

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



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, Histogra		
Function	Voltage/Current : AC, I	OC .	
	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.









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.



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.

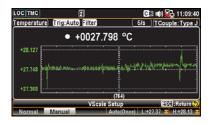
HIGH MEASUREMENT RESOLUTION AND HIGH SAMPLING RATE

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		51/2	Resoluti	on	4½	Resolut	tion		
5/s	20/s	60/s	100/s	400/s	1k/s	_	_	_	_

The GDM-906X series provides high resolution of $0.1\mu V$ for voltage measurement, 100pA for current measurement, and $100\mu\Omega$ 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 $4\frac{1}{2}$ digits, while GDM-9060 achieves 1k measurement readings per second with a display resolution of $5\frac{1}{2}$ 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.

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.

. 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 Accuracy(1Year)(TCAL±5°C) Input Resistance Resolution GDM-9061 GDM-9060 100.0000 mV $10M\Omega$ or $>10G\Omega$ 0.0050 + 0.0035 0.0090 + 0.0065 0.1μV 1.000000 V $10M\Omega$ or $>10G\Omega$ 0.0048 + 0.00070.0080 + 0.001010µV 10 00000 V $10M\Omega$ or $>10G\Omega$ 0.0035 + 0.00050.0075 + 0.00050.1mV 100.0000 V 0.0050 + 0.00060.0085 + 0.000610MΩ ±1% 1000.000 V 1mV 10MΩ ±1% 0.0050 + 0.00100.0085 + 0.0010Resistance Range Resolution **Test Current** Accuracy(1Year)(TCAL±5°C) GDM-9060 GDM-9061 100.0000 Ω 0.010 + 0.0040.014 + 0.007100μΩ 1mA 1.000000 kΩ 0.010 + 0.0011mA 0.014 + 0.001 $1m\Omega$ 10.00000 kΩ 100μΑ 0.010 + 0.001 0.014 + 0.001 $10m\Omega$ 100.0000 kΩ 10µA 0.010 + 0.001 0.014 + 0.001 100mΩ $1.000000~M\Omega$ 1Ω 5μΑ 0.010 + 0.0010.014 + 0.001 $10.00000 M\Omega$ 100 500nA 0.040 + 0.0010.040 + 0.001 $500 nA//10 M\Omega$ 100.0000 MΩ 100Ω 0.800 + 0.0100.800 + 0.010DC Current Range Burden Volt. Accuracy(1Year)(TCAL±5°C) Resolution GDM-9061 GDM-9060 100.0000 μΑ < 0.011 V 0.05 + 0.025 0.05 + 0.025 100pA 0.05 + 0.0060.05 + 0.0061.000000 mA < 0.11 V 10nA 10.00000 mA < 0.04 V0.05 + 0.0200.05 + 0.020100nA 100.0000 mA < 0.4 V0.05 + 0.0050.05 + 0.0051.000000 A 1μΑ < 0.7 V 0.10 + 0.0100.10 + 0.0101μΑ < 2.0 V 3.000000 A 0.20 + 0.0200.20 + 0.02010.00000 A 10μΑ < 0.5 V 0.15 + 0.010Continuity Accuracy(1Year)(TCAL±5°C) Range Resolution **Test Current** GDM-9061 GDM-9060 1000.000 Ω 0.001 Ω 1 mA 0.010 + 0.0300.014 + 0.030Diode Test Range Resolution Accuracy(1Year)(TCAL±5°C) GDM-9061 GDM-9060

TEMPERATURE CHARACTERISTICS
RTD (Accuracy based on PT100)

1µV

5.000000 V

DC Ratio

,	,	
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

0.010 + 0.030

0.014 + 0.030

1 mA

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

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
В	+350 °C ~ +1820 °C	0.01 °C	1 °C

Thermistor (2.2k Ω , 5k Ω , 10k Ω 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 6½ (1200000 counts) Digit Dual Measurement Multimeter

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)

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AC CHARACTERISTICS

AC Voltage (1)	rue Kivis)			
Range	Resolution	Frequency	Accuracy(1Yea	ar)(TCAL±5°C)
			GDM-9061	GDM-9060
		3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
		5Hz ~ 10Hz	0.35 + 0.04	0.38 + 0.04
100.0000 mV	0.1μV	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
		3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
		5Hz ~ 10Hz 0.35 + 0.04	0.35 + 0.04	0.38 + 0.04
1.000000 V to	1µV ~ 1mV	10Hz ~ 20kHz	0.06 + 0.04	0.09 + 0.04
750.000 V	iµv ~ imv	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(1Ye	ar)(TCAL±5°C)
			GDM-9061	GDM-9060
100 00004	100.4	3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
100.0000 µA 10.00000 mA	100pA	5Hz ~ 10Hz	0.35 + 0.04	0.38 + 0.04
10.00000 mA	10nA	10Hz ~ 5kHz	0.10 + 0.04	0.13 + 0.04
		5kHz ~ 10kHz	0.18 + 0.04	0.20 + 0.04
		3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
1.000000 mA	1nA	5Hz ~ 10Hz	0.30 + 0.04	0.33 + 0.04
100.0000 mA	100nA	10Hz ~ 5kHz	0.10 + 0.04	0.13 + 0.04
		5kHz ~ 10kHz	0.15 + 0.04	0.18 + 0.04
		3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
1.000000 A	1μΑ	5Hz ~ 10Hz	0.30 + 0.04	0.33 + 0.04
1.000000 A		10Hz ~ 5kHz	0.10 + 0.04	0.13 + 0.04
		5kHz ~ 10kHz	0.15 + 0.04	0.18 + 0.04
		3Hz ~ 5Hz	1.00 + 0.04	1.00 + 0.04
2 000000 4	1μA	5Hz ~ 10Hz	0.35 + 0.04	0.38 + 0.04
3.000000 A		10Hz ~ 5kHz	0.23 + 0.04	0.23 + 0.04
		5kHz ~ 10kHz	0.23 + 0.04	0.23 + 0.04
		3Hz ~ 5Hz	1.10 + 0.04	
		5Hz ~ 10Hz	0.35 + 0.04	
10.00000 A	10.00000 A 10μA	10Hz ~ 5kHz	0.15 + 0.04	
		5kHz ~ 10kHz	0.35 + 0.04	

CAPACITANCE CHARACTERISTICS

Canacitance

	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		
ĺ	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 Accurac

Frequency/Period

rrequency/reriod			
Range	Frequency	Accuracy(1Year)(TCAL±5°C)	
100.0000mV	3Hz ~ 5Hz	0.1	
to	5Hz ~ 10Hz	0.05	
750.000V	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

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

OPTIONAL ACCESSORIE

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 GRA-422 Rack Mount Kit(19",2U) GTL-308

4Wire Type (+shield) Test lead, approx. 1500mm GDM-TL1

Soft Carrying Case for DMM Accessory GSC-014

GW INSTEK

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