

Title (en)
GEOTHERMAL HEAT PUMP DEVICE

Title (de)
GEOTHERMISCHE WÄRMEPUMPENVORRICHTUNG

Title (fr)
DISPOSITIF DE POMPE À CHALEUR GÉOTHERMIQUE

Publication
EP 3594588 A4 20200408 (EN)

Application
EP 17899277 A 20170309

Priority
JP 2017009420 W 20170309

Abstract (en)
[origin: EP3594588A1] A geothermal heat pump device includes a heat pump heat source unit having a refrigerant circuit in which a compressor, a water-refrigerant heat exchanger, an expansion valve, and a refrigerant-brine heat exchanger in which a heat medium from an underground heat exchanger buried underground is connected such that the heat medium circulates are serially connected, a warm-water heater unit configured to supply warm water heated at the water-refrigerant heat exchanger to heating and air conditioning and hot water supply such that the warm water circulates, and a controller configured to control an upper limit of an operation frequency of the compressor based on a heat collection limit value set by comparing a unit necessary evaporation capacity calculated from information on the underground heat exchanger with a unit actual evaporation capacity calculated from inlet and outlet temperatures and a circulation flow rate of the heat medium circulating through the refrigerant-brine heat exchanger.

IPC 8 full level
F25B 1/00 (2006.01); **F24H 4/02** (2006.01); **F25B 27/00** (2006.01); **F25B 30/02** (2006.01); **F25B 30/06** (2006.01); **F25B 49/02** (2006.01)

CPC (source: EP US)
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Citation (search report)

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- [A] JP 2013061102 A 20130404 - CORONA CORP
- [A] CHO CHANGYONG ET AL: "Experimental investigation of a multi-function heat pump under various operating modes", RENEWABLE ENERGY, PERGAMON PRESS, OXFORD, GB, vol. 54, 11 August 2012 (2012-08-11), pages 253 - 258, XP028970432, ISSN: 0960-1481, DOI: 10.1016/J.RENENE.2012.07.017
- See references of WO 2018163347A1

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EP 3594588 A1 20200115; **EP 3594588 A4 20200408**; **EP 3594588 B1 20220713**; JP WO2018163347 A1 20191107;
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