

# Electronics

## Uses of Differential Amplifier Circuits

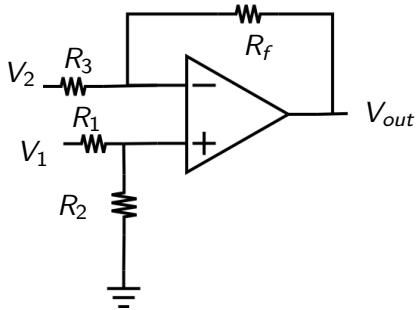
Terry Sturtevant

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February 8, 2019

# Differential amplifier

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- ① differential signals  
e.g. Wheatstone bridge
- ② signals which never reach zero  
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- ③ signals which vary in the “wrong” *direction*  
similar to “inverting” a signal in a single supply configuration

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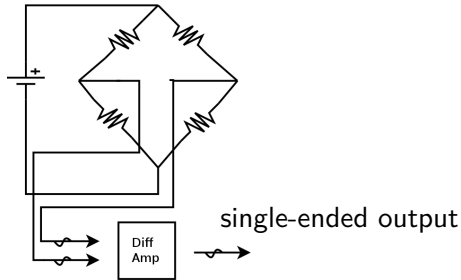
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## Wheatstone bridge with differential amplifier

## Wheatstone bridge with differential amplifier



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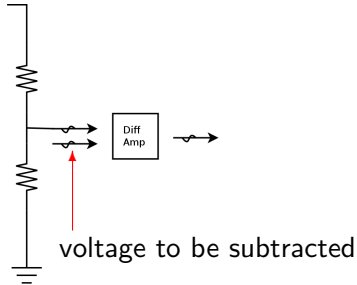
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- A differential amplifier allows you to subtract *a fixed voltage from the signal*

## Voltage divider with differential amplifier

## Voltage divider with differential amplifier



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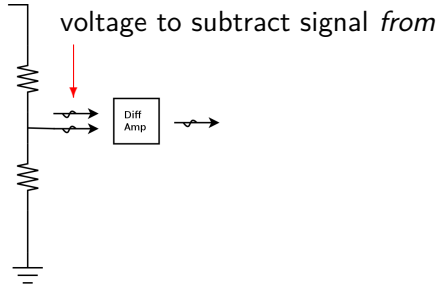
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**In a dual supply configuration, an inverting amplifier could be used, but this works with a single supply as well.**

## Inverting signal variation with differential amplifier

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If the fixed voltages are not what you want, you can adjust the resistor values instead.