

Weigh Modules

AD-4212A AD-4212B Series



AD-4212A



AD-4212B



Achieving Both Precision and Speed in a Cost-effective Way

What Is the Most Essential Element of a Weigh Module to You?

The level of control required for filling, coating, or dispensing amounts in high-tech industries has become progressively stricter and stricter. A&D's weigh modules, the AD-4212A/B series, provide the precision and speed required for building automatic weighing systems for use in such applications, while realizing cost-effectiveness by various means, including the affordability of the weigh modules themselves. **Precision, speed, and cost-effectiveness** — these three elements are essential to most users, and yet, it has been difficult to achieve all of them at the same time.

AD-4212A

Display unit



Quick reference sheet

2 m (removable)



Weighing unit

80 mm

AD-4212B

Display unit



Quick reference sheet

2 m (removable)



Weighing unit

80 mm

Weighing performance

High-resolution, high-speed weighing

The AD-4212A/B series realizes the precision of laboratory analytical balances for production processes while dramatically improving their throughput.

Model	AD-4212A-100	AD-4212A-200	AD-4212A-600	AD-4212A-1000
Capacity	110 g	210 g	610 g	1100 g
Readability	0.1 mg	1 mg		
Stabilization time* ⁱ	0-30 g: 1.1 sec 30-110 g: 1.3 sec	0-30 g: 0.8 sec 30-210 g: 1.0 sec	0-30 g: 0.9 sec 30-610 g: 1.1 sec	0-30 g: 0.9 sec 30-1100 g: 1.1 sec

Model	AD-4212B-101	AD-4212B-102	AD-4212B-201	AD-4212B-301
Capacity	31 g / 110 g* ⁱⁱ	110 g	210 g	310 g
Readability	0.01 mg / 0.1 mg* ⁱⁱ	0.01 mg	0.1 mg	
Stabilization time* ⁱ	4.0 sec / 2.5 sec	4.0 sec* ⁱⁱⁱ	2.5 sec	

*ⁱ Typical when set to FAST

*ⁱⁱ Smart range: The readability will switch to 0.1 mg automatically when the display value exceeds 31 g, but returns to 0.01 mg when the RE-ZERO key is pressed.

*ⁱⁱⁱ 2.5 seconds when the readability is set to 0.1 mg

Adjustable response characteristics

Depending on the amount of drafts and/or vibration at the location of use, you can trade weighing speed for higher display stability, or vice versa, by selecting one of three preset response characteristics (FAST, MID, or SLOW). Further, with the AD-4212A, more detailed settings are possible using its extended function.

Installation flexibility

Wall/panel-mountable display unit

The provided stand can be used to attach the display unit to a wall. The size of the display unit is also suitable for panel mounting (panel cutout dimensions: 186 mm × 92 mm).

Space-saving with an 80 mm width

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

Securable directly to a base

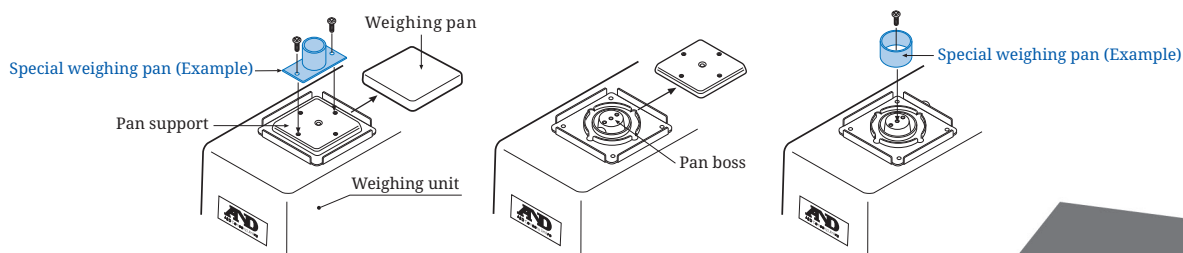
The weighing unit can be firmly fixed to a base by removing the leveling feet and using the provided mounting fixtures.



Wall/panel mounting

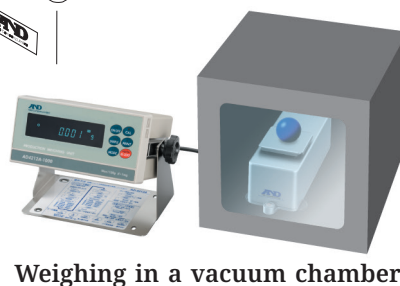
Customization of the weighing pan

It is possible to design and attach (to either the pan support or the pan boss) a special weighing pan/receptacle that suits the specific needs of your system.



Weighing in vacuum chambers

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



Data management solutions

Various input/output methods

The following three choices are available:

1. Standard interface: RS-232C, comparator contact output with buzzer (AD-4212A: 3 levels^{*iv} / AD-4212B: 3 or 5 levels), and external contact input for RE-ZERO and PRINT
2. AD4212A-01 (optional): BCD output and external contact input for RE-ZERO and ON/OFF
3. AD4212A-08 (optional): Ethernet interface with WinCT-Plus software

^{*iv} For 5 levels, the AD4212A-04 (factory-installed option) is available.

Data memory function^{*v}

The display unit stores up to 200 weighing results (or 100 with a timestamp) or the 50 latest calibration results without need for an external memory device. It can also save 20 unit masses to be used in counting mode, or 20 comparator limit settings for later changeover.

^{*v} Not available when the AD4212-01 is installed

Durability and protection

Guarded against vertical and transverse overloading

A&D's patented shock absorber^{*vi} under the weighing pan copes with movement in all directions so that the sensor is protected from actuator malfunctions.

^{*vi} Not designed to handle impact loads

Chemically resistant, stainless steel construction (AD-4212B)^{*vii}

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

^{*vii} The AD-4212A has a die cast aluminum body (IP54) with a SUS316 weighing pan, but it can be changed to stainless steel by special order.

Auto power ON function

The weighing mode display is automatically activated with AC power, so there is no need to press the ON/OFF key, which is useful when the display is turned off due to blackout or other accidental power failure.

Specifications

Models		AD-4212A-100	AD-4212A-200	AD-4212A-600	AD-4212A-1000
Capacity		110 g	210 g	610 g	1100 g
Readability		0.1 mg		1 mg	
Repeatability (standard deviation)		0.15 mg		1 mg	
Linearity		±0.3 mg	±2 mg		±3 mg
Stabilization time (typical when set to FAST)		0-30 g: 1.1 sec 30-110 g: 1.3 sec	0-30 g: 0.8 sec 30-210 g: 1.0 sec	0-30 g: 0.9 sec 30-610 g: 1.1 sec	0-30 g: 0.9 sec 30-1100 g: 1.1 sec
Sensitivity drift		±2 ppm/°C (10 to 30 °C /50 to 86 °F)			
Operating environment		5 to 40 °C (41 to 104 °F), 85%RH or less (no condensation)			
Display refresh rate		5 times/sec or 10 times/sec			
Units of measure		mg, g, oz, ozt, ct, mom, dwt, gr, pcs (counting mode), % (percent mode), and a user-programmable unit (either tael or tola can be added upon request)			
Counting mode	Minimum unit mass	0.1 mg		1 mg	
	Number of samples		10, 25, 50 or 100 pieces		
Percent mode	Minimum 100% reference mass	10.0 mg		100 mg	
	% readability		0.01%, 0.1% or 1% (depends on the reference mass stored)		
I/O unit	RS-232C	Bi-directional, 600-19200 bps			
	Comparator contact output	3-level (with buzzer)			
	External contact input	RE-ZERO, PRINT			
Calibration weight provided (OIML Class E2 equivalent)		50 g	100 g	200 g	
Applicable calibration weight value		20 g, 50 g, 100 g	20 g, 50 g, 100 g, 200 g	20 g, 50 g, 100 g, 200 g, 300 g, 400 g, 500 g, 600 g	20 g, 50 g, 100 g, 200 g, 300 g, 400 g, 500 g, 600 g, 700 g, 800 g, 900 g, 1000 g
Weighing unit	External dimensions	80 (W) × 230 (D) × 90 (H) mm		80 (W) × 230 (D) × 92.5 (H) mm	
	Weighing pan size	50 × 50 mm		70 × 70 mm	
	Net weight	Approx. 2 kg			
Display unit	External dimensions	237 (W) × 150 (D) × 155 (H) mm			
	Net weight	Approx. 2 kg			
Connection cable		Approx. 2 m (between the weighing unit and the display unit)			
Power supply / consumption		AC adapter / Approx. 15 VA			

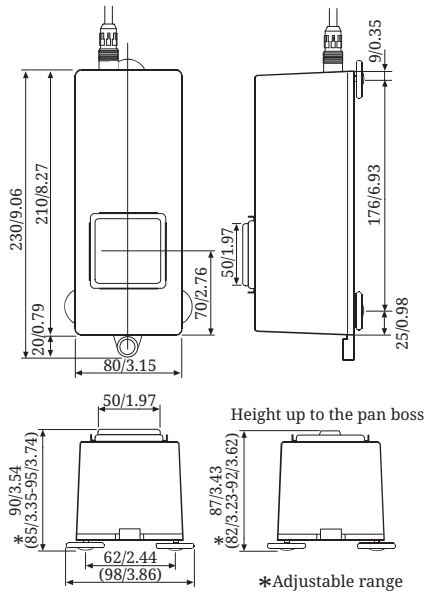
Models		AD-4212B-101	AD-4212B-102	AD-4212B-201	AD-4212B-301
Capacity		31 g / 110 g ^{*viii}	110 g	210 g	310 g
Readability		0.01 mg / 0.1 mg ^{*viii}	0.01 mg		0.1 mg
Repeatability (standard deviation)		0.05 mg / 0.1 mg	30 g: 0.02 mg 100 g: 0.04 mg	0.1 mg	0.2 mg
Linearity		±0.05 mg / ±0.2 mg	±0.1 mg	±0.2 mg	±0.3 mg
Stabilization time (typical when set to FAST)		4.0 sec / 2.5 sec	4.0 sec ^{*ix}		2.5 sec
Sensitivity drift		±2 ppm/°C (10 to 30 °C /50 to 86 °F)			
Operating environment		5 to 40 °C (41 to 104 °F), 85%RH or less (no condensation)			
Display refresh rate		5 times/sec or 10 times/sec			
Units of measure		mg, g, oz, ozt, ct, mom, dwt, gr, pcs (counting mode), and % (percent mode) (either tael or tola can be added upon request)			
Counting mode	Minimum unit mass	0.1 mg			
	Number of samples	10, 25, 50 or 100 pieces			
Percent mode	Minimum 100% reference mass	10.0 mg			
	% readability	0.01%, 0.1% or 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 (OIML Class E2 equivalent)		50 g		100 g	
Applicable calibration weight value		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	External dimensions	80 (W) × 230 (D) × 90 (H) mm			
	Weighing pan size	Ø34 mm		50 × 50 mm	
	Net weight	Approx. 2.3 kg			
Display unit	External dimensions	237 (W) × 150 (D) × 155 (H) mm			
	Net weight	Approx. 2 kg			
Connection cable		Approx. 2 m (between the weighing unit and the display unit)			
Power supply / consumption		AC adapter / Approx. 15 VA			

*viii Smart range: The readability will switch to 0.1 mg automatically when the display value exceeds 31 g, but returns to 0.01 mg when the RE-ZERO key is pressed.

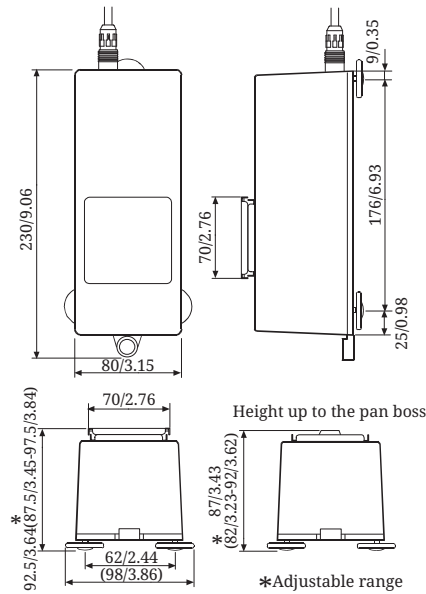
*ix 2.5 seconds when the readability is set to 0.1 mg

Dimensions (mm/inches)

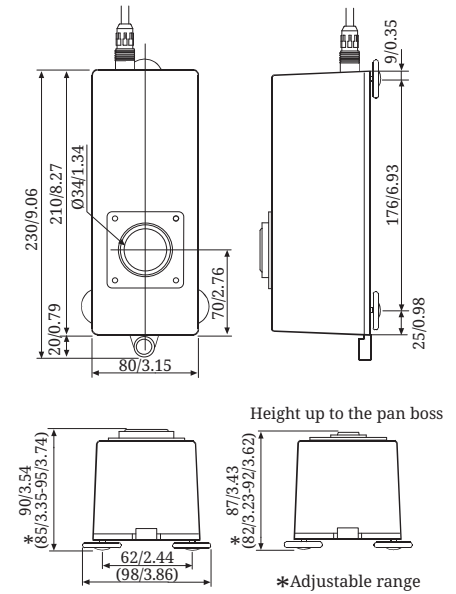
AD-4212A-100/200
AD-4212B-201/301



AD-4212A-600/1000



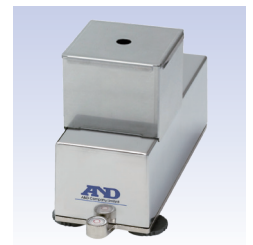
AD-4212B-101/102



Options

- AD4212A-01** BCD output / external contact input
- AD4212A-04** RS-232C / 5-level comparator contact output (for the AD-4212A only, factory-installed option)
- AD4212A-07 Extension cable (3 m)
- AD4212A-08** Ethernet interface with WinCT-Plus software
- AD4212A-18 Vibration damper
- AD4212A-19 Stainless steel breeze break (also comes standard with the AD-4212A-100 and all AD-4212B models)
- AD4212A-20 Metal leveling feet

*x Only one of the AD4212A-01, AD4212A-04, AD4212A-08, or the standard interface can be used.



Stainless steel breeze break

Accessories

- AD-1683 Static eliminator
- AD-1684A Electrostatic field meter
- AD-1687 Weighing environment logger
- AD-1688 Weighing data logger
- AD-1689 Tweezers for calibration weight
- AD-8127 Compact printer
- AD-8527 Quick USB adapter



Static eliminator



Electrostatic field meter



Optional

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