

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
25 July 2024 (25.07.2024)



(10) International Publication Number
WO 2024/153671 A1

(51) International Patent Classification:

F24D 19/10 (2006.01) *F24H 15/31* (2022.01)
F24H 15/104 (2022.01) *G05D 7/01* (2006.01)
F24H 15/242 (2022.01)

(21) International Application Number:

PCT/EP2024/050977

(22) International Filing Date:

17 January 2024 (17.01.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

23152660.9 20 January 2023 (20.01.2023) EP

(71) Applicant: IMI HYDRONIC ENGINEERING INTERNATIONAL SA [CH/CH]; Lake Geneva business Park, Route de Crassier 19, 1262 Eysins (CH).

(72) Inventor: VOLOVEC, Peter; Zupelevce 58, 8258 Kapele (SI).

(74) Agent: ZACCO SWEDEN AB; Box 5581, Löjtnantsgatan 21, 114 85 Stockholm (SE).

(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, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,

(54) Title: A VALVE ARRANGEMENT WITH A DIFFERENTIAL PRESSURE CONTROLLER

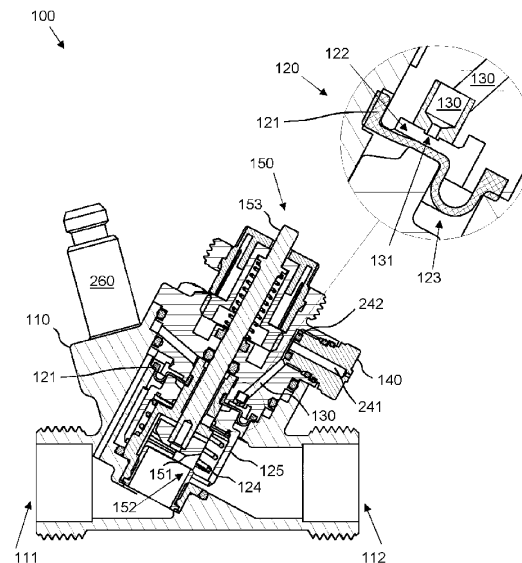


Figure 6

(57) Abstract: A valve arrangement (100) for controlling fluid flow and a fluid distribution system (300) comprising the valve arrangement. The valve arrangement comprises a valve body (110) having a valve inlet (111) and a valve outlet (112), and a differential pressure controller (120) comprising a movable membrane (121). The movable membrane (121) is held in an end position when a differential pressure between first and second membrane sides is below a threshold value. The movable membrane (121) is movable in response to the differential pressure when the differential pressure is above the threshold value. The valve arrangement (100) further comprises an inspection passage (130) configured to receive fluid from the valve inlet (111) or the valve outlet (112) when the differential pressure is above the threshold value. The differential pressure controller (120) is configured to close the inspection passage (130) when the differential pressure is below the threshold value. Presence of fluid in the inspection passage (130) is indicative of the differential

[Continued on next page]

RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, 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).

Published:

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

pressure being above the threshold value.