

Title (en)  
REFRIGERATION CYCLE DEVICE

Title (de)  
KÄLTEKREISLAUFVORRICHTUNG

Title (fr)  
DISPOSITIF À CYCLE FRIGORIFIQUE

Publication  
**EP 4027076 A1 20220713 (EN)**

Application  
**EP 20860598 A 20200824**

Priority  
• JP 2019162172 A 20190905  
• JP 2020031827 W 20200824

Abstract (en)  
A refrigeration cycle device with excellent safety that can prevent water in a water heat exchanger from freezing. A water heat exchange unit includes a water heat exchanger, a pump for circulating water between a water flow path of the water heat exchanger and a load, and a water heat controller, and is operated by a power source different from that of the outdoor unit and the indoor unit. The water heat exchanger controller operates the pump when the temperature of the water heat exchanger is below a set value. An outdoor controller of the outdoor unit permits operation of the refrigeration cycle device when the number of operable water heat exchange units reaches a specified number of units, and prohibits operation of the refrigeration cycle device when the number of operable units does not reach the specified number of units.

IPC 8 full level  
**F25B 13/00** (2006.01); **F24F 5/00** (2006.01); **F24F 11/41** (2018.01); **F24F 11/46** (2018.01); **F24F 11/70** (2018.01); **F25B 1/00** (2006.01); **F24F 140/00** (2018.01)

CPC (source: EP)  
**F24F 5/00** (2013.01); **F24F 11/41** (2017.12); **F24F 11/70** (2017.12); **F24F 11/83** (2017.12); **F25B 13/00** (2013.01); **F25B 25/005** (2013.01); **F25B 47/006** (2013.01); **F25B 49/02** (2013.01); **F24F 2110/10** (2017.12); **F24F 2110/12** (2017.12); **F25B 2313/003** (2013.01); **F25B 2313/0233** (2013.01); **F25B 2500/06** (2013.01); **F25B 2500/26** (2013.01); **F25B 2500/31** (2013.01); **F25B 2600/13** (2013.01)

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)  
**EP 4027076 A1 20220713**; **EP 4027076 A4 20231011**; CN 114341558 A 20220412; CN 114341558 B 20230808; JP 7259058 B2 20230417; JP WO2021044886 A1 20210311; WO 2021044886 A1 20210311

DOCDB simple family (application)  
**EP 20860598 A 20200824**; CN 202080062351 A 20200824; JP 2020031827 W 20200824; JP 2021543702 A 20200824