**16/ENG04/065**

**ELECT/ELECT**

**500 LEVEL**

**EEE 556(Machine Application and Protection)**

**Operation of Digital Relay**

Digital relay is a protective relay that uses a microprocessor and microcontroller to analyze power system quantities like voltages, currents, etc. The microcontrollers and microprocessors used replace analogue circuits. Instead of using analog signals the digital relay converts all measured analog quantities into digital signals by introducing analogue to digital conversion of all measured analogue quantities and use a microprocessor to implement the protection algorithm. The microprocessor may use some kind of counting technique or use Discrete Fourier transform to implement the algorithm. It basically works by converting analog signal to digital form, processes the digital form then uses Boolean decision to determine whether it would trip or not.