(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
02 October 2025 (02.10.2025)

WIPO | PCT

(10) International Publication Number
WO 2025/203115 A1

(51) International Patent Classification:
H01M 10/44 (2006.01) *H01M 10/48* (2006.01)
H01M 10/42 (2006.01) *H02J 7/34* (2006.01)

(21) International Application Number:
PCT/IN2025/050507

(22) International Filing Date:
28 March 2025 (28.03.2025)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
202441025812 29 March 2024 (29.03.2024) IN

(71) Applicant: **EICHER MOTORS LIMITED** [IN/IN]; Royal Enfield (A Unit of Eicher Motors Ltd.), 296, Rajiv Gandhi Salai, Elcot Sez, Sholinganallur, Chennai, Tamil Nadu 600119 (IN).

(72) Inventors: **THALIYANVEEDU, Hareesh**; Royal Enfield, 296, Rajiv Gandhi Salai, Elcot Sez, Sholinganallur, Chennai, Tamil Nadu 600119 (IN). **KUMAR, Naresh**; Royal Enfield, 296, Rajiv Gandhi Salai, Elcot Sez, Sholinganallur, Chennai, Tamil Nadu 600119 (IN). **REDDY, Bheemireddy Rohit**; Royal Enfield, 296, Rajiv Gandhi Salai, Elcot Sez, Sholinganallur, Chennai, Tamil Nadu 600119 (IN).

(74) Agent: **MAHUA RAY**; REMFRY & SAGAR, Attorneys-at-Law, Remfry House Millennium Plaza, Sector 27, Gurugram, HARYANA 122 009 (IN).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY,

(54) Title: ACTIVE FIRE PROTECTION DEVICE FOR TWO WHEELER ELECTRIC VEHICLE BATTERY PACK

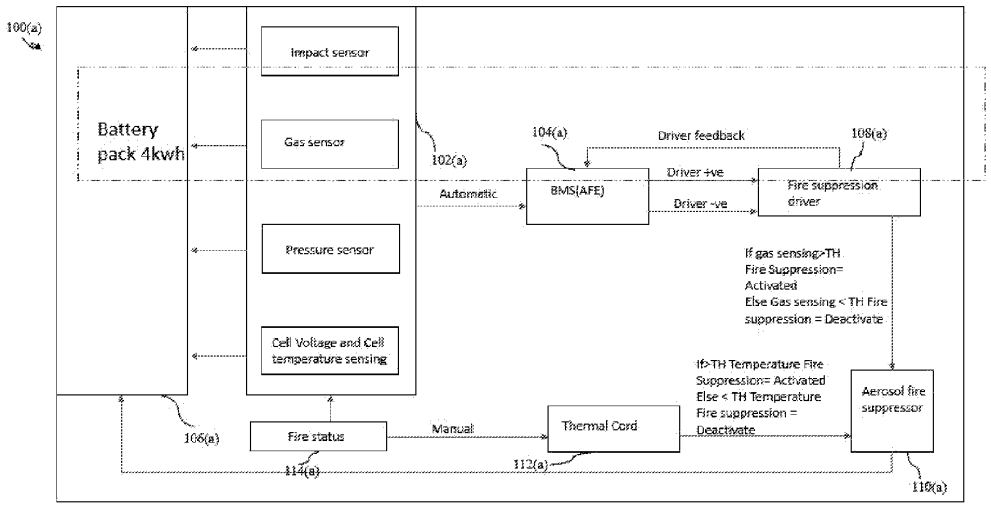

Fig. 1(a)

(57) Abstract: A fire protection device for battery pack in a vehicle is disclosed the device comprising: a plurality of sensor modules coupled to a battery management system (BMS), and is configured to detect at least one condition associated with the battery pack; a control unit coupled to the plurality of the sensor modules; and at least one fire suppressor coupled to the control unit, wherein the control unit is configured to receive at least one input from the plurality of sensor modules, the input indicating the at least one condition associated with the battery pack analyse input value associated with the condition to determine if the input value condition is beyond a threshold value; activate the fire suppressor based on determination that the input value is beyond the threshold value; and send feedback of fire suppression to the BMS.

[Continued on next page]

WO 2025/203115 A1

MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UY, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to the identity of the inventor (Rule 4.17(i))*
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*
— *with amended claims (Art. 19(1))*
— *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*