

Title (en)

HEAT PUMP WITH PULSE WIDTH MODULATION CONTROL

Title (de)

WÄRMEPUMPE MIT PULSBREITENMODULATIONSSTEUERUNG

Title (fr)

POMPE A CHALEUR AVEC COMMANDE A MODULATION DE LARGEUR D'IMPULSIONS

Publication

EP 1996875 A4 20110119 (EN)

Application

EP 05854510 A 20051216

Priority

US 2005045810 W 20051216

Abstract (en)

[origin: WO2007070060A1] A heat pump is provided with a component that has a pulse width modulation control to adjust system capacity. Thus, by utilizing a pulse width modulation technique to control this component, the present invention is able to closely tailor the delivered capacity of the heat pump to that which is demanded, without cycling the unit. In one embodiment, the component has a suction pulse width modulation valve. In another embodiment, the component which is modulated is the compressor pump unit, and, in particular, a pair of scroll members that are allowed to move into and out of contact with each other. The pulse width modulation control device can also be utilized in combination with a heat pump having an economizer function and/or an unloader function.

IPC 8 full level

F25B 1/00 (2006.01); **F25B 13/00** (2006.01); **F25B 41/00** (2006.01); **F25B 49/00** (2006.01)

CPC (source: EP US)

F25B 13/00 (2013.01 - EP US); **F25B 41/22** (2021.01 - EP US); **F25B 1/04** (2013.01 - EP US); **F25B 2313/02741** (2013.01 - EP US);
F25B 2313/02742 (2013.01 - EP US); **F25B 2400/13** (2013.01 - EP US); **F25B 2400/23** (2013.01 - EP US); **F25B 2600/0261** (2013.01 - EP US);
F25B 2600/2521 (2013.01 - EP US)

Citation (search report)

- [X] US 5303562 A 19940419 - BAHEL VIJAY [US], et al
- [XI] US 5247989 A 19930928 - BENEVELLI JOHN A [US]
- [A] US 2003213254 A1 20031120 - KOO HYOUNG-MO [KR]
- [X] US 4856286 A 19890815 - SULFSTEDE LOUIS E [US], et al
- [A] WO 03059664 A1 20030724 - DAIMLER CHRYSLER AG [DE], et al
- [A] US 2005086970 A1 20050428 - LIFSON ALEXANDER [US], et al
- See references of WO 2007070060A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2007070060 A1 20070621; CN 101341367 A 20090107; EP 1996875 A1 20081203; EP 1996875 A4 20110119;
US 2008209930 A1 20080904

DOCDB simple family (application)

US 2005045810 W 20051216; CN 200580052317 A 20051216; EP 05854510 A 20051216; US 8887908 A 20080401