

Title (en)  
BINARY REFRIGERATION DEVICE

Title (de)  
BINÄRE KÜHLVORRICHTUNG

Title (fr)  
DISPOSITIF DE RÉFRIGÉRATION BINAIRE

Publication  
**EP 2995885 B1 20200415 (EN)**

Application  
**EP 13883949 A 20130508**

Priority  
JP 2013062931 W 20130508

Abstract (en)  
[origin: EP2995885A1] A two-stage refrigeration cycle system includes a higher-stage compressor 21, a higher-stage condenser 22, a higher-stage expansion device 23, and a higher-stage evaporator 24 connected in a higher-stage refrigeration cycle 20 by pipes through which refrigerant circulates therein, a lower-stage compressor 11, an auxiliary radiator 15, a lower-stage condenser 12, a lower-stage expansion device 13, and a lower-stage evaporator 14 connected in a lower-stage refrigeration cycle 10 by pipes through which refrigerant circulates therein, a cascade condenser C including the higher-stage evaporator 24 and the lower-stage condenser 12 and configured to heat exchange between the refrigerant flowing in the higher-stage refrigeration cycle 20 and the refrigerant flowing in the lower-stage refrigeration cycle 10, and a controller 30 configured to switch between a two-stage operation in which both the higher-stage refrigeration cycle 20 and the lower-stage refrigeration cycle 10 operate and a single-stage operation in which the higher-stage refrigeration cycle 20 stops and the lower-stage refrigeration cycle 10 operates, so as to select one of the two-stage operation and the single-stage operation having a higher COP.

IPC 8 full level  
**F25B 7/00** (2006.01); **F25B 6/04** (2006.01); **F25B 9/00** (2006.01); **F25B 49/02** (2006.01)

CPC (source: EP)  
**F25B 6/04** (2013.01); **F25B 7/00** (2013.01); **F25B 9/008** (2013.01); **F25B 49/02** (2013.01); **F25B 2500/18** (2013.01); **F25B 2500/19** (2013.01); **F25B 2700/2106** (2013.01)

Cited by  
EP4224092A1; US11137172B2; US10830500B2; US11841177B2; US11268741B2; US2022307733A1; WO2018019779A1; WO2018019777A1; US11982481B2; US12007154B2

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 2995885 A1 20160316**; **EP 2995885 A4 20170201**; **EP 2995885 B1 20200415**; CN 203615641 U 20140528; JP 6125000 B2 20170510; JP WO2014181399 A1 20170223; WO 2014181399 A1 20141113

DOCDB simple family (application)  
**EP 13883949 A 20130508**; CN 201320772061 U 20131127; JP 2013062931 W 20130508; JP 2015515669 A 20130508