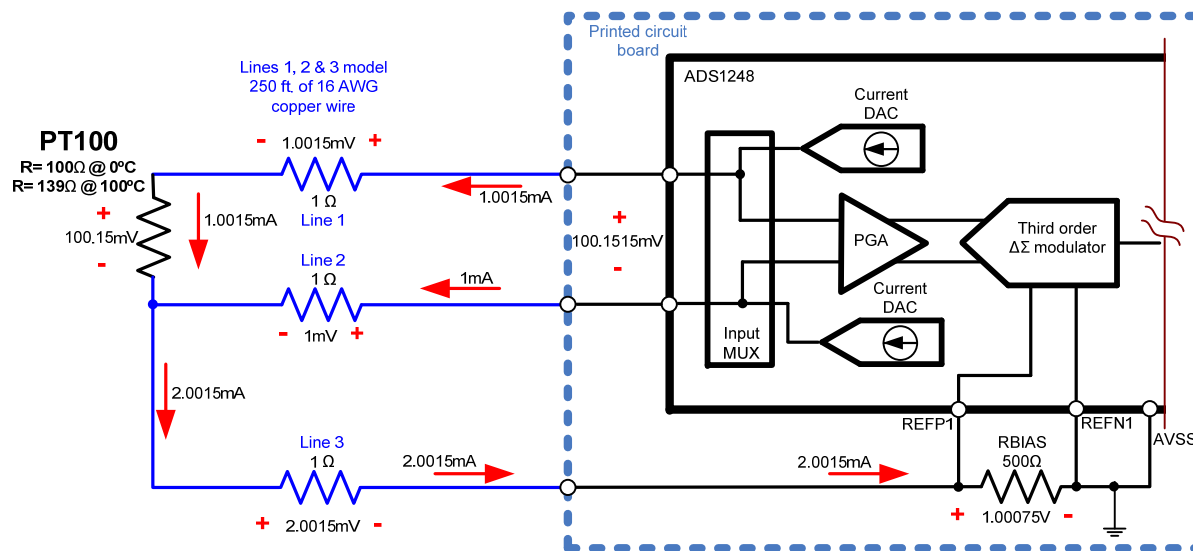


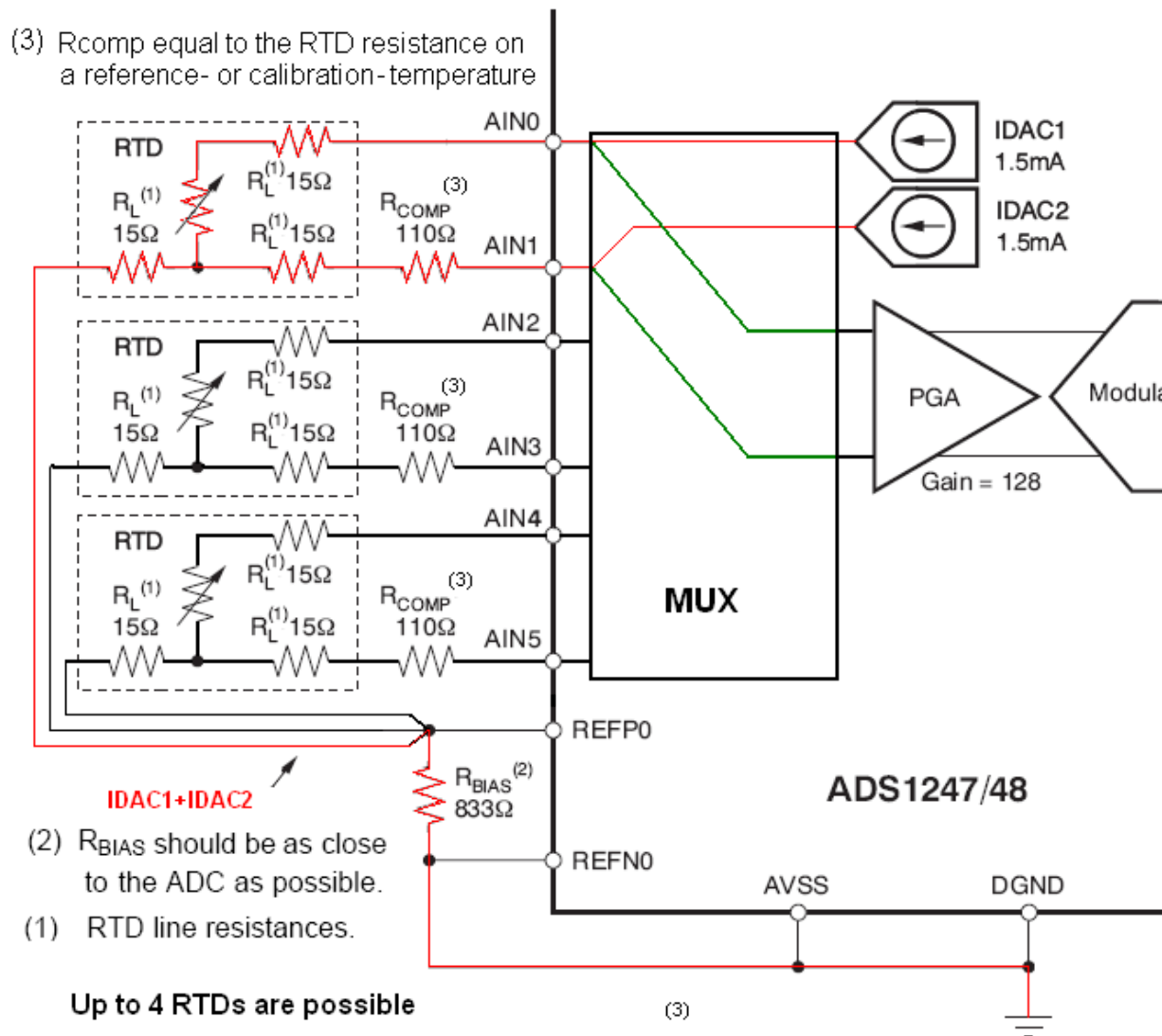
Three-wire RTD configuration



For the three-wire setup for an RTD measurement, advantages are:

- It's still simple, and compared with the two-wire RTD measurement, we've only added one current source.
- If the line resistances are equal and the current sources are equal, the effect of the line resistances cancel each other and only the RTD measurement remains.
- It's still a ratiometric measurement

3-Wire RTD with compensation



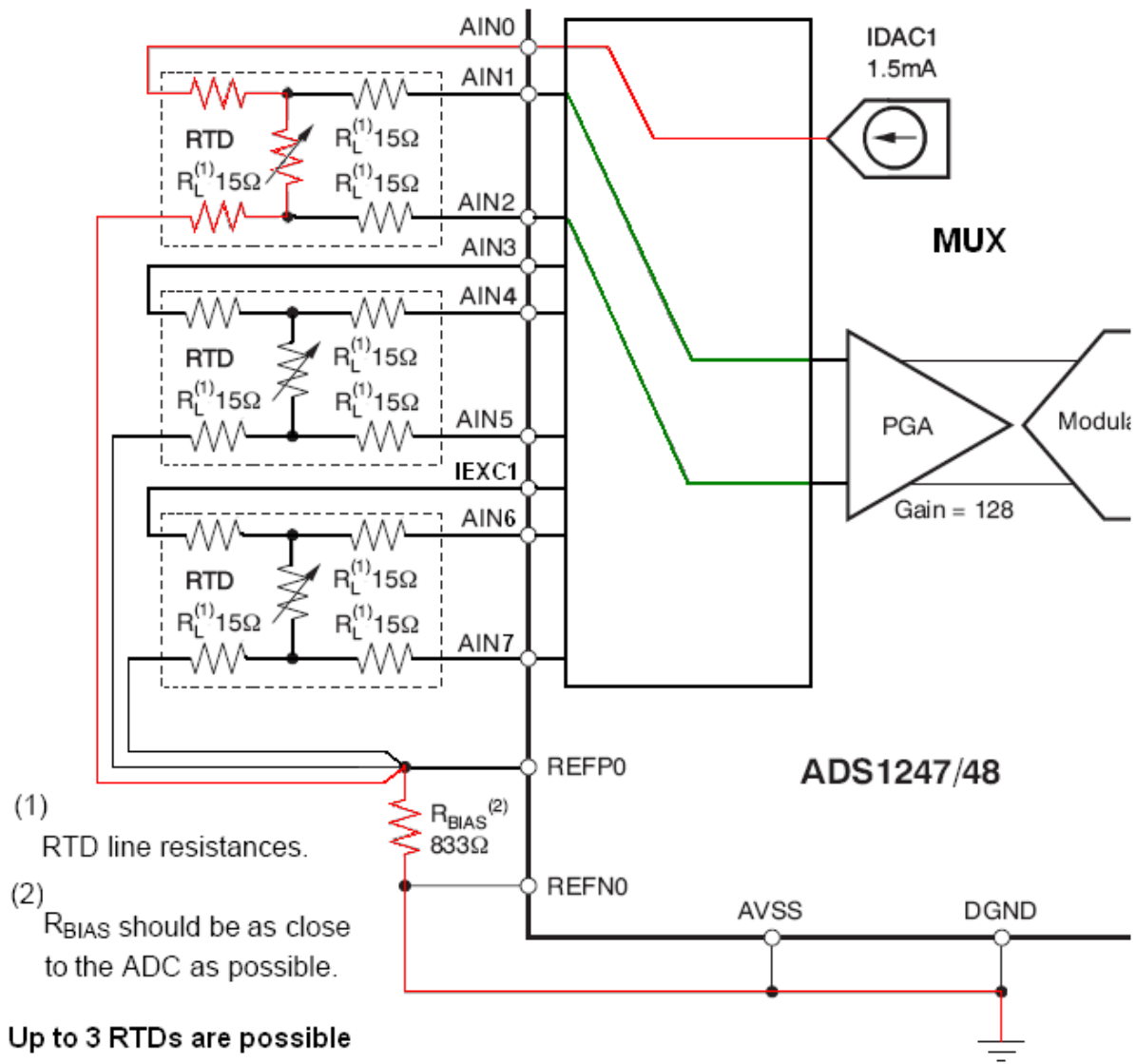
Advantage:

- IDAC generates the sensor excitation and the reference voltage.
- Noise and drift of the Ref voltage are correlated and therefore canceled.
- Voltage drop across the line resistance are compensated.
- Allows complete utilization of the input range, no offset caused by the RTD itself.

Disadvantage:

- Needs two current sources.
- Only IDAC current mismatch matters.

4-Wire RTD



Advantage:

- IDAC generates the sensor excitation and the reference voltage.
- Noise and drift of the Ref voltage are correlated and therefore canceled.
- Voltage drop across the line resistance are compensated.
- No IDAC current mismatch because only one current path is needed.

Disadvantage:

- Four connections are used for every sensor.
- Up to 3 RTDs are possible