LCR-Meter
HM8018

Measurement functions: L, C, R, Θ, Q, D, |Z|
Basic accuracy 0.2 %

5 measurement frequencies: 100 Hz, 120 Hz, 1 kHz, 10 kHz, 25 kHz

Max. Resolution: 0.001 Ω, 0.001 pF, 0.01 µH

2- and 4-wire measurement

Measurement of series and parallel components

Bias voltage for electrolyt capacitors

Mainframe HM8001-2 required for operation

Mainframe HM8001-2

Option HZ18 Kelvin test lead

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 MΩ
	C: 0.001 pF – 99.9 mF
	L: 0.01 µH – 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:	± 100 ppm
	(except 120 Hz: 120.2 Hz ± 100 ppm)
Measuring voltage:	0.5 V_{eff} ±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 kΩ

Measurement accuracy

with D‹0.1 or Q›10:	C: $A_e = A_f (1+C_x/C_{max} + C_{min}/C_x)$
	L: $A_e = A_f (1+L_x/L_{max} + L_{min}/L_x)$
	Z: $A_e = A_f (1+Z_x/Z_{max} + Z_{min}/Z_x)$
	R: $A_e = A_f (1+R_x/R_{max} + R_{min}/R_x)$
with D≥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 = 1 0 kHz
	$A_f = 0.5 \%$ at f = 25 kHz

Parameter	Auto Range
C_{max}	160 µF/f
C_{min}	53 pF/f
L_{max}	480 H/f
Z_{max}, R_{max}	3 MΩ
Z_{min}, R_{min}	1 Ω

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

Display

5-digits 7-Segment LEDs with sign

Display Parameters:	
Value	
% Value	Calculation from measurement
Deviation	value and reference value stored
% 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.

Operating temperature:	+10 °C ... 40 °C
Max. relative humidity:	80 %
Power supply	
(from mainframe):	+5 V/300 mA
	+5.2 V/50 mA
	-5.2 V/50 mA
	($\sum$ = 2 W)
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: LCR Meter HM8018, Operator's Manual
Optional accessories:
HZ18 Kelvin test lead
HZ10S/R Silicone test lead

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