliability							
Print head Life		-					
MCBF		1.0 x 10 ⁶ lines		0.7 x 10 ⁶ lines		1.0 x 10 ⁶ lines	
Printer Life		-					
Overall Dimensions		91.0 (W) x 46.9 (D) x 15.8 (H) mm					93.9 (W) x 59.3 (D) x 21.1 (H) mm
Mass (without options)		Approx. 95 g					Approx. 140 g

(*) Card Type paper : Max. Width : 54mm

Item	Model	1 Station Printer						
		M-190 Series				M-190G Series		
		M-190	M-191	M-192	M-195	M-190G	M-192G	
Printing Method		Shuttle impact dot matrix				Shuttle impact dot matrix		
Printing Format								
Font		5 x 7				5 x 7		
Column capacity		24 columns	32 columns	40 columns	18 columns	24 columns	40 columns	
Character size		1.7 (W) x 2.6 (H) mm	1.3 (W) x 2.6 (H) mm	1.1 (W) x 2.6 (H) mm	1.7 (W) x 2.6 (H) mm	1.7 (W) x 2.6 (H) mm	1.1 (W) x 2.6 (H) mm	
Line spacing		3.7 mm (In case of 5 x 7 font and 3 dots / line paper feed)				3.7 mm (In case of 5 x 7 font and 3 dots / line paper feed)		
Column spacing		2.0 mm	1.5 mm	1.2 mm	2.0 mm	2.0 mm	1.2 mm	
Number of total dots		144 dots / line	192 dots / line	240 dots / line	108 dots / line	144 dots / line	240 dots / line	
Printing Speed		2.5 lines / sec. (at 4.8 VDC)	1.9 lines / sec. (at 4.8 VDC)	1.5 lines / sec. (at 4.8 VDC)	2.5 lines / sec. (at 4.8 VDC)	2.7 lines / sec. ± 20%	1.8 lines / sec. ± 20%	
Print head								
Voltage		3.3 to 5.2 VDC				5.0 ± 0.5 VDC		
Peak current		Approx. 2.5 A / solenoid (at 4.8 VDC)				Approx. 2.5 A / solenoid (at 5 VDC)		
Motor								
Voltage		3.8 to 5.2 VDC				5.0 ± 0.5 VDC		
Mean current		Approx. 0.35 A (at 4.8 VDC)				Approx. 0.35 A (at 5 VDC)		
Paper		Roll paper						
Dimensions		57.5 ± 0.5 mm (W) x dia. 83 mm max.			44.5 ± 0.5 mm (W)	57.5 ± 0.5 mm (W) x dia 83 mm max.		
Total Thickness		0.06 to 0.085 mm					0.06 to 0.085 mm	
Copy Capability		Original and one copy				Original and one copy		
Ribbon Cassette		ERC-09 / 22				ERC-09 / ERC-22 / ERC-40		
Operating Temperature		0 to 50°C				-10 to 50°C (using ECR-22, ERC-40)		
Reliability								
Print head Life		-						
MCBF		1.5 x 10 ⁶ lines	1.1 x 10 ⁶ lines	0.9 x 10 ⁶ lines	1.5 x 10 ⁶ lines	1.5 x 10 ⁶ lines	1 x 10 ⁶ lines	
Printer Life		2.25 x 10 ⁶ lines	1.65 x 10 ⁶ lines	1.35 x 10 ⁶ lines	2.25 x 10 ⁶ lines	2.25 x 10 ⁶ lines	1.5 x 10 ⁶ lines	
Overall Dimensions		91.0 (W) x 46.9 (D) x 15.8 (H) mm					91.0 (W) x 46.9 (D) x 15.8 (H) mm	
Mass (without options)		Approx. 100 g					Approx. 100 g	

SPECIFICATIONS



Item	Model	1 Station Printer		Slip Printer
		M-260 Series		M-290
		M-260	M-265	
Printing Method		Shuttle impact dot matrix		Shuttle impact dot matrix
Printing Format				
Font		7 x 7		7 x 7
Column capacity		42 columns		42 columns
Character size		1.3 (W) x 2.9 (H) mm		1.3 (W) x 2.9 (H) mm
Line spacing		4.2 mm (In case of 7 x 7 font and 3 dots / line paper feed)		4.2 mm
Column spacing		1.6 mm		1.6 mm
Number of total dots		210 dots / line		210 dots / line
Printing Speed		2.3 lines / sec. (at 13.2 VDC)	2.3 lines / sec. (at 26.4 VDC)	Approx. 2.1 lines / sec. (24 VDC)
Print head				
Voltage		12 VDC ± 10%	24 VDC ± 10%	24 VDC ± 10%
Peak current		2.2 A / solenoid (at 12 VDC)	1.6 A / solenoid (at 24 VDC)	1.6 A / solenoid (at 24 VDC)
Motor				
Voltage		12 VDC ± 10%	24 VDC ± 10%	24 VDC ± 10%
Mean current		Approx. 0.2 A (at 12 VDC)	Approx. 0.15 A (at 24 VDC)	Approx. 0.15 A (at 24 VDC, P.F. motor), Approx. 0.15 A (at 24 VDC, CR motor)
Paper		Roll paper		Slip paper
Dimensions		76 ± 0.5 mm (W) x dia. 83 mm max.		80 (W) x 80 (L) mm mini. to 182 (W) x 257 (L) mm max.
Total Thickness		0.05 to 0.2 mm		0.09 to 0.35 mm
Copy Capability		Original and two copies		Max : Original and four copies (at 25°C)
Ribbon Cassette		ERC-23		ERC-27
Operating Temperature		0 to 50°C		0 to 50°C
Reliability				
Print head Life		1.0 x 10 ⁸ strokes / wire		1 x 10 ⁸ strokes / wire
MCBF		1.5 x 10 ⁶ lines		1.5 x 10 ⁶ lines
Printer Life		-		-
Overall Dimensions		122.0 (W) x 83.6 (D) x 25.4 (H) mm (Single color)		138.0 (W) x 70.5 (D) x 59.5 (H) mm
Mass (without options)		Approx. 340 g (Single color) / Approx. 340 g (Two color)		Approx. 550 g




UL478 / CSA220 recognized products are available on request UL478, CSA220 recognized products are available on request.
(Safety Standards)

Item	Model	1 Station Printer		Sprocket Printer		
				M-U310 Series		
		M-U310	M-U311	M-U310S	M-U311S	M-U312S
Printing Method		Serial impact dot matrix				
Printing Format						
Font		7 x 9	7 x 7 / 7 x 9	7 x 9	7 x 7 / 7 x 9	7 x 9
Column capacity		42 columns		28 columns		28 columns
Character size		1.2 (W) x 3.1 (H) mm	1.2 (W) x 2.4 (H) mm / 1.2 (W) x 3.1 (H) mm	1.5 (W) x 3.1 (H) mm	1.5 (W) x 2.4 (H) mm / 1.5 (W) x 3.1 (H) mm	1.5 (W) x 3.1 (H) mm
Line spacing		Approx. 4.2 mm	Approx. 3.2 mm	Approx. 4.2 mm	Approx. 3.2 mm	Approx. 4.2 mm
Column spacing						
Number of total dots		210 dots (420 positions) / line		140 dots (280 positions) / line		140 dots (280 positions) / line
Printing Speed		Approx. 3.1 lines / sec.		Approx. 3.3 lines / sec.		4.4 lines / sec.
Print head						
Voltage		24 VDC ± 5% / 10%		24 VDC ± 10%		24 VDC ± 10%
Peak current		Approx. 8.6 A (at 24 VDC)				Approx. 9 A (at 24 VDC)
Motor						
Voltage		24 VDC ± 5% / 10%		24 VDC ± 10%		24 VDC ± 10%
Mean current		Approx. 0.14 A (at 24 VDC)		Approx. 0.13 A (at 24 VDC)		Approx. 0.14 A (at 24 VDC)
Paper		Roll paper		Sprocket paper		Sprocket paper
Dimensions		76.2 ± 0.7 mm (W) x dia. 83 mm max. (shaft holding)		76.2 ± 0.7 mm (W) x 127 to 254 mm (H) (between perforations)		76.2 ± 0.7 mm (W) x 127 to 254 mm (H) (between perforations)
Total Thickness		0.06 to 0.20 mm		0.08 to 0.25 mm		0.25 to 0.35 mm
Copy Capability		Original and two copies		Original and three copies		Original and three copies
Ribbon Cassette		ERC-39 (P)				
Operating Temperature		0 to 50°C				
Reliability						
Print head Life		-				
MCBF		2.5 x 10 ⁶ lines		2.5 x 10 ⁶ lines		2.5 x 10 ⁶ lines
Printer Life		4 x 10 ⁶ lines		4 x 10 ⁶ lines		4 x 10 ⁶ lines
Overall Dimensions		122.0 (W) x 97.0 (D) x 48.0 (H) mm (Excluding release lever and an optional knob set)				127.0 (W) x 101.0 (D) x 48.0 (H) mm
Mass (without options)		Approx. 450 g				




Item \ Model	1 Station Printer		Sprocket Printer
	M-U110 Series		
	M-U110	M-U112	M-U111S
Printing Method	Serial impact dot matrix		
Printing Format			
Font	7 x 9		
Column capacity	42 columns (76 mm) / 30 columns (58 mm)	30 columns	40 columns (89 mm) / 28 columns (76 mm)
Character size	1.24 (W) x 3.1 (H) mm		1.24 (W) x 3.1 (H) mm (89 mm) / 1.5 (W) x 3.1 (H) mm (76 mm)
Line spacing	Approx. 4.2 mm		
Column spacing	Approx. 1.6 mm		Approx. 1.6 mm (89 mm) / Approx. 2.0 mm (76 mm)
Number of total dots	210 dots (420 positions) / line (76 mm) / 150 dots (300 positions) / line (58 mm)	150 dots (300 positions) / line	200 dots (400 positions) / line / 140 dots (280 positions) / line
Printing Speed	3.3 lines / sec. (76 mm) / 4.2 lines / sec. (58 mm)	4.2 lines / sec.	3.4 lines / sec. (89 mm) / 4.4 lines / sec. (76 mm)
Print head			
Voltage	24 ± 2.4 VDC		
Peak current	Approx. 8.6 A (at 24 VDC)		Approx. 9 A (at 24 VDC)
Motor			
Voltage	24 ± 2.4 VDC		
Mean current	0.35 A (CR motor) / 0.3A (P.F. motor)		
Paper	Roll paper / Validation paper	Roll paper	Sprocket paper
Dimensions	Roll paper : 76.2 ± 0.7 mm (W) / 57.5 ± 0.5 mm (W) x dia. 83 mm max. Validation : 130 mm or more (W) x 60 mm or more (H)	Roll paper : 57.5 ± 0.5 mm (W) x dia. 83 mm max.	89.0 ± 0.5 mm (W) x 127 to 254 mm (H) (between perforations) 76.2 ± 0.7 mm (W) x 127 to 254 mm (H) (between perforations)
Total Thickness	Roll paper : 0.06 to 0.2mm / Validation paper : 0.85 to 0.25 (including the rollpaper)	Roll paper : 0.06 to 0.2mm	0.25 to 0.35 mm
Copy Capability	Original and two copies		Original and three copies
Ribbon Cassette	ERC-39 (P)	ERC-42 (P)	ERC-39 (P)
Operating Temperature	0 to 50°C		
Reliability			
Print head Life	1.5 x 10 ⁸ characters		
MCBF	5.0 x 10 ⁶ lines		
Printer Life	8.0 x 10 ⁶ lines		
Overall Dimensions	127.0 (W) x 96.0 (D) x 53.0 (H) mm	108.0 (W) x 96.0 (D) x 53.0 (H) mm	127.0 (W) x 96.0 (D) x 61.0 (H) mm
Mass (without options)	Approx. 430 g	Approx. 400 g	Approx. 460 g




Item \ Model	Sprocket Printer	2 Station Printer	
	M-U110 Series	M-780	M-U420 Series
	M-U110A		
Printing Method	Serial impact dot matrix		Serial impact dot matrix
Printing Format			
Font	7 x 9		7 x 9
Column capacity	42 columns (76 mm) / 30 columns (58 mm)	18 columns x 2, Validation: 42 columns	Receipt : 24 columns Journal : 24 columns Validation : 55 columns
Character size	1.24 (W) x 3.1 (H) mm		1.32 (W) x 3.1 (H) mm
Line spacing	Approx. 4.23 mm (24 step)		4.7 mm
Column spacing	Approx. 1.6 mm		1.53 mm
Number of total dots	210 dots (420 positions) / line (76mm) / 150 dots (300positions) / line (58mm)	R / J : 81 dots (162 positions) / line / Validation: 189 dots (378 positions) / line	R / J : 108 dots (216 positions) / line Validation : 247 dots (495 positions) / line
Printing Speed	3.3 lines / sec. (76 mm) / 4.2 lines / sec. (58 mm)	Approximately 3.3 lines / sec. (at 24 VDC)	Approximately 3 lines / sec. (at 24 VDC)
Print head	Voltage	24 ± 2.4 VDC	24 VDC ± ^{5%} / _{10%}
	Peak current	Approx. 8.6 A (at 24 VDC)	Approx. 10.8 A (at 24 VDC)
Motor	Voltage	24 ± 2.4 VDC	24 VDC ± ^{5%} / _{10%}
	Mean current	0.35A (CR motor) / 0.3A (P.F. motor)	Approx. 0.25 A (at 24 VDC)
Paper	Roll paper		Roll paper / Validation paper
Dimensions	Roll paper : 76.2 ± 0.7 mm (W) / 57.5 ± 0.5 mm (W) dia. 83 mm max	Roll paper : 37.5 ± 0.5 mm (W) x dia. 83 mm max. Validation : 134 mm or more (W) x 70 mm or more (H)	Roll paper : 44.5 ± 0.5 mm (W) x dia. 83 mm max. Validation : 135 to 210 (W) x 70 (H) mm mini.
Total Thickness	Roll paper : 0.06 to 0.14 mm	Roll paper : 0.06 to 0.09 mm, Validation : 0.07 to 0.2 mm	Roll paper : 0.06 to 0.09 mm / Validation : 0.07 to 0.14 mm
Copy Capability	Original and two copies		Original and one copy (Validation)
Ribbon Cassette	ERC-39 (P)		ERC-37 (P)
Operating Temperature	0 to 50°C		0 to 50°C
Reliability	Print head Life	1 x 10 ⁸ characters	1 x 10 ⁸ characters
	MCBF	5 x 10 ⁶ lines	3 x 10 ⁶ lines
	Printer Life	8 x 10 ⁶ lines	5 x 10 ⁶ lines
Overall Dimensions	128.6 (W) x 98.8 (D) x 77.3 (H) mm (76 mm) 127.6 (W) x 98.8 (D) x 77.3 (H) mm (58 mm)	135 (W) x 227.7 (D) x 150.5 (H) mm	150.7 (W) x 251.5 (D) x 103.5 (H) mm
Mass (without options)	Approx. 700 g		Approx. 1.0 kg (1.1 kg with autocutter)
Autocutter	Autocutter life	1 x 10 ⁶ cuts	-
	Cutting method	Scissors	-
	Operating duration	Approximately 350 ms (at 24 VDC)	-

Item	Inkjet Printer			
	TM-J7000 / J7100	NEW TM-J7500 / J7600	TM-J2000 / J2100	
Appearance				
Print method	Serial Inkjet dot matrix (180 dpi x 180 dpi)		J2000: 64 nozzle serial inkjet (180 dpi x 180 dpi) J2100: 128 nozzle serial inkjet (180 dpi x 180 dpi)	
Font	12 x 24 / 9 x 17			
Column capacity (columns)	Receipt: 82.5 mm: 42 / 56, 76 mm: 40 / 53, 69.5 mm: 36 / 48, 57.5 mm: 30 / 40, Slip: 48 / 64, Endorsement: 46 / 61	Receipt: 82.5 mm: 42 / 56, 76 mm: 40 / 53, 69.5 mm: 36 / 48, 57.5 mm: 30 / 40, Slip: 80 / 106	82.5 mm: 42 / 56, 76 mm: 40 / 53 70 mm: 36 / 48, 58 mm: 30 / 40	
Character size (mm)	1.41 (W) x 3.38 (H) / 0.99 (W) x 2.40 (H)		1.41 (W) x 3.39 (H) / 0.99 (W) x 2.4 (H)	
Character set	95 Alphanumeric, 37 International, 128 x 11 Graphic Bar code: UPC-A, UPC-E, JAN13 (EAN), JAN8 (EAN), CODE39, CODE93, CODE128, ITF, CODABAR (NW7), Two-dimensional code: PDF417		ASCII, WPC1252, PC437, PC850, PC852, PC858, PC860, PC863, PC865, PC866 Custom Graphic, Bar code: UPC-A, UPC-E, JAN8 (EAN), JAN13 (EAN), 2 of 5 (ITF), CODE39, CODE93, CODE128, CODABAR (NW7)	
Characters Per Inch	15 cpi (Font A) / 20 cpi (Font B)			
Interfaces*	RS-232, Bi-directional parallel, RS-485, USB, 10 Base-T I/F			
Data buffer	4 KB		4 KB or 512 bytes	
Print speed	Character: 14.3 lps, Graphic: 43 mm / sec. (Paper width 76mm, Economy, High speed mode)		Character: 14.7 lps (8 lines / inch) Graphic: 43 mm / sec. (76 mm width paper, Full columns print)	
Paper	Dimensions (mm)	Receipt: 57.5 ± 0.5, 69.5 ± 0.5, 76 ± 0.5, 82.5 ± 0.5 Slip: 68 to 230 (W) x 68 to 297 (L) (min. 68 x 152) Endorsement: 68 to 101.6 (W) x 150 to 223 (L)	Receipt: 57.5 ± 0.5, 69.5 ± 0.5, 76 ± 0.5, 82.5 ± 0.5 Slip: 68 to 230 (W) x 68 to 297 (L) (min. 68 x 152)	57.5 ± 0.5, 69.5 ± 0.5 76 ± 0.5, 82.5 ± 0.5
	Thickness (mm)	Receipt: 0.06 to 0.09 Slip: 0.09 to 0.2, Endorsement: 0.09 to 0.13	Receipt: 0.06 to 0.09 Slip: 0.09 to 0.2	0.06 to 0.11
Copy capability	-			
Inked ribbon	Ink Cartridge: Single color: SJIC8 (K) : Black (for TM-J7000 only) Two color: SJIC6 (K) : Black, SJIC7 (R) : Red, SJIC7 (B) : Blue, SJIC7 (G) : Green (for TM-J7100)	Ink Cartridge: Single color: SJIC8 (K) : Black (for TM-J7500 only) Two color: SJIC6 (K) : Black, SJIC7 (R) : Red, SJIC7 (B) : Blue, SJIC7 (G) : Green (for TM-J7600)	Ink Cartridge: SJIC5 (Black for TM-J2000) SJIC3 (Black for TM-J2100), SJIC4 (Red, Blue, Green for TM-J2100)	
Ribbon Life (characters)	Ink Life: Single color: Approx. 20 x 10 ⁶ Two color: Approx. 15 x 10 ⁶ for 2 color cartridge		Ink Life: 24 x 10 ⁶ (Mono) 17 x 10 ⁶ (2 colors)	
Power	24 VDC ± 10%			
Power consumption	Printing: Approx. 0.5 A Stand-by: Approx. 70 mA	Printing: Approx. 0.5 A Stand-by: Approx. 80 mA	Approx. 1 A (Operating)	
D.K.D.function	2 drivers			
Reliability	MTBF	18 x 10 ⁴ hours		
	MCBF	50 x 10 ⁶ lines		
Overall dimensions (mm)	195 (W) x 237 (D) x 188 (H)	251 (W) x 237 (D) x 188 (H)	195 (W) x 250 (D) (275 D with overhanging ledge) x 195 (H)	
Mass (Approx.)	4.4 kg	4.9 kg	4.7 kg	
EMC standards	VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B			
Power supply (option)	PS-180			
Factory Options	MICR device	-		
Safety Standards	UL / CSA / TÜV (EN60950)			




		Hybrid Printer		
TM-J8000	TM-H6000II	TM-H5000II		
			Appearance	
Serial Inkjet dot matrix (128 nozzle / 360 dpi)	Receipt: Thermal line printing , Slip: 9-pin serial impact dot matrix E / P: 8-pin shuttle impact dot matrix	Receipt: Thermal line printing Slip: 9-pin serial impact dot matrix	Print method	
22 x 48 / 18 x 36	Receipt: 9 x 17 / 12 x 24 Slip: 5 x 9 / 7 x 9, E / P: 5 x 7	Receipt: 9 x 17 / 12 x 24 Slip: 7 x 9 / 9 x 9	Font	
Receipt: 42 / 51, Slip: 130 / 158	Receipt: 56 / 42, Slip: 45 / 60, E / P: 40	Receipt: 56 / 42, Slip: 88 / 66	Column capacity (columns)	
1.48 (W) x 3.32 (H) / 1.20 (W) x 2.47 (H)	Receipt: 0.99 (W) x 2.4 (H) / 1.41 (W) x 3.39 (H) Slip: 1.24 (W) x 3.1 (H) / 1.56 (W) x 3.1 (H), E / P: 1.1 (W) x 2.42 (H)	Receipt: 0.99 (W) x 2.4 (H) / 1.41 (W) x 3.39 (H) Slip: 1.3 (W) x 3.1 (H) / 1.6 (W) x 3.1 (H)	Character size (mm)	
95 Alphanumeric, 32 International, 128 x 9 Graphic Bar code: UPC-A, UPC-E, JAN13 (EAN), 2 of 5 (ITF), CODE39, CODE93, CODE128	Receipt / Slip: 95 Alphanumeric, 37 International, Receipt: 128 x 11 Graphic, Slip: 128 x 12 Graphic, Bar code: UPC-A, UPC-E, JAN13 (EAN13), JAN8 (EAN8), CODE39, CODE93, CODE128, ITF, CODABAR, Two-dimensional code: PDF417 (Receipt only)	95 Alphanumeric, 32 International, 128 x 7 Graphic (Receipt) 128 x 10 Graphic (Slip) Traditional / Simplified Chinese, Thai, Japanese	Print Font	
16.4 cpi / 20 cpi	Slip: 13.3 cpi / 17.8 cpi	Receipt: 20.0 cpi / 15 .0 cpi Slip: 16.7 cpi / 12.5 cpi	Character set	
RS-232, Bi-directional parallel, RS-485, USB, 10 Base-T I/F			Interfaces*	
4 KB or 45 bytes			Data buffer	
Receipt: 10.1 lps (at 42 columns) / 14.7 lps (at 51 columns) Slip: 4.9 lps (at 130 columns) / 7.3 lps (at 158 columns)	Receipt: Max. 170 mm / sec. Slip: Approx. 5.14 lps (at 40 columns, 17.8 cpi), E / P: Approx. 1.9 lps	Receipt: 120 mm / sec. (38 lps, 1 / 8" conversion) Slip: 311 / 233 cps	Print speed	
Receipt: 76 ± 0.5 x dia. 83.0 Slip: (W) 68 to 215.9 (L) 68 to 297.0	Receipt: Thermal roll paper 79.5 ± 0.5 (W) x dia. 83.0 Slip & E / P: 68 to 230 x 68 to 297 (W x L) NOTE: The minimum paper size is 68 x 152 mm	Receipt: Thermal roll paper 79.5 ± 0.5 (W) x dia. 83.0 Slip: 70 (W) x 70 (L) to 210 (W) x 297 (L)	Dimensions (mm)	
Receipt: 0.06 to 0.09 Slip: 0.09 to 0.15	Receipt: 0.06 to 0.09 Slip: 0.09 to 0.31, E / P: 0.09 to 0.2	Receipt: 0.06 to 0.07 Slip: 0.09 to 0.2 (total thickness: ~ 0.36)	Thickness (mm)	
–	Slip: One original and three copies, E / P: One original single ply	Slip: One original and four copies	Copy capability	
Ink Cartridge: SJIC1 (Black)	Slip: ERC-32 (Purple, Black), E / P: ERC-41 (Purple, Black)	ERC-31 (Purple, Black)	Inked ribbon	
Ink Life: 12 x 10 ⁶	Slip: Purple: 6 x 10 ⁶ , Black: 4 x 10 ⁶ E / P: Purple: 1 x 10 ⁶ , Black: 8 x 10 ⁵	Purple: 7 x 10 ⁶ · Black: 4.5 x 10 ⁶	Ribbon Life (characters)	
AC 85 V - 264.5 V (only for single phase)	24 VDC ± 10 %		Power	
25 W (Operating)	Receipt: Approx. 1.8 A Slip: Approx. 1.7 A	Receipt: Approx. 1.7 A Slip: Approx. 1.9 A	Power consumption	
2 drivers			D.K.D.function	
18 x 10 ⁴ hours	Receipt: 36 x 10 ⁴ hours, Slip: 18 x 10 ⁴ hours		MTBF	
37 x 10 ⁶ lines	Receipt: 52 x 10 ⁶ lines Slip: 18 x 10 ⁶ lines	Receipt: 52 x 10 ⁶ lines Slip: 29 x 10 ⁶ lines	Reliability	
325 (W) x 300 (D) x 200 (H)	186 (W) x 298 (D) x 185 (H)	252 (W) x 331 (D) x 201 (H) (excluding extended table)	MCFB	
9.0 kg	5.8 kg	6.5 kg	Overall dimensions (mm)	
VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B	VCCI class A, FCC class A, CE marking, AS / NZS 3548	VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B	Mass (Approx.)	
Universal power supply is built in	PS-180		EMC standards	
–	MICR device, Endorsement Printer (E / P)	MICR device	Power supply (option)	
UL / CSA / TÜV (EN60950)			Factory Options	
			Safety Standards	



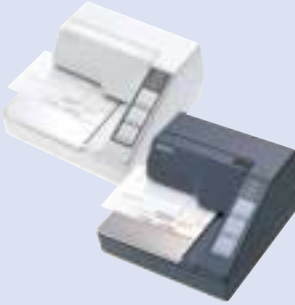
TM SERIES SPECIFICATIONS

Item	Thermal Line Printer		
	TM-T90	TM-L90	TM-T88III
Appearance			
Print method	Thermal line printing		
Print Font	Font 9 x 17 / 12 x 24 Column capacity (columns) 56 / 42 64 / 48 56 / 42 Character size (mm) 1.3 (W) x 2.4 (H) / 1.7 (W) x 3.4 (H) 1.1 (W) x 2.1 (H) / 1.5 (W) x 3.0 (H) 0.99 (W) x 2.4 (H) / 1.41 (W) x 3.39 (H) Character set 95 Alphanumeric, 37 International, 128 x 11 Graphic Bar code: UPC-A, UPC-E, JAN13 (EAN), JAN8 (EAN), CODE39, CODE93, CODE128, ITF, CODABAR, Maxicode (L90 only), QRCode (L90 only), Two-dimensional code: PDF417 95 Alphanumeric, 37 International, 128 x 11 Graphic Traditional / Simplified Chinese, Thai, Japanese, Korean Bar code: UPC-A, UPC-E, JAN8 (EAN), JAN13 (EAN), CODE39, CODE93, CODE128, ITF, CODABAR Characters Per Inch 20.0 cpi / 15.0 cpi 22.6 cpi / 16.9 cpi 20.0 cpi / 15.0 cpi		
Interfaces*	RS-232, Bi-directional parallel, RS-485, USB, 10 Base-T I/F		
Data buffer	4 KB or 45 bytes		
Print speed	Max. 170 mm / sec.	Max. 150 mm / sec.	
Paper	Dimensions (mm) Roll paper: Max. 79.5 ± 0.5 (W) x dia. 102.0 Thickness (mm) 0.06 to 0.08	Dimensions (mm) Roll paper: Max. 79.5 ± 0.5 (W) x dia. 90 .0 Thickness (mm) 0.06 to 0.15	Dimensions (mm) Roll paper: 79.5 ± 0.5 (W) x dia. 83.0 Thickness (mm) 0.06 to 0.07
Copy capability	-		
Inked ribbon	-		
Ribbon Life (characters)	-		
Power	24 VDC ± 7%		
Power consumption	Approx. 1.7 A (mean)		Approx. 1.8 A (mean)
D.K.D.function	2 drivers		
Reliability	36 x 10 ⁴ hours		
	70 x 10 ⁶ lines	70 x 10 ⁶ lines (when printing receipt)	52 x 10 ⁶ lines
Overall dimensions (mm)	140 (W) x 201 (D) x 148 (H)	140 (W) x 148 (D) x 203 (H)	145 (W) x 195 (D) x 148 (H)
Mass (Approx.)	1.8 kg	1.9 kg	1.8 kg
EMC standards	VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B		
Power supply (option)	PS-180		
Factory Options	-		
Safety Standards	UL / CSA / TÜV (EN60950)		

Thermal Line Printer TM-L60II	Impact Dot Matrix Printer		
	TM-U950	TM-U675	
			Appearance
Thermal line printing	9-pin, serial impact dot matrix		Print method
9 x 24 / 12 x 24	7 x 9 / 9 x 9	5 x 9 / 7 x 9	Font
42 / 32 (Roll paper), 40 / 30 (Label)	Receipt (Journal): 40 / 30, Slip: 88 / 66	Receipt: 37 / 50, Slip / Validation: 45 / 60	Column capacity (columns)
0.99 (W) x 3.39 (H) / 1.41 (W) x 3.39 (H)	1.3 (W) x 3.1 (H) / 1.6 (W) x 3.1 (H)	1.56 (W) x 3.1 (H) / 1.24 (W) x 3.1 (H)	Character size (mm)
95 Alphanumeric, 32 International, 128 x 7 Graphic Bar code: UPC-A, UPC-E, JAN8 (EAN), JAN13 (EAN), CODE39, CODE93, CODE128, ITF, CODABAR	95 Alphanumeric 32 International 128 x 9 Graphic	95 Alphanumeric 37 International 128 x 12 Graphic	Character set
20.0 cpi / 15.0 cpi	16.7 cpi / 12.5 cpi	13.3 cpi / 17.8 cpi	Characters Per Inch
RS-232, Bi-directional parallel	RS-232, Bi-directional parallel	RS-232, Bi-directional parallel RS-485, USB, 10 Base-T I/F	Interfaces*
4 KB or 45 bytes	2 KB or 32 bytes	4 KB or 45 bytes	Data buffer
50 mm / sec. (12 lps with 1 / 6" paper feed)	311 / 233 cps	Approx. 5.14 lps (at 40 columns, 17.8 cpi)	Print speed
Roll paper: 60.0 ⁺⁰ (W) x dia. 83.0 Label: 60.0 ^{+0.2} (W) x dia. 83.0	Receipt (Journal): Roll paper 69.5 ± 0.5 (W) x dia. 83.0 Slip: 70 (W) x 70 (L) to 210 (W) x 297 (L)	Roll paper: 82.5 / 76.0 ± 0.5 (W) x dia. 83.0 Slip: 68 to 230 (W) x 68 to 297 (L) (min. 68 x 152) Validation: 68 to 230 (W) x 68 to 230 (L) (min. 68 x 152)	Dimensions (mm)
Label: 0.143 ± 0.015	Receipt (Journal): 0.06 to 0.09, Slip: 0.09 to 0.36	Roll paper: 0.06 to 0.085 / sheet Slip: 0.09 to 0.2 (total thickness: 0.09 to 0.31)	Thickness (mm)
-	One original and four copies (for slip)	One original and two copies	Copy capability
-	ERC-31 (Purple)	ERC-32 (Purple, Black)	Inked ribbon
-	Purple: 7 x 10 ⁶	Purple: 6 x 10 ⁶ , Black: 4 x 10 ⁶	Ribbon Life (characters)
24 VDC ± 7%	24 VDC ± 10%		Power
Approx. 1.0 A (mean)	Approx. 1.8 A (mean)		Power consumption
2 drivers			D.K.D.function
18 x 10 ⁴ hours			MTBF
29 x 10 ⁶ lines (thermal paper) 12 x 10 ⁶ lines (thermal label)	18 x 10 ⁶ lines	37 x 10 ⁶ lines	MCFB
123 (W) x 201 (D) x 124 (H)	251 (W) x 298 (D) x 194.5 (H)	186 (W) x 298 (D) x 195 (H)	Overall dimensions (mm)
0.8 kg	5.6 kg	5.8 kg	Mass (Approx.)
VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B			EMC standards
PS-180			Power supply (option)
-	MICR device	MICR device, Autocutter	Factory Options
UL / CSA / TÜV (EN60950)			Safety Standards

TM SERIES SPECIFICATIONS

Item	Impact Dot Matrix Printer																						
	TM-U375	TM-U325	NEW TM-U220 series																				
Appearance																							
Print method	9-pin, serial impact dot matrix																						
Print Font	<table border="1"> <tr> <td>Font</td> <td>5 x 9 / 7 x 9</td> <td colspan="2">7 x 9 / 9 x 9</td> </tr> <tr> <td>Column capacity (columns)</td> <td>33 / 40</td> <td>40 / 42 or 33 / 35 (3 half dots / 2 half dots space)</td> <td>40 / 42 or 33 / 35</td> </tr> <tr> <td>Character size (mm)</td> <td colspan="3">1.6 (W) x 3.1 (H) / 1.2 (W) x 3.1 (H)</td> </tr> <tr> <td>Character set</td> <td>95 Alphanumeric 32 International 128 x 9 Graphic</td> <td>95 Alphanumeric 32 International 128 x 8 Graphic</td> <td>95 Alphanumeric, 37 International 128 x 12 Graphic Traditional / Simplified Chinese, Thai, Japanese, Korean</td> </tr> <tr> <td>Characters Per Inch</td> <td>13.3 cpi / 16 cpi</td> <td>16 or 17.8 cpi / 13.3 or 14.5 cpi</td> <td>17.8 cpi / 16 cpi or 14.5 cpi / 13.3 cpi</td> </tr> </table>			Font	5 x 9 / 7 x 9	7 x 9 / 9 x 9		Column capacity (columns)	33 / 40	40 / 42 or 33 / 35 (3 half dots / 2 half dots space)	40 / 42 or 33 / 35	Character size (mm)	1.6 (W) x 3.1 (H) / 1.2 (W) x 3.1 (H)			Character set	95 Alphanumeric 32 International 128 x 9 Graphic	95 Alphanumeric 32 International 128 x 8 Graphic	95 Alphanumeric, 37 International 128 x 12 Graphic Traditional / Simplified Chinese, Thai, Japanese, Korean	Characters Per Inch	13.3 cpi / 16 cpi	16 or 17.8 cpi / 13.3 or 14.5 cpi	17.8 cpi / 16 cpi or 14.5 cpi / 13.3 cpi
Font	5 x 9 / 7 x 9	7 x 9 / 9 x 9																					
Column capacity (columns)	33 / 40	40 / 42 or 33 / 35 (3 half dots / 2 half dots space)	40 / 42 or 33 / 35																				
Character size (mm)	1.6 (W) x 3.1 (H) / 1.2 (W) x 3.1 (H)																						
Character set	95 Alphanumeric 32 International 128 x 9 Graphic	95 Alphanumeric 32 International 128 x 8 Graphic	95 Alphanumeric, 37 International 128 x 12 Graphic Traditional / Simplified Chinese, Thai, Japanese, Korean																				
Characters Per Inch	13.3 cpi / 16 cpi	16 or 17.8 cpi / 13.3 or 14.5 cpi	17.8 cpi / 16 cpi or 14.5 cpi / 13.3 cpi																				
Interfaces*	RS-232, Bi-directional parallel	RS-232, Bi-directional parallel, RS-485, USB, 10 Base-T I/F	RS-232, Bi-directional parallel, USB, 10 Base-T I/F																				
Data buffer	4 KB or 40 bytes	4 KB or 45 bytes	4 KB or 40 bytes																				
Print speed	3.5 lps (at 40 columns, 16 cpi) 5.4 lps (at 20 columns, 16 cpi)	Approx. 3.5 lps (at 40 columns, 16 cpi) Approx. 6.4 lps (at 16 columns, 16 cpi)	4.7 lps (at 40 columns, 16 cpi) 6.0 lps (at 30 columns, 16 cpi)																				
Paper	<table border="1"> <tr> <td>Dimensions (mm)</td> <td>Roll paper: 76.0 ± 0.5 (W) x dia. 83.0 Slip: 70 (W) x 160 (L) to 182 (W) x 257 (L) Validation: 135 (W) x 70 (L) to 182 (W) x 257 (L)</td> <td>Receipt: 76.0 ± 0.5 (W) x dia. 83.0 Validation: 135 (W) x 70 (L) to 182 (W) x 182 (L) (Maximum print lines: 9 lines)</td> <td>Roll paper: 57.5 ± 0.5, 69.5 ± 0.5, 76.0 ± 0.5 (W) x dia. 83.0</td> </tr> <tr> <td>Thickness (mm)</td> <td>Roll paper: 0.06 to 0.085 / sheet Slip: 0.09 to 0.12 (total thickness: 0.09 to 0.31)</td> <td>Receipt: 0.06 to 0.085 (total thickness: 0.2 mm or less) Validation: 0.09 to 0.12 (total thickness: 0.09 to 0.31)</td> <td>0.06 to 0.085</td> </tr> </table>			Dimensions (mm)	Roll paper: 76.0 ± 0.5 (W) x dia. 83.0 Slip: 70 (W) x 160 (L) to 182 (W) x 257 (L) Validation: 135 (W) x 70 (L) to 182 (W) x 257 (L)	Receipt: 76.0 ± 0.5 (W) x dia. 83.0 Validation: 135 (W) x 70 (L) to 182 (W) x 182 (L) (Maximum print lines: 9 lines)	Roll paper: 57.5 ± 0.5, 69.5 ± 0.5, 76.0 ± 0.5 (W) x dia. 83.0	Thickness (mm)	Roll paper: 0.06 to 0.085 / sheet Slip: 0.09 to 0.12 (total thickness: 0.09 to 0.31)	Receipt: 0.06 to 0.085 (total thickness: 0.2 mm or less) Validation: 0.09 to 0.12 (total thickness: 0.09 to 0.31)	0.06 to 0.085												
Dimensions (mm)	Roll paper: 76.0 ± 0.5 (W) x dia. 83.0 Slip: 70 (W) x 160 (L) to 182 (W) x 257 (L) Validation: 135 (W) x 70 (L) to 182 (W) x 257 (L)	Receipt: 76.0 ± 0.5 (W) x dia. 83.0 Validation: 135 (W) x 70 (L) to 182 (W) x 182 (L) (Maximum print lines: 9 lines)	Roll paper: 57.5 ± 0.5, 69.5 ± 0.5, 76.0 ± 0.5 (W) x dia. 83.0																				
Thickness (mm)	Roll paper: 0.06 to 0.085 / sheet Slip: 0.09 to 0.12 (total thickness: 0.09 to 0.31)	Receipt: 0.06 to 0.085 (total thickness: 0.2 mm or less) Validation: 0.09 to 0.12 (total thickness: 0.09 to 0.31)	0.06 to 0.085																				
Copy capability	Roll paper: One original and one copy Slip: One original and two copies	One original and two copies	One original and one copy																				
Inked ribbon	ERC-38 (Purple, Black)																						
Ribbon Life (characters)	Purple: 4 x 10 ⁶ , Black: 3 x 10 ⁶		Purple: 4 x 10 ⁶ , Black: 3 x 10 ⁶ B / R: 15 x 10 ⁵ (Black), 75 x 10 ⁴ (Red)																				
Power	24 VDC ± 10%	AC adapter (included)																					
Power consumption	Approx. 1.4 A	Approx. 43 W	24V																				
D.K.D.function	2 drivers																						
Reliability	18 x 10 ⁴ hours																						
Overall dimensions (mm)	186 (W) x 327 (D) x 145 (H)	164 (W) x 240 (D) x 136 (H)	Type A: 160 (W) x 286 (D) x 157.5 (H) Type B: 160 (W) x 248 (D) x 138.5 (H) Type D: 160 (W) x 248 (D) x 138.5 (H)																				
Mass (Approx.)	4 kg	2.3 kg	Type A: 2.7kg Type B: 2.5kg, Type D: 2.3kg																				
EMC standards	VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B	FCC class A	VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B																				
Power supply (option)	PS - 180	Exclusive AC adapter (included)																					
Factory Options	-		Near - end sensor																				
Safety Standards	UL / CSA / TÜV (EN60950)	UL / CSA	UL / CSA / TÜV (EN60950)																				

Impact Dot Matrix Printer TM-U230	Slip Printer		
	TM-U590	TM-U295	Appearance
			
9-pin, serial impact dot matrix	7-pin, shuttle impact dot matrix		Print method
7 x 9 / 9 x 9	5 x 7 / 7 x 7		Font
40 / 42 or 33 / 35	88 / 66	35 / 42	Column capacity (columns)
1.2 (W) x 3.1 (H) / 1.6 (W) x 3.1 (H)	1.3 (W) x 3.1 (H) / 1.6 (W) x 3.1 (H)	1.6 (W) x 2.9 (H) / 1.3 (W) x 2.9 (H)	Character size (mm)
95 Alphanumeric, 37 International 128 x 8 Graphic Traditional / Simplified Chinese	95 Alphanumeric 32 International 128 x 10 Graphic Simplified Chinese Japanese, Korean	95 Alphanumeric 32 International 128 x 3 Graphic	Print Font Character set
16 or 17.8 cpi / 13.3 or 14.5 cpi	16.7 cpi / 12.5 cpi	13.5 cpi / 16.2 cpi	Characters Per Inch
RS-232, Bi-directional parallel, RS-485, USB, 10 Base-T I/F		RS-232, Bi-directional parallel	Interfaces*
1 KB / 16 KB	4 KB or 69 bytes	512 bytes or 35 bytes	Data buffer
3.5 lps (at 40 columns, 16 cpi) 6.4 lps (at 16 columns, 16 cpi)	311 / 233 cps	2.1 lps	Print speed
Roll paper: 76.0 ± 0.5 (W) x dia. 83.0	70 (W) x 70 (L) to 210 (W) x 297 (L)	80 (W) x 69 (L) to 182 (W) x 257 (L)	Paper Dimensions (mm)
0.06 to 0.085	0.09 to 0.2 (total thickness: ~ 0.36)	0.09 to 0.25 (total thickness with copy: ~ 0.35)	Thickness (mm)
One original	One original and four copies	One original and two copies	Copy capability
ERC-38 (Purple, Black, Black / Red)	ERC-31 (Purple, Black)	ERC-27 (Purple)	Inked ribbon
Purple: 4 x 10 ⁶ , Black: 3 x 10 ⁶ B / R: 15 x 10 ⁵ (Black), 75 x 10 ⁴ (Red)	Purple: 7 x 10 ⁶ , Black: 4.5 x 10 ⁶	15 x 10 ⁵	Ribbon Life (characters)
24 ~ 34 VDC	24 VDC ± 10%		Power
Approx. 43 W	Approx. 1.9 A (mean)	Approx. 600 mA (mean)	Power consumption
2 drivers			D.K.D.function
18 x 10 ⁴ hours			MTBF
18 x 10 ⁶ lines	29 x 10 ⁶ lines	7 x 10 ⁶ lines	Reliability MCBF
166 (W) x 168 (D) x 259.5 (H)	252 (W) x 266 (D) x 185 (H)	180 (W) x 190.5 (D) x 101.5 (H)	Overall dimensions (mm)
2.7 kg	5 kg	1.6 kg	Mass (Approx.)
VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B			EMC standards
Power supply built-in model / Power supply separate model	PS - 180		Power supply (option)
-			Factory Options
UL / CSA / TÜV (EN60950)			Safety Standards

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