

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 July 2020 (02.07.2020)



(10) International Publication Number
WO 2020/139922 A1

(51) International Patent Classification:
H01H 9/04 (2006.01)

(21) International Application Number:
PCT/US2019/068541

(22) International Filing Date:
26 December 2019 (26.12.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/784,965 26 December 2018 (26.12.2018) US
16/723,374 20 December 2019 (20.12.2019) US

(71) Applicant: **EATON INTELLIGENT POWER LIMITED** [IE/IE]; 30 Pembroke Road, Dublin, 4 (IE).

(72) Inventor; and

(71) Applicant: **MANAHAN, Joseph Michael** [US/US]; 4598 Brookhill Drive N, Manlius, New York 13104 (US).

(72) Inventors: **LEDGERWOOD, Adam**; 4848 Pembridge Circle, Syracuse, New York 13215 (US). **BUTLER, Andrew**; 3447 Cold Springs Road, Baldwinsville, New York 13027 (US). **DECARR, Graig**; 6213 Gulfstream Path, Ci-

cero, New York 13039 (US). **LEUBNER, Edmund**; 7714 Summerwood Place, Liverpool, New York 13090 (US).

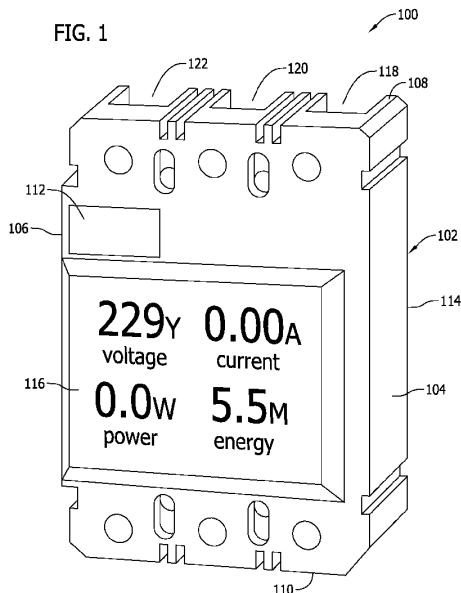
(74) Agent: **ATKINS, Bruce** et al.; Armstrong Teasdale LLP, 7700 Forsyth Blvd., Suite 1800, St. Louis, Missouri 63105 (US).

(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, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, 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, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, 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, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,

(54) Title: COMPLIANT, HAZARDOUS ENVIRONMENT CIRCUIT PROTECTION DEVICES, SYSTEMS AND METHODS

FIG. 1



(57) Abstract: Solid state and hybrid circuit protection devices include improved arc-less switching capability and overcurrent protection, improved terminal assemblies and improved thermal management features that reduce or eliminate ignition sources for hazardous environments. The solid state and hybrid circuit protection devices are ignition protected and avoid possible explosions and therefore obviate a need for conventional explosion-proof enclosures to ensure safe operation of an electrical power system in hazardous locations.

WO 2020/139922 A1

[Continued on next page]

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

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