



Chrysler Operational Description

The TPMS Transmitter is installed to the valve stem in each tyre of a vehicle. The unit measures tyre pressure periodically and transmits this information by RF communication to a receiver inside the vehicle. In addition, the TPMS Transmitter performs the following functions:

- Determines a temperature compensated pressure value.
- Determines any abnormal pressure variations in the wheel.
- Monitors the state of the Transmitters' internal battery and informs the receiver of a low battery condition.
- Determines wheel location

Transmitter Mode Parameters

Mode	Parameter	Description	Tolerance	
			Typical	Worst case
All Modes	ID code length	28 bit (268,435,455 Id's)	N/A	N/A
	Data protocol	Manchester	N/A	N/A
	Data rate	4.096kHz	±2%	±5%
	Temperature Scale	-50°C to 205°C (1 bit = 1 temperature count 1°C)	N/A	N/A
	Temperature Sample Rate	Every time a pressure sample occurs	N/A	N/A
	Pressure Range	Pressure range from 0 bar to 6.375 bar, resolution of 25mbar per bit	N/A	N/A
Stationary Mode	N° of Frames per Block	6 frames per Transmission	N/A	N/A
	Transmission Rate	No transmissions (See Re-measure transmission)	N/A	N/A
	Pressure Sample Rate	Every 60 seconds	60.16s	+ 4.18s - 2.9s
	Motion Sample Rate	Every 10 seconds	± 2%	± 5%
	Re-measure Transmission	2 consecutive blocks of data (12 Frames)	N/A	N/A
WAL Mode	Transmission Rate	Every 33 seconds	34.21s	+ 7.18s - 0.98s
	Motion Sample Rate	Motion detected during WAL direction detection, every 10.8 seconds	10.98s	+ 1.74s - 0.43s
	WAL Mode Duration	Total accumulative time of 9 minutes (assuming 50 valid WAL cycles)	9.45min	+2.06min -0.09min
	N° of Frames per Block	8 frames per Transmission	N/A	N/A
	Pressure Sample Rate	Every 10.8 seconds	10.98s	+ 1.74s - 0.43s
	WAL Direction Sample	Every 10.8 seconds	10.98s	+ 1.74s - 0.43s
	ΔP Transmission	1 block of data		
Normal Mode	N° of Frames per Block	6 frames per Transmission	N/A	N/A
	Transmission Rate	Every 66 seconds	66.89s	+ 11.56s - 3.14s
	Pressure Sample Rate	Every 10.8 seconds	10.98s	+ 1.74s - 0.43s
	Motion Sample Rate	Every 10.8 seconds	10.98s	+ 1.74s - 0.43s

	ΔP Transmission	1 block of data		
Service mode	Duration (assuming no change in pressure)	15 minutes	15min	+ 2.13min - 0.83min
	Transmission Rate	No transmissions (See Re-measure transmission)	N/A	N/A
	Pressure Sample Rate	Every 10.8 seconds	10.98s	+ 1.74s - 0.43s
	Motion Sample Rate	Every 10.8 seconds	10.98s	+ 1.74s - 0.43s
	Re-measure Transmission	2 consecutive blocks of data (12 Frames)	N/A	N/A
Off Mode	N ^o of Frames per Block	6 frames per Transmission	N/A	N/A
	Transmission Rate	No transmissions	N/A	N/A
	Pressure Sample Rate	30 seconds	30.1s	+2.61s - 1.47s
	Motion Sample Rate	Not sampled	N/A	N/A
	Enter Off mode	Method: Transponder Activation		
		Transponder Activation timing: 2 seconds "On", 2 seconds "Off" 2 seconds "On", 2 seconds "Off"	+60 ms, -60 ms tolerance on all edges. (60ms subject to 2% variation)	+60 ms, -60 ms tolerance on all edges. (60ms subject to 5% variation)
	Exit Off mode	Method: Learn Activation or pressure change		
		Learn Activation timing: >3.612 seconds Upon exit enter stationary mode	N/A	N/A
		Pressure <i>increase</i> : > 225mbar between 2 consecutive samples	N/A	N/A
Learn Activation	Field strength to activate	>5A/m Snap In > 8A/m Gen Alpha		
	Activation frequency	125 kHz		± 8kHz
	Learn Activation timing	>3.612 seconds	N/A	N/A
	Duration of Learn Transmission	5 seconds		- 170ms - 540ms
	No of Frames per Learn	36 Frames	N/A	N/A
Re-	Pressure Change	4 Pressure counts		

measure (Service and Stationary Modes)	Time Between Pressure Sample and Re-measure Sample	125ms	$\pm 2\%$	$\pm 5\%$
	Transmission Rate, ΔP	On detection of pressure change	N/A	N/A
	Time Between Re-measure and Transmission	220msec	142.1ms	+1.047s - 10.035ms
Fast Deflation (WAL and Normal Mode)	Pressure Change	4 Pressure counts	N/A	N/A
	Time Between Pressure Sample and Re-measure Sample	125ms	$\pm 2\%$	$\pm 5\%$
	Duration	10 seconds only in WAL and Normal Mode		10 consecutive samples without a delta P.
	Transmission Rate, ΔP (pressure changing)	1 Second tx on detection of 4 pressure count change	1.06s	+1.3s -0.22s
	Time Between Re-measure and Transmission	220msec	142.1ms	+1.047s - 10.035ms
	Sample Rate (pressure constant)	Every second	1.1s	+ 1.16s - 20ms