



A Leader in Electric Motor Testing

Tip Of The Week

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There is More to Capacitance

Capacitance-to-Ground (CTG) measurements have long been the low voltage AC equivalent to the DC Resistance-to-Ground (RTG) measurement for insulation integrity testing. A key difference is that the DC RTG values can be compared to existing standards such as IEEE 43 (Recommended Practice for Testing Insulation Resistance of Rotating Machinery) to assist the analyst in identifying degrading insulation. However, CTG values are unique for each asset/power circuit combination and must be compared to the baseline for trend analysis.

Often overlooked is the under-range value of CTG. Commonly dismissed as influence from power factor capacitors or lightning arrestors, a low under-range value in CTG may be your first indication that the ground circuit is not performing correctly. Due to the high frequency of the AC test signal used during the CTG test, it is rare even in an extremely high RTG environment that this signal would not find a way back to the tester through the insulation and ground return path. Generally speaking a low under-range value of CTG basically means that there is no path for our test signal to return via the ground circuit. Further investigation into the ground distribution circuit may find that the motor casing under test is not properly grounded and in the worse case you might find that all the motors in the same application or building may be improperly grounded.

You are invited to submit an Electric Motor Testing Tip of your own and receive a free PdMA® mug or hat if we publish it! Contact Lou at 813-621-6463 ext. 126 or lou@pdma.com.

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