



Features

Use with VT1413C/VT1415A/VT1419A/
VT1422A

Eight Programmable Current Sources

Input Over-voltage Protection

Current Source for Resistance and
Temperature Measurements

8-channel Current Source SCP

Overview

The VXI Technology VT1505A 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 VT1505A SCP is used to supply excitation current to resistance and resistance-temperature measurements. It also provides over-voltage protection on each channel.

Use the VT1505A with the following VXI modules:

Model	Description
VT1413C	64-channel Scanning A/D Converter
VT1415A	Algorithmic Closed Loop Controller
VT1419A	Multifunction Measurement and Control Module
VT1422A	Remote Channel Multifunction DAC

Refer to the VXI Technology Website for recent product updates, if applicable.

Resistance Measurements

Resistance is measured using the VT1505A 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 VT1505A. The recommended application is as shown here, using four-wire connections. Two-wire resistance measurement is possible but not recommended since two 150 Ω series resistors protecting the input FET multiplexer are included in the measurement.

These specifications for the VT1505A reflect the combined performance of the scanning A/D and the VT1505A SCP.

Specifications

Current Source

Minimum: 30.5 μA ± 9 nA

Maximum: 488.3 μA ± 60 nA

Output Accuracy

90 day, 23 $^{\circ}\text{C} \pm 1$ $^{\circ}\text{C}$ (with *CAL? done 1 hr after warm up)

Current Amplitude:

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

8-channel Current Source SCP

Resistance Measurements

Ranges FS	Current Amplitude	A/D Range (V dc)	Maximum Resolution
131.1 k Ω	30.518 μ A	4	4 Ω
32.77 k Ω	30.518 μ A	1	1 Ω
8.192 k Ω	30.518 μ A	0.25	0.25 Ω
8.192 k Ω	488.28 μ A	4	0.25 Ω
2.048 k Ω	488.28 μ A	1	0.0625 Ω
512 Ω	488.28 μ A	0.25	0.015 Ω
128 Ω	488.28 μ A	0.0625	0.0039 Ω

Resistance Accuracy

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

Gain:

30.518 μ A: $\pm 0.035\%$ of reading
 488.28 μ A: $\pm 0.02\%$ of reading

Offset Ω :

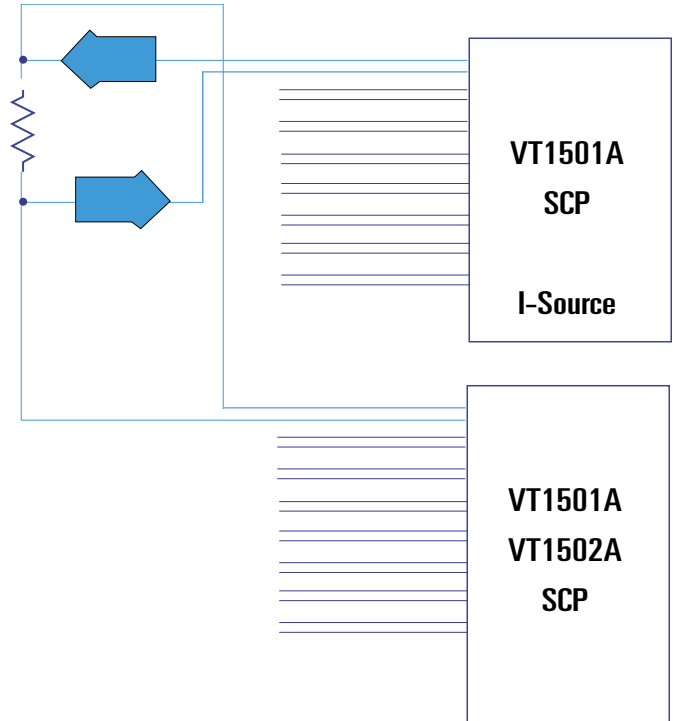
[offset of input SCP (in volts)]/[current source value (in amps)]

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

VT1505A

VT1505A

8-channel Current Source SCP