



- (51) International Patent Classification:
G01F 25/00 (2006.01) *G05D 7/06* (2006.01)
- (21) International Application Number:
PCT/US2013/020790
- (22) International Filing Date:
9 January 2013 (09.01.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
13/354,988 20 January 2012 (20.01.2012) US
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- (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, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, 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, 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, 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,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Published:

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

- (54) Title: SYSTEM FOR AND METHOD OF MONITORING FLOW THROUGH MASS FLOW CONTROLLERS IN REAL TIME

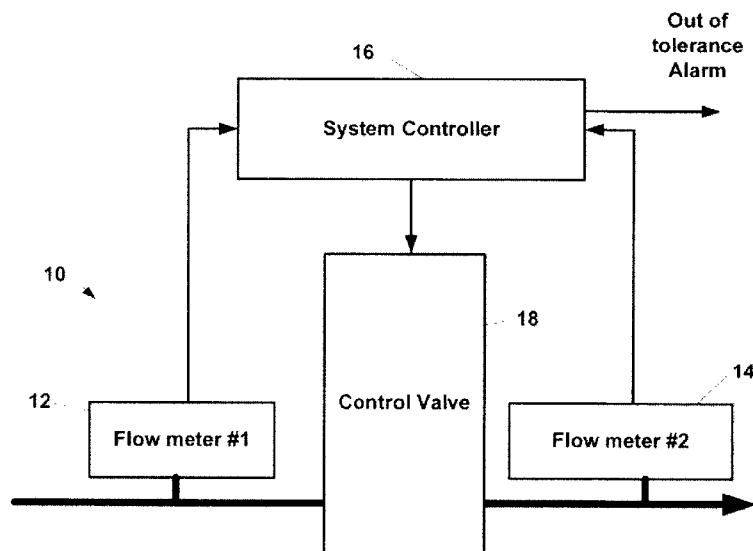


FIG. 1

(57) Abstract: A mass flow controller comprises: a first flow meter constructed and arranged to measure flow rate of mass through the mass flow controller; a second flow meter constructed and arranged to measure flow rate of mass through the mass flow controller; a control valve constructed and arranged so as to control the flow rate of mass through the mass flow controller in response to a control signal generated as a function of the flow rate as measured by one of the flow meters; and a system controller constructed and arranged to generate the control signal, and to provide an indication when a difference between the flow rate of mass as measured by the first flow meter and the flow rate of mass as measured by the second flow meter exceeds a threshold.