Ferrari 328 Ignition ECU Testing (Microplex MED 806A)

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November 2004 v1.0

Tools Required:

- 10mm combination wrench
- Small Philips screwdriver
- Digital Multimeter with ohm, AC, DC capabilities

First, determine the “zero” point for your individual multimeter (ex: mine reads 0.7ohms at rest):

The Microplex ECU is located in the passenger (LH) rear compartment. Unzip the cover and slide the carpet cover plate & remove underlayment to reveal the ECU mounting plate:

Remove the four 10mm screws (each with lock & serrated washer):

Pivot the plate out, turning over to expose wiring and ECU:

Remove the main ECU multi-terminal connector. Remove the small screw on top and gently slide the rubber boot back. Two more screws are exposed at the base. Remove both and the back reinforcement plate lifts off. The multi-connector is then maneuvered out of the cover:


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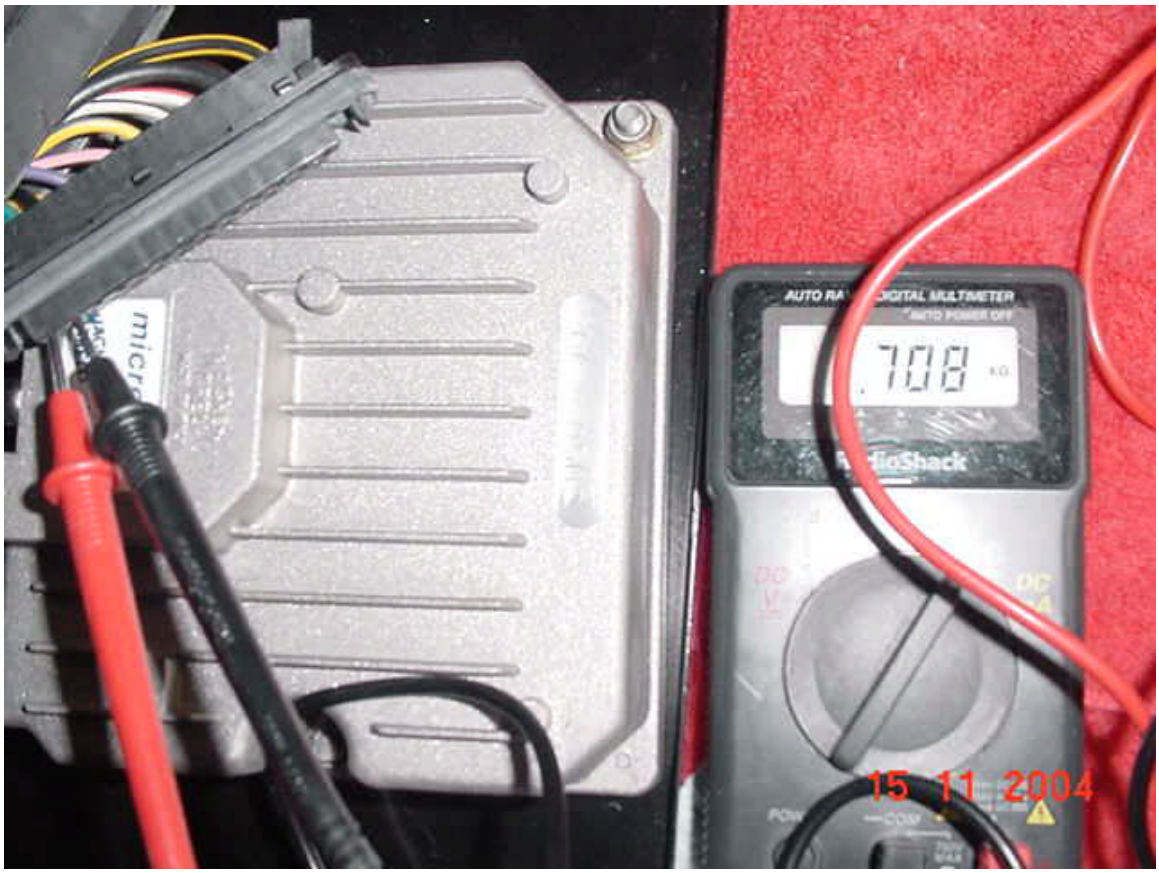
Terminal #s are clearly marked on the connector. Many positions are unoccupied:

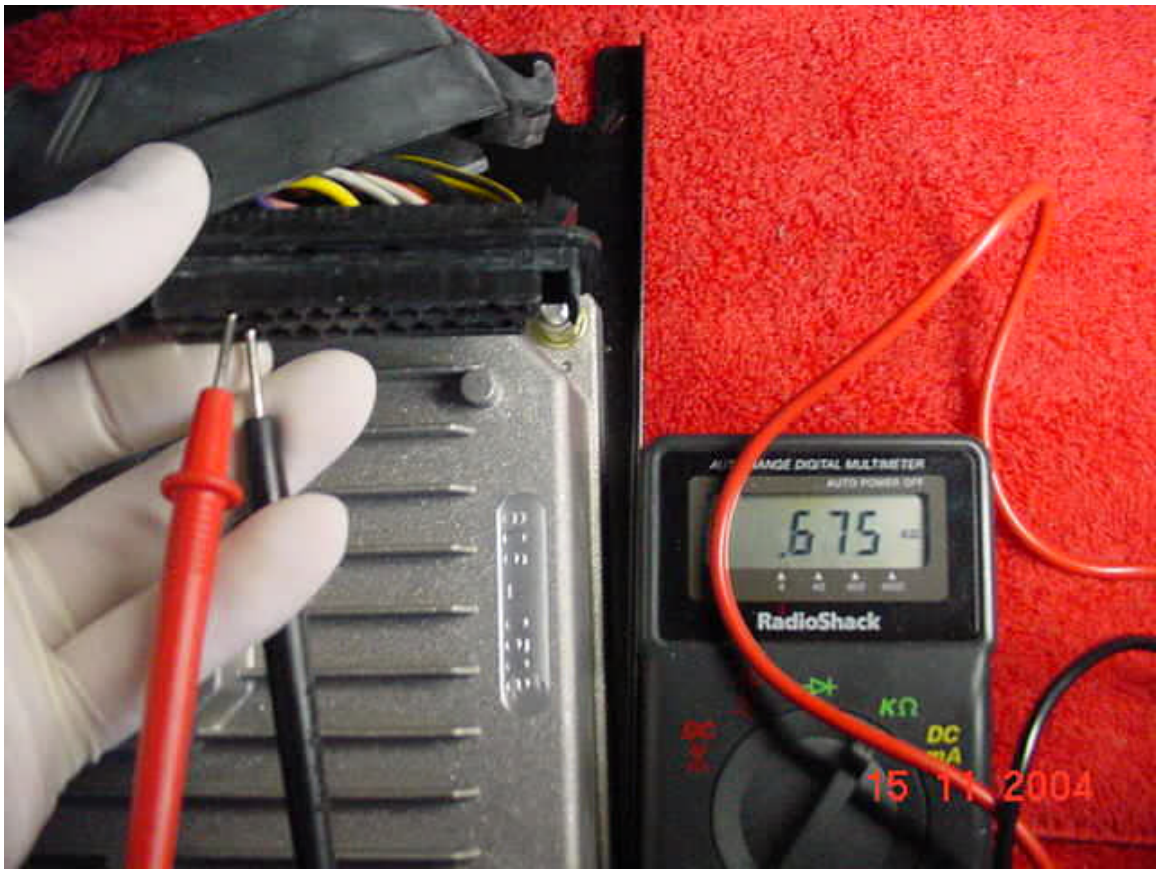
Start testing as per the workshop manual:

Key off, ECU disconnected.

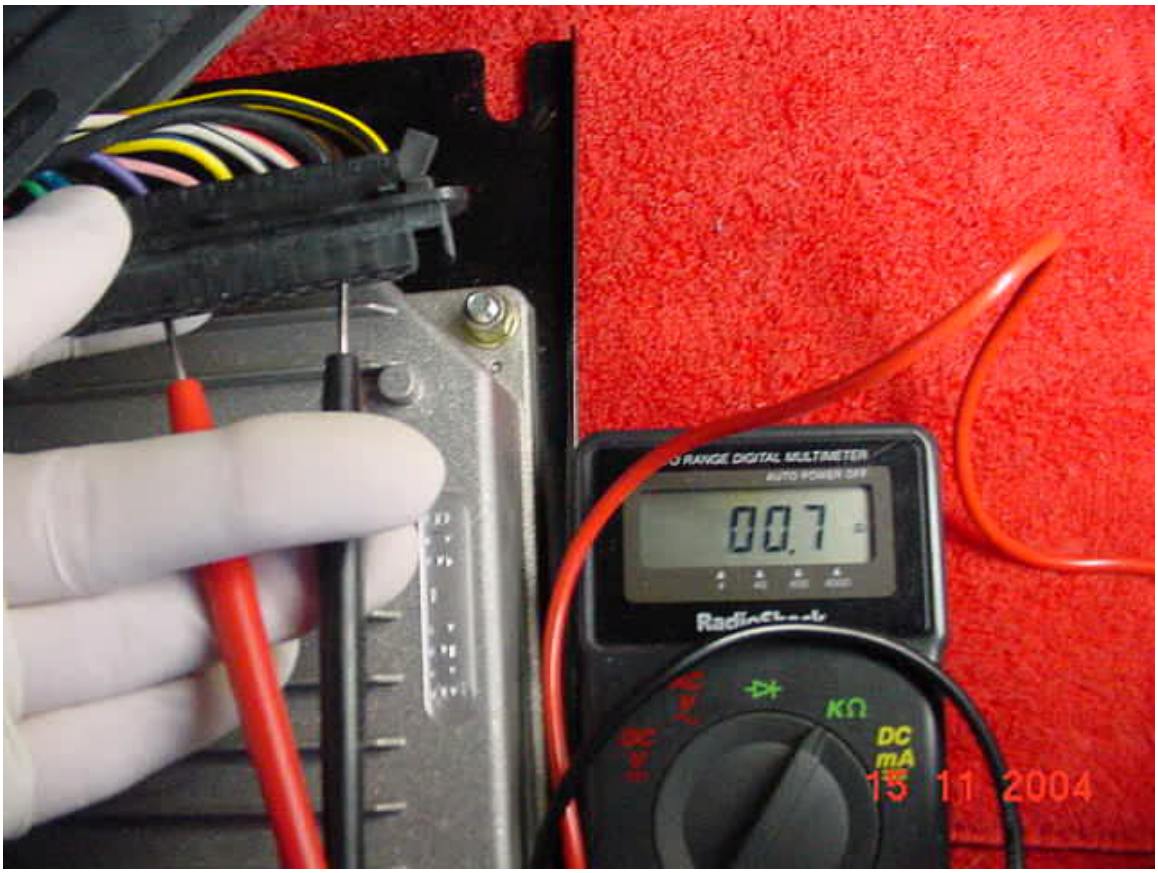
- TDC sensor resistance: #1-#2: 600-1000ohms (if 0 ohms or >1500ohms abnormal)



- RPM sensor resistance: #3-#16: 600-1000ohms (if 0 ohms or >1500ohms abnormal)



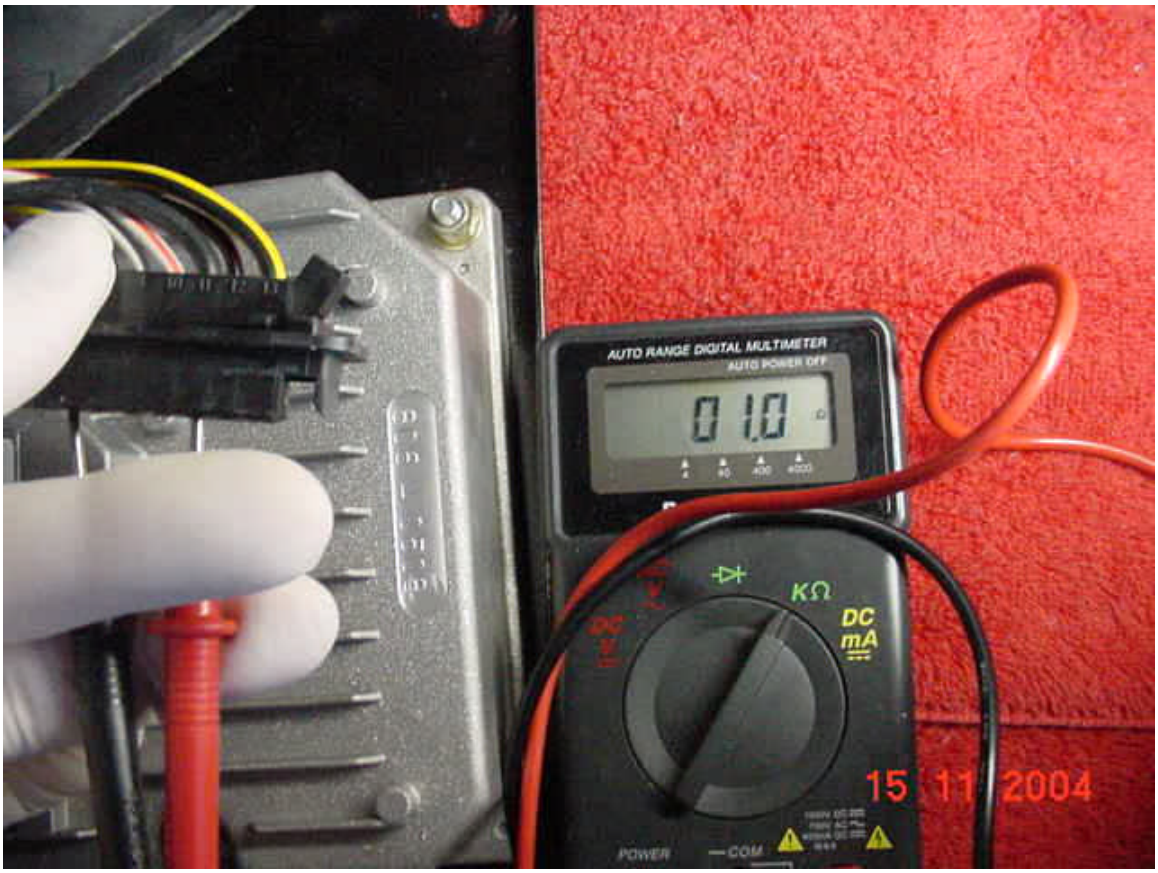
- Microplex ground: #11-#17: (>0.2 ohms listed as abnormal)



The manual then lists #11-#18 & #11-#23 for “advance curve identification as having infinite resistance. They must, since my connector didn’t have wire inputs to either #18 or #23.

- TPS signal #11-#19: <0.2ohms at idle rising to infinite just off idle (my meter read 1.1 million ohms)

IDLE


AUTO RANGE DIGITAL MULTIMETER
AUTO POWER OFF
01.0
DC
mA
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POWER
COM

OFF-IDLE

Turn the key to “run” (not start). Check for input voltage by setting meter to DC with (-) lead on #11 and (+) on #13. Normal is 11-13v (meter reads 11.6v)

Reconnect the multi-terminal to the ECU, leaving cover off so wire terminals can be back-probed. Start the car and allow to warm. At idle, measure the following:

- TDC sensor AC voltage: (-) lead on #2 and (+) on #1. Should read >0.2v (meter reads 0.590v)

- RPM sensor AC voltage: (-) lead on #3 and (+) on #16. Should read >2.0v.

- ECU output signal to 5-8 bank coil: (-) lead on #10 and (+) on #9. Normal is 2.8-3.5v. If no output, ECU is faulty.

- ECU output signal to 1-4 bank coil: (-) lead on #15 and (+) on #14. Normal is 2.8-3.5v. If no output, ECU is faulty.

- Tachometer signal: (-) lead on #11 and (+) on #24. Normal output is 0.2-0.35v.

Turn key off. Reassemble connector and gently slide rubber boot back into place. Reverse disassembly procedure.