

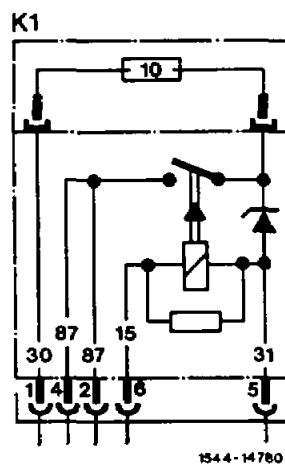
### A. Function

A 5, 7 or 9-pin overvoltage protection relay is installed depending on the vehicle model and special equipment. This relay protects the control units (ABS, CIS-E, etc.) from excessively high voltage.

The battery voltage is present continuously at relay terminal 30. With the 7 and 9-pin versions the battery voltage is also connected to terminal 30a over the 10 A flat plug-in fuse. When the ignition/starter switch is turned to position 2 (driving position), the voltage is present at terminal 15 causing the relay to pull in. Power is supplied to terminals 87 (5-pin version) or 87E and 87L (7 and 9-pin versions).

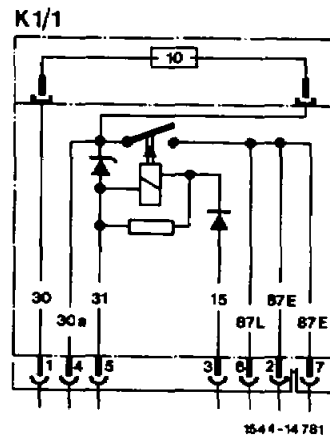
Voltages  $> 22$  V in the vehicle electrical system are connected directly to ground by the Z diode (fuse defective).

In the event of overloads occurring **after** the overvoltage cutout, the circuit is interrupted by the 10 A flat plug-in fuse. The 9-pin version is also fused separately at terminals 87E and 87L, whereby when the fuse for 87E blows 87L is also switched off.

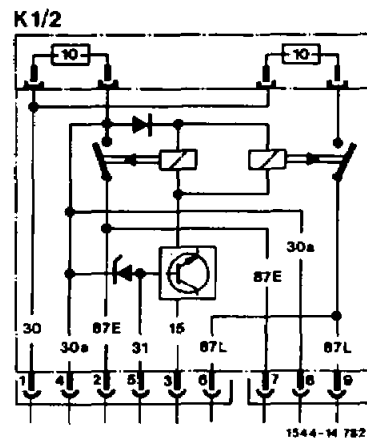


Circuit  
Overvoltage protection, 5-pin

Circuit  
Overvoltage protection, 7-pin



Circuit  
Overvoltage protection, 9-pin



## B. Testing

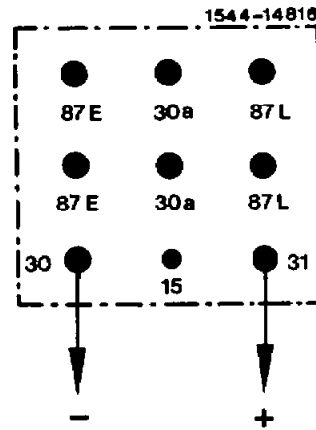
### Z diode In relay (5-pin)

Perform test with ABS tester and protective adapter according to test step 12.

### Z diode In relay (7 and 9-pin)

Perform test with approved multimeter as follows:

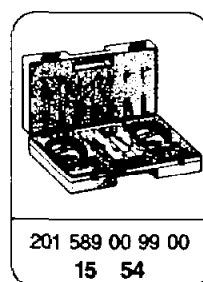
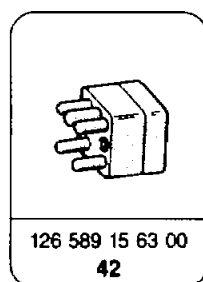
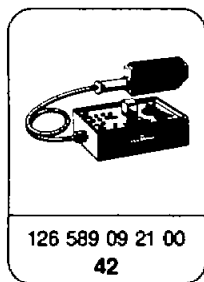
1. Switch multimeter to diode testing range.
2. Connect removed relay to multimeter **observing polarity**; multimeter connection + to terminal 31 and connection - to terminal 30. Use electrical connection set 201 589 00 99 00.



### Specification 0.4 to 1.5 V

3. If specified value is not reached, check 10 A flat plug-in fuse and replace overvoltage protection relay.

## Special tools



## Commercially available test equipment

Digital multimeter

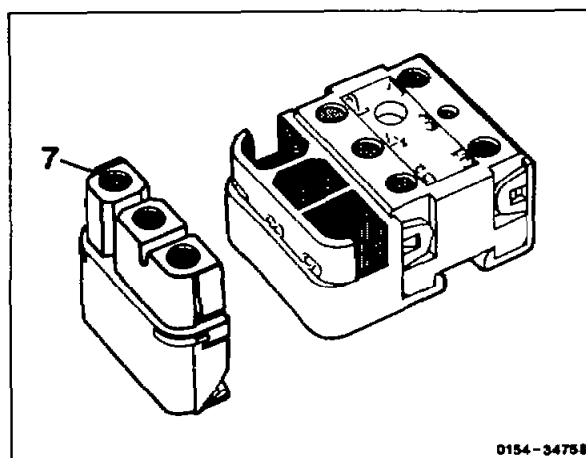
e.g. Sun company, DMM-5  
Hermann company, Avometer 2003

## C. Repair Instructions

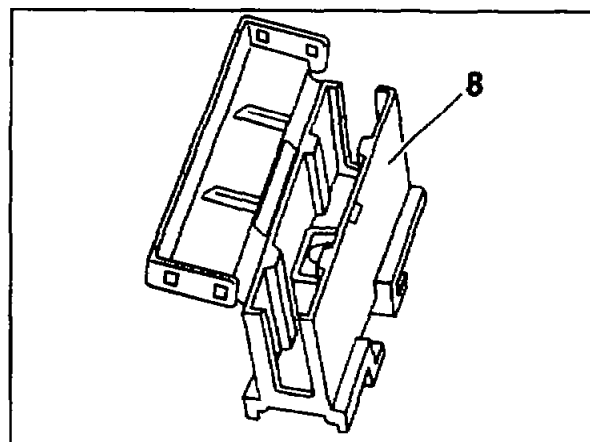
Only engine main wiring harnesses with 7-pin connector for the overvoltage protection relay are available for replacement.

After installation of an engine main wiring harness with 7-pin connector for overvoltage protection in a vehicle with 5-pin overvoltage protection, it is also necessary to replace the overvoltage protection and bracket for the control units.

On vehicles with ABS plug the lead for the power supply for the ABS control unit into the separate 3-pin connector into socket 7 on the connector for overvoltage protection. Replace the terminal block on the removed bracket for the control units with terminal block (8) and fasten with cable strap.



D154-34758



P54-6670-13

### Parts

Designation		Part no.
Overvoltage protection relay, 7-pin	Optionally	201 540 32 45 201 540 38 45
Bracket for control unit		124 545 43 40
Terminal block		000 540 08 69
Cable strap		001 997 41 90

Available from: plant 50 (PEW Sindelfingen)