



SEQUENCE BASED NETWORK PROTECTOR RELAY WITH FORWARD
OVERCURRENT PROTECTION AND ANTI-PUMPING FEATURE

ABSTRACT OF THE DISCLOSURE

5 A digital network protector relay (21) samples the polyphase current, network voltage and phasing voltage at 16, and preferably 32, times per cycle so that up to the seventh and fifteenth harmonics, respectively, are eliminated from the sequence calculation used to make trip and close decisions. The relay (21) also provides metering, forward overcurrent protection, and an anti-pumping feature, the latter of which locks the circuit breaker (19) out if a selected number of breaker operations is exceeded during a given time interval. Sequential sampling of the polyphase current and voltages by a single analog to digital converter (25) reduces the cost of the relay.

10 In order to accommodate metering and extraction of the fundamental components of the current and voltages for the sequence calculations, the polyphase current and network voltage are sampled sequentially in a first order for a given number of cycles and then in a second reverse order for the same given number of cycles.