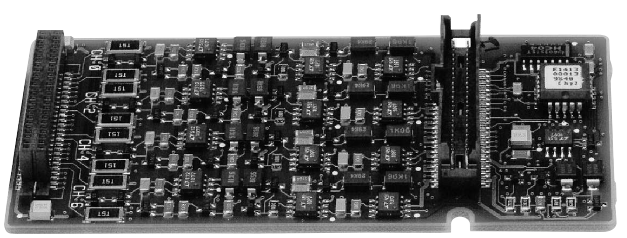
Agilent E1505A
8-Channel Current Source SCP

Data Sheet

- **Use with Agilent E1413C/E1415A/E1419A**
- **Eight programmable current sources**
- **Input over-voltage protection**
- **Current source for resistance and temperature measurements**



Agilent E1505A

Description

The Agilent E1505A 8-Channel Current Source SCP provides eight current sources programmable to one of two current levels. Each current source can be programmed to provide either 30 µA or 488 µA. The E1505A SCP is used to supply excitation current to resistance and resistance-temperature measurements. It also provides over-voltage protection on each channel.

Use the E1505A with the following VXI modules:

Model	Description
E1413C	64-Channel Scanning A/D Converter
E1415A	Algorithmic Closed Loop Controller
E1419A	Multifunction Measurement and Control Module

Refer to the Agilent Technologies Website for recent product updates, if applicable.

Resistance Measurements

Resistance is measured using the E1505A 8-Channel Current Source SCP and an input SCP. Measurements are made by applying a dc current to the unknown and measuring the voltage drop across the unknown resistance. The current source is provided through the E1505A.

The recommended application is as shown here using four-wire Ω connections. Two-wire Ω measurement is possible but not recommended since two 150 Ω series resistors protecting the input FET multiplexer are included in the measurement.

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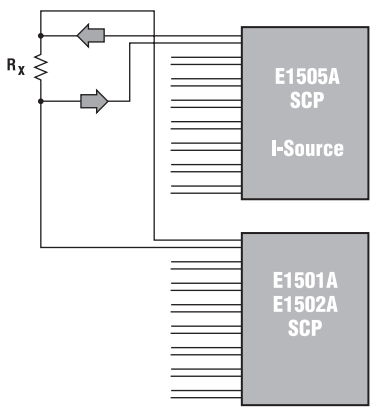

Product Specifications

These specifications for the E1505A reflect the combined performance of the scanning A/D and the E1505A SCP.

Current Source

Minimum: 30.5 μA ± 9 nA
Maximum: 488.3 μA ± 60 nA

Output Accuracy

90–day, 23 °C ± 1 °C (with *CAL? done 1 hr after warm up)

Current Amplitude:
30.518 μA: ± 9 nA
488.28 μA: ± 60 nA

Resistance Measurements

Range Ωs FS	Current Amplitude	A/D Range (Vdc)	Maximum Resolution
131.1 k	30.518 μA	4	4 Ω
32.77 k	30.518 μA	1	1 Ω
8.192 k	30.518 μA	.25	.25 Ω
8.192 k	488.28 μA	4	.25 Ω
2.048 k	488.28 μA	1	.0625 Ω
512	488.28 μA	.25	.015 Ω
128	488.28 μA	.0625	.0039 Ω

Resistance Accuracy

Any input SCP/most sensitive range. Four-wire connection.

Gain:
30.518 μA: ± 0.035% of rdg
488.28 μA: ± 0.02% of rdg
Offset Ω: [offset of input SCP (in Volts)]/[current source value (in Amps)]
Noise Ω: [noise of input SCP (in Volts)]/[current source value (in Amps)]

Current Requirements (Amps)

5 V max	24 V max	-24 V max
0.02	0.03	0.03

Ordering Information

Description	Product No.
8-Channel Current Source SCP	E1505A

Related Literature

2000 Test System and VXI Catalog CD-ROM,
Agilent Pub. No. 5980-0308E (detailed specifications for VXI products)

2000 Test System and VXI Catalog,
Agilent Pub. No. 5980-0307E (overview of VXI products)

1998 Test System and VXI Products Data Book,
Agilent Pub. No. 5966-2812E

Online

Internet access for Agilent product information, services and support
www.agilent.com/find/tmdir

VXI product information
www.agilent.com/find/vxi

Defense Electronics Applications
www.agilent.com/find/defense_ATE

Agilent Technologies VXI Channel Partners
www.agilent.com/find/vxichanpart

Agilent Technologies' HP VEE Application Website
www.agilent.com/find/vee

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