

Trailer EBS D – New Software Release

As of calendar week 51/2004 all Trailer EBS-Modulators are equipped with the new D2 software. The following new features can now be used with variants 480 102 014 0 and 480 102 015 0:

- **RSS for drawbar trailers**
- **4S/3M Vario: Variable installation position of the modulator in the drawbar trailer**
- **Facilitate installation specification for usage of RSS in semitrailers**

The changeover was realized with running number and production date as follows:

WABCO Part number	Modulator	running number ECU	production date
480 102 010 0	90 000	287 005 8001	51/ 04
480 102 014 0	140 000	215 011 3001	51/ 04
480 102 015 0	60 000	216 000 5001	51/ 04

Important Note:

Modulators with this software status can be put into operation with the TEBS diagnosis as of version 5.11 only. The required software is available in many languages via software subscription (www.wabco-auto.com, menu Downloads)

The new Functions in Detail

1. RSS for Drawbar Trailers

The trailer stability system RSS is from now on also available for drawbar trailers. The system offers performance at the best since wheels of all axles are braked when RSS is active. This is a special feature of this WABCO system and became possible by a new control method called Fuzzy-Select-Logic (patent pending). This ABS control method acts on the axle equipped with the EBS relay valve.

The RSS certificate was extended by this new system (TÜV-Report EB 134.3E).



WABCO test vehicle without RSS

2. Trailer EBS D 4S/3M - Vario

This revised system is called **4S/3M - Vario** since nearly all components mounting positions are possible in drawbar trailers.

Brake hoses of a length up to 6 m are now released (TÜV-Report EB 123.5E) and enable to install all components in one module centrally in the middle of the vehicle (fig. 1). This mounting allows to optionally control front axle or rear axle with the modulator. A new developed ABS control allows this variable installation, which adapts the brake pressures only slightly on the basis of the evaluation of the wheel slip.

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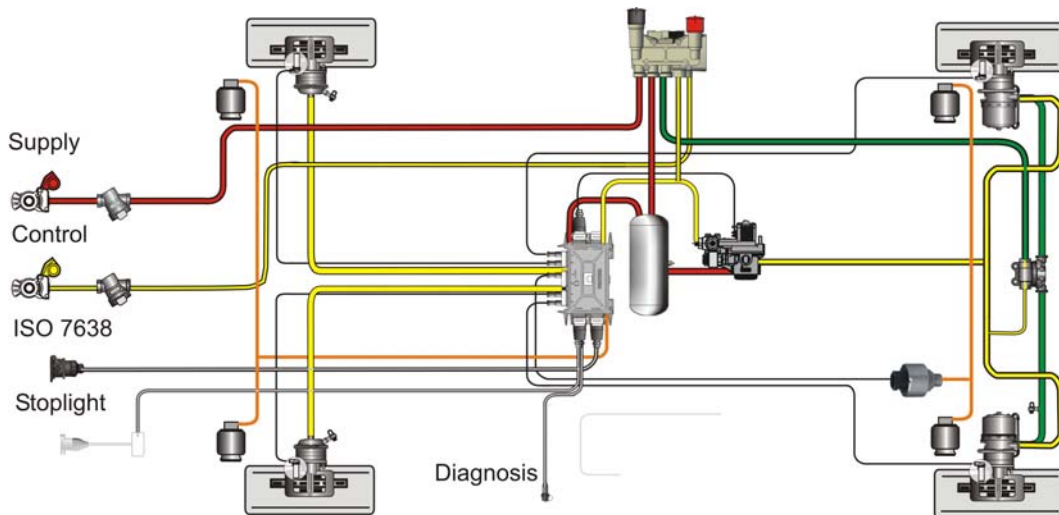


Figure 1: Central installation of all components in the middle of the vehicle

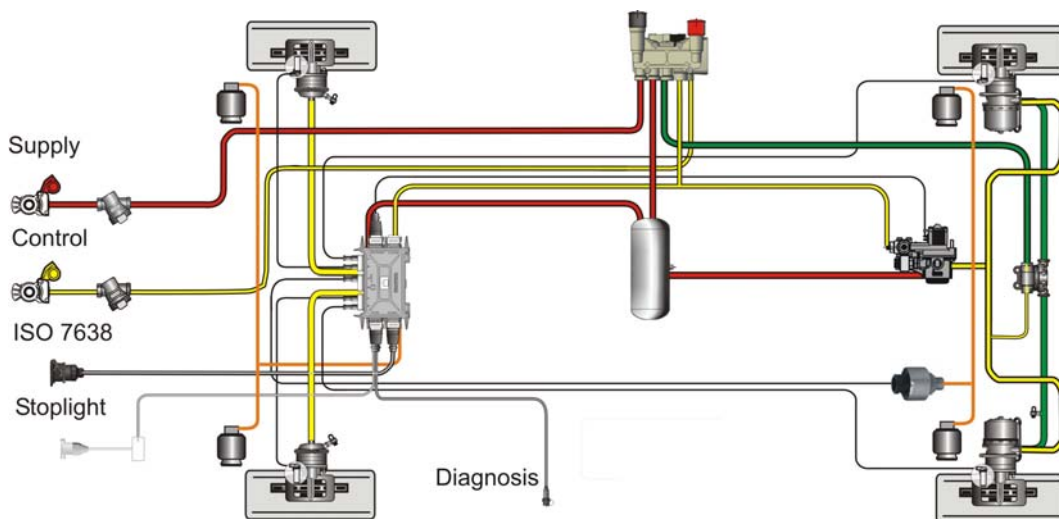


Figure 2: Installation of the modulator on the front axle

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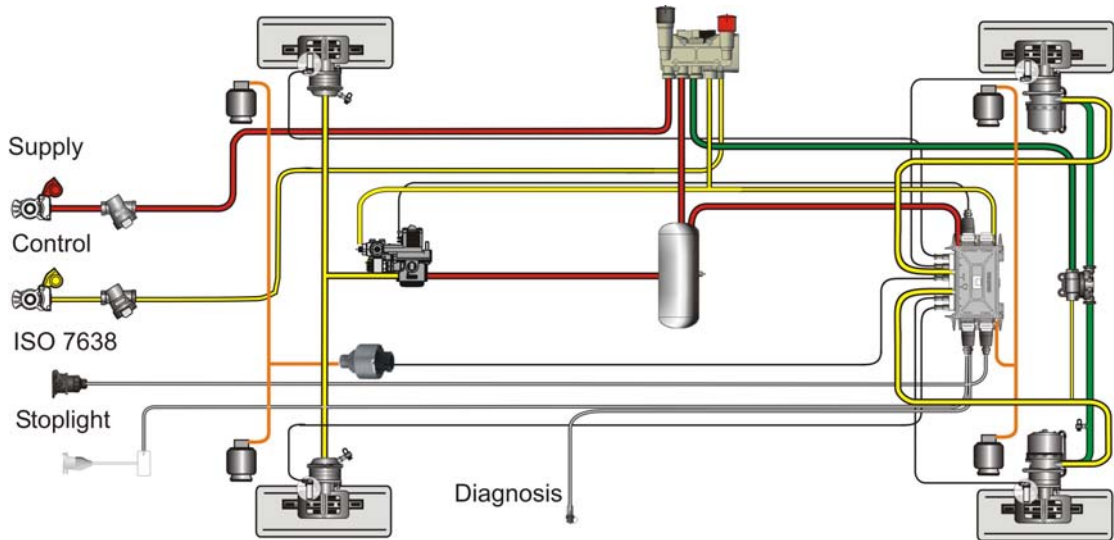


Figure 3: Installation of the modulator on the rear axle

In order to obtain the best RSS control, the trailer modulator should control the axle with the highest brake force. We recommend:

- **For 2-axle drawbar trailers**
4S/3M – Vario / Modulator central or on the front axle. The modulator controls the front axle (equipped with largest cylinders). WABCO brake scheme: 841 601 086 0
- **For 3-axle drawbar trailers**
4S/3M – Vario / Modulator central or on the rear axle. The modulator controls both rear axles.

However, as per installation specification all three mounting positions are released (modulator on the front axle, in the center of the vehicle or on the rear axle). Only another axle load sensor for the axle e,f is required as additional component for RSS.

- **Axle load sensor:** 441 040 013 0 and 441 040 015 0
- **Cable:** 449 752 xxx 0 (available lengths: 3 m, 8 m und 10 m)

The axle load sensor is connected to the air suspension circuit of the axle with the EBS relay valve (axle e,f).

3. Extended Installation Specification

3.1 Installation specification for semitrailers

The mounting area of the modulator in semitrailers with RSS was extended. **The permissible deviation of the modulator position from the center axis of the vehicle (ΔY) was increased from 300 mm to 500 mm.** If needed, the total width of the chassis can now be used for the installation of the modulator.

	ΔX [mm]	ΔY [mm]	$\Delta\alpha$	$\Delta\beta$	$\Delta\vartheta$
480 102 014 0 with RSS	2000	500	$\pm 15^\circ$	$\pm 3^\circ$	$\pm 3^\circ$
480 102 015 0 with RSS	2000	500	$\pm 15^\circ$	$\pm 3^\circ$	$\pm 3^\circ$

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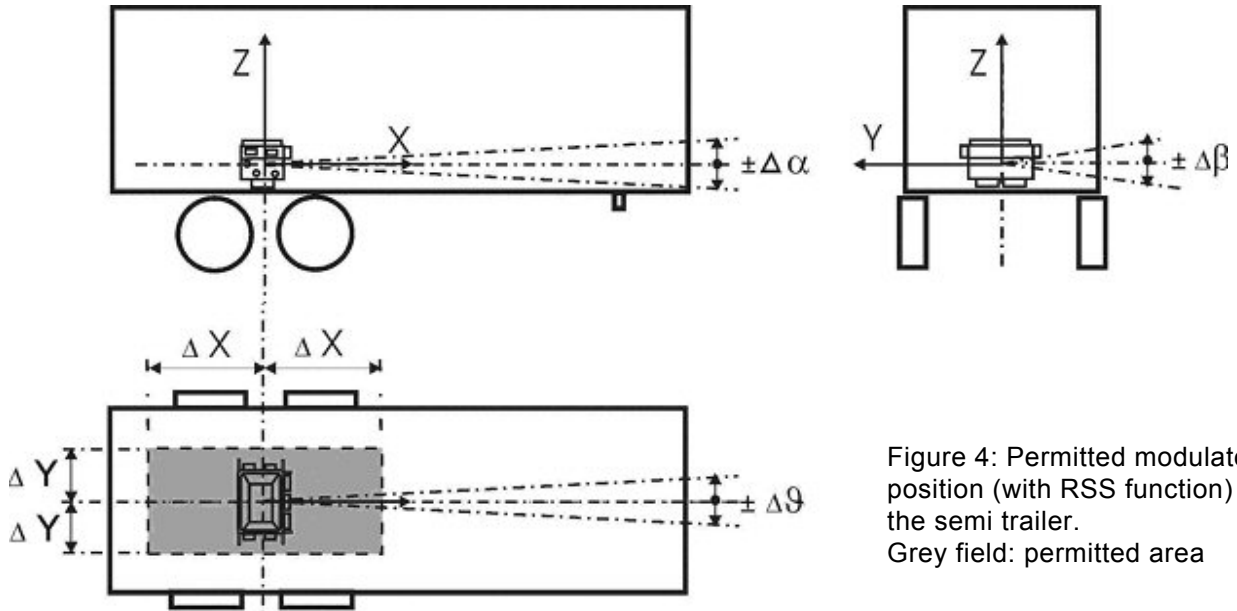


Figure 4: Permitted modulator position (with RSS function) in the semi trailer.
Grey field: permitted area

3.2 Installation specification for drawbar trailers

	ΔX [mm]	ΔY [mm]	$\Delta\alpha$	$\Delta\beta$	$\Delta\theta$
480 102 014 0 with RSS	600	500	$\pm 15^\circ$	$\pm 3^\circ$	$\pm 3^\circ$
480 102 015 0 with RSS	600	500	$\pm 15^\circ$	$\pm 3^\circ$	$\pm 3^\circ$

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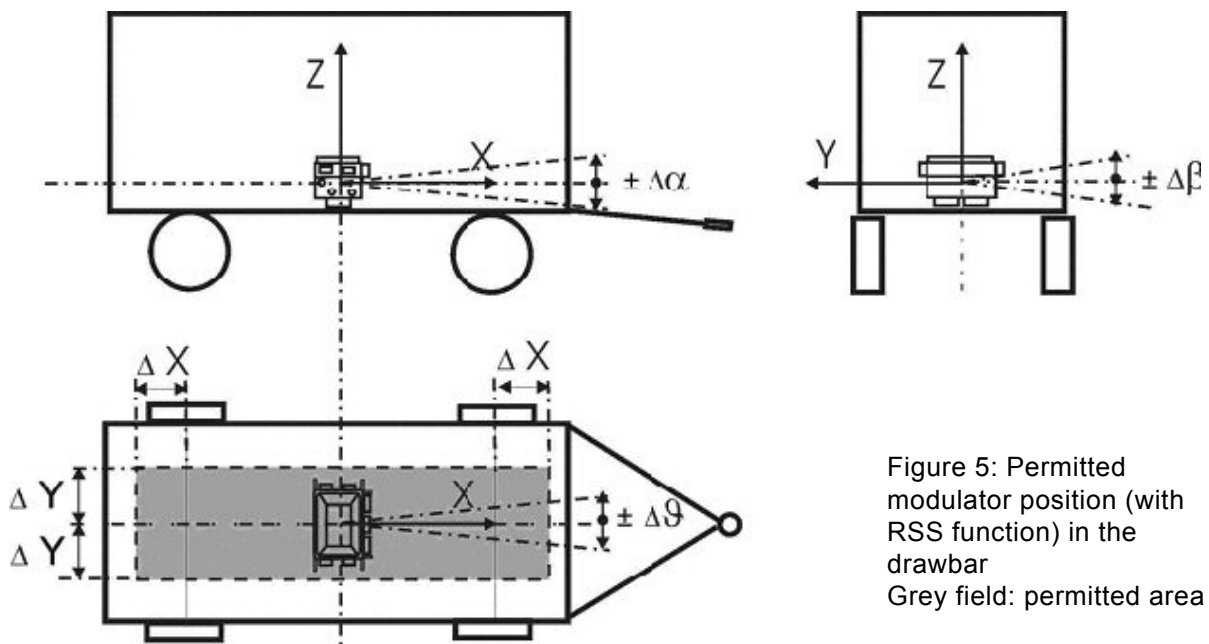


Figure 5: Permitted modulator position (with RSS function) in the drawbar
Grey field: permitted area