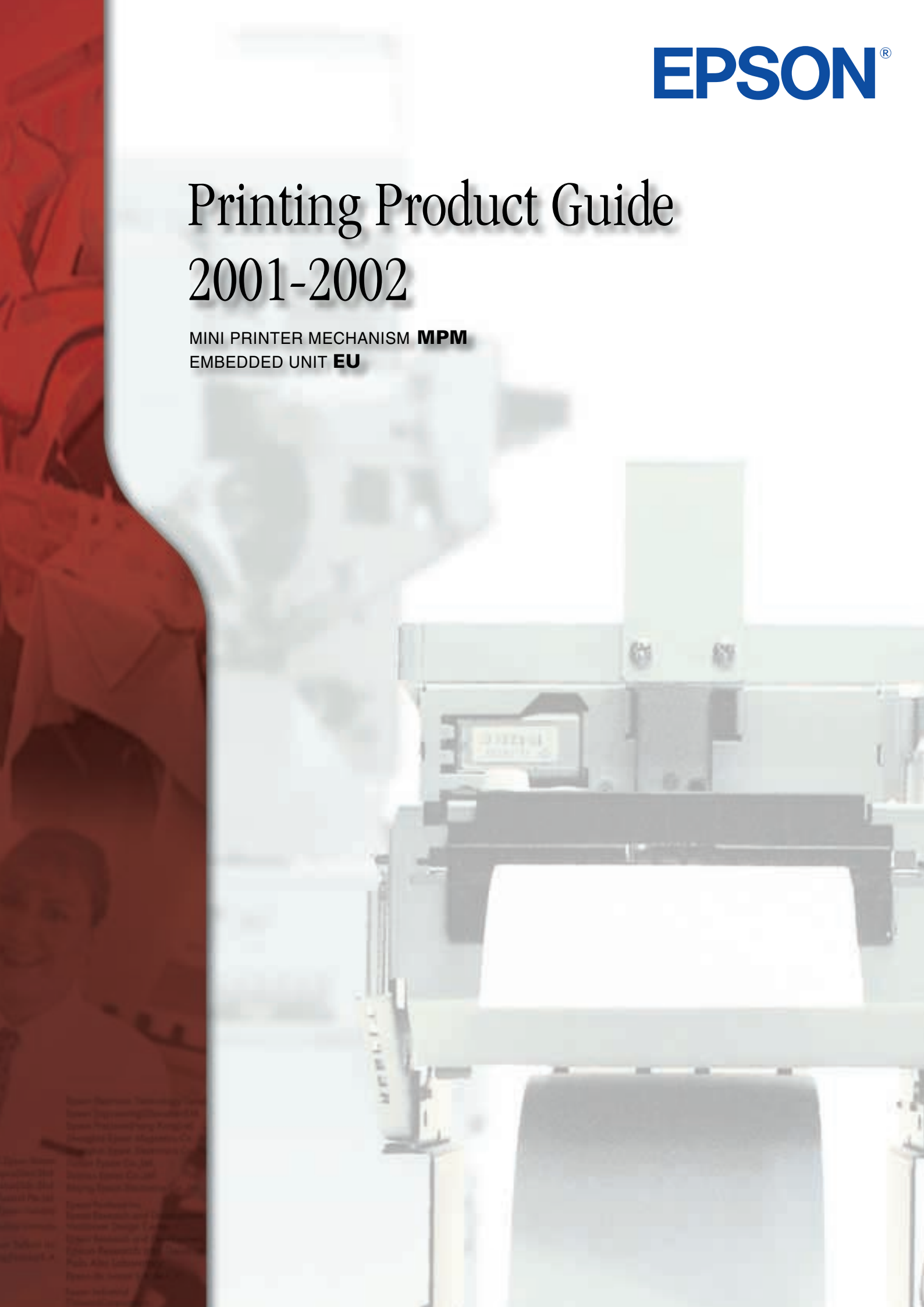
EPSON®

Printing Product Guide 2001-2002

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 ideas, 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.


EP-101

EPSON Roots

EPSON first made its mark with a digital watch featuring micromechatronics 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 diversity, 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 ten years ago, with the declaration that the company would stop using CFCs. Other examples include the reduction of CO_2 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.

JQA-E-80015

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,Ltd.
Epson Canada Ltd.
Epson America Inc.
Epson Accessories, Inc.
Epson Latin America Inc.
Epson Venezuela S.A.
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Epson Mexico, S.A. de C.V.
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Epson Korea Co., Ltd.
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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: Hand-held terminal	CAT/EFT	POS/ECR	Ticket machine	ATM/CD	Kiosk	Gaming machine	Teller machine	Models	
Embedded Unit				●	●	●	●		EU-T532	6
				●	●	●	●		EU-T400 Series	7
			●	●	●	●	●		M/BA-T500 Series	8
Thermal	●	●			●				M-T100 Series	10
	●	●	●						M/BA-T51	11
	●	●							M-T153	11
			●	●		●	●		M-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-310 Series	15
		●	●						M-U110	15
			●						M-780	16
			●						M-U420 Series	16
TM Series			●					●	SPECIFICATIONS	20

Embedded Unit

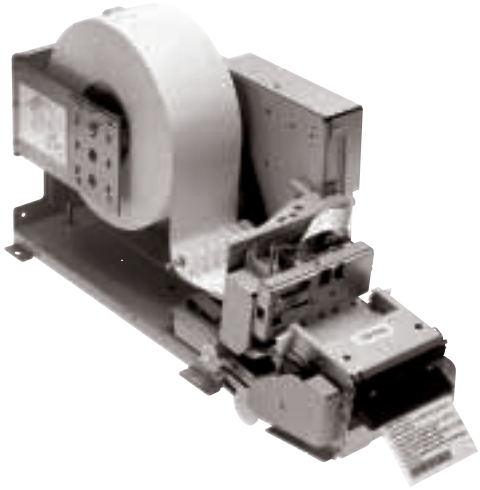
Epson Embedded Units offer a whole new dimension of self-service terminal design. They feature high printing speeds, high quality and reliability, a wide variety of module configuration selections, an original Epson Advanced Printer Drivers, and many new ideas and functions. Epson Embedded Units are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

EMBEDDED UNIT

Embedded Unit

EU-T532

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.

Fastest in its class - up to 150mm/sec.

The EU-T532 achieves the fastest throughput in this class. 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 module have opening mechanisms for easy maintenance.

Flexible module configuration

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

Multi-language support

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

SPECIFICATIONS

Print Method	Thermal line printing
Paper Path	Straight
Print Speed	150 mm / sec.
Paper Dimensions	79.5 ± 0.5 mm x dia. 254 mm max.
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 (Paper Roll Equipped Model)
Mass	Approx. 5.5 kg

EMBEDDED UNIT

NEW

Embedded Unit

EU-T400 Series

for kiosk applications

Kiosk terminals

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.

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.

Highly durable

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

Asian language options

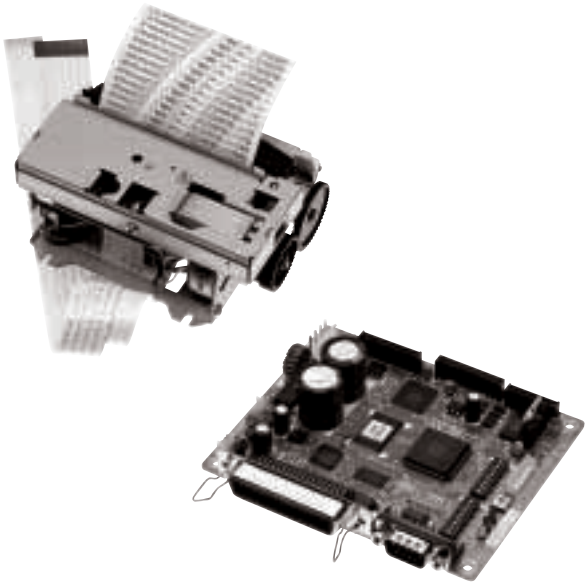
Japanese, Chinese (simple and traditional) and Korean fonts are available as factory options for local markets.

SPECIFICATIONS

Print Method	Thermal line printing
Paper Path	Straight
Print Speed	150 mm / sec.
Paper Dimensions	79.5 ± 0.5 mm x dia. 203 mm max.
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)

Embedded Unit

M/BA-T500 Series



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.

User-friendly design
These printers are designed to maximize ease of use for the operator. They come with easy and convenient semi-automatic paper loading and a full paper path opening mechanism that facilitates paper jam removal and head cleaning.

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
The interface RS-232 serial and IEEE 1284 bi-directional are also available for direct connection to standard PCs. A USB interface is under consideration now.

Direct PC connection
The BA-T500 comes equipped with RS-232C and parallel as standard interface connectors. The ability to directly connect to a PC allows you to build smart systems.

High speed printing and high quality print
The BA-T500 fast data transfer produces a 150 mm/sec. printing speed with the M-T500 Series in character mode as well as graphic mode.

PS-170 available
By attaching the optional connector cable unit DC-T500, the printer works with the PS-170 power supply unit.

Multi-language type ready
In addition to the to Alphanumeric standard character set, Japanese (including Kanji), Simple 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 M-T505 / BA-T505.

BA-T500 / BA-T505 SPECIFICATIONS

	M-T500 Series	M-T505 Series
Supported Printer	150 mm / sec. max.	100 mm / sec. max.
Printing Speed	Text (Euro Symbol available), Barcode, Graphics	
Printing Character Barcode Type	UPC-A, UPC-E, EAN 13(JAN), EAN 8(JAN), ITF, CODE 39,CODABAR, CODE 93 and CODE 128	
Interface	Parallel (IEEE 1284 bidirectional), RS-232	Parallel (IEEE 1284 bidirectional) or RS-232 (Factory Option)
Operating Temperature	0 to 55 °C	
Driver	Windows® 95/98, Windows NT4.0, 2000	
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 (fonts & graphics)	
Option	Japanese Kanji, Traditional Chinese, Simple Chinese Character	

SPECIFICATIONS

	M-T511A*	M-T512A*	M-T521A*	M-T522A*	M-T531A*	M-T532A*	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	Drop in	Curve	Straight	Straight
Number of total dots**	432 dots / line		448 dots / line		576 dots / line				640 dots / line		
Resolution	8 dots / mm										
Printing Speed	150 mm / sec. max.						100 mm / sec. max.	150 mm / sec. max.			
Power Supply Voltage	24 VDC ± 10 %						10 ~16 VDC	24 VDC ± 10 %			
Reliability (MCBF)	37 x 10^6 lines										
Overall Dimensions	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. 460 g				approx. 550 g						

** Number of total dots : with BA-T500 / BA-T505

*Note: Autocutter is selectable as follows;
AF: full cut type
AP: partial cut type
HF*:High Speed Cutter
(full cut only)

Epson Advanced Printer Drivers

(for EU-T532, EU-T400 series and M/BA-T500 series)

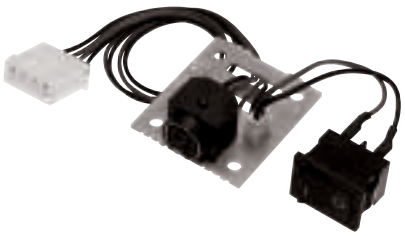
Epson advanced drivers make it easy. Available for Windows® 95/98/NT 4.0 and 2000, and Linux®, the ever-adaptable Epson printer drivers make it so easy to develop applications software, saving you time and money. And that's not all. In addition to printer drivers, the Epson Advanced Printer Drivers help 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 autocutter, retractor and print head. This reduces time by helping you determine when maintenance is needed - before it is needed. Epson advanced drivers for efficient system operation.

■ Epson Advanced Printer Drivers-Status Monitor

OPTIONS

Connector Cable Unit
DC-T500



The DC-T500 enables the printer to use power supply unit PS-170. By attaching the connector cable unit DC-T500, you can use the Epson standard power supply unit PS-170. This means that you do not have to design a new power supply unit for the EU-T532 by yourself.

Paper Near End Sensor Unit
NE-T500

Paper Near End Sensor Available

Paper near-end sensor unit connects to the EU-T532 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

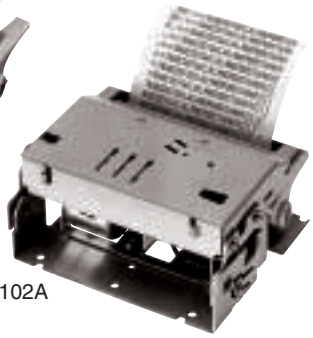
Thermal printers feature quiet operation and high throughput. Excellent for high-resolution graphics, our thermal printers render beautifully crisp, clear logo marks and barcodes. The simplicity of the paper path mechanism makes paper refills and maintenance easy. Epson offers a wide variety of thermal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

1-STATION PRINTER

Thermal Line

M-T100 Series

M-T102



M-T102A

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).

Control LSI	Options
LA-T101	Mounting Attachment

SPECIFICATIONS

	M-T102	M-T102A (with A / C)	M-T103	M-T103A (with A / C)
Paper Width	57.5 ± 0.5 mm			
Paper Path	Curve		Straight	
Number of total dots	384 dots / line			
Resolution	8 dots / mm			
Printing Speed	Approx. 60 mm / sec. max. (at 7.0 V)			
Voltage	5.0 to 7.5 VDC (A / C: 5.0 to 6.0 VDC)			
Reliability (MCBF)	15×10^6 lines			
Overall Dimensions	69.15 (W) x 51.2 (D) x 20 (H) mm	87 (W) x 73.3 (D) x 40.5 (H) mm	69.15 (W) x 51.2 (D) x 32.8 (H) mm	87 (W) x 73.3 (D) x 52.1 (H) mm
Mass	85 g	265 g	85 g	265 g

Control LSI for M-T100 Series

LA-T101

Printer status reporting

The LA-T101 reports printer status, enabling processing on the basis of appropriate printer data.

Compatible with autocutters

To give you the widest choice, the LA-T101 can even be used with an M-T102A equipped with an autocutter.

"Kanji" option

An optional Japanese "kanji" ROM enables the printing of Japanese kanji on the M-T100 Series. Simply add the option and save yourself the trouble and expense of creating your own new fonts.

SPECIFICATIONS

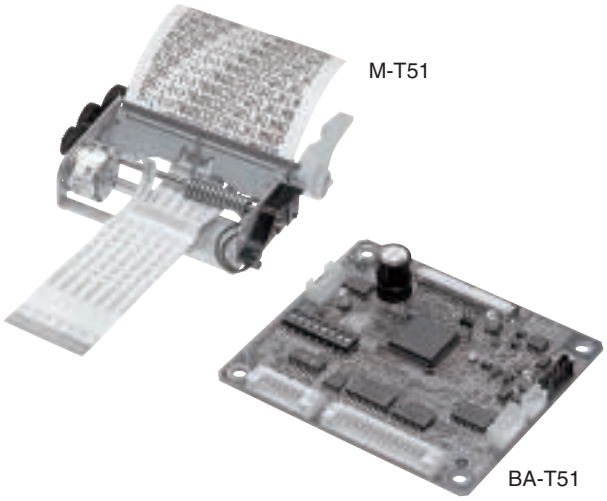
Supported Printer	M-T100 Series
Character code table	
page 0	PC437:USA, Standard Europe
page 1	Katakana
page 2	PC850 : Multi-Lingual
Data input form	
8 bit parallel	Centronics Compatible
Asynchronous serial	2400 bps, 9600 bps, 4800 bps, 19200 bps
Operating voltage	
LSI	5 V ± 5 % for LA-T101 5~7.5V for Printer
Option	KANJI (with CG-T101)
Package type	Flat package

(bps: bits per second)

1-STATION PRINTER

NEW

Thermal Line
M/BA-T51



BA-T51 SPECIFICATIONS (with LSI)

Power	5 V ± 5% (VD), 5 ~ 7.5 V (VP)
Character	Font A : 12 x24, Font B : 9 x17
Printing	ANK, Graphics
Dimensions	80 x 70 x 15
Interface	Parallel Centronics, Serial RS-232C

New Thermal Printer

Easy-to-read printing

Compared to other thermal printers using the same font, text printed with the M-T51 is larger - and receipts easier for customers to read.


M-T51 print sample


Other Thermal Printers print sample

Effective use of existing resources

With the installation and paper inlet/outlet position the same as Epson's best selling printer mechanism, the M-180/190 series*, there's no 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, and all types can be controlled using the BA-T51.

M-T51 SPECIFICATIONS

Paper Width	57.5 ± 0.5 mm
Resolution	6 dots / mm
Printing Speed	52 mm / sec. max. (at 7.5 V, 25˚C)
Voltage	7.5 V $^{+0.5}_{-1.5}$
Reliability (MCBF)	15 x 10^6 lines
Overall Dimensions	69.15 (W) x 51.2 (D) x 17.3 (H) mm
Mass	Approx. 70 g

Thermal Line
M-T153

Control Board	Options
Evaluation board for customer's evaluation only.	Manual feed knob

Low-power ultra-compact printer

Low power consumption

The low-power design improves processing capability, which translates into a greater number of transactions in less fine.

Battery operation and wide voltage range

The M-T153 conserves energy by operating on a mere 2.7 V. The printer additionally operates in a wide range from 2.7 to 7.4 VDC.

Ultra-compact and lightweight, but durable

The compact M-T153, weighing only 40 grams, is extremely light, but it is durable thanks to its metal frame, which makes it an excellent choice for hand-held applications.

Flexible paper path layout

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

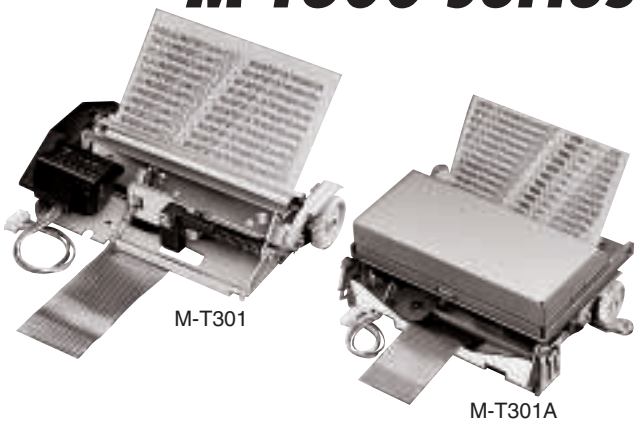
SPECIFICATIONS

Paper Width	57.5 ± 0.5 mm
Number of total dots	384 dots / line
Resolution	8 dots / mm
Printing Speed	62.5 mm / sec. max. (at 7.4 V), 15 mm / sec. (at 3.8 V)
Voltage	2.7 to 7.4 VDC
Reliability (MCBF)	15 x 10^6 lines (Feeds)
Overall Dimensions	77 (W) x 38 (D) x 13 (H) mm
Mass	Approx. 40 g

1-STATION PRINTER

Thermal Line

M-T300 Series



A middle-range printer with a wealth of applications

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).

SPECIFICATIONS

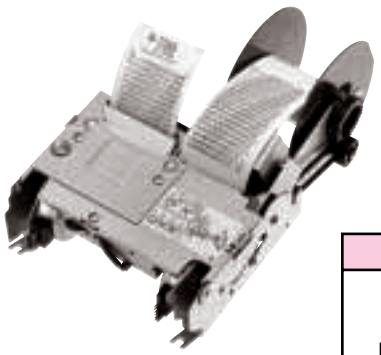
	M-T301	M-T301A (with A / C)	M-T303	M-T303A (with A / C)
Paper Path	Curve		Straight	
Overall Dimensions	110.6 (W) x 54.0 (D) x 22.8 (H) mm	110.6 (W) x 81.5 (D) x 47.9 (H) mm	110.6 (W) x 54.0 (D) x 37.1 (H) mm	110.6 (W) x 81.5 (D) x 60.6 (H) mm
Mass	Approx. 180 g	Approx. 500 g	Approx. 180 g	Approx. 500 g

See the specifications on page 17 for details.

2-STATION PRINTER

Thermal Line

M-T245



Options
Autocutter
Paper supply device
Near-end sensor (R / J)
Writing stand
Paper exit guide

(R / J) : Receipt / Journal

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 17 for details.

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)	3×10^5 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	

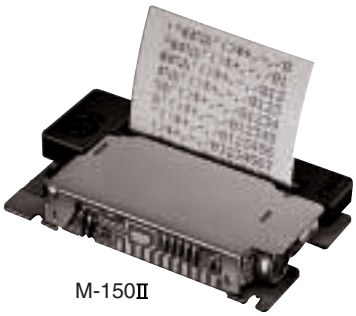
Impact Printers

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.

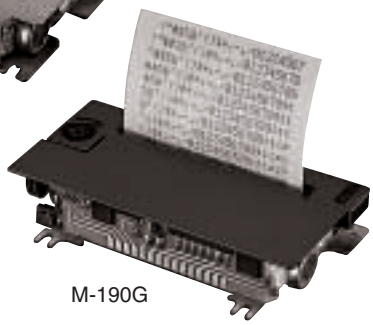
1-STATION PRINTER

Shuttle Impact Dot

M-150 Series
M-180/190 Series
190G Series



M-150Ⅱ



M-190G

Model	Control LSI / Board	Options
M-150 Series	LA-170 BA-170Ⅲ	—
M-180	LA-180 BA-180	Manual feed knob
M-181		
M-182		
M-183		
M-185	—	
M-186	—	—
M-190 Series	LA-190	Manual feed knob
M-190G Series	—	Manual feed knob

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.

See the specifications on pages 18 and 19 for details.

M-150 Series	M-150Ⅱ	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			

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.

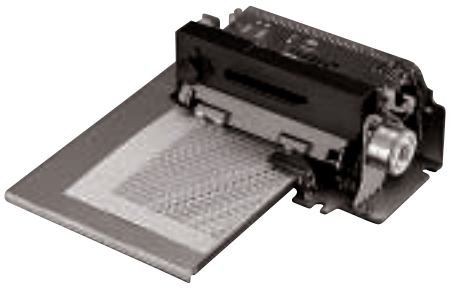
SPECIFICATIONS

	M-250	M-252	M-255	M-257	M-260	M-262	M-265	M-267
Paper Width	57.5 ± 0.5 mm				76 ± 0.5 mm			
Feature	Single color	Two color	Single color	Two color	Single color	Two color	Single color	Two color
Column Capacity	30 columns				42 columns			
Printing Speed	2.3 lines / sec.(at 13.2 VDC)		2.3 lines / sec.(at 26.4 VDC)		2.3 lines / sec.(at 13.2 VDC)		2.3 lines / sec.(at 26.4 VDC)	
Voltage	12 VDC ± 10%		24 VDC ± 10%		12 VDC ± 10%		24 VDC ± 10%	
MCBF	1.5×10^6 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. 350 g (Two color)							

SLIP PRINTER

Shuttle Impact Dot

M-290



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	1.5×10^6 lines
Overall Dimensions	138.0 (W) x 70.5 (D) x 59.5 (H) mm
Mass	Approx. 550 g

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

1-STATION PRINTER

Serial Impact Dot

M-U310 Series

M-U312S

The best printer for CAT and ECR applications

Compact and lightweight

Lightweight printers with a small footprint, these are ideal for case designs and applications.

User-friendly design

Handy features include semi-automatic paper loading for easy operation.

High-quality printout

Provides clear and sharp printout, even of complicated Chinese characters (Model 312S).

Improved ability to accept poor-quality paper

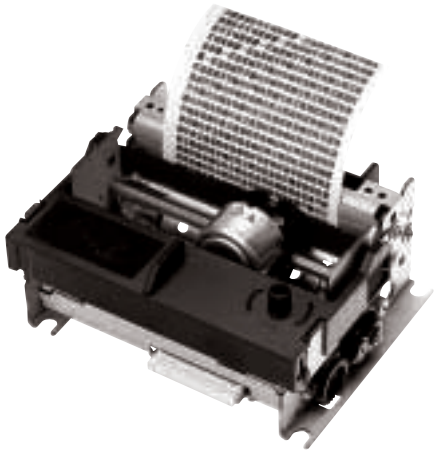
A removable paper guide has given the M-U312S an improved ability to accept poor-quality paper.

SPECIFICATIONS

	M-U310	M-U311	M-U310S	M-U311S	M-U312S
Paper Type	Friction		Sprocket		
Paper Width	76.2 ± 0.7 mm				
Column Capacity	42 columns		28 columns		
Font	7 x 9	7 x 7, 7 x 9	7 x 9	7 x 7, 7 x 9	7 x 9
Printing Speed	Approx. 3.1 lines / sec.		Approx. 3.3 lines / sec.		4.4 lines / sec.
Voltage	24 VDC $\pm^{5\,\%}_{10\,\%}$		24 VDC ± 10 %		
MCBF	2.5×10^6 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	Approx. 450 g				

Serial Impact Dot

M-U110



High-performance printer for ECR and POS 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.

Two paper widths

The compact M-U110 supports two paper widths: 58 mm and 76 mm.

Multiple Copy Capability

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

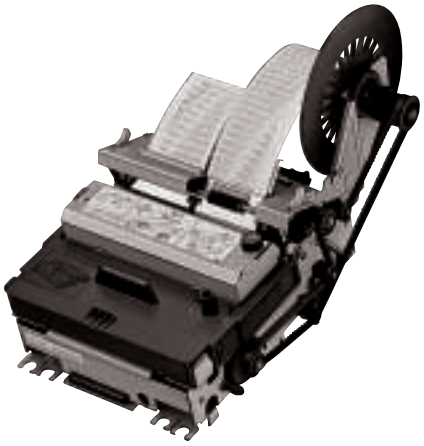
SPECIFICATIONS

Paper Type	Friction
Paper Width	76.2 ± 0.7 mm / 57.5 ± 0.5 mm
Column Capacity	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)
Voltage	24 VDC ± 10 %
MCBF	5.0×10^6 lines
Overall Dimensions	127 (W) x 96 (D) x 53 (H) mm
Mass	Approx. 460 g

2-STATION PRINTER

Serial Impact Dot

M-780



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.

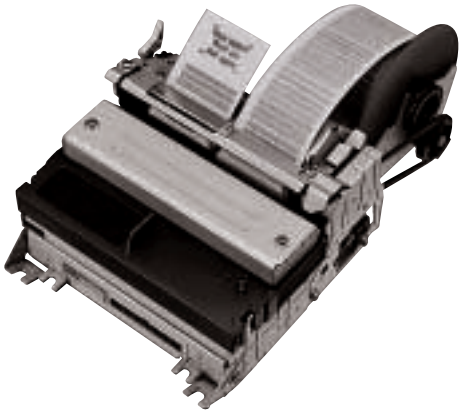
Options
Validation sensor Near-end sensor Autocutter

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 $\pm^{5\%}_{10\%}$
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



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.

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

(R / J): Receipt / Journal

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.
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

SPECIFICATIONS

Item / MODEL	Embedded Unit						
	EU-T532	**EU-T400**	**M/BA-T500 Series**				
			M-T510 Series	**M-T520 Series**	**M-T530 Series**	**M-T540 Series**	**M-T537A**
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	Font A : 12 x 24 / Font B : 9 x 17 / Kanji : 24 x 24						
Column capacity	Font A : 48 columns / Font B : 64 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)						
Character set	95 Alphanumeric, 37 International, 128 x 11 Graphic						
Interface	RS-232 / IEEE 1284 Bi-directional parallel						← (Factory Option)
Data buffer	4KB						
Print Speed (Max.)	150 mm / sec.						100 mm / sec.
Paper Dimensions	79.5 ± 0.5 mm x dia. 254 mm max.	79.5 ± 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%)
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-170						–
Factory Options	Cut Sheet retracting module	Loop Guide (for 600 mm Receipt issuance), Paper Supply Spacer, Multilingual Font Set, Paper Near-end Sensor	Mark sensor, Autocutter Type				

Item / MODEL		1 Station Printer				2Station Printer
		M-T102	**M-T51**	**M-T153**	**M-T300 Series**	**M-T245**
Printing Method		Thermal line	Thermal line	Thermal line	Thermal line	Thermal line
Number of total dots		384 dots / line	288 dots / line	384 dots / line	576 dots / line	R / J : 288 dots / line
Resolution		8 dots / mm	6 dots / mm	8 dots / mm	8 dots / mm	8 dots / mm
Printing width		48 mm	48 mm	48 mm	72 mm	R / J : 36 mm
Printing Speed		60 mm / sec. max. (at 7.0 V)	52 mm / sec. max. (at 7.5 V)	62.5 mm / sec. max. (at 7.4 V), 15 mm / sec. (at 3.8 V)	Max. 60 mm / sec.	Approx. 50 mm / sec.
Paper feeding pitch		0.0625 mm	0.087 mm	0.03125 mm	0.0625 mm	0.125 mm
Paper feeding speed		60 mm / sec. max. (at 7.0 V)	52 mm / sec. max. (at 7.5 V)	62.5 mm / sec. max. (at 7.4 V), 15 mm / sec. (at 3.8 V)	Max. 60 mm / sec.	Approx. 50 mm / sec.
Sensor	Paper end	Photosensor	Photosensor	Photosensor	Photosensor	Reflecting photo
	Printhead temperature	Thermistor	Thermistor	Thermistor	Thermistor	Thermistor
	Printhead unload	Microswitch	Microswitch	Microswitch	Microswitch	Micro switch
Power Supply Voltage	Printhead & Motors	5.0 to 7.5 VDC	7.5 VDC $^{+0.5}_{-1.5}$	2.7 to 7.4 VDC	24 VDC ± 7 %	24 VDC ± 7 %
	Logistic	5 VDC ± 5 %	5 VDC ± 5 %	2.7 to 5.25 VDC	5 VDC ± 5 %	5 VCD ± 5 %
Connector	Printhead	Pin connector	FFC	FFC connector	FPC (print head temperature sensor)	FFC
	Motor	Pin connector	FFC	Pin connector	Pin connector	Pin connector
Paper Dimensions		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 (width) x dia.50 mm	79.5 ± 0.5 mm (W) x dia. 100 mm	44.5 mm (W) x dia. 83 mm max.
Paper Thickness		65.0 µm ± 5 µm	65.0 µm ± 5 µm	65 µm ± 5 µm	65.0 µm ± 5 µm	65.0µm ± 5µm
Operating Temperature		0˚ to 50˚C	0˚ to 50˚C	-5˚ to 55˚C	0˚ to 50˚C	0˚ to 40˚C
Reliability	Print head Life	50 km, 1 x 10^8 pulses	50 km, 1 x 10^8 pulses	50 km, 1 x 10^8 pulses	50 km, 1 x 10^8 pulses	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	5 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	10 x 10^6 lines
Overall Dimensions		69.15 (W) x 51.2 (D) x 20 (H) mm	69.15 (W) x 51.2 (D) x 17.3 (H) mm	77 (W) x 38 (D) x 13 (H) mm (Excluding head-up lever)	110.6 (W) x 54.0 (D) x 22.8 (H) mm	144 (W) x 213.1 (D) x 159.2 (H) mm (with full options)
Mass		Approx. 85 g	Approx. 70 g	Approx. 40 g	Approx.180 g	Approx. 920 g (without options)

(★) (R / J) : Receipt / Journal

SPECIFICATIONS

Item \ MODEL	1 Station Printer									
	M-150 Series				M-180 Series					
	M-150Ⅱ	M-160	M-163	M-164	M-180	M-181	M-182	M-183	M-185	M-186
Printing Method	Shuttle impact dot matrix				Shuttle impact dot matrix					
Printing Format										
Font	5 x 7				5 x 7					
Column capacity	16 columns	24 columns	32 columns	40 columns	24 columns	30 columns	36 columns	42 columns	18 columns	20 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	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	* 3.5 mm	* 3.3 mm			3.7 mm (In case of 5 x 7 font and 3 dots / line paper feed)					–
Column spacing	2.1 mm	2.0 mm	1.5 mm	1.2 mm	2.0 mm	1.6 mm	1.3 mm	1.2 mm	2.0 mm	
Number of total dots	96 dots / line	144 dots / line	192 dots / line	240 dots / line	144 dots / line	180 dots / line	216 dots / line	252 dots / line	108 dots / line	120 dots / line
Printing Speed	1.0 line / sec.	0.7 line / sec.	0.5 line / sec.	0.4 line / sec.	1.7 lines / sec.	1.3 lines / sec.	1.1 lines / sec.	1.0 lines / sec.	1.7 lines / sec.	Type 83 ms / dotline
Print head										
Voltage	3.3 to 5.0 VDC				3.3 to 5.5 VDC					5.0 to 6.0 VDC
Peak current	Approx. 3 A / solenoid				Approx. 3 A / solenoid					3.5 A / solenoid
Motor										
Voltage	3.8 to 5.0 VDC				3.8 to 5.5 VDC					
Mean current	Approx. 0.17 A	Approx. 0.2 A			Approx. 0.2 A					
Paper	Roll 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.			57.5 ± 0.5 mm (W) x dia. 83 mm max.				44.5 ± 0.5 mm (W)	*Card Type
Total Thickness	0.07 mm				0.06 to 0.085 mm					0.21 to 0.25 mm
Copy Capability	Original and One copy				Original and One copy					
Ribbon Cassette	ERC-05	ERC-09			ERC-09 / 22					ERC-24
Operating Temperature	0˚ to 50˚C				0˚ to 50˚C					
Reliability										
Print head Life	–				–					
MCBF	0.5 x 10^6 lines			0.4 x 10^6 lines	1.0 x 10^6 lines		0.7 x 10^6 lines		1.0 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			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. 60 g	Approx. 75 g			Approx. 95 g					Approx. 140 g

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

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

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 / 1.2 (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		
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				Approx. 9 A
Motor					
Voltage	24 VDC ± $^{5\ \%}_{10\ \%}$		24 VDC ± 10 %		24 VDC ± 10 %
Mean current	Approx. 0.14 A		Approx. 0.13 A		Approx. 0.14 A
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	0.05 to 0.20 mm		0.05 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				ERC-39
Operating Temperature	0˚ to 50˚C				0˚ to 50˚C
Reliability					
Print head Life	–				–
MCBF	2.5 x 10^6 lines				2.5 x 10^6 lines
Printer Life	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				Approx. 450 g

	M-190 Series				M-190G Series		M-260 Series				Slip Printer
	M-190	M-191	M-192	M-195	M-190G	M-192G	M-250	M-260	M-255	M-265	M-290
	Shuttle impact dot matrix				Shuttle impact dot matrix		Shuttle impact dot matrix				Shuttle impact dot matrix
	5 x 7				5 x 7		7 x 7				7 x 7
	24 columns	32 columns	40 columns	18 columns	24 columns	40 columns	30 columns	42 columns	30 columns	42 columns	42 columns
	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	1.3 (W) x 2.9 (H) mm				1.3 (W) x 2.9 (H) mm
	3.7 mm (In case of 5 x 7 font and 3 dots / line paper feed)				Approx. 3.7 mm (In case of 5 x 7 font and 3 dots / line paper feed)		4.2 mm (In case of 7 x 7 font and 3 dots / line paper feed)				4.2 mm
	2.0 mm	1.5 mm	1.2 mm	2.0 mm	Approx. 2.0 mm	Approx. 1.2 mm	1.6 mm				1.6 mm
	144 dots / line	192 dots / line	240 dots / line	108 dots / line	144 dots / line	240 dots / line	150 dots / line	210 dots / line	150 dots / line	210 dots / line	210 dots (420 positions) / line
	2.5 lines / sec.	1.9 lines / sec.	1.5 lines / sec.	2.5 lines / sec.	2.7 lines / sec. ± 20%	1.8 lines / sec. ± 20%	2.3 lines / sec. (at 13.2 VDC)		2.3 lines / sec. (at 26.4 VDC)		Approx. 2.1 lines / sec. (24 VDC)
	3.3 to 5.2 VDC				$5.0^{+0.5}_{-0.5}$ VDC		12 VDC ± 10%		24 VDC ± 10%		24 VDC ± 10%
	Approx. 2.5 A / solenoid				Approx. 2.5 A / solenoid		Approx. 2.2 A / solenoid		Approx. 1.6 A / solenoid		Approx. 1.6 A / solenoid
	3.8 to 5.2 VDC				$5.0^{+0.5}_{-0.5}$ VDC		12 VDC ± 10%		24 VDC ± 10%		24 VDC ± 10%
	Approx. 0.35 A				Approx. 0.35 A		Approx. 0.2 A		Approx. 0.15 A		Approx. 0.15 A (P.F. motor), Approx. 0.15 A (CR motor)
	Roll paper				Roll paper		Roll paper				Slip paper
	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.		M-25x : 57.5 ± 0.5 (W) mm x dia. 83 mm max. M-26x : 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.
	0.06 to 0.085 mm				0.06 to 0.085 mm		0.05 to 0.2 mm				0.09 to 0.35 mm
	Original and one copy				Original and one copy		Original and two copies				Max : Original and four copies at 25˚C
	ERC-09 / 22				ERC-09 / ERC-22 / ERC-40		ERC-23				ERC-27
	0˚ to 50˚C				-10˚ to 50˚C (using ECR-22, ERC-40)		0˚ to 50˚C				0˚ to 50˚C
	–				–		1.0×10^8 strokes / wire				1×10^8 strokes / wire
	1.5×10^6 lines	1.1×10^6 lines	0.9×10^6 lines	1.5×10^6 lines	1.5×10^6 lines	1×10^6 lines	1.5×10^6 lines				1.5×10^6 lines
	2.25×10^6 lines	1.65×10^6 lines	1.35×10^6 lines	2.25×10^6 lines	2.25×10^6 lines	1.5×10^6 lines	–				–
	91.0 (W) x 46.9 (D) x 15.8 (H) mm				91.0 (W) x 46.9 (D) x 15.8 (H) mm		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
	Approx. 100 g				Approx. 100 g		Approx. 340 g (Single color) / Approx. 350 g (Two color)				Approx. 550 g

UL478 / CSA220 recognized products are available on request

UL478, CSA220 recognized products are available on request.

(Safety Standards)

	1Station Printer	2Station Printer	
	M-U110	M-780	M-U420 Series
	Serial impact dot matrix	Serial impact dot matrix	Serial impact dot matrix
	7 x 9	7 x 9	7 x 9
	42 columns (76 mm) / 30 columns (58 mm)	18 columns x 2, Validation: 42 columns	Receipt : 24 columns Journal : 24 columns Validation : 55 columns
	1.5 (W) x 3.1 (H) mm	1.3 (W) x 3.1 (H) mm	1.32 (W) x 3.1 (H) mm
	Approx. 4.2 mm	4.7 mm	4.3 mm
	Approx. 1.6 mm	1.53 mm	1.54 mm
	210 dots (420 positions) / line	R / J : 81 dots (162 positions) / line / Validation: 189 dots (378 positions) / line	Receipt : 108 dots / line Journal : 108 dots / line Validation : 247 dots / line
	3.3 lines / sec. (76 mm) / 4.2 lines / sec. (58 mm)	3.3 lines / sec. (at 24 VDC)	3 lines / sec.
	24 ± 2.4 VDC	24 VDC $\pm^{5\%}_{10\%}$	24 VDC $^{+5\%}_{-10\%}$
	Approx. 8.6 A	Approx. 10.8 A	Approx. 8.6 A
	24 ± 2.4 VDC	24 VDC $\pm^{5\%}_{10\%}$	24 VDC $^{+5\%}_{-10\%}$
	Approx. 0.35 A	Approx. 0.25 A	Approx. 0.2 A
	Roll paper / Validation paper	Roll paper / Validation paper	Roll paper / Validation paper
	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 : 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.
	0.05 to 0.2 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
	Original and two copies	Original and two copies (Validation)	Original and one copy (Validation)
	ERC-39	ERC-37	ERC-32
	0˚ to 50˚C	0˚ to 50˚C	0˚ to 50˚C
	1.5×10^8 characters	1×10^8 characters	1.5×10^8 characters
	5.0×10^6 lines	3×10^6 lines	4×10^6 lines
	8.0×10^6 lines	5×10^6 lines	8×10^6 lines
	127.0 (W) x 96.0 (D) x 53.0 (H) mm	135 (W) x 227.7 (D) x 150.5 (H) mm	150.7 (W) x 251.5 (D) x 103.5 (H) mm
	Approx. 460 g	Approx. 1.0 kg	Approx. 1.0 kg (1.1 kg with autocutter)

TM SERIES SPECIFICATIONS

Item		Hybrid Printer		Thermal Line Printer	
		NEW TM-H6000II	TM-H5000II	NEW TM-T90	NEW TM-L90
Appearance					
Print method		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	Thermal line printing	
Print Font	Font	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		9 x 17 / 12 x 24
	Column capacity (columns)	Receipt: 56 / 42 Slip: 45 / 60 E / P: 40	Receipt: 56 / 42 Slip: 88 / 66	56 / 42	64 / 48
	Character size (mm)	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)	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)
	Character set	Receipt / Slip: 95 Alphanumeric, 37 International, 128 x 12 Graphic Bar code: UPC-A, UPC-E, JAN13 (EAN), JAN8 (EAN), CODE39, CODE93, CODE128, ITF, CODABAR, PDF417 (Receipt only)	95 Alphanumeric 32 International 128 x 7 Graphic (Receipt) 128 x 10 Graphic (Slip) Traditional / Simple Chinese, Thai, Japanese	95 Alphanumeric, 37 International, 128 x 11 Graphic Bar code: UPC-A, UPC-E, JAN13 (EAN), JAN8 (EAN), CODE39, CODE93, CODE128, ITF, CODABAR, PDF417, Maxicode (L90 only), QRCode (L90 only)	
	Characters Per Inch	Slip: 13.3 cpi / 17.8 cpi	Receipt: 20.0 cpi / 15 .0 cpi Slip: 16.7 cpi / 12.5 cpi	20.0 cpi / 15.0 cpi	22.6 cpi / 16.9 cpi
Interfaces*		RS-232, Bi-directional parallel, RS-485, USB, 10 Base-T I/F			
Data buffer		4 KB or 45 bytes			
Print speed		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	Max. 170 mm / sec.	Max. 150 mm / sec.
Paper	Dimensions (mm)	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)	Roll paper: Max. 79.5 ± 0.5 (W) x dia. 100.0	Roll paper: Max. 79.5 ± 0.5 (W) x dia. 90 .0
	Thickness (mm)	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)	0.06 ~ 0.08	0.06 ~ 0.15
Copy capability		Slip: One original and three copies E / P: One original single ply	Slip: One original and four copies	–	
Inked ribbon		Slip: ERC-32 (Purple, Black) E / P: ERC-41 (Purple, Black)	ERC-31 (Purple, Black)	–	
Ribbon Life (characters)		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	–	
Power		24 VDC ± 10 %		24 VDC ± 7%	
Power consumption		Receipt: Approx. 1.8 A Slip: Approx. 1.7 A	Receipt: Approx. 1.7 A Slip: Approx. 1.9 A	Approx. 1.7 A (mean)	
D.K.D.function		2 drivers			
Reliability	MTBF	Receipt: 36 x 10^4 hours Slip: 18 x 10^4 hours		36 x 10^4 hours	
	MCBF	Receipt: 52 x 10^6 lines Slip: 18 x 10^6 lines	Receipt: 52 x 10^6 lines Slip: 29 x 10^6 lines	70 x 10^6 lines	70 x 10^6 lines (when printing receipt)
Overall dimensions (mm)		186 (W) x 298 (D) x 185 (H)	252 (W) x 331 (D) x 201 (H) (excluding extended table)	140 (W) x 201 (D) x 148 (H)	140 (W) x 148 (D) x 203 (H)
Mass (Approx.)		5.8 kg	6.5 kg	1.8 kg	1.9 kg
EMC standards		VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B			
Power supply (option)		PS-170, PS-180	PS-170	PS-170, PS-180	
Factory Options		MICR device, Endorsement Printer (E / P)	MICR device	Wall-hanging bracket WH-10	
Safety Standards		UL / CSA / TÜV (EN60950)			

*Interface: Dealer option: RS-485, USB, 10 Base T I/F, Please contact your EPSON representative lps: lines per second cpi: characters per 25.4 mm (character per inch)

TM SERIES SPECIFICATIONS

Thermal Line Printer		Impact Dot Matrix Printer		
TM-T88II	**TM-L60II**	**TM-U950 / U925**	**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
56 / 42	42 / 32 (Roll paper) 40 / 30 (Label)	U950: Receipt (Journal): 40 / 30 Slip: 88 / 66 U925: Receipt: 40 / 30 Slip: 88 / 66	Receipt: 37 / 50 Slip / Validation: 45 / 60	Column capacity (columns)
0.99 (W) x 2.4 (H) / 1.41 (W) x 3.39 (H)	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, 37 International, 128 x 8 Graphic Traditional / Simple Chinese, Thai, Japanese Bar code: UPC-A, UPC-E, JAN8 (EAN), JAN13 (EAN), CODE39, CODE93, CODE128, ITF, CODABAR	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 8 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-485, USB, 10 Base-T I/F	RS-232, Bi-directional parallel	U950: RS-232, Bi-directional parallel U925: RS-232	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**
120 mm / sec. (38 lps, 1 / 8" conversion)	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: 79.5 ± 0.5 (W) x dia. 83.0	Roll paper: 60.0^{+0}_{-1}(W) x dia. 83.0 Label: $60.0^{+0.5}_{-0.5}$(W) x dia. 83.0	U950: 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) U925: Receipt: 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 ± 0.5 (W) x dia. 83.0 Slip: 70 (W) x 150 (L) to 148 (W) x 297 (L) Validation: 148 (W) x 70 (L) to 150 (W) x 210 (L)	Dimensions (mm) — **Paper**
0.06 to 0.07	Label: 0.143 ± 0.015	U950: Receipt (Journal): 0.06 to 0.09, Slip: 0.09 to 0.36 U925: Receipt: 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, Black)	ERC-32 (Purple, Black)	**Inked ribbon**
–		Purple: 7×10^6 Black: 4.5×10^6	Purple: 6×10^6 Black: 4×10^6	**Ribbon Life (characters)**
24 VDC ± 7%		24 VDC ± 10%		**Power**
Approx. 1.7 A (mean)	Approx. 1.0 A (mean)	Approx. 1.8 A (mean)		**Power consumption**
2 drivers				**D.K.D.function**
36×10^4 hours	18×10^4 hours	18×10^4 hours		MTBF — **Reliability**
52×10^6 lines	29×10^6 lines (thermal paper) 12×10^6 lines (thermal label)	18×10^6 lines	37×10^6 lines	MCBF
145 (W) x 195 (D) x 148 (H)	123 (W) x 201 (D) x 124 (H)	U950: 251 (W) x 298 (D) x 194.5 (H) U925: 251 (W) x 298 (D) x 193.7 (H)	186 (W) x 298 (D) x 195 (H)	**Overall dimensions (mm)**
1.8 kg	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-170, PS-180	PS-170			**Power supply (option)**
Wall-hanging bracket WH-10	–	MICR device		**Factory Options**
UL / CSA / TÜV (EN60950)				**Safety Standards**

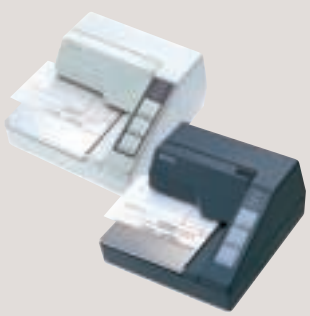
cps: characters per second

TM SERIES SPECIFICATIONS

Item		Impact Dot Matrix Printer			
		TM-U375	TM-U325	TM-U200 series	TM-U230
Appearance					
Print method		9-pin, serial impact dot matrix			
Print Font	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)	1.2 (W) x 3.1 (H) / 1.6 (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 32 International 128 x 8 Graphic Traditional / Simple Chinese, Thai, Japanese (A type)	95 Alphanumeric, 37 International 128 x 8 Graphic Traditional / Simple Chinese,
	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	16 or 17.8 cpi 13.3 or 14.5 cpi
Interfaces*		RS-232, Bi-directional parallel	RS-232, Bi-directional parallel, RS-485, USB, 10 Base-T I/F		
Data buffer		4 KB or 40 bytes	4 KB or 45 bytes	1 KB or 40 bytes	1 KB / 16 KB
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)	3.5 lps (at 40 columns,16 cpi) 6.4 lps (at 16 columns,16 cpi)	
Paper	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: 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	A type: One original and two copies B type: One original and one copy D type: One original and two copies	One original
Inked ribbon		ERC-38 (Purple, Black)		ERC-38 (Purple, Black, Black / Red)	
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)		24 VDC ± 5%
Power consumption		Approx. 1.4 A	Approx. 43 W		
D.K.D.function		2 drivers			
Reliability	MTBF	18 x 10^4 hours			
	MCBF	18 x 10^6 lines	49 x 10^6 lines	18 x 10^6 lines	
Overall dimensions (mm)		186 (W) x 327 (D) x 145 (H)	164 (W) x 240 (D) x 136 (H)	A type: 160 (W) x 295 (D) x 160 (H) B type: 160 (W) x 248 (D) x 150 (H) D type: 160 (W) x 248 (D) x 133 (H)	166 (W) x 168 (D) x 259.5 (H)
Mass (Approx.)		4 kg	2.3 kg	A type / B type: 2.5kg D type: 2.2kg	2.7 kg
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 - 170	Exclusive AC adapter (included)		Power supply built-in model / Power supply separate model
Factory Options		–		Near - end sensor	WH-10
Safety Standards		UL / CSA / TÜV (EN60950)	UL / CSA	UL / CSA / TÜV (EN60950)	

*Interface: Dealer option: RS-485, USB, 10 Base T I/F, Please contact your EPSON representative lps: lines per second cpi: characters per 25.4 mm (character per inch)

TM SERIES SPECIFICATIONS

Inkjet Printer		Slip Printer		
TM-J8000	**NEW TM-J2000 / J2100**	**TM-U590**	**TM-U295**	
				**Appearance**
Serial Inkjet dot matrix (128 nozzle / 360 dpi)	J2000: 64 nozzle serial inkjet (180 dpi x 180 dpi) J2100: 128 nozzle serial inkjet (180 dpi x 180 dpi)	9-pin, serial impact dot matrix	7-pin, shuttle impact dot matrix	**Print method**
22 x 48 / 18 x 36	12 x 24 / 9 x 17	7 x 9 / 9 x 9	5 x 7 / 7 x 7	Font
Receipt: 42 / 51 Slip: 130 / 158	82.5 mm 42 / 56 76 mm: 40 / 53 70 mm: 36 / 48 58 mm: 30 / 40	88 / 66	35 / 42	Column capacity (columns)
1.48 (W) x 3.32 (H) / 1.20 (W) x 2.47 (H)	1.41 (W) x 3.39 (H) / 0.99 (W) x 2.4 (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, 32 International, 128 x 9 Graphic Bar code: UPC-A, UPC-E, JAN13 (EAN), 2 of 5 (ITF), CODE39, CODE93, CODE128	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)	95 Alphanumeric 32 International 128 x 10 Graphic	95 Alphanumeric 32 International 128 x 3 Graphic	Character set — **Print Font**
16.4 cpi / 20 cpi	15 cpi (Font A) / 20 cpi (Font B)	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 RS-485, USB, 10 Base-T I/F	RS-232, Bi-directional parallel, RS-485, USB, 10 Base-T I/F	RS-232, Bi-directional parallel	**Interfaces***
4 KB or 45 bytes	4 KB or 512 bytes	4 KB or 69 bytes	512 bytes or 35 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)	Character: 14.7 lps (8 lines / inch) Graphic: 43 mm / sec. (76 mm width paper, Full columns print)	311 / 233 cps	2.1 lps	**Print speed**
Receipt: 76 ± 0.5 x dia. 83.0 Slip: (W) 68 to 215.9 (L) 68 to 297.0	57.5 ± 0.5, 69.5 ± 0.5 76 ± 0.5, 82.5 ± 0.5	70 (W) x 70 (L) to 210 (W) x 297 (L)	80 (W) x 69 (L) to 182 (W) x 257 (L)	Dimensions (mm) — **Paper**
Receipt: 0.06 to 0.09 Slip: 0.09 to 0.15	0.06 to 0.11	0.09 to 0.2 (total thickness: ~ 0.36)	0.09 to 0.25 (total thickness with copy: ~ 0.35)	Thickness (mm)
–		One original and four copies	One original and two copies	**Copy capability**
Ink Cartridge: SJIC1 (Black)	Ink Cartridge: SJIC5 (Black for TM-J2000) SJIC3 (Black for TM-J2100) SJIC4 (Red, Blue, Green for TM-J2100)	ERC-31 (Purple, Black)	ERC-27 (Purple)	**Inked ribbon**
Ink Life:12 x 10^6	Ink Life: 24 x 10^6 (Mono) 17 x 10^6 (2 colors)	Purple: 7 x 10^6 Black: 4.5 x 10^6	15 x 10^5	**Ribbon Life (characters)**
AC 85 V - 264.5 V (only for single phase)	24 VDC ± 10%			**Power**
25 W (Operating)	Approx. 1 A (Operating)	Approx. 1.9 A (mean)	Approx. 600 mA (mean)	**Power consumption**
2 drivers				**D.K.D.function**
18 x 10^4 hours				MTBF — **Reliability**
37 x 10^6 lines	50 x 10^6 lines	29 x 10^6 lines	7 x 10^6 lines	MCBF
325 (W) x 300 (D) x 200 (H)	195 (W) x 250 (D) (275 D with overhanging ledge) x 195 (H)	252 (W) x 266 (D) x 185 (H)	180 (W) x 190.5 (D) x 101.5 (H)	**Overall dimensions (mm)**
9.0 kg	4.7 kg	5 kg	1.6 kg	**Mass (Approx.)**
VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B	VCCI class A, FCC class A, CE marking, Canada EMI, AS / NZS 3548	VCCI class A, FCC class A, CE marking, AS / NZS 3548 class B		**EMC standards**
Universal power supply is built in	PS - 170			**Power supply (option)**
–				**Factory Options**
UL / CSA / TÜV (EN60950)				**Safety Standards**

cps: characters per second

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