PL2009

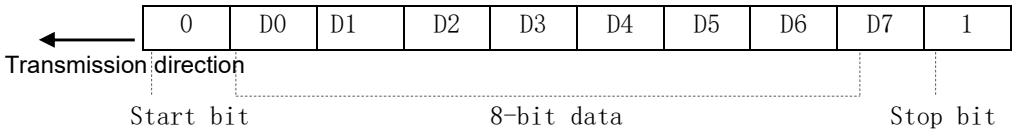
KM1S004-188B Protocol

V1.0

1 188B Protocol introduction

A. This protocol adopts the master-slave structure of half duplex communication.

B. The byte format is 8-bit binary code per byte, add a start bit(0) during transmission、One stop bit (1), 10 bits in total. The byte transmission sequence is shown in Figure 1. D0 is the lowest bit of a byte and D7 is the highest bit of a byte. Low bit is the first, then high bit.



Byte transfer sequence

Figure 1

C. The frame format shall conform to the following table.

Item		Code
SOF		6FH
Address Fields	User address EP：1234567890	A0=90
		A1=78
		A2=56
		A3=34
		A4=12
	Manufacturer code	A5
	Address check code, cumulative sum	A6
Forward flow		B0 B1 B2 B3
Reverse flow		C0 C1 C2 C3
Unit		2BH
Internal time of water meter		D0 D1 D3 D4 D5 D6
St status byte		E0 E1 E2
Battery voltage		F0
Check code		CS

2 Detailed explanation of data link layer

2.1 Address field and check code

The address field (A0-A4) consists of five bytes, each byte is in 2-bit BCD code format. The length of the address is 10 decimal digits, the low address is first, and the high address is the last. When the address is AAAAAAAAAAH, it is the broadcast address. Broadcast address can only be used in point-to-point communication.

The check code (CS) is a byte. All the bytes from the beginning of the frame to before the parity check code are added in binary arithmetic, and the overflow value exceeding FFH is ignored.

3 Uint Code

Code	Description (decimal position)	remarks
27H	×.××××××ton	
28H	××.××××××ton	
29H	×××.×××××ton	
2AH	××××.××××ton	
2BH	×××××.×××ton	
2CH	××××××.××ton	
37H	×× m^3/h	
36H	××.× m^3/h	
35H	××.×× m^3/h	

4 Status ST

4.1 Status ST Takes four bytes

Status ST First byte definition table

	D0	D1	D2	D3	D4	D5	D6	D7
Define	Valve	Main battery voltage	N/A	Vback	Tamper	Valve opening process	Valve closing process	Reverse flow
explain	0: On 1: Off	0: Normal 1: Under voltage	Retain	0: Normal 1: Under voltage	0: Not removed 1: Removed	0: unexecuted 1: implement	0: unexecuted 1: implement	0: normal 1: abnormal

Status ST Second byte definition table

	D0	D1	D2	D3	D4	D5	D6	D7
Define	Valve status	GPRS battery voltage	N/A	Sensor failure	Small flow alarm	Large flow alarm	N/A	System reset
explain	0: normal 1: abnormal	0: normal 1: under voltage	Retain	0: normal 1: abnormal	0: normal 1: abnormal	0: normal 1: abnormal	Retain	0: normal 1: abnormal

Status ST Third byte definition table

	D0	D1	D2	D3	D4	D5	D6	D7
Define	N/A	price error	magnetic interference	leakage	N/A	Current magnetic interference		
explain	Retain	0：normal 1：abnormal	0：normal 1：abnormal	0：normal 1：abnormal	Retain	0：normal 1：abnormal	N/A	N/A

(Note: the marked part is the general water meter status bit, and the rest part is the specific water meter status bit)

5 Protocol case

6F 03 08 11 17 00 06 39 00 00 00 00 00 00 00 00 2B 06 04 09 05 03 E4 07 00 00 00 23 35

6F:

Start identifier

03 08 11 17 00 06 39:**Meter number 39060017110803**

00 00 00 00: **Forward flow 0.000m³**

00 00 00 00: **Reverse flow 0.000m³**

2B: Water unit 1L

06 04 09 05 03 E4 07:**Meter time： 2020year 03 month 05day 9h 4min 6s**
（07E4：2020year 03:3moth 05:5day 09:9h 04:4min 06:6s）

00 00 00 **: Status byte**

23 : Battery voltage 3.5V

35**: Check byte**

Revision

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