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Understanding Bridge Accuracy Specifications
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R(T) is derived using the Alpha coefficient of nearly pure platinum; the coefficient is 0.00392 Ω/Ω/°C. It is not 0.00392 ohms. Equation 1 shows the resistance for 419 °C (Zn point)

$$R(T) = \left(0.00392\frac{\Omega}{\Omega}/°C * 25.5\ \Omega * 419°C\right) + 25.5\Omega \qquad [1]$$

Note that Ohms is the unit for the answer in this equation.

For a Ratio

$$R(T)/R(S) \qquad [2]$$

Here R(T) has already been shown to be in Ohms and R(S) is the standard resistor in Ohms; thus the ohms cancels and we have a ratio that is dimensionless.

To obtain the sensitivity coefficient use the first term of equation 1.

$$\Delta R(T) = \left(\frac{0.00392\frac{\Omega}{\Omega}}{°C} * 25.5\ \Omega * \Delta 0.001°C\right) = \Delta 9.99\ e^{-5} \qquad [3]$$

This is equivalent to 0.0001Ω/0.001°C.

Now we must relate PPM to measurement accuracy, remembering that PPM is a dimensionless ratio.

E.g. We will use an approximate value from equation 1 for R(Zn)= 66.88 Ω and 25 ohms for R(S) thus we will have the following:

$$\frac{R(Zn)}{R(S)} = 2.6752 = Dimensionless\ Ratio \qquad [4]$$

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If the bridge ratio accuracy is given in ppm we have the following.

$2.6752 * 1 * 10^{-6} \quad = 2.6752^{-6}$

0r 0.0000026752 this is the minimum increment

$$R(T) = R(S) * 2.6752^{-6} \qquad [5]$$

Where R(S) in this case would be 25 Ohms, so the general form of the equation follows

$$\frac{\frac{R(T)}{R(S)} * R(S) * PPM}{0.0001} = mK \qquad [6]$$

For a 25 Ohm Reference Resistor
Uncertainty in mK

Ratio PPM	*TPW 0.010°C*	*Ga 29.76°C*	*In 156°C*	*Sn 232°C*	*Zn 419°C*	*Al 660°C*
0.02	0.005	0.0056	0.0082	0.0098	0.014	0.018
0.1	.025	0.029	0.041	0.049	0.067	0.092
0.8	0.2	0.232	0.328	0.392	0.536	0.736
1.0	0.25	0.29	0.41	0.490	0.67	0.920
2.0	0.5	0.58	0.82	0.98	1.34	1.84
4.0	1.0	1.16	1.64	1.96	2.68	3.68