

Title (en)  
AIR CONDITIONER DEVICE

Title (de)  
KLIMAAANLAGE

Title (fr)  
DISPOSITIF DE CONDITIONNEMENT D'AIR

Publication  
**EP 2669607 A1 20131204 (EN)**

Application  
**EP 11856852 A 20110126**

Priority  
JP 2011000411 W 20110126

Abstract (en)  
An air-conditioning apparatus 100 that includes a refrigeration cycle in which a compressor 10, a heat-source side heat exchanger 12, an expansion unit 16, and a load-side heat exchanger 15 are included and are connected with refrigerant pipes, includes cutoff units 37 and 38 capable of flowing or cut off a refrigerant circulating in the refrigeration cycle; a detection unit detecting leaking of the refrigerant on the basis of a resistance that changes with densities of plural kinds of leaked refrigerants; a concentration calculation unit 41 calculating a concentration of a refrigerant that has leaked, on the basis of the resistance of the detection unit; a concentration detection unit 39 outputting a calculation result of the concentration calculation unit 41 in order that the calculation result is used for controlling the cutoff units 37 and 38; and a cutoff control unit 40 controlling the cutoff units 37 and 38 on the basis of an output of the concentration detection unit 39.

IPC 8 full level  
**F25B 49/02** (2006.01); **F25B 13/00** (2006.01); **F25B 25/00** (2006.01); **F25B 49/00** (2006.01)

CPC (source: EP US)  
**F25B 9/008** (2013.01 - US); **F25B 49/005** (2013.01 - EP US); **F25B 13/00** (2013.01 - EP US); **F25B 25/005** (2013.01 - EP US);  
**F25B 2313/0231** (2013.01 - EP US); **F25B 2313/0272** (2013.01 - EP US); **F25B 2313/02732** (2013.01 - EP US);  
**F25B 2500/222** (2013.01 - EP US); **F25B 2600/2519** (2013.01 - EP US)

Cited by  
CN106440584A; CN109952479A; EP3546855A4; US11181303B2

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)  
**US 2013233006 A1 20130912**; EP 2669607 A1 20131204; EP 2669607 A4 20170426; EP 2669607 B1 20200415; JP 5642202 B2 20141217;  
JP WO2012101673 A1 20140630; WO 2012101673 A1 20120802

DOCDB simple family (application)  
**US 201113882779 A 20110126**; EP 11856852 A 20110126; JP 2011000411 W 20110126; JP 2012554479 A 20110126