

Title (en)  
REFRIGERATION CYCLE DEVICE

Title (de)  
KÄLTEKREISLAUFVORRICHTUNG

Title (fr)  
DISPOSITIF À CYCLE DE RÉFRIGÉRATION

Publication  
**EP 4163574 A4 20230705 (EN)**

Application  
**EP 20940265 A 20200609**

Priority  
JP 2020022734 W 20200609

Abstract (en)  
[origin: EP4163574A1] A refrigeration cycle apparatus (1) comprises a refrigerant circuit (100), a water circuit (200), and a control device (300). The refrigerant circuit (100) includes a compressor (101), a four-way valve (104), a heat exchanger (105), a fan (106), a diaphragm mechanism (108), a water heat exchanger (109), and an accumulator (110). Based on a value of a low-pressure sensor (111) or a high-pressure sensor (103) and a water temperature on an outlet side of the water heat exchanger (109), the refrigeration cycle apparatus (1) determines whether or not there is an abnormality due to dirtiness adhered to a plate inside the water heat exchanger (109).

IPC 8 full level  
**F25B 49/02** (2006.01); **F25B 1/00** (2006.01); **F25B 13/00** (2006.01); **F25B 25/00** (2006.01)

CPC (source: EP US)  
**F25B 13/00** (2013.01 - EP); **F25B 25/005** (2013.01 - EP); **F25B 49/02** (2013.01 - EP US); **F25B 2313/0315** (2013.01 - US); **F25B 2500/19** (2013.01 - EP); **F25B 2500/222** (2013.01 - EP); **F25B 2700/21** (2013.01 - US)

Citation (search report)

- [X] EP 3205954 A1 20170816 - MITSUBISHI HEAVY IND THERMAL SYSTEMS LTD [JP]
- [AD] JP 2003050067 A 20030221 - CKD CORP
- [A] JP 2013079749 A 20130502 - MITSUBISHI ELECTRIC CORP
- See also references of WO 2021250789A1

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

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 4163574 A1 20230412**; **EP 4163574 A4 20230705**; CN 115698606 A 20230203; CN 115698606 B 20240319; JP 7367216 B2 20231023; JP WO2021250789 A1 20211216; US 2023221050 A1 20230713; WO 2021250789 A1 20211216

DOCDB simple family (application)  
**EP 20940265 A 20200609**; CN 202080101914 A 20200609; JP 2020022734 W 20200609; JP 2022530407 A 20200609; US 202018000320 A 20200609