

9900365-9

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: G01B 7/02, 7/14		A1	(11) International Publication Number: WO 98/58230
			(43) International Publication Date: 23 December 1998 (23.12.98)
(21) International Application Number: PCT/GB98/01749 (22) International Filing Date: 16 June 1998 (16.06.98) (30) Priority Data: 9712848.2 18 June 1997 (18.06.97) GB (71) Applicant (for all designated States except US): QUEENSGATE INSTRUMENTS LIMITED [GB/GB]; Queensgate House, Waterside Park, Bracknell, Berkshire RG12 1RB (GB). (72) Inventor; and (75) Inventor/Applicant (for US only): HICKS, Thomas, Rudolph [GB/GB]; 170 Sutton Court Road, Chiswick, London W4 3HR (GB). (74) Agents: HALE, Peter et al.; Kilburn & Strode, 20 Red Lion Street, London WC1R 4PJ (GB).			(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published With international search report.

(54) Title: CAPACITANCE MICROMETER

(57) Abstract

A capacitance micrometer which is capable of measuring displacements over a large range of frequencies with low noise levels comprises a variable oscillator (JR1, L1, Cmic) including a variable capacitance (Cmic) the oscillator frequency varying with the capacitance, the oscillator being mounted in a probe (P) adjacent an object to be measured, and a discriminator (D) coupled to the probe by a coaxial cable (W), the discriminator assessing the oscillator frequency in relation to a predetermined frequency value, which may either be provided by an analogue resonant circuit (Figure 3) or a digital circuit wherein the predetermined frequency value is provided by a reference clock signal which delays the oscillator

frequency symbol by a predetermined amount and multiplies it with an undelayed version of the oscillator signal to give a voltage signal whose value varies in relation to the frequency of the oscillator signal (Figures 6, 7). The oscillator frequency signal may be reduced in frequency by a heterodyne arrangement, and the discriminator included in a phase lock loop arrangement. Various constructions of probe are described.

