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**Datasheet for the decision
of 10 February 2022**

Case Number: T 2492/19 - 3.4.02

Application Number: 10707380.1

Publication Number: 2454564

IPC: G01F1/74, G01F1/84, G01N9/00,
G01N11/16

Language of the proceedings: EN

Title of invention:

METER ELECTRONICS AND FLUID QUANTIFICATION METHOD FOR A FLUID
BEING TRANSFERRED

Applicant:

Micro Motion, Inc.

Headword:

Relevant legal provisions:

EPC Art. 84
RPBA 2020 Art. 13(1), 13(2)

Keyword:

Claims - clarity - main request (no) - first auxiliary request
(no)
Late-filed second auxiliary request - admitted (no)

Decisions cited:

Catchword:



Beschwerdekammern

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Chambres de recours

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Case Number: T 2492/19 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 10 February 2022

Appellant:
(Applicant)

Micro Motion, Inc.
7070 Winchester Circle
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Representative:

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Decision under appeal:

**Decision of the Examining Division of the
European Patent Office posted on 26 March 2019
refusing European patent application No.
10707380.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman R. Bekkering
Members: C. Kallinger
G. Decker

Summary of Facts and Submissions

- I. The appellant lodged an appeal against the decision of the examining division refusing European patent application No. 10 707 380.1 on the basis of Articles 52(1) and 56 EPC.
- II. In its decision, the examining division found that the subject-matter of claim 1 (and the corresponding method claim 8) could not be regarded as being inventive over documents D1 or D2 alone or in combination with document D3.
- III. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims annexed to the contested decision.
- IV. Oral proceedings were appointed as requested. In a communication pursuant to Article 15(1) RPBA 2020 dated 24 September 2021 the board raised objections under Articles 84 and 83 EPC.
- V. In preparation for the oral proceedings the appellant filed with the letter dated 10 January 2022 amended claims according to a first and a second auxiliary request.
- VI. On 10 February 2022 oral proceedings took place during which the appellant filed claims according to a new second auxiliary request.

VII. Appellant's final requests:

The appellant requested as a main request that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to the main request filed by fax on 10 February 2012, or alternatively on the basis of the claims according to the first auxiliary request filed with the letter dated 10 January 2022, or according to the new second auxiliary request filed during oral proceedings on 10 February 2022, 12:17 hrs.

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

"Meter electronics (20) for quantifying a fluid being transferred, the meter electronics (20) comprising an interface (201) configured to communicate with a flowmeter assembly of a vibratory flowmeter and receive a vibrational response and a processing system (203) coupled to the interface (201) and configured to measure a mass flow (\dot{m}_i) and a density (ρ_i) for a predetermined time portion (t_i) of the fluid transfer, with the processing system (203) being characterized by being configured to:

*determine if the fluid transfer is non-aerated during the predetermined time portion (t_i);
if the predetermined time portion (t_i) is non-aerated, then add a mass-density product ($\dot{m}_i\rho_i$) to an accumulated mass-density product ($\dot{m}_i\rho_{accum}$) and add the mass flow (\dot{m}_i) to an accumulated mass flow (\dot{m}_{accum}); and
determine a non-aerated mass-weighted density ($\rho_{mass-weighted}$) for the fluid transfer by dividing the accumulated*

mass-density product ($\dot{m}_i\rho_{accum}$) by the accumulated mass flow (\dot{m}_{accum})."

IX. Claim 1 of the first auxiliary reads as follows:

"Meter electronics (20) for quantifying a fluid being transferred, the meter electronics (20) comprising an interface (201) configured to communicate with a flowmeter assembly of a vibratory flowmeter and receive a vibrational response and a processing system (203) coupled to the interface (201) and configured to measure a mass flow rate (\dot{m}_i) and a density (ρ_i) for a predetermined time portion (t_i) of the fluid transfer, with the processing system (203) being characterized by being configured to:

determine if the fluid transfer is non-aerated during the predetermined time portion (t_i); if the predetermined time portion (t_i) is non-aerated, then add a mass flow rate-density product ($\dot{m}_i\rho_i$) to an accumulated mass-density product ($\dot{m}_i\rho_{accum}$) and add the mass flow rate (\dot{m}_i) to an accumulated mass flow rate (\dot{m}_{accum}); and determine a non-aerated mass-weighted density ($\rho_{mass-weighted}$) for the fluid transfer by dividing the accumulated mass flow rate-density product ($\dot{m}_i\rho_{accum}$) by the accumulated mass flow rate (\dot{m}_{accum})."

X. Claim 1 of the new second auxiliary request reads as follows:

"Meter electronics (20) for quantifying a fluid being transferred, the meter electronics (20) comprising an interface (201) configured to communicate with a flowmeter assembly of a Coriolis flowmeter and receive a vibrational response and a processing system (203) coupled to the interface (201) and configured to determine an average mass flow and an average density (ρ_i) measurement for a plurality of predetermined time portions (t_i) of the fluid transfer, with the processing system (203) being characterized by being configured to:

determine if the fluid transfer is non-aerated during the predetermined time portion (t_i), and re-measure a mass flow and a density (ρ_i) for a predetermined time portion (t_i) if the fluid transfer is aerated;

if the predetermined time portion (t_i) is non-aerated, then, for all non-aerated pre-determined time portions, add a mass flow-density product to an accumulated mass flow-density product captured over the predetermined time portion (t_i) and add the mass flow to an accumulated mass flow captured over the predetermined time portion (t_i); and

determine a non-aerated mass-weighted density ($\rho_{\text{mass-weighted}}$) for the fluid transfer by dividing the accumulated mass flow-density product captured over the predetermined time portion (t_i) by the accumulated mass flow."

Reasons for the Decision

1. Main request - Clarity

The appellant argued with respect to the claimed measurement of *"a density (ρ_i) for a predetermined time portion (t_i) of the fluid transfer"* that the person skilled in the art would understand that meter electronics configured to measure a density for a predetermined time portion of the fluid transfer would use an average density value over that time period.

The board is not convinced by this line of argument. As a density measurement usually reflects the density value at a certain point in time, it is not clear what the claimed measurement of a density for a predetermined time portion means. For the skilled person, various possibilities for interpreting this feature exist, e.g. calculating an average or mean value based on several measurements during the time portion, choosing a single value at a specific point of the time portion (e.g. beginning, middle or end) or choosing a single value representing the time portion (e.g. the maximum or minimum value within a time portion). In addition, the description does not disclose any further details with respect to the measurement of a density for a predetermined time portion, in particular not the averaging of density measurements over the predetermined time portion as brought forward by the appellant.

In conclusion, claim 1 of the main request is not clear and therefore does not meet the requirements of Article 84 EPC.

In view of the lack of clarity established above, there is no need to establish whether the further objections under Articles 84 and 83 EPC raised by the board in its communication pursuant to Article 15(1) RPBA 2020 also prejudice the grant of a patent.

2. First auxiliary request

2.1 Admission

The first auxiliary request was filed after the notification of the summons to oral proceedings and one month before the oral proceedings. In the communication pursuant to Article 15(1) RPBA 2020 annexed to the summons, the board raised for the first time objections under Article 84 EPC. The board agrees with the appellant's argument that this constitutes exceptional circumstances and therefore admitted the first auxiliary request into the proceedings (Article 13(2) RPBA 2020).

2.2 Clarity

As claim 1 of the first auxiliary request still contains the feature relating to the measurement of "*a density (ρ_i) for a predetermined time portion (t_i) of the fluid transfer*", it does not meet the clarity requirement of Article 84 EPC for the same reasons as indicated above for the main request.

In view of the lack of clarity established above for the main request, there is no need to establish whether the further objections under Articles 84 and 83 EPC raised by the board in its communication pursuant to

Article 15(1) RPBA 2020 also prejudice the grant of a patent.

3. Second auxiliary request - Admission

The second auxiliary request was filed during the oral proceedings, although the objections under Article 84 EPC raised by the board in the communication pursuant to Article 15(1) RPBA 2020 were known to the appellant several months before the oral proceedings took place.

The appellant argued that the amendments in claim 1 relating to the determination of *"an average mass flow and an average density (ρ_i) measurement for a plurality of predetermined time portions (t_i) of the fluid transfer"* were derivable from the application as a whole as this was the only possibility for the density measurement that made sense to the skilled person. In addition, the description (see page 16, lines 1 to 12 and page 17, lines 13 to 21) provided support for the determination of an average mass flow and an average density measurement rather than the determination/measurement of instantaneous values. As the amended claims were also aimed at overcoming the clarity objection, they should be admitted into the proceedings.

The board is not convinced by the appellant's arguments and is of the opinion that the amendments in claim 1 give rise to new objections under Article 123(2) EPC. The first passage (page 16, lines 1 to 12) referred to by the appellant discloses with respect to the density only that density (ρ_i) values are determined but fails to disclose that an average density is determined as claimed. The cited passage only indicates that the mass

flow (\dot{m}_i) can comprise a substantially instantaneous mass flow rate value, a mass flow rate sample, an averaged mass flow rate over the time portion or an accumulated mass flow rate over the time portion. The second passage (page 17, lines 13 to 21) referred to by the appellant describes that the mass-weighted density can be similar to an average density. However, the passage fails to disclose that an average density for a plurality of predetermined time portions is measured.

Also the other parts of the description fail to disclose the feature that an *"an average density (ρ_i) measurement for a plurality of predetermined time portions"* is determined.

The board is therefore of the opinion that the amendments in claim 1 give rise to new objections under Article 123(2) EPC.

Furthermore, and in contrast to the first auxiliary request which was filed one month before the oral proceedings, the new second auxiliary request was filed only during the oral proceedings, although the objections under Article 84 EPC raised by the board in the communication pursuant to Article 15(1) RPBA 2020 were known to the appellant already several months before the oral proceedings took place.

Therefore, in exercising its discretion in view of the fact that the amendments give rise to new objections and in view of the current state of the proceedings, the board did not admit the second auxiliary request into the proceedings (Article 13(1) and (2) RPBA 2020).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



H. Jenney

R. Bekkering

Decision electronically authenticated