

# RLC Series

## Return Loss Bridges for 50, 75, and 93 ohm Coax Systems



### Data Sheet

In communication circuits, maximum power transfer occurs when source and load impedance are matched. By relating it to a reference source impedance, the magnitude of a load impedance may, meaningfully, be expressed as "return loss."

North Hills Series RLC Return Loss Bridges interface with network analyzers to measure return loss of 50, 75, and 93 ohm coax systems. There are models for both 50 and 75 ohm network analyzers, covering frequency ranges from 10kHz to 300MHz.

There is also a companion **RLT Series of Return Loss Bridges** for twinax networks and a **RLB Series** for twisted pair (UTP) and other balanced systems.

**Application Note 155** explains the meaning of return loss and includes formulas and tables relating impedance, return loss, reflection factor and transmission losses.

**Application Note 157** is a tutorial on return loss bridges.



The North Hills RLC Series Return Loss Bridge

#### Features:

- Excellent Bridge directivity
- Frequency range 0.01 to 300 MHz
- 50, 75, and 93 ohm balanced impedances available

#### Test Procedure:

**Step 1:** Plug the bridge input directly into the Network Analyzer Output.

**Step 2:** Apply the bridge reflected signal output to the Network Analyzer input through a cable of impedance equal to that of the Network Analyzer.

#### Benefits:

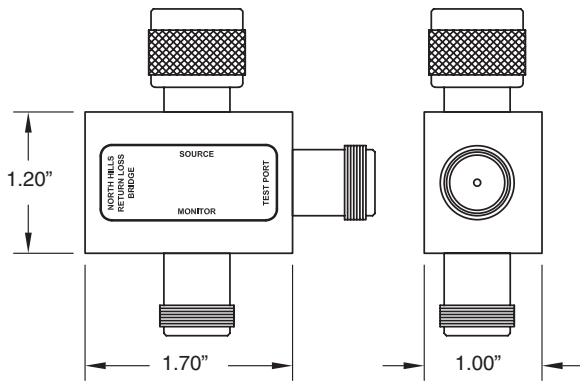
- Easy interface with 50  $\Omega$  or 75  $\Omega$  impedance network analyzers
- Excellent directivity across a broad frequency range

**Step 3:** With test port open, normalize display to 0 dB

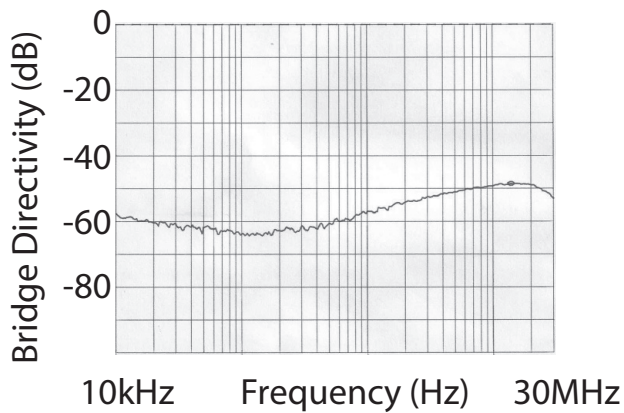
**Step 4:** Terminate the test port with the test load and measure return loss directly.

## Technical Drawings

### Mechanical Drawing



### Typical Characteristics - Model 1050RLC



## Specifications

Materials (unless otherwise specified)

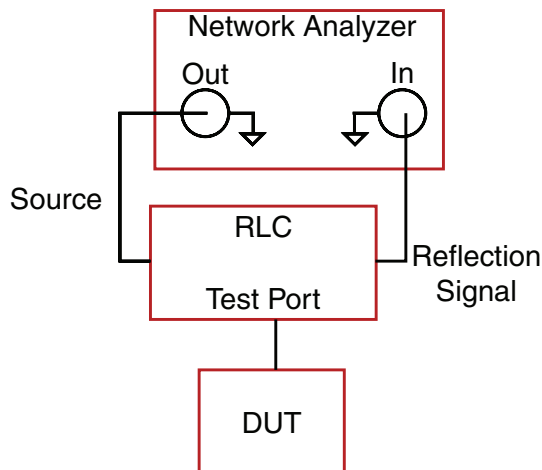
Parameter	Value
Connectors:	N Type
Socket Terminals	For $\phi$ .040 inch (18 GA.) PIN
Finish	Aluminum Alloy 6061-T6
Weight	110 grams (3.9 oz) Typical

## Ordering Information

Coax Impedance OHM	Network Analyzers	
	50 ohm Part #	75 ohm part #
10kHz - 30MHZ		
50	51050RLC	Call to Inquire
75	51075RLC	Call to Inquire
93	51093RLC	Call to Inquire
.1Hz - 100MHZ		
50	52050RLC	Call to Inquire
75	Call to Inquire	Call to Inquire
93	Call to Inquire	Call to Inquire

Specifications subject to change without notice.

### Return Loss Bridge Measurement Circuit



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