

How To Get The Most From Your Electric Motors

To correct insulation resistance readings to the reference temperature, use the following formula:

$$R_c = R_t \times K_t$$

Where:

R_c = Insulation resistance (In megohms) corrected to 40° C

R_t = measured insulation resistance (In megohms) at temperature t (° C)

K_t = Insulation resistance temperature coefficient at temperature t (° C)

Example: Winding temperature t = 68° F = 20° C

Measured resistance R_t = 800 megohms

Referring to Figure 1, find the insulation resistance temperature coefficient:

$$K_t = 0.25$$

Multiply 800 megohms times 0.25 to find the corrected resistance:

$$\begin{aligned} R_c &= R_t \times K_t \\ &= 800 \times 0.25 \\ &= 200 \text{ megohms} \end{aligned}$$

Plot the corrected insulation resistance readings for each test on a chart for reference and trending. The corrected reading of 200 megohms from the above example is shown at "0 months" in Figure 2.

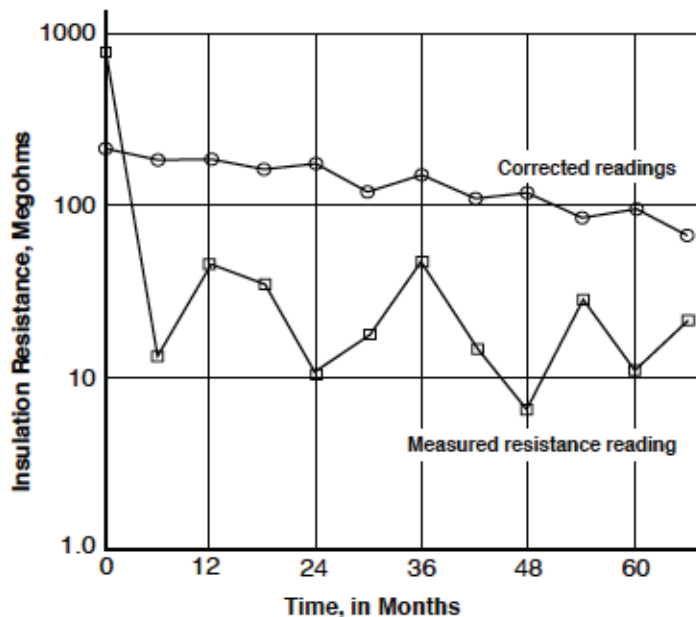


Figure 2. Corrected Insulation Resistance Readings