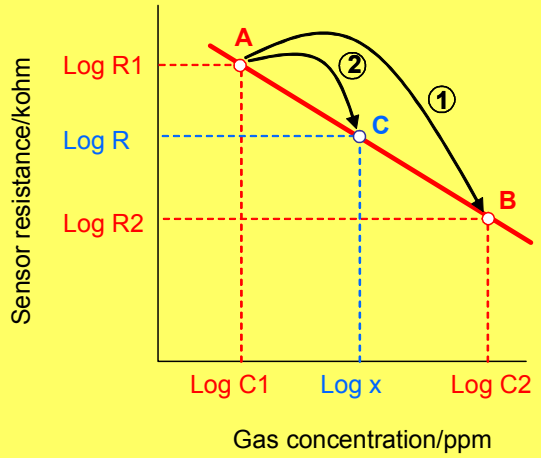
<Calculation method>



Plot A and B : Calibration point
Plot C : measuring point

R1 : the sensor resistance in C1ppm (kohm)
R2 : the sensor resistance in C2ppm (kohm)
R : sensor resistance at measuring point (kohm)
X : gas concentration at measuring point (ppm)

① Slope between A and B

$$\text{Slope(A-B)} = \frac{\text{Log R2} - \text{log R1}}{\text{Log C2} - \text{log C1}} = \frac{\text{Log (R2 / R1)}}{\text{Log (C2 / C1)}}$$

② Slope between A and C

$$\text{Slope(A-C)} = \frac{\text{Log R} - \text{log R1}}{\text{Log X} - \text{log C1}} = \frac{\text{Log (R / R1)}}{\text{Log (X / C1)}}$$

③ Slope (A-B) = Slope (A–C)

$$\frac{\text{Log (R2 / R1)}}{\text{Log (C2 / C1)}} = \frac{\text{Log (R / R1)}}{\text{Log (X / C1)}}$$

④

Log(C2 / C1) Log (R / R1) = Log (R2 / R1) Log (X / C1) ----- general formula

<Calculation example>

When calibration value is

C1= 1000ppm, R1= 20kohm
C2= 3500ppm, R2= 2kohm

And R value at the measuring point is

R= 10kohm

Log(C2 / C1) Log (R / R1) = Log (R2 / R1) Log (X / C1)

Log (3500 / 1000) Log (10 / 20) = Log (2 / 20) Log (X / 1000)

Log 3.5 X Log 0.5 = log 0.1 X (Log X – Log 1000)

Log X = (Log3.5 X Log 0.5 + Log 0.1 X Log 1000) / Log 0.1

Log X =3.1637

X = 1458 (ppm)