

Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy ¹⁾
⇒ 1.0 Function test	Low beam switched on.	After 1 – 2 seconds 50% of maximum illumination. After 30 seconds maximum illumination attained.	23 Test

¹⁾ Observe Preparation for Test, see 22.

 **DANGER!**

High voltage components with switched on Xenon headlamps.

Therefore, when Xenon headlamps are switched on, do not touch any of the high voltage components.

1.2 Xenon Headlamps

Models 202, 208, 210

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
Left and right Xenon low beam headlamps (E1e8 and E2e8) do not function.	Fuses, Wiring, Illumination control module (N7-1), models 208, 210 Fuse and relay box (F1), model 202	Models 208, 210 23 ⇒ 1.0, 23 ⇒ 2.0 Model 202 23 ⇒ 3.0, 23 ⇒ 4.0
Left Xenon low beam headlamp (E1e8) does not function.	Fuse (N7-1 F8), models 208, 210 Fuse (F1f34), model 202 Wiring, Illumination control module (N7-1), Xenon headlamp (D2R, 35W) ²⁾ , Xenon headlamp control module (E1n1) with Xenon headlamp ignition module (E1n2)	Models 208, 210 23 ⇒ 1.0, Model 202 23 ⇒ 3.0,
Right Xenon low beam headlamp (E2e8) does not function.	Fuse (N7-1 F6), models 208, 210 Fuse (F1f33), model 202 Wiring, Illumination control module (N7-1) Xenon headlamp (D2R, 35W) ²⁾ Xenon headlamp control module (E2n1) with Xenon headlamp ignition module (E2n2)	Models 208, 210 23 ⇒ 2.0 Model 202 23 ⇒ 4.0,

¹⁾ Observe Preparation for Test, see 22.

²⁾ To prevent damage to new installed Xenon lamps (D2R, 35W), be certain to check system wattage output prior to lamp installation.

Electrical Test Program – Component Locations

Xenon Headlamps

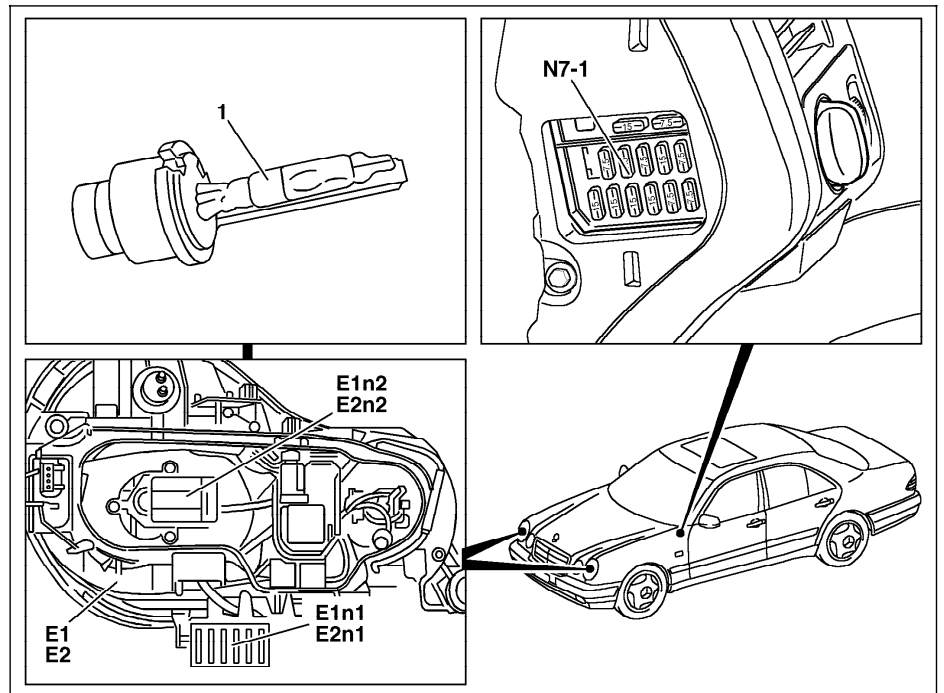


Figure 1

- 1 Xenon headlamp (D2R, 35W)
- E1 Left headlamp unit
- E1n1 Xenon headlamp control module
- E1n2 Xenon headlamp ignition module
- E2 Right headlamp unit
- E2n1 Xenon headlamp control module
- E2n2 Xenon headlamp ignition module
- N7-1 Illumination control module

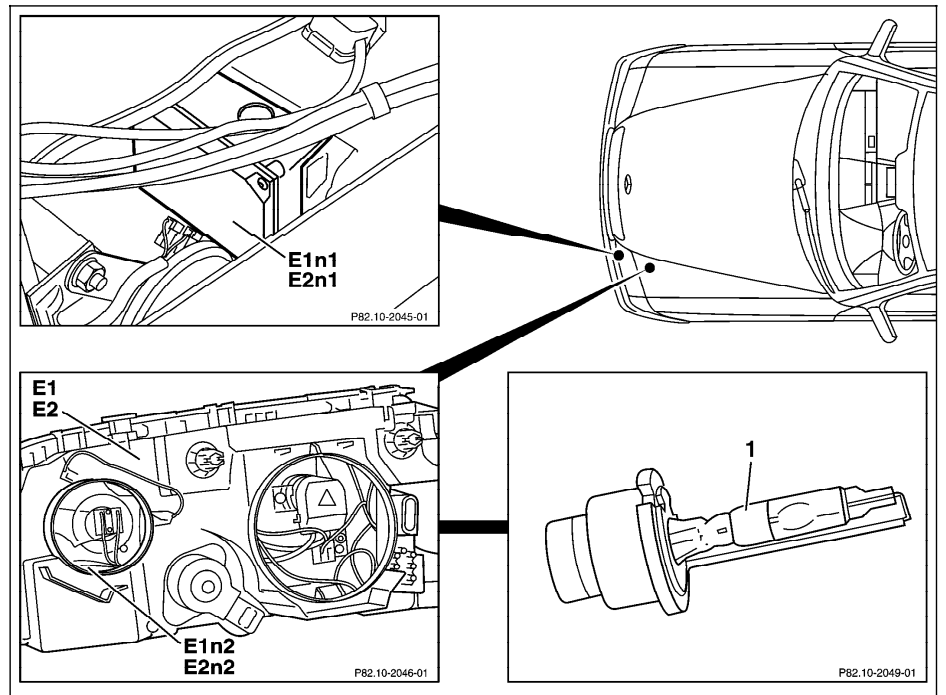
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1.2 Xenon Headlamps

Models 202, 208, 210

Electrical Test Program – Component Locations

Xenon Headlamps



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1.2 Xenon Headlamps

Models 202, 208, 210

Electrical Test Program – Preparation for Test

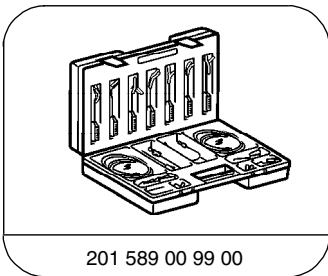
Preparation for Test:

1. Vehicle battery must be sufficiently charged (electrolyte specific gravity: 1:3.6)
2. Check fuses OK.

Electrical wiring diagrams (location of grounds and connectors) :

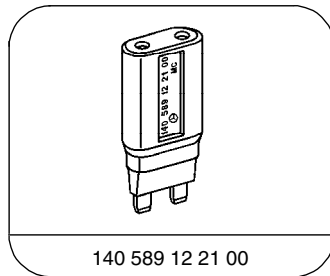
Electrical Troubleshooting Manual, Model 202, group 82,
 Electrical Troubleshooting Manual, Model 208, group 82,
 Electrical Troubleshooting Manual, Model 210, group 82,

Special Tools



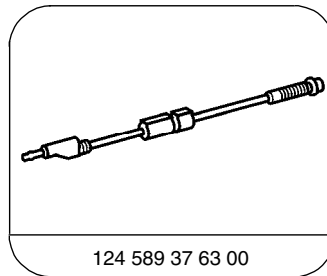
201 589 00 99 00

Electrical connecting set



140 589 12 21 00

Quiescent current test adapter 1



124 589 37 63 00

Fused cable

Conventional tools, test equipment

Description	Brand, model, etc.
Multimeter ¹⁾	Fluke models 23, 83, 85, 87
Inductive pickup ¹⁾	Fluke 80i - 1010

¹⁾ Available through the MBUSA Standard Equipment Program.



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1.2 Xenon Headlamps

Models 202, 208, 210

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		Left low beam Xenon headlamp (E1e8) Voltage at illumination control module (N7-1) Models 208, 210		Remove fuse (N7-1 F8) and check voltage using rest current maintenance unit. Low beam: ON	11 – 14 V	Wiring, (N7-1), ⇒ 1.1
1.1		Voltage and amperage at illumination control module (N7-1)	 N7-1 F8 Inductive pickup N7-1 F8	Remove fuse (N7-1 F8). Review Figure 1 and attach multimeters and test cables as shown. ⚠ CAUTION! Observe multimeter amps reading when switching on low beam. Low beam: ON After approx. 30 seconds measure voltage (U) and amps (I), then calculate wattage (P).	40±5W (P = U x I)	A brief amp flow is noted only when first switching on: Xenon headlamp (D2R, 35W) ^{1) 2)} . Wattage < 35W or > 45W: Xenon headlamp control module (E1n1) with Xenon headlamp ignition module (E1n2) ²⁾ .


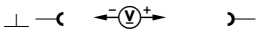
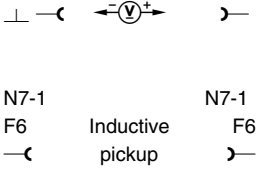
¹⁾ To prevent damage to new installed Xenon lamps (D2R, 35W), be certain to check system output (watts) output prior to lamp installation.

²⁾ Replace complete headlamp unit as necessary.

1.2 Xenon Headlamps

Models 202, 208, 210

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0		Right low beam Xenon headlamp (E2e8) Voltage at illumination control module (N7-1) Models 208, 210		Remove fuse (N7-1 F6) and check voltage using rest current maintenance unit. Low beam: ON	11 – 14 V	Wiring, (N7-1), ⇒ 2.1
2.1		Voltage and amperage at illumination control module (N7-1)		Remove fuse (N7-1 F6). Review Figure 1 and attach multimeters and test cables as shown. CAUTION! Observe multimeter amps reading when switching on low beam. Low beam: ON After approx. 30 seconds measure voltage (U) and amps (I), then calculate wattage (P).	$40 \pm 5W$ $(P = U \times I)$	A brief amp flow is noted only when first switching on: Xenon headlamp (D2R, 35W) ^{1) 2)} . Wattage < 35W or > 45W: Xenon headlamp control module (E2n1) with Xenon headlamp ignition module (E2n2) ²⁾ .



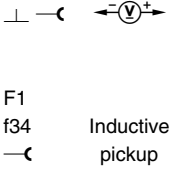
1) To prevent damage to new installed Xenon lamps (D2R, 35W), be certain to check system output (watts) output prior to lamp installation.

2) Replace complete headlamp unit as necessary.

1.2 Xenon Headlamps

Models 202, 208, 210

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0		Left low beam Xenon headlamp (E1e8) Voltage at fuse and relay box (F1). Model 202		Remove fuse (F1f34) and check voltage using rest current maintenance unit. Low beam: ON	11 – 14 V	Wiring, ⇒ 1.1
3.1		Voltage and amperage at fuse and relay box (F1).		Remove fuse (F1f34). Review Figure 1 and attach multimeters and test cables as shown. CAUTION! Observe multimeter amps reading when switching on low beam. Low beam: ON After approx. 30 seconds measure voltage (U) and amps (I), then calculate wattage (P).	40±5W (P = U x I)	A brief amp flow is noted only when first switching on: Xenon headlamp (D2R, 35W) ^{1) 2)} . Wattage < 35W or > 45W: Xenon headlamp control module (E1n1) with Xenon headlamp ignition module (E1n2) ²⁾ .




¹⁾ To prevent damage to new installed Xenon lamps (D2R, 35W), be certain to check system output (watts) output prior to lamp installation.

²⁾ Replace complete headlamp unit as necessary.

1.2 Xenon Headlamps

Models 202, 208, 210

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		Right low beam Xenon headlamp (E2e8) Voltage at Fuse and relay box (F1). Model 202		F1 f33 Remove fuse (F1f33) and check voltage using rest current maintenance unit. Low beam: ON	11 – 14 V	Wiring, (N7-1), ⇒ 2.1
4.1		Voltage and amperage at fuse and relay box (F1).	 F1 f33 Inductive pickup	F1 f33 Remove fuse (N7-1 F6). Review Figure 1 and attach multimeters and test cables as shown. CAUTION! Observe multimeter amps reading when switching on low beam. Low beam: ON After approx. 30 seconds measure voltage (U) and amps (I), then calculate wattage (P).	40±5W (P = U x I)	A brief amp flow is noted only when first switching on: Xenon headlamp (D2R, 35W) ^{1) 2)} . Wattage < 35W or > 45W: Xenon headlamp control module (E2n1) with Xenon headlamp ignition module (E2n2) ²⁾ .

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²⁾ Replace complete headlamp unit as necessary.

Electrical Test Program – Test

Connection diagram – Amperage and Voltage Measurement

CAUTION!

An inductive pickup must be used during amperage measurement, since high amps will be present when the Xenon headlamps are first switched on.

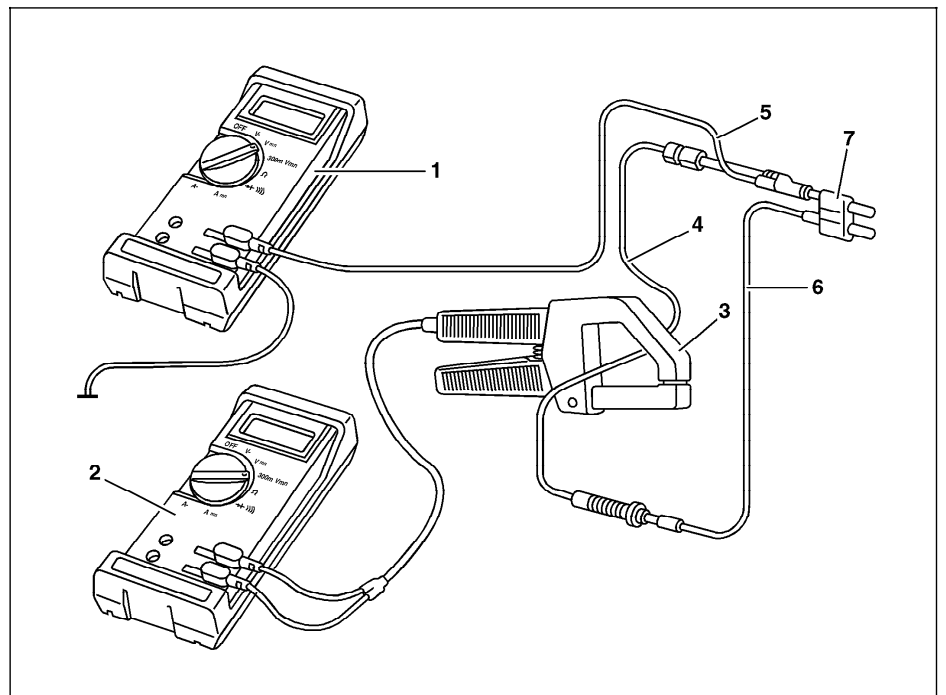


Figure 1

- 1 Multimeter (voltage measurement)
- 2 Multimeter (amperage measurement)
- 3 Inductive pickup
- 4 Fused test cable
- 5 Measurement test cable
- 6 Adapter test cable
- 7 Rest current maintenance unit

P82.10-0291-06