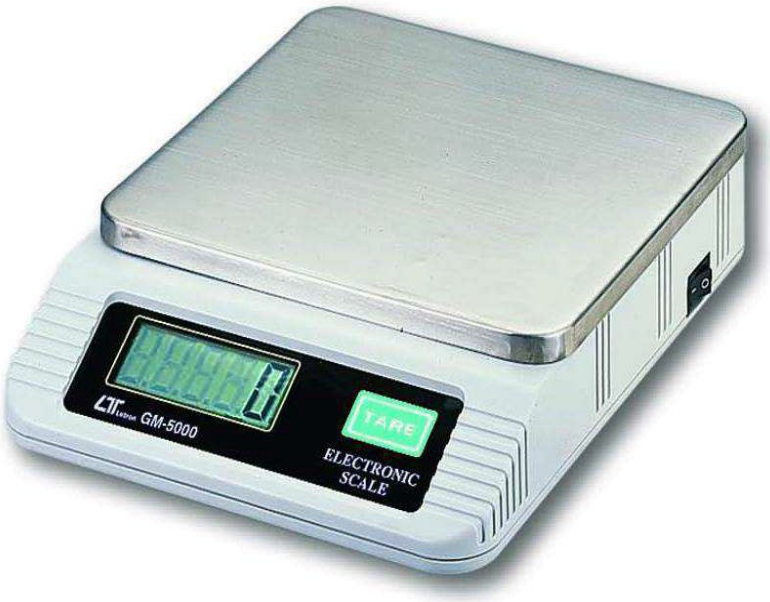
5000 g x 1 g, RS-232/USB

DIGITAL SCALE

Model : GM-5000



Your purchase of this DIGITAL SCALE marks a step forward for you into the field of precision measurement. Although this DIGITAL SCALE is a complex and delicate instrument, its durable structure developed. Please read the following instructions carefully and always keep this manual within easy reach.

OPERATION MANUAL

TABLE OF CONTENTS

1. FEATURES

* 5000 g measuring capacity with 1 g resolution.
* RS 232 PC serial interface.
* Full capacity tare function capability.
* Only one control button on front panel, easy operation.
* Battery or DC adapter power supply.
* Large LCD display.
* Stainless platform.
* Durable & portable housing plastic case.
* LOAD CELL transducer, high precision.
* Gram and Oz display unit, select by rear switch.
* Use exclusive microprocessor LSI-circuit, high reliability.

2. SPECIFICATIONS

Display	20.9 mm(0.8") LCD, 5 digits w/annunciator.
Measuring Capacity	5000 g/176 oz.
Resolution	1 g/0.05 oz.
Min. Display Weight	3 g/0.15 oz.
Accuracy	±(0.3 % + 1 d). * *23±5 ℃.* * *Spec. tested under the environment RF Field Strength less than 3 V/M & frequency less than the 30 MHz only.*
Unit Select	g or oz, select by internal slide switch.
Sampling Time	Approx. 0.5 second.
Tare Control	Full capacity.
Transducer	Load cell.
Circuit	Exclusive LSI-circuit.
Data Bus	RS-232 serial output.
Cabinet Size	250 x 190 x 70 mm
Platform Size	185 x 185 mm.
Operating Temp.	0 to 50 ℃ (32 to 122 ℉).
Operating Humidity	Less than 80% RH.
Weight	1542 g/ 3.4 LB. ** not include batteries.*
Power Supply	6 x 1.5V AA (UM-3) BATTERY, or DC 9V adapter.

Power Consumption	Approx. DC 9 mA.
Accessory Included	Manual..... 1 PC.
Interface cable * *optional*	* USB cable, USB-01. * RS232 cable, UPCB-02.
Software * *optional*	Data acquisition software Model : SW-U801-WIN
	Excel data acquisition software Model : SW-E802

3. FRONT PANEL DESCRIPTION

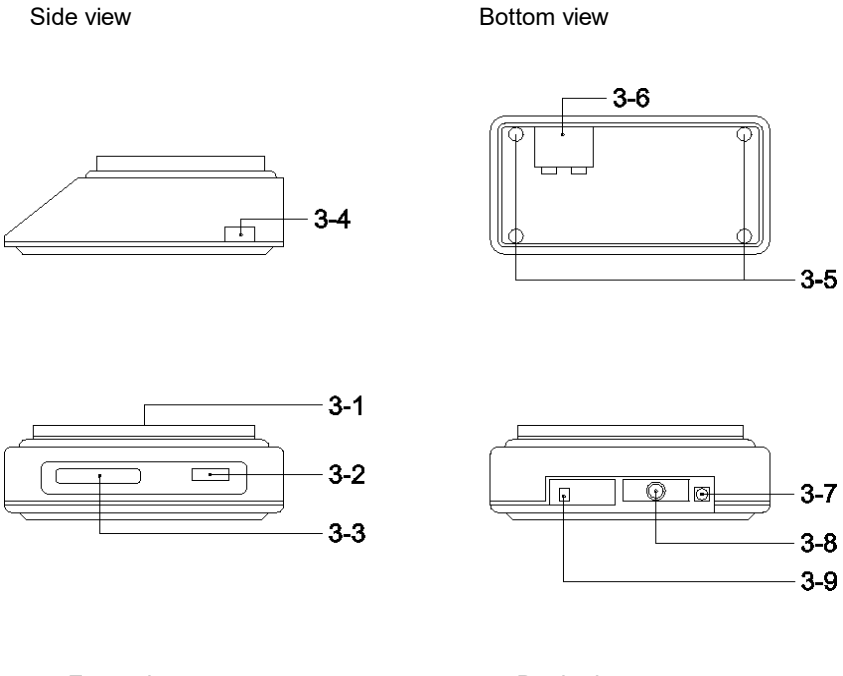


Fig. 1

3-1 Platform
3-2 Tare Button
3-3 Display
3-4 Power Switch
3-5 Rubber Pads
3-6 Battery Cover/Compartment
3-7 DC 9V receptacle
3-8 RS232 Output Socket
3-9 Unit Switch

4. PLATFORM INSTALLATION

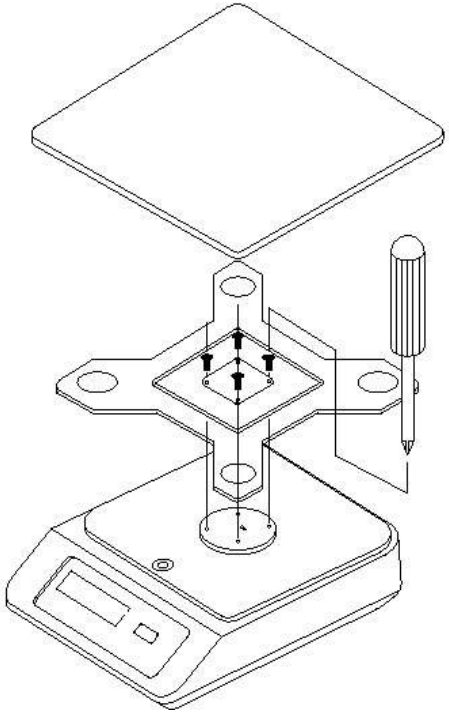


Fig. 2

5. MEASURING PROCEDURE

1) Place scale on a flat hard surface.
   Adjust the 'Rubber Pad"(3-5, Fig. 1) until the scale install under the horizontal position completely.
2) Set the "gm" or "oz" unit by slide the "Unit Switch" (3-9, Fig. 1).
   ** Use the "-" type screw driver to slide the "Unit Switch".*
   ** The scale are preset to the "gm" unit typically.*
   ** Slide the "Unit Switch" to the right position will set to "gm" unit & the right down corner of LCD will show the "g" marker.*
   ** Slide the "Unit Switch" to the left position will set to "oz" unit.*
3) Turn the "Power Switch"(3-4, Fig. 1) to the On position. The Display(3-3, Fig. 1) will show "8.8.8.8.8" for a few seconds, then "0" will appear again.
4) Apply the load to the platform gently, display will show the measuring weight values.
   ** Do not exceed the over load capacity of the scale.*
   ** Over weighting, the display will show "EEEEE".*
5) Tare function :
   After weighting the first item, press "Tare Button" (3-2, Fig. 1), scale will reset to zero values automatically. At the same time, the LCD display will show the "Tare" mark. Place next weighted item onto scale. Scale will give weights of the second only.
   **** If the display show "** ------- ***", means the display reading is under the zero, then tare function should be execute again.***
   **** The max. tare capacity is the full capacity(5000g).***
   **** The "Tare" marker will disappear until "Power Off" and "Power On" again.***

6. BATTERY REPLACEMENT

If battery is weak, LCD display will show "LO" indicator.
This reminds user to replace new battery.

1) Open "Battery Cover"(3-6, Fig. 1) located at the bottom of the scale.
2) According to the device instruction, place batteries(1.5V AA size battery x 6 PCs) into the battery compartment & replace the battery cover.

7. DC 9V AC/DC ADAPTER OPERATION

(Adapter is optional accessory)

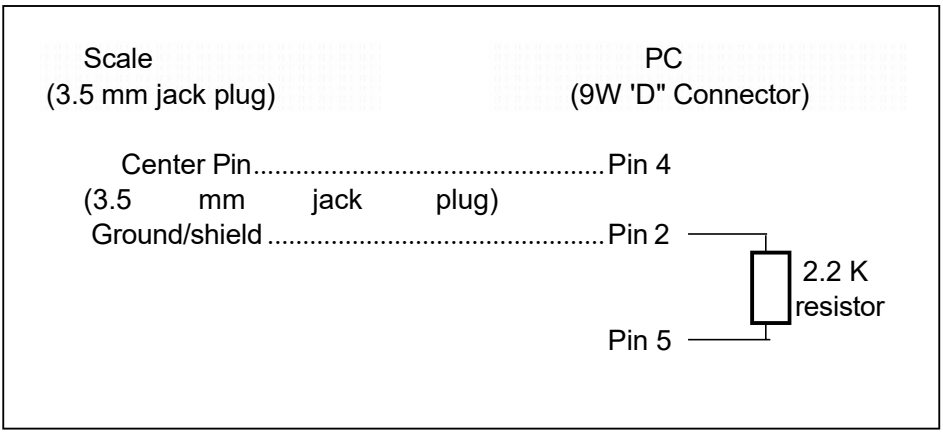
1) The scale will also be operated by the household ACV power source (110/220/240 ACV) with a DC 9V AC/DC Adapter(capacity 300 mA).
2) Plug the jack from the Adapter into the "DC 9V receptacle"(3-7, Fig. 1).
3) Now the scale is ready for ACV operation.

8. RS232 PC SERIAL INTERFACE

The instrument features an RS232 output via 3.5 mm Terminal (3-8, Fig. 1).

The connector output is a 16 digit data stream which can be utilized to the user's specific application.

An RS232 lead with the following connection will be required to link the instrument with the PC serial port.



The 16 digit data stream will be displayed in the following format :

D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0

Each digit indicate the following status :

D15	Start Word (02)		
D14	4		
D13	1		
D12, D11	Annunciator for Display		
	g = 57	oz = 58	
D10	0		
D9	Decimal Point(DP), position from right to the left		
	0 = No DP, 1= 1 DP, 2 = 2 DP, 3 = 3 DP		
D8 to D1	Display reading, D8 = MSD, D1 = LSD *For example :* *If the display reading is 1234, then D8 to D1 is :* *00001234*		
D0	End Word (0D)		

RS232 FORMAT : 9600, N, 8, 1

Baud rate	9600
Parity	No parity
Data bit no.	8 Data bits
Stop bit	1 Stop bit