

Title (en)

PUMP CONTROLLER FOR PRECISION PUMPING APPARATUS

Title (de)

PUMPENSTEUERGERÄT FÜR HOCHPRÄZISIONSDOSIERPUMPE

Title (fr)

CONTROLEUR DE POMPE POUR APPAREIL DE POMPAGE DE PRECISION

Publication

**EP 1133639 B1 20040609 (EN)**

Application

**EP 99965911 A 19991123**

Priority

- US 9928002 W 19991123
- US 10956898 P 19981123

Abstract (en)

[origin: WO0031416A1] A pump controller and pump controlling method for dispensing a precise amount of low viscosity fluid are provided in which the problems of double dispenses and stuttered dispenses are avoided. In particular, the timing of the valves and motors in the pumping apparatus are adjusted to avoid these problems.

IPC 1-7

**F04B 13/00**; F04B 49/06; F04B 7/00

IPC 8 full level

**F04B 7/00** (2006.01); **F04B 13/00** (2006.01); **F04B 43/02** (2006.01); **F04B 49/06** (2006.01)

CPC (source: EP US)

**F04B 7/0076** (2013.01 - EP); **F04B 13/00** (2013.01 - EP US); **F04B 43/02** (2013.01 - EP US); **F04B 49/065** (2013.01 - EP); **F04B 2201/0201** (2013.01 - EP); **F04B 2201/0601** (2013.01 - EP); **F04B 2205/03** (2013.01 - EP)

Cited by

US9816502B2; US9631611B2; US9617988B2; US7383967B2; EP2354546A1; DE202010002145U1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

**WO 0031416 A1 20000602**; AT E268867 T1 20040615; CN 1175182 C 20041110; CN 1331783 A 20020116; CN 1590761 A 20050309; DE 69917927 D1 20040715; DE 69917927 T2 20050623; EP 1133639 A1 20010919; EP 1133639 B1 20040609; TW 593888 B 20040621

DOCDB simple family (application)

**US 9928002 W 19991123**; AT 99965911 T 19991123; CN 200410079193 A 19991123; CN 99815053 A 19991123; DE 69917927 T 19991123; EP 99965911 A 19991123; TW 88120448 A 19991123