

Title (en)
INDUCTION HEATING METHOD AND SYSTEM

Title (de)
INDUKTIONSHETZVERFAHREN UND -SYSTEM

Title (fr)
PROCÉDÉ ET SYSTÈME DE CHAUFFAGE PAR INDUCTION

Publication
EP 3386270 A1 20181010 (EN)

Application
EP 17164842 A 20170404

Priority
EP 17164842 A 20170404

Abstract (en)
A method for boiling detection in an induction heating system is disclosed, in which the induction heating system comprises an electrically conducting load and an inverter circuit comprising a switching section and a resonant section, the switching section comprising switching devices adapted to generate an AC current from an AC input voltage comprising a plurality of half-waves, and the resonant section comprising an induction heating coil adapted to receive the AC current for generating a corresponding time-varying magnetic field in order to generate heat in the electrically conducting load by inductive coupling, wherein the AC current oscillates at an actuation frequency of the switching devices and has an envelope comprising a plurality of half-waves corresponding to the half-waves of the AC input voltage, and wherein the amount of heat generated in the load depends on the frequency of the AC current. The method comprises performing at least once the following sequence of steps: (a) varying, within a same half-wave of the envelope, the actuation frequency according to a sequence of actuation frequency values, each actuation frequency value of the sequence being set for a corresponding time interval corresponding to a fraction of the duration of the half-wave of the envelope; (b) for each actuation frequency value of the sequence, calculating a corresponding current peak value based on a corresponding set of at least one absolute value peak assumed by the AC current during the corresponding time interval, so as to generate a corresponding current peak/actuation frequency relation; and (c) based on evaluating variations in the current peak/actuation frequency relations generated for plural actuation frequencies, determining a boiling condition.

IPC 8 full level
H05B 6/06 (2006.01)

CPC (source: EP)
H05B 6/062 (2013.01); **H05B 2213/04** (2013.01)

Citation (applicant)
• EP 1734789 A1 20061220 - EGO ELEKTRO GERAETEBAU GMBH [DE]
• WO 2016041684 A1 20160324 - ELECTROLUX AB [SE]
• EP 1732357 A2 20061213 - BSH BOSCH SIEMENS HAUSGERAETE [DE]

Citation (search report)
• [A] WO 2013064332 A1 20130510 - ARCELIK AS [TR], et al
• [A] EP 1420613 A2 20040519 - ELECTROLUX HOME PROD CORP [BE]
• [A] EP 2533605 A2 20121212 - GEN ELECTRIC [US]

Cited by
US2021199304A1; EP3694296A1; FR3092464A1

Designated contracting state (EPC)
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