INSIZE

www.insize.com

8303
ELECTRONIC PRECISION BALANCES

Instruction Manual

PLEASE SCAN QR CODE TO WATCH THE OPERATION VIDEO OF PRODUCTS.

VIDEO

INSIZE

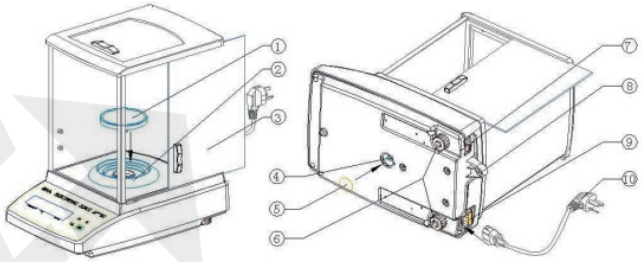
1 Features

1. Electromagnetic force compensation technology.
2. High precision, sensitivity and rapid response time (<5 sec.).
3. High quality materials and an optimized power supply.
4. High reliability and long service life.
5. A robust base made of powder coated aluminum cast.
6. An easy-cleaning, durable and stable metal shell with glass wind protection.
7. A removable stainless steel pan can be cleaned easily.
8. A Level Indicator, four adjustable feet.
9. External calibration, zeroing searches, parts counting function, tare function, density determination.
10. 7 Weighing units (g, ct, ozt, oz, GN, dwt, lb).
11. Large LCD display with backlight, digit height 15 m.
12. An integrated RS-232-interface enables you to automatically send the weighing data to PC.
13. Powered by the external mains adapter.

2 Performance

Code	8303-220	8303-320	8301-520	8303-620	8301-1020
Maximum weighting	220g	320g	520g	620g	1020g
Minimum weighting	0.02g	0.02g	0.1g	0.1g	0.1g
Resolution	0.001g	0.001g	0.001g	0.001g	0.001g
Verification index	10d	10d	10d	10d	10d
Weighting pan size	Φ80mm				Φ120mm
Working temperature	15-30°C		18-23°C		
Working humidity	≤40%-80%R.H		≤50%-70%R.H		
Power supply	power adapter				
Dimension	330x210x340mm				

3 Structure



1. Weighing pan
2. Pan support ring
3. Wind protection
4. Underfloor weighing widget
5. Sealing cap
6. Adjustable feet
7. RS232 interface
8. Level indicator
9. Power socket
10. AC adapter

4 Operation

‹1› ⏻ - [power ON/OFF]
Press the [⏻] power button to turn on the balance. The display shows the message “ON”. Then the max weighing range is displayed. The balance will carry out self-test (“F----1” to “F----9”). when “0.000g” in display appears the balance is ready for operation.
Press the [⏻] button and keep it pressed, until the display shows the message “OFF”. The balance will switch off then.

‹2› TARE
When the pan is empty and indication is different than zero press [TRAE] key.Weighing with tare: Place the weighing box and press the tare button. After standstill control the zero display appears. The weight of the container is now internally saved. Weigh the material, the net weight will be indicated. The weight of the weighing container will be displayed as a minus number after removing the weighing container. The tare weight is saved until it is deleted. Remove the load from the balance and press the tare button. The tare procedure can be repeated as many times as necessary, for example with initial weighing of several components for a mix (add-on weighing).The limit is reached when the total weighing range capacity is full.

‹3› CAL - [calibration with external weight]
Operations sequence:
Observe stable environmental conditions. A warming up time(1 hour) is required for stabilization.
Press the [⏻] Key, turn on the balance.
Then press the [CAL] Key, keep it pressed until the acoustic signal gets mute and the weighed value “CXXX” for the required adjustment weight appears flashing.(e.g.: C100 means 100 g)

During the flashing display put the required adjustment weight carefully in the center of the weighing plate.
The flashing display disappears.
After successful adjustment the balance automatically returns to weighing mode.
Take away the adjustment weight, the display shows ZERO.
If an error message “C----F” is displayed in the event of an adjustment error or incorrect adjustment weight. Wait until the balance is again in weighing mode and repeat the adjustment procedure.

‹4› ⇳ -[multifunctional key]
▲Weighing unit selection [weighing mode]
You can change the balance mode between weighing mode, print mode and counting mode. The default setting is set to the weighing mode. Under the weighing mode, use the key to choose weighing units: g (gram), ct (carat), ozt (troy ounce), oz (ounce), GN (gran), dwt (pennyweight) and lb (pound).
1 g = 5 ct
= 0.032150747 ozt
= 0.035273962 oz
= 15.43235835 GN
= 0.643014931 dwt
= 0.0022046226 lb

▲Print function [print mode]
The balance can be connected via the RS232C interface directly to a printer or PC. Under the print mode, use the [⇳] key to send a print command to the output device.

▲Pieces counting function [counting mode]
Before the balance can count parts, it must know the average part weight (i.e. reference). Proceed by putting on a certain number of the parts to be counted. The balance determines the total weight and divides it by the number of parts, the so-called reference quantity (1, 10, 20, 50, or 100). Counting is then carried out on the basis of the calculated average piece weight.

As a rule: The higher the reference quantity the higher the counting exactness. Follow these steps:
▲Change the balance into counting mode.

▲Place as many pieces to add-up as required by the reference quantity. Press the [⇳] button to enter the setting menu. The display now shows the number “1” and the unit “Pcs”. Using the [⇳] button select the reference quantity (1, 10, 20, 50, or 100).

▲After successful reference determination the current quantity is displayed and the unit “pcs”.

▲Remove reference weight. The balance is now in part counting mode counting all units on the weighing plate.

‹5› Underfloor weighing
Objects unsuitable for placing on the weighing scale due to size or shape may be weighed with the help of the underfloor weighing device.
Proceed as follows:
▲Switch off the balance.

▲Open the sealing cap at the balance on.

▲Suspend hook forunderfloor weighing carefully and completely.

▲Place weighing balance over an opening.

▲Attach load to hook and carry out weighing procedure.

5 Interface RS232C

‹1› Technical Data
8-bit ASCII Code
1start bit, 8 data bits, 1 stop bits, no parity bits
Bit rates supported include: 600, 1200, 2400, 4800 and 9600 bit/s.
(default setting is 600)
Miniature plug is necessary (9 pin D-Sub)
For operation with interface faultless operation is only ensured with the correct INSIZE – interface cable

‹2› Description of the data transfer

▲Symbols

-/+	minus-sign / for pnumbers this is output as blank
Data	value of weight / decimal, depending on weighing value
Unit	Units / Pcs.
STP	stop character
CR	Carriage Return

▲Data format: 14-bits Output (ASCII Code):

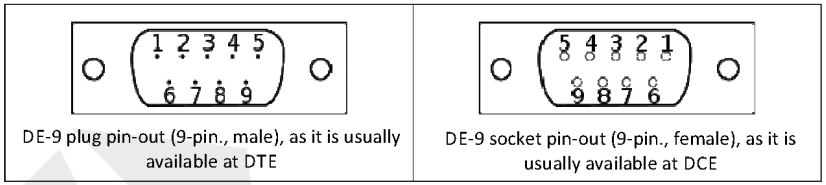
-/+	Data	Unit	STP	CR
2bits	7bits	3bits	1bits	1bits

‹3› Remote control instructions

Via the RS232 data interface, the computer can control the balance with subsequent commands.
If the transmit / device setting is 27 (27=1Bhex, default setting), the remote control commands are sent to the balance by ASCII code:

1BH+70H (ACSII Code p): Sending data (Print)
1BH+71H (ACSII Code q): Calibration function is active (CAL - Key)
1BH+72H (ACSII Code r): Counting function is active
1BH+73H (ACSII Code s): Weighing unit selection
1BH+74H (ACSII Code t): Taring (TARE - Key)

‹4› RS232 Pinout (9-pin D-Sub)



DE-9 plug pin-out (9-pin., male), as it is usually available at DTE

DE-9 socket pin-out (9-pin., female), as it is usually available at DCE

DTE - data terminal equipment (Terminals resp. computer)
DCE - data circuit-terminaing equipment (Balance)

6 Configuration

1. C1 = sensitivity setting - values: 0 1 2 3 4
   The higher the value, the lower the sensitivity and higher stability.
   Filter 0: Setting for dispensing.
   Filter 1/2: Sensitive and fast, very quiet using location.
   Filter 3/4: Robust but slow, busy using location.
   Default setting is 2 or 1.

2. C2 = filtering strength setting - values: 0 1 2 3
   The higher the value, the lower the sensitivity and higher stability.
   Filter 0: Setting for dispensing.
   Filtve 1/2: Sensitive and fast, very quiet using location.
   Filter 3: Robust but slow, busy using location.
   Default setting is 2 or 1.

3. C3 = serial portng - transmission speed (RS-322) 2(600), 3(1200), 4(2400), 5(4800), 6(9600) - Default seng is 2.

4. C4 = device number / communication setting (RS-232)
   Press [TARE] button changes the value smaller. Press [⇅] button changes the value bigger. The number corresponds to the first data signal to the command control of the computer.

   Default setting is 27 (1Bhex).

5. C5 = setting of work mode for balance
   0(weighing mode), 1 (print mode), 2 (counting mode) - Default setting is 0.

6. Save settings
   After all points have been configured, press [CAL] button returns the balance automatically into weighing mode.

7. Restore the factory settings
   In the off state press the [TARE] button and press the [⏻] button turn on the balance, keep the [TARE] button pressed until the balance returns automatically into weighing mode. All the parameters will be reset to default settings. Please re-calibration the balance before using.

7 Safety

1. Environmental conditions: only use indoor, max.Altitude: 2000m, operating temperature: 20°C ± 2°C, humidity of air: 45 ~ 60% R.H., power fluctuations less than ±10%.
2. Only use the extender cable, which with ground wire.
3. Place the balance on a stable surface and set it horizontally with the help of the adjustable feet and the spirit level.
4. Violation of limit of weighing range or impact can cause permanent damage to the balance.
5. The balance needs a warm up time for about 1 hour before using.
6. Please do not use aggressive cleaning agents, but a cloth dampened with mild soap suds. Ensure that no liquid penetrates into the device and wipe with a dry soft cloth.
7. Do not overload the balance more than 20% of maximum load (Max).
8. Do not press the pan with a hand!