

Title (en)  
REFRIGERATION CYCLE DEVICE

Title (de)  
KÄLTEKREISLAUFVORRICHTUNG

Title (fr)  
DISPOSITIF DE CIRCUIT DE RÉFRIGÉRATION

Publication  
**EP 3205954 A1 20170816 (EN)**

Application  
**EP 17155400 A 20170209**

Priority  
JP 2016024906 A 20160212

Abstract (en)  
An air conditioner 1 includes an outdoor unit 2 which includes a compressor 10 and an outdoor heat exchanger 13 and a water temperature control unit 40 which includes a water heat exchanger 51 connected to the outdoor unit 2 through a unit connection pipe 6, the water heat exchanger 51 exchanging heat between water and a refrigerant supplied from the outdoor unit 2 and further includes a low-pressure sensor 42 which detects a low pressure of a refrigerant at a suction side of the compressor 10 and a freezing determination unit which determines whether water flowing through the water heat exchanger 51 is going to be frozen when the low pressure is lower than a predetermined low-pressure protection value, the low-pressure protection value set in consideration of pressure loss generated when a refrigerant flows through the unit connection pipe 6.

IPC 8 full level  
**F25B 13/00** (2006.01); **F25B 47/02** (2006.01); **F25B 49/02** (2006.01)

CPC (source: EP)  
**F25B 13/00** (2013.01); **F25B 47/006** (2013.01); **F25B 47/02** (2013.01); **F25B 49/02** (2013.01); **F25B 2313/003** (2013.01); **F25B 2313/02322** (2013.01); **F25B 2313/0233** (2013.01); **F25B 2700/1933** (2013.01)

Citation (applicant)  
JP 2009243828 A 20091022 - MITSUBISHI ELECTRIC CORP, et al

Citation (search report)  
• [A] EP 2781854 A1 20140924 - MITSUBISHI ELECTRIC CORP [JP]  
• [A] EP 2902726 A1 20150805 - MITSUBISHI ELECTRIC CORP [JP]  
• [AD] JP 2009243828 A 20091022 - MITSUBISHI ELECTRIC CORP, et al  
• [A] EP 2733441 A2 20140521 - MITSUBISHI HEAVY IND LTD [JP]  
• [A] JP 2011163729 A 20110825 - MITSUBISHI ELECTRIC CORP  
• [A] EP 2933588 A1 20151021 - MITSUBISHI ELECTRIC CORP [JP]

Cited by  
EP4350251A3; CN108151367A; CN115183405A; CN114992801A; EP4163574A4; CN115183403A; EP3845830A1; US11725855B2

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 3205954 A1 20170816; EP 3205954 B1 20180509**; ES 2675039 T3 20180705; JP 2017142038 A 20170817

DOCDB simple family (application)  
**EP 17155400 A 20170209**; ES 17155400 T 20170209; JP 2016024906 A 20160212