Title: MEDICAL DEVICES INCLUDING METALLIC CONNECTOR ENCLOSURES

Abstract: Medical devices provide metallic connector enclosures. The metallic connector enclosures may be constructed with relatively thin walls in comparison to polymer connector enclosures to aid in miniaturizing the medical device. The metallic connector enclosures may be constructed with interior surfaces that deviate less from an ideal inner surface shape in comparison to polymer connector enclosures to allow for better concentricity of electrical connectors. The metallic connector enclosures may include a panel that allows access to the cavity of the connector enclosure where set screw blocks, lead connectors, spacers, seals, and the like may be located. Furthermore, the lead connectors within the metallic connector enclosures may be separated from the metallic connector enclosure by being positioned within non-conductive seals that reside within features included in cavity walls of the connector enclosure. Similarly, set screw blocks may be separated from the metallic connector enclosure by non-conductive spacers present within the cavity.
Published: (88) Date of publication of the international search report:

| 23 August 2012 |

— with international search report (Art. 21(3))

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

**INV.** A61N1/375

**ADD.** A61N1/37

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

A61N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 4 715 380 A (HARRIS DONALD L [US]) 29 December 1987 (1987-12-29) abstract; figures 2, 3 column 4, line 59 - column 5, line 2 column 6, lines 3-7, 32-48</td>
<td>1-10,41</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:
  *A:* document defining the general state of the art which is not considered to be of particular relevance
  *E:* earlier application or patent but published on or after the international filing date
  *L:* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  *O:* document referring to an oral disclosure, use, exhibition or other means
  *P:* document published prior to the international filing date but later than the priority date claimed

*"T:* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

*"X:* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

*"Y:* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

*"A:* document member of the same patent family

**Date of the actual completion of the international search**

8 March 2012

**Date of mailing of the international search report**

29/06/2012

**Name and mailing address of the ISA/**

European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016

**Authorized officer**

Pfeiffer, Uwe

Form PCT/ISA/210 (second sheet) (April 2005)
INTERNATIONAL SEARCH REPORT

Box No. II  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

   see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☑ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
   1-10, 41

4. ☑ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant’s protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant’s protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/21 0 (continuation of first sheet (2)) (April 2005)
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10, 41

IMD with metallic connector enclosure comprising a metallic body and a metallic panel welded to the body

2. claims: 11-20, 42

IMD with metallic connector enclosure with a wall thickness of less than 0.025 inch

3. claims: 21-30, 43

IMD with metallic connector enclosure and a plurality of lead connectors, each surrounded by a seal.

4. claims: 31-40, 44

IMD with metallic connector enclosure comprising a recess and lead connector spacers within the recess.
<table>
<thead>
<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
</tr>
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<tbody>
<tr>
<td>US 4715380 A</td>
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