ADDENDA

FC-*i* series INSTRUCTION MANUAL

Please note the following additions/amendments to the instruction manual for FC-***i*** series counting scale (WM:PD4000541).

(Page 14)

Place Sample, Set Sample Size and ENTER

⚠ If the calculated unit weight is too light, "Lo ut" (low unit weight) will be displayed, and you will be returned to Step 3.

⇩

⚠ If the "Add Sample" display appears again, then the sample size is not large enough for accurate counting – add the additional number of sample pieces.

(Page 27)

Changing Comparator Limits Temporarily

3. Change the Lower limit using 10-key pad and press the [ENTER] key. Then the display will return to the step 1 above with new limits.

⇩

3. Change the lower limit using 10-key pad and press the [ENTER] key. Then the display will return to normal with new limits.

(Page 28)

Using the [✳] Key to Set the Time and Date

4. Use the 10-key pad to set the time and press the [ENTER] key to return to the step 1 and the clock will start from "00" second.

5. Press the [✳] key. The display will return to normal.

⇩

4. Use the 10-key pad to set the time and press the [ENTER] key to return to normal. The clock will start from "00" second.
("5.Press the [✳] key ....": removed.)

(Page 29)

8-1. Calibration Procedure Using a Weight

⚠ If you .....
(For example: Using 10kg calibration weight that actually weighs 10.02kg.)

⇩

⚠ If you .....
(For example: Using 10kg calibration weight that actually weighs 10.002kg.)

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(Page 33)

F-00-X Weighing Unit

USA Version ONLY

❑ **Unit Weight (when "lb" is selected).**	
0	lb as piece weight.
1 ◂	lb as 1,000 piece weight.

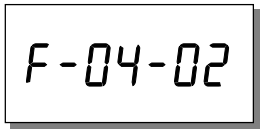
(Page 34)

F-01-X Operations

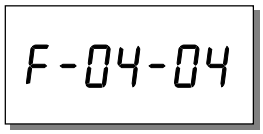
❑ **Display ON Unit Weight – Reset or Last.** When the display is turned on, the scale can be set to recall the last unit weight used.	
0 ◂	Unit weight is RESET (cleared) when display comes on.
1	Unit weight last used (before display is turned off, not power interrupt) will be entered automatically.

(Page 36)

F-04-X Environment and Beeper



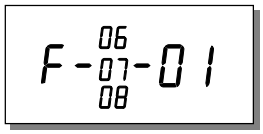
❑ **Response**	
0	Fast / sensitive
1 ◂	Normal
2	Slow / stable



❑ **Beeper for key operation**	
0 ◂	Beeper ON.
1	Beeper OFF.

(Page 37)

F-06-X/F-07-X/F-08-X Data Output



❑ **Data Out Mode / Bar Code Reader**	
0 ◂	Key mode: Data is sent by pressing the PRINT key. + command mode.
1	Stream mode: Data is sent continuously. command mode cannot be used.
2	Auto-print mode A: Data is sent if the weight display is stable at +5d (weighing display division) and above. + command mode.
3	Auto-print mode B: Data is sent if the weight display is stable at ±5d (weighing display division) and above/below. + command mode
4	Command mode only.
5	To use as Bar Code Reader Interface.

F-06/07/08-01		
	6	UFC format with Key Mode (see setting "0").
	7	UFC format with Auto-Print Mode A (see setting "2").
	8	UFC format with Auto-Print Mode B (see setting "3").

(Page 47)

Acknowledgment and Error Codes

- ❑ If the command is [S], [T] or [Z], the scale will send a second acknowledgment <AK> (06H) when the command operation is completed.

⇩

- ❑ If the command is [I], [S], [T] or [Z], the scale will send a second acknowledgment <AK> (06H) when the command operation is completed.

(Page 47)

Data Format

- ❑ ID Number and Item Code

Reply

I	D	,	0	0	0	1	2	3	C_R	L_F	A	B	C	D	E	F	G	H	I	J	K	L	C_R	L_F

ID number — Item Code (These are "space" for no item code.)

⇩

Reply

I	D	,	0	0	0	1	2	3	,	A	B	C	D	E	F	G	H	I	J	K	L	C_R	L_F

ID number — Item code (These are "space" for no item code.)

(Page 49)

- ❑ Memorize (enter) Total Count and Number of Addition into a specified ID memory.

ID Number: Maximum 6 digits
Total Count: Maximum 9 digits including sign
Lower Limit: Maximum 8 digits

⇩

ID Number: Maximum 6 digits
Total Count: Maximum 9 digits including sign
Number of addition: Maximum 8 digits

(The following sections are added to the section "11. RS-232C SERIAL INTERFACE".)

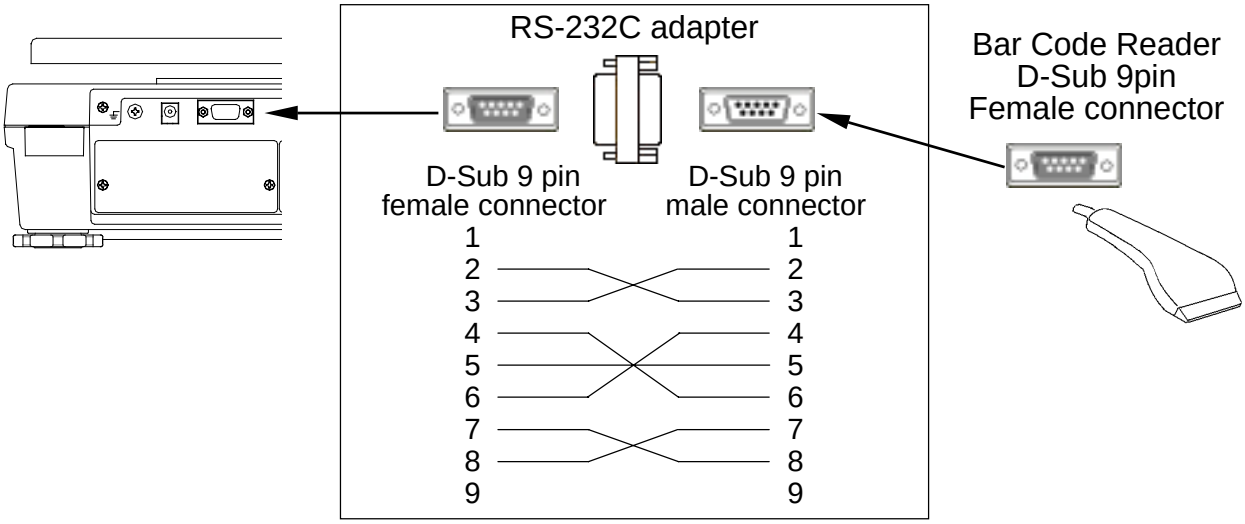
11-6. Using a Bar Code Reader

- ❑ The bar code reader can be connected to the FC-***i***'s RS-232C interface. It can read bar codes for ID number, unit weight, tare weight and comparator limits.
- ❑ Any of the RS-232C interfaces can be used for the bar code reader.
- ❑ Set the F-Function F-06/07/08-01='5' to use a bar code reader. For example, to use Ch.1 (PORT 1), set F-07-01='5'.

Requirement for the Bar Code Reader

Interface	RS-232C
Baud Rate	2400, 4800, 9600 bps
Character Code	ASCII
Terminator	C_R or C_RL_F
Bar Code	EAN/JAN, UPC, Codabar (NW-7), Interleaved 2 of 5, Code39 etc., depending on the bar code reader.
Connector	D-Sub 9pin connector (recommended)

⚠ In most cases, the bar code reader with RS-232C interface is to connect directly with a personal computer. It is necessary to convert signals to connect this kind of bar code reader with the FC-***i***. Refer to the diagram below.



⚠ Some bar codes will have start and stop characters. But set your bar code reader not to send those characters to FC-***i***. The FC-***i*** doesn't accept such data.

⚠ EAN/JAN/UPC bar codes usually have a check digit and other bar codes may have either. But set your bar code reader not to send the check digit. The FC-***i*** doesn't accept such data. If accepted, the FC-***i*** cannot know the difference between data and check digit.

❑ Read the instruction/technical manual of your bar code reader to connect it with the FC-***i***.

Bar Code Data and Format

❑ The bar code data that the FC-***i*** accepts are ID number, unit weight, tare weight and comparator limits.

❑ The bar code has "2 digit identification code + 6 digits numbers" for ID number and "2 digit identification code + maximum 10 digits numbers including sign and decimal point" for the other data.

❑ The unit weight and tare weight must be within 6 digits except nonsignificant zeros.

Unit weight 123.456 g:	"12+123.456"	acceptable
	"12+00123.456"	acceptable
	"12+0123.4560"	not acceptable
Tare weight 10 kg:	"15+10"	acceptable
	"15+0000010.0"	acceptable
	"15+010.00000"	not acceptable

❑ The comparator limits must be within 7 digits except nonsignificant zeros.

Upper limit:	“17+123”	acceptable
	“17+000000123”	acceptable
	“17+012345670”	not acceptable

Bar Code Data	Identification Code	Numbers	Function
ID Number	01	6 digits ID number.	Recall the unit weight by ID numbers. Similar function to “2-5. Unit Weight By ID Number”.
Unit Weight (g)	12	10 digits including sign and decimal point.	Enter a unit weight in “g” directly. Similar to “2-4. Unit Weight by KEYBOARD”
Unit Weight (lb)	13	10 digits including sign and decimal point.	Enter a unit weight in “lb” directly. Similar to “2-4. Unit Weight by KEYBOARD”
Unit Weight (lb/1000pcs)	14	10 digits including sign and decimal point.	Enter a unit weight in “lb/1000pcs” directly. Similar to “2-4.Unit Weight by KEYBOARD”.
Tare Weight (kg)	15	10 digits including sign and decimal point.	Enter a tare weight in “kg” directly. Similar to “3-1. Using the KEYBOARD TARE key”.
Tare Weight (lb)	16	10 digits including sign and decimal point.	Enter a tare weight in “lb” directly. Similar to “3-1. Using the KEYBOARD TARE key”.
Comparator Upper limit	17	10 digits including sign.	Change comparator upper limit temporarily.
Comparator Lower limit	18	10 digits including sign.	Change comparator lower limit temporarily.

❑ If the EAN/JAN/UPC-A is used for ID number, place “0” to the high-order digits to keep the necessary digit number.
Example of ID number “000123”

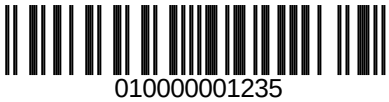
EAN/JAN-13	010000000123[3]	([3] shows check digit)
EAN-8	0100123[5]	([5] shows check digit)
UPC-A	01000000123[5]	([5] shows check digit)

⚠ When the data from bar code reader is not acceptable, the FC-***i*** will beep 4 times.

- ♬ The data contains too many digits or too many significant digits.
- ♬ The data contains invalid identification code.
- ♬ The data is out of range. (The tare data is more than the capacity, etc.)
- ♬ The tare / unite weight has a minus sign.
- ♬ The data has start/stop characters or check digit. These will lead to the invalid identification code, too many digits and so on.

⚠ The check digit may be accepted as an effective number.
Example: EAN-8 / 0100123[5] ([5] is a check digit) can be accepted as ID number “001235”.
Do not set the bar code reader to send the check digit.

Examples of Bar Code

ID No. = 123456	 01123456	Interleaved 2 of 5
ID No. = 123456	 0100001234562	EAN/JAN-13
ID No. = 123	 01001235	EAN/JAN-8
ID No. = 123	 010000001235	UPC-A
Unit Weight = 123.456g	 *12+123.456*	Code 39
Unit Weight = 0.27217 lb	 *13+000.27217*	Code 39
Tare Weight = 1.234 kg	 *15+00001.234*	Code 39
Tare Weight = 0.5 lb	 *16+0.5*	Code 39
Comparator Upper limit =12345	 A17+000012345A	Codabar (NW-7)

11-7. Using UFC (Universal Flex Coms) Function

- ❑ The UFC function allows you to print out as you format the printer (UFC format).
- ❑ The FC-***i*** can store the UFC format as text data. It will include parameters to replace with count data, weight data and so on.
- ❑ The maximum number of text data is **384** characters.
- ❑ Using “PF” command, the text data have to be sent to the scale in advance. When the [PRINT] key is pressed or by auto-print mode A/B, the scale will send the stored text data with the parameters replaced by original data.
- ❑ Terminator for the “PF” command is “C_R” or “C_RL_F”.
- ❑ Set F-06/07/08-01=“6”, “7” or “8” to send the UFC format data.

Store Text Data into the Scale Memory

Command

P	F	,	$	P	C	,	‘	T	E	X	T	‘	,	#	2	0	,	$	S	P	∗	2	,	&
$	C	R	,	$	L	F	,	$	W	T	,	$	C	R	,	$	L	F	C_R	L_F				

Terminator

Reply

AK

The “PF” command sends text data that will include:

❑ Parameters for the scale data and control codes

Parameter	Data & Code
$PC	Count
$WT	Weight
$UW	Unit weight in use
$TR	Tare weight in use
$TL	Total count
$AN	Accumulation numbers
$CD	ID number in use
$NM	Item code in use

Parameter	Data & Code
$CP	Comparator result
$DT	Date
$TM	Time
$CM	Comma
$SP	Space
$CR	Carriage Return
$LF	Line Feed

❑ ASCII text string
Text string is described in single quote marks as ‘Data’.
The single quote itself is written as ’’(2 single quotes).
Example: Text ‘ABC’ is described as ‘’’ABC’’’.

❑ ASCII hexadecimal code
The ASCII hexadecimal codes are written in the form “# + 2 hexadecimal digits.
This will be mainly used to send control codes that can’t be described as text string.
Example: #04 “EOT”

❑ Repeat data
The control codes $SP, $CR and $LF can be used with “∗ + maximum 2 digit number”. That code will be repeated number of times designated.
Example: $LF∗9 Repeat “$LF” 9 times.
$SP∗12 Place 12 “Spaces”.

❑ Link mark “&”
If you will send more than 2 lines data, attach “&” to the end of the line. Then, the scale considers the data to be continued.

⚠ “Space” or “,” will be used to separate these data. You can skip them, but you cannot skip “,” after “PF”. You must start with “PF,”.

Data Format for the Scale Data

“ ␣ ” in examples below shows “Space” (20H).

Parameters for the scale data will be replaced by the format below when the scale sends them out.

⚠ Data has the fixed number of digits including a sign and a decimal point. The insignificant zeros are replaced by “Space (20H)” (except the ID number).

$PC	␣ ␣ ␣ ␣ + 1 2 3 4 ␣ P C	1234 pcs / 9 digit data + 3 digit unit
$WT	␣ ␣ + 4 . 3 2 1 0 ␣ k g	4.3210 kg / 9 digit data + 3 digit unit
$UW	+ 1 . 2 3 4 5 6 7 ␣ ␣ g	1.234567 g / 9 digit data + 3 digit unit
$TR	␣ ␣ + 1 . 2 3 4 5 ␣ k g	1.2345 kg / 9 digit data + 3 digit unit
$TL	␣ ␣ + 9 9 9 9 9 9 ␣ P C	999999 pcs / 9 digit data + 3 digit unit
$AN	␣ ␣ ␣ ␣ 1 2 3 4	1234 times / 8 digit data

$CD	0 0 0 1 2 3	ID No. 000123 / 6 digit data
$NM	Z ␣ D ␣ 5 . 6 V ␣ ␣ ␣ ␣	12 characters
$CP	O K	Result is “OK” / 2 characters
	␣ ␣	Result is not available.
$DT	0 3 / 1 8 / 2 0 0 3	The order of date obeys F-11-01.
$TM	1 2 : 3 4 : 5 6	12(h) 34(m) 56(s)

Examples of PF command and AD-8121 Printout Sample

AD-8121 Printout
(F-06/07/08-03=” 0” or “ 1”)

```
ID 000123
PN Z D 5.6V
Count
         +1234 PC
Unit Weight
     +1.234567  g
Weight
       +1.5235 kg

    03/18/2003
    12:34:56

  A&D FC-5000i
```

“PF” Command

```
PF,‘ID  ’,$CD,$CR,$LF,&
‘PN  ’,$NM,$CR,$LF,&
‘Count’,$CR,$LF,&
$SP*4,$PC,$CR,$LF,&
‘Unit  Weight’,$CR,$LF,&
$SP*4,$UW,$CR,$LF,&
‘Weight’,$CR,$LF,&
$SP*4,$WT,$CR,$LF,&
$CR,$LF,&
$SP*3,$DT,$CR,$LF,&
$SP*3,$TM,$CR,$LF,&
$CR,$LF,&
‘   A&D  FC-5000i’,$CR,$LF
```

Terminator codes

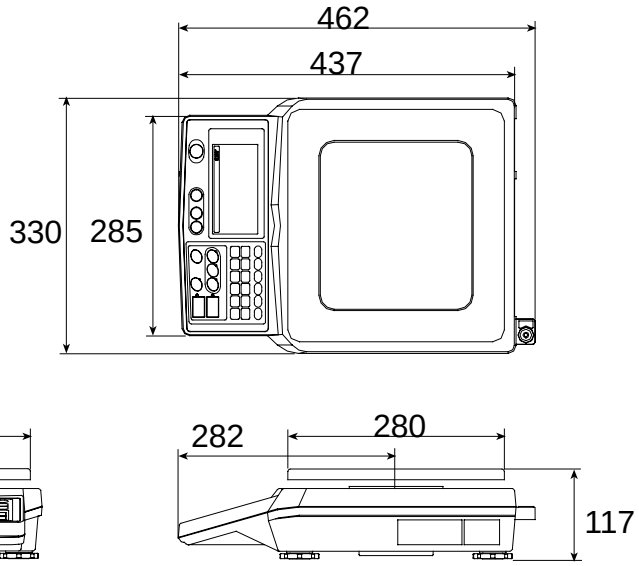
⚠ Normally the printer needs to receive the terminator and do not forget to add the terminator code(s) to the end of text data.

(Page 57)

SPECIFICATIONS

Platform Size (mm)	315 x 270
Platform Size (inches)	12.4 x 10.6

Platform Size (mm)	300 x 280
Platform Size (inches)	11.8 x 11.0



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