

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

Manuals.plus /

› [Radwag](#) /

› Radwag PS 200/2000.R1 Precision Balance User Manual

Radwag WL-213-1002

Radwag PS 200/2000.R1 Precision Balance User Manual

Model: WL-213-1002

INTRODUCTION

This manual provides comprehensive instructions for the proper setup, operation, and maintenance of your Radwag PS 200/2000.R1 Precision Balance. This instrument is designed for precise weighing applications, offering dual range capacity of 200g/2000g with readability of 0.001g/0.01g. It features a backlit LCD display, programmable buttons, and various connectivity options to enhance your laboratory or industrial processes.

Please read this manual thoroughly before using the balance to ensure safe and efficient operation and to achieve optimal performance.

SETUP AND INSTALLATION

1. Unpacking and Inspection

Carefully remove the balance from its packaging. Inspect all components for any signs of damage that may have occurred during transit. Ensure all listed accessories are present.

- PS 200/2000.R1 Precision Balance unit
- Weighing pan
- Power adapter
- User manual (this document)

2. Placement and Leveling

Place the balance on a stable, level surface free from vibrations, drafts, and direct sunlight. Avoid locations near air conditioning vents, windows, or heavy machinery. Use the adjustable feet at the bottom of the balance to level the unit. The integrated spirit level (bubble level) on the balance indicates when it is perfectly level.



Figure 1: Front view of the Radwag PS 200/2000.R1 Precision Balance, showing the display and control panel.



Figure 2: Angled view of the balance, highlighting its compact design and adjustable feet.

3. Power Connection

Connect the provided power adapter to the balance's power input port and then plug it into a suitable electrical outlet. Ensure the power supply matches the balance's requirements (100-240V AC 50/60Hz or 12V DC 1.2A).



Figure 3: Rear view of the balance, illustrating the power input and communication ports (RS232, USB).

4. Initial Calibration

For optimal accuracy, it is recommended to perform an initial calibration after setup and whenever the balance is moved to a new location or experiences significant temperature changes. Refer to the balance's on-screen menu or the detailed technical specifications for calibration procedures.

OPERATING THE BALANCE

Display and Keypad

The PS 200/2000.R1 features a backlit LCD display for clear readability and an intuitive keypad for easy operation. The display provides weight readings, unit indications, and menu prompts. The keypad includes dedicated buttons for common functions and programmable function keys (F1-F4) for customized shortcuts.



Precision Balance

Introducing the PS.R1 series balances, setting a new benchmark for precision weighing. Experience the enhanced clarity of the new readable LCD display, delivering a sharper presentation of weight measurements.

With an added text information line, conveniently display supplementary messages and data such as product names or tare values. Elevate your weighing experience with PS.R1 balances - the epitome of precision and versatility.

Figure 4: Close-up view of the balance's backlit LCD display, showing a weight reading and various indicators.

Basic Weighing Operations

- **Power On/Off:** Press the **On/Off** button to power the balance on or off.
- **Zeroing:** Press the **-0-** button to set the display to zero. This is typically done before placing any sample on the pan.
- **Tare Function:** Place an empty container on the weighing pan. Press the **-T-** button to tare the container's weight. The display will show zero, allowing you to weigh only the contents.
- **Unit Selection:** Press the **Units** button to cycle through available weighing units (e.g., grams, milligrams, kilograms).

Advanced Functions and Weighing Modes

The PS 200/2000.R1 balance offers a variety of advanced functions and weighing modes to suit diverse applications:

- **Autotest:** Self-diagnostic function.
- **Dosing:** For precise dispensing of materials.
- **Percent Weighing:** Measures weight as a percentage of a reference weight.
- **Totalizing:** Accumulates multiple weighings.
- **Parts Counting:** Counts individual items based on a reference weight.
- **Checkweighing:** Determines if a sample's weight falls within a specified range.
- **GLP Procedures:** Adherence to Good Laboratory Practice guidelines for data recording.
- **Newton Unit Measurement:** Measures force in Newtons.
- **Statistics:** Provides statistical analysis of weighing data.
- **Animal Weighing:** Stabilizes readings for unstable loads, such as live animals.
- **Density Determination:** Calculates the density of a substance.
- **Under-Pan Weighing:** Allows weighing of objects that cannot be placed on the pan, by suspending them below the balance.

Features

New PS.R1 balances, like previously designed PS series balances, have pans in two possible dimensions: 128x128 mm or 195x195 mm balances with a smaller pan have a draft shield. The balance precision and the measurement accuracy is assured by automatic internal adjustment, which takes into consideration temperature changes and time flow.

The housing is made of plastic, and the pan is made of stainless steel.

The balances have a possibility to weigh products out of the pan (under-pan weighing) - the load hangs under the pan.



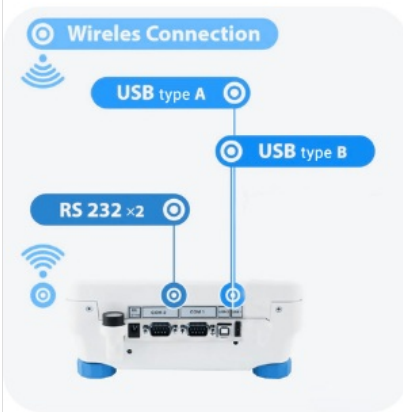
Figure 5: Illustration of key features including the plastic housing, stainless steel pan, and the under-pan weighing capability.

Connectivity and Data Management

The balance is equipped with multiple interfaces for data transfer and integration:

- **2x RS232 Ports:** For connecting to printers or other serial devices.
- **USB-A Port:** For connecting USB flash drives or other USB peripherals.
- **USB-B Port:** For connecting to a computer.
- **Wi-Fi (Optional):** For wireless data communication.

The system utilizes databases for storing information on operators (up to 10), products (up to 1000), weighings (up to 5000), tares (up to 100), and ALIBI memory (up to 100,000 weighings) ensuring data safety and continuity.



Interfaces

PS R1 series is equipped with the following interfaces: 2 x RS 232, USB type A, USB type B, Ethernet and Wireless Connection.



ALIBI Memory

Data safety is ensured by the ALIBI memory integrated into PS R1 balances, which enables record of up to 100 000 weighings. ALIBI guarantees continuity of data collection over a long period of time.



Databases

The system utilizes five databases, the databases include operators (up to 10 users), products (up to 1000), weighings (up to 5000), tares (up to 100), and ALIBI memory (up to 100,000 weighings).

Figure 6: Overview of the balance's interfaces, ALIBI Memory for data safety, and integrated database capabilities.

MAINTENANCE

Cleaning

To maintain the accuracy and longevity of your balance, regular cleaning is essential. Always disconnect the power before cleaning.

- Use a soft, damp cloth with a mild, non-abrasive cleaning agent to wipe the exterior of the balance.
- The stainless steel weighing pan can be removed for thorough cleaning.
- Do not use harsh chemicals, solvents, or abrasive materials, as these can damage the balance's surfaces or internal components.
- Ensure no liquids enter the balance housing or display area.

Storage

When not in use for extended periods, store the balance in a clean, dry environment, away from extreme temperatures, humidity, and direct sunlight. It is advisable to cover the balance to protect it from dust.

TROUBLESHOOTING

This section provides solutions to common issues you might encounter with your PS 200/2000.R1 Precision Balance. If the problem persists, please contact customer support.

Problem	Possible Cause	Solution
Balance does not power on.	No power supply; faulty power adapter; power button issue.	Check power cable connection. Ensure outlet is functional. Try a different power adapter if available.
Inaccurate or unstable readings.	Balance not level; vibrations; drafts; temperature fluctuations; calibration needed.	Level the balance using the adjustable feet. Move to a stable, draft-free location. Allow balance to acclimate to room temperature. Perform calibration.
Display shows "OVERLOAD" or "----".	Weight on pan exceeds maximum capacity; pan not properly seated.	Remove excess weight. Ensure weighing pan is correctly placed.
Cannot connect to computer/printer.	Incorrect cable; driver issues; incorrect communication settings.	Verify correct cable type (RS232, USB). Install necessary drivers. Check communication settings on both balance and connected device.

TECHNICAL SPECIFICATIONS

The following table outlines the key technical specifications for the Radwag PS 200/2000.R1 Precision Balance:



PS 200/2000.R1 Precision Balance

More information on the website
radwag.com/en/info,w1,TUN



The drawings, photos and graphics used are for illustrative purposes only.

Functions

- Autotest
- Dosing
- Percent Weighing
- Totalizing
- Parts counting
- Peak hold
- Newton unit measurement
- Statistics
- Checkweighing
- GLP Procedures
- Animal weighing
- Density determination

Datasheet

Metrological parameters	
Maximum capacity [Max]	200 / 2000 g
Minimum load	20 mg
Readability [d]	0,001 / 0,01 g
Tare range	-2000 g
Repeatability (Max)	0,001 / 0,01 g
Repeatability (5% Max)	0,0005 / 0,005 g
Linearity	±0,002 / 0,02 g

Figure 7: Datasheet page 1, detailing metrological parameters and available functions.

Metrological parameters	
Stabilization time	2 / 1,5 s
Adjustment	external
Physical parameters	
Leveling system	manual
Display	LCD (backlit)
Protection class	IP 43
Delivery components	Balance, weighing pan, weighing pan shield, grounding bumper ×1, bumper ×3, power supply.
Weighing pan dimensions	128×128 mm
Packaging dimensions	465×370×290 mm
Net weight	3,2 kg
Gross weight	6 kg
Communication interface	
Communication interface	2×RS232 ¹ , USB-A, USB-B, Wi-Fi (option)
Electrical parameters	
Power supply	Adapter: 100 – 240V AC 50/60Hz 0,6A; 12V DC 1,2A Balance: 12 – 15V DC 0,4A max
Power consumption	4 W
Environmental conditions	
Operating temperature	+10 ÷ +40 °C
Relative humidity	40% ÷ 80%

Repeatability is expressed as a standard deviation from 10 weighing cycles. Stabilization time depends on the ambient conditions and the dynamics of weighing pan loading; specified for FAST profile. 1 Barcode scanners, available as weighing instrument accessory, communicate with the instrument via RS232 interface exclusively.

* Wi-Fi® is a registered trademark of Wi-Fi® Alliance.



Accessories

Balance Storage Case	Displays
Barcode scanners	Draft Shield
Cigarette lighter receptacle power supply cables	Receipt Printer
USB cable (scale - printer)	RPANEL BOX
Density determination KIT	Protective cover for balances
Power Adapters	RS 232, RS 485 cables
Anti-Draft Chamber for Balances with a 128×128 mm Weighing Pan	Under-pan weighing
Antivibration Tables	RS 232 cables (scale - printer)

Software

RAD-KEY	LabVIEW Driver
R Panel	Alibi Reader
R-LAB	RADWAG Development Studio
E2R System	R.Barcode

Figure 8: Datasheet page 2, detailing physical, communication, electrical, environmental parameters, accessories, and software.

General Specifications

- **Model:** WL-213-1002

- **Product Dimensions:** 13.11 x 8.11 x 3.94 inches
- **Weight:** 10 Pounds
- **Color:** White
- **Display Type:** LCD (Backlit)
- **Special Feature:** Advanced Weighing Modes, Backlit Display, Programmable Buttons

Metrological Parameters

- **Dual Range Max Capacity:** 200g / 2000g
- **Readability [d]:** 0.001g / 0.01g
- **Minimum Load:** 20 mg
- **Tare Range:** -2000 g
- **Repeatability (Max):** 0.001 g / 0.01 g
- **Repeatability (5% Max):** 0.0005 g / 0.005 g
- **Linearity:** ± 0.002 g / ± 0.02 g
- **Stabilization Time:** 2 / 1.5 s
- **Adjustment:** External

Physical Parameters

- **Leveling System:** Manual
- **Display:** LCD (backlit)
- **Protection Class:** IP 43
- **Delivery Components:** Balance, weighing pan, weighing pan shield, grounding bumper x1, bumper x3, power supply.
- **Weighing Pan Dimensions:** 128×128 mm
- **Packaging Dimensions:** 465×370×290 mm
- **Net Weight:** 3.2 kg
- **Gross Weight:** 6 kg

Communication Interface

- 2×RS232
- USB-A
- USB-B
- Wi-Fi (option)

Electrical Parameters

- **Power Supply:** Adapter: 100 - 240V AC 50/60Hz 0.6A; 12V DC 1.2A
- **Balance:** 12 - 15V DC 0.4A max
- **Power Consumption:** 4 W

Environmental Conditions

- **Operating Temperature:** +10 °C to +40 °C
- **Relative Humidity:** 40% to 80%

Note: Repeatability is expressed as a standard deviation from 10 weighing cycles. Stabilization time depends on the ambient conditions and the dynamics of weighing pan loading specified for FAST mode. 3 Barcode scanners, available as weighing instrument accessory, communicate with the instrument via RS232 interface exclusively.

WARRANTY AND SUPPORT

Radwag products are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official Radwag website.

For technical support, service, or inquiries regarding your PS 200/2000.R1 Precision Balance, please contact Radwag customer service or visit their official website:

[Visit Radwag Official Website](#)

Additional information and resources, including updated drivers and software, may be available on the Radwag website.