Seeing is believing

S84NX / S86NX Series

The most versatile thermal
print engines yet

SATO AEP — Application Enabled Printing

SOS — SATO Online Services

RFID SATO SOLUTIONS

satoeurope.com

With improved flexibility, usability, connectivity and reliability, our flagship print engines are now equipped with next level SATO innovation, eclipsing all previous expectations.

Designed for the most demanding environments, the series is available in both 4" and 6", direct thermal/thermal transfer and direct thermal solutions. Ideal for printing **text data**, **barcodes**, **RFID tags** and **labels**. Its unrivalled versatility in performance is due to its excellent capabilities in emulation, PC-Less printing through Simple Stand Alone Mode or more complex AEP autonomous applications, alongside fast throughput and print speed.

Advanced intelligence

AEP

Application Enabled Printing can swiftly transform and simplify printing operations to reduce business costs. It enables the printer to be used without a PC by connecting to peripheral devices to easily print labels and tags, while maximising productivity by integrating with PLC's, eliminating the need for additional external devices, neither PCs, or any type of special software. It also features useable built-in memory for additional AEP software applications like AEP Utility and AEP Works.

EMULATION

Auto detection of major emulation languages enable seamless switching from SATO legacy models or other brands. These include:

- **Standard SBPL and programmable AEP**
  - **SZPL • SDPL • SIPL**
  - **STCPL • PDF Direct Printing**

Improved Usability

BUILT-IN VIDEO

Users can understand how to operate the device in minutes by watching short videos on the printer's 3.5-inch colour display screen, significantly reducing the learning curve. In addition, users can add supplementary images and videos, making it fully customisable to their environment.

REGISTERED SHORTCUTS

Create custom shortcuts to limit access to select parameters only and prevent accidental changes to operations.

EASE OF MAINTENANCE

With no tools required, print head replacement is quick and easy, while a non-stick surface prevents labels from getting jammed. A universal gearbox – that supports all print resolutions – is also used to ensure it can be replaced quickly, while reducing inventory space and time.

High Reliability & Accuracy

RFID-READY

Providing supreme accuracy, SATO printers are designed with high-speed data rates and right-first time tagging capabilities to meet the needs of the most complex business environment.

SOS

By monitoring printers 24/7 via cloud, SATO Online Services enables proactive preventative maintenance and helps reduce downtime by up to 86%*.

*based on survey conducted by SATO in Japan

More Great Features

MULTIPLE INTERFACES

Support both legacy and future host environments with standard RS232C, USB, LAN and NFC interfaces, with network speeds up to 100Mbps. Optional interfaces include Wireless LAN (IEEE 802.11 ac standard) with WEP, WPA, and WPA2 security protocols.

ONE-DISPLAY

Users can take control of print engine operations easily with the built-in virtual display functionality that shows the display in any other device.

IMPROVED STABILITY

Larger hinges are now used to provide extra strength for securing the printer cover, alongside aluminium extrusions to replace the original welded plates for added robustness.

S84NX / S86NX Series

For high volume, 24/7 mission critical print and apply labeling operations.

Feature Overview

3.5-inch color LCD and dual-color LED indicators

Large color display for ease of operation. LED indicators help users quickly assess printing status and identify errors even from a distance.

Standard user interface

Users familiar with SATO's CLNX printers can operate the print engine in the same way. This allows for faster troubleshooting and less downtime when errors occur.

Built-in video tutorials

Instructional videos guide users to perform basic operations such as media loading, parts replacement and error resolution without wasting any time.

Smart print head

Usage of each print head can be tracked and monitored by its serial number via SOS (SATO Online Services) to enable timely replacement.

Versatile specifications to meet diverse needs

Left- or right-hand orientation; 4- or 6-inch print width; Direct thermal or thermal transfer printing; 203 dpi, 305 dpi or 609 dpi print resolution).

RFID option

Users can use the print engine for printing and encoding UHF RFID labels/tags, configuring the necessary settings easily with SATO's All-In-One Tool (AIOT)*. RFID is gaining popularity as it promises increased productivity among other benefits.

*A printer management utility that allows users to seamlessly configure SATO printers across system-wide infrastructure.

S84NX / S86NX Series

Robustness

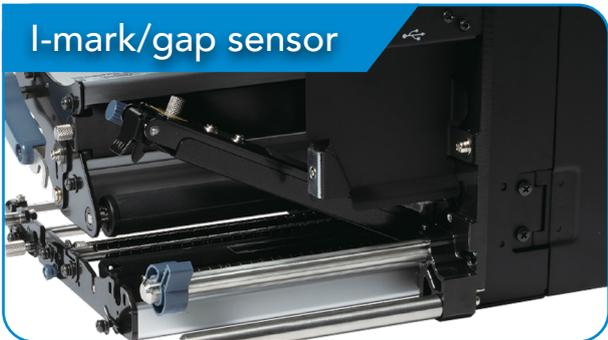### Robust construction to lower damage risks and prevent downtime

Hinges

Larger hinges (when compared with legacy model) to provide extra strength for securing cover.

Pressure roller

New, durable roller assembly.

I-mark/gap sensor

Sensor assembly enhanced to stay firmly in place even under heavy-duty use. Stronger, deformation-resistant sensor cover.

Print head

Print mechanism framed with aluminum extrusions (instead of welded plates) for added ruggedness.

Improved dust and splash protection

Print engine can withstand use in dusty environments or where water may be splashed.

(Note that product is not IP rated for dust or water resistance.)

Usability

Intuitive operation and ease of use to maximize productivity

Standard emulations onboard
Support SZPL and other major printer languages, for seamless fit into existing systems.

One display concept
Enable centralized control of print engine operations from the applicator's display with a new command.

Applicator's LCD

ONLINE
OFFLINE

Applicator's LCD

Printer's LCD

Printer's LCD
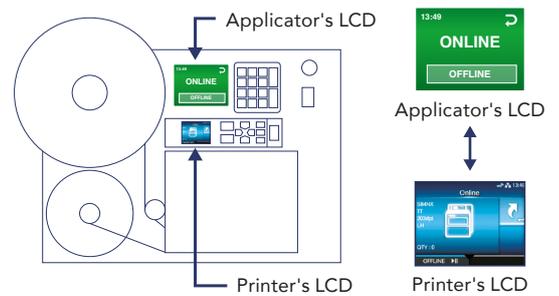
Multiple interfaces
Connect easily to different external devices. USB port added to the side for greater ease of connectivity.

Multi-national language support
Support 31 display and 47 print languages, to meet the needs of global workforces and businesses.

Adjustable backfeed speed
Let users choose from multiple backfeed speed options, an enhancement from legacy model.

Customizable shortcut menu
Let users create custom shortcuts for quick access to operations they perform frequently.

New settings to minimize interruptions during printing

Enabling page clipping mode
Use this to clip off any remaining print data at label edge and continue printing without triggering errors.

Disabling cover open sensor
Use this to keep the cover open during printing, without triggering errors.

Ease of maintenance

User-replaceable parts with easy-to-access layout for ultimate serviceability

Toolless print head replacement

No tools needed.

When replacing print head, users can open side panel to tuck away cables smoothly.


Easy roller replacement

Simply loosen one screw to remove roller. No need to unscrew all the way with the longer screws used. To allow easy identification, a different line marking is used for each type of roller shaft.

Convenient access to rear components

Rear cage opens outward on both sides so that internal components such as mainboard, gearbox and power supply can be accessed in one go.
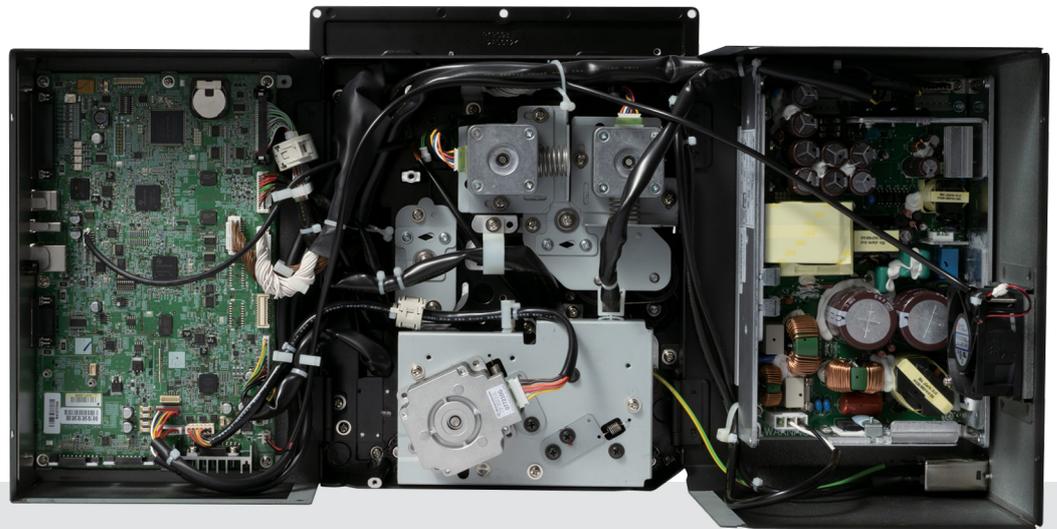
Improved gearbox design

Gearbox elements are integrated into an assembly unit to facilitate removal. The new design also makes it easier to assemble, disassemble and repair gearbox.

New value-add with SATO's game-changing technologies

SATO AEP
Application Enabled Printing

Intelligence inside the printer for standalone printing

SATO AEP (Application Enabled Printing) is a powerful onboard intelligence that enables customization of printer operations to simplify labeling processes and reduce business costs.

Achieve PC less printing

Print independently without costly computers or network connections by using data input from on-screen keyboard or via peripherals such as scanners and scales.

Customize printer screen

Customize screen with company logo, helpdesk phone number, IP address, asset ID or other information based on user needs.

Print directly from PLC

Use SATO AEP to easily integrate printer with devices such as programmable logic controller (PLC) for direct and more efficient printing. No need for special printer firmware or device customization.

SATO AEP also supports programmable customization of the external signal (EXT) interface.

Streamline RFID printing and encoding

Upload log files automatically to user systems for traceability after printing and encoding RFID labels/tags.

SATO AEP
Application Enabled Printing
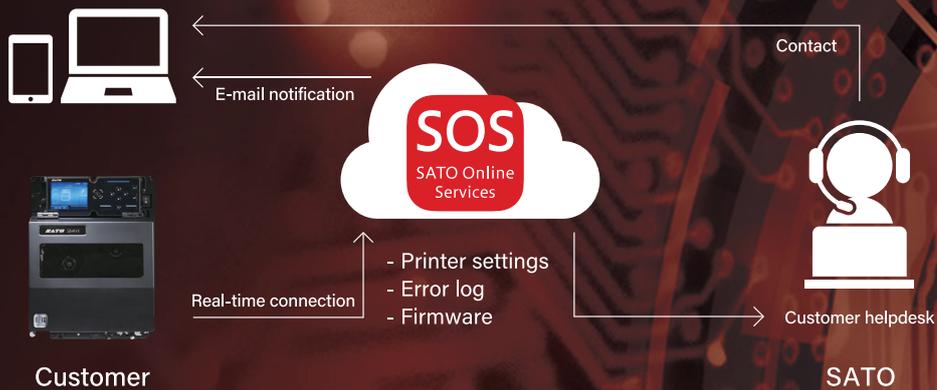
SOS
SATO Online Services

Virtual customer engineer, right on site

Video

SOS (SATO Online Services) is a cloud-based maintenance solution that keeps printer operations running and visible.
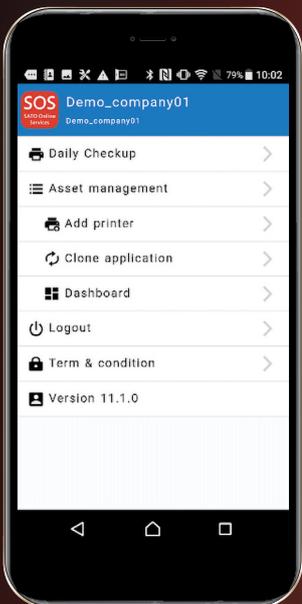
Contact

E-mail notification

SOS
SATO Online Services

- Printer settings
- Error log
- Firmware

Real-time connection

Customer helpdesk

Customer

SATO

Enjoy preventative maintenance and quick troubleshooting

Use SOS to monitor cloud-connected printers 24/7 using their operating data. SOS sends notifications when expendable parts need replacement, and offers prompt and effective resolution to printer errors when they occur. This helps reduce unplanned downtime by as much as 86%*.

*Based on survey conducted by SATO in Japan.

SOS Smart App

SOS
Demo_company01
Demo_company01

- Daily Checkup
- Asset management
- Add printer
- Clone application
- Dashboard
- Logout
- Term & condition
- Version 11.1.0

Manage printers across multiple locations efficiently

View the status of all printers at a glance using the dashboard and easily adjust print speed, print darkness, print position or network settings remotely as needed. The dashboard can be accessed via SOS Web or on the go via SOS Smart App.

Further Beyond Expectations | The most versatile thermal print engine

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PRINTING SPECIFICATION			S84NX			S86NX	
Printing Method			Direct Thermal and Thermal Transfer or Direct Thermal Only Model				
Print Resolution			8 dots / mm (203 dpi)	12 dots / mm (305 dpi)	24 dots / mm (609 dpi)	8 dots / mm (203 dpi)	12 dots / mm (305 dpi)
Max. Print Speed			16 ips (406.4 mm/sec)	14 ips (355.6 mm/sec)	6 ips (152.4 mm/sec)	14 ips (355.6 mm/sec)	12 ips (304.8 mm/sec)
Max. Print Area	Width mm (inch)		104 mm (4.1")			167.5 mm (6.59")	
	Length mm (inch)		2500 mm (98.43")	1500 mm (59.06")	400 mm (15.75")	2500 mm (98.43")	1249 mm (49.17")
Processor			Dual CPU & Dual OS: CPU1: 800MHz for Linux OS, CPU2: 800MHz for ITRON OS				
Printer Memory			CPU1: 2GB ROM, 256MB RAM, CPU2: 4MB ROM, 64MB RAM				

CONSUMABLES SPECIFICATION (Recommended to use printer supplies manufactured or certified by SATO)

Sensor Type			I-Mark Sensor (Reflective), Label Gap Sensor (Transmissive), Paper-end, Ribbon near-end/end.				
Media Type			Roll or fan-fold die cut labels, Plain paper face stock, Synthetics and Continuous stock				
Media Thickness			0.05 ~ 0.31 mm (0.002" to 0.012")				
Label Size	Continuous	Width	13 to 131mm (0.51" to 5.16")			54 to 180 mm (2.13" to 7.09")	
		Length	9 to 2503 mm (0.35" to 98.54")	9 to 1503 mm (0.35" to 59.17")	9 to 403 mm (0.35" to 15.87")	9 to 2503 mm (0.24" to 98.54")	9 to 1503 mm (0.35" to 59.17")
	Dispenser	Width	13 to 131 mm (0.51" to 5.16")			54 to 180 mm (2.13" to 7.09")	
		Length	Thermal Transfer Model: 13 to 359 mm (0.51" to 14.13") / Direct Thermal Model: 18 to 359 mm (0.71" to 14.13")				
Ribbon	Length/Width		Width: 25mm to 128 mm (0.98" to 5.04") Length: 450 m (1476.4 ft.) when width is less than 39.5 mm (1.56") 600 m (1968.5 ft.) when width is equal or more than 39.5 mm (1.55")			Width: 59 mm to 177 mm (2.32" to 6.97") Length: 600 m (1968.5 ft.)	
	Roll diameter		108 mm (4.25")				
	Core		Core diameter: Ø 25.4 mm (1")				
	Wind direction		Face-in/out, No Setting Change Required				
Ribbon others			Electronic Ribbon Tension Control System				

FONTS / SYMBOLOGIES

Internal Fonts	Standard Bitmap	U, S, M, WB, WL, XU, XS, XM, XB, XL, OCR-A, OCR-B
	TTF Fonts	30 scalable SATO fonts, Multi-national language support (47 languages/Unicode), Single- and double-byte font support (Korean, Chinese, Japanese)
	Encoding	Major Latin and Pan-European Code Pages (WGL4), GB18030 (simplified Chinese), BIG5 (traditional Chinese), KSX1001 (Korean), Thai (CP874), Arabic, UTF-8 and UTF-16BE (downloaded fonts)
Barcode	Linear	Code 39, Code 93, Code 128, CODABAR (NW7), EAN8/13, GS1-DatabarTM, GS1-128(UCC/EAN128), Interleaved 2/5, Industrial 2/5, JAN8/13, Matrix 2/5, MSI, Bookland, Postnet TM, Bookland, UPC-A/E Intelligent Mail Barcode
	2D Symbologies	PDF417, Micro PDF, Maxi Code, GS1 Data Matrix, QR Code, Micro QR Code, Security QR code, Aztec Code and Composite Symbologies
Print Direction		Character data rotation: 0°, 90°, 180°, 270° / Barcode rotation: 0°, 90°, 180°, 270°

INTERFACE CHARACTERISTICS AND INTEGRATION

Standard Interfaces	USB	USB 2.0 type-B / 2 x USB 2.0 Type-A (host) One in the front, one in the rear (Connect scanners and keyboards)
	LAN	Ethernet 10/100 Mbps / DHCP / Protocol: TCP/IP, LPR, FTP, TELNET, SNTP
	RS232C	RS232C Standard (XON/XOFF, RTS/CTS)
	EXT (I/O)	DSUB 25 pin (female) / Amphenol 14 pin (female, optional adapter) Now also AEP Controlled
Optional Interfaces	Wireless LAN	Wireless LAN, WiFi Certified, WiFi Direct, IEEE 802.11 a/b/g/n/ac Dual Band (2.4GHz, 5GHz), Security: WEP, WPA, WPA2, Dynamic WEP, DHCP Option 81.
External Memory	USB	USB type-A (USB Host)
Supported printer protocols		Standard SATO: SBPL and programable AEP / Emulation Languages auto detect: SZPL, SDPL, SIPL / Others: XML
Remote Setting		Web Browser, SATO All-in-One Printer Utilities, SOS, SNMPv3
Drivers		Windows, Linux, SAP, MAC OS

OPERATING CHARACTERISTICS

Power Requirements		Universal Auto-ranging Power Supply, AC 100V AC240V ± 10%, 50/60Hz
Dimensions		W245mm (9.65") x D408mm (16.06") x H300mm (11.81") / W245 mm (9.65") x D417 mm (16.42") x H300 mm(11.81")
Weight		Thermal Transfer Model: 14.1 kg (31 lbs) Direct Thermal Model: 12.7 kg (28 lbs) / Thermal Transfer Model 15.5 kg (34.1 lbs) Direct Thermal Model: 14.0 kg (30,8 lbs)
Environment	Operating	-5° to 40 °C / 15 – 85 % RH (without condensation)
	Storage	-20 to 60 °C / 15 – 90 % RH (without condensation)
Display Panel		LCD 3,5 full color display, 9 buttons control keys, Sound beep (4 volume settings), two color LED lighting bars

MISCELLANEOUS

Standards & Agency Approvals	EN 62368-1, CE Marking, NEMKO-GS, cMETus, UL60950-1,coCmSAplCia2n2t .2, FCC, ICES-003, NMB-003, RCM, CCC, SRRC, KC, ROHS compliant
Functions – Useful features	Simple Standalone Mode, Multi Language support LCD message (31 Languages), USB Memory, clone functionality and firmware updates, Status return, Micro Label Printing, User guidance videos in display, Custom videos, Energy saving, SOS (SATO Online-services), Direct PDF printing, SOTI and SAS.
Functions – Self Diagnosis Checking	Thermal head check, Ribbon end detection, Test print, Head Lift detection, Auto Sensor Calibration
RFID	For more information about qualified RFID labels / inlay combinations please contact SATO

OPTIONS (EUROPE ONLY)

Accessories	WLAN Kit, RFID: UHF RFID S84-ex Dual antenna and S86-ex single antenna configuration; Standard: ISO 18000-6 Type C, Frequency: 868 – 960Mhz, Protocols: EPC Gen 2 Class 1

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