# Explosion-Proof Electronic Precision Table Balance

*EX-GB-T Series*

Flameproof weighing for Zone 1 and Zone 2 hazardous areas




**ABSTRACT**

A stainless-steel, explosion-proof electronic precision balance engineered for hazardous areas. Nine capacity and readability combinations span 120 g × 1 mg to 30 kg × 0.2 g. A flameproof Ex db IIB T6 Gb enclosure, IP68 sealing and a bright backlit LCD with a five-key sealed panel keep accurate results within reach — even where flammable gases, vapours or dust rule out ordinary electronic balances.

# Product Overview

Precision weighing, certified for hazardous areas.

The EX-GB series are intelligent electronic precision balances built around a high-stability weighing sensor and a single-chip microcontroller. They deliver accurate, repeatable results in environments where flammable gases, vapours or combustible dust make standard electronic balances unsafe to operate.

The instrument is housed in brushed SUS304 stainless steel and sealed to IP68. Weighing, tare, self-calibration, parts counting and unit conversion all run from a single five-key panel with a backlit LCD. The flameproof enclosure carries the marking Ex db IIB T6 Gb (certificate ZJEx23.1422), so the balance can be installed directly in Zone 1 and Zone 2 hazardous areas.




EX-GB series front view — backlit LCD, five sealed keys and the Ex marking plate.

| Ex db IIB T6 Gb | 1 mg | IP68 | 30 kg |
|---|---|---|---|
| Protection marking | Finest readability | Ingress protection | Maximum capacity |

## Six Key Advantages

Why the EX series is specified where ordinary balances cannot go.

### Explosion-Proof

Certified **Ex db IIB T6 Gb** flameproof enclosure — approved for Zone 1 and Zone 2 gas atmospheres under certificate ZJEx23.1422. No purge or pressurisation equipment required.

### High Precision

Readability down to **1 mg** with repeatability of ± 3 d and Class III verification accuracy. A high-stability sensor and digital filtering keep readings reliable shift after shift.

### Rugged Construction

Brushed stainless-steel housing over a rigid load frame, with sealed adjustable feet and an impact-resistant front panel — built for daily use on the factory floor.

### Corrosion Resistant

SUS304 stainless-steel surfaces resist water, acids, alkalis and aggressive chemical vapours, and wipe clean in seconds.

### Long-Term Reliability

Automatic self-test at power-up, overload and low-battery alarms, and an internal rechargeable battery pack that keeps the balance running through long shifts.

### IP68 Waterproof

Sealed to **IP68** — dust-tight and protected against continuous immersion, so the balance withstands washdown, spillage and humid process areas.

# Technical Specifications

Capacity, performance and electrical interfaces.

## Capacity and readability

| Model | Max. capacity | Readability (d) | Verification interval (e) | Weighing pan |
|---|---|---|---|---|
| **EX-GB SERIES — ROUND PAN, HIGHEST RESOLUTION** | | | | |
| EX-GB 1203 | 120 g | 1 mg | 10 mg | Ø 92 mm |
| EX-GB 2103 | 210 g | 1 mg | 10 mg | Ø 92 mm |
| EX-GB 3003 | 300 g | 1 mg | 10 mg | Ø 92 mm |
| EX-GB 12002 | 1.2 kg | 0.01 g | 0.1 g | Ø 116 mm |
| EX-GB 21002 | 2.1 kg | 0.01 g | 0.1 g | Ø 116 mm |
| EX-GB 30002 | 3 kg | 0.01 g | 0.1 g | Ø 116 mm |
| **EX-GB SERIES — SQUARE PAN, HIGHER CAPACITY** | | | | |
| EX-GB 6001 | 6 kg | 0.1 g | 1 g | 125 × 145 mm |
| EX-GB 7501 | 7.5 kg | 0.1 g | 1 g | 125 × 145 mm |
| EX-GB 15001 | 15 kg | 0.1 g | 1 g | 200 × 210 mm |
| EX-GB 30001 | 30 kg | 0.2 g | 2 g | 200 × 210 mm |

## General specifications

| | |
|---|---|
| **Protection marking** | Ex db IIB T6 Gb — flameproof enclosure |
| **Explosion-proof certificate** | ZJEx23.1422 |
| **Accuracy class** | Class III (e = 10 d) |
| **Repeatability** | ± 3 d |
| **Tare range** | Up to full capacity |
| **Ingress protection** | IP68 — dust-tight, protected against continuous immersion |
| **Housing material** | Brushed SUS304 stainless steel |
| **Keypad** | Five sealed stainless-steel keys |
| **Display** | Backlit LCD with zero, tare, stability, unit, negative-sign and low-battery indicators |
| **Standard functions** | Weighing, tare, self-calibration, parts counting, unit conversion, RS-232 output |
| **Serial output** | RS-232 UART · 1200 / 2400 / 4800 / 9600 bps · 8 data bits · no parity · 1 stop bit · ASCII （RS-485 optional） |
| **Dimensions — main unit** | 335 × 225 × 130 mm (W × D × H) |
| **Dimensions — overall envelope** | 332 × 253 × 335 mm (incl. pan) |

# Power, Sealing & Supply

Long runtime, sealed construction and everything in the box.

## Power & battery

**Mains adapter**
External switched-mode adapter — AC 220 V（110V） ± 10 % / 50 Hz ± 1 Hz input, DC 8 V / 0.6 A output.

**Internal battery**
Rechargeable 6 V / 5 Ah pack. The charging indicator shows red while charging and green when fully charged; a full charge takes 8 – 12 hours.

**Low-battery protection**
The low-battery indicator lights at 5.8 V ± 0.15 V. At 5.1 V ± 0.15 V the balance shuts down automatically to protect the electronics.

**Operating temperature**
5 – 35 °C — stable performance in conditioned process areas and laboratories.

**Charging in hazardous areas.** The battery charger is not explosion-proof. Charge the balance in a safe, non-classified area only, and refit the sealed charging-port cap before the instrument returns to service.

## Materials & Sealing

| | |
|---|---|
| **Housing** | Brushed SUS304 stainless steel |
| **Weighing pan** | Stainless steel, removable for cleaning |
| **Sealing** | IP68 — dust-tight, protected against continuous immersion |
| **Levelling** | Sealed adjustable feet with integral spirit level |
| **Front panel** | Impact-resistant, wipe-clean surface |

## Standard Supply

| | |
|---|---|
| **Balance main unit** | 1 pc |
| **Weighing pan** | 1 pc |
| **External power adapter** | 1 pc |
| **Documentation set** | 1 set — manual and certificate |

| 6 V / 5 Ah | 8 – 12 h | 5 – 35 °C | IP68 | 24 months |
|---|---|---|---|---|
| Rechargeable pack | Full charge time | Operating range | Sealed enclosure | Warranty cover |



Side elevation — low-profile stainless-steel body with sealed adjustable feet.

# Display & Controls

Clear indicators and five sealed keys — readable at a glance.

## LCD indicator layout




LCD indicator layout | EX-GS / EX-GA / EX-GB series

## Indicator legend

| | |
|---|---|
| **Zero indicator** | The displayed value is at the zero reference. |
| **Tare indicator** | Tare (net) mode is active — the container weight has been subtracted. |
| **Negative sign** | The displayed value is below zero. |
| **Stability indicator** | The reading is stable and valid for recording. |
| **Low-battery warning** | Battery voltage is low — recharge before use. |
| **Unit display** | Shows the active weighing unit — g, ct, oz or ozt. |

## Unit Display abbreviations

| | |
|---|---|
| **g** | Gram — the default weighing unit. |
| **CT** | Carat — for gemstone and precious-stone weighing. |
| **OZ / OZT** | Ounce / troy ounce — for general and precious-metal weighing. |
| **CA 10 pcs** | Parts-counting mode, using a 10-piece sample. |
| **CAL** | Calibration in progress. |
| **Err** | Sample weight too small — add more pieces and sample again. |
| **OL** | Overload alarm — the load exceeds the rated capacity; remove it immediately. |

## Keypad legend




Front panel of the EX-GB series — LCD window, model plate and the five sealed keys. The panel legends are printed in Chinese; their English equivalents are listed opposite.

| Key | Function |
|---|---|
| **On / Off** | Power the balance on or off. |
| **Unit** | Step through the weighing units — g, ct, oz, ozt. |
| **Zero** | Zero the display, or tare off the weight of a container. |
| **Calibrate** | Start calibration against a standard weight. |
| **Print** | Send the current reading to a printer or host computer. |

# Typical Applications

Specified wherever a spark is not an option.

**Chemical & Petrochemical**
Solvent, reagent and catalyst weighing in classified process areas.

**Pharmaceutical**
API dispensing, batch formulation and in-process quality control.

**Food & Beverage**
Ingredient portioning, recipe batching and additive dosing.

**Laboratory & R&D**
Sample preparation and analytical work in fume-hood environments.

**Coatings & Solvents**
Pigment, resin and thinner batching where flammable vapours are present.

**Oil, Gas & Energy**
Field and plant weighing in Zone 1 and Zone 2 hazardous areas.

## Reading the Protection Marking

| Element | Meaning |
|---|---|
| **Ex** | Explosion-protected equipment |
| **db** | Flameproof enclosure, to IEC / EN 60079-1 |
| **IIB** | Gas group IIB — suitable for ethylene atmospheres |
| **T6** | Maximum surface temperature ≤ 85 °C |
| **Gb** | Equipment protection level Gb — Zone 1 and Zone 2 |

**Specifying your balance.** Choose the series by pan format, then the model by capacity and readability. EX-GS and EX-GA models use a round pan for high-resolution work down to 1 mg; EX-GB models use a square pan for heavier loads up to 30 kg. Every model leaves the factory with the same Ex db IIB T6 Gb flameproof enclosure, IP68 sealing and five-key panel.

## Two-Year Warranty

Every balance is supplied with a 24-month manufacturer warranty covering parts and workmanship from the date of delivery. Defective components are repaired or replaced free of charge, and technical support is available for the service life of the instrument.

**24**
MONTHS

**Explosion-Proof Electronic Precision Balance**
EX-GB Series — certified Ex db IIB T6 Gb

**Shenzhen Definition Electric Co., Ltd**
Explosion-Proof Instrument Division

Specifications are typical and subject to change without notice. Verify model, capacity class and approval marking against the instrument nameplate before installation.