EX-GB-H Series Explosion-Proof Electronic High Precision Balance

Electromagnetic-force weighing for Zone 1 and Zone 2 hazardous areas

Product Manual · Description, Features & Specifications



ABSTRACT

The EX-GB-H series is an explosion-proof electronic high precision balance built on an electromagnetic force sensor for hazardous areas where flammable gases, vapours or combustible dust rule out ordinary balances. Capacity and readability combinations span **100 g × 0.0001 g** to **6,100 g × 0.01 g**, backed by a certified **Ex db IIB T6 Gb** flameproof enclosure, **IP65** sealing, a toughened-glass draft shield and a **24-month** manufacturer warranty.

Product Overview

Intelligent explosion-proof weighing, engineered for hazardous areas.

The EX-GB-H series is an intelligent electronic precision balance built around an **electromagnetic force sensor** and a single-chip microcontroller. The sensor principle measures force directly rather than deflection, giving fast stabilization, excellent linearity and repeatable results shift after shift. A toughened-glass draft shield protects the weighing pan from draughts, so milligram-level readings stay stable on the factory floor.

Everything runs from a single panel of **six sealed keys**: weighing, zeroing, tare, calibration, parts counting, percent weighing and unit conversion, with RS-232 data output to a printer or PC. The flameproof enclosure carries the marking **Ex db IIB T6 Gb** (certificate ZJEx23.1422) and is sealed to IP65, so the balance installs directly in Zone 1 and Zone 2 hazardous areas.



EX-GB series — backlit LCD, six sealed flameproof keys and the Ex marking.

Ex db IIB T6 Gb	0.1 mg	IP65	6,100 g
Protection marking	Finest readability	Ingress protection	Maximum capacity

Seven Key Advantages

Why the EX-GB is specified where ordinary balances cannot go.

Explosion-Proof

Certified **Ex db IIB T6 Gb** flameproof enclosure (certificate ZJEx23.1422) — installs directly in Zone 1 and Zone 2 gas atmospheres, no purge equipment needed.

Rugged Construction

Rigid flameproof housing with a toughened-glass draft shield, stainless-steel pan, sealed brass keys and adjustable levelling feet — built for daily plant-floor use.

Long-Term Reliability

Self-test at power-up, overload warning, automatic shutdown protection and a stable AC power path keep the balance on duty shift after shift.

Two-Year Warranty

24-month manufacturer warranty on parts and workmanship, with technical support for the service life of the instrument.

High Precision

Electromagnetic force sensor with readability down to **0.0001 g** and linearity of ± 0.0003 g, stabilizing in about 4 seconds.

Corrosion Resistant

Stainless-steel pan and coated flameproof surfaces resist water, oils and chemical vapours — and wipe clean in seconds.

IP65 Waterproof

Sealed to **IP65** — dust-tight and protected against low-pressure water jets from any direction; withstands splash, spillage and humid process areas.

The Balance at a Glance

Flameproof body, draft shield and display — every angle built for the plant floor.



Display panel — Ex logo, backlit LCD and the six-key sealed keypad: ON/OFF · UNIT · MODE · TARE · CAL · PRINT.



Front view — backlit LCD with the Ex logo, six sealed keys and the toughened-glass draft shield.



Side view — glass draft shield over the stainless-steel pan on the flameproof base.



Rear view — rating plate, safety notice plate, AC inlet and flameproof connection glands.

Standard Supply

EX-GB explosion-proof balance main unit	1 pc
Weighing pan	1 pc
Calibration weight (model-dependent)	1 pc
AC / DC adapter 220 V · 50 Hz · 15 V / 500 mA	1 pc
Operation manual	1 pc
Certificate of conformity & warranty card	1 set

Options. Optional: RS-232 printer or PC connection · density kit (density mode is an optional function).

Display & Controls

Large backlit LCD, ten unit annunciators and six sealed keys.

LCD indicator layout



Indicator legend

Standby indicator	Balance is powered, ready to switch on.
Positive/negative sign	Value is positive or negative.
Stability indicator	Reading is stable and valid.
Main digit display	Weighing result in large digits.
Unit display area	Active weighing unit lights up.
Battery indicator	Backup battery status (where fitted).
G / NET	Gross or net value shown.
AUTO CAL	Automatic calibration annunciator.

Keypad legend

Key	Function
ON/OFF	Short press: power on / off.
ZERO/CAL	Zero within ± 6 d · long press: calibrate.
TARE	Tare off a container · menu selection.
PRINT	Data output · shift during digit entry.
MODE	Mode switch — weighing, counting, % …
UNIT	Weighing unit and 1/10 d conversion.

Weighing modes

Mode	Display	Use
Normal weighing	NORMAL g	Everyday weighing
Parts counting	COUNT pcs	Counting from a sample
Percent weighing	PERCENT %	Loads as % of a reference
Density (option)	DENSITY d	Density — optional

Weighing units

Symbol	Unit	1 g equals
g	Gram	**1**
mg	Milligram	**1000**
ct	Carat	**5**
oz	Ounce	**0.03527396200**
GN	Grain	**15.43235835000**
lb	Pound	**0.00220462260**
N	Newton	**0.00980654189**
Kg	Kilogram	**0.00100000000**

RS-232 data output

Interface	EIA RS-232 UART signal
Baud rates	1,200 / 2,400 / 4,800 / 9,600 bps
Format	8 data bits · no parity · 1 stop bit · ASCII
Output	ST/US status + 8-digit data + unit, e.g. **ST +0.168 g**
Connection	9-pin D-sub to PC or serial printer

Panel notes

Note. Display panel of the EX-GB series. Panel legends are printed in Chinese; their English equivalents are listed opposite.

Technical Specifications

Capacity, performance, power and construction.

Capacity and readability

Capacity class	Max. capacity	Readability (d)	Linearity	Stabilisation	Pan ⌀
EX-GB-H 104 – 314	100 g – 310 g	**0.0001 g**	± 0.0003 g	≈ 4 s	90 mm
EX-GB-H 213 – 1013	210 g – 1,010 g	**0.001 g**	± 0.002 g	≈ 3 s	128 mm
EX-GB-H 1102 – 6102	1,100 g – 6,100 g	**0.01 g**	± 0.02 g	≈ 3 s	160 mm

Calibration weights: 100 / 200 g (class 104–314), 200 – 1,000 g (213–1013), 1,000 – 5,000 g (1102–6102). Warm-up 60 – 120 min (104–314) or 60 – 90 min. Operating temperature 20 °C ± 2.5 °C (104–314) / ± 7.5 °C.

General specifications

Protection marking	**Ex db IIB T6 Gb** — flameproof enclosure
Explosion-proof certificate	**ZJEx23.1422**
Weighing sensor	Electromagnetic force compensation
Repeatability (std. dev.)	**± 0.0003 g** (104–314) · ± 0.002 g (213–1013) · ± 0.02 g (1102–6102)
Tare range	Up to full capacity
Ingress protection	**IP65** — dust-tight, protected against low-pressure water jets
Display	Large backlit LCD — standby, ± sign, stability, battery, G/NET and AUTO CAL annunciators, ten weighing units
Keypad	Six sealed keys — ON/OFF · ZERO/CAL · TARE · PRINT · MODE · UNIT
Draft shield	Toughened glass, 180 × 175 × 200 mm weighing chamber
Standard functions	Weighing, zeroing, tare, calibration, parts counting, percent weighing, unit conversion, data output
Serial output	RS-232 · 1,200 / 2,400 / 4,800 / 9,600 bps · 8 data bits · no parity · ASCII
Housing dimensions	352 × 236 × 408 mm (W × D × H)
Power supply	AC adapter 220 V · 50 Hz, DC 15 V / 500 mA output
Weight	Net ≈ 18 kg · gross ≈ 25 kg

Power & Environment

A stable power path and a stable surface — the two things precision asks for.

Power supply

Mains adapter
External adapter — AC 220 V(110V) · 50 Hz input, DC 15 V / 500 mA output. Use a dedicated socket, separate from other electrical equipment.

Operating environment
Stable, level, vibration-free bench away from direct sunlight, draughts, heat sources and strong electromagnetic interference.

Levelling
Adjust the rear levelling feet until the air bubble sits center of the level; never place loads on the pan while switching on.

Ready around the clock
Power-up self-test, overload warning and automatic shutdown protection keep the balance safe to leave connected between shifts.

Hazardous-area essentials

Never open the flameproof enclosure — Opening by non-professionals is prohibited — a damaged Ex safety label voids the warranty.

Earth the balance in hazardous areas — The balance must be reliably earthed whenever it operates in a hazardous area.

Isolate power before connecting devices — Always disconnect the supply before connecting or removing printers, PCs or any peripheral equipment.

Warm up before critical weighing — Allow about 60 minutes of warm-up for full accuracy; let the balance acclimatise for 2 hours after a large temperature change.

0.1 mg	Ex db IIB T6 Gb	IP65	RS-232	24 months
Finest readability	Flameproof enclosure	Sealed enclosure	Data output	Warranty cover

Two-Year Warranty

Every EX-GB 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

EX-GB Series Explosion-Proof Electronic Precision Balance
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Shenzhen Definition Electric Co., Ltd
www.definitionscale.com

Specifications are typical and subject to change without notice. Verify model, capacity class and approval marking against the instrument nameplate before installation. Operation, calibration and maintenance instructions are given in the accompanying operation manual.