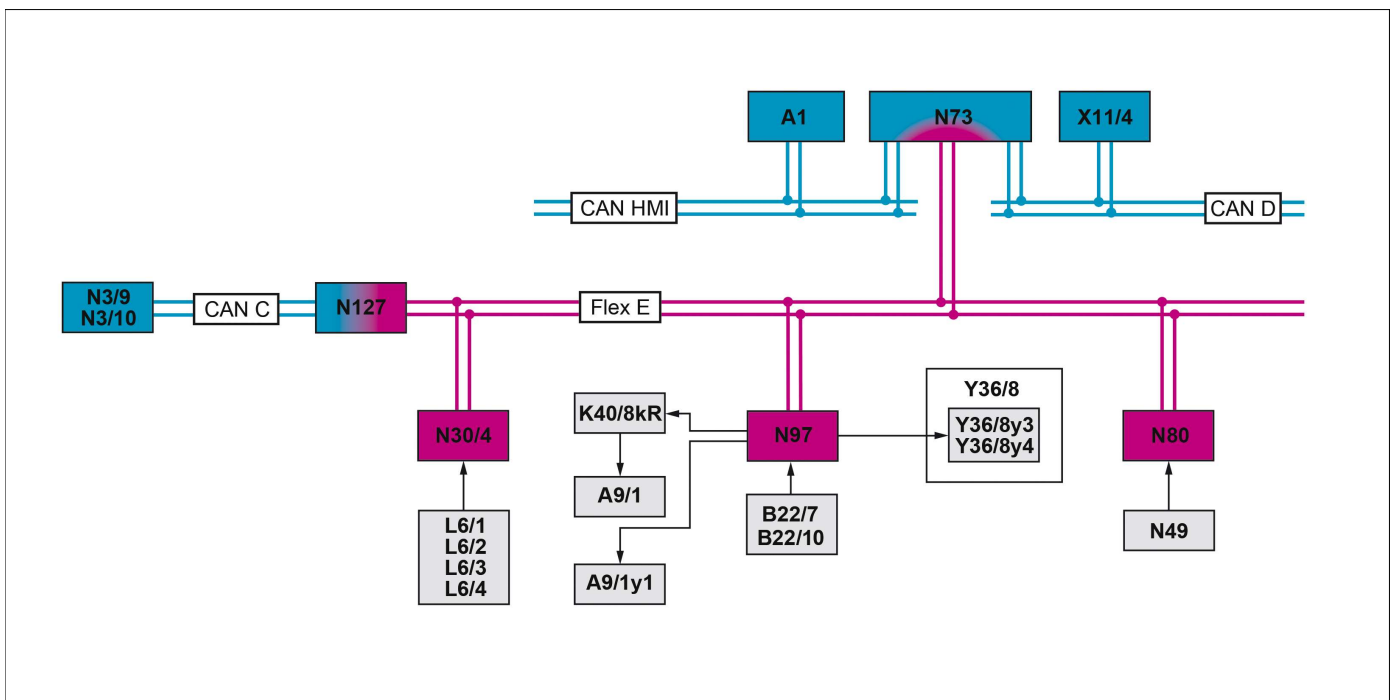


Model 213.2
 up to model year 2021
 except code 459 (Steel suspension with adjustable damping)
 except code 489 (AIR BODY CONTROL)



P32.32-2209-79

Block diagram

A1	Instrument cluster	L6/4	Right rear axle rpm sensor	X11/4	Diagnostic connector
A9/1	AIR BODY CONTROL compressor	N3/9	CDI control unit (with diesel engine)	Y36/8	Rear axle electronic level control valve unit
A9/1y1	AIR BODY CONTROL pressure relief valve	N3/10	ME-SFI [ME] control unit (with gasoline engine)	Y36/8y3	Left rear level control valve
B22/7	Left rear level sensor	N30/4	Electronic Stability Program control unit	Y36/8y4	Right rear level valve
B22/10	Right rear level sensor	N49	Steering wheel angle sensor	CAN C	Engine CAN
K40/8kR	AIR BODY CONTROL relay	N73	Electronic ignition switch control unit	CAN D	Diagnostic CAN
L6/1	Left front axle rpm sensor	N80	Steering column module control unit	CAN HMI	User interface CAN
L6/2	Right front axle rpm sensor	N97	Rear axle electronic level control control unit	Flex E	Chassis FlexRay
L6/3	Left rear axle rpm sensor	N127	Drivetrain control unit		

i On vehicles with rear axle electronic level control, the same component parts (AIR BODY CONTROL relay, AIR BODY CONTROL compressor and AIR BODY CONTROL pressure relief valve) are used as on vehicles with code 489 (AIR BODY CONTROL).

Function requirements, general

- Drive train operational
- Engine running

Electronic rear-axle level control system, general

The electronic rear-axle level control system monitors the rear axle level and, if necessary, actuates the air suspension bellows on the rear axle to compensate for the effect of loads.

The system is made up of the following subfunctions:

- System startup function sequence
- Compressed air supply function sequence
- Function sequence for level control
- Function sequence for locking position
- Function sequence for system and warning messages

Function sequence for level control

The electronic rear-axle level control is realized with 2 air suspension bellows. The objective of electronic rear-axle level control is to keep the rear-axle level constant irrespective of the load status and any driving-dynamics related pitch motion of the vehicle.

If the AIR BODY CONTROL compressor delivers air to air suspension bellows via a corresponding valve in the electronic rear-axle level control valve unit, the vehicle level at the wheel concerned increases. Conversely, the vehicle level decreases when air from the air suspension bellows is released by the corresponding valve in the electronic rear-axle level control valve unit and released at the AIR BODY CONTROL pressure reduction valve in the AIR BODY CONTROL compressor.

To evaluate the current vehicle condition, the electronic rear-axle level control control unit receives the following information via chassis FlexRay:

- The steering wheel angle is sensed by the steering wheel angle

System startup function sequence

The electronic rear-axle level control control unit is activated (woken up) by the active chassis FlexRay after the vehicle is unlocked in order to check the current vehicle level.

Compressed air supply function sequence

Under normal operating conditions, the electronic rear-axle level control operates with different pressures depending on the load. The AIR BODY CONTROL electric compressor is used to supply pressure. The AIR BODY CONTROL compressor is activated by the electronic rear-axle level control control unit via the AIR BODY CONTROL relay.

The duty cycle is monitored to protect against overload. Once the maximum operating time has been reached, the AIR BODY CONTROL compressor is switched off and enters a cooling phase. The excess compressed air in the air suspension bellows of the rear axle suspension struts is relieved by actuating the AIR BODY CONTROL pressure relief valve. The electronic rear-axle level control control unit is sent the atmospheric pressure and the intake air temperature for actuation of the compressed air supply over the chassis FlexRay and the drive train CAN using the powertrain control unit interface from the ME-SFI [ME] control unit (with gasoline engine) or the CDI control unit (with diesel engine).

sensor and delivered by the steering column tube module control unit

- Wheel speeds, from the Electronic Stability Program control unit
- The wheel speeds are used to calculate the vehicle speed and - in combination with the steering wheel angle - to determine the lateral acceleration acting on the vehicle.

The signals from the following components are read-in directly by the electronic rear-axle level control control unit to calculate the rear axle level:

- Left rear level sensor
- Right rear level sensor

Function sequence for locking position

To ensure that, when intentionally raising the vehicle (e.g. with a vehicle jack), air is not continuously released from the suspension struts (which would lower the vehicle), it is necessary to detect this reduction in wheel load automatically and then to initiate a locking position. The locking position is a pure software function which prevents the actuation of the level control valves (draining process). If the locking position is detected by the electronic rear-axle level control control unit, nothing is displayed in the instrument cluster and no faults are stored.

The locking position is automatically canceled if the electronic rear-axle level control control unit receives wheel speed signals from the left front and right front sensors with $v > 10$ km/h from the Electronic Stability Program control unit over the chassis FlexRay. The level control functions are then reactivated.

The output stage actuations of the electronic rear-axle level control control unit via the diagnosis take place independent of the locking status and are thus always possible.

Function sequence for system and warning messages

System and warning messages with safety and system-relevant instructions for the driver are displayed on the instrument cluster.

In order to output the messages, the electronic rear-axle level control control unit sends appropriate messages to the instrument cluster via the chassis FlexRay, the electronic ignition lock control unit and the user interface CAN. There are various system and warning messages with different fault priorities, depending on the severity of the fault and the urgency of the request for action to be taken.

If several faults exist at the same time, several fault messages will be sent accordingly.

	Electrical function schematic for rear axle electronic level control		PE32.33-P-2051-97DBA
	Overview of system components for rear axle electronic level control		GF32.33-P-9992FG