

ABSTRACT

A Non-intrusive Induction Heating (IH) Electric Cooker Operating Identification Method Based on Hybrid Criteria

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A non-intrusive induction heating (IH) electric cooker operating identification method based on hybrid criteria, comprising the following steps: acquiring current waveform data u and voltage waveform data i at a main incoming line within a certain range of sampling frequency, and calculating an average active power sequence P and an average inactive power sequence Q ; calculating an active power change ΔP_{on} and an inactive power change ΔQ_{on} during switching-on, and an active power change ΔP_{off} and an inactive power change ΔQ_{off} during switching-off; matching the adjacent starting and stopping of a load, and counting the number of operation times M of the load for a duty cycle k and a temperature control time interval Δt_{ctr} ; and if $P_1 < P < P_2$, $M > M_0$, $Q_1 < Q < Q_2$. and $T_1 < \Delta t_{ctr} < T_2$ then determining to be the IH electric cooker. According to the non-intrusive IH electric cooker operating identification method based on hybrid criteria, an operating state of the IH electric cooker may be efficiently and accurately identified.

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