

# Suzhou Tongsheng Vehicle Co., Ltd.

## Controller & Instrument Communication Protocol

### 1、 Protocol Parameter

- 1、 Communication Mode: Serial Communication (UART)
- 2、 Baud Rate: 9600 bit/s
- 3、 Transmission Format: Check N, Data Bit 8, Stop Bit 1
- 4、 Communication Level: 0V And 5V
- 5、 controller and instrument without primary and secondary, independent transceiver; transmission interval is 100MS

### 2、 controller sent to the meter data

- 1、 transmission style (9 bytes, first data 0)

data code	meaning
data 0	controller ID
data 1	voltage ( Power)
Data 2	Working Status
Data 3	Reserved
Data 4	Reserved
Data 5	Fault Code
Data 6	Speed Cycle Low Octet
Data 7	Speed Cycle High Octet
Data 8	Accumulated Check Low Octet

- 2、 Data Description:

(1) Data 0: Control ID 67 (decimal)

(2) Data 1: Received value 0-12 (decimal) Corresponding power 0-100%

(3) Data 2: Working status flag

Data 2.0	Undervoltage flag (set high for undervoltage)
Data 2.1	Reserved
data 2.2	motor working mark (set high means the motor is working)
data 2.3	reserved
data 2.4	reserved

(4) data 5: fault code

fault code bit (decimal)	meaning
0	no fault
1	temperature protection
2	short circuit protection
4	turnfault
5	motor phase loss
[6	Torque
7	jam fault
8	Brown
9	overvoltage

(5) Data 6: a motor speed sensor period (T) of the lower 8 bits

(6) Data 7: The motor speed sensor a period (T) of the eight

instructions : Controller maximum period value: 0X0700H (count unit: "1" every two milliseconds)

as follows: (unit: millisecond):

$$T = 2 * (\text{Data7}, \text{Data6}) \text{ ms}$$

(7) Data 8: (sum value Check code)

$$\text{DATA8} = (\text{DATA0} + \text{DATA1} + \text{DATA2} + \text{DATA3} + \text{DATA4} + \text{DATA5} + \text{DATA6} + \text{DATA7}) \text{ The lower 8-bit}$$

### 3、 meter is sent to the controller data

1、 transmission pattern (7 bytes, first data 0)

Data code	meaning
data 0	Meter ID
data 1	gear position and lamp control
data 2	power (special type specified use)
data 3	wheel diameter
data 4	test use
data 5	maximum speed limit value
data 6	and the lower 8 bits of the value check code

2, data description

(1) Data 0: Instrument ID 89 (decimal)

(2) Data 1: gear position and lamp control

data 1.7	1 file
data 1.6	2 files
data 1.1	3 files
data 1.2	4 files
data 1.3	5 files
data 1.4	0 files
data 1.5	6KM jog
data 1.0	light controlled (high lights)

Note: shift flag: small gear to the large gear (shift to active high, only a valid range)  
of tetrakis When the gear is high: the third gear is high:

(3) Data 2: The maximum power is 200-400 (0 is sent when not in use, unit: w)

(4) Data 3: Wheel diameter 14--30 ( Unit: inch)

(5) Data 4: Test use (normal transmission 0, test 0x55)

(6) Data 5: Maximum speed limit value 15-45 (unit km/h)

(7) Data 6: sum valuecheck code

$$\text{The lower 8 bits of theData6} = (\text{data0} + \text{data1} + \text{data2} + \text{data3} + \text{data4} + \text{data5})$$