Title (en)

AUTONOMOUS FLUID CONTROL SYSTEM HAVING A FLUID DIODE

Title (de)

AUTONOMES FLUIDSTEUERUNGSSYSTEM MIT EINER FLUIDDIODE

Title (fr)

SYSTÈME DE COMMANDE DE FLUIDE AUTONOME COMPRENANT UNE DIODE À FLUIDE

Publication

EP 2780540 B1 20170906 (EN)

Application

EP 11875961 A 20111118

Priority

US 2011061331 W 20111118

Abstract (en)

[origin: WO2013074113A1] Apparatus and methods for autonomously controlling fluid flow in a subterranean well are presented, and in particular for providing a fluid diode to create a relatively high resistance to fluid flow in one direction and a relatively low resistance to fluid flowing in the opposite direction. The diode is positioned in a fluid passageway and has opposing high resistance and low resistance entries. In one embodiment, the high resistance entry has a concave, annular surface surrounding an orifice and the low resistance entry has a substantially conical surface. The concave, annular surface of the high resistance entry preferably extends longitudinally beyond the plane of the orifice. In a preferred embodiment, the fluid will flow in eddies adjacent the concave, annular surface.

IPC 8 full level

E21B 34/08 (2006.01); **E21B 41/00** (2006.01); **E21B 43/12** (2006.01)

CPC (source: EP)

E21B 34/08 (2013.01); **E21B 41/0078** (2013.01); **E21B 43/12** (2013.01)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

WO 2013074113 A1 20130523; AU 2011381058 A1 20140522; AU 2011381058 B2 20160519; BR 112014011842 A2 20170502; BR 112014011842 B1 20200623; CA 2844928 A1 20130523; CA 2844928 C 20160823; CN 104040109 A 20140910; CN 104040109 B 20170118; EP 2780540 A1 20140924; EP 2780540 A4 20160302; EP 2780540 B1 20170906; SG 2014008791 A 20140428

DOCDB simple family (application)

US 2011061331 W 20111118; AU 2011381058 A 20111118; BR 112014011842 A 20111118; CA 2844928 A 20111118; CN 201180074888 A 20111118; EP 11875961 A 20111118; SG 2014008791 A 20111118