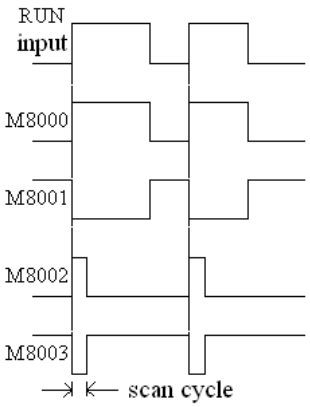
Appendix 1　Special soft device list

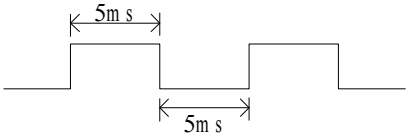
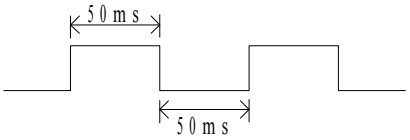
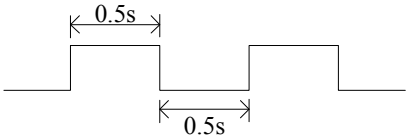
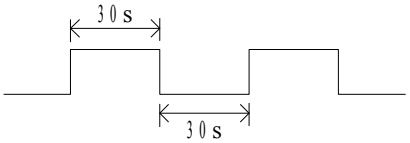
Here we mainly introduce the functions of special soft device, data register and FlashROM, and introduce the address of expansion. Users can scan fast.

Appendix 1-1. Special Auxiliary Relay List

PC Status (M8000-M8003)

ID	Function	Description	
M8000	Normally ON coil when running		M8000 keeps being ON status when PLC is running
M8001	Normally OFF coil when running		M8001 keeps being OFF status when PLC is running
M8002	Initial positive pulse coil		M8002 be ON in first scan cycle
M8003	Initial negative pulse coil		M8003 be OFF in first scan cycle

Clock (M8011-M8014)

ID	Function	Description
M8011	Shake with the cycle of 10ms	
M8012	Shake with the cycle of 100ms	
M8013	Shake with the cycle of 10sec	
M8014	Shake with the cycle of 1min	

Flag (M8020-M8029)

ID	Function	Description
M8020	Zero	The plus/minus operation result is 0
M8021	Borrow	“borrow” occurs in minus operation
M8022	Carry	When carry occurs in plus operation or overflow occurs in bit shift operation
M8023		
M8026	RAMP Mode	
M8029		

PC Mode (M8030-M8038)

ID	Function	Description
M8030	PLC initializing	
M8031	Non-retentive register reset	When driving this M, ON/OFF mapping memory of Y, M, S, TC and the current values of T, C, D are all reset to be 0
M8032	Retentive register reset	
M8033	Registers keep stopping	When PLC changes from RUN to STOP, leave all content in mapping registers and data registers
M8034	All output forbidden	Set PC’s all external contacts to be OFF status
M8038	Parameter setting	Set communication parameters flag

Stepping Ladder (M8041-M8046)

ID	Function	Description
M8041		
M8045	All output reset forbidden	When shifting the mode, all outputs reset functions are forbidden
M8046	STL status activate	When M8047 activating, act when any device of S0~S999 turns to be ON

Interruption (**M8050-M8059)**

ID	Function	Description
M8050 I000□	Forbid the input interruption 0	After executing EI instruction, even the interruption is allowed, but if M acts at this time, the correspond input interruption couldn't act separately E.g.: when M8050 is ON, interrupt I000□ is forbidden
M8051 I010□	Forbid the input interruption 1	
M8052 I020□	Forbid the input interruption 2	
M8053 I030□	Forbid the input interruption 3	
M8054 I040□	Forbid the input interruption 4	
M8055 I050□	Forbid the input interruption 5	
M8056 I40□□	Forbid the time interruption 0	After executing EI instruction, even the interruption is allowed, but if M acts at this time, the correspond time interruption couldn't act separately
M8057 I41□□	Forbid the time interruption 1	
M8058 I42□□	Forbid the time interruption 2	
M8059	Forbid the interruption	Forbid all interruption

Error Testing (M8067-M8072)

ID	Function	Description
M8067	Operation error	happen when calculating
M8070	Scan time out	
M8071	No user program	Internal codes parity error
M8072	User program error	execution codes or configure table parity error

Communication (M8120-M8148)

	ID	Function	Description
COM1	M8120		
	M8121	Waiting to send via RS232	
	M8122	“sending by RS232” flag	
	M8123	“RS232 receiving finish” flag	
	M8124	RS232 receiving flag	
	M8125	“Receive incomplete” flag	acceptance ends normally, but the accepted data number is less than the required number
	M8126	Global signal	
	M8127	“Accept error” flag	
	M8128	“ Accept correct” flag	
	M8129		
COM2	M8130		
	M8131	Waiting to send via RS232	
	M8132	“sending by RS232” flag	
	M8133	“RS232 receiving finish” flag	
	M8134	RS232 receiving flag	
	M8135	“Receive incomplete” flag	acceptance ends normally, but the accepted data number is less than the required number
	M8136	Global signal	
	M8137	“Accept error” flag	
	M8138	“ Accept correct” flag	
	M8139		
COM3	M8140		
	M8141	Waiting to send via RS232	
	M8142	“sending by RS232” flag	
	M8143	“RS232 receiving finish” flag	
	M8144	RS232 receiving flag	
	M8145	“Receive incomplete” flag	acceptance ends normally, but the accepted data number is less than the required number
	M8146	Global signal	
	M8147	“Accept error” flag	
	M8148	“ Accept correct” flag	
	M8149		

“High Speed Counter Interruption Finished” Flag (M8150-M 8169)

ID	**Counter ID**	Function	Description
M8150	C600	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8151	C602	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8152	C604	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8153	C606	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8154	C608	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8155	C610	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8156	C612	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8157	C614	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8158	C616	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8159	C618	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8160	C620	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8161	C622	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8162	C624	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8163	C626	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8164	C628	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8165	C630	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8166	C632	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8167	C634	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8168	C636	“Count Interruption Finished” Flag	Set flag ON when count interruption finish
M8169	C638	“Count Interruption Finished” Flag	Set flag ON when count interruption finish

Pulse output (M8170~M8238)

ID	Pulse ID	Function	specification
M8170	PULSE_1	“sending pulse” flag	Being ON when sending the pulse,
M8171		overflow flag of “32 bits pulse sending”	When overflow, Flag is on
M8172		Direction flag	1 is positive direction, the correspond direction port is on
M8173	PULSE_2	“sending pulse” flag	Being ON when sending the pulse,
M8174		overflow flag of “32 bits pulse sending”	When overflow, Flag is on
M8175		Direction flag	1 is positive direction, the correspond direction port is on
M8176	PULSE_3	“sending pulse” flag	Being ON when sending the pulse,
M8177		overflow flag of “32 bits pulse sending”	When overflow, Flag is on

M8178		Direction flag	1 is positive direction, the correspond direction port is on
M8179	PULSE_4	"sending pulse" flag	Being ON when sending the pulse,
M8180		overflow flag of "32 bits pulse sending"	When overflow, Flag is on
M8181		Direction flag	1 is positive direction, the correspond direction port is on

absolute、relative bit:

ID	function	specification	
M8190	C600 (24 segments)	**1** is absolute, **0** is relative	
M8191	C602 (24 segments)	**1** is absolute, **0** is relative	
M8192	C604 (24 segments)	**1** is absolute, **0** is relative	
M8193	C606 (24 segments)	**1** is absolute, **0** is relative	
M8194	C608 (24 segments)	**1** is absolute, **0** is relative	
M8195	C610 (24 segments)	……	
M8196	C612 (24 segments)		
M8197	C614 (24 segments)		
M8198	C616 (24 segments)		
M8199	C618 (24 segments)		
M8200	C620 (24 segments)		
M8201	C622 (24 segments)		
M8202	C624 (24 segments)		
M8203	C626 (24 segments)		
M8204	C628 (24 segments)		
M8205	C630 (24 segments)		
M8206	C632 (24 segments)		
M8207	C634 (24 segments)		
M8208	C636 (24 segments)		
M8209	C638 (24 segments)		
M8210	Pulse alarm flag (frequency change suddenly)	**1** is alarm, **0** is correct	PULSE_1
M8211	Neglect the alarm or not	When flag is 1, stop sending alarm	PULSE_1
M8212	Pulse alarm flag (frequency change suddenly)	**1** is alarm, **0** is correct	PULSE_2
M8213	Neglect the alarm or not	When flag is 1, stop sending alarm	PULSE_2
M8214	Pulse alarm flag (frequency change suddenly)	**1** is alarm, **0** is correct	PULSE_3
M8215	Neglect the alarm or not	When flag is 1, stop sending alarm	PULSE_3
M8216	Pulse alarm flag (frequency change suddenly)	**1** is alarm, **0** is correct	PULSE_4
M8217	Neglect the alarm or not	When flag is 1, stop sending alarm	PULSE_4

M8218	Pulse alarm flag (frequency change suddenly)	**1** is alarm, **0** is correct	PULSE_5
M8219	Neglect the alarm or not	When flag is 1, stop sending alarm	PULSE_5

Positive/negative count

ID	Counter Nr.	Function	Specification
M8238	C300~C498	Positive/negative counter control	**0** is increment counter, **1** is decrement counter, default is 0

24 segments HSC interruption loop (M8270~M8289)

ID	Counter ID	Specification	
M8270	24 segments HSC interruption loop (C600)	if set it to be 1, then loop executing the interruption; or else execute only one time interruption;	
M8271	24 segments HSC interruption loop (C602)		
M8272	24 segments HSC interruption loop (C604)		
M8273	24 segments HSC interruption loop (C606)		
M8274	24 segments HSC interruption loop (C608)		
M8275	24 segments HSC interruption loop (C610)		
M8276	24 segments HSC interruption loop (C612)		
M8277	24 segments HSC interruption loop (C614)		
……	……		
M8279	24 segments HSC interruption loop (C618)		
M8280	24 segments HSC interruption loop (C620)	if set it to be 1, then loop executing the interruption; or else execute only one time interruption;	
M8281	24 segments HSC interruption loop (C		

	622)		
……	……		
M8284	24 segments HSC interruption loop (C628)		
M8285	24 segments HSC interruption loop (C630)	if set it to be 1, then loop executing the interruption; or else execute only one time interruption;	
……	……		
M8289	24 segments HSC interruption loop (C638)		

Read &Write the Expansions (M8340~M8341)

ID	Function	Specification
M8340	Read the expansion error flag (**read** instruction)	
M8341	Write the expansion error flag (**write** instruction)	

BLOCK Execution (M8630~M8730)

ID	Function	Specification
M8630		
M8631	BLOCK1 is running flag	
M8632	BLOCK2 is running flag	
……	……	……
……	……	……
……	……	……

M8730	BLOCK100 is running flag	

Appendix 1-2. List of special memory and special data register

Clock (D8010-D8019)

ID	Function	Specification
D8010	The current scan cycle	Unit:0.1ms
D8011	The min. scan time	Unit:0.1ms
D8012	The max. scan time	Unit:0.1ms
D8013	Second (clock)	0~59 (BCD code)
D8014	minute (clock)	0~59 (BCD code)
D8015	hour (clock)	0~23 (BCD code)
D8016	day (clock)	0~31 (BCD code)
D8017	month (clock)	0~12 (BCD code)
D8018	year (clock)	2000~2099 (BCD code)
D8019	week (clock)	0 (Sunday)~6 (Saturday) (BCD code)

Flag (D8021-D8029)

ID	Function	Specification
D8021	Model	Low byte
	Series number	High byte
D8022	Compatible system's version number	Low byte
	System's version number	High byte
D8023	Compatible model's version number	Low byte
	Model's version number	High byte
D8024	Model's information	Max 5 characters +"\0"
D8025		
D8026		
D8027	Suitable program software version	
D8028		
D8029		

Error check（D8067-D8098）

ID	Function	Specification
D8067	Operation error code's Nr.	The error of divide zero
D8068	lock the Nr. of error code	
D8069		
D8070	exceeded scan time	Unit 1ms
D8074	Nr. of offset registers D	
D8097		
D8098		

Communication (D8120-D8149)

	ID	Function	specification
Com 1	D8120		
	D8121		
	D8122	the left data RS232 should send	
	D8123	Data number RS232 received	
	D8126		

	D8127	Communication error code	7: hardware error 8: CRC Parity error 9: station number error 10: no start code 11: no end code 12: communication time out
	D8128	Modbus communication error (the replied message from slaves when the master send errors)	0: correct 1: don't support function ID 2: address error (overrun address) 3: Data error (the number of data) 8: saving data error (rewrite Flash)
	D8129		
Com2	D8130		
	D8131		
	D8132	the left data RS232 should send	
	D8133	Data number RS232 received	
	D8136		
	D8137	Communication error code	7: hardware error 8: CRC check error 9: station number error 10: no start sign 11: no end sign 12: communication time out
	D8138	Modbus communication error (the replied message from slaves when the master send errors)	0：correct 1: don't support function ID 2: address error(overrun address) 3: Data error (the number of data) 8：saving data error (rewrite Flash)
	D8139		
Com 3	D8140		
	D8141		
	D8142	the left data RS232 should send	
	D8143	Data number RS232 received	
	D8146		
	D8147	Communication error code	7: hardware error 8: CRC check error 9: station number error 10: no start sign 11: no end sign 12: communication time out

	D8148	Modbus communication error (the replied message from slaves when the master send errors)	0：correct 1: don't support function ID 2: address error(overrun address) 3: Data error (the number of data) 8：saving data error (rewrite Flash)
	D8149		

HSC Interruption Station (D8150-D8169)

ID	Counter ID	function	specification
D8150	C600	The current segment (**No.n** segment)	
D8151	C602	The current segment	
D8152	C604	The current segment	
D8153	C606	The current segment	
D8154	C608	The current segment	
D8155	C610	The current segment	
D8156	C612	The current segment	
D8157	C614	The current segment	
D8158	C616	The current segment	
D8159	C618	The current segment	
D8160	C620	The current segment	
D8161	C622	The current segment	
D8162	C624	The current segment	
D8163	C626	The current segment	
D8164	C628	The current segment	
D8165	C630	The current segment	
D8166	C632	The current segment	
D8167	C634	The current segment	
D8168	C636	The current segment	
D8169	C638	The current segment	

Pulse output (D8170-D8220)

ID	Pulse ID	function	specification
D8170	PULSE_1	The low 16 bits of accumulated pulse number	
D8171		The high 16 bits of accumulated pulse number	

D8172		The current segment (means Nr.n segment)	
D8173	PULSE_2	The low 16 bits of accumulated pulse number	
D8174		The high 16 bits of accumulated pulse number	
D8175		The current segment (means Nr.n segment)	
D8176	PULSE_3	The low 16 bits of accumulated pulse number	
D8177		The high 16 bits of accumulated pulse number	
D8178		The current segment (means Nr.n segment)	Only XC5-32RT-E (4PLS) model has
D8179	PULSE_4	The low 16 bits of accumulated pulse number	
D8180		The high 16 bits of accumulated pulse number	
D8181		The current segment (means Nr.n segment)	
D8190	PULSE_1	The low 16 bits of the current accumulated current pulse number	
D8191		The high 16 bits of the current accumulated current pulse number	
D8192	PULSE_2	The low 16 bits of the current accumulated current pulse number	
D8193		The high 16 bits of the current accumulated current pulse number	
D8194	PULSE_3	The low 16 bits of the current accumulated current pulse number	
D8195		The high 16 bits of the current accumulated current pulse number	Only XC5-32RT-E (4PLS) model has
D8196	PULSE_4	The low 16 bits of the current accumulated current pulse number	
D8197		The high 16 bits of the current accumulated current pulse number	

ID	Pulse ID	Function	Description
D8210	PULSE_1	Error segment number	PULSE_1
D8212	PULSE_2	Error segment number	PULSE_2
D8214	PULSE_3	Error segment number	PULSE_3
D8216	PULSE_4	Error segment number	PULSE_4
D8218	PULSE_5	Error segment number	PULSE_5
D8220	Frequency Testi	indicate the bit Nr. Behind th	

	ng Precision	e decimal dot, **1** means ***10**, **2** means ***100**	

Absolute Positioning/Relative Positioning/the Origin Return (D8230-D8239)

ID	Pulse	Function	Description
D8230	PULSE_1	Rising time of the absolute/relation position instruction (Y0)	
D8231		Falling time of the origin return instruction (Y0)	
D8232	PULSE_2	Rising time of the absolute/relation position instruction (Y1)	
D8233		Falling time of the origin return instruction (Y1)	
D8234	PULSE_3	Rising time of the absolute/relation position instruction (Y2)	
D8235		Falling time of the origin return instruction (Y2)	
D8236	PULSE_4	Rising time of the absolute/relation position instruction (Y3)	
D8237		Falling time of the origin return instruction (Y3)	
D8238	PULSE_5	Rising time of the absolute/relation position instruction	
D8239		Falling time of the origin return instruction	

Read/Write the Expansion (D8315-D8316)

ID	Function	Description
D8315	Read the expansion's error type	
D8316	Write the expansion's error type	

Sequential Function Block (D8630-D8730)

ID	Function	Description
D8630		
D8631	The current executing instruction of **BLOCK1**	The value is used when **BLOCK** is monitoring
D8632	The current executing instruction of **BLOCK2**	The value is used when **BLOCK** is monitoring
……	……	……
……	……	……
……	……	……
D8730	The current executing instruction of	The value is used when **BLOCK** is monitoring

	BLOCK100	

Error information of the Expansions (D8600-D8627)

ID	Function	specification	Expansion ID
D8600	Read the expansion's error times		Expansion 1
D8601	Read the expansion's error	1. expansion's CRC parity error 2. expansion's address error 3. expansion's accepted data length error 4. expansion's accept buffer zone overflow 5. expansion's timeout error 6. CRC parity error when PLC is accepting data 7. unknown error	
D8602	write the expansion's error times		
D8603	write the expansion's error	……	
D8604	Read the expansion's times		Expansion 2
D8605	Read the expansion's error	……	
D8606	write the expansion's error times		
D8607	write the expansion's error	……	
D8608	Read the expansion's times		Expansion 3
D8609	Read the expansion's error	……	
D8610	write the expansion's error times		
D8611	write the expansion's error	……	
D8612	Read the expansion's times		Expansion 4
D8613	Read the expansion's error	……	
D8614	write the expansion's error times		
D8615	write the expansion's error	……	
……	……	……	……
……	……	……	……
D8624	Read the expansion's times		Expansion 7
D8625	Read the expansion's error	……	
D8626	write the expansion's error t		

	imes		
D8627	write the expansion's error	……	

Appendix 1-3. ID List of the Expansions

Take the first expansion module as the example:

Channel	AD signal	DA signal	PID Output value	PID run/stop bit	Set value	PID parameter: **Kp, Ki, Kd,** control range **Diff**, Death range **death**
XC-E8AD						
0CH	ID100	-	ID108	Y100	QD100	Kp-----QD108 Ki------QD109 Kd-----QD110 Diff----QD111 Death--QD112
1CH	ID101	-	ID109	Y101	QD101	
2CH	ID102	-	ID110	Y102	QD102	
3CH	ID103	-	ID111	Y103	QD103	
4CH	ID104	-	ID112	Y104	QD104	
5CH	ID105	-	ID113	Y105	QD105	
6CH	ID106	-	ID114	Y106	QD106	
7CH	ID107	-	ID115	Y107	QD107	
XC-E4AD2DA						
0CH	ID100	-	ID104	Y100	QD102	Kp-----QD106 Ki------QD107 Kd-----QD108 Diff----QD109 Death--QD110
1CH	ID101	-	ID105	Y101	QD103	
2CH	ID102	-	ID106	Y102	QD104	
3CH	ID103	-	ID107	Y103	QD105	
0CH	-	QD100	-	-	-	
1CH	-	QD101	-	-	-	

XC-E4DA

CH Nr.	Exp. 1	Exp. 2	Exp. 3	Exp. 4	Exp. 5	Exp. 6	Exp. 7
0CH	QD100	QD200	QD300	QD400	QD500	QD600	QD700
1CH	QD101	QD201	QD301	QD401	QD501	QD601	QD701
2CH	QD102	QD202	QD302	QD402	QD502	QD602	QD702
3CH	QD103	QD203	QD303	QD403	QD503	QD603	QD703

XC-E2DA

CH Nr.	Exp. 1	Exp. 2	Exp. 3	Exp. 4	Exp. 5	Exp. 6	Exp. 7
0CH	QD100	QD200	QD300	QD400	QD500	QD600	QD700
1CH	QD101	QD201	QD301	QD401	QD501	QD601	QD701

XC-E6PT-P/ XC-E6TC-P

CH Nr.	Current temp.	Set temp.	PID run/stop bit	The first 3CH PID value	The last 3CH PID value
0CH	ID100	QD100	Y100		
1CH	ID101	QD101	Y101	Kp：QD106	Kp：QD110
2CH	ID102	QD102	Y102	Ki：QD107	Ki：QD111
3CH	ID103	QD103	Y103	Kd：QD108	Kd：QD112
4CH	ID104	QD104	Y104	Diff：QD109	Diff：QD113
5CH	ID105	QD105	Y105		

XC-E6TCA-P

RELATIVE PARAMETERS	COMMENTS AND DESCRIPTIONS				
	CH	Ch0	Ch1	……	Ch5
Display temperature (unit: 0.1℃)	module 1	ID100	ID101	ID10×	ID105
PID output (X input which returns to main unit)	module 1	X100	X101	X10×	X105
Thermocouple's connecting status (0 is connect, 1 is disconnect)	module 1	X110	X111	X11×	X115
PID auto tune error bit (0 is normal, 1 is parameters error)	module 1	X120	X121	X12×	X125
Enable channel's signal	module 1	Y100	Y101	Y10×	Y105
Auto tune PID control bit	Auto tune activate signal, enter auto tune stage if being set to be 1; when auto turn finish, PID parameters and temperature control cycle value are refreshed, reset this bit automatically. Users can also read its status; 1 represents auto tune processing; 0 represents no atto tune or auto tune finished				
PID output value (operation value)	Digital output value range: 0～4095 If PID output is analogue control (like steam valve open scale or thyistor ON angle), transfer this value to the analogue output module to realize the control requirements				
PID parameters (P、I、D)	Via PID auto tune to get the best parameters; If the current PID control can't fulfill the control requirements, users can also write the PID parameters according to experience. Modules carry on PID control according to the set PID parameters.				
PID operation range (Diff) (unit: 0.1℃)	PID operation activates between ±Diff range. In real temperature control environments, if the temperature is lower than $T_{\text{set temp.}} - T_{Diff}$, PID output the max value; if the				

	temperature is higher than $T_{\text{set temp.}} + T_{Diff}$, PID output the mini value;
Temperature difference δ (unit: 0.1℃)	(sample temperature+ Temperature difference δ)/10=display temperature value. Then temperature display value can equal or close to the real temperature value. This parameter has sign (negative or positive). Unit is 0.1℃, the default value is 0.
The set temperature value(unit: 0.1℃)	Control system's target temperature value. The range is 0～1000℃, the precision is 0.1℃.
Temperature control cycle (unit: 0.1s)	Control cycle's range is 0.5s～200s, the minimum precision is 0.1s. the write value is the real temperature control cycle multiply 10. i.e. 0.5s control cycle should write 5, 200s control cycle should write 2000.
Adjust environment temperature value (unit: 0.1℃)	If users think the environment temperature is different with the display temperature, he can write in the known temperature value. At the moment of value written in, calculate the temperature difference δ and save. Calculate the temperature difference value δ=adjust environment temperature value－sample temperature value. Unit: 0.1℃. E.g.: under heat balance status, user test the environmental temperature as 60.0℃ with mercurial thermometer, the display temperature is 55.0℃ (correspond sample temperature is 550), temperature difference δ=0. at this time, users write this parameters with 600，temperature difference δ is re-calculated to be 50 (5℃), then the display temperature = (sample temperature＋temperature difference δ）/10 =60℃。 **Note: when users write the adjust temperature value, make sure that the temperature is same with the environment temperature value. This value is very important, once it's wrong, temperature difference δ will be wrong, then effect the display temperature
Auto tune output value	The output when auto tune, use % as the unit, 100 represents 100% of full scale output. 80 represents 80% of full scale output.

XC-E3AD4PT2DA

CH Nr.	**AD signal**	**PID output value**	**PID run/stop bit**	**Set value**	PID parameters: **Kp**、**Ki**、**Kd**、control range **Diff**、death range **Death**
0CH	ID100	ID107	Y100	QD102	Kp------- QD109 Ki------- QD110 Kd------- QD111 Diff------ QD112 Death---- QD113
1CH	ID101	ID108	Y101	QD103	
2CH	ID102	ID109	Y102	QD104	
CH Nr.	**PT signal**	**PID output value**	**PID run/stop bit**	**Set value**	
3CH	ID103	ID110	Y103	QD105	
4CH	ID104	ID111	Y104	QD106	
5CH	ID105	ID112	Y105	QD107	
6CH	ID106	ID113	Y106	QD108	

CH Nr.	DA signal	-	-	-	-
0CH	QD100	-	-	-	
1CH	QD101	-	-	-	

XC-E2AD2PT2DA

RELATIVE PARAMETERS	COMMENTS AND DESCRIPTIONS				
	CH	PT0（0.01℃）	PT1（0.01℃）	AD0	AD1
Display temperature (unit: 0.1℃)	module 1	ID100	ID101	ID102	ID103
PID output (X input which returns to main unit)	module 1	X100	X101	X102	X103
Connecting status (0 is connect, 1 is disconnect)	module 1	X110	X111	X112	X113
PID auto tune error bit (0 is normal, 1 is parameters error)	module 1	X120	X121	X122	X123
Enable channel's signal	module 1	Y100	Y101	Y102	Y103
Auto tune PID control bit	Auto tune activate signal, enter auto tune stage if being set to be 1; when auto turn finish, PID parameters and temperature control cycle value are refreshed, reset this bit automatically. Users can also read its status; 1 represents auto tune processing; 0 represents no atto tune or auto tune finished				
PID output value (operation value)	Digital output value range: 0～4095 If PID output is analogue control (like steam valve open scale or thyistor ON angle), transfer this value to the analogue output module to realize the control requirements				
PID parameters (P、I、D)	Via PID auto tune to get the best parameters; If the current PID control can't fulfill the control requirements, users can also write the PID parameters according to experience. Modules carry on PID control according to the set PID parameters.				
PID operation range (Diff) (unit: 0.1℃)	PID operation activates between ±Diff range. In real temperature control environments, if the temperature is lower than $T_{\text{set temp.}} - T_{Diff}$, PID output the max value; if the temperature is higher than $T_{\text{set temp.}} + T_{Diff}$, PID output the mini value;				
Temperature difference δ	(sample temperature+ Temperature difference δ)/10=display temperature value. Then temperature display value can equal or close to the real temperature value. This parameter h				

(unit: 0.1℃)	as sign (negative or positive). Unit is 0.1℃, the default value is 0.
The set temperature value(unit: 0.1℃)	Control system's target temperature value. The range is 0～1000℃, the precision is 0.1℃.
Temperature control cycle (unit: 0.1s)	Control cycle's range is 0.5s～200s, the minimum precision is 0.1s. the write value is the real temperature control cycle multiply 10. i.e. 0.5s control cycle should write 5, 200s control cycle should write 2000.
Real value (unit: 0.1℃)	If users think the environment temperature is different with the display temperature, he can write in the known temperature value. At the moment of value written in, calculate the temperature difference δ and save. Calculate the temperature difference value δ=adjust environment temperature value－sample temperature value. Unit: 0.1℃. E.g.: under heat balance status, user test the environmental temperature as 60.0℃ with mercurial thermometer, the display temperature is 55.0℃ (correspond sample temperature is 550), temperature difference δ=0. at this time, users write this parameters with 600，temperature difference δ is re-calculated to be 50 (5℃), then the display temperature = (sample temperature＋temperature difference δ）/10 =60℃。 **Note: when users write the adjust temperature value, make sure that the temperature is same with the environment temperature value. This value is very important, once it's wrong, temperature difference δ will be wrong, then effect the display temperature
Auto tune output value	The output when auto tune, use % as the unit, 100 represents 100% of full scale output. 80 represents 80% of full scale output.

Appendix 1-4. Special Flash Register List

1、 I filter

ID	Function	Initial Value	Description
FD8000	input filter time of **X** port	10	Unit: ms
FD8002		0	
FD8003		0	
……		0	
FD8009		0	

2、 I mapping

ID	Function	Initial value	Description
FD8010	**X00** corresponds with **I****	0	X0 corresponds with number of input image I**
FD8011	**X01** corresponds with **I****	1	Initial values are all decimal
FD8012	**X02** corresponds with **I****	2	
……	……		
FD8073	**X77** corresponds with **I****	63	

3、 O mapping

ID	Function	Initial value	Description
FD8074	**Y00** corresponds with **I****	0	Y0 corresponds with the number of output image O**
FD8075	**Y01** corresponds with **I****	1	Initial value are all decimal
FD8076	**Y02** corresponds with **I****	2	
……	……		
FD8137	**Y77** corresponds with **I****	63	

4、 I property

ID	function	Initial value	Description
FD8138	X00 property	all be 0	0: positive logic; others: negative logic
FD8139	X01 property		
FD8140	X02 property		
……	……		
FD8201	X77 property		

5、 power-off retentive area of soft components

ID	Function	Initial Value
FD8202	Start tag of **D** power off retentive area	4000
FD8203	Start tag of **M** power off retentive area	3000
FD8204	Start tag of **T** power off retentive area	640
FD8205	Start tag of **C** power off retentive area	320
FD8206	Start tag of **S** power off retentive area	512
FD8207	Start tag of E**D** power off retentive area	0
FD8209	Pulse director and pulse delay time setting	50ms

6、 Communication

	ID	Function	Initial	Description
COM1	FD8210	Communicate Mode (station number)	1	255 (FF) is free mode， 1~254 is modbus station number
	FD8211	Communicate format	8710	Baud rate, Data bit, stop bit, parity
	FD8212	Judgment time of ASC timeout	3	Unit ms, if set to be 0, it means no timeout waiting
	FD8213	Judgment time of reply timeout	300	Unit ms, if set to be 0, it means no timeout waiting
	FD8214	Start ASC	0	High 8 bits invalid
	FD8215	End ASC	0	High 8 bits invalid
	FD8216	Free format setting	0	8/16 bits buffer; With/without start bit， With/without stop bit

COM2	FD8220	Communicate Mode (station number)	8710	255 (FF) is free mode， 1~254 is modbus station number
	FD8221	Communicate format	3	Baud rate, Data bit, stop bit, parity
	FD8222	Judgment time of ASC timeout	300	Unit ms, if set to be 0, it means no timeout waiting
	FD8223	Judgment time of reply timeout	0	Unit ms, if set to be 0, it means no timeout waiting
	FD8224	Start ASC	0	High 8 bits invalid
	FD8225	End ASC	0	High 8 bits invalid
	FD8226	Free format setting	8710	8/16 bits buffer; With/without start bit， With/without stop bit
COM3	FD8230	Communicate Mode (station number)	8710	255 (FF) is free mode， 1~254 is modbus station number
	FD8231	Communicate format	3	Baud rate, Data bit, stop bit, parity
	FD8232	Judgment time of ASC timeout	300	Unit ms, if set to be 0, it means no timeout waiting
	FD8233	Judgment time of reply timeout	0	Unit ms, if set to be 0, it means no timeout waiting
	FD8234	Start ASC	0	High 8 bits invalid
	FD8235	End ASC	0	High 8 bits invalid
	FD8236	Free format setting	8710	8/16 bits buffer; With/without start bit， With/without stop bit

7、 Subsection Power-off Retentive Zone of Timer T

Nr.	Function	Initial Value
FD8323	Set the retentive zone’s start tag of 100ms non-accumulation timer	
FD8324	Set the retentive zone’s start tag of 100ms accumulation timer	
FD8325	Set the retentive zone’s start tag of 10ms non-accumulation timer	
FD8326	Set the retentive zone’s start tag of 10ms accumulation timer	
FD8327	Set the retentive zone’s start tag of 1ms non-accumulation timer	
FD8328	Set the retentive zone’s start tag of 1ms accumulation timer	
FD8329	Set the retentive zone’s start tag of 1ms precise timer	

8、 Subsection power-off retentive zone of counter C

Nr.	Function	Initial Value
FD8330	Set the retentive zone’s start tag of 16 bits positive counter	
FD8331	Set the retentive zone’s start tag of 32 bits positive/negative counter	

FD8332	Set the retentive zone's start tag of single-phase HSC	
FD8333	Set the retentive zone's start tag of dual-phase HSC	
FD8334	Set the retentive zone's start tag of AB-phase HSC	

※1：If you change special FLASH memory, it will take into effect after restart the PLC

Appendix 2　Instructions List

In this chapter, we will list all the instructions XC series PLC support. These instructions include: basic instructions, application instructions, special function instructions and motion control instructions. Also, we declare each instruction's application range.

This part enables the users to check the instruction's functions much faster. For the detailed application, please refer to《XC Series Programmable Controller【Instruction Part】》。

Appendix 2-1. Basic Instructions List

Mnemonic	Function
LD	Initial logical operation contact type NO (normally open)
LDI	Initial logical operation contact type NC (normally closed)
OUT	Final logic operation type coil drive
AND	Serial connection of NO
ANI	Serial connection of NC
OR	Parallel connection of NO
ORI	Parallel connection of NC
LDP	Rising edge pulse
LDF	Falling edge pulse
ANDP	Serial connection of rising edge pulse
ANDF	Serial connection of falling edge pulse
ORP	Parallel l connection of rising edge pulse
ORF	parallel connection of falling edge pulse
LDD	直接从触点上读取状态
LDDI	直接读取常闭触点
ANDD	直接从触点上读取状态，串联连接
ANDDI	直接读取常闭触点，串联连接
ORD	直接从触点上读取状态，并联连接
ORDI	直接读取常闭触点，并联连接
OUTD	直接输出到触点
ORB	Parallel connection of parallel multiply parallel circuit
ANB	Serial connection of parallel multiply parallel circuit
MCS	New bus line start
MCR	Bus line return
ALT	Alternate state
PLS	Rising edge pulse
PLF	Falling edge pulse
SET	Set a bit device permanently on
RST	Reset a bit device permanently off
OUT	Output counter coil 计数线圈的驱动
RST	Output reset, and current data reset to zero 输出触点的复位，当前值清零
END	输入输出处理以及返回到第 0 步
GROUP	指令块折叠开始
GROUPE	指令块折叠结束
TMR	Time 定时

Appendix 2-2. Applied instruction list

Sort	Mnemonic	Function	Suit Model				
			XC1	XC2	XC3	XC5	XCM
Program flow	CJ	Condition Jump	√	√	√	√	√
	CALL	Call subroutine	√	√	√	√	√
	SRET	Subroutine return	√	√	√	√	√
	STL	Flow start	√	√	√	√	√
	STLE	Flow end	√	√	√	√	√
	SET	Open the assigned flow, close the current flow	√	√	√	√	√
	ST	Open the assigned flow, not close the current flow	√	√	√	√	√
	FOR	Start of a FOR-NEXT loop	√	√	√	√	√
	NEXT	END of a FOR-NEXT loop	√	√	√	√	√
	FEND	End of main program	√	√	√	√	√
Data compare	LD=※1	LD activate if (S1)= (S2)	√	√	√	√	√
	LD>※1	LD activate if (S1)> (S2)	√	√	√	√	√
	LD<※1	LD activate if (S1)< (S2)	√	√	√	√	√
	LD<>※1	LD activate if(S1)≠(S2)	√	√	√	√	√
	LD>=※1	LD activate if(S1) >= (S2)	√	√	√	√	√
	LD<=※1	LD activate if(S1) <= (S2)	√	√	√	√	√
	AND=※1	AND activate if (S1)= (S2)	√	√	√	√	√
	AND>※1	AND activate if (S1)> (S2)	√	√	√	√	√
	AND<※1	AND activate if (S1)< (S2)	√	√	√	√	√
	AND<>※1	AND activate if(S1)≠(S2)	√	√	√	√	√
	AND>=※1	AND activate if(S1) >= (S2)	√	√	√	√	√
	AND<=※1	AND activate if(S1) <= (S2)	√	√	√	√	√
	OR=※1	OR activate if (S1)= (S2)	√	√	√	√	√
	OR>※1	OR activate if (S1)> (S2)	√	√	√	√	√
	OR<※1	OR activate if (S1)< (S2)	√	√	√	√	√
	OR<>※1	OR activate if(S1)≠(S2)	√	√	√	√	√
	OR>=※1	OR activate if(S1) >= (S2)	√	√	√	√	√
	OR<=※1	OR activate if(S1) <= (S2)	√	√	√	√	√
Data move	CMP※1	Data compare	√	√	√	√	√
	ZCP※1	Data zone compare	√	√	√	√	√
	MOV※1	Move	√	√	√	√	√
	BMOV	Block move	√	√	√	√	√

	FMOV※1	Fill move	√	√	√	√	√
	FWRT※1	FlashROM Written	√	√	√	√	√
	MSET	Zone set	√	√	√	√	√
	ZRST	Zone reset	√	√	√	√	√
	SWAP	The high bytes and low bytes exchange	√	√	√	√	√
	XCH※1	Data exchange	√	√	√	√	√
Sort	**Mnemonic**	**function**	**Suit model**				
			XC1	**XC2**	**XC3**	**XC5**	**XCM**
Data Operation	ADD※1	addition	√	√	√	√	√
	SUB※1	subtraction	√	√	√	√	√
	MUL※1	multiplication	√	√	√	√	√
	DIV※1	division	√	√	√	√	√
	INC※1	Increment	√	√	√	√	√
	DEC※1	decrement	√	√	√	√	√
	MEAN※1	mean	√	√	√	√	√
	WAND※1	Word and	√	√	√	√	√
	WOR※1	Word or	√	√	√	√	√
	WXOR※1	Word exclusive or	√	√	√	√	√
	CML※1	**Complement**	√	√	√	√	√
	NEG※1	Negative	√	√	√	√	√
Data shift	SHL※1	Arithmetic shift left		√	√	√	√
	SHR※1	Arithmetic shift right		√	√	√	√
	LSL※1	Logic shift left		√	√	√	√
	LSR※1	Logic shift right		√	√	√	√
	ROL※1	Rotation shift lift		√	√	√	√
	ROR※1	Rotation shift right		√	√	√	√
	SFTL※1	Bit shift left		√	√	√	√
	SFTR※1	Bit shift right		√	√	√	√
	WSFL	Word shift left		√	√	√	√
	WSFR	Word shift right		√	√	√	√
Data convert	WTD	Single word integer convert to double word integer		√	√	√	√
	FLT※1	16 bits integer convert to float		√	√	√	√
	FLTD※1	64 bits integer convert to float		√	√	√	√
	INT※1	Float convert to integer		√	√	√	√
	BIN	BCD convert to binary		√	√	√	√
	BCD	Binary convert to BCD		√	√	√	√

	ASCI	Hex convert to ASCⅡ		√	√	√	√
	HEX	ASCⅡ convert to Hex		√	√	√	√
	DECO	Coding		√	√	√	√
	ENCO	High bit coding		√	√	√	√
	ENCOL	Low bit coding		√	√	√	√

Sort	**Mnemonic**	**function**	**Suit Model**				
			XC1	**XC2**	**XC3**	**XC5**	**XCM**
Float Operation	ECMP※2	Float compare		√	√	√	√
	EZCP※2	Float zone compare		√	√	√	√
	EADD※2	Float addition		√	√	√	√
	ESUB※2	Float subtraction		√	√	√	√
	EMUL※2	Float multiplication		√	√	√	√
	EDIV※2	Float division		√	√	√	√
	ESQR※2	Float square root		√	√	√	√
	SIN※2	Sine		√	√	√	√
	COS※2	Cosine		√	√	√	√
	TAN※2	tangent		√	√	√	√
	ASIN※2	浮点数反 SIN 运算		√	√	√	√
	ACOS※2	浮点数反 COS 运算		√	√	√	√
	ATAN※2	浮点数反 TAN 运算		√	√	√	√
Clock	TRD	Read RTC data		√	√	√	√
	TWR	Set RTC data		√	√	√	√

※1：如无特别说明，指令一般为 16 位，并且不具有 32 位指令形式。以※1 标识的指令具有 32 位指令形式，一般 32 位指令的表达为其相应的 16 位指令前加“D”，如 ADD 的 32 位指令为 DADD。

※2：以※2 标识的指令为 32 位指令，并且不具有 16 位指令形式。

※3：“√”表示所在系列支持该条指令。

Appendix 2-3．Special Instructions List

sort	Mnemonic	功能	适用机型				
			XC1	XC2	XC3	XC5	XCM
pulse	PLSY※1	单段无加减速脉冲输出		√	√	√	√
	PLSR※1	多/单段、加减速、单/双向脉冲输出		√	√	√	√
	PLSF※1	可变频率脉冲输出		√	√	√	√
	PLSA※1	绝对位置多段脉冲控制		√	√	√	√
	PLSNEXT/PLSNT	脉冲段切换		√	√	√	√
	PLSMV※2	把脉冲个数存入寄存器		√	√	√	√
	STOP	脉冲停止		√	√	√	√
High Speed Counter (HSC)	HSCR※2	32 位高速计数读取		√	√	√	√
	HSCW※2	32 位高速计数写入		√	√	√	√
MODBUS communication	COLR	MODBUS 线圈读		√	√	√	√
	INPR	MODBUS 输入线圈读		√	√	√	√
	COLW	MODBUS 单个线圈写		√	√	√	√
	MCLW	MODBUS 多个线圈写		√	√	√	√
	REGR	MODBUS 寄存器读		√	√	√	√
	INRR	MODBUS 输入寄存器写		√	√	√	√
	REGW	MODBUS 单个寄存器写		√	√	√	√
	MRGW	MODBUS 多个寄存器写		√	√	√	√
Free format communication	SEND	自由格式数据发送		√	√	√	√
	RCV	自由格式数据接收		√	√	√	√
CANBUS communicatio	CCOLR	CANBUS 线圈读				√	
	CCOLW	CANBUS 线圈写				√	

n	CREGR	CANBUS 寄存器读				√	
	CREGW	CANBUS 寄存器写				√	
精确定时	STR	精确定时		√	√	√	√
	STRR	读精确定时寄存器		√	√	√	√
	STRS	停止精确定时		√	√	√	√
interrupt	EI	允许中断		√	√	√	√
	DI	禁止中断		√	√	√	√
	IRET	中断返回		√	√	√	√
BLOCK	BSTOP	停止 BLOCK 的运行		√	√	√	√
	BGOON	继续执行被暂停的 BLOCK		√	√	√	√
	WAIT	等待		√	√	√	√
Read/write expansion	FROM	读取模块		√	√	√	√
	TO	写入		√	√	√	√
others	FRQM	频率测量		√	√	√	√
	PWM	脉宽调制		√	√	√	√
	PID	PID 运算控制		√	√	√	√

※1：如无特别说明，所述指令一般为 16 位，并且不具有 32 位指令形式。以※1 标识的指令具有 32 位指令形式，一般 32 位指令的表达为其相应的 16 位指令前加“D”，如 ADD 的 32 位指令为 DADD。

※2：以※2 标识的指令为 32 位指令，并且不具有 16 位指令形式。

※3：“√”表示该系列支持当前指令。

Appendix 2-4. MOTION CONTROL INSTRUCTIONS LIST

Mnemonic	FUNCTION	SUITABLE MODELS				
		XC1	XC2	XC3	XC5	XCM
ZRN※1	Origin return		√	√	√	√
DRVA※1	Absolute position		√	√	√	√
DRVI※1	Relative position		√	√	√	√
ABS	Absolute address					√
CCW※2	Circular anticlockwise interpolation					√
CHK	Servo end check					√
CW※2	Circular clockwise interpolation					√
DRV※2	High speed					√
DRVR	Electrical zero return					√
DRVZ	Machine zero return					√
FOLLOW※2	Follow movement instruction					√
INC	Incremental address					√
LIN※2	Linear interpolation positioning					√
PLAN※2	Plane selection					√
TIM※2	Delayed time					√
SETR	Set electrical zero					√
SETP※2	Set reference frame					√

※1: The instructions with ※1 sign have 32 bits form; generally 32 bits instructions are represented as adding D before 16 bits instructions, like this 32 bits ADD instructions is DADD;

※2: The instructions with ※2 sign are 32 bits form; they don't have 16 bits form;

Appendix 3 Version for special function

Generally, the functions and instructions described in this manual don't have software and hardware requirements. But for some special functions, we have software and hardware versions requirement. Below, we list these requirements for the special functions;

function	Hardware version	Software version
Fill move 32 bits instruction DFMOV	V3.0 and above	V3.0 and above
Anti-trigonometric Operation	V3.0 and above	V3.0 and above
Read/write clock	V2.51 and above	V3.0 and above
Read/write high speed counter	V3.1c and above	V3.0 and above
Interrupt high speed counter	V3.1c and above	V3.0 and above
Read precise time	V3.0e and above	V3.0 and above
Stop precise time	V3.0e and above	V3.0 and above
C program block function	V3.0c and above	V3.0 and above
PID function	V3.0 and above	V3.0 and above
Block	V3.1i and above	V3.1h and above
Connect T-BOX	V3.0g and above	V3.0 and above
Connect G-BOX	V3.0i and above	V3.0 and above
Read/write XC-E6TCA-P 、 XC-E2AD2PT3DA 、 XC-E2AD2PT2DA	V3.1f and above	V3.1b and above
Expand register ED	V3.0 and above	V3.0 and above

Appendix 4 PLC Configuration List

This part is used to check each model's configurations. Via this table, we can judge the model easily;

○ selectable ×Not support √support

Models	clock	communication			expansion	BD board	NO. of high speed counter			No. of Pulse（T model/ RT model)	External interrupt
		CAN	Modbus	Free			Increase	Pulse + director	AB phase		
XC1 Series											
XC1-10	×	×	×	×	×	×	×	×	×	×	×
XC1-16	×	×	×	×	×	×	×	×	×	×	×
XC1-24	×	×	√※2	×	×	×	×	×	×	×	×
XC1-32	×	×	√※2	×	×	×	×	×	×	×	×
XC2 Series											
XC2-14	○	×	○	○	×	×	5	2	2	2	3
XC2-16	○	×	×	×	×	×	5	2	2	2	3
XC2-24	○	×	√	√	×	√	5	2	2	2※1	3
XC2-32	○	×	√	√	×	√	5	2	2	2※1	3
XC2-48	○	×	√	√	×	√	5	2	2	2※1	3
XC2-60	○	×	√	√	×	√	5	2	2	2※1	3
XC3 Series											
XC3-14	×	×	○	○	×	×	4	2	2	2	1
XC3-24	○	×	√	√	√	√	6	3	3	2※1	3
XC3-32	○	×	√	√	√	√	6	3	3	2※1	3
XC3-48	○	×	√	√	√	√	4	2	2	2	3
XC3-60	○	×	√	√	√	√	4	2	2	2	3
XC3-19AR-E	○	×	√	√	×	×	4	2	2	2	3
XC5 Series											
XC5-24	○	×	√	√	√	√	2	1	1	4※1	5
XC5-32	○	×	√	√	√	√	2	1	1	4※1	5
XC5-48	○	√	√	√	√	√	6	3	3	2※1	3
XC5-60	○	√	√	√	√	√	6	3	3	2※1	3
XCM Series											
XCM-24	○	×	√	√	√	√	2	1	1	4※1	5
XCM-32	○	×	√	√	√	√	2	1	1	4※1	5

※1：If use BD board , Y1 can’t be used for pulse

※2：it just can be used for Modbus slave.

Appendix 5 common question A&Q

在运行或调试 PLC 的时候，用户可能会因为缺乏一定的经验而遇到一些难以解决的问题。这部分内容主要针对用户最可能碰到的问题，提出了解决方法，以供用户参考。

Q1：条件成立了，为什么对应的线圈却没有置位？

A1：可能出现的原因有以下两点：

（1）可能在多处使用了同一个线圈，执行二重线圈输出，在二重线圈输出时，后侧的线圈优先动作。

（2）此时，对该线圈的复位条件也成立导致。用户可通过监控功能查找该复位点，修改程序。

Q2：脉冲发送指令置 ON，脉冲却没有输出？

A2：程序里可能有多处使用了脉冲发送指令。

Q3：为什么高速计数已接入，而 PLC 高速计数器却没有数据？

A3：可能出现的原因有以下两点：

（1）请确认当前使用的 PLC 是否带有高速计数光耦。（一般会在 PLC 标签上标明，此外在购买之前请说明需带高速计数光耦的要求）

（2）当用户的软件版本为 3.0，而硬件版本为 2.5，可能导致无法识别高速计数，此时，用户可以换用 2.5 的软件，或者将硬件升级到 3.0。

注意：用旧版本打开程序时可能不成功，用户可以采用编程语句的复制粘贴实现 。

Q4：通讯口 1 和通讯口 2 有什么区别？

A4：通讯口 1 和通讯口 2 的通信参数都可以重设，区别在于通讯口 1 可通过上电停止 PLC 功能，恢复为默认通信参数。

Q5：自由格式通讯为什么无法通讯起来？

A5：首先检查通讯参数设置是否正确，如果使用串口 2 通讯，就要将通讯模式 FD8220 修改为 HFF，FD8221 通讯格式设置为相应的参数。

Q6：为什么 PLC 里的时间没有变化？

A6：XC3 系列 14 点 PLC 及一体机 XP1 系列不带时钟。

Q7：为什么 PLC 与外围设备无法通讯上？

A7：通讯失败一般归纳为以下几个问题：

（1）通讯参数：PLC 通讯口与外围设备的通讯参数设置可能不一致。

（2）通讯线：连接可能不正确，或接触不良，用户可更换通讯线重试。

（3）通讯串口：检查通讯串口，可以通过下载 PLC 程序来检查，下载成功则排除串口问题。

（4）如果以上均排除，请与我公司联系。

Q8：PLC 内的电池电量能维持多久？

A8：一般能维持 3~5 年。

Q9：为什么热电偶接入温度模块后，在常温下温度跳动幅度就很大？

A9：可能出现的原因有以下两点：

（1）检测热电偶的冷端是否与其外壳短路，如果短路，请更换热电偶。

（2）外界干扰，热电偶，温度模块等弱电部分与强电部分需要分隔开来，并保证它们之间相隔一段距离。如果设备使用有电机、变频器，确保它们正确接地。