Title (en)

MULTI-COUPLED HEAT PUMP AIR-CONDITIONING SYSTEM AND METHOD OF CONTROLLING MULTI-COUPLED HEAT PUMP AIR-CONDITIONING SYSTEM

Title (de)

MULTIGEKOPPELTE WÄRMEPUMPEN-KLIMAANLAGE UND VERFAHREN ZUR STEUERUNG EINER MULTIGEKOPPELTEN WÄRMEPUMPEN-KLIMAANLAGE

Title (fr)

SYSTÈME DE CONDITIONNEMENT D'AIR À POMPE À CHALEUR À COUPLAGES MULTIPLES ET PROCÉDÉ DE COMMANDE D'UN SYSTÈME DE CONDITIONNEMENT D'AIR À POMPE À CHALEUR À COUPLAGES MULTIPLES

Publication

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Application

EP 12887504 A 20121102

Priority

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- CN 2012083981 W 20121102

Abstract (en)

[origin: EP2916082A1] Disclosed are a multi-coupled heat pump air-conditioning system and a method of controlling a multi-coupled heat pump air-conditioning system. The method comprises: after a convergence unit performs gas-liquid separation and compression of coolant outputted by a third end of a switching unit, outputting same to a first end of the switching unit; under the operating modes of cooling and dehumidifying without a temperature drop, driving refrigerant outputted by a second end of the switching unit to successively flow through a first heat exchange unit and a second electronic expansion valve (11), a second heat exchanger (13), a third electronic expansion valve (17), and a third heat exchanger (14), flow back into a fourth end of the switching unit via a first shutoff valve (8), and then be outputted from the third end; under the operating mode of heating, driving refrigerant outputted by the fourth end of the switching unit to successively flow through the third heat exchanger (14), the third electronic expansion valve (17), the second heat exchanger (13), and the second electronic expansion valve (11), flow back to the second end of the switching unit via a second shutoff valve (9) and a first heat exchange unit, and then be outputted from the third end. System costs can be lowered and the control precision of a multi-coupled heat pump air-conditioning system can be improved by applying the present invention.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

- [XI] US 2006254294 A1 20061116 - SHIMAMOTO DAISUKE [JP], et al
- [I] WO 2012085965 A1 20120628 - HITACHI APPLIANCES INC [JP], et al
- [I] JP H11304285 A 19991105 - HITACHI LTD
- See references of WO 2014067129A1

Cited by

US11981180B2; US10612803B2; US11313572B2

Designated contracting state (EPC)

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