

KEYSIGHT TECHNOLOGIES (AGILENT HP)

N8485A

The Keysight N8485A is a high-performance thermocouple power sensor designed for accurate RF and microwave power measurements. Operating across a wide frequency range from 10 MHz up to 26.5 GHz (or up to 33 GHz with Option 033), it offers high linearity, exceptional SWR performance, and compatibility with a wide range of legacy and modern Keysight/Agilent power meters. Available in standard EEPROM-calibrated (Option STD) and printed calibration table (Option CFT) variants, it is an essential tool for precise power characterization in laboratory, manufacturing, and field environments.

SPECIFICATIONS

General

Interfaces	Multipin sensor connector (compatible with Keysight 11730 series cables)
Display	None (utilizes compatible power meter display)
Sensor Technology	Thermocouple

Physical

Power Supply	Power supplied directly from compatible power meter
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	38 mm x 30 mm x 135 mm mm
Weight	0.181 kg

Performance

Frequency Range (Standard)	10 MHz to 26.5 GHz
Frequency Range (Option 033)	10 MHz to 33 GHz
Power Measurement Range	-35 dBm to +20 dBm (224 nW to 100 mW)
Maximum Continuous Input Power	+25 dBm (300 mW)
Maximum Peak Input Power	15 W (for pulse width < 10 μs)
Maximum DC Input Voltage	20 VDC

Standing Wave Ratio (SWR)

Maximum SWR (10 MHz to 50 MHz)	1.15
Maximum SWR (50 MHz to 100 MHz)	1.10
Maximum SWR (100 MHz to 2 GHz)	1.13
Maximum SWR (2 GHz to 12.4 GHz)	1.18
Maximum SWR (12.4 GHz to 18 GHz)	1.25
Maximum SWR (18 GHz to 26.5 GHz)	1.29
Maximum SWR (26.5 GHz to 33 GHz)	1.34 (Option 033)

Linearity

Power Linearity (-35 to -1 dBm, Option STD)	±0.52%
Power Linearity (-1 to +15 dBm, Option STD)	±0.80%
Power Linearity (+15 to +20 dBm, Option STD)	±1.41%
Power Linearity (-35 to -1 dBm, Option CFT)	±0.80%
Power Linearity (-1 to +15 dBm, Option CFT)	±1.24%
Power Linearity (+15 to +20 dBm, Option CFT)	±1.84%

Zeroing & Noise

Zero Set	±25 nW
Zero Drift	< ±10 nW (within 1 hour at constant temperature)
Measurement Noise	< 80 nW

Physical & Mechanical

RF Input Connector	3.5 mm male
RF Connector Torque Limit	90 N-cm (8 in-lb)

System Connectivity

Compatible Cable Type	Keysight 11730 series cables
Compatible Power Meters	Keysight EPM (N1913A/14A, E4418B/19B), EPM-P (E4416A/17A), and P-Series (N1911A/12A)

System Compatibility

Calibration Storage (Option STD)	EEPROM (no manual calibration table entry required)
Calibration Storage (Option CFT)	Calibration factor table printed on sensor chassis

Environmental

Storage Temperature Range	-40 °C to +70 °C
Operating Humidity Range	Up to 95% RH at 40 °C (non-condensing)
Storage Humidity Range	Up to 90% RH at 65 °C (non-condensing)
Operating Altitude	Up to 4,600 meters (15,000 feet)
Storage Altitude	Up to 15,240 meters (50,000 feet)
Vibration (Operating)	Random: 5 to 500 Hz, 0.21 g rms
Vibration (Non-Operating)	Random: 5 to 500 Hz, 2.09 g rms; Swept Sine: 0.5G, 5 to 500 Hz
Shock (Non-Operating)	Half-sine pulse: 400G, 2 ms

Compliance & Certifications

EMC Compliance	Complies with IEC 61326-1 / EN 61326-1, CISPR 11 / EN 55011 Class A
Safety Standards	Complies with IEC 61010-1 / EN 61010-1

Ordering Information

Option STD Description	Standard configuration featuring integrated EEPROM calibration
Option CFT Description	Legacy compatibility option with printed calibration factor table
Option 033	Frequency range expansion up to 33 GHz
Option 1A7	ISO 17025 compliant calibration certificate
Option A6J	ANSI Z540 compliant calibration certificate
Option UK6	Commercial calibration certificate with test data

RF Characteristics

Nominal Impedance	50 Ω
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TECHNOLOGY

Thermocouple RF Power Measurement

APPLICATIONS

RF and Microwave Power Measurement

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