

MODEL 211.0/ 2



P54.10-2474-09

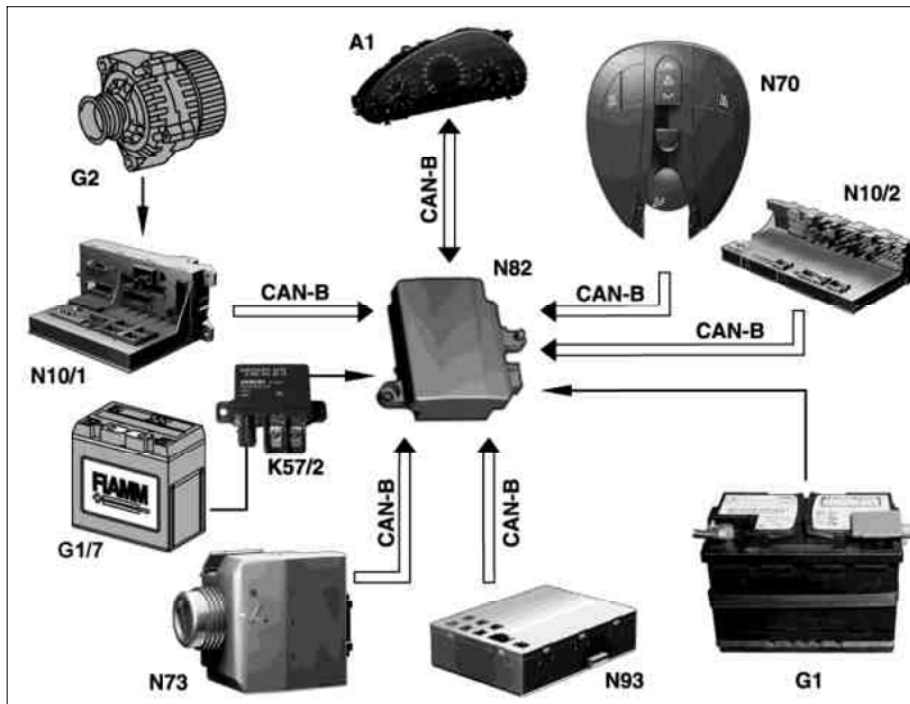
Installation survey of batteries shown on model 211.0

G1 Battery

G1/7 Additional battery

Networking of components

- A1 Instrument cluster
- CAN-B interior CAN.
- G1 Battery
- G1/7 Additional battery
- G2 Alternator
- K57/2 Additional battery relay
- N10/1 Driver-side SAM control unit with fuse and relay module
- N10/2 Rear SAM control unit with fuse and relay module
- N70 Overhead control panel control unit
- N73 EIS [EZS] control unit
- N82 Battery control unit
- N93 Central gateway control unit



P54.10-2487-06

The battery control unit (N82) is integrated in the power supply of the vehicle. The battery control unit increases the availability of the on-board electrical system by introducing energy management measures. To do this, it determines the load capacity of the battery (G1).

The battery control unit (N82) is planned for a 14-V-on-board electrical system with the battery (G1), which is designed as a 12-V-lead battery (AGM- or wet battery). The additional battery (G1/7) is connected for charging if necessary in order to assist the on-board electrical system in particular situations. Via the additional battery relay (K57/2) the additional battery (G1/7) can be connected through the battery control unit (N82).

Function conditions

The battery control unit (N82) operates within the specified voltage and temperature limits when the on-board voltage is supplied.

The buffer algorithm continuously determines the dynamic internal resistance of the battery (G1) from the recorded current and voltage values. When the alternator (G2) is running this is the basic parameter for the following functions:

- D Consumer shutoff
- D Idle speed increase
- D Activation of additional battery (G1/7)

The maximum current demand of the vehicle is limited to $I_T 100$ A by switching off consumers. A calculation is also made as to which state of charge prevails when the battery is loaded (G1) with $I = 100$ A. This is a measure for the load capacity of the battery (G1). If the alternator (G2) fails, 100 % of the power required is provided by the battery (G1).

Consumer shutoff:

In the event of problems in the two-battery on-board electrical system various messages are displayed in the multifunction display (A1p13) in the instrument cluster (A1).

If the battery control unit (N82) detects a fault in the power consumption or a poor condition of the battery (G1), the driver is informed through the multifunction display (A1p13) in the instrument cluster (A1) about the corresponding charge level.

Messages which are displayed in the color white, only have information functions, so that consumers which do not impair driving safety are switched off until the overall condition of the on-board electrical system has stabilized again.

Amongst others the consumer shutoff is signaled by the flashing on and off of the switched-on heated rear window or heated seats.

The following messages are displayed in red in the multifunction display (A1p13) in the instrument cluster (A1):

D Messages "BATTERY/ALTERNATOR - CONSULT WORKSHOP" and simultaneously "ELECTRICAL CONSUMER SWITCHED OFF" (up to 08.2003)

D "Locate workshop" in conjunction with the battery symbol in the display (as of 09.2003),

the signal of circuit 61 cannot be read in via the interior CAN.

The message appears, if the battery control unit (N82) is defective, the alternator (G2), the additional battery relay (K57/2) or the additional battery (G1/7) are defective.

Connection of electrical devices (consumers or chargers in the broadest sense) direct to the battery post of the battery (G1) while bypassing the current sensor is not permissible.

Function sequence

The battery control unit (N82) records the current from the negative terminal of the battery (G1) or if the additional battery (G1/7) is connected, the current from both batteries. The voltage of the battery (G1) is determined via circuit 30 which simultaneously serves the supply of the battery control unit (N82). An internal temperature sensor is used to draw conclusions about the temperature of the battery (G1)

The voltage of the auxiliary battery (G1/7) is also measured.

i Should the battery (G1) and/or the additional battery (G1/7) be replaced, then only the replacement parts used by DaimlerChrysler AG be used.

The effective characteristics of the battery control unit (N82) is determined by the overall condition of the vehicle and determined in the integral linking part.

The battery control unit (N82) directly actuates the cutoff relay for interruptible loads (K75) for the cutout of the consumer socket and G1/7 the additional battery relay (K57/2) is actuated for the connection of the additional battery (<>).

i Once the battery has been disconnected (G1) the vehicle must be started because this is how the battery control unit (N82) determines the start value for internal battery resistance.

i The battery control unit (N82) is not able to predict battery defects.

The following messages can be displayed in white in the multifunction display (A1p13) in the instrument cluster (A1):

D Message "MALFUNCTION:ELECTRICAL CONSUMER SWITCHED OFF" (up to 08.2003)
"Battery protection, comfort functions temporarily switched off" (as of 09.2003);

The charge level of the battery is too low (G1).

Cutout stage 1 is activated at a voltage of approx. > 11 V.

Cutout stage 2 is activated at a voltage of approx. > 10.5 V.

D In the event of the message "BATTERY/ALTERNATOR - STOP" the additional battery is connected to the onboard electrical system limp home G1/7 and a consumer shutoff takes place at the same time.

This message appears when the vehicle rolls without the engine and the battery is flat (G1) or when the engine is running the additional battery (G1/7) is connected but the on-board electrical system is still unstable.

i The two-battery on-board electrical system can be diagnosed via STAR DIAGNOSTIC.

The following consumers are switched off during consumer cutoff stage 1:

- D Heated rear window
- D Memory
- D Interior blower (reduced to 69 %)
- D Headlamp cleaning system
- D Seat adjustment front passenger
- D Seat heating/ventilation
- D Multicontour backrest
- D Entrance lamp
- D Exit lamp
- D Warning lamp
- D Steering wheel air conditioning
- D Dynamic seat
- D Stationary heater

The following consumers are switched off during consumer cutoff stage 2:

- D Parktronic
- D Trunk lid remote closing
- D Washer fluid hose heater
- D Washer nozzle heater
- D Mirror heater
- D Reading lamp
- D Passenger compartment lighting
- D Footwell lighting
- D Load compartment illumination
- D Rear/load compartment socket
- D Front cigarette lighter
- D Trailer socket
- D Interior blower (reduced to 53 %)

	Auxiliary battery relay, location/task		GF54.10-P-4201T
	Battery control unit, location/task		GF54.21-P-4121T