

## 200kHz LCR-Bridge HM8118



HM8118



HZ188 4-Terminal SMD Component Test Fixture (included)



HZ184 4-Terminal Kelvin Test Cable (included)



HZ181 4-Terminal Test Fixture with Shorting Plate (optional)



- ✓ Basic Accuracy 0.05%
- ✓ Measurement Functions L, C, R, |Z|, X, |Y|, G, B, D, Q,  $\Theta$ ,  $\Delta$ , M, N
- ✓ Test Frequencies 20Hz...200kHz
- ✓ Up to 12 Measurements per Second
- ✓ Parallel and Serial Mode
- ✓ Binning Interface H0118 (optional) for automatic Sorting of Components
- ✓ Internal programmable Voltage and Current Bias
- ✓ Transformer Parameter Measurement
- ✓ External Capacitor Bias up to 40V
- ✓ Kelvin Cable and 4-Terminal SMD Test Adapter included
- ✓ Galvanically isolated USB/RS-232 Dual-Interface, optional IEEE-488 (GPIB)

## 200 kHz LCR-Bridge HM8118

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

### Conditions

Test signal voltage:	1 V
Open and short corrections performed	
Measurement time:	SLOW

### Display

Measurement modes:	Auto, L-Q, L-R, C-D, C-R, R-Q, Z- $\theta$ , Y- $\theta$ , R-X, G-B, N- $\theta$ , M
Equivalent circuits:	Auto, Series or Parallel
Parameters displayed:	Value, Deviation or % Deviation
Averaging:	2...99 measurements

### Accuracy

Primary Parameters:	Basic accuracy (Test voltage: 1.0V, measurement SLOW/MEDIUM, autoranging mode, constant voltage OFF, bias off). For FAST mode double the basic accuracy values
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Impedance: 100 M $\Omega$ 4 M $\Omega$ 1 M $\Omega$ 25 k $\Omega$ 100 $\Omega$ 2.5 $\Omega$ 0.01 m $\Omega$	0.2% +  Z /1.5G $\Omega$		0.5% +  Z /100M $\Omega$	0.5% + 5m $\Omega$ / Z  +  Z /10M $\Omega$
	0.05% +  Z /2G $\Omega$	0.1% +  Z /1.5G $\Omega$		
			0.2% +  Z /100M $\Omega$	
	0.1% + 1m $\Omega$ / Z		0.2% + 2m $\Omega$ / Z	
	0.3% + 1m $\Omega$ / Z		0.5% + 2m $\Omega$ / Z	
	20 Hz	1 kHz	10 kHz	100 kHz

### Secondary Parameters:

Basic accuracy D, Q:	$\pm 0.0001$ @ f = 1 kHz
Phase angle:	$\pm 0.005^\circ$ @ f = 1 kHz

### Ranges

Z , R, X:	0.01 m $\Omega$ ...100 M $\Omega$
Y , G, B:	10 nS...1,000 S
C:	0.01 pF...100 mF
L:	10 nH...100 kH
D:	0.0001...9.9999
Q:	0.1...9,999.9
$\theta$ :	-180...+180 $^\circ$
$\Delta$ :	-999.99...999.99%
M:	1 $\mu$ H...100 H
N:	0.95...500

### Measurement conditions and functions

Test frequency:	20 Hz...200 kHz (69 steps)
Frequency accuracy:	$\pm 100$ ppm
AC test signal level:	50 mV <sub>rms</sub> ...1.5 V <sub>rms</sub>
Resolution	10 mV <sub>rms</sub>
Drive level accuracy:	$\pm(5\% + 5$ mV)
Internal Bias Voltage:	0...+5.00 V <sub>dc</sub>
Resolution	10 mV
External Bias Voltage:	0...+40 V <sub>dc</sub> (fused 0.5 A)
Internal Bias Current:	0...+200 mA
Resolution	1 mA
Range Selection:	Auto and Hold
Trigger:	Continuous, manual or external via interface, Binning Interface or Trigger Input
Trigger delay time:	0...999 ms in 1 ms steps
Measurement time (f $\geq 1$ kHz):	
FAST	70 ms
MEDIUM	125 ms
SLOW	0.7 s

### Other Instrument Functions

Test signal level monitor:	Voltage, current
Error Correction:	Open, Short, Load
Save/Recall:	9 instrument settings
Front-end Protection:	V <sub>max</sub> < $\sqrt{2}C$ @ V <sub>max</sub> < 200V, C in Farads (1 Joule of stored energy)

Low Potential and Low Current Guarding: Ground, Driven Guard or Auto (fused)

### Constant Voltage Mode (25 $\Omega$ source):

Temperature effects R, L or C  $\pm 5$  ppm/ $^\circ$ C

Interface: Dual-Interface USB/RS-232 (H0820), IEEE-488 (GPIB) (optional)

Safety Class: Safety Class I (EN61010-1)

Power supply: 110...230V  $\pm 10\%$ , 50...60 Hz, CAT II

Power consumption: approx. 20 W

Operating temperature: +5...+40  $^\circ$ C

Storage temperature: -20...+70  $^\circ$ C

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

Dimensions (W x H x D): 285 x 75 x 365 mm

Weight: approx. 4 kg

**Accessories supplied:** Line cord, Operating manual, HZ184 4 Terminal Kelvin Test Cable and HZ188 4 Terminal SMD Component Test Fixture, CD

### Recommended accessories:

H0118	Binning Interface
H0880	Interface IEEE-488 (GPIB), galvanically isolated
HZ13	Interface cable (USB) 1.8 m
HZ14	Interface cable (serial) 1:1
HZ33	Test cable 50 $\Omega$ , BNC/BNC, 0.5 m
HZ34	Test cable 50 $\Omega$ , BNC/BNC, 1.0 m
HZ42	19" Rackmount kit 2RU
HZ72	GPIB-Cable 2 m
HZ181	4 Terminal Test Fixture including Shorting Plate
HZ186	4 Terminal Transformer Test Cable