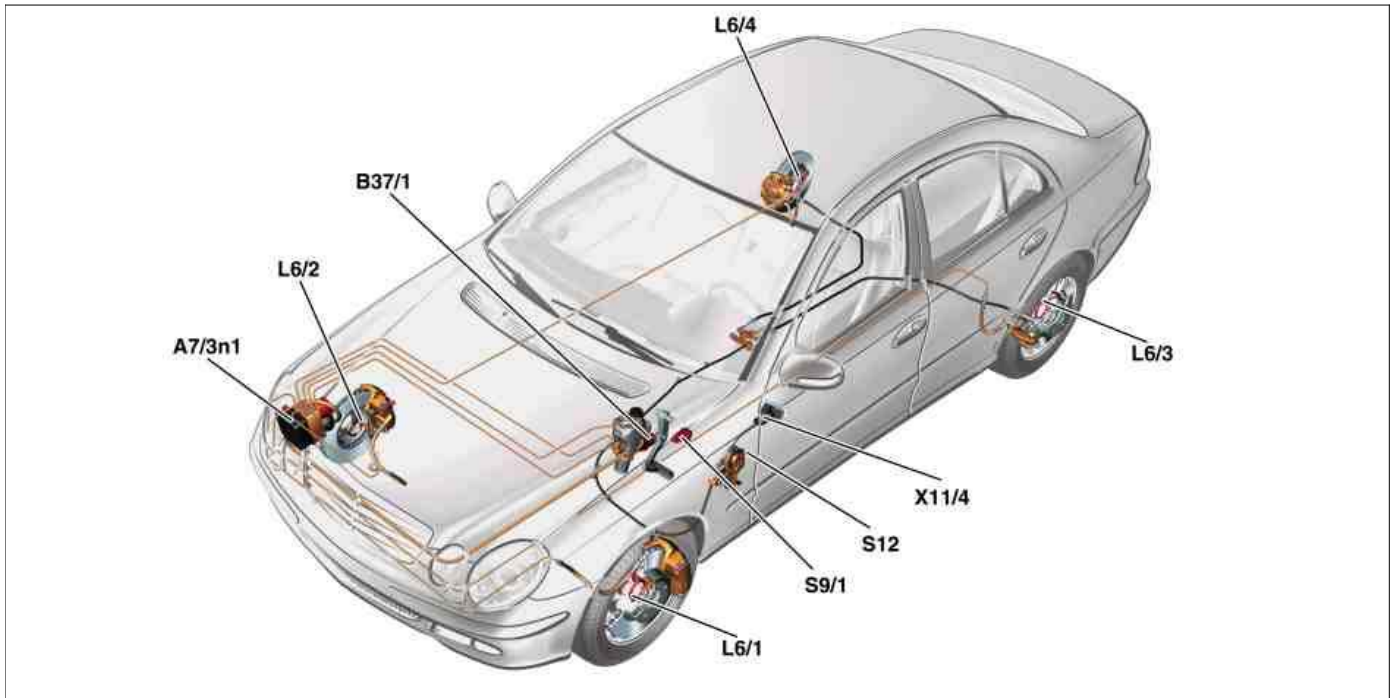


MODEL 211.004 /006 /016 /023 /026 /028 /042 /043 /056 /061 /065 /070 /076 /206 /216 /223 /226 /242 /243 /256 /261 /265 /270 /276 /606 /616 up to 31.5.04,  
211.080 /082 /083 /087 /280 /282 /283 up to 30.11.04



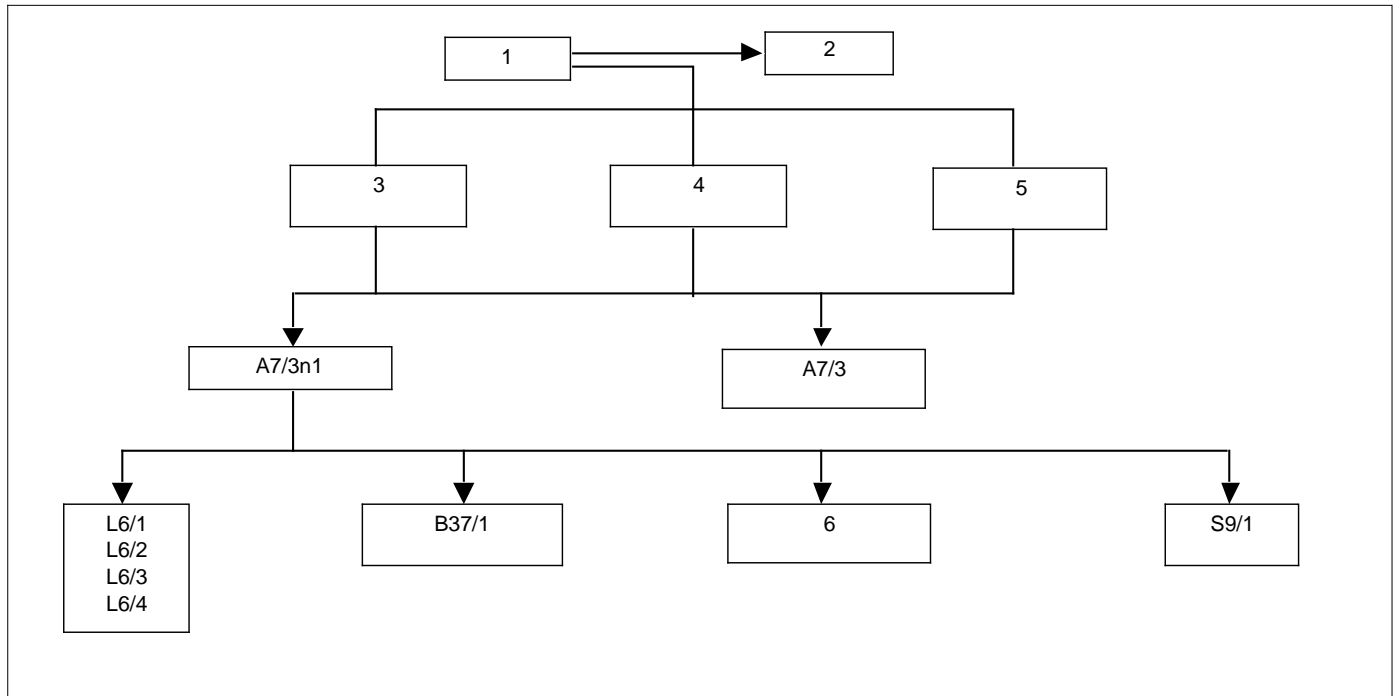
P42.46-2041-79

**Shown on model 211.0**

A7/3n1 SBC control unit  
B37/1 SBC pedal value sensor  
L6/1 Left front rpm sensor

L6/2 Right front rpm sensor  
L6/3 Left rear rpm sensor  
L6/4 Right rear rpm sensor

S9/1 Stop lamp switch (4-pin)  
S12 Parking brake indicator switch  
X11/4 Data link connector



**Dataflow display**

1 Sensotronic Brake Control (SBC), function  
2 Electronic stability program (ESP), function  
3 Normal braking function  
4 Additional functions

5 Emergency mode function  
6 Operating unit  
A7/3 SBC hydraulic unit  
A7/3n1 SBC control unit  
B37/1 SBC pedal value sensor

L6/1 Left front rpm sensor  
L6/2 Right front rpm sensor  
L6/3 Left rear rpm sensor  
L6/4 right rear rpm sensor  
S9/1 Stop lamp switch (4-pin)

**Function**

The Sensotronic Brake Control (SBC) is an electrohydraulic brake system.

In normal operation the hydraulic link between brake pedal and wheel brakes is interrupted by separation valves. In contrast with the conventional braking system, an electrohydraulic control ensues with every type of intervention by the braking system.

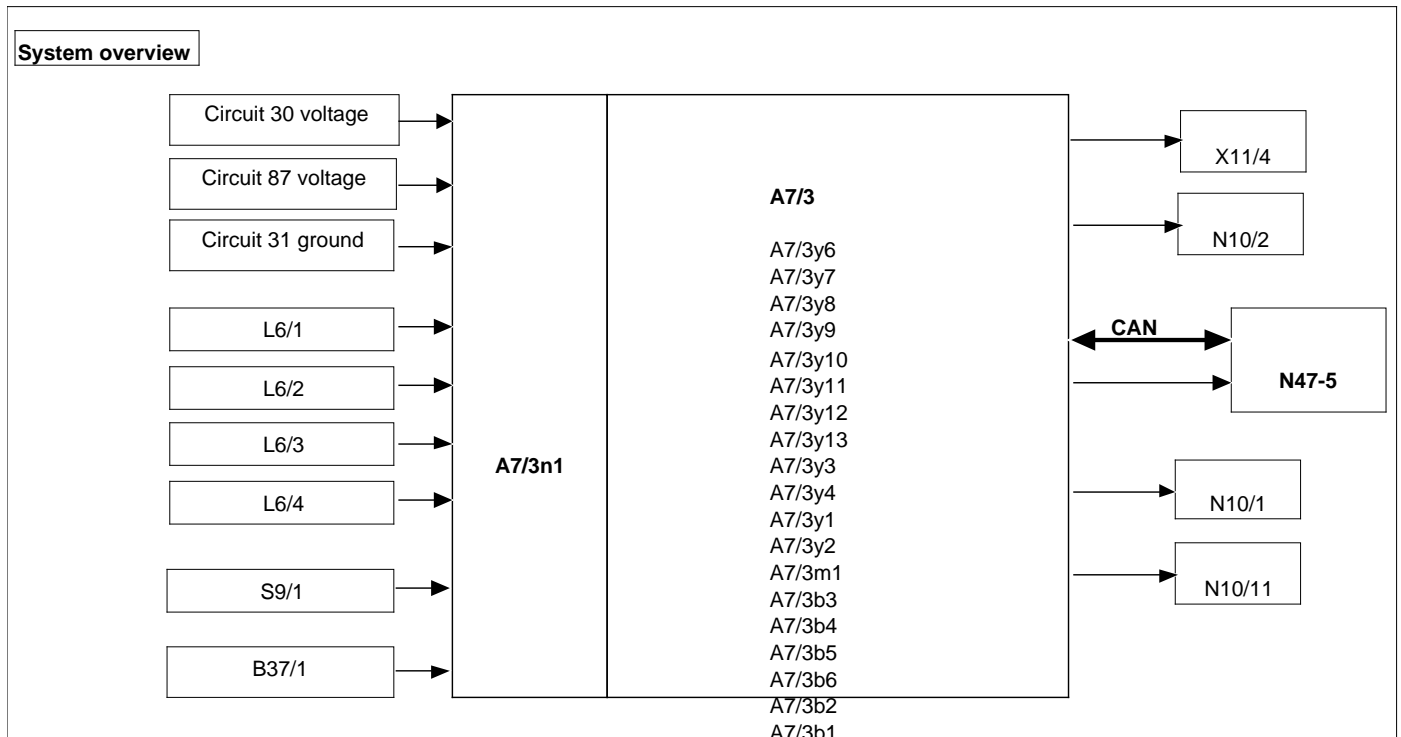
The SBC provides the following advantages:

- Improvement in the metering of the required brake pressure, more exact and quicker.
- Reduction in stopping distance in particular during an emergency stop (improved BAS function).
- Increase in active vehicle dynamics safety as the vehicle dynamics control systems ABS and BAS as well as ASR and ESP can be used in an optimized manner.
- Leads to more timely and more comfortable stabilization of the vehicle during ASR or ESP control.

- Takes care of even wear on the brake linings and better response characteristics of the brake due to optimum brake force distribution between the front and rear axle.
- Use of the brake force reserve at the rear axle due to increasing the brake force share in the partial braking range and when braking from a low speed.
- Results in more stable braking performance with optimal deceleration values when cornering as a result of the braking forces being shifted to the outer wheels.
- No reaction (vibration) on the brake pedal during ABS control intervention functions

Additional functions relevant to comfort and safety:

- **SBC-Hold** (SBC hold).
- Softstop (SBC gentle braking to a stop).
- SBC Stop (SBC hold-on).
- Dry braking of brake disks under wet conditions and precharging (overcoming the play).



System overview

A7/3	SBC hydraulic unit	A7/3y6	Left front inlet control valve	N10/1	Driver-side SAM control unit with fuse and relay module
A7/3b1	Front axle pre-pressure sensor	A7/3y7	Left front outlet control valve	N10/2	Rear SAM control unit with fuse and relay module
A7/3b2	Reservoir pressure sensor	A7/3y8	Right front inlet control valve	N10/11	Passenger-side SAM control unit
A7/3b3	Left front pressure sensor	A7/3y9	Right front outlet control valve	N47-5	ESP, SPS [PML] and BAS control unit
A7/3b4	Right front pressure sensor	A7/3y10	Left rear inlet control valve	S9/1	Stop lamp switch (4-pin)
A7/3b5	Left rear pressure sensor	A7/3y11	Left rear outlet control valve	X11/4	Data link connector
A7/3b6	Right rear pressure sensor	A7/3y12	Right rear inlet control valve		
A7/3m1	High-pressure charging pump	A7/3y13	Right rear outlet control valve		
A7/3n1	SBC control unit	B37/1	SBC pedal value sensor		
A7/3y1	Left front separation valve	L6/1	Left front rpm sensor		
A7/3y2	Right front separation valve	L6/2	Right front rpm sensor		
A7/3y3	Front axle balance valve	L6/3	Left rear rpm sensor		
A7/3y4	Rear axle balance valve	L6/4	Right rear rpm sensor		

The system is activated via various waking events:

- Circuit 15R ON
- Stop light switch (S9/1)
- Operate parking brake release handle
- Parking brake indicator switch (S12)
- Left front door contact switch (S17/3)
- Right front door contact switch (S17/4)

**i** During the "PreDriveCheck" pressure is built up in the braking system. In order to prevent the pistons moving out of the brake calipers unintentionally (e.g. when changing the brake pads), the system must be deactivated using the diagnosis tool during work on the brake system.

- Vehicle unlocking via remote control

After "Waking" the SBC control unit (A7/3n1) carries out a self-test (PreDriveCheck). The storage pressure is checked and corrected if necessary. In addition, the pressure sensors and the control valves are checked and various leak and operational checks performed. Self-tests are also carried out constantly while driving.

In order to prevent the system being switched off when the vehicle is rolling (e.g. rolling downhill or traffic jam situation) when the ignition is switched off, a signal is transmitted which displays the vehicle standstill.

A7/3n1 The driver's brake actuation is transmitted electronically to the SBC control unit via the SBC pedal travel sensor. B37/1 The brake pressures calculated by the ESP, SPS [PML] and BAS control unit (N47-5) are allocated individually to the individual wheel brakes via the SBC hydraulic unit (A7/3).



The hydraulic energy required for this is provided by a high pressure reservoir which is supplied with pressure from a high-pressure charging pump (A7/3m1).

If faults exist in the electrohydraulic system, the hydraulic link between brake pedal and wheel is automatically restored.

### System relationships, Sensotronic Brake Control (SBC)

The ESP, SPS [PML] and BAS control unit (N47-5) has a higher priority than the SBC control unit (A7/3n1). Both control units are interlinked by their own CAN databus. The SBC control unit (A7/3n1) conveys data on the driver's braking wish and on the pressures in the system to the ESP, SPS [PML] and BAS control unit (N47-5).

The ESP, SPS [PML] and BAS control unit (N47-5) calculates the specified pressures required and transmits them to the SBC control unit (A7/3n1). A7/3n1 In the SBC control unit the pressures for braking control are then set and the actual pressures signaled back.

 AH	Notes on towing		AH42.00-P-0001-05B
 AH	Notes on testing electronic components and system for damage resulting from an accident		AH42.00-P-0001-06B
	Sensotronic Brake Control (SBC) function, location of electrical components		GF42.46-P-0001-03E
	Sensotronic Brake Control (SBC) function, location of hydraulic components		GF42.46-P-0001-02E
	Electronic stability program (ESP), driver information		GF42.45-P-0001-04T
	SBC normal braking, function		GF42.46-P-1000T
	SBC additional functions, function		GF42.46-P-2000T
	SBC function brake application in the event of system fault		GF42.46-P-3000T
	Electronic stability program (ESP), function		GF42.45-P-0001T
	Location/task/design/function of traction systems hydraulic unit		GF42.50-P-4000S
	SBC control unit, location/task/function		GF42.46-P-4500SL
	SBC pedal value sensor, location/task/design/function		GF42.46-P-4210SL