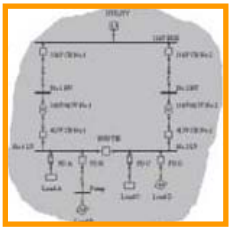
Welcon Technologies
ELECTRICAL ENGINEERING SPECIALISTS

POWER SYSTEM ANALYSIS

Using advanced computer software, Welcon Technologies can model your complete electrical power distribution system and perform the following analysis studies.



FAULT LEVELS

Calculating the 3-phase and single-phase fault levels throughout the power system, allowing you to:

- Determine whether your equipment is adequately rated to carry the fault currents.
- Ensure switchgear is rated to break the potential fault currents.

LOAD FLOW, VOLTAGE DROP & MOTOR STARTING

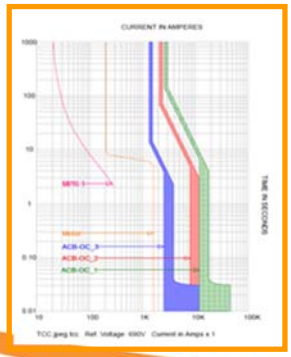
Determining equipment loadings under different operating situations, allowing you to:

- Confirm all components are rated for the load currents.
- Determine the voltage drop and power factor at each point in the distribution system.
- Confirm motor start-up using dynamic modelling (TMS analysis).

PROTECTION COORDINATION & DISCRIMINATION

Modelling of the protection devices from the Utility supply down to motors and loads, allowing you to:

- Determine the optimal fuse sizes and optimal protection settings on protection relays, ACBs and MCCBs.
- Ensure all equipment is adequately protected against overload, short circuit and earth fault.
- Confirm coordination between protection devices by viewing the graphical Time-Current Curves showing the operating characteristics of all Protection.



POWER FACTOR STUDIES

Calculating the resultant power factor, allowing you to:

- Ensure you meet the Power Supply Authority requirements.
- Allow for maximum utilisation of electrical equipment.
- Size power factor correction units.
- Determine the economic benefits of power factor correction against reduced utility charges and increased system capacity.

HARMONIC ANALYSIS

Calculating the voltage and current harmonic distortion at any point in your power system, allowing you to:

- Ensure you meet the Power Authority requirements.
- Ensure harmonic overloading does not occur.
- Determine the sizing of the appropriate harmonic filters and locations for installation.

ARC FLASH STUDIES

Calculating the incident energy that personnel may be exposed to for an arcing fault, allowing you to:

- Determine the level of PPE required to be worn.
- Allow for possible adjustment in protection settings to reduce the PPE requirements.

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