



E-Series Power Sensors

High Frequency, High Power Specials

E4413A H33

Frequency Range	Maximum SWR	Cal Factor Uncertainty % at 1 mW (0.0 dBm)
50 MHz to 33 GHz	1.34 (26 GHz to 33 GHz)	3.2%

E9300A H24

All specifications for the E9300A option H24 are identical to the E9300A with the following exceptions:

Frequency Range	Connector Type
50 MHz to 24 GHz	3.5 mm

Maximum SWR (25 ± 10°C)	Maximum SWR (0 to 55°C)
50 MHz to 2 GHz: 1.13	50 MHz to 2 GHz: 1.15
2 GHz to 14 GHz: 1.19	2 GHz to 14 GHz: 1.20
14 GHz to 16 GHz: 1.22	14 GHz to 16 GHz: 1.23
16 GHz to 18 GHz: 1.26	16 GHz to 18 GHz: 1.27
18 GHz to 24 GHz: 1.30 ¹	18 GHz to 24 GHz: 1.30 ¹

Maximum DC Volts: 10 volts

Cal Factor uncertainty (Low Power Path, -60 to -10 dBm):

Frequency	Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
50 MHz to 500 MHz	± 1.6%	± 2.0%
500 MHz to 1.2 GHz	± 1.8%	± 2.5%
1.2 GHz to 6 GHz	± 1.7%	± 2.0%
6 GHz to 14 GHz	± 1.8%	± 2.0%
14 GHz to 18 GHz	± 2.0%	± 2.2%
18 GHz to 24 GHz	± 3.0%	± 3.5%

Cal Factor uncertainty (High Power Path, -10 to +20 dBm):

Frequency	Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
50 MHz to 500 MHz	± 2.3%	± 3.0%
500 MHz to 1.2 GHz	± 2.8%	± 4.0%
1.2 GHz to 6 GHz	± 2.3%	± 2.1%
6 GHz to 14 GHz	± 2.4%	± 2.3%
14 GHz to 18 GHz	± 2.7%	± 3.3%
18 GHz to 24 GHz	± 3.5%	± 4.0%

¹ A supplemental characteristic



E9300A H25

Option H25 adds an external 8493C option 010 10 dB attenuator, which shifts the power range of the standard E9300A to -50 to +30 dBm. All specifications for the E9300A option H25 are identical to the E9300H with the following exceptions:

Frequency Range	Connector Type
50 MHz to 24 GHz	3.5 mm

Maximum SWR (25 ± 10°C)	Maximum SWR (0 to 55°C)
50 MHz to 2 GHz: 1.13	50 MHz to 2 GHz: 1.15
2 GHz to 14 GHz: 1.19	2 GHz to 14 GHz: 1.20
14 GHz to 16 GHz: 1.25	14 GHz to 16 GHz: 1.25
16 GHz to 18 GHz: 1.26	16 GHz to 18 GHz: 1.27
18 GHz to 24 GHz: 1.30	18 GHz to 24 GHz: 1.30 ¹

Maximum DC Volts: 10 volts

Cal Factor uncertainty (Low Power Path, -50 to 0 dBm):

Frequency	Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
50 MHz to 500 MHz	± 1.6%	± 2.0%
500 MHz to 1.2 GHz	± 1.8%	± 2.5%
1.2 GHz to 6 GHz	± 1.7%	± 2.0%
6 GHz to 14 GHz	± 1.8%	± 2.0%
14 GHz to 18 GHz	± 2.0%	± 2.2%
18 GHz to 24 GHz	± 3.0% ²	± 3.5% ²

Cal Factor uncertainty (High Power Path, 0 to +30 dBm):

Frequency	Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
50 MHz to 500 MHz	± 2.3%	± 3.5%
500 MHz to 1.2 GHz	± 2.8%	± 4.5%
1.2 GHz to 6 GHz	± 2.3%	± 2.6%
6 GHz to 14 GHz	± 2.4%	± 2.8%
14 GHz to 18 GHz	± 2.7%	± 3.8%
18 GHz to 24 GHz	± 3.5%	± 4.5%

¹ A supplemental characteristic

² Supplemental characteristic except ± 5°C in the 25 ± 10°C specification

E9304A H18

All specifications for the E9304A option H18 are identical to the E9304A with the following exceptions:

Frequency Range

9 kHz to 18 GHz

Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
9 kHz to 2 GHz: 1.13	50 MHz to 2 GHz: 1.15
2 GHz to 14 GHz: 1.19	2 GHz to 14 GHz: 1.20
14 GHz to 16 GHz: 1.22	14 GHz to 16 GHz: 1.23
16 GHz to 18 GHz: 1.26	16 GHz to 18 GHz: 1.27

Cal Factor uncertainty (Low Power Path, -60 to -10 dBm):

Frequency	Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
9 kHz to 6 GHz	± 1.7%	± 2.0%
6 GHz to 14 GHz	± 1.8%	± 2.0%
14 GHz to 18 GHz	± 2.0%	± 2.2%

**Cal Factor uncertainty
(High Power Path, -10 to +20 dBm):**

Frequency	Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
9 kHz to 500 MHz	± 2.0%	± 3.4%
500 MHz to 1.2 GHz	± 2.2%	± 3.4%
1.2 GHz to 6 GHz	± 1.8%	± 2.1%
6 GHz to 14 GHz	± 1.9%	± 2.3%
14 GHz to 18 GHz	± 2.2%	± 3.3%

**Cal Factor uncertainty
(High Power Path, 0 to +30 dBm):**

Frequency	Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
9 kHz to 500 MHz	± 2.3%	± 3.5%
500 MHz to 1.2 GHz	± 2.8%	± 4.5%
1.2 GHz to 6 GHz	± 2.3%	± 2.6%
6 GHz to 14 GHz	± 2.4%	± 2.8%
14 GHz to 18 GHz	± 2.7%	± 3.8%

E9304A H19

Option H19 modifies the standard E9304A power sensor by adding a 10 dB attenuator, which shifts the power range to -50 to +30 dBm and extends the upper frequency range to 18 GHz. All specifications for the E9304A option H19 are identical to the E9304A with the following exceptions:

Frequency Range	Power Range
9 kHz to 18 GHz	-50 to +30 dBm

Maximum SWR (25 ± 10°C)	Maximum SWR (0 to 55°C)
9 kHz to 8 GHz: 1.15	9 kHz to 8 GHz: 1.17
8 GHz to 12.4 GHz: 1.25	8 GHz to 12.4 GHz: 1.26
12.4 GHz to 18 GHz: 1.28	12.4 GHz to 18 GHz: 1.29

**Cal Factor uncertainty
(Low Power Path, -50 to 0 dBm):**

Frequency	Uncertainty (25 ± 10°C)	Uncertainty (0 to 55°C)
9 kHz to 6 GHz	± 1.7%	± 2.0%
6 GHz to 14 GHz	± 1.8%	± 2.0%
14 GHz to 18 GHz	± 2.0%	± 2.2%

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.



Agilent Email Updates

www.agilent.com/find/emailupdates

Get the latest information on the products and applications you select.

Agilent T&M Software and Connectivity

Agilent's Test and Measurement software and connectivity products, solutions and developer network allows you to take time out of connecting your instruments to your computer with tools based on PC standards, so you can focus on your tasks, not on your connections. Visit www.agilent.com/find/connectivity for more information.

By internet, phone, or fax, get assistance with all your test & measurement needs

Online assistance:
www.agilent.com/find/assist

Phone or Fax

United States:
(tel) 800 452 4844

Canada:
(tel) 877 894 4414
(fax) 905 282 6495

China:
(tel) 800 810 0189
(fax) 800 820 2816

Europe:
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390

Japan:
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Korea:
(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115

Latin America:
(tel) 305 269 7500
(fax) 305 269 7599

Taiwan:
(tel) 0800 047 866
(fax) 0800 286 331

Other Asia Pacific Countries:
(tel) (65) 6375 8100
(fax) (65) 6836 0252
Email: tm_asia@agilent.com

Product specifications and descriptions in this document subject to change without notice.
© Agilent Technologies, Inc. 2002
Printed in the USA November 13, 2002
0000-0000EN



Agilent Technologies