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Datasheet for the decision of 12 August 2019

Case Number: T 1243/14 - 3.5.02

Application Number: 04700338.9

Publication Number: 1581842

IPC: H02J13/00, H02H7/26, H02H7/30, H02J3/14

Language of the proceedings: EN

Title of invention:
Circuit Protection System

Applicant:
ABB Schweiz AG

Relevant legal provisions:
EPC Art. 123(2), 84

Keyword:
Amendments - allowable (no)
Claims - clarity (no)

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Case Number: T 1243/14 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 12 August 2019

Appellant: (Applicant)	ABB Schweiz AG Brown Boveri Strasse 6 5400 Baden (CH)
Representative:	Aipex B.V. P.O. Box 30223 3001 DE Rotterdam (NL)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 3 January 2014 refusing European patent application No. 04700338.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. The applicant's appeal contests the examining division's decision to refuse the European patent application 04 700 338.9, which was filed on the basis of an international application published under the PCT as WO 2004/064219 A2.

II. The examining division used the following prior art document references, which the Board will adhere to:

D1: US 6 347 027 B1

D4: US 6 496 342 B1

III. The international application as originally filed included two independent method claims (1 and 4), and two independent apparatus claims (7 and 9).

Independent method claim 1 as originally filed read as follows:

"1. A method of protecting a circuit [105] comprising:

monitoring a zone of protection [595, 895, 896, 995, 1095, 1195] of the circuit [105] to determine a first topology;

adjusting a zone protective function for said zone of protection [595, 895, 896, 995, 1095, 1195] based at least in part upon changes to said first topology; and

performing said zone protective function on said zone of protection [595, 895, 896, 995, 1095, 1195]."

IV. During the course of the first-instance examination procedure the examining division issued at least five written communications and held one telephone consultation with the applicant. In each case the examining division raised objections under Articles 84,

54 and 56 EPC. The applicant filed amended claims on no less than five occasions.

V. In the contested decision, the examining division considered the applicant's request for grant of a patent on the basis of the following application documents:

Description, pages

- 1 and 2 filed in electronic form on 22 October 2010
- 3 filed in electronic form on 18 October 2013
- 4 to 28 as published

Claims, Numbers

- 1 to 4 filed in electronic form on 18 October 2013

Drawings, Sheets

- 1/11 to 11/11 as published.

The examining division held that:

- Independent claim 1 was not clear and not supported by the description, Article 84 EPC;
- Dependent claim 2 was not clear, Article 84 EPC;
- Dependent claim 3 did not solve the lack of clarity of claim 1;
- Independent claim 4 was not clear, Article 84 EPC;
- The subject-matter of all claims lacked novelty over D4 and over D1, Article 54 EPC.

VI. In the notice of appeal the appellant (applicant) requested that the decision be set aside, and that a patent be granted on the basis of "the present claims, or on the basis of amended claims which may be submitted in the course of the proceedings".

With the statement of grounds of appeal, filed in electronic form on 12 May 2014, the appellant filed "a replacement set of claims" and submitted arguments in

respect of Article 84 EPC and novelty and inventive step. Oral proceedings were requested as a precaution.

As the Board stated in their preliminary observations annexed to the summons to oral proceedings, it is assumed on the basis of the reference to a "replacement" set of claims that the appellant requests grant of a patent on the basis of the following application documents:

Description, pages

- 1 and 2 filed on 22 October 2010
- 3 filed on 18 October 2013
- 4 to 28 as published

Claims, Numbers

- 1 to 4 filed on 12 May 2014

Drawings, Sheets

- 1/11 to 11/11 as published.

VII. Independent method claim 1 as filed with the grounds of appeal reads as follows (underlining and strike-out added by the Board to identify changes compared to claim 1 as filed):

"1. A method of protecting a circuit (105) in a power distribution system (10), the circuit having a first circuit breaker (420) and a second circuit breaker (415), the first circuit breaker (420) being downstream of the second circuit breaker (415), the first circuit breaker (420) having first pickup settings and the second circuit breaker (415) having second pickup settings; the method comprising:

monitoring a zone of protection (595) of the circuit (105) with a control processing unit (28) communicatively coupled to the first and second circuit breakers to determine a first topology of said circuit;

in the event of an abnormal condition of power in said circuit (105), adjusting a zone protective function for said zone of protection (595) based ~~at least in part~~ upon changes ~~to said~~ in the first topology;

performing said zone protective function on said zone of protection (595) by the control processing unit (28) controlling the first and second circuit breakers (420, 415) such that the first circuit breaker (420) is arranged to enter a pickup mode before the second circuit breaker (415), and determining a modified dynamic delay time for the opening of the second circuit breaker (415) based upon sampled data for the power distribution system (10)."

VIII. The appellant's arguments may be summarised as follows:

- The examining division's Article 84 EPC objections have been addressed by appropriate amendments in the claims.
- Claim 1 has been amended as supported by page 5, lines 6 and 7, page 19, lines 10 to 14 and page 22, lines 14 to 24 of the description and in line with equivalent apparatus claim 4.
- In document D1 the uppermost tier device *[i.e. upstream device]* must be desensitised so that it operates more slowly than the devices it may have below *[i.e. downstream devices]*.
- In contrast, in the method of claim 1 the control processing unit 28 controls the downstream and upstream circuit breakers 420, 415 such that the downstream circuit breaker 420 is arranged to enter a pickup mode before the upstream circuit breaker 415 and the control processing unit 28 determines a modified dynamic delay time for the opening of the upstream circuit breaker 415 based upon sampled data for the power distribution system.

- Document D4 does not disclose to change circuit breaker settings based on topology considerations as claimed.

IX. The Board summonsed the appellant to attend oral proceedings to be held on 12 August 2019, setting out their preliminary observations in a communication annexed to the summons.

X. With a letter dated 8 August 2019 the appellant informed the Board that they would not attend the oral proceedings. No substantive response was made to the Board's preliminary observations.

Reasons for the Decision

1. Amendments, Article 123(2) EPC

1.1 The passages cited by the appellant as a basis for the amendments to claim 1 refer to different embodiments of the invention. Furthermore, the features that have been added to claim 1 have been taken in isolation from the context in which they were disclosed. Prima facie the Board does not see a direct and unambiguous basis for the combination of features now present in claim 1 and the mere citation of a collection of originally-disclosed passages is not sufficient to demonstrate such a basis.

1.2 According to the feature that has been added at the end of claim 1, the control processing unit determines a modified dynamic delay time for the opening of the

upstream circuit breaker "based upon sampled data for the power distribution system".

There is no basis in the application as filed for modifying the dynamic delay time for the opening of an upstream circuit breaker based only upon some unspecified sampled data for the power distribution system. That level of generality is not disclosed.

In the application as filed it is disclosed that the "modified dynamic delay time for the opening of main-1 CB 415 ... is then determined by zone selective interlock (ZSI) routine 426" (see paragraph [0077], in particular page 19, lines 11 to 13). That disclosure is made with reference to figure 5 in the context of a zone of protection within a power distribution system that has a main circuit breaker 415 upstream of two feeder circuit breakers 420, 425. Furthermore, it is made in the context of:

- a fault X occurring between one of the feeder CBs (feeder 1 CB) and its load;
- the existence and location of the fault being determined by the CCPU; and
- feeder 1 CB being placed into "pickup mode" by the CCPU and waiting a pre-defined delay time before being opened.

Furthermore, from the explanations in paragraph [0078] it is evidently important that the modified dynamic delay time for main CB should be determined from the sum of the pre-defined delay time and the clearing time of feeder 1 CB.

The purpose of all of the above features is evident from the explanations given in paragraph [0078] and the first seven lines of paragraph [0080]. They allow the

opening of the upstream (main) circuit breaker to be delayed for the optimum time period to provide the downstream circuit breaker with the full opportunity to clear the fault, such that it provides backup protection for the downstream (feeder) circuit breaker nearest the fault.

The disclosure of determining a modified dynamic delay time was thus only made in the context of all of the features identified above. By taking this feature out of that context Article 123(2) EPC has been contravened.

1.3 The feature of the control processing unit determining a modified dynamic delay time relates, if anything, to the originally claimed feature of "adjusting a zone protective function", rather than to the originally claimed feature of "performing said zone protective function". Combining the modified dynamic delay time feature with the step of performing the zone protective function adds undisclosed subject-matter, contrary to Article 123(2) EPC.

2. Clarity, Article 84 EPC

2.1 According to the features that have been added near the beginning of claim 1, the method protects a circuit that comprises a first circuit breaker and a second circuit breaker, the first being downstream of the second. These features define the components of the circuit and how they are interconnected. In other words, they define the circuit "topology" in the way that this term is normally understood in the field, see https://en.wikipedia.org/wiki/Topology_(electrical_circuits).

This definition of the circuit topology in claim 1 is clear in itself, however the question arises whether claim 1 as a whole is clear when the features defining the circuit topology are read together with the feature of "adjusting a zone protective function for said zone of protection based at least in part upon changes to said first topology". If the circuit topology is defined, there can be no changes to it. Hence, the feature referring to changes in the topology does not make sense in the context. This renders claim 1 as a whole unclear, Article 84 EPC.

2.2 Considering the feature of "monitoring ... to determine a first topology of said circuit", the Board notes the following. As discussed above, the circuit topology is defined explicitly in claim 1. In that context it is not evident what purpose is served by the CCPU determining the circuit topology. Furthermore, the word "determine" is ambiguous as it can have a meaning synonymous with "ascertain" or "discern", but it can also have a meaning synonymous with "control" or "regulate". Also, the term "first circuit topology" makes no sense in the context.

3. Conclusion

In view of the deficiencies set out above the Board cannot accede to the appellant's request for grant of a patent on the basis of the documents submitted. Hence, the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

U. Bultmann R. Lord

Decision electronically authenticated