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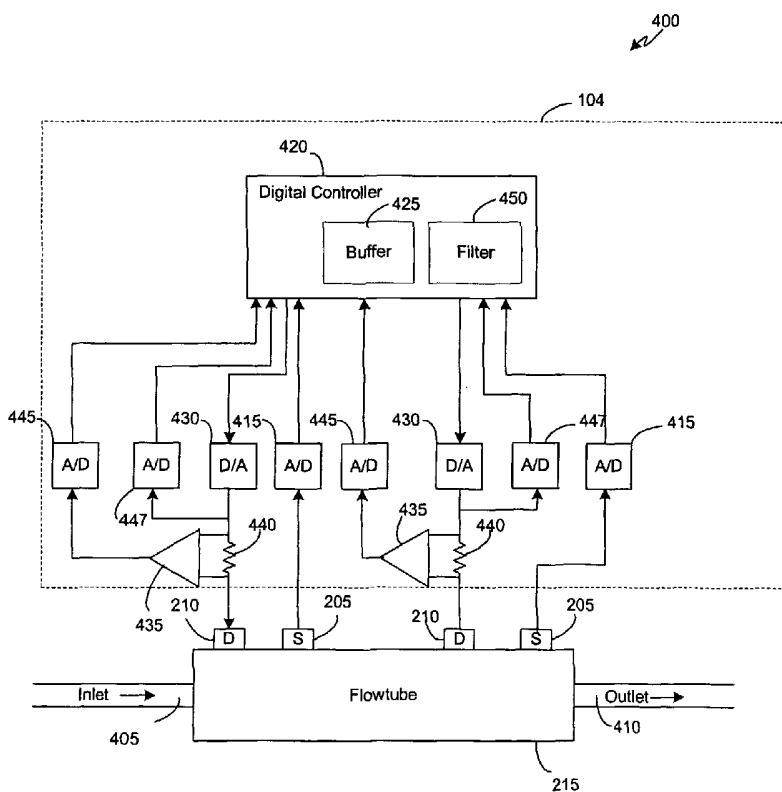
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[Continued on next page]

(54) Title: DRIVE TECHNIQUES FOR A DIGITAL FLOWMETER



(57) Abstract: Drive techniques for a digital flowmeter are described. The drive techniques account for delays caused during digital signal processing of sensor signals that correspond to a motion of a flowtube, as well as drive signals that impart motion to the flowtube. Such delays may be caused by a variety of factors, including delays associated with analog/digital conversion of the signals and/or filtering of the signals. The techniques include open-loop techniques and closed-loop techniques, which can be used separately or together during the start-up and operation of the digital flowmeter. Startup and operational techniques for a digital flowmeter also are described. The startup and operational techniques select an optimal mode of operation for the digital flowmeter, depending on a current environment of the flowmeter, where the mode of operation might be chosen from, for example, a random sequence mode, a positive feedback mode, or a digital synthesis mode. In either the positive feedback mode or the digital synthesis mode, the digital flowmeter may revert to a previous

mode to regain stable and desired oscillation of the flowtube, such as might be required during a recovery operation associated with a disturbance to an operation of the digital flowmeter.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01F1/84

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 301 973 B1 (SMITH WILLIAM C) 16 October 2001 (2001-10-16) abstract; figures 1-3 column 9, line 27 - line 29	83
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A	US 2002/038186 A1 (HENRY MANUS P ET AL) 28 March 2002 (2002-03-28) cited in the application abstract; figures 1-5	1,26,40
A	----- WO 02 08703 A (MICRO MOTION INC) 31 January 2002 (2002-01-31) abstract; figures 9,10 page 19, line 5 - line 7 -----	47,68

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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