

KEYSIGHT TECHNOLOGIES (AGILENT HP)

E9300A

The Keysight (Agilent) E9300A is an E-Series RF/microwave average power sensor for use with Keysight EPM, EPM-P and P-series power meters. It measures average power of any modulation format over 10 MHz to 18 GHz, with an 80 dB dynamic range and low VSWR for minimized mismatch uncertainty.

SPECIFICATIONS

General

Interfaces	E-Series sensor interface to compatible power meters; no direct USB/LAN/GPIB (control via meter)
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Physical

Power Supply	Powered from compatible power meter via E-Series sensor interface (no external supply)
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Operating Temperature	0 to +55 °C °C
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Product Identification

Manufacturer	Keysight Technologies (Agilent legacy)
Model	E9300A
Product type	RF/microwave average power sensor
Sensor family/series	E-Series E9300
Detector technology	Patented diode–attenuator–diode topology
Measurement principle	True average power, bandwidth-independent (square-law)
Application focus	Average power of CW and complex-modulated RF/microwave signals
Series continuity	Part of E9300 sensor family covering various frequency/power variants

Performance Specifications

Frequency range	10 MHz to 18 GHz
Measurement power range	–60 to +20 dBm
Dynamic range	80 dB
Measurement modes	Average power
Modulation compatibility	Average power of all modulation formats (bandwidth independent)
Measurement units	W, dBm (via compatible meter)
High/low power paths	Low: –60 to –10 dBm; High: –10 to +20 dBm (auto-switched)
Range switching	Automatic, fast switching between low and high power paths
Bandwidth dependence	Bandwidth-independent average sensing (no video BW to set)
Time-gated measurement support	Not supported by this sensor (average-only); gating features reside in meter with peak sensors
Measurement path behavior	Diodes operated in square-law region across both ranges for modulation-independent accuracy
Auto-range benefit	Combines two sensors in one: low- and high-power paths switch automatically
Measurement display	Provided by connected meter; sensor has no integral display

RF Input Characteristics

RF input connector	Type-N male
Nominal impedance	50 Ω
Connector gender	Male (plug) at RF input
Intended impedance system	50-ohm RF systems

Damage and Operating Limits

Maximum average (CW) power	+25 dBm at RF input
Maximum peak power	+33 dBm for <10 μ s duration

Calibration and Traceability

Calibration approach	Uses compatible meter's 50 MHz reference for user cal/adjust (via meter)
Zeroing requirement	Zero sensor via compatible meter before precision measurements
Sensor identification	Sensor stores ID and calibration in EEPROM for automatic recognition by meter

Connectivity and Interfaces

Compatible power meters	EPM series (E4418A/E4419A), EPM-P series (E4416A/E4417A), and P-series power meters
Sensor-to-meter interface	Keysight E-Series sensor interface (meter front-panel)
Sensor series compatibility note	E9300 sensors usable for average-power measurements with EPM, EPM-P and P-series meters
Meter pairing example (single-channel)	E4418A (EPM)
Meter pairing example (dual-channel)	E4419A (EPM)

Software and Control

SCPI/programming access	Via the connected power meter (meter provides remote interfaces)
Data logging/buffering	Provided by the connected meter (not in sensor)
Remote control interfaces (via meter)	USB/LAN/GPIB as fitted to the chosen meter

Power Requirements

Power source	From connected power meter (no external supply)
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Application Notes

Use case—general	Standardize on one average power sensor for diverse modulated signals (no bandwidth matching)
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Dynamic Performance and Filtering

Measurement averaging/filtering	Implemented in meter; sensor provides average-detected signal
Triggering	Managed by the meter; not a function of the E9300A sensor

TECHNOLOGY

Diode–attenuator–diode average power detector topology (square-law operation across range) with EEPROM-stored cal/linearity/temperature data.

APPLICATIONS

Average RF/microwave power measurements of modulated and CW signals, general purpose RF test, wireless/ comms, radar, and component/bench measurements with compatible power meters.

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