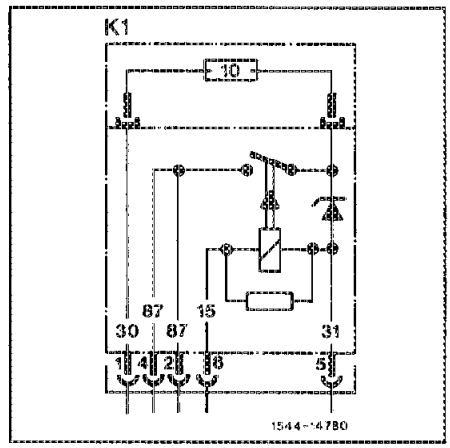
Depending on vehicle model and special equipment, a 5-, 7- or 9-pin overvoltage protection relay has been installed. These relays protect the control units (ABS, CIS-E, etc.) from overvoltage.

Function

The existing battery voltage is permanently available at terminal 30 of the relay. On the 7- and 9-pin versions the battery voltage is also led to terminal 30a via the 10 A flat plug fuse.
If the ignition/starter switch is turned to position 2 (driving position), voltage exists at terminal 15 and the relay operates. Terminal 87 (5-pin version) or 87E and 87L (7- and 9-pin version) are supplied with voltage.

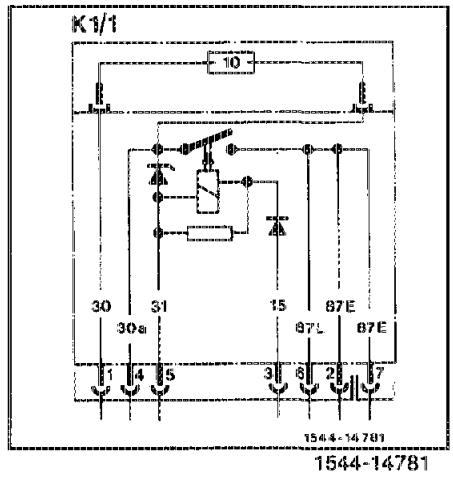
Voltages > 22V in the electric system are led directly to ground by the Z-diode (fuse defective).



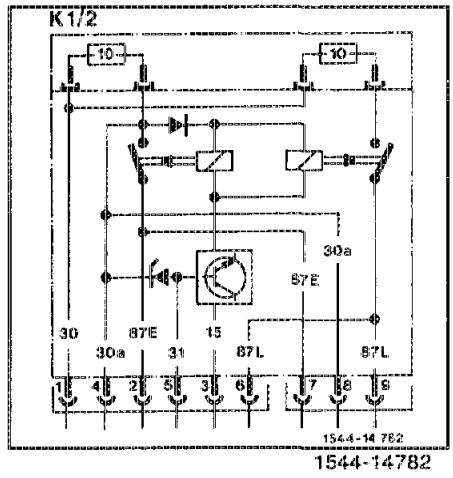
1544-14780

Circuit - 5-pin overvoltage protection

In the event of overloads which occur **after** the overvoltage protection, the circuit is interrupted by the 10 A flat plug fuse. The 9-pin version is fused separately at terminals 87E and 87L; an interruption of the fuse from 87E also causes switching off of 87L.



Circuit - 7-pin overvoltage protection



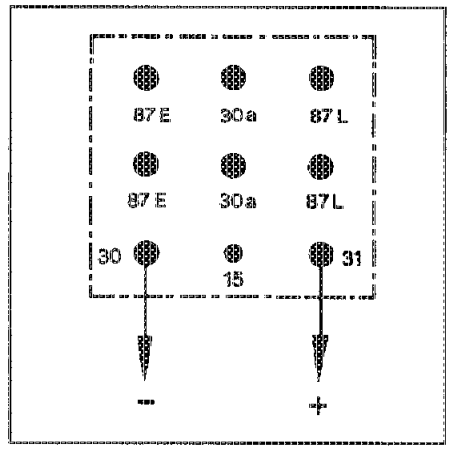
Circuit - 9-pin overvoltage protection (e.g. 4MATIC, ASD or ASR)

Testing the Z-diode in the relay (5-pin)
Perform test with ABS tester and protective adapter in accordance with test step 12.

Testing the Z-diode in the relay (7- and 9-pin)
Perform test with an approved multimeter as follows:

1. Switch multimeter to the measuring range for diode testing.

2. Connect the relay which has been removed to the multimeter, **paying attention to polarity**; connection + of multimeter to terminal 31 and connection – to terminal 30. Use electrical connection set for this purpose.



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Nominal value 0.4 to 1.5 V
3. If the nominal value is not attained, check 10 A flat plug fuse or replace overvoltage protection relay.