Series 1320 Bias Current Source

20A DC Bias Current Source

USES:

- DC Bias Current Testing of High Power Inductors
- Inductance Measurements Under Actual Operating Conditions
- Automated Testing Using QuadTech's 1750 LCR Digibridge or 2000 Automatic Transformer Test System
- Useable With Most Any LCR Meter

FEATURES:

- Programmable DC Bias Current to 20A
- Connects to LCR Meters for Inductance Measurements versus DC Current
- DC Resistance Measurements
- Forward/Reverse Biasing, Programmable
- Multi-point Current Testing
- Easy to Read LCD Display
- Four-Terminal Kelvin Connections
- Store/Recall up to 50 Test Groups
- IEEE-488 and I/O Interfaces Standard
- Slave Units Extend Bias Current to 100A

Introduction

The 1320 DC Bias Current Source is a programmable DC current source with DC resistance measuring capability for testing a wide range of inductive components. The 1320 provides 0 –20 amps of DC current and measures DC resistance from 0 to 200 ohms. The unit can be used as stand alone or used in conjunction with a variety of LCR Meters for evaluating inductance characteristics of components under DC bias conditions.

Description

The 1320 is a versatile unit, with a wide selection of user programmable capabilities, for testing or evaluation of inductor characteristics with a DC bias current applied.

High DC Bias Current Offers flexibility with programmable DC current from 0 – 20A, forward or reverse biasing. Up to 5 units can be connected in parallel to extend the current range to a maximum of 100A

Forward and Reverse Biasing A unique feature of the 1320 allows the operator to select bias current direction as forward or reverse. This has the advantage of testing hysteresis effects on inductors without changing test leads.

Display of Choice The 1320 provides the ability to select display of DC bias current, DC resistance value or DC voltage across the device, enabling the user to select the parameter or test results of primary interest.

Setup Storage and Recall The user friendly front panel of the 1320 makes for fast, easy setup of test conditions for 50 test groups which can be stored and recalled from internal memory to ensure that tests can be run the same way each time. Each group can contain up to 21 steps for performing multi-point testing at various levels of current.

Multi-point Current Testing The 1320 can be programmed for multi-point current testing with measurements being made at stepped current levels or as a loop test (current stepped up and back down). This makes it possible to evaluate devices under varying or actual operating conditions.

Multiple I/O Interfaces Four input/output interfaces are included standard on the 1320; the IEEE-488 for remote control and programming, two interfaces for connection to the QuadTech 2000 Automatic Transformer Test System and LCR meters, and slave interface for connecting parallel units to extend the overall bias current range.

Operation With 1750 LCR Meter The 1320 and 1750 make an ideal pair for fully automated inductance testing using multi-point current stepping and loop techniques. This combination can perform up to 21 tests in sequence for device evaluation under varying bias current levels.

Connection to LCR Meters The unit can be used in conjunction with QuadTech or other LCR meters for applying an external DC bias current to the device under test. The 1320 is connected directly to the bridge's 4-terminal Kelvin connections and enhances the measurement capability of existing instrumentation.

QuadTech
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1-800-253-1230
Fax 1-978-461-4295
Intl. 1-978-461-2100

Product Specifications

1320 Bias Current Source

DC Bias Current: Display:

Range	Accuracy	Resolution
0.000 – 1.000A	+/-(1% + 3mA)	0.001A
1.01 – 5.00A	+/-(2%)	0.001A
5.05 – 20.00A	+/-(3%)	0.01A
20.01- 20.0(1+X)A	+/-(5%)	0.1A

X = Number of 1320 (slave) instruments connected

DC Resistance:

Range	Measure Range	Measure I	Accuracy
20mΩ	0.00 – 19.99mΩ	2A	+/-(2% +0.07mΩ)
200mΩ	0.0 – 199.9mΩ	2A	+/-(2% + 0.2mΩ)
2Ω	0.000 – 1.999Ω	20mA	+/-(3% + 0.002Ω)
20Ω	0.00 – 19.99Ω	20mA	+/-(3% + 0.02Ω)
200Ω	0.0 – 199.9Ω	20mA	+/-(3% + 0.2Ω)

DC Voltage Display: Accuracy: +/-(2% + 0.05V)

Driver Capacity:
Maximum Tolerance Unknown DCR
RDCmax = 6.5/I (Ω)
Maximum Tolerance Unknown Inductance
Lmax = 8/I (H)
Maximum Open Circuit Time
Tmax = 1.5 (sec)
Minimum Drive Level
DCVmin = 6.5 (V)
I = Set Current in amps (A)

Test Setups: 50 Memory Locations with store/recall

Delay Time: 1 – 100 seconds

Display: LCD display, 2 lines, 16 characters each

Connectors:
To Unknown: 2 Banana Plugs (Drive -, Drive +)
2 BNC Female (Sense -, Sense +)
To LCR Meter: 4 BNC Female (I+, I-, P+, P-)
DCV Monitor: BNC Female

Interfaces: IEEE-488, Handler, LCR Link, Slave Link

General Features:
Forward/Reverse Biasing
Multiple tests up to 21
Single or Multiple Measure Mode
Return Loop Testing
Internal Clock with Programmable Timer

Mechanical: Bench Mount with tilt bail

Dimensions: (w x h x d): 16.5 x 7.0 x 12.0 in
(419 x 177 x 300mm)

Weight: 26 lbs (11.8kg) net, 33 lbs (15kg) shipping

Environmental:
Operating: 0 to 40 ˚C
Humidity: <80%
Storage: -10 to 50 ˚C
Warm-up Time: 30 minutes

Power:
- 95 - 125V AC
- 50 or 60Hz
- 190 - 250V AC
- 50W max

Ordering Information

1320 Bias Current Source
Includes:
Kelvin Clip Leads (1320-01)
Instruction Manual
Power Cord
Fuse
Calibration Certificate Traceable to NIST

Optional Accessories
1320-01 Banana/BNC to Kelvin Clip Leads
1320-02 BNC to BNC (4) Test Lead Box
1320-03 BNC to BNC (4) Lead Set, 16 in.
1320-04 Interconnect Cable, 9 pin (2000)
1320-05 Interconnect Cable, 24 pin (1750)
Calibration Data

For more detailed specifications, visit www.quadtech.com
For more information about special purchase, rent & lease options, call
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