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TPMS communicate protocol

1. Data feedback in certain period

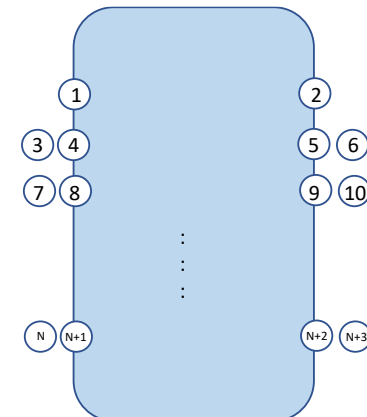
Instruction: The data format is ASCII. Data is transmitted back periodically according to the setting period, the maximum data amount at each feedback is 1 set of data, time period is every 2 seconds, user could set the feedback period of time from 60 to 600 seconds.

Baud rate: 9600 bps

Data protocol:

AT\$PD=11; Tire location: tire pressure (kPa); tire temperature(°C); connected status; battery status; alarm type <CR><LF>

- (1) Tire location: location number : 01~99, refer to drawing on the right-hand side.
 - (2) Tire pressure: fixed unit : kPa, value is 0~9999.
 - (3) Tire pressure: fixed unit: °C, value is -999.9~999.9.
 - (4) Connection status: connected is 1, un-connected is 0.
 - (5) Battery status: normal battery power is 1, low battery power is 0.
 - (6) Pressure status: normal pressure value is 1, abnormal pressure value is 0 (not define High or Low pressure value).
 - (7) Temperature status: normal temperature value is 1, abnormal temperature value is 0.
- ※ The content is NULL if it cannot receive any data in special condition.



Ex 1. Data feedback at 4-wheel vehicle, set period is 60 seconds, 01 normal, 02 un-connected, 03 low battery power, 04 abnormal status on tire pressure and temperature.

AT\$PD=11;01:221:35.0:1:1:1:1<CR><LF>

time period: 2 seconds

AT\$PD=11;02:::0:::<CR><LF>

time period: 2 seconds

AT\$PD=11;03:223:35.0:1:0:1:1<CR><LF>

time period: 2 seconds

AT\$PD=11;04:100:35.0:1:1:0:0 <CR><LF>

Suggested periodic delay time – wheel number*2 seconds

Ex 2. Data feedback at 2-wheel vehicle, actual status is that vehicle is just activating and not moving, it could not receive data from either 01 or 02.

AT\$PD=11;01:.....<CR><LF>

time period: 2 seconds

AT\$PD=11;02:.....<CR><LF>

Suggested periodic delay time – wheel number*2 seconds

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2. Sensor learning status feedback

Instruction: The data format is ASCII. Data is transmitted back periodically before tire pressure data is transmitted.

Data protocol:

AT\$PD=10;000000000000000000000000<CR><LF>

(1) Learning status: Fixed data length is 23, represents tire location 01-23 accordingly, 22 wheels and spare tire.

Ex1. The first 6 wheels of the tractor (01~06) are learned.

AT\$PD=10;111111000000000000000000<CR><LF>

Ex2. The first 6 wheels of the tractor (01~06) and #11~16 wheels of the trailer are learned.

AT\$PD=10;111111000011111100000000<CR><LF>

3. Warning data feedback

Instruction: The data format is ASCII. It transmits the current abnormal status when the alarm occurs, it keeps transmits data two times then back to periodical feedback. When the alarm status is released, it keeps transmits data two times then back to periodical feedback. The data format at both normal and alarm status are the same.

4. Parameter setting command

Instruction: The data format is ASCII. The order content is described below, it needs to feedback message “successful” when setting is completed. If there is only one vehicle, it shows “1”, if the vehicle contains tractor and trailer, “1” stands for the tractor, “2” stands for the trailer. There is a 4-Byte “corresponding code” in the end of the command, it is also attached when data transmitted back. The ” <CR><LF>” is the end code of the setting command, it includes the receiving and transmission results.

Command: TPMS\$ order; parameter; corresponding code

TPMS\$STMR

Instruction: Set the fixed feedback period, unit is second, the default value is 60 seconds, the range could be from 60 to 600. Ex.: TPMS\$STMR;60;12AB, it means the feedback period is 60 seconds, it transmits the AT\$PD=TPMS\$STMR:1;12AB after finish the setting, it transmits AT\$PD=TPMS\$STMR:0;12AB if the setting is unsuccessful.

TPMS\$SPWN

Instruction: Set the standard tire pressure value, unit is kPa, the default value is ? kPa, the range could be from 550 to 1000. Ex.: TPMS\$SPWN;1;800;12AB, it means the standard tire pressure value is 800 kPa, it transmits the AT\$PD=TPMS\$STMR:1;1;12AB after finish the setting, it transmits AT\$PD=TPMS\$STMR:1;0;12AB if the setting is unsuccessful.

※ The alarm value is 130% above or 80% below of the standard tire pressure value.

TPMS\$STWN

Instruction: Set the tire temperature alarm value, unit is °C, the default value is ? °C, the range could be from 60.0 to 120. Ex.: TPMS\$STWN;60.0;12AB, it means the standard tire temperature alarm value is 60.0 °C , it transmits the AT\$PD=TPMS\$STWN:1;12AB after finish the setting, it transmits AT\$PD=TPMS\$STWN:0;12AB if the setting is unsuccessful.

※ P.S.: It transmits the message “unsuccessful” if the setting value is negative.

TPMS\$LOCK

Instruction: The button function of the receiver monitor is locked, means that user is not allowed to modify the parameter on the receiver monitor at the user end, locked status is “1”, unlocked status is “0”.