

Title (en)  
HEAT PUMP APPARATUS

Title (de)  
WÄRMEPUMPENVORRICHTUNG

Title (fr)  
APPAREIL DE POMPE À CHALEUR

Publication  
**EP 3220075 A4 20171108 (EN)**

Application  
**EP 15858912 A 20150820**

Priority  
• JP 2014229387 A 20141112  
• JP 2015004163 W 20150820

Abstract (en)  
[origin: EP3220075A1] A heat pump apparatus includes a refrigerant circuit to which a compressor (1), a condenser (3 or 5), an expander (4), an evaporator (5 or 3) are connected in a loop by a refrigerant tube. One of the condenser (3 or 5) and the evaporator (5 or 3) is a plate heat exchanger which performs heat exchange between a refrigerant and a liquid. The refrigerant which is filled in the refrigerant circuit contains R32 as a main component, which reduces refrigerant drift current inside the condenser (3 or 5) and pressure losses, and thereby increases energy-saving performances.

IPC 8 full level  
**F25B 1/00** (2006.01); **F25B 1/02** (2006.01); **F25B 1/04** (2006.01); **F25B 39/00** (2006.01); **F25B 39/02** (2006.01); **F25B 39/04** (2006.01)

CPC (source: EP)  
**F25B 13/00** (2013.01); **F25B 39/022** (2013.01); **F25B 39/04** (2013.01); **F25B 2313/003** (2013.01); **F25B 2339/043** (2013.01)

Citation (search report)  
• [I] EP 2765371 A1 20140813 - MITSUBISHI ELECTRIC CORP [JP]  
• [A] JP 2012117717 A 20120621 - NISHIYAMA CORP  
• [A] JP 2010002111 A 20100107 - MITSUBISHI ELECTRIC CORP  
• [A] EP 1243877 A1 20020925 - DAIKIN IND LTD [JP]  
• See references of WO 2016075851A1

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 3220075 A1 20170920; EP 3220075 A4 20171108**; CN 106796060 A 20170531; JP 2016095039 A 20160526; WO 2016075851 A1 20160519

DOCDB simple family (application)  
**EP 15858912 A 20150820**; CN 201580054540 A 20150820; JP 2014229387 A 20141112; JP 2015004163 W 20150820