

RL-DBS-2

Dual-Range Digital Baby Scale

Technical Manual



**Disponible
en Español**
Visite ricelake.com/spanish
para ver todos los materiales
RLWS disponibles en Español

September 18, 2024

RICE LAKE[®]
WEIGHING SYSTEMS

PN 168522 Rev I

© Rice Lake Weighing Systems. All rights reserved.

Rice Lake Weighing Systems® is a registered trademark of
Rice Lake Weighing Systems.

All other brand or product names within this publication are trademarks or
registered trademarks of their respective companies.

All information contained within this publication is, to the best of our knowledge, complete and
accurate at the time of publication. Rice Lake Weighing Systems reserves the right to make
changes to the technology, features, specifications and design of the equipment without notice.

The most current version of this publication, software, firmware and all other product
updates can be found on our website:

www.ricelake.com

Revision History

This section tracks and describes the current and previous manual revisions for awareness of major updates and when the updates took place.

Revision	Date	Description
F	June 8, 2020	Rev history established after Rev F
G	April 15, 2022	Updated calibration procedure
H	February 6, 2023	Calibration weight update
I	September 18, 2024	Updated troubleshoot procedures

Table i. Revision Letter History



Technical training seminars are available through Rice Lake Weighing Systems. Course descriptions and dates can be viewed at www.ricelake.com/training or obtained by calling 715-234-9171 and asking for the training department.

Contents

1.0 Introduction	5
1.1 Safety	5
1.2 Disposal	6
2.0 Setup	7
3.0 Operation	8
3.1 Display Descriptions	8
3.2 Initial Setup	9
3.3 Set Units	9
3.3.1 KG Units Only	9
3.3.2 LB/OZ Units Only	9
3.3.3 Unlock Units	9
3.4 Weigh With A Tare	10
3.5 Weigh Without A Tare	10
4.0 Calibration	11
4.1 Firmware Version 2016 and After	11
4.1.1 Toggling Calibration between Pounds and Kilograms	11
4.1.2 Calibrating with Pounds	11
4.1.3 Calibrating with Kilograms	11
4.2 Firmware Version Prior to 2016	12
5.0 Maintenance	13
5.1 Basic Maintenance	13
5.2 Cleaning	13
5.3 Troubleshooting	13
6.0 Compliance	15
7.0 Specifications	16



Rice Lake continually offers web-based video training on a growing selection of product-related topics at no cost. Visit www.ricelake.com/webinars

1.0 Introduction

The Rice Lake Dual-Range Digital Baby Scale (RL-DBS-2) provides precise weighing of babies for accurate, reliable and repeatable weighments. Movement compensation technology eliminates errors caused by spontaneous movement of the baby and the weight can be displayed in pounds/ounces or in kilograms.



Manuals are available from Rice Lake Weighing Systems at www.ricelake.com/manuals

Warranty information is available at www.ricelake.com/warranties



Figure 1-1. RL-DBS-2 Dual-Range Digital Baby Scale

1.1 Safety

Safety Definitions:



DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.



WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.



CAUTION: Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.



IMPORTANT: Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.

General Safety



Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.



WARNING

Failure to heed could result in serious injury or death.

Ensure every individual operating or working with this unit has read and understands the following safety information.

Do not transport the scale with an infant on the weighing tray.

Clean the scale regularly to avoid cross contamination.

Do not allow minors (children) or inexperienced persons to operate this scale.

Do not use in the presence of flammable materials.

Do not use this product if any of the components are loose or cracked.

Do not drop the scale or subject it to violent shocks.

For accurate weighing, the scale must be placed on a level, stable surface.

Weight exceeding the maximum rated scale capacity may damage the scale.

Avoid contact with excessive moisture.

Do not make alterations or modifications to the scale; any alterations void the warranty.

For accurate weighing, verify proper setup is complete prior to first use. See [Section 3.2 on page 9](#).

Operation at voltages and frequencies other than specified could damage the scale.

Utilizing adapters not supplied by Rice Lake Weighing Systems voids all warranties.

1.2 Disposal



Product Disposal

The product must be brought to appropriate separate waste collection centers at the end of its life cycle.

Proper separate collection to recycle the product helps prevent possible negative effects on the environment and to health, and promotes the recycling of the materials. Users who dispose of the product illegally shall face administrative sanctions as provided by law.

Battery Disposal

Dispose of batteries at appropriate waste collection centers at the end of their life cycle in accordance with local laws and regulations. Batteries and rechargeable batteries may contain harmful substances that should not be disposed of in household waste. Batteries may contain harmful substances including but not limited to: cadmium (Cd), lithium (Li), mercury (Hg) or lead (Pb). Users who dispose of batteries illegally shall face administrative sanctions as provided by law.



WARNING: Risk of fire and explosion. Do not burn, crush, disassemble or short-circuit lithium batteries.

2.0 Setup

The RL-DBS-2 comes fully assembled and includes the scale and a 120 V or 230 V AC adapter. Immediately after unpacking, visually inspect the RL-DBS-2 to ensure all components are included and undamaged. If parts were damaged in shipment, notify Rice Lake Weighing Systems and the shipper immediately.

Use the following instructions for scale setup:

1. Place the scale on a sturdy, level surface.
2. Connect the 120 V or 230 V AC adapter to the back of the scale.
3. Plug the AC adapter into a power source.

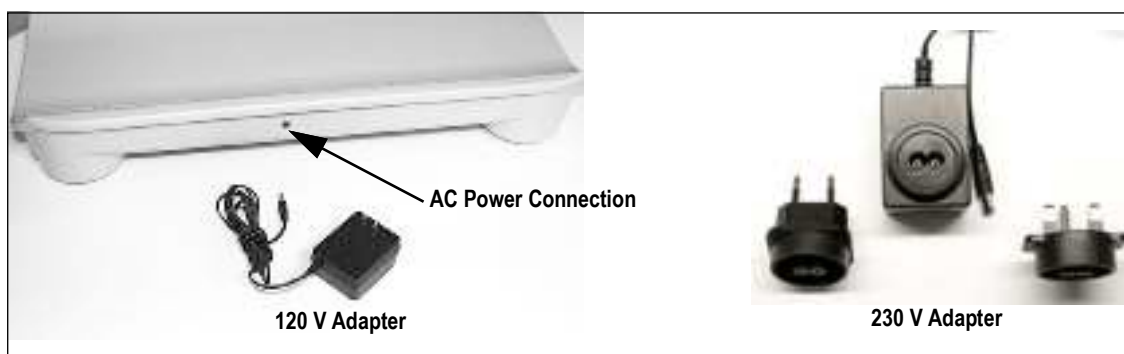


Figure 2-1. AC Power Connection Site

The RL-DBS-2 can also be powered by four AA alkaline batteries if an additional power source is not available. A battery powered scale automatically turns off after two minutes of not being used to save battery life. Replace the batteries or connect to an AC power source as soon as possible if the low battery indicator (**Lo**) displays.

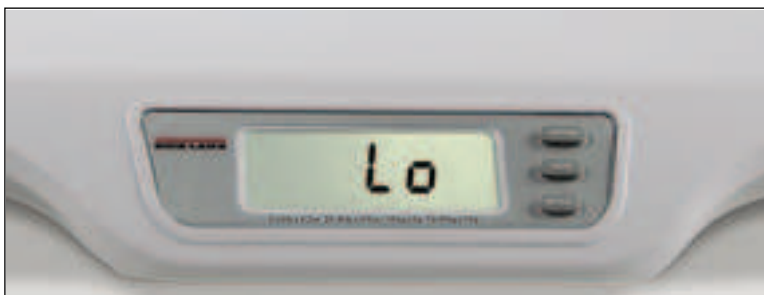


Figure 2-2. Low Battery Indicator

3.0 Operation

The RL-DBS-2 accurately weighs babies up to 44 lb (20 kg) and features a dual-range capacity for increased precision from 0-22 lb (0-10 kg). The weighing surface also includes a ruler for measuring the length of the baby. The built-in ruler can measure babies up to 22.5 in (57 cm).



NOTE: If the scale is battery powered and has not been used for two minutes, it automatically turns off to save battery life.

3.1 Display Descriptions

The following section describes the RL-DBS-2 operating keys and their functions.

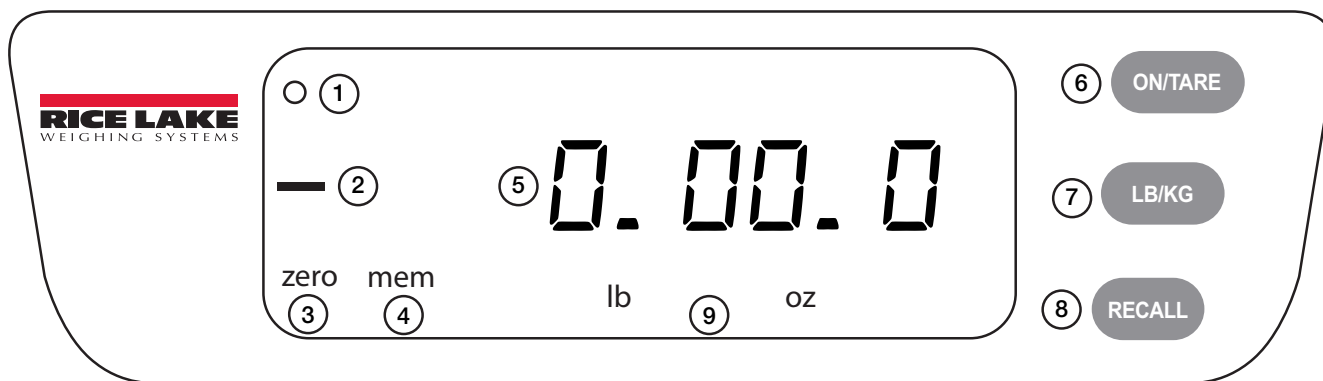


Figure 3-1. RL-DBS-2 Display

Item	Description	Function
1	Motion annunciator	Displays when a weight reading is complete
2	Negative/Minus annunciator	Indicates a negative weight reading
3	Zero annunciator	Indicates the scale is stable and ready for use
4	Memory annunciator	Indicates the last weight measurement is displayed after pressing RECALL
5	6-Digit LCD digital display	Displays the weight in pounds/ounces or kilograms
6	On/Off	Press to turn On Press and hold to turn Off
	Tare	With weight on the scale, short press to tare off the weight, 0 displays
7	LB/KG	Selects pounds/ounces or kilograms
8	RECALL	Recalls the last weight measurement <i>Example: Weigh a baby on the scale and then remove the baby Press RECALL and the baby's weight displays again</i>
9	LB/OZ annunciator	Indicates the scale is weighing in pounds/ounces
	KG annunciator	Indicates the scale is weighing in kilograms

Table 3-1. Front Panel with Annunciators Displayed



NOTE: The RL-DBS-2 comes pre-calibrated from the factory.

3.2 Initial Setup

Use the following steps to set up and verify the RL-DBS-2 upon initial power up and periodically thereafter.

1. Plug AC adapter cable into the back of the scale ([Figure 2-1 on page 7](#)) and the AC adapter plug into a power source.
2. Turn on the scale. A self test runs and **0.00.0 lb** or **0.00 kg** displays when complete.
3. Place a weight, not exceeding 40 lb, on the scale. The weight measurement is complete when **0** displays.
4. Press **LB/KG** to select unit of measure, lb/oz or kg.
5. Remove the weight from the scale. To display the weight again, press **RECALL**.



NOTE: If setup procedure fails, see [Section 5.3 on page 13](#). If the problem is not resolved, refer to a qualified service provider.

3.3 Set Units

The RL-DBS-2 can be set to display weights in lb/oz only, kg only, or to toggle between lb/oz and kg units on the scale.

3.3.1 KG Units Only

Lock the weight units to display in kg only.

1. Ensure the scale is turned on.
2. Press **LB/KG** to change the displayed units to kg.
3. Press and hold **LB/KG** for five seconds until **kg** flashes.
4. Release **LB/KG**. The weight units are now locked in kg. Pressing **LB/KG** does not switch units to lb/oz.

3.3.2 LB/OZ Units Only

Lock the weight units to display in lb/oz only.

1. Ensure the scale is turned on.
2. Press **LB/KG** to change the displayed units to lb/oz.
3. Press and hold **LB/KG** for five seconds until **lb oz** flashes.
4. Release **LB/KG**. The weight units are locked in lb/oz. Pressing **LB/KG** does not switch units to kg.

3.3.3 Unlock Units

Unlock the weight units to toggle between lb/oz and kg.

1. Ensure the scale is turned on.
2. Press and hold **LB/KG** for five seconds until **kg** or **lb oz** flashes.
3. Release **LB/KG**. Pressing **LB/KG** toggles units between lb/oz and kg.

3.4 Weigh With A Tare

The tare function removes the weight of additional items on the scale, such as a pad or blanket, at the time the baby is weighed.

1. Turn on the scale. **0:0.0 lb oz** or **0.00 kg** displays.
2. Place a pad on the weighing tray, ensuring the edges of the pad are not touching the stand. **○** displays when the weight reading is complete.
3. Press **ON/TARE** to remove the weight of the pad or any other accessory on the weighing tray.
4. Place a baby on the scale. **○** displays when the weight reading is complete.
5. Remove the baby from the scale.
6. Press **RECALL** to display the weight again, if necessary.

3.5 Weigh Without A Tare

Use this procedure when there are no additional items on the scale at the time the baby is weighed.

1. Turn on the scale. **0:0.0 lb oz** or **0.00 kg** displays.
2. Place a baby on the scale. **○** displays when the weight reading is complete.
3. Remove the baby from the scale.
4. Press **RECALL** to display the weight again, if necessary.

4.0 Calibration

This section contains procedures on how to calibrate the RL-DBS-2 based on the year of the firmware version.

4.1 Firmware Version 2016 and After

Use the following instructions to calibrate the RL-DBS-2 with a newer version of firmware.



NOTE: Ensure the scale is installed on a level surface.

The scale needs to be off at the start of the calibration procedure.

Calibration is performed using two 20 lb calibration weights or two 10 kg calibration weights.

4.1.1 Toggling Calibration between Pounds and Kilograms



IMPORTANT: The RL-DBS-2 must be configured to calibrate in pounds or kilograms. Ensure that the correct calibration units have been selected before calibrating.

Perform the following steps to select and toggle calibration units from pounds to kilograms.

1. Press **ON/TARE** to turn the scale on.
2. Press **LB/KG** and **ON/TARE** (at the same time). **UNIT 1** displays.
3. Press **ON/TARE**. **CAL** displays and **lb** lights.
4. Press **LB/KG** to switch to kg. **CAL** displays and **kg** lights.
5. Press and hold **ON/TARE** to turn the scale off.

4.1.2 Calibrating with Pounds

1. Ensure the scale is turned off.
2. Press **LB/KG** and **ON/TARE** (at the same time). The raw A/D counts display.
3. Press **ON/TARE** again. **CAL20** displays.
4. Load the scale with a 20 lb test weight. **CAL40** displays.
5. Load the scale with a second 20 lb test weight to equal a total of 40 lb.
6. **End** briefly displays and scale returns to weigh mode. **40.00** displays.
7. Place a known weight onto the scale to confirm the correct calibration. If not correct, repeat the calibration procedure.

4.1.3 Calibrating with Kilograms

1. Ensure the scale is turned off.
2. Press **LB/KG** and **ON/TARE** (at the same time). The raw A/D counts display.
3. Press **ON/TARE** again. **CAL10** displays.
4. Load the scale with a 10 kg test weight. **CAL20** displays.
5. Load the scale with the second a 10 kg test weight to equal a total of 20 kg.
6. **End** briefly displays and scale returns to weigh mode. **20.00** displays.
7. Place a known weight onto the scale to confirm the correct calibration. If not correct, repeat the calibration procedure.

4.2 Firmware Version Prior to 2016

Use the following instructions to calibrate the RL-DBS-2 with an older version of firmware.

1. Ensure the scale is installed on a level surface.



NOTE: *The scale needs to be off at the start of the calibration procedure.*

2. If using kg weights, the scale needs to be set up using the following instructions (skip to [step 3](#) if using lb weights).
 - Press and hold **LB/KG** and **ON/TARE** (at the same time) until the scale displays **CAL**.
 - Release the keys. The scale displays the raw A/D counts.
 - Press **RECALL**. **CAL** displays and **lb** lights.
 - Press **LB/KG** to switch to kg. **CAL** displays and **kg** lights.
 - Press and hold **ON/TARE** to turn the scale off.
3. Press and hold **LB/KG** and **ON/TARE** (at the same time) until **CAL** displays.
4. Release the keys. The raw A/D counts display.
5. Press **ON/TARE**. **0.00** displays.
6. Load the scale with a 40 lb or 20 kg test weight.
7. Press **ON/TARE** again. **40.00** (lb) or **20.00** (kg) displays.
8. Press **ON/TARE** again. **Pass** displays and the scale turns off automatically.
9. Remove weight from the scale.
10. Turn on the scale.
11. Place a known weight onto the scale to confirm the correct calibration. If it is not correct, repeat the calibration procedure.

5.0 Maintenance

The following section provides instructions for maintaining, cleaning and troubleshooting the RL-DBS-2.



IMPORTANT: Maintenance operations not described in this section must be performed by qualified service personnel.

5.1 Basic Maintenance

- Check the scale for proper operation and function before first use and after periods of non-use.
- Inspect the scale. If the scale does not operate correctly, contact qualified service personnel.
- Check the overall appearance of the entire scale for any obvious signs of damage.
- Inspect the condition of the AC adapter for cord fraying or for broken or bent prongs.

5.2 Cleaning

Proper care and cleaning is essential to ensure a long life of accurate and effective operation. Disconnect the scale from the AC power source before beginning the cleaning process.



IMPORTANT: Do not immerse the scale into cleaning solutions or other liquids. Do not use Isopropyl alcohol or other solutions to clean the display surface.

1. Clean all external surfaces with a clean, damp cloth or tissue. Mild soap and water solution can be used.
2. Dry with a clean, soft cloth.

5.3 Troubleshooting

Use the following instructions to troubleshoot any errors with the scale.

Symptom	Possible Cause	Corrective Action
Scale does not turn on	Batteries are dead	Replace batteries or connect scale to a power source
	Electrical outlet is faulty	Use a different electrical outlet
	Power supply is faulty	Replace the adapter NOTE: Utilizing adapters not supplied by Rice Lake Weighing Systems voids all warranties
Scale displays questionable weight or does not zero	There is weight on or an object interfering with the scale	Remove baby, weight or interfering object from scale
	Weight was placed on the scale before 0.0 displayed	Remove baby or weight from the scale; zero scale and begin weighing process again
	Scale is not on a level surface	Place scale on a stable surface and begin weighing process again
	Weighing tray is not placed properly	Ensure weighing tray is properly installed
	Scale is out of calibration	Check scale calibration with a known weight value; perform a new calibration if the calibration is incorrect (see Section 4.0)
o_Ld message is displayed	Load on the scale exceeds the capacity	Remove excess weight and use scale according to its stated limit
Err message is displayed	RECALL key was pressed with insufficient weight on the scale	Place more than 2 lb 30 oz on the scale
OUTZ message is displayed	Scale needs to be recalibrated	Recalibrate the scale

Table 5-1. Troubleshooting Table

6.0 Compliance

	EU DECLARATION OF CONFORMITY EU-KONFORMITÄTSERKLÄRUNG DÉCLARATION UE DE CONFORMITÉ	Rice Lake Weighing Systems 230 West Coleman Street Rice Lake, Wisconsin 54868 United States of America 												
Type/Typ/Type: RL-DBS, RL-DBS-2 baby scale														
English	We declare under our sole responsibility that the products to which this declaration refers to, is in conformity with the following standard(s) or other regulations document(s).													
Deutsch	Wir erklären unter unserer alleinigen Verantwortung, dass die Produkte auf die sich diese Erklärung bezieht, den folgenden Normen und Regulierungsbestimmungen entsprechen.													
Francais	Nous déclarons sous notre responsabilité que les produits auxquels se rapporte la présente déclaration, sont conformes à la/aux norme/s suivante ou au/aux document/s normatif/s suivant/s.													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #f2f2f2;"> <th style="text-align: left; padding: 5px;">EU Directive</th> <th style="text-align: center; padding: 5px;">Certificates</th> <th style="text-align: left; padding: 5px;">Standards Used / Notified Body Involvement</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">2014/30/EU EMC</td> <td style="text-align: center; padding: 5px;">-</td> <td style="padding: 5px;">EN 55022:2006+A1:2007, EN 55024:1998+A1:2001+A2:2003, EN 61000-3-2:2006, EN 61000-3-3:2008</td> </tr> <tr> <td style="padding: 5px;">2014/35/EU low voltage directive</td> <td style="text-align: center; padding: 5px;">-</td> <td style="padding: 5px;">EN 60950-1:2006+A11</td> </tr> <tr> <td style="padding: 5px;">2011/65/EU RoHS</td> <td style="text-align: center; padding: 5px;">-</td> <td style="padding: 5px;">EN 50581:2012</td> </tr> </tbody> </table>			EU Directive	Certificates	Standards Used / Notified Body Involvement	2014/30/EU EMC	-	EN 55022:2006+A1:2007, EN 55024:1998+A1:2001+A2:2003, EN 61000-3-2:2006, EN 61000-3-3:2008	2014/35/EU low voltage directive	-	EN 60950-1:2006+A11	2011/65/EU RoHS	-	EN 50581:2012
EU Directive	Certificates	Standards Used / Notified Body Involvement												
2014/30/EU EMC	-	EN 55022:2006+A1:2007, EN 55024:1998+A1:2001+A2:2003, EN 61000-3-2:2006, EN 61000-3-3:2008												
2014/35/EU low voltage directive	-	EN 60950-1:2006+A11												
2011/65/EU RoHS	-	EN 50581:2012												
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Signature: <u></u> </td> <td style="width: 50%; vertical-align: top;"> Place: <u>Rice Lake, WI USA</u> </td> </tr> <tr> <td style="vertical-align: top;"> Type Name: <u>Brandi Harder</u> </td> <td style="vertical-align: top;"> Date: <u>April 16, 2020</u> </td> </tr> <tr> <td style="vertical-align: top;"> Title: <u>Quality Manager</u> </td> <td></td> </tr> </table>			Signature: <u></u>	Place: <u>Rice Lake, WI USA</u>	Type Name: <u>Brandi Harder</u>	Date: <u>April 16, 2020</u>	Title: <u>Quality Manager</u>							
Signature: <u></u>	Place: <u>Rice Lake, WI USA</u>													
Type Name: <u>Brandi Harder</u>	Date: <u>April 16, 2020</u>													
Title: <u>Quality Manager</u>														

7.0 Specifications

Capacity:

0-22 lb x 0.2 oz (0-10 kg x 5 g)

22-44 lb x 0.5 oz (10-20 kg x 10 g)

Power Requirements:

Four AA alkaline batteries (included)

120 V or 230 V AC adapter (included)

Adapter is UL and C-UL approved

Environmental:

Operating temperature: 50 to +104° F (10 to +40° C)

Storage temperature: -4 to +140° F (-20 to +60° C)

Humidity: < 80% relative humidity

Dimensions (L x W x H):

23.6" x 15.0" x 3.9" (60.9 x 38.1 x 9.9 cm)

Weight:

5.26 lb (2.5 kg)

Warranty:

Two-year limited warranty



© Rice Lake Weighing Systems Content subject to change without notice.

230 W. Coleman St. • Rice Lake, WI 54868 • USA USA: 800-472-6703 • International: +1-715-234-9171