

Engine management systems

Motronic engine management (DME) troubleshooting

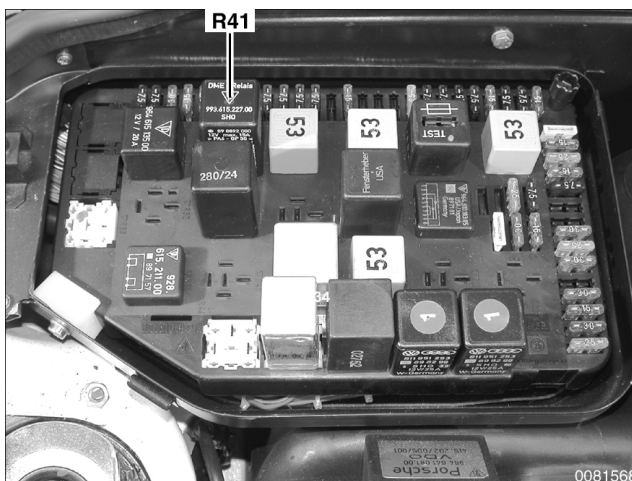
DME / fuel pump and oxygen sensor heater relay (R41)

A failure in relay R41 can cause any one of the following problems:

- Fuel pump not running when ignition turned on
- Engine losing power at around 4000 rpm
- Power stalls, sudden loss of power
- Intermittent hesitation problems
- Fluctuating idle rpm
- Engine will not start (starter motor cranking correctly)
- Fuel can be smelt whilst driving
- Engine management system stuck in open loop mode

To confirm a fault in relay R41, which is located in the central electric, is quite simple.

- Turn off ignition.
- Open luggage compartment (trunk) lid. Remove carpet from over central electric unit which is located behind left rear of the fuel tank (looking from the front). Remove the central electric cover (2 quick release clips).
- ◀ Locate relay R41 and remove it.



- Install a home-made jumper lead set across connectors 3, 5 and 7 in relay socket. (These pins correspond to pins 30, 87 and 87b on relay.) This jumper set up distributes power directly to the DME and fuel pump.

CAUTION —

If connectors 3 and 7 only are jumpered, power is supplied to the fuel pump but the 964 cannot be started because the DME is not powered.

- Turn on ignition and start engine. If the engine starts up and runs then this confirms the DME relay as failed.

CAUTION —

- *It is not recommended to leave the jumper lead installed apart from troubleshooting and a confirmation drive if suffering from problems which only occur whilst driving.*
- *Replace relay as soon as possible when confirmed failed. In fact due to its low cost it is recommended to actually purchase a spare unit. These relays become unreliable with advancing age.*

NOTE —

The only way to stop the fuel pump when using jumper set is to disconnect connector 7.

NOTE —

The original DME relay is a 944 part. It is advised to replace this relay with an improved 993 unit, Porsche part number 993 615 227 00.

Motronic troubleshooting

Fault	Possible causes
Something feels wrong. Seems to be down on power. Just not running correctly.	Carry out visual inspection of secondary distributor belt. Check when it was last changed and if more than 48,000 miles or five years old, replace it. Install vent kit if not installed.
	Check fuel octane being used. Too low octane will cause pinging and knock sensors will retard timing.
	Failed knock sensor system will automatically retard timing by 6° at crankshaft.
Engine will not start	Low battery voltage, starter motor not reaching 30 rpm
	DME/Fuel pump relay failed
	Starter motor, solenoid assembly failed
Engine will not start (starter motor cranking correctly i.e. above 30 rpm) and DME relay serviceable.	Alarm immobiliser system active
	No fuel
	Ignition system failure (failed coils common)
	Fuel pump failed
	Flywheel speed reference sensor failed
	Idle speed control valve failed
	Throttle valve stuck closed
	Resonance valve stuck open
DME control unit failed	
Engine will not start (Carrera 2 Tiptronics only).	Transmission position switch incorrectly adjusted
	Transmission position switch failed
	If Tiptronic transmission switch is incorrectly adjusted or has failed it can be cross-checked by checking reverse lights. If reverse is selected (lights serviceable) and lights do not come on, this confirms a transmission position switch problem.