

Title (en)

Switching control system for heating panel with leakage current cancellation

Title (de)

Schaltregelsystem für Heizplatten mit Leckstromunterdrückung

Title (fr)

Système de commande de interrupteur de panneau de chauffage avec annulation du courant de fuite

Publication

EP 0967836 A1 19991229 (EN)

Application

EP 98112006 A 19980625

Priority

EP 98112006 A 19980625

Abstract (en)

A heating panel has a substrate with a resistive heating material disposed thereon. The substrate can be metal with an insulating layer disposed between the substrate and the heating layer. Alternatively, the substrate can be glass ceramic. The heating layer has electrodes on opposite edges connected to different phases of a multiphase power source. Another electrode on the heating layer can be connected to a neutral of the power source. Capacitive currents caused in the substrate or a metal object on the substrate by the different phases cancel each other. Thus, leakage current through a conductor connected between the substrate and ground is minimized. The heating panel can be adapted for two phase or three phase systems. Power to the panels is controlled by solid state switches or relays. Zero crossing drivers sense supply voltages and operate the switches to balance currents in the panels. The zero crossing driver operates the corresponding switch or switches to turn the power on or off at a zero crossing of the voltage. <IMAGE>

IPC 1-7

H05B 3/26; **H05B 3/30**; **H05B 3/28**

IPC 8 full level

H05B 3/26 (2006.01)

CPC (source: EP)

H05B 3/262 (2013.01); **H05B 3/265** (2013.01)

Citation (search report)

- [Y] WO 9704622 A1 19970206 - WHITE CONSOLIDATED IND INC [US]
- [Y] US 5376773 A 19941227 - MASUDA KAZUNORI [JP], et al
- [A] EP 0840534 A1 19980506 - EGO ELEKTRO GERAETEBAU GMBH [DE]
- [AD] US 4298789 A 19811103 - EICHELBERGER CHARLES W, et al

Cited by

CN103200712A; NL1014601C2; US6919540B2; WO0167818A1

Designated contracting state (EPC)

CH DE DK ES FR GB IT LI SE

DOCDB simple family (publication)

EP 0967836 A1 19991229

DOCDB simple family (application)

EP 98112006 A 19980625