

Title (en)

A VAPOUR COMPRESSION SYSTEM WITH A SUCTION LINE LIQUID SEPARATOR

Title (de)

DAMPFKOMPRESSIONSSYSTEM MIT EINEM SAUGLEITUNGSFLÜSSIGKEITSABSCHIEDER

Title (fr)

SYSTÈME DE COMPRESSION DE VAPEUR DOTÉ D'UN SÉPARATEUR DE LIQUIDE DE CONDUITE D'ASPIRATION

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2018177956A1] A method for controlling a vapour compression system (1) is disclosed. The vapour compression system (1) comprises an ejector (6) and a liquid separating device (10) arranged in a suction line. A liquid level sensor (18) is arranged in the liquid separating device (10). A liquid level in the liquid separating device (10) is monitored by means of the liquid level sensor (18). In the case that the liquid level in the liquid separating device (10) is above a predefined threshold level, a control parameter of the vapour compression system (1) is adjusted in order to increase a flow rate of refrigerant from the liquid separating device (10) to the secondary inlet (15) of the ejector (6) and/or decrease a flow rate of liquid refrigerant from the evaporator(s) (9) to the liquid separating device (10).

IPC 8 full level

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Citation (opposition)

Opponent : Manitz Finsterwald Patent- und Rechtsanwaltspartnerschaft mbB

- AU 2016101310 A4 20160825 - EPTA SPA [IT]
- US 3600904 A 19710824 - TILNEY RALPH B
- WO 2012168544 A1 20121213 - HUURRE GROUP OY [FI], et al
- US 2016341451 A1 20161124 - MINAMI JUNYA [JP], et al
- EP 0217605 A2 19870408 - SANDEN CORP [JP]
- SCHÖNENBERGER JONAS, WIEDENMANN ERIK: "Effiziente Kälteerzeugung im Supermarkt mittels CO₂-Booster-Kälteanlage und Ejektoren", DKV TAGUNGSBERICHT ZU DER DEUTSCHEN KÄLTE- UND KLIMATAGUNG, 1 January 2016 (2016-01-01), pages 1 - 8, XP093019054
- SCHOENENBERGER J.: "Experience with R744 refrigerating systems and implemented multi ejectors and liquid overfeed", INTERNATIONAL INSTITUTE OF REFRIGERATION (IIR), 1 January 2016 (2016-01-01), XP093019057, DOI: 10.18462/iir.gl.2016.1107
- WIEDENMANN ERIK ET AL: "Effiziente Kälteerzeugung im Supermarkt mittels CO₂-Booster-Kälteanlage und Ejektor", DKV TAGUNGSBERICHT ZU DER DEUTSCHEN KÄLTE- UND KLIMATAGUNG, 1 January 2014 (2014-01-01), pages 1 - 10, XP093019064
- 1 January 1991, VERLAG C.F. MÜLLER, Karlsruhe, article GRAS HORST: "Das Expansionsventil, Grundlagen und Einsatz thermischer und elektronischer Regelelemente", pages: 42-45 - 54-59, XP093019099
- "Der Kälteanlagenbauer, Band 1, 4th Edition", 1 January 2003, C. F. MÜLLER VERLAG, article BREIDENBACH KARL: "Aufbau des Lg p, h-Diagramm", pages: 184, XP093020210
- "Der Kälteanlagenbauer, Band 2, 4th Edition", 1 January 2004, C. F. MÜLLER VERLAG, article BREIDENBACH KARL: "Steuern und Regeln in der Kälteanlage, Handgeregeltes Expansionsventil", pages: 437 - 520-523, XP093020275
- ANONYMOUS: "Injector", WIKIPEDIA, THE FREE ENCYCLOPEDIA, INTERNET ARTICLE, 29 December 2016 (2016-12-29), pages 1 - 7, XP093020277, Retrieved from the Internet <URL:https://en.wikipedia.org/wiki/Injector> [retrieved on 20230202]
- ANONYMOUS: "Ejektor macht Kälteanlage effizienter", BUNDESAMT FÜR ENERGIE (BFE), 27 January 2014 (2014-01-27), pages 1 - 4, XP093020282
- ANONYMOUS: "Prozessoptimierung einer CO₂-Kälteanlage mittels Ejektoren und Liquid-Overfeed", BUNDESAMT FÜR ENERGIE (BFE), 18 December 2015 (2015-12-18), pages 1 - 15, XP093020289

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