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**Datasheet for the decision
of 28 January 2020**

Case Number: T 0707/15 - 3.5.02

Application Number: 02726482.9

Publication Number: 1367681

IPC: H02B1/20, H02B11/04, H01H33/66

Language of the proceedings: EN

Title of invention:
Vacuum Switch Unit and Switch Gear

Patent Proprietor:
Mitsubishi Denki Kabushiki Kaisha

Opponent:
Siemens Aktiengesellschaft

Relevant legal provisions:
EPC Art. 84, 100(b), 56
RPBA Art. 13(1), 12(4)

Keyword:

Claims - clarity in opposition appeal proceedings
Grounds for opposition - insufficiency of disclosure (no)
Late-filed evidence - colour copy of D4 - admitted (yes)
Late-filed fact - D5 not admitted in first instance
proceedings - admitted (no)
Inventive step - (yes)

Decisions cited:

G 0003/14



Beschwerdekammern

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Case Number: T 0707/15 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 28 January 2020

Appellant: Siemens Aktiengesellschaft
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
29 January 2015 concerning maintenance of the
European Patent No. 1367681 in amended form.**

Composition of the Board:

Chairman R. Lord
Members: G. Flyng
R. Cramer

Summary of Facts and Submissions

- I. The opponent Siemens AG is appealing against the interlocutory decision of the opposition division relating to the maintenance of the European patent EP 1 367 681 in amended form on the basis of the patent proprietor's main request. The patent proprietor Mitsubishi Denki KK is respondent to the appeal.
- II. In the contested decision, the opposition division concluded that the proprietor's main request, the claims of which were filed with the letter dated 13 October 2014, met the requirements of the convention.

In particular, the opposition division held that the independent claims 1 and 3 of the main request did not offend Article 123(2) or (3) EPC and met the requirements for clarity, Article 84 EPC. They held that the appellant had withdrawn the ground for opposition pursuant to Article 100(b) EPC and the ground for opposition pursuant to Article 100(a) EPC in conjunction with Article 54 EPC during the oral proceedings and saw no reason to examine these of their own motion.

Regarding inventive step, Article 56 EPC, the opposition division considered in particular the disclosure of **Document D4**, a Siemens AG product brochure entitled "Vakuumschutz-Einschubanlagen Typ 8BK30, bis 12 kV" [*Board's translation: Type 8BK30 Plug-in Vacuum Switchgear, up to 12 kV*] and bearing the reference "Mittelspannungsanlagen Katalog [*Medium-Voltage Switchgear Catalogue*] HA 27.11 1999".

The opposition division found that there was no convincing objection which could demonstrate a lack of inventive step of the independent claims 1 and 3 of the main request.

The opposition division decided not to admit a late-filed **document D5** (EP 0 263 396 B1) into the procedure.

- III. The Board summonsed the parties to attend oral proceedings to be held on 28 January 2020, setting out their preliminary observations in a communication pursuant to Article 15(1) RPBA 2007 annexed to the summons.
- IV. With a letter dated 17 December 2019 the appellant, responding to an invitation in the communication pursuant to Article 15(1) RPBA 2007 to do so, filed a colour version of the document D4.
- V. Oral proceedings were held on 28 January 2020 as scheduled.

The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed, or alternatively that the decision under appeal be set aside and the patent be maintained on the basis of the claims of one of the first to eighth auxiliary requests filed with the letter of 13 October 2014.

VI. Independent claims 1 and 3 of the main request considered in the contested decision read as follows:

Claim 1

"1. A vacuum switch unit comprising:

a substantially cylindrical vacuum switch (1);
a stationary-electrode-side connection contact terminal (23, 24) of which one end is fixed to a stationary electrode (1a) of said vacuum switch (1) and the other end side is provided with a contact connection part (23a) that is contactable and connectable to a first circuit conductor disposed in a switchgear; and

a movable-electrode-side connection contact terminal (33, 34) of which one end is fixed to a movable electrode (1b) of said vacuum switch (1) and the other end side is provided with a contact connection part (33b) that is contactable and connectable to a second circuit conductor disposed in the switchgear;

characterized in that said stationary-electrode-side connection contact terminal (23, 24) and the movable-electrode-side connection contact terminal (33, 34) are formed so that the contact connection parts (21a, 31a) on their other end sides are substantially parallel to a central axis of said vacuum switch (1) and

in that the other end side having the contact connection part of either said stationary-electrode-side connection contact terminal (23, 24) or the movable-electrode-side connection contact terminal (33, 34) is formed on the central axis of said vacuum switch (1)."

Claim 3

"3. A switchgear comprising:

a first circuit conductor (61, 80) and a second circuit conductor (71, 72b) each connected to either a power supply side or a load side; and

a vacuum switch unit (45, 46) including a substantially cylindrical vacuum switch (1), a stationary-electrode-side connection contact terminal (23, 24) of which one end is fixed to a stationary electrode (1a) of said vacuum switch (1) and the other end side is provided with a contact connection part that is contactable and connectable to said first circuit conductor (61, 80), said stationary-electrode-side connection contact terminal (23, 24) being formed on a central axis of said vacuum switch (1), and a movable-electrode-side connection contact terminal (33, 34) of which one end is fixed to a movable electrode (1b) of said vacuum switch (1) and the other end side is provided with a contact connection part that is contactable and connectable to said second circuit conductor (71, 72b), said movable-electrode-side connection contact terminal (33, 34) being formed in parallel to the central axis of said vacuum switch (1); wherein said vacuum switch unit (45, 46) is moveable by an opening mechanism from a position, in which the vacuum switch unit (45, 46) is separated from the first and second circuit conductors (61, 71, 72b, 80), to a predetermined position in said switch gear, in which the contact and connection part of said stationary-electrode-side connection terminal (23, 24) comes into contact with and is connected to said first circuit conductor (61, 80) and the contact and connection part of the movable-electrode-side connection contact terminal (33, 34) comes in contact with and is connected to said second circuit conductor (71, 72b)."

Given the decision taken in this appeal, it is not necessary to cite here the claims of the respondent's auxiliary requests.

VII. The pertinent submissions of the appellant (opponent) may be summarised as follows.

The feature of claims 1 and 3 of the main request according to which one end of the movable-electrode-side connection contact terminal is "fixed" to a movable electrode of the vacuum switch requires a fixed connection between the two objects. It does not cover a guided contact without fixation. As the amended independent claims of the main request say nothing about this fixed connection, the person skilled in the art would not be able to carry them out, such that the requirements of Articles 83 and 84 EPC are not met.

The colour version of document D4 submitted with the letter dated 17 December 2019 should be admitted into the proceedings. This document was originally filed in colour, even though that is not reflected in the version available on the public file. Furthermore, the proprietor had offered to provide the colour version during the first-instance oral proceedings. Furthermore, the colour version was filed at this stage in response to a request from the Board to do so.

The opposition division erred in their finding that document D5 is not prima facie relevant. The figure of document D5 is particularly relevant as support for the figure on page 12 of document D4 as it shows the basic structure of a plug-in vacuum switch unit. Being not overloaded with information, a schematic drawing is

particularly helpful and thus relevant for the skilled person.

Starting from the plug-in vacuum switch unit as depicted in the figures on the cover page and on pages 7 and 12 of document D4, the subject-matter of claims 1 and 3 of the main request lacks an inventive step, Article 56 EPC.

The following is derivable from these figures:

- Each figure shows three vacuum switches (page 7, reference 14; page 12, ref. 5).
- Each vacuum switch has a movable electrode and a stationary electrode. In the figure on pages 7 and 12 the moveable electrode is on the right-hand side of the vacuum switch and the stationary electrode is on its left-hand side.
- Fixed to the stationary electrode is one end of an arrangement of conductors that constitutes a "connection contact terminal" as claimed, the other end of which has a contact connection part (page 7, reference 13: "Einfahrkontakte") which is connectable to a first circuit conductor in the switchgear (see cover page and page 7).
- Fixed to the movable electrode is one end of an arrangement of conductors and a fuse that can be considered either to be, or to be obviously amendable to, a "connection contact terminal", the other end of which has a contact connection part (page 12, reference 2: "Einfahrkontakt") that is connectable to a second circuit conductor in the switchgear (see cover page and page 7).
- Each of the connection contact terminals is formed so that the contact connection part on its "other" end is substantially parallel with the central axis of the vacuum switch.

- It is derivable from the figure on page 7 that the "other" end, having the contact connection part, of the stationary-electrode-side connection contact terminal of the middle one of the three vacuum switches is on the central axis of the vacuum switch for at least two dimensions.

The device disclosed in document D4 differs from the subject-matter of claim 1 in that from the figure on page 7 it is only clearly visible that the "other" end is on the central axis of the vacuum switch for two dimensions, not for the dimension perpendicular to the page.

This difference would solve the problem of reducing bending stress on the vacuum switch when downsizing it.

From the figure on page 7 the skilled person would immediately recognise that by arranging the "other" end, with the contact connection part, of the stationary-electrode-side connection contact terminal on the central axis of the vacuum switch, the bending stress exerted on the vacuum switch during insertion would be reduced. Thus, the skilled person would be led to the arrangement of claim 1 of the main request. The same applies for claim 3.

Claim 1 of the main request does not preclude the connection contact terminal being mounted on an insulator and does not preclude it being made up of several parts.

VIII. The pertinent submissions of the respondent (patent proprietor) may be summarised as follows.

The feature challenged as being unclear by the appellant was present in granted independent claims 1 and 4. Any question as to its clarity has not been introduced by the amendments according to the main request. In accordance with G 3/14 the clarity of this feature in the sense of Article 84 EPC may not be examined in opposition appeal proceedings.

The opponent withdrew the objection regarding insufficiency of disclosure and the corresponding ground for opposition (Article 100(b) EPC) during the first-instance proceedings. This ground for opposition is thus no longer in the proceedings.

The colour version of document D4 submitted with the letter dated 17 December 2019 should not be admitted into the proceedings. The appellant has given no justification for filing this colour version at such a late stage in the proceedings.

In document D4 the movable electrode of each vacuum switch is connected to its respective contact connection part (page 12, reference 2) by an arrangement comprising a plurality of conductors and a fuse. This arrangement does not constitute a "connection contact terminal" as claimed.

It is not directly and unambiguously derivable from the figures in document D4 that the "other" end, having the contact connection part, of the stationary-electrode-side connection contact terminal of the middle one of the three vacuum switches is on the central axis of the vacuum switch. The figure on page 7 is two-dimensional and it is not possible to determine whether or not the contact connection part is aligned with the central axis in the direction perpendicular to the page.

The stationary-electrode-side connection contact terminals of document D4 are shown as being mounted on insulating supports. Any forces that would be imposed on the contact connection parts during insertion would be borne by the insulating supports and would thus not impose a bending stress on the vacuum switch, regardless of whether the end of the connection contact terminal, with its contact connection part, is on the central axis of the vacuum switch. Hence, starting from the disclosure of D4 the skilled person would have no incentive to arrange the contact connection part on the central axis of the vacuum switch as claimed.

In not admitting the document D5 the opposition division used their discretion in an appropriate manner, basing their decision on prima facie relevance, which is a correct principle to apply.

Reasons for the Decision

1. Article 84 EPC

1.1 According to Enlarged Board decision G 3/14, in considering whether, for the purposes of Article 101(3) EPC, a patent as amended meets the requirements of the EPC, the claims of the patent may be examined for compliance with the requirements of Article 84 EPC only when, and then only to the extent that, the amendment introduces non-compliance with Article 84 EPC.

1.2 The appellant has objected that the feature according to which one end of a movable-electrode-side connection contact terminal is fixed to a movable electrode of said vacuum switch is not clear in the sense of Article 84 EPC.

1.3 This feature was present in granted independent claims 1 and 4 and therefore any doubt as to its clarity is not introduced by the amendments according to the main request. Thus, in accordance with G 3/14 the clarity of this feature in the sense of Article 84 EPC may not be examined in these opposition appeal proceedings.

2. Articles 100(b) and 83 EPC

2.1 According to section 5.2 of the minutes of the oral proceedings before the opposition division the opponent indicated that they withdrew the objection regarding insufficiency of disclosure and the corresponding ground for opposition (Article 100(b) EPC) and would

have this matter discussed as a clarity issue (Article 84 EPC) at a later point in the proceedings.

2.2 The appellant does not contest that they withdrew the ground for opposition under Article 100(b) EPC before the opposition division. Hence, this ground for opposition is no longer in the proceedings.

3. Admission of the colour version of document D4 filed with letter dated 17 December 2019

3.1 The appellant filed the colour version of document D4 in response to an invitation from the Board to do so, to allow the Board and the respondent to properly assess its disclosure (see communication pursuant to Article 15(1) RPBA 2007, para 3.4.3). Furthermore, the appellant submits that the version of document D4 they originally filed was in colour, even if that is not reflected in the electronic file.

3.2 The Board considers that admitting the colour version of document D4 would facilitate the substantive discussions, does not give rise to new issues and would not be detrimental to procedural economy. For these reasons the Board exercised their discretion under Rule 13(1) RPBA 2007 to admit it.

4. Article 56 EPC

4.1 It is clear from the figure on page 7 of document D4 that the connection contact terminal connected to the stationary electrode of the upper vacuum switch and the connection contact terminal connected to the stationary electrode of the lower vacuum switch are shaped with an

offset in the vertical direction such that the end having the contact connection part 13 is clearly not on the central axis of the vacuum switch as required by claim 1 of the main request.

4.2 The connection contact terminal connected to the stationary electrode of the middle vacuum switch does not have such an offset in the vertical direction. Even so, it is not possible to determine from the two-dimensional representation in the page 7 figure whether the end, having the contact connection part, of the stationary-electrode-side connection contact terminal connected to the the middle vacuum switch is aligned with the central axis of the vacuum switch in the direction perpendicular to the page. It is also not possible to tell this from the figures on the cover page and on page 12.

4.3 Hence, it is not directly and unambiguously derivable from document D4 that the **"other" end, having the contact connection part, of the stationary-electrode-side connection contact terminal of the middle vacuum switch is on the central axis of the vacuum switch** as required by claim 1 of the main request. At least this feature of claim 1 is novel over the disclosure of document D4, as has been conceded by the appellant.

4.4 In view of the fact that in document D4 the stationary-electrode-side connection contact terminals are clearly depicted as being mounted on insulating supports, the Board is not convinced that the novel feature identified above would have any effect on the bending stress that would be applied to the vacuum switch during its insertion. Indeed, given that the connection contact terminals of the upper and lower vacuum switches are quite clearly offset from the axes of the

vacuum switches, it would not be evident to the skilled person that such an offset from the axis would cause a problem of bending stress. Thus, the Board is not convinced that this novel feature would solve the problem of reducing bending stress on the vacuum switch when downsizing it, or that it would be obvious to the skilled person that the problem can be solved by arranging the "other" end of the connection contact terminal on the vacuum switch axis. At least for this reason the Board concludes that the subject-matter of claim 1 involves an inventive step.

4.5 The same applies for the other independent claim 3 which includes corresponding features to those considered above.

4.6 In view of the above findings it is not necessary to address the question of whether the arrangement of a plurality of conductors and a high-voltage, high-rupturing-capacity (HV HRC) fuse ("HH-Sicherung", page 7, ref. 10, page 12, ref. 1), disclosed in document D4 as being connected to the movable electrode of each vacuum switch, can be considered to be a "connection contact terminal" as claimed.

5. Admittance of Document D5

5.1 The request to admit document D5 into the appeal procedure was submitted in the statement of grounds of appeal. According to Article 25(2) RPBA 2020, Article 12 paragraph 6 RPBA 2020, concerning the admittance of facts and evidence not admitted in the proceedings leading to the decision, shall not apply to a statement of grounds filed before the date of entry into force, instead Article 12(4) RPBA 2007 shall apply.

5.2 According to the established case law on Article 12(4) RPBA 2007, if the way in which a department of first instance has exercised its discretion on a procedural matter such as admitting a late-filed document is challenged in an appeal a board of appeal should only overrule the way in which a department of first instance has exercised its discretion if the board concludes it has done so according to the wrong principles, or without taking into account the right principles, or in an unreasonable way (cf. Case Law of the Boards of Appeal, 9th Edition, V.A.3.5).

In not admitting document D5 into the procedure the opposition division considered whether or not the document was prima facie relevant, which is a correct principle. Furthermore, the Board considers that they did so reasonably, taking account of the schematic nature of the sole figure in D5.

For these reasons the Board did not see any reason to overrule the opposition division's discretionary decision not to admit document D5 and decided not to admit it into the proceedings in accordance with Article 12(4) RPBA 2007.

6. Concluding remark

For the reasons set out above, none of the objections raised by the appellant in an admissible way give cause to set aside the contested decision. For this reason the appeal is dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



U. Bultmann

R. Lord

Decision electronically authenticated