

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

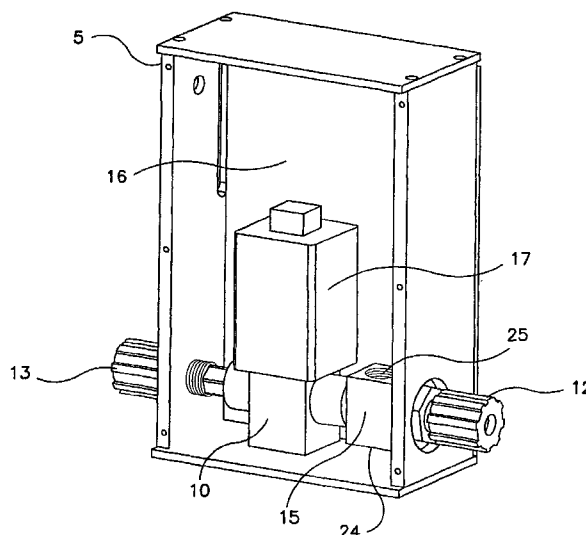
PCT

(10) International Publication Number
WO 2004/010086 A3

- (51) International Patent Classification⁷: **G06F 19/00**, G01F 17/00, 1/12, 1/50
- (21) International Application Number: PCT/US2003/022533
- (22) International Filing Date: 18 July 2003 (18.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/397,162 19 July 2002 (19.07.2002) US
- (71) Applicant (for all designated States except US): **MYKROLIS CORPORATION** [US/US]; 129 Concord Road, Billerica, MA 01821-4600 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WARGO, Christopher** [US/US]; 45 Brook Street, Wellesley, MA 02482 (US). **NIERMEYER, Karl, J.** [US/US]; 52 Groton Road, Tyngsboro, MA 01879 (US). **SHYU, Jieh-Hwa** [US/US]; 6 Starr Avenue East, Andover, MA 01810 (US). **BRODEUR, Craig, L.** [US/US]; 26 Dalton Road, Marlborough, MA 01752 (US). **BASSER, William** [US/US]; 352 West Shaft Road, North Adams, MA 01247 (US).
- (74) Agents: **LEMACK, Kevin, S.** et al.; Nields & Lemack, 176 E. Main Street - Suite 7, Westboro, MA 01581 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: FLUID FLOW MEASURING AND PROPORTIONAL FLUID FLOW CONTROL DEVICE



(57) **Abstract:** A fluid flow measuring and control device for measuring a flow rate based on a pressure drop created by a restrictive flow element (15). The device includes a proportional flow valve (10) having a fluid inlet and a fluid outlet and an actuator (17) for modulating the proportional flow valve (10). The restrictive flow element (15) includes a fluid inlet and a fluid outlet in communication with the proportional flow valve (10) and creates a pressure drop between the restrictive flow element fluid inlet and outlet. The device also includes means (24, 25) for measuring the pressure drop, means (16) for calculating the flow rate based on the pressure drop, and control means (not shown) that communicates with the pressure drop measuring means (24, 25) and the actuator (17) for controlling the flow of fluid through a proportional flow valve (10) in response to the measured pressure drop.

WO 2004/010086 A3



(88) Date of publication of the international search report:

7 October 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.