

## GDM-9061 規格

規格適用於 GDM-9061 在環境中熱機至少 60 分鐘時



Note :

- All specifications are ensured only under a single display.
- At least 1 hour of warm-up time is required before applying these specifications.
- Make sure that the Sense LO terminal to Input LO is limited to 2Vpk, the Sense HI to Sense LO terminals are limited to 200Vpk and the Input LO to earth is limited to 500Vpk. CAT II 300V. MAX DC1000V, AC 750V

功能	檔位(2)	解析度	輸入電阻 其他.	24 小時 TCAL± 1°C	90 天 TCAL± 5°C	1 年 TCAL± 5°C	溫度係數 0°~ 18°C /
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							28°~ 55°C
直流特性							準確度：±(讀值% + 檔位%)
直流電壓 (1)	100.0000 mV	0.1μV	10MΩ or >10GΩ	0.0030 + 0.0030	0.0040 + 0.0035	0.0050 + 0.0035	0.0005 + 0.0005
	1.000000 V	1μV	10MΩ or >10GΩ	0.0020 + 0.0006	0.0035 + 0.0007	0.0048 + 0.0007	0.0005 + 0.0001
	10.00000 V	10μV	10MΩ or >10GΩ	0.0015 + 0.0004	0.0020 + 0.0005	0.0035 + 0.0005	0.0005 + 0.0001
	100.0000 V	0.1mV	10MΩ±1%	0.0020 + 0.0006	0.0035 + 0.0006	0.0050 + 0.0006	0.0005 + 0.0001
	1000.000 V	1mV	10MΩ±1%	0.0025 + 0.0006	0.0040 + 0.0010	0.0050 + 0.0010	0.0005 + 0.0001
電阻 (1)(3)	100.0000 Ω	100μΩ	1mA	0.003 + 0.0030	0.008 + 0.004	0.010 + 0.004	0.0008 + 0.0005
	1.000000 kΩ	1mΩ	1mA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	10.00000 kΩ	10mΩ	100μA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	100.0000 kΩ	100mΩ	10μA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	1.000000 MΩ	1Ω	5μA	0.002 + 0.0010	0.008 + 0.001	0.010 + 0.001	0.0010 + 0.0002
	10.00000 MΩ	10Ω	500nA	0.015 + 0.0010	0.020 + 0.001	0.040 + 0.001	0.0030 + 0.0004
	100.0000 MΩ	100Ω	500nA/10MΩ	0.300 + 0.0100	0.800 + 0.010	0.800 + 0.010	0.1500 + 0.0002
直流電流 (1)(6)	100.0000 μA	100pA	< 0.11 V	0.010 + 0.020	0.040 + 0.025	0.050 + 0.025	0.002 + 0.003
	1.000000 mA	1nA	< 0.11 V	0.007 + 0.006	0.030 + 0.006	0.050 + 0.006	0.002 + 0.001
	10.00000 mA	10nA	< 0.04 V	0.007 + 0.020	0.030 + 0.020	0.050 + 0.020	0.002 + 0.002
	100.0000 mA	100nA	< 0.4 V	0.010 + 0.004	0.030 + 0.005	0.050 + 0.005	0.002 + 0.001
	1.000000 A	1μA	< 0.7 V	0.050 + 0.006	0.080 + 0.010	0.100 + 0.010	0.005 + 0.001
	3.000000 A	1μA	< 2.0 V	0.180 + 0.020	0.200 + 0.020	0.200 + 0.020	0.005 + 0.002
	10.00000 A	10μA	< 0.5 V	0.100 + 0.010	0.120 + 0.010	0.150 + 0.010	0.005 + 0.001

短路蜂鳴(1)	1000.000 Ω	0.001Ω	1 mA	0.002 + 0.030	0.008 + 0.030	0.01 + 0.030	0.001 + 0.002		
二極體(1)(4)	5.00000 V	10μV	1 mA	0.002 + 0.030	0.008 + 0.030	0.01 + 0.030	0.001 + 0.002		
DC Ratio (1)(5)	—	—	—	± (DC Input accuracy + DC Reference accuracy)					
交流特性 準確度：± (讀值% + 檔位%)									
True RMS 交流電壓 (7)(8)(9)(10)	100.0000 mV	0.1μV	3Hz - 5Hz	1.00 + 0.03	1.00 + 0.04	1.00 + 0.04	0.100 + 0.004		
			5Hz - 10Hz	0.35 + 0.03	0.35 + 0.04	0.35 + 0.04	0.035 + 0.004		
			10Hz - 20kHz	0.04 + 0.03	0.05 + 0.04	0.06 + 0.04	0.005 + 0.003		
			20kHz - 50kHz	0.10 + 0.05	0.11 + 0.05	0.12 + 0.05	0.011 + 0.005		
			50kHz - 100kHz	0.55 + 0.08	0.60 + 0.08	0.60 + 0.08	0.060 + 0.008		
			100kHz - 300kHz	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	0.200 + 0.020		
	1.000000 V to 750.000 V	1μV ~ 1mV	3Hz - 5Hz	1.00 + 0.02	1.00 + 0.03	1.00 + 0.03	0.100 + 0.004		
			5Hz - 10Hz	0.35 + 0.02	0.35 + 0.03	0.35 + 0.03	0.035 + 0.004		
			10Hz - 20kHz	0.04 + 0.02	0.05 + 0.03	0.06 + 0.03	0.005 + 0.003		
			20kHz - 50kHz	0.10 + 0.04	0.11 + 0.05	0.12 + 0.05	0.011 + 0.005		
			50kHz - 100kHz	0.55 + 0.08	0.60 + 0.08	0.60 + 0.08	0.060 + 0.008		
			100kHz - 300kHz	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	0.200 + 0.020		
True RMS 交流電流 (6)(7)(9)(10)	100.0000 μA	< 0.011 V	3Hz - 5Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006		
			10.00000 mA	< 0.04 V	5Hz - 10Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006
					10Hz - 5kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
					5kHz - 10kHz	0.18 + 0.04	0.18 + 0.04	0.18 + 0.04	0.030 + 0.006
			3Hz - 5Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006		

	1.000000 mA 100.0000 mA	< 0.11 V < 0.4 V	5Hz – 10Hz	0.30 + 0.04	0.30 + 0.04	0.30 + 0.04	0.035 + 0.006
			10Hz – 5kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
			5kHz – 10kHz	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.030 + 0.006
	1.000000 A	< 0.7 V	3Hz – 5Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5Hz – 10Hz	0.30 + 0.04	0.30 + 0.04	0.30 + 0.04	0.035 + 0.006
			10Hz – 5kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
			5kHz – 10kHz	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.030 + 0.006
	3.000000 A	< 0.2 V	3Hz – 5Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5Hz – 10Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006
			10Hz – 5kHz	0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.015 + 0.006
			5kHz – 10kHz	0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.030 + 0.006
	10.00000 A	< 0.5 V	3Hz – 5Hz	1.10 + 0.04	1.10 + 0.04	1.10 + 0.04	0.100 + 0.006
			5Hz – 10Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006
			10Hz – 5kHz	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.015 + 0.006
			5kHz – 10kHz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.030 + 0.006
	<b>頻率特性</b> <span style="float: right;">準確度：± (讀值%)</span>						
頻率 / 週期 (11)(12)(13)(14)	100.0000mV to 750.000V	—	3Hz - 5Hz	0.100	0.100	0.100	0.100
			5Hz - 10Hz	0.050	0.050	0.050	0.035
			10Hz - 40Hz	0.030	0.030	0.030	0.015
			40Hz -1MHz	0.006	0.006	0.006	0.015
<b>溫度特性</b>							
溫度(RTD) (15)	-200 °C ~ -100 °C	0.001 °C	—	—	—	0.09 °C	0.004 °C / °C
	-100 °C ~ -20 °C	0.001 °C	—	—	—	0.08 °C	0.005 °C / °C

	-20 °C ~ 20 °C	0.001 °C	—	—	—	0.06 °C	0.005 °C / °C
	20 °C ~ 100 °C	0.001 °C	—	—	—	0.08 °C	0.005 °C / °C
	100 °C ~ 300 °C	0.001 °C	—	—	—	0.12 °C	0.007 °C / °C
	300 °C ~ 600 °C	0.001 °C	—	—	—	0.22 °C	0.009 °C / °C
溫度(熱電偶) (15)	-200 to +1000 °C	0.002 °C	E	—	—	0.2 °C	0.03 °C / °C
	-210 to +1200 °C	0.002 °C	J	—	—	0.2 °C	0.03 °C / °C
	-200 to +400 °C	0.002 °C	T	—	—	0.3 °C	0.04 °C / °C
	-200 to +1372 °C	0.002 °C	K	—	—	0.3 °C	0.04 °C / °C
	-200 to +1300 °C	0.003 °C	N	—	—	0.4 °C	0.05 °C / °C
	-50 to +1768 °C	0.01 °C	R	—	—	1 °C	0.14 °C / °C
	-50 to +1768 °C	0.01 °C	S	—	—	1 °C	0.14 °C / °C
	+350 to +1820 °C	0.01 °C	B	—	—	1 °C	0.14 °C / °C
溫度(熱敏電阻) (15)	- 80 ° to 150 °C	0.01 °C	—	—	—	0.01 °C	0.003 °C / °C
電容特性 準確度：±(讀值% + 檔位%)							
電容 (16)	1.000 nF	—	2.00 + 2.00	2.00 + 2.00	2.00 + 2.00	0.05 + 0.01	2.00 + 2.00
	10.00 nF	—	2.00 + 1.00	2.00 + 1.00	2.00 + 1.00	0.05 + 0.01	2.00 + 1.00
	100.0 nF	—	2.00 + 0.40	2.00 + 0.40	2.00 + 0.40	0.05 + 0.01	2.00 + 0.40
	1.000 μF	—	2.00 + 0.40	2.00 + 0.40	2.00 + 0.40	0.05 + 0.01	2.00 + 0.40
	10.00 μF	—	2.00 + 0.40	2.00 + 0.40	2.00 + 0.40	0.05 + 0.01	2.00 + 0.40
	100.0 μF	—	2.00 + 0.40	2.00 + 0.40	2.00 + 0.40	0.05 + 0.01	2.00 + 0.40
顯示幕	4.3" color TFT WQVGA (480x272) with LED backlight						
介面	RS -232C, USB host/device, LAN, Digital I/O; GPIB(optional)						

使用電源	AC 100 V / 120 V / 220 V / 240 V ±10%
電源頻率	50 Hz / 60 Hz and 400 Hz ±10%
消耗功率	Max. 25VA
尺寸	267(W) x 107(H) x 302(D) mm ~ with bumper 220(W) x 88 (H) x 277(D) mm ~ without bumper
重量	Approx. 3.53kg without option

- [1]. DC Specification: In addition to the availability that requires warm-up of 60 minutes, it must be set in 5/s speed rate (60/s speed rate for Continuity and Diode), A-Zero on.
- [2]. The entire range of measurement will pass the set range by 20% except the tests of 1000 DCV, 750 ACV, 3 A DC, 3A AC, 10 A DC, 10A AC and diode.
- [3]. This specification applies to 4-wire resistance measurement, whilst it requires using "REL" function for offset on 2-wire resistance measurement. 2-wire resistance measurement will cause additional error of 0.2 Ω if REL function is not executed.
- [4]. This specification applies to the voltage measured from input terminal. 1 mA test current is the typical value. The change of current source leads to the variation in buck of diode junction.
- [5]. Accuracy is ± (DC Input accuracy + DC Reference accuracy), where Input accuracy = DC Voltage accuracy for the Input HI to LO (in % of the Input voltage), and Reference accuracy = DC Voltage accuracy for the HI to LO (Sense) Reference (in % of the Reference voltage).
- [6]. The 10 A range of measurement is available for the terminals on front panel only. Due to power factor resulting in temperature rise, 2 mA increment per one ampere when input is greater than 5 A rms.
- [7]. AC Specification: It will be available after 60 minutes of warm-up, sine wave as well as 1/s speed rate.
- [8]. Specifications are for sinewave input >5% of range. For inputs from 1% to 5% of range and <50 kHz, add 0.1% of range additional error. For 50 kHz to 100 kHz, add 0.13% of range. The measurement range of 750 ACV is limited within the range of 7.5 x 10<sup>7</sup> Volt-Hz.
- [9]. Three speed settings provided for low-frequency performance: 1/s (3 Hz), 5/s (20 Hz), 20/s (200 Hz). Additional errors will Not occur for the frequency greater than the filter settings.
- [10]. Specifications are for sinewave input >5% of range, and is beyond 10 μA AC. For inputs from 1% to 5% of range, add 0.1% of range additional error.
- [11]. This specification will be available after 60 minutes of warm-up and sine wave input, unless stated otherwise. This specification applies to 1s gate time.
- [12]. This specification is available when both sine wave and square wave input ≥ 100 mV. For the input of 10 mV to 100 mV, the % of reading error needs to be multiplied by 10 times.
- [13]. The amplitude range is from 10% to 120% and is lower than 750 ACV.
- [14]. The input ≥ 60 mV, for 300 k ~ 1 MHz, within 100mV range.
- [15]. The actual measurement range and test lead error will be constrained by the adopted test lead. The test lead accuracy adder covers all errors of measurements and ITS-90 temperature change.
- [16]. Specifications are for film Capacitance inputs that are greater than 10% range

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