GDM-906X Series

6 1/2 Digit Dual Measurement Multimeter

FEATURES

- 6 1/2 Digit Display: 1,200,000 Counts
- 4.3" TFT Graphic LCD
- DCV Basic Accuracy: 0.0035%(GDM-9061)/0.0075%(GDM-9060)
- 12 Measurement Functions: DCV, ACV, DCI, ACI, 2-wire and 4-wire Resistance, Frequency, Period, Diode, Continuity, Temperature and Capacitance
- Sampling Rate up to 10k SPS (GDM-9061)
- Dual Measurements to Perform Two Selected Measurement Simultaneously
- Offer Graphical Capabilities Including Histogram, Bar Meter and Trend
- Temperature Measurement Support RTD, Thermistor as Well as Thermocouple
- Standard Interface: USB Host/Device,RS-232C,LAN,Digital I/O
- Optional Interface: GPIB

GW Instek launches GDM-906X series 6 ½ digit dual measurement multimeter (2 models: GDM-9061 and GDM-9060), featuring high precision DC voltage accuracy, fast sampling rate, 12 measurement functions (DC voltage/current, AC voltage/current, 2-wire/4-wire resistance, frequency, period, diode, continuity beeper, temperature, capacitance), 6 mathematical functions (dB/dBm/Compare/MX+B/Percent and 1/X) as well as a variety of communications interfaces (USB device/host, RS-232C, LAN, digital I/O and optional GPIB) to provide comprehensive measurement capabilities, higher speed and accuracy.

The series adopts a 4.3-inch TFT graphical display and a fast sampling rate (GDM-9061: 10k/s, GDM-9060: 1k/s max.). In addition to the conventional digital display, displays can be collocated with bar meter, trend chart or histogram to make the panoramic view of the entire measurement process more completely and quickly presented. At the same time, the internal memory capacity (GDM-9061: 100k, GDM-9060: 10k) can simultaneously facilitate the trend plot or histogram measurement process and perform statistical calculations to simplify the complex trend analysis.

For user-friendly, the GDM-906X series incorporates some ingenious operational ideas, such as numeric soft keys for settings that require numerical input, upper/lower limits, LAN IP operational interfaces or messages, and multiple languages (English / Traditional Chinese/ Simplified Chinese/ Japanese / Korean) to shorten the operational and learning time of the meter.

For ATS measurement or remote control applications, the GDM-906X series provides GPIB (option can be installed at customer site) other than standard communications interfaces: USB, RS-232 and LAN. With respect to software supports, the GDM-906X series provides DMM-Viewer2 to assist users in observing or recording the data from the measurement process. In addition, LabVIEW driver is also provided to facilitate the program requirements of different system integrations.

PANEL INTRODUCTION

1. 4.3" Color TFT LCD
2. Screen Capture/Data Log Key
3. USB Host
4. Function Key
5. Range & Speed Selection Key
6. Measurement & Numeral Key
7. Measurement Terminal
8. Front/Rear Input Switch (GDM-9061 only)
9. Rear Measurement Terminal (GDM-9061 only)
10. Digital I/O
11. Standard Interface : RS-232C, USB device, LAN
12. GPIB (optional)

A.   IDEAL BENCHTOP PARTNER

	GDM-9061	GDM-9060
DCV Accuracy	0.0035%	0.0075%
Sampling Rate	10k/sec	1k/sec
Memory	100k	10k
Rear Input	Yes	No
Current Terminal (Front)	3A, 10A	3A
Current Terminal (Rear)	3A	—
Display	Number, Trend Chart, Bar Meter, Histogram	
Function	Voltage/Current : AC, DC	
	Resistance : 2-Wire, 4-Wire Diode, Continuity, Temperature Frequency, Period, Capacitance	
Math.	REL, dB, dBm, Compare, MX+B, Percent, 1/X	
STAT.	Min/Max/Average/ P-P, STDEV	
Interface	RS-232C, USB Host/Device, LAN	

The GDM-906X series provides all fundamental measurement functions engineers require to design, develop, and test electronic circuits or products, including voltage, current, resistance, diode, and continuity beeper, frequency, temperature and capacitance. In addition, the series also features mathematical functions (dB, dBm, Compare, MX+B, 1/X and Percent), statistical functions (Min/Max/Average/P-P/STDEV), and a variety of standard communications interfaces. The series can meet specific measurement requirements and complex measurement applications whether for the benchtop operation or to be installed in the system.

B. DIVERSE DISPLAY MODE

In addition to the standard numeric display mode, it also provides a variety of graphical functions such as bar meter, trend chart and histogram, so that the measurement results are no longer just a series of numbers, but a swift insight into the panoramic measurement.

C. DUAL MEASUREMENT AND DUAL TREND LINE

The dual measurement function has always been a unique feature of GW Instek digital multimeters, allowing two measurement functions to be performed simultaneously and displaying the test results separately so as to greatly improve the test speed of the multi-functional measurement tasks.

D. HIGH MEASUREMENT RESOLUTION AND HIGH SAMPLING RATE

GDM-9061 MEASUREMENT TYPE ~ DCV/DCI/2W/4W								
Refresh Rate Available								
6½ Resolution				5½ Resolution			4½ Resolution	
5/s	20/s	60/s	100/s	400/s	1.2k/s	2.4k/s	4.8k/s	7.2k/s	10k/s

GDM-9060 MEASUREMENT TYPE ~ DCV/DCI/2W/4W								
Refresh Rate Available								
6½ Resolution				5½ Resolution			4½ Resolution	
5/s	20/s	60/s	100/s	400/s	1k/s	–	–	–	–

The GDM-906X series provides high resolution of 0.1µV for voltage measurement, 100pA for current measurement, and 100µΩ for resistance measurement to meet the necessary requirements for precision measurement in specific applications. In addition, GDM-9061 is capable of achieving 10k readings per second with a display resolution of 4½ digits, while GDM-9060 achieves 1k measurement readings per second with a display resolution of 5½ digits; such a fast sampling rate is sufficient for current measurement needs.

E. TEMPERATURE MEASUREMENT

The GDM-906X series conducts temperature measurement and is ideal for a variety of temperature sensors, such as thermistors, RTDs, and thermocouples. The GDM-906X's temperature measurement supports commonly used thermocouple types (e.g. J / T / K..., etc.), using voltage measurement terminals as thermocouple inputs, and calculating temperature based on voltage fluctuations; the function can be used as a temperature recorder if collocated with internal memory capacity and the trend chart function.

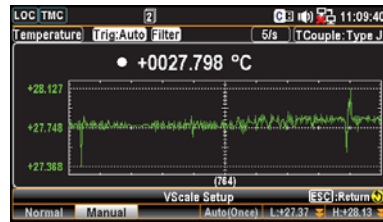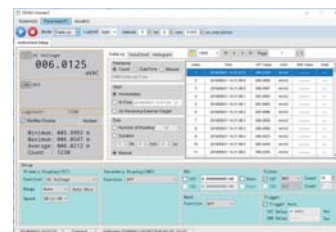## F. DIVERSE COMMUNICATIONS INTERFACE AND FAST TRANSFER RATE

For system integration applications, the GDM-906X series is equipped with RS232, USB and LAN as standard communications interfaces, and GPIB is an option (can be installed by customer) to meet the requirements of different system integrations. Data transfer rate is up to 10k readings per second (GDM-9061) or 1k readings per second (GDM-9060) via USB/LAN/GPIB interfaces.

G. CONVENIENT PC SOFTWARE

The PC software DMM-Viewer2 is suitable for any computer communications interfaces (RS232C/LAN/USB/ GPIB) provided by the GDM-906X series for long-term data acquisition. The software not only allows users to control the settings of the GDM-906X series but also provides the observation mode or the recording mode for the captured data. For the observation mode, the measurement result is directly presented as the result of the trend plot or the histogram and the result is not saved. For the recording mode, the measurement result is directly saved into the log file, but only the current display is shown in the process. The measured data and trend plot can be viewed after the recording mode is stopped. In addition, the GDM-906X series also provides LabVIEW driver to meet the software application requirements of system integration.

SPECIFICATIONS

DC CHARACTERISTICS

DC Voltage

Range	Resolution	Input Resistance	Accuracy(1Year)(TCAL±5°C) GDM-9061	GDM-9060
100.0000 mV	0.1µV	10MΩ or >10GΩ	0.0050 + 0.0035	0.0090 + 0.0065
1.000000 V	1µV	10MΩ or >10GΩ	0.0048 + 0.0007	0.0080 + 0.0010
10.00000 V	10µV	10MΩ or >10GΩ	0.0035 + 0.0005	0.0075 + 0.0005
100.0000 V	0.1mV	10MΩ ±1%	0.0050 + 0.0006	0.0085 + 0.0006
1000.000 V	1mV	10MΩ ±1%	0.0050 + 0.0010	0.0085 + 0.0010

Resistance

Range	Resolution	Test Current	Accuracy(1Year)(TCAL±5°C) GDM-9061	GDM-9060
100.0000 Ω	100µΩ	1mA	0.010 + 0.004	0.014 + 0.007
1.000000 kΩ	1mΩ	1mA	0.010 + 0.001	0.014 + 0.001
10.00000 kΩ	10mΩ	100µA	0.010 + 0.001	0.014 + 0.001
100.0000 kΩ	100mΩ	10µA	0.010 + 0.001	0.014 + 0.001
1.000000 MΩ	1Ω	5µA	0.010 + 0.001	0.014 + 0.001
10.00000 MΩ	10Ω	500nA	0.040 + 0.001	0.040 + 0.001
100.0000 MΩ	100Ω	500nA//10 MΩ	0.800 + 0.010	0.800 + 0.010

DC Current

Range	Resolution	Burden Volt.	Accuracy(1Year)(TCAL±5°C) GDM-9061	GDM-9060
100.0000 µA	100pA	< 0.011 V	0.05 + 0.025	0.05 + 0.025
1.000000 mA	1nA	< 0.11 V	0.05 + 0.006	0.05 + 0.006
10.00000 mA	10nA	< 0.04 V	0.05 + 0.020	0.05 + 0.020
100.0000 mA	100nA	< 0.4 V	0.05 + 0.005	0.05 + 0.005
1.000000 A	1µA	< 0.7 V	0.10 + 0.010	0.10 + 0.010
3.000000 A	1µA	< 2.0 V	0.20 + 0.020	0.20 + 0.020
10.00000 A	10µA	< 0.5 V	0.15 + 0.010	- - - - - - - - - -

Continuity

Range	Resolution	Test Current	Accuracy(1Year)(TCAL±5°C) GDM-9061	GDM-9060
1000.000 Ω	0.001 Ω	1 mA	0.010 + 0.030	0.014 + 0.030

Diode Test

Range	Resolution	Test Current	Accuracy(1Year)(TCAL±5°C) GDM-9061	GDM-9060
5.000000 V	1µV	1 mA	0.010 + 0.030	0.014 + 0.030

DC Ratio

Accuracy Specification: ± (DC Input accuracy + DC Reference accuracy)

TEMPERATURE CHARACTERISTICS

RTD (Accuracy based on PT100)

Range	Resolution	Accuracy(1Year)(TCAL±5°C)
-200 °C ~ -100 °C	0.001 °C	0.09 °C
-100 °C ~ -20 °C	0.001 °C	0.08 °C
-20 °C ~ 20 °C	0.001 °C	0.06 °C
20 °C ~ 100 °C	0.001 °C	0.08 °C
100 °C ~ 300 °C	0.001 °C	0.12 °C
300 °C ~ 600 °C	0.001 °C	0.22 °C

Thermocouples (Accuracy based on ITS-90)

Type	Range	Resolution	Accuracy(1Year)(TCAL±5°C)
E	-200 °C ~ +1000 °C	0.002 °C	0.2 °C
J	-210 °C ~ +1200 °C	0.002 °C	0.2 °C
T	-200 °C ~ +400 °C	0.002 °C	0.3 °C
K	-200 °C ~ +1372 °C	0.002 °C	0.3 °C
N	-200 °C ~ +1300 °C	0.003 °C	0.4 °C
R	-50 °C ~ +1768 °C	0.01 °C	1 °C
S	-50 °C ~ +1768 °C	0.01 °C	1 °C
B	+350 °C ~ +1820 °C	0.01 °C	1 °C

Thermistor (2.2kΩ, 5kΩ, 10kΩ or User Type)

Range	Resolution	Accuracy(1Year)(TCAL±5°C)
-80 °C ~ 150 °C	0.01 °C	0.01 °C

ORDERING INFORMATION

GDM-9061 6 ½ (1200000 counts) Digit Dual Measurement Multimeter
GDM-9060 6 ½ (1200000 counts) Digit Dual Measurement Multimeter

ACCESSORIES

Safety Instructions x 1, Power cord x 1, USB cable GTL-246 x 1, Test lead GTL-217 x 1, CD x 1(including the complete user manual, upgrade program and PC software, DMM-Viewer2)

AC CHARACTERISTICS

Accuracy : ± (% of reading + % of range)

AC Voltage (True RMS)

Range	Resolution	Frequency	Accuracy(1Year)(TCAL±5°C) GDM-9061	GDM-9060
100.0000 mV	0.1µV	3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
		5Hz ~ 10Hz	0.35 + 0.04	0.38 + 0.04
		10Hz ~ 20kHz	0.06 + 0.04	0.09 + 0.04
		20kHz ~ 50kHz	0.12 + 0.05	0.15 + 0.05
		50kHz ~ 100kHz	0.60 + 0.08	0.63 + 0.08
		100kHz ~ 300kHz	4.00 + 0.50	4.00 + 0.50
1.000000 V to 750.000 V	1µV ~ 1mV	3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
		5Hz ~ 10Hz	0.35 + 0.04	0.38 + 0.04
		10Hz ~ 20kHz	0.06 + 0.04	0.09 + 0.04
		20kHz ~ 50kHz	0.12 + 0.05	0.15 + 0.05
		50kHz ~ 100kHz	0.60 + 0.08	0.63 + 0.08
		100kHz ~ 300kHz	4.00 + 0.50	4.00 + 0.50

AC Current (True RMS)

Range	Resolution	Frequency	Accuracy(1Year)(TCAL±5°C) GDM-9061	GDM-9060
100.0000 µA / 10.00000 mA	100pA / 10nA	3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
		5Hz ~ 10Hz	0.35 + 0.04	0.38 + 0.04
		10Hz ~ 5kHz	0.10 + 0.04	0.13 + 0.04
		5kHz ~ 10kHz	0.18 + 0.04	0.20 + 0.04
1.000000 mA / 100.0000 mA	1nA / 100nA	3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
		5Hz ~ 10Hz	0.30 + 0.04	0.33 + 0.04
		10Hz ~ 5kHz	0.10 + 0.04	0.13 + 0.04
		5kHz ~ 10kHz	0.15 + 0.04	0.18 + 0.04
1.000000 A	1µA	3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
		5Hz ~ 10Hz	0.30 + 0.04	0.33 + 0.04
		10Hz ~ 5kHz	0.10 + 0.04	0.13 + 0.04
		5kHz ~ 10kHz	0.15 + 0.04	0.18 + 0.04
3.000000 A	1µA	3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
		5Hz ~ 10Hz	0.35 + 0.04	0.38 + 0.04
		10Hz ~ 5kHz	0.23 + 0.04	0.23 + 0.04
		5kHz ~ 10kHz	0.23 + 0.04	0.23 + 0.04
10.00000 A	10µA	3Hz ~ 5Hz	1.10 + 0.04	------------------
		5Hz ~ 10Hz	0.35 + 0.04	------------------
		10Hz ~ 5kHz	0.15 + 0.04	------------------
		5kHz ~ 10kHz	0.35 + 0.04	------------------

CAPACITANCE CHARACTERISTICS

Accuracy : ± (% of reading + % of range)

Capacitance

Range	Resolution	Accuracy(1Year)(TCAL±5°C)
1.000 nF	0.001nF	2.00 + 2.00
10.00 nF	0.01nF	2.00 + 1.00
100.0 nF	0.1nF	2.00 + 0.40
1.000 µF	0.001µF	2.00 + 0.40
10.00 µF	0.01µF	2.00 + 0.40
100.0 µF	0.1µF	2.00 + 0.40

FREQUENCY AND PERIOD CHARACTERISTICS

Accuracy : ± (% of reading)

Frequency/Period

Range	Frequency	Accuracy(1Year)(TCAL±5°C)
100.0000mV to 750.000V	3Hz ~ 5Hz	0.1
	5Hz ~ 10Hz	0.05
	10Hz ~ 40Hz	0.03
	40Hz ~ 1MHz	0.006

GENERAL INFORMATION

Display	4.3" Color TFT WQVGA (480 x 272)
Standard Interface	RS-232C, USB Host/Device, LAN, Digital I/O
Power Source	AC 100 V/120 V/220 V/240 V±10%
Power Line Frequency	50 Hz/60 Hz/400 Hz±10%
Power Consumption	Max. 25VA
Dimension & Weight	267(W) x 107(H) x 302(D) mm, Approx. 3.5kg

Specifications subject to change without notice. GDM-906XCD1BH_2018.11_2000

OPTION

GDM-90G1 GPIB card (*) GPIB can be installed at customer site

OPTIONAL ACCESSORIES

GTL-205A	Temperature Probe Adapter with Thermal Coupling (K-type), approx. 1000mm
GTL-234	RS-232C Cable, 9-pin female-female cable, approx. 2000mm
GTL-248	GPIB Cable, approx. 2000mm
GTL-308	4Wire Type (+shield) Test lead, approx. 1500mm
GRA-422	Rack Mount Kit(19",2U)
GDM-TL1	Test Lead Set
GSC-014	Soft Carrying Case for DMM Accessory