
CNCCELL[®] PA8101
WEIGHT INDICATOR

OPERATOR MANUAL

YUYAO PACIFIC WEIGHING ENGINEERING CO.,LTD

Add: NO.50 TanJiaLing East Road Yuyao City, Zhejiang Province P.R. China

Tel : 0086-574-62730153

<http://www.cn-cells.com>

Fax: 0086-574-62730178

E-mail: pacells@mail.nbptt.zj.cn

P.C: 315400

TABLE OF CONTENTS

1. INTRODUCTION
 2. PANEL AND CONNECTORS
 3. FUNCTION KEYS AND ANNUNCIATOR
 4. MENU
 5. OPERATION OF SETUP MENU F
 6. OPERATION OF USER MENU A
 7. RS-232 COMMUNICATION
 8. ADDITIONAL FEATURES
 9. SPECIFICATIONS
 10. ACCESSORIES
- APPENDIX A
- APPENDIX B

1. INTRODUCTION

The PA8101 series indicators use a 7-digit 7-segment LED display, they have high resolution, rapid A/D conversion and flexible selection with menus. And they have additional features, such as counting feature, peak hold feature and more units' feature. They are convenient to use.

MODEL	ADDITIONAL FEATURES
PA8101	Common features
PA8101A	Add "more units" feature in PA8101.
PA8101E	Add "counting" feature and "peak hold" feature in PA8101.

2. PANEL AND CONNECTORS

2.1 Panel Distribution

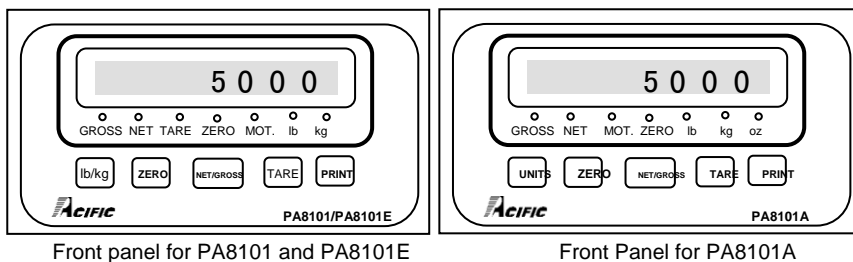


Fig.1 Front Panel Diagram

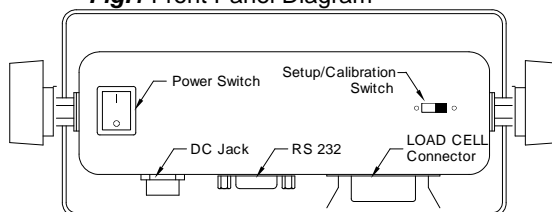


Fig.2 Back Panel Diagram

2.1.1 Front Panel. (See Fig. 1)

- 0.54 inch 7digit LED display.
- 7 LEDs for GROSS, NET, TARE, ZERO, MOT, lb, kg legends.
- 5 function keys.

2.1.2 Back Panel. (See Fig.2)

- 14-pin load cell connector (Female).
- 9-pin D-type connector for the RS-232 serial port (Female).
- Input jack for power (Male).
- Power Switch (1-ON, 0-OFF).
- Setup/Calibration Switch.

2.2 Connector and Its Wiring

2.2.1 Shown at Fig.3 are the pin assignments for the load cell connector.

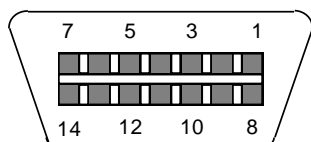


Fig. 3

Pin Nos	Color	Wire Name
1/8	RED	+Excitation
3/10	BLK	-Excitation
5/12	GRN	+Signal
7/14	WHT	-Signal

2.2.2 Shown at *Fig.4* are the pin assignments for the RS-232 connector.

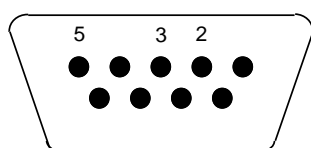


Fig. 4

Pin Nos	Wire Name
2	RXD
3	TXD
5	COM

3. FUNCTION KEYS AND STATUS INDICATOR

3.1 Functions Keys

Function keys in the weighing mode (Function keys in the menu mode seeing *Fig. 4.1*).

Toggles between lb and kg units if you select "0" in the User Menu A5.

Sets indicator to display zero, the indicator will not respond if a) scale is not within Zero Range; b) scale is in motion; c) scale is overload.

Toggles between Gross and Net weight display only if a Tare has been established.

Used to establish a Tare while in either Gross mode or Net mode. The indicator will not respond if a) scale is below zero; b) scale is in motion; c) scale is in over capacity.

Sends "Print" data to printer. The indicator will not respond if a) scale is in motion; b) scale is in over capacity.

3.2 Annunciators

- GROSS: Indicates that the indicator is displaying gross weight.
- NET: Indicates that the indicator is displaying net weight.
- TARE: Flash once when a tare weight has been established in the system.
- ZERO: Indicates that the indicator is displaying zero.
- MOTION: This light is on whenever the scale is motion.
- lb: Indicates the "lb" unit of the displayed weight.
- kg: Indicates the "kg" unit of the displayed weight.

4. Menu

The indicator includes two menus: the setup menu "F" and the user menu "A". The Setup menu "F", containing basic weighing parameters and calibration data, consists of 16 selections, each with its own selectable sub-menu. The User menu "A", containing serial communication parameters, ID No. printout record number, etc. consists of 8 selections, each also with its own selectable sub-menu.

4.1 Operation of the function keys in the menu mode

4.1.1 The four keys on keyboard used as direction browsers and accept current selection. They are shown at *Fig. 5*.

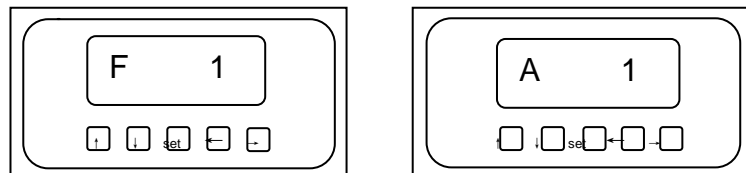


Fig. 5

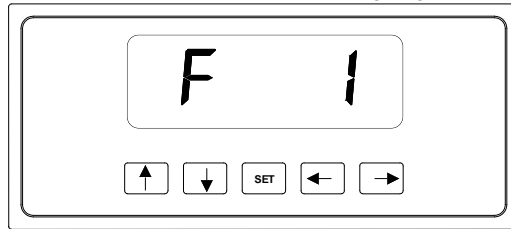
4.1.2 Definition of the keys in the menu mode

- [↑]: Entering to the main menu.
- [↓]: Entering to sub-menu from main menu and scroll down the flashing digit 1 from 1 to 9 by press this key at setting the value in sub-menu.
- [→]: Entering to right menu in equal class and scroll up the flashing digit 1 from 1 to 9 by press this key at setting the value in sub-menu.
- [←]: Entering to left menu in equal class and change the flashing digit from higher to lower.
- [SET]: Accept displayed data of a selection and return to main menu.

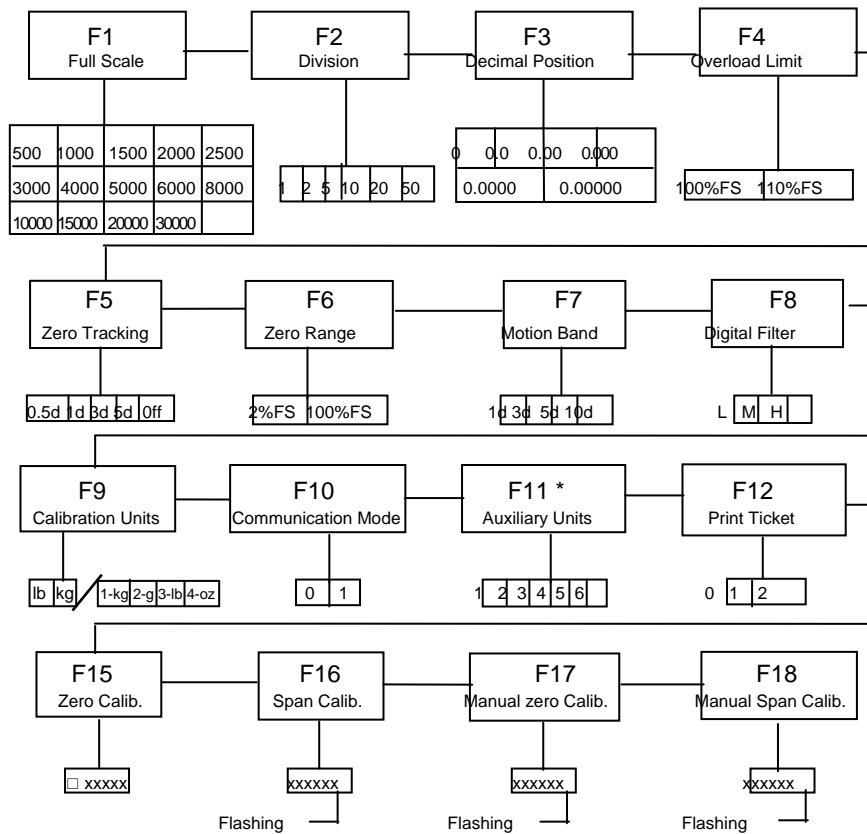
5. Operation of the Setup Menu F

5.1 Entering to the Setup Menu F

Put the Setup/Calibration Switch to "ON", turn power on and press the **[lb/kg]** key or **[UNITS]** simultaneously, and then the display shows information as bellow. Only to place the Setup/Calibration switch to the "OFF" if ending or exiting the Setup Menu, then the indicator will return to the weighing mode.



5.2 Setup Menu Chart A



Remark: The selection with "*" is valid in Model PA8101A.

5.3 Setup Menu Description

CODE	NAME	DESCRIPTION	CODE/VALUE
F1	Full Scale	Full Scale =Number of Division× Value of Division	500 1000 1500 2000 2500 3000 4000 5000 6000 8000 10000 15000 20000 30000 ✓
F2	Division	Minimum difference between two weighing readings.	1 ✓ 2 5 10 20 50
F3	Decimal Pt.	Decimal point position	0 ✓, 0.0, 0.00, 0.000, 0.0000, 0.00000
F4	Overload Limit	Display will show " _ _OL_ _ " if the reading is greater than the value.	100%F.S. ✓ 110%F.S.
F5	Zero Tracking	Display maintain zero while the reading is less than this selection and stable.	0.5d ✓ 1d 3d 5d OFF
F6	Zero Range	The range of zero-setting operation is enabled.	2%F.S. ✓ 100%F.S.
F7	Motion Band	The MOT LED light out and the weighing operation (i.e. zero, tare) is enable while motive reading is not exceeded the limit of this selection.	1d ✓ 3d 5d 10d
F8	Digital Filter	L-light, M-middle, H-heavy. Select heavier, the reading is stable but slower.	L M ✓ H
F9	Calib. Unit	Select unit at calibration. You should use "lb" weights if you select "lb".	0 ✓ 1
		Select unit at calibration. You should use "kg" weights if you select "kg".	1 ✓ 2 3 4 (Valid in PA8101A) (See in 8.1)
F10	Communication Mode	0-standard RS-232 output 1-printout.	0 ✓ 1

CODE	NAME	DESCRIPTION	CODE/VALUE
F11*	Auxiliary units	Press [UNITS] key to toggle the unit between calibration units and auxiliary units in weighting. 1-off 2-kg 3-g 4-lb 5-oz 6-lb:oz	1 ✓ 2 3 4 5 6 (Valid in PA8101A) (See in 8.1)
F12	Print Ticket	Print ticket Mode: 0-Print "GROSS, NET, TARE". 1-Print displayed weight	0 ✓ 1
F15	Zero Calib.	Show internal codes at zero (no load on platform) and wait for MOT LED light out, press SET key to save zero calibration value.	
F16	Span Calib.	Enter the value of current test weights on platform via direction keys and wait for MOT LED light out, press SET key to save span calibration value. See appendix A if display show EER 1.	
F17	Manual Zero Calib.	Check or re-establish zero calibration value.	
F18	Manual Span Calib.	Check or re-establish span calibration value.	

Remark: Factory-set defaults are shown in bold with a ✓

Note: The weight value of span calibration is 20%FS at least. Zero calibration value and span calibration value can be checked in F17 and F18 after F15 and F16 being set successfully. Please fill the calibration data in the following form to prevent data missing in an accident. You can key-in the data via F17 and F18 without re-calibration.

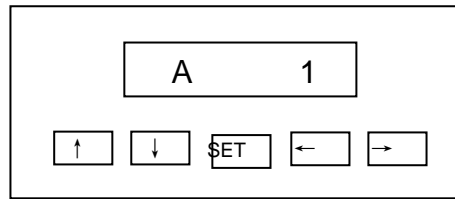
Put the set/calibration switch to "OFF", the indicator will return to the weighing mode.

ID NO.	Zero Calib. Value	Span Calib. Value

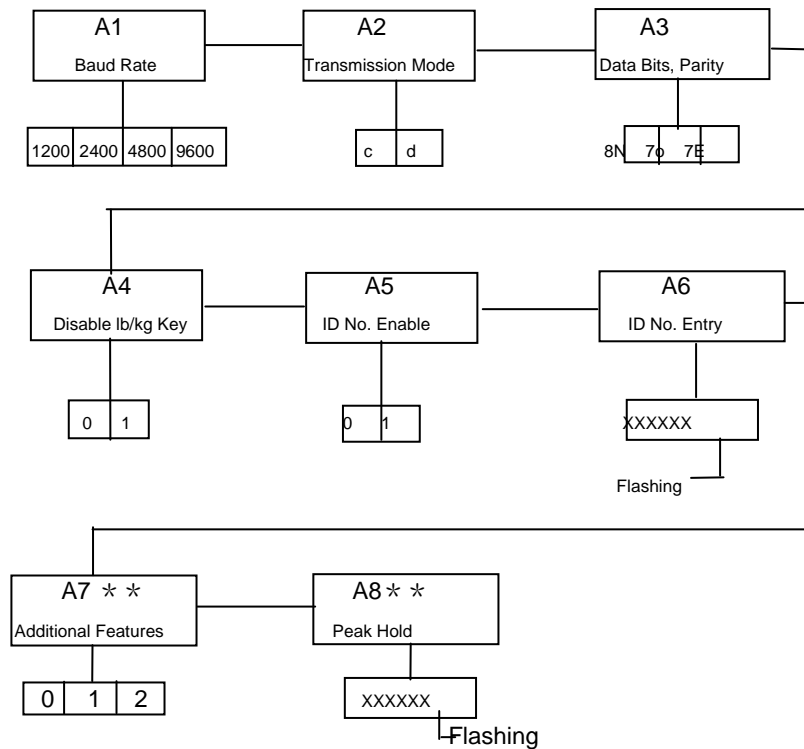
6. Operation of the User Menu A

6.1 Entering to the User Menu A

When the power is on, press the [lb/kg] or [UNITS] key and hold, then put the Setup/Calibration Switch to "ON", the display shows information as below:




6.2 User Menu Chart A



Remark: The selection with “* *” is valid in model PA8101E.

6.3 User Menu Description

CODE	NAME	DESCRIPTION	CODE/VALUE
A1	Baud Rate	Set baud rate of the RS-232 serial communication when F10 is 0.	1200 2400 4800 ✓ 9600
A2	Communication Mode	"c"=continuous mode "d"=command mode.	c ✓ d
A3	Data Bits and Parity	8N: 8 data bits with no parity bit and 1 stop bit. 7O: 7 data bits with odd parity bit and 1 stop bit. 7E: 7 data bits with even parity bit and 1 stop bit.	8N ✓ 7O 7E
A4	Disable the lb/kg Key	"0"=Disable the lb/kg key. "1"=Enable the lb/kg key.	0 1 ✓ (Invalid in PA8101A)
A5	ID No. Enable	"0"=disable the ID No. "1"=enable the ID No.	0 1 ✓
A6	ID No. Entry	Pressing [←] and [→] key to input ID No. and pressing the [SET] key to store and return to A6. Displaying Axxxxx. Prints ID Flashing  No.Column after ID No. being set, (see APPE.A) 6-bit ID No. can be inputted at most when	
A7**	Additional Features	0—Typical 1—Counting feature 2—Peak hold	0 ✓ 1 2 (Valid in PA8101E) (See in 8.2)
A8**	Peak Hold	Set peak hold A8 is the same with setting A6. The maximum of A8 is 80%FS	(Valid in PA8101E) (See in 8.2)

7. RS-232 Communication

7.1 Wiring

Pin Nos.	Description
2	RXD
3	TXD
5	COM

7.2 Communication Parameters

Baud rate: set in the user menu A.

7.3 Communication Protocol

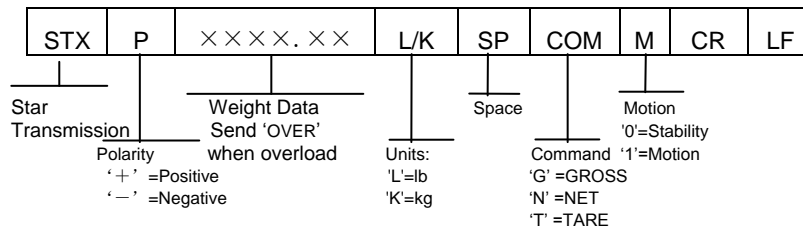
Sign:

STX 1 (the Decimal System);

CR 13;

LF 10.

7.4 Consolidated Controls Demand Mode



7.5 Recognized Host Commands

PC

COM: 'P' =This command is sent to the indicator to print the indicated display.

'G' =This command is sent to revert to gross mode.

'N' =This command is sent to the indicator to print the indicated display.

'T' =This command is sent to the indicator to print the indicated display.

'Z' =This command is sent to the indicator to zero the scale.

'C' =This command is sent to the indicator to toggle among the configured units.

8. The Additional Features

8.1 The operation description for PA8101A

8.1.1 Function key: change the [lb/kg] key to [UNITS] key.

8.1.2 Annunciators: see in Fig. 1

GROSS: Indicates that the indicator is displaying gross weight.

NET: Indicates that the indicator is displaying net weight.

ZERO: Indicates that the indicator is displaying zero.

MOTION: This light is on whenever the scale is motion.

lb: Indicates the "lb" unit of the displayed weight.

Kg: Indicates the "kg" unit of the displayed weight.

oz: Indicates the "oz" unit of the displayed weight.

The unit is "g" when all units' annunciators are dying off.

8.1.3 The change of menu "F", change F9 and add F11

F9: calibration units

1—kg 2—g 3—lb 4—oz

F11: auxiliary unit

1—off 2—kg 3—g

4—lb 5—oz 6—lb: oz

8.1.4 Press [UNITS] key to switch the calibration unit and auxiliary unit.

For example,

If you select 1 in F9 and select 4 in F11, press [UNITS] key, then the weight will be switched between "kg" and "lb".

If you select 1 in F9 and select 6 in F11, press [UNITS] key, then the weight will be switched between "kg" and "lb:oz".

8.1.5 Appendix:

F11 F9	off	kg	g	lb	oz	lb:oz
kg	Err5	Err5	Err5	1kg= 2.20458838lb	Err5	1kg= 2lb3.27341408oz
g	Err5	1000g= 1.000kg	Err5	1g= 0.00220458838lb	1g= 0.035273368oz	Err5
lb	Err5	1lb= 0.4536kg	Err5	Err5	1lb=16oz	3.2lb=3lb3oz
oz	Err5	1oz= 0.02835kg	1oz= 28.35g	1oz= 0.0625lb	Err5	Err5

8.2 The operation description for PA8101E: Add A7 and A8 in Menu A:

- A7: 0—typical
 1—Counting feature
 2—Peak hold

A8: Peak hold. Set peak hold is the same with setting A6.

8.2.1 Counting feature

1. Select 1 in A7.
2. Make scale stable (it must be in Gross mode).
3. Press [kg/lb] key until annunciators are die off and display “XX 0”, then enter into counting mode.
4. Press [GROSS/TARE] key to change sample number XX (available choices are 5, 10, 20, 50, and 100).
5. Place XX units sample items on the scale all at once, display “XX —”.
6. Press [GROSS/TARE] key, display “SET” for one second, then enter into mode of sample number and display “YY”.

Remark: if the weight of sample is greater than 1, then enter into step #6. If the weight of one sample is less than 1, then change the number of sample items, display “XX —” (available choices are 5, 10, 20, 50, and 100).

7. Press [TARE] key to exit the count mode, then display “XX —”. Sample items are rided off to enter in to step #5.

8.2.2 Peak hold

1. Select A7=2 in menu A, when the weight is greater than A8 (Peak Hold), the display goes up with the weight goes up. When the weight goes down and is greater than A8 and equal with A8, the display keeps on the maximum, at this time, you can press **[lb/kg]** to restart the new peak hold. When the weight is less than A8, the display goes down with the weight goes down. There is a “≡” in the display when the weight is greater than A8 or equal with A8.

For example, if you select A8=100kg, when the weight goes up to 300kg, the peak hold is 300kg, when the weight goes down to 200kg, display is still 300kg, at this time, if you press **[lb/kg]** button, the peak hold will be 200kg.

2. The Disable the lb/kg Key in A4 is invalid when selecting select Peak Hold.

9. Specifications and Functions

- Non-linearity 0.01%F.S.
- Max Input Signal 15mV
- Input Sensitivity 0.4 μ V/d
- A/D Conversion Rate 50 times per second
- Internal Count 500,000
- External Count 30,000
- Setup parameter via menu mode, calibrate numerically, and save in EEPROM.
- Load Cell Excitation
 - Voltage 5 \pm 0.3 VDC with 4 \times 350 Ω load cells
 - Current 80 mA
- RS-232 serial communication connector
- Display: 7-digit 7-segment LED, 0.54" high, 7 LEDs for status
- Operation Conditions:
 - Temperature 0 $^{\circ}$ C ~ 40 $^{\circ}$ C
 - Humidity 40 $^{\circ}$ C (20~90)%RH
 - No corrosive gas and no strong EMI in use field.
- Dimension: 81mm (H) \times 173mm (w) \times 57mm (D)

- Mains: AC220V/AC120V/DC6V

The indicator should have good earthing wire.

10. ACCESSORIES

10.1 INDICATOR	1
10.2 OPERATOR MANUAL	1
10.3 QUALIFIED CERTIFICATE	1
10.4 LOA DCELL CONNECTOR	1
10.5 9-TIN CONNECTOR FOR RS-232	1
10.6 1AB×G5×20 FUSE	1
10.7 ASSEMBLED CRUTCH	1
10.8 ASSEMBLED NUT	2

APPENDIX A: Error Codes

ERROR CODE	PROBLEM	SOLUTION
Err1	Input signal of the load cell is too low.	Examine whether there are items on the scale.
Err2	EEPROM error	Change EEPROM
Err3	Key-in weight value in calibration mode is larger than full scale capacity	Reduce weight value in calibration mode or accrete full-scale capacity.
Err4	Calibration yard is too large	Reduce calibration divisions.
Err5	Unit selected is wrong	Change F9 or F11
Err6	Decimal position selected is wrong	Change decimal position in F3
Err7	The weight of one sample is too light	Check a greater sample item until display is 1.
__OL__	Overload	Materials too much
=====	A/D no working	Examine the wire of the load cell, if well, change the print panel.

APPENDIX B: PRINT TICKET MODE

*ID. NO.	12345
GROSS	30.0LB
TARE	10.0LB
NET	20.0LB

Select F12=0 in "F"

ID.NO.12345
30.00LB

Select F12=1 in "F"

*ID. NO. is set in the user menu A6. if A5 select "0", there is ID NO
××××× when printing, nothing when A5 selects "1".