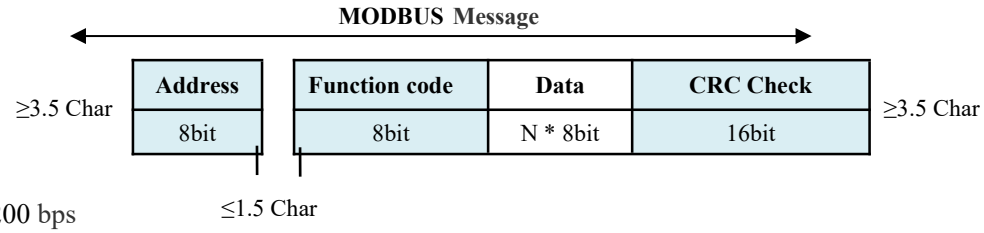
LFS10- RS485 Protocol

This protocol operate in RS485 hardware for one to many control as well as signal collection under the standard of Modbus RTU.

1. Character format

Start：1Bit
Data：8Bit
Parity：None
Stop：1Bit
Baud Rate：9600 bps、19200 bps



In the RTU,two characters should be spaced out less than 1.5 characters of time;otherwise this frame message would be considered as incomplete and be abandoned by receiver. 3.5 characters of time would be needed between two frame messages.

2. Communication protocol

2.1 Slave equipment ID address

Slave address is the identity for each equipment, The default value is 0x01 and could be altered from range 0x01~0xFF through communication .

2.2 Read Holding Registers (Function code 0x03)

Host equipment could read data from slave registers numbered in one or many through this function.
Sequence format：

Host reading requests					
Slave ID address	Function code= 0x03	Starting Address	No. of Registers	CRC LO	CRC HI
8Bit	8Bit	16Bit	16Bit	8Bit	8Bit
Slave response sequence					
Slave ID address	Function code= 0x03	Data bytes n	Data	CRC LO	CRC HI
8Bit	8Bit	8Bit	N * 8Bit	8Bit	8Bit
Slave inaccurate response sequence					
Slave ID address	Function code= 0x03	Abnormal code= 0x02 or 0x03		CRC LO	CRC HI
8Bit	8Bit	8Bit		8Bit	8Bit

Communication protocol example

Host dispatch sequence：	01	03	00 01	00 02	95 CB
	Slave ID	Function	Starting address	No. of Registers	CRC Check
Slave response sequence：	01	03	04	07 0A 41 4F	92 21
	Slave ID	Function	Byte Count	Data1 Data2	CRC Check
Slave inaccurate response sequence：	01	83	02	C0 F1	
	Slave ID	Function	Data length	CRC Check	

2.3 Preset Single Register（Function code 0x06）

Host could input data to register and could only operate a register a time.
Sequence format：

Host input requests for register sequence					
Slave ID address	Function code = 0x06	Register address	Preset Data	CRC LO	CRC HI
8Bit	8Bit	16Bit	16Bit	8Bit	8Bit
Slave response sequence					
Slave ID address	Function code = 0x06	Register address	Preset Data	CRC LO	CRC HI
8Bit	8Bit	16Bit	16Bit	8Bit	8Bit
Slave inaccurate response sequence					
Slave ID address	False code = 0x86	Abnormal code = 0x02 or 0x03		CRC LO	CRC HI
8Bit	8Bit	8Bit		8Bit	8Bit

Communication protocol example

Host dispatch sequence：

01	06	00 03	00 01	B8 0A
Slave ID	Function	Register address	Preset data	CRC Check

Slave response sequence：

01	06	00 03	00 01	B8 0A
Slave ID	Function	Register address	Preset data	CRC Check

Slave inaccurate response sequence:

01	86	02	C3 A1
Slave ID	Function	Data length	CRC Check

3. Register Address Table

Register address	Function	Read&write mode	Detail description
0x0001	Wind speed data	R	The wind speed data is four-byte single-precision floating-point data. For example, the current wind speed is 12.99 (decimal), 414FD70A (hexadecimal), and its transmission sequence is: D7 0A 41 4F
0x0004	Communication mode setting	R&W	1=9600bps, 2=19200bps Default:1
0x0005	Slave ID address setting①	R&W	0x01~0xFF can be set, address Default: 0x01

Note①: The address set by the DIP switch has the highest priority, when modifying the slave address online, the DIP switch must be set to 0 to be successfully modified, if not necessary,Use the dip switch to modify the address first.

4. Analysis Of Error Codes

0x02	Illegal register address
0x03	Illegal input data