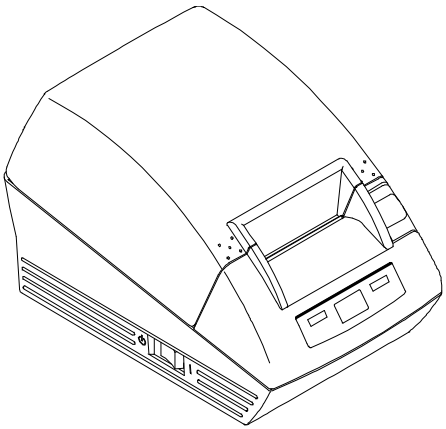
CITIZEN

LINE THERMAL PRINTER

MODEL CT-S280 Type II

User's Manual



CITIZEN SYSTEMS JAPAN CO., LTD.

WEEE MARK

En If you want to dispose of this product, do not mix it with general household waste. There is a separate collection systems for used electronics products in accordance with legislation under the WEEE Directive and is effective only within European Union.

Ge Wenn Sie dieses Produkt entsorgen wollen, dann tun Sie dies bitte nicht zusammen mit dem Haushaltsmüll. Es gibt im Rahmen der WEEE-Direktive innerhalb der Europäischen Union gesetzliche Bestimmungen für separate Sammelsysteme für gebrauchte elektronische Geräte und Produkte.

Fr Si vous souhaitez vous débarrasser de cet appareil, ne le mettez pas à la poubelle avec vos ordures ménagères. Il existe un système de récupération distinct pour les vieux appareils électroniques conformément à la législation WEEE sur le recyclage des déchets des équipements électriques et électroniques qui est uniquement valable dans les pays de l'Union européenne.
Les appareils et les machines électriques et électroniques contiennent souvent des matières dangereuses pour l'homme et l'environnement si vous les utilisez et vous vous en débarrassez de façon inappropriée.

Sp Si desea deshacerse de este producto, no lo mezcle con residuos domésticos de carácter general. Existe un sistema de recogida selectiva de aparatos electrónicos usados, según establece la legislación prevista por la sobre residuos de aparatos eléctricos y electrónicos (RAEE), vigente únicamente en la Unión Europea.

It Se desiderate gettare via questo prodotto, non mescolatelo ai rifiuti generici di casa. Esiste un sistema di raccolta separato per i prodotti elettronici usati in conformità alla legislazione RAEE, valida solo all'interno dell'Unione Europea.

Du Deponeer dit product niet bij het gewone huishoudelijk afval wanneer u het wilt verwijderen. Er bestaat ingevolge de WEEE-richtlijn een speciaal wettelijk voorgeschreven verzamelsysteem voor gebruikte elektronische producten, welk alleen geldt binnen de Europese Unie.

Da Hvis du vil skille dig af med dette produkt, må du ikke smide det ud sammen med dit almindelige husholdningsaffald. Der findes et separat indsamlingssystem for udtjente elektroniske produkter i overensstemmelse med lovgivningen under WEEE-direktivet, som kun er gældende i den Europæiske Union.

Por Se quiser deitar fora este produto, não o misture com o lixo comum. De acordo com a legislação que decorre da Directiva REEE – Resíduos de Equipamentos Eléctricos e Electrónicos, existe um sistema de recolha separado para os equipamentos electrónicos fora de uso, em vigor apenas na União Europeia.

Pol Jeżeli zamierzasz pozbyć się tego produktu, nie wyrzucaj go razem ze zwykłymi domowymi odpadkami. Według dyrektywy WEEE obowiązującej w Unii Europejskiej dla używanych produktów elektronicznych należy stosować oddzielne sposoby utylizacji.

Compliance Statement for European Users

CE marking shows conformity to the following criteria and provisions:

Low Voltage Directive (2014/35/EU), EMC Directive (2014/30/EU), and RoHS directive (2011/65/EU)

Full text of the EU declaration of conformity is available at the following internet address:

http://www.citizen-systems.co.jp/en/printer/download/eu_doc.html

EPSON and ESC/POS are registered trademarks of Seiko Epson Corporation.
CITIZEN is a registered trade mark of CITIZEN WATCH CO.
CITIZEN es una marca registrada de CITIZEN WATCH CO.
Company names and product names in this manual are trademarks or registered trademarks of relevant companies.
Copyright © 2022 by CITIZEN SYSTEMS JAPAN CO., LTD.

IMPORTANT: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

CAUTION: Use shielded cable for this equipment.

Sicherheitshinweis

Die Steckdose zum Anschluß dieses Druckers muß nahe dem Gerät angebracht und leicht zugänglich sein.

For Uses in Canada
This digital apparatus does not exceed the class A limits for radio noise emissions from digital apparatus, as set out in the radio interference regulations of the Canadian department of communications.

Pour L'utilisateurs Canadiens
Cet appareil numérique ne dépasse pas les limites de carégorie a pour les émissions de bruit radio émanant d'appareils numériques, tel que prévu dans les réglements sur l'interférence radio du départment Canadien des communications.

GENERAL PRECAUTIONS

- Before using this product, be sure to read through this manual. After having read this manual, keep it in a safe, readily accessible place for future reference.
- The information contained herein is subject to change without prior notice.
- Reproduction or transfer of part or all of this document in any means is prohibited without permission from CITIZEN SYSTEMS.
- Note that CITIZEN SYSTEMS is not responsible for any operation results regardless of missing, error, or misprinting in this manual.
- Note that CITIZEN SYSTEMS is not responsible for any trouble caused as a result of using options or consumables that are not specified in this manual.
- Except explained elsewhere in this manual, do not attempt to service, disassemble, or repair this product.
- Note that CITIZEN SYSTEMS is not responsible for any damage attributable to incorrect operation/handling or improper operating environments that are not specified in this manual.
- Data are basically for temporary use, not stored for a long period or permanently Please note that CITIZEN SYSTEMS is not responsible for damage or lost profit resulting from the loss of data caused by accidents, repairs, tests or other occurrence.
- If you find loss of information, error, or uncertain matter, please contact your CITIZEN SYSTEMS dealer.
- If you find any disordered or missing page(s), contact your CITIZEN SYSTEMS dealer for replacement.

SAFETY PRECAUTIONS...WHICH SHOULD BE STRICTLY OBSERVED

Before using this product for the first time, carefully read these SAFETY PRECAUTIONS. Incorrect operation may result in unexpected accidents (fire, shock, or injury).

- After having read this Manual, keep it in a safe, readily accessible place for future reference.
- Some of the descriptions contained in this manual may not be relevant to some printer models.

In order to prevent injury hazard to operators, third parties or damage to property, special warning symbols are used in this user's manual to indicate important items to be strictly observed.

The following describes the degree of hazard and damage that could occur if the printer is improperly operated by ignoring the instructions indicated by the warning symbols.

WARNING

Neglecting precautions indicated by this symbol may result in fatal or serious injury.

CAUTION

Neglecting precautions indicated by this symbol may result in injury or damage to property.

CAUTION

The parts near the mark become hot. Do not touch them during or immediately after operation. Doing so may result in burns.

WARNING

There is a cutter at the paper ejection port. Do not put your fingers in this area, as touching it may cause injury.

This symbol is used to alert your attention to important items.

This symbol is used to alert you to the danger of electric shock or electrostatic damage.

This symbol denotes a request to unplug the printer from the wall outlet.

This symbol is used to indicate the “information” on the use, or the like.

This symbol is used to indicate prohibited actions.

PRECAUTIONS ON PRINTER INSTALLATION

⚠ WARNING

Do not use or store this product in a place where it will be exposed to:

- Flames or moist air
- Direct sunlight
- Hot airflow or radiation from a heating device
- Salty air or corrosive gases
- Ill-ventilated atmosphere
- Chemical reactions in a laboratory
- Airborne oil, steel particles, or dust
- Static electricity or strong magnetic field

- **Neglecting these warnings may result in printer failure, overheating, emission of smoke, fire, or electric shock.**

Do not drop any foreign object nor spill liquid into the printer. Do not place any object on the printer either.

- Do not drop any metallic object such as paper clip, pin or screw into the printer.
- Do not place a flower vase, pot or cup containing water on the printer.
- Do not spill coffee, soft drinks or any other liquid into the printer.
- Do not spray insecticide or any other chemical liquid over the printer.

- **A metallic foreign object, if accidentally dropped into the printer, may cause printer failure, fire, or electric shock. Should it occur, immediately turn the printer off, unplug it from the supply outlet, and call your local CITIZEN SYSTEMS dealer.**

Do not handle the printer in the following ways:

- Do not allow the printer to sustain strong impacts or hard jolts (e.g., trampling, dropping, striking with a hard edge).
- Never attempt to disassemble or modify the printer.

- **Neglecting to handle properly may result in printer failure, overheating, emission of smoke, fire, or electric shock.**
- Do not hold the cover when carrying your printer. Otherwise, damage to the equipment or malfunction may occur.

Install, use, or store the printer out of the reach of children.

- **Electric appliances could cause an unexpected injury or accident if they are handled or used improperly.**
- **Keep the power cord and signal cables out of the reach of children. Also children should not be allowed to gain access to any internal part of the printer.**
- **The plastic bag the printer came in must be disposed of properly or kept away from children. Wearing it over the head may lead to suffocation.**

⚠ CAUTION

Place the printer on a flat, stable surface without vibration.

• **Otherwise dropping may cause injury.**

Do not use the printer under the following conditions.

- A state where the printer ventilation holes are blocked by a nearby wall or something
- A state where any object is placed on the printer
- A state where the printer is covered or wrapped by a cloth or bed clothing

• **Be careful about internal heat buildup, which could cause fire and deform the case.**

- Avoid using the printer near a radio or TV set or from supplying it from the same outlet as these appliances.
- Avoid using the printer interconnected with a cable or cord that has no protection against noise. (For interconnections, use shielded or a twisted pair of cables and ferrite cores, or other anti-noise devices.)

- Avoid using the printer with a device that is a strong source of noise.

• **The printer may have an adverse effect on nearby radio or TV transmissions. There may also be cases when nearby electrical appliances adversely influence the printer, causing data errors or malfunction.**

Use the printer with its grounding post connected to a convenient grounding facility.

• **If leakage occurs electric shock may result.**

Do not connect the printer's grounding post onto any of the following facilities.

- Utility gas piping
  A gas explosion could result
- Telephone line ground
- Lightning rod
  If lightning strikes a large surge of current may cause fire or shock.

- Utility water pipes
  Plastic water pipes should not be used for grounding. (Those approved by a Waterworks Department may be used.)

Before connecting or disconnecting the grounding lead to or from the printer, always unplug it from supply outlet.

PRECAUTIONS IN HANDLINGTHE PRINTER

⚠ WARNING

Please observe the following precautions for power source and power cord:

- Do not plug or unplug the power cord with a wet hand.
- Use the printer only at the specified supply voltage and frequency.
- Use only the specified AC adapter with the printer.

- Check to make sure that the supply outlet from which the printer is powered has a sufficient capacity.
- Do not supply the printer from a power strip or current tap shared with other appliances.

- Do not plug the power cord into a supply outlet with dust or debris left on its plug.
- Do not use a deformed or damaged power cord.
- Do not move the printer while the printer power is on.

- **Neglecting to handle properly may result in printer failure, emission of smoke, fire, or electric shock.**
- **An overload may cause the power cord to overheat or fire or the circuit breaker to trip.**

- Do not allow anything to rest on the power cord. Do not place the printer where the power cord will be trampled on.
- Do not use or carry the printer with its power cord bent, twisted, or pulled.
- Do not attempt to modify the power cord unnecessarily.
- Do not lay the power cord in the neighbor of a heating device.

- **Neglecting these cautions may cause wires or insulation to break, which could result in leakage, electric shock, or printer failure. If a power cord sustains damage contact your CITIZEN SYSTEMS dealer.**
- Do not leave things around the supply outlet.

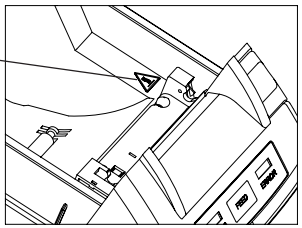
- Supply power to the printer form a convenient wall outlet, readily accessible in an emergency.
- **The printer may not be immediately shut down in an emergency.**
- Insert the power plug fully into the outlet.
- If the printer is not to be used for a long time, leave it disconnected from its supply outlet.

- Hold the plug and connector when plugging or unplugging the power cord or signal cable after turning off the printer and the appliance connected to it.

⚠ CAUTION

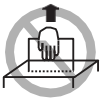
Caution label is attached on the position shown in the following figure. Carefully read the precautions in handling before using the printer.

THIS LABEL INDICATES THE RISK OF ANY INJURY DUE TO "HIGHTEMPERATURE" OF THE PRINT HEAD.



To prevent possible malfunction or failure observe the following.

- Avoid operating the printer without paper properly loaded.
- Avoid the use of paper not complying with specifications.
  - **May result in poor print quality.**
- Avoid using torn pieces of paper or spliced with plastic adhesive tapes.
- Avoid forcibly pulling already loaded paper by hand.
- Avoid wedging the paper in by the paper cover.
  - **May jam paper. To release, refer to "Removing Jammed Paper" in this manual.**
- Avoid using a sharp pointed device to operate panel keys.



Be sure to firmly insert the cable plug into its mating socket.

- **A cross connection may damage the printer's internal electronics or the host system's hardware.**
- **Neglecting this caution may result in malfunction or failure.**

To prevent injury and printer failures from worsening, observe the following:

- Do not touch the printing surface of the thermal head.
- Do not touch any of the moving parts (e.g., paper cutter, gears, active electrical parts) while the printer is working.
- In case of trouble do not attempt to repair the printer. Ask CITIZEN SYSTEMS service for repair.
- Be careful that the paper cover does not entrap your hands or fingers.
- Be careful with sharp edges on the printer. Don't allow them to injure you or damage property.
  - **May result in electric shock, burn, or injury.**
  - **If the printer emits smoke, an odd smell, or unusual noise while printing, immediately abort the current print session and unplug the printer from the supply outlet.**

ⓘ DAILY MAINTENANCE

Observe the following precautions for daily maintenance.

- When cleaning the printer, always turn it off and unplug it from the supply outlet.
- Use a soft, dry cloth for cleaning the surface of the printer case.
- For severe stains, use a soft cloth slightly dampened with water.
- Never use organic cleaning solvent such as alcohol, paint thinner, trichloroethylene, benzene, or ketone. Never use a chemically processed cleaning cloth.
- To remove paper chips, use a soft brush.
- When transporting the printer, remove the roll paper form its paper holder.

⚠ CAUTION

- **The thermal head is at a dangerously high temperature immediately after printing. Allow it to cool off before launching maintenance work.**

THE TABLE OF CONTENTS

1. GENERAL OUTLINE 14
- 1.1 Features 14
- 1.2 Model Classification 14
- 1.3 Basic Specifications 15

2. EXPLANATION OF PRINTER PARTS 16
- 2.1 Printer Appearance 16
- 2.2 Paper Cover Inside 18
- 2.3 Other Built-in Functions 18

3. PREPARATION 19
- 3.1 Connecting the AC Adapter and AC Power Cord 19
- 3.2 Connecting Interface Cables 20
- 3.3 Installing the Printer 21
- 3.4 Setting DIP Switch 22
- 3.5 Adjusting the Paper Near-end Sensor 23

4. MAINTENANCE AND TROUBLESHOOTING 24
- 4.1 Setting/Replacing Paper Rolls 24
- 4.2 Removing Jammed Paper 25
- 4.3 Cleaning the Print Head 25
- 4.4 Self-printing 26
- 4.5 Hexadecimal Dump Printing 26
- 4.6 Error Indication 27

5. OTHER 28
- 5.1 External Views and Dimensions 28
- 5.2 Printing Paper 29
- 5.3 Manual Setting of Memory Switch 30

1. GENERAL OUTLINE

The CT-S280II is a thermal line printer designed for use with a broad array of terminal equipment including, data, POS, and kitchen terminals. With extensive features, it can be used in a wide range of applications.

1.1 Features

- Compact design.
- Paper drop-in mechanism facilitating paper handling and head cleaning.
- Low-noise printing.
- Built-in input buffer.
- Barcode printing.
- Page mode. Now you can arrange pages freely.
- Registration of user-defined characters and logos into flash memory.
- A variety of functions selectable with memory switch.
- The printer allows horizontal or wall mounting installation.
- Various kinds of customization are permitted.

1.2 Model Classification

The printer models are classified by the following designation method:

CT-S 280II US U - WH
1 2 3 4

1: Model name
2: Interface
PA: Parallel IEEE 1284
US: USB + Serial RS-232C
3: Destination
E: Europe
U: USA
4: Case color
WH: Cool White
BK: Black

1.3 Basic Specifications

Item	Specifications
Model	CT-S280II
Print method	Line thermal dot print method
Print width	48 mm/384 dots
Dot density	8 (horizontal) × 8 (vertical) dots/mm (203 dpi)
Print speed	80 mm/s (Fastest, print density: Standard level)
Number of print columns	Font A: 32 columns; 12 × 24 dots horizontal and vertical Font B: 42 columns; 9 × 24 dots Font C: 48 columns; 8 × 16 dots
Character size	Font A: 1.50 × 3.00 mm Font B: 1.13 × 3.00 mm Font C: 1.00 × 2.00 mm
Character type	Alphanumeric, International, PC437/850/852/857/858/860/863/ 864/865/866/WPC1252/Katakana/Thai code 18
User-defined logo/character	User-defined characters and logos can be registered in flash memory.
Types of bar code	UPC-A/E, JAN (EAN) 13/8 columns, ITF, CODE 39, CODE 128, CODABAR, CODE 93
Line spacing	4.23 mm (1/6 inch) settable with command
Paper roll	Thermal paper roll: 58 mm ×Ø83 mm Paper thickness: 0.059 to 0.075 mm
Interfacing	Serial (RS-232C compliant), Parallel (IEEE 1284 compliant), USB
Input buffer	4k bytes/45 bytes
Supply voltage	DC 8.5 V ±5%
Power consumption	Standby: Approx. 2 W, Printing: Approx. 18 W (Approx. 26 W max.)
AC adapter	Rated input: AC 100 to 240 V, 50/60 Hz Rated output: DC 8.5 V, 2.5 A
Weight	Approx. 430 g
Outside dimensions	106 (W) × 170 (D) × 116.5 (H) mm
Operating temperature and humidity	5 to 45°C / 41 to 113°F, 10 to 85% RH (No condensation)
Storage temperature and humidity	-20 to 60°C / -4 to 140°F, 10 to 90% RH (No condensation)
Reliability	Print head life: Pulse resistance: 1×10^8 pulses (Printing rate 12.5%) Wear resistance: 50 km (At normal temperature/humidity with recommended paper used)
Safety standard *1	UL, cUL, FCC, IC, CE, UKCA *

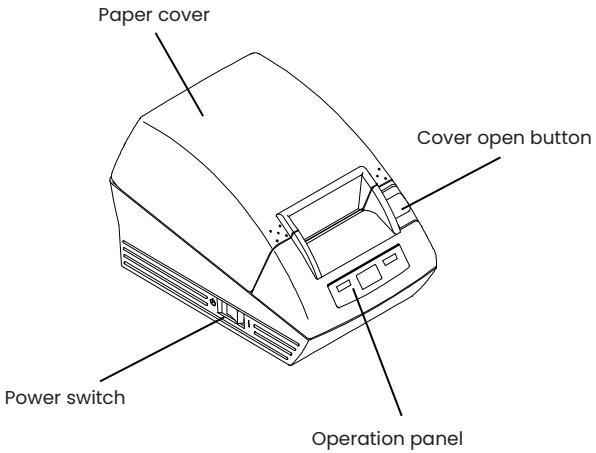
*: Please contact us for information on other regions and the latest status such as standardnumbers.

Note:

*1: Represents the safety standards acquired when CITIZEN SYSTEMS-made adapters (28AD series) are used.

2. EXPLANATION OF PRINTER PARTS

2.1 Printer Appearance

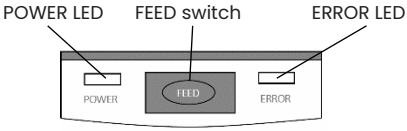


● Paper cover
Paper is located inside this cover.

● Cover open button
To refill or replace paper, open the paper cover by pushing this button.

● Power switch
This switch turns the printer power ON/OFF.

Operation Panel

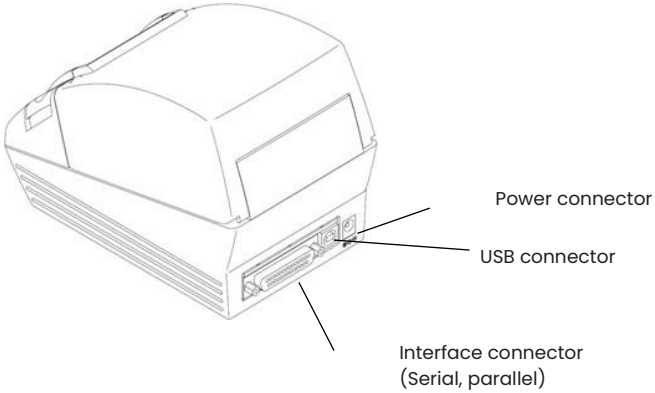


● POWER LED
Lights when the printer power is on and goes off when the printer power is off. May blink or light in a special mode or in case of a failure.

● FEED switch
Pressing this switch once causes a paper feed of one line. Pressing the switch continuously causes the paper to feed continuously.

● ERROR LED
Lights or blinks when paper is empty or in case of a failure.
The interval length of blinking shows the type of error.

Rear Connectors

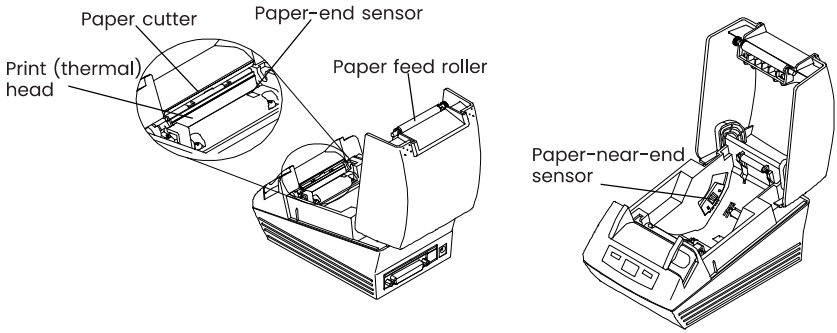


● Power connector
Connects to the cable from AC adapter.

● Interface connector (Serial, parallel)
Connects to the interface cable.

● USB connector

2.2 Paper Cover Inside



- Paper cutter
  Used to cut paper at the time of paper setting or at the end of printing.
- Print (thermal) head
  Prints characters and/or graphic data on thermal paper.
- Paper-end sensor
  Stops printing when this sensor detects paper end.
- Paper feed roller
  Feeds paper as part of print mechanism.
- Paper-near-end sensor
  Detects paper low state. Changes the setting in accordance with the inner diameter of paper roll or setting status.

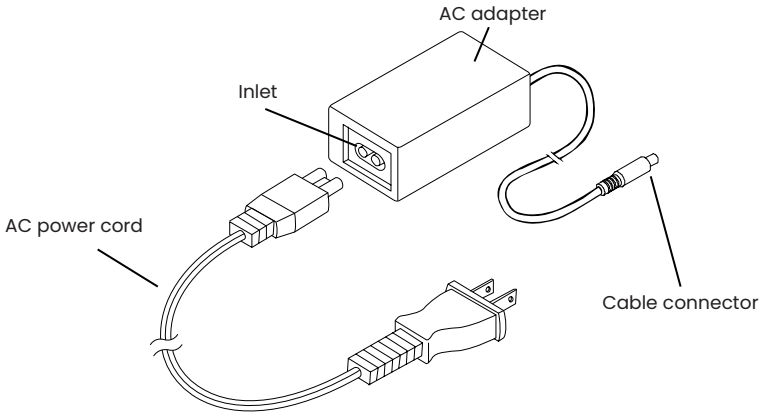
2.3 Other Built-in Functions

- User memory
  Allows registration of user-defined characters and logo data on the nonvolatile memory. Data registered remains even after the printer power is off.
- Memory switch
  Setting of various kinds of functions can be registered on the nonvolatile memory. The setting registered is valid even if the printer power is turned off. In addition, memory switch setting can be changed by manual operation.

3. PREPARATION

3.1 Connecting the AC Adapter and AC Power Cord

1. **Turn off the printer power.**
2. **Plug in the cable connector of the AC adapter to the power connector at the rear of the printer.**
3. **Connect the AC power cord to the inlet of the printer, and insert the AC power-cord plug into a suitable wall outlet.**

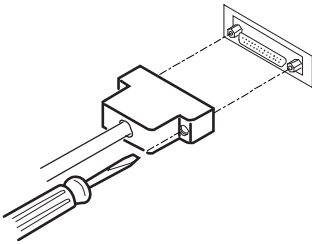


⚠ CAUTION!

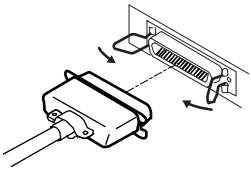
- Use only the specified AC adapter with the printer.
- When disconnecting a cable, do not pull out by the cable. Always hold the plug.
- Always keep the AC power supply away from other noise generating equipment.
- Do not pull the power cord. Otherwise fire, electric shock, or power disconnection may result.
- If lightning is approaching, unplug the AC power cord from the wall outlet. Otherwise fire or electric shock may result.
- Keep the power cord away from heat generating appliances. Otherwise the shield of power cord may be fused resulting in a fire or electric shock.
- If the printer is not to be used for a long time, leave it disconnected from its supply outlet.
- Lay the cable not to be caught by the leg or the like.

3.2 Connecting Interface Cables

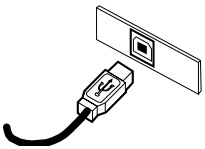
Turn off the printer and unplug the power connector. Then follow the procedure for interface cable connection.
Orient the interface cable terminal correctly and insert it into the interface connector.



Serial Interface



Parallel Interface



USB Interface

⚠ CAUTION!

- When disconnecting the cable, always hold the connector.
- Lay the cable not to be caught by the leg or the like.
- Do not connect multiple interfaces at the same time.

For serial interface cable, use the one with the following connection.

25-pin - 25-pin cable

PC

Signal	Pin
FG	1
TXD	2
RXD	3
CTS	5
DSR	6
SG	7
DTR	20

Printer

Pin	Signal
1	FG
2	TXD
3	RXD
4	RTS
6	DSR
7	SG
20	DTR

9-pin - 25-pin cable

PC

Signal	Pin
RXD	2
TXD	3
DTR	4
SG	5
DSR	6
CTS	8

Printer

Pin	Signal
2	TXD
3	RXD
4	RTS
6	DSR
7	SG
20	DTR

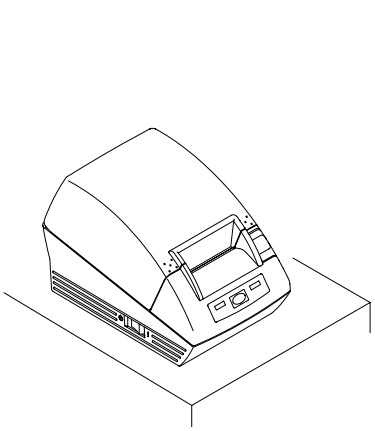
3.3 Installing the Printer

The printer can be installed horizontally or on the wall.

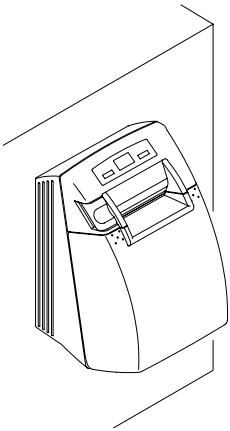
At the time of shipment, the printer is set for horizontal installation. To install the printer on the wall, the following adjustments are required.

⚠ CAUTION!

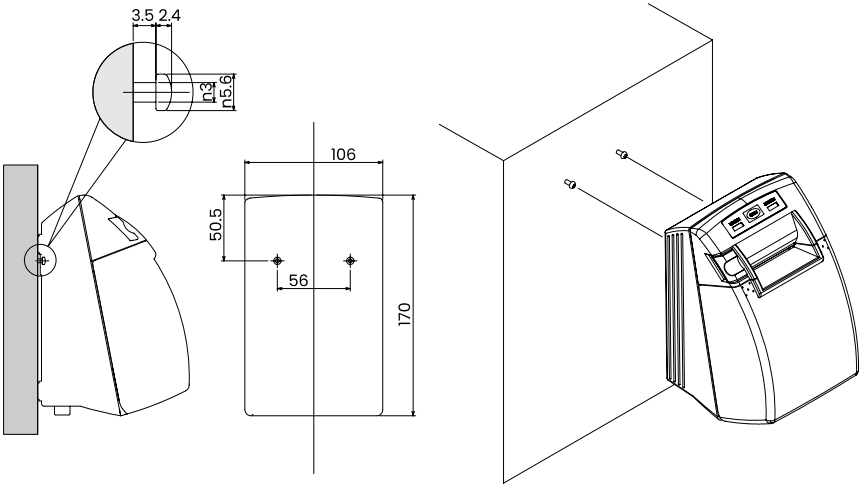
- No screw for wall mounting is provided. Check the structure and strength of the wall (plaster board or stronger one) and prepare two appropriate screws (round-head wood screws of 3.1ø, 16 mm or more). And fix the printer by tightening the screws in accordance with the specified dimensions.



Horizontal position



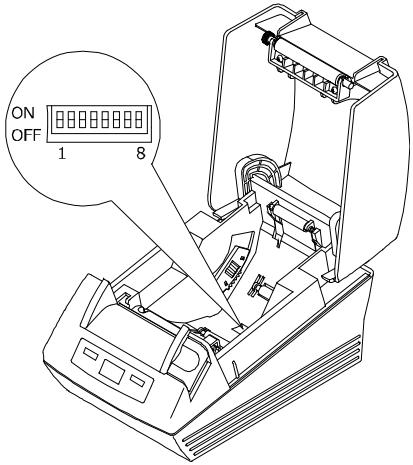
Wall mounting



Hooks for wall mounting

3.4 Setting DIP Switch

DIP switch is provided only for serial interface specification.
The DIP switch is located at the bottom of the paper holder. To set the DIP switch open the paper cover and remove the paper.



Switch No.	Function	ON	OFF	Initial Settings
1	Communication condition setting method	DIP switch setting	Internal memory setting	*1
2	Hand shake	XON/XOFF	DTR/DSR	OFF
3	Bit length	7 bits	8 bits	OFF
4	Parity check	With parity	None	OFF
5	Parity selection	Even parity	Odd parity	OFF
6	Baud rate selection	See Table below.		OFF
7				ON
8	Reserved	-	Fixed	OFF

*1 CT-S280II ** E ** : ON
CT-S280II ** U ** : OFF

Selecting baud rate

Baud Rate (bps)	Switch No.	
	6	7
2400	OFF	OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON

1200,38400,57600 and 115200bps can also be selected by command,etc.

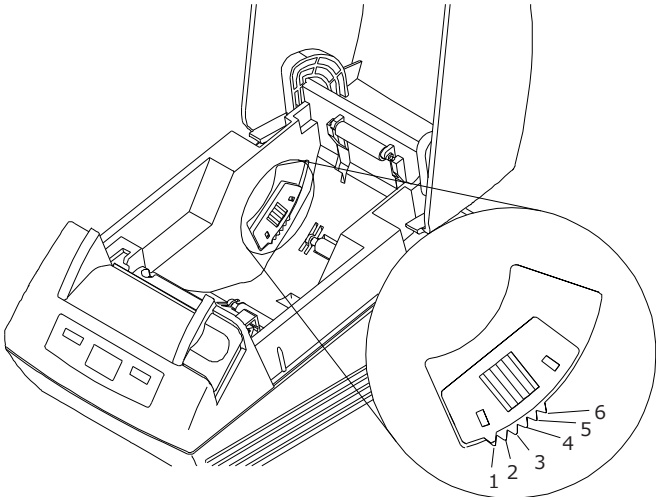
3.5 Adjusting the Paper Near-end Sensor

1. **Push in the paper near-end sensor unit.**
2. **Move the paper near-end sensor unit to the right and left while pushing it. The position to be set varies in accordance with the setting of the printer, horizontal or wall mounting, or the diameter of the paper roll as shown in the following figure.**

Sensor Position	Installation Method	Paper Roll External Diameter (mm)
1	Horizontal	Ø22
2		Ø24
3		Ø27
4	Wall mounting	Ø27
5		Ø24
6		Ø22

⚠ CAUTION!

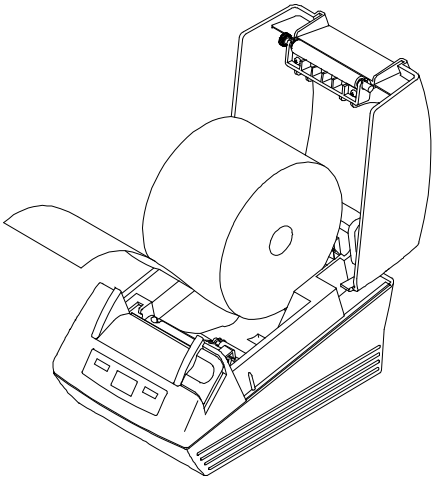
- Paper remainder (outside diameter of roll) differs by the type of paper roll used.
- The external diameter of the paper roll is only for reference.
- Recommended outer diameter of paper roll core is ø18. If, however, using a paper roll with a diameter of Ø22 is unavoidable, adjustments to “1” for horizontal positioning and “6” for wall mounting cannot be used.



4. MAINTENANCE AND TROUBLESHOOTING

4.1 Setting/Replacing Paper Rolls

1. Pull the cover open button fully toward you.
2. Open the paper cover.
3. Insert a paper roll with is print area facing down as shown in the figure and pull out the paper end straightforward by several cm out of the printer.
4. Close the paper cover until a click can be heard.



⚠ WARNING

- When opening the paper cover, take care not to touch the print head or cutter blade. Otherwise, burning or injury of hand may result.

⚠ CAUTION!

- Always use the specified types of paper roll.
- Confirm that the paper roll is set correctly.
- When the paper is skewed and not extended straightforward from under the cover, open the cover and adjust the paper correctly.
- When closing the cover, press on the center part of the cover to close it firmly.
- When setting paper, pay attention not to let your fingers get injured by the edge of paper.

4.2 Removing Jammed Paper

1. **Turn the printer power off.**
2. **Open the paper cover.**
3. **Remove the jammed paper including any paper chips remaining. (Also take out the paper roll from the holder.)**
4. **Turn on the printer and set paper roll to the holder.**

⚠ CAUTION!

- The print head is hot immediately after printing. Do not touch it with your hand. Do not touch the heating element of the head with a bare hand or metal object either.
- When setting paper, pay attention not to let your fingers get injured by the edge of paper.

4.3 Cleaning the Print Head

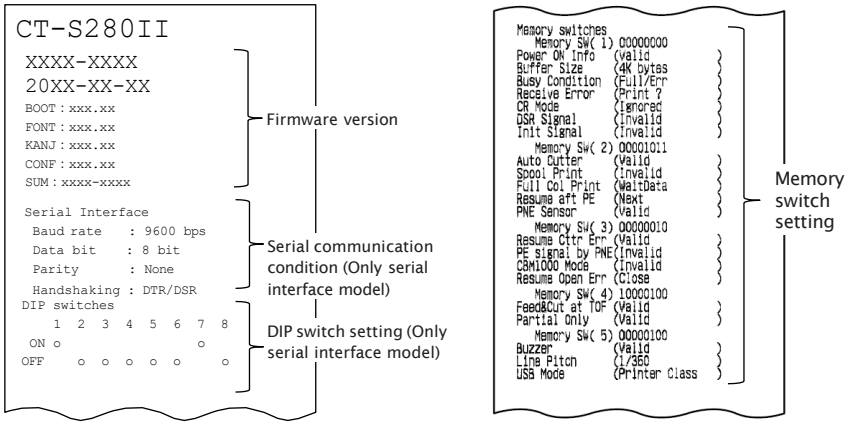
1. **Turn the printer power off.**
2. **Open the paper cover.**
3. **Wait several minutes. Wipe off any debris on the heating element of the head using a cotton swab soaked in ethyl alcohol.**

⚠ CAUTION

- The print head is hot immediately after printing. Do not touch it with your hand. Do not touch the heating element of the head with a bare hand or metal object either.

4.4 Self-printing

Insert paper into the printer. With the FEED switch pressed and held, turn the printer power on, keep the FEED switch held for about 1 second, and then release the FEED switch. The printer prints model name, version, DIP switch setting, memory switch setting, and built-in fonts.



4.5 Hexadecimal Dump Printing

This function is to print all received data in hexadecimal numbers. If printing cannot occur correctly, this function allows checking whether or not the printer is receiving data correctly.
Set paper to the printer and keep the paper cover open. With the FEED switch pressed and held, turn the printer power on and then close the paper cover. The printer prints “HEX dump print mode” followed by the received data printed in hexadecimal numbers and some characters.

⚠ CAUTION!

- The printer prints “.” if there is no characters corresponding to data.
- During hexadecimal dump, functions except some command will be disabled.
- If print data does not cover a line, press the FEED switch to print the line.

When you press the FEED switch three times consecutively, or you turn the printer power off, or the printer receives a reset signal from the interface, the hexadecimal dump printing is terminated.

Print example

HEX DUMP PRINT MODE

```
1B 21 00 1B 20 04 41 42 43 44 .!.. .ABCD
45 46 47 48 49 4A 4B 4C 4D 4E EFGHIJKLMN
4F 50 0D 0A 31 32 33 0D 0A     OP..123..
```

4.6 Error Indication

● Paper end

Paper empty is detected in two steps: paper near-end and paper end. It causes the ERROR LED to light. If paper end is detected, refill the paper. If the paper cover is open, a paper-end is detected.

● Paper cover open

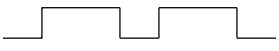
When the paper cover is opened, Paper cover open is detected and the ERROR LED goes on.

During printing, do not open the paper cover. If you open the paper cover accidentally, the ERROR LED blinks. Confirm the paper and close the cover. Printing resumes automatically.

● Thermal head overheat

When you print dense characters or dark image, the head temperature rises. If the head temperature exceeds a specified level, the printer stops printing operation and waits till the head temperature is lowered. During waiting, the ERROR LED blinks. When the head temperature is lowered, printing resumes automatically.

The status of LED, lighting or blinking, including other errors is shown below.

Status	POWER LED	ERROR LED
Paper-end	Lights	Lights
Paper near-end	Lights	Lights
Cover open error *1	Lights	
Cover open error	Lights	Lights
Head overheat error	Lights	
Memory check error		OFF
Low voltage error	Lights	
High voltage error	Lights	
Macro execution wait *2	Lights	

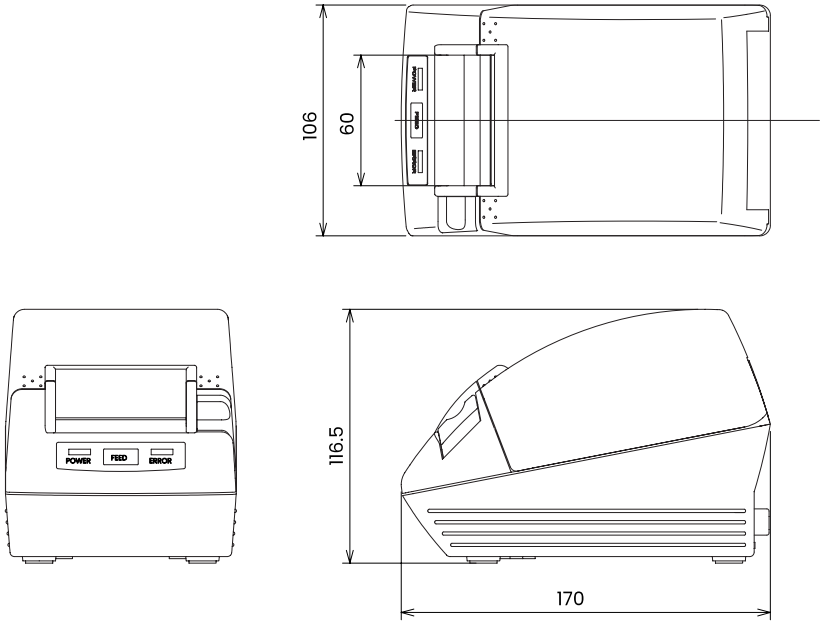
*1: When the printer is printing.

*2: The ERROR LED may blink even in the execution of macro function.

5. OTHER

5.1 External Views and Dimensions

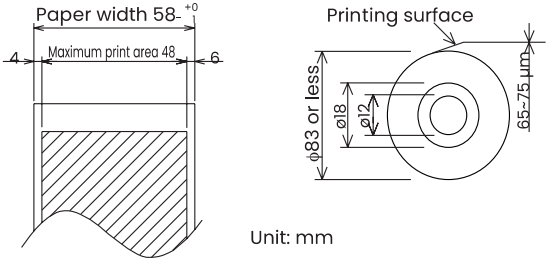
(Unit: millimeter)



5.2 Printing Paper

Use the print paper shown in the following table or the paper with equivalent quality.

Paper Type	Product Name
Recommended thermal paper roll	TF50KS-E2D from Nippon Paper PD150R, PD160R, PD160R-63 from Ohji Paper P220AG, HP220A, HP220AB-1, F230AA from Mitsubishi Paper



Unit: mm

⚠ CAUTION

Use the paper with the start of winding to roll core is as shown below.
- No fold line is present and paper is along the inner diameter.
- No turnup is present.
- No pasting to core is present.
- Outer winding (print side out) is used.

5.3 Manual Setting of Memory Switch

Memory switches can be set manually or by a command. For manual setting, refer to the next page.
The function of each memory switch is shown in the following table.
(The white-on-black characters are factory setting.)

Switch No.	Setting	0 (OFF)	1 (ON)
Memory SW1-1	Power ON Info	Send	Not send
Memory SW1-2	Buffer Size	4kbytes	45 bytes
Memory SW1-3	Busy Condition	Full/Err	Full
Memory SW1-4	Receive Error	Print ?	No Print
Memory SW1-5	CR mode	IgNored	LF
Memory SW1-6	Reserved	Fixed	-
Memory SW1-7	DSR Signal	Invalid	Valid
Memory SW1-8	Reserved	Fixed	-
Memory SW2-1	Reserved	-	Fixed
Memory SW2-2	Reserved	Fixed	-
Memory SW2-3	Spool Print	Invalid	Valid
Memory SW2-4	Full Col Print	LineFeed	WaitData
Memory SW2-5	Resume aft PE	Next	Top
Memory SW2-6	Reserved	-	Fixed
Memory SW2-7	Reserved	Fixed	-
Memory SW2-8	PNE Sensor	Valid	Invalid
Memory SW3-1	Reserved	Fixed	-
Memory SW3-2	Reserved	Fixed	-
Memory SW3-3	Parallel 31 Pin	Valid	Invalid
Memory SW3-4	Reserved	Fixed	-
Memory SW3-5	Reserved	Fixed	-
Memory SW3-6	Reserved	Fixed	-
Memory SW3-7	CBM-270 mode	Invalid	Valid
Memory SW3-8	Resum Open Err	Close	Command
Memory SW4-1	Reserved	Fixed	-
Memory SW4-2	Reserved	Fixed	-
Memory SW4-3	Reserved	Fixed	-
Memory SW4-4	Reserved	Fixed	-
Memory SW4-5	Reserved	Fixed	-
Memory SW4-6	Reserved	Fixed	-
Memory SW4-7	DC3 Function	2 Color	B/W Reverse
Memory SW4-8	Reserved	Fixed	-

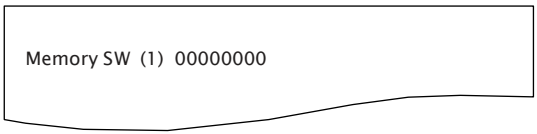
Switch No.	Setting	Default	Set Values
Memory SW7-1	Baud Rate	9600 bps	1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps
Memory SW7-2	Data Length	8bits	7bits, 8bits
Memory SW7-3	Stop Bit	1bit	1bit, 2bits
Memory SW7-4	Parity	NONE	NONE, EVEN, ODD
Memory SW7-5	Flow Control	DTR/DSR	DTR/DSR, XON/XOFF
Memory SW7-6	Reserved	-	-
Memory SW7-7	Reserved	-	-
Memory SW8-1	Reserved	-	-
Memory SW8-2	Paper Type	1 Color Normal	1 Color Normal, 2 Color Normal
Memory SW9-1	Code Page	PC437	PC437/Katakana/PC850,858/PC860/PC863/ PC865/PC852/PC866/PC857/WPC1252/ Space page/PC864/Thai Code 18
Memory SW9-2	Int' char Set	U.S.A	U.S.A, France, Germany, England, Denmark, Sweden, Italy, Spain, Japan, Norway, Denmark 2, Spain 2, Latin America, Korea
Memory SW9-3	Kanji	OFF	ON, OFF
Memory SW9-4	JIS/Shift JIS	JIS	JIS, Shift JIS
Memory SW10-1	Print Density	100%	70%, 75%, 80%, 85%, 90%, 95%, 100%, 105%, 110%, 115%, 120%, 125%, 130%, 135%, 140%
Memory SW10-2	Print Speed	Level 9	Level 1, Level 2, Level 3, Level 4, Level 5, Level 6, Level 7, Level 8, Level 9
Memory SW10-3	Reserved	-	-
Memory SW10-4	Reserved	-	-

Manual Setting of Memory Switch (Memory SW)

The memory switch can be selected, changed, or written by the combination of three actions: pressing the FEED switch, pressing and holding the FEED switch, and opening or closing the paper cover.

1. Entering memory switch setting mode.

   Set paper to the printer and keep the printer cover open. With the FEED switch pressed and held, turn the printer power on, and then press the FEED switch twice. Close the cover. If the current settings of the memory switch etc. are printed, the printer is now in the memory switch setting mode.



0: OFF state
1: ON state

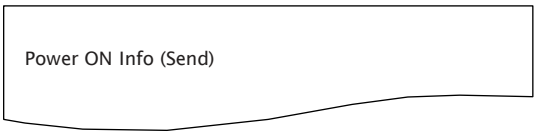
(No indication for 0/1 with memory switch ranging from 7 to 10.)

2. Selecting memory switch

   When the FEED switch is pressed short (within 2 seconds), printing occurs in the order of “Memory SW 1” -> “Memory SW 2” -> “Memory SW 3” -> .....“Memory SW10”-> Save To Memory -> “Write/Factory Setting” -> “Memory SW 1” ->..... repeatedly. When the memory switch you want to change is reached, press and hold the FEED switch (for more than 2 seconds).

3. Selecting each switch item

   There are 1-14 setting items for each switch. Press and hold the FEED switch for long, the printer goes to the next item and prints the current setting of the item. Repeat pressing and holding till the item you want to change setting is reached.



Items with ERROR LED lit are those values selected currently.

4. Changing the setting

   When the item you want to change is reached, press the FEED switch short. The changed set value is printed. (To return to the previous setting press the FEED switch short). When you press the FEED switch long, the set value is accepted and then the printer goes to the next setting item.

5. Returning to the memory switch select mode

   When the setting of the desired content is completed, open the paper cover and then close the paper cover. This allows the printer to print the setting of the changed memory switch.

6. Saving the setting and exiting the memory switch setting mode

   Press the FEED switch short to move to "Write/Factory Setting". Then press and hold the FEED switch. The printer prints the content of new setting and exits the memory switch setting mode to return to the normal standby state.
   * Unless saving the setting is executed, the changed setting cannot be enabled.

7. Initializing the memory switch

   When you want to return the memory switch setting to the initial state, go to "Write/Factory Setting" in the above procedure. Here, open the paper cover and press and hold the FEED switch till buzzer sounds. This allows the printer to return to the initial state.
   * All the memory switches settings are returned to the factory set values.