

USER MANUAL

IDS831

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1 General Introduction

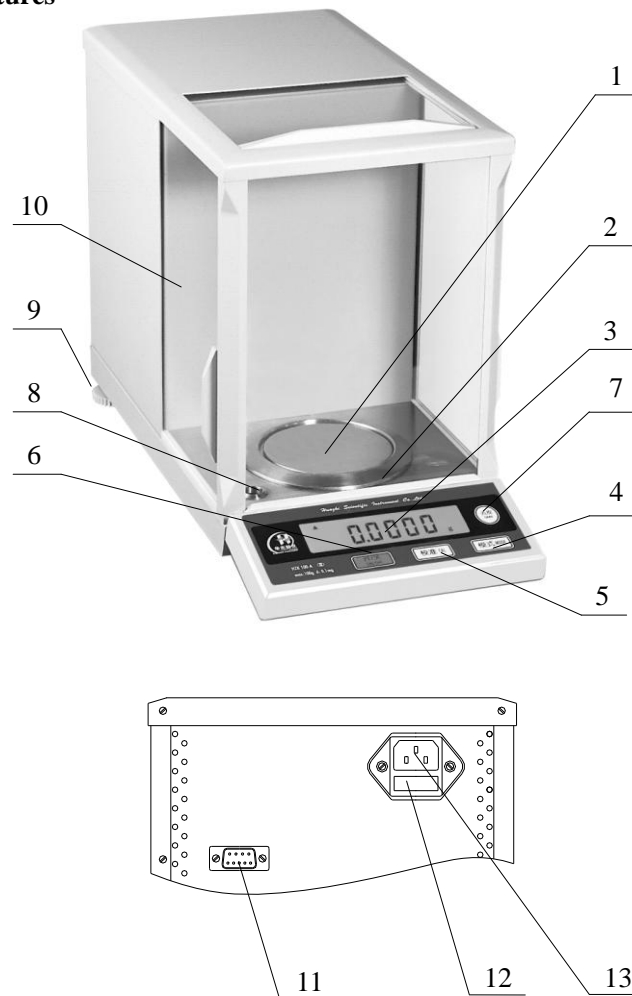
1.1 General Information

The IDS831 series has different properties and weighing ranges to meet the need of different users.

The IDS831 series has the following features:

- ◎ digital multi-point linear correcting
- ◎ digital multi-point temperature drafting correcting
- ◎ sensors with the best measuring properties of international recognition
- ◎ LCD screen display

1.2 Basic Structures



1	weighing pan	2	draft shield	3	weight display
4	M	5	C	6	on-off
7	Tare	8	level indicator	9	leveling foot
10	glass door	11	RS232C plug-in	12	fuse box
13	socket				

1.3 Safety

Before starting the balance for the first time, please follow the directions in chapter 2

Do not expose the balance in dangerous places. The power must be AC220V 50Hz. Hardware inside the balance do not need maintenance and care. Please contact the sales department or us if your balance works wrongly.

2 Installation and Calibration

2.1 The weighing location

Before setting up your balance, read the following:

- Set up the balance on a stable, even, non-vibration surface
- Avoid direct sunlight
- Avoid great temperature change
- Avoid strong drafts

The ideal location for weighing is suggested at the corner of a room, a stable, even surface where has no drafts from open windows or air conditions.

2.2 Unpacking the Balance and Checking the Equipment Supplied

The package includes:

- Balance 1
- Operating instruction 1
- Cable 1
- Weighing pan and a draft shield(Φ 125mm weighing pan hasn't a draft shield) 1
- Calibration weight (table 1) 1

2.3 Setting up the balance

Check the below:

- ⊙ properly shut the glass door
- ⊙ slightly shake the pan support, make sure it is securely equipped
- ⊙ Make sure the weighing pan is absolutely clean

Setting up:

- ⊙ place the draft shield properly(skip the step if there is no draft shields)
- ⊙ place the weighing pan onto the weighing support
- ⊙ adjust the two leveling feet until the bubble is in the middle of the level indicator
- ⊙ properly shut down the three glass doors

2.4 Power

Plug the cable into the socket, and connect it to the outside power. Press "ON/OFF" once, a self-test will be performed (30 seconds), and the balance is adapting to the surrounding during the period.

The power must be:

The AC power: $\geq 20W$ 220V 50Hz.

Under very dry conditions, the outside of the balance may have static electricity.

2.5 Calibrating the balance

For basic weighing, the balance must warm up for at least 30 minutes; For accurate weighing, the balance must warm up for at least 120 minutes.

Necessary situations to calibrate the balance :

- Before the first measurement
- After weighing for a period
- Weighing location changed
- The ambient temperature changed greatly

Calibration weight format (table 1)

type	Weight (g)
IDS831-200g	200

Unload the balance, press “**TARE**” key when the display is stabilized. Then press "**C**", after is displayed, center the calibration weight on the weighing pan. 30seconds after the glass door is shut down, the deviation of the current readout from the target weight (in grams only) is indicated. Remove the calibration weight after the "do" sound. Calibration is finished.

3 Operating the Balance

3.1 Simple weighing

Tare the balance.

Place the sample on the weighing pan after “zero” is readout.

After the display is stabilized, read the results.

3.2 Weighing using containers

- ⊙ Place the container on the weighing pan.
- ⊙ Tare the balance.
- ⊙ Put in the sample. After the display is stabilized, read the results.

3.3 Weighing Mode Shifting

3.3.1 weighing mode selecting

Keep pressing on the “M” key, and the balance can shift among gram, carat, piece count, and weighing in percent. Lose the key when your needed mode is displayed.

$$1 \text{ ct} = 0.2\text{g}$$

3.3.2 Piece count

- ⊙ Place the container on the balance. (quit this step if no container is needed)
- ⊙ Tare the balance.
- ⊙ Place 10 sample pieces on the balance. Wait until the display is stabilized.
- ⊙ Operate according to **3.3.1**, select the piece count mode.

3.3.3 weighing in percent

- ⊙ Place the container on the balance. (quit this step if no container is needed)
- ⊙ Tare the balance.
- ⊙ Place the sample on the balance. Wait until the display is stabilized.
- ⊙ Operate according to **3.3.1**, select the weighing in percent mode.

3.4 Outputting and Printing the Data

Press “M” key, the data will be output through the RS232C plug-in.

See details in chapter 4.

4 Configuring the balance

4.1 Operating the configuring keys

You can only configure the balance before measurement.

Turn on the balance. Keep pressing the “M” key, at the same time, press “ON/OFF” key once, lose the “M” key after 1-2 seconds.

---- ⌚ is displayed

---- Few seconds later, ⌚ ✕ is displayed
page line word

---- Word, line, page numbers are automatically displayed from 0 to a number.

---- Exit to the last menu by each one press of “M” key (word-line-page-weighing mode)

---- Enter the next menu by each one press of “M” key (page-line-word)

---- Press “M” key once to confirm a code setting. % is displayed

---- ⌚ ✕ ✕ ✕ % indicates a certain function is on.
page line word

---- All functions are set on when produced. No need to set all the functions. You can set some of the functions to meet your special requirements.

4.2 Configuring

Page	Line	Word	Function	Selections
1	1	1	Adapting the balance to	Very stable conditions
1	1	2		Stable
1	1	3		Unstable *
1	1	4		Very unstable
1	2	1	Ambient conditions Stability range	0.25 digit
1	2	2		0.5 digit
1	2	3		1 digit *
1	2	4		2 digit
1	2	5		4 digit
1	2	6		8 digit
1	2	7		16 digit
1	2	8		32 digit
1	2	9		64 digit
1	3	1		Display
1	3	2	Not displaying the last decimal place	
1	3	3	Display the last decimal place stability	
1	3	4	Display all decimal places at stability	
1	4	1	Remove the container	Remove regardless of stability
1	4	2		Remove at stability *
1	5	1	Auto-zero function	Auto-zero on *

1	5	2		Auto-zero off
2	1	1	RS232C output	Print on request regardless of stability
2	1	2		Print on request after stability *
2	1	3		Auto print no stoppable regardless of stability
2	1	4		Auto print not stoppable at stability
2	2	1	Baud	300
2	2	2		600
2	2	3		1200
2	2	4		2400 *
2	2	5		4800
2	2	6		9600
2	2	7		19200
2	3	1	Parity	Mark
2	3	2		Space *
2	3	3		Odd
2	3	4		Even

4.3 Specifications of the Balance Operating Parameters

<Adapting the balance to ambient conditions> Normal drafts 113 Strong drafts 114

<Stability range> For quick weighing or strong drafts, please select larger digit.

<Display > Select your desired mode

<Remove the container> Please operate carefully if you select 141

<Auto zero> To do measurement ranging from a few to tens of digit around zero, please choose C152, and please pay attention to drifting of the zero digit, that might affect the precision of the measurement.

4.4 Data Communication

8051 MCU (Intel)

1 start bit

1 stop bit

7-bit ASCII (D6~D0)

1 parity (D7)

First setting <RS232 out put>

<Baud>

<Parity>

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>
±	Null	Weighing Display									Null	Units	CR	LF	

5 Error codes

Please contact your sales department or us if your balance works wrongly.

Some problems can be solved immediately.

5.1 If the self-test is not correctly performed, EEx will be displayed.

Please contact us when this occurred.

EE1 CPU broken

EE2 Keyboard error

EE3 Storage lost

EE4 A/D model is not started

5.2 Errors occurred during weighing

H

- ⊙ Weight is too heavy. Please decrease the weight
- ⊙ The balance may be calibrated incorrectly (using calibration weight lighter than the standard), please re-calibrate your balance.

L

- ⊙ Weight is too light
- ⊙ No sample is placed on the weighing pan. Or the weighing pan is not in place.
- ⊙ Check below the weighing pan, see if it is touching any objects.
- ⊙ Draft shield(if have)is touching the weighing pan, check if the draft shield is properly equipped.

E1 Display over 9999999. Display capacity exceeded.

- ⊙ Too little sample quantity

If occurred at piece count, unload the balance (E1 disappear), re-select the samples. 20,50,100 or more pieces of samples can be taken the place of 10 pieces of samples. Each time multiply the weight by the number (divide the number of the pieces you take by 10)

If occurred at weighing in percent, unload the balance (E1 disappear), and operate according to **3.3.2**

E2 Error in A/D mode

- ⊙ Unplug the power adapter. Then plug in after 10 seconds.

E4 When gross value <- 0, no tare.

- ⊙ Press “tare” key, tare.
- ⊙ Unplug the power adapter. Then plug in after 10 seconds.

E8 Error occurs when receiving data through RS232C

- ⊙ Press “tare” key. If EB disappears, please check **4.4** again.
- ⊙ Unplug the power adapter. Then plug in after 10 seconds. Please check **4.4** again. Display unable to change according to change of the weight.
- ⊙ Error occurs in data communication. Please check **4.4**.

The balance may be calibrated incorrectly (using calibration weight heavier than the standard), please re-calibrate your balance.

5.3 No display after power connection

- ⊙ Press “ **ON/OFF** ” key.
- ⊙ Fuse blown. Please unplug the balance , and change the fuse. The fuse box is in the socket.
After power connection and turning on the balance, after all the starting display and EEx , 0 displayed in lower left corner indicates an unstable weighing location

- ⊙ The glass door is improperly shut down.
- ⊙ Check below the weighing pan, see if it is touching any objects.
- ⊙ The draft shield is improperly equipped.
- ⊙ Strong drafts. Please reset the balance. See details in **2.3 4.3**.
- ⊙ Unstable weighing location and improper stability range. Please reset your balance. See details in **4.3**.

The last digit and the weighing unit rarely display. Unstable weighing.

- ⊙ The glass door is improperly shut down.
- ⊙ Strong drafts. Please reset the balance. See details in **2.3 4.3**.

Mistakes occur when doing measurement ranging from a few to tens of digit around zero. Constant "0" display.

- ⊙ Auto zero function is set on. To set it off, see details in 4.3.

6 Care and Maintenance

Cleaning

Our products are made of high-quality materials, please clean the balance regularly to avoid corrosion on the surface.

Maintenance

Our maintaining engineer will do regular maintenance to your balance for longer using. Please contact us.

7 Prosperity Format

Model	Weighing capacity (g)	Readability (mg)	Repeatability \leq (mg)	Linearity \leq (mg)	pan size (mm)	calibration weight(g)
IDS831-200g	200	0.1	± 0.1	± 0.2	$\varnothing 90$	200