

Control system

Relay module

Checking supply voltage - [Fig. 25](#)

Technical Data		
Terminals	Condition	Voltage
2 & earth	Ignition OFF	Battery voltage
8 & earth	Ignition OFF	Battery voltage
11 & earth	Ignition OFF	Battery voltage
15 & earth	Ignition OFF	Battery voltage
14 & earth	Ignition ON	Battery voltage

- Ensure ignition switched OFF.
- Disconnect relay module multi-plug.
- Check voltage between harness multi-plug terminals and earth.
- Switch ignition ON.
- Check voltage between harness multi-plug terminal and earth.
- If voltage not as specified: Check wiring.

Checking operation - fuel pump contacts - [Fig. 26](#)

Technical Data		
Terminals	Condition	Resistance
8 & 4	Battery voltage disconnected	∞
8 & 4	Battery voltage connected	Zero
8 & 5	Battery voltage disconnected	∞
8 & 5	Battery voltage connected	Zero
8 & 6	Battery voltage disconnected	∞
8 & 6	Battery voltage connected	Zero
8 & 13	Battery voltage disconnected	∞
8 & 13	Battery voltage connected	Zero
Battery + to terminal 14		
Battery - to terminal 7		

- Ensure ignition switched OFF.
- Disconnect relay module multi-plug.
- Remove relay module.
- Check resistance between relay module terminals.
- Connect battery voltage supply to specified relay module terminals.
- Check resistance between relay module terminals.

Checking operation - engine control contacts - [Fig. 27](#)

Technical Data		
Terminals	Condition	Resistance
11 & 1	Battery voltage disconnected	∞
11 & 1	Battery voltage connected	Zero
11 & 9	Battery voltage disconnected	∞
11 & 9	Battery voltage connected	Zero
Battery + to terminal 2		
Battery - to terminal 10		

- Ensure ignition switched OFF.
- Disconnect relay module multi-plug.
- Remove relay module.
- Check resistance between relay module terminals.
- Connect battery voltage supply to specified relay module terminals.
- Check resistance between relay module terminals.

Engine control module (ECM)

NOTE: Incorporates ignition amplifier.

NOTE: Due to small size of ECM harness multi-plug pins it is advisable to use a breakout box.

Checking supply voltage - [Fig. 28](#)

Technical Data		
Terminals	Condition	Voltage
52 & earth	Ignition OFF	Battery voltage
13 & earth	Ignition ON	Battery voltage
35 & earth	Engine running	Battery voltage

NOTE: Relay module must be fitted and working correctly in order to carry out supply voltage checks.

- Ensure ignition switched OFF.
- Disconnect ECM multi-plug.
- Connect breakout box between ECM and harness multi-plug.
- Check voltage between breakout box terminal and earth.
- Switch ignition ON.
- Check voltage between breakout box terminal and earth.
- Start engine.
- Allow to idle.
- Check voltage between breakout box terminal and earth.

Checking earth connection - Fig. 28

Technical Data	
Terminals	Resistance
17 & earth - 5/97	Zero
36 & earth - 6/97-	Zero
54 & earth - 6/97-	Zero

- Ensure ignition switched OFF.
- Disconnect ECM multi-plug.
- Connect breakout box to ECM harness multi-plug.
- Check resistance between breakout box terminals and earth.
- If resistance not as specified: Check wiring.

