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(54) **ONLINE RECONFIGURABLE BATTERY  
SYSTEM WITH CURRENT SURGE  
PROTECTION MODULES AND ACTIVATION  
METHOD THEREOF**

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(57) **ABSTRACT**

An online reconfigurable battery system with current surge protection modules (SPM), including: a plurality of battery module strings connected in parallel. The battery module string further includes: an SPM and a plurality of enable/bypass battery modules (EBM) connected in series; where the EBM further includes: a battery, a first switch, and a second switch; the first switch and the battery are connected in series, and then connected to the second switch in parallel to form an EBM that can be enabled or bypassed; the SPM further includes: a variable resistor, a third switch, and a fourth switch; the third switch and the variable resistors are connected in series, and then connected in parallel with the fourth switch to buffer the surge current.

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