

Title (en)
REFRIGERATION DEVICE

Title (de)
KÜHLVORRICHTUNG

Title (fr)
DISPOSITIF DE RÉFRIGÉRATION

Publication
EP 3486578 A4 20200408 (EN)

Application
EP 17836720 A 20170714

Priority
• JP 2016153801 A 20160804
• JP 2017025668 W 20170714

Abstract (en)
[origin: EP3486578A1] A refrigeration apparatus (10) includes a utilization-side unit (12) and a heat source-side unit (11) connected together through a pair of connection pipes (14, 15). When the utilization-side unit (12) is switched from a cooling state to a suspended state, a controller (90) closes a heat source-side expansion valve (38), and then stops a compressor (31a-31c) and closes a utilization-side solenoid valve (62). This can avoid a liquid hammer phenomenon that occurs upon opening the utilization-side solenoid valve (62) of the utilization-side unit (12).

IPC 8 full level
F25B 1/00 (2006.01); **F25B 41/04** (2006.01); **F25B 47/02** (2006.01)

CPC (source: EP US)
F25B 1/00 (2013.01 - US); **F25B 41/20** (2021.01 - EP US); **F25B 41/24** (2021.01 - EP US); **F25B 41/39** (2021.01 - EP US);
F25B 47/025 (2013.01 - EP); **F25B 2313/006** (2013.01 - EP); **F25B 2400/13** (2013.01 - EP); **F25B 2600/2513** (2013.01 - EP);
F25B 2600/2521 (2013.01 - EP); **F25B 2700/191** (2013.01 - EP); **F25B 2700/2103** (2013.01 - EP)

Citation (search report)
• [XY] JP 2014070830 A 20140421 - DAIKIN IND LTD
• [Y] EP 2578965 A1 20130410 - DAIKIN IND LTD [JP]
• [AD] JP H11325654 A 19991126 - MITSUBISHI ELECTRIC CORP
• [A] EP 0874202 A1 19981028 - DENSO CORP [JP]
• See references of WO 2018025614A1

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

DOCDB simple family (publication)
EP 3486578 A1 20190522; **EP 3486578 A4 20200408**; **EP 3486578 B1 20230614**; CN 109564034 A 20190402; CN 109564034 B 20200407;
JP 2018021723 A 20180208; JP 6323508 B2 20180516; WO 2018025614 A1 20180208

DOCDB simple family (application)
EP 17836720 A 20170714; CN 201780047413 A 20170714; JP 2016153801 A 20160804; JP 2017025668 W 20170714