

User Manual / Functional Description

of the

Siemens VDO

Tire Pressure Monitoring transmitter

Generation 1B

Type

S120123

General description

The tire pressure monitoring system (referred to as TireGuard) consists of the following units :

- Tire guard transmitter type S120123 which includes an integrated pressure, temperature and acceleration sensor and a 315 MHz RF transmitter.
- RF receiver unit which includes a 315 MHz receiver (not described in this document)

The TireGuard system monitors a vehicle's tire pressure whilst driving or stationary. An electronic unit (wheel unit) inside each tire, mounted to the valve stem, periodically measures the actual tire pressure. By means of RF communication, this pressure information is transmitted to the RF receiver/decoder.

When the vehicle starts moving, the TireGuard transmitter enters the driving mode. It measures and transmits RF burst 4 times per minute up to 30 bursts. The telegram length is approximately 30ms. After this period the transmitter measures and transmits data every minute. The transmitter will remain in driving mode for a period of 10 minutes after the vehicle is stopped.

If, during any measurement period in driving mode, the pressure leakage is detected (difference compared to the last transmitted pressure value), a re-measure will occur after 5s taking in account the latest pressure value emitted as reference value. If the pressure continues changing, an additional transmission will be sent.

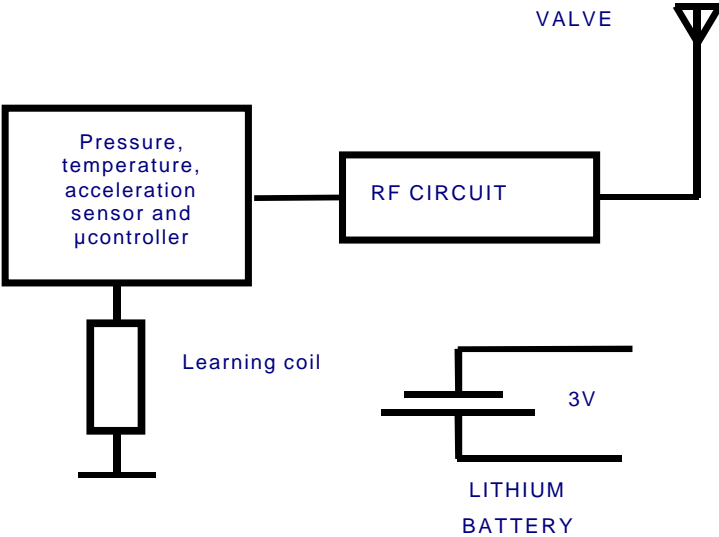
For normal transmission the wheel must be rotating and the device must be pressurized. For factory testing, installation testing, ect., the device has been designed to be activated also by a 125kHz signal. For homologation testing one sample was modified for CW emission, that last about 2 min. after activation with LF.

Technical description

Carrier frequency:	315 MHz
Frequency shift:	± 45 kHz
Number of channels:	1
Duty cycle:	$< 0.1\%$
Type of modulation:	Frequency Shift Keying (FSK)
Rated Output Power:	< 10 mW
Antenna:	integral
Voltage supply:	1 Lithium battery 3V (CR2450)
Voltage supply range :	2.1 up to 3.2V

Block diagram

The block diagram below shows the main electronic units of the TireGuard transmitter:



Label design

Siemens VDO
S120123

IC: 267T-S120123
FCC ID:KR5S120123

User manual information

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This device complies with part 15 of the FCC Rules and RSS-210. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept interference received, including interference that may cause undesired operation.

NOTE

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.