

Title (en)

AIR/FUEL MIXTURE RATIO CONTROL SYSTEM FOR INTERNAL COMBUSTION ENGINE WITH FEATURE OF LEARNING CORRECTION COEFFICIENT INCLUDING ALTITUDE DEPENDENT FACTOR

Publication

EP 0292973 B1 19920722 (EN)

Application

EP 88108437 A 19880526

Priority

- JP 12989387 A 19870528
- JP 13182687 A 19870529

Abstract (en)

[origin: EP0452996A2] A method for controlling a mixture ratio of an air/fuel mixture for an engine, comprises the steps of: monitoring (1002) preselected basic first engine operation parameter to produce a first sensor signal indicative thereof; monitoring (1204) an air/fuel mixture ratio indicative parameter (V_{ox}) for producing a second sensor signal indicative of a deviation of the air/fuel mixture from a stoichiometric value; deriving (1002, 1006) a basic fuel metering amount (Tp) on the basis of said first sensor signal value; deriving (1008) an air/fuel ratio dependent correction factor (COEF) from said second sensor signal value; deriving (1610) a first correction coefficient (K_{ALT}) on the basis of said air/fuel ratio dependent correction factor (COEF), which first correction coefficient is commonly applicable for correcting said basic fuel metering amount (Tp) in all engine driving ranges, said step (1610) comprising the updating of the first correction coefficient (K_{ALT}) when a feedback condition is satisfied; deriving (1012) a second correction coefficient (K_{MAP}) which is variable depending upon the engine driving range on the basis of said air/fuel ratio dependent correction factor (COEF) and setting a plurality of second correction coefficients (K_{MAP}) for respective engine driving ranges and updating each of said second correction coefficients with an instantaneous value derived based on said air/fuel ratio dependent correction factor in the corresponding engine driving range; detecting (1002-1014) an engine driving condition on the basis of said first sensor values and governing said steps (1610, 1012) of deriving said first and second correction coefficients (K_{ALT} , K_{MAP}) depending upon the detected engine driving condition; and correcting (1018, 1020) said basic fuel metering amount (Tp) with said first and second correction coefficients (K_{ALT} , K_{MAP}). For achieving an enhanced accuracy in determining the fuel metering amount the step of deriving the first correction coefficient (K_{ALT}) further comprises the steps of determining (1724) a first component ratio indicative value (k_1) based on at least one of an engine load indicative signal (α , Q), a basic fuel injection amount (Tp) and the engine speed (N); determining a predetermined number of engine driving ranges for which the second correction coefficient (K_{MAP}) was recently updated; detecting (1726) for each range the difference between a present second correction coefficient (K_{MAP}) and a previous one for distinguishing between positive difference regions, where the difference between the present and the previous second correction coefficient (K_{MAP}) for this region is positive, and negative difference regions; determining (1726-1732) a second component ratio indicative value (k_2) based on the number of positive and/or negative difference regions; and modifying (1732-1736) the first correction coefficient (K_{ALT}) based on said first and second component ratio indicative values (k_1 , k_2).

IPC 1-7

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IPC 8 full level

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