

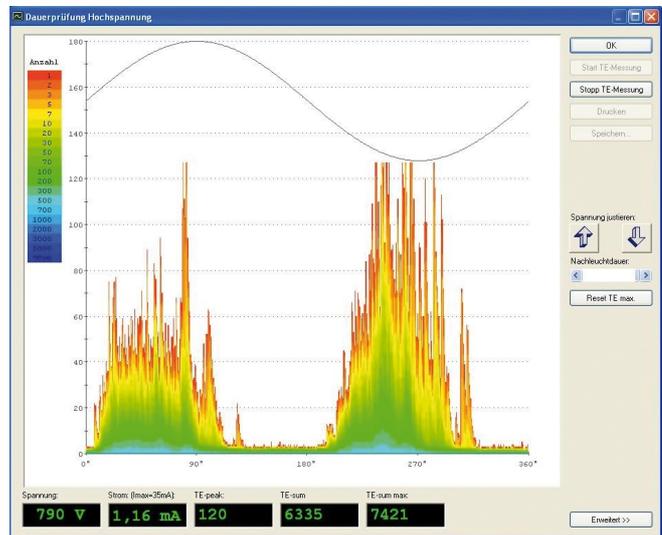
Partial Discharge Testing

<http://www.whitelegg.com/products/electric-motor/electric-motor-manufacture/partial-discharge-testing>

For the earliest detection of insulation breakdown, partial discharge provides another level of high accuracy electric motor analysis over and above that achieved by the standard surge test. The partial discharge test has become more important to evaluate insulation in electric motors within the last few years. This is especially true do to the large increase of Variable Frequency Drives for the motor control.

The **Partial Discharge** test is characterized by detecting micro-discharges in a partial part of the insulation at an early stage. The micro-discharges in one part of the insulation system will, in due course, lead to increasing damage at this point. After hours, days, weeks, months or years the insulation system is weakened due to persistent micro-discharges and a complete failure occurs

The **Partial Discharge** serves for testing the insulation quality. The test is always performed in connection with a high-voltage AC test.



	<p>The picture shows a loose winding wire. The winding wire touches the lamination or is a small distance away from it. In a high-voltage test such a defect is only detected with either a very high test voltage (not always possible) or if the winding wire is actually damaged at this specific location By means of the Partial Discharge (Arc-Detection) this defect is detected.</p>
	<p>The picture shows a slot in which a part of the slot liner is missing. The winding wire touches the lamination or is a small distance away from it. In a high-voltage test such a defect is only detected with either a very high test voltage (not always possible) or if the winding wire is actually damaged at this specific location By means of the Partial Discharge (Arc-Detection) this defect is detected.</p>
	<p>This picture shows a slot in which the slot insulation is missing. The winding wire touches the lamination or is a small distance away from it. In a high-voltage test such a defect is only detected with either a very high test voltage (not always possible) or if the winding wire is actually damaged at this specific location By means of the Partial Discharge (Arc-Detection) this defect is detected.</p>

Highlights:

- determining the inception and extinction voltage according to IEC 61934
- very high reproducibility owing to special filter technology
- special coupling technology for measuring completely assembled motors
- extremely free of any disturbances due to special high-frequent filter technology
- no shielding of the test area necessary
- partial discharge test up to 25KV
- Verifies the quality of enameled copper wire (twisted pair), enamel-insulation, impregnation procedure
- Can be performed with an HV-AC or at the surge test
- Available on all MTC2, MTC3 and GLP3 testers