



ELECTRICAL ENGINEERING TECHNICAL DIVISION (EETD)

# LOAD FLOW VOLTAGE DROP & MOTOR STARTING VOLTAGE DIP STUDIES

CPD HOURS : 2

CPD REF NO : IEM20/HQ/123/T(W)

## SPEAKER :

# Ir. LEE CHONG KIEW

**22 AUGUST 2020, SATURDAY**

**9.30AM TO 11.30AM**

Registration Fees (effective 1st August 2020)

IEM Members : RM 15.00

IEM Non Members : RM 50.00

Register online | [www.iem.org.my](http://www.iem.org.my)

# SYNOPSIS

The session begins with a review of the three types of voltage-dependent loads – constant impedance, constant kVA and constant current – and compares the differences between starting and running motors. It will review the classical formula and a simplified formula for voltage drop, which is further simplified to provide a quick means to estimate the motor starting voltage dip in transformers and generators. The session concludes with some examples of motor starting dip with and without pre-starting loads and power factor correction capacitors.

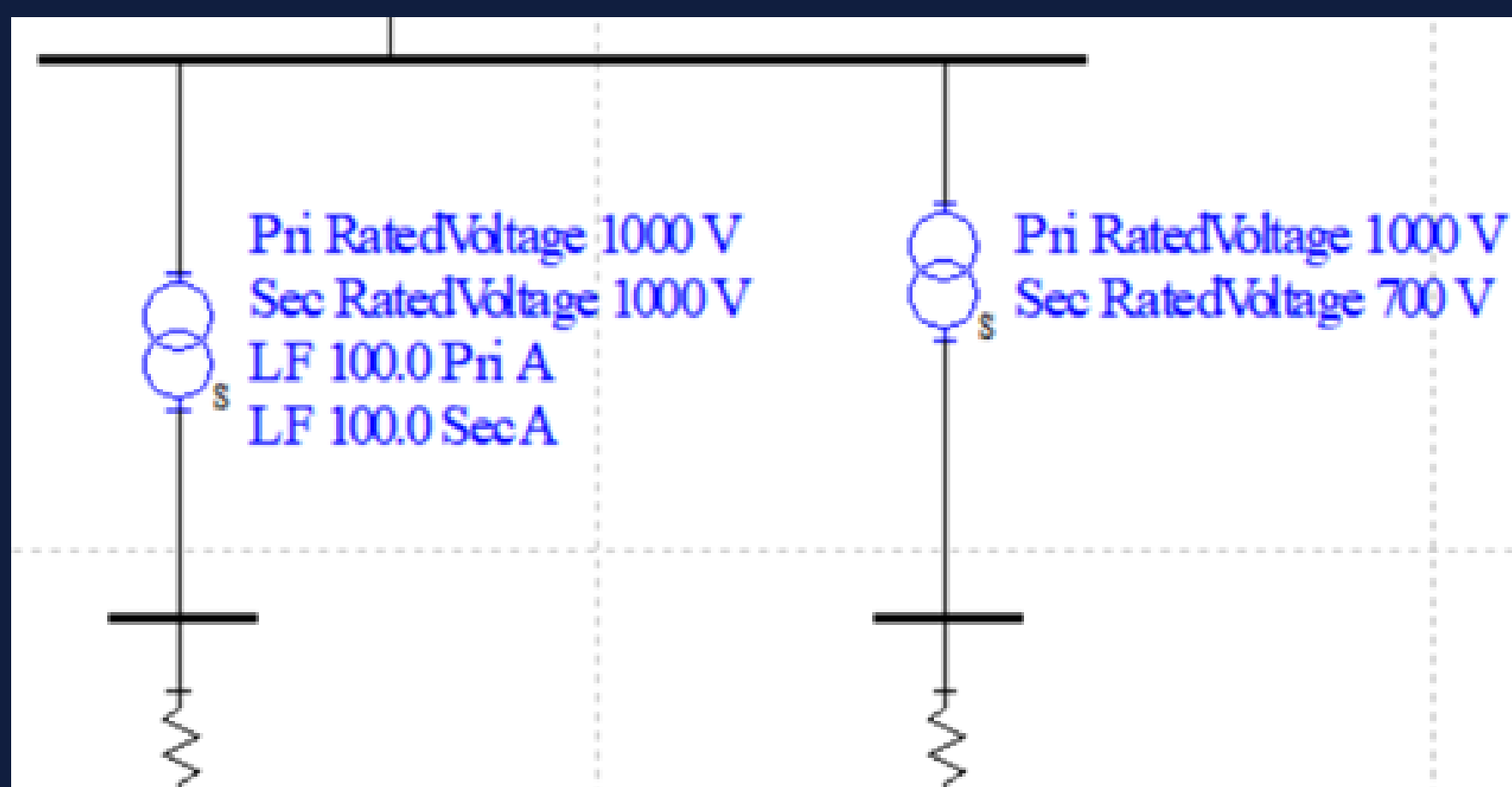
## Pre-Talk Homework

**Consider a 1 kV motor with a FLA = 20 A and an LRA/FLA = 5.0**

**FLA = Full-load Amp & LRA = Locked Rotor Amp**

**Assuming the use of an ideal 1 kV source, calculate the following starting currents:**

- **DOL starting current**
- **Primary current, assuming the use of an ideal 1000/700 V auto-transformer**



## SPEAKER'S BIODATA

**Ir. Lee Chong Kiow is a 1974 electrical engineering graduate from Strathclyde University, Glasgow, with 50 years of experience in the power supply industry. He specialises in providing technical training of electrical courses and performing power system studies. His previous experience included working as the Engineering Manager in a company manufacturing indoor medium- and low-voltage switchgear, Associate Director in a large consultancy practice and protection engineer with the former National Electricity Board. He is an Energy Commission certified competent/services engineer up to 275kV. He has trained about 7,000 participants from electrical utilities, petrochemical industry and multi-national companies in several countries in Asia and Africa on a variety of topics related to electrical engineering.**