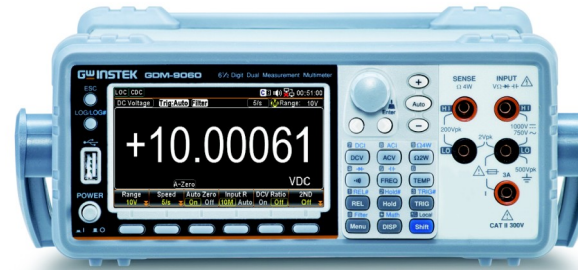


GDM-9060 規格

規格適用於 GDM-9060 規格在環境中熱機至少 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 / 28°~ 55°C |
|---------------------|-------------|-------|---------------|--------------------|-------------------|------------------|---------------------------------|
| 準確度 : ± (讀值% + 檔位%) | | | | | | | |
| 直流電壓 (1) | 100.0000 mV | 0.1μV | 10MΩ or >10GΩ | 0.0040 + 0.0060 | 0.0070 + 0.0065 | 0.0090 + 0.0065 | 0.0005 + 0.0005 |
| | 1.000000 V | 1μV | 10MΩ or >10GΩ | 0.0030 + 0.0009 | 0.0060 + 0.0010 | 0.0080 + 0.0010 | 0.0005 + 0.0001 |
| | 10.00000 V | 10μV | 10MΩ or >10GΩ | 0.0025 + 0.0004 | 0.0050 + 0.0005 | 0.0075 + 0.0005 | 0.0005 + 0.0001 |
| | 100.0000 V | 0.1mV | 10MΩ±1% | 0.0030 + 0.0006 | 0.0065 + 0.0006 | 0.0085 + 0.0006 | 0.0005 + 0.0001 |
| | 1000.000 V | 1mV | 10MΩ±1% | 0.0030 + 0.0006 | 0.0065 + 0.0010 | 0.0085 + 0.0010 | 0.0005 + 0.0001 |
| 電阻 (1)(3) | 100.0000 Ω | 100μΩ | 1mA | 0.004 + 0.0060 | 0.011 + 0.007 | 0.014 + 0.007 | 0.0006 + 0.0005 |
| | 1.000000 kΩ | 1mΩ | 1mA | 0.003 + 0.0008 | 0.011 + 0.001 | 0.014 + 0.001 | 0.0006 + 0.0001 |
| | 10.00000 kΩ | 10mΩ | 100μA | 0.003 + 0.0005 | 0.011 + 0.001 | 0.014 + 0.001 | 0.0006 + 0.0001 |
| | 100.0000 kΩ | 100mΩ | 10μA | 0.003 + 0.0005 | 0.011 + 0.001 | 0.014 + 0.001 | 0.0006 + 0.0001 |
| | 1.000000 MΩ | 1Ω | 5μA | 0.003 + 0.0010 | 0.011 + 0.001 | 0.014 + 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 | < 0.011 V | 0.010 + 0.020 | 0.040 + 0.025 | 0.050 + 0.025 | 0.0020 + 0.0030 |
| | 1.000000 mA | 1nA | < 0.11 V | 0.007 + 0.006 | 0.030 + 0.006 | 0.050 + 0.006 | 0.0020 + 0.0005 |
| | 10.00000 mA | 10nA | < 0.04 V | 0.007 + 0.020 | 0.030 + 0.020 | 0.050 + 0.020 | 0.0020 + 0.0020 |
| | 100.0000 mA | 100nA | < 0.4 V | 0.010 + 0.004 | 0.030 + 0.005 | 0.050 + 0.005 | 0.0020 + 0.0005 |

| | | | | | | | | |
|-------------------------------|-----------------|----------------------------|----------------|---|---------------|---------------|-----------------|---------------|
| | 1.000000 A | 1μA | < 0.7 V | 0.050 + 0.006 | 0.080 + 0.010 | 0.100 + 0.010 | 0.0050 + 0.0010 | |
| | 3.000000 A | 1μA | < 2.0 V | 0.180 + 0.020 | 0.200 + 0.020 | 0.200 + 0.020 | 0.0050 + 0.0020 | |
| 短路蜂鳴 (1) | 1000.000 Ω | 0.001Ω | 1 mA | 0.003 + 0.030 | 0.011 + 0.030 | 0.014 + 0.030 | 0.0010 + 0.0020 | |
| 二極體(1)(4) | 5.00000 V | 10μV | 1 mA | 0.003 + 0.030 | 0.011 + 0.030 | 0.014 + 0.030 | 0.0010 + 0.0020 | |
| 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 (6)(7)(8) | 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 | 0.38 + 0.03 | 0.38 + 0.04 | 0.38 + 0.04 | 0.035 + 0.003 | |
| | | | 10Hz - 20kHz | 0.07 + 0.03 | 0.08 + 0.04 | 0.09 + 0.04 | 0.005 + 0.003 | |
| | | | 20kHz - 50kHz | 0.13 + 0.04 | 0.14 + 0.05 | 0.15 + 0.05 | 0.011 + 0.005 | |
| | | | 50kHz - 100kHz | 0.58 + 0.08 | 0.63 + 0.08 | 0.63 + 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 | 0.38 + 0.02 | 0.38 + 0.03 | 0.38 + 0.03 | 0.035 + 0.003 |
| | | | | 10Hz - 20kHz | 0.07 + 0.02 | 0.08 + 0.03 | 0.09 + 0.03 | 0.005 + 0.003 |
| | | | | 20kHz - 50kHz | 0.13 + 0.04 | 0.14 + 0.05 | 0.15 + 0.05 | 0.011 + 0.005 |
| | 50kHz - 100kHz | | | 0.58 + 0.08 | 0.63 + 0.08 | 0.63 + 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)(8)(9) | 100.0000 μA | < 0.011 V | | 1.00 + 0.04 | 1.00 + 0.04 | 1.00 + 0.04 | 0.100 + 0.006 | |
| | 10.00000 mA | < 0.04 V | 3Hz - 5Hz | | | | | |
| | | | 5Hz - 10Hz | 0.38 + 0.04 | 0.38 + 0.04 | 0.38 + 0.04 | 0.035 + 0.006 | |
| | | | 10Hz - 5kHz | 0.13 + 0.04 | 0.13 + 0.04 | 0.13 + 0.04 | 0.015 + 0.006 | |

| | | | | | | | |
|-----------------------------|----------------------------|-------------------|--------------|-------------|-------------|-------------|---------------|
| | 1.000000 mA 100.0000 mA | < 0.11 V 0.4 V | 5kHz – 10kHz | 0.20 + 0.04 | 0.20 + 0.04 | 0.20 + 0.04 | 0.030 + 0.006 |
| | | | 3Hz – 5Hz | 1.00 + 0.04 | 1.00 + 0.04 | 1.00 + 0.04 | 0.100 + 0.006 |
| | | | 5Hz – 10Hz | 0.33 + 0.04 | 0.33 + 0.04 | 0.33 + 0.04 | 0.035 + 0.006 |
| | | | 10Hz – 5kHz | 0.13 + 0.04 | 0.13 + 0.04 | 0.13 + 0.04 | 0.015 + 0.006 |
| | 1.000000 A | < 0.7 V | 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 |
| | | | 5Hz – 10Hz | 0.33 + 0.04 | 0.33 + 0.04 | 0.33 + 0.04 | 0.035 + 0.006 |
| | | | 10Hz – 5kHz | 0.13 + 0.04 | 0.13 + 0.04 | 0.13 + 0.04 | 0.015 + 0.006 |
| | 3.000000 A | < 0.2 V | 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 |
| | | | 5Hz – 10Hz | 0.38 + 0.04 | 0.38 + 0.04 | 0.38 + 0.04 | 0.035 + 0.006 |
| | | | 10Hz – 5kHz | 0.23 + 0.04 | 0.23 + 0.04 | 0.23 + 0.04 | 0.015 + 0.006 |
| 頻率特性 | | | | | | | 準確度：± (讀值%) |
| 頻率 / 週期 (10)(11)(12)(13) | 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 |
| 溫度特性 | | | | | | | |
| 溫度(RTD) (14) | -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) (14) | -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) (14) | - 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 (15) | 1.000 nF | — | 2.00 + 2.00 | 2.00 + 2.00 | 2.00 + 2.00 | 0.05 + 0.05 | 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 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 \pm (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]. AC Specification: It will be available after 60 minutes of warm-up, sine wave as well as 1/s speed rate.
- [7]. 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.
- [8]. 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.
- [9]. Specifications are for sinewave input >5% of range, and is beyond 10 μ A AC. For inputs from 1% to 5% of range, add 0.1% of range additional error.
- [10]. 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.
- [11]. This specification is available when both sine wave and square wave input \geq 100 mV. For the input of 10 mV to 100 mV, the % of reading error needs to be multiplied by 10 times.
- [12]. The amplitude range is from 10% to 120% and is lower than 750 ACV.
- [13]. The input \geq 60 mV, for 300 k \sim 1 MHz, within 100mV range.
- [14]. 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.
- [15]. Specifications are for film Capacitance inputs that are greater than 10% range

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