

Digital Multimeters

DL-712 (Accuracy $\pm 0.1\%$) /DL-711 (Accuracy $\pm 0.5\%$)

OUTLINE

The DL-712 and DL-711 are 3-1/2 digit digital multimeters designed to meet your requirements for accurate measurements combined with simple operation. Both are compact and packed with convenient features including large, easy-to-read LCD, a beeper continuity test function and a measurement data hold function.

FEATURES

Easy-to-read Digital Display

An FE type LCD is used to provide digital readings (maximum value 1999) visible even in bright locations.

Wide Range

The multimeters measure DC voltage (5 ranges), AC voltage (4 ranges), resistance (6 ranges), DC current (5 ranges) and AC current (5 ranges).

DC V: 100 μ V - 1000 V/AC V: 1 mV - 750 V/ Ω : 100 m Ω - 19.99M Ω /
DC A: 0.1 μ A - 10.00 A/AC A: 0.1 μ A - 10.00 A

High Accuracy

Measurement accuracy of the DL-712 is $\pm 0.1\%$ of reading ± 1 digit in the 2000 mV DC range (corresponding to ± 2 mV when measuring 1 V). (It is 0.5% of reading 1 digit with the DL-711.)

Autoranging

When measuring DC voltage, AC voltage or resistance, a convenient autoranging function selects the range automatically.

Continuity Check

This function does not measure the resistance but simply detects the open or short of a circuit. The electronic beeper function provides buzzer sound when short circuit is detected.

Low Power Consumption

By using C-MOS and LSI devices in conjunction with an LCD display, power consumption has been drastically reduced, enabling 1,000 hours of continuous operation by 4 batteries (IEC R14). The multimeters can also be powered from an external DC power supply.

Data Hold

A data hold function maintains the measured value on the display. (The data hold function is externally controllable.)

Other Features

Protection against maximum input level. Diode checking. Automatic polarity switching. Overflow display. Battery low indicator.



SPECIFICATIONS

Model		DL-712	DL-711		
Range	Resolution				
DC Voltage		Accuracy (at 23 ± 5 °C, 80% RH or lower)		Input impedance	
200mV	100µV	± 0.1% of rdg ± 2digits	± 0.5% of rdg ± 2digits	1000MΩ (min.)	
2000mV	1mV	± 0.1% of rdg ± 1digit	± 0.5% of rdg ± 1digit	11MΩ ± 2%	
20V	10mV			± 1100V DC or 850V AC	
200V	100mV				10MΩ ± 2%
1000V	1V				

Manual and automatic ranging

AC voltage		Accuracy (at 23 ± 5 °C, 80% RH or lower)	Input impedance	Maximum input
2000mV	1mV	± 0.75% of rdg ± 3digits	11MΩ ± 2%	± 1100V DC
20V	10mV			
200V	100mV		10MΩ ± 2%	or 850V AC
750V	1V			

Manual and automatic ranging /Average-type rectification (calibrated to rms values), frequency response: 40 to 500Hz

DC Current		Accuracy (at 23 ± 5 °C, 80% RH or lower)	Maximum Current
200µA	100nA	± 0.75% of rdg ± 1digit	200mA
2000µA	1µA		
20mA	10µA		
200mA	100µA	± 1% of rdg ± 2digits	10A
10A	10mA	± 1.2% of rdg ± 2digits	

Manual ranging only /In the 200µA to 200mA range, fuse protection is provided for applied currents of over 200mA.

AC Current		Accuracy (at 23 ± 5 °C, 80% RH or lower)	Maximum Current
200µA	100nA	± 1% of rdg ± 3digits	200mA
2000µA	1µA		
20mA	10µA		
200mA	100µA	± 1.2% of rdg ± 3digits	10A
10A	10mA	± 1.5% of rdg ± 5digits	

Manual ranging only/Average-type rectification (calibrated to rms values), frequency response: 40 to 500Hz

In the 200µA to 200mA range, fuse protection is provided for applied currents of over 200mA.

Resistance		Accuracy (at 23 ± 5 °C, 80% RH or lower)	Open-circuit Voltage	Maximum Current	
200Ω	100mΩ	± 0.2% of rdg ± 3digits	1.8V (max.)	0.55mA	
2000Ω	1Ω	± 0.2% of rdg ± 1digit	0.8V (max.)	86µA	
20kΩ	10Ω			± 0.5% of rdg ± 1digit	22µA
200kΩ	100Ω			± 1% of rdg ± 1digit	0.4µA
2000kΩ	1kΩ	± 1% of rdg ± 1digit		40µA	
20MΩ	10kΩ	± 2% of rdg ± 2digits			

Manual and automatic ranging, maximum allowable voltage: ± 250V DC/250Vrms

General Specifications

Continuity test

Test range 200Ω Range
Beeper sounds at less approx. 20Ω

Diode check

Measurement current Approx. 1mA
Display accuracy ± 5% of rdg ± 1digit
Open-circuit voltage Approx. 2.8V

Display FE-Type LCD panel (with unit indicators)

Maximum display 1999 or - 1999

A-D conversion Drift-compensated integration type

Polarity Automatic switching

Overrange 1 or - 1 display in the most significant digit only (displays of decimal point and units remain)

Range switching Automatic and manual (manual only for DC and AC current)

Automatic range switching at 1999 for up ranging and 179 for down ranging.

Sampling time Approx. 500ms/sample

Power supply Batteries (IEC R14) (4) (approx. 1000 hours of continuous operation with manganese batteries). In addition, operation is possible using an external DC supply (4.5 to 9V DC, approx. 10mA)

Dimensions 162 (W) × 60 (H) × 130 (D) mm

Weight Approx. 610g (including batteries)

Accessories Instruction manual (1),
measurement leads (1 pair),
batteries (IEC R14) (4), fuse (1)