

# Non-inverting Operational Amplifier

## Student Group

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## Non-inverting Operational Amplifier

### Op-Amp as current source

An Op-Amp can not only amplify voltages and currents, it can also act as a current source itself. Here is the schematic of a typical Op-Amp current source:

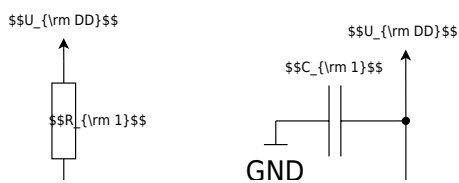


Fig. 1: Non-inverting Op-Amp: current source

$U_{DD} \approx 10\text{V}$ ,  $U_{SS} \approx -10\text{V}$ ,  $R_1 \approx 100\text{k}\Omega$ ,  $R_2 \approx 10\text{k}\Omega$ ,  $R_3 \approx 100\Omega$ ,  $C_1 \approx 100\text{nF}$ ,  $C_2 \approx 100\text{nF}$

Measure the values given in the table below.

| Potentiometer | $U_{R2}$ | $U_{R3}$ | $I_{OUT}$ | $U_{OUT}$ | $I_{OUT}$ | $U_{OUT}$ |
|---------------|----------|----------|-----------|-----------|-----------|-----------|
| 0%            |          |          |           |           |           |           |
| 50%           |          | ...      |           |           |           |           |

Tab. 1: Op-Amp as current source: measured and calculated values

Why does the current remain constant at the output of the Op-Amp?  
 Give a brief explanation of the circuit's operating principle.

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