## Test program - Electrics Preconditions for test

Preceding work:
Diagnosis - Fault memory 9 11

1. Ignition: **OFF**
2. Connect test cable set with contact box to PMS control unit (N3/6) according to connection diagram.

⚠

, If the PMS control unit from another vehicle is installed, the memory of the PMS control unit must be reset and re-activated, see 9 11/3

, On vehicles as of approx. 1/94 an immobilizer is installed as standard. Before commencing the test, it is necessary to ensure that the locking functions of the immobilizer are deactivated.

See "Electric Wiring Diagrams, Model 124 and 202, Volume 1"

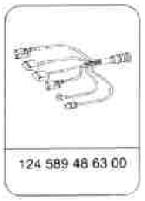
| Designation: | Group |
|---|---|
| Model 124 | 07 |
| Model 202 | 07 |

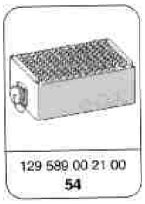
**Note regarding column Tester/Test connection**

The numbers entered in parentheses, e.g. in 7 1.0 (1.23) mean:

1= Coupling 1 in wiring diagram
23= Contact 23 in wiring diagram

**Special tools**


124 589 48 63 00


129 589 00 21 00
54


124 589 19 21 00
07 83


201 589 00 99 00
15 54


124 589 09 63 00
15 54


201 589 13 21 00
00 42 80

## Test program - Electrics Preconditions for test

**Commercially available tools and testers, MB testers** (see Workshop Equipment Manual)

| Designation | e.g. make, order no. |
|---|---|
| Multimeter | Fluke 23 DB, 83, 88<br>Sun, DMM-5<br>Hermann, Avometer 2003 |
| Test and adjustment equipment, diagnostic testers | Hermann, Datascope 960/980<br>Bosch, MOT 250/400<br>BEAR, DACE |

## Test program - Electrics Preconditions for test

**Notes regarding avoiding damage to ignition system**

- To avoid damage to the PMS control unit (N3/6), the two couplings must not be unplugged or plugged in unless the ignition is switched off.
- Do not connect a test lamp to terminal 1 of the ignition coils.
- Terminal 1 of the ignition coils must not be short-circuited to ground, e. g. as an anti-theft protection.
- Install only genuine ignition system components.
- Do not operate ignition system at starting speed unless all the ignition cables are fully connected.
- Tests, e.g. holding ignition cable 4 close to ground, unplugging a spark plug connector or unplugging cable 4 from ignition coils, must not be performed at starting speed or when the engine is running.
- Before performing operations at starting speed, e.g. testing compression pressure, switch off ignition and unplug coupling for crankshaft position sensor at the PMS control unit (N3/6).
- If the short-circuit protection (cylinder comparison) is operated and the engine stops, the test cannot be performed with this tester.
- The load applied to the ignition coil for separate ignition coil test must not exceed 28 kV in order to avoid damaging the ignition coil.
- If it is necessary to test the ignition spark when rendering breakdown assistance, this must only be done with a spark plug at a cylinder ignition cable. Ensure good ground contact of the spark plug.

⚠

High tension.

- Voltage of up to 400 V present at primary connections. Core package mount on ignition coils must always be connected to vehicle ground.
- People with heart pacemakers should not work on this ignition system.

Use of testers

- **Do not connect or disconnect secondary measured value pickup to the appropriate ignition cables and trigger clamp to cylinder 1 unless the engine is not running and the ignition is switched off.**

⚠

Safety notes, see Repair Instructions, Group 15.

## Test program - Electrics Preconditions for test

**Connection schematic for socket box, models 124, 202**

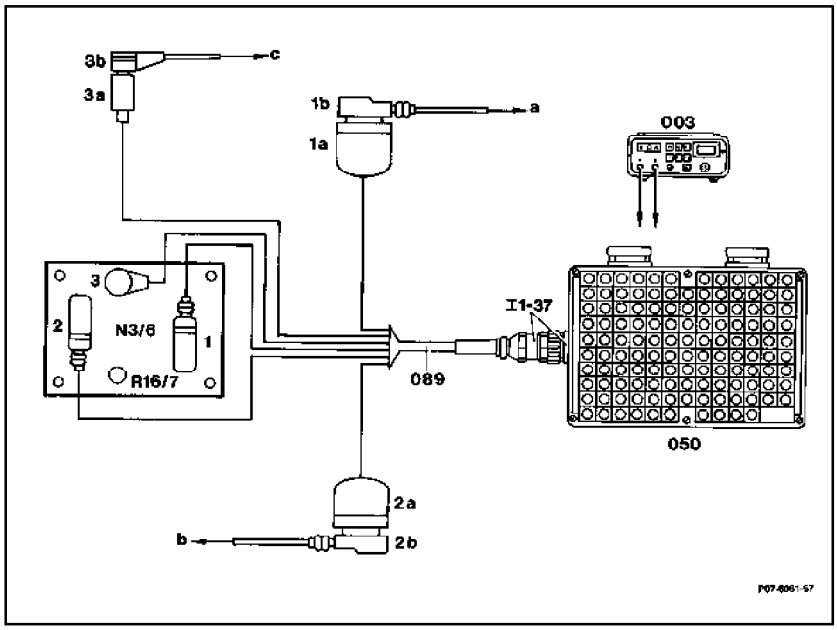



Fig. 1

003 Multimeter
050 Socket box, 126-pin
089 PMS diagnostic test cable

1 Test connector, vehicle side
1a Test plug, vehicle side
1b Control unit connector, vehicle side
2 Test connector, engine side
2a Test plug, engine side
2b Control unit connector, engine side
3 Test connector for crankshaft position sensor
3a Test plug for crankshaft position sensor
3b Connector for crankshaft position sensor

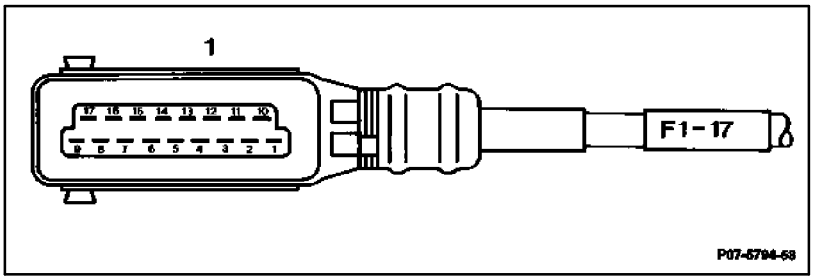
N3/6 PMS control unit
R16/7 PMS reference resistor

a Vehicle wiring harness
b Engine wiring harness
c Crankshaft position sensor

## Test program - Electrics Preconditions for test

**Pin assignment at coupling "1" vehicle side for PMS control unit**

Fig. 2

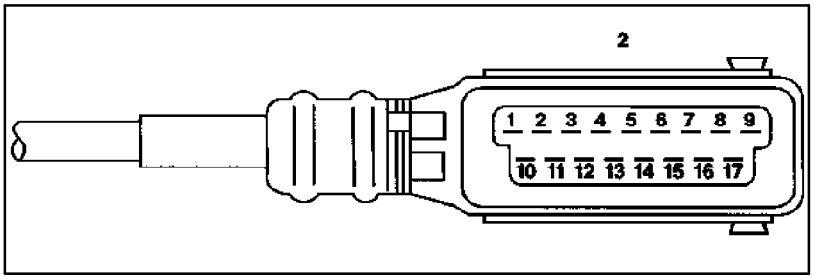



1 Model 124: ground, hydraulic unit bracket W14,
Model 202: ground, component compartment left, W16/5
2 Terminal 15 unfused
3 Shift point retard switchover valve
(only for AG with CAT)
4 Tempomat
5 Selector lever position P/N
6 Oxygen sensor signal
7 Oxygen sensor ground
8 Fuel pump relay
9 Model 124: ground, hydraulic unit bracket W14,
Model 202: ground, component compartment left, W16/5
10 Terminal 30 (battery positive)
11 Selector lever position 2/3 (only for AG with CAT)
12 Compressor cutoff control unit
13 TN engine speed signal
14 Road speed signal from ABS control unit
15 Diagnostic cable to test connector, 38-pin
16 Oxygen sensor heater
17 Relay for partial intake manifold preheater
(PSV, model 124 with CAT up to 08/93 only)

## Test program - Electrics Preconditions for test

**Pin assignment at coupling "2" engine side for PMS control unit**

Fig. 3




1-3 -
4 Injection valve cylinders 1+4
5 Actuator motor +
6 Voltage supply for potentiometer,
idle speed control actuator
7 Coolant temperature sensor
8 Wiper contact, potentiometer drive
9 Control unit ground
10 Ignition coil cylinders 1+4 terminal 1
11 Ignition coil cylinders 2+3 terminal 1
12 -
13 Injection valves cylinders 2+3
14 Actuator motor -
15 Slide contact in throttle valve potentiometer
16 Intake air temperature sensor
17 Idle speed contact