HAMEG Instruments

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: 0.001Ω, 0.001pF, 0.01µH
- ☑ 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 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_{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 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 = 10 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 mΩ

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
% Value
Deviation
% Offset

} Calculation from measurement value and reference value stored

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 (∑ = 2W)
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: Operator's Manual

Optional 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 (4wire) with probe tips
HZ18	Kelvin test lead (4wire) with gold plated contacts
HZ19	Kelvin test lead (4wire) with SMD-Test-tweezers

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