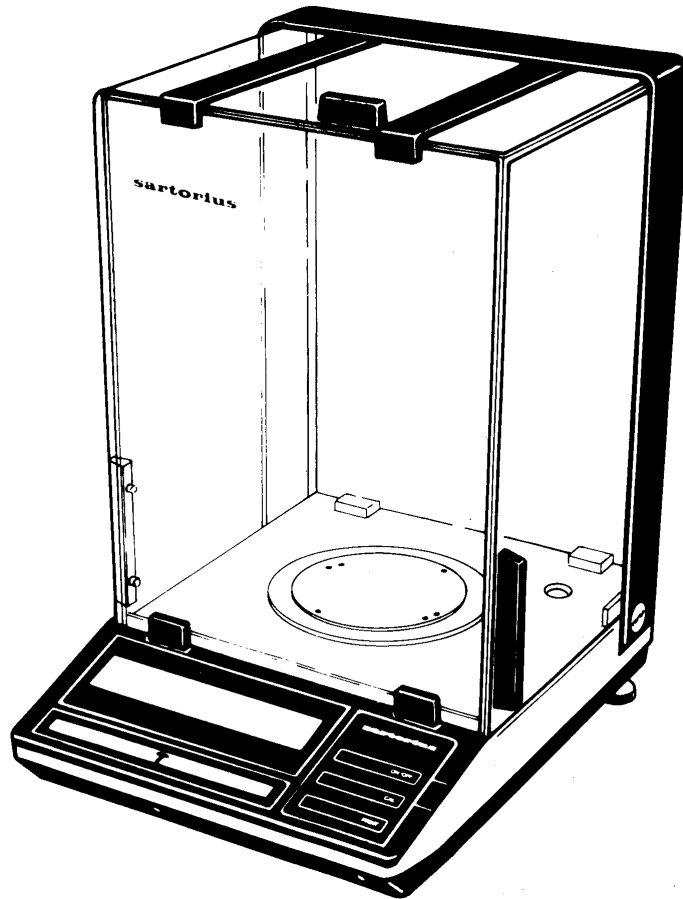
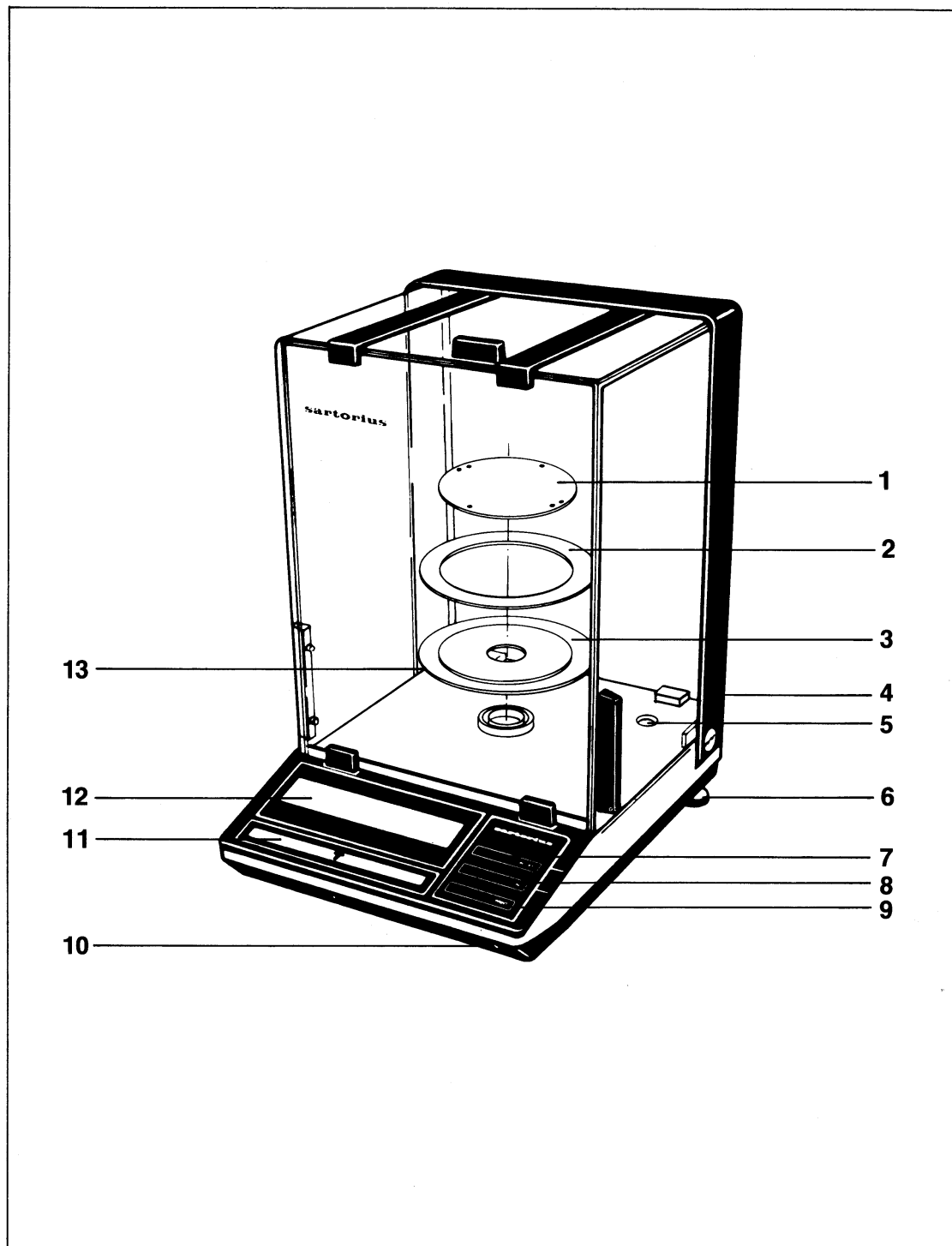

Sartorius analytic.
A 120 S, A 200 S, A 210 P



Electronic Analytical Balance
Installation and Operating Instructions

sartorius



- | | |
|---|-----------------------|
| 1 Weighing pan | 2 Protective ring |
| 3 Shield plate | 4 Power receptacle |
| 5 Level indicator | 6 Leveling foot |
| 7 ON/OFF key | 8 CAL key |
| 9 PRINT key (functions only if the
balance has a built-in interface) | 10 Menu access switch |
| 11 Tare control | 12 Weight display |
| 13 Manufacturer's label | |

Sartorius analytic. A 120 S, A 200 S, A 210 P.

With this Sartorius Top loading Balance, you have acquired a sophisticated, top-of-the-line electronic weighing Instrument that will ease your daily work load.

Please read these installation and operating instructions carefully before operating your new precision balance.

Pursuant to the German Directive For the Implementation of Regulations for Prevention of Accidents "Elektrische Anlagen und Betriebsmittel (VBG 4)" [Electrical Installations and Equipment] of April, 1986, it is hereby certified that the equipment delivered, "Electronic Analytical Balance, model A 120 S, A 200 S or A 210 P," is manufactured and tested in compliance with the following DIN/VDE regulations and with Article 10 of the Low Voltage Directive 72/23/EEC issued on February 19, 1973, by the European Community:

DIN IEC 348/VDE 041 1
Safety requirements for electronic measuring apparatus
DIN IEC 380/VDE 0806
Safety of electrically energized Office machines
DIN IEC 601/VDE 0750
Safety of medical electrical equipment

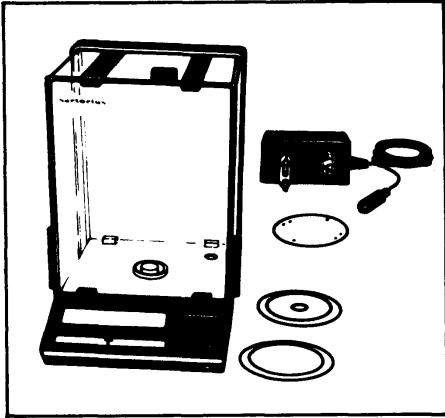
When you use electrical equipment in installations and under ambient conditions requiring higher safety Standards, you must comply with the provisions as specified in the applicable regulations for installation in your country

Contents

	Page
Equipment Supplied	4
Installation Instructions	5
Startup	6
Operation	7
Calibration	9
Balance Operating Program	11
Accessories (Options)	14
Specifications	16

Equipment Supplied

Do not miss out on the benefits of our full warranty. Please complete the warranty registration card, indicating the data of installation, and return the card to your Sartorius dealer.



The equipment supplied includes the components shown on the left, plus a dust cover.

Save all parts of the packaging and the box because you may need to ship your scale. Before you pack your scale to ship it, unplug all connected cables to prevent damage.

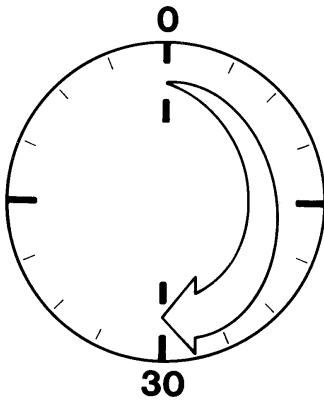
Installation Instructions

Choose a suitable place to set up your balance
It should not be exposed to the following:

- heat radiation
- aggressive/corrosive substances
- vibrations
- drafts

Your Sartorius Balance will provide accurate readouts even when it is exposed to unfavorable conditions. You can adapt it to your requirements simply by changing the menu code settings in the balance operating program. For this purpose, please read pages 11 through 13.

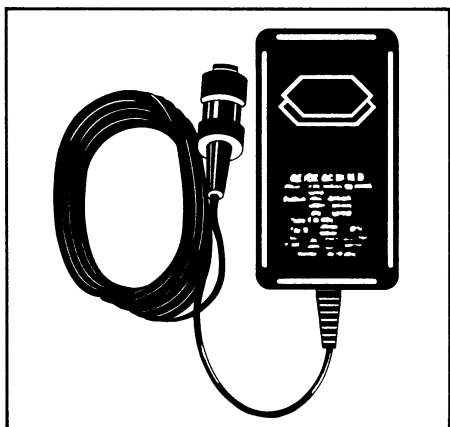
After connecting the balance to line power using the AC adapter, make sure to allow for initial warmup of at least 30 minutes.



Important Note:

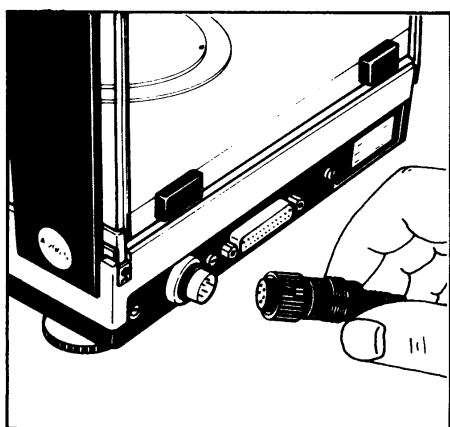
Unplug the AC adapter before you connect or disconnect peripherals.

Startup

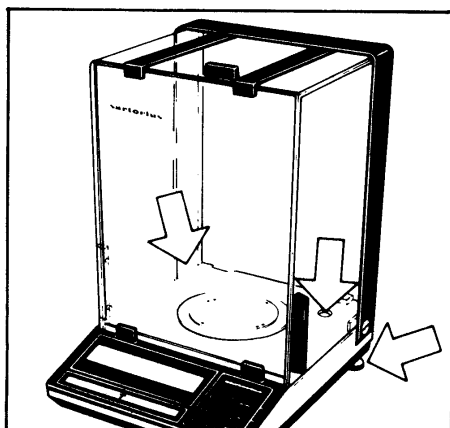


Install the components (3-1) in the weighing chamber one at a time in the order indicated.

Your balance is powered by an AC adapter. Please make sure that the voltage rating printed on this unit is identical to your local line voltage rating.



Plug the AC adapter cord into the power receptacle of the balance. Secure the connection by tightening the knurled collar. Now plug the AC adapter into a wall outlet.



At the point of use, level the balance using the leveling feet (6) so that the air bubble is centered within the circle of the level indicator (5).

Operation

The weight display shows the following special Status messages for your information:

BUSY

The processor is still busy processing a function and will not accept any other commands to perform functions at this time.

STANDBY

The display has been turned off with the ON/OFF key (7) and the balance is now in the ready-to-operate mode so that it does not require warmup.

POWER OFF

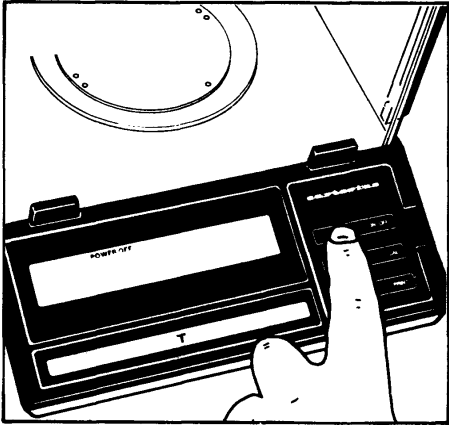
The balance was disconnected from line power (power failure or outage, reconnection to line power after balance was unplugged).

CAL

The calibration function has been activated.

In addition to grams, this balance gives you a variety of other menu-definable international weight unit options.

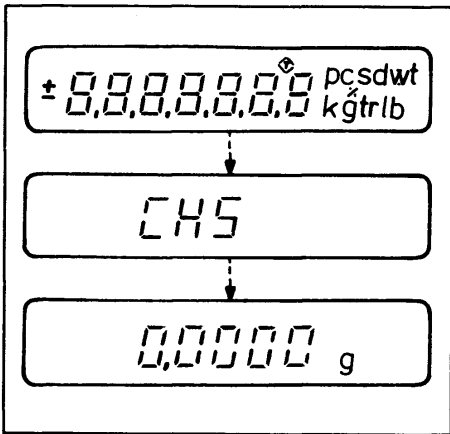
Select the weight unit you need from the table of menu options for the balance operating program, and set the appropriate code as described in the section "Balance Operating Program."



Press the ON/OFF key (7) to turn the display on or off. You can also turn it on with the tare control (11).

After the balance has been plugged into the AC adapter, the weight display will go out whenever you turn off the power with the ON/OFF key.

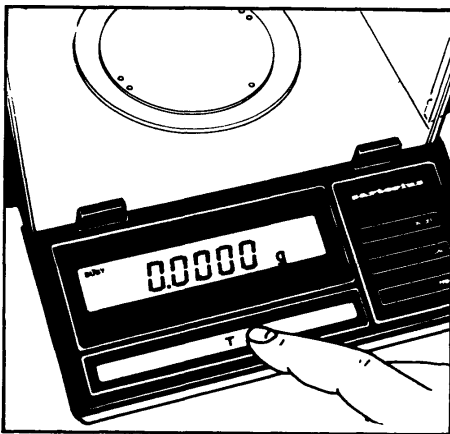
All other circuits will remain energized (indicated by STANDBY). This means the balance is immediately ready to operate without requiring warmup the next time you switch it on.



After the power is turned on, a test of all essential electronic functions is run automatically.

The self-test ends with the readout 0.0000 g (if the factory code setting 51 1 is used).

Now place your sample or object on the pan (1) to determine the weight. Read off the weight indicated in the weight display (12) as soon as the weight unit (in this case "g") appears as the stability symbol.

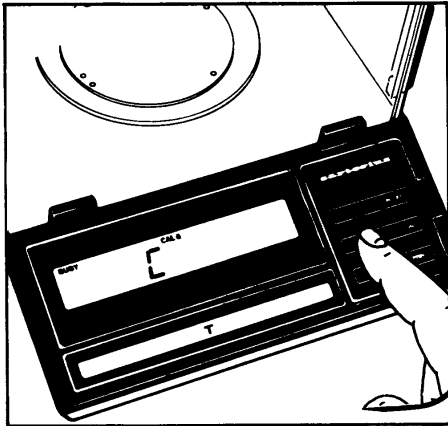


If you wish to use a Container or if the weight display does not indicate 0.0000 g (or the equivalent with the weight unit of your choice), press the tare control to zero the display.

Calibration

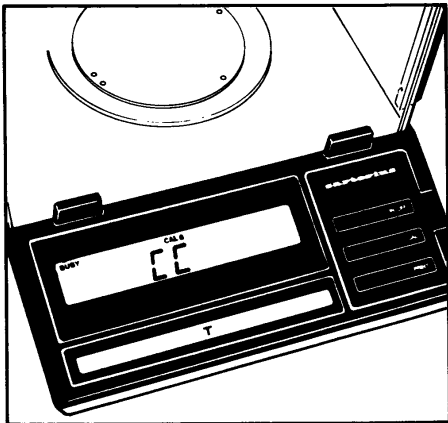
Internal Calibration:

Unload the balance and tare.



As soon as the display indicates 0.0000 g, press the CAL key (8). "C" will now be displayed.

A built-in calibration weight is internally applied by Servomotor and automatically removed at the end of the calibration process. If "CE" is displayed instead, zero the display by pressing the tare control and press the CAL key again.



During calibration, the microprocessor uses the factor already stored to calculate the exact value of this calibration weight.

How to Obtain a Calibration Weight Readout (models starting with with serial no. 37090001)

You can obtain a readout of the calibration weight. To do so, select menu code 451 in the balance operating program.

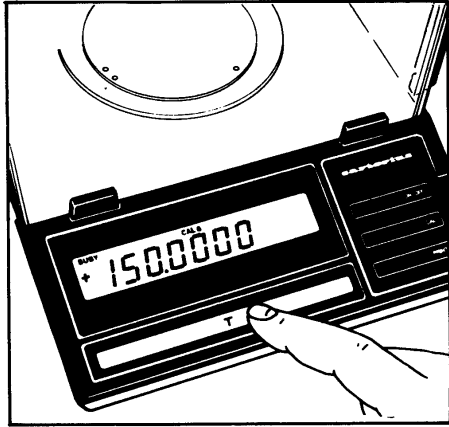
Press the CAL key to have the internal calibration weight automatically applied so you can obtain a readout in the display.

To use the internal calibration function with this menu code setting, make sure to press the CAL key a second time to have the calibration weight automatically removed before internal calibration.

Now you can press the CAL key once again for approx. 3 seconds to activate the internal calibration function.

External Calibration:

This is only possible with an accurate calibration weight (A 120 S -100 g; A 200 S and A210 P-150 g).



Clear the weighing pan and press the tare control (11) for at least three seconds until the calibration weight readout appears in the display.

Center the calibration weight on the pan.

Now the weight unit symbol is displayed. An acoustic signal indicates the end of the calibration procedure.

If the display continues to indicate "CC" (internal calibration) or if the stability symbol "g" does not appear (external calibration), the balance cannot be calibrated on account of the momentary Status. Turn it off and on again with the ON/OFF key. The calibration procedure you started will now be cancelled.

Possible causes for a readout of "CC":

- The balance is still in the warmup phase.
- The weighing System is affected by a draft or Vibration.

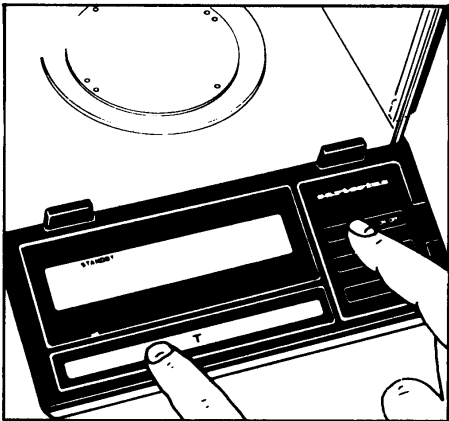
You can block access to the internal and external calibration functions - to find these menu codes, refer to the "Balance Operating Program." These functions are accessible whenever the balance operating program is unlocked using the menu access switch (10).

Balance Operating Program

The balance operating program lets you adapt your balance to various ambient conditions and to different weighing requirements, and select various weight units commonly used in your country.

At the factory, we have set the codes for a Standard program, which is protected by a locking function to prevent accidental changes.

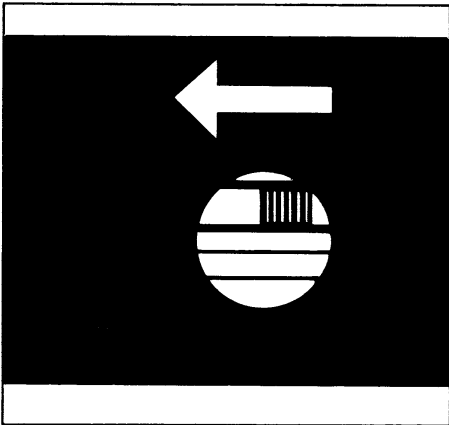
The "menu code" contains the information of the operating program, It consists of three digits, known in "computerize" as the page (1st digit), the line (2nd digit) and the word (3rd digit).



How to access the menu of the balance operating program:

With the display turned off (STANDBY state), hold down the tare control (11) and briefly press the ON/OFF key (7). Upon completion of the automatic self-test, release the tare control as soon as "CH5" is displayed. The Status of the balance operating program will be indicated in the weight display: "L" Stands for the list mode. In this mode, you can check the code settings, but you cannot program new codes.

If you wish to change a program menu code, you must first unlock the menu access switch to access the menu.

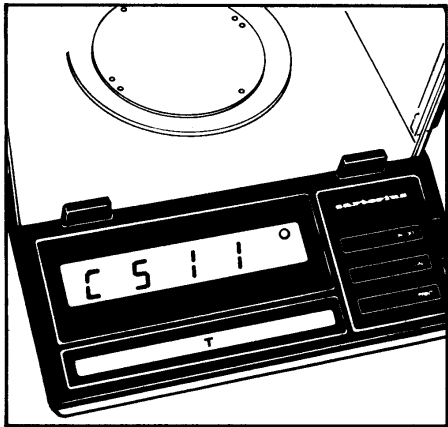


To do so, remove the protective cap located on the front right of your balance, and slide the menu access switch (10) in the direction of the arrow.

The display will now indicate "C," which Stands for the change mode, meaning you can now change the menu code settings.

After you have accessed the menu of the operating program, the display will show a continuous sequence of numbers from 0-5 for the "page" or first digit of the code, in addition to the Status code letter "L" or "C."

When the first digit of the code you wish to check or change appears, press the tare control (11). The "page" code number (1st digit) now stops in the display, and a series of numbers for the 2nd digit or "line" will begin to cycle. Press the tare control again to stop the code number of your choice in the display. Next, the numbers for the "word" (last digit) will cycle in the display. Repeat the procedure to enter the last digit of the code.



The "o" symbol that appears indicates the actual setting.

To change any menu code settings ("C" mode), press the tare control as soon as the appropriate numeric code is displayed.

Brief display of BUSY and the "o" symbol confirms your selection, followed by a return to "zero" for the 2nd digit or "line."

How to return to the weighing mode:

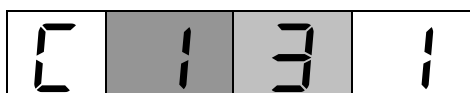
Press the tare control each time a "0" appears in the numerical sequence (word, line, page). If you have changed a menu code, it will be stored as soon as the display returns to the weighing mode. Lock the balance operating program using the menu access switch ("L" readout) and replace the protective cap.

Auto Zero

This balance has an automatic zero tracking function, known as "Auto Zero" (can be turned off by menu code).

Any change off zero ≤ 2 digits per second will be set to zero automatically.

List of the Programmable Menu Code Settings



Page 1st Digit Line 2nd Digit Word 3rd Digit

Factory setting

Factory setting

Code Ambient Conditions

[	1	1	1
[	1	1	2
[	1	1	3
[	1	1	4

Very stable
Stable
Unstable
Very unstable

Code Stability Range

[	1	2	1
[	1	2	2
[	1	2	3
[	1	2	4
[	1	2	5
[	1	2	6
[	1	2	7
[	1	2	8
[	1	2	9

0,25 digit
0,5 digit
1 digit
2 digits
4 digits
8 digits
16 digits
32 digits
64 digits

Code Display Format

[	1	3	1
[	1	3	2
[	1	3	3
[	1	3	4

Last decimal ON
Last decimal OFF
Last decimal at stability
All decimals at stability

Code Tare Parameter

[	1	4	1
[	1	4	2

Without stability
At stability

Code Auto Zero

[	1	5	1
[	1	5	2

ON
OFF

Code External Calibration

[	1	6	1
[	1	6	2

Accessible
Access blocked

Code Internal Calibration

[	1	7	1
[	1	7	2

Accessible
Access blocked

Special Information

Code Program Lock

[	4	1	1
[	4	1	2

OFF
ON

Code Acoustic Signal

[	4	3	1
[	4	3	2

ON
OFF

Code Calibration weight Readout

[	4	5	1
[	4	5	2

Accessible
Access blocked

Code Weight Units¹⁾

[	5	1	1
[	5	1	2
[	5	1	3
[	5	1	4
[	5	1	5
[	5	1	6
[	5	1	7
[	5	2	1
[	5	2	2
[	5	2	3
[	5	2	4
[	5	2	5
[	5	2	6
[	5	2	7
[	5	2	8

Grams g
Kilograms kg
Carats ct
Pounds lb
Ounces oz
Troy ounces ozt
Parts/pound o
Hong Kong taels tl
Singapore taels tl
Taiwan taels tl
Grains gr
Pennyweights dwt
Mommes o
Milligrams o
Austrian Karats o

[5 2 0] Call Program Line
[5 0] Call program page

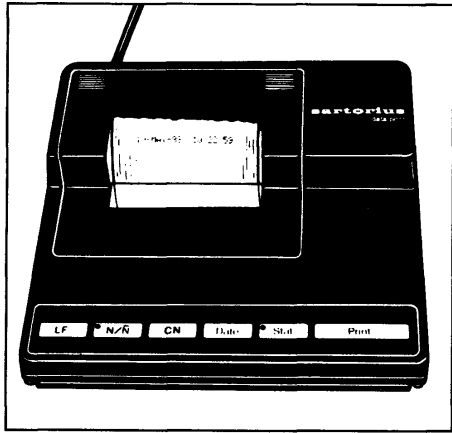
Code End of Programming

[0		
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Additional Parameters for the data Output format at the interface port and for calculation programs are available on request.-Please refer to the "Accessories."

¹⁾ You can choose any weight unit as long as it can be displayed in the particular weighing range you selected (for example do not set the code for "kg" when you are using a 0.1 mg balance).

Accessories (Options)

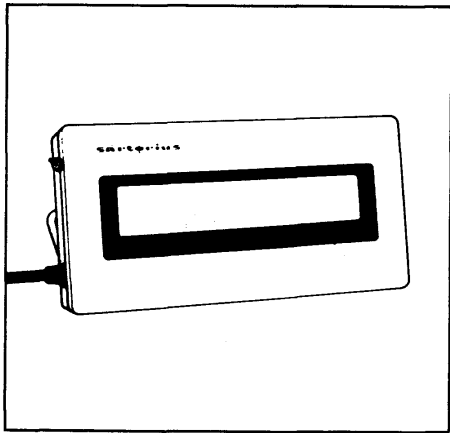


Data printer with date/time and statistics functions	YDP 02-*DV1
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Print speed approx. lines/sec.	1,5
--------------------------------	-----

Printer housing (W x D x H) in mm	150 x 138 x 43
in inches	5.5 x 5.4 x 1.7

Interface	YDO 01 A
<p>“LAB-PLUS“ Package, integratable (incl. interface)</p> <ul style="list-style-type: none"> — Specific gravity determination — Weighing in components acc. to %, ppm or mol — Weight of residue in%/change in % — Statistics — Net total/formulation & compounding — Filling toward "0" — Over/undercheckweighing/ sorting & classification — Automatic checkweigher — Calculation of the mean value — Parts counting — Mass unit conversion — Calculations by a factor — Accumulator memory — ID no. memory — Data communication with Computers 	YDI 01A+***D



Remote display
(can be plugged into the interface port
of the balance)

- LCD, reflective
- LCD (for overhead projectors
transmissive)

7371 01A
7371 02A

Carrying case YDB 01 A

Antitheft locking device 6087

Density (specific gravity) determination kit 6080

Vibrating spatula 6025

Balance table YWT 01

Special weighing pan device
for magnetic/ferrous samples YWP 01 A

Special pan (155 mm Ø) for weighing
electro statically charged samples YWP 01A-0001

Specification

Model		A 120 S	A 200 S	A 210 P
Capacity	g	121	202	60/120/212
Readability	g	0.0001	0.0001	0.0001/0.0002/0.0005
Tare range (by subtraction)	g	121	-202	212
Standard deviation	g	$\leq \pm 0.0001$	$\leq \pm 0.0001$	$\leq \pm 0.0001/0.0002/0.0005$
Max. linearity	g	$\leq \pm 0.0002$	$\leq \pm 0.0002$	$\leq \pm 0.0001/0.0002/0.001$
Stabilization time (typical)	s	3		
Display update	s	0.1 – 0.8 (selectable)		
Adaption to ambient conditions and application requirements		By selection of one of 4 optimized filter levels		
Stability range	d	0.25 ... 64 (selectable)		
Ambient temperature range	K	283 – 313 (+10°C ... +40°C) (50°F ... 104°F)		
Sensitivity drift within 283 ... 303 K	/K	$\leq \pm 2 \cdot 10^{-6}$		
Deviation of the readout when the balance is tilted 1:1000	g	$\leq \pm 0.0001$	$\leq \pm 0,0001$	$\leq \pm 0,0001/0.0002/0.0005$
Pan size	mm	Ø 90 (3.5 in.)		
Clearance above pan	mm	257 (10.1 in.)		
Balance chamber (W x D x H)	mm	200 x 184 x 265 (7.9 x 7.2 x 10.4 in.)		
Balance housing (W x D x H)	mm	230 x 291 x 343 (9.1 x 11.5 x 13.5 in.)		
Net weight	kg	7.5 (16.5 lbs)		
Power requirements (voltage + frequency)		115 or 230 V depending on the AC adapter used 50 – 60 Hz		
Power consumption	VA	13 max. (typical)		
Interface (optional)		RS 232 C/V24 – 28, RS 423/V10; 7-bit; parity: even, mark, odd, space; transmissions rate: 150 ... 9600 Baud		

Sartorius AG

✉ 37070 Göttingen

📦 Weender Landstraße 94–108, 37075 Göttingen

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