

Title (en)

COMPOSITION ABNORMALITY DETECTION DEVICE AND COMPOSITION ABNORMALITY DETECTION METHOD

Title (de)

VORRICHTUNG ZUR ERKENNUNG VON ANOMALIEN BEI EINER ZUSAMMENSETZUNG UND VERFAHREN ZUR ERKENNUNG VON ANOMALIEN BEI EINER ZUSAMMENSETZUNG

Title (fr)

DISPOSITIF DE DÉTECTION D'ANOMALIES DE COMPOSITION ET PROCÉDÉ DE DÉTECTION D'ANOMALIES DE COMPOSITION

Publication

EP 3502593 A4 20191023 (EN)

Application

EP 18757070 A 20180221

Priority

- JP 2017034942 A 20170227
- JP 2018006300 W 20180221

Abstract (en)

[origin: EP3502593A1] In order to detect abnormalities such as slow refrigeration leaks at a relatively early stage, this composition abnormality detection unit (60) is provided with: multiple temperature sensors disposed from a refrigerant inlet to a refrigerant outlet of a condenser; a pressure sensor which detects the inlet-side pressure of the condenser; a reference value calculation unit (61) which uses the detected pressure value detected by the pressure sensor to calculate a reference value of the temperature gradient in the condenser; a temperature gradient calculation unit (62) which uses multiple detected temperature values detected by the temperature detection unit to calculate the temperature gradient; and an abnormality determination unit (63) which determines an abnormality if the difference between the temperature gradient calculated by the temperature gradient calculation unit (62) and the reference value of the temperature gradient calculated by the reference value calculation unit (61) is outside of a prescribed temperature range.

IPC 8 full level

F25B 49/02 (2006.01); **F25B 1/00** (2006.01); **F25B 9/00** (2006.01)

CPC (source: EP)

F25B 1/00 (2013.01); **F25B 9/006** (2013.01); **F25B 41/39** (2021.01); **F25B 49/02** (2013.01); **F25B 2313/0311** (2013.01); **F25B 2500/222** (2013.01); **F25B 2700/195** (2013.01); **F25B 2700/21162** (2013.01); **F25B 2700/21163** (2013.01)

Citation (search report)

- [XY] EP 0693663 A2 19960124 - MITSUBISHI ELECTRIC CORP [JP]
- [Y] US 2016075927 A1 20160317 - FUKUSHIMA MASATO [JP]
- [A] ZHANG S ET AL: "Experimental investigation of moderately high temperature water source heat pump with non-azeotropic refrigerant mixtures", APPLIED ENERGY, ELSEVIER SCIENCE PUBLISHERS, GB, vol. 87, no. 5, 1 May 2010 (2010-05-01), pages 1554 - 1561, XP026883815, ISSN: 0306-2619, [retrieved on 20091209], DOI: 10.1016/J.APENERGY.2009.11.001
- See references of WO 2018155513A1

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)

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DOCDB simple family (application)

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