

25kHz LCR-Meter HM8018



HM8018

Option HZ19 SMD Test
Tweezers



Option HZ18 Kelvin Test
Lead



Mainframe HM8001-2
required for Operation

- ✓ Measurement Functions: L, C, R, Θ , Q/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 serial Mode

25 kHz-LCR-Meter HM8018

All data valid at 23 °C after 30 minutes 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...9.999 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:	± 100 ppm (except 120 Hz: 120.2 Hz ± 100 ppm)
Measuring voltage:	0.5 V _{rms} ± 10 % (unloaded)
Measuring rate:	2 measurements/second
Range changing:	automatic, manual
DC Bias voltage:	1 V ± 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	$C: A_e = A_f \times A_d (1 + C_x/C_{max} + C_{min}/C_x)$ $L: A_e = A_f \times A_d (1 + L_x/L_{max} + L_{min}/L_x)$ $Z: A_e = A_f (1 + Z_x/Z_{max} + Z_{min}/Z_x)$ $R: A_e = A_f \times A_d (1 + R_x/R_{max} + R_{min}/R_x)$ $A_d = 1$ for D < 0.1
with D ≥ 0.1	$A_d = \sqrt{1 + D^2}$
with the parameters	C_x, L_x, Z_x, R_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 (f in kHz)
C _{min}	53 pF/f (f in kHz)
L _{max}	480 H/f (f in kHz)
L _{min}	0.16 mH/f (f in kHz)
Z _{max} , R _{max}	3 M Ω
Z _{min} , R _{min}	0.5 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 100V_{dc} with a maximum energy consumption of 1 J.
One configuration can be saved.

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

Operating temperature: +5...+40 °C

Storage temperature: -20...+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 kg

Included in delivery: Operating manual, CD

Recommended accessories:

HZ10S	5 x silicone test lead (measurement connection in black)
HZ10R	5 x silicone test lead (measurement connection in red)
HZ10B	5 x silicone test lead (measurement connection in blue)
HZ17	Kelvin test lead (4-wire) with probe tips
HZ18	Kelvin test lead (4-wire) with gold plated contacts
HZ19	Kelvin test lead (4-wire) with SMD-Test-tweezers