

Advantech AE Technical Share Document

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Category	■FAQ □SOP	Related OS	N/A
Abstract	ADAM-4015_Theory of 2-Wire & 3-Wire RTD		
Keyword	ADAM-4015, RTD, 2-Wire, 3-Wire, Measurement		
Related Product	ADAM-4015		

■ Problem Description:

This documentation elaborate the measurement theory of 2-Wire and 3-Wire RTD used on ADAM-4015

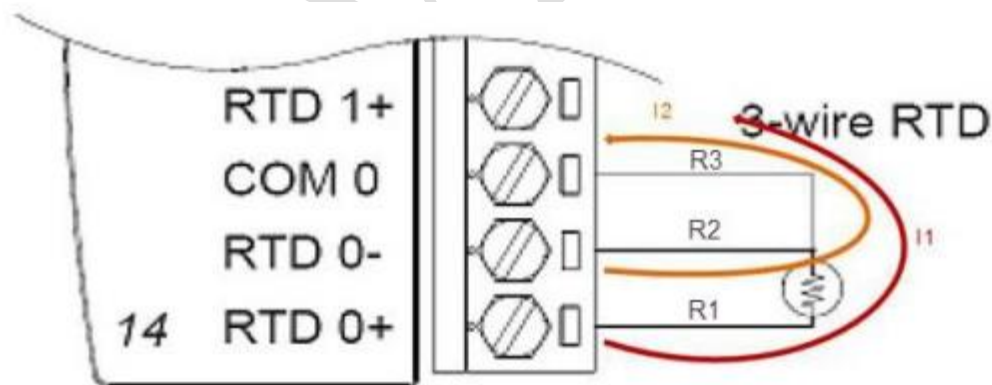
■ Brief Solution - Step by Step:

1. 3-Wire RTD

The measurement theory of ADAM-4015 with 3-wire RTD shown as below picture.

Two excitation current (I_1 and I_2) flow from RTD+ and RTD- separately to the COM.

Because the line resistance of R1 and R2 are the same, the line resistance in the RTD can be eliminated to increase the accuracy of the measurement.



2. Simulated 2-Wire RTD

Two-wire RTD, on the other hand, can be used simulated to the 3-wire RTD with the correct connection way.

Please note that, **the length and the characteristic of the cable must be SAME.**

Take the following two pictures as the example, the bottom one will have better accuracy than the top one which shorted the RTD0- pin to COM on connector directly.

