

Title (en)

HEAT PUMP SYSTEM AND CONTROL METHOD THEREOF

Title (de)

WÄRMEPUMPENSYSTEM UND STEUERUNGSVERFAHREN DAFÜR

Title (fr)

SYSTÈME DE POMPE À CHALEUR ET SON PROCÉDÉ DE COMMANDE

Publication

EP 4212794 A1 20230719 (EN)

Application

EP 23150603 A 20230106

Priority

CN 202210043503 A 20220114

Abstract (en)

The present application provides a heat pump system 100 and a control method thereof. The heat pump system comprises a compressor 110; a heat storage heat exchanger 140, the pipeline connection of which is configured to be disconnectable from the heat pump system 100; an indoor heat exchanger 120 and an outdoor heat exchanger 130; a plurality of throttling elements 171, 172, 173; and a first four-way valve 151 and a second four-way valve 153, the ports of which are respectively connected to the inlet 110a and the outlet 110b of the compressor 110; wherein the remaining ports of the first four-way valve are respectively connected to the outdoor heat exchanger 130 and the heat storage heat exchanger 140; and the remaining ports of the second four-way valve are respectively connected to the indoor heat exchanger 120 and connected to the port connected to the inlet 110a through a capillary or on-off valve; wherein in a combined defrosting mode, the refrigerant dissipates heat from the indoor heat exchanger 120 and the outdoor heat exchanger 130 respectively, and absorbs heat from the heat storage heat exchanger 140. The heat pump system and control method according to the present application can maintain the heating operation of the indoor unit while defrosting the outdoor unit, and improve indoor heating comfort during defrosting.

IPC 8 full level

F25B 13/00 (2006.01); **F25B 47/02** (2006.01); **F25B 49/02** (2006.01)

CPC (source: CN EP US)

F24F 5/001 (2013.01 - CN); **F24F 11/65** (2017.12 - CN); **F24F 13/30** (2013.01 - CN); **F25B 13/00** (2013.01 - CN EP US); **F25B 39/00** (2013.01 - CN); **F25B 41/30** (2021.01 - CN); **F25B 41/40** (2021.01 - CN); **F25B 41/42** (2021.01 - US); **F25B 47/02** (2013.01 - CN); **F25B 47/025** (2013.01 - EP); **F25B 49/022** (2013.01 - EP); **F25B 2313/0211** (2013.01 - EP); **F25B 2313/02742** (2013.01 - EP); **F25B 2600/2515** (2013.01 - US)

Citation (search report)

[X] EP 2884205 B1 20170201 - DAIKIN IND LTD [JP], et al

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

EP 4212794 A1 20230719; CN 116481094 A 20230725; US 2023228470 A1 20230720

DOCDB simple family (application)

EP 23150603 A 20230106; CN 202210043503 A 20220114; US 202318152522 A 20230110