

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/086143

A. CLASSIFICATION OF SUBJECT MATTER

B60L 5/39 (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)

B60L

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

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

CNTXT, CNKI, CNABS: 控制, 靴, 升, 轨, 接触, 压力, 故障, 熔断, 到位, 受流, 受电 WOTXT, USTXT, VEN, SIPOABS:
pressur+, contact+, sensor, lift+, up+, rise, raise, ascend, control+, failure, fault, shoe, rail

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 107804174 A (CRRC QINGDAO SIFANG CO., LTD.) 16 March 2018 (16.03.2018), claims 1-15	1-15
X	CN 106080213 A (CRRC NANJING PUZHEN CO., LTD.) 09 November 2016 (09.11.2016), description, paragraphs [0014]-[0017], and figures 1 and 2	1-3, 8, 9, 13-15
Y	CN 106080213 A (CRRC NANJING PUZHEN CO., LTD.) 09 November 2016 (09.11.2016), description, paragraphs [0014]-[0017], and figures 1 and 2	4-7, 10-12, 14, 15
Y	CN 106356960 A (XIANGTAN ELECTRIC MANUFACTURING CO., LTD.) 25 January 2017 (25.01.2017), description, paragraphs [0018]-[0020]	4-7, 14, 15
Y	CN 106882076 A (WUHAN ZHONGYUAN ELECTRONICS GROUP CO., LTD.) 23 June 2017 (23.06.2017), description, paragraphs [0030]-[0043]	6, 7, 14, 15

Further documents are listed in the continuation of Box C.

See patent family annex.

<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“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)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p>	<p>“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</p> <p>“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</p> <p>“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</p> <p>“&” document member of the same patent family</p>
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Date of the actual completion of the international search
28 June 2018

Date of mailing of the international search report
09 August 2018

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 102830302 A (CSR ZHUZHOU ELECTRIC LOCOMOTIVE CO., LTD.) 19 December 2012 (19.12.2012), description, paragraphs [0022]-[0046], and figures 1-4	7, 10-12, 14, 15
X	CN 105346398 A (HUNAN ZHONGTONG ELECTRIC CO., LTD.) 24 February 2016 (24.02.2016), description, paragraphs [0038]-[0049], and figure 1	1, 3, 8, 9, 13-15
X	CN 106114236 A (XIAMEN GOLDEN DRAGON BUS CO., LTD.) 16 November 2016 (16.11.2016), description, paragraphs [0028]-[0050], and figures 1-7	1, 3, 7-15
A	JP 5457900 B2 (RAILWAY TECHNICAL RESEARCH INSTITUTE et al.) 02 April 2014 (02.04.2014), entire document	1-15
A	CN 103175473 A (DONGGUAN LORI ELECTRON TECHNOLOGY LIMITED) 26 June 2013 (26.06.2013), entire document	1-15

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2018/086143

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 107804174 A	16 March 2018	None	
CN 106080213 A	09 November 2016	None	
CN 106356960 A	25 January 2017	None	
CN 106882076 A	23 June 2017	None	
CN 102830302 A	19 December 2012	CN 102830302 B	25 February 2015
CN 105346398 A	24 February 2016	None	
CN 106114236 A	16 November 2016	None	
JP 5457900 B2	02 April 2014	JP 2011205774 A	13 October 2011
CN 103175473 A	26 June 2013	CN 103175473 B	20 January 2016