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**CNCCELL<sup>®</sup> PA8101TS**  
*WEIGHT INDICATOR*

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# OPERATOR MANUAL

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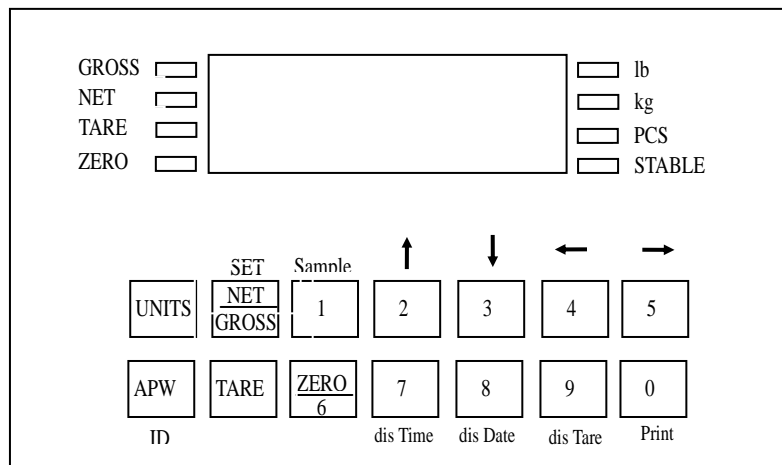
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## Chapter 1: Introduction to the PA8101TS weight indicator

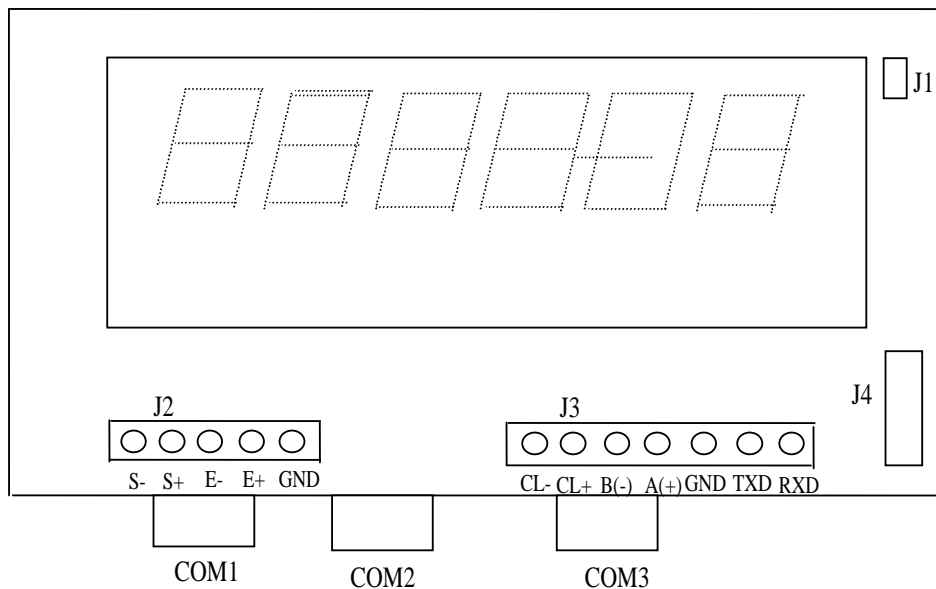
PA8101TS Weight Indicator is a general purpose, industrial grade weight indicator with piece counting operation, custom units, peak hold, and percent mode and weight test features.

## Chapter 2: Panel and Connectors

2.1 Front panel see **Fig. 1**, connectors see **Fig. 2**.



**Fig 1**



**Fig. 2**

### 2.1.1 Front panel

- a. 0.8 inch 6 digits LED display.
- b. 8 LEDs legends.
- c. 5 function keys.

### 2.1.2 Connectors

- a. COM1: Load cell connector
- b. COM2: RS-232C connector, or RS-485 connector, or 4~20mA current loop connector for remote display.
- c. COM3: Power connector

## 2.2 Wiring

### 2.2.1 Wiring for COM1 load cell connector sees Fig. 3.

Pin No.	Color	Wire Name
E+	Red	+ Excitation
E-	Black	- Excitation
S+	Green	+ Signal
S-	White	- Signal

Fig. 3

### 2.2.1 Wiring for RS-232C, or RS-485, or current loop connector see Fig. 4.

Pin Nos.	Wire Name
CL+	Current loop output (+)
CL-	Current loop output (-)
B(-)	B(-)
A(+)	A(+)
GND	COM
RXD	RXD
TXD	TXD

Fig. 4

## Chapter 3: Function Keys and Annunciator

### 3.1 Function Keys

**[0] - [9]** — These keys allow numeric entry where applicable, such as keyboard tare entry. The “1”, “2”, “4” and “5” keys also function as arrow keys when in the Setup Menu mode and User Menu Mode. The “0” key also acts as the PRINT key.

**[NET/GROSS]**— This key toggles the indicator between Gross weight and Net weight only if a Tare has been established.

**[SET]** — Use as the **[SET]** key.

**[TARE]** — This key is used to establish a Tare provided the following conditions are met:

1. The scale is not at or below Gross zero.
2. The scale is not in motion.
3. The scale is not in overload.

**[ZERO]** — This key sets the indicator to display zero provided the following conditions are met:

1. The displayed weight is with the zero reset range.
2. The scale is not in motion.
3. The scale is not in overload.

**[UNITS]** — This key toggles the indicator among the available weight units in the Setup “F” menu. The units will be changed between F9 and F10 if you press this key.

1. The indicator will be in Piece Counting mode when F12=2, and the “PCS” annunciator will be on at this time if you press the **[UNITS]** key.
2. The indicator will be in Peak Hold mode when F12=3, and the “PCS” annunciator will be on at this time if you press the **[UNITS]** key.
3. The indicator will be in Percent Weighing mode when F12=4, and the “PCS” annunciator will be on at this time if you press the **[UNITS]** key.

**[dis TARE]** — Display previous tare weight, you can enter new tare weight using numeric keys, and press the **[SET]** key to confirm, the indicator will return weighing mode if no key pressed during 10 seconds.

**[dis Date]** — Display date. You can enter new date using numeric keys, then press the **[SET]** key to confirm, the indicator will exit displaying date mode if you press the **[UNITS]** key or the **[APW]** key.

**[dis Time]** — Display time. You can enter new time using numeric keys, then press the **[SET]** key to confirm, the indicator will exit displaying time mode if you press the **[UNITS]** key or the **[APW]** key.

**[APW/ID]** — This key works only if piece count is enabled in the Setup Menu (F12=2). When pressed, this key displays the current APW (Average Piece Weight) value. If you want to change the APW, you can write new by numeric keys, then press **[NET/GROSS]** key to confirm.

**[Sample/ 1]** — This key is valid when the indicator is in piece counting mode (when F12=2), and the indicator will calculate the APW when pressing this key.

**[Print]** — This key is used to send weight information out to the Printer provided the following conditions are met.

1. The scale is not in motion.
2. The scale is not in overload

**[←/ 4]** — This key is valid when the indicator is in weight testing mode (when F12=5), press this key to display weight testing lower limit, you can enter the lower limit using numerical keys and press **[SET]** key to confirm.

**[→/ 5]** — This key is valid when the indicator is in peak hold mode or weight testing mode (when F12=3 or 5), press this key to display the peak hold value or weight testing upper limit, you can enter the peak hold value or upper limit value using numerical keys and press **[SET]** key to confirm.

### 3. 2 Annunciators

**GROSS:** Denotes that the indicator is displaying gross weight.

**NET:** Denotes that the indicator is displaying net weight.

**TARE:** Indicates that a tare weight has been established in the system.

**ZERO:** This light is active whenever the displayed weight is zero.

**lb:** Indicates that the unit of the displayed weight is “lb”.

**kg:** Indicates that the unit of the displayed weight is “kg”.

**PCS:** If the indicator is in More Units mode, after your pressing the **[UNITS]** key, that the annunciator is on indicates that the unit is not “kg” and “lb” if the unit you choice is not “lb” and “kg”.

- a. The indicator will be in Piece Counting mode when F12=2, and the “PCS” annunciator will be on at this time if you press the **[UNITS]** key.
- b. The indicator will be in Peak Hold mode when F12=3, and the

“PCS” annunciator will be on at this time if you press the [UNITS] key.

- c. The indicator will be in Percent Weighing mode when F12=4, and the “PCS” annunciator will be on at this time if you press the [UNITS] key.

**STAELE:** Indicates that the scale is stable.

## Chapter 4: Menus

**4. 1** The indicator contains two main setup menus: The Setup (“F”) menu which configure the indicator to your weight platform and the User (“A”) menu which configures the serial communication port and enables some user options. The Setup and User menus consist of several menu selections, each with its own sub-menu of choices.

### 4. 2 Entering the Setup Menu.

- a. Power off the indicator by unplugging the power source.
- b. Remove the back cover and locate jumper J1, power on the indicator by plugging the power source. The indicator shows “F 1” to indicate that you are in Setup Menu mode.

### 4. 3 Exit the setup menu

Put into the jumper J1 switch, and the indicator will enter into the weighing mode after initialization.

### 4. 4 Definition of the keys in the menu mode

The “1”, “2”, “4” and “5” keys will be used as direction browsers after entering menu mode, and the [NET/GROSS] use as the [SET] key to memory the parameters (see in Fig. 3), and you can enter the value using the numeric keys when setting sub-menus.

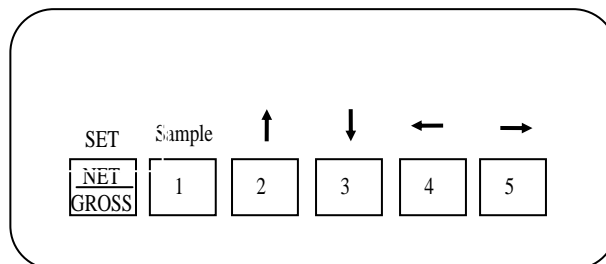
[↑]: Exiting sub-menu and return main menu.

[↓]: Entering the sub-menus.

[←] and [→]: Moving right or left in Menus.

[EST]: Memory the parameter you want.

[0]—[9]: These keys allow numeric entry where applicable



## Chapter 5: Setup “F” Menu

### 5.1 Setup Menu Chart

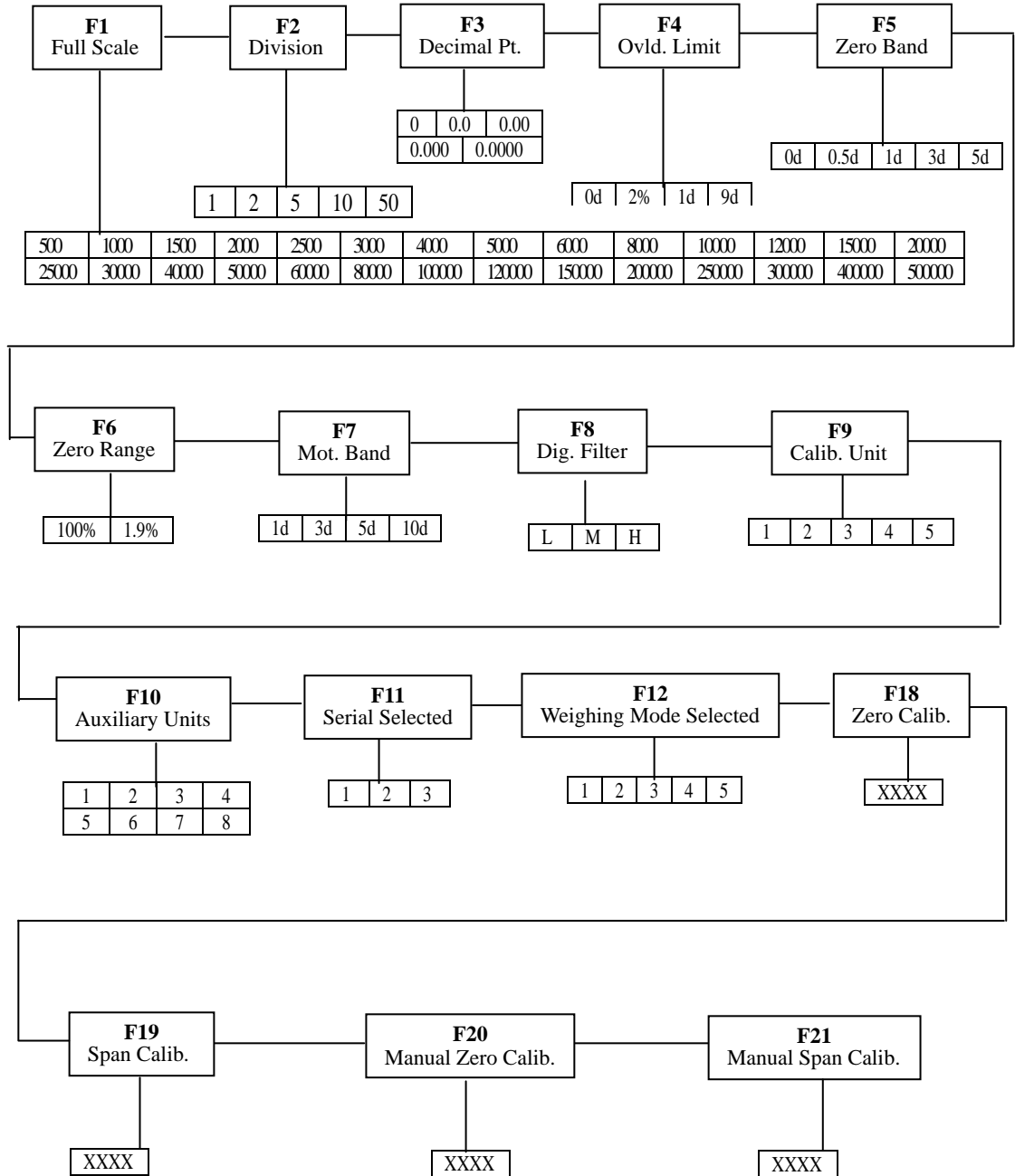


Fig. 4

## 5. 2 Setup Menu Description

NAME/CODE	DESCRIPTION	CODE/VALUE
<b>F1</b> Full Scale	Full Scale=Graduation×Division (See Appendix C)	500, 1000, 1500, 2000, 2500, 3000, 4000, 5000, 6000, 8000, 10000, 12000, 15000, 20000, 25000, <b>30000</b> ✓, 40000, 50000, 60000, 80000, 100000, 120000, 150000, 200000, 250000, 300000, 400000, 500000
<b>F2</b> Division	Minimum difference between two weighing readings	<b>1</b> ✓, 2, 5, 10, 50
<b>F3</b> Decimal Pt.	Determines location of the decimal point.	<b>0</b> ✓, 0.0, 0.00, 0.000, 0.0000
<b>F4</b> Overload Limit	Selects the desired formula which determines the point at which the indicator shows overload. All selections are based on the primary unit.	0d 2% 1d <b>9d</b> ✓
<b>F5</b> Zero Track Band	Selects the range within the scale will automatically zero. Note that the scale must be in standstill to automatically zero. Selections are in Display Divisions.	0d <b>0.5d</b> ✓ 1d 3d 5d
<b>F6</b> Zero Range	Selects the range within the scale may be zeroed. Note that the indicator must be in standstill to zero the scale	<b>1.9% FS</b> ✓ 100%FS
<b>F7</b> Motion Band	Sets the level at which motion is detected by comparing the present display update with the previous one. If motion is not detected for 0.5 seconds of more, scale is in standstill and can process a Print or Zero command. Maximum value varies depending on local regulations	<b>1d</b> ✓ 3d 5d 10d
<b>F8</b> Digital Filter	The higher the filter number, the greater the stability but the slower the response time.	L M H
<b>F9</b> Calib. Unit	Selects the primary base unit to be used in the calibration process. Also the default unit for normal operation. “1”= t “2”= kg “3”= g “4”= lb “5”=oz	1 <b>2</b> ✓ 3 4 5
<b>F10</b> Auxiliary Units	Press the [UNITS] key to toggle the unit between calibration units and auxiliary units in weighing mode. “1”= off “2”= t “3”= kg “4”= g “5”= lb “6”= oz “7”= KN “8”= lb:oz	<b>1</b> ✓ 2 3 4 5 6 7 8
<b>F11</b> Serial Connectors	“1”= RS—232C or RS—485serial connector “2”= Serial connector for printing “3”= Serial connector for printing automatically	<b>1</b> ✓ 2 3
<b>F12</b> Weighing Mode	“1” = Normal weighing mode “2” = Piece Counting “3” = Peak Hold “4” = Percent mode “5” = Weight testing (overload or too light) “6” = Animal weighing mode	<b>1</b> ✓ 2 3 4 5 6

NAME/CODE	DESCRIPTION	CODE/VALUE
<b>F18</b> Zero Calib.	See in <b>Form 5.3</b>	
<b>F19</b> Span Calib.	See in <b>Form 5.3</b>	
<b>F20</b> Manual Zero Calib	See in <b>Form 5.3</b>	
<b>F21</b> Manual Span Calib.	See in <b>Form 5.3</b>	

**Remark:** Factory-set defaults are shown in bold with a “√”.

### 5.3 Calibration for the scale

STEP	NAME	DISPLAY	OPERATION
<b>1</b>	Zero Calibration <b>(F18)</b>	XXXXXX	Display internal codes at zero, press the <b>[SET]</b> key to memory the zero calibration value after the scale is stable and empty. Then return to F18 waiting for Span Calibration.
<b>2</b>	Span Calibration <b>(F19)</b>	XXXXXX	Display current weight value, you can enter the calibrating weights value using numeric keys, press the <b>[SET]</b> key to memory the span calibration value when confirming that the weights on the scale is equal to the displayed value. The indicator will return to F19 automatically after calibrating successfully. Error code will appear if not success, and also return to F19 automatically 3 seconds later for you to re-calibrate after checking.
<b>3</b>	Manual Zero Calib. <b>(F20)</b>	XXXXXX	Display zero calibration value. You can also enter the value using the numeric keys to check and amend the zero calibration value.
<b>4</b>	Manual Span Calib. <b>(F21)</b>	XXXXXX	Display span calibration value. You can also enter the value using the numeric keys to check and amend the span calibration value.

**Note:** The weight value of span calibration is 20%F.S. at least. Zero calibration value and span calibration value can be checked in F20 and F21 after being calibrated successfully. Please fill the calibration data in the following form to prevent data missing in an accident. You can key-in the data without re-calibration.

ID NO.	Zero Calib. Value (F20)	Span Calib. Value (F21)

## Chapter 6: User “A” Menu

### 6.1 USER MENU CHART

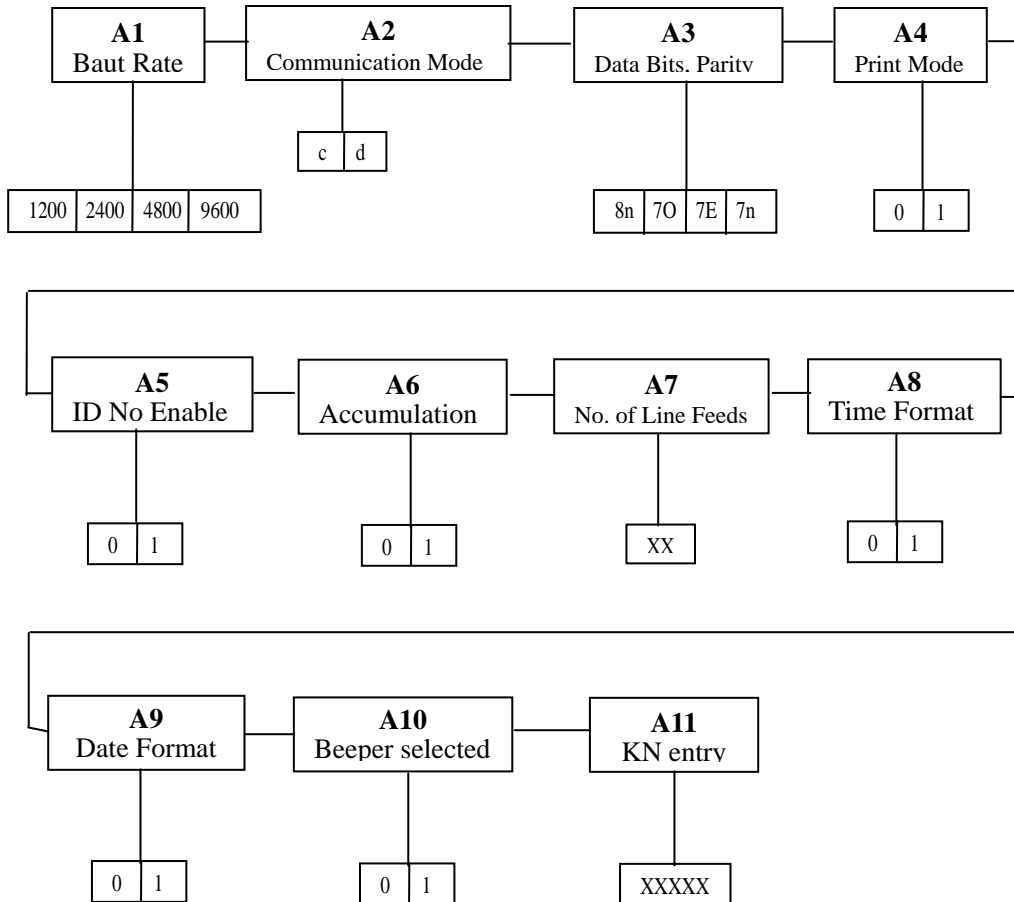


Fig. 5

### 6.2 User Menu Description

NAME/CODE	DESCRIPTION	CODE/VALUE
<b>A1</b> Baud Rate	Selects the baud rate for data transmission through both serial ports	1200    2400 <b>4800</b> ✓    9600
<b>A2</b> Communication Mode	“C” = Continuous mode “D” = Command mode	<b>C</b> ✓ D
<b>A3</b> Data Bits and Parity	Selects the number of data bits and parity of serial transmission. 8n=8 data bits with no parity bits and one stop bit 7O=7 data bits with odd parity bit and one stop bit 7E=7 data bits with even parity bit and one stop bit 7n=7 data bits with no parity bit and two stop bit	<b>8n</b> ✓ 7O 7E 7n

NAME/CODE	DESCRIPTION	CODE/VALUE
<b>A4</b> Print Mode	“0” = Print “GROSS NET TARE” “1” = Print “Displayed weight”	<b>0</b> ✓ 1
<b>A5</b> ID No. Enable	“0” = Disable the ID No. “1” = Enable the ID No.	<b>0</b> ✓ 1
<b>A6</b> Accumulation	“0” = turn on the accumulation feature, the indicator will accumulate the displayed value and store it. “1” = turn off the accumulation feature	0 1 ✓
<b>A7</b> No. of Line Feeds	Actuates the function that allows entry of the desired number of line feeds to be printed in Print Ticket Mode.	0~99 <b>3</b> ✓
<b>A8</b> Time Format	“0” = 12 Hr (Please add “80” if you enter the time in the afternoon. For example, if the time is 2:00 PM, your entering the time is 82) “1” = 24 Hr	<b>0</b> ✓ 1
<b>A9</b> Date Format	“0” = mm/dd/yy “1” = dd/mm/yy	<b>0</b> ✓ 1
<b>A10</b> Beeper Selected	“0” = Beeper on “1” = Beeper off	0 1 ✓
<b>A11</b> KN Unit Entry	Units can be changed between KN and kg, you can enter a 6-digit number using numeric keys and press the [SET] key to confirm.	X.XXXXXX <b>9.80000</b> ✓

**Remark: Factory-set defaults are shown in bold with a “✓”.**

## Chapter 7: Operation

### 7.1 Weight operation

1. Select weighing mode (F12=1)
2. Pressing [UNITS] key until it appears the unit you want.
3. If you need, press the [ZERO] key to zero out the displayed value.
4. Press the [NET/GROSS] key, and the display value will be changed between gross and net
5. The indicator will display “—OL—” when the scale is overload.

### 7.2 Taring

#### 7.2.1 Taring an item of unknown weight

To weight an item in a container, the weight of that container must first be subtracted from the overall weight to obtain an accurate weight reading. This is known as taring.

1. Select the desired weighing unit by pressing the [UNITS] key until that unit is indicated on the display.
2. If necessary, press the [ZERO] key to obtain a weight reading of zero.
3. Place the empty container on the scale’s platter and allow the weight indication to stabilize. Then press the [Tare] key, the TARE annunciator will be on and the display shows tare value, return weighing mode after 10

seconds, press the [NET/GROSS] key to make the NET annunciator on, the display shows zero weight.

4. Place the material to be weighted in the container and allow the weight indication to stabilize. Read the weight shown on the display.
5. You may toggle between the gross weight and the net weight by pressing the [NET/GROSS] key.

### **7. 2. 2 TARING AN ITEM OF KNOWN WEIGHT**

If the weight of the container or object is known, you may enter this weight via the keyboard.

1. Select the weighing unit of the known tare weight by pressing the [UNITS] key until that unit is indicated on the display.
2. If necessary, press the [ZERO] key to obtain a weight reading of zero.
3. Press the [dis Tare] key and enter the known tare weight using the front panel numeric keys. Press the [SET] key, if the tare weight is valid, the display shows zero weight and turns the NET annunciator on. If the tare weight is invalid, you will see an error message. Refer to Appendix B for displayed error code and their meanings. And you can re-enter the tare weight by pressing the [dis Tare] key after pressing the [UNITS] key.
4. Place the material to be weighed in the container and press the [NET/GROSS] key to make NET annunciator on, and read the weight shown on the display as net weight after the weight indication is stable.
5. You may toggle between the gross weight and the net weight by pressing the [NET/GROSS] key.

### **7. 2. 3 CLEARING THE TARE WEIGHT VALUE**

Enter zero using the front panel numeric keys after pressing the [dis Tare] key, and press the [SET] key to make tare weight zero.

### **7. 3 PIECE COUNTING**

This mode is used to indicate the number of pieces of an item you have placed on the scale's platform and is accessed by pressing the [UNITS] key. To ensure accuracy, the parts you are counting must be consistent in weight.

The indicator used the sampling method to determine the average piece weight (APW) of the items you wish to count. If the APW of the items is too light or the total weight of the sample is too light, accuracy cannot be guaranteed. You will get an error message, but piece counting will still be allowed.

**NOTE:** Piece counting must be enabled in the Setup Menu (F12=2) in order to use this feature.

#### **7. 3. 1 PIECE COUNTING – UNKNOWN AVERAGE PIECE WEIGHT**

1. If the items you will be counting require a container, you should first tare off the weight of that container by following the appropriate procedure in either Section 7.2.1 or Section 7.2.2.
2. Press the [1/Sample] key. The indicator displays previous quantity of the

samples, if you wish to change the sample number, only input the desired sample number. For example, displays “100”, which indicate that you need place 100 pieces samples.

3. Place the sample items on the platform all at once and allow the weight indication to stabilize. Press the **[SET]** key, the APW of the items will be displayed if the total weight of the sample is sufficient. Otherwise, the indicator will display Error Code “EE61”, repeat Step 2 to increment the sample size.
4. Press the **[UNITS]** key to make “PCS” annunciator on, the indicator now displays the number of pieces on the platform. Press the **[UNITS]** key to make “PCS” annunciator off, the indicator will display the weight of the samples.
5. If re-counting APW is necessary, take away the samples on the scale and repeat Step 2.

### **7. 3. 2 PIECE COUNTING – KNOW AVERAGE PIECE WEIGHT**

1. Press the **[UNITS]** key until the “PCS” annunciator is on.
2. If the items you will be counting require a container, you should first tare off the weight of that container by following the appropriate procedure in either Section 7.2.1 or Section 7.2.2.
3. Press the **[APW]** key, use the numeric keys to enter the APW you want, and press the **[SET]** key to confirm. If you don’t want to change the APW, you can press the **[UNIT]** key or wait 10 seconds, the indicator will return to piece counting mode by lighting the “PCS” annunciator, and now displays the number of pieces on the platform. You can also press the **[UNITS]** key by the “PCS” annunciator off at this moment, the indicator now displays the weight of the samples.
4. If re-counting APW is necessary, take away the samples on the scale and repeat Step 3.

### **7. 4 PEAK HOLD**

Set F12 to 3 so as that the indicator have the peak hold feature, and set the value of peak hold “A10”.

1. Press the **[NET/GROSS]** key to make the “gross” annunciator on.
2. Press the **[UNITS]** key to make the “PCS” annunciator on. If the display weight is greater than A10, then the display goes up with the weight goes up at this situation. When the weight goes down but still greater than A8 and equal with A8, the display keeps on the maximum. 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 **[UNITS]** button, the peak hold will be

200kg.

3. Press the [UNITS] key to make the “PCS” annunciator off, the indicator will display the actually weight.

### **7.5 OPERATION OF PERCENT MODE**

You should set F12=4 to enter percent mode.

**The percent weight = Displayed weight × 100%, the indicator displays percent.**

1. Press the [NET/GROSS] key to make the “gross” annunciator on.
2. Press the [UNITS] key by lighting the “PCS” annunciator, the indicator now displays the percent.
3. Set the contrast value
  - a. Puts a sample on the scale and presses the [1/Sample] key after the scale is stable, the indicator will display the weight value as a contrast value.
  - b. Then removes that sample and puts a new item on the scale. Press the [APW/ID] key, the indicator automatically displays what percent the new item is compared to the sample item. For example, if the contrast value is 10lb, and the new item weighs 5 lb then the indicator displays 50%. If the new item weighs 15 lb then the indicator displays 150%.
  - c. You can also use the numerical keys to enter the contrast value and press the [SET] key to confirm.
4. Press the [UNITS] key, the indicator return to formal weighing mode and display the actually weight

### **7.6 OPERATING OF THE WEIGHT TESTING**

1. Set F12=5 to enter weight testing mode, and press the [→/5] key to display original testing upper limit value, you can use the numerical keys to enter new value and press the [SET] key to confirm. Besides, and press the [←/5] key to display original testing lower limit value, you can use the numerical keys to enter new value and press the [SET] key to confirm.
2. If the weight value < testing lower limit, there is a “L” sign on the left, the beeper will be on if A10=0. If the weight value > testing upper limit, there is a “L” sign on the left, the beeper will be on if A10=0.

### **7.7 OPERATING OF THE PRINTING AUTOMATICALLY**

You should set F11=3 and F12=5 to start operating the printing automatically, when the weight is added from the weight lower limit to weight upper limit, the indicator will print automatically when the scale is stable.

### **7.8 ENTERING AN ID NUMBER**

Set “A5 = 0” so that you can enter an ID number

1. Press the [APW] key at the formal weighing mode, the indicator will display the original ID number, you can use the numeric keys to enter the ID number you want and press the [SET] key and the current ID number now reverts back to the value saved in the User Menu.
2. Press the [PRINT] key, the ID number can be printed.

## 7.9 ANIMAL WEIGHING MODE

Set “F12 = 6” so that you can enter animal weighing mode.

1. Press the [UNITS] key at formal weighing mode, then appear “=” on the left means that you are entering animal weighing mode.
2. The weight does not increase after the animal step up to the scale and the scale is stable (stable annunciator is on), besides, the weight must be more than 10%F.S., the indicator will lock the weight, when the animal step down the scale and the weight is less or equal to 50%, the indicator will release the weight and the display will vary along with the weight.
3. Please select motion range (F5) according to actual situation when you use animal weighing mode.
4. Press the [UNITS] key to exit and return to formal weighing mode and display actual weight value.

## 7.10 Accumulation operation

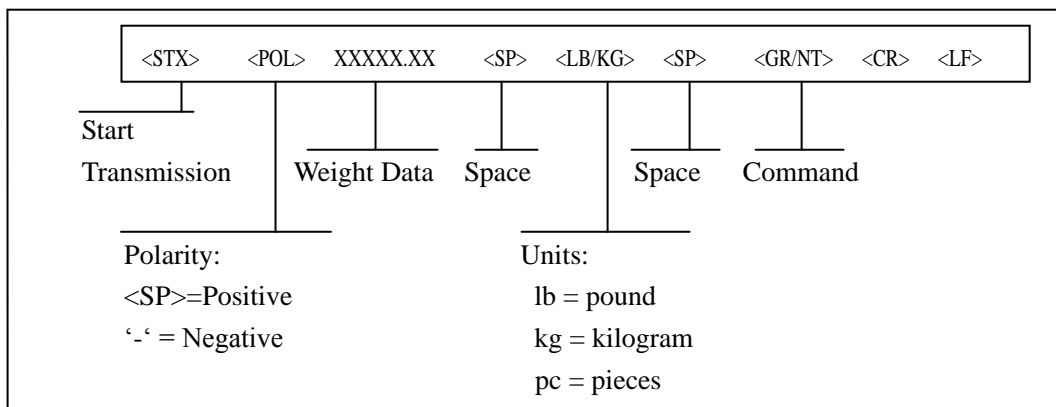
Set “A10 = 0” so that you can enter accumulation mode.

1. Press the [PRINT] key, the indicator will accumulate the displayed value and store it if the scale is stable, positive and not overload
2. Press the [2/↑] key, the indicator will display the accumulated value. And press the [UNITS] key to exit accumulation mode, and the indicator will return to the formal weighing mode after 5 second if no keys are pressed.
3. You can print the accumulated value if you press the [PRINT] key during the displaying the accumulated value.
4. You can also clear the accumulated value if you press the [ZERO] key during the displaying the accumulated value.

## 8 RS—232 Communication

Wiring please sees in Form 3.

### 8.1 Consolidated Controls Demand Mode



**Fig. 7**

## 8.2 Recognized Host Commands

- “P”— This command is sent to the indicator to print the indicated display. The indicator will not respond if the scale is in motion, positive overload or negative overload.
- “Z”— This command is sent to the indicator to zero the scale. The indicator will not respond if the scale is in motion, positive overload or negative overload.
- “T”— This command is sent to the indicator to tare the scale. The indicator will not respond if the scale is in motion, positive overload or negative overload.
- “G”— This command is sent to the indicator to revert to gross mode. The indicator will not respond if the scale is in motion, positive overload or negative overload.
- “C”— This command is sent to the indicator to toggle among the configure units.

## 9. SPECIFICATIONS

- No-linearity 0.01%FS
- Input Signal 20mV
- Input Sensitivity 0.4uV/d
- A/D Conversion Rate 50 times per second
- Internal Resolution 500,000 Counts
- External Resolution 50,000 Counts
- Setup parameter via menu mode, calibrate numerically.
- Extra Units
- Counting Mode
- Peak Hold
- Percent Style
- Weight Testing Feature
- Time and Date Print
- RS—232C and RS-485 Serial Communications
- Serial Print Output
- Remote display output
- Excitation Voltage  $8 \pm 0.3V$ ,  $8 \times 350\Omega$  load cells
- Environmental
  - Operating Temperature  $-10^{\circ}C \sim 40^{\circ}C$
  - Humidity  $40^{\circ}C$  (20~90)%RH
  - No corrosive gas and no strong EMI in use field.
- Mechanical 305mm×203mm×102mm(12”×8”×4”)

## APPENDIX A: PRINT TICKET MODE

DATE	06/02/2000
TIME	12:36
ID.NO	12345
GROSS	1000 kg
NET	800 kg
TARE	200 kg

Select A4=0 in menu "A"

DATE	06/02/2000
TIME	12:36
ID.NO	12345
	1000 kg

Select A4=1 in menu "A"

## APPENDIX B:

	off	t	kg	g	lb	oz	Kn	lb:oz
<b>t</b>			1t=1000kg		1t= 2204.58838lb			
<b>kg</b>		1kg= 0.0001t		1kg= 1000g	1kg= 2.20458838lb		1kg=xxx kn	1kg= 1(lb)3.27341408(oz)
<b>g</b>			1g=0.001kg		1g= 0.00220458838lb	1g= 0.035273368oz	1g= 0.001xx.xxxxkn*	
<b>lb</b>			1lb= 0.4536kg			1lb=16oz	1lb= * 0.4536xx.xxxxkn	1lb=3(lb)2(oz)
<b>oz</b>			1oz= 0.02835kg	1oz = 28.35g	1oz = 0.0625 lb		1oz= 0.02835xx.xxxxkn *	

**Note: The conversion rate between kg and Kn is different in different place because of the different gravity,**

### APPENDIX C: DISPLAYED ERROR CODES

CODE	MODE	MEANING / POSSIBLE SOLUTION
—OL—	Normal Operating Mode	Gross Overload. A weight greater than the rated capacity has been applied to the scale. Remove the weight from the platter or try re-calibrating the scale. Otherwise, check for a bad load cell connection or possible load cell damage due to overloading.
EE0	Normal Operating Mode	The code of the “F” menu or the “A” menu varies, re-set the code, the EEPROM may be damage if still appearing EE0.
EE01	All Modes	EEPROM error, change “X25045”
EE02	All Modes	RAM error, change “DS12C887”
EE2	Normal Operating Mode after turning on the indicator	Accumulative zero value >20%FS, indicating that the shift of the scale is much large.
EE20	Normal Operating Mode	Press the [ZERO] key since the zero is >20%FS
EE21	Normal Operating Mode	Press the [Zero] key since the scale is in motion or overload.
EE22	Normal Operating Mode	Press the [ZERO] key since the displayed value is out of zero range
EE3	In menu “F” mode	The divisions are not correct, see Appendix C.
EE30	Span Calibration Mode (F20)	No weights on the platform, put the weights on the platform.
EE31	Span Calibration Mode (F20)	Use small weight to calibrate the large weight.
EE32	All Modes	A/D works normally, check the wirings, if so, change the PCB.
EE4	Time and Date Entry	Time entry or date entry is wrong, re-entry.
EE5	Units Select	Unit selection is wrong, change F9 or F10.
EE50	Units Select	Decimal position selected is wrong
EE60	Counting Mode	APW is less than “2”, add the sample weight.
EE61	Counting Mode	The sample number are too many, and the weight of the samples are too less.
EE7	Set Taring	Tare Weight Value > 80%F.S., re-adjust tare weight value.
	Set “A10”	A10 > 80%F.S., re-adjust A10.
EE70	Set Taring	The scale is in motion, positive overload or negative.
EE8	Kn Entry	Kn < 9.70000, re-entry.

**APPENDIX D: Minimum Recommended Span Gain Table**

F1 \ F2	1	2	5	10	20	50
500	500	250	100	50	25	10
1,000	1,000	500	200	100	50	20
1,500	1,500	750	300	150	75	30
2,000	2,000	1,000	400	200	100	40
2,500	2,500	1,250	500	250	125	50
3,000	3,000	1,500	600	300	150	60
4,000	4,000	2,000	800	400	200	80
5,000	5,000	2,500	1,000	500	250	100
6,000	6,000	3,000	1,200	600	300	120
8,000	8,000	4,000	1,600	800	400	160
10,000	10,000	5,000	2,000	1,000	500	200
12,000	/	6,000	2,400	1,200	600	240
15,000	/	7,500	3,000	1,500	750	300
20,000	/	10,000	4,000	2,000	1,000	400
25,000	/	/	5,000	2,500	1,250	500
30,000	/	/	6,000	3,000	1,500	600
40,000	/	/	8,000	4,000	2,000	800
50,000	/	/	10,000	5,000	2,500	1,000
60,000	/	/	/	6,000	3,000	1,200
80,000	/	/	/	8,000	4,000	1,600
100,000	/	/	/	10,000	5,000	2,000
120,000	/	/	/	/	6,000	2,400
150,000	/	/	/	/	7,500	3,000
200,000	/	/	/	/	10,000	4,000
250,000	/	/	/	/	/	5,000
300,000	/	/	/	/	/	6,000
400,000	/	/	/	/	/	8,000
500,000	/	/	/	/	/	10,000