

AD-8129TH

Thermal Printer

INSTRUCTION MANUAL



This Manual and Marks Herein

Note Describes "when it is easy to mishandle" and "general advice when using this product".

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1. Introduction

This manual describes how the AD-8129TH Thermal Printer work and how to get the most out of them in terms of performance.

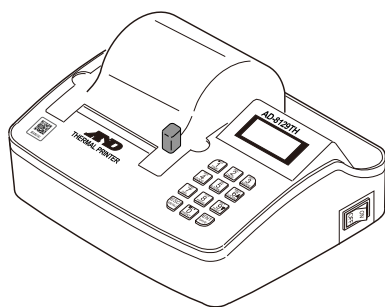
Read this manual thoroughly before using the printer and keep it at hand for future reference.

1-1. Features

- ❑ This device is a printer used to connect to a weighing device such as A&D's electronic balance, scale, counting scale, moisture analyzer, vibro viscometer or weighing indicator and print out data transmitted from the weighing device.
- ❑ With thermal printing, the printed contents can be clearly and easily viewed, and the print density can also be changed.
- ❑ Light weight and compact size of the printer enables it to be set up in various locations and be easily transported.
- ❑ The printer is equipped with the RS-232C or current loop interface for data input, so it allows easy connections between the printer and a weighing device such as an electronic balance.
- ❑ Dust-free paper sold separately is available for using the printer in cleanrooms (AX-PP183-S).
- ❑ Built-in clock function of the printer enables printing out of the date and time.
- ❑ Printing at a regular interval is possible. (Interval printing)
- ❑ Statistical calculation results of the weighing data, including standard deviation, can be printed out.
- ❑ Time series variation of the weighing data in chart form can be printed out.
- ❑ The liquid crystal display provides easy conditions confirmation and settings of the printer.
- ❑ By pressing the key switch of the printer, a re-zero command to zero the display and request commands for the weighing data can be transmitted to a weighing device, enabling the weighing data to be printed out without touching the highly sensitive weighing device.

2. Product Structure (Part Names), Package Contents

Main unit

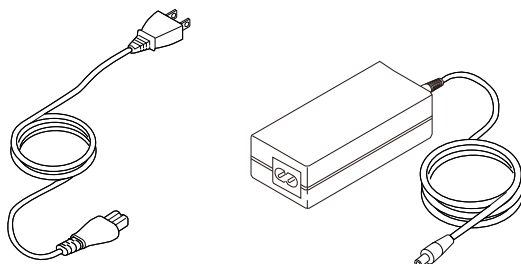


Thermal printer for printers (1 pcs)

* Attached to the main body



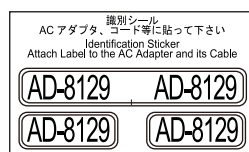
AC adapter (AX-TB305-A)



Power cable
(Approx. 2 m)

AC adapter

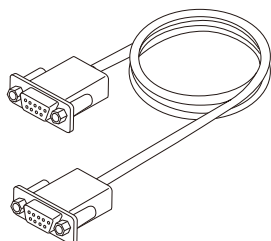
AC adapter labels



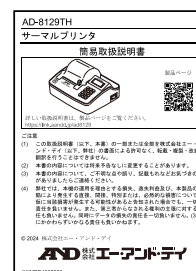
Affix the AC adapter label
to the cable of the provided
AC adapter.

- * A power cable is also available as an optional accessory (AX-KO1885).
- * Using the wrong AC adapter with the AD-8129TH may prevent the AD-8129TH or weighing devices from operating properly.
- * Confirm that the adapter type is correct for the local voltage and power receptacle type.

RS-232C cable D-sub 9 pin-9 pin (AX-KO2741-100)



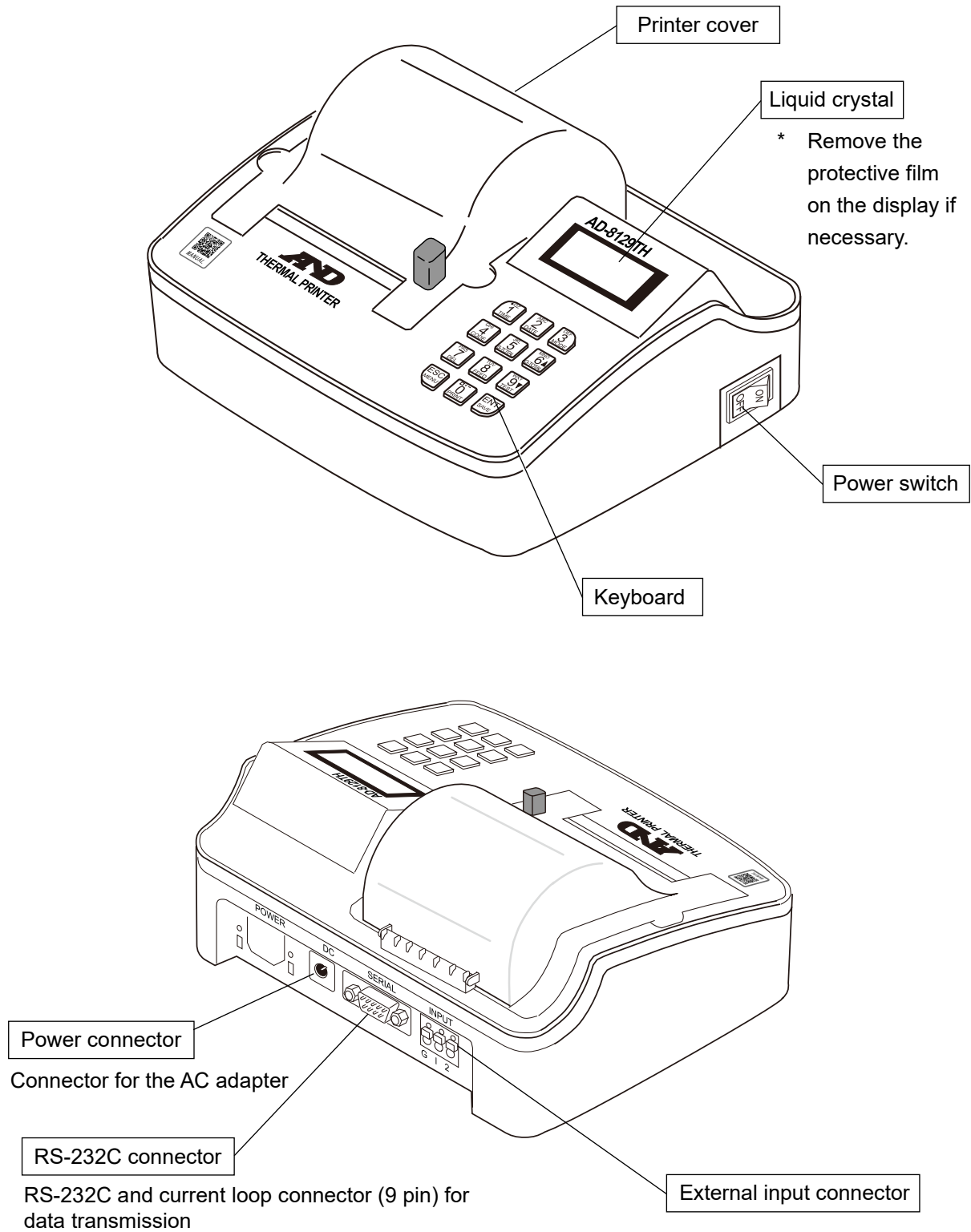
Simplified Instruction manual



Sold separately

- Thermal printer paper for printers (5 pcs) AX-PP147-S
- Dust-free thermal printer paper for printers (10 pcs) AX-PP183-S

2-1. Part names

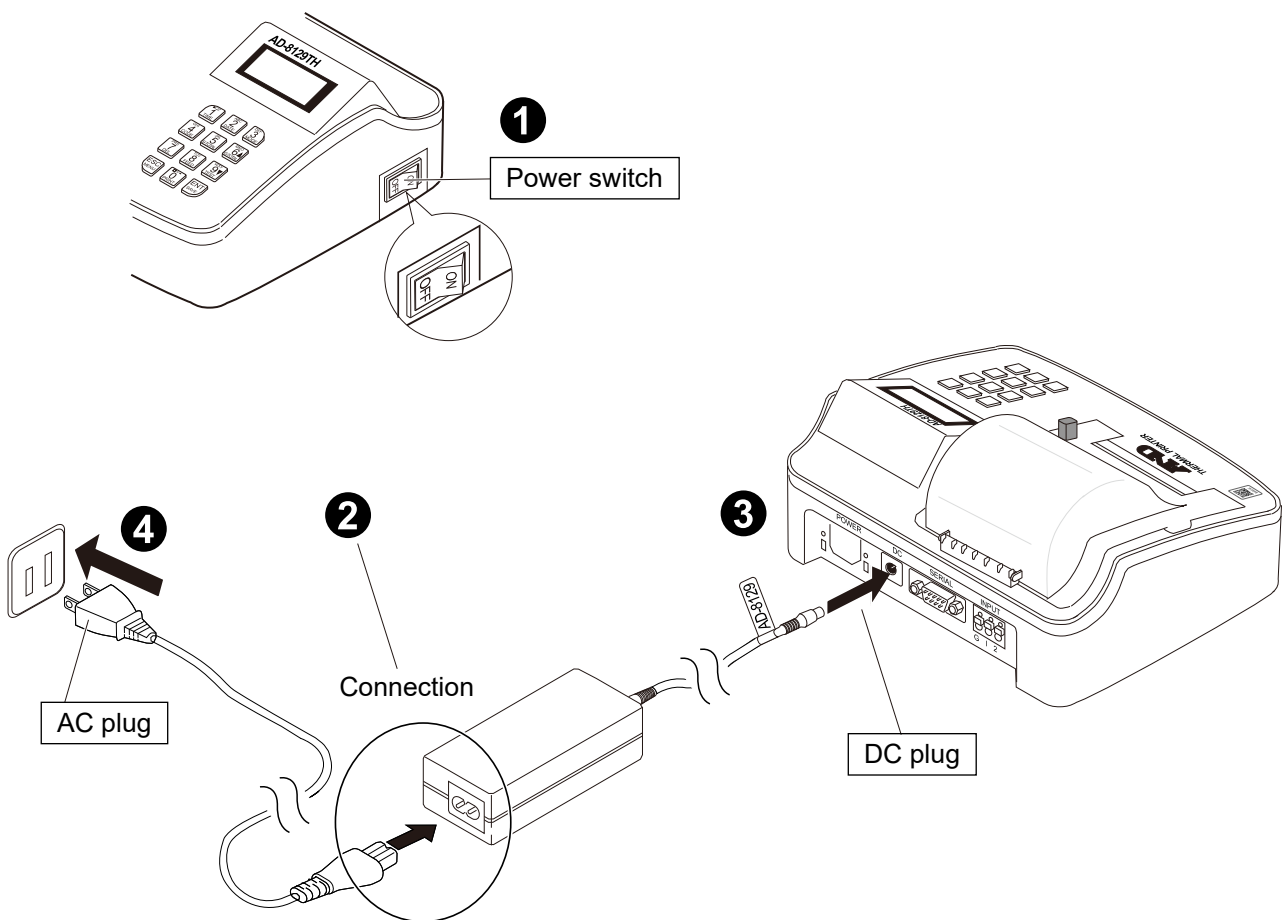


3. Preparations

3-1. Connecting the AC adapter

Instructions

1. Confirm that the power switch is turned to off.
2. Connect the power cable and AC adapter.
3. Connect the DC plug of the AC adapter to the power connector of the printer.
4. Connect the AC plug to the outlet.

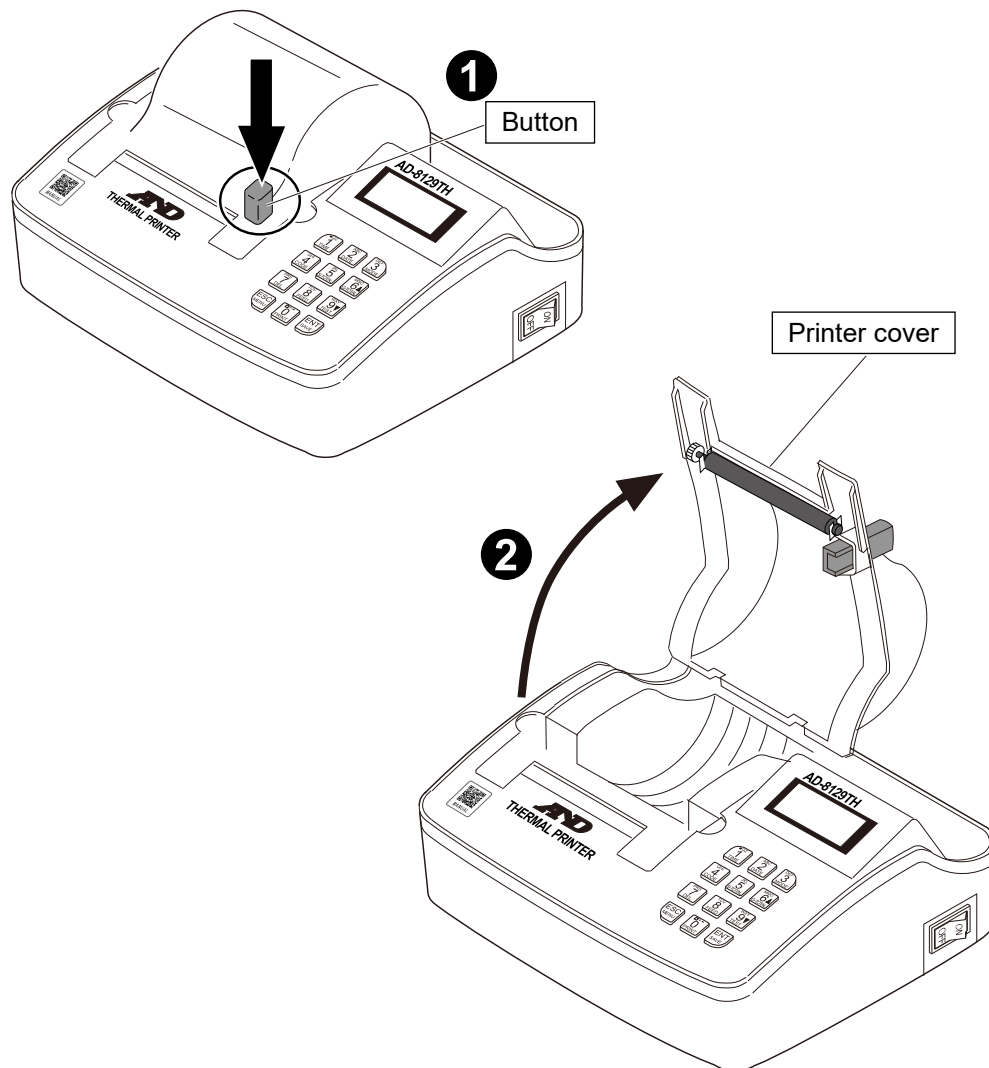


3-2. Opening and closing the printer cover

When installing and removing the printer paper, open the printer cover to allow these operations to be performed.

Instructions

1. Press the button on the right side of the printer cover.
2. Lift the printer cover upwards.

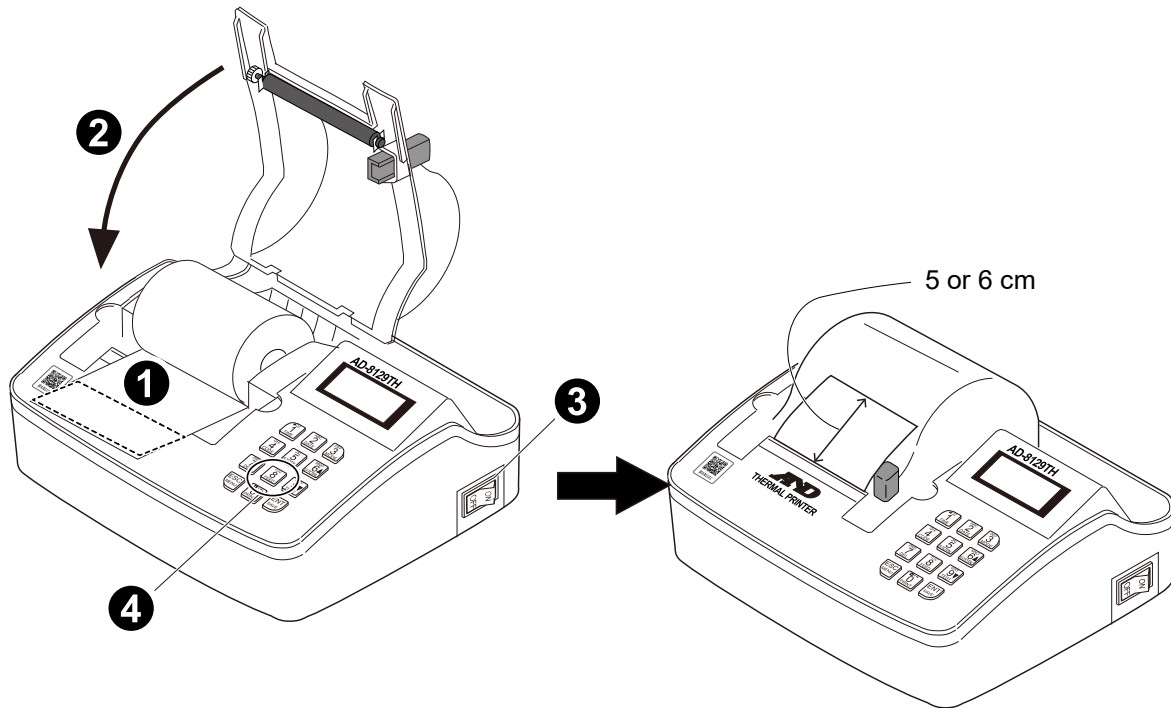


Note Opening or closing the printer cover improperly may result in damage to the printer cover.

3-3. Installing the printer paper

Instructions

1. Place the printer paper so that its leading edge protrudes from the printing unit.
2. Close the printer cover.
3. Turn the power switch on.
4. Press the  key to feed the printer paper 5 or 6 cm out of the printing unit.



- | | | |
|--|----------|------------|
| * Thermal printer paper for printers | (5 pcs) | AX-PP147-S |
| Dust-free thermal printer paper for printers | (10 pcs) | AX-PP183-S |

3-4. Test printing

To start test printing, turn the power on while pressing and holding the



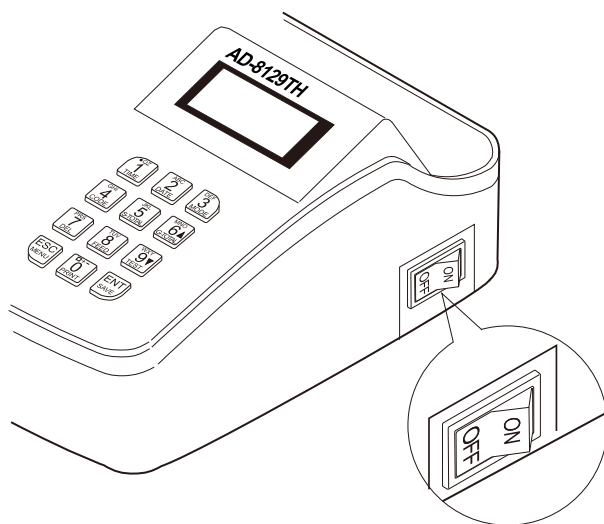
key, and then press and hold the



key (for approx. 4 seconds).

By performing test printing, the status of the function settings can be confirmed.

* To stop printing, turn the power off.



Printout example

```

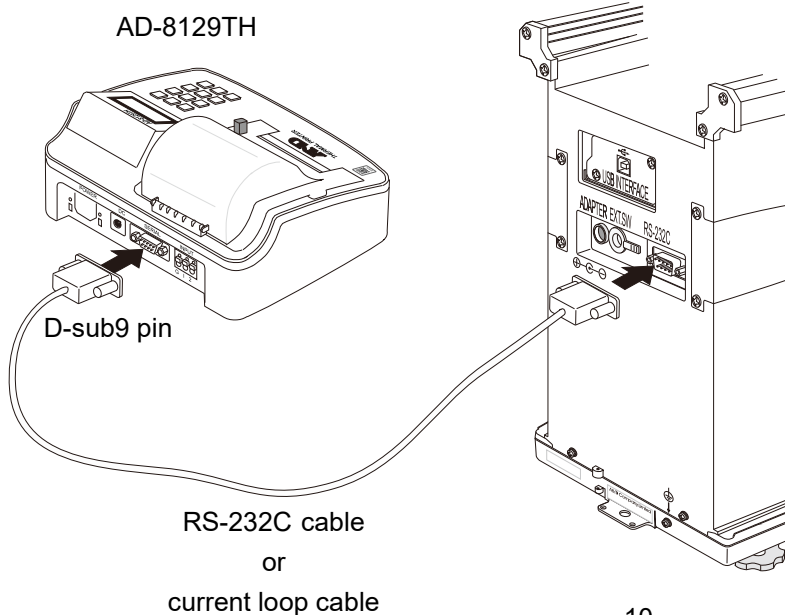
-----
      * [ PRINTER SETUP ] *
VERSION  : V1.05(2024/06/17)
USER MODEL   : AND
PRINT MODE    : EXT. KEY
PRINT FORMAT  : WEIGHT
PRINT FORMAT2 : +/- PRINT
US PRINT      : NOT PRINT
DATE FORMAT   : Y/M/D
LINE FEED     : 1 LINE
USER CODE     : 00000001
TOTAL MODE    : TIME PRINT
CODE PRINT    : PRINT
CODE DIRECTION : L <-- R
NO. PRINT     : PRINT
BACK FEED     : YES
PRINT DENSITY : 70%
INTERFACE     : SERIAL(RS-232C)
                CURRENT LOOP
PROTOCOL      : 2400bps, E, 7, 1
CURRENT TIME/DATE :
                2024/11/01 12:34:56
-----
  
```

3-5. Connecting to the weighing device

Use the RS-232C or current loop cable to connect the printer to the weighing device.

The factory default communication settings are baud rate: 2400 bps, data length: 7 bits, parity: EVEN, stop bit: 1 bit. This is in accordance with the factory default settings for most of A&D's weighing devices.

Weighing device rear side



* If the weighing device has a connector other than D-sub 9 pin, an RS-232C cable (sold separately) is required.

* If connecting to the current loop output of a weighing device, a current loop cable (sold separately) is required.

4. Printing

4-1. Printing out data from the weighing device

Instructions

1. Turn the printer power on.
The factory default printing mode is "External key printing mode (EXT.KEY)".
 2. Connect the printer to the weighing device using a RS-232C or current loop cable.
 3. Transmit data to the printer from the weighing device.
(e.g.) Press the  key on the weighing device.
Refer to the instruction manual of the weighing device for the data output methods, output format and RS-232C communication settings.
 4. Press and hold the  key to feed the printer paper until the printed results can be viewed, and then cut off the printer paper.
- * Some weighing devices have functions such as outputting by pressing the  key or automatically outputting after stabilizing the weighing.

4-2. Paper feed

Instructions

1. Press the  key to allow paper feed while the button is pressed.

4-3. Precautions

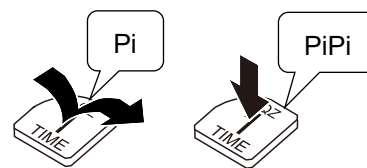
- ☐ Storage of thermal paper
 - Store the thermal paper in a cool, dry, dark place.
 - Do not rub the thermal paper with a hard object.
 - Do not place the thermal paper near organic solvents.
 - Do not allow the product to come into contact with PVC film, erasers, or adhesive tape to touch the thermal paper for extended periods of time.
 - Do not stack the thermal paper with whiteprints or wet copies immediately after copying.
- ☐ Do not drop foreign matter into the printer. Doing so may cause mechanical damage to the printer.
- ☐ When operating the printer, install the printer in a stable location. Installing the printer in an uneven or unstable location may result in movement of the printer caused by vibration due to printing out, leading to a serious accident.
- ☐ Depending on a material (PVC, etc.) of the installation table, rubber may transfer to it from the printer. Do not set the printer on a table or sheet made of vinyl.
- ☐ When cleaning the main unit, do not use organic solvents such as alcohol, thinner, or benzene. Otherwise, that may cause damage to the printer as its main body is made of plastic.

5. Basic Operations of the Keys

There are two actions possible when pressing a key.

1. Press the key and release after the buzzer sounds
2. Press and hold the key (for approx. 2 seconds) and release after the buzzer sounds twice

* To prevent errors when making key operations, there is an interval until the buzzer sounds after pressing the key.



Keys	When the key is pressed (Until the buzzer sounds one time)	When the key is pressed and held for approx. 2 seconds (Until the buzzer sounds twice)
	Prints out the current time.	Puts the printer in the time settings mode.
	Prints out the current date.	Puts the printer in the date settings mode.
	Accesses the printing mode settings.	
	Prints out the ID code.	Puts the printer in the ID code settings mode.
	Prints out the total.	
	Prints out the statistical calculation results.	
	Deletes one instance of the data to be used in statistical calculation.	Deletes all of the data to be used in statistical calculation.
	Feeds the paper one line.	Feeds paper while the key is pressed.
	Test prints when the power is turned on while pressing this key with the power turned off.	
	Cancels changes at each setting. Advances to the next setting item when configuring the function settings.	Transmits a re-zero command. * The commands can be selected at the function settings.
	Prints out weighing values in the manual printing mode. Prints out received weighing values after transmitting weighing value request commands to the device at the external key printing mode and dump printing mode. *	
	Confirms the setting changes. Stops or restarts the chart printing while printing a chart.	Toggles between the external key printing mode and dump printing mode. Completes the chart printing while printing a chart.

※ The transmission command may vary depending on the settings.

PRN MODE Printing mode	US PRN Unstable data	Transmission command
EXT.KEY	NOT PRN Not printed out	PRT
	PRINT Printed	Q
DUMP	—	PRT

For software versions earlier than V1.08, the transmission command will be “Q” regardless of the settings.

* When connecting using the current loop, the commands cannot be transmitted.

6. Statistical Calculation Functions

In addition to printing out weighing values, the printer can also perform statistical calculation of the weighing values printed out. The printer always performs calculation processing while operating, so you can print out calculation results at the touch of a key whenever needed.

6-1. Printing example and printing contents of statistical calculation

- When printing out the weighing values, the weighing number is printed out.
If unit and kind of data entered in the printer differ from those of the data entered first, the printer prints out the values without calculating.

- If accidentally printing out the weighing values, press the  key. "****< *** DELETE >****" is displayed and the printer does not calculate prior data.

- When printing out total calculation results, press the  key.
Date and time, ID code, data count (N) and total (TOTAL) are printed out. To delete all the data used with the statistical calculation, press and hold the  key for approx. 2 seconds.

- When printing out all of the calculation results, press the  key.
Date and time, ID code, data count (N), total (TOTAL), averaging value (AVE), maximum value (MAX), minimum value (MIN), maximum value - minimum value (R), standard deviation (STDEV), coefficient variation (CV) and minimum weighing value (MINI WT) are printed out.

$$\text{Coefficient variation (CV)} = \frac{\text{Standard deviation (STDEV)}}{\text{Averaging value (AVE)}} \times 100(\%)$$

Minimum weighing value (MINI WT) = standard deviation (STDEV) × 2000

- * Calculation of the minimum weighing value conforms to USP Chapter 41. This calculation is applied only when weighing using a weight.
- * Data count (N) to be calculated is a maximum of 999.

- After printing out all of the calculation results, data to be used at statistical calculation can all be deleted. (Or press and hold the  key for approx. 2 seconds to make the same operation.)



key : To delete all of the data.



key : To not delete the data.

LCD display

CLEAR
DATA? E

Printout example

```
ID CODE : LAB-1234
NO.  1 WT    1000.12 g
NO.  2 WT    1000.20 g
NO.  3 WT    1000.16 g
NO.  4 WT    1000.21 g
```

****< 004 DELETE >****

```
NO.  4 WT    1000.25 g
NO.  5 WT    1000.13 g
```

```
-----
****< SUB TOTAL >****
2024/11/01  15:31:50
ID CODE     LAB-1234
N           5
TOTAL       5000.86 g
-----
```

```
-----
****< GRAND TOTAL >****
2024/11/01  15:32:07
ID CODE     LAB-1234
N           5
TOTAL       5000.86 g
AVE(x̄)      1000.17 g
MAX         1000.25 g
MIN         1000.12 g
RANGE(R)    0.13 g
STDEV(σ)    0.054 g
CV          0.01 %
MINI WT     108.00 g
-----
```

7. Basic Settings

The basic settings allow easy key operations to perform minimum required settings such as clock and printing mode. The setting values are always backed up using the built-in battery, so those values are maintained in the memory even when the power is turned to OFF or the AC adapter is disconnected.

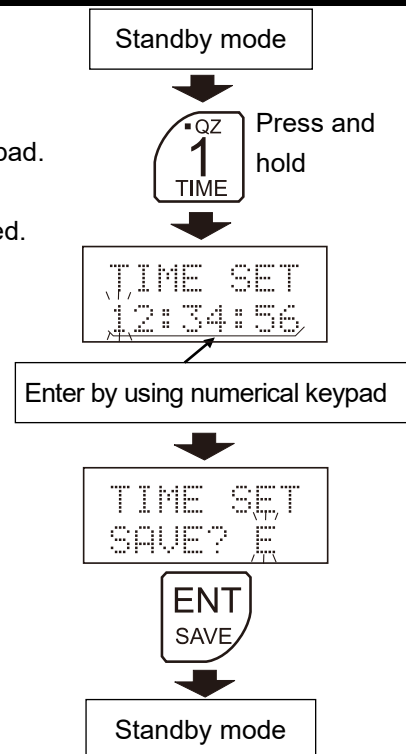
Note If an alarm such as one long beep followed by three short beeps sounds when the power is turned to ON, the printer is prevented from printing properly and configuring settings for date and time due to an error in the built-in lithium battery. In this case, the printer requires repair.

7-1. Time settings

1. Press and hold the  key.
2. Enter the hour, minutes and seconds by using the numerical keypad.
3. The display shows  when all data is entered.
4. To confirm the entered data, press the  key.

To cancel the entered data, press the  key.

* Do not set a time that does not exist to the printer.



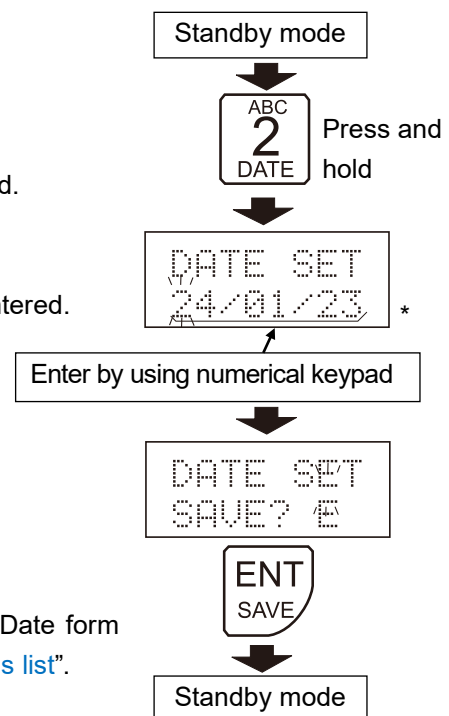
7-2. Date settings

1. Press and hold the  key.
2. Enter the year, month and day by using the numerical keypad.
3. The display shows  when all data is entered.
4. To confirm the entered data, press the  key.

To cancel the entered data, press the  key.

* Do not set a date that does not exist to the printer.

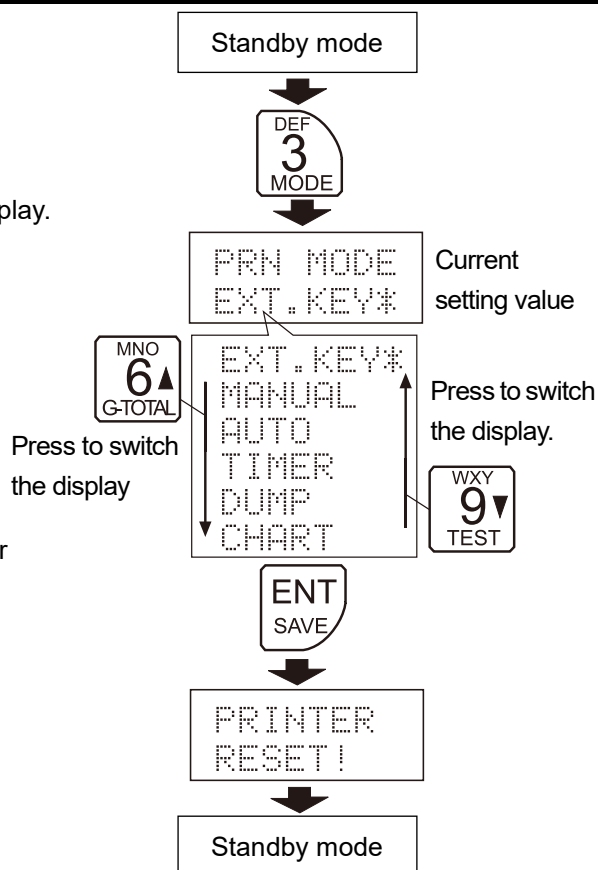
* When changing the order of year, month and day, set by "Date form (DATE FOR)" of "Function settings (3=MODE)" in "8-2. Items list".



7-3. Printing mode settings

1. Press the  key.
 2. Press the  or  key to switch the display.
 3. Press the  key to confirm the setting.
- To cancel the setting, press the  key.

* Refer to “8-4. Descriptions for the printing mode” for descriptions of the each setting.

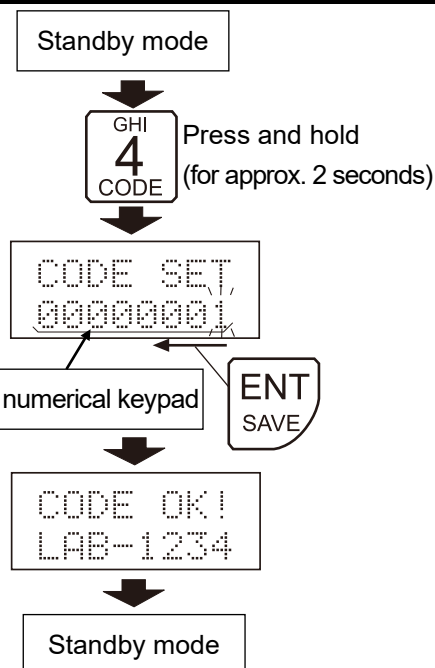


7-4. ID code setting

1. Press and hold the  key.
2. Enter the ID code by using the numerical keypad.
3. To move the digit to be entered, press the  key.
4. When the digits to be changed are all entered,  is displayed, and then the printer returns to the standby mode.

* Even if the  key was pressed to cancel settings, any digits where the  key has been pressed will be changed.

* Direction in which the ID code is set can be changed using the function settings.



8. Function Settings

The function settings are available for changes to communications and functions of the printer.

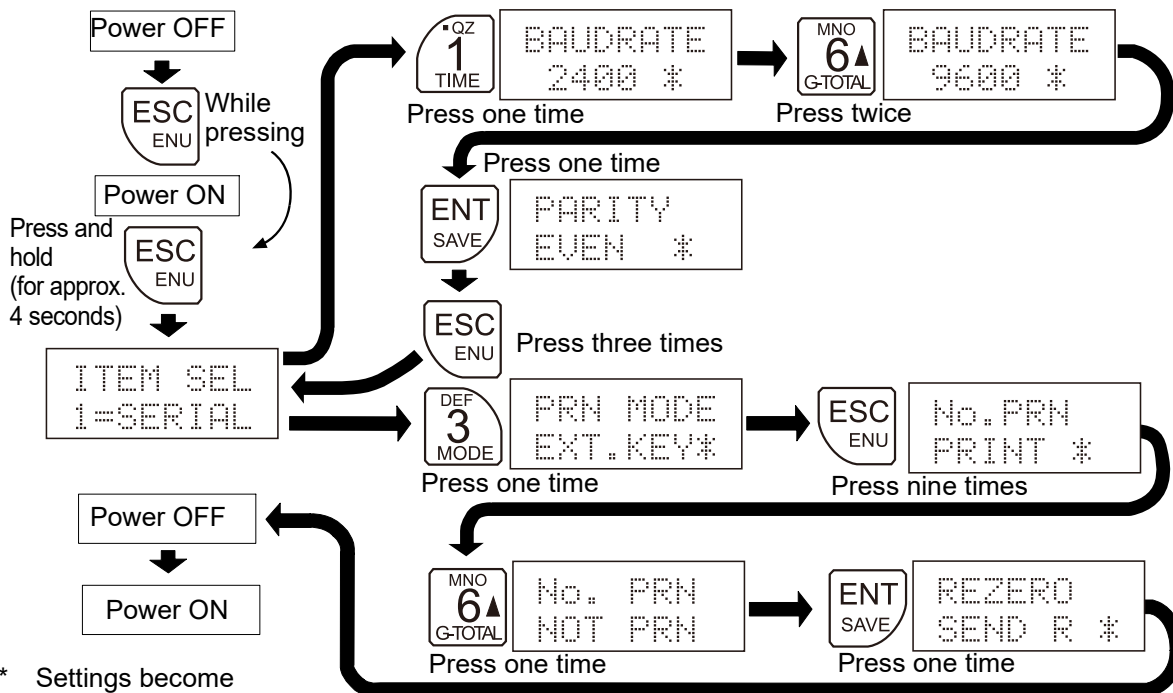
These parameters are maintained in non-volatile memory, even if the AC adapter is removed.

This function table menu consists of two layers. The first layer is the "Class" and the second layer is the

"Item". Each item has one setting value registered. A setting value confirmed by pressing the  key after selecting the item becomes effective.

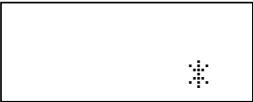
The updated settings will be reflected in the printer's operation after the power is turned off and on again.

Settings example and menu structure



* Settings become effective by turning the power off and on again.

8-1. Function settings display and operation keys

Display and operation keys	Descriptions
	Currently enabled setting values are indicated by the " * " mark being lit.
	Accesses menu for the item selected when "ITEM SEL" is displayed.
	Changes settings values.
	Changes current item and advances to next item.
	Advances to next item without changing current item.

8-2. Item list

Class	Items	Setting values	Details and usage	
1=SERIAL Serial interface *1	BAUDRATE Baud rate	1200	1200 bps	
		■ 2400	2400 bps	
		4800	4800 bps	
		9600	9600 bps	
		19200	19200 bps	
	PARITY Parity	NONE	Not used	
		ODD	Odd	
		■ EVEN	Even	
	WORD LEN Data length	8 bit	8 bit	
		■ 7 bit	7 bit	
2=VENDER Data format *2	STOP BIT Stop bit	1STOP	1 bit	
		2STOP	2 bit	
		■ AND	A&D standard format	*3
3=MODE Function settings	PRN MODE Printing mode	⋮	Subsequent values are for other-company format.	
		■ EXT.KEY	External key printing mode	
		MANUAL	Manual printing mode	*4
		AUTO	Auto printing mode	*4
		TIMER	Interval printing mode	*4
		DUMP	Dump printing mode	
	PRN FOR. Printing data	CHART	Chart printing mode	*4
		■ WEIGHT	Weighing values only	
		TIME/WG	Date and time + weighing values	
	PRN FOR2 Printing data 2	TM1/WG	Date and time + weighing values	Prints out date and time only at first operation.
		+ PRN	Prints out when the weighing values are at "+".	
		■ +/- PRN	Prints out when the weighing values are at "+" and "-".	
	US PRN Unstable data	NOT PRN	Not printed out	
		PRINT	Printed out	
	DATE FOR Date form	■ Y/M/D	yyyy/mm/dd	
		M/D/Y	mm/dd/yyyy	
		D/M/Y	dd/mm/yyyy	

■ indicates factory settings.

- *1 Initial setting values of the serial interface are adjusted to those of A&D weighing devices.
- *2 Please also set the output format of the scale to the A&D standard format.
- *3 We do not support operations of product formats other than A&D standard format.
- *4 The output mode of the weighing device must be set to stream output.

Class	Items	Setting values	Details and usage	
3=MODE Function settings	FEED CNT Feed	■ 1 LINE	Feeds one line after printing.	
		2 LINE	Feeds two lines after printing.	
		3 LINE	Feeds three lines after printing.	
		4 LINE	Feeds four lines after printing.	
		5 LINE	Feeds five lines after printing.	
		6 LINE	Feeds six lines after printing.	
		7 LINE	Feeds seven lines after printing.	
		8 LINE	Feeds eight lines after printing.	
	TOTAL MD Calculation printing	■ T/D YES	Adds a date to the calculation printing.	
		T/D NO	Does not add date to the calculation printing.	
	CODE PRN ID printing	NOT PRN	Not printed out	When printing out No.1 data and statistical calculation
		■ PRINT	Printed out	
	CODE DIR ID setting direction	■ L <-- R	To left from right	
		L --> R	To right from left	
	NO. PRN Weighing number printing	NOT PRN	Not printed out	Number to be applied to statistical calculation
		■ PRINT	Printed out	
	REZERO Re-zero Command *5	■ SEND R	R command	
		SEND Z	Z command	

■ indicates factory settings.

*5 Set the command so as to match figures for the weighing device connected.

Class	Items	Setting values	Details and usage	
3=MODE Function settings	EXT IN1 External input 1	■ NONE	Has no function.	
		PRINT	Printed out	Printing mode is "MANUAL".
		FEED	Paper feed	*6
		G TOTAL	Calculation results printing	
		S TOTAL	Total printing	
		R/Z CMD	Re-zero command	
		Q CMD	Weighing value request command	
	EXT IN2 External input 2	■ NONE	Has no function.	
		PRINT	Printed out	Printing mode is "MANUAL".
		FEED	Paper feed	*6
		G TOTAL	Calculation results printing	
		S TOTAL	Total printing	
		R/Z CMD	Re-zero command	
		Q CMD	Weighing value request command	
	BACK FD Backfeed *7	■ YES	Enables backfeed	
		NO	Disables backfeed	
	DENSITY Print Density	50%~100%	Print density input	Factory settings: 70%
4=INITIAL Initialization	PRN F/A Initialization	-	Resets the printer's function settings to factory settings.	
5=PW Password lock function	LOCK Password lock function	■ NOT USE	Disables password function	When the password function is enabled,, the password must be entered in order to change the date, time or function settings.
		USE	Enables password function	

■ indicates factory settings.

- *6 By pressing the external input switch one time, paper feed is started. By pressing the external input switch once again, paper feed is stopped.
- *7 This function loads the paper into the printer, prints, and then advances the paper to a position where the printed text is easy to see.

8-3. Initializing the function settings

When resetting the function settings values of the printer to factory settings, perform “Initializing (4=INITAL)” in “8-2. Items list”.



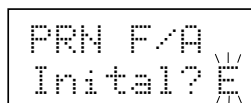
key: Initializes function settings to factory settings.



key: Cancels initialization

(The function settings are not initialized.)

LCD display



8-4. Descriptions for the printing mode

Printing method of the printer varies depending on “Printing mode (PRN MODE)” in “8-2. Items list”.

External key printing mode (EXT. KEY)

Printing is done using weighing device’s keys without making printer key operations.

Set data output settings of the weighing device to output using the keys.

It is also possible to print out data by pressing the



key to transmit a weighing value

request command to the weighing device side.

The transmission command may vary depending on the settings.

US PRN Unstable data	Transmission command
NOT PRN Not printed out	PRT
PRINT Printed	Q

For software versions earlier than V1.08, the transmission command will be “Q” regardless of the settings. But when connecting using current loop, the commands cannot be transmitted.

Manual printing mode (MANUAL)

Printing can be done by pressing the



key.

Set data output settings of the weighing device to stream output (Always outputting).

Auto printing mode (AUTO)

Printing is done automatically when data transmitted from the weighing device has changes of +10 d or more to zero and is stable.

One d is the minimum display of the weighing device.

Set data output settings of the weighing device to stream output (Always outputting).

Interval printing mode (TIMER)

Printing is done at each time that was set by this mode. To set the interval time, set minutes and seconds (mm:dd) after confirming settings of the printing mode to “TIMER” . To suspend the printing, press the



key. To restart the printing, press the



key.

Set data output settings of the weighing device to stream output (Always outputting).

Dump printing mode (DUMP)

Data transmitted from the weighing device is printed out without changes. Use these settings for GLP outputs, etc. of the weighing device.

Set data output settings of the weighing device to output using the keys.

It is also possible to print by pressing the  key to transmit a weighing value request command ("PRT" command). For software versions earlier than V1.08, the transmission command will be "Q". But when connecting using current loop, the commands cannot be transmitted.

Character code table (ASCII) that is available for printing in DUMP printing mode

	0	1	2	3	4	5	6	7
0			SP	0	@	P	'	p
1			!	1	A	Q	a	q
2			"	2	B	R	b	r
3			#	3	C	S	c	s
4			\$	4	D	T	d	t
5			%	5	E	U	e	u
6			&	6	F	V	f	v
7			'	7	G	W	g	w
8			(	8	H	X	h	x
9			)	9	I	Y	i	y
A			*	:	J	Z	j	z
B			+	;	K	[	k	{
C			,	<	L	\	l	
D			-	=	M	]	m	}
E			.	>	N	^	n	~
F			/	?	O	_	o	

ASCII code available for printing: 20h to 7Eh

Spaces cannot be printed.

SP indicates a space.

Chart printing mode (CHART)

Amount of changes of the weighing values is printed out as scatter plot. Changes of the weighing values in real time can be confirmed visually.

At the chart printing mode, set digits (2 digits) for chart printing, minutes and seconds of the interval time (mm:ss) and the printing count after confirming settings of the printing mode to "CHART".

Set data output settings of the weighing device to stream output (Always outputting).

Refer to "8-5. [Chart printing mode](#)" for details.

8-5. Chart printing mode

1. Set the printing mode to "CHART" and press the  key to confirm.

2. Turn the power off and on.

3. Press the  or  key to select a digit to be transformed

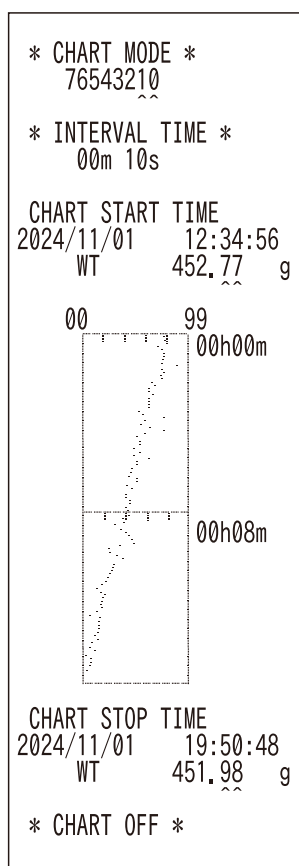
in chat and press the  key to confirm.

4. Enter the interval time by using the numerical keypad and press the  key to confirm.

5. Enter the chart printing number by using the numerical keypad and press the  key to confirm.

Chart printing starts.

Chart printing example



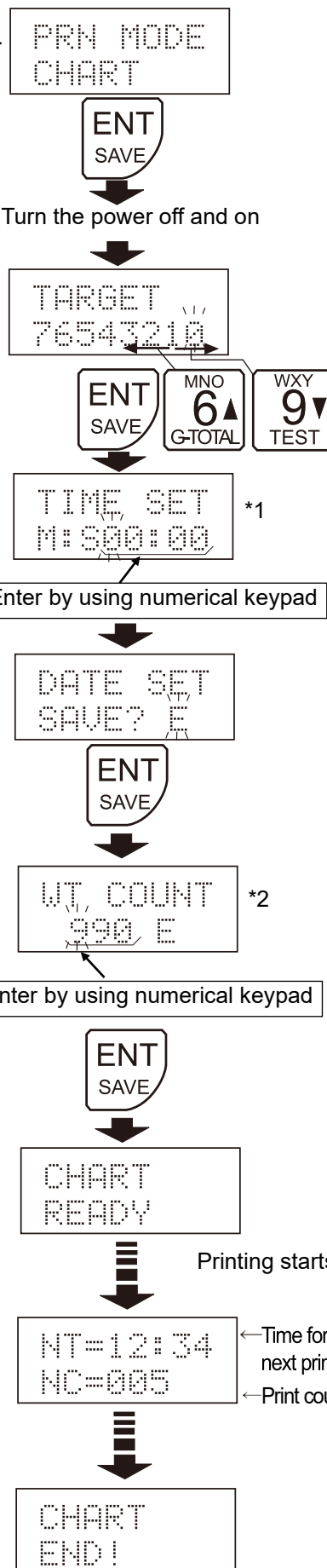
6. When the  key is pressed and held or the chart print count reaches the number of times that was set beforehand, the chart printing is completed. To stop the chart printing, press the  key.

To restart the printing, press the  key.

7. To repeat the operations from "Step 3" after finishing chart printing, press the  key.

*1 Settings range of the interval time is 00 : 05 (5 seconds) to 59 : 59 (59 minutes 59 seconds).

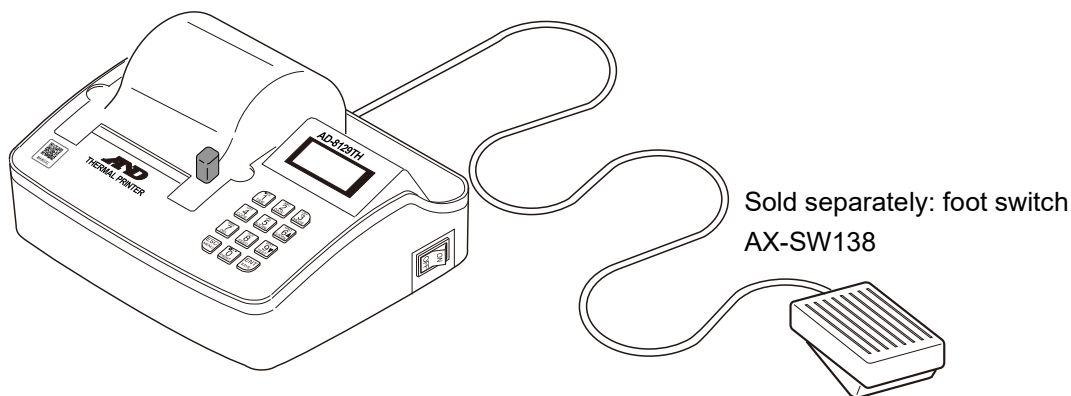
*2 Settings range of the chart print count is 010 (10 times) to 990 (990 times).



8-6. Descriptions for the external input connector

By using the external input connectors, operations such as printing, paper feed or re-zero on a weighing device away from the printer can be performed. The printer has two external inputs. Those operations can be set by “External input 1 (EXT IN1)” and “External input 2 (EXT IN2)” of “Function settings (3=MODE)” in “8-2. Items list”.

Combination example

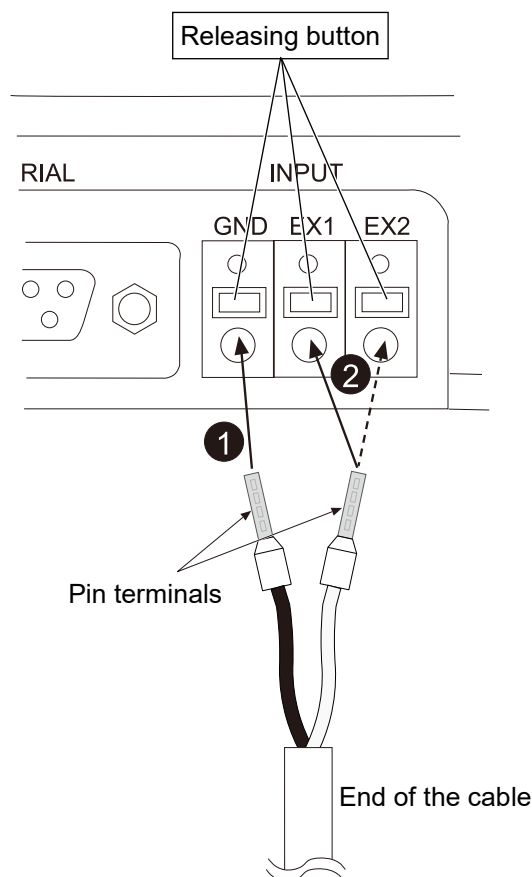


Using the external input connector (Example using a foot switch)

1. Insert either pin terminal into the “GND” of the external input connector. *1 , *2
2. Insert the other pin terminal into the “EX1” or “EX2” of the external input connector. *2
3. When removing the pin terminal from the external input connector, pull out the conducting wire while pressing the releasing button. *2

*1 If the pin terminal cannot be secured properly by inserting, insert the pin terminal while pressing the releasing button.

*2 If the releasing button can not easily be pressed, depress the releasing button using a screwdriver.



9. Password Lock Function

This function is used to set a password to allow only an administrator who knows the password to change the date or time setting and function settings. The operator can change the ID number even while the password lock function is in use.

9-1. Enabling the password lock function

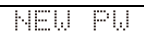
Setting the password

1. With the power off, turn the power on while pressing and holding

the  key, and then continue to press and hold the  key. (for approx. 4 seconds)

2. Function setting  appears. Press the  key to

display  or . Press the  or  key to select , and then press the  key.

3.  appears.

Set the password with five digits using the numerical keypad.

(The password is set to 00000 at shipment.)

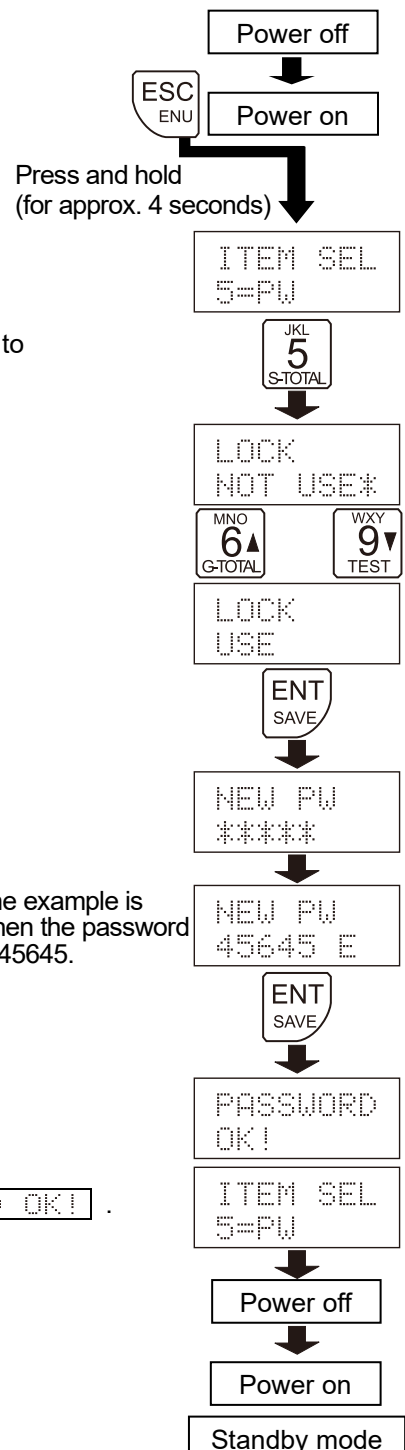
(To stop the setting operations in progress, press the  key.)

4. When finished setting the five-digit password using the numerical keypad, "E" appears. Press the  key to confirm the password setting.

5. The function settings display appears after displaying .

6. Turn the power off and then turn the power on again.

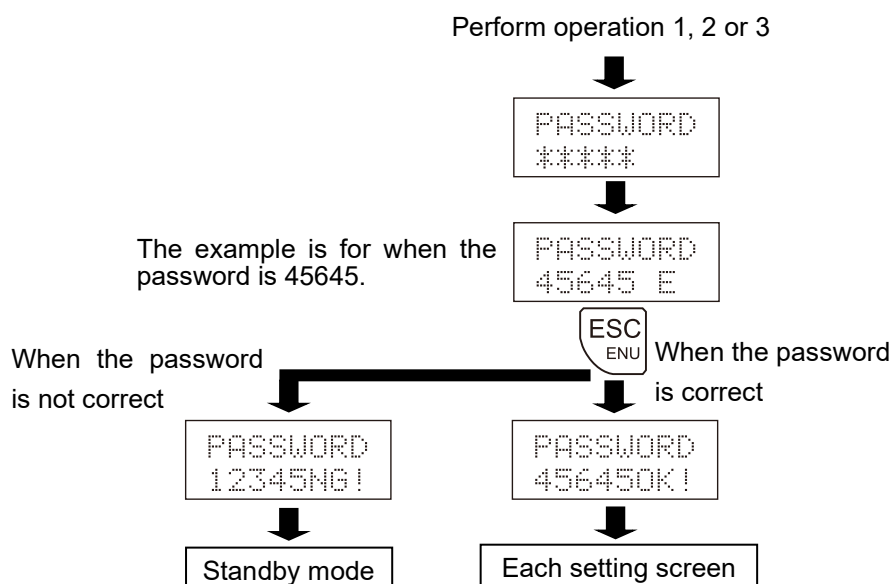
The printer returns to standby mode and is available for printing.



9-2. Where the password is entered

When the password is enabled (☐ USE *), the password must be entered by using the setting operations described below.

1. To enter the function settings: With the power off, turn the power on while pressing and holding the  key.
2. To enter the time setting: In standby mode, press and hold the  key (for approx. 2 seconds).
3. To enter the date setting: In standby mode, press and hold the  key (for approx. 2 seconds).



10. Interface Specifications

10-1. RS-232C

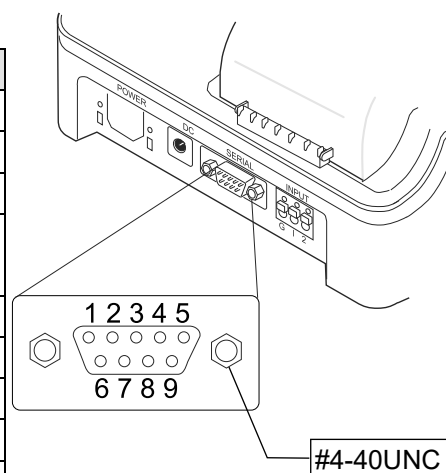
The printer is a DTE device. Connect a weighing device (DCE) to the printer using a straight through cable.

Transmission system : EIA RS-232C
 Transmission form : Asynchronous, bi-directional, half duplex
 Data format : Baud rate : 1200, 2400*, 4800, 9600, 19200 bps
 Terminator : <CR><LF>
 Data length : 7 * or 8 bits
 Parity : EVEN*, ODD(Data length 7 bits)
 NONE (Data length 8 bits)
 Stop bit : 1 bit

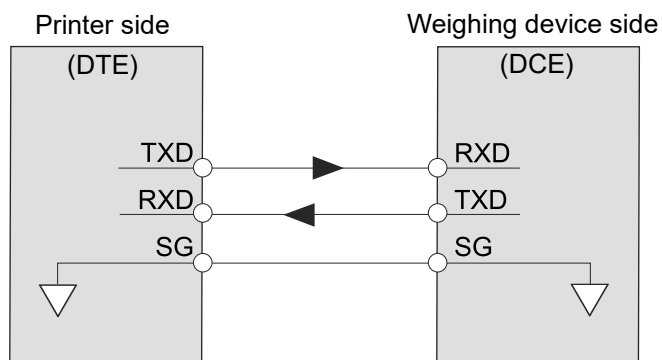
* Indicates factory settings. (This is in accordance with the factory default settings for most of A&D's weighing devices.)

D-Sub 9-pin assignment

Pin No.	Signal name	Direction	Description
1	RXD	—	Current loop receiving data
2	RXD	Input	Receive data
3	TXD	Output	Transmit data
4	Used internally	Output	Unavailable for connection (5V output)
5	SG	Output	Signal ground
6	—	—	No connection
7	—	—	No connection
8	—	—	No connection
9	—	—	No connection



RS-232C connection



11. Maintenance

11-1. Care and cleaning

- Do not use organic solvents or chemical cloth to clean the printer.
- Clean the printer with a lint free cloth that is moistened with a mild detergent.
- Do not disassemble the printer.
- Use the original packing material for transportation.

11-2. Checking the printer performance

If the printer seems to have a problem, check the items described below.

If improper performance persists after checking, contact the local A&D dealer for repair.

Checking the power supply

- Is an appropriate AC adapter connected?

Checking the data transmission

- Is the printer connected to the weighing device using an RS-232C straight through cable or current loop cable?
- Are the RS-232C settings (baud rate, data length and parity) of the printer the same with those of the weighing device?

Checking the printer paper

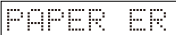
- Are you using thermal paper for the printer?
 - * Plain paper for the AD-8127 multi-function printer cannot be used.

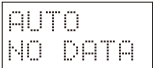
Sold separately

- Thermal printer paper for printers : AX-PP147-S
- Dust-free thermal printer paper for printers : AX-PP183-S

11-3. Troubleshooting

No.	Phenomenon		Possible cause, remedy
11-3-1	The Weighing values cannot be printed.	The results are printed as dots.	An improper AC adapter may be used with the printer. Confirm that the adapter type is correct for the local voltage and power receptacle type. Refer to “2-1. Part names” in “2. Product Structure (Part Names), Package Contents” in this document.
11-3-2		Nothing is printed on the printer paper	If you are using printer paper other than the thermal paper provided, the printer paper may not be thermal paper. Please check the model number of the printer paper. Model number : Thermal paper for printers AX-PP147-S Dust-free thermal paper for printers AX-PP183-S

No.	Phenomenon	Possible cause, remedy
11-3-3	The Weighing values cannot be printed. Printer display 	The printer cannot receive weighing values because the printer is set to “Manual printing mode” [3=MODE PRN MODE / MANUAL MANUAL] in the function settings. * Manual printing mode is used to print weighing values each time the  key on the printer is pressed while the weighing values are being continuously transmitted from the weighing device to the printer. 1. To print weighing values using keys on the weighing device Initialize the settings for the printer. Refer to “8-3. Initializing the function settings” in “8. Function Settings” in this document. 2. To print weighing values using keys on the printer Perform by one of the methods below. 2-1 Transmitting the weighing value request command from the printer to the weighing device. * These operations are available only for weighing device that can output weighing values using the “Q” or “PRT” command. 1) Settings for the weighing device - Data output format: “A&D standard format” 2) Settings for the printer - Printing mode: “External key printing mode” [3=MODE PRN MODE / EXT.KEY] Refer to “7-3. Printing mode settings” in “7. Basic Settings” in this document. 3) Printing the weighing value - By pressing the  key on the printer, the weighing value request command (“Q” command) is transmitted from the printer to the weighing device, and then the printer prints the weighing values received from the weighing device. 2-2 Printing weighing values each time the  key on the printer is pressed while the weighing values are being continuously transmitted from the weighing device to the printer 1) Settings for the weighing device - Data output mode: “Stream mode” (outputting the weighing values continuously) - Data output format: “A&D standard format” 2) Settings for the printer - Printing mode: “Manual printing mode” [3=MODE PRN MODE / MANUAL] Refer to “7-3. Printing mode settings” in “7. Basic Settings” in this document. 3) Printing the weighing value - Press the  key on the printer to print the newest weighing values. * When output of weighing values from the weighing device stops in cases such as when the display is turned off or when re-zeroing, the printer displays the error shown at the left.
11-3-4	Printer display 	There is no printer paper or the printer cover is open. Refer to “3-3. Installing the printer paper” to load the paper correctly.

No.	Phenomenon		Possible cause, remedy
11-3-5	The Weighing values cannot be printed.	Printer display 	The printer cannot receive weighing values because it is set to "Auto printing mode" [3=MODE PRN MODE / AUTO] in the function settings. * Auto printing mode of the printer is used to automatically print weighing values only when the printer detects a change in a weighing value while weighing values are being continuously transmitted from the weighing device to the printer. 1. To print weighing values using keys on the weighing device Initialize the settings for the printer. Refer to "8-3. Initializing the function settings" in "8. Function Settings" in this document. 2. To automatically print weighing values due to a change in the weighing value. Perform by one of the methods below. 2-1 Printing using the auto printing function of the weighing device Many models of weighing device are equipped with functions (auto printing function) that can automatically output weighing values after the weighing value changes or stabilizes. The weighing values can be printed automatically with the printer by using this function. 1) Settings for the weighing device - Data output mode: "Auto printing" - Data output format: "A&D standard format" 2) Settings for the printer - Printing mode: "External key printing mode" [3=MODE PRN MODE / EXT.KEY] Refer to "7-3. Printing mode settings" in "7. Basic Settings" in this document. 3) Printing the weighing value - When outputting the weighing values to the printer by placing and removing a sample as instructed in the instruction manual of the weighing device, the printer prints the weighing values. 2-2 Printing using auto printing mode of the printer 1) Settings for the weighing device - Data output mode: "Stream mode" (outputting the weighing values continuously) - Data output format: "A&D standard format" 2) Settings for the printer - Printing mode: "Auto printing mode" [3=MODE PRN MODE / AUTO] Refer to "7-3. Printing mode settings" in "7. Basic Settings" in this document. 3) Printing the weighing value - When the weighing value has a change of more than 10 d from zero and is stable, the printer prints the weighing values.

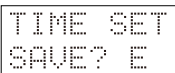
No.	Phenomenon		Possible cause, remedy
11-3-6	The Weighing values cannot be printed.	Printer display 	Digits to be charted are selected because the printer is set to chart printing mode [3=MODE PRN MODE / CHART]. 1. To print weighing values using keys on the weighing device Initialize the settings for the printer. Refer to “8-3. Initializing the function settings” in “8. Function Settings” in this document. 2. To perform chart printing (printing of changes in the weighing value in real time as a scatter diagram) 1) Settings for the weighing device - Data output mode: “Stream mode” (outputting the weighing values continuously) - Data output format: “A&D standard format” 2) Settings for the printer - Printing mode: “Chart printing mode” [3=MODE PRN MODE / CHART] Refer to “7-3. Printing mode settings” in “7. Basic Settings” in this document. Refer to “8-5. Chart printing mode” in “8. Function Settings” to set chart printing mode.
11-3-7		Printer display 	Interval time is set because the printer is set to interval printing mode [3=MODE PRN MODE / TIMER] or chart printing mode [3=MODE PRN MODE / CHART]. 1. To print weighing values using keys on the weighing device Initialize the settings for the printer. Refer to “8-3. Initializing the function settings” in “8. Function Settings” in this document. 2. To perform interval printing or chart printing with the printer. 1) Settings for the weighing device - Data output mode: “Stream mode” (outputting the weighing values continuously) - Data output format: “A&D standard format” 2) Settings for the printer - Printing mode: “Interval printing mode” [3=MODE PRN MODE / TIMER] or “Chart printing mode” [3=MODE PRN MODE / CHART]. Refer to “7-3. Printing mode settings” in “7. Basic Settings” in this document. Refer to “8-4. Descriptions for the printing mode” and “8-5. Chart printing mode” in “8. Function Settings” for detailed settings procedure.

No.	Phenomenon		Possible cause, remedy
11-3-8		Printing cannot be done after tare (HV-C-K series)	This issue often appears when the printer is used with the HV-C-K series. Settings for the printer - Printing mode: "Dump printing mode" [3=MODE FRN MODE / DUMP] Refer to "7-3. Printing mode settings" in "7. Basic Settings" in this document.
11-3-9	The Weighing values cannot be printed.	Others	1. An improper connection cable is used between the weighing device and printer. When connecting the weighing device and printer using an RS-232C cable, a straight through cable must be used. When connecting using DIN cable (rounded connector), make sure that a cable for RS-232C connection is used without using a cable for current loop connection. Refer to "2. Product Structure (Part Names), Package Contents" and "12-2. Sold separately" in "12. Specifications" in this document. 2. The output format of the weighing device is not correct. See if printing can be done by the settings below. If printing can be done properly, the communication settings between the weighing device and printer match. 1) Settings for the weighing device - Data output format: "A&D standard format" 2) Settings for the printer - Printing mode: "Dump printing mode" [3=MODE FRN MODE / DUMP] Refer to "7-3. Printing mode settings" in "7. Basic Settings" in this document. 3. The communication settings between the weighing device and printer do not match. Confirm the communication settings (baud rate, data bit rate and parity bit) for the weighing device and printer. Refer to the instruction manual for the weighing device for its communication settings. Factory settings for most weighing devices are the same as for the printer. There are cases when it is possible to print by initializing the weighing device and printer Refer to "8-3. Initializing the function settings" in "8. Function Settings" in this document. 1) Settings for the printer - Confirm settings of the serial interface [1=SERIAL]. Refer to "8. Function Settings" in this document.
11-3-10	The weighing values are continuously printed without end.		Data output mode for the weighing device is set to stream mode (outputting the weighing values continuously) 1. To print weighing values using keys on the weighing device 1) Settings for the weighing device - Data output mode: select other than stream mode. 2. To print weighing values using keys on the printer 1) Settings for the printer - Printing mode: Set to manual printing mode [3=MODE FRN MODE / MANUAL]. Refer to "7-3. Printing mode settings" in "7. Basic Settings" in this document.

11-4. When problems cannot be resolved

No.	Phenomenon, desired action		Remedy
11-4-1	The printed results cannot be seen.		1. Press and hold the  key to feed paper until the printed results can be seen. 2. Paper can also be fed automatically after the weighing values are printed. Settings for the printer: Select the paper feed amount by "FEED" [3=MODE BACK FD / YES]. Refer to "8-2. Items list ("BACK FD" item)" in "8. Function Settings" in this document.
11-4-2	About the weighing number before the weighing value	To print or not print the weighing number	Whether or not to print the weighing number before the weighing value can be selected. 1) Settings for the printer - Weighing number printing: Printed out/Not printed out [3=MODE NO. PRN NOT PRN / PRINT] Refer to "8-2. Items list ("NO. PRN" item)" in "8. Function Settings" in this document. 2) Settings for the weighing device - Data output format: "A&D standard format"
11-4-3		To reset the printer	Statistical calculation data can be deleted by pressing the  key
11-4-4		To delete all data to be used for statistical calculation	after pressing and holding the  key (for approx. 2 seconds). Refer to "6-1. Printing example and printing contents of statistical calculation" in "6. Statistical Calculation Functions" in this document. * If statistical calculation data is deleted, the weighing number for that data will be also reset. (printed from "No.1" next time)
11-4-5	About statistical calculation	To perform statistical calculation	1) Settings for the weighing device - Data output format: "A&D standard format" * When the weighing values are outputted from the weighing device, do not add information (date / time, ID number, etc.) other than the weighing value to the weighing values. 2) Settings for the printer - Printing mode: "External key printing mode" [3=MODE PRN MODE / EXT.KEY] Refer to "7-3. Printing mode settings" in "7. Basic Settings" in this document. * Data used for statistical calculation is maintained in non-volatile memory of the printer even when turning the power of the printer off. To reset the weighing number, please delete the statistical calculation data. Refer to "6-1. Printing example and printing contents of statistical calculation" in "6. Statistical Calculation Functions" in this document.

No.	Phenomenon, desired action		Remedy
11-4-6	To print a maintenance record according to GLP/GMP		1) Settings for the weighing device - Set for the weighing device to "Perform the GLP output". 2) Settings for the printer - Printing mode: Dump printing mode [3=MODE PRN MODE / DUMP] Refer to "7-3. Printing mode settings" in "7. Basic Settings" in this document. * When printing maintenance records according to GLP/GMP, the printing mode for the printer must be set to "Dump printing mode" [3=MODE PRN MODE / DUMP]. * When performing statistical calculation, the printer is operated using "External key printing mode" [3=MODE PRN MODE / EXT.KEY]. Therefore, to print maintenance records according to GLP/GMP, it is necessary to change the mode to "Dump printing mode" temporarily. * When switching printing mode, please note that the printer deletes all data to be used with statistical calculation. (We recommend taking actions such as printing results for statistical calculation beforehand.) * Press and hold the  key to switch between "External printing mode" and "Dump printing mode" Refer to the item for the  key in "5. Basic Operations of the Keys" in this document. 3) Printing the maintenance records - When outputting data for maintenance records such as data for calibration (sensitivity adjustment) of the printer by operating the weighing device, the printer prints the data transmitted to it. * Return the printing mode for the printer to "External key printing mode" if necessary.
11-4-7		To print the date / time	Press the  key to print the time. Press the  key to print the date. * The printer uses the built-in clock for printing date / time. * By using the password lock function of the printer, setting the date / time can be limited to only by an administrator. Refer to "9. Password Lock Function" in this document.
11-4-8	About date / time	To automatically print the date / time when printing the weighing values	1) Settings for the weighing device - Data output format: "A&D standard format" 2) Settings for the printer - Printing mode: "External key printing mode" [3=MODE PRN MODE / EXT.KEY] Refer to "7-3. Printing mode settings" in "7. Basic Settings" in this document. - Printing data: Date + weighing value [3=MODE PRN FOR. / TIME/WG] Refer to "8-2. Items list ("PRN FOR." item)" in "8. Function Settings" in this document. * The printer uses the built-in clock for printing date / time. * By using the password lock function of the printer, setting the date / time can be limited to only by an administrator. Refer to "9. Password Lock Function" in this document.

No.	Phenomenon, desired action		Remedy
11-4-9	About date / time	To change settings of date / time	Press and hold the  key to enter time setting mode. Press and hold the  key to enter date setting mode. Enter values using the numerical keypad in each setting mode to set date or time. Press the  key while  is displayed to store date or time. * By using the password lock function of the printer, setting the date / time can be limited to only by an administrator. Refer to “9. Password Lock Function” in this document.
11-4-10		To not print date / time in Statistical calculation results	Set the printer as follows. - Calculation printing: Do not add date and time in the calculation printing [3=MODE TOTAL MD / T/D NO] Refer to “8-2. Items list (“TOTAL MD” item)” in “8. Function Settings” in this document.
11-4-11	Printing the weighing values	To automatically print weighing values by placing the sample without pressing the key.	Refer to “11-3-5 “2. To automatically print weighing values due to a change in the weighing value.” in “11-3. Troubleshooting” in this table.
11-4-12		To print weighing values using keys on the printer	Refer to “11-3-3 “2. To print weighing values using keys on the printer” in “11-3. Troubleshooting” in this table.
11-4-13		To print the unstable weighing values where the stable mark is not lit	Set the printer as follows. - Unstable data: Printed [3=MODE US PRN / PRINT] Refer to “8-2. Items list (“US PRN” item)” in “8. Function Settings” in this document.
11-4-14	About ID code	To not print ID code	Set the printer as follows. 1) Settings for the printer - ID printing: Not printed out [3=MODE CODE PRN / NOT PRN] Refer to “8-2. Items list (“CODE PRN” item)” in “8. Function Settings” in this document.
11-4-15		How to use ID code	By having the printer record information (product name, lot number, and measurer, etc) related to the weighing results in advance, that data can be printed whenever needed. * Press the  key to print the ID code.

No.	Phenomenon, desired action	Remedy
11-4-16	Confirming the software version	Confirm the software version by following the procedure below. 1) Turn the power of the printer off by using the power switch on the right side of the printer. 2) When the power of the printer is turned on again, the printer's display shows the software version temporarily. V1.05 24/06/17 (software version display) The example above shows software version "V1.05(24/06/17)".

11-5. Asking for repair

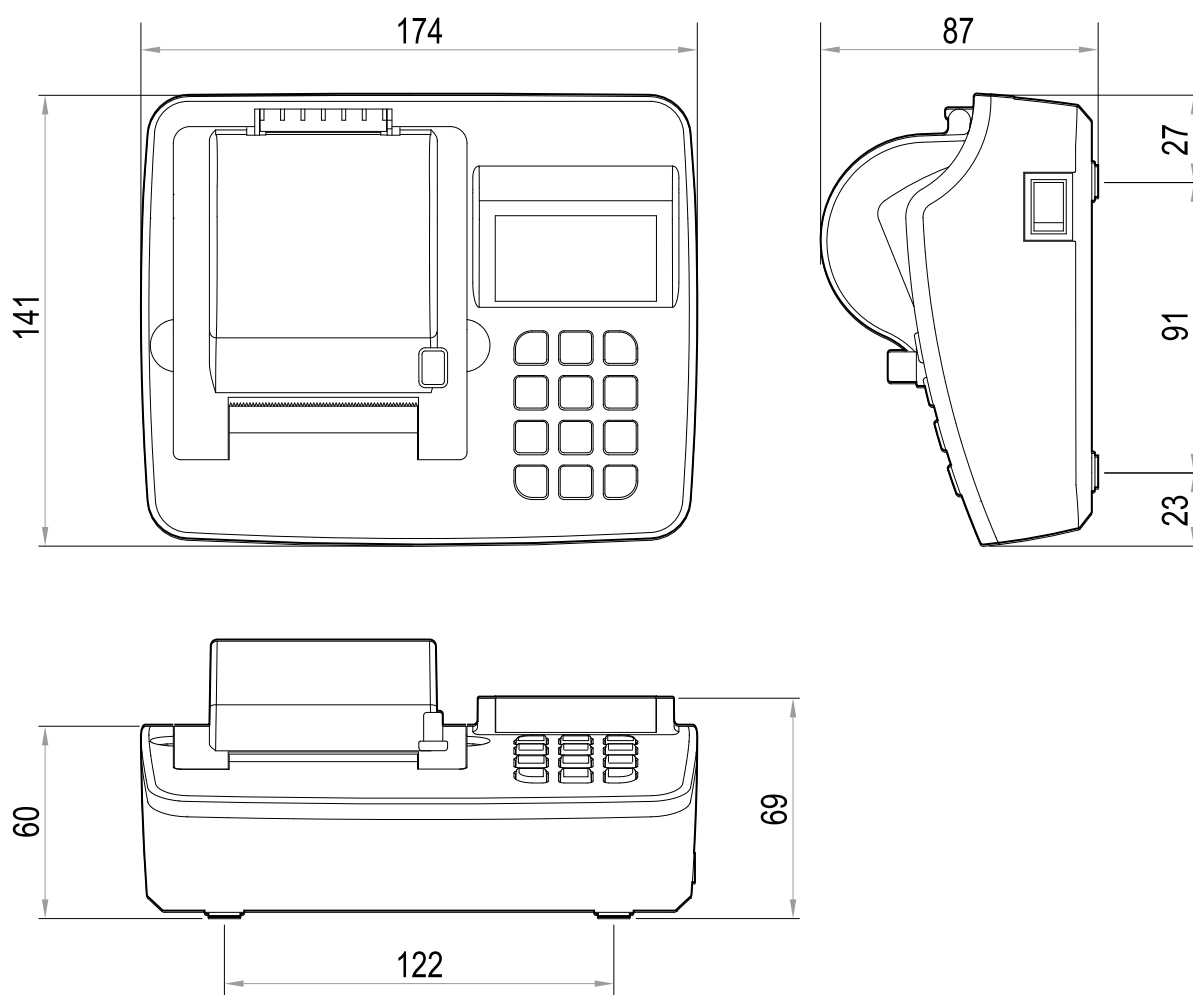
If improper performance persists after checking, contact the local A&D dealer for repair.

The printer is a precision instrument. Use the original packing material for transportation.

12. Specifications

Printing method	Thermal type
Character specifications	13 dots × 28 dots 1.5(W) × 2.6(H) mm
Number of characters printed	24 characters per line
Operating temperature range	0 °C to 40 °C
Operating humidity range	20 % to 85 %RH (No condensation)
Storage temperature range	−10 °C to 50 °C
Storage humidity range	10 % to 90 %RH (No condensation)
Interface	RS-232C, current loop
Power supply & AC adapter type	Supplied to the AC adapter Confirm that the adapter type is correct for the local voltage and power receptacle type.
External dimensions	174(W) × 141(D) × 87(H) mm
Weight	Approx. 500 g
Accessories	Thermal printer paper for printers (1 pcs), AC adapter, AC adapter labels, simplified instruction manual, RS-232C cable, power cable

12-1. External dimensions



Unit : mm

12-2. Sold separately

Thermal paper for printers (5 pcs) AX-PP147-S

- This is thermal paper of 57.5 mm width × Approx. 30 m length.

Dust-free thermal paper for printers (10 pcs) AX-PP183-S

- This is dust-free thermal paper that is available for use in cleanrooms.
57 mm width × Approx. 25 m length

RS-232C cable (D-sub9 pin – 9 pin, 1 m) AX-KO2741-100

RS-232C cable (D-sub9 pin – 9 pin, 2 m) AX-KO2466-200

RS-232C cable (D-sub25 pin – 9 pin, 0.9 m) AX-KO2116-090

RS-232C cable (D-sub25 pin – 9 pin, 2 m) AX-KO1710-200

RS-232C cable (DIN – 9 pin, 2 m) AX-KO1786-200

Current loop cable (DIN – 9 pin, 1 m) AX-KO5291-100

Foot switch AX-SW138

- By connecting the foot switch to the external input connector, functions assigned to the “External input 1 (EXT IN1IN1)” and “External input 2 (EXT IN2IN2)” of “Function settings (3=MODE)” can be performed.

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A&D Company, Limited

3-23-14 Higashi-Ikebukuro, Toshima-ku, Tokyo 170-0013, JAPAN

Telephone: [81] (3) 5391-6132

Fax: [81] (3) 5391-1566

A&D ENGINEERING, INC.

Headquarters Office: 4622 Runway Boulevard, Ann Arbor, Michigan 48108, U.S.A.

Sales Office: 47747 Warm Springs Boulevard, Fremont, California 94539, U.S.A.

Tel: [1] (800) 726-3364

Weighing Support: [1] (888) 726-5931

Inspection Support: [1] (855) 332-8815

A&D INSTRUMENTS LIMITED

Unit 24/26 Blacklands Way, Abingdon Business Park, Abingdon, Oxfordshire OX14 1DY United Kingdom

Telephone: [44] (1235) 550420

Fax: [44] (1235) 550485

A&D AUSTRALASIA PTY LTD

32 Dew Street, Thebarton, South Australia 5031, AUSTRALIA

Telephone: [61] (8) 8301-8100

Fax: [61] (8) 8352-7409

A&D KOREA Limited

한국에이.엔.디(주)

서울특별시 영등포구 국제금융로6길33 (여의도동) 맨하탄빌딩 817 우편 번호 07331

(817, Manhattan Bldg., 33. Gukjegeumyung-ro 6-gil, Yeongdeungpo-gu, Seoul, 07331 Korea)

전화: [82] (2) 780-4101

팩스: [82] (2) 782-4264

ООО A&D RUS

ООО "Эй энд Ди Рус"

Почтовый адрес: 121357, Российская Федерация, г.Москва, ул. Вереysкая, дом 17

Юридический адрес: 117556 г. Москва, Варшавское шоссе, д. 95, корп. 1.

тел.: [7] (495) 937-33-44

факс: [7] (495) 937-55-66

A&D Instruments India Private Limited

ऐ&डी इन्स्ट्रुमेंट्स इण्डिया प्रा० लिमिटेड

D-48, उद्योग विहार , फेस -5, गुडगांव - 122016, हरियाणा , भारत

(D-48, Udyog Vihar, Phase-V, Gurgaon - 122016, Haryana, India)

फोन : [91] (124) 4715555

फैक्स : [91] (124) 4715599

A&D SCIENTECH TAIWAN LIMITED.

艾安得股份有限公司

台湾台北市中山區南京東路2段206號11樓之2

(11F-2, No.206, Sec.2, Nanjing E.Rd., Zhongshan Dist., Taipei City 10489, Taiwan, R.O.C.)

Tel : [886](02) 2322-4722

Fax : [886](02) 2392-1794

A&D INSTRUMENTS (THAILAND) LIMITED

บริษัท เอ แอนด์ ดี อินสตรูमेंท์ (ไทยแลนด์) จำกัด

168/16 หมู่ที่ 1 ตำบลรังสิต อำเภอธัญบุรี จังหวัดปทุมธานี 12110 ประเทศไทย

(168/16 Moo 1, Rangsit, Thanyaburi, Pathumthani 12110 Thailand)

Tel : [66] 20038911