

Keysight 16048A Test Leads

Notices

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Manual Part Number

16048-90001

Edition

Edition 8, January 2020

Printed in Malaysia

Published by:

Keysight Technologies International
Japan G.K,
1-3-3 Higashikawasaki-cho
Chuo-ku
Kobe-shi, Hyogo, Japan

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1 Operation

This operating note provides complete information on the 16048A Test Leads. The 16048A is shown pictorially in **Figure 1-1**, its physical dimensions are given in **Table 1-1**, and typical characteristics related to offset error are given in **Table 1-2**. To order additional copies of this operating note, use the option number listed on www.keysight.com.

Product Description

The 16048A consists of a direct attachment, 4-terminal pair type fixture which is equipped with four BNC (m) terminated-coaxial test leads. These test leads are used to attach user-fabricated test fixtures. DC bias levels of up to $\pm 42V$ can be applied to the 16048A. Cable length is 1 meter. The 16048A is shown in **Figure 1-1**.

Figure 1-1 Product Overview



Specifications

Table 1-1 **Specifications of the 16048A**

Function:	For use with 4 terminal-pair LCR Meters and Impedance Analyzers.
Connector Type:	BNC male
Cable Length:	Approximately 1m
Maximum Voltage:	± 42V peak max. (AC+DC)
Frequency Range:	DC to 30 MHz
Weight:	315 g
Safety Standards:	EN61010-1:1993 +A2:1995 IEC61010-1:1990 +A1:1992 +A2:1995 CSA C22.2 No.1010.1:1992 INSTALLATION CATEGORY I POLLUTION DEGREE 2 INDOOR USE

Typical Characteristics

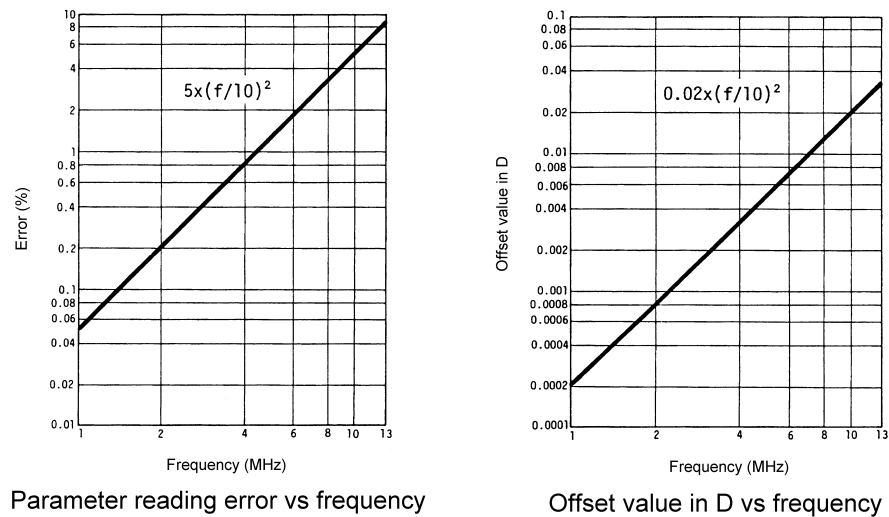
Table 1-2 Typical Characteristics

Incremental error at freq ≥ 1 MHz.	
Parameter reading error (%)	Offset value for D
$\pm 5 \times \left(\frac{f}{10}\right)^2$	$\pm 0.02 \times \left(\frac{f}{10}\right)^2$

NOTE

f is the measurement frequency in megahertz. The incremental errors calculated from the equation in the table for measurements at frequencies above 1 MHz are additive.

Figure 1-2



Compensation for Fixture Residual Impedance Error

The 16048A has inherent stray capacitance, residual inductance, and residual resistance that affect the accuracy of measured values. To compensate for, or negate, these residuals to minimize measurement error, the instrument's Open/Short compensation procedure should be performed. The procedure is given in the instrument's operating manual.

2 Service

Introduction

This chapter gives the service information for the 16048A.

Serial Number for Non-RoHS 16048A:

“MY44100001 – MY44199999” or “SG44100001 – SG44199999”

Serial Number for RoHS 16048A:

“MY44200001 and above” or “SG44200001 and above”.

Maintenance

Shown are the supported parts and their respective RoHS compliant replacement support part. RoHS conversion involves with design and dimension change which result in the RoHS support part backward incompatible with non-RoHS 16048A. Special handling is needed while using the RoHS replacement part on non-RoHS 16048A. The original support part number is replaced by the respective “RoHS Compliant Replacement Part”.

Do not disassemble any further than shown. Maintenance consists principally of cleaning contacts and replacing worn or damaged parts. Take special care when cleaning contacts. To order parts, use the Keysight Technologies part numbers listed in **Table 2-1**. If a faulty part is located in an assembly that cannot be disassembled, order the next higher assembly or return the whole device to the nearest Keysight Technologies Sales/Service Office for repair or replacement.

Figure 2-1 Parts Identification

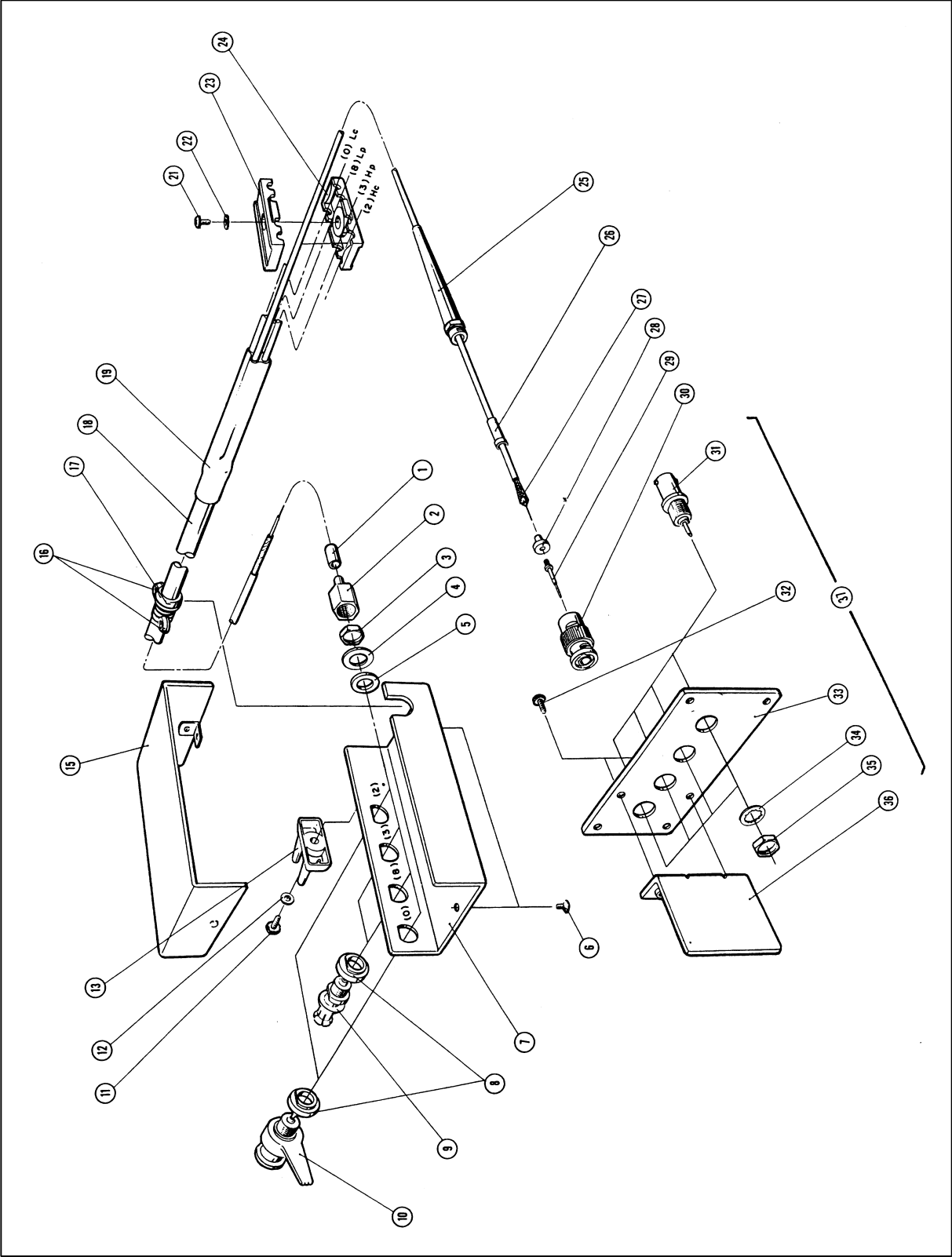


Table 2-1

Replaceable Part

Ref /D	Non-RoHS Part No.	Description	Qty	RoHS Compliant Replacement Part	Description	Qty
1	*	SLEEVE	4	*	-	4
2	*	NUT	4	*	-	4
3	*	NUT	4	*	-	4
4	*	WASHER	4	*	-	4
5	*	WASHER	4	*	-	4
6	2360-0192	SCREW	2	16048-60610	TEST LEAD	2
7	*	COVER-BOTTOM	1	*	-	1
8	*	INSULATOR	4	*	-	4
9	*	CONNECTOR-BNC	2	*	-	2
10	*	CONNECTOR-BNC	2	*	-	2
11	2200-0103	SCREW	1	*	-	1
12	2190-0206	WASHER	1	*	-	1
13	16047-40000	STOPPER	1	*	-	1
15	16048-04000	COVER-TOP	1	16048-60610	TEST LEAD	1
16	1400-0719 (1400-3284)	CABLE TIE	2	1400-3284	CABLE TIE	2
17	*	GROMMET	1	*	-	1
18	*	CABLE	1	*	-	1
19	*	BUSHING	1	*	-	1
21	2360-0115	SCREW	1	16048-60610	TEST LEAD	1
22	3050-0010	WASHER	1	16048-60610	TEST LEAD	1
23	16021-50021	CABLE CRAMP	1	16048-60610	TEST LEAD	1
24	16021-50022	CABLE CRAMP	1	16048-60610	TEST LEAD	1
25	*	BOOT-BNC	4	*	-	4
26	*	SLEEVE	4	*	-	4
27	*	SLEEVE	4	*	-	4
28	*	INSULATOR	4	*	-	4

Table 2-1

Replaceable Part

Ref /D	Non-RoHS Part No.	Description	Qty	RoHS Compliant Replacement Part	Description	Qty
29	1250-0089	CONTACT	4	1250-0089	CONTACT	4
30	1250-0052	CONNECTOR-BNC	4	1250-0052	CONNECTOR -BNC	4
	16048-60010	TEST LEAD (1 thru 30)	1	16048-60610	TEST LEAD	1
31	1250-0118	CONNECTOR-BNC FEMALE	4	1250-0118	CONNECTOR -BNC FEMALE	4
32	2360-0115	SCREW	2	^a Set Change: 0515-0372	SCREW	2
33	16032-10021	PLATE	1	^a Set Change: 16032-10621	PLATE	1
34	2190-0016	WASHER	4	2190-0016	WASHER	4
35	2950-0001	NUT	4	2950-0001	NUT	4
36	16032-10022	PLATE	1	^a Set Change: 16032-10622	PLATE	1
37	16032-60001	BNC BRACKET (31 thru 36)	1	16032-60071	CONNECTOR ASSEMBLY	1

a. Replace all the associated parts marked with ^a as they are mutually dependent.

*. Not separately replaceable. Order 16048-60010.

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Edition 8, January 2020



16048-90001

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