Title (en)

A PRESSURE REGULATOR DEVICE FOR FUEL PLANTS IN INTERNAL COMBUSTION ENGINES, PARTICULARLY FOR THE AUTOMOTIVE FIELD

Title (de)

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Title (fr)

DISPOSITIF RÉGULATEUR DE PRESSION POUR DISPOSITIFS DE COMBUSTIBLE DANS DES MOTEURS À COMBUSTION INTERNE, EN PARTICULIER POUR LE DOMAINE AUTOMOBILE

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Application

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Priority

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Abstract (en)

[origin: WO2014045218A1] A pressure regulator device (10) for fuel gas plants in internal combustion engines, particularly for the automotive field, is described, the device being interposed between a tank for the gas at high pressure and a line (4) for sending the gas to the engine. The device comprises at least a first stage (1) for gas pressure reduction, bearing respective gas inlet (la) and outlet (lb) openings, the inlet opening (la) being in fluid communication with the gas tank, the pressure of the gas regulated by the first stage (2) being of an intermediate value between the gas pressure upstream and downstream of the device, at least a second stage (2) for gas pressure regulation, of the type comprising a regulating resilient membrane (15) placed downstream of the first stage (1), the membrane separating between them a first and a second chamber (16, 17) of the second stage (2), the regulated gas being supplied with the intermediate pressure into the first chamber (16) and the gas being delivered from the first chamber (16) at the preselected pressure for sending to the engine. The second stage (2) bears respective gas inlet (2a) and outlet (2b) openings, the outlet opening (2b) from the second stage (2) being in fluid communication with the line (4) for sending the gas to the engine. The device further comprises a secondary circuit associated with the device and connected in parallel with the second pressure regulation stage (2), the circuit comprising an auxiliary duct (21) designed to connect, with fluid communication, the second chamber (17) of the second stage (2) with the line (4) for sending gas to the engine, a valve unit comprising a valve seat (22) with a respective shutter member (23) and an electromagnetic actuator (24) operatively connected to the shutter member (23) in order to control the latter with respect to the valve seat (22), the actuator (24) being controlled by an electronic control unit (30) which, according to the pressure value at the outlet from the device (10) controls the opening of the shutter member (23) in order to regulate the gas pressure in the first chamber (16) of the second stage (2), so as to keep the pressure value at the outlet of the device stable.

IPC 8 full level

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