UK MKIII Supra Owners Group

# Reading ECU codes

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| Date | 29/08/07 |
| Version | 1.00 |
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Step 1 - Locate the diagnostic plug on your car which is in the engine bay

Step 2 - Open the plastic lid and you will see a number of connectors and a description of each on in the lid itself

Step 3 - Use a piece of wire/paper clip/something metal to short E1 with either TE1 (MS) or T (MA)

Step 4 - Insert keys and turn them to the 'ON' position - do not start the car! The engine warning lamp will now flash a sequence of error codes at you

Interpreting the codes:

If you haven't got any stored error codes the light will simply flash on then off at quarter second intervals

If you have any codes they will come out in numerical order (Smallest first). Once the codes are displayed, there will be a pause for 4.5 seconds then it will start again so don't worry if you miss them first time round

Each code will be a two digit number represented by a series of 0.5 second flashes for the numbers and a gap of 1.5 seconds between digits. Between each code is a 2.5 second pause.

An example, code 24 then 31 would be:

Two 0.5 second flashes, a 1.5 second pause, four 0.5 second flashes

Then there would be a 2.5 second pause followed by

Three 0.5 second flashes, a 1.5 second pause, 1 0.5 second flash

Then after 4.5 seconds it starts again

A/C = Air conditioning
AFM = Air flow meter
AFR = Air/Fuel Ratio
CPS = Crank Position Sensor
ECU = Electronic control unit
EGR = Exhaust Gas Recirculation
HAC = High Altitude Compensation
RPM = Revolutions per minute
TPS = Throttle Position Sensor

| Code(s) | Problem area | Description | Area(s) to investigate |
|---|---|---|---|
| 11 | ECU | Interrupt to ECU power supply | • Ignition switch (or circuit)<br>• Main relay (or circuit) |
| 6/12 | RPM signal | ECU has no "NE" or "G" signal within 2 seconds of cranking | • Alarm/immobiliser<br>• CPS/distributor (or circuits)<br>• Starter signal circuit |
| 13 | RPM signal | ECU has no "Ne" signal with revs >1000rpm | • CPS/distributor (or circuits) |
| 3/14 | Ignition | ECU has no "IGF" signal | • Alarm/immobiliser<br>• Igniter + coil (or circuits) |
| 5/21 | O2 sensor | O2 (lambda) sensor problem in closed loop operation | • Lambda sensor / circuit |
| 5/21 | O2 sensor | **7MGTE**: Open or short circuit in heater wiring for sensor | • Lambda sensor heater / circuit |
| 4/22 | Water temp | Open or short circuit in water temp sensor signal | • Water temp sensor / circuit |
| 8/24 | Intake temp | Open or short circuit in intake air temp sensor signal | • Air temp sensor / circuit<br>• AFM, connector and wiring |
| 25 | AFR lean | Problem with mixture detected (excessive lean) | • Fuel injector / circuit<br>• Fuel pressure<br>• AFM<br>• Air intake system<br>• O2 sensor / circuit<br>• Ignition system<br>• Water temp sensor |
| 26 | AFR rich | Problem with mixture detected (excessive rich) | • See above (code 25)<br>• Ignition sensor |
| 27 | Sub-O2 sensor | **California 7MGE**: Problem with sub-oxygen signal | • Sensor / circuit<br>• Heater / circuit |
| 28 | O2 sensor | See code 21 | See code 21 |
| 2/31 | AFM signal | **7MGE**: VC open circuit/short circuit between VS and E2 when idle contacts closed<br>**7MGTE**: Open or short circuit in AFM signal | • AFM, connector and wiring |
| 32 | AFM signal | **7MGE**: Open circuit in E2 or short circuit between VC and VS | • AFM, connector and wiring |
| 14/34 | Turbo pressure | **7MGTE**: Turbo pressure abnormal (could be fuel cut, check for boost leaks and bleed valves/shims/boost controller) | • Turbo<br>• AFM |

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| | | | • Turbo pressure sensor<br>• Intercooler |
| 35 | HAC signal | **7MGTE**: Open or short circuit in HAC circuit | • Turbo pressure sensor<br>• ECU |
| 7/41 | TPS signal | Open or short circuit in TPS signal (VTA) | • TPS sensor / circuit / wiring |
| 9/42 | Speed sensor | 1. No "SPD" signal to ECU for 8 seconds between 2500rpm and 400rpm (7MGTE) or 4500rpm (7MGE)<br>2. Coolant temp < 80ºC<br>3. Neutral start switch is off | • Speed sensor / circuit<br>On imports, this can be due to improperly delimited vehicles |
| 10/43 | Starter signal | ECU has no "STA" signal when stationary and <=800rpm | • Ignition switch / circuit |
| 11/51 | Switch state | ECU has no "IDL" (TPS), "NSW" (Neutral start switch) or "A/C" during diagnostics | • TPS most likely-see code 41<br>• A/C switch / circuit<br>• A/C amplifier<br>• NSW switch circuit |
| 12/52 | Knock sensor | Open or short circuit in knock sensor signal<br>Note: Heat/age can cause the wiring to deteriorate. You can rewire the sensor to the ECU using the old co-axial cable for networks or shielded speaker cable. You do not need to ground the shield | • Knock sensor / circuit<br>• Check connector plugs |
| 13/53 | Knock control | Knock control signal fault | • ECU |
| 71 | EGR fault | **California:** EGR gas temp low during operation or gas temp signal open circuit | • EGR system, sensors or VSV |
| 72 | A/C | Compressor relay/signal fault | • Compressor/relay circuit |

Note : The ECU should be considered as a potential 'Area to investigate' for **all** codes.