

**INTERNATIONAL SEARCH REPORT**

|  |
|--|
| International application No.<br>PCT/JP2018/043730 |
|--|

**A. CLASSIFICATION OF SUBJECT MATTER**  
 Int.Cl. G01R31/02 (2006.01) i, H05B3/00 (2006.01) i

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)  
 Int.Cl. G01R31/02, H05B3/00

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

|  |           |
|--|-----------|
| Published examined utility model applications of Japan   | 1922-1996 |
| Published unexamined utility model applications of Japan | 1971-2019 |
| Registered utility model specifications of Japan         | 1996-2019 |
| Published registered utility model applications of Japan | 1994-2019 |

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.     |
|-----------|--|---------------------------|
| Y<br>A    | JP 04-026091 A (RKC INSTRUMENT INC.) 29 January 1992, page 3, upper right column, line 8 to page 6, lower right column, line 2, fig. 1-9<br>(Family: none) | 1, 6-7, 10-11<br>2-5, 8-9 |
| Y<br>A    | JP 57-050781 A (NEC CORPORATION) 25 March 1982, page 2, upper left column, line 15 to lower right column, line 7, fig. 1, 2<br>(Family: none)              | 1, 6-7, 10-11<br>2-5, 8-9 |
| A         | JP 11-227032 A (JAPAN STEEL WORKS LTD.) 24 August 1999, paragraphs [0002]-[0005], fig. 5, 6<br>(Family: none)  | 1-11                      |

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

|   |  |
|---|--|
| * Special categories of cited documents:  | "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  |
| "A" document defining the general state of the art which is not considered to be of particular relevance  | "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   |
| "E" earlier application or patent but published on or after the international filing date   | "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 |
| "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) | "&" document member of the same patent family  |
| "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  |  |

|   |  |
|---|--|
| Date of the actual completion of the international search<br>23.01.2019 | Date of mailing of the international search report<br>05.02.2019 |
|---|--|

|  |   |
|--|---|
| Name and mailing address of the ISA/<br>Japan Patent Office<br>3-4-3, Kasumigaseki, Chiyoda-ku,<br>Tokyo 100-8915, Japan | Authorized officer<br><br>Telephone No. |
|--|---|