

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference V 2461 WO	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/EP2018/074333	International filing date ( <i>day/month/year</i> ) 10 September 2018 (10.09.2018)	Priority date ( <i>day/month/year</i> ) 13 September 2017 (13.09.2017)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant VALEO KLIMASYSTEME GMBH			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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	Date of issuance of this report 17 March 2020 (17.03.2020)
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From the INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing <i>(day/month/year)</i> <b>03 January 2019</b>	
Applicant's or agent's file reference <b>V 2461 WO</b>	<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/EP2018/074333</b>	International filing date <i>(day/month/year)</i> <b>10 September 2018</b>
Priority date <i>(day/month/year)</i> <b>13 September 2017</b>	
International Patent Classification (IPC) or both national classification and IPC <b>B60H 3/00(2006.01)i; B60H 1/34(2006.01)n; F24F 3/16(2006.01)n</b>	
Applicant <b>VALEO KLIMASYSTEME GMBH</b>	

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/	Date of completion of this opinion	Authorized officer
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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2018/074333

## Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
  - the international application in the language in which it was filed.
  - a translation of the international application into \_\_\_\_\_ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2.  This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3.  With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
  - a.  forming part of the international application as filed:
    - in the form of an Annex C/ST.25 text file.
    - on paper or in the form of an image file.
  - b.  furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
  - c.  furnished subsequent to the international filing date for the purposes of international search only:
    - in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
    - on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).
4.  In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2018/074333

**Box No. V** Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	8	YES
	Claims	1-7, 9, 10	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

## 2. Citations and explanations :

See Supplemental Box

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/EP2018/074333****Box No. VII      Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

See Supplemental Box

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/EP2018/074333****Box No. VIII    Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

See Supplemental Box

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.  
Continuation of:

The following documents, which are attached to the international search report, are cited in this opinion:

**D1:** JP S52 149730 A

**D2:** JP S52 152036 A

**D3:** JP 2002 136893 A

**D4:** JP 2008 056196 A

**Box V**

- [1] With regard to independent **claim 1**: Document **D1**(see pages 1-4 and figures 1-2) discloses a vehicle air-conditioning system outflow unit (1) (see page 1) which comprises at least one channel surrounded by a wall (see figure 1), and an electrode (6) connected to a voltage source, wherein the electrode (6) comprises at least one section which protrudes into the channel, for ionizing the air flowing through the respective channel, and a holding section (see figure 1) to which a holder (7) for the electrode (6) is affixed.
- [1.1] The vehicle air-conditioning system outflow unit according to **claim 1**differs from the vehicle air-conditioning system outflow unit known from document **D1**in that the at least one section of the electrode, which protrudes into the channel, is angled relative to the holding section and integrally transitions into said holding section.
- [1.2] However, these additional features do not appear to solve any technical problem and do not appear to substantiate any difference on the basis of which the requirements of the PCT in respect of inventive step could be met, since they relate merely to minor structural modifications to the electrode of the vehicle air-conditioning system outflow unit known from document **D1**, which do not contribute to any technical effect by means of which a technical problem is solved, in comparison to the structure of the electrode in the vehicle air-conditioning system outflow unit known from document **D1**.
- [1.3] Therefore, the subject matter of independent **claim 1**does not involve an inventive step (PCT Article 33(3)).
- [1.4] In this context, it should be noted that the subject matter of independent **claim 1**also lacks inventive step (PCT Article 33(3)) with respect to documents **D2**, **D3**and **D4** which disclose a vehicle air-conditioning system outflow unit with all the features described in point 1 above (see in particular the electrode (11) of the vehicle air-conditioning system outflow unit in figures 1 and 2 of **D2**, the electrode (3) of the vehicle air-conditioning system outflow unit (1) in figure 1 of **D3**, and the electrode (5) of the vehicle air-conditioning system outflow unit (1) in figure 1 of **D4**).
- [1.5] With regard to dependent **claim 2**, it appears that this claim relates to minor design features which, however, do not appear to substantiate any difference on the basis of which the requirements of the PCT in respect of inventive step could be met, since they relate merely to one of several obvious possibilities from which a person skilled in the art seeking to arrange several electrodes in the vehicle air-conditioning system outflow unit would choose, according to the circumstances, without exercising inventive skill.
- [1.6] With regard to dependent **claims 3-5**, it appears that these claims relate to minor design features which are disclosed in **D4**(see in particular figures 1-3).
- [1.7] With regard to dependent **claims 6**and **7**, it appears that these claims relate to minor design features which are disclosed in **D1**(see in particular figure 1).
- [1.8] With regard to dependent **claims 9** and **10**, it appears that these claims relate to minor design features which, however, do not appear to substantiate any difference on the basis of which the requirements of the PCT in respect of inventive step could be met, since they relate merely to one of several obvious possibilities from which a person skilled in the art seeking to establish an electrical connection between the electrode and the voltage source or an electrode assembly would choose, according to the circumstances, without exercising inventive skill.
- [1.9] Therefore, the subject matter of dependent **claims 2-7** and **9-10** does not involve an inventive step (PCT Article 33(3)).

## Supplemental Box

- [2] The combination of features in dependent **claims 1, 7 and 8** is neither known nor obvious from the available prior art.

**Box VII**

- [3] Independent **claim 1** should have been drafted in the two-part form (see PCT Rule 6.3(b)).
- [3.1] Documents **D1, D2, D3** and **D4**, which reflect the useful prior art for understanding the invention, should have been cited in the description (PCT Rule 5.1(a)(ii)).
- [3.2] Reference sign "110", which is not included in the drawings, should not appear in the claims (see claim 5) and in the description (see page 12, line 4) (see PCT Rule 11.13(1)).

**Box VIII**

- [4] The expressions "into the channel... the angled section which protrudes into the channel...", "the angled section which protrudes into the channel... of the angled section...", "into the channel... of the angled section...", "an angled section protruding into the channel (14, 16), adjacent to the holding section (66)... of the section protruding into the channel (14, 16)... In the channel..." and "in the channel..." in **claims 1 and 4-7** are unclear (see PCT Article 6) because they are inconsistent with claim 1 in which at least one channel and at least one angled section are defined.