



- (51) **International Patent Classification:**  
*G01K 1/02* (2006.01) *G01F 1/84* (2006.01)
- (21) **International Application Number:**  
PCT/US2010/056856
- (22) **International Filing Date:**  
16 November 2010 (16.11.2010)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
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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, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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).

**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

**Published:**

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

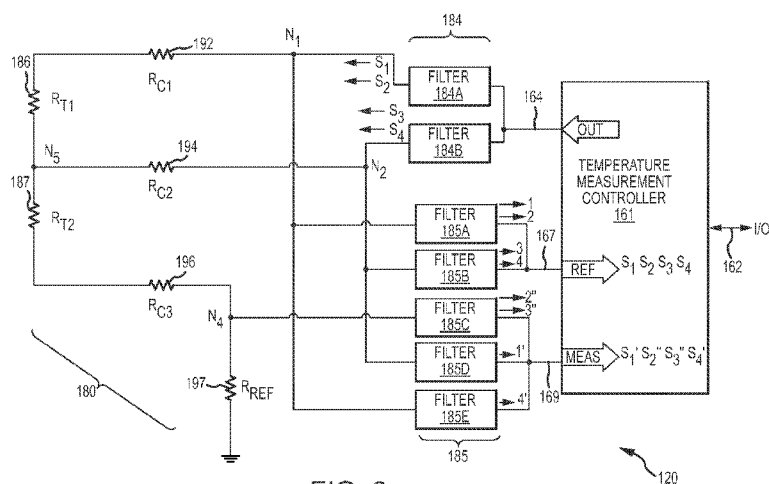
(54) **Title:** MULTIPLE TEMPERATURE SENSOR SYSTEM

FIG. 3

(57) **Abstract:** A multiple temperature sensor system (120) includes a temperature sensor network (180) including temperature-sensing resistors  $R_{T1}$  and  $R_{T2}$  (186, 187) and frequency-selective filters (184, 185) coupled to the plurality of temperature-sensing resistors  $R_{T1}$  and  $R_{T2}$  (186, 187). The frequency-selective filters (184, 185) pass distinct time-varying signals into the temperature sensor network (180) and pass attenuated distinct time-varying signals out. The system (120) further includes a temperature measurement controller (161) coupled to the temperature sensor network (180) and configured to inject the distinct time-varying signals into the temperature sensor network (180), receive the attenuated distinct time-varying signals in response to the injection, with the attenuated distinct time-varying signals being attenuated by the temperature sensing resistors (186, 187), and generate two or more substantially simultaneous temperature values from the attenuated distinct time-varying signals.