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**Datasheet for the decision
of 9 April 2019**

Case Number: T 0386/14 - 3.5.02

Application Number: 08770485.4

Publication Number: 2168216

IPC: H01R13/66

Language of the proceedings: EN

Title of invention:

Sensor Adaptor Circuit Housing Assembly and Method of
Manufacturing thereof

Applicant:

Watlow Electric Manufacturing Company

Relevant legal provisions:

EPC Art. 84, 123(2)
RPBA Art. 13(1)

Keyword:

Late-filed new main request - request clearly allowable (no)
Claims - clarity - auxiliary requests (no)
Amendments - added subject-matter (yes)



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Case Number: T 0386/14 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 9 April 2019

Appellant: Watlow Electric Manufacturing Company
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 13 August 2013
refusing European patent application No.
08770485.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman R. Lord
Members: G. Flynn
J. Hoppe

Summary of Facts and Submissions

- I. The applicant's appeal contests the examining division's decision to refuse the European patent application 08 770 485.4, which was published under the PCT as WO 2009/002690 A1.
- II. In the contested decision, the examining division considered the applicant's main request and first to fifth auxiliary requests for grant of a patent on the basis of corresponding sets of amended claims that were filed with a letter dated 8 May 2013.

The examining division noted that claim 1 of the main request and of each of the first to fifth auxiliary requests included the limitation that:

"the housing (14; 144) defines a first lower chamber and a second lower chamber disposed adjacent to the input connector (18) and the output connector (36), respectively, wherein the input connector (18) and the output connector (36) are inserted through the first and second lower chambers before the second end (32) of the input connector (18) and the second end (48) of the output connector (36) are attached to the circuit board (12)".

Noting that the applicant had indicated figures 2 and 5 as support for this newly introduced feature, the examining division expressed the opinion that from figures 2 and 5 it was not directly and unambiguously derivable that the housing defined two chambers.

The examining division also noted that there was no indication or discussion of the two chambers, or of their technical effect in the description.

The examining division concluded that the amendments filed with the letter dated 8 May 2013 introduced subject-matter which extended beyond the content of the application as filed, contrary to Article 123(2) EPC.

The examining division also noted that as the chamber was not disclosed in the originally filed application, it was subject-matter that had never been searched.

- III. In the statement of grounds of appeal the appellant (applicant) requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request or one of the 1st to 5th auxiliary requests filed therewith, which corresponded to the requests considered in the contested decision.
- IV. The Board summonsed the appellant to attend oral proceedings to be held on 9 April 2019, setting out their preliminary observations in an annex.
- V. The appellant replied to the summons with a letter dated 5 March 2019, filing sets of claims according to an amended main request, amended 1st to 5th auxiliary requests and new 6th to 8th auxiliary requests.
- VI. Oral proceedings were held on 9 April 2019 as scheduled. At the outset the appellant presented a new main request dated 9 April 2019.

The appellant expressly withdrew the former main request and the requests labelled 1st to 6th auxiliary requests, filed with the letter dated 5 March 2019.

The appellant's final requests were confirmed as being to set aside the decision and to grant a patent on the basis of the claims of the new main request, filed during the oral proceedings (dated 9 April 2019) or if that is not possible on the basis of the claims of the auxiliary requests labelled 7th and 8th auxiliary requests, filed with letter dated 5th March 2019, in the given order.

VII. Claim 1 according to the **new main request** filed in the oral proceedings of 9 April 2019 reads as follows:

"1. A sensor adaptor circuit housing assembly (10; 110) comprising:

 a circuit board (20) having an electrical circuit;
 a housing (14; 114) having a housing body (22; 122) and a cavity (24) defined by inner surfaces (26) of the housing body (22; 122), the circuit board (20) being positioned within the cavity (24);

 an input wire (16; 116, 216); and

 an input connector (18) having a unitary body, a first end (28) of the unitary body attached directly to an end (30; 130, 230) of the input wire (16; 116, 216), the end (30; 130, 230) of the input wire (16; 116, 216) and the first end (28) of the unitary body being at least partially encapsulated within a portion of the housing (14; 114), a second end (32) of the unitary body positioned within the cavity and attached directly to the circuit board (12) and making a first electrical connection with the electrical circuit (20);

 an output connector (36) configured to interface to an external mating connector, the output connector (36) having a unitary body and a first end (46) disposed external to the housing body (22; 122), the first end (46) of the output connector (36) being configured to

attach directly to a mating portion of the external mating connector, the output connector (36) having a second end (48) disposed within the cavity (24) and attached directly to the circuit board (12), the second end (48) of the output connector (36) making a second electrical connection with the electrical circuit (20), characterized in that

the first end of the input connector (18), the end of the input wire, and an attachment therebetween are encapsulated substantially or at least in part within a portion of the housing body forming a first lower chamber,

an intermediate portion of the output connector (36) is encapsulated substantially or at least in part within a portion of the housing body forming a second lower chamber,

the circuit board is configured to receive a sensor signal and generate a sensor characteristic in response to the received sensor signal; and

the input wire is configured to receive the sensor signal from a sensor;

a cavity sealer is positioned, dimensioned and/or adapted for closing and substantially sealing the cavity."

- VIII. Claim 1 according to the **request labelled 7th auxiliary request** has a preamble which is identical to that of the new main request and a characterising portion which differs from that of the new main request as follows (deletions and additions indicated by strike-out and underlining by the Board):

"characterized in that

~~the first end of the input connector (18), the end of the input wire, and an attachment therebetween are encapsulated substantially or at least in part within a~~

~~portion of the housing body forming a first lower chamber,~~

~~an intermediate portion of the output connector (36) is encapsulated substantially or at least in part within a portion of the housing body forming a second lower chamber,~~

the housing (14; 144) defines a first wall and a second wall disposed above the first ends (28, 46) of the input connector (18) and the output connector (36), respectively, wherein the second end (32) of the input connector (18) and the second end (48) of the output connector (36) extend through the first wall and the second wall, respectively, and are attached to the circuit board (12),

the circuit board is configured to receive a sensor signal and generate a sensor characteristic in response to the received sensor signal; and

the input wire is configured to receive the sensor signal from a sensor;

~~a cavity sealer is positioned, dimensioned and/or adapted for closing and substantially sealing the cavity~~

and in that the assembly further comprises a cavity sealer in the cavity to at least partially encapsulate the circuit board."

- IX. Claim 1 according to the **request labelled 8th auxiliary request** differs from that of the request labelled 7th auxiliary request in that the beginning of the first paragraph of the characterising portion is amended as follows (deletions and additions indicated by strike-out and underlining by the Board):

"characterized in that

the housing (14; 144) defines a first wall between the first end (28) of the input connector (18) and the

circuit board (12) and a second wall between the first end (46) of the output connector (36) and the circuit board disposed above the first ends (28, 46) of the input connector (18) and the output connector (36), respectively, wherein the second end (32) of the input connector (18) and the second end (48) of the output connector (36) extend through the first wall and the second wall, respectively, and are attached to the circuit board (12), ...".

- X. The appellant's submissions concerning the new main request may be summarised as follows:
- The features concerning the first and second lower chambers have been reformulated based on paragraph [0033] of the description and the disclosure in the figures.
 - All of the disclosed features of the chambers and their relationship to the connectors have been taken into the claim and the claim does not cover any embodiment that is not as shown in figures 3 to 5 of the application as filed.
 - Figures 4 and 5 show two closed cavities, each bounded by an upper wall, lateral walls and inner surfaces 26 of the housing body 22.
 - The skilled person would recognise these closed cavities as being first and second chambers as claimed.
 - Paragraph [0033] refers to a portion of the end of the input wire and the connector and the attachment therebetween being encapsulated within a portion of the housing body, and it would be evident to the skilled person that this portion of the housing body forms the claimed chamber.
 - It would be implicit to the skilled person that the claimed arrangement makes the assembly suitable for harsh environments as the chambers would be able to

prevent moisture and vibration from coming into the housing and onto the circuit board.

- None of the other features depicted in the figures are important for that function. Hence, taking the chamber features from the figures does not result in an intermediate generalisation.

Regarding the request labelled 7th auxiliary request the appellant submitted that the claimed "second wall" represented the upper horizontal wall of the unreferenced housing body portion as depicted on the right-hand side of figure 5. The wording of the claim also covered an arrangement in which the second wall was disposed "diagonally above" the first end of the output connector.

Regarding the request labelled 8th auxiliary request the appellant submitted that the claimed "second wall" could not be interpreted as meaning the outer wall of the housing body 22 because claim 1 specifies that the second end 48 of the output connector 36 extends through the second wall and is attached to the circuit board.

Reasons for the Decision

1. Admittance of the new main request filed in oral proceedings, Article 13(1) RPBA
- 1.1 Under Article 13(1) RPBA any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion. In accordance with the case law (see CLBA IV.E.4.4.2 a)), the boards may use that discretion to not admit late-filed requests that are directed to subject-matter which prima facie is not allowable. Claims are clearly allowable if the board can quickly ascertain that they do not give rise to new objections and overcome all outstanding objections under the EPC.
- 1.2 Claim 1 of the new main request includes the features that (emphasis added):
 - "the first end of the input connector (18), the end of the input wire, and an attachment therebetween are encapsulated substantially or at least in part within a portion of the housing body forming a first lower chamber"; and
 - "an intermediate portion of the output connector (36) is encapsulated substantially or at least in part within a portion of the housing body forming a second lower chamber".
- 1.3 The appellant has cited paragraphs [0033] and [0037] and the corresponding figures of the published international application (WO 2009/002690 A1) as a basis for these features.

1.4 Paragraphs [0033] and [0037] read as follows:

[0033] "As shown in Figs. 4, 5, 6, and 7 [see note in paragraph 1.5 below] all or a portion of the end of the input wire and the connector, and the attachment therebetween can be encapsulated substantially or at least in part within a portion of the housing body. This can be by assembling various housing body portions to form an integrated body or can be by molding or encapsulating."

[0037] "As with the input connector, an intermediate portion of the output connector can be partially or substantially encapsulated by a portion of the housing body either by mechanical assembly of the housing body or by molding the output connector into the housing body."

Hence, these paragraphs do not disclose first and second "chambers".

1.5 For the sake of completeness the Board notes that the description as originally filed referred to a set of thirteen drawings (figures 1A, 1B and 2 to 12), whereas only ten drawings were filed (figures 1A, 1B and 2 to 9). No figures were filed that correspond in substance to the textual references to figures 6, 7 and 10.

1.6 As regards the appellant's argument that chambers as claimed are implicit from the figures, the Board's findings are as follows.

1.6.1 Figures 1A, 2, 4, 5, 6 and 7 as filed all show a component 22 that is evidently (at least a part of) the housing body that is referred to, without reference numerals, throughout the description.

- 1.6.2 In addition to the housing body 22, figure 5 shows two other unreferenced components in the vicinity of the input and output connectors 18, 36. These unreferenced components have different cross-hatching to the housing body 22, indicating that they and the housing body 22 are different components. Hence, the two unreferenced components and the housing body 22 could perhaps correspond to the "various housing body portions" that are mentioned in paragraph [0033] in the context that (on the input side) the end of the input wire (16), the connector (18) and the attachment (44) therebetween can be encapsulated at least in part within a portion of the housing body by assembling various housing body portions to form an integrated body. That would be consistent with the disclosure in paragraph [0037] referring to "mechanical assembly of the housing body" to encapsulate the "intermediate portion of the output connector".
- 1.6.3 There is no evidence to suggest that the figures show an arrangement in which the connectors etc. are encapsulated in part within a portion of the housing body by "molding or encapsulation" as mentioned as an alternative in paragraph [0033]. Furthermore, if this technique were to be used, as an alternative to the assembly of mechanical parts as shown in figure 5, the Board cannot see how a closed space could be left around the connectors etc. that could be considered a "chamber" as claimed. The appellant has not provided any evidence that this would be within the common general knowledge of the person skilled in the art.
- 1.6.4 In view of the above, the Board considers that even if *arguendo* the skilled person would for some reason come to the realisation that there are closed "spaces" in

the assembly shown in figure 5 that form a "first lower chamber" and a "second lower chamber" as claimed, the skilled person would realise that this feature is structurally and functionally related to the feature that various housing body portions are assembled to form an integrated body as disclosed in paragraph [0033] and in the manner shown in figure 5. The extraction of the "chambers" feature in isolation from these related features leads to an undisclosed intermediate generalisation, which according to established case law is contrary to Article 123(2) EPC (see CLBA II.E.1.7).

- 1.7 Notwithstanding the above, the Board notes that amendment of claims to include features from drawings is not prohibited, provided the structure and the function of such features are clearly, unmistakably and fully derivable from the drawings by the skilled person and not at odds with the other parts of the disclosure and that no element is dropped (cf. CLBA II.E.1.12.1). In the present case it is alleged that the "chambers" serve to prevent moisture and vibrations from entering the housing. It is however evident from paragraphs [0029] and [0040] that other elements of the disclosed assembly are important for moisture prevention, such as sinuous connector bodies and supports within the cavity. There is no indication that the mere presence of first and second chambers, that are not mentioned, would provide the alleged functions, independently of the features that are explicitly disclosed as performing those functions. Also for this reason the Board considers that an undisclosed intermediate generalisation has been introduced, contravening Article 123(2) EPC.

1.8 For the above reasons the Board concluded that the new main request was prima facie not allowable and exercised their discretion under Article 13(1) RPBA not to admit it.

2. Request labelled 7th auxiliary request

2.1 According to claim 1 of the request labelled 7th auxiliary request the housing defines a second wall disposed above the first ends (46) of the output connector (36).

2.2 The preamble of claim 1 states that the first end (46) of the output connector is disposed external to the housing body (22, 122), which is consistent with the assembly as depicted in figure 5 (albeit that the first ends are erroneously referenced 86 in figure 5).

2.3 According to the appellant the claimed "second wall" represents the upper horizontal wall of the unreferenced housing body portion as depicted on the right-hand side of figure 5 and the wording of the claim covers an arrangement in which the second wall is disposed "diagonally above" the first ends of the output connector.

2.4 The Board considers that even if the term "above" could *arguendo* be understood in the sense of meaning "diagonally above" it can certainly also be understood in its normal sense as meaning directly above. With this normal interpretation, however, the claimed arrangement is not disclosed in figure 5 or elsewhere in the application as filed. Hence claim 1 of the request labelled 7th auxiliary request includes an arrangement that is not disclosed in the application as filed, namely an arrangement in which the second wall

is directly above the first ends of the output connector.

2.5 Hence, irrespective of the question whether the amendments amount to an undisclosed intermediate generalisation, the introduction of the feature that a second wall is disposed above the first end of the output connector adds subject-matter in contravention of Article 123(2) EPC and renders the claim inconsistent with the description, Article 84 EPC.

3. Request labelled 8th auxiliary request

3.1 According to claim 1 of the request labelled 8th auxiliary request the housing "defines a first wall between the first end (28) of the input connector (18) and the circuit board (12) and a second wall between the first end (46) of the output connector (36) and the circuit board".

3.2 Given that the claim does not give any details as to the shape and dimensions of the output connector 36 and does not give any details as to the extent of what is referred to as its "first end" and "second end", the Board considers that the "second wall" of the housing, which is merely defined as being "between the first end (46) of the output connector (36) and the circuit board", could cover the outer wall of housing body 22 through which the output connector passes. There is no indication in the claim that the "second wall" is something in addition to the outer wall housing body 22.

3.3 The appellant argues that the "second wall" cannot be interpreted so broadly because claim 1 specifies that the second end 48 of the output connector 36 extends

through the second wall and is attached to the circuit board. The Board was not convinced by this argument because, as stated above, no details are given as to the extent of what is referred to as the "first end" and "second end" of the output connector.

3.4 Hence, the Board considers the claim to be unclear in the sense of Article 84 EPC because it is not clear whether the claimed "second wall" is the same as the outer wall of the housing body 22 or an additional feature.

3.5 Notwithstanding the above, claim 1 only defines the "first wall" and "second wall" as being between the first end of the respective input/output connector and the circuit board. This definition clearly covers many arrangements and locations of first and second walls that are quite different to those depicted in the figures. For example, the first and second walls could run vertically (in the sense as depicted in figure 5). There is no basis for claiming an arrangement of the first and second walls more broadly than is depicted in figure 5. The introduction of this broader definition of the arrangement of these walls thus contravenes Article 123(2) EPC.

4. Conclusion

In the absence of an allowable request the Board concluded that the appeal was 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