

AD-8123

INSTRUCTION MANUAL

THERMAL PRINTER

AND
A&D Company, Limited

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Compliance with FCC Rules

Please note that this equipment generates, uses and can radiate radio frequency energy. This equipment has been tested and has been found to comply with the limits of a Class A computing device pursuant to Subpart J of Part 15 of FCC rules. These rules are designed to provide reasonable protection against interference when equipment is operated in a commercial environment. If this equipment is operated in a residential area, it might cause some interference and under these circumstances the user would be required to take, at his own expense, whatever measures are necessary to eliminate the interference.

(FCC = Federal Communications Commission in the USA)

INTRODUCTION

This instruction manual applies to the AD-8123 Thermal Printer.

Read the safety precautions on pages 2 through 6 carefully before using the printer.



This manual consists of the following sections.

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SAFETY PRECAUTIONS

For the proper use of the printer and preventing damage to the printer, the following symbols are used.

Follow the instructions marked with the symbols.

 WARNING	Failure to follow the guidelines marked with this symbol could result in severe personal injury or death.
 CAUTION	Failure to follow the guidelines marked with this symbol could result in minor personal injury or product and/or peripheral damage.



WARNING

Failure to heed these warnings could cause a fire, electrical shock, personal injury, damage to the instrument or other serious accidents.

- ◆ Do not use an AC adapter or battery pack other than those supplied with the printer.
- ◆ Do not bend the power cable forcibly, or place heavy objects on the cable. Doing so could damage the cable.
- ◆ Do not throw the battery pack into fire or apply heat. Doing so could cause the battery pack to explode.
- ◆ Do not put the battery into water or use it in a place where it could get wet.
- ◆ Do not disassemble the battery pack.
- ◆ Do not short the battery pack terminals.
- ◆ Do not expose the battery pack to direct sunlight or high temperature.
- ◆ If any fluid from the battery pack gets in your eyes, immediately flush with water and seek medical treatment.



CAUTION

Failure to heed these cautions could cause a fire, electrical shock, personal injury, damage to the instrument or other serious accidents.

- ◆ Do not allow metal or liquids to come in contact with the internal parts or the paper slot of the printer.
- ◆ Do not disassemble or remodel the printer.
- ◆ Do not attempt to repair the printer yourself.
- ◆ Do not use the printer in a place of extreme humidity or any place where liquids could splash or get into the printer.
- ◆ Be sure to hold the connector part of the power cable or the interface cable when disconnecting it. Pulling on the cable portion may cause it to fray or break.
- ◆ Turn the power off, disconnect the AC adapter from the electrical outlet and remove the battery pack in any of the following cases:
 - The printer does not recover from an error.
 - Smoke, strange noise or smells come out of the printer.
 - A piece of metal or liquids come in contact with the internal parts or the paper slot of the printer.
- ◆ Do not use the printer in any manner other than intended.

OPERATING PRECAUTIONS

Follow the precautions below to maintain the full performance of the printer.

Using the Printer

- ◆ Be careful not to drop or bump the printer.
- ◆ Do not install the printer in a location where it may be exposed to direct sunlight, magnetic fields or corrosive gases. The optimum ambient conditions are as follows:
 - Ambient temperature: 32 to 104°F (0 to 40°C)
 - Relative humidity: 30 to 80%RH (non-condensing)
- ◆ Do not connect the AC adapter to the same outlet as devices that generate electromagnetic fields.
- ◆ Do not turn the power off while printing.
- ◆ Turn the power off when not in use.
- ◆ When the printer is not to be used for extended periods of time, remove the battery pack from the printer. Disconnect the AC adapter from the electrical outlet.
- ◆ Clean the printer using a soft, dry, lint-free cloth. Do not use alcohol or other solvent.
- ◆ Before use, always clean the AC adapter terminals using a soft, dry, lint-free cloth. If the terminals are dirty, proper contact may not be obtained.
- ◆ The AC adapter and the battery pack become warm when in use. This is normal and is not a malfunction.
- ◆ The length of time the printer can be used may be shortened when using a battery pack at low temperature.

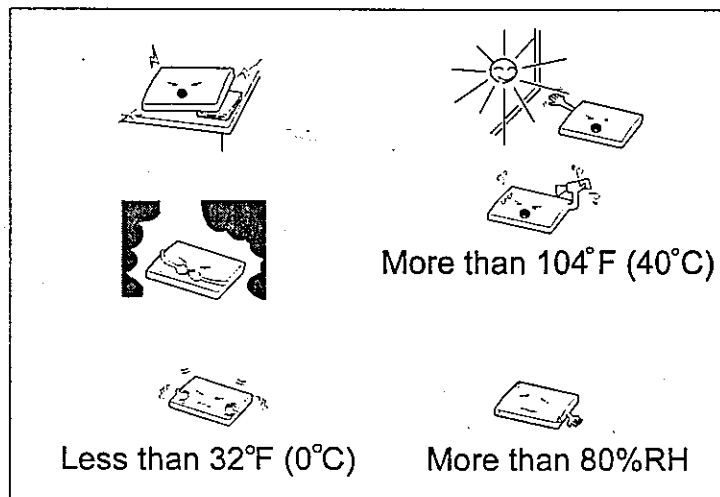
Handling the Thermal Paper

- ◆ Store the thermal paper in a cool, dry, and dark place.
- ◆ Do not rub the paper with hard objects.
- ◆ Do not leave the paper near organic solvents.
- ◆ Do not allow plastic films, erasers, or adhesive tape to touch the paper for long periods.
- ◆ Do not stack copies made by the Diazo or wet process on top of the thermal paper.
- ◆ Do not use chemical glue.
- ◆ Always use the specified thermal paper: AX-PP123-S

Installing the Printer

- ◆ Install the printer on a flat, stable surface.
- ◆ Do not install the printer in the following places:
 - Where there is strong vibration
 - Where there is oily vapor or iron particles
 - Where it is too hot or cold
 - Where it is very humid

Don'ts



NOTATIONS USED IN THIS MANUAL

The following two types of notations are used throughout this manual to denote items of caution and items to remember:

NOTE

- ◆ This box contains items that when not followed may lead to a malfunction or to a deterioration of performance.

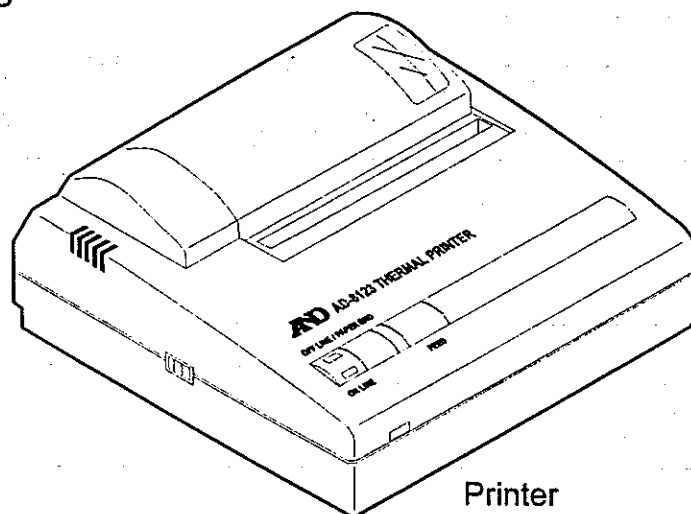
HINT

- This box contains helpful hints to remember when using the printer.

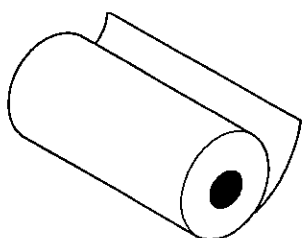
1. PREPARATION

1-1 Unpacking

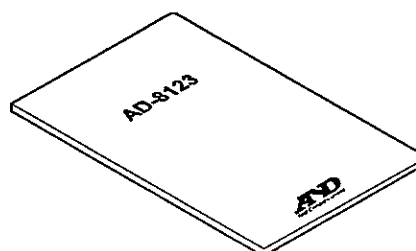
Once you have opened the carton, make sure it contains the printer and all accessories. The standard configuration contains the following items:



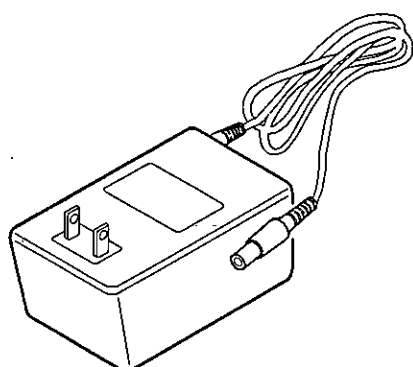
Printer



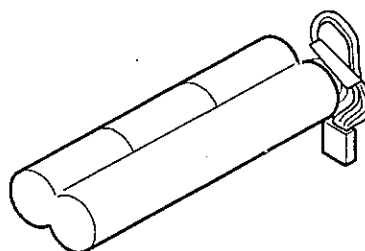
Thermal paper (28 m)



Instruction manual



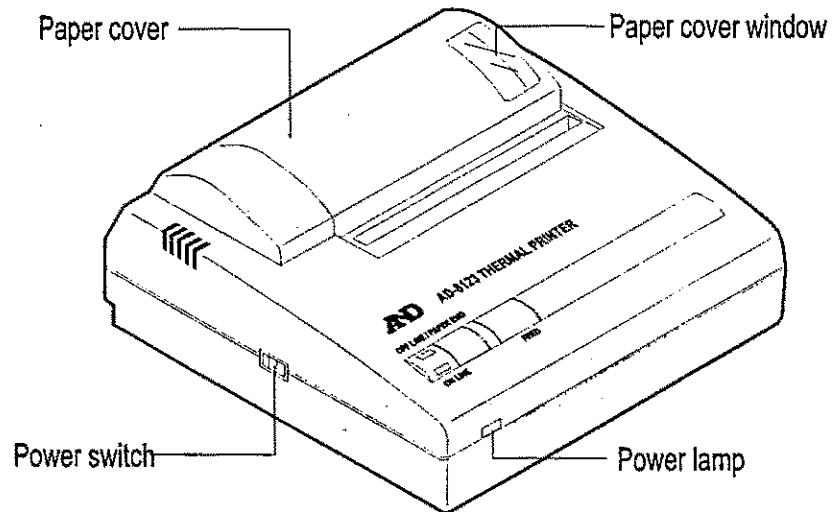
AC adapter
AD-8123-120 (120 V) or AD-8123-230 (230 V)
is supplied.
The illustration shows AD-8123-120, a 120-V adapter.



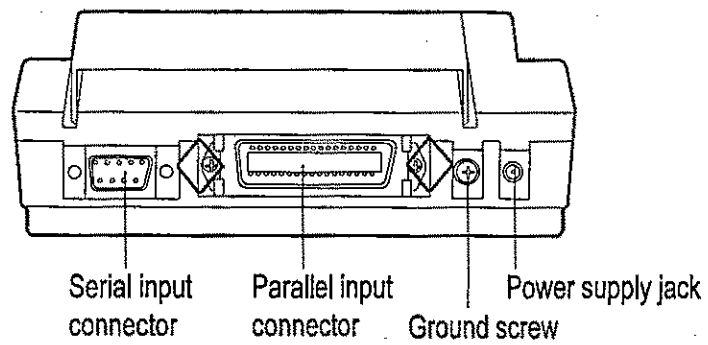
Battery pack (installed in the printer)

1-2 Part Names

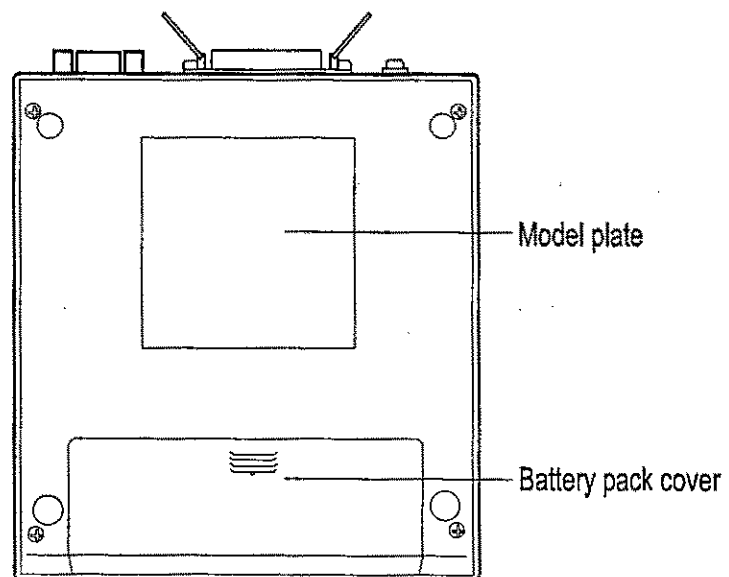
Front



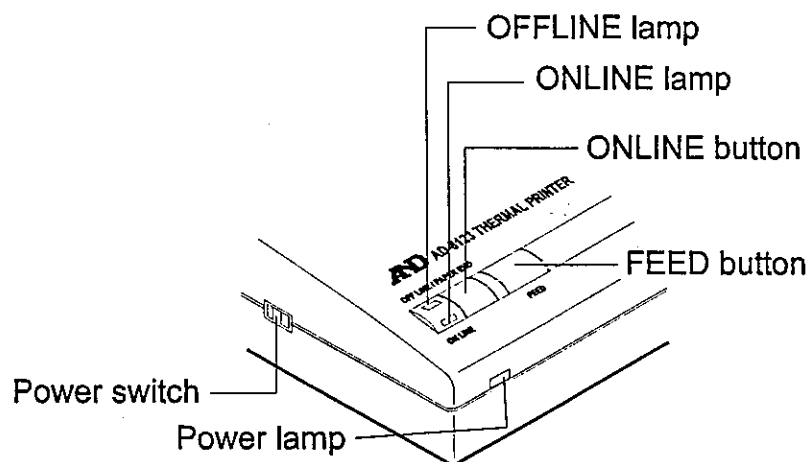
Rear



Bottom



1-3 Operation Panel



Power switch	Slide the power switch to turn the power on (ONLINE) or off.
Power lamp	Illuminates to indicate the power is on. Flashes once every second while the battery pack is being charged. Flashes once every 1/2 second when the battery is low.
FEED button	Feeds paper when pressed in the OFFLINE mode. (See the HINT on the next page.)
ONLINE button	Pressed to toggle between OFFLINE and ONLINE.
ONLINE lamp	Illuminates to indicate that the printer is ONLINE. Flashes if there is data left in the buffer memory when the printer is OFFLINE.
OFFLINE lamp	Illuminated to indicate that the printer is OFFLINE. Flashes if the paper is not set or has run out. When an error occurs, both the ONLINE and OFFLINE lamps illuminate.

NOTE

- ◆ Be sure the thermal head is in the home position (at the far left) before turning off the power switch. If left away from the home position for a long period, the print quality might deteriorate.

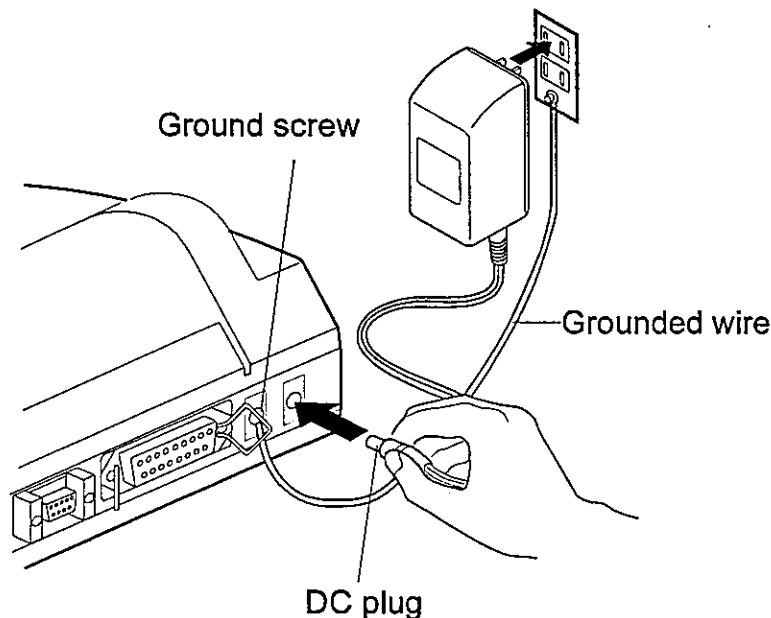
HINT

- **ONLINE:** Set the printer ONLINE to print data from the measuring instrument.
- **OFFLINE:** Set the printer OFFLINE to feed paper with the FEED button or to stop printing. (Print data and commands can not be input in the OFFLINE mode.)

2. OPERATION

2-1 Connecting the AC Adapter

- ① Turn off the power.
- ② Plug the AC adapter's DC plug on into the power supply jack on the printer.
- ③ Plug the AC adapter into an electrical outlet.
- ④ Turn on the power.



The illustration above uses the 120-V adapter.

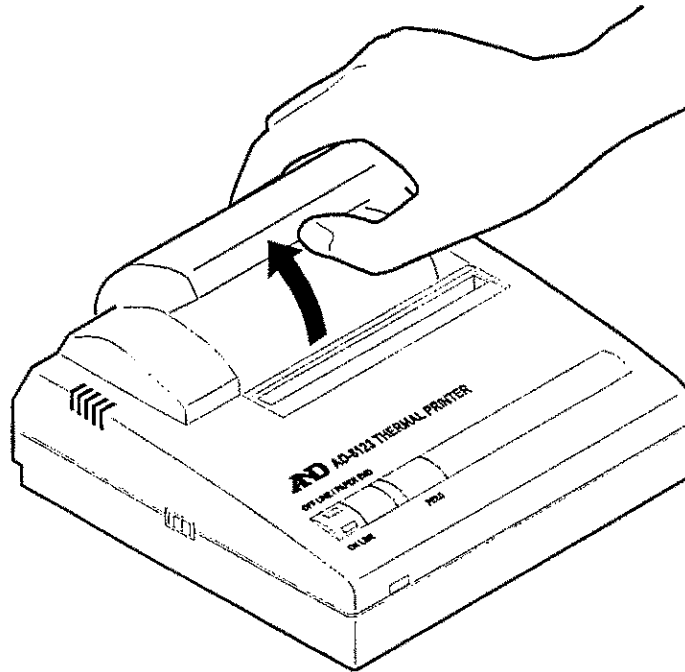
NOTE

- ◆ Use the AC adapter supplied with the printer.
- ◆ Connect a grounded wire to the ground screw on the printer.
- ◆ Do not touch the pins of the DC plug.
- ◆ To remove the AC adapter, turn off the power switch first, then unplug the AC adapter and the DC plug.

2-2 Loading the Paper

Opening and closing the paper cover

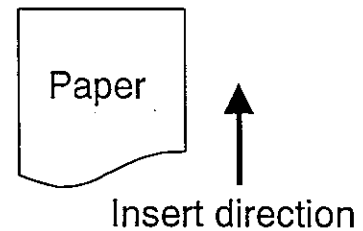
- ① Gently push up on the front of the paper cover with your thumb and rotate it toward the back of the printer.



- ② Close the paper cover and push it down to lock it into place.

Loading the paper

- ① Turn on the power.
- ② Cut the tip of the paper straight across. Unused paper can be inserted as is. (See the figure to the right.)
- ③ Open the paper cover.
- ④ Push the tip of the paper into the inlet at the bottom of the paper holder, until auto-loader catches it and feeds about 10 cm of it through the paper cutter.



NOTE

- ◆ Load the paper in an area protected from direct sunlight.

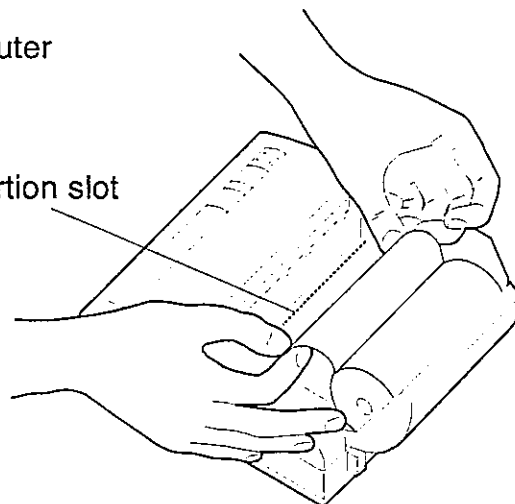
HINT

- Place the paper on the paper cover to make feeding easier.

The printing surface is the outer side of the thermal paper.

Insertion slot

- ⑤ Keep pressing the FEED button until the paper feeds straight and smoothly.



HINT

- When the paper is set correctly, the OFFLINE lamp stops flashing and stays on to indicate that the printer is still in the OFFLINE mode.
- When the paper is about to run out, red lines appear on both sides of the paper.

2-3 Setting the DIP Switches

The startup settings and input method can be set by the DIP switches (DIP SW). Refer to Section 2-4 "DIP SW Settings" for details on the different settings.

- ① Turn the power off.
- ② While holding down the ONLINE button, turn the power on. A list of the current settings starts to print out. Release the ONLINE button.
- ③ The printout of the current settings is followed by the prompt: "Continue? :Push 'On-line SW' ", "Write? :Push 'Paper feed SW' ".
To change the DIP SW settings, press the ONLINE button, and proceed to step 4.
To leave the DIP SW settings unchanged, press the FEED button, and proceed to step 5.
- ④ 'Dip SW-1' is printed, prompting the input of new settings for switch numbers 1 to 8 of DIP SW1.

NOTE

- ◆ Input either "ON" or "OFF" to each setting for switch numbers 1 to 8 in order. DIP SW setting mode can not be canceled once it is initiated.

"ON" can be set by pressing the ONLINE button once and "OFF" by pressing the FEED button once.

The setting is printed out after the ONLINE or FEED button is pressed to allow to confirm the new setting.

As soon as switch number 8 is set, the printer once again prompts with "Continue?" or "Write?", and step 3 is repeated for DIP SW2 and 3.

HINT

- The OFFLINE lamp flashes once when the ONLINE button is pressed and the ONLINE lamp when the FEED button is pressed to allow confirmation of the button operation.

- ⑤ After the FEED button is pressed, the ONLINE and OFFLINE lamps alternately flash and the new settings are written to memory. When the printer finishes writing everything to memory, "DIP SW setting complete!" is printed out and the printer returns to the ONLINE mode.
- ⑥ As soon as switch number 8 of DIP SW3 is set, the printer writes the settings to memory regardless of which button (ONLINE or FEED) is pressed.

NOTE

- ◆ Do not turn the printer off while it is writing the new settings to memory. Wait until "DIP SW setting complete!" is printed. Then turn the power off.

2-4 DIP SW Settings

(1) Software DIP SW1

The shaded characters indicate the default settings.

Switch No.	Function	ON	OFF
1	Input method	Parallel	Serial
2	Printing speed	High	Low
3	Auto loading	ON	OFF
4	CR function	Carriage return and line feed	Carriage return
5	DIP SW setting command	Enable	Disable
6 to 8	Printing density	See the table below	

Switch No.	6	7	8
Print Density (%)			
72	ON	ON	ON
79	ON	ON	OFF
86	ON	OFF	ON
93	ON	OFF	OFF
100	OFF	ON	ON
107	OFF	ON	OFF
114	OFF	OFF	ON
121	OFF	OFF	OFF

HINT

- Set switch number 5 to "ON" when you want to enable DIP SW setting via command.

(2) Software DIP SW2

Switch No.	Function	ON	OFF
1	Print mode	Normal printing (40 columns)	Condensed printing (80 columns)
2	User-defined characters backup	ON	OFF
3	Character type	Ordinary characters	Special characters
4	Zero font	0	Ø
5 to 8	International character set	See the table below	

Switch No. Character	5	6	7	8
Japanese	ON	ON	ON	ON
American	ON	ON	ON	OFF
German	ON	ON	OFF	ON
English	ON	ON	OFF	OFF
French	ON	OFF	ON	ON
Spanish 1	ON	OFF	ON	OFF
Italian	ON	OFF	OFF	ON
Swedish	ON	OFF	OFF	OFF
Danish 1	OFF	ON	ON	ON
Danish 2	OFF	ON	ON	OFF
Norwegian	OFF	ON	OFF	ON
Spanish 2	OFF	ON	OFF	OFF
Latin American	OFF	OFF	ON	ON

NOTE

- ◆ Do not set switches 5 to 8 to a setting other than that shown in the table.

(3) Software DIP SW3

Switch No.	Function	ON	OFF
1	Data bit length	8 bits	7 bits
2	Parity permission	Without	With
3	Parity condition	Odd	Even
4	Flow control	H/W BUSY	XON/XOFF
5 to 8	Baud rate	See the table below.	

Switch No. Baud rate	5	6	7	8
75 bps	ON	ON	ON	ON
110 bps	ON	ON	ON	OFF
150 bps	ON	ON	OFF	ON
300 bps	ON	ON	OFF	OFF
600 bps	ON	OFF	ON	ON
1200 bps	ON	OFF	ON	OFF
2400 bps	ON	OFF	OFF	ON
4800 bps	ON	OFF	OFF	OFF
9600 bps	OFF	ON	ON	ON
19200 bps	OFF	ON	ON	OFF
75 bps	OFF	ON	OFF	ON
75 bps	OFF	ON	OFF	OFF
75 bps	OFF	OFF	ON	ON
75 bps	OFF	OFF	ON	OFF
75 bps	OFF	OFF	OFF	ON
75 bps	OFF	OFF	OFF	OFF

2-5 Connecting the Printer

Connection

- ① Turn off the printer and measuring instrument.
- ② Connect the printer to the measuring instrument with an interface cable.
 - Parallel: Secure with a bail lock.
 - Serial: Secure with screws.
- ③ Set the printer DIP switches to match the input method.
- ④ Turn on the printer and measuring instrument.

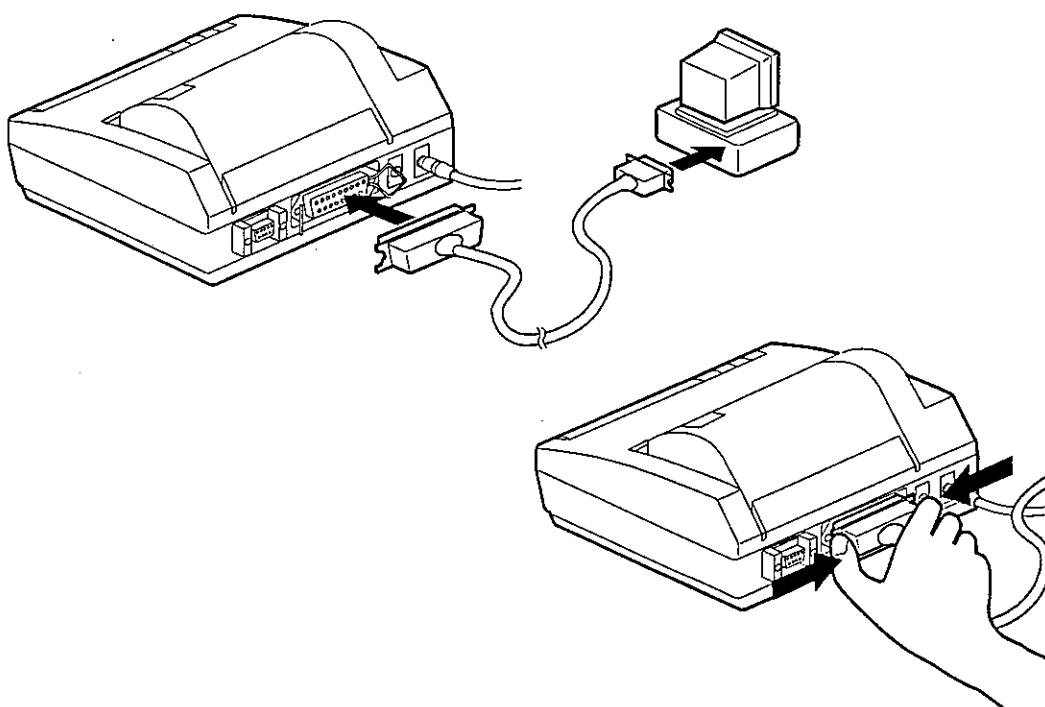
NOTE

- ◆ Select the correct interface cable for the type of input (parallel or serial).
 - Applicable connectors
 - Parallel: Anphenol 36-pin
Equipped connector :57LE-40360-7700(D29)
or the equivalent
 - Serial: D-Subminiature type connector with 9-pin
Equipped connector:(M2.6 type)RDED-9SE-LN(05)
or the equivalent
- ◆ Use a shielded cable of 1.5 meters or less in length.

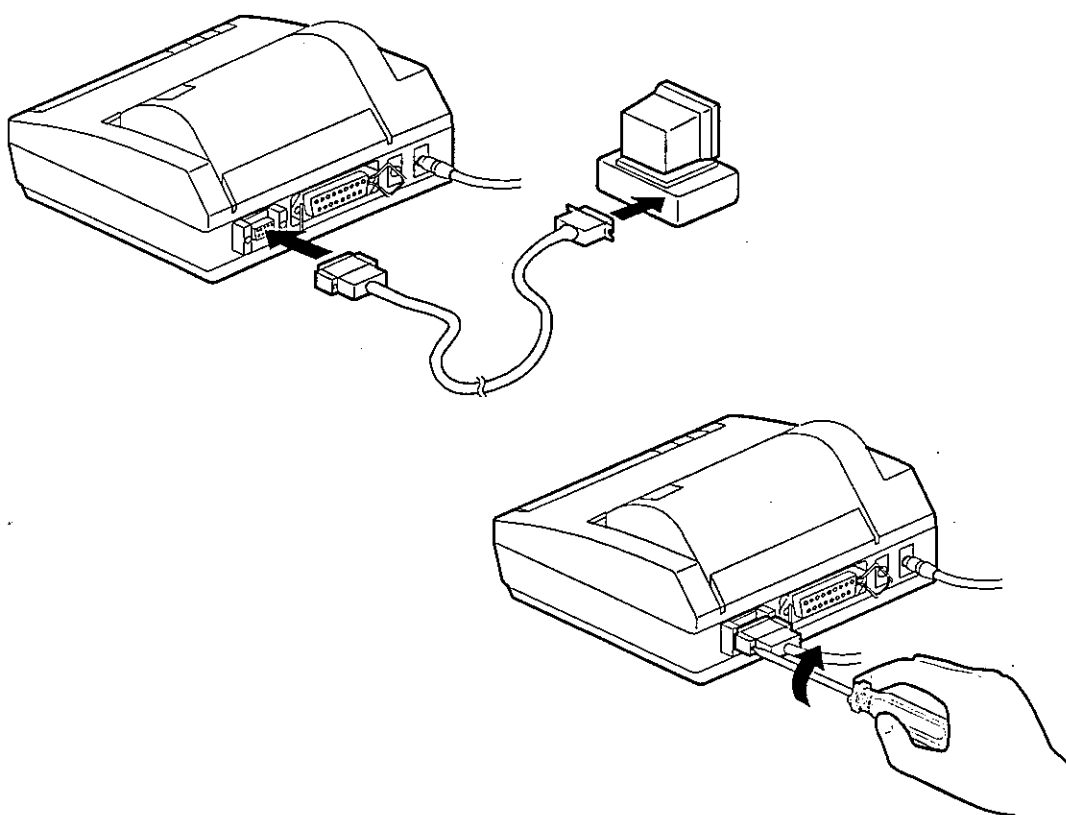
Confirmation

Follow the instructions in section 2-8 "Printing" to confirm the printer connection. Proper printout operation means that the printer is connected correctly.

Parallel



Serial

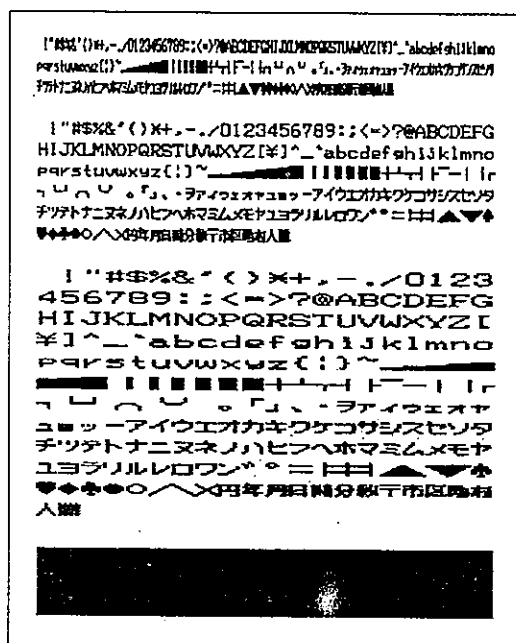


2-6 Test Print

In a test print, characters in codes 20₁₆ to FE₁₆ are printed in condensed, ordinary and double-width modes according the DIP switch settings of character type, zero font, and international character set. This is followed by a small checkered pattern and solid black pattern printed dot by dot, after which the current settings are printed. To execute a test print, follow this procedure:

- ① Turn the power off.
- ② Make sure the paper is loaded correctly.
- ③ While holding down the FEED button, turn the power on to start the self-test.
- ④ Release the FEED button as soon as the self-test starts.

Print sample



NOTE

- ◆ The printer stops automatically after the test print. Do not turn the power off while the printer is printing.

2-7 HEX Dump Print

Data input from the measuring instrument is printed in hexadecimal codes and in characters to allow you to check if data has been input correctly from the measuring instrument.

- ① Turn the power off.
- ② While holding down the FEED button, turn the power on.
- ③ Press the ONLINE button when the OFFLINE lamp illuminates (this can be done even if the test print has started). The printer prints "[HEX DUMP MODE]" and enters HEX dump mode
- ④ Start inputting data from the measuring instrument. When 16 bytes or more of data have been input, the data is printed as shown below:

Print sample

[HEX DUMP MODE]		
00000000	00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
00000100	10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F
00000200	20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F	!"#\$%&'()*+,-./
00000300	30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F	0123456789:;<=?

↑ Number of input code (Hex.) ↑ Character code (Hex.) ↑ Corresponding characters

- ⑤ Turn the power off to exit HEX dump mode.

HINT

- If you switch the printer to OFFLINE when there is less than 16 bytes per line, the printer goes to OFFLINE after a print-dump. HEX dump mode is reinitiated when the printer is put in the ONLINE mode.
- The ONLINE lamp flashes when there is still data in the buffer memory in the OFFLINE mode.

2-8 Printing

- ① Turn on the power to the printer and measuring instrument.
- ② Check that the ONLINE lamp illuminates.
If the paper is not loaded, the OFFLINE lamp flashes. When the paper is loaded, the OFFLINE lamp illuminates. Press the ONLINE button to switch the printer ONLINE.
- ③ Send the data and print command from the measuring instrument to the printer.

2-9 Buffer Memory

The buffer memory, which has a capacity of about 28000 characters (approx. 28KB), receives and stores data at high speed, greatly reducing the time that the measuring instrument cannot be used while it outputs to the printer.

When the printer is ONLINE, data can be input even during printing until the buffer memory becomes full.

If the printer is set to OFFLINE when there is still data in the buffer memory, the ONLINE lamp will flash. Printing resumes when the printer is set to ONLINE.

2-10 Handling the Battery Pack

(The battery pack was installed in the printer before shipping.)

A fully charged battery pack can print about 3000 lines (40 columns of the number "8"). Fully charge a newly-purchased battery pack. Using a newly purchased battery pack for a long period of time without first charging it, may lead to reduced battery life.

Charging the battery

- ① Turn the power off.
- ② Connect the AC adapter to the printer. The POWER lamp will flash once every second indicating the battery is charging. It takes about 10 hours to fully charge the battery. When the battery is fully charged, the power lamp stops flashing and goes off.
- ③ Disconnect the AC adapter.

NOTE

- ◆ Charge the battery in a location where the temperature is from 41 to 104°F (5 to 40°C). Otherwise, it may lead to a degradation of the battery.

HINT

- It takes about 15 hours to charge the battery with the power ON.
- Battery charging is temporarily interrupted while the printer is printing and resumed automatically when printing has completed.

When the battery gets low during printing

When the power lamp starts flashing about once every 0.5 second and the printer goes OFFLINE, connect the AC adapter.

The ONLINE lamp will flash if there is data left in the memory buffer. To print the remaining data, connect the AC adapter immediately and press the ONLINE button.

NOTE

- ◆ When using the rechargeable battery:
Turn the power off after use.
- ◆ When using the AC adapter:
The battery gradually recharges regardless of whether the power is on or off. If you are not using the printer, turn the power off, and unplug the AC adapter.

3. PRINTER FUNCTION

3-1 Buffer Full Printing

The AD-8123 has a line buffer to receive data in one-line units. If data with more columns than one line is received, printing will start, even if there is no print command. This is called "Buffer full printing".

3-2 Interval Home Return

To protect the printer, the head returns to the home position (the leftmost position) automatically when;

- data is not sent from the measuring instrument
- the ONLINE button is pressed to set the printer OFFLINE
- the printer runs out of paper

3-3 Errors

Both the ONLINE and OFFLINE lamps illuminate and data input and paper feed are disabled when one of the following four errors occurs:

- A. The head does not return to the home position even when the power is turned on.
- B. The head does not return to the home position at interval home return.
- C. Printing is attempted at extremely low or high ambient temperature.
- D. The battery is depleted.

If an error appears:

- ① Turn the power off.
- ② Remove the cause. For A and B, remove any foreign objects. For C, use the printer at 32 to 104°F (0 to 40°C). For D, connect the AC adapter and charge the battery.
- ③ Turn the power on.

3-4 Paper-out detection

When paper runs out, the printer goes OFFLINE and the OFFLINE lamp flashes. The printer can not be set ONLINE while the OFFLINE lamp is flashing. When paper has been loaded, the OFFLINE lamp stops flashing and stays on. Press the ONLINE button to print.

If paper runs out during printing, the printer will go OFFLINE. Load new paper and press the ONLINE button to resume printing.

4. SPECIFICATIONS

4-1 General Specifications

Printer

Printing method	: Thermal serial dot
Character mode	
Total number of dots	: 9×320 dots/line
Character matrix	: 9 dot high×7 dot wide
Space between characters	: 1 dot
Columns	: 40 columns (normal) 80 columns (condensed)
Printing direction	: Unidirectional or bidirectional logical seek
Bit-image graphics mode	
Total number of dots	: 8×320 dots/line
Printing direction	: Unidirectional logical seek
Printing width	: 89.6 mm
Printing speed	: Max.52.5 cps (normal) Max.80 cps (condensed)
External dimensions	: 160 mm×170 mm×66.5 mm
Mainframe weight	: Approx.580 g (excluding the battery pack)
Life	: Approx.500,000 lines (continuous printing of 40 columns of "8") (when print density is 100%)

Operating conditions

Temperature	: 32 to 104°F (0 to 40° C)
Humidity	: 30 to 80%RH (non-condensing)

Thermal paper (AX-PP123-S, 10 rolls/unit)

Width	: 112 mm
Roll length	: Approx. 18 m

AC adapter (AD-8123-120 or AD-8123-230)

Input	: 120 V 60 Hz or 230 V 50 Hz
Output	: 6.5 VDC 2.0 A

Battery pack (built in the printer)

Cell type	: Ni-MH
Rated voltage	: 4.8 V
Weight	: Approx.120 g

4-2 Interface Specifications

Parallel

(1) Specifications

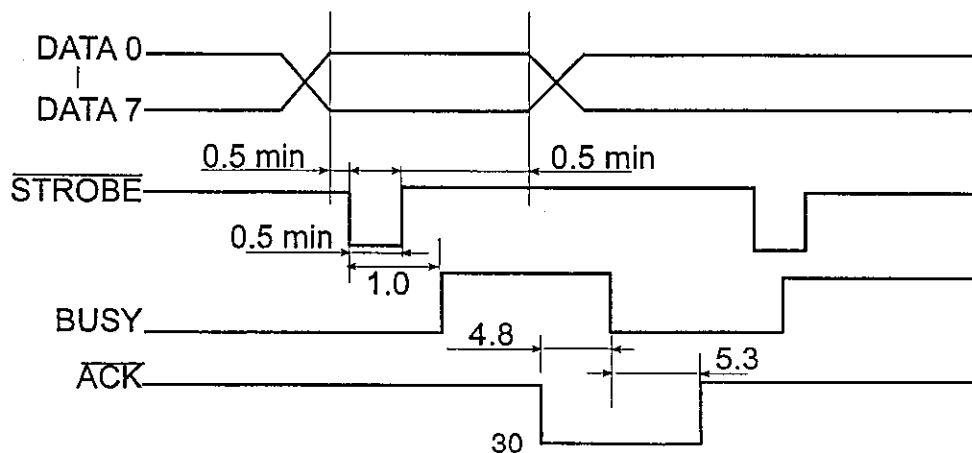
Data input: 8-bit parallel (Centronics)

Handshake: STROBE, BUSY, and ACK

(2) Connector signal description

Pin No.	Signal	I/O	Function
1	STROBE	Input	Data strobe
2 to 9	DATA 0 to 7	Input	Carries the input data 1 when high and 0 when low
10	ACK	Output	Signal showing that data is received
11	BUSY	Output	Signal showing that data cannot be received
12	PE	Output	Signal showing that there is no paper
13	SLCT	Output	Signal showing that the printer is ONLINE
14	AUTO·LF	Input	When this signal is low at power-on, one line feed is performed at carriage return
15	NC	-	Not used
16	GND	-	Ground
17	FG	-	Frame ground
18	NC	-	Not used
19 to 30	GND	-	Twist, pair, and ground for return signal
31	INIT	Input	Initialize
32	ERROR	Output	Signal showing that there is an error
33	GND	-	Ground
34	NC	-	Not used
35 and 36	+5 V	-	Normally, pulled up at 4.7 k Ω at high

(3) Data input timing



(4) Signal conditions

Item	Standard			Unit
	Min.	Typical	Max.	
Input: LO logic level	0.0	-	0.9	V
Input: HI logic level	3.5	-	5.0	V
Output: LO logic level	-	-	0.5	V
Output: HI logic level	3.5	-	-	V

Serial

(1) Specifications

Data input: RS-232C

Data control: H/W BUSY, XON/XOFF

(2) Connector signal description

Pin No.	Signal	I/O	Function
1	NC	-	Not used
2	TxD	Output	XON/XOFF output
3	RxD	Input	Data reception
4	-	-	Connected to pin 6
5	GND	-	Ground
6	-	-	Connected to pin 4
7	NC	-	Not used
8	RTS	Output	Data send request
9	NC	-	Not used

Connections to measuring instrument

Measuring instrument	AD-8123
RxD	2 TxD
TxD	3 RxD
DTR	4 Connected to pin 6
GND	5 GND
DSR	6 Connected to pin 4
RTS	7 NC
CTS	8 RTS

(3) Error processing

The following characters are printed when an error occurs.

? (3F₁₆) : Framing error

! (21₁₆) : Parity error

* (2A₁₆) : Overrun error

Turn the power off. Check the measuring instrument and printer DIP switch settings.

(4) Signal conditions

Item	Standard			Unit
	Min.	Typical	Max.	
Input: LO logic level	-15.0	-	-3.0	V
Input: HI logic level	3.0	-	15.0	V
Output: LO logic level	-	-12.0	-	V
Output: HI logic level	-	12.0	-	V

5. TROUBLESHOOTING

Check the following points if the printer has malfunctioned or does not operate at all. If it still has problems, contact the nearest A&D dealer.

If the power does not turn on (the power lamp is off)

Checkpoint	Action
Is the power switch on?	Turn the power switch on.
Is the AC adapter connected correctly?	See Section 2-1 "Connecting AC Adapter".
Is the battery charged?	See Section 2-10 "Handling the Battery Pack".
Is power being supplied from the outlet?	Plug other electrical appliances into the outlet to check that it is working.

If the paper does not feed

Checkpoint	Action
Is the paper loaded correctly?	See Section 2-2 "Loading the Paper".
Is there foreign matter in the paper inlet?	Remove the foreign matter.
Are the ONLINE and OFFLINE lamps on?	An error has occurred. See Section 3-3 "Errors".
Is the ONLINE lamp off?	Set the printer OFFLINE.

If the printer does not print or stops during operation

Checkpoint	Action
Is the OFFLINE lamp flashing?	The paper has run out. Load paper.
Are the ONLINE and OFFLINE lamps on?	An error has occurred. See Section 3-3 "Errors".
Is the OFFLINE lamp on?	Set the printer ONLINE.
Is the OFFLINE lamp on and the power lamp flashing?	If you cannot set the printer ONLINE, the battery has depleted. Connect the AC adapter.
Is the ONLINE lamp flashing?	Connect the AC adapter and set the printer ONLINE.
Are the DIP switches set correctly?	Set the DIP switches according to the input method.
Is the interface cable connected correctly?	See Section 2-5 "Connecting the Printer".
Is the specified paper used?	Use the specified paper, AX-PP123-S.
Is paper loaded correctly?	The surface facing outside when loaded is the printing surface. See 2-2 "Loading the Paper".
Does the printer execute a self-test?	If it does not execute a self-test, contact the nearest A&D dealer.
The printer seems to be working, but there is no print on the paper.	Use the specified paper, AX-PP123-S.

If the printer prints wrong characters

Checkpoint	Action
Is the interface cable connected correctly?	See Section 2-5 "Connecting the Printer".
Are the DIP switches set correctly?	Set the DIP switches according to the input method. In serial input, "!", "?", "*" is printed for incorrect settings of DIP SW3. Set them according to the communications method of the measuring instrument.

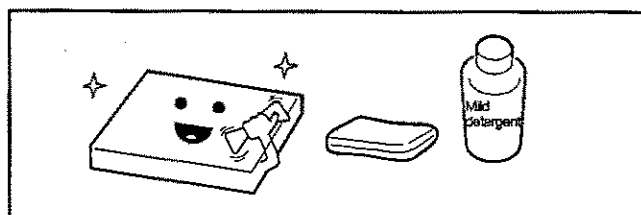
If the printing is light or dark

Checkpoint	Action
Is the temperature too high or low?	Use the printer at 32 to 104°F (0 to 40°C).
Is the specified paper used?	Use the specified paper, AX-PP123-S.
Are the DIP switches set correctly?	Check the print density DIP SW settings.

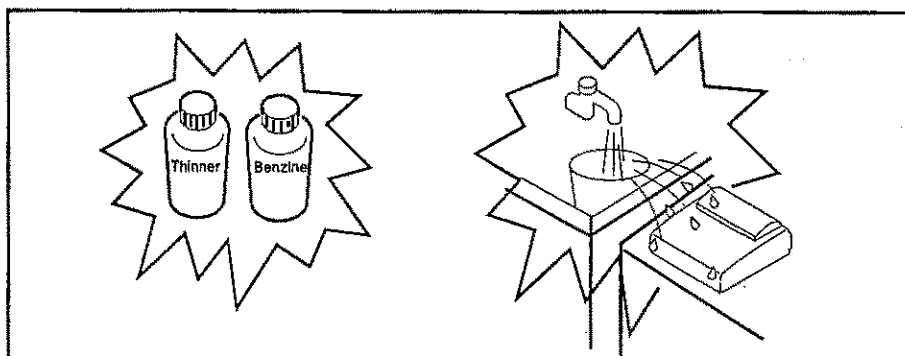
6. MAINTENANCE

If the outside of the printer gets dirty, wipe it with a soft, dry cloth. If the dirt is hard to remove, wet a soft cloth with mild detergent diluted with water, squeeze it well, and clean the printer. Do not try to clean in the slot where paper comes out, you could damage the print head.

Do's



Don'ts



NOTES

- ◆ Do not use thinner, benzine, or other volatile chemicals.
- ◆ Do not allow water to get inside the printer.

Memoranda

[illegible]