

ABSTRACT

A METHOD FOR DETECTING A REAL-TIME DEVIATION OF ENERGY EFFICIENCY IN A HVAC PLANT

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The application provides a method for detecting an anomaly in energy efficiency of an HVAC unit. The method comprises capturing operational parameters of the HVAC unit by sensors and providing an estimated baseline efficiency of the HVAC unit based on a model according to predictor variables derived from the operational parameters. The predictor variables comprise a total power that refers to a sum of power of at least one cooling tower, power of a plurality of electric pumps, and power of at least one chiller of the HVAC unit. The predictor variables also include a temperature of chilled water supplied from the chiller, a temperature of the chilled water returned to the chiller, and a flow rate of the chilled water in a chilled water loop. The method further includes providing a warning if a deviation between the baseline efficiency and a measured efficiency is larger than a predetermined value.

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(Fig. 4)