INSTRUCTION MANUAL

INTELLIGENT PRINTER

AD-8113

C O N T E N T S

1. INTRODUCTION

AD-8113 is an intelligent printer which can be used in connection with the A & D weighing indicators and electronic balances. It prints each input data together with date, code number, and Sequential number, and prints accumulated total, maximum, minimum and average of the data when total button is pushed.

2. MAIN CHARACTERISTICS

2-1 This journal printer uses the printing mechanism of the impact dot matrix method, and characters are printed in two colors-red and black.

2-2 This printer can print out Grandtotal and Subtotal of the data.

2-3 Maximum, minimum and average of the data are given.

2-4 Standard deviation of the accumulated data is given (Optional).

3. PANEL DESCRIPTION

3-1 Front Panel
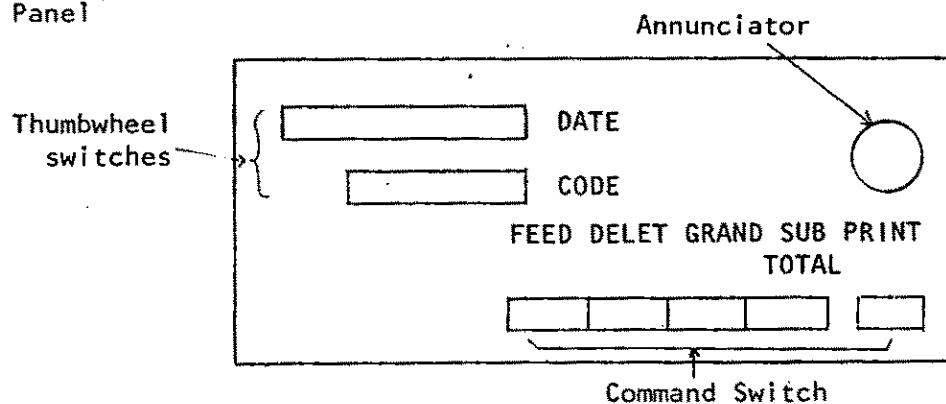
3-2 Rear Panel
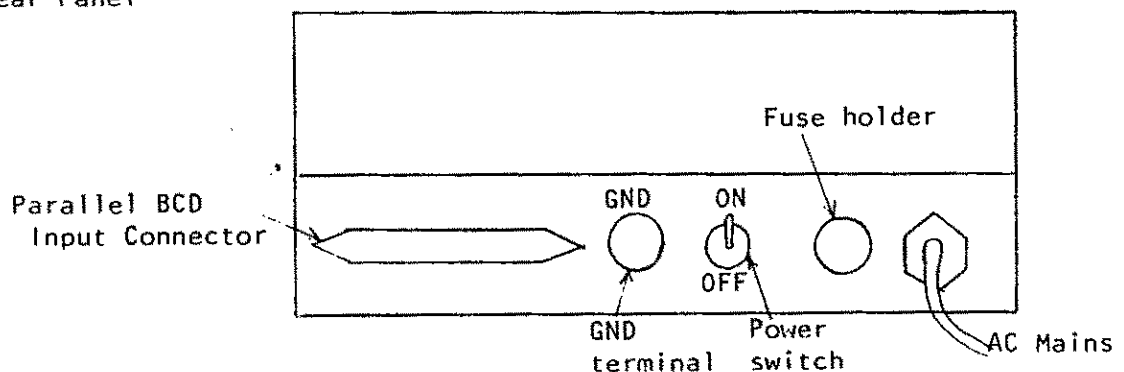
4. DATA INPUT

4-1 Data Format

    (1) Method .... Parallel BCD
    (2) Logic .... Positive (Data) Negative (Command)
    (3) Logic Level .... TTL Compatible, Fan-in 1.

                             High(1)   +2.4 ∿ +5V or Open
                             Low (0)   0 ∿ 0.4V

4-2 Command Signals

Command signals such as Feed, Delete, Grand/Subtotal and Print can be given through the connector. The functions of these command signals are the same as the front keys and the pins from No. 26 to No. 30 are used.
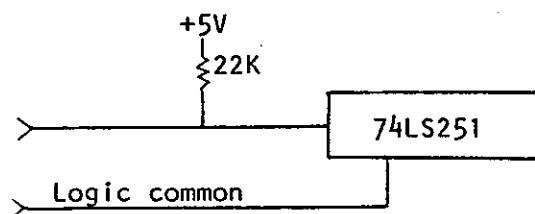The connections should be either by contact or by open collector, internal circuit of which is shown in Fig. 4-2
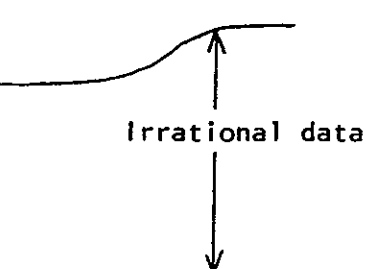

Fig. 4-2

4-3 Data Input Pin Designation

Connector 57-30500(DDK) will be supplied with AD-8113.

Pin No.	Signal	Pin No.	Signal
1	Logic Common	26	Command 1 (Feed)
2	1 ⌉	27	Command 2 (Delete)
3	2 × 10⁰	28	Command 3 ("Lo"for ON) ("Lo" for ON)
4	4	29	Command 4 (Subtotal)
5	8 ⌋	30	Command 5 (Print)
6	1 ⌉	31	
7	2 × 10¹	32	
8	4	33	
9	8 ⌋	34	
10	1 ⌉	35	
11	2 × 10²	36	
12	4	37	
13	8 ⌋	38	
14	1 ⌉	39	
15	2 × 10³	40	
16	4	41	
17	8 ⌋	42	Polarity ("Lo" for minus)
18	1 ⌉	43	
19	2 × 10⁴	44	
20	4	45	
21	8 ⌋	46	
22	1 ⌉	47	Over ("Hi" for over indication)
23	2 × 10⁵	48	
24	4	49	
25	8 ⌋	50	

4-4 Input Signal

BCD codes through Data Input are interpreted as below.

BCD Codes	Interpreted as	Note
0 0 0 0	0	
0 0 0 1	1	
0 0 1 0	2	
0 0 1 1	3	
0 1 0 0	4	
0 1 0 1	5	
0 1 1 0	6	
0 1 1 1	7	
1 0 0 0	8	
1 0 0 1	9	
1 0 1 0	A	Irrational data
1 0 1 1	B	
1 1 0 0	C	
1 1 0 1	D	
1 1 1 0	E	
1 1 1 1	Φ	

4-5 Polarity indication, over and commands are designated as shown in Table 4-5.

Table 4-5.

Signal	Polarity	Over	Command
Lo(0)	–	.	ON
Hi(1)	+	Over	OFF

"Over" logic can be set in negative logic by dip switch.

4-6 Printer Output

Printing Format

Printer will output the result in the following form.

Action	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Notes
	No Code	
PRINT	1 1 2 3 4 5 6 6 0 0 0 . 0 0 kg	
PRINT	2 2 3 4 5 6 7 0 . 0 0	
FEED		Feed One Line *
PRINT	3 3 4 5 6 7 8 0 0 0 0 . 1 s	Red (Minus data)(1)
PRINT	3 3 4 5 6 7 8 0 0 5 2 . 7 8R	Red (Irrational data)
PRINT	3 3 4 5 6 7 8 E 0 . 0 0C	
PRINT *	3 3 4 5 6 7 8 6 0 0 0 . 0 0	
DELETE(2)	3 3 4 5 6 7 8	Red
PRINT	3 3 4 5 6 7 8 6 0 0 0 . 0 0	
PRINT	4 4 5 6 7 8 9 6 0 0 0 . 0 0	
PRINT	5 5 6 7 8 9 0 1 2 3 4 . 5 6	

SUBTOTAL	S. TOTAL 5 1 9 2 3 4 . 5 6	
	MAX. 6 0 0 0 . 0 0	
	MIN. 0 . 0 0	
	AVE. 3 8 4 6 . 9 1	
	*(3) S.D. 2 6 6 5 . 7 3	Standard Deviation
	DATE 01.07.82	
	* *	
	No Code	
PRINT	1 3 0 0 0 0 1 4 0 0 0 . 0 0 kg	
PRINT	2 3 0 0 0 1 1 1 5 0 0 . 0 0	

	S. TOTAL 2 5 5 0 0 . 0 0	
	MAX. 4 0 0 0 . 0 0	
	MIN. 1 5 0 0 . 0 0	
	AVE. 2 7 5 0 . 0 0	
	S.D. 1 7 6 7 . 7 6	
	DATE 01.07. 82.	
	* *	
	G. TOTAL 7 2 2 1 7 6 . 1 2 kg	
	MAX. 6 0 0 0 . 0 0	
	MIN. 2 2 0 . 0 0	
	AVE. 3 1 6 8 . 0 2	
	S. D. 2 2 1 4 . 0 4	

Notes : *(1) Minus data are treated as error.
      *(2) When "DELETE" button is pushed, the proceeding data are deleted
           after data to be deleted are printed out in red.
      *(3) Standard deviation is optional.

4- Error Code

Printer prints in red color in case of the following errors
and these error data are not included in data processing.

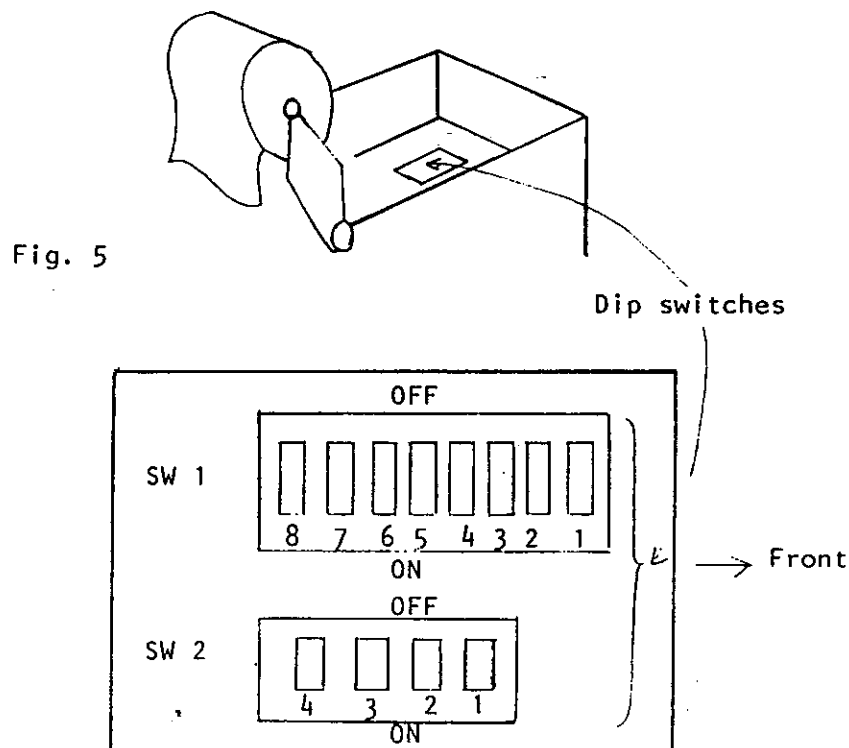| Error Code	Contents
C ·	Irrational data
R	Over range of data
S	Minus date

Table 4-6.

5. LOGIC SETTINGS

Before installation, logic settings must be done in order to suit the
application.
Dip swithces are located under the roll paper as shown in Fig. 5.

Note: Be sure to turn off power before any adjustment.

Fig. 5

Dip switches

SW 1

OFF

8 7 6 5 4 3 2 1

ON

SW 2

OFF

4 3 2 1

ON

→ Front

5-1 Decimal Point Setting

Decimal point is provided by a combination of dipswitches No.1, No.2 and No.3 of SW1 as below.

SW1			Decimal point position
No.1	No.2	No.3	
OFF	OFF	OFF	X X X X X X
ON	OFF	OFF	X X X X X.X
OFF	ON	OFF	X X X X.X X
ON	ON	OFF	X X X.X X X
OFF	OFF	ON	X.X.X X X X
ON	OFF	ON	X.X X X X X
OFF	ON	ON	0.X X X X X X

5-2 Logic Setting for "OVER"

NO.4 of SW 1   ON .... "Lo" for over indication
                  OFF .... "Hi" for over indication

5-3 Unit Selection

Engineering unit of the data can be selected by a combination of No.5 and No.6 of SW1 as below.

SW1		Unit
No.5	No.6	
OFF	OFF	Space
ON	OFF	g
OFF	ON	kg
ON	ON	t

5-4 Printout of Maximum, Minimum and Average

Printout of maximum, minimum and average of data can be activated by No.7 of SW1.

No.7 of SW1   ON .... Print of Max., Min. and Ave. activated
                  OFF .... Print of Max., Min. and Ave. deactivated.

5-5 Printout of Code

Print of Code can be activated or deactivated by No.8 of SW1.

No.8 of SW1   ON .... Print of Code activated.
                  OFF .... Print of Code deactivated.

5-6 Print.Line Space

Line space can be selected by No.1 of SW2.

No.1 of SW2   ON .... Single space
OFF .... Double space

5-7 Formula for Standard Deviation

Two formula for standard deviation are available and can be selected by No.2 of SW2.

No.2 of SW2   ON .... Population standard deviation
OFF .... Sample standard deviation

Notes: (1) No.3 and No.4 of SW2 are used internally and should be kept OFF all the time.

       (2) In normal use No.7 and No.8 SW1 should be ON.

       (3) Turn off power always when you change dip switch settings.

5-8 Supplying the printing paper

Insert the printing paper to the inner part to the inner part of the slot (ii), then pushing the feed switch and then the printing paper will be taken into the printer then finally printing paper will output from under the printing head.
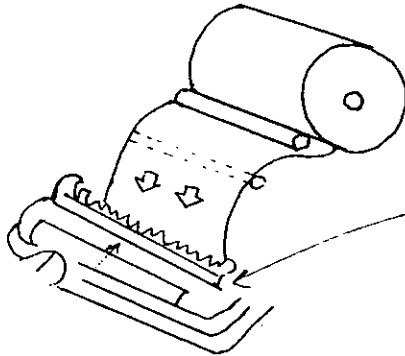
Finally, pass the paper under the cutter.

When you need to know about the characterisitic of this printer, please refer to the chapter

5-9 Connection with the External Devices.

   a) Connect the connecting cable which will match for the each
      external device to the input device.

   b) Make the inside designation by dip switch (see the dip switch
      setting) for the each external device.

   c) Push the command switch.

By these operation, you can get the specified printing output. Use
this printer under the full consideration within the requlated speci-
fication.
For example, Fig. 5-9. Show the connection with EX-2000A.

Fig. 5-9

BCD OUTPUT

(OP-01)

EX-2000A   AD-8113

KO-183
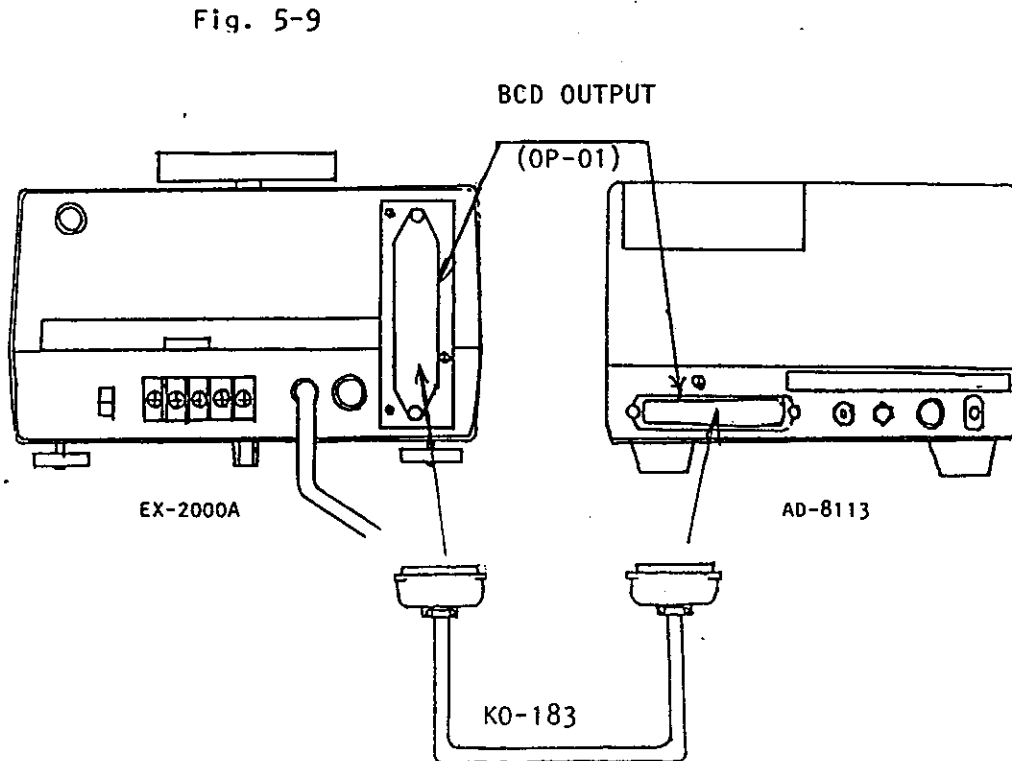
5-10 Finaly, after connecting with the external device, put the power
     switch on, then LED lamp will be on and then set the printing paper.
     Finaly, push the Feed switch until the print paperend appears from
     the Papaer Outlet of the printer.

Paper Outlet

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