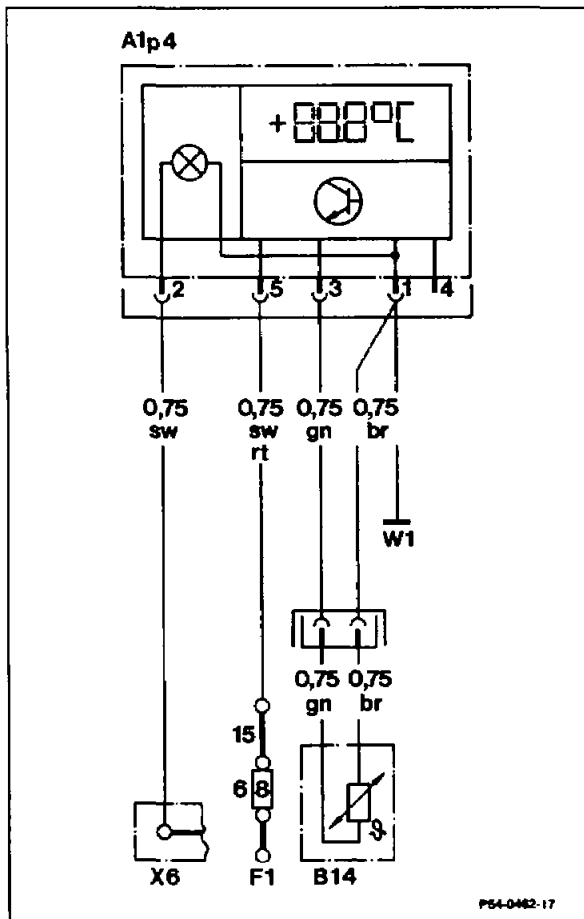


# 54-6320 Testing electrical outside temperature display

Preceding work:  
Instrument cluster removed (54-6015).

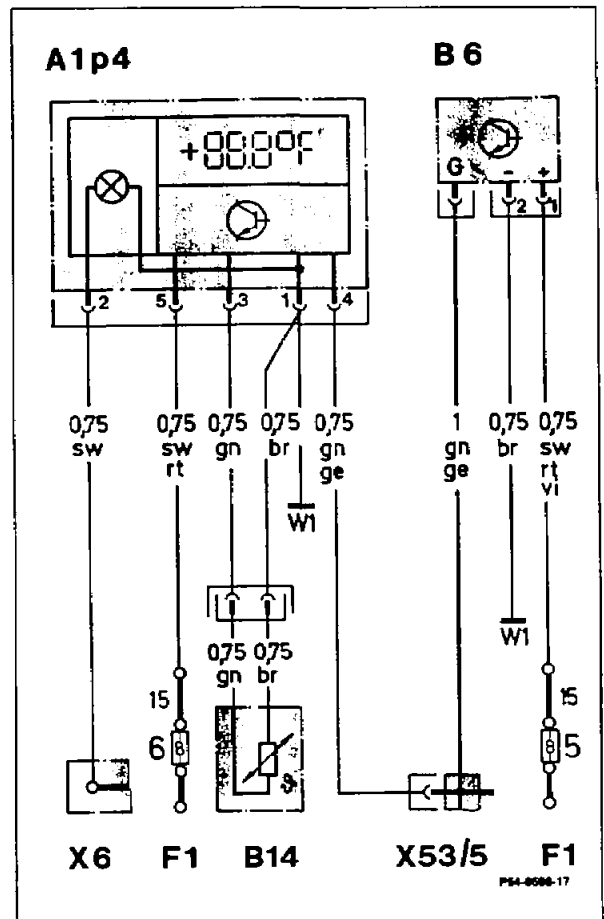
Operation no. of operation texts and work units or standard texts  
and flat rates:

## A. Test



Wir. diagr. of outside temp. display up to 08/87

A1p4 Outside temperature display  
B14 Temperature sensor, outside temperature display  
F1 Fuse and relay box  
W1 Main ground (behind instrument cluster)  
X6 Terminal block, terminal 58d



Wir. diagr. of outside temp. display as of 09/87

A1p4 Outside temperature display  
B6 Hall road speed sensor  
B14 Temperature sensor, outside temperature display  
F1 Fuse and relay box  
W1 Main ground (behind instrument cluster)  
X6 Terminal block, terminal 58d  
X53/5 Multiple pin connection/Hall sensor

Voltage at 5-pin coupling of outside temperature display (A1p4) .....	test between contact 5 (terminal 15) and contact 1 (ground). Key in position "2". Specification: battery voltage.								
Lighting at 5-pin coupling for outside temperature display (A1p4) .....	test between contact 1 (ground) and contact 2 (instrument lighting). Lighting switched on. The voltage measured is dependent on the position of the rheostat (A1r1) of the instrument lighting.								
If the specifications are not achieved, .....	check contacts and wiring for open circuit. Main ground behind instrument cluster (W1), fuse and relay box (F1) and terminal block, terminal 58d (X6) to plug connection, outside temperature display.								
Temperature sensor, outside temperature display (B14) .....	test.								
	<table border="0"> <tr> <td style="padding-right: 20px;">°C</td> <td>Resistance (ohms)</td> </tr> <tr> <td>± 0</td> <td>9800 ± 100</td> </tr> <tr> <td>+ 20</td> <td>3750 ± 70</td> </tr> <tr> <td>+ 40</td> <td>1600 ± 40</td> </tr> </table>	°C	Resistance (ohms)	± 0	9800 ± 100	+ 20	3750 ± 70	+ 40	1600 ± 40
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± 0	9800 ± 100								
+ 20	3750 ± 70								
+ 40	1600 ± 40								
Outside temperature display (A1p4) .....	test. Feed in resistances with ohms decade at 2-pin coupling.								
	<table border="0"> <tr> <td style="padding-right: 20px;">Resistance</td> <td>Readout</td> </tr> <tr> <td>53100 Ω</td> <td>-30 °C ± 2 °C</td> </tr> <tr> <td>9800 Ω</td> <td>0 °C ± 0.5 °C</td> </tr> <tr> <td>1080 Ω</td> <td>+50 °C ± 5 °C</td> </tr> </table>	Resistance	Readout	53100 Ω	-30 °C ± 2 °C	9800 Ω	0 °C ± 0.5 °C	1080 Ω	+50 °C ± 5 °C
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**Note**

Measuring range -38 °C to +58 °C  
(Readout at intervals of 0.5 °C).

## B. Function

Up to 08/87, the outside temperature display is supplied direct by the temperature sensor.

As of 09/87, the outside temperature display analyzes the road speed signal from the Hall sensor.

When the engine is started, the temperature measured is displayed. The memory is activated if, after starting the engine, the vehicle has been driven no faster than 20 km/h.

As the temperature drops, the readout always appears **immediately** no matter the speed.

At speeds below approx. 20 km/h the temperature last measured is stored and displayed.

If the temperature rises, the stored temperature is displayed in order to avoid any incorrect measurement. This prevents an incorrect temperature being displayed when driving slowly or when the car is stopped and the temperature sensor is heated up e. g. as a result of exhaust gases from the vehicle in front or from heat radiated by the radiator.

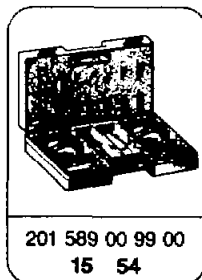
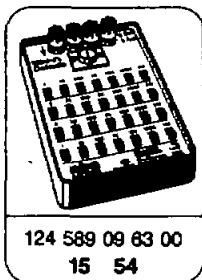


At speeds between approx. 20–60 km/h the temperature displayed changes after about 5 minutes in line with the temperature measured. The change in the readout is open from approx. 60 km/h.

**Note**

Only display units with 5-pin connector (with road speed signal) are stocked as replacement parts. If these display instruments are installed in vehicles manufactured up to an including model year 1987, the coupling at the connection cable should also be replaced by the coupling supplied.

**Special tools**



**Commercially available tester**

Multimeter

e. g. Sun, DMM-5  
or Avometer 2001