

# A New Definition of Power Factor and Its Implications for Power Systems

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**Abstract:** *This paper indicates the shortcomings of the conventional interpretations of power factor for the assessment of abnormal loads and loading conditions in the electricity supply industry. A new definition is suggested which encompasses the conventional interpretations for the usual steady state, linear and time invariant loads and which can be applied to abnormal loads and loading conditions. This paper then considers the basic approaches for power factor correction of abnormal loads and draws some fundamental conclusions. Particular schemes for power factor compensation (correction) are being developed by the authors and will appear in future publications.*

**Keywords:** *Power factor, power systems, loads, loading conditions, electricity supply industry*