

User Manual

SP01 Thermal Printer





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I. Instructions

SP01 is currently the smallest front paper exit direct thermal receipt printer in China, supports front and upper paper exits, easy to operate and high cost performance, and is widely used in many fields like shopping mall, supermarket, hospital, restaurant, bank, gasoline station, toll stations etc.

Safety notes:

Please read carefully and obey strictly the following instructions before using this printer.









1.1 Safety warnings

-  **Warning:** Do not touch the cutting tools in the printer.
-  **Warning:** As the print head is the heat-generated component, do not touch it and its peripheral parts when printing is in progress or just finished.
-  **Warning:** Do not touch the surface of the thermal-printing head and its connecting parts to protect it from the damage of static.
-  **Warning:** this product is applies only in the conditions other than tropical condition.

Warning:






It belongs to the product grade A. It may cause the radio interference in which condition it is suggested users take practicable measures to avoid such interference.

1.2 Precautions

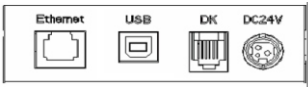
| | |
|--|--|
|  The printer should be placed in a stable place without shock and vibration. |  Do not use or store the printer in the atmosphere of high temperature, humidity or heavy pollution. |
|  The power adapter of printer should be connected to a proper grounded receptacle and it should be avoid to share the same socket with other large electronic machines or equipment which may cause the mains voltage fluctuation. |  Avoid water or conducting materials (such as metal) to get into the printer, if it occurs, the power must be turned off immediately. |
|  The printer should not be operated in the condition of out of paper, otherwise it will badly damage the printing roller and the thermal printer head. |  Please cut off power supply of power adapter if unused for quite a long time. |
|  The users should not dismantle the printer by their own for maintenance or modification. |  Use only the power adapter provided together with the printer. |

* Please properly keep the user manual for your reference when needed.

II. Main Features

| | |
|---|---|
|  | Compatible 80 and 58 paper rolls |
|  | Print at a high speed of 250mm/s |
|  | Low power consumption and operation costs |
|  | Support interfaces of USB, Ethernet and cashbox |
|  | Compatible printing instruction sets of ESC and POS |

III. Instructions on technical specifications


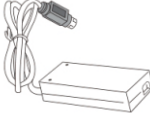

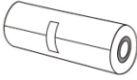


| | | |
|-----------------------------------|---|--|
| Printing method | Line thermal printing (QR code also can be printed.) | |
| Paper width | 79.5±0.5 mm | |
| Effective width of printing paper | 72mm | |
| Effective resolution | 203dpi (8 dots per mm) | |
| Printing speed | 250mm/s MAX | |
| Print head property | Print density : 504 dots/line or 576dots/ line | |
| | Operating life : 100km | |
| Printer interface |  <p>Ethernet USB Cashbox Power</p> <p>Cashbox power supply (6 lines RJ-11 socket, output volts DC 24V/1A to drive cashbox operation)</p> | |
| Printed character | ASC II character set | 12x24 dots, 1.25 (width) x3.00 (height) mm |

| | | |
|---|--|--|
| | Chinese character library of international first and second level | 24x24dots, 300 (width) X 3.00 (height) mm |
| | International code | 10 kinds of international languages such as PC437, Katakana,PC850, PC860, PC863PC865, WPC1252, PC866, PC852,PC858 and so on. |
| | Barcode printing | Support 9 kinds of barcode printing like UPC-A, UPC-E, EAN(JAN)13, EAN(JAN)8, CODE39, CODABAR, ITF, CODE93, CODE128 etc. |
| Printing paper index | Paper type | Thermal printing paper |
| | Recommended thermal paper roll | Size:AF50KS-E Manufacturer: Jujo Thermal Oy(Finland) |
| | | Size: TF-50KS-E Manufacturer: Nippon Paper Industries CO., Ltd. |
| | <p>⚠ Notes:</p> <ol style="list-style-type: none"> 1. It's suggested to use the recommended thermal paper or the one with the equal quality, or it will affect the printing result and shorten the operating life of thermal printer head. 2. Do not use the paper roll whose end is pasted on the axis of the roll, or it may damage the printer. 3. If the thermal paper is polluted by the chemical agents or oil, it may fade and affect the print result. 4. Do not use hard materials to rub against the surface of paper, or it will cause the color fading. 5. The paper will fade if the ambient temperature is over 70 °C. Therefore, please pay special attention to the effects of the temperature, humidity and illumination. | |
| Printer reliability | 6x10 ⁶ lines (MCFB) | |
| Instruction type (compatible in the printing instruction sets of ESC/POS) | Character printing | Support ANK. Width, height and character spacing of the user-defined characters and Chinese characters can be adjusted. |
| | Bitmap printing | Support the printing of the bitmap and downloaded figures with various densities. |
| Power adapter | Adapter input voltage | AC 110V/220V,50~60HZ |
| | Adapter output voltage | DC 24V/2.5A |
| | Printer input voltage | DC 24V/2.5A |
| Weight | About 1.2kg (excluding the paper roll) | |
| Size | 200 (Length) x 160(Width) x 140 (Height) mm | |

| | | |
|---------------------------------|----------------------------------|------------------------------------|
| Environmental adaptation | Operation temperature: 0~40°C | Operation relative humidity:20~70% |
| | Storage temperature: -20~70°C | Storage relative humidity: 5~95% |

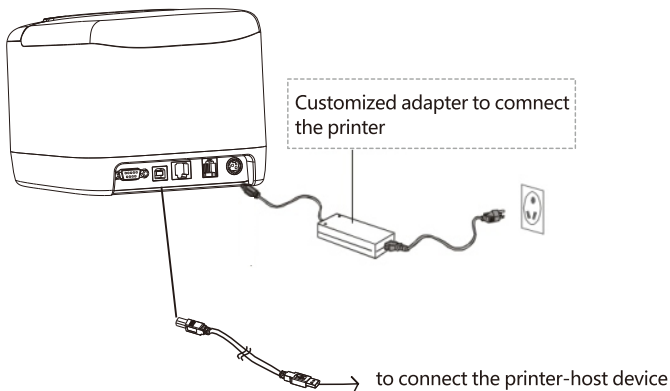
IV. Installation and operation of the printer

4.1 Unsealing of the printer

| | | |
|---|---|---|
|  |  |  |
| Printer-host device | Power adapter | Power line |
|  |  |  |
| Paper roll | CD | Communication line |

* Please check the parts when opening the box, if there is something missed, please contact the supplier or the manufacturer.

4.2 Connection method of the printer



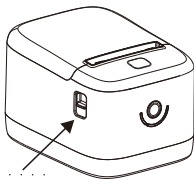
Please use the customized power adapter provided together with the printer. Connection as shown in above figure.

! Attention

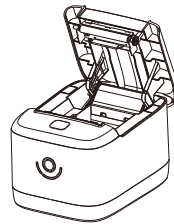
1. Firstly, plug in the printer power supply connector DC24V, then turn on AC220V power and turn on the power switch, please do not in a opposite order for avoiding the damage of the machine.
2. Using inappropriate power adapter can cause bad print quality, or even damage the printer.
3. Do not connect the phone line to the cash box interface, otherwise the printer and phone may be damaged.
4. When you plug in or out the printer power cord, please hold the place where has an arrow on the printer power connector (Do not plug out the connector by holding printer power supply cord). Forced to plug out printer power supply cords by pulling power connector cords may cause the damage of the printer or the power adapter.

4.3 Installation of paper rollers

SP01 printers use 80.0 mm thermal paper rolls, and it has easy paper loading mechanism which can make loading paper more convenient. Thermal paper installation method is as follows:



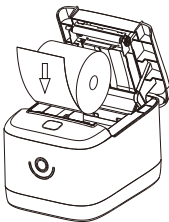
Opening button



Confirm to open the printer's front cover

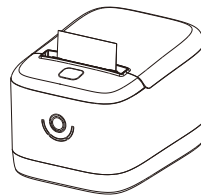
1 2
3 4

Confirm to open the printer's upper cover



The wrong direction

The right direction



Confirm that the paper rolls printing is facing forward and put the paper roll into the printer; then pulling the paper roll out of upper cover.

Close the front cover of the printer, press forward until the cover locked with a sound.

V. Switches, buttons and indicator lights of the printer

5.1 Power switch

Power switch is used to switch power of the printer. Printer power switch is located on the left side of the printer. When you press the switch “-”, then power on the printer; when you press the switch “0”, turn off the printer.

Attention

Only turn on the switch when connecting the power supply.

5.2 Self-check test of the printer

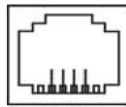
Self inspection can detect whether the printer works correctly. If you can print the check-list correctly, you will get the information that in addition to connection with the host interface, the printer is working good, otherwise you may need to repair.

Self inspection of the printer is printing a software version number, print density, interface type and English characters and some of the Chinese characters in order.

Inspection and operating method is: after the printer connected, press and hold the paper feeding button and then turn on the power of printer. Firstly, do the printer reset inspection, when the reset inspection is completed, release the paper feeding (FEED) button in less than 5 seconds, then self inspection of the printer will print out check list for samples.

VI. Cashbox port of the printer

The cash box of the printer port using the RJ-11 standard, plug with 6 cords and output DC 24V/1A power signal to drive the cash box movements. Plug the cash box RJ-11 crystal head into the cash box interface to open the cash box through printer.



RJ-11

Pin functions of printer's cash box interface is defined as follows:

| Pin Number | signal | flow direction |
|------------|-----------------------|----------------|
| 1 | empty | empty |
| 2 | structure | output |
| 3 | empty | empty |
| 4 | cash box drive signal | output |
| 5 | empty | empty |
| 6 | empty | empty |

VII. Printer cleaning

7.1 Clean the printer head

When one of the following condition occurs, you have to cleaning the printing head

- ✓ Printing not clear
- ✓ Printing page longitudinal column is not clear
- ✓ Paper feeding noise

Print head cleaning steps

1. Turn off the power of printer and open the upper cover. If there is paper, remove the paper;
2. If you have just finished printing, you should wait until the print head cool completely;
3. Erasing dust and stains of the printing head by a soft cloth dipped in ethanol (wring the cloth and dry it).
4. When the anhydrous alcohol was fully evaporated, close the upper cover and try again

7.2 Cleaning sensor

When the printer appears one of the following conditions, you should clean the paper out sensor.

- ✓ During printing, printer occasionally terminate printing, Out of paper will alarm
- ✓ Out of paper not alarm

Cleaning steps of paper out sensors

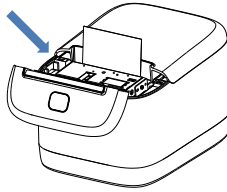
1. Turn off the power of printer and open the upper cover. If there is paper, remove the paper;
2. Erasing dust and stains on the surface of the sensor by a soft cloth dipped in ethanol (wring the cloth and dry it).
3. When the anhydrous alcohol was fully evaporated, close the upper cover and try again.

 **Attention**

1. Printer maintenance is must in the condition that the power supply is turned off.
2. Do not touch the print head surface with hand and metal goods. Do not use tweezers and other tools to scratch the print head, printing rubber rollers and sensor surface.
3. Do not use gasoline, acetone and other organic solvents.
4. Only when the anhydrous alcohol was fully evaporated can we turn on the power to continue printing.

VIII. Paper jam elimination method

When the printer jam occurred, first turn off the power of the printer, open the upper cover of the printer, remove stuck in the paper carefully after waiting for the print head cooling, and then right on paper, close the upper cover. It is not easy to jam if the printing paper selected is recommended or similar quality or its width is in conformity with the provisions.



IX. Malfunction elimination

When the printer failed, you can refer to the corresponding processing section. If you are still unable to remove the fault, please contact distribution dealer or manufacturer.

9.1 Indicator light on the control penal fail to work

Check whether the power cord correctly inserted into the printer, power adapter and power socket. Check that the printer electrical source switch is urn on or not.

9.2 Indicator light function well, but the printer fail to work

Run the self-test to check whether the printer is working properly. If It can not self test, please contact the dealer or technical service personnel.



If the self-test is normal, check the following content

1. Check the interface on both ends between the printer and the computer. At the same time confirm the connection is to satisfy a printing machine and computer specifications.
2. Data transfer settings between printers and computers may differ. You can use the self checking to print interface setting of the printer. If the printer can't print, please contact the dealer or technical service personnel.

X. Printer driver

There are two kinds of driving methods of SP01 printers. One is to install driver directly under Windows9x/ME/2000/XP, and another is to use a network port and drive directly.

10.1 Driver installation under Windows

In the Windows you could add printer, and drive plate driver specified file to the Windows, just need to transfer the print command and you can begin to print. In this way, the fact is the printer driver in Windows converts characters into graphic dot matrix to print.

10.2 Direct drive of serial ports

In this way, it doesn't need to use the driver, only need to output the characters directly to the port, and the printer in the department of hard word stock could achieve conversion print of character font. The printing way could change to line printing from page printing if you use port direct drive way and it is convenient to control print.

It needs to use the instruction set to control the printer to print if using port direct drive, and SP01 printing machine internal has integrated the ESC/POS command set.

FCC Requirement

1. changes or modifications not expressly approved by the party responsible for compliance could void the user' s authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

2. Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.