

UP2DATE

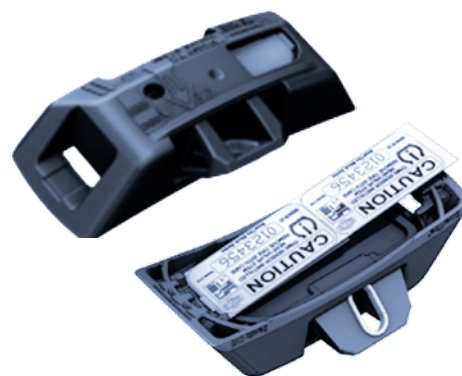
SMARTIRE® TYRE PRESSURE MONITORING SYSTEM (TPMS)

Update: The new SmarTire® TPMS Black Series sensor service replacement components as well as the new ECUs.

Knorr-Bremse offers reliable products with high quality. The continuous enhancement of our products leads to changes in material, components or production process. In the course of a continuous enhancement of the SmarTire Pressure Monitoring System (TPMS), we would like to inform you about a new generation of ECUs and sensors now available in the Independent Aftermarket.







At a glance

- › The Tyre Pressure Monitoring System (TPMS) is a system that alerts the driver when a monitored tyre is running below its normal pressure or above its normal temperature
- › High product life expectancy due to robust and proven design
- › Tyre internally mounted pressure sensors (rim-mounted)
- › Flexible configuration & system set-up





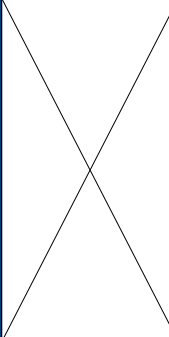
ECU REPLACEMENT MATRIX

The ECU must be compatible with the vehicles fitted SmartTire sensor and TEBS software version. Please use the matrix below to find the correct version for your vehicle.

AM				Description	Compatibility to sensor part number	Compatibility to TPMS system
Obsolete AM Part Number		New AM Part Number				
ECU	200.0184 200.0189 200.0216 201.0013.V00 201.0013.V01 201.0014.V00 201.0014.V01 201.0014.V02 200.0224 200.0225		K180082 	With TNC (connection) for the antenna	201.0009N 201.0007N K141469 (AM) K141466 K141467 (AM)	Backwards compatible (old CAN specification) for TEBS G2.2 modules before the comprehensive Kyoto software update
			K180080 	Without TNC (connection) for the antenna	K141469 (AM) K141466 K141467 (AM)	Only compatible for TEBS G2.2 modules after the comprehensive Kyoto software update due to new CAN specification
			K180081 	With TNC (connection) for the antenna	201.0009N 201.0007N K141469 (AM) K141466 K141467 (AM)	
Handheld Tool	090.0021 090.0011		K180077 			

SENSOR REPLACEMENT MATRIX

The sensor must be compatible with the vehicles fitted SmarTire ECU. Please use the matrix below to find the correct version for your vehicle.

AM		Description	Compatibility to ECU part number	Compatibility to TPMS system
Obsolete AM Part Number	New AM Part Number			
				
GEN2	Gold Series (produced 2007–2018) - For servicing the SmarTire TPMS Gold Series sensors. Take care to ensure you obtain the correct version of the new sensor as the communications protocol is different. Refer to the part number printed on the sensor being replaced to ensure the correct part number is selected. To confirm compatibility, refer to the the ECU (Electronic Control Unit) part number.			
	201.0009N 201.0007N	K141469	SmarTire Black Series Sensor for replacing existing Gold Series Sensors. Contains sensor/cradle assembly only. Does not include a strap.	For Use With ECU Part Numbers: 200.0184 200.0189 200.0216 201.0013.V00 201.0013.V01 201.0014.V00 201.0014.V01 K180081 K180082 Gold Sensor & Black Sensor GEN2 can be mixed in one system
GEN4	Black Series (produced 09-2018 to current) - For servicing the SmarTire TPMS Black Series sensors. The part numbers shown in this table cannot be used to service the SmarTire TPMS Gold Series sensors. The Black Series sensors are designed to be compatible with new versions of the same. To ensure compatibility, refer to the ECU (Electronic Control Unit) part number.			
		K141467	SmarTire Black Series Sensor. Contains sensor/cradle assembly only. Does not include a strap.	For Use With ECU Part Numbers: 201.0014.V02 200.0224 200.0225 K180080 K180081 K180082 Note: ECUs are backward compatible
Strap	264.0328N	K129560	Strap for 22.5" Rims*	
	264.0332N	K129561	Strap for 24.5" Rims*	

* not applicable for 17.5" Rims

CAUTION: Use of the incorrect sensor will lead to a sensor fault, resulting in data from the sensor not being received by the ECU. If using a tool to read from the new sensor, the system cannot access data from an incorrect sensor type.

BENEFITS OF THE SYSTEM

Feature	Description	Benefits
Pressure Deviation Alert (Under or over inflation >10%)	The TPMS calculates each tyre's 'correct' inflation pressure based on its operating temperature and its cold inflation pressure setting. The system then constantly compares this with the actual measured pressure and temperature values for each tyre.	Temperature Compensated Pressure Alerts. Dual Tyre Imbalance Alerts.
Critical Low Pressure Alert (Under inflation >15%)	If a tyre's pressure falls to 15% below the programmed cold inflation pressure (CIP) value, a warning alerts the driver to take immediate precautions.	
High Temperature Alert	If a tyre's temperature exceeds 90°C, a warning is given. Note: High temperatures are typically caused by under-inflation and a Pressure Deviation Alert or Critical Low Pressure Alert will normally occur in advance of a High Temperature Alert. If triggered on its own, the High Temperature Alert could indicate an alternative cause such as a dragging brake or a bearing failure.	High Temperature Warnings.
Data Transmission		Alerts and tyre information can be transmitted via standard ISO11992 CAN interfaces. Seamless integration with the TEBS G2.1 and G2.2.

MAIN COMPETITIVE ADVANTAGES

High product life expectancy due to robust and proven design

- Weather-proof, robust chassis-mounted ECU (IP67 rating) for a flexible vehicle installation
- Self contained lithium battery power in tyre sensors with more than 5 years lifetime and ability to maintain consistent performance of the system, at both upper and lower temperature extremes
- ECU tested to SAE J1455 standards
- Available Radio and EMC approvals for Europe and North America

Internally mounted tyre sensors

- Measure both temperature, pressure and battery life
- Do not interfere with normal tyre pressure maintenance
- Protected from damage and theft and no added additional leak point to the tyre

Flexible configuration & system set-up

- Supply voltage from 9 to 36 Volt
- Programmable pressure and temperature alert levels including temperature compensation
- Internal antenna plus connection for external antenna to optimize the wireless data transmission from sensor to final receiver depending on vehicle application
- Retains alerts after power down

Communication interface & diagnostics

- Tyre Pressure monitoring and temperature monitoring to be displayed on the Knorr-Bremse iTAP
- Standardized J1939 CAN interface to transmit tyre information
- Retains alerts after power down

Temperature compensation

- Tracks increase in pressure due to temperature and uses the information when calculating its pressure alerts & warnings. Significantly improved system response to pressure drops with prevention of false alarms

DID YOU KNOW THAT...?

- Industry research has indicated that about 90% of tyre blow-outs can be traced to under-inflation, and almost half of all emergency service road calls are tyre-related.¹
- Tyres account for up to 30% of a vehicle's fuel consumption. In other words, about every third tank of fuel is used exclusively to overcome the rolling resistance of the tyres.²
- Low rolling resistance tyres not only reduce fuel consumption, they also reduce carbon dioxide (CO₂) emissions. For one litre of fuel that is not consumed, 2.66 kilos less CO₂ is emitted into the air.³
- According to data collected by Continental, commercial vehicles are under-inflated by an average of around twelve percent. This is accompanied by a roughly 1.5 percent increase in fuel consumption and a tyre service life that is almost ten percent shorter.⁴
- When one tyre of a dual wheel assembly has a lower pressure than the other, there will be uneven weight distribution. This can lead to wheel drag, heat generation and ultimately tyre failure or fire!

Note

Detailed information about the product and its functions can be found in document Y095833 available on the "Download Documentation" section on the Knorr-Bremse website: **truckservices.knorr-bremse.com**.

¹ Kilcarr, Sean: Tires: Avoiding failures (as of 04.02.2020). <https://www.fleetowner.com/equipment/tires/article/21700800/tires-avoiding-failures>. [09.08.2017].

² Manufacture Française des Pneumatiques Michelin (2012): Richtig oder Falsch? Schluss mit Missverständnissen zum Thema Nutzfahrzeugreifen und Kraftstoffeinsparung, Clermont-Ferrand, France.

³ Manufacture Française des Pneumatiques Michelin (2012): Richtig oder Falsch? Schluss mit Missverständnissen zum Thema Nutzfahrzeugreifen und Kraftstoffeinsparung, Clermont-Ferrand, France.

⁴ J. Voges: Reifendruckkontrolle bei LKWs – Laut EU-Kommission kein Handlungsbedarf (as of 04.02.2020). <https://www.transportbranche.de/news/reifendruckkontrolle-lkw/>. [13.04.2015].

KEEP IT RUNNING

Up-to-date information on our products can be found on our website **truckservices.knorr-bremse.com**



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