RPBS-1 PORTABLE SCALE

User Manual
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**Warning:** ROTEM products are designed and manufactured to provide reliable operation. Strict tests and quality control procedures are applied to every product. However, there is the possibility that something may fail beyond our control. Since these products are designed to operate climate control and other systems in confined livestock environments, where failure may cause severe damage, the user should provide adequate back up and alarm systems. These are to operate critical systems even in case of a ROTEM system failure. Neglecting to provide such back up will be regarded as the user's willingness to accept the risk of loss, injury and financial damage.
Table of contents

FEATURES ....................................................................................................................................................................... 4
CONTROL PANEL ......................................................................................................................................................... 4
GETTING STARTED ...................................................................................................................................................... 5
  MAIN SCREEN .......................................................................................................................................................... 5
QUICK GUIDE ................................................................................................................................................................ 6
  CHANGE WEIGHING UNIT ................................................................................................................................................. 6
  FIRST START .................................................................................................................................................................... 6
  SCALE CALIBRATION .................................................................................................................................................... 7
OPERATING PRINCIPLES ........................................................................................................................................... 8
  FARM, HOUSE, FLOCK, DAY ........................................................................................................................................... 8
  HISTORY ......................................................................................................................................................................... 8
  COMMUNICATION ............................................................................................................................................................ 9
  PRINT .............................................................................................................................................................................. 9
GENERAL FEATURES ................................................................................................................................................ 10
  SETTING UP BIRDS CLASSIFICATION ........................................................................................................................ 10
  TEST .............................................................................................................................................................................. 11
HIDDEN PARAMETERS ............................................................................................................................................. 11
  SECOND LEVEL MENU ..................................................................................................................................................... 11
  HIDDEN PARAMETERS LIST .......................................................................................................................................... 12
  Parameters Explanation .................................................................................................................................................. 12
MAINTENANCE ........................................................................................................................................................... 12
  CHARGING THE RPBS-1 ............................................................................................................................................... 13
  FACTORY DEFAULT SETTINGS .................................................................................................................................... 13
  REPLACEMENT PART LIST ......................................................................................................................................... 13
CONCEPTS .................................................................................................................................................................... 14
  COEFFICIENT OF VARIATION ........................................................................................................................................... 14
  UNIFORMITY (HOMOGENEITY OR EVENNESS) .............................................................................................................. 14
  ENVIRONMENTAL PROTECTION .................................................................................................................................. 14
Features

- Average weight
- Number of weights
- Data storage by Farm, House, Flock and Day
- Standard deviation, C.V and Uniformity
- Birds age
- Birds classification by weight
- PC communication
- 10,000 weights memory
- Printer Connection
- Battery backup
- Stainless steel enclosure
- 10 kg (22 Lb.) or 30Kg (66Lb.) max load
- Rechargeable Batteries

Control panel

The RPBS-1 interface is very easy to understand and design to be intuitive.
Getting started

Thank you for choosing ROTEM RPBS-1. Please read the entire manual before first use to avoid operational mistakes.

RPBS-1 is a portable weighing Poultry Scale system for broilers and breeders. The RPBS-1 is easy to operate and users friendly, simply weigh birds individually, or by batch using the special curved metal hook. It is recommended to hang the RPBS-1 in a convenient place and height to perform the birds weighing.

Main screen

In stand by mode, the RPBS-1 will show a running dot on the bottom of the screen.

Through the weighing process there are vibrations and shifts in weights. The RPBS-1 is calculating the average weight and its accuracy can be programmed in the hidden parameters section (page 13). The more accurate you program the RPBS-1, the longer it will take to calculate a weight. When finished, the RPBS-1 will display the bird's weight. The weights flicker on display until you remove the bird.
Quick Guide

Change weighing unit

Follow the next steps only if you wish to switch from Kg to Lb.

1. Enter the Hidden Parameters menu. To display the Hidden parameters, the RPBS-1 must be on average weight display. Press simultaneously till blinking -A-is sown.

2. Parameter A is the weight unit. Change the units by using the keys, from “0”-Kg to “1”-Lb.

3. Press several times to exit the hidden parameters.

The RPBS-1 is leaving our factory fully calibrated and ready to work. In this quick guide, we will follow the necessaries steps in order to begin weighing properly and easily from the first time.

First Start

1. Turn the RPBS-1 on by pressing the key.

2. The RPBS-1 will flash the message "PLEASE TARE". To perform the tare procedure press key.

3. The message “TARE no” will show. Hang a weighing basket and use the keys to change the message to “TARE YES” and press . The RPBS-1 will perform Tare procedure.

4. Press the key. The message “CLEAR no” will appear.

5. Use the keys to change the message to “CLEAR ALL” and press . It is also possible to clear only the last weight by selecting “CLEAR LAST”.

6. The message “SURE no” will appear. Use the keys to change the message to “SURE YES” and press.
This will erase the RPBS-1 history, without changing the calibration. If you wish to double-check the RPBS-1 calibration, place a known weight on the weighing basket and check the result.

In case the unit is accurate repeat steps 5-7 to clear weighing history. If you wish to recalibrate the RPBS-1 follow the Scale Calibration steps.

**Note**: the RPBS-1 will ask you to perform the tare procedure after every power on, 300 weights or changing a flock/house/farm. If you wish not to perform the tare procedure, take the first weight without pressing on the key and the message will stop.

**Scale calibration**

This procedure should be preformed only if the RPBS-1 is not showing the right weight of a known weight. Scale calibration should also be preformed after every cold start.


2. Leave the RPBS-1 empty and press . The RPBS-1 will perform a tare procedure to prevent a negative calibration.

3. You will be asked to place a known weight, for example 1Kg/1Lb.

4. Use the to change the weight for calibration according to the weight you placed on the RPBS-1. Press .

5. The RPBS-1 will perform the calibration and will show the message “GOOD Calibration”.

6. If the message is “BAD Calibration” remove the weight and repeat steps 1-4.

7. Press to Exit.

This concludes the Quick Guide instructions. The following instructions will help you define the RPBS-1 to your own personal needs and will teach you some of the more complex features of the RPBS-1.
Operating principles

Farm, House, Flock, Day

Using the RPBS-1 on a daily basis is an easy way of sampling your bird’s weight and to receive an overall picture of the flock throughout the growth period.

To avoid mixing information from one flock or growth day with the other, the RPBS-1 is designed to gather weight from different farms/houses/flocks/days.

Before performing weights, check that you are gathering information for the right Farm/House/Flock/Day.

Follow the next steps to change Farm/House/Flock/Day:

1. To change either Farm/House/Flock/Day press one of the following keys. The selection and current number will appear.

   ![SELECT Key]

   If you wish to exit without changing press key.

2. Use the keys to change numbers.

3. Press the key to set the changes.

Program the RPBS according to your farm’s structure and make necessary changes daily.

Before adding new weighing information, follow steps 1-3 to enter the right section and begin weighing.

History

The RPBS-1 can gather and show historical data such as Average weight, number of birds weighed, standard deviation, C.V. and uniformity.

Before viewing historical data, enter the farm, house and flock you wish to check according to the instructions above.

To view historical data follow the next steps:

1. Press the key. “HIS” will be displayed and will alternate with growth day.

2. In order to leaf through growth days use the keys.
3. When reaching the desired growth day, use the key to switch between Average weights, number of weights, standard deviation and C.V information.

4. To exit history mode press key again -ESC- will appear swiftly on the display.

**Communication**

The RPBS-1 can be connected to a P.C. and be controlled via RPBS-1 communication program. ROTEM RPBS-1 communication program is an easy to operate windows environment program and required for this connection.

This software is sold separately (Part Number: A-RPBS1-COM) and contains a software CD + Communication Cable. The software has many advantages such as:

- History collection.
- Easy management.
- Graphic display options.
- Easy to print information.
- Comparison options.
- Together with every feature available form the RPBS-1.
- View and process data through Excel.

**Print**

The RPBS-1 is able to connect and print directly from a special serial printer. This serial printer is available from ROTEM.

If you own a serial printer, follow the next easy steps to print data from the RPBS-1:

1. Press the key. “PRINT no” will be displayed.

2. Use the arrow key to change the print mode from “no” to “DAY”.

3. Pressing key will print all information for the present day.

4. The second time you press , “FLOCK” will be displayed. Pressing key will print all information for the current flock.
5. Pressing again will change the print mode to “HOUSE”. Pressing key will print all information for the current house (all days all flocks).

6. Next time you press “FARM” will be displayed. Pressing key will print all information for the present farm (all days all flocks all houses).

7. The last option after pressing is “ALL”. Pressing key will print all information in the RPBS-1 memory.

If at any point you wish to cancel the printing job, press the key for several seconds.

**General features**

**Setting up birds classification**

The RPBS-1 can automatically classify bird weights into 4 groups defined by the user. To create different groups follow the next easy instructions:

1. Press simultaneously on and keys. The message “CLASS no” will appear on the display.

2. Use the keys to change the message to “CLASS YES” and press .

3. The number “1” (For class 1) alternating with weight value will appear on the display. The weight you set here is the low limit of the first class. Use the to change the weight range.

4. Press to enter class “2”. The low value of this class is the upper value of class 1. Use the to change the weight range and set the low limit to class 2.

5. Repeat these steps to adjust classes 3 and 4.

6. To **EXIT** classification mode, repeat steps 1-2 and select “CLASS no”

After creating different classes, the RPBS-1 will automatically assort weight to their proper classes. The main display will show the group # instead of weight.
To view the number of weight per class, browse by pressing \[\text{SELECT}\] to number of weights and use \[\text{\downarrow, \uparrow}\] to leaf trough classes.

It is possible to view the same information through the printer output or PC.

**NOTE**: if class one low limit is set higher then “0”, it is possible that some weights, lighter then the low limit, will not belong in any group or taken in consideration. This feature can help you managing your weights and get a better picture of the flock’s situation.

**Test**

The RPBS-1 can show A/D counts on the main screen.

1. To show A/D counts press \[\text{SELECT}\] and \[\text{CLEAR}\] simultaneously.
2. Place any weight and see if the A/D counts are changing.
3. To exit press \[\text{SELECT}\].

If the A/D counts are not changing restart the system and repeat steps 1-3. If the problem persists call your local dealer for assistant.

**Hidden parameters**

**Second level menu**

RPBS-1 has 4 Hidden parameters. These have a different access format, to protect them from being changed accidentally.

1. To display the Hidden parameters, the RPBS-1 must be on average weight display. Press \[\text{\downarrow, \uparrow}\] simultaneously untill blinking -A- starts.
2. Parameter A is the weight unit. Change the parameter’s units by using the \[\text{\downarrow, \uparrow}\] keys. Or use the \[\text{SELECT}\] key to leaf between parameters.
3. Pressing \[\text{SELECT}\] several times will eventually exit you from the hidden parameters menu.
Hidden Parameters list

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>DEFAULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Weighing Unit</td>
<td>0</td>
</tr>
<tr>
<td>B Scale Calibration Number.</td>
<td>6500</td>
</tr>
<tr>
<td>C Number of chicks per weighing. (1 to 10)</td>
<td>1</td>
</tr>
<tr>
<td>D Scale Sensitivity in percent</td>
<td>2</td>
</tr>
<tr>
<td>E Uniformity percentage Range (10% to 30%)</td>
<td>10%</td>
</tr>
</tbody>
</table>

Parameters Explanation

A. Weighing Unit: Switch between Kilograms and Libras.

B. Scale Calibration Number: After calibration, the RPBS-1 gives a calibration number that will overwrite the default value. Write down this number and use it instead of calibration after cold start.

C. Number of chicks per weighing: If you wish to weigh more than one bird at a time, change this value and the RPBS-1 will calculate the individual weight for each bird.

D. Scale Sensitivity in percent: the RPBS-1 sensitivity can be programmed through this system parameter. The value here is the tolerance percent above and below A/D count average to perform the weighing. If set at low percents, shifting and strong movement will prevent weighing. Only after stabilizing and not shifting more than the set percent above and below, will the RPBS-1 perform the weighing. In simple words, low percent meaning higher accuracy yet slower operation. Higher values meaning less accuracy and faster weighing.

E. Uniformity percentage Range: change the range in percent for calculating uniformity according to the next formula:

\[ \text{Uniformity} = \left( \frac{\text{number of bird weights within } \pm 10\% \text{ (to} 30\%\text{) of Average}}{\text{Number of weights}} \right) \times 100. \]

Maintenance
Charging the RPBS-1
The unit is operating with NiMH batteries in configuration of 2.4V 2300 mAH. Call your local dealer for replacement battery package (Part Number SP-RPBS1-BAT) if needed.

When the low battery led blinks the scale will work for 30 minutes more and then turn off permanently.

Low battery unit should be charged for 14 hours using the supplied charger.

Factory Default Settings

To restore factory default settings (or after changing EPROM) perform COLD START:
1. Turn OFF the RPBS-1.
2. Press and hold the keys simultaneously. While holding the three keys, turn ON the unit.
3. When the RPBS-1 displays the word COLD release the keys.
4. The RPBS-1 will reset to the factory defaults.
5. Calibration procedure (Page 6) should be executed after COLD START.

Replacement Part List

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-RPBS1</td>
<td>RPBS-1 Card</td>
</tr>
<tr>
<td>C-RPBS1-BC-V1</td>
<td>RPBS-1 Battery Charger 115V</td>
</tr>
<tr>
<td>C-RPBS1-BC-V2</td>
<td>RPBS-1 Battery Charger 230V</td>
</tr>
<tr>
<td>C-RPBS1-CASE</td>
<td>RPBS-1 Case</td>
</tr>
<tr>
<td>C-RPBS1-CC</td>
<td>RPBS-1 Car Charger Cable</td>
</tr>
<tr>
<td>C-RPBS1-COM</td>
<td>RPBS-1 Communication Package</td>
</tr>
<tr>
<td>C-RPBS1-PC</td>
<td>RPBS-1 Printer Cable</td>
</tr>
<tr>
<td>SP-RPBS1-10K</td>
<td>RPBS-1 Load Cell 10 Kilos</td>
</tr>
<tr>
<td>SP-RPBS1-30K</td>
<td>RPBS-1 Load Cell 30 Kilos</td>
</tr>
<tr>
<td>SP-RPBS1-BAT</td>
<td>RPBS-1 Battery Case</td>
</tr>
</tbody>
</table>
Concepts

Coefficient of variation

The CV (percentage) is calculated by the following formula:

\[
CV = \frac{\text{standard deviation}}{\text{Average}} \times 100
\]

The CV is obtained by expressing the standard deviation as a percentage of the average weight. This term describes the variation among the recorded body weights in a single value.

Uniformity (Homogeneity or Evenness)

The Uniformity is obtained by counting birds with body weight, within a range of either ±10% or ±15% of the average body weight. The number of birds in this range is expressed as a percentage of the total number of weights. In Europe most managers use the ±10% range but the fact that different ranges are used does sometimes cause confusion. This method of describing variation is easy to practice but it does not accurately account for all variation in the way that CV does.

The formula for Uniformity is:

\[
\text{Uniformity} = \frac{\text{number of birds within ±10% of Average}}{\text{Number of weights}} \times 100
\]

Environmental Protection

Recycle raw materials instead of disposing as waste. The controller, accessories and packaging should be sorted for environmental-friendly recycling. The plastic components are labeled for categorized recycling.