GBM-3000 Series

Battery Meter

FEATURES

- 3.5' TFT LCD (320x240)
- Measurement Items : DC Voltage and AC Resistance
  * Voltage Measurement : 1000V(GBM-3100H)/300V(GBM-3300)/80V(GBM-3080)
  * Resistance Measurement : 0mΩ~ 3.2kΩ (max.)
- Basic Accuracy For Voltage Measurement : 0.01%
- Basic Accuracy For Resistance Measurement : 0.5%
- Measurement Resolution up to 0.1μΩ and 10μV, Suitable For Single-cell Measurement
- Independent Go/NoGo Determination Function For Voltage and Resistance Respectively
- The Judgment Mechanism of Test Lead (Probe) Disconnect/ Contact Failure is to Ensure The Measurement Reliability
- Standard Interfaces : USB Host/Device, RS-232C and Handler

GW INSTEK
Simply Reliable

GW Instek desktop battery tester, the GBM-3000 series, which uses AC 1kHz as the test signal and measures battery's voltage and internal resistance to 1000V (GBM-3100H) or 300V (GBM-3300) and 80V (GBM-3080). The series features 3.5" TFT LCD, 4-wire measurement method, high-resolution (6-digit voltage / 5-digit resistance) measurement display capability, and independent GO/NOGO determination of voltage and resistance, various communications interfaces, etc. to meet various types of battery measurements, ranging from single cell, battery cell, to the end product (battery), etc. so as to facilitate users in achieving accurate measurements at all stages of production.

The GBM-3000 series provides excellent features for various types of batteries in measuring open circuit voltage and resistance. For voltage measurement, the accuracy is as high as ± (0.01% reading + 5 digits), and measurement resolution is up to 10 μV (at 8V). For resistance measurement, the accuracy reaches ± (0.5% reading + 5 digits) and the resolution achieves 0.1 $\mu\Omega$ (at 3mΩ) that is especially suitable for the sorting of single cell measurements, which is to achieve a better output balance for the follow-up series and parallel connections. In the meantime, in order to facilitate users to quickly and clearly interpret the measurement results, the GBM-3000 series features HI/LO determination respectively based on voltage and resistance, and can be switched to the simple (big numerical display) mode to meet the requirements of test accuracy, clear and easy-to-read, and elevated inspection efficiency and capabilities.

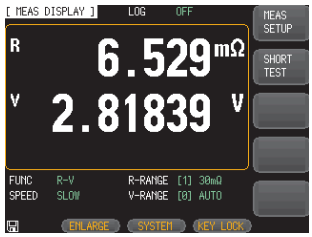
Other than the excellent measurement capabilities, the GBM-3000 series also provides a number of functions to ensure effectiveness and convenience. For the effectiveness, the test lead (probe) contact status detection function is to effectively prompt users whether test lead (probe) and DUT are in good contact to ensure the validity of the measured value. In terms of convenience, the GBM-3000 series provides two data storage methods (up to 10,000 lots of measurement values). "General storage" only stores the measured voltage and resistance values; "statistical storage" has the related parameters (Cp/Ckp/Mean/MAX/MIN...) for the statistical analysis. Users can store the data from the measurement process in the internal memory first and then transfer the data to the computer via flash drive for subsequent analysis without being limited to the connection with the computer.

In addition, for retrieving and storing measurement results via the transmission method, the GBM-3000 series provides RS-232C/USB device (virtual COM) for writing programs and retrievals. The handler interface is provided for external trigger control via PLC. All interfaces are standard-equipped that not only save the cost of instruments, but also meet the requirement of using different automated measurement systems.

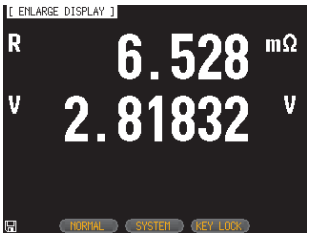
PANEL INTRODUCTION

1. 3.5” TFT LCD
2. Operation Key
3. Numeric & Navigator Key
4. Setup & Measure Key
5. Test Terminal
6. USB Host
7. Standard Interface : USB Device, RS-232C, Handler
8. Universal Input Power

A. TWO DISPLAY MODES



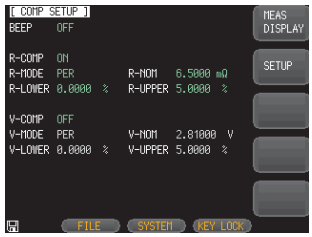
Standard Mode
(Setting conditions and R+V measurement parameters)



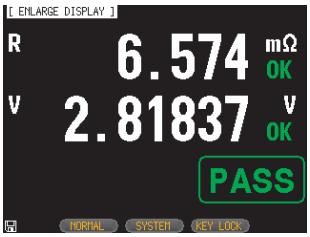
Simple Mode
(R+V measurement parameters)

The GBM-3000 series offers two display modes to facilitate users in maximizing the benefits of their measurements – Standard mode: The main measurement parameters (three combinations: R+V/R/V) and parameter settings for the related measurements can be displayed simultaneously. This mode is applicable to R&D design and engineering certification. Simple mode: Big numerical display only shows the results of main measurement parameters to increase the visibility of observations. This mode is suitable for production measurements.

B. INDEPENDENT GO/NOGO DETERMINATION



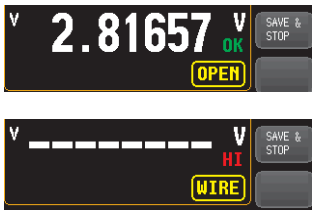
Independent HI/LO Setting



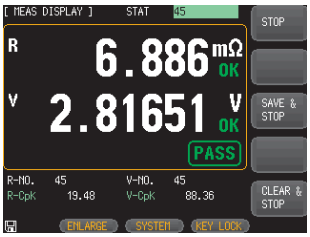
Separate & Totally Judgement

The GBM-3000 series provides independent HI/LO determination settings for both voltage and resistance and can be set according to the required mode, such as SEQ, PER or ABS. In addition to displaying the results of the final determination, the results of individual measurement parameters are also provided for subsequent actions.

C. EXCELLENT SUPPLEMENTARY MEASUREMENT CAPABILITY



Disconnect/Contact Display



Statistical Function

In addition to providing accurate measurements, the ability of the GBM-3000 Series to supplement the measurement of production lines is also a major feature of the series. For example, the ability to detect disconnect/contact. The display screen can clearly show bad contact of the test lead (probe).The series can store up to 10,000 lots of measurement data and has the statistical calculation function to allow the status of the production process to be clearly observed and retained in real time without any manual calculation or connection to the computer. After the measurement is completed, the result can be transferred to the computer through flash drive for long-term storage and subsequent analysis.

D. COMPREHENSIVE STANDARD INTERFACES

Finally, the GBM-3000 series provides a variety of practical and standard-equipped interfaces including RS-232C/USB device/ Handler, which are for measurement result collection in the remote program control or collocating with system integration for external trigger measurement through PLC.

SPECIFICATIONS

DISPLAY

Screen	3.5"(320 x240) TFT LCD
Resistance	5 digits
Voltage	6 digits

TEST SPEED

Slow	4 time/second
Medium	11 time/second
Fast	25 time/second
Ex. Fast	60 time/second

RESISTANCE MEASUREMENT

Test Frequency: 1kHz (±0.5Hz) Fixed

Input Impedance: 3mΩ~ 300mΩ: 99kΩ, 3Ω ~ 3kΩ: 2MΩ

Range

Range No.	Range	Max. scale	Resolution	Test Current	Open-circuit Voltage (Vpp,Max)
0	3mΩ	3.1000mΩ	0.1μΩ	100mA	8V
1	30mΩ	31.000mΩ	1μΩ	100mA	8V
2	300mΩ	310.00mΩ	10μΩ	10mA	7V
3	3Ω	3.1000Ω	100μΩ	1mA	3V
4	30Ω	31.000Ω	1mΩ	100μA	2V
5	300Ω	310.00Ω	10mΩ	10μA	1.5V
6	3kΩ	3200.0Ω	100mΩ	10μA	1.5V

Accuracy

Range No.	Speed	Accuracy	Temperature Coefficient
0	Slow	±0.5%rdg ± 10dgt	(±0.05%rdg ±1dgt)/°C
	Medium	±0.5%rdg ± 15dgt	
	Fast	±0.5%rdg ± 20dgt	
	EX. Fast	±0.5%rdg ± 40dgt	
1~6	Slow	±0.5%rdg ± 5dgt	(±0.05%rdg ± 0.5dgt)/°C
	Medium	±0.5%rdg ± 7dgt	
	Fast	±0.5%rdg ± 7dgt	
	EX. Fast	±1.0%rdg ± 8dgt	

VOLTAGE MEASUREMENT

Range (GBM-3100H)

Range No.	Range	Max. scale	Resolution
0	10V	±9.99999	10 μV
1	100V	±99.9999	100 μV
2	1000V	±1009.99	1mV/10mV

Range (GBM-3300/3080)

Range No.	Range	Max. scale	Resolution
0	8V	±8.08000	10 μV
1	80V	±80.8000	100 μV
2	300V (For GBM-3300 only)	±303.000	1mV

Accuracy

Range No.	Speed	Accuracy	Temperature Coefficient
0~2	Slow	±0.01%rdg ±5dgt	(±0.001%rdg ± 0.5dgt)/°C
	Medium	±0.01%rdg ±7dgt	
	Fast	±0.05%rdg ±7dgt	
	EX. Fast	±0.10%rdg ±10dgt	

OTHER FUNCTIONS

Range Selection	Auto range, Hold range, Nom range
Comparator	ABS, PER or SEQ
Contact Detection	OPEN & WIRE
Buzzer	OFF, Pass, Fail
Trigger	INT, EXT

INTERFACE	USB Host/USB Device/RS-232C/Handler
POWER SOURCE	AC 100-240, 50-60Hz; Consumption: 10W
DIMENSIONS & WEIGHT	264(W) x 107(H) x 309(D) mm, Approx. 2.8kg

Specifications subject to change without notice. GBM-3000SeriesID1BH

ORDERING INFORMATION

GBM-3100H 1000V Battery Meter (including RS-232C/USB device/host and HANDLER interface)
GBM-3300 300V Battery Meter (including RS-232C/USB device/host and HANDLER interface)
GBM-3080 80V Battery Meter (including RS-232C/USB device/host and HANDLER interface)

ACCESSORIES

Safety sheet x 1, Power cord x 1,
GBM-01 x 1 : 4 Wire(kelvin clip) test lead, 90V(max.), approx..1100mm

FREE DOWNLOAD

PC Software Battery Meter

OPTION ACCESSORIES

GBM-02	4 Wire (single pin) test probe, 80V (max.), approx. 1100mm
GBM-03	4 Wire (twin pin) test probe, 300V (max.), approx. 1400mm
GBM-03A	4 Wire (twin pin) test probe, 1000V (max.), approx. 1400mm
GBM-S1	Short Bar (for GBM-02/GBM-03/GBM-03A)
GTL-232	RS-232C cable, 9-pin Female to 9-pin, null modem for computer, Approx. 2000mm
GTL-246	USB cable, A-B type, approx.1200mm
GRA-422	Rack Mount kit
GRA-454	Rack Mount Kit (19",2U) for one set or two sets

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