

Title (en)
HEAT MEDIUM CIRCULATION SYSTEM

Title (de)
SYSTEM FÜR HITZEMEDIUMZIRKULATION

Title (fr)
SYSTÈME DE CIRCULATION DE MILIEU THERMIQUE

Publication
EP 3477221 A4 20190724 (EN)

Application
EP 16906300 A 20160623

Priority
JP 2016068700 W 20160623

Abstract (en)
[origin: EP3477221A1] Provided is a heat medium cycle system capable of being continuously operated while a heat medium is being prevented from freezing in a heat medium heat exchanger by using a pressure difference of the heat medium obtained from a measurement value of an inlet pressure sensor provided at an inlet of the heat medium heat exchanger and a measurement value of an outlet pressure sensor provided at an outlet of the heat medium heat exchanger. The heat medium cycle system includes a refrigeration cycle circuit, a heat medium cycle circuit, an inlet temperature sensor, the inlet pressure sensor, the outlet pressure sensor, an evaporating temperature sensor, and a controller. Under a first condition where the heat medium is to freeze in the heat medium heat exchanger, the controller is configured to obtain a minimum on-state flow rate at which the heat medium is kept from freezing in the heat medium heat exchanger, on the basis of a temperature of the heat medium at a heat medium inlet measured by the inlet temperature sensor and an evaporating temperature of refrigerant detected by the evaporating temperature sensor, and control a pump in such a manner that the minimum on-state flow rate is maintained to make the pressure difference of the heat medium obtained from a measurement value of the inlet pressure sensor and a measurement value of the outlet pressure sensor into a minimum on-state pressure difference.

IPC 8 full level
F25B 1/00 (2006.01); **F24F 5/00** (2006.01); **F24F 11/62** (2018.01); **F24F 11/85** (2018.01)

CPC (source: EP)
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Citation (search report)

- [A] JP 2009243828 A 20091022 - MITSUBISHI ELECTRIC CORP, et al
- [A] WO 2016071977 A1 20160512 - MITSUBISHI ELECTRIC CORP [JP]
- [A] CN 101782260 A 20100721 - UNIV HUAZHONG SCIENCE TECH
- See references of WO 2017221383A1

Cited by
CN113899053A; EP4212795A1; US11408656B2

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 MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
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DOCDB simple family (application)
EP 16906300 A 20160623; JP 2016068700 W 20160623; JP 2018523238 A 20160623