

How to measure inductance of a three phase reactor

The basic equation that defines the inductance relation is shown using the accompanying schematic:

$$\text{Inductance in Henrys} = \text{VM}(1-3) / \text{AM}(1-3) \times 2 \times \pi \times 60 \text{ Hertz}$$

The test setup consists of a variable high current 3 phase 60 hertz supply with meters for voltage and current connected as shown. The test reactor is connected in wye.

Adjust the current to be within the reactor's fundamental current range. Be sure to supply at least 50% of the reactor current rating so that the reactor core is active; a RL-003503 is designed to produce 1.2 mH +/- 10% inductance at 35 amps. A 17 amp test could be enough to validate the reactor inductance. The ideal test should be done at 35 amps. Apply the measured voltage and currents into the above equation to determine the inductance of each leg of the reactor.

