

KEYSIGHT TECHNOLOGIES (AGILENT HP)

E9300B

The Keysight (Agilent) E9300B is an average power sensor designed for measuring RF and microwave signals from 10 MHz to 18 GHz across a wide dynamic range of -30 to +44 dBm. Utilizing a patented diode-attenuator-diode topology, the sensor ensures square-law region operation for accurate and modulation-independent average power measurements. It features exceptionally low SWR to minimize mismatch uncertainty and stores calibration, linearity, and temperature compensation data on an internal EEPROM for plug-and-play compatibility with EPM, EPM-P, and P-series power meters.

SPECIFICATIONS

General

Interfaces	Proprietary cable interface for connection to compatible power meters
Display	None (results displayed on connected power meter host)

Physical

Power Supply	Powered directly from connected power meter host
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	43 mm × 30 mm × 184 mm mm
Weight	0.272 kg

Measurement Ranges & Power Specifications

Frequency Range Minimum	10 MHz
Frequency Range Maximum	18 GHz
Power Measurement Range Minimum	-30 dBm
Power Measurement Range Maximum	+44 dBm
Dynamic Range	74 dB
Maximum Continuous Input Power	+45 dBm (30 W)
Maximum Peak Input Power	+47 dBm (50 W) for <10 μs duration

Sensor Technology & Architecture

Sensor Detection Type	Diode-attenuator-diode topology (dual-path)
Measurement Modes Supported	Average power (modulation format independent)

RF Port Characteristics

Input Impedance	50 Ω nominal
RF Connector Type	Type-N
Connector Sex	Male
Maximum SWR (10 MHz to 8 GHz)	1.12
Maximum SWR (8 GHz to 12.4 GHz)	1.17
Maximum SWR (12.4 GHz to 18 GHz)	1.24

Accuracy, Calibration & Noise

Calibration Factor Storage	Internal EEPROM
EEPROM Stored Data	Calibration factors, linearity, and temperature compensation data
Zero Set	± 500 nW
Zero Drift	± 150 nW
Measurement Noise	± 700 nW

Meter Compatibility & System Integration

Compatible Power Meter Models	Keysight/Agilent EPM (E4418, E4419), EPM-P (E4416, E4417), and P-series (N1911, N1912)
-------------------------------	--

Environmental Parameters

Storage Temperature Range	-40 to +75 $^{\circ}\text{C}$
---------------------------	-------------------------------

Environmental

Operating Humidity	Up to 95% RH at 40 $^{\circ}\text{C}$ (non-condensing)
Storage Humidity	Up to 95% RH at 65 $^{\circ}\text{C}$ (non-condensing)
Maximum Operating Altitude	4600 m (15000 ft)

Compliance

Safety Compliance	Conforms to CSA C22.2 No. 1010.1, EN 61010-1
EMC Compliance	Conforms to EN 61326-1, CISPR 11 / EN 55011 Class A

RF Characteristics

Integrated Attenuator	30 dB (nominal)
-----------------------	-----------------

Linearity

Linearity (-30 to +20 dBm)	$\pm 3.0\%$ (25 $\pm$ 5 $^{\circ}\text{C}$), $\pm 4.0\%$ (0 to 55 $^{\circ}\text{C}$)
Linearity (+20 to +30 dBm)	$\pm 4.0\%$ (25 $\pm$ 5 $^{\circ}\text{C}$), $\pm 5.0\%$ (0 to 55 $^{\circ}\text{C}$)
Linearity (+30 to +44 dBm)	$\pm 10.0\%$ (25 $\pm$ 5 $^{\circ}\text{C}$), $\pm 10.0\%$ (0 to 55 $^{\circ}\text{C}$)

Calibration Uncertainty

Calibration Factor Uncertainty (10 to 30 MHz)	±1.8% (25 ± 5 °C)
Calibration Factor Uncertainty (30 to 500 MHz)	±1.6% (25 ± 5 °C)
Calibration Factor Uncertainty (500 MHz to 1.2 GHz)	±1.8% (25 ± 5 °C)
Calibration Factor Uncertainty (14 to 18 GHz)	±2.0% (25 ± 5 °C)

Connectivity

Compatible Cables	Keysight E9288A (1.5 m), E9288B (3 m), E9288C (10 m) or legacy 11730A/B/C/D/E/F series
-------------------	--

TECHNOLOGY

Diode-attenuator-diode

APPLICATIONS

RF and Microwave Power Measurement

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.