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Datasheet for the decision of 10 December 2008

Case Number: T 0554/06 - 3.2.05

Application Number: 00913644.1

Publication Number: 1161636

IPC: F16K 37/00

Language of the proceedings: EN

Title of invention:
Emergency shutdown test system

Patentee:
Fisher Controls International, LLC

Opponent:
Samson AG

Headword:
-

Relevant legal provisions:
EPC Art. 84, 123(2), 123(3), 111(1)

Relevant legal provisions (EPC 1973):
-

Keyword:
"Clarity - yes"
"Extension beyond the application as filed (main request, yes; auxiliary request, no)"
"Extension of the scope of protection, no"
"Remittal to the first instance"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0554/06 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 10 December 2008

Appellant: (Patent Proprietor)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 27 January 2006 revoking European patent No. 1161636 pursuant to Article 102(1) EPC 1973.

Composition of the Board:

Chairman: W. Zellhuber
Members: H. Schram
M. J. Vogel

Summary of Facts and Submissions

I. The appeal is against the decision of the Opposition Division posted on 27 January 2006 revoking European patent No. 1 161 636 on the ground that the subject-matter of claim 1 of the main request of the appellant (patent proprietor) did not meet the requirements of Articles 123(2) and 123(3) EPC, and that claim 1 of the first and second auxiliary request of the appellant did not meet the requirements of Article 123(2) EPC.

II. Oral proceedings were held before the Board of Appeal on 10 December 2008.

III. The appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of claims 1 to 4 of the main request, or claims 1 and 2 of the auxiliary request, both filed on 7 November 2008.

The respondent (opponent) requested that the appeal be dismissed.

IV. Claim 1 of the main request reads as follows:

"1. An emergency shutdown system (10) for a process control system comprising:

an emergency shutdown valve (12) and associated valve actuator (18) located within a desired portion of the process control system;

an emergency shutdown controller (46) providing output signals for commanding the operation of the shutdown valve (12) in response to sensing of a failure event in the process control system;

a solenoid valve (24) coupled to the shutdown valve actuator (18) and responsive to the shutdown controller output signals for venting the actuator (18) to a fail state,

characterized in that:

the emergency shutdown system (10) also comprises:

a digital valve controller means (36) including a pressure output coupled to the shutdown valve actuator (18), for test stroking said shutdown valve (12) from a fully opened or fully closed normal position to a partially opened or partially closed test position and returning to the normal position, so as to thereby test the operability of the emergency shutdown valve (12),

wherein in the event of an emergency, the emergency shutdown controller (46) is adapted to remove power from both the solenoid valve (24) and the digital valve controller means (36), thereby causing the solenoid valve (24) to vent the valve actuator (18) and causing the digital valve controller means (36) to vent pressure in the pressure output, both of which actions lead to the emergency shutdown valve (12) being placed in an emergency shutdown position."

Claim 1 of the auxiliary request differs from claim 1 of the main request in that the feature "*wherein a two-wire line (28, 30) is provided which is connected at one end to the emergency shutdown controller (46) and at the opposite end to the solenoid valve (24), and the digital valve controller means (36) are coupled in parallel across the two-wire line (28, 30), wherein the emergency shutdown controller (46) is adapted to provide dc power to the two-wire lines (28, 30)*" is inserted before the last feature of the claim and in that the expression "to an exhaust line (39)" is

inserted after the expression "to vent the valve actuator (18)" in the last feature of the claim.

V. The arguments of the appellant, in writing and during the oral proceedings, can be summarized as follows:

Main request, Article 123(2) EPC

The last feature of claim 1 of the main request was disclosed in the passage on page 9, lines 3 to 15, of the application as filed (published version). Whilst the standard mechanism to power and depower a device was a two-wire line, another mechanism would work equally well. Claim 1 of the main request thus met the requirements of Article 123(2) EPC.

Auxiliary request, Article 84 EPC

The last feature of claim 1 of the auxiliary request was clear. The failure event mentioned in the preamble of the claim could be an emergency event. The emergency shutdown controller provided two output signals for commanding the operation of the shutdown valve 12 in response to sensing of a failure event in the process control system, namely a signal (24 volts dc) if there was no failure, and a signal (0 volts dc) if there was a failure. There were thus two signals on the two-wire line. It was clear that the removal of the power from the solenoid valve caused that valve to vent the valve actuator to an exhaust line, and that the removal of the power from the digital valve controller means caused the controller means to vent pressure in the pressure output, whereby each action, viz. the venting of the valve actuator and the venting of pressure in

the pressure output, led to the emergency shutdown valve being placed in an emergency shutdown position.

Auxiliary request, Article 123(2) EPC

Claim 1 of the auxiliary request claimed a system, not how it should be run. The claimed system was capable of test stroking the emergency shutdown valve. There was no need to specify how and how often test stroking was performed. The objection under Article 123(2) EPC against claim 1 of the main request was overcome by the additional feature "*wherein a two-wire line (28, 30) is provided ... to provide dc power to the two-wire lines (28, 30)*". There was no need to specify that the dc power was 24 volts, see eg page 5, line 21, of the application as filed, published version. The expression "in the event of an emergency" covered all times, also the case that an emergency, or failure, event occurred during test stroking. The wording "is adapted to" was chosen, since claim 1 of the auxiliary request was a device claim, and not a method claim. It was not appropriate in a device claim to use wording such as "the emergency shutdown controller (46) removes power from ...". On a proper interpretation of claim 1 of the auxiliary request (see alleged clarity objections above) the further objections under Article 123(2) EPC of the respondent lacked any basis as well.

Auxiliary request, Article 123(3) EPC

A comma had been inserted before the expression "for test stroking" in claim 1 of the auxiliary request for the sake of clarity only and did not extend the scope of protection conferred by the claim.

VI. The respondent's arguments, in writing and during the oral proceedings, can be summarized as follows:

Main request, Article 123(2) EPC

The passage on page 9, lines 3 to 15, of the application as filed (published version) cited by the appellant concerned an embodiment wherein the power source was removed from two-wire lines 28, 30 and 40, 42. The omission of the two-wire lines in claim 1 of the main request contravened the requirements of Article 123(2) EPC.

Auxiliary request, Article 84 EPC

The clarity objections related to the last feature of the claim were as follows:

a) It was not clear whether the expression "in the event of an emergency" referred to the "failure event" reiterated in the preamble of the claim, or not.

b) The expression "the emergency shutdown controller (46) is adapted to remove power" implied that said controller provided a single output signal (zero dc voltage), not output signals as reiterated in the preamble of the claim.

c) The expression "thereby causing" linked two causes, namely the removal of the power from the solenoid valve 26 and the removal of the power from the digital valve controller means 36, to two effects, namely causing the solenoid valve 26 to vent the valve

actuator 18 and causing the digital valve controller means 36 to vent pressure in the pressure output, without specifying which cause lead to which effect.

d) The expression "both of which actions" was unclear, because the word action had no precedent in the claim. If said actions referred to the venting of the valve actuator 18 and the venting of the digital valve controller means 36, it was not clear whether each action taken alone lead to the emergency shutdown valve 12 being placed in an emergency shutdown position, or whether both actions were needed to achieve that.

Auxiliary request, Article 123(2) EPC

i) The description and the Figures of the application as filed (published version) related to an emergency shutdown test system for periodically testing an emergency shutdown valve, rather than to an emergency shutdown system as such (see e.g. page 4, lines 17 to 18, page 5, lines 2 to 15, page 6, lines 11 to 21, page 8, lines 15 to 24, and page 9, line 20, to page 10, line 2). The omission of the feature in claim 1 of the auxiliary request that the emergency shutdown valve was periodically tested contravened the requirements of Article 123(2) EPC.

ii) The expression "*wherein in the event of an emergency*" in the last feature of the claim was not disclosed in the passage on page 9, lines 3 to 15, of the application as filed (published version) cited by the appellant, where it was stated "*If a true emergency occurs ...*".

iii) The expressions "*is adapted to provide dc power*" and "*is adapted to remove power*" in the last two features of claim 1 of the auxiliary request were not disclosed the application as filed (published version), and could not be construed to mean "*will provide dc power*" and "*will remove power*", respectively.

iv) The dc power should have been specified in claim 1 of the auxiliary request as "24 volts dc power", see page 9, lines 3 to 15, of the application as filed (published version).

v) The feature "*to remove power from both the solenoid valve (26) and the digital valve controller means (36)*" in the last feature of claim 1 of the auxiliary request was not disclosed in the passage on page 9, lines 3 to 15, of the application as filed (published version) cited by the appellant, where it was stated "*This also removes power from the digital valve controller ...*".

vi) The expression "thereby causing ... and causing" in the last feature of claim 1 of the auxiliary request linked two causes (removal of power from the solenoid valve; removal of power from the digital valve controller) and two effects encompassed possibilities that were not disclosed in the application as filed (cf. the corresponding clarity objection above). The claim should specify which cause had which effect.

vii) The expression "both of which actions" in the last feature of claim 1 of the auxiliary request encompassed the possibility that each action taken alone led to the

emergency shutdown valve 12 being placed in an emergency shutdown position, and that both actions were needed to achieve that (cf. the corresponding clarity objection above).

viii)The expression "in an emergency shutdown position" in the last feature of claim 1 of the auxiliary request was not disclosed in the passage on page 9, lines 3 to 15, of the application as filed (published version), where it was stated "in the desired emergency shut down position".

Auxiliary request, Article 123(3) EPC

The comma inserted before the expression "for test stroking" in the second characterizing feature of claim 1 of the auxiliary request led to a shift in the scope of protection conferred by the claim, contrary to Article 123(3) EPC.

Reasons for the Decision

MAIN REQUEST

1. *Admissibility of the amendments*

Claim 1 of the main request differs from claim 1 as granted *inter alia* in that the following feature has been added at the end of the claim 1 as granted:

"*wherein in the event of an emergency, the emergency shutdown controller (46) is adapted to remove power from both the solenoid valve (26) and the digital valve*

controller means (36), thereby causing the solenoid valve (26) to vent the valve actuator (18) and causing the digital valve controller means (36) to vent pressure in the pressure output, both of which actions lead to the emergency shutdown valve (12) being placed in an emergency shutdown position".

The appellant has submitted that the passage on page 9, lines 3 to 15, of the application as filed (published version WO 00/52374) formed a basis for that feature.

This passage is part of the detailed description of the invention, cf. page 4, line 15, to page 10, line 22, and Figures 1 and 2 of the application as filed, published version. In that detailed description it is disclosed that during normal operation the emergency shutdown controller supplies power to the two-wire lines 28, 30 and 40, 42 to power the solenoid valve and the digital valve controller means, which is coupled to the two-wire line 28, 30 by means of the two-wire line 40, 42, cf. page 5, lines 20 to 22, page 6, lines 9 to 11, and lines 21 to 26, page 7, line 22, to page 8, line 7, of the application as filed, published version. In the passage cited by the appellant it is disclosed that in the event of an emergency, the emergency shutdown controller removes the power (source) from the two-wire lines 28, 30 and 40, 42, which in turn removes power from both the solenoid valve and the digital valve controller means. There is no disclosure in the application as filed that the emergency shutdown controller removes power from both the solenoid valve and the digital valve controller means other than by removing the power from the two-wire lines 28, 30 and 40, 42.

The amendment to claim 1 of the main request, in particular the added feature "*the emergency shutdown controller (46) is adapted to remove power from both the solenoid valve (26) and the digital valve controller means (36)*", without specifying that the emergency shutdown controller is adapted to supply power to the two-wire lines 28, 30 and 40, 42, is therefore an amendment which introduces subject-matter extending beyond the content of the application as filed, Article 123(2) EPC.

AUXILIARY REQUEST

2. *Admissibility of the amendments*

2.1 Claim 1 of the auxiliary request differs from claim 1 as granted in that

1) the reference sign 26 for the solenoid valve has been replaced by the reference sign 24 (cf. the last feature of the preamble of claim 1 as granted);

2) the expression "characterised in that" has been replaced by the expression "characterized in that:";

3) a comma has been placed before the expression "for test stroking" (cf. the last feature of the characterising of claim 1 as granted);

and in that the following features have been added at the end of the claim 1 as granted:

4) "*wherein a two-wire line (28, 30) is provided which is connected at one end to the emergency shutdown controller (46) and at the opposite end to the solenoid valve (24), and the digital valve controller means (36) are coupled in parallel across the two-wire line (28, 30), wherein the emergency shutdown controller (46) is adapted to provide dc power to the two-wire lines (sic) (28, 30)*;" (henceforth referred to as feature 4);

5) "*wherein in the event of an emergency, the emergency shutdown controller (46) is adapted to remove power from both the solenoid valve (24) and the digital valve controller means (36), thereby causing the solenoid valve (24) to vent the valve actuator (18) to an exhaust line (39) and causing the digital valve controller means (36) to vent pressure in the pressure output, both of which actions lead to the emergency shutdown valve (12) being placed in an emergency shutdown position*" (henceforth referred to as feature 5).

2.2 Amendment 1) concerns the correction of an obvious mistake, cf. Rule 139 EPC, second sentence. The reference sign assigned to the solenoid valve in paragraphs [0010], [0013] and [0015] of the patent in suit is 24. Since reference signs shall not be construed as limiting the claim (cf. Rule 43(7) EPC, last sentence), the question whether said amendment meets the requirements of Articles 84 and 123 EPC does not arise.

Amendment 2) concerns the addition of a colon after the expression "characterised in that" and the introduction of an alternative spelling of the word "characterised"

employed in claim 1 as granted. This amendment does not give rise to an objection under Article 84 or 123 EPC.

Amendment 3) concerns the introduction of a comma between the bracketed expressions (brackets added by the Board) as follows (cf. the second feature of the characterizing portion of claim 1 of the auxiliary request):

"[*digital valve controller means (36) including a pressure output coupled to the shutdown valve actuator (18)*] , [*for test stroking said shutdown valve (12) from a fully opened or fully closed normal position to a partially opened or partially closed test position and returning to the normal position*]".

In paragraph [0005] of the patent in suit (cf. column 1, lines 51 to 56) it is stated. "A digital valve controller or positioner includes an output pressure coupled through the solenoid valve to the valve actuator of the emergency shutdown valve so that the emergency shutdown valve can be quickly ramped up and down in order to test the emergency shutdown valve". The first and second bracketed portions of the aforementioned feature describe a unit (a digital valve controller means (first subunit) including a pressure output and a shutdown valve actuator as further subunits) and the function of said unit, respectively. The three subunits together cause the actual test stroking of the shutdown valve, cf. paragraphs [0010] and [0011] of the patent in suit. The comma after the expression "the shutdown valve actuator (18)" makes it clear that it is not intended that the subunit "pressure output" or "shutdown valve actuator" alone is

test stroking the shutdown valve (which was already clear from the passage in the description cited above).

In the judgement of the Board, the second feature of the characterizing portion of claim 1 of the auxiliary request (including a comma) has therefore exactly the same meaning as the corresponding feature (without a comma) as present in claim 1 as granted. It follows that the insertion of the comma does not lead to a shift or extension in the scope of protection conferred by the European patent, Article 123(3) EPC, as submitted by the respondent.

2.3 Objection of lack of clarity, Article 84 EPC

The clarity objections a) to d) under Article 84 EPC raised by the respondent (see point VI above) are addressed as follows:

Objections a) and b)

In the preamble of claim 1 of the auxiliary request the following is stated: "*an emergency shutdown controller (46) providing output signals for commanding the operation of the shutdown valve (12) in response to sensing of a failure event in the process control system*". Feature 5 provides details about said output signals, namely an output signal having the effect of removing the power from the solenoid valve 26 and an output signal having the effect of removing the power from the digital valve controller means 36, and how the shutdown valve 12 is operated in the event of an emergency. In the judgement of the Board, the expressions "a failure [event]" and "an emergency [event]" are in the context of claim 1 of the auxiliary

request synonyms. Even when the solenoid valve 26 and the digital valve controller means 36 receive an identical output signal ("power off"), no lack of clarity arises.

Objections c) and d)

The person skilled in the art will understand that the removal of the power from the solenoid valve 26 causes the solenoid valve 26 to vent the valve actuator 18 and that the removal of the power from the digital valve controller means 36 causes the digital valve controller means 36 to vent pressure in the pressure output. The person skilled in the art will further understand that the action of removing the power from the solenoid valve 26 will vent the valve actuator 18 (a further action), which in turn places the emergency shutdown valve in an emergency shutdown position, and that likewise, the action of removing the power from the digital valve controller means 36 will vent pressure in the pressure output (a further action), which in turn places the emergency shutdown valve in an emergency shutdown position. In other words, the person skilled in the art will understand that the claimed emergency shutdown system responds to a sensing of a failure event in the process control system ("emergency") in a redundant manner, and in such a way that the emergency shutdown valve is always placed in an emergency shutdown position, ie also during test stroking.

The Board therefore comes to the conclusion that the subject-matter defined by claim 1 of the auxiliary request is clear, Article 84 EPC. The subject-matter of claim 1 of the auxiliary request is also supported by the description, Article 84 EPC.

2.4 Objection of inadmissible extension beyond the contents of the application as filed, Article 123(2) EPC, and objection of inadmissible extension of the scope of protection, Article 123(3) EPC

A basis for feature 4) is claim 3, page 5, lines 20 to 22, page 6, lines 9 to 11, and lines 21 to 26, page 7, line 22, to page 8, line 7, of the application as filed, published version. It is clear from the passage on page 6, lines 9 to 11, of the application as filed, published version, that the dc voltage may be 24 volts, but not necessarily so. A basis for feature 5) is the passage on page 9, lines 3 to 15, of the application as filed, published version.

The objections i) to viii) under Article 123(2) EPC raised by the respondent (see point VI above) are addressed as follows:

It may be noticed that the test to assess whether or not subject-matter extends beyond the disclosure of the application documents as filed is not a purely linguistic (or photographic) test in the sense that the basis for an amendment has to be found *verbatim* in the application as filed. Strictly speaking the test under Article 123(2) EPC has two stages: Firstly, it must be established what the content is of the application as filed, ie what is disclosed in the application documents as filed as a whole, and, secondly, it must be examined whether the European patent application or European patent has been amended in such a way that it contains subject-matter which extends beyond said content or disclosure.

Objection i)

Claim 1 of the application as filed is directed to an entity, namely an emergency shutdown system comprising a digital valve controller means for test stroking the shutdown valve (cf. the last feature of said claim) without further specifying the manner of test stroking the shutdown valve (eg periodically or otherwise). Moreover, the expression "for test stroking" in claim 1 of the auxiliary request - a device claim - must be construed as meaning suitable for test stroking. For these reasons the absence of "periodically" before the expression "test stroking" in claim 1 of the auxiliary request does not contravene the requirements of Article 123(2) EPC.

Objection ii)

It seems that the word "true" in the expression "*If a true emergency occurs during the valve ramp test sequence ...*" in the passage on page 9, lines 3 to 15, of the application as filed (published version) has been merely employed to distinguish the behaviour of the shutdown valve during a "simulated emergency", ie during test stroking, and its behaviour in case of a failure event. The purpose of test stroking is to assure that the shutdown valve functions properly in case of an actual emergency, see paragraph [0009] of the patent in suit. In the judgement of the Board, there is no need to qualify the term "emergency" as "true, or actual, emergency" in claim 1 of the auxiliary request. The expression "*wherein in the event of an emergency*" does not contravene the requirements of Article 123(2) EPC.

Objections iii) to v

It is disclosed in the application as filed (emphasis added by the Board), that "The emergency shutdown controller 46 provides dc power, such as 24 volts dc, to the two-wire line 48,50 and to the two-wire line 28,30 and eventually to the solenoid valve control portion 26 to enable the proper operation of the valve 12 as will be described in more detail hereinafter" (see page 6, lines 21 to 26, of the application as filed, published version). It follows that a voltage of 24 volts is not mandatory. In the context of claim 1 of the auxiliary request the expression "*the emergency shutdown controller (46) is adapted to provide dc power (to remove power)*" does not introduce subject-matter that extends beyond the disclosure of the application as filed. According to the penultimate feature of claim 1 of the auxiliary request "*a two-wire line (28, 30) is provided which is connected at one end to the emergency shutdown controller (46) and at the opposite end to the solenoid valve (24)*". The person skilled in the art will readily understand that removing power from the two-wire line will simultaneously "*remove power from both the solenoid valve (26) and the digital valve controller means (36)*". Nothing else is disclosed in the passage on page 9, lines 3 to 15, of the application as filed (published version), wherein it is stated "*This also removes power from the digital valve controller ...*", whereby "This" refers to "Removal of the power source from the solenoid valve.

Objections vi) to vii

The objections under Article 123(2) EPC against the second part of feature 5, viz. "*thereby causing the solenoid valve (26) to vent the valve actuator (18) to*

an exhaust line (39) and causing the digital valve controller means (36) to vent pressure in the pressure output, both of which actions lead to the emergency shutdown valve (12) being placed in an emergency shutdown position", are very similar to the corresponding objections under Article 84 EPC (see point VII). On a proper interpretation of this feature, which is both clear and supported by the description (see point 2.3 above), the question whether it meets the requirements of Article 123(2) EPC does not arise.

Objection viii)

The expression "in an emergency shutdown position" in the last feature of the claim must be construed to mean in the position prescribed by the designer of the emergency shut down system (which may be different from the desired emergency shut down position during normal operation, which can be fully opened or fully closed). That expression does not contravene the requirements of Article 123(2) EPC.

In the judgement of the Board, the subject-matter of claim 1 of the auxiliary request therefore meets the requirements of Articles 123(2) EPC.

Since features 4) and 5) restrict the scope of protection conferred by the European patent, it follows that claim 1 of the auxiliary request meets the requirements of Article 123(3) EPC.

3. *Remittal to the department of first instance*

Since the grounds mentioned in Article 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step,

Article 56 EPC) were not examined by the Opposition Division, the Board considers it appropriate to make use of its discretionary powers under Article 111(1) EPC and to remit the case to the department of first instance for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance for further prosecution.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber