

GDM-9061 規格

規格適用於在環境中熱機至少 60 分鐘時



注意：

- 所有規格僅在單一顯示下。
- 在應用這些規範之前，至少需要 1 小時的預熱時間。
- Sense LO 端子到輸入 LO 端子限制為 2 Vpk。Sense HI 端子到 Sense LO 端子限制為 200 Vpk。輸入 LO 到地限制為 500 Vpk。CAT II 300 V。最大直流 1000 V，交流 750 V

功能	檔位(2)	解析度	輸入電阻或 其他.	24 小時 TCAL ± 1 °C	90 天 TCAL ± 5 °C	1 年 TCAL ± 5 °C	溫度係數 0 °C to 18 °C / 28°C to 55 °C
準確度 : ± (讀值% + 檔位%)							
直流電壓 (1)	100.0000 mV	0.1 μV	10 MΩ or > 10 GΩ	0.0030 + 0.0030	0.0040 + 0.0035	0.0050 + 0.0035	0.0005 + 0.0005
	1.000000 V	1 μV	10 MΩ or > 10 GΩ	0.0020 + 0.0006	0.0035 + 0.0007	0.0048 + 0.0007	0.0005 + 0.0001
	10.00000 V	10 μV	10 MΩ or > 10 GΩ	0.0015 + 0.0004	0.0020 + 0.0005	0.0035 + 0.0005	0.0005 + 0.0001
	100.0000 V	0.1 mV	10 MΩ ± 1 %	0.0020 + 0.0006	0.0035 + 0.0006	0.0050 + 0.0006	0.0005 + 0.0001
	1000.000 V	1 mV	10 MΩ ± 1 %	0.0025 + 0.0006	0.0040 + 0.0010	0.0050 + 0.0010	0.0005 + 0.0001
電阻 (1)(3)	100.0000 Ω	100 μΩ	1 mA	0.003 + 0.0030	0.008 + 0.004	0.010 + 0.004	0.0008 + 0.0005
	1.000000 kΩ	1 mΩ	1 mA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	10.00000 kΩ	10 mΩ	100 μA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	100.0000 kΩ	100 mΩ	10 μA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	1.000000 MΩ	1 Ω	5 μA	0.002 + 0.0010	0.008 + 0.001	0.010 + 0.001	0.0010 + 0.0002
	10.00000 MΩ	10 Ω	500 nA	0.015 + 0.0010	0.020 + 0.001	0.040 + 0.001	0.0030 + 0.0004
	100.0000 MΩ	100 Ω	500 nA // 10 MΩ	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	100 pA	< 0.011 V	0.010 + 0.020	0.040 + 0.025	0.050 + 0.025	0.002 + 0.003
	1.000000 mA	1 nA	< 0.11 V	0.007 + 0.006	0.030 + 0.006	0.050 + 0.006	0.002 + 0.001
	10.00000 mA	10 nA	< 0.04 V	0.007 + 0.020	0.030 + 0.020	0.050 + 0.020	0.002 + 0.002
	100.0000 m A	100 nA	< 0.4 V	0.010 + 0.004	0.030 + 0.005	0.050 + 0.005	0.002 + 0.001
	1.000000 A	1 μA	< 0.7 V	0.050 + 0.006	0.080 + 0.010	0.100 + 0.010	0.005 + 0.001
	3.000000 A	1 μA	< 2.0 V	0.180 + 0.020	0.200 + 0.020	0.200 + 0.020	0.005 + 0.002
	10.00000 A	10 μA	< 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	0.001 Ω	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	10 μV	1 mA	0.002 + 0.030	0.008 + 0.030	0.01 + 0.030	0.001 + 0.002

DC Ratio (1)(5)	—	—	—	\pm (DC Input accuracy + DC Reference accuracy)			
交流特性							準確度 : \pm (讀值% + 檔位%)
True RMS 交流電壓 (7)(8)(9)(10)	100.0000 mV	0.1 μ V	3 Hz to 5 Hz	1.00 + 0.03	1.00 + 0.04	1.00 + 0.04	0.100 + 0.004
			5 Hz to 10 Hz	0.35 + 0.03	0.35 + 0.04	0.35 + 0.04	0.035 + 0.004
			10 Hz to 20 kHz	0.04 + 0.03	0.05 + 0.04	0.06 + 0.04	0.005 + 0.003
			20 kHz to 50 kHz	0.10 + 0.05	0.11 + 0.05	0.12 + 0.05	0.011 + 0.005
			50 kHz to 100 kHz	0.55 + 0.08	0.60 + 0.08	0.60 + 0.08	0.060 + 0.008
			100 kHz to 300 kHz	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	0.200 + 0.020
	1.000000 V to 750.000 V	1 μ V to 1 mV	3 Hz to 5 Hz	1.00 + 0.02	1.00 + 0.03	1.00 + 0.03	0.100 + 0.004
			5 Hz to 10 Hz	0.35 + 0.02	0.35 + 0.03	0.35 + 0.03	0.035 + 0.004
			10 Hz to 20 kHz	0.04 + 0.02	0.05 + 0.03	0.06 + 0.03	0.005 + 0.003
			20 kHz to 50 kHz	0.10 + 0.04	0.11 + 0.05	0.12 + 0.05	0.011 + 0.005
True RMS 交流電流 (6)(7)(9)(10)	100.0000 μ A 10.00000 mA	< 0.011 V < 0.04 V	50 kHz to 100 kHz	0.55 + 0.08	0.60 + 0.08	0.60 + 0.08	0.060 + 0.008
			100 kHz to 300 kHz	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	0.200 + 0.020
			3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006
	1.000000 mA 100.0000 mA	< 0.11 V < 0.4 V	10 Hz to 5 kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.18 + 0.04	0.18 + 0.04	0.18 + 0.04	0.030 + 0.006
			3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.30 + 0.04	0.30 + 0.04	0.30 + 0.04	0.035 + 0.006
	1.000000 A 100.0000 A	< 0.7 V	10 Hz to 5 kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.030 + 0.006
			3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.30 + 0.04	0.30 + 0.04	0.30 + 0.04	0.035 + 0.006
頻率特性	100.0000 mV to 750.000 V	< 0.2 V	10 Hz to 5 kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.015 + 0.006
			3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006
			10 Hz to 5 kHz	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.030 + 0.006
			3 Hz to 5 Hz	1.10 + 0.04	1.10 + 0.04	1.10 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006
溫度特性	10.00000 A	< 0.5 V	10 Hz to 5 kHz	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.030 + 0.006
			3 Hz to 5 Hz	1.10 + 0.04	1.10 + 0.04	1.10 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006

溫度(RTD) (15)	-100 °C to -20 °C	0.001 °C	—	—	—	0.08 °C	0.005 °C / °C
	-20 °C to 20 °C	0.001 °C	—	—	—	0.06 °C	0.005 °C / °C
	20 °C to 100 °C	0.001 °C	—	—	—	0.08 °C	0.005 °C / °C
	100 °C to 300 °C	0.001 °C	—	—	—	0.12 °C	0.007 °C / °C
	300 °C to 600 °C	0.001 °C	—	—	—	0.22 °C	0.009 °C / °C
溫度(熱電偶) (15)	-200 °C to +1000 °C	0.002 °C	E	—	—	0.2 °C	0.03 °C / °C
	-210 °C to +1200 °C	0.002 °C	J	—	—	0.2 °C	0.03 °C / °C
	-200 °C to +400 °C	0.002 °C	T	—	—	0.3 °C	0.04 °C / °C
	-200 °C to +1372 °C	0.002 °C	K	—	—	0.3 °C	0.04 °C / °C
	-200 °C to +1300 °C	0.003 °C	N	—	—	0.4 °C	0.05 °C / °C
	-50 °C to +1768 °C	0.01 °C	R	—	—	1 °C	0.14 °C / °C
	-50 °C to +1768 °C	0.01 °C	S	—	—	1 °C	0.14 °C / °C
	+350 °C to +1820 °C	0.01 °C	B	—	—	1 °C	0.14 °C / °C
溫度(熱敏電阻) (15)	-80 °C to 150 °C	0.01 °C	—	—	—	0.01 °C	0.003 °C / °C
電容特性							
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. 25 VA						
尺寸	267(W) mm x 107(H) mm x 302(D) mm ~ with bumper 220(W) mm x 88 (H) mm x 277(D) mm ~ without bumper						
重量	Approx. 3.53 kg 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, 3 A AC, 10 A DC, 10 A 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 7.5×10^7 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 1 s 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 kHz to 1 MHz, within 100 mV 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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