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8101
COUNTING SCALES

Instruction Manual

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VIDEO OF PRODUCTS.



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1. Precautions

 Some of the products in this series are shipped with transportation safety screws, please remove the screws on the bottom surface before use, otherwise it will cause damage to the sensor.



▲ Read this manual before operating or servicing this equipment.

▲ Follow these instructions carefully.

▲ Disconnect this equipment from the power source before cleaning or performing maintenance.

▲ Keep the manual for your future reference.

▲ Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.

▲ Avoid unsuitable tables. The tables or floor must be rigid and not vibrate. Do not place near vibrating machinery.

▲ Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.

▲ Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the scales in water.

▲ Avoid air movement such as from fans or opening doors. Do not place near open windows.

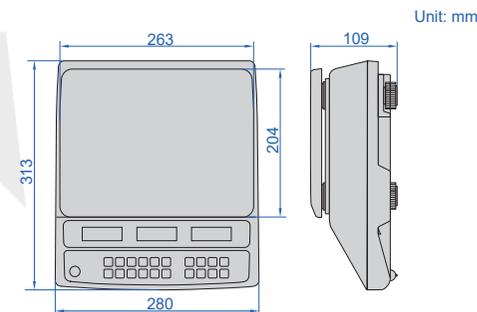
▲ Do not stack material on the scales when they are not in use.

▲ Keep the scales clean.



2. Models and installaitoin

■ Dimension



■ Specification

Code	8101-6	8101-15	8101-30	8101-6D	8101-15D	8101-30D
Maximum weighing	6kg	15kg	30kg	6kg	15kg	30kg
Minimum weighing	4g	10g	20g	4g	10g	20g
Resolution (d)	0.2g	0.5g	1g	0.2g	0.5g	1g
Accuracy (m is load)	m≤1kg: ±1g 1kg<m≤4kg: ±2g m>4kg: ±3g	m≤2.5kg: ±2.5g 2.5kg<m≤10kg: ±5g m>10kg: ±7.5g	m≤5kg: ±5g 5kg<m≤20kg: ±10g m>20kg: ±15g	m≤1kg: ±1g 1kg<m≤4kg: ±2g m>4kg: ±3g	m≤2.5kg: ±2.5g 2.5kg<m≤10kg: ±5g m>10kg: ±7.5g	m≤5kg: ±5g 5kg<m≤20kg: ±10g m>20kg: ±15g
Output	no			RS232		
Operation temperature	-10~40°C					
Power supply	rechargeable battery (6V/3.2Ah), power adapter (12V/500mA)					
Dimensions of pan	263×204mm					

■ Unpacking

Carefully take the balance out of its package, make it sure its not damaged and all accessories are included.

Accessories,

1. Balance
2. Adaptor
3. Stainless steel pan
4. Product manual

Keep the packaging material for your future use.

■ Parts Description



■ Installation

- ▲ Place the scale on a table.
- ▲ Carefully place the pan to the four holes on the top cover
- ▲ Adjust the water mark bubble level.
- ▲ Connect the adaptor pin to the adaptor jack. Adaptor jack is locating below the right side of the scale.
- ▲ Adaptor connects into your AC power socket.
Pluggable equipment must be installed near an easily accessible socket outlet with a protective ground/ earth contact.
- ▲ Turn on the power switch.
On / Off switch is locating below the right side of the scale. Press switch forward to turn on the scale. If you want to turn off, press backward the switch.
- ▲ Display will be show the scale capacity and will be starting self checking.
- ▲ After self checking, display will be come to normal weighing mode.
- ▲ Then you can start your operation.

■ Note: Initial Start Up.

Warm-up time of 15 minutes stabilizes the measured values after switching on.

■ Level Adjusting

Place the scale on a table.
Check the water mark. If, bubble is not centre adjust the leveling feet until reach centre.
Check the level when you change the location.

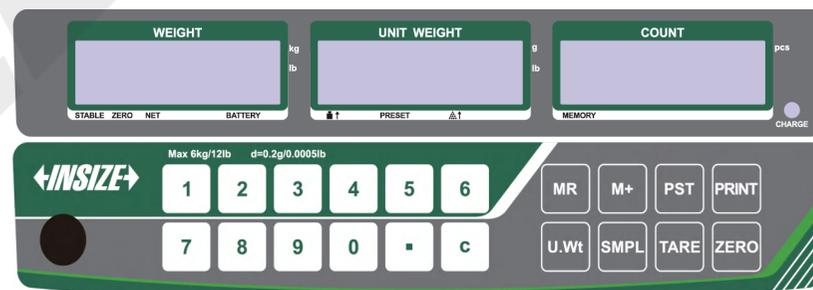


■ Connect Adaptor and Charging

- ▲ To charge the battery insert the adaptor pin to jack. Adaptor simply plug into the mains power. The scale no needs to be turned on.
- ▲ The battery should be charged for 12 hours for full capacity.
- ▲ Left side of the count display there is an LED to indicate the status of battery charging. When the scale is plugged into the mains power the internal battery will be recharged. If the LED is green, the battery has a full charge. If it is red, the battery is nearly discharged and if yellow, the battery is being charged.
- ▲ Do not use any other type of power adaptor than the one supplied with the scale.
- ▲ Verify that the AC power socket outlet is properly protected.

Note: Please charge the battery before using the scale for the first time.

3. Display and keys



■ Functional description of each key

keys	function
0 to 9	Enter individual unit weights and the present tare
c	Clear incorrect entries and error conditions
ZERO	Returns the display to zero.

keys	function
TARE	Storing the current weight as tare value. Subtracting the tare value from the total weight and displays the result as net weight. and clear the tare weight.
M+	Add the current count data aggregated. Also evokes the memory if pressed to balance empty. Can add up to 99 values, or until it reaches the maximum displayable digits.
MR	Recall the accumulator memory.
SMPL	Manually enter the weight of sample, also changes the unit if they are enabled.
U.Wt	Enter the numbers of items, used for the unit weight.
PST	To set the limits of the number of items counted and weight.
PRINT	Used to print the results to printer

■ Weight display

indicator light	marking
BATT.	Low Battery
Net	Net Weight Display
Stable	Stable Display
Zero	Zeroing Display

■ Unit weight display

indicator light	marking
	Insufficient number of counts
	Insufficient number of samples
Preset	To show preset count when stored

■ Count display

indicator light	marking
Memory	To show when value stored
Charge	Status of the battery charging

4. Operation

■ Initial start-Up

Warm-up time of 15 minutes stabilizes the measured values after switching on

■ Power ON/OFF

Power switch is located below the right side of the scale. Press the key forward until to turn on. The display is switched on and the self test is started. If you want to switch off press the key forward again .

■ Zero

Environmental conditions can lead to the balance exactly zero in spite of the pan not taking any strain. However, you can set the display of your balance to zero any time by pressing ZERO key and therefore ensure that the weighing starts at zero.

■ Tare

The weight of any container can be tared by pressing tare button so that with subsequent weighing the net weight of the object being weighed is always displayed.

▲ Load weight on the pan

▲ Press TARE key. Zero is displayed, and tare is subtracted.

▲ Remove weight from the platform. Tared weight is displayed. It can set only one tare value. It can display with a minus value.

▲ Press TARE key. Zero is displayed, tare weight is cleared.

■ Parts counting

▲ Setting unit weight

● For this function you need to know the average weight of the objects to count. This value can be obtained by weighing a known number of pieces so that the balance calculation.

- Scales can be used to calculate the unit weight or the manual input that can be used to count. It can increase the precision of the unit weight at any time during the process of counting by the count displayed and pressing **SMPL**. Make sure that the amount shown is the amount on the scale before pressing the button.
- The weighing may be amended on the basis of greater numbers of samples improves the accuracy of counting large quantities.

▲ Entering a known unit weight

If the unit weight is known can be entered from the keyboard.

- Place the goods on the platform
- Enter the unit weight by using numeric keys and press **U.WT** key

For e.g.: 50.00

- Unit weight display will be show the entered value and count display will be show pcs of the goods.
- Press **C** key to clear the unit price.

0.500	0
	0
0.500	50
	0
0.500	50
	10

▲ Parts counting.

Weigh a sample to calculate the unit weight to determine the average weight of items to count, put a known number of pieces on the scale and insert their content. The balance of the total weight divided by the number of samples and displays the unit weight.

- Zero the scale by pressing the zero if necessary. If you use a container, put it on the scale and the tare weight gain by following the steps above.
- Place a known amount of pieces on the scale.
- When the viewer 'Weight' is stable enter the quantity Of pieces using the numeric keys
- and press the **SMPL**. The number of units is shown by the viewer 'Count' and the average weight shown is calculated from the viewer 'Unit Weight'.

2.812	0
	0
2.812	30
	0
2.812	SAMP

2.812	33.72
	30
3.316	33.79
	36

▲ Automatic Part Weight Updates

After entering into parts counting, the display shows number of parts corresponding to previous reference weight. So that continuity will be maintained with previous parts counting this was interrupted due to power failure.

CHECK	nEt

■ Check Weighing and Setting High / Low limits

▲ Checking Alarm

Press and hold the **C** key, display will be show. To turn on checking alarm into weighing operations. To turn on the checking alarm into counting operations. To turn off the checking alarm in the operations

CHECK	PCS

CHECK	OFF

Note: At time only one function can set to turn on

■ Check Counting / Weighing Limits

▲ Counting Limits

By pressing **PST** key can select counting or weighing limits.

Press **PST** key, display will be show

PCS Hi	0

Press the numeric keys to set the Hi Limits and confirm by pressing **TARE** key. Hi limit will be set and display will be show

PCS Lo	0

Press the numeric keys to set the Lo Limits and confirm by pressing **TARE** key, then display will go to 'nEt Hi' for to set weighing limits

nEt Hi	0.00

▲ Weighing Limits

Press **TARE** key, display will be show

Press the numeric keys to set the Hi net and confirm by pressing **TARE** key. Hi limit will be set and display will be show.

nEt Lo	0.00

Press the numeric keys to set the Lo Limits and confirm by pressing **TARE** key to back to the weighing mode,

- For check limits, just one limit value can be set for operations
- The check mode will be deactivating, if both values are set to zero.
- The beep sound will be worked as per described in the beep settings.

Check parameter 'F9 bEEP'

- **Check mode 'no'** : No beep sound in the limits. Function turned off.
- **Check mode 'ok'** : When the weight is between the limits. beeper will be sounded.
- **Check mode 'ng'** : When the weight is out of the limits, the beeper will be sounded .

Note: Check weighing available only when weight more than 20d

■ **Accumulation**

▲ Prepare for accumulation

- Before accumulation, ensure the platform is empty.
- If necessary, press **ZERO** to make display zero.
- Display should be stable.

2 8 12 0

0

▲ Accumulate operation

- Place the goods on the platform.
display will be show

2 8 12 2

0

- Using numeric keys to enter the unit weight

Press **U.Wt** key ,the count will be calculate Automatically,Display will be shown

2 8 12 2

1406

2 8 12 11

1406

- When stable indicator will be displayed, press **M+** key to enter accumulation Weight Display will show Total weight and Unit Weight Display will be show the total times of accumulation.

Note:

- Accumulation display will be show 2 seconds only, then will come to normal display. It can continue up to 99 entries or until to reach maximum displayed values.
- Weight Display should be want to get zero for the next accumulate operation
- Loaded weight should be more than 20d of the scale

▲ Recall memory

To check the total value stored, press the **MR** key when the scale is in zero. The total and number of times will be displayed 2 seconds

▲ Memory Clear

To delete the saved data, press **MR** key to recall the stored data and press the **C** key to clear all values.

■ **Back light**

The scale has the option of back light. It can help to see white background and more bright.

Press and hold **□** key, display will be show **bL SET** **mode**

By pressing **M+** key can change back light to auto/on/off

Auto

Press M+	bL SET AUto	To set auto option. When start to use operation, back light will be turn on and when stop the operation back light also will turn off.
	bL SET on	To set always on. After turn on the power, back light also will be on.
	bL SET oFF	To set back light turn off. No back light in the operations

5.Parameter setting

■ Parametersetting

▲ Enter into the menu

- Turn on the scale. Press and hold **TARE** key during the self test. Display will show 'Pn' briefly PIN is activated. Press the PIN number to get into the parameter menu.
- The default PIN number is '9999'
- Press numeric key 0 four times , display will be shown Pn - - - -
- Press **TARE** key to confirm, It will enter into the parameter settings and will to show 'F0 CAL' .

▲ Enter to selected menu

- Press **TARE** , it can confirm which will be shown displayed.

▲ Select the menu

- Press **M+** or **PRINT** . It can choose menu block one by one.

▲ Return to weighing mode

- Press **ZERO** escape from the menu and exit to weighing mode

▲ Active parameter

Press CAL switch to enable parameters for to access and change any parameter. CAL switch is locating bottom of the scale



CAL Switch

▲ Parameter menu block

Menu	Sub-Menu	DESCRIPTION	
F0 CAL		Calibration	
F1 LCAL		Linear Calibration	
F2 rES	dUAL-i	Set external resolution	
	dUAL-r		
	30000		
	60000		
	3000		
F2 CAP	6000	Set Scale Capacity	
	3KG		
	6KG		
	15KG		
F4 SPEEd	30KG	To select A/D speed	
	Slow		
	mEdiUm		
	FAST		
F5 ISN		This display will show XXXXX for indicating the internal counts.	
F6 GrA		To set your local gravity value.	
F7 rSEt		Factory default settings	
F8 rS232	ModE	oFF	RS232 function disable
		Cont	Continues data transmission
		StC	Stable data sending continues
		ASk	Bi- direction , through PC Commands W= Send, T= Tare, Z=Zero
		tPUP	press PRINT key to send data to printer
		LP50	press PRINT key to send data to printer
		bAUd	Set baud rate to (1200/2400/4800/9600/ 19200/38400/115200)
	Pr	8n 1	8 data bits, no verify, 1 stop bit
		7E 1	7 data bits, Even verify, 1 stop bit
		7o 1	7 data bits, Odd verify, 1 stop bit

Menu	Sub-Menu	DESCRIPTION
F9 bEEP	ok	When the weight is between the limits. beeper will be sounded.
	no	No beep sound in the limits.Function turned off.
	nG	When the weight is out of the limits, the beeper will be sounded .

6. Calibration

■ Normal Calibration

Turn on the scale. Press and hold **TARE** key during the self test.

Display will show 'Pn' briefly PIN is activated. Press the PIN number to get into the parameter menu.

- The default PIN number is '9999'
- Press numeric key 0 four times , display will be shown 'Pn - - -'
- Press **TARE** key to confirm, It will enter into the parameter settings and will to show 'F0 CAL' .Then press the calibration switch to enter calibration.
- Press **TARE** key to confirm for calibration, display will be show 'UnLoAd'
- Remove the goods from the platform and make sure STABLE indication has been enable.
- Press **TARE** key to confirm
- Display will be show 'CAP LoAdXX'
- If necessary change the calibration weight value by pressing **M+** key and place the calibration weight on the platform.
- Press **TARE** key to confirm when display gets stable, display will be show 'PASS' Finished calibration and display will come to 'F0 CAL'
- Remove calibration weight from the platform.
- Press **ZERO** key for to go back to the weighing mode.

■ Linear Calibration

Turn on the scale. Press and hold **TARE** key during the self test.

Display will show 'Pn' briefly PIN is activated. Press the PIN number to get into the parameter menu.

- The default PIN number is '9999'
 - Press numeric key 0 four times , display will be shown Pn - - -
 - Press key to confirm, It will enter into the parameter settings and will to show 'F0 CAL' .
 - Press **M+** key to select 'F1 LCAL' .
 - Press **TARE** key to confirm, display will be show 'UnLoAd'
 - Press **TARE** key to confirm, display will be show 'CAL LoAd 1'
 - Place the first weight on the platform,
 - press **TARE** key to confirm, display will be show 'CAL LoAd 2'
 - Place the second weight on the platform,
 - press **TARE** key to confirm, display will be show 'CAL LoAd 3'
 - Place the third weight on the platform,
 - press **TARE** key to confirm, display will be show 'pass'
- Remove the weights; The Linear Calibration procedure is finished.
When the calibration is finished, the display will enter into 'F1 LCAL'.
- Press **ZERO** key for to go back to the weighing mode.

▲ Calibration Weights for linear Calibration.

CODE	8101-6	8101-15	8101-30
LoAd 1	2kg	5kg	10kg
LoAd 2	4kg	10kg	20kg
LoAd 3	6kg	15kg	30kg

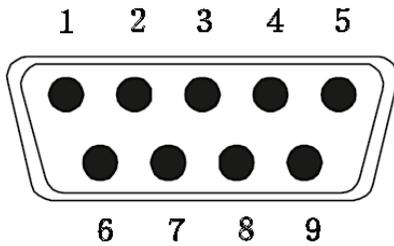
7.RS-232 Protocol

The 8101 Series of scales can be ordered with an option RS-232 output.

■ **Specifications:**

- RS-232 output of weighing data
- ASCII code
- 1200-115200 Baud
- 8 data bits
- No Parity

■ **Connector: 9 pin socket**



Pin 1	RXD	Input	Receiving data
Pin 2	TXD	Output	Transmission data
Pin 3	GND	—	Signal ground

■ **9pin D Connector:**

Indicator	Computer
Pin 2:	Pin 3
Pin 3:	Pin 2
Pin 5:	Pin 5

■ **Continuously output protocol**

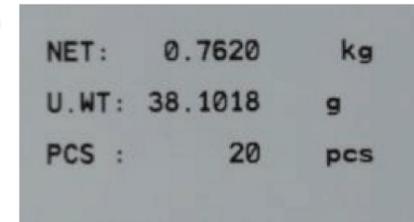
Con1:

S	T	,	G	S	:	-1						k	g	CR	LF
-HEADER1-		-HEADER2-						-WEIGHT DATA-		-WEIGHT UNIT-		-TERMINATOR-			

HEADER1:ST=STABLE, UT=UNSTABLE

HEADER2: NT=NET, GS=GROSS

■ **Print format**



8.Error codes

Error Message	Description	Solution
----	Maximum load exceeded	Unload or reduce weight
Err 1	Incorrect date	Enter the date by using format 'yy:mm:dd'
Err 2	Incorrect time	Enter the time by using format 'hh:mm:ss'
Err 4	Zero setting error	Zero setting range exceeded due to switching on.(4%max) Make sure platform empty.

Error Message	Description	Solution
Err 5	Key board error	Check the keys and connector.
Err 6	A/D value out of range	Make sure platform empty and check the pan is installed proper. Check the load cell connectors.
Err 7	Percentage Error	Please check input data, must be > 0.5d
Err 8	Calibration weight error	Check the test weights for calibration or linear calibration
Err 9	Unstable Reading	Check any air variation, vibration, RF noise and touching some where. Check the load cell and connectors.
Err 10	Wireless communication failure	Check wireless settings or change Com settings from the wireless
Err 11	Communication protocol error	Check communication settings
Err 12	Accumulation error	Max accumulation times 99 / 999 / weight 999999
Err 13	Lack of unit weight	Check unit weight entry data, must be >0.5d
Err 14	Lack of sample	Check counting samples entry, must be >20d
Err 15	Gravity error	Check the gravity settings. Gravity range must be 0.9xx ~1.0xx
Err 16	Paper error	Check the printer paper
Err 17	Tare out of range	Minus weight or overload. Remove the load and restart scale again.

Error Message	Description	Solution
Err 18	Pre-tare error	Check the pre-tare value
Err 19	Initialize zero error	Calibration the scale
Err P	Printer error	Check the printer settings or connections
Err L	Approval setting error	Check the PCB jumper settings. Must be connect jumper pin to K1 (BW series)
--oL--	Over range	Remove the load. Re calibrate
--Lo--	Underload	Minus weight, check the platform and restart or calibrate.
FAiL H / FAiL L / FAiL	Calibration Error	Check the test weights & Re calibrate
bA Lo / Lo bA	Battery low	Re charge battery, check the voltages.