

KEYSIGHT TECHNOLOGIES (AGILENT HP)

4288A

The Keysight (Agilent) 4288A is a high-speed, high-precision capacitance meter designed specifically for capacitor testing in production environments. Operating at test frequencies of 1 kHz and 1 MHz, it offers reliable and rapid measurements with a basic capacitance accuracy of 0.07% and a test speed as fast as 6.5 ms, making it ideal for high-throughput ceramic capacitor testing.

SPECIFICATIONS

General

Interfaces	GPIB, Handler Interface (Opt. 201/202), Scanner Interface (Opt. 301)
Display	Liquid Crystal Display (LCD) with backlight
Recommended Calibration Cycle	1 year

Physical

Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	320 mm x 100 mm x 300 mm mm
Weight	3.0 kg kg

Measurement Characteristics

Measurement Parameters	Cp-D, Cp-Q, Cp-G, Cp-Rp, Cs-D, Cs-Q, Cs-Rs
Test Frequencies	1 kHz, 1 MHz
Test Frequency Accuracy	±0.01%
Test Signal Levels	0.1 V, 0.5 V, 1.0 V rms
Basic Capacitance Accuracy	0.07%
Basic Dissipation Factor Accuracy	0.0005
Capacitance Measurement Range at 1 kHz	100 pF to 20 µF
Capacitance Measurement Range at 1 MHz	1 pF to 1000 pF
Measurement Speed (1 MHz, Short)	6.5 ms
Measurement Speed (1 MHz, Medium)	19 ms
Measurement Speed (1 MHz, Long)	53 ms
Measurement Speed (1 kHz, Short)	18 ms
Measurement Speed (1 kHz, Medium)	31 ms
Measurement Speed (1 kHz, Long)	65 ms
Equivalent Circuit Modes	Series, Parallel
Averaging Range	1 to 256
Capacitance Display Range	0.0001 pF to 99.999 µF
Dissipation Factor Display Range	0.00001 to 9.99999
Measurement Terminal Structure	4-terminal pair configuration

Trigger and Sweep

Trigger Source Options	Internal, Manual, External, GPIB
Trigger Delay Time	0 ms to 9.999 s
Trigger Delay Step Size	1 ms
Step Delay Time	0 ms to 9.999 s
Step Delay Step Size	1 ms

Correction and Compensation

Open Correction	Reduces stray capacitance and conductance
Short Correction	Reduces residual inductance and resistance
Cable Length Compensation Settings	0 m, 1 m, 2 m

Comparator and Binning Functions

Number of Bin sorting channels	9 bins for primary parameter
Auxiliary Bin	Yes
Out-of-Bin Sorting	Yes
Comparator Limits	Tolerance percentage, Absolute value, Deviation
Beeper Configuration	Off, Pass, Fail sound patterns

Interfaces and Connectivity

GPIB Interface Type	IEEE-488
Handler Interface Options	36-pin (Opt. 201) / 45-pin (Opt. 202)
Scanner Interface Option	Opt. 301 Multi-channel Compensation

Display and Memory

Measurement Display Digits	6 digits max
Save/Recall Memory	10 registers for instrument configuration
Key Lock Function	Yes

Power and Electrical Specifications

Line Voltage Capability	90 V to 132 V AC, 198 V to 264 V AC
Max Power Consumption	40 VA

Environmental and Physical Specifications

Warm-up Time	10 minutes
Cabinet Width	320 mm
Cabinet Height	100 mm
Cabinet Depth	300 mm

Measurement Configuration

External DC Bias Input Range	0 V to 40 V
Source Impedance	20 Ω nominal (at 1 kHz); 1 Ω or 20 Ω nominal (at 1 MHz, range dependent)

Measurement Functions

Deviation Measurement Modes	Deviation (Δ), Percent Deviation ($\Delta\%$)
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Inputs & Outputs

External Trigger Input Connector	BNC female (rear panel)
External DC Bias Input Connector	BNC female (rear panel)

Memory & Interface

Save/Recall Memory Capacity	10 instrument setups
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Product Options

Calibration Certificate Options	Option 1A7 (ISO 17025 compliant), Option A6J (ANSI Z540 compliant)
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TECHNOLOGY

Capacitance Meter

APPLICATIONS

Capacitor testing in production lines, laboratory characterization, and high-speed quality control.

