

TRM TRUCK RETROFIT KIT

The Knorr-Bremse Trailer Roadtrain Module (TRM) for Truck Retrofit Kit enables trucks that do not have an Electronic Braking System (EBS) to communicate with compatible Trailer Electronic Braking Systems (TEBS). The TRM system converts the pneumatic brake signal from the foot brake valve and reproduces it into an electronic braking signal required by TEBS units.



Why fit the TRM for Truck Retrofit Kit?

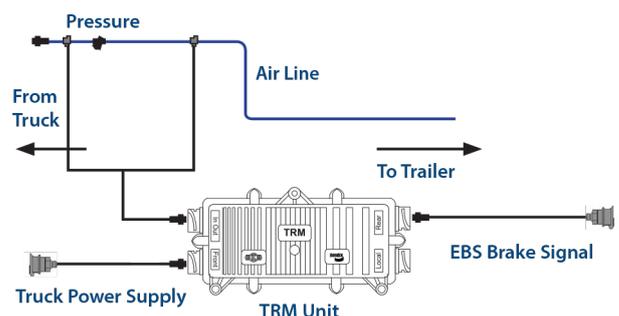
A Trailer Electronic Braking System (TEBS) is controlled by an electronic signal generated by a truck that is transmitted through a CAN line to a TEBS unit on the trailer. When a truck not fitted with an Electronic Braking System (EBS) is towing a TEBS equipped trailer, only a traditional pneumatic brake signal is used to control the trailer. This means that the improved braking response available from the TEBS via utilising electronic braking signals is lost!

The TRM for Truck Retrofit Kit will measure the pneumatic control line pressure for the trailer from the foot brake valve and generate an electronic representation of this value on the ISO11992 CAN bus. Because this electronic brake signal is **considerably faster** than the conventional pneumatic signal when transmitted over long distances, the brake apply and release times of a connected trailer or combination of trailers with compatible Trailer EBS will be significantly improved and **stopping distances can be reduced**.

TRM can be fitted onto a **wide variety of truck brands** and provides a CAN signal **compatible with all brands of Trailer EBS**. To ensure compatibility in your vehicle combination, contact your local Knorr-Bremse representative.

Technical Insights

Two pressure sensors are installed along the pneumatic brake line. The sensors convert the pneumatic brake signal, and their electrical outputs are sent to the TRM unit. In addition, the measured pressure values are compared against each other and a sensor crosscheck fault is generated if the values differ.



The TRM unit reads the signal from the two external pressure sensors and generates a CAN message which is immediately relayed to the Trailer EBS unit via the ISO11992 CAN line. This ensures that the connected Trailer EBS unit(s) will always work according to a CAN brake signal, speeding up the response time of the trailer braking system(s) even if the truck is fitted with a conventional braking system.

The Knorr-Bremse TRM is a **multi-volt device** that will operate between 9 and 32V and is available in kit format with options for 12 and 24 V configurations:

- 12 V Truck TRM Retrofit Kit: CV2122
- 24 V Truck TRM Retrofit Kit: CV2123

Truck, TRM and Trailer Compatibility

Truck Voltage	Trailer EBS System		
	12 Volt	24 Volt	Multi Volt
12 V	Not suitable *	Not suitable	Suitable
12 V with Inverter	Not suitable *	Suitable **	Suitable
24 V w/o EBS	Not suitable *	Suitable	Suitable
24 V with EBS	Not suitable *	Not required ***	Not required ***

* 12 V trailer systems are not true EBS as they cannot handle necessary ISO11992 CAN messages between truck and trailer
 ** A power inverter is required to be fitted before the TRM unit to convert the input voltage to 24 V
 *** CAN already supplied by the truck, TRM not required