Title (en)

AIR CONDITIONER

Title (de)

KLIMAANLAGE

Title (fr)

CLIMATISEUR

Publication

EP 2290304 A1 20110302 (EN)

Application

EP 09729048 A 20090331

Priority

- JP 2009056655 W 20090331
- JP 2008056370 W 20080331

Abstract (en)

Provided is an air conditioner capable of improving a COP in simultaneous heating and cooling operation. The air conditioner is an air conditioning system in which an outdoor unit (100) and a plurality of indoor units (301 to 303) are connected through a branch controller (200), and a supercritical fluid is used, to thereby establish a single refrigerating cycle. The outdoor unit (100) and the branch controller (200) are connected through two pipes of a high-pressure pipe (400) and a low-pressure pipe (500). The branch controller (200) and each of the plurality of indoor units (301 to 303) are connected through two pipes of a high-pressure pipe (700) and a low-pressure pipe (800). The branch controller (200) includes a double-pipe heat exchanger (240) for heat exchange between a medium-pressure two-phase refrigerant and a low-pressure two-phase refrigerant. The medium-pressure two-phase refrigerant is relatively high in temperature and flows into the double-pipe heat exchanger after branching a refrigerant flowing from the outdoor unit toward the plurality of indoor units, and joining together a refrigerant decompressed by a first expansion valve (211) and a refrigerant flowing from the plurality of indoor units. The low-pressure two-phase refrigerant is relatively low in temperature and flows out of the double-pipe heat exchanger toward the outdoor unit after branching a refrigerant flowing out of the double-pipe heat exchanger toward the plurality of indoor units, and decompressing a part of the branched refrigerant by a second expansion valve (212).

IPC 8 full level

F25B 1/00 (2006.01); **F25B 9/00** (2006.01); **F25B 13/00** (2006.01); **F25B 29/00** (2006.01)

CPC (source: EP)

F25B 9/008 (2013.01); **F25B 13/00** (2013.01); **F25B 41/39** (2021.01); F25B 2309/061 (2013.01); F25B 2313/006 (2013.01); F25B 2313/0231 (2013.01); F25B 2313/02741 (2013.01); F25B 2400/13 (2013.01); F25B 2600/11 (2013.01); F25B 2600/2509 (2013.01); F25B 2600/2513 (2013.01); F25B 2700/191 (2013.01)

Cited by

CN109445494A; EP4379288A1; JP2014510895A; EP2833086A4; US9915247B2; WO2016173497A1; US9360236B2; WO2012120097A3; US9556856B2; US10309693B2; US10921030B2

Designated contracting state (EPC)

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 SE SI SK TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

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