

Injectronics

Remanufactured Automotive Electronics Components

TECHNICAL BULLETIN

Document number: T0036

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Make: Nissan

Model: Pintara R31 RWD CA20E

Subject: Fuel pump control

At Injectronics we are commonly asked questions regarding the operation of the fuel pump control on the Nissan R31 Pintara. The faults described range from erratic / hunting idle to no fuel pump operation at all. As these particular vehicles are now more than twelve years old, these faults are becoming more and more prevalent yet can often be easily diagnosed.

12V power is directly applied to one side of the pump while the current control circuitry, within the ECM regulates the earth to the fuel pump. Upon turning on the ignition, the fuel pump should run for approximately 5 seconds in order to prime the system for initial start up. When the engine is started, the fuel pump should operate with approximately 13 volts for 16 seconds to allow full fuel pressure during cranking and for a few seconds after start up to help stabilise engine idle. The fuel pump voltage will then drop to approximately 10 volts if the idle switch contacts are closed. The fuel pump voltage will only return to 13 volts if engine speed is above 3000rpm, if the engine is under heavy load or the engine temperature is above 100°C or below 10°C. Problems arise when the contact circuit within the ECM begins to deteriorate, causing engine idle to become erratic and hunt. The reason for this is the fuel pump voltage begins to fluctuate between 10 and 13 volts at idle. These voltage fluctuations cause excessive current to be passed through the ECM fuel pump circuit causing discolouration and often burning of the ECM circuit board within the current control circuitry.

To test for a possible current control problem, check the voltage at the fuel pump ground (ECM pin 106). With the pump at idle pressure the voltage will be approximately 3.5 volts and approximately 1.0 volts at full pressure. To check for fuel pump power supply, remove the 15 pin connector from the ECM, probe into pin 106 of the connector and check for battery voltage. If battery voltage is not indicated carry out a wiring harness continuity check and test 10 amp in line fuse.

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