

#### Function

The **Relay Modulator Valve** is a modulator with integrated relay valve and is used on trailers with ABS/EBS to control the service brake pressure in one or more brake actuators.

In a trailer air brake system, under non-ABS conditions, the Relay Modulator Valve acts as a standard relay valve and in response to an air pressure signal, speeds up brake applications by providing rapid and precise control of large volumes of air.

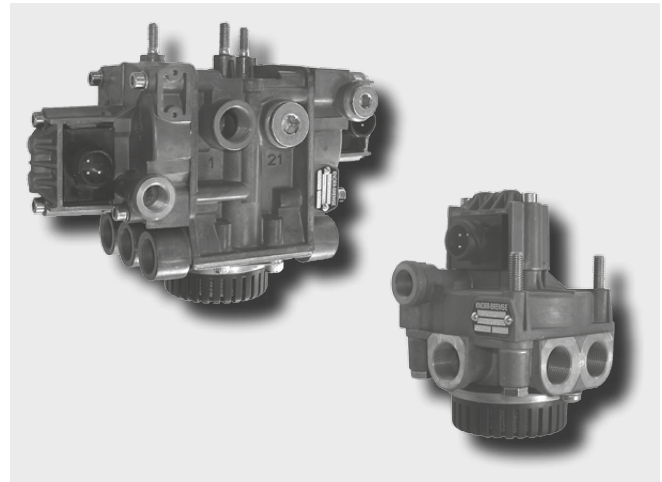
However, if during braking, the anti-lock braking system's ECU detects that a sensed wheel is decelerating too rapidly and wheel lock is imminent, it sends electronic signals to the Relay Modulator Valve controlling that wheel. The modulator valve then rapidly modulates the braking pressure between the three states of "release", "hold" and "apply". This continues until the risk of wheel lock is overcome.

The Relay Modulator Valve is available in both single and dual relay form. The Dual Relay Modulator Valve can be used as an alternative to two single valves fitted across the axle. The Dual Relay Modulator Valves use a single signal and a single supply port with the delivery ports independently controlled by their respective modulators.

The Dual Relay Modulator Valve is used as a part of the Trailer Module Assemblies ES200. (See PD-203-100, Document No. Y011361 and PD-203-200, Document No. Y011365).

The Single Relay Modulator Valve can also be used as a third modulator in systems using TEBS4 (See PD-215-100, Document No. Y011366).

Please note that valves are supplied complete with exhaust silencers.



Standard Symbol as DIN ISO 1219

See page 4

#### Technical Features

Maximum operating pressure:	10 bar	Operating temperature range:	-40 °C to +75 °C
Weight - Single modulator:	1.2 kg approx.	Dual modulator:	2.9 kg approx.
Nominal voltage:	24 V DC		

#### Range Overview

Part No.	Type No.	Modulator type	Port threads			Electrical connection	Used in Trailer Module Assembly		
			1	2	3		System	Part No.	Type No.
I130522	BR9231	Dual	M22x1.5	(22) 3 x M22x1.5	M16x1.5	Threaded M24x1	KB3-TA	I136383	ES2001
I137090 <sup>1)</sup>	BR9233			(23) 3 x M22x1.5				I136384	ES2002
						Bayonet DIN72585	A18	I136413	ES2005

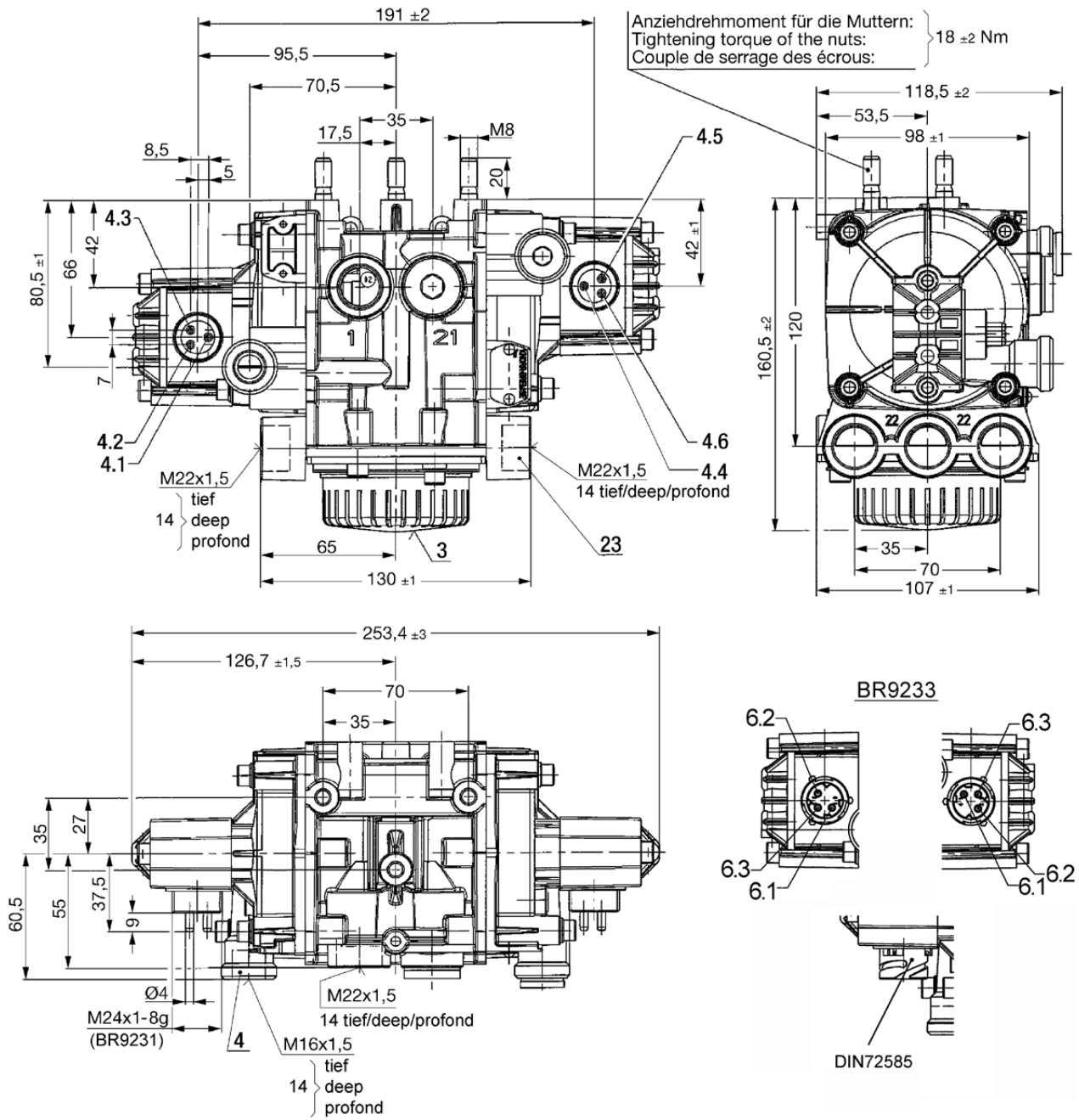
Part No.	Type No.	Modulator type	Port threads			Electrical connection	Used in Brake System
			1	2	3		
K125877K50 <sup>2)</sup>	-	Single	M22x1.5	4 x M22x1.5	M16x1.5	Threaded M24x1 <sup>2)</sup>	KB3-TA
I137091 <sup>1)</sup>	BR9234						TEBS4

<sup>1)</sup> will carry the suffix N00 which denotes that it is supplied without packaging.

<sup>2)</sup> BR9234 with adapter cable Bayonet to M24 x 1 (replaces BR9232 - I132614)

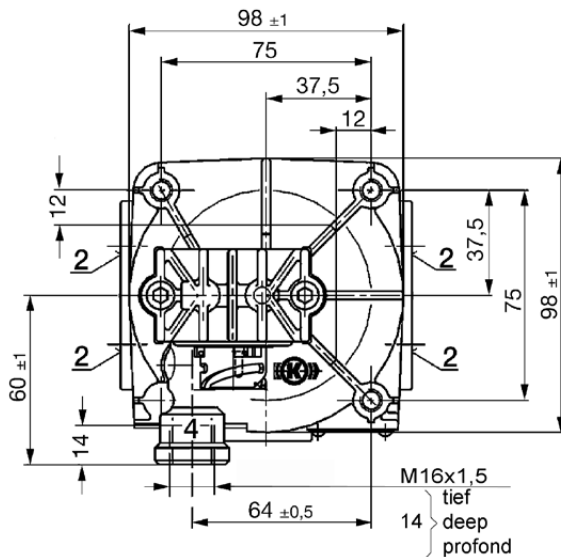
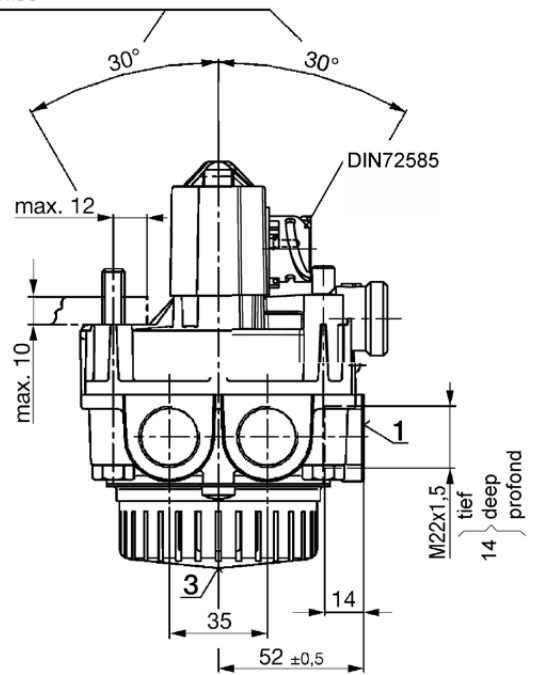
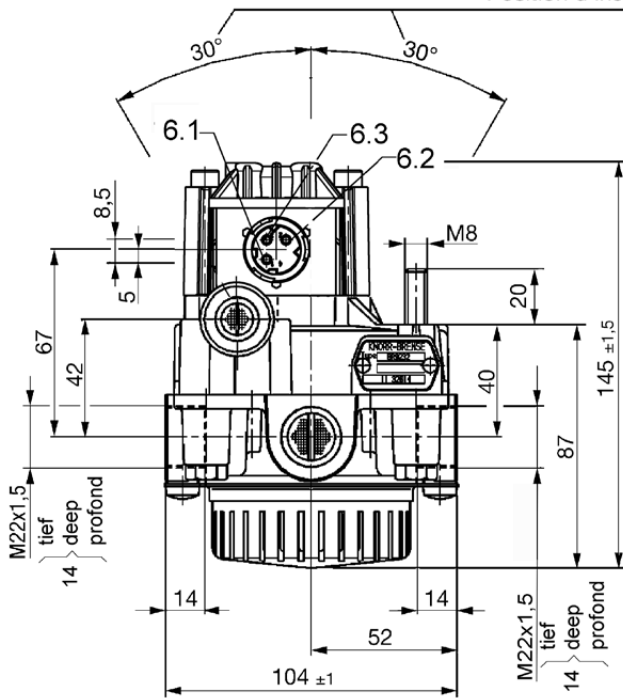
#### Dimensions

BR9231  
BR9233



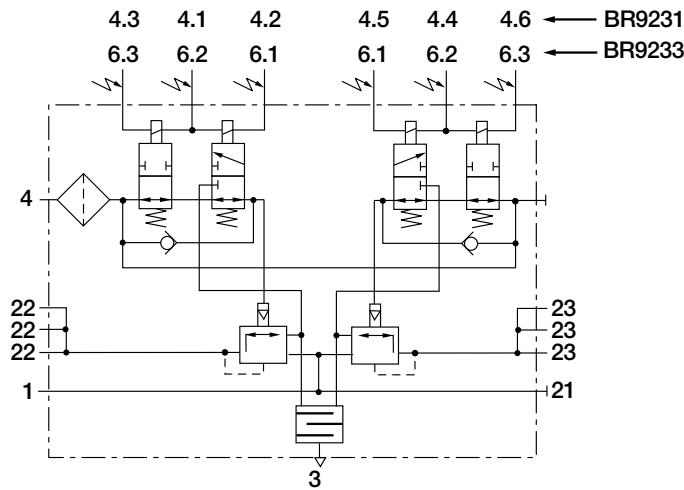
BR9234

Zulässige Einbaulage  
Admissible installation position  
Position d'installation admise

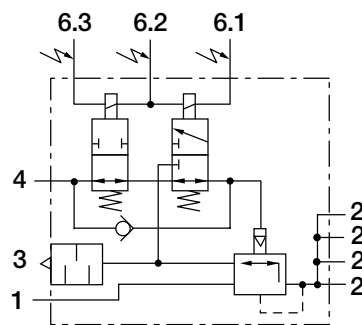


#### Standard Symbols as DIN ISO 1219

BR9231  
BR9233



BR9234



#### Revision Details

Rev. 005	April 2019	New Layout



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