

Title (en)
Method and apparatus for controlling a spark ignited internal combustion engine

Title (de)
Verfahren und Vorrichtung zur Steuerung des Betriebs einer fremdgezündeten Brennkraftmaschine

Title (fr)
Procédé et dispositif de contrôlé d'un moteur à combustion interne, à allumage commandé

Publication
EP 0886055 A1 19981223 (FR)

Application
EP 98401507 A 19980619

Priority
FR 9707664 A 19970619

Abstract (en)
The connector control process involves controlling injection using calculating electronics. The calculating electronics has three parameters which are applied respectively to controlling air, sparking and richness of a combustion mixture. Linear dynamics of the production of the connector is performed using a logarithmic function and its inverse during engine development. An optimal gain is also calculated during engine development. When the engine is running the calculating electronics determine state variables at each neutral point. A magnitude of a mass of air absorbed and a mass of air exiting a collector as well as mixture richness are calculated. Real and projected coupling values are determined. Control variables for a linear quadratic integral are calculated.

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F02D 41/14; F02D 37/02

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Citation (search report)
• [DA] EP 0185552 A2 19860625 - NIPPON DENSO CO [JP]
• [A] EP 0337366 A2 19891018 - TOYOTA MOTOR CO LTD [JP]
• [A] E. KAMEI ET AL.: "APPLICATION OF REDUCED ORDER MODEL TO AUTOMOTIVE ENGINE CONTROL SYSTEM", PROCEEDING OF THE 1987 AMERICAN CONTROL CONFERENCE, vol. 3, 10 June 1987 (1987-06-10) - 12 June 1987 (1987-06-12), MINNEAPOLIS (US), pages 1815 - 1820, XP00042674
• [A] TSUTOMU TABE ET AL.: "ON THE APPLICATION OF MODERN CONTROL THEORY TO AUTOMOTIVE ENGINE CONTROL", I.E.E.E. TRANSACTION ON INDUSTRIAL ELECTRONICS, vol. IE-34, no. 1, February 1987 (1987-02-01), NEW YORK, USA, pages 35 - 39, XP002058209

Cited by
US6955107B2

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