Agilent U1701A/U1701B Handheld Capacitance Meter

Data Sheet



Agilent handheld capacitance meters expand Agilent's portfolio of handheld tools into electronics assembly and passive components troubleshooting. Agilent now offers its latest handheld capacitance meter, the U1701B, in all-new orange, providing capabilities and functionalities that are equivalent to the U1701A.

Features

- 11,000 counts resolution
- Dual display with backlight
- Wide range: 0.1 pF to 199.99 mF
- Compare mode with 25 sets of High/Low limit settings
- Tolerance mode: 1%, 5%, 10% and 20%
- Relative mode
- Hold and Min/Max/Average recordings
- Data logging to PC with optional IR-to-USB cable

Efficient capacitor sorting

With up to 25 sets of High/Low limits that you can store and choose from in compare mode, the U1701A/U1701B lets you breeze through capacitor sorting without the need to set and reset the standard reference for different capacitors-under-test.

The U1701A/U1701B also comes with other handy functions, including tolerance and relative modes, Hold, Min/Max/Average recordings, and PC data logging.



Figure 1: Automate the recording of continuous readings when you hook the U1701A/U1701B to a PC

Uncompromised quality and reliability

The handheld capacitance meter comes in a robust overmold and tested to stringent industrial standards. Each capacitance meter is also sealed with a three-year warranty and the assurance that you can test your components with confidence.

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Take a closer look



Figure 2: U1701B front view

U1701A/U1701B Electrical Specifications

Accuracy is given as ± (% of output + counts of least significant digit) at 23 °C ± 5 °C, with relative humidity less than 80% R.H.

For example, 1% ±10 = 1% of reading + 10 counts of least significant digit

Capacitance

Range	Resolution	Accuracy*	Measuring rate as full scale (approx.)
1000.0 pF	*0.1 pF*	*1% + 10*	*5 times/s*
10.000 nF	*0.001 nF*	*1% + 5*	*5 times/s*
100.00 nF	*0.01 nF*	*0.5% + 3*	*5 times/s*
1000.0 nF	*0.1 nF*		*5 times/s*
10.000 µF	*0.001µF*		*5 times/s*
100.00 µF	*0.01 µF*		*5 times/s*
1000.0 µF	*0.1 µF*		*0.86 times/s*
10.000 mF	*0.001 mF*	*1% + 5*	*0.13 times/s*
199.99 mF	*0.01 mF*	*2% + 5*	*0.006 times/s*

*Accuracy is specified to measure film capacitor or better. Use Relative mode to zero residual.

General Specifications

Parameter	U1701A/U1701B
Display	4½-digit liquid crystal display (LCD) with a maximum resolution of 11,000 counts and automatic polarity indication
Power supply	• 9 V Alkaline battery (ANSI/NEDA 1604A or IEC 6LR61) • AC power adapter and cord available as options
Power consumption	5.6 mA (on battery operation)
Battery life	~80 hours without backlight and based on new alkaline
Operating temperature	Full accuracy at 0 °C to 50 °C
Operating humidity	Up to 80% relative humidity (R.H.) for temperatures up to 31 °C, decreasing linearly to 50% R.H. at 50 °C
Altitude	0 to 2000 m
Storage temperature	–20 °C to 60 °C
Storage humidity	0 to 80% R.H. non-condensing
Temperature coefficient	0.1 x (specified accuracy)/ °C (from 0 °C to 18 °C or 28 °C to 50 °C)
Low battery indicator	 will appear when the voltage drops below ~ 6.0 V
Weight	320 g
Dimensions (H x W x D)	184 mm x 87 mm x 41 mm
Safety and EMC compliance	IEC 61010-1:2001/EN 61010-1:2001 (2nd Edition) Pollution Degree 2, IEC 61326-2-1:2005/ EN 61326-2-1:2006, ICES-001:2004, AS/NZS CISPR11:2004
Calibration	One-year calibration cycle recommended
Warranty	• 3 years for U1701A/U1701B • 3 months for standard shipped accessories

Ordering Information

Standard shipped accessories



U1701A



U1701B

Standard U1701A/U1701B ordering includes:

- Quick Start Guide
- Certificate of Calibration (CoC)
- Alligator clip leads
- 9 V Alkaline battery

Option U1701A-SMD ordering includes (For U1701A only) :

SMD tweezer and soft carrying case in addition to the standard shipped items

Recommended accessories



U1174A Soft carrying case



U5481A IR-to-USB cable



U1782A SMD tweezer



U1780A Power adapter and cord (according to country)



U1781A Alligator clip leads

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