Keysight Technologies
E4990A Impedance Analyzer
20 Hz to 10/20/30/50/120 MHz

Configuration Guide

KEYSIGHT
TECHNOLOGIES

Ordering Guide

The following steps will guide you through configuring your E4990A.

Standard Furnished Item

Description	Additional Information
Installation guide	Contains the information necessary to start up with the E4990A.
CD ROM IO libraries	
100 ohm resistor	100 Ω load resistor module for 4-terminal pair extension. See Available Accessories (General/Miscellaneous Measurement Accessories) for additional information.
Power Cable	
Certificate of Calibration	

Step 1. Choose Frequency (Mandatory)

Description	Option No.	Requires	Not Compatible	Additional Information
20 Hz to 120 MHz	E4990A-120	None	None	
20 Hz to 50 MHz	E4990A-050	None	None	
20 Hz to 30 MHz	E4990A-030	None	None	Does not support 42941A and 42942A
20 Hz to 20 MHz	E4990A-020	None	None	
20 Hz to 10 MHz	E4990A-010	None	None	

Step 2. Choose Frequency Reference (if not required, go to Step 3)

Description	Option No.	Requires	Not Compatible	Additional Information
High Stability Frequency Reference	E4990A-1E5	None		This option improves the frequency accuracy and stability of the E4990A. BNC Adapter is supplied with E4990A-1E5.

Note: Refer to Hardware Upgrade for retrofit information on the above options.

Step 3. Choose Accessory Option (If not required, go to Step 4)

Description	Option No.	Requires	Not Compatible	Additional Information
Rackmount Kit	E4990A-1CM	None	E4990A-1CP	
Front Handle Kit	E4990A-1CN	None	E4990A-1CP	
Handle/Rackmount Kit	E4990A-1CP	None	E4990A-1CM E4990A-1CN	
Keyboard	E4990A-810	None	None	
Mouse	E4990A-820	None	None	

Note: Refer to Hardware Upgrade for retrofit information on the above options.

Step 4. Choose Calibration Certificate Option (If not required, go to Step 5)

Description	Option No.	Additional Information
ISO 17025 compliant calibration	E4990A-1A7	ISO 17025 compliant calibration
ANSI Z540 Compliant Calibration	E4990A-A6J	ANSI Z540 compliant calibration

Step 5. Choose Warranty Plan

3-year Return-to-Keysight Warranty and Service Plan are standard. For extended warranty options and additional information, contact your local Keysight Technologies, Inc. sales office or visit the Keysight home website.

Hardware Upgrade

Option No.	Description	Upgrade Model No. or Equivalent Part Number	Customer Installable	Requires (Instrument must already include the following)	Not Compatible	Additional Information
E4990A-1E5	High Stability Frequency Reference	E4990AU-1E5	No		None	
E4990A-020	Upgrade from 10 MHz to to 20 MHz	E4990AU-020	No	E4990A-010	None	
E4990A-030	Upgrade from 10 MHz to to 30 MHz	E4990AU-030	No	E4990A-010	None	
E4990A-050	Upgrade from 10 MHz to to 50 MHz	E4990AU-050	No	E4990A-010	None	
E4990A-120	Upgrade from 10 MHz to to 120 MHz	E4990AU-120	No	E4990A-010	None	Installable at service center only
E4990A-030	Upgrade from 20 MHz to to 30 MHz	E4990AU-031	No	E4990A-020	None	
E4990A-050	Upgrade from 20 MHz to to 50 MHz	E4990AU-051	No	E4990A-020	None	
E4990A-120	Upgrade from 20 MHz to to 120 MHz	E4990AU-121	No	E4990A-020	None	
E4990A-050	Upgrade from 30 MHz to to 50 MHz	E4990AU-052	No	E4990A-030	None	
E4990A-120	Upgrade from 30 MHz to to 120 MHz	E4990AU-122	No	E4990A-030	None	
E4990A-120	Upgrade from 50 MHz to to 120 MHz	E4990AU-123	No	E4990A-050	None	
E4990A-1CM	Rackmount Kit	5063-9216	Yes	None	E4990A-1CP	
E4990A-1CN	Front Handle Kit	5063-9229 E4990-20001	Yes	None	E4990A-1CP	
E4990A-1CP	Handle/Rackmount Kit	5188-4430 E4990-20001	Yes	None	E4990A-1CM E4990A-1CN	

Available Accessories – General/Miscellaneous Measurement Accessories

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Impedance Probe Kit	42941A	None	Require Option E4990A-120. 20 Hz – 120 MHz Impedance Probe Kit. Contains Pin Probe, Spare Pin Set, BNC-SMB Adapter, 3.5 mm Short and Load terminations, clip lead, grounding lead, carrying case and Operation and Service manual.
	42941A-ABA	None	U.S. – English localization
	42941A-ABJ	None	Japan – Japanese localization
4-Terminal to 7 mm Terminal Adapter	42942A	None	Require Option E4990A-120. 20 Hz – 120 MHz Terminal Adapter for using RF component test fixtures such as the 16092A, 16192A, 16194A, 16196A/B/C/D and 16197A. Operation Note is furnished.
	42942A-700	None	Adds 7 mm open/short/load terminations set
	42942A-ABA	None	U.S. – English localization
	42942A-ABJ	None	Japan – Japanese localization
Test Leads	16048G	None	1 m BNC connector leads. DC – 120 MHz. Usable with the 4294A and E4990A.
	16048G-001	None	Adds BNC Bracket
	16048G-ABA	None	U.S. – English localization
	16048G-ABJ	None	Japan – Japanese localization
Test Leads	16048H	None	2 m BNC connector leads. DC – 120 MHz. Usable with the 4294A and E4990A.
	16048H-001	None	Adds BNC Bracket
	16048H-ABA	None	U.S. - English localization
	16048H-ABJ	None	Japan – Japanese localization
SMD Test Fixture	16034E	None	For SMD; (0.1 to 8)L x (0.5 to 10)W x (0.5 to 10)H mm. DC – 40 MHz. Operation and Service Manual is furnished.
SMD Test Fixture	16034G	None	For SMD; (0.1 to 5)L x (0.3 to 1.6)W x (0.3 to 1.6)H mm. DC – 120 MHz. 100 Ω SMD resistors set is furnished.
	16034G-ABA	None	U.S. - English localization
	16034G-ABJ	None	Japan – Japanese localization
SMD Test Fixture	16034H	None	For Array-type SMD; (0.1 to 5)L x (≤ 15)W x (0.6 to 3)H mm. DC – 120 MHz. 100 Ω SMD resistors set and Operation Manual are furnished.
SMD Test Fixture	16044A	None	Kelvin contact test fixture for SMD; (1.6 to 8)L x (0.8 to 8)W x (0.8 to 3)H mm. DC – 10 MHz.
	16044A-ABA	None	U.S. – English localization
	16044A-ABJ	None	Japan – Japanese localization
Test Fixture	16047A	None	For axial or radial lead device. DC – 13 MHz. Operation and Service Manual is furnished.
	16047A-701	None	Adds Shorting plate

Available Accessories – General/Miscellaneous Measurement Accessories (continued)

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Test Fixture	16047E	None	For axial or radial lead device. DC – 120 MHz.
	16047E-ABA	None	U.S. – English localization
	16047E-ABJ	None	Japan – Japanese localization
Tweezers Test Fixture	16334A	None	For SMD; ≤ 10 mm L. Tweezers type; cable length 1 m. DC – 15 MHz. Shorting block and Operation and Service Manual are furnished.
Kelvin Clip Leads	16089A	None	2 large clips. 5 Hz – 100 kHz. Choose mandatory option 16089A-800 or C20. Operation and Service Manual is furnished.
	16089A-800	None	Cable length: 1 m (standard)
	16089A-C20	None	Cable length: 2 m
Kelvin Clip Leads	16089B	None	2 medium clips. 5 Hz – 100 kHz. Choose mandatory option 16089B-800 or C20. Operation and Service Manual is furnished.
	16089B-800	None	Cable length: 1 m (standard)
	16089B-C20	None	Cable length: 2 m
Kelvin IC Clip Leads	16089C	None	2 IC clips; cable length 1 m. 5 Hz – 100 kHz. Operation and Service Manual is furnished.
Alligator Clip Leads	16089D	None	4 medium clips; cable length 1 m. 5 Hz – 100 kHz. Operation and Service Manual is furnished.
External Voltage Bias Fixture	16065A	None	± 200 V dc max., for axial or radial lead device. 50 Hz – 2 MHz. Shorting plate and Operation and Service Manual are furnished.
Dielectric Test Fixture	16451B	None	Test fixture for measuring permittivity of dry solid sheet material; Cable length 1 m. DC – 30 MHz. 38 mm and 5 mm diameter electrodes for measuring bare material and two types of electrodes for measuring material with pre-formed electrodes are furnished.
	16451B-ABA	None	U.S. - English localization
	16451B-ABJ	None	Japan – Japanese localization
Liquid Test Fixture	16452A	None (16048G and four of 1250-0216 BNC(m) to BNC(m) adapters)	Test fixture for measuring permittivity of liquid material. 20 Hz – 30 MHz. Required volume of material; 3.4, 3.8, 4.8 or 6.8 ml. Temperature range: –20 ° to +125 °C. Shorting plate, spacers, SMA-BNC adapters, fixture stand, carrying case and Operation and Service Manual are furnished.
Test Leads	16452-61601	None	Heat-proof test leads for use with the 16452A. Temperature range: –20 ° to +125 °C
100 Ω Resistor	E4990-61001	None	100 Ω load resistor module for 4-terminal pair extension. Furnished with the E4990A.

Note: For more detailed information, refer to Accessories Selection Guide for Impedance Measurements.

Available Accessories – for Calibration and Maintenance

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Open Termination	42090A	None	4-terminal pair Open termination. Required for performing calibration.
Short Termination	42091A	None	4-terminal pair Short termination. Required for performing calibration.
4-Terminal Pair Standard Capacitor Set	16380A	None	1 pF, 10 pF, 100 pF and 1000 pF standard capacitor set with carrying case. Calibration report and Operation Note are furnished.
4-Terminal Pair Standard Capacitor Set	16380C	None	0.01 µF, 0.1 µF and 1 µF standard capacitor set with carrying case. Calibration report and Operation Note are furnished.
	16380C-001	None	Adds 10 µF standard capacitor.
4-Terminal Pair Standard Resistor Set	42030A	None	9 standard resistors from 1 mΩ to 100 kΩ in decade steps; Carrying case, calibration report and Operation and Service Manual are furnished.
Performance Test Kit	16190A	None	Contains 7 mm Open, Short, 50 Ω Load terminations, calibrated air-line, wrench, calibration data diskette, carrying case and Operation Note.
4 Terminal Pair to BNC Interface Box	04294-61002	None	Terminal Adapter for test signal and DC bias performance tests

Note: For more detailed information, refer to Accessories Selection Guide for Impedance Measurements

Literature Resource

Title	Publication Number	Additional Information
E4990A Data Sheet	5991-3890EN	
E4990A Brochure	5991-3888EN	
LCR Meters, Impedance Analyzers and Test Fixtures Selection Guide	5952-1430E	
Accessories Selection Guide For Impedance Measurements	5965-4792E	
Impedance Measurement Handbook	5950-3000	

Note: More literature is available on the Keysight home website.

Web Resource

Have access to the following website to acquire the latest news, product and support information, application literature and more.
www.keysight.com/find/impedance

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