

Title (en)

METHOD AND DEVICE FOR MEASURING THE INJECTION RATE OF AN INJECTION VALVE FOR LIQUIDS

Title (de)

VERFAHREN UND VORRICHTUNG ZUR MESSUNG DER EINSPRITZRATE EINES EINSPRITZVENTILS FÜR FLÜSSIGKEITEN

Title (fr)

PROCEDE ET DISPOSITIF POUR MESURER LE DEBIT D'INJECTION D'UN INJECTEUR DE LIQUIDES

Publication

EP 1561029 A1 20050810 (DE)

Application

EP 03809686 A 20030604

Priority

- DE 0301852 W 20030604
- DE 10249754 A 20021025

Abstract (en)

[origin: WO2004040129A1] The invention relates to a method for measuring the injection rate of an injection valve for liquids, preferably liquid fuel, according to which the injection valve (3) injects the liquid into a liquid-filled sensing volume (1) that is sealed on all sides, a pressure sensor (20) being arranged inside the sensing volume. The sound velocity is determined and, as a consequence, the injection quantity (<m) or the progress of the injection rate (r (t)) is calculated from the measured pressure values (p (t)) or by means of a separate measurement. The inventive device comprises a sensing volume (1), an injection valve (3) which protrudes into the sensing volume by means of at least one injection port (12), and a pressure sensor (20) that is disposed within the pressure node of the natural vibration of the pressure of the sensing volume (1).

IPC 1-7

F02M 65/00

IPC 8 full level

F02M 65/00 (2006.01)

CPC (source: EP US)

F02M 65/001 (2013.01 - EP US); **F02M 65/005** (2013.01 - EP US)

Citation (search report)

See references of WO 2004040129A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2004040129 A1 20040513; AT E337484 T1 20060915; DE 10249754 A1 20040506; DE 50304788 D1 20061005; EP 1561029 A1 20050810; EP 1561029 B1 20060823; EP 1561029 B2 20110706; JP 2006504038 A 20060202; JP 4130823 B2 20080806; US 2006156801 A1 20060720; US 7171847 B2 20070206

DOCDB simple family (application)

DE 0301852 W 20030604; AT 03809686 T 20030604; DE 10249754 A 20021025; DE 50304788 T 20030604; EP 03809686 A 20030604; JP 2004547363 A 20030604; US 53250405 A 20051116