

Claims

1. Data collection device comprising:
 - One or more sensing elements configured to provide a plurality of instantaneous electrical current and voltage measurements;
 - A metrology element configured to determine electric power parameters that may include active power, reactive power, power factor, harmonics, and energy;
 - A processor element to perform computing operations on and store data;
 - A communications element to transmit data from the data collection device to an external device, system, or network via wireless means;
2. The data collection device of claim 1, wherein the processor element is configured to generate features based on:
 - Parameters obtained from the metrology element
 - One or more electrical load models obtained from the Server
3. The data collection device of claim 1, further comprising a user interface configured to display machine or appliance specific electrical parameters
4. Method for feature selection from electrical parameters, comprising:
 - determining the time an electrical event occurs
 - determining the corresponding magnitude and direction of change for a plurality of electrical parameters
 - determining the period and magnitude of cycles occurring in the electrical parameters over a specified time interval
5. Method for providing equipment specific energy readings based on information obtained from the method of claim 4, comprising:
 - processing the feature information to generate a score
 - determining that the score matches a plurality of models stored on the data collection device and server
 - selecting the model with the best fit in accordance with the score
 - generating a graph based on the selected model