

Micro Analytical Weighing Sensors
AD-4212D
Series



For factories...

For laboratories...



*The secret to making a perfect weighing system
is simply choosing the right balance!*



AND ...Clearly a Better Value
A&D Company, Limited
<http://www.aandd.jp>

High Resolution, High Stability, Space-Saving And Cost-Saving

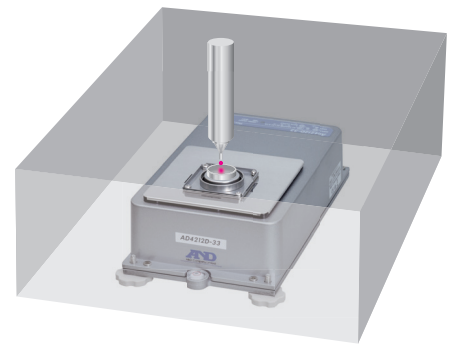
The AD-4212D series brings the precision of high-end laboratory analytical balances to production lines/systems with unprecedented flexibility and utility. Additionally, it brings the ease of installation of in-line/built-in weighing sensors to laboratories for use inside certain kinds of equipment. Read on and find out what that means—

Minimum weighing value from 1 μ g

The AD-4212D enables the most minute weight measurement and control for processes such as dispensing.

EM-DLC^{*1} technology for direct connection to a PC or PLC

The AD-4212D is a weighing sensor with an integrated analog-to-digital converter. It can output weighing results as digital data directly to a PC or PLC^{*2}, which saves space when you do not need or have room for installing a separate display unit.



* 1 Electromagnetic Digital Load Cell

* 2 A separately sold RS-232C cable for PC/PLC is required

Internal calibration function

This function allows you to calibrate the AD-4212D to ensure its accuracy quickly and correctly with one key press.

Guarded against vertical and transverse overloading

Our patented shock absorber^{*3} under the weighing pan copes with movement in all directions so that the sensor is protected from actuator malfunction.

* 3 Not designed to handle impact loads

Adaptable to a special weighing pan

You can design and attach your preferred weighing pan (or receptacle) when the standard pan is unfit for your specific application.

Removable leveling feet

The AD-4212D can be secured directly to a base by removing the leveling feet and using screws.

High extensibility with A&D's various peripheral devices

AD-1691 Weighing Environment Analyzer (provided as standard)



AD-1691

Using the AD-1691, it is possible to display the weight values (and also possible to output those values to another device), perform calibration, change internal settings such as response characteristics, etc.

Moreover, the AD-1691 is equipped with functions that help manage the quality and performance of balances, assess the installation environment for stable precision weighing, etc. (Please refer to the dedicated AD-1691 brochure for details.)

AD-8922A, AD-8923-BCD and AD-8923-CC Remote Controllers (all sold separately)



AD-8922A



AD-8923-BCD



AD-8923-CC

In addition to displaying weight values, performing re-zero, calibration, etc., the AD-8922A can output BCD, comparator or analog data by choosing the appropriate accessory. The AD-8923-BCD and AD-8923-CC can transmit the weighing data through BCD and CC-Link respectively.*4

AD-8526 Serial/Ethernet Converter (sold separately)



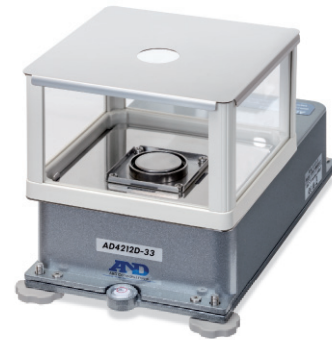
Via the AD-8526, the RS-232C output from the AD-4212D can be converted and connected to LAN-Ethernet.

*4 The AD-8923-BCD/CC only displays the last six digits (but outputs the complete data).

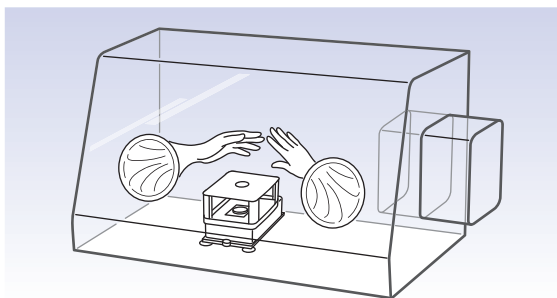
AD-1691, AD-8922A, AD-8923-BCD, AD-8923-CC, AD-8526

Equipped with a small breeze break

The AD-4212D comes standard with a small breeze break, which reduces the destabilizing effects of drafts and air turbulence. Depending on the use, you can choose to remove one of the side panels instead of the lid to access the weighing pan from the side.



What ordinary analytical balances cannot do...



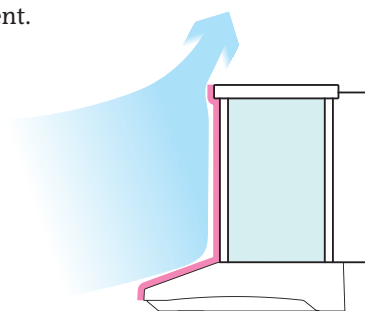
Ideal for use in a glove box

The compact size of the AD-4212D is suitable for installation in narrow spaces such as inside a glove box. Further, since the AD-4212D is independent of delicate electric parts used in a display unit, it can easily withstand a vacuum state caused during gas displacement of a glove box.*5

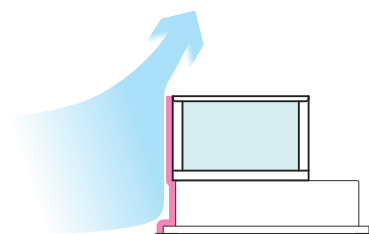
*5 Internal calibration cannot be performed in a vacuum as it uses air pressure for the power source.

Stable measurement in a fume hood (for 0.1 mg readability only)

Thanks to its small body, the AD-4212D is also less susceptible to the effects of drafts compared with standard analytical balances, which receive the force of the wind more squarely. Therefore, when used with the provided small breeze break, the AD-4212D can stably measure with 0.1 mg readability even in a fume hood where turbulent airflows are constantly present.



Ordinary analytical balance



AD-4212D

Specifications

| Models | AD-4212D-33 | AD-4212D-32 | AD-4212D-302 | AD-4212D-301 |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------|-------------------------|
| Weighing capacity | 32 g | 5.1 g / 32 g* ⁱ | 320 g | 320 g |
| Minimum weighing value | 0.001 mg | 0.001 mg / 0.01 mg | 0.01 mg | 0.1 mg |
| Repeatability (standard deviation) | 0.002 mg* ⁱⁱ | 0.004 mg* ⁱⁱ / 0.02 mg | 0.02 mg* ⁱⁱⁱ | 0.07 mg* ⁱⁱⁱ |
| Linearity | ±0.02 mg | ±0.03 mg | ±0.15 mg | ±0.25 mg |
| Stabilization time (when set to FAST under a good environment) | Approx. 7 sec | Approx. 7 sec | Approx. 7 sec | Approx. 3 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 | 5 times/second or 10 times/second | | | |
| Environment sensors | Measurement accuracy: temperature ±1.5°C, humidity ±10%, atmospheric pressure ±10 hPa Applicable range: 5°C to 40°C | | | |
| I/O unit (RS-232C) | Bi-directional, 600-19200 bps | | | |
| Applicable calibration weight value | 1 g, 2 g, 5 g, 10 g, 20 g, 30 g | 10 g, 20 g, 50 g, 100 g, 200 g, 300 g | 50 g, 100 g, 200 g, 300 g | |
| Weighing pan size | Ø34 mm | | Ø50 mm | |
| Dimensions | 167.5(W) × 298(D) × 170(H) mm (with the small breeze break) 167.5(W) × 298(D) × 90(H) mm (without the small breeze break) | | | |
| Weight (excluding the small breeze break) | Approx. 3.6 kg | | | |
| Connection cable | Approx. 2 m (between the AD-4212D and A&D's external display) | | | |
| Power supply | AC adapter | | | |
| Power consumption | Approx. 30 VA (supplied to the AC adapter) | | | |

* i Smart range function: The display will switch to the standard range automatically when the value exceeds 5.1 g but return to the precision range when RE-ZERO (tare) is performed.

* ii Repeatability for a 1 g mass using an automatic loading machine

* iii For a 10 g mass over the entire range

Accessories

| | |
|----------------|-----------------------------------------------------------------|
| AD-1683 | Static eliminator |
| AD-1684A | Electrostatic field meter |
| AD-8121B | Compact printer |
| AD-8526 | Serial/Ethernet converter |
| AD-8922A | Remote controller |
| AD-8923-BCD | Remote controller (BCD) |
| AD-8923-CC | Remote controller (CC-Link) |
| AX-KO3590-1000 | RS-232C cable (10 m, for A&D's external display)* ^{iv} |
| AX-KO4472-1000 | RS-232C cable (10 m, for a PC/PLC) |

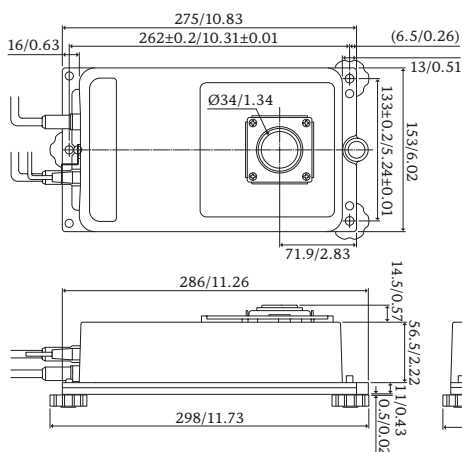
* iv 2 m cable is provided as standard



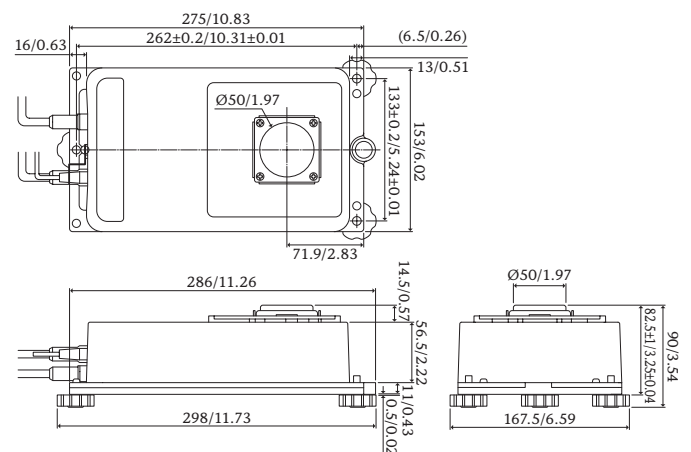
AD-4212D-32

Dimensions (mm/inches)

AD-4212D-33/32



AD-4212D-302/301



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