BMW – PORSCHE – VOLVO

#T0066

Make: BMW, Porsche, Volvo

Model: Bosch Motronic

Subject: No start pin outs

The early Bosch Motronic system used in the early to mid 1980's was used by Volvo, BMW, Porsche and other manufacturers. It controls ignition, injection and fuel pump and later models also had IAC and O2 functions. It uses a 35 pin plug ECM and 2 crankshaft sensors both mounted in the bell housing. One is mounted above the flywheel teeth and produces a pulse as each tooth passes the sensor. The other sensor is mounted slightly further away from the engine and detects a pin mounted in the flywheel. Only one pulse per engine revolution is produced by this sensor and the ECM requires this pulse to initially start. Once this pulse has been obtained by the ECM, the sensor can be disconnected and the vehicle will still run.

Common ECM faults:

a. Intermittent no injection / ignition or fuel pump
b. Vehicle starts then stalls shortly after start up
c. Intermittently runs extremely rich at operating temperature
d. No idle speed control (early units did not control the IAC)

Common vehicle faults:

Although ECM's are regularly repaired by Injectronics, there are other problems that occur on the vehicle.

a. Plugs swapped at crank angle sensors (identical sensors and plugs)
b. Faulty partially or fully shorted or open crank angle sensor.
c. Supply voltage faults eg, relays
d. Earth problems
e. Reference mark sensor pin broken or missing

There are a number of wiring versions for the first of the Bosch Motronic 35 pin systems. The very first had 12v power at pins 10 and 29 and earth at pin 35. These were used on BMW vehicles in the early 80's. Injectronics has found 3 part numbers used in Australia but there may be others. They are 0261 200 001, 002 and 004. The 2nd version had power at pins 18 and 35 and were used on many BMW and Porsche models during the early to mid/late 80's as well as the Volvo 760 turbo 84-86.

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No Start:

a. First determine if you have lost ignition, injection and fuel pump. If you have none of these 3 outputs check supplies and earths.
b. Check that there is a static voltage of approximately 1.5v at pins 8 and pins 27 (speed sensor)
c. Check that there is a static voltage of approx 1v at pins 25 and 26 (reference mark sensor)
d. Check with an oscilloscope while cranking that there is a continual sine wave speed signal pulse, greater than 2.5p.p across pins 8 and 27
e. Check with an oscilloscope while cranking that there is a reference mark signal pulse greater than 2v above the static voltage, eg if the static voltage is 1v the pulse should be 3v above ground.(Pins 25 & 26)

The following pin description is a generic representation and may not apply to your vehicle. For any further assistance please call the Injectronics technical department.

1	Ignition coil trigger	19	Ground
2	TPS idle	20	Fuel pump ground
3	TPS full	21	
4	Start signal	22	AFM temp sensor
5	Ground	23	Shielding – O2
6	AFM ground	24	O2 sensor
7	AFM signal	25	Reference mark sensor
8	Speed sensor	26	Reference mark sensor
9	AFM supply	27	Speed sensor
10	Performance curve change	28	Ground
11		29	
12		30	
13	Coolant	31	
14	Injector signal	32	
15	Injector signal	33	IAC
16	Ground	34	IAC
17	Ground	35	Power supply
18	Power supply		