What's new in the xLogicSoft update ?

1. NEW Function Blocks (Page1~14)

- F(digital flag)
- AF(analog flag)
- Modbus Read
- Modbus Write

• F(digital flag)



Flags are only used when xLogic works as a master in a communication system. F is digital flag which is used to receive signal 1 or 0(data format is Bit) from slave device and AF is analog flag which is used to receive analog values (data format is Signed short) form slave device. Both of flags (digital/analog) are up to 32 can be used when programming. In your block configuration, you can assign a new number to the flag, provided this flag number does not already exist in your circuit program.

The output always carries the signal of the previous program cycle. This value does not change if the communication were failed .

F=FM

• AF(analog flag)



Flags are used only when xLogic works as a master in a communication system. F is digital flag which is used to receive signal 1 or 0(data format is Bit) from slave device and AF is analog flag which is used to receive analog values (data format is Signed short) form slave device. Both of flags (digital/analog) are up to 32 can be used when programming. In your block configuration, you can assign a new number to the flag, provided this flag number does not already exist in your circuit program.

The output always carries the signal of the previous program cycle. This value does not change if the communication were failed.

AF=FAM

• Modbus Read



Short description:

When there is a high level at En, the Modbus Read block will be activated and the xLogic SuperRelay can communicate with a peripheral device as a master via RS232 or RS485 interface. Furthermore, the output will be switched on when communication is established successfully. Otherwise the output (Q pin) remains "off" which means communication has failed. A signal at input R resets output Q and disables this block at the same time

Connection	Description		
Input En	A high signal at En input will enable "Modbus Read" function block to be		
	activated		
Input R	Reset the value read from peripheral and set the output to 0 via the R (Reset)		
	input.		
	Reset has priority over En		
Parameter	Slave address: 1 is default.		
	Communication protocol: Modbus(RTU)		
	Communication parameter: baud rate (BPS), Data bits, Stop bits,		
	Parity, Overtime (response time out)		
	Comm Type: RS232 or RS485(Communication interface of xLogic)		
	Data register Index: High Low /Low High		
	Command: 01 Read coils(0x)		
	02 Read Discrete Input(1x)		
	03 Read Holding Registers(4x)		
	04 Read Input Registers(3x)		
	Register start address, count		
Output Q	Q is set or reset depending on the communication status.		
	Successful communication, Q=1;		
	Failed communication ,Q=0;		

Note: 1. Data register Index: High Low /Low High

For example ,when High Low index was set, one data $0x \ 00 \ 12$ was read and saved to AQ ,AQ= 0X0012; However ,when Low High index was set ,AQ= $0x \ 1200$

2. Regarding Modbus RTU detail, please refer to our Modbus RTU communication protocol file for it.

Description of the function:

In the configuration of our xLogic communication, the xLogic SuperRelay usually serves as a slave via Modbus RTU Protocol, and can communicate with a master directly. That's to say, any device communicating with xLogic SuperRelay sends command to it, and the its response will be sent out only when the xLogic SuperRelay has received the command, Just as the below figure shows:



However, the "Modbus Read" or "Modbus Write"(next chapter will introduce it) function block would be utilized if xLogic SuperRelay shall be required to play a role of master to communicate with other devices. As the following figure shows:



When you put Modbus read" or "Modbus Write" function block in your program and make some configurations, the function that xLogic SuperRelay serves as master will be realized.

The Property in dialog box of "Modbus Read" shows as below figure:

	B001 [Lodbus Read]	
	Parameter Comment	
	Block name:	
1	Slave Address	
	Communicate Params	
0	BPS 9600 V Stopbits 1 V	
J	Databits 8 💌 Paritybit None 💌	
	Comm Type RS232 TimeOut 5 1/10S	
	Protocol Modbus(RTV) 💌	
	Data Register Index High Low 💌	
~		
(3)	Command 01 Read Coils(0x)	
	Register addr: 0 Count 1	
	C Auto Data addr: FM 1	
	C Manual 0 0 Config	
	OK Cancel Help	

1. Slave Address :1 is default

2. Communication parameters: BPS is baud rate, Stopbits, Databits, Communication type: RS232, RS485. Actually RS232 or RS485 are just interface of xLogic.

Notes: RS485 interface is only applied to ELC-18 SERIES.

3. Command , register address and register count

Command	Function description	remark
01	Read one group coil status (00000 \sim	Read Coil Status
	OXXXX)	(output)
02	Fetch one group data of the status of	Read input Status
	switch input (10000 \sim 1XXXX)	(input relay)
03	Read data of multi-holding register	Read Holding Registers
	$(40000 \sim 4XXXX)$	
		(Output register)
04	Read data of input registers (3000 \sim	Read Input Registers
	3XXXX)	

Note: Please use "03" command to read AI/AO of xLogic

4.where to save the data read from Slave.

Example: The following we'll take a example that one xLogic (Master) communicate with other xLogic (Slave) via RS485.



Example 1: Get Q1 status of SLAVE1(xLogic) and then save the bit status to FM1.

IOO1	B001	Alarm co H:1	mmunication status
B001 [Modbus Read]		Prio = 1 Quit = Off	
Parameter Comment			
Block name:	F1	B002 [M2]	Q001
Slave Address 1		REG1 Rem = Off	
Communicate Params		00:00s+	
BPS 9600 💌 Stopbits 1 💌			
Databits 8 💌 Paritybit None 💌			
Comm Type RS232 TimeOut 5 1/10S			
Protocol Modbus (RTV) 💌			
Data Register Index High Low 💌			
Command UI Read Coils (Ux)			
Register addr: " Count *			
C Auto Data addr: M 1			
C Manual 0 0 Config			
OK Cancel Help			

If count was set 4 ,the Q1,Q2,Q3,Q4 of xLogic (station No.1) will be read and save to F1 to F4



F is bit flag . It can be used to receive bit data from slave device.

Example 2 : Get AI value from Slave 2(xLogic with station No.2) and save the data to AQ11



The number setting of Q,I,AQ are continuous .AQ12 can not be set as AQ 12 and should be set AQ 4 as above figure shows.

The following table shows how to set.

Note : this table also can be applied for the configuration of Modbus Write function block.

MODEL	I, Q, AI, AQ	DIALOG BOX SET
CPU	I1-IC	I1-I12
	Q1-Q6	Q1-Q6
	AI1-AI8	AI1-AI8
	AQ1-AQ2	AQ1-AQ2
Expansion 1	I11-I18	I13-I20
	Q11-Q18	Q7-Q14
(Address is 1)	AI11-AI18(AI15-AI18 are reserved)	AI9-AI12
	AQ11-AQ12	AQ3-AQ4
Expansion 2	I21-I28	I21-I28
	Q21-Q28	Q15-Q22
(Address is 2)	AI21-AI28	AI17-AI24
	AQ21-AQ22	AQ5-AQ6

Data format instruction

Name	Data format
F, I,Q	BIT
AF, AI, AQ,	Signed Short

• Modbus Write



Short description:

When a high level in En, the Modbus Write block will be activated and the xLogic SuperRelay could communicate with peripheral as a master via RS232 or RS485 interface, further the output will be switched on when the communication is established successfully. Otherwise the output (Q pin) is keep "off" it means communication is failed.

A signal at input R resets output Q and disable this block at the same time

Connection	Description		
Input En	A high signal at En input will enable "Modbus Write" function block to be		
	activated		
Input R	Reset the value read from peripheral and set the output to 0 via the R (Reset)		
	input.		
	Reset has priority over En		
Parameter	Slave address: 1 is default.		
	Communication protocol: Modbus(RTU)		
	Communication parameter: baud rate (BPS),Data bits, Stop bits,		
	Parity, Overtime (response time out)		
	Comm Type: RS232 or RS485(Communication interface of xLogic)		
	Data register Index: High Low /Low High		
	Command: 05 Write Single Coil		
	06 Write Single Register		
	15 Write Multiple Coils		
	16 Write Multiple Registers		
	Register start address, count		
Output Q	Q is set or reset depending on the communication status.		
	Successful communication, Q=1;		
	Failed communication ,Q=0;		

The Property in dialog box of "Modbus Write" shows as below figure:

	B001[Lodbus Vrite]
	Parameter Comment
	Block name:
1	Slave Address 1
	BPS 9600 V Stopbits 1
(2)	Databits 8 💌 Paritybit None 💌
\sim	Comm Type RS232 TimeOut 5 1/10S
	Protocol Modbus(RTV) 💌
	Data Register Index High Low 💌
3	Command 05 Write Single Coil 🔹
U	Register addr: 0 Count 1
	Auto Data addr: I ▼1
U	C Manual FF O Config
	OK Cancel Help

1. Slave Address:1 is default

2.Communication parameters: BPS is baud rate, Stopbits, Databits, Communication type: RS232, RS485. Actually RS232 or RS485 are just interface of xLogic.

Notes: RS485 interface is only applied to ELC-18 SERIES.

3. Command, register address and register count

Command	Function description	remark
05	Force the switch status of single coil	Force Single Coil
	(00000~0XXXX)	
		(output)
06	Pre-set the data of single register	Set single output
		register
	$(40000 \sim 4XXXX)$	
15	Force multi-coils on/off bit (00000 \sim	
	OXXXX)	
16	Write multi-holding registers data	
	$(40000 \sim 4XXXX)$	

4. where is to save the pre-configuration data that would be written to Slave. It contains 2 kind ways to pre-configuration. One is auto mode ,this data uses the flags in the program ,such as FM, AFM ,I, Q and AQ. The manual mode is intput a fixed value or bit status .

Example 1



Write the I2 bit status of Master xLogic to Slave xLogic with No.1 and control Q1 of Slave via RS485 port. the program of master can be made as follows:



It of master is used to control the communication .If It is high and the communication is established successfully, one alarm message (text message block) will be displayed on LCD. Then the Q1 of slave No.1 will be controlled by I2 of master. If I2 is high, Q1 of slave No.1 would be ON and if I2 is low ,Q1 of slave would be OFF.

Note: The Q1 must be free, it means the in the program of Slave No.1, the input pin of Q1 must be not linked to other blocks.

Example 2, manual mode input value

BOO1[Modbus Vrite]		
Parameter Comment		
Block name:		Show + H:1
Slave Address 1		Prio = 1
Communicate Params	- 1	Quit = Off
BPS 9600 V Stopbits 1 V		
Databits 8 Paritybit None	1002	B002[M2]
Comm Type RS485 TimeOut 5 1/10	s I	
Protocol Modbus (RTV)	Set Coil State	
Data Register Index High Low 💌	Coil 0 Coil 8	🗖 Coil 16 🛛 Coil 24
	Coil 1 Coil 9	🗖 Coil 17 📘 Coil 25
Command 15 Write Multiple Coils	Coil 2 Coil 10	🗖 Coil 18 📘 Coil 26
Register addr: 0 Count 3	☐ Coil 3 ☐ Coil 11	☐ Coil 19 ☐ Coil 27
	Coil 4 Coil 12	🔽 Coil 20 🔽 Coil 28
C Auto	Coil 5 Coil 13	Coil 21 Coil 29
Data ador.	Coil 6 Coil 14	Coil 22 Coil 30
@ Manual Des Lite	Coil 7 Coil 15	Coil 23 Coil 31
Config	OK	Cancel
OK Cancel Hel		

The above configuration is to force Q1,Q2,Q3 of Slave No.1 ON. "Coil O" means pre-set the

BIT 1 and "**Coil**" means pre-set the BIT 0 ,"Coil 0" is corresponding to the start address ,Here is Q1.

address , Here is Q1.

Note: The manual input value is Hex data .it contains 4 bytes. If you want to write a decimal value to the register of SLAVE ,please convert it to Hex format.



4.

The following table shows how to set.

Note : this table also can be applied for the configuration of Modbus Read function block

MODEL	I, Q, AI, AQ	DIALOG BOX SET
CPU	I1-IC	I1-I12
	Q1-Q6	Q1-Q6
	AI1-AI8	AI1-AI8
	AQ1-AQ2	AQ1-AQ2
Expansion 1	I11-I18	I13-I20
	Q11-Q18	Q7-Q14
(Address is 1)	AI11-AI18(AI15-AI18 are reserved)	AI9-AI12
	AQ11-AQ12	AQ3-AQ4
Expansion 2	I21-I28	I21-I28
	Q21-Q28	Q15-Q22
(Address is 2)	AI21-AI28	AI17-AI24
	AQ21-AQ22	AQ5-AQ6

Data format instruction

Name	Data format
F, I,Q	BIT
AF, AI, AQ,	Signed Short

For the detail information about I,AI,Q,AQ, registers address of xLogic ,refer to the RTU protocol file.

2. Changes of the software interface



Using these two icons, you can easily get the PLC' time or set its time directly. (2)

📄 Info 🏽 🎬 Simulate 🔍 Simulate I/O 🔝 Analog I/O							
	0 A1002	0 AIUU3	0 A1004	0 A1005	0 A1006	0 A1007	
<)	

In the simulation mode, you can modify the value of the AI and AQ.

3. Changes of the menu bar

(1)			
<u>E</u> dit <u>Tools</u> SMS Undo Redo	<u>View Help</u> Ctrltz Ctrltz	Parameter Settings	
geoo Cag Copy gaste Delete Select <u>All</u> Properties (All 1 Properties (All 1	Ctrl+T Ctrl+T Ctrl+C Ctrl+V Del Ctrl+A Blocks)	A BOO1[M1] AI ATOO1 # # BOO2[AM2] Q QOO1 # H:1 # H:1 # H:1 # AI ATOO2 AI ATOO3 AI ATOO3 AI ATOO5 AI ATOO6 AI ATOO6 AI ATOO7 AI ATOO5 AI ATOO6 # ATOO5 AI ATOO6 # BOO5[AM3] # BOO5[AM3] # BOO5[AM5] # BOO5[AM5] # BOO5[AM5] # BOO5[AM6] # BOO5[AM6] # BOO5[AM6]	BO11[M11] Parameter Configuration Center Elock name:
		UK	Cancei Help

You can find the block whose parameter you want to modify easily. (2)

Tools SMS View Help	
Configuration	
Disconnect Line	Ionit Config
Transfer	Succession Trees
Simulation F3 Select Hardware Edit Cover HMI Language Selection User Manager	Supervisory Type Input/Output M Analog Input/Output Registers REG0
Set Monit Config	
	Save Analog Input/Output Data

Before clicking the "Online monitor" button, please open the above window, and choose the type of blocks that you want to monitor.