

DM 100 Digital Multimeter

digimess® compact

Order no.: H.UC 50-00



The digital multimeter DM 100 is yet another addition to the GRUNDIG electronics range of innovative service measuring instruments. Like the others in the range, the DM 100 is based on a sophisticated microprocessor-controlled operating concept and offers extensive self-test functions. User guidance takes place via an LCD.

This device is equipped with a special feature allowing all measurements (with the exception of voltage measurements in the 1 kV range) to be performed via two input sockets. This greatly reduces the risk of damage to the device in the event of a faulty measurement.

All the settings are carried out using only a few keys. This operating concept is in line with the GRUNDIG electronics objective of allowing the user to work with the instrument after just a few minutes without having to refer to written documentation.

The DM 100 is a 4½-digit multimeter with a maximum DC voltage measuring error of 0.05% of full scale

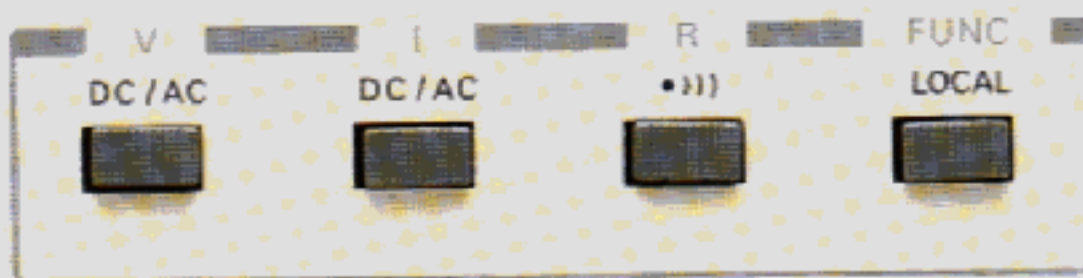
+ 0.05% of the measured value and a DC current measuring error of 0.1% of f.s. + 0.05% of m.v. in all current and voltage measuring ranges. Measuring functions such as auto ranging, hold range, unit display and true r.m.s. measurement are, of course, provided.

The measuring mode can be set to either fast or slow. The device is equipped with offset correction and automatic calibration which can be applied as required. Five different means of relative measured value representation, including dB measurement, are available (selectable over menu).

All the functions of the instrument can be controlled via the built-in RS-232 C interface.

The DM 100 is suitable for a wide range of applications in the fields of research, production, training and service due to its performance data and its unbeatable price/performance ratio.

Measuring with the DM 100 is so simple!

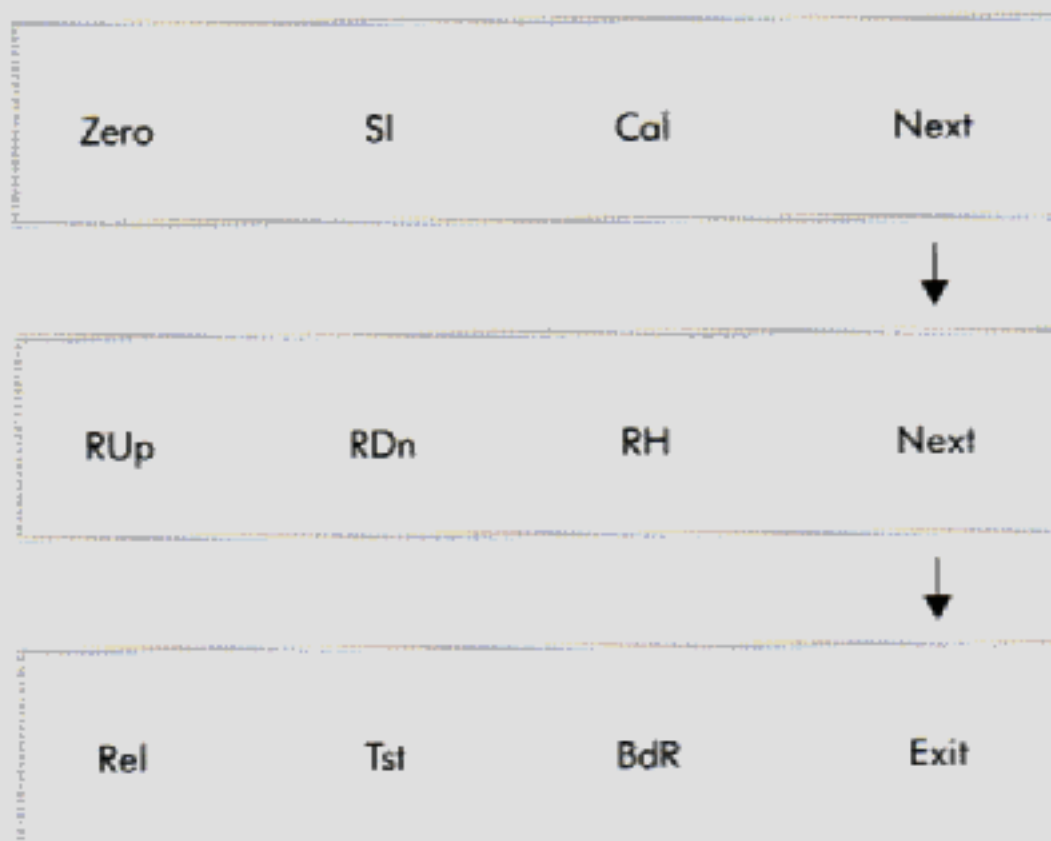
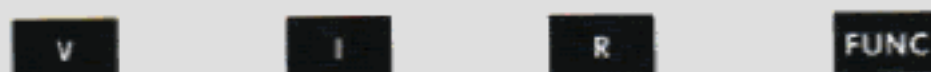


Current, voltage and resistance measuring can be selected directly using the corresponding function keys. After the mains voltage has been switched on,

the device is ready for DC voltage measuring and auto ranging is active.

Three further menu levels can be reached using the FUNC key.

Key:



Individual menu items offer additional selection alternatives if the appropriate key is pressed repeatedly.

Example:
Press the BdR key.

Display:
1200 → 2400 →
4800 → 9600 →
1200
(one after the other)

Explanation of menu displays:

- Zero : Offset correction on/off
- SI : Slow measuring mode (max. 5 measurements/sec) on/off
- Cal : Auto calibration on/off
- Next : Proceed to next menu level
- RUp : Increase measuring range (Range Up)
- RDn : Decrease measuring range (Range Down)
- RH : Auto ranging on/off
- Rel : Relative measuring on/off
Selection of five relative measurement alternatives
- Tst : Perform self-test
- BdR : Adjustment of baud rate for remote control
- Exit : Exit menu. Return to default status

Technical data

Measuring functions

- AC and DC voltage measurement
- AC and DC current measurement
- Resistance measurement
- Continuity test with acoustic signal

Special characteristics of device

- Offset correction using the ZERO function
- Suppression of auto calibration
- Automatic selection of measuring range using the Hold function
- Relative representation of measured value: Relation to reference value, deviation from reference value (absolute and percentage), product with reference value, dB
- Internal test procedures
- Remote control via RS-232 C

Calibration data	Duration: approx. 14 secs, Interval: ≥ 20 mins
Warm-up time	15 mins
Measuring range switchover	Automatic/manual
Measuring rates	5 or 25 measurements/sec
Display	16-digit alphanumeric LCD, backlit
Display contents	Function menu, measuring parameters, key functions, data transmission parameters (for remote control)
Output format	a, "Measuring parameter Measured value Unit of measurement" b, "Type of measured value representation Value"

Voltage measurement

Maximum voltage at input sockets:
(DC voltage value V_{DC} or r.m.s. of the AC voltage V_{rms})

Input sockets	Range	$U_{max} = V_{rms}$	Load duration
L – GND	–	500 V	constant
H – GND	–	1000 V	constant
H _{1kV} – GND	–	1500 V	constant
H – L	200 mV	150 V 250 V	constant 5 secs
	2 V	150 V 250 V	constant 5 secs
	20 V 200 V	500 V 500 V	constant constant
H _{1kV} – L	1000 V	1000 V	constant

DC voltage measurement

Measuring range	Resolution (LSD)
200 mV	10 μ V
2 V	100 μ V
20 V	1 mV
200 V	10 mV
2000 V *	100 mV

* Measurements only possible up to 1000 V

Input resistance	10 M Ω
Measuring accuracy	0.05% f.s. + 0.05% of m.v. (valid for up to 6 months following calibration by manufacturer)

AC voltage measurement (r.m.s. measurement)

Measuring range	Resolution (LSD)
200 mV	10 μ V
2 V	100 μ V
20 V	1 mV
200 V	10 mV
2000 V *	100 mV

* Measurements only possible up to 1000 V

Frequency range	20 Hz \leq f \leq 20 kHz
Input resistance	R _p - 10 M Ω , C _p - 45 pF
Measuring accuracy	Specified in the frequency range 20 Hz to 2 kHz (valid for up to 6 months following calibration by manufacturer)
Crest factor	2

Resistance measurement

Maximum voltage at input sockets:
(DC voltage value V_{DC} or r.m.s. of the AC voltage V_{rms})

Input sockets	$U_{eff} = V_{rms}$	Load duration
H - GND	500V	constant
H - L	15V	constant
L - GND	500V	constant

Measuring range	Resolution (LSD)	Measured current
200 Ω	10 m Ω	1 mA
2 k Ω	100 m Ω	1 mA
20 k Ω	1 Ω	10 μ A
200 k Ω	10 Ω	10 μ A
2 M Ω	100 Ω	1 μ A
20 M Ω	1 k Ω	100 nA

Measuring accuracy	0.05% of f.s. + 0.1% of m.v. (valid for up to 6 months following calibration by manufacturer)
Continuity test with acoustic signal	R < 10 Ω < 10 (with relative representation of measured value)

Current measurement

Maximum input currents I_m for input sockets: (DC current value or r.m.s. of the input signal)

Range	I_m	Load duration
200 μ A	1 A 10 A	constant 10 secs
2 mA	1 A 10 A	constant 10 secs
20 mA	1 A 10 A	constant 10 s
200 mA	2 A 10 A	constant 10 s
2 A	4 A 10 A	constant 10 secs
20 A *	10 A	constant

* Measurements only possible up to 10 A

DC current measurement

Measuring range	Resolution (LSD)	Voltage drop
200 μ A	10 nA	200 mV
2 mA	100 nA	200 mV
20 mA	1 μ A	200 mV
200 mA	10 μ A	220 mV
2 A	100 μ A	300 mV
20 A *	1 mA	600 mV

* Measurements only possible up to 10 A

Measuring accuracy 0.1% of f.s. + 0.05% of m.v. (valid for up to 6 months following calibration by manufacturer)

AC current measurement (r.m.s. measurement)

Measuring range	Resolution (LSD)	Voltage drop (100 Hz)
200 μ A	10 nA	200 mV
2 mA	100 nA	200 mV
20 mA	1 μ A	200 mV
200 mA	10 μ A	220 mV
2 A	100 μ A	300 mV
20 A *	1 mA	600 mV

* Measurements only possible up to 10 A

Frequency range 20 Hz \leq f \leq 20 kHz

Measuring accuracy 0.2% of f.s. + 0.3% of m.v. Specified in the frequency range 20 Hz to 2 kHz (valid for up to 6 months following calibration by manufacturer)

Crest factor 2