

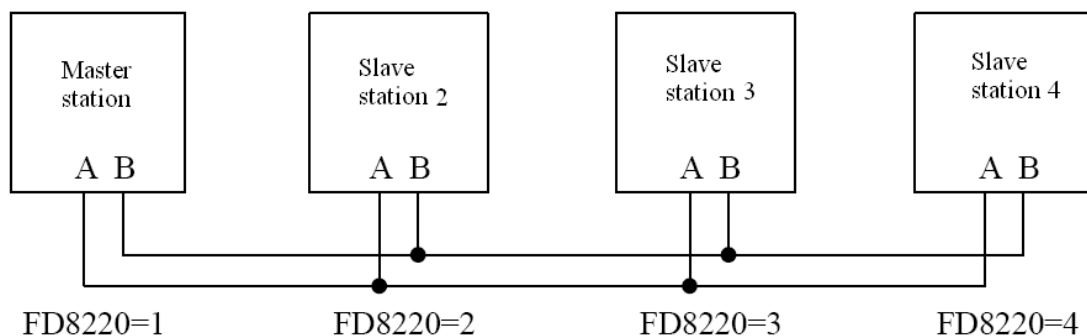
MODBUS instruction application

We will use 4 XC series PLCs in this example.

Requirements: master station reads and writes data from slave station 2, 3, 4.

How to realize?

1. wiring figure



2. data configure table

Master station	Slave station 2	Slave station 3	Slave station 4
D0 (station number)	2	3	4
D10—D14 (send)	D10—D14		
D15—D19 (receive)	D15—D19		
D20—D24 (send)		D10—D14	
D25—D29 (receive)		D15—D19	
D30—D34 (send)			D10—D14
D35—D39 (receive)			D15—D19

3. parameters setting

PLC communication parameters setting are shown as below:

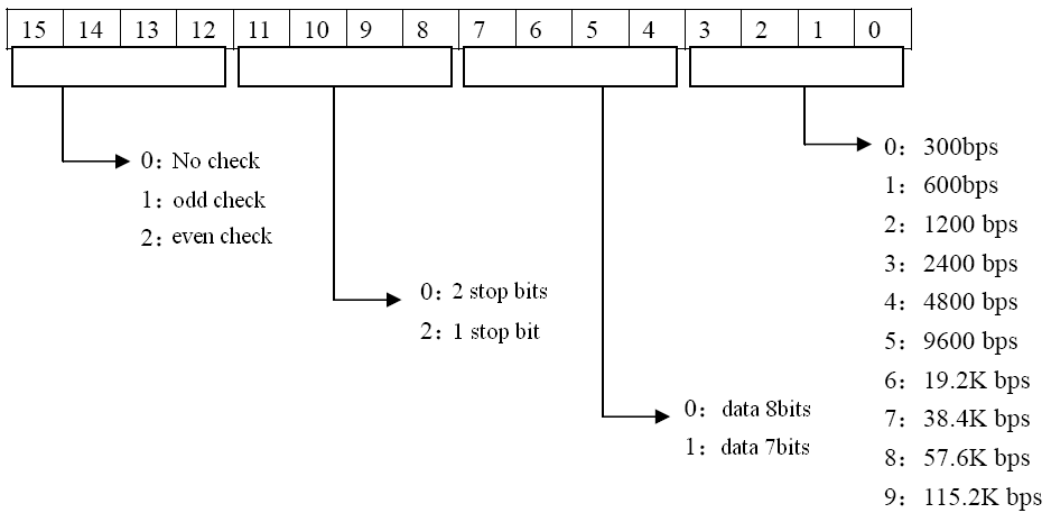
Communication port 2	FD8220	Communication mode	255 is free format 1~254 is Modbus station number
	FD8221	Communication format	Baud rate, data bit, stop bit, check
	FD8222	Word overtime judgement time	Unit is ms, 0 means without overtime waiting
	FD8223	Reply overtime judgement time	Unit is ms, 0 means without overtime waiting
	FD8224	Start sign	high 8 bits are invalid
	FD8225	End sign	high 8 bits are invalid
	FD8226	Free format setting	8/16 bits buffer, Have/without start bit, Have/without stop bit

Communication port 2	M8130		
	M8132	RS232 sending sign	
	M8134	RS232 receiving sign	
	M8135	Receive incomplete sign	Receiving is over, but the received data quantities are less than the required ones
	M8137	Receive error sign	
	M8138	Receive correct sign	
	M8139	Overtime judgement sign	

All the PLCs in this example communicate with each other via port 2.

Setting method of communication parameters:

FD8221 (port 2 communication parameters):

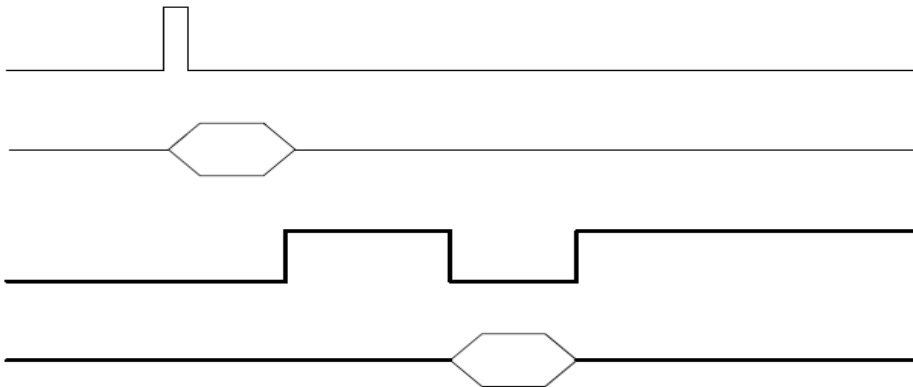


Default value FD8221=8710. 19200, 8 data bits, 1 stop bit, even check. (this example uses default value)

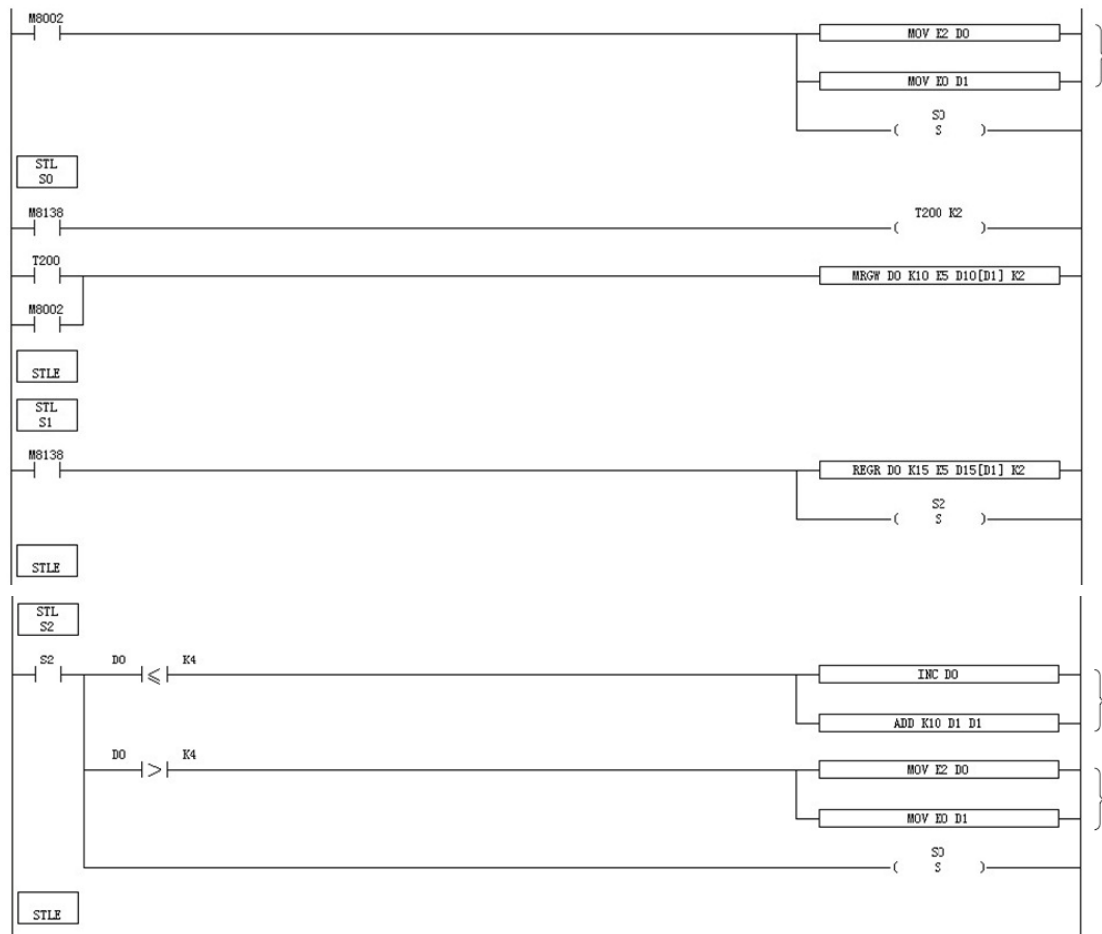
FD8220 (communication port 2): station number setting. Master station 1(FD8220=1), slave station 2(FD8220=2), slave station 3 (FD8220=3), slave station 4 (FD8220=4).

4. sequence chart

Master station reads and writes once from one slave station.



5. ladder chart



Program explanation:

PLC starts to run, M8002 is ON in the first PLC scan period. S0 is ON, PLC writes the data from D10—D14 of master station to D10—D14 of slave station 2. Communication over sign M8138 is ON, then PLC reads the data from D15—D19 of slave station 2 to D15—D19 of master station, communication over sign M8138 is ON. At this time, PLC has completed the process of reading and writing the data with one slave station. Process S2 will judge the station number. If the station number is less than 4, station number will increase 1, offset value will increase 10; otherwise the station number will start from 2 again.