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(54) Title: APPARATUS AND METHOD FOR POWER MANAGEMENT IN A TIRE PRESSURE MONITORING SYSTEM

PRESSURE	PRESSURE TEMPERATURE RATIO	TIRE CONDITION	SYSTEM RESPONSE
DECREASING	DECREASES	AIR LEAK IN TIRE	AIR LEAK DETECTED; GO TO SHORTER MEASURE AND TRANSMIT INTERVALS.
	REMAINS CONSTANT	TIRE IS COOLING	VEHICLE IS PARKED; GO TO LONGER MEASURE AND TRANSMIT INTERVALS.
	INCREASES	NOT VALID CONDITION	INVALID CASE. DEFAULT TO SHORTER MEASURE AND TRANSMIT INTERVALS.
CONSTANT	DECREASES	NOT VALID CONDITION	INVALID CASE. KEEP CURRENT MEASURE AND TRANSMIT INTERVALS.
	REMAINS CONSTANT	TIRE IS STEADY STATE CONDITION	TIRE STABLE. KEEP CURRENT MEASURE AND TRANSMIT INTERVALS.
	INCREASES	NOT VALID CONDITION	INVALID CASE. KEEP CURRENT MEASURE AND TRANSMIT INTERVALS.
INCREASING	DECREASES	NOT VALID CONDITION	INVALID CASE. DEFAULT TO SHORTER MEASURE AND TRANSMIT INTERVALS.
	REMAINS CONSTANT	TIRE IS HEATING	VEHICLE IN MOTION; GO TO SHORTER MEASURE AND TRANSMIT INTERVALS.
	INCREASES	AIR IS BEING ADDED TO THE TIRE	AIR IS BEING ADDED; GO TO SHORTER MEASURE AND TRANSMIT INTERVALS.

(57) Abstract: A system (10) and method manages battery (13) power in a wheel module (11) for indicating when air pressure in a tire falls below a recommended value. Tire air pressure is sensed with a pressure sensor (16). Tire air temperature is sensed with a temperature sensor (18). A determination is made whether the air pressure is increasing or decreasing with respect to time. Based upon whether a ratio of the air pressure and the air temperature is increasing, decreasing or remaining constant with respect to time, tire motion is inferred without directly sensing acceleration or movement of the tire. Power management circuitry (14) controls battery power to enable sensing of air pressure and air temperature at measurement intervals that are longer in time when the tire is not in motion.

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