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**Datasheet for the decision
of 1 October 2019**

Case Number: T 0521/15 - 3.4.02

Application Number: 03736759.6

Publication Number: 1511975

IPC: G01F1/84, G01F25/00

Language of the proceedings: EN

Title of invention:

PROCESS CONNECTION ADAPTER FOR A METER CALIBRATION SYSTEM

Applicant:

Micro Motion, Inc.

Headword:

Relevant legal provisions:

EPC 1973 Art. 54(1), 56

Keyword:

Novelty - after amendment (yes)
Inventive step - after amendment (yes)

Decisions cited:

Catchword:



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Case Number: T 0521/15 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 1 October 2019

Appellant: Micro Motion, Inc.
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Boulder, CO 80301 (US)

Representative: Vossius & Partner
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 28 October 2014
refusing European patent application No.
03736759.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman R. Bekkering
Members: H. von Gronau
T. Karamanli

Summary of Facts and Submissions

I. The appeal of the applicant is directed against the decision of the examining division to refuse the European patent application No. 03736759.6. The examining division refused the application on the grounds that the subject-matter of the independent claim 1 was not new in view of document

D5: DE 1 498 341,

and did not involve an inventive step over document

D1: US 6 360 579 B1

in combination with document

D4: US 6 343 517 B1,

and over document D4 in combination with document D1.

II. With the statement setting out the grounds of appeal, the appellant requested that the decision of the examining division be set aside and that a patent be granted on the basis of the claims subject to the contested decision, i.e. the claims filed with letter dated 5 September 2014.

As an auxiliary measure oral proceedings were requested.

III. In a communication annexed to the summons to oral proceedings, the board expressed its provisional opinion that *inter alia* claim 1 of the request filed with letter dated 5 September 2014 was not clear and its subject-matter was not new in view of documents D5

or D1.

IV. With a letter dated 23 August 2019, the appellant filed claims 1-9 according to an auxiliary request. It argued that the claims of the main request were clear and that their subject-matter was novel and involved an inventive step. With regard to the claims of the auxiliary request, the appellant put forward that these claims corresponded to the method claims 14-22 of the main request.

V. Oral proceedings before the board took place on 1 October 2019. In the course of the oral proceedings the appellant filed, as basis of its new main and sole request, claims 1-8 and description pages 2/a and 4-6.

The appellant requested as its final request that the decision under appeal be set aside and that a patent be granted in the following version:

Claims: Nos. 1 to 8 of the main request filed at the oral proceedings of 1 October 2019.

Description: Pages 1 and 2 filed by fax dated 25 November 2010;
Pages 2a, 4, 5 and 6 filed at the oral proceedings of 1 October 2019;
Pages 3, 7 to 13 as originally filed;
Page 14 filed by letter dated 18 September 2014.

Drawings: Sheets 1/6 to 6/6 as originally filed.

At the end of the oral proceedings the chairman of the board announced the decision.

VI. Claim 1 of the main (and sole) request as filed during the oral proceedings reads as follows:

"A method of manufacturing and calibrating a Coriolis meter under test devoid of process connections, the method comprising the steps of:
connecting a first process connection adapter to an input of said meter and a second process connection adapter to an output of said meter to form a series connection with said meter;
flowing a fluid serially through said first process connection adapter, said meter, and said second process connection adapter;
generating measurement signals from the meter in response to said flow;
processing the generated measurement signals to derive calibration information for the meter, and subsequently attaching process connections, based on customer requirements, to the meter."

Reasons for the Decision

1. The appeal is admissible.
2. Claim 1 - amendments (Article 123(2) EPC)

Claim 1 is based on originally filed independent claim 15, with the additional features that the meter is a Coriolis meter (see originally filed claim 21), that a fluid is flowing through the meter (see originally filed description, page 8, lines 15-17), that the measurement signals are generated from the meter (see originally filed description, page 4, lines

11-16), and that in manufacture subsequently process connections, based on customer requirements, are attached to the meter (see originally filed Figure 5, and originally filed description, page 9, line 30, to page 10, line 5).

Therefore, claim 1 meets the requirements of Article 123(2) EPC.

3. Claim 1 - clarity (Article 84 EPC 1973)

Claim 1 defines a method of manufacturing and calibrating in which the calibrating step is performed without process connections and the process connections are attached subsequently. The order of the calibration step and the attachment step is clearly defined in the claim and it is not essential which type of process connection is attached to the Coriolis meter after calibration.

The board comes therefore to the conclusion that claim 1 meets the clarity requirements of Article 84 EPC 1973.

4. Claim 1 - novelty and inventive step (Articles 54(1) and 56 EPC 1973)

4.1 None of the documents cited by the examining division discloses the method of claim 1.

4.2 Document D1 addresses the problem to perform periodic maintenance upon flow meters that are placed in service and one aspect of this maintenance is to calibrate the meters for the purpose of ensuring accurate and reliable measurement data (see column 1, lines 15-30). To solve this problem document D1 proposes a compact

flowmeter calibration system for calibrating different types of flow meters across a wide range of flow rates (see column 3, lines 6-15). Document D1 does not disclose or suggest to attach process connections after the calibration of the meter as part of the manufacturing and calibrating process of the meter.

4.3 Document D5 discloses an apparatus for calibrating a flowmeter in which the flowmeter is fixed between two movable connection tubes. The tubes comprise connection adapters that allow to fluidly connect the connections of the flow meter. Document D5 does not disclose or suggest that, after the calibration process, connections are attached to the flowmeter as part of the manufacturing and calibrating process of the meter.

4.4 Document D4 addresses the problem to minimize the number of Coriolis flowmeters of a given model that must be maintained in inventory. The reason for the high number of different types of flow meters is that there are more than twenty different types of end flanges that may be coupled to each size of flowmeter. Document D4 therefore proposes to manufacture, test, and balance the flow tube prior to the time that the end flange is actually attached. At this stage of completion, the internal elements of the flowmeter are fully operational and are sealed or isolated by the cone connect element. The end portions of the flow tube extend axially outward from each of the case ends and their cone connect elements. Because the case is sealed and the flow tubes are rigidly affixed to the case ends, the tube ends may be temporarily coupled to a source of material flow at this time. The flowmeter may then be balanced. The flowmeter may be indefinitely stored in this state until an order is received from a customer. Then, the needs of the customer and the

details of the end flanges required by the customer are made known and the appropriate end flanges may be coupled to the flow tube projections and the case ends by suitable welding operations (see column 4, lines 10-26). Document D4 does not disclose or suggest to also calibrate the flowmeter without end flanges attached.

4.5 The appellant argued that, at the priority date of the present application, the person skilled in the art would not consider to calibrate the flowmeter without process connections attached, because the person skilled in the art was convinced that fastening the process connections would change the properties of the meter to such an extent that a calibration would only make sense after attaching the process connections. Neither document D1 nor documents D4 and D5 suggested to perform calibration prior to the attachment of process connections. The appellant first found out that process connections could be attached after calibration.

4.6 The board comes to the conclusion that none of the documents cited above discloses the claimed method and none of the documents suggests to perform the calibration of the Coriolis meter prior to attaching process connections. In particular, document D4, which discloses to attach process connections after balancing and testing the flow tube, does not mention any calibration step. None of the documents cited suggests that the person skilled in the art would consider at the priority date calibrating before attaching the process connections. For the person skilled in the art it was consequently not obvious in view of any combination of documents D1, D4 or D5 to consider such order of calibration and attachment of process

connections as part of the method of manufacturing and calibrating the meter.

- 4.7 The subject-matter of claim 1 therefore involves an inventive step.
5. Claims 2 to 8 are dependent on claim 1 and their subject-matter therefore also meets the novelty and inventive step requirements of the EPC.

The description fulfils the requirements of Rule 27(1) EPC 1973.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to grant a patent in the following version:

Claims:

Nos. 1 to 8 of the main request filed at the oral proceedings of 1 October 2019.

Description:

Pages 1 and 2 filed by fax dated 25 November 2010;
Pages 2a, 4, 5 and 6 filed at the oral proceedings of 1 October 2019;
Pages 3, 7 to 13 as originally filed;
Page 14 filed by letter dated 18 September 2014.

Drawings:

Sheets 1/6 to 6/6 as originally filed.

The Registrar:

The Chairman:



M. Kiehl

R. Bekkering

Decision electronically authenticated