Agilent U1701A Handheld Capacitance Meter

Data Sheet

Agilent U1701A handheld capacitance meter expands Agilent's portfolio of handheld tools into electronics assembly and passive components troubleshooting.

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 lets you breeze through capacitor sorting without the need to set and reset the standard reference for different capacitors-under-test.

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

Uncompromised quality and reliability

The U1701A comes in a robust overmold and tested to stringent industrial standards. Each U1701A is also sealed with a three-year warranty and the assurance that you can test your components with confidence.

Figure 1: Automate the recording of continuous readings when you hook the U1701A to a PC
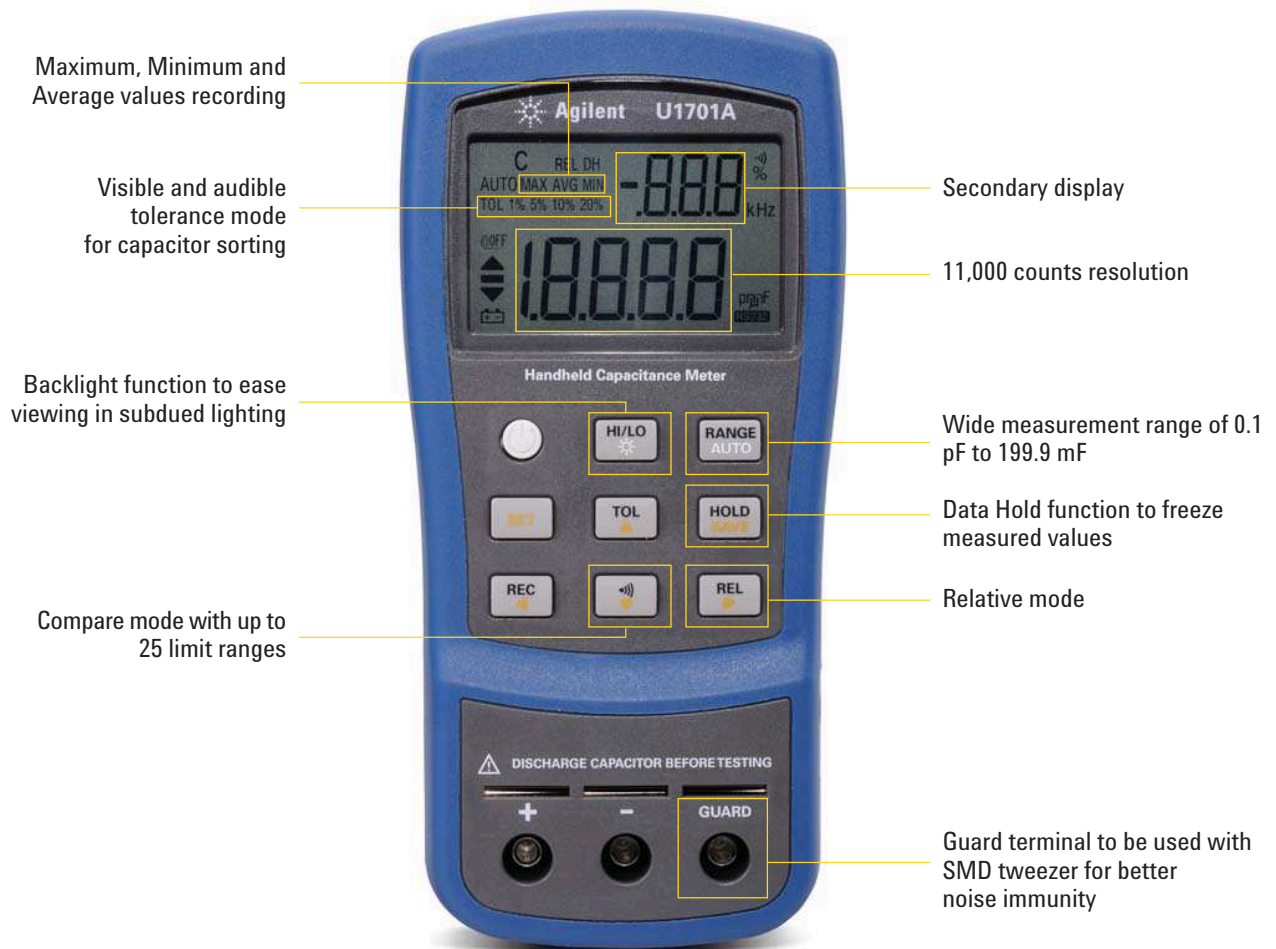
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Take a closer look

Maximum, Minimum and Average values recording

Visible and audible tolerance mode for capacitor sorting

Backlight function to ease viewing in subdued lighting

Compare mode with up to 25 limit ranges

Secondary display

11,000 counts resolution

Wide measurement range of 0.1 pF to 199.9 mF

Data Hold function to freeze measured values

Relative mode

Guard terminal to be used with SMD tweezer for better noise immunity

Figure 2: U1701A front view

U1701A 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
Display	4½-digit liquid crystal display (LCD) with a maximum resolution of 11,000 counts. 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

Ordering Information

Standard shipped items

Standard U1701A ordering includes:

- Quick Start Guide
- User's and Service Guide
  (included in Product Reference CD)
- Certificate of Calibration (CoC)

- Alligator clip leads
- Data logging software
  (included in Product Reference CD)
- 9 V Alkaline battery

Option U1701A-SMD ordering includes:

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

Optional 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

Product specifications and descriptions
in this document subject to change
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