



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
31.07.2019 Bulletin 2019/31

(51) Int Cl.:
F25B 49/02 (2006.01)

(43) Date of publication A2:
15.05.2019 Bulletin 2019/20

(21) Application number: **18205477.5**

(22) Date of filing: **09.11.2018**

(84) Designated Contracting States:
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 States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **13.11.2017 JP 2017218055**

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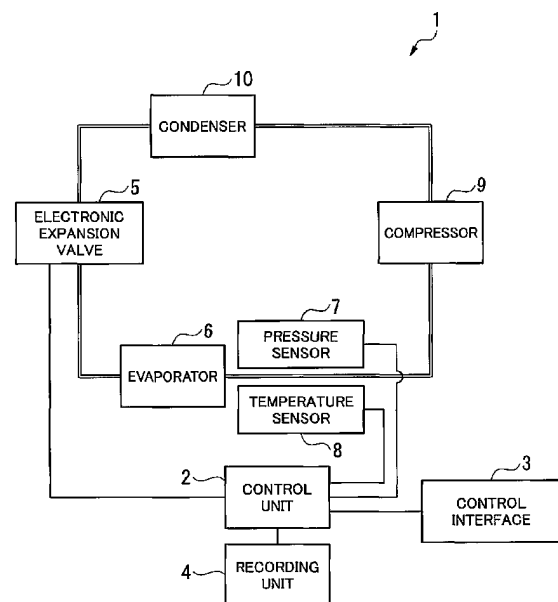
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(54) **CONTROL DEVICE, REFRIGERATING MACHINE, CONTROL METHOD, AND PROGRAM**

(57) A control device includes: a pressure acquisition section which is configured to acquire an outlet pressure of an evaporator from a pressure sensor for detecting a pressure of the refrigerant at an outlet of the evaporator in the refrigeration unit; a temperature acquisition section which is configured to acquire an outlet temperature of the evaporator from a temperature sensor for detecting a temperature of the refrigerant at the outlet of the evaporator; a saturation temperature table acquisition section which is configured to acquire one of a plurality of saturation temperature tables recorded in a recording unit in the refrigeration unit, the plurality of saturation temperature tables corresponding to each of the different refrigerants, the saturation temperature table designating the gas side saturation temperature at each pressure for a corresponding refrigerant; and an expansion valve control section which is configured to control an expansion valve opening degree of an electronic expansion valve in the refrigeration unit to obtain a predetermined degree of superheat, based on the obtained saturation temperature table, the acquired outlet pressure, and the acquired outlet temperature.

FIG. 1





EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 0 732 551 A2 (TOSHIBA KK [JP]) 18 September 1996 (1996-09-18)	1-3,7-12	INV. F25B49/02
A	* abstract; figure 1 * * page 1, line 44 - page 2, line 31 * * page 6, line 11 - page 7, line 43; figures 2, 3, 4A-4C *	4,6	
X	JP H07 253250 A (TOSHIBA CORP) 3 October 1995 (1995-10-03)	1-3,7-12	
A	* paragraphs [0001] - [0011] * * paragraphs [0027] - [0049]; figures 2-5 *	4,6	
X	US 9 234 686 B2 (ENERGY RECOVERY SYSTEMS INC [CA]) 12 January 2016 (2016-01-12)	1	
A	* column 3, line 23 - column 5, line 19; figure 1 * * column 6, lines 20-49; figure 3 *	2-4,6-12	
A	WO 2016/073281 A1 (EMERSON CLIMATE TECHNOLOGIES [US]) 12 May 2016 (2016-05-12) * paragraphs [0058] - [0060] *	1-12	TECHNICAL FIELDS SEARCHED (IPC) F25B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 25 June 2019	Examiner Weisser, Meinrad
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

4, 6

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3, 7-12

A control device comprising a refrigerant selection signal acquisition section configured to receive a refrigerant selection from a control interface.

2. claims: 4, 6

A control device comprising a record unit in which an allowable pressure is stored and a compatible refrigerant determination section configured to determine a suitable refrigerant based on the allowable pressure and the stored saturation temperature tables of different refrigerants.

3. claim: 5

A control device comprising a record unit in which information concerning the lubricating oil is stored and a compatible refrigerant determination section configured to determine a suitable refrigerant based on the used lubrication oil and the stored saturation temperature tables of different refrigerants.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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25-06-2019

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