MODBUS communication protocol

Function Code 03:

Use MODBUS communication protocol function code reads the value of 03 sensors or monitors (a value) hosts.
Slave response command format is the slave address; function code; data area and CRC. Data area binary data, four bytes, high byte first. CRC codes are two bytes, low byte first.

Frame Format Information:(Slave address is 01, are binary data)

The host sends:

Station No.(1B)   Function code(2B)   starting address(2B)   Read Points CRC(2B)
T1~T4 01   03   00 0X   XX XX T1~T4

Among: T1 ~ T4 indicate the beginning and end of each frame to be set aside 3-5 quiescent

   Station No.(Address) :A byte"01"
   Function code:A byte"03"
     starting address:Two bytes; Advisable0000-0003

    0000, returning radar currently empty high value, Units is cm
    0001, returning radar currently empty high value, Units is mm
    0002,returning radar currently water level value,Units is cm
     0003,returning radar currently water level value,Units is mm

   Read Points:Two bytes advisable0001 or 0002
   CRC:Checksum, two bytes

Slave response:

Station No.(1B)   Function code(1B)   The number of bytes read(1B)
T1~T4 01   03   04

    Data(4B)   CRC(2B)

xx xx xx xx   xx xx T1-T4

Among: T1 ~ T4 indicate the beginning and end of each frame to be set aside 4 quiescent

Station No.(Address) :A byte"01"
Function code:A byte"03"
Data: four bytes; high byte in the before; constitute a 16-bit binary data
CRC:Checksum, two bytes

CRC code calculation rules:

1.Preset 16 registers as hexadecimal FFFF (e.g all is 1), this register is called CRC register

2.The first 8-bit data and 16-bit CRC register is low or the results placed in different CRC register

3.Check the lowest bit is not zero, as is 0, put the contents of the register to the right one (go low), with 0 fill the highest position.If the contents of a register right one (go low), with 0 fill the highest position, then the CRC register with the polynomial A001 (1010 0000 0000 0001) XOR

4.Repeat step 3 until the right eight times, so that the entire eight were processed all the data.

5.Repeat steps 2 through 4, the next bit of data processing

Sample protocol:

The host sends data:

Station No.	Function code	starting address	Read Points	Checksum	Meaning
01	03	0000	0002	C40b	Read empty high,unit is cm
01	03	0001	0002	95cb	Read empty high,unit is mm
01	03	0002	0002	65cb	Read liquid level,unit is cm
01	03	0003	0002	340b	Read liquid level,unit is mm

02	03	0000	0002	C438	Read empty high,unit is cm
02	03	0001	0002	95f8	Read empty high,unit is mm
02	03	0002	0002	65f8	Read liquid level,unit is cm
02	03	0003	0002	3438	Read liquid level,unit is mm
03	03	0000	0002	C5e9	Read empty high,unit is cm
03	03	0001	0002	9429	Read empty high,unit is mm
03	03	0002	0002	6429	Read liquid level,unit is cm
03	03	0003	0002	35e9	Read liquid level,unit is mm
04	03	0000	0002	C45e	Read empty high,unit is cm
04	03	0001	0002	659e	Read empty high,unit is mm
04	03	0002	0002	345e	Read liquid level,unit is cm
04	03	0003	0002		Read liquid level,unit is mm