

# Keysight N9398C/F/G and N9399C/F DC Block

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## Manual Part Number

N9398-90001

## Edition

Edition 3, April 2, 2019

## Printed in:

Printed in Malaysia

## Published by:

Keysight Technologies  
Bayan Lepas Free Industrial Zone,  
11900 Penang, Malaysia

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## Waste Electrical and Electronic Equipment Directive 2002/96/EC

This instrument complies with the WEEE Directive (2002/96/EC) marking requirement. This affixed product label indicates that you must not discard this electrical or electronic product in domestic household waste.

### Product Category

With reference to the equipment types in the WEEE directive Annex 1, this instrument is classified as a “Monitoring and Control Instrument” product.

The affixed product label is as shown below.



Do not dispose in domestic household waste.

To return this unwanted instrument, contact your nearest Keysight Service Center, or visit <http://about.keysight.com/en/companyinfo/environment/takeback.shtml> for more information.

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- Click GO.

## Sales and Technical Support

To contact Keysight for sales and technical support, refer to the support links on the following Keysight websites:

- [www.keysight.com/find/dc-blocks](http://www.keysight.com/find/dc-blocks)  
(product-specific information and support, software and documentation updates)
- [www.keysight.com/find/assist](http://www.keysight.com/find/assist)  
(worldwide contact information for repair and service)

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# 1 General Information

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This chapter provides an overview of the Keysight N9398x and N9399x DC Blocks.

## DC Block Overview

The N9398C/F/G and N9399C/F are small, light-weight, coaxial DC blocks. They are designed to apply AC drive signals to a device while eliminating any DC voltage or current components.

The DC blocks cover broad frequency ranges and choice of connector types. Each model comes with different maximum operating voltage, frequency range and connector type as shown in [Table 1-1](#).

**Table 1-1** List of DC Blocks

Model	Frequency Range	Operating Voltage (Max)	Connector Type
N9398C	50 kHz to 26.5 GHz	16 V	3.5 mm (m), (f)
N9399C	700 kHz to 26.5 GHz	50 V	3.5 mm (m), (f)
N9398F	50 kHz to 50 GHz	16 V	2.4 mm (m), (f)
N9399F	700 kHz to 50 GHz	50 V	2.4 mm (m), (f)
N9398G	700 kHz to 67 GHz	16 V	1.85 mm (m), (f)

## Key Features

- Ruggedness, reliability, and small size make these DC blocks useful both on the bench and in systems applications.
- Low return loss and low insertion loss make these DC blocks well suited for isolating DC leakage between two electrical components.
- Each DC Block is tested with a vector network analyzer for return loss and insertion loss.



## 2 Specifications

For the characteristics and specifications of the N9398C/F/G and N9399C/F DC Blocks, refer to the Technical Overview document at <https://literature.cdn.keysight.com/litweb/pdf/5989-4544EN.pdf>.

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# 3 Installation

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This chapter provides you installation information and simple verification steps of the DC Blocks.

## Installation

### Initial Inspection

- 1** Inspect the shipping container for damage. If the shipping container or cushioning material is damaged, it should be kept until the contents of the shipment have been checked for completeness and the instrument has been checked both mechanically and electrically.
  - Check for mechanical damage such as scratches or dents.
  - Procedures for checking electrical performance are given under “[Operator’s Check](#)” on page 13 or “[Performance Test](#)” on page 16.
- 2** If the contents are incomplete, there is mechanical damage or defect, or the instrument does not pass the electrical performance test, contact the nearest Keysight Sales and Service office (refer to “[Sales and Technical Support](#)” on page 4). Keysight will arrange for repair or replacement of the damaged or defective equipment. Keep the shipping materials for the carrier’s inspection.
- 3** If you are returning the instrument under warranty or for service, repackaging the instrument requires original shipping containers and materials or their equivalents. Keysight can provide packaging materials identical to the original materials. Refer to “[Sales and Technical Support](#)” on page 4 for the Keysight office nearest to you. Attach a tag indicating the type of service required, return address, model number, and serial number. Mark the container *FRAGILE* to insure careful handling. In any correspondence, refer to the instrument by its model number and serial number.

# Operating and Service Instruction

## Operator's Check

The operator's check is supplied to allow the operator to make a quick check on the DC blocks prior to use or if a failure is suspected.

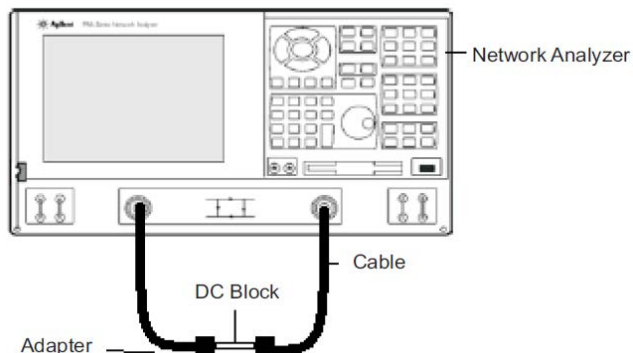
### Description

All four s-parameters of the DC block are measured using a network analyzer that is already calibrated with the necessary settings.

### Quick Check Procedure

Use correct cables and adapters on the test ports of the network analyzer. This depends on the type of DC block being checked. The equipment setup is as illustrated in [Figure 3-1](#).

- 1 Calibrate a network analyzer using an appropriate settings and setup if necessary.
- 2 Measure the S21 or/and S12 of the DC block. Compare with the specification to verify its electrical performance.
- 3 Measure the S11 and S22 of the DC block. Compare with the specification to verify its electrical performance.



**Figure 3-1** Connection to perform Quick Check

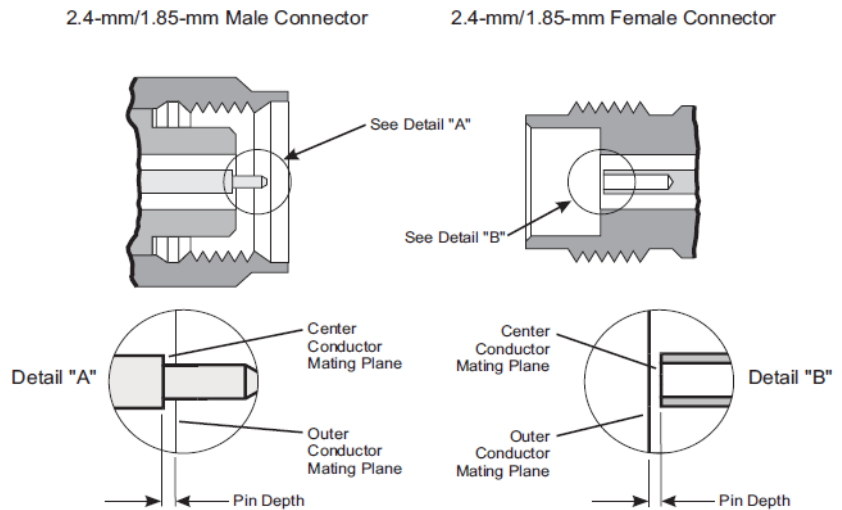
## Making Connections

The DC blocks should not bear any force or weight contributed by other devices connected to them. The DC blocks are bidirectional, that is, the signal may be inserted from either end.

### N9398F/N9399F/N9398G

The N9398F and N9399F 2.4-mm connectors mate with other 2.4-mm connectors of the opposite sex.

The N9398G 1.85-mm connectors mate with other 1.85-mm connectors of the opposite sex.



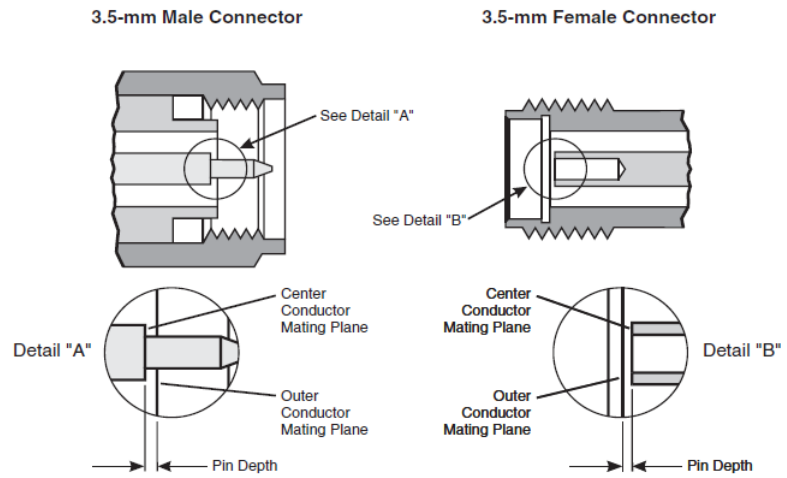
**Figure 3-2** 2.4-mm/1.85mm Connector Diagram

**N9398C/N9399C**

The N9398C and N9399C have a male 3.5-mm connector on one end and a female 3.5-mm connector on the other side. These connectors mate with the opposite sex 3.5-mm or SMA connectors.

**NOTE**

Continued mating with SMA connectors could degrade the 3.5-mm connector.



**Figure 3-3** 3.5-mm Connector Diagram

## Performance Test

The DC blocks can be tested to the accuracy of the specifications with a network analyzer or equivalent equipment of suitable accuracy. If a network analyzer is available, test the instrument using the procedure in the analyzer's operating manual.

## Service Instructions

### **Technical Assistance**

For technical assistance, you can contact your local Keysight Technologies Call Center. All major contacts are provided in the manual.

### **Maintenance**

The connectors, particularly the connector faces, must be kept clean. For instruction on connecting and care of your connectors, refer to the Microwave Connector Care Quick Reference Card (08510-90360).





This information is subject to change without notice. Always refer to the English version at the Keysight website for the latest revision.

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Edition 3, April 2, 2019

Printed in Malaysia



N9398-90001

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