

## 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,  $\Theta$ , Q/D, |Z|
- Basic Accuracy 0.2%
- 5 Measurement Frequencies:  
100Hz, 120Hz, 1kHz, 10kHz, 25kHz
- Max. Resolution: 0.001 $\Omega$ , 0.001pF, 0.01 $\mu$ 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

<b>Measuring modes:</b>	R, L, C, $\Theta$ , Q/D,  Z
<b>Equivalent circuits:</b>	serial, parallel
<b>Measuring method:</b>	2-wire, 4-wire
<b>Measuring ranges:</b>	R: 0.001 $\Omega$ ...99.9 M $\Omega$ C: 0.001 pF...99.9 mF L: 0.01 $\mu$ H...9.999 H Q: 0.0001...99.9 D: 0.0001...9.9999 $\Theta$ : (-180.00°)...(+180.00°)
<b>Basic accuracy:</b>	0.2%
<b>Measuring frequencies:</b>	100 Hz, 120 Hz, 1 kHz, 10 kHz, 25 kHz
<b>Freq. Accuracy:</b>	$\pm$ 100 ppm (except 120 Hz: 120.2 Hz $\pm$ 100 ppm)
<b>Measuring voltage:</b>	0.5V <sub>rms</sub> $\pm$ 10% (unloaded)
<b>Measuring rate:</b>	2 measurements/second
<b>Range changing:</b>	automatic, manual
<b>DC Bias voltage:</b>	1V $\pm$ 10%
<b>Zero setting:</b>	Open/short circuit compensation
<b>Compensation limits:</b>	Short: R < 10 $\Omega$ Z < 15 $\Omega$ Open: Z > 10 k $\Omega$

### 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 $\geq$ 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 $\mu$ 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 $\Omega$
$Z_{min}, R_{min}$	0.5 $\Omega$

<b>Dissipation factor accuracy:</b>	$D_e = \pm \frac{A_e}{100}$
<b>Quality factor accuracy:</b>	$Q_e = \frac{Q_x^2 \cdot D_e}{1 \pm D_x \cdot D_e}$
<b>Phase angle accuracy:</b>	$\Theta_e = \frac{180}{\pi} \cdot \frac{A_e}{100}$

### 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<sub>dc</sub> with a maximum energy consumption of 1 J. One configuration can be saved.

<b>Power supply</b>	+5V/300 mA
<b>(from mainframe):</b>	+5.2 V/50 mA -5.2 V/50 mA ( $\Sigma$ = 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

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