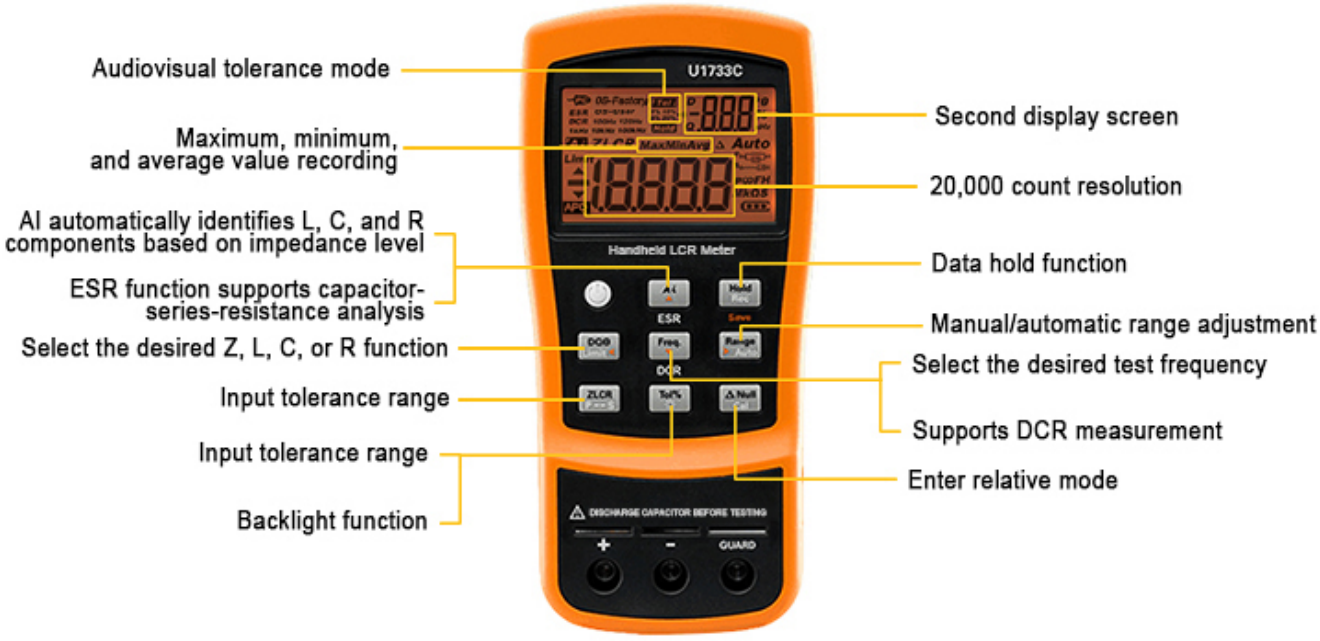
Portable LCR Meter, 100Hz~100kHz

SISCO-LCRM-U1733C

Instruction

This handheld LCR meter supports measurements up to 100 kHz, a feature typically found only in benchtop LCR meters. Automatic component identification displays component types and provides detailed component analysis (e.g., Z, ESR, DCR), allowing for faster measurement completion. Furthermore, it's up to 16 hours of battery life makes it ideal for outdoor testing. This portable LCR meter enables convenient and quick performance of basic LCR measurements within your budget.

Handheld LCR meter U1733C button



Inductance							
		Accuracy = AL + Bias					
Range	Resolution	U1731C/U1732C/U1733C			U1732C/U1733C	U1733C	
		100 Hz	120 Hz	1 kHz	10 kHz	100 kHz	DCR
2 Ω[1]	0.0001 Ω	0.7% + 50	0.7% + 50	0.7% + 50	0.7% + 50	1.0% + 50	0.7% + 50
20 Ω[1]	0.001 Ω	0.7% + 8	0.7% + 8	0.7% + 8	0.7% + 8	0.7% + 8	0.7% + 8
200 Ω[1]	0.01 Ω	0.2% + 3	0.2% + 3	0.2% + 3	0.2% + 3	0.5% + 5	0.2% + 3
2000 Ω	0.1 Ω	0.2% + 3	0.2% + 3	0.2% + 3	0.2% + 3	0.5% + 5	0.2% + 3
20 kΩ	0.001 kΩ	0.2% + 3	0.2% + 3	0.2% + 3	0.2% + 3	0.5% + 5	0.2% + 3
200 kΩ	0.01 kΩ	0.5% + 5	0.5% + 5	0.5% + 5	0.5% + 5	0.7% + 8	0.5% + 5
2000 kΩ	0.1 kΩ	0.5% + 5	0.5% + 5	0.5% + 5	0.7% + 5		0.5% + 5
20 MΩ	0.001 MΩ	2.0% + 8	2.0% + 8	2.0% + 8	5.0% + 8		2.0% + 8
200 MΩ	0.01 MΩ	6.0% + 80	6.0% + 80	6.0% + 80			6.0% + 80

Accuracy in the 2 to 200 Ω range is specified by a null function, which is used instead of testing lead resistance and contact resistance.

Note:

a. Relative humidity <60% is required for the 20MΩ and 200MΩ range.

b. Resistance must be Q < 10 and D > 0.1; otherwise, accuracy should be (AZ + Bias) x

c. Equivalent series resistance (ESR) measurement depends on impedance measurement and range. Maximum display up to 199.99kΩ, accuracy (AZ + Bias) x

Capacitance						
		Accuracy = AC + Bias				
Range	Resolution	U1731C/U1732C/U1733C			U1732C/U1733C	U1733C
		100 Hz	120 Hz	1 kHz	10 kHz	100 kHz
20 mF	0.001 mF	0.5% + 8	0.5% + 8	NA	NA	NA
2000 µF	0.1 µF	0.5% + 5	0.5% + 5	0.5% + 8	NA	NA
200 µF	0.01 µF	0.3% + 3	0.3% + 3	0.5% + 5	0.5% + 8	NA
20 µF	0.001 µF	0.2% + 3	0.2% + 3	0.2% + 3	0.5% + 5	5.0% + 10
2000 nF	0.1 nF	0.2% + 3	0.2% + 3	0.2% + 3	0.2% + 3	0.7% + 10
200 nF	0.01 nF	0.2% + 3	0.2% + 3	0.2% + 3	0.5% + 3	0.7% + 10
20 nF	0.001 nF	0.5% + 5	0.5% + 5	0.2% + 3	0.5% + 3	0.7% + 10
2000 pF[1]	0.1 pF	0.5% + 10	0.5% + 10	0.5% + 5	0.5% + 3	2.0% + 10
200 pF[1]	0.01 pF			0.5% + 10	0.8% + 10	2.0% + 10
20 pF[1]	0.001 pF				1.0% + 20	2.5% + 10

Accuracy in the range of 20 pF to 2000 pF is specified by a null function, which is used to replace stray capacitance of the test leads.

Note:

a. The impact on the measurement accuracy of ceramic capacitors will depend on the dielectric constant (K) of the material used to manufacture the ceramic capacitor.

Impedance Phase Angle				
Range	Resolution	Accuracy (θe)	Conditions	
-180° ~180°	0.1° /1°	(AZ + Bias/Zx) x 180/π	D < 1 or Q > 1	
Impedance	Zx	AZ	Bias	θe
1999.9 Ω	19999	0.2%	3	±0.12 °
199.9 Ω	1999	0.2%	3	±0.20 °
19.9 Ω	199	0.2%	3	±0.98 °
1.9 Ω	19	0.2%	3	±9.16 °

Note:

a. “AZ” and “Bias” are used to specify impedance accuracy.

b. “π” is approximately 3.14159.

Loss/Quality Factor			
Function	Range	Accuracy (De)	Condition
Z	0.001~999	AZ + Offset/Zx x 100% + 3	D < 1 or Q > 1
L	0.001~999	AL + Offset/Lx x 100% + 3	D < 1 or Q > 1
C	0.001~999	AC + Offset/Cx x 100% + 3	D < 1 or Q > 1

Capacitor	Cx	AC	Bias	De
88.88 µF	8888	0.2%	3	0.334% + 3

Note: "AZ, AL, AC" and bias specify the accuracy of impedance, inductance, and capacitance, respectively.

Test Signal					
		Test Signal Level		Test Frequency	
Model	Select Frequency	Level	Accuracy	Frequency	Accuracy
U1731C/U1732C/U1733C	100 Hz	0.74 Vrms	0.05 Vrms	100 Hz	0.01%
	120 Hz	0.74 Vrms	0.05 Vrms	120.481 Hz	0.01%
	1 kHz	0.74 Vrms	0.05 Vrms	1 kHz	0.01%
U1732C/1733C	10 kHz	0.70 Vrms	0.05 Vrms	10 kHz	0.01%
U1733C	100 kHz	0.70 Vrms	0.05 Vrms	100 kHz	0.01%
	DCR	+1.235 V	0.05 V		

Source impedance for impedance/resistance measurement						
	Typical source impedance					
Range	U1731C/U1732C/U1733C			U1732C/U1733C	U1733C	
	100 Hz	120 Hz	1 kHz	10 kHz	100 kHz	DCR
2 Ω	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω
20 Ω	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω
200 Ω	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω
2000 Ω	1 kΩ	1 kΩ	1 kΩ	1 kΩ	1 kΩ	1 kΩ
20 kΩ	10 kΩ	10 kΩ	10 kΩ	10 kΩ	1 kΩ	10 kΩ
200 kΩ	100 kΩ	100 kΩ	100 kΩ	10 kΩ	1 kΩ	100 kΩ
2000 kΩ	100 kΩ	100 kΩ	100 kΩ	10 kΩ		100 kΩ
20 MΩ	100 kΩ	100 kΩ	100 kΩ	100 kΩ		100 kΩ
200 MΩ	100 kΩ	100 kΩ	100 kΩ			100 kΩ

Source impedance of capacitance measurement					
	Typical source impedance				
Range	U1731C/U1732C/U1733C			U1732C/U1733C	U1733C
	100 Hz	120 Hz	1 kHz	10 kHz	100 kHz
20 mF	100 Ω	100 Ω			
2000 µF	100 Ω	100 Ω	100 Ω		
200 µF	100 Ω	100 Ω	100 Ω	100 Ω	
20 µF	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω
2000 nF	1 kΩ	1 kΩ	100 Ω	100 Ω	100 Ω
200 nF	10 kΩ	10 kΩ	1 kΩ	100 Ω	100 Ω
20 nF	100 kΩ	100 kΩ	10 Ω	1 kΩ	100 Ω
2000 pF	100 kΩ	100 kΩ	100 kΩ	10 kΩ	1 kΩ
200 pF			100 kΩ	10 kΩ	1 kΩ
20 pF				100 kΩ	1 kΩ

Standard Accessories	
Standard U1733C order includes:	– Quick Start Guide – Calibration Certificate (CoC) – Alligator Clips – 9V Alkaline Battery

U1733P

The kit includes one U1733C series handheld meter and four accessories:

- U5491A carrying case
- U5481AIR-USB cable
- U1780A AC adapter
- U1782A SMD tweezers