

Analytical Weighing Sensors

# AD-4212B

Series



*At last, 1  $\mu$ g readability in  
production-line weighing!*



**AD** ...Clearly a Better Value  
A&D Company, Limited

# Looking for the Highest Precision Possible for Your Weighing System?

The level of control of filling, coating, and dispensing amounts in high-tech industries just gets stricter and stricter, raising to new heights the precision required of balances used in such applications. The AD-4212B, the highest-precision series of A&D's production-line balances, are not only suitable for building extremely sensitive weighing systems, but are also fast and yet surprisingly affordable. **Precision, Speed, Affordability** – three aspects of which most other balances can satisfy only two at a time!



## Exceptional Weighing Performance

### Minimum Weighing Value from 1 $\mu\text{g}$ <sup>i</sup>

The AD-4212B realizes the precision of laboratory analytical balances (including micro-balances) and most minute weighing in production processes.

\*i 1  $\mu\text{g}$  (= 1/1,000,000 g) is approximately 1 nanoliter of water volume.

### Fast Stabilization of 4.0 Seconds for 0.01 mg Resolution<sup>ii</sup>

The high-speed, efficient weighing dramatically improves the throughput of your system. \*ii AD-4212B-101/102

### Adjustable Response Characteristics

Select one of three preset combinations of weighing speed and stability (FAST, MID, or SLOW) to effectively minimize the influence of drafts and vibrations.





## Great Installation Flexibility

### Space-saving with an 80 mm width

The slim separate weighing unit facilitates the compact arrangement of your system.

### Wall / Panel-Mountable Display Unit

The provided stand can be used to attach the display unit to a wall. The DIN-sized (192 × 96 mm) display unit is also suitable for panel mounting.



Wall / panel mounting

### Possible to Create Your Own Weighing Pan

Design and attach your preferred weighing pan when the standard pan is unfit for your specific application.

### Weighing in Vacuum Chambers

You can safely install and use the weighing unit in a vacuum chamber, as it is isolated from the delicate electric parts in the display unit.



Weighing in a vacuum chamber

## Diverse Data Management Solutions

### Data Memory Function<sup>iii</sup>

The balance stores up to 200 weighing results (100 with date & time) or the 50 latest calibration results without external memory devices. It can also save 20 unit masses for the counting mode or 20 sets of upper/lower limit values for easy recall afterwards.

\*iii Not available when the BCD output (AD-4212-01) is installed

### Various Input / Output Methods

The following three choices are available:

1. RS-232C serial interface, 3-level / 5-level comparator contact output with buzzer, and external contact input for RE-ZERO and PRINT (standard)
2. BCD output and external contact input for RE-ZERO and ON/OFF (AD4212A-01, optional)
3. LAN-Ethernet interface with WinCT-Plus software (AD4212A-08, optional)

### GLP/GMP/GCP/ISO Compliant Output

For documentation, the AD-4212B can output the balance manufacturer, model, serial number, ID number, date, time, space for a signature, calibration records, etc.

## High Durability and Protection

### Guarded Against Vertical and Transverse Overloading

Our patented shock absorber<sup>iv</sup> under the weighing pan copes with movement in all directions so that the sensor is protected from actuator malfunctions.

\*iv Not designed to handle impact loads.

### Chemically Resistant, Stainless Steel Construction

The splash-proof, IP54 weighing unit with a SUS304 body (SUS316 weighing pan) protects the sensor from accidental spilling of medical agents, resist ink, coating materials, etc.

## Other Helpful Features

- ✓ Securable to a base by removing the leveling feet and using the provided mounting fixtures
- ✓ Twelve units of weighing including g, mg, oz, ozt, ct, mom, dwt, GN, tael, tola, PC (counting mode), Pct (percent mode)
- ✓ Preventive function to inhibit unintended changes to important parameters
- ✓ Stainless steel breeze break for better weighing stability
- ✓ Comes with a free calibration weight (OIML Class E2 equivalent)



Stainless steel breeze break

## Specifications

Models	AD-4212B-23	AD-4212B-101	AD-4212B-102	AD-4212B-201	AD-4212B-301
Weighing capacity	21 g	31 g / 110 g <sup>v</sup>	110 g	210 g	310 g
Minimum weighing value	0.001 mg	0.01 mg / 0.1 mg	0.01 mg	0.1 mg	0.1 mg
Repeatability (standard deviation)	0 - 10 g (gross) : 0.003 mg <sup>vi</sup> 10 - 21 g (gross) : 0.004 mg <sup>vi</sup>	0.05 mg / 0.1 mg	0 - 30 g : 0.02 mg 30 - 100 g : 0.04 mg	0.1 mg	0.2 mg
Linearity	±0.01 mg	±0.05 mg / ±0.2 mg	±0.1 mg	±0.2 mg	±0.3 mg
Stabilization time (when set to FAST under a good environment)	Approx. 12 sec	Approx. 4.0 sec / 2.5 sec	Approx. 4.0 sec	Approx. 2.5 sec	Approx. 2.5 sec
Sensitivity drift	±2 ppm/°C (10 °C to 30 °C/50 °F to 86 °F)				
Operating environment	5 °C to 40 °C (41 °F to 104 °F), 85%RH or less (no condensation)				
Display refresh rate	10 times/second (5 times/second can be selected)				
Display mode	g, mg, oz, ozt, ct, mom, dwt, GN, tael, tola, PC (counting mode), Pct (percent mode)				
Counting mode	Minimum unit mass	0.1 mg			
	Number of samples	10, 25, 50 or 100 pieces			
Percent mode	Minimum 100% reference mass	1 mg	10.0 mg		
	Minimum 100% display	0.01%, 0.1%, 1% (depends on the reference mass stored)			
I/O unit	RS-232C	Bi-directional, 600-19200 bps			
	Comparator contact output	3-level or 5-level (with buzzer)			
	External contact input	RE-ZERO, PRINT			
Calibration weight provided (conforming to OIML Class E2)	1 g	50 g	100 g		
Applicable calibration weight value	1 g, 2 g, 5 g, 10 g, 20 g	10 g, 20 g, 50 g, 100 g	10 g, 20 g, 50 g 100 g, 200 g	10 g, 20 g, 50 g 100 g, 200 g, 300 g	
Weighing unit	Dimensions	80(W) × 230(D) × 90(H) mm			
	Weighing pan	Ø34 mm	50 × 50 mm		
	Weight	Approx. 2.3 kg			
Display unit	Dimensions	237(W) × 150(D) × 155(H) mm			
	Weight	Approx. 2 kg			
Connection cable	Approx. 2 m (between the weighing unit and the display unit)				
Power supply	AC adapter				
Power consumption	Approx. 15 VA (supplied to the AC adapter)				

\* v Smart range function: The display will switch to the standard range automatically when the value exceeds 31 g but return to the precision range when RE-ZERO (tare) is performed.  
\* vi Repeatability for a 1 g mass using an automatic loading machine.

## Options

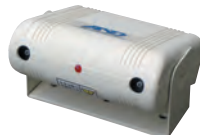
AD4212A-01	BCD output / external contact input
AD4212A-07	Extension cable (3 m)
AD4212A-08	Ethernet interface (with application software WinCT-plus on CD-ROM)
AD4212A-19	Stainless steel breeze break (comes as standard but also available as an option)
AD4212A-20	Metal leveling foot

## Accessories

AD-1683	Static eliminator
AD-1684	Electrostatic field meter
AD-1688	Weighing data logger
AD-1689	Tweezers for calibration weight
AD-8121B	Compact printer
AD-8527	Quick USB adapter
AD-8951	Comparator light



AD-8121B



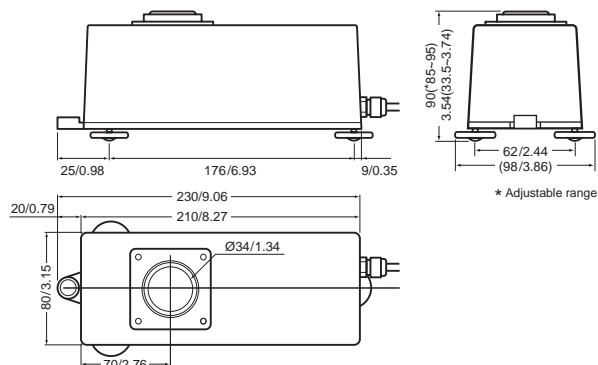
AD-1683



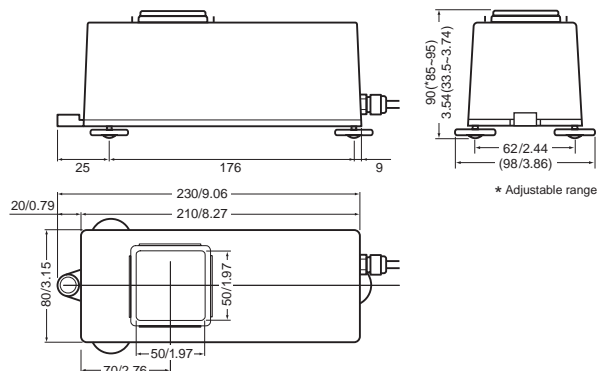
AD-1684

## Dimensions(mm/inch)

### AD-4212B-23/101/102



### AD-4212B-201/301



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