



## SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 22 74 59 17

### Classification of the application (IPC):

F25B 1/00, F24F 11/61, F24F 11/84, F24F 11/86, F24F 11/871, F25B 49/02

### Technical fields searched (IPC):

F25B

### DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X A	EP 2924368 A1 (MITSUBISHI ELECTRIC CORP [JP]) 30 September 2015 (2015-09-30) * paragraph [0012] - paragraph [0080]; figures 1-8 *	1-6, 9 7, 8
X	EP 1496317 A1 (DAIKIN IND LTD [JP]) 12 January 2005 (2005-01-12) * paragraph [0021] - paragraph [0097]; claim 1 *	1-3

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search The Hague	Date of completion of the search 03 June 2024	Examiner Szilagyi, Barnabas
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### CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

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### 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:

1. claims: 7, 8(completely); 1-6, 9(all partially)

Refrigeration cycle apparatus wherein the control unit determines the first time period based on a number of rotations of the compressor.

2. claims: 10(completely); 1-6, 9(all partially)

Refrigeration cycle apparatus wherein the control unit determines that the refrigerant circuit is in the low-load state when a difference between a first estimated temperature (Tare1) of a refrigerant flowing through the usage-side heat exchanger calculated based on a first temperature that is a temperature of heat source air for heat exchange with the refrigerant in the heat source-side heat exchanger, or a third temperature (Tar) that is a temperature of the refrigerant flowing through the usage-side heat exchanger, and the second temperature is less than or equal to a predetermined second temperature difference (Tg2).

3. claims: 11(completely); 1-6, 9(all partially)

Refrigeration cycle apparatus wherein the control unit determines that the refrigerant circuit is in the low-load state when a difference between a third temperature (Tar) that is a temperature of the refrigerant flowing through the usage-side heat exchanger, or a second estimated temperature (Tare2) of the refrigerant flowing through the usage-side heat exchanger calculated based on a number of rotations of the compressor, and a first temperature that is a temperature of heat source air for heat exchange with the refrigerant in the heat source-side heat exchanger is less than or equal to a predetermined third temperature difference (Tg3).

4. claims: 12(completely); 1-6, 9(all partially)

Refrigeration cycle apparatus wherein the control unit determines that the refrigerant circuit is in the low-load state when a difference between a first temperature that is a temperature of heat source air for heat exchange with a refrigerant in the heat source-side heat exchanger and a sixth temperature (Tr) that is a temperature in the target space is less than or equal to a predetermined fourth temperature difference (Tg4).

5. claims: 13(completely); 1-6, 9(all partially)

Refrigeration cycle apparatus wherein the control unit determines that the refrigerant circuit is in the low-load state when a number of rotations of the compressor is less than or equal to a predetermined number of rotations.

None of the further search fees have been paid within the fixed time limit. The present (supplementary) European search report has been drawn up for those parts of the European patent application which relate to the first mentioned in the claims, namely claims: 7, 8(completely); 1-6, 9(partially)

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search The Hague	Date of completion of the search 03 June 2024	Examiner Szilagyi, Barnabas
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## ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 22 74 59 17

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 03-06-2024.  
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2924368 A1	30-09-2015	EP 2924368 A1	30-09-2015
		JP 5921712 B2	24-05-2016
		JP WO2014080496 A1	05-01-2017
		US 2015276290 A1	01-10-2015
		WO 2014080496 A1	30-05-2014
EP 1496317 A1	12-01-2005	AT E489588 T1	15-12-2010
		AU 2003258299 A1	13-10-2003
		CN 1643306 A	20-07-2005
		EP 1496317 A1	12-01-2005
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		JP 3864956 B2	10-01-2007
		JP WO2003083376 A1	04-08-2005
		WO 03083376 A1	09-10-2003