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Week 29/07/2019 – 02/08/2019

Progress Report:

- Partial design of induction motor for internal fault simulations were established by using a sample model of a synchronous machine and adjusting its d-q parameters. By keeping the field winding open, and making d-axis parameters equal to q-axis parameters, this was achieved.
- AC supply now powers the motor protection relay using twin flexes.
- Thermal model was studied and it was found that the power losses in the stator and rotor will need to be modelled with thermal resistances and capacitors. The important components required to develop the thermal model were found to be full load speed, locked rotor current and torque, and the thermal limit time.

Challenges:
- Estimating key parameters for a high voltage induction motor equivalent circuit are troublesome since lab experiments have only been carried out with low powered motors in Genmin.
- The SEL-710 motor protection relay configuration requires ports that are not available for connection to the OMICRON amplifier. In addition, a software called SEL-5030 ACSELERATOR QuickSet is required for setting trip times and voltage and current limits for the relay to respond to.

Target for the week:

- Download ACSELERATOR QuickSet software
- Complete equivalent circuit model and hence thermal model on paper
- Investigate and model in RSCAD, alternatively model in block diagram format in MATLAB and use the CONVERT component in RSCAD to convert it into RSCAD format so it can be run through the RTDS.