
R-X
C-D
L-Q
HOLD
FREQ
RANGE
LEVEL
SPEED
AUTO/R /C/L/Z
X/D/Q /θ/ESR
SER/PAL
SET
RECORD
REL
CAL
COMPARE
DISCHARGE CAPACITOR BEFORE TESTING
HPOT
HCUR
LPOT
LCUR
GUARD
+
−
GUARD

Chapter 5 Specification

The general and measurement precision specification of LCR are described below.

5.1 General Specification

Model	Hantek1832C	Hantek1833C
Measurement parameters	Main parameter: L/C/R/Z Secondary parameter: X/D/Q/ θ /ESR	
Equivalent mode	Series, parallel	
Mode of range	Manual, automatic	
Measurement speed	Fast(4 times/s), medium(2 times/s), slow(1 times/s)	
Configuration of the test terminal	3-terminal, 5-terminal	
Correction function	Short circuit, Open circuit	
Communication interface	Type C(virtual serial port)	
Test signal frequency	100Hz, 120Hz, 400Hz, 1kHz, 4KHz, 10kHz, 40kHz	100Hz, 120Hz, 400Hz, 1kHz, 4KHz, 10kHz, 40kHz, 50KHz, 75KHz, 100kHz
Test signal level	0.6Vrms	0.3Vrms, 0.6Vrms
Output impedance	100Ω	
Highest accuracy (see accuracy index for details)	Resistance: 0.25% Capacitance: 0.4%	
Measurement range	L: 0-2000H C: 0-20mF R: 0-20MΩ	

5.2 Accuracy

Notes:

- ***Environment temperature: 20℃ ± 2℃, humidity: ≤75% R.H;***
- ***Preheat the instrument for at least 30 minutes before the test;***
- ***Test at the test notch on the end face of the instrument;***
- ***It is better to conduct open and short circuit correction before the test;***
- ***Measure with the recommended equivalent mode;***
- ***The percentage in terms of error indicates:***
- ***± (% of the reading + last digit)***
- ***If the actual measurement of the instrument and the display exceeds the scope specified in the table, the accuracy of the excessive part will not be given;***
- ***The meaning of the subscript***
- ***S- series equivalent; p- parallel equivalent; e- accuracy***
- ***Some parameters cannot be given in the data table, and it can only be calculated based on the measurement results;***

Capacitance C and dissipation D

■ 100Hz/120Hz/400Hz

Range	Range of display	Accuracy Ce	Accuracy De	Equivalent mode recommended
20mF	4.000mF~20.000mF	8.00%+5 digits	0.0800	Series
4mF	400.0μF~3.9999mF	2.00%+3 digits	0.0200	Series
400μF	40.00μF~399.99μF	0.60%+2 digits	0.0060	Series
40μF	4.000μF~39.999μF	0.40%+2 digits	0.0040	Series
4μF	400.0nF~3.9999μF	0.40%+2 digits	0.0040	----
400nF	40.00nF~399.99nF	0.4%+2 digits	0.0040	Parallel
40nF	4.000nF~39.999nF	0.5%+3 digits	0.0050	Parallel
4nF	0pF~3.999nF	1.5%+5 digits	------	Parallel

■ 1kHz/4KHz

Range	Range of display	Accuracy Ce	Accuracy De	Equivalent mode recommended
1000uF	400.0uF~999.9uF	3.00%+5 digits	0.0300	Series
400μF	40.00μF~399.99μF	1.50%+3 digits	0.0150	Series
40μF	4.000μF~39.999μF	0.60%+2 digits	0.0060	Series
4μF	400.0nF~3.9999μF	0.40%+2 digits	0.0040	----
400nF	40.00nF~399.99nF	0.4%+2 digits	0.0040	Parallel
40nF	4.000nF~39.999nF	0.6%+3 digits	0.0060	Parallel
4nF	400.0pF~3.9999nF	0.6%+3 digits	0.0060	Parallel
400pF	0.0pF~399.9pF	3%+5 digits	------	Parallel

■ 10kHz

Range	Range of display	Accuracy Ce	Accuracy De	Equivalent mode recommended
100μF	40.00μF~100.00μF	4.00%+5 digits	0.0400	Series
40μF	4.000μF~39.999μF	2.0%+3 digits	0.0200	Series
4μF	400.0nF~3.9999μF	0.60%+2 digits	0.0060	Series
400nF	40.00nF~399.99nF	0.4%+2 digits	0.0040	Series
40nF	4.000nF~39.999nF	0.4%+2 digits	0.0040	------
4nF	400.0pF~3.9999nF	0.4%+2 digits	0.0040	Parallel
400pF	40.00pF~399.99pF	0.6%+3 digits	0.0060	Parallel
40pF	0.00pF~39.99pF	2.5%+5 digits	------	Parallel

■ 40kHz/50KHz

Range	Range of display	Accuracy Ce	Accuracy De	Equivalent mode recommended
100μF	40.00μF~100.00μF	6.00%+5 digits	0.0600	Series
40μF	4.000μF~39.999μF	4.0%+3 digits	0.0400	Series
4μF	400.0nF~3.9999μF	1.0%+2 digits	0.0100	Series
400nF	40.00nF~399.99nF	0.6%+2 digits	0.0060	Series

40nF	4.000nF~39.999nF	0.6%+2 digits	0.0060	------
4nF	400.0pF~3.9999nF	0.6%+2 digits	0.0060	Parallel
400pF	40.00pF~399.99pF	1%+3 digits	0.0100	Parallel
40pF	0.000pF~39.999pF	3%+5 digits	------	Parallel

■ **75KHz/100kHz**

Range	Range of display	Accuracy Ce	Accuracy De	Equivalent mode recommended
10μF	4.000μF~10.000μF	8.0%+20 digits	0.0800	Series
4μF	400.0nF~3.9999μF	5.0%+10 digits	0.050	Series
400nF	40.00nF~399.99nF	1.5%+5 digits	0.0150	Series
40nF	4.000nF~39.999nF	1%+2 digits	0.0100	Series
4nF	400.0pF~3.999nF	1%+2 digits	0.0100	------
400pF	40.00pF~399.99pF	1.5%+2 digits	0.0150	Parallel
40pF	4.000pF~39.999pF	2%+5 digits	0.0200	Parallel
4pF	0.000pF~3.999pF	5%+10 digits	------	Parallel

Inductance L and quality factor

■ **100Hz/120Hz/400Hz**

Range	Range of display	Accuracy Le	Accuracy De*	Equivalent mode recommended
1000H	400.0H~999.9H	2.00%+3 digits	0.0200	Parallel
400H	40.00H~399.99H	0.60%+2 digits	0.0060	Parallel
40H	4.000H~39.999H	0.40%+2 digits	0.0040	Parallel
4H	400.0mH~3.9999H	0.40%+2 digits	0.0040	----
400mH	40.00mH~399.99mH	0.4%+2 digits	0.0040	Series
40mH	4.000mH~39.999mH	0.6%+3 digits	0.0060	Series
4mH	0uH~3.999mH	3.0%+5 digits	------	Series

■ **1kHz/4KHz**

Range	Range of display	Accuracy Le	Accuracy De*	Equivalent mode recommended
1H	400.0mH~999.9mH	1.50%+3 digits	0.0150	Parallel
400mH	40.00mH~399.99mH	0.4%+2 digits	0.0040	Parallel
40mH	4.000mH~39.999mH	0.4%+2 digits	0.0040	------
4mH	400.0uH~3.9999mH	0.4%+2 digits	0.0040	Series
400uH	40.00uH~399.99uH	0.8%+3 digits	0.0080	Series
40uH	0.0uH~39.9uH	3.0%+5 digits	------	Series

■ **10kHz/40KHz**

Range	Range of display	Accuracy Le	Accuracy De*	Equivalent mode recommended
100H	40.00H~100.00H	2.0%+3 digits	0.0200	Parallel
40H	4.000H~39.999H	0.60%+2 digits	0.0060	Parallel
4H	400.0mH~3.9999H	0.40%+2 digits	0.0040	Parallel

400mH	40.00mH~399.99mH	0.4%+2 digits	0.0040	------
40mH	4.000mH~39.999mH	0.4%+2 digits	0.0040	Series
4mH	400.0uH~3.9999mH	1%+3 digits	0.0100	Series
400uH	0.00uH~399.99uH	3.0%+5 digits	------	Series

■ 40kHz/50KHz

Range	Range of display	Accuracy Le	Accuracy De*	Equivalent mode recommended
1H	400.0mH~999.9mH	2.0%+4 digits	0.0200	Parallel
400mH	40.00mH~399.99mH	0.8%+2 digits	0.0080	Parallel
40mH	4.000mH~39.999mH	0.8%+2 digits	0.0080	------
4mH	400.0uH~3.9999mH	0.8%+2 digits	0.0080	Series
400uH	40.00uH~399.99uH	1.5%+3 digits	0.0150	Series
40uH	0.000uH~39.999uH	4.0%+5 digits	------	Series

Note*: please calculate the quality factor according to the formula to calculate the accuracy of Q.

■ 75KHz/100kHz

Range	Range of display	Accuracy Le	Accuracy De*	Equivalent mode recommended
400mH	40.00mH~399.99mH	2.5%+2 digits	0.0250	Parallel
40mH	4.000mH~39.999mH	1.5%+2 digits	0.0150	Parallel
4mH	400.0μH~3.9999mH	1.0%+2 digits	0.0100	------
400μH	40.00μH~399.99μH	1.0%+2 digits	0.0100	Series
40μH	4.000μH~39.999μH	1.5%+5 digits	0.0150	Series
4μH	0.000μH~3.999μH	4%+10 digits	------	Series

Impedance Z and phase angle θ

■ 100Hz/120Hz/400Hz/1kHz/4KHz/10kHz

Range	Range of display	Accuracy Ze	Accuracy θ_e	Equivalent mode recommended
20MΩ	4.000MΩ~20.000MΩ	3.0%+10 digits	3.4°	Parallel
4MΩ	400.0kΩ~3.9999MΩ	1.2%+3 digits	0.7°	Parallel
400kΩ	40.00kΩ~399.99kΩ	0.3%+3 digits	0.2°	Parallel
40kΩ	4.000kΩ~39.999kΩ	0.25%+2 digits	0.1°	------
4kΩ	400.0Ω~3.9999kΩ	0.25%+2 digits	0.1°	Series
400Ω	40.00Ω~399.99Ω	0.25%+2 digits	0.1°	Series
40Ω	4.000Ω~39.999Ω	0.5%+3 digits	0.3°	Series
4Ω	0.4000Ω~3.9999Ω	2.0%+3 digits	1.1°	Series
0.4Ω	0.0000Ω~0.3999Ω	4.0%+3 digits	------	Series

■ 40kHz/50KHz

Range	Range of display	Accuracy Ze	Accuracy θ_e	Equivalent mode recommended
20MΩ	4.000MΩ~20.000MΩ	7.0%+41 digits	4.0°	Parallel
4MΩ	400.0kΩ~3.9999MΩ	2.5%+3 digits	1.4°	Parallel
400kΩ	40.00kΩ~399.99kΩ	1.0%+4 digits	0.6°	Parallel
40kΩ	4.000kΩ~39.999kΩ	1.0%+4 digits	0.6°	------
4kΩ	400.0Ω~3.9999kΩ	0.5%+3 digits	0.3°	Series
400Ω	40.00Ω~399.99Ω	0.5%+3 digits	0.3°	Series
40Ω	4.000Ω~39.999Ω	0.7%+4 digits	0.4°	Series
4Ω	0.4000Ω~3.9999Ω	2.0%+6 digits	1.1°	Series
0.4Ω	0.0000Ω~0.3999Ω	5.0%+10 digits	------	Series

■ 75KHz/100kHz

Range	Range of display	Accuracy Ze	Accuracy θ_e	Equivalent mode recommended
20MΩ	4.000MΩ~20.000MΩ	9.0%+20 digits	5.2°	Parallel
4MΩ	400.0kΩ~3.9999MΩ	4.0%+10 digits	2.3°	Parallel
400kΩ	40.00kΩ~399.99kΩ	1.5%+4 digits	0.9°	Parallel
40kΩ	4.000kΩ~39.999kΩ	1.0%+2 digits	0.6°	Parallel
4kΩ	400.0Ω~3.9999kΩ	0.7%+2 digits	0.4°	------
400Ω	40.00Ω~399.99Ω	0.7%+2 digits	0.4°	Series
40Ω	4.000Ω~39.999Ω	1.0%+5 digits	0.6°	Series
4Ω	0.4000Ω~3.9999Ω	3.0%+10 digits	1.7°	Series
0.4Ω	0.0000Ω~0.3999Ω	7%+20 digits	------	Series

Accessories

Standard accessories list:

- Handheld LCR (lithium battery installed)
- CD
- A type C-USB communication cable
- An AC power adapter
- A pair of red / black rubber plugs –alligator clip test line
- A short-circuit bar

Please check according to the accessories list after the box is opened, if any component is missing, please immediately contact the company or the related dealer.