

Title (en)

COOLING AND/OR LIQUEFYING SYSTEM AND METHOD

Title (de)

KÜHL- UND/ODER VERFLÜSSIGUNGSSYSTEM UND VERFAHREN

Title (fr)

INSTALLATION ET PROCEDE DE REFROIDISSEMENT ET/OU DE LIQUEFACTION

Publication

EP 4010647 A1 20220615 (FR)

Application

EP 20743083 A 20200708

Priority

- FR 1908946 A 20190805
- EP 2020069187 W 20200708

Abstract (en)

[origin: WO2021023458A1] Disclosed is a low-temperature refrigeration device comprising a working circuit (10) that forms a loop and contains a working fluid, the device (1) further comprising a cooling exchanger (8) for extracting heat from at least one member (25) by exchanging heat with the working fluid, the working circuit (10) forming a cycle comprising, connected in series: a compression mechanism (2, 3), a cooling mechanism (6), an expansion mechanism (7) and a heating mechanism (6, 8), wherein the mechanism for cooling the working fluid and the heating mechanism comprise a common heat exchanger (6) in which the working fluid flows in opposite directions in two separate transit portions of the circuit according to whether it is cooled or heated, the device (1) being designed to ensure equal mass flow rates in the two transit portions in the common heat exchanger (6), the device (1) also comprising a bypass (9) for bypassing one of the two transit portions, said bypass (9) comprising a bypass valve (11) which, in the open state, changes the mass flow rate in one of the two transit portions.

IPC 8 full level

F25J 1/00 (2006.01); **F25B 1/053** (2006.01); **F25B 9/06** (2006.01); **F25B 11/04** (2006.01); **F25B 47/02** (2006.01); **F25J 1/02** (2006.01); **F25J 5/00** (2006.01)

CPC (source: EP KR US)

F17C 6/00 (2013.01 - EP KR); **F25B 1/053** (2013.01 - EP KR); **F25B 9/06** (2013.01 - EP KR); **F25B 11/04** (2013.01 - EP KR); **F25B 47/02** (2013.01 - EP KR); **F25J 1/0022** (2013.01 - KR US); **F25J 1/0025** (2013.01 - EP KR); **F25J 1/005** (2013.01 - EP KR US); **F25J 1/0062** (2013.01 - EP KR); **F25J 1/0065** (2013.01 - EP KR); **F25J 1/0067** (2013.01 - EP KR); **F25J 1/0072** (2013.01 - EP KR); **F25J 1/0204** (2013.01 - EP KR); **F25J 1/0212** (2013.01 - EP KR); **F25J 1/0248** (2013.01 - EP KR US); **F25J 1/0265** (2013.01 - EP KR); **F25J 1/0277** (2013.01 - EP KR); **F25J 1/0284** (2013.01 - EP KR); **F25J 1/0288** (2013.01 - EP KR US); **F25J 1/0298** (2013.01 - EP); **F25B 2400/04** (2013.01 - EP KR US); **F25B 2400/0411** (2013.01 - EP KR); **F25B 2400/13** (2013.01 - EP KR); **F25B 2400/14** (2013.01 - EP KR); **F25B 2500/04** (2013.01 - EP KR); **F25B 2500/09** (2013.01 - EP KR); **F25B 2600/2501** (2013.01 - EP KR US); **F25J 1/0284** (2013.01 - US); **F25J 2205/20** (2013.01 - EP KR US); **F25J 2220/66** (2013.01 - EP KR); **F25J 2230/20** (2013.01 - EP); **F25J 2245/02** (2013.01 - EP KR); **F25J 2280/20** (2013.01 - EP KR US); **F25J 2280/40** (2013.01 - EP KR US); **F25J 2290/34** (2013.01 - EP KR US); **F25J 2290/62** (2013.01 - EP KR)

Citation (search report)

See references of WO 2021023458A1

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)

WO 2021023458 A1 20210211; AU 2020324281 A1 20220224; CA 3146133 A1 20210211; CN 114270109 A 20220401; EP 4010647 A1 20220615; FR 3099818 A1 20210212; FR 3099818 B1 20221104; JP 2022542687 A 20221006; KR 20220042415 A 20220405; US 2022268516 A1 20220825

DOCDB simple family (application)

EP 2020069187 W 20200708; AU 2020324281 A 20200708; CA 3146133 A 20200708; CN 202080058843 A 20200708; EP 20743083 A 20200708; FR 1908946 A 20190805; JP 2022506094 A 20200708; KR 20227006735 A 20200708; US 202017632992 A 20200708