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SCALE • UPSCALE • PROVED • APPROVED

# USER MANUAL

## Digital Weighing Scale ECON Series



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## Chapter 1. Gratitude

Thank you for purchasing an EAGLE ECON series Digital Weighing Scale. The ECON series models are high performance and economic digital Weighing Scales that we confidently recommend based on over 97 years of Weighing Scale manufacturer. While these models are of course capable of fast and accurate weighing, the ECON Series models all use the High Precision Load Cells and highly reliable electronic boards that EAGLE started using for Digital Weighing Scale in 1976, and the ECON Series models use our unique, newly developed and robust product range, improving the reliability of the scales still further.

The new ECON series Scales also feature operation keys for four directions, improving convenience and making the scales easier to use. ECON Series Scales have Counting Function, Liter Conversion, Password Protected unit conversion, Weight Accumulation Function up to 999999, Selectable display speed, Auto Tare, Peak Hold, Auto Sleep, Zero Locking counts and Stable time setting. These Scales also feature a variety of other functions that make it more convenient for customers to use them for their own applications, including the PC communication function, which enables measuring results to be transferred to a PC without installing any software. To ensure that you can make full use of the performance and functions of your ECON series balance, read this instruction manual carefully and use the scale correctly in accordance with the directions in the manual. When you have finished reading the manual, keep it in a safe place together with the scale so that you can refer to it at any time.

For information on the following points, please contact our EAGLE representative.

Product warranty and After Sales service

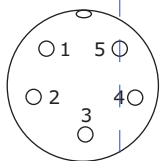
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## Chapter 4. Technical Data Of Scale

- |                                   |                         |
|-----------------------------------|-------------------------|
| 1. Series                         | - ECON Series           |
| 2. Serial communication interface | - RS-232 signal         |
| 3. Transmission distance          | - <20m                  |
| 4. Power supply                   | - AC240V;50Hz (-2%~+2%) |
| 5. Operating temperature          | - (-10°C to 50°C)       |
| 6. Relative humidity              | - ≤85%RH                |
| 7. Internal Resolution            | - 20,00,000             |

## Chapter 5. Connections

### Load Cell Wiring



- |       |       |                  |
|-------|-------|------------------|
| Pin 1 | >>>>> | Supply + (Red)   |
| Pin 2 | >>>>> | Supply - (Black) |
| Pin 3 | >>>>> | Signal + (Green) |
| Pin 4 | >>>>> | Signal - (White) |
| Pin 5 | >>>>> | Shield           |

### RS-232 Cable Wiring

DB9 Pin Female Connector – Scale End

DB9 Pin Female Connector – Scale End

(GND) Pin	5	>>>>>	Pin	5	(GND)
(Tx) Pin	3	>>>>>	Pin	2	(Rx)
(Rx) Pin	2	>>>>>	Pin	3	(Tx)

Baud Rate	:	1200, 2400, 4800 and 9600
Data Bits	:	8
Parity Bit	:	None
Stop Bit:	1	

## Chapter 6. Key Operations

- 1. Zero Key:** Used to zero the weight on scale. It operates up to **4%** of scale capacity only; as per Weights and Measure law. The key is also used as left increment key.
- 2. Tare Key:** Used to Tare the weight. The key is also used as decrement key.
- 3. M+/MR** : Used to accumulate the data, Recall the accumulated data also used as Enter/Selection key
- 4. Func Key:** Used to go into counting mode. The key is used as enter key.
- 5. N/G Key** :Used to toggle the displayed weight between Net and Gross weight. The key is also used as Left Shift key.

## Chapter 7. Scale Functions

- 1. Counting Function:** Using the counting function user can count the similar items on the scale. The scale have 6 fixed sample sizes they are 10, 20, 50, 100, 200 and 500 pieces. When the [Func] Key is pressed the display alternates between the following:-
  1. S 0 – this for selection of going back to weight mode.
  2. S cnt – this for selection of going back to count mode using the last sample weight.
  3. S 10 – this for selection of sample size of 10 pieces.
  4. S 20 – this for selection of sample size of 20 pieces.
  5. S 50 – this for selection of sample size of 50 pieces.
  6. S 100 – this for selection of sample size of 100 pieces.
  7. S 200 – this for selection of sample size of 200 pieces.
  8. S 500 – this for selection of sample size of 500 pieces.

#### Enter in to Counting Mode:

1. Place the counted samples on the pan.
2. Press [Func] key the display will show [S 0]. Select the options listed above. (If the samples kept on the pan are 10nos)
3. Press [Func] key again to change the option and select [S 10]
4. Press [M] key for the confirmation.
5. Repeated the procedure from 1 to 4 for all the other samples.

After pressing the conformation key the scale will calculate the unit weight and go in to Counting Mode. now the display will show the number of samples on the scale as 10.

#### To Recall Previous Counting Mode:

1. Press [Func] key the display will show [S 0].
2. Press [Func] key again to change the option and select [S Cnt]
3. Press [M] key for the confirmation.

After pressing confirmation key the scale will recall the previously calculated Unit Weight.

#### To Escape form Counting Mode:

1. Press [Func] key the display will show [S 0].
2. Press [M] key again to escape from counting mode to weighing mode.

If the scale is restarted in counting mode it will by default start in counting mode.

**2. Weight Accumulation:** When scale is in weighing mode press [M] key the accumulation of displayed weight is done. On releasing the [M] key the display will show [Add xxx](Add xxx where xxx = number of times the weight has been accumulated) for 1sec and then accumulated weight for 2sec then scale will come back to weighing mode.

To view the accumulated weight:

Press [M] key in zero mode (When no weight on the scale i.e. 0.000) display will show [Add xxx] for 1sec and then flash accumulated weight three times and then back to weighing mode.

To clear the accumulated weight:

Press [M] key in zero mode sale display will show [Add xxx] for 1 sec and then flashes accumulated weight. During the flashing if [ZERO] key is pressed scale will clear both accumulate weight and number of times added count.

The accumulation will not happen when weight is in negative. This time scale will show **[Err-or]**.

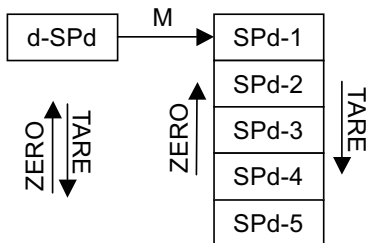
When accumulating current weight which will cause the value of the accumulated weight to go over 999999 then at such time the scale will display **[tot-of]** and show accumulated value without accumulating current weight.

When accumulating current weight which will cause the number of times weight accumulated to exceed beyond 999 then at such time the scale will display **[Add-of]** and show accumulated value without accumulating current weight.

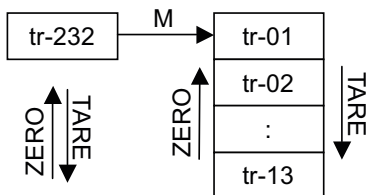
## Chapter 8. User Parameter Setting Mode

In weighing mode, keep [FUNC] key pressed for 5 sec, it will enter operator setting mode, press [M] to choose the mode, press [TARE] to move forward and press [ZERO] to move reverse the parameter. Pressing the [FUNC] key will make you escape to previous menu or stage. The description of parameters are as follows:

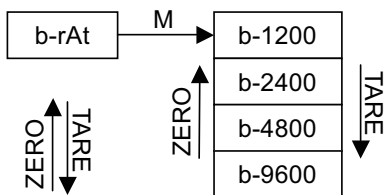
### 1. Display Speed Selection



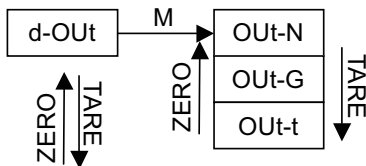
### 2. Data format on RS-232



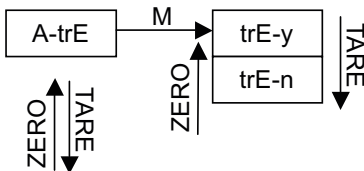
### 3. Baud Rate Selection



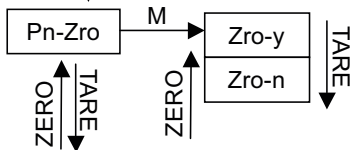
### 4. RS-232 output data



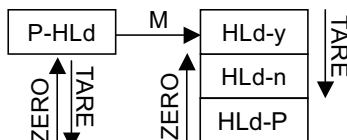
5. Auto Tare function



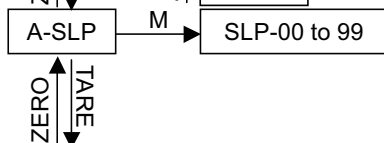
6. Power ON Zero function



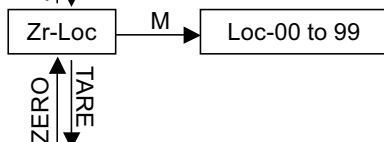
7. Peak Hold Function



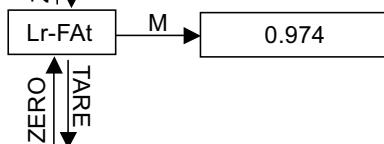
8. Auto Sleep Time



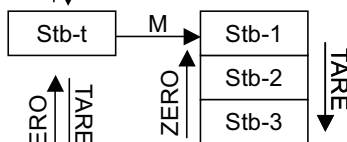
9. Zero Lock Counts



10. Stable Time



11. Stable Time



From 10 ZERO Back to 1

**1. Display Speed Selection [d-SPd]-**The scale have 5 different display update speeds. SPd-1 is the fastest and SPd-5 is the slowest speed.

To set Display Speed:

- Enter in to User Parameter Setting Mode showing Display Speed Selection
- Press [M] key to select display speed
- Scale always shows previously set display speed. Using [TARE] & [ZERO] key to select SPd-1 to SPd-5
- Press [M] key to confirm the selection
- Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key it will back to display Speed Selection. If without selection escaped out then scale will work on previously set speed.

**2. RS-232 Data Format [tr-232]-** The scale have 13 different Data formats the way explained below.

Three modes of transmission and four formats of data explained in following table. The command from computer will be Z, T and \$ character.

Z Command – The scale should get ZEROD.

T Command – The scale should get TARED.

\$ Command – The scale should send the weight data to PC

Transmission Modes Formats	Weight	Sign+ Weight	Weight+ Unit	Sign+Weight+ Unit
On Pressing COUNT Key	=002.000 [tr-01]	=+002.000 [tr-02]	=002.000kg [tr-03]	=+002.000kg [tr-04]
Continuous Transmission	=002.000 [tr-05]	=+002.000 [tr-06]	=002.000kg [tr-07]	=+002.000kg [tr-08]
On command "\$" from computer	=002.000 [tr-09]	=+002.000 [tr-10]	=002.000kg [tr-11]	=+002.000kg [tr-12]

[tr-13] - this mode of transmission is used to connect a scoreboard to indicator.

PRINT Keys – Press [N/G] and [FUNC] keys simultaneously.

e.g. If my selected data transmission format is tr-01 then data will be transmitted when print key is pressed on scale and in the format (=002.000) weight only.

Note: Every time when weight is transmitted the starting character “=” is always kept common for all modes and formats.

To set RS-232 Data Format:

- Enter in to User Parameter Setting Mode
- Using [TARE] & [ZERO] keys select RS-232 Data Format
- Press [M] key to select Data Format
- Scale always shows previously set Data Format. Using [TARE] & [ZERO] keys select from tr-01 to tr-13
- Press [M] key to confirm the selection
- Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key it will go back to Data Format. If without selection escaped out then scale will work on previously set Data format.

**3. Baud Rate Selection** – The scale have 4 baud rates and are user selectable as explained below.

To set Baud Rate:

- Enter in to User Parameter Setting Mode
- Using [TARE] & [ZERO] keys select Baud Rate Selection
- Press [M] key to select Baud Rate Selection parameter
- Scale always shows previously set Baud Rate. Using [TARE] & [ZERO] keys select from b-1200 to b-9600
- Press [M] key to confirm the selection
- Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key it will go back to Baud Rate Selection. If without selection escaped out then scale will work on previously set Baud Rate.

**4. RS-232 Output Data** – The scale have 3 data available on RS-232 as explained below.

To set RS-232 Output Data:

- Enter in to User Parameter Setting Mode
- Using [TARE] & [ZERO] keys select d-OUT
- Press [M] key to select RS-232 Output Data parameter
- Scale always shows previously set RS-232 output data. Using [TARE] & [ZERO] keys select from OUT-N, OUT-G or OUT-t.
- Press [M] key to confirm the selection
- Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key it will go back to RS-232 Output Data. If without selection escaped out then scale will work on previously set Output Data.

**5. Auto Tare [A-trE]** - The scale have Auto Tare function as explained. When weight is nonzero and stable for 3sec the scale automatically TARE that weight only once. TARE will be immediately removed only if scale goes in negative value.

e.g. A container is kept on the scale and is automatically TARE the weight once, now material is filled in the container i.e. scale is showing weight of material taken in the container. After container is removed scale will show negative weight previously TARED then immediately scale will remove the TARE.

To set Auto Tare:

- Enter in to User Parameter Setting Mode
- using [TARE] and [ZERO] keys select Auto Tare
- Press [M] key to select Auto Tare
- Scale always shows previously set Auto Tare. Using [TARE] & [ZERO] keys select trE-y or trE-n.
- Press [M] key to confirm the selection
- Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key it will go back to Auto Tare. If without selection escaped out then scale will work on previous setting.

**6. Power ON Zero [Pn-Zro]** - The Scale have Power ON Zero function as explained below. Power On Zero mean zeroing the weight on the scale during power On only if the weight during power on is less than 20% of Scale capacity. If the weight is greater than 20% of scale capacity then scale will show Err 20 and scale need to be restarted.

If weight is greater than 20% of scale capacity then scale will show actual weight kept on the scale directly when this function is off.

- a. ON [Zro-y] - Power On Zero function is on.
- b. OFF [Zro-n] - Power On Zero function is off.

To set Power ON Zero:

- a. Enter in to User Parameter Setting Mode
- b. using [TARE] & [ZERO] keys select Power ON Zero
- c. Press [M] key to select Power ON Zero
- d. Scale always shows previously set Power ON Zero. Using [TARE] & [ZERO] keys select trE-y or trE-n.
- e. Press [M] key to confirm the selection
- f. Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key it should back to Power ON Zero. If without selection escaped out then scale should work on previous setting.

**7. Peak Hold [P-HLd]** - Max weight shown by scale is kept displaying.

- a. ON [HLd-y] - Keep flashing the max weight on display till [ZERO] key Pressed after weighing.
- b. OFF [HLd-n] - Peak Hold is made off.
- c. Progressive [HLd-P] - The maximum weight is kept flashing till the weight greater than the current flashing weight is not applied. The weight displayed is progressively.

To set Peak Hold:

- a. Enter in to User Parameter Setting Mode
- b. using [TARE] & [ZERO] keys select Peak Hold
- c. Press [M] key to select Peak Hold

- d. Scale always shows previously set Peak Hold. Using [TARE] & [Zero] keys select HLd-y, HLd-n or HLd-P.
- e. Press [M] key to confirm the selection
- f. Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key it should back to Peak Hold. If without selection escaped out then scale will work on previous setting.

**8. Auto Sleep Time [A-SLP]** - The scale have auto sleep time bfunction as explained below.

User will be able to set sleep time from 01 to 99 min i.e. when scale is in zero mode up to set time limit then scale will go in sleep mode displaying only last digit's as 0 [ 0]

Note: if set sleep time set is 00min then scale will not go in sleep mode.

To set Auto Sleep Time:

- a. Enter in to User Parameter Setting Mode
- b. using [TARE] & [ZERO] keys select Auto Sleep Time
- c. Press [M] key to select Auto Tare
- d. Scale always shows previously set Auto Sleep Time. Using [TARE] for DECREASE, [ZERO] for INCREASE and [N/G] key for SHIFT can change the Sleep time.
- e. Press [M] key to confirm the selection
- f. Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key scale will go back to Auto Sleep Time. If without confirming escaped out then scale will work on previous set sleep time.

**9. Zero Locking [Zr-Loc]** - The Scale have zero locking as explained. User will be able to select from 01 to 99 count locking. Set value xx means - number xx divisions of locking.

e.g. if you have selected 10 and the scale is having division of 500 mg the zero locking will be up to 5g (10 steps of division) and if the division is 2g then the zero locking will be up to 20g.

To set Zero Locking:

- a. Enter in to User Parameter Setting Mode
- b. using [TARE] & [ZERO] keys select Zero Locking
- c. Press [M] key to select Zero Locking
- d. Scale always shows previously set Zero Locking Value. Using [TARE] for DECREASE, [ZERO] for INCREASE and [N/G] for SHIFT can change the Zero Locking Value.
- e. Press [M] key to confirm the selection
- f. Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key scale will go back to Zero Locking. If without confirming escaped out then scale will work on previous set Zero Locking.

**10. Set Liter Factor** - The scale have liter conversions function. This converts the weight in to liter. The factor for liter conversion is user programmable.

Note: The conversion factor maximum value allowed is 1.000

To set Auto Sleep Time:

- a. Enter in to User Parameter Setting Mode
- b. using [TARE] & [ZERO] keys select Set Liter Factor
- c. Press [M] key to enter Liter Factor
- d. Scale always shows previously set Liter Factor Time. Using [TARE] for DECREASE, [ZERO] for INCREASE and [N/G] key for SHIFT can change the Liter Factor.
- e. Press [M] key to confirm the selection
- f. Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key scale will go back to Set Liter Factor. If without confirming escaped out then scale will work on previous set liter factor.

**11. Stable Time** – Scale have selection for Stable time as explained below.

Stb-1: Slowest Stable Time

Stb-2: Medium Stable Time

Stb-3: Fastest Stable Time

To set Stable time:

- a. Enter in to User Parameter Setting Mode
- b. Using [TARE] & [ZERO] keys select Stb-t
- c. Press [M] key to select Stable Time parameter
- d. Scale always shows previously set Stable time. Using [TARE] & [ZERO] keys select from Stb-1 to Stb-3.
- e. Press [M] key to confirm the selection
- f. Use [FUNC] key to escape from selection

Note: Pressing [FUNC] key scale will go back to Stable Time. If without selection escaped out then scale will work on previously set Sable Time.

## Chapter 7. Maintenance And Attention

1. To guarantee its accuracy, the scale should not be placed directly under sunshine and should be set on the firm and leveled place.
2. It is not suitable to place the scale in the dusty and vibration environment and also avoid using in the moist environment.
3. Signal source and weighing scale should be reliably connected and system should be well grounded. the scale should be far away from strong electric and magnetic field. The scale should be far away from corrosive, inflammable and explosive objects.
4. Never use strong solvent (e.g. benzene, nitro class oil) to clean the housing.
5. Liquid or electricity conducting particles should not be poured into the scale.
6. You should cut off power supply of scale and relevant device before you pull-in and out the connecting cable of scale and external device.
7. Output interfaces of scale must be strictly in accordance to the user's manual, you should not alter any connection. If there is failure while using the scale, you should immediately unplug it, and send to manufacturers for repair. Ordinary non-professional manufacturers should not repair it to avoid greater damage.

## Warranty Information

EAGLE offers a Limited Warranty (Parts and Labour) for the components that fail due to defects in materials or workmanship. Warranty starts from the date of purchase up to 12 months .

During the warranty period, should any repairs be necessary, the purchaser must inform its supplier or EAGLE Company. The company or its authorised Technician reserves the right to repair or replace the components at the purchaser's site or any of its workshops depending on the severity of the problems at no additional cost. However, any freight involved in sending the faulty units or parts to the service center will be borne by the purchaser.

The warranty will cease to operate if the equipment is not returned in the original packaging and with correct documentation for a claim to be processed. All claims are at the sole discretion of EAGLE company.

This warranty does not cover equipment where defects or poor performance is due to misuse, accidental damage, exposure to radioactive or corrosive materials, negligence, faulty installation, unauthorized modification or attempted repair or failure to observe the requirements and recommendations as given in this User Manual.

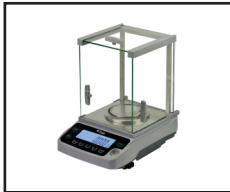
Repairs carried out under the warranty does not extend the warranty period. Components removed during the warranty repairs become the company property.

## Product Information

<b>Model No.</b>	
<b>Serial No.</b>	
<b>Invoice No.</b>	
<b>Date of Purchase</b>	
<b>Name, Address &amp; Stamp of Dealer :</b>	

# OTHER EAGLE PRODUCTS

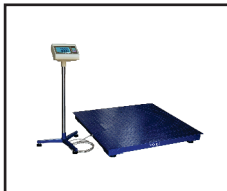
## Precision Analytical Scales



## Table Top Scales



## Platform Scales



## Hanging Scales



## Crane Scales



## Pallet Scale



## LifeStyle Scales



## PROVIDER OF LIFE STYLE & INDUSTRIAL SCALES