

## GDM-452 (NEW)

## DC Voltage

Range	Resolution	Accuracy	Input Impedance	Fixed Value Input
200mV	10 $\mu$ V	$\pm(0.05\%+3)$	Around 10M $\Omega$	250Vac/ dc rms
2V	100 $\mu$ V	$\pm(0.1\%+3)$		600Vrms / 850Vpp
20V	1mV			
200V	10mV			
600V	100mV	$\pm(0.15\%+5)$		

## AC Voltage

Range	Resolution	Accuracy 40~400Hz	Input Impedance	Fixed Value Input
200mV	10 $\mu$ V	$\pm(0.8\%+10)$	Around 10M $\Omega$	250Vac/ dc rms
2V	100 $\mu$ V	$\pm(0.5\%+10)$		600Vrms / 850Vpp
20V	1mV	$\pm(0.6\%+10)$		
200V	10mV	$\pm(0.8\%+15)$		
600V	100mV			

## • GDM-452:

- Display : effective average value

## DC Current

Range	Resolution	Accuracy	Overload Protection
2mA	0.1 $\mu$ A	$\pm(0.5\%+5)$	Fuse: 200mA/250V, $\phi$ 5 x 20mm
20mA	1 $\mu$ A		
200mA	10 $\mu$ A	$\pm(0.8\%+5)$	
10A	1mA	$\pm(2.0\%+10)$	Fuse : 10A/250V, $\phi$ 6 x 25mm

## Remarks:

- Maximum input current: 10A (For current over 5A: measuring time shall not exceed 15 second.
- Measured voltage drop: 200mV for all range

## GDM-451 (OLD)

## DC Voltage

Range	Resolution	Accuracy	Input Impedance	Fixed Value Input
200mV	10 $\mu$ V	$\pm(0.05\%+3)$	Around 10M $\Omega$	250Vac/ dc rms
2V	100 $\mu$ V	$\pm(0.1\%+3)$		750Vrms / 1000Vpp
20V	1mV			
200V	10mV			
1000V	100mV	$\pm(0.15\%+5)$		

## AC Voltage (True rms)

Range	Resolution	Accuracy 40~400Hz	Input Impedance	Fixed Value Input
200mV	10 $\mu$ V	$\pm(0.5\%+10)$	Around 2M $\Omega$	250Vac/ dc rms
2V	100 $\mu$ V			750Vrms / 1000Vpp
20V	1mV			
200V	10mV			
750V	100mV			

## • GDM-451:

- Display : effective average value

## DC Current

Range	Resolution	Accuracy	Overload Protection
2mA	0.1 $\mu$ A	$\pm(0.5\%+5)$	Fuse: 0.5A/250V
20mA	1 $\mu$ A		
200mA	10 $\mu$ A	$\pm(0.8\%+5)$	
20A	1mA	$\pm(2.0\%+10)$	No Fused

## Remarks:

- 20A range: Continuous measurement for less than 10 seconds with intervals of more than 15 minutes between measurements.
- Measured voltage drop: 200mV for all range

### AC Current (True rms)

Range	Resolution	Accuracy	Overload Protection
		40~400Hz	
2mA	0.1μA	±(0.8%+10)	Fuse: 200mA/250V, φ5 x 20mm
20mA	1μA		
200mA	10μA	±(1.2%+10)	
10A	1mA	±(2.5%+10)	Fuse : 10A/250V, φ6 x 25mm

#### Remarks:

- Maximum input current: 10A (For current over 5A: measuring time shall not exceed 15 second.
- Measured voltage drop: 200mV for all range
- Display: True RMS value (Waveform coefficient is not more than 5)

### Resistance

Range	Resolution	Accuracy	Overload Protection
200Ω	0.01Ω	±(0.5%+10)	250V dc or ac (rms)
2kΩ	0.1Ω	±(0.3%+3)	
20kΩ	1Ω	±(0.3%+1)	
200kΩ	10Ω		
2MΩ	100Ω		
20MΩ	1kΩ	±(0.5%+1)	

#### Remarks:

- Open circuit voltage: About 3V (for 200Ωrange)
- Please short-circuit the test leads when using 200Ω range to measure, and subtract this shorted value from all subsequent measured values so as to obtain accurate reading.

### Capacitance

Range	Resolution	Accuracy	Overload Protection	Remark
20nF	1pF	±(4.0%+20)	mA to V terminal : 200mA/250V, φ5 x 20mm	The test signal is about 400Hz, 40mVrms
200nF	10pF			
2μF	100pF			
20μF	1nF			

### AC Current

Range	Resolution	Accuracy	Overload Protection
		40~400Hz	
20mA	1μA	±(0.8%+10)	Fuse: 200mA/250V, φ5 x 20mm
200mA	10μA	±(1.2%+10)	
20A	1mA	±(2.5%+10)	

#### Remarks:

- 20A range: Continuous measurement for less than 10 seconds with intervals of more than 15 minutes between measurements.
- Measured voltage drop: 200mV for all range
- Display : effective average value

### Resistance

Range	Resolution	Accuracy	Overload Protection
200Ω	0.01Ω	±(0.5%+10)	250V dc or ac (rms)
2kΩ	0.1Ω	±(0.3%+1)	
20kΩ	1Ω		
200kΩ	10Ω		
2MΩ	100Ω	±(0.5%+12)	
20MΩ	1kΩ		
200MΩ	10kΩ	±[5.0%(rdg-1000)+10]	

#### Remarks:

- Short-circuit the test leads when using 200Ω and 200MΩ range to measure, and subtract this shorted value from all subsequent measured values so as to obtain accurate reading.

### Capacitance


Range	Resolution	Accuracy	Overload Protection	Remark
20nF	0.1pF	±(3.0%+40)	mA to V terminal : 250Vac	The test signal is about 400Hz, 40mVrms
200nF	1pF	±(4.0%+10)		
2μF	100pF			
20μF	1nF			

### Frequency

Model	Range	Accuracy	Maximum Resolution
Frequency	20kHz	$\pm(1.5\%+5)$	1Hz


- Overload Protection: 250V (rms)
- Input sensitivity:  $\leq 200\text{mVrms}$
- The maximum input Amplitude:  $\leq 30\text{Vrms}$

### Diode Test

Range	Instructions	Testing conditions
	Display approximate value of forward voltage drop for diode	Positive DC current is about 1mA and reverse DC voltage is about 2.8V

- Overload Protection: 250Vdc or ac effective value

### Continuity Test

Range	Resolution	Testing conditions
	If resistance $\leq 30\Omega$ , the buzzer sounds; Display approximate k $\Omega$ value.	Open circuit voltage is about 3V (Vpp)

- Overload Protection: 250Vdc or ac effective value


### Temperature Measurement

### Frequency

Model	Range	Accuracy	Maximum Resolution
Frequency	20kHz	$\pm(1.5\%+5)$	1Hz


- Overload Protection: 250V (rms)
- Input sensitivity:  $\leq 200\text{mVrms}$
- The maximum input Amplitude:  $\leq 60\text{Vdc}$  or  $30\text{Vrms}$

### Diode Test

Range	Instructions	Testing conditions
	Display approximate value (500~800 mV) of forward voltage drop for diode	Open circuit is about 2.8V

- Overload Protection: 250Vdc or ac effective value
- Resolution: 0.1mV

### Continuity Test

Range	Resolution	Testing conditions
	If resistance $\leq 70\Omega$ , the buzzer sounds	Open circuit voltage is about 3V (Vpp)

- Overload Protection: 250Vdc or ac effective value
- Resolution: 0.1mV

### Temperature Measurement

Range	Resolution	Accuracy	Overload Protection
°C	0.1°C	(-40~0°C): $\pm(3\%+40)$	250Vac
		(>0~400°C): $\pm(1\%+30)$	
		(>400~1000°C): $\pm(2.0\%+50)$	

Other Functions

MODEL	GDM-452
Max. Display	19999
Auto Ranging	
Analog Bar	
True RMS	
Display Backlight	
Fused 10A Range	✓
Auto Power off	✓
Diode	✓
Continuity	✓
Temperature	
Duty Cycle(%)	
Transistor (hFE)	
REL	
Data Hold	✓
Peak Hold	
MAX MIN	
RS232C	



Other Functions:

MODEL	GDM-451
Max. Display	19999
Auto Ranging	
Analog Bar	
True RMS	
Display Backlight	✓
Fused 10A Range	
Auto Power off	✓
Diode	✓
Continuity	✓
Temperature	✓
Duty Cycle(%)	
Transistor (hFE)	
REL	
Data Hold	✓
Peak Hold	
MAX MIN	
RS232C	

