

SATO

DCS & Labeling Worldwide

GT Series



OPERATOR'S MANUAL

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Warning: This equipment complies with the requirements in Part 15 of FCC rules for a Class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and television reception requiring the operator to take whatever steps necessary to correct the interference.

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1

OVERVIEW

Thank you for your investment in this SATO printer product.

This Operator's Manual contains basic information about the installation, setup, configuration, operation and maintenance of the printer.

A total of seven topics are covered herein, and they are organized as follows:

- Section 1: Overview**
- Section 2: Installation**
- Section 3: Configuration and Operation**
- Section 4: Cleaning and Maintenance**
- Section 5: Interface Specifications**
- Section 6: Troubleshooting**
- Section 7: Optional Accessories**

It is recommended that you become familiar with each section before installing and maintaining the printer. Refer to the **Table Of Contents** at the front of this manual to search for the relevant information needed. All page numbers in this manual consist of a section number followed by the page number within the stated section.

For specialized programming, refer to the separate Programming Manual located on the utility CD-ROM.

1.1 GENERAL SPECIFICATIONS

The SATO GT4xx “e” series of dual use (Thermal Transfer and Direct Thermal) printers are complete, high-performance labeling systems designed for printing tags and labels.

The key features of the GT series are:

- Faster print speed and better print quality than ever
- Large 3-line LCD screen and icon-rich user interface
- Fully configurable without the need for setting DIP switches
- Easy operation via multiple control buttons and status indicators
- Easy upgrading to higher resolution print heads and additional memory by users
- Richer SBPL command set for better control via software/network
- Supports standalone operation via execution of BASIC programs stored in memory
- Supports two I/O connections
- User friendly label and ribbon path
- Ribbon saving feature

All printer parameters are programmable using the front panel controls and via software. All popular bar codes, including 2-D codes, eight human-readable fonts with two Care Symbol fonts and a fast and efficient vector font, are resident in memory, providing literally thousands of combinations of type styles and sizes.

Features of SATO GT4xxe Series Printers

Feature	GT408e	GT412e	GT424e
Print resolution	203dpi for economical labeling solution (user upgradable to higher resolution print assembly)	305dpi for laser quality printing and graphic images	608dpi for laser quality printing and graphic images
Print method	Thermal Transfer and Direct Thermal	Thermal Transfer and Direct Thermal	Thermal Transfer and Direct Thermal
Label sizes supported (using default internal memory)	4 inches (W) by 9.4 inches	4 inches (W) by 9.4 inches	4 inches (W) by 9.4 inches
Label sizes supported (using additional optional PCMCIA memory card)	4 inches (W) by 49.2 inches at 203 dpi	4 inches (W) by 32.8 inches at 305 dpi	4 inches (W) by 32.8 inches at 305 dpi
Integral Cutter unit	Optional	Optional	Optional
Stacker option	Up to 500 3.9 inch (W) by 5.9 inch labels	Up to 500 3.9 inch (W) by 5.9 inch labels	Up to 500 3.9 inch (W) by 5.9 inch labels
Interfaces available	Optional RS-232C, LAN, USB, RFID, IEEE 1284 or high speed RS-232C	Optional RS-232C, LAN, USB, RFID, IEEE 1284 or high speed RS-232C	Optional RS-232C, LAN, USB, RFID, IEEE 1284 or high speed RS-232C

1.1 GENERAL SPECIFICATIONS (CONT'D)

Specification/ Model Name		GT408	GT412	GT424
Print method		Thermal transfer or thermal		
Head density		8 dots/ mm (203 dpi)	12 dots/ mm (305 dpi)	24 dots/ mm (609 dpi)
Print valid range (width)		104 mm x pitch 2500 mm	104 mm x pitch 1500 mm	104 mm x pitch 400 mm
		Not printable for 3 mm from the backside.		
Print speed (Max)		12 inches/sec (Approx 300 mm/sec)	12 inches/sec (Approx 300 mm/sec)	6 inches/sec (Approx 150 mm/sec)
		Note: Maximum speed may be further dependent on the type of print layout, paper, or carbon ribbon in use.		
Paper Thickness		0.060 mm to 0.268 mm supported. Note: Be sure to use only printer supplies manufactured or certified by SATO.		
Label size (mounting and cardboard size)	Standard	Width: 22 to 128 mm (25 to 131 mm) Pitch: 5 to 397 mm (9 to 400 mm)		Note: Supported sizes may be regulated due to the quantity of print jobs or size of paper. Other usage conditions may restrict the range of label sizes supported.
	Tear off	Width: 22 to 128 mm (25 to 131 mm) Pitch: 17 to 397 mm (20 to 400 mm)		
	Peel	Width: 22 to 128 mm (25 to 131 mm) Pitch: 17 to 397 mm (20 to 400 mm)		
	Cutter	Width: 22 to 128 mm (25 to 131 mm) Pitch: 17 to 397 mm (20 to 400 mm)		
	Non-sepa- rate	Width: 22 to 128 mm (25 to 131 mm) Pitch: 17 to 397 mm (20 to 400 mm)		
Number of loadable sheets	Roll paper	Maximum external diameter: 200 mm (Approximately 150 m/roll) 3-inch paper tube used Back winding (only front winding for non-separate mode)		
	Fanfold paper	Maximum folded height: 200 mm See the section in this manual on Setting Fanfold Paper		
Carbon ribbon Width Length Thickness of base material Color Winding direction		Be sure to use the specified carbon ribbon manufactured by SATO. 39.5, 45, 59, 76, 84, 92, 102, 111, and 128 mm Use a carbon ribbon that is wider than the paper used. 300 m/roll 4.5 µm Black (standard), also red, blue, purple, and green Front winding and back winding		
Label dispensing modes		Continuous, tear off, peeler, dispenser and non-separate		
Dimensions		W 271 mm x D 455 mm x H 305 mm x (Standard)		
Weight		14 kg (for a standard configuration)		
Power supply		Input voltage: AC 100 V to 240 V ±10% Power consumption: Maximum 200 VA 150 W, print rate 30% (89 VA 40 W on standby)		
Operating Environment		Operational ambient temperature: 0 to 40 ×C Operational ambient humidity: 30 to 80% (without condensation) Storing ambient temperature: -5 to 60 ×C Storing ambient humidity: 30 to 90% (no condensation) Paper, and carbon ribbon excluded.		

1.1 GENERAL SPECIFICATIONS (CONT'D)

Specification/ Model Name		GT408	GT412	GT424
External interface		Interface board □ Parallel (IEEE1284) □ RS-232C • READY/BUSY • XON/XOFF • Status 2/3 • Driver specific protocol • Status 5 □ USB (Ver. 2.0) □ LAN (10BASE-T/ 100BASE-TX automatic changeover) □ Wireless LAN (IEEE802.11b) □ Mini LAN (10BASE-T/ 100BASE-TX automatic changeover) External (EXT) signal interface (14-pin)		
Operation Panel	Buttons	LINE, FEED FUNCTION, 4 navigation buttons (up/down/left/right), ENTER, CANCEL		
	Switch	POWER ON/OFF		
	LCD	Green LCD (with backlight), Vertical 32 dots x horizontal 128 dots, displaying up to five icons at the top of the screen		
	LEDs	POWER, ONLINE, STATUS, LABEL, RIBBON status indicators		
	Adjustment Potentiometer	VOLUME: buzzer loudness adjustment PITCH: print-head pitch adjustment OFFSET: tear off, peel, and cutter stop position adjustment DARKNESS: print density adjustment		
Sensor		Paper sensor: reflection type, penetration type		
Memory cartridge		16 MB FLASH ROM, 4 MB non-volatile user memory		
Print Format		Transmitted from host (computer) or recalled from print formats stored by user on memory card (optional)		
Stored Font Types	Standard	X20 5 x 9 dots (alphanumeric, symbol, and kana) X21 17 x 17 dots (alphanumeric, symbol, and kana) X22 24 x 24 dots (alphanumeric, symbol, and kana) X23 48 x 48 dots (alphanumeric, symbol, and kana) X24 48 x 48 dots (alphanumeric, symbol, and kana) Outline font (alphanumeric, symbol, and kana) OCR-A GT408 15 x 22 dots (alphanumeric and symbol) GT412 22 x 33 dots (alphanumeric and symbol) GT424 44 x 66 dots (alphanumeric and symbol) OCR-B GT408 20 x 24 dots (alphanumeric and symbol) GT412 30 x 36 dots (alphanumeric and symbol) GT424 60 x 72 dots (alphanumeric and symbol)		
	TrueType Fonts	CG Times (alphanumeric and symbol) CG Triumvirate (alphanumeric and symbol)		
	Kanji Fonts (where applicable)	16 x 16 dots (JIS level-1 and -2 kanji sets. Selectable either Mincho or Gothic) 24 x 24 dots (JIS level-1 and -2 kanji sets. Selectable either Mincho or Gothic) 22 x 22 dots (JIS level-1 and -2 kanji sets. Selectable either Mincho or Gothic) 32 x 32 dots (JIS level-1 and -2 kanji sets. Selectable either Mincho or Gothic) 40 x 40 dots (JIS level-1 and -2 kanji sets. Selectable either Mincho or Gothic) Kanji outline font		

1.1 GENERAL SPECIFICATIONS (CONT'D)

Specification/ Model Name		GT408	GT412	GT424
Barcode	One-dimensional code	• UPC-A/E, EAN8/13, JAN8/13 • NW-7 • INTERLEAVED 2 of 5 (ITF) • INDUSTRIAL 2 of 5 • MATRIX 2 of 5 • CODE39, CODE93, CODE128 • UCC/EAN128 • Customer barcode • RSS-14		
	Two-dimensional code	• QR code model 2, Micro QR (Ver 8.1) • PDF417 (Ver. 2.4, including micro PDF) • Veri code (Ver. 1.0) • MAXI code (Ver. 3.0) • Data matrix ECC200 (Ver. 2.0) • Synthetic symbol (UPC-A/E, EAN8/13, JAN8/13, CODE39, CODE128 CC-A/B/C supported with RSS-14)		
Magnification		Vertical 1 to 12 times Horizontal 1 to 12 times (characters) 1 to 12 L (barcodes)		
Rotation		Characters: 0°, 90°, 180°, and 270° Barcode: parallel 1, serial 1, parallel 2, serial 2		
Barcode Ratio		1:2, 1:3, 2:5, arbitrary		
User mode		1. Volume set value indication 2. Print speed 3. Print density 4. Print position correction 5. Zero slash changeover 6. Kanji code changeover 7. Kanji font setting 8. Proportional pitch setting		
Automatic diagnostics		Head check/ Head open/ Paper end/ Ribbon end/ Winding full/ Kanji ROM check/ Test print		
Noise emission	Radiant noise	VCCI Class B		
	Static with-stand pressure	IEC Level 3		
	AC line noise	1000 Vp-p or more (50 nS to 1 μS pulse)		
Optional accessories		• Peel unit (with mounting winder) • Cutter unit • Non-separate unit • Simplified peel unit • Internal winding unit • External winding unit • RFID unit • Detection scanner unit • EXT connector (external signal) • Interface boards (serial RS-232C or Parallel IEEE1284) • USB Interface board • LAN (10BASE-T/100BASE-TX), • Wireless LAN (IEEE802.11b), • Mini LAN (10BASE-T/100BASE-TX)		
Memory cartridge		24 MB		

Note:

All the GT printers use the same command codes. The only differences are the allowable values representing print positions on the label. These values are specified in “dots” and

will vary depending upon the resolution of the printer and the amount of memory available for imaging the label.