

LCR-Meter HM8018

HM8018



HZ19 SMD Test Tweezers



Option HZ18 Kelvin test lead



Mainframe HM8001-2
required for operation

- Measurement functions: L, C, R, Θ , D, |Z|
- Basic accuracy 0.2%
- 5 measurement frequencies:
100Hz, 120Hz, 1kHz, 10kHz, 25kHz
- Max. Resolution: 0.001 Ω , 0.001pF, 0.01 μ H
- 2- and 4-wire measurement, parallel and series mode

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All data valid at 23 °C after 30 minute warm-up

Measurement functions

Measuring modes:	R, L, C, Θ , Q/D, Z
Equivalent circuits:	serial, parallel
Measuring method:	2-wire, 4-wire
Measuring ranges:	R: 0.001 Ω ...99.9 M Ω C: 0.001 pF...99.9 mF L: 0.01 μ H...9999 H Q: 0.0001...99.9 D: 0.0001...9.9999 Θ : [-180.00°]...[+180.00°]
Basic accuracy:	0.2%
Measuring frequencies:	100 Hz, 120 Hz, 1 kHz, 10 kHz, 25 kHz
Freq. Accuracy:	\pm 100 ppm (except 120 Hz: 120.2 Hz \pm 100 ppm)
Measuring voltage:	0.5 V _{rms} \pm 10% (unloaded)
Measuring rate:	2 measurements/second
Range changing:	automatic, manual
DC Bias voltage:	1 V \pm 10%
Zero setting:	Open/short circuit compensation
Compensation limits:	Short: R < 10 Ω Z < 15 Ω Open: Z > 10 k Ω

Measurement accuracy

with $D < 0.1$ or $Q > 10$:

$$C: A_e = A_f \left(1 + \frac{C_x}{C_{max}} + \frac{C_{min}}{C_x} \right)$$

$$L: A_e = A_f \left(1 + \frac{L_x}{L_{max}} + \frac{L_{min}}{L_x} \right)$$

$$Z: A_e = A_f \left(1 + \frac{Z_x}{Z_{max}} + \frac{Z_{min}}{Z_x} \right)$$

$$R: A_e = A_f \left(1 + \frac{R_x}{R_{max}} + \frac{R_{min}}{R_x} \right)$$

with $D \geq 0.1$: $A_e = \sqrt{1 + D_x^2}$

with the parameters:

C_x = Measurement value
 A_f = 0.2% at f = 100 Hz, 120 Hz, 1 kHz
 A_f = 0.3% at f = 10 kHz
 A_f = 0.5% at f = 25 kHz

Parameter	Auto Range
C_{max}	160 μ F/f
C_{min}	53 pF/f
L_{max}	480 H/f
Z_{max}, R_{max}	3 M Ω
Z_{min}, R_{min}	1 m Ω

Dissipation factor accuracy: $D_e = \pm \frac{A_e}{100}$

Quality factor accuracy: $Q_e = \frac{Q_x^2 \cdot D_e}{1 \pm D_x \cdot D_e}$

Phase angle accuracy: $\Theta_e = \frac{180}{\pi} \cdot \frac{A_e}{100}$

Display

5-digits 7-Segment LEDs with sign

Display Parameters:

Value	} Calculation from measurement value and reference value stored
% Value	
% Deviation	
% Offset	

Miscellaneous

The inputs are short-circuit-proof and overvoltage protected up to 100 V_{DC} with a maximum energy consumption of 1 J. One configuration can be saved.

Power supply

(from mainframe): +5 V/300 mA
+5.2 V/50 mA
-5.2 V/50 mA
(Σ = 2 W)

Operating temperature: +5°C...+40°C

Storage temperature: -20°C...+70°C

Rel. humidity: 5%...80% (non condensing)

Dimensions (W x H x D) (without 22-pole flat plug):

135 x 68 x 228 mm

Weight: approx. 0.5 g

Included in delivery: Operator's Manual

Optional accessories: HZ18 Kelvin test lead, HZ10S/R Silicone test lead

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