

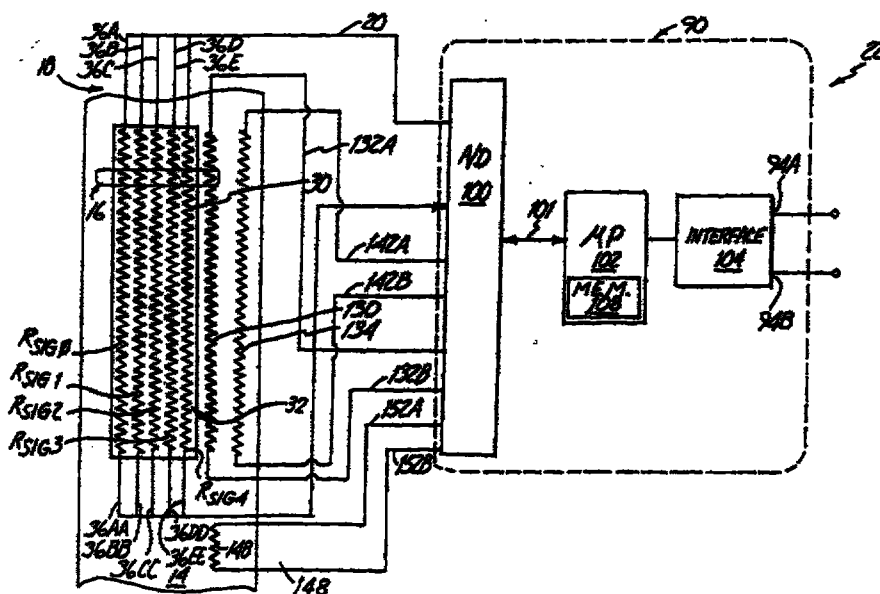


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: G01D 5/12, 5/16, F16K 37/00	A1	(11) International Publication Number: WO 95/30128 (43) International Publication Date: 9 November 1995 (09.11.95)
(21) International Application Number: PCT/US95/05239 (22) International Filing Date: 27 April 1995 (27.04.95) (30) Priority Data: 08/234,182 28 April 1994 (28.04.94) US (71) Applicant: ROSEMOUNT INC. [US/US]; 12001 Technology Drive, Eden Prairie, MN 55344 (US). (72) Inventors: SITTLER, Fred, C.; 6526 Aster Trail, Excelsior, MN 55331 (US). HOWARD, Kathryn, M.; 3920 Hawthorne Circle, Excelsior, MN 55331 (US). (74) Agents: KOEHLER, Steven, M. et al.; Westman, Champlin & Kelly, Suite 720 - TCF Tower, 121 South Eighth Street, Minneapolis, MN 55402-2827 (US).		(81) Designated States: CA, CN, JP, RU, SG, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

9611773-4

(54) Title: ANALOG WEIGHTED BINARY ABSOLUTE POSITION ENCODER



(57) Abstract

A magnet (16) mounted on a moving stem (12) or rotary member of a valve generates magnetic flux over part of a stationary member (14) of the valve which has a uniquely patterned set of magnetoresistive sense resistors (RSIG0-RSIG4) and three reference resistors (130, 134, 148) disposed thereon. The distance between two adjacent patterns can be equally spaced, or can be compressed for valves with non-linear characteristics in order to achieve increased resolution over a specific portion of the valve travel. Other embodiments can use a light source, beta radiation or neutron radiation as the source of flux, the pattern for each embodiment's sensor having some material responsive and some unresponsive to the flux. The sensor (18) can provide feedback representative of position in a valve positioner, or functions as the position sensor in a position transmitter.