User Manual For The WS3U-F Series PLC Control Board

--V1.92

Applicable to the following models：

WS3U-14MR/MT-F

WS3U-24MR/MT-F

WS3U-32MR/MT-F

WS3U-48MR/MT-F

WS3U-56MR-F

Catalogue

Chapter 1 Product Overview

1.1 Product Overview

- The WS3U Precision Speed Series features an ARM Cortex-M3 32-bit MISC core chip, offering fast processing speeds and ample storage capacity.
- Download speed is 38.4 Kbps (9.6 Kbps can be requested under special circumstances); programming, downloading, debugging, and monitoring can be performed directly using Mitsubishi GX Developer or GX Works2 (write monitoring is not supported).
- Powered by 24 V DC; static current is 30 mA when all output relays are off;

  Each activated relay adds 10 mA to the current; for example, when all output relays on the 3U-48mr are activated, the current is 270 mA (6.48 W).
- Features 6 analog inputs (3 voltage channels: 0–10 V; 3 current channels: 0–20 mA) and 2 analog outputs (0–10 V voltage).
- Features 6 channels of 3K counting (upgradable to 6 channels of 60K; 14-point models can be upgraded to 2 channels of 60K), supports 3-channel A/B phase input, and includes 4 channels of 10K pulse output via transistors (upgradable to 8 channels of 100K; 14-point models default to 2 channels of 100K—please consult customer service for specifics).
- The relays use 5A current relays; for long-term use, the current should be kept below 3A；

  The transistors use bipolar transistor drivers with an output current of 1A; for long-term use, the current should not exceed 500mA.
- Multiple models are available for a wide range of applications, and DIN rail mounting is available as an option.

1.2 Essential parameter

Model	External dimensions (L*W, mm)	Opening size (L*W, mm)	Terminal width (mm)	Outer shell dimensions (L*W*H, mm)	Download speed	Memory capacity	enter point	Output Point	Output Type	Output current	Load	Counting	Pulse output	Analog in	Analog out	MODBUS	RTC	Shell
WS3U-14MR-F	93X87.5	85X80.0	30	95X90X40	38.4Kb	8000	8	6	relay	5A	24V 220V	6/3K default 2/60K optional	none	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional
WS3U-14MT-F	93X87.5	85X80.0	30	95X90X40	38.4Kb	8000	8	6	transistor	1A	24V	6/3K default 2/60K optional	2/100K	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional
WS3U-24MR-F	121X87.5	115X81.5	30	125X90X40	38.4Kb	8000	14	10	relay	5A	24V 220V	6/3K default 2/60K optional	none	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional
WS3U-24MT-F	121X87.5	115X81.5	30	125X90X40	38.4Kb	8000	14	10	transistor	1A	24V	6/3K default 2/60K optional	4/100K	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional
WS3U-32MR-F	150X90.0	150X90.0	30	150X90X40	38.4Kb	8000	16	16	relay	5A	24V 220V	6/3K default 2/60K optional	none	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional
WS3U-32MT-F	150X90.0	150X90.0	30	150X90X40	38.4Kb	8000	16	16	transistor	1A	24V	6/3K default 2/60K optional	4/100K can be upgraded to	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional
WS3U-48MR-F	174X95.0	163X87.0	30	180X98X40	38.4Kb	8000	24	24	relay	5A	24V 220V	6/3K default 2/60K optional	none	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional
WS3U-48MT-F	174X95.0	163X87.0	30	180X98X40	38.4Kb	8000	24	24	transistor	1A	24V	6/3K default 2/60K optional	4/100K can be upgraded to	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional
WS3U-56MR-F	174X95.0	163X87.0	30	180X98X40	38.4Kb	8000	32	24	relay	5A	24V 220V	6/3K default 2/60K optional	none	3AD 0-10V 3AD 4-20MA	2DA 0-10V	Optional	Optional	Optional

Figure.2-1

1.3 Environment and installation method

- To prevent excessive internal overheating of the machine, install it wall-mounted. Ensure sufficient vertical clearance for heat dissipation
- Maintain a clearance of at least 50 mm between the PLC unit and other equipment or structures. Keep it as far away as possible from high-voltage lines, high-voltage equipment, and power equipment.
- Avoid dusty, oily, or corrosive environments; take precautions against static electricity (avoid direct contact with circuit board traces).
- Secure the unit using rubber mounting posts. Optional mounting on enclosure rails is available.

Chapter 2 product display

2.1 Main hardware specifications of the product (using the WS3U-24MR as an example)

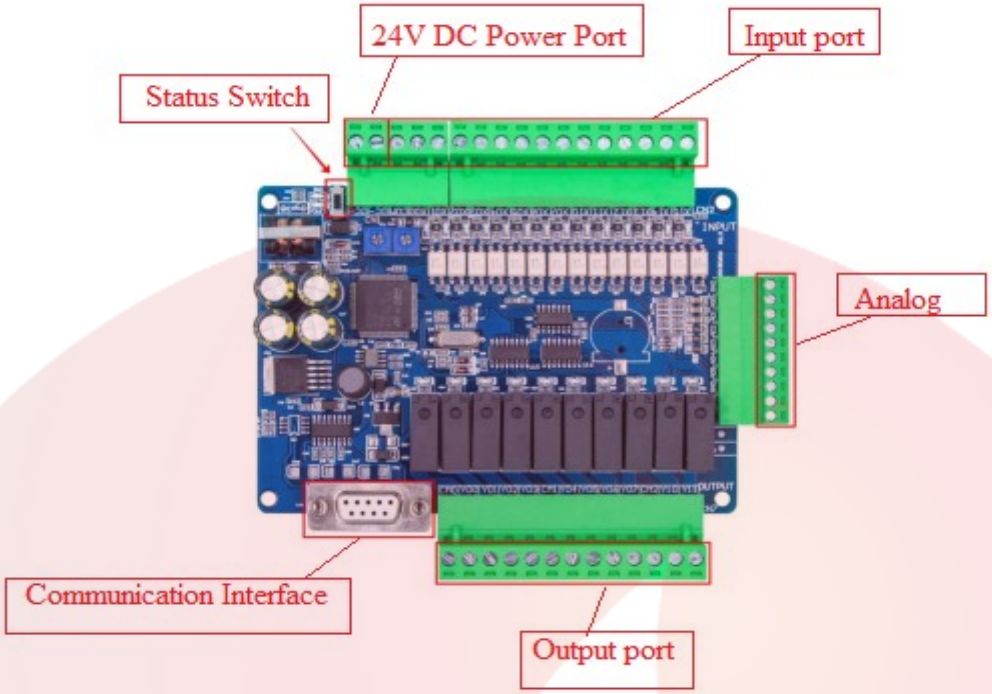


Figure 2-2

2.2 Product front view

WS3U-14MR-F

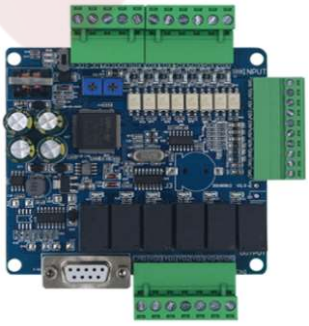


Figure 2-3

WS3U-14MT-F

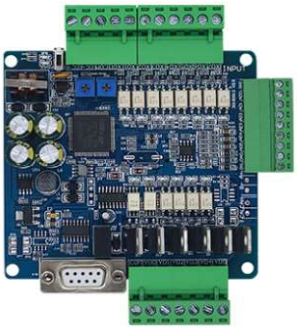


Figure 2-4

WS3U-24MR-F

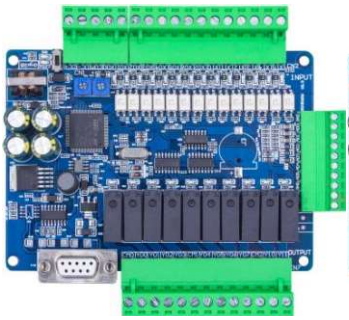


Figure 2-5

WS3U-24MT-F

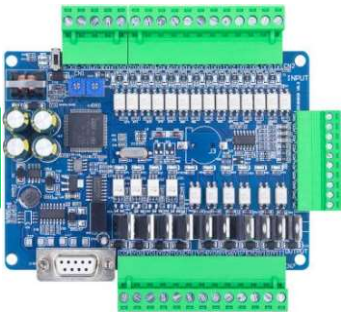


Figure 2-6

WS3U-32MR-F

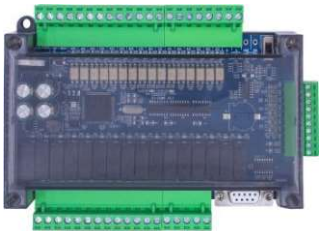


Figure 2-7

WS3U-32MT-F

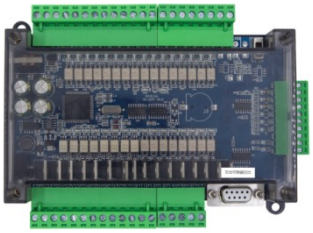


Figure 2-8

WS3U-48MR-F

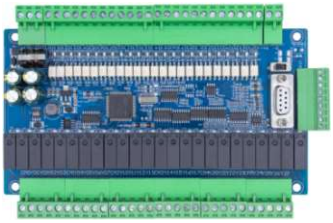


Figure 2-9

WS3U-48MT-F

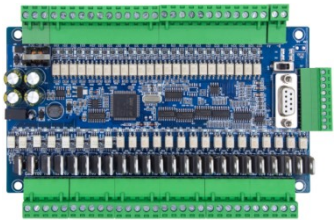


Figure 2-10

WS3U-56MR-F

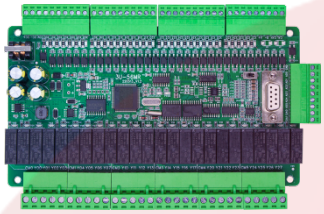


Figure 2-11

Chapter 3 Electrical Design Reference

3.1 Power Supply and Power Consumption

Powered by 24 V DC;

Quiescent current: 30 mA when all output relays are off;

Current increases by 10 mA for each activated channel; for example, when all output relays on the 3U-48mr are activated, the current is 270 mA (6.48 W)

Note: Use a switching power supply with low ripple for powering the unit. If there is significant interference on the power lines, be sure to use an appropriate filter.

3.2 232 Communication Port Description

a. It comes standard with a set of RS-232 ports, which are used for uploading and downloading programs or for communication with a human-machine interface.

Communication Interface Definition：

2————TXD（Transmit Data）

3————RXD（receive data）

5————GND （Signal ground）

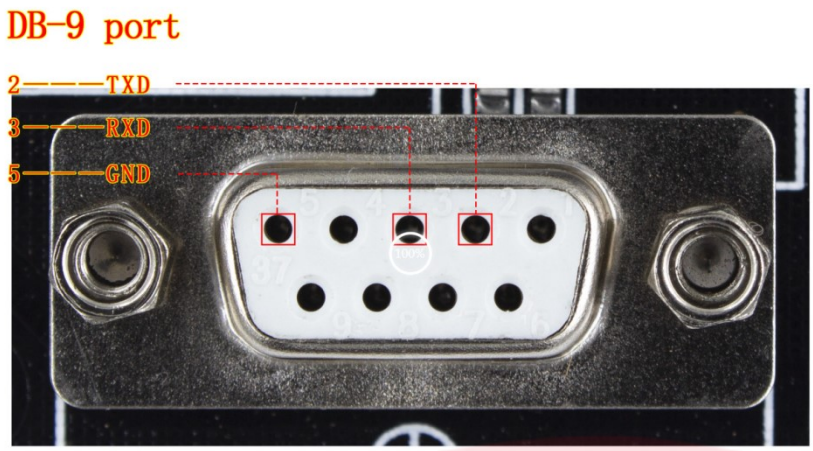


Fig. 3－1 Definition of Nine-Needle Serial Port

b. Connecting to the HMI touchscreen:

Connect the PLC's TXD (transmit) to the touchscreen's RXD (receive);

Connect the PLC's RXD (receive) to the touchscreen's TXD (transmit);

Connect the PLC's GND (signal ground) to the touchscreen's GND (signal ground).

c. Configure the touchscreen settings (baud rate 38400, Data bits: 7, Parity: Even, Stop bits: 1)

d. For touchscreens that require rewiring, first ensure that the touchscreen's serial port RXD, TXD, and GND are connected according to the communication interface specifications.

e. The D-type communication port is an RS232 port that supports the WS PLC programming protocol. It enables program download (using a 9-pin serial cable or a USB-to-serial adapter) and supports text-based and HMI.

3.3 485 Communication Port Description

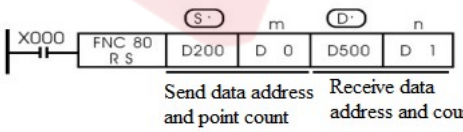
Serial data transmission ：

Special register	Instruction	Special relay	Instruction
RS485 communication port			
D8120	RS485 Communication Format Definition	M8121	Set when sending data and reset automatically after completion
D8121	RS485 Communication Station Number Setting	M8122	Send request; when M8122 is set, data transmission begins as soon as the communication port becomes idle, and the request is automatically reset once transmission starts.
D8122	Remaining data for transmission	M8123	The data reception completion flag is automatically set upon receiving a frame of data. Users should reset this flag after data reception.
		M8124	Set during data reception, reset after data reception
M8129：Communication timeout flag: If the slave device fails to respond within the D8129 time limit after the master device issues a command, M8129 will set this flag.			

The corresponding communication parameters for D8120 and D8126 are as follows:

Item	Name	Content	
		0 (bit OFF)	1 (ON)
B0	Data length	7-bit	8-bit
B1 B2	Parity bit	b2 b1 (0,0): No parity check (0,1): Odd parity ODD (1,1): Even parity EVEN	
B3	Stop bit	1 bit	2 bit
B4 B5 B6 B7	Transfer rate bps	b7 b6 b5 b4 b7 b6 b5 b4 {0, 0, 1, 1}: 300 {0, 1, 1, 1}: 4800 {0, 1, 0, 0}: 600 {1, 0, 0, 0}: 9600 {0, 1, 0, 1}: 1200 {1, 0, 0, 1}: 19200 {0, 1, 1, 0}: 2400 {1, 0, 1, 0}: 38400	
B8	Start symbol	None	Have（D8124）
B9	Terminating symbol	None	Have（D8125）
B10 B11	Do not use		
B12 B13 B14 B15	Communicating protocol	B15 b14 b13 b12 {0, 0, 0, 0}: Mitsubishi FX2N protocol (slave) {0, 1, 0, 0}: MODBUS RTU (slave) {1, 0, 0, 0}: MODBUS RTU (master, IVRD, IWR commands) {1, 1, 0, 0}: Free communication (RS commands, with CCD verification)	

When the M8120 resets and RS is executed, the parameters are configured for RS485 port; when the M8120 is set and RS is executed, the parameters are configured for RS232 port.



● The data transmission format can be configured using the special data register D8120, as described below. However, changes to the D8120 settings are not actually applied while the RS instruction is active.

● In systems that do not transmit data, set the number of data transmission points to "K0." Similarly, in systems that do not receive data, set the number of reception points to "K0."

Figure 3-2

CCD instruction:

Take n-point data starting from the specified element S, sum all bits of the data and store the result along with CRC check data in D, D+2, and D+3. In this example, the data and check are stored in D0, while the CRC check is stored in D2 and D3.

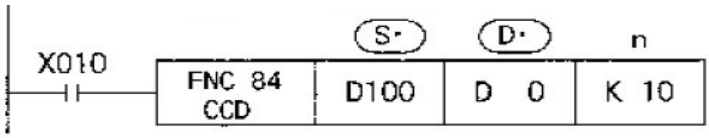


Figure 3-3

3.4 Communication with frequency converters or instruments:

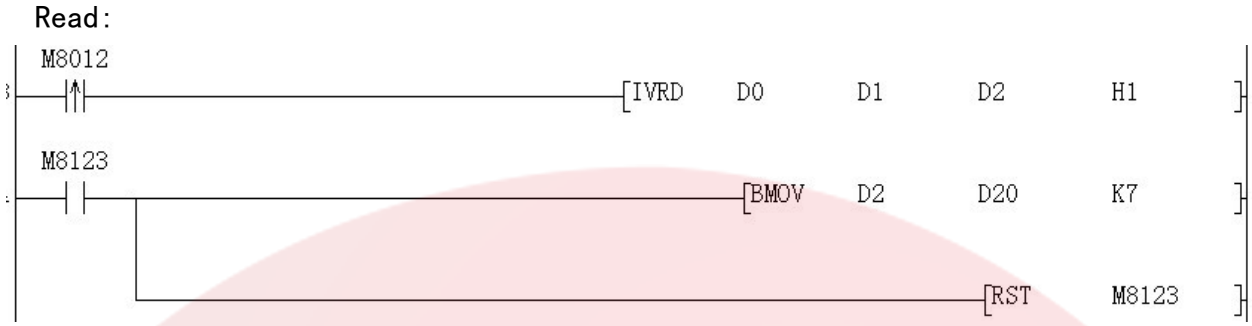


Figure 3-4

D0 represents the read station number (high 8 bits) and command code (low 8 bits). For example, if D0 equals H103, it indicates Station 1 and Command 3. D1 specifies the data address to be read, while D2 denotes the starting address of data returned by frequency converters or instruments. Upon data reception (e.g., from Channel 0), the M8123 module activates its bit. H1 indicates the high 8-bit channel, with the low 8 bits specifying the read count. One data unit is read through Channel 0 (485 channel). If H101 is selected, one data unit is read via Channel 1 (RS232 channel).

Write in：

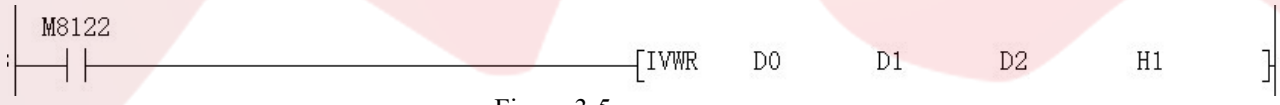


Figure 3-5

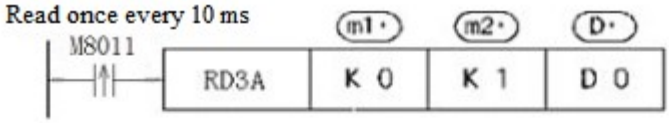
D0 represents the written station number (high 8 bits) and command code (low 8 bits). For example, if D0 equals H106, it indicates Station 1 and the Single Data Write Command 6. D1 specifies the target data address, while D2 denotes the starting address for writing frequency conversion or instrument data. The high 8 bits of H1 represent the channel, and the low 8 bits indicate the write count. Data is written through Channel 0 (485 channel), with one data unit transmitted. If H101 is selected, the data is written via Channel 1 (RS232 channel). Upon completion of the write operation, the M8122 automatically resets.

3.5 Host with analog input/output description:

1. Analog signal reading instructions:

AD0, AD1, and AD2 are 0-10V analog input channels, while AD3, AD4, and AD5 are 0-20mA analog input channels.

The corresponding values range from 0 to 4095 for 0-10V and 0-20mA inputs repectively.



● Command for reading analog input values from an analog module.

m1: Module number; set to K0 on the host

m2: Analog input channel number
K0–K5 (corresponding to AI1–6)

D: Save the instantaneous data value to D0
Saves the value read from the analog module.

Figure 3-6

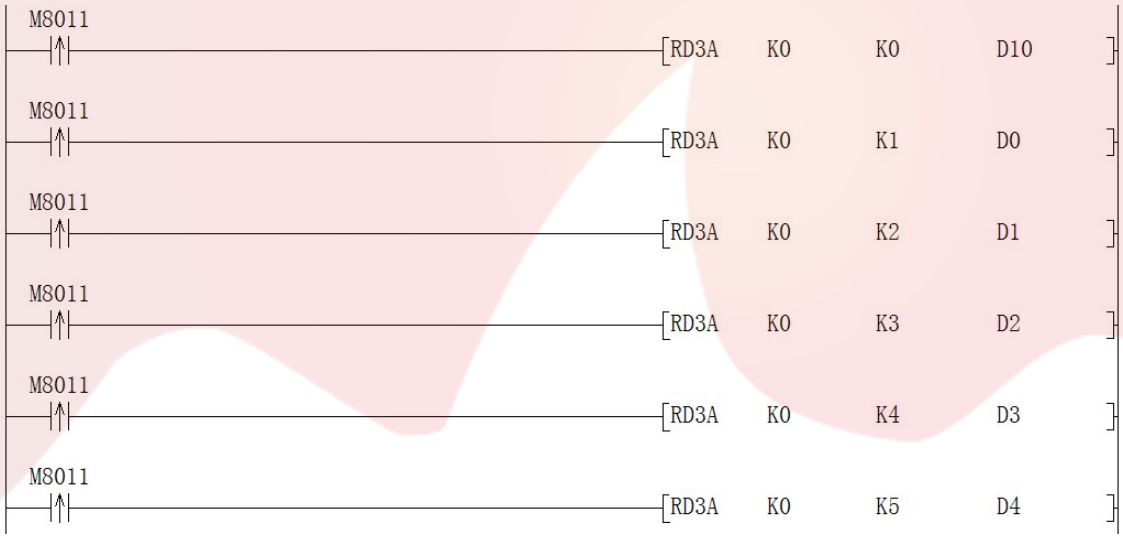
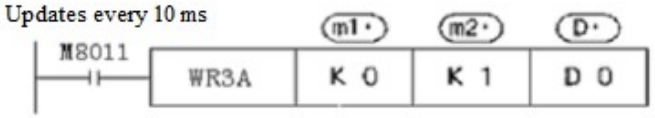


Figure3-7 Example of Analog Input Progra

2. Analog output instruction：

DA0 and DA1 provide 0-10V analog output signals, corresponding to values ranging from 0 to 4095.



● Command for writing digital values to an analog module

m1: Module number; set to 0 on the host

m2: Analog output channel number K0-K1

D: Data to be written; specifies the value to be written to the analog module (0-4095)

Figure 3-8

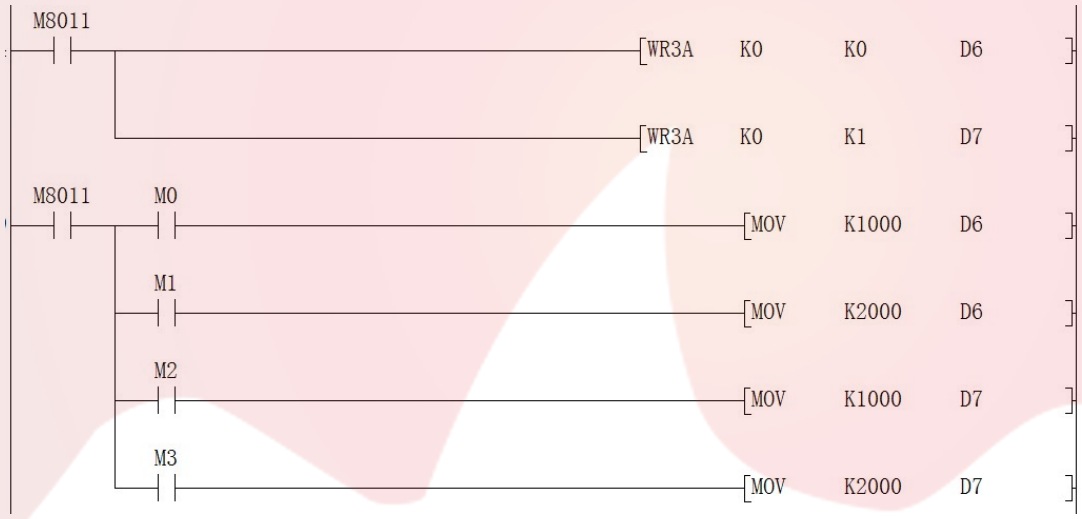


Figure3-9 Example of Analog Output Program

3.6 Clock module description:

When setting the clock, M8015 must be set and reset to resume operation; D8018–D8013 store year, month, day, weekday, hour, minute, second respectively, and clock data can be read by TRD or modified by TWR without setting M8015.

3.7 PID Operation Instruction Description：

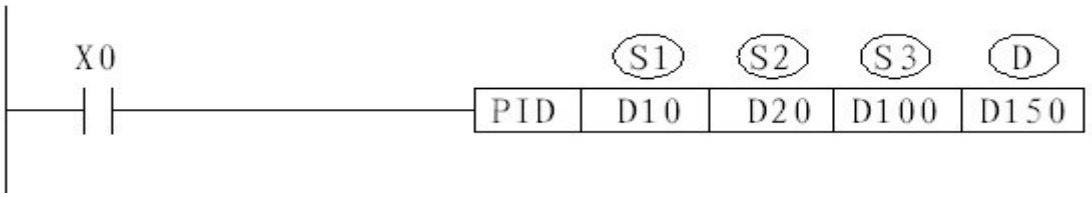


Figure 3-10

This instruction is used for the PID calculation program in PID control. S1: Set target value; S2: Current value (feedback value); S3: PID control parameters occupying the first 9 consecutive D registers starting from S3. S3 represents the PID channel number; S3+1 is the proportional coefficient KP; S3+2 is the integral coefficient KI; S3+3 is the derivative coefficient KD; S3+4 is the error coefficient KE, with PID processing initiated only when the error exceeds this threshold; S3+5 is the upper output limit PMAX; S3+6 is the lower output limit PMIN; S3+7 is reserved; S3+8 is reserved; D: Control value output.

3.7 High-speed counting：

The SPD instruction (supporting X0-5) enables the encoder to generate 720 pulses at 2x frequency multiplication and 1440 pulses at 4x frequency multiplication when a single encoder cycle contains 360 pulses, thereby enhancing the encoder's resolution.

Countinput	Single-phase counter number	Upward and downward counting direction switch	Countinput	Single-phase 2-fold frequency counter number	Upward and downward counting direction switch
X0	C235	M8235	X0	C241	M8241
X1	C236	M8236	X1	C242	M8242
X2	C237	M8237	X2	C243	M8243
X3	C238	M8238	X3	C244	M8244
X4	C239	M8239	X4	C245	M8245
X5	C240	M8240	X5	C246	M8246

Countinput	Biphasic 2-fold frequency counter number	Upward and downward counting directions (read only)	Countinput	Biphasic 4-channel frequency counter number	Upward and downward counting directions (read only)
X0 (Phase A)	C250	M8250	X0（Phase A）	C253	M8253
X1（Phase B）			X1（Phase B）		
X2（Phase A）	C251	M8251	X2（Phase A）	C254	M8254
X3（Phase B）			X3（Phase B）		
X4（Phase A）	C252	M8252	X4（Phase A）	C255	M8255
X5（Phase B）			X5（Phase B）		

C247 (X0, X1), C248 (X2, X3) and C249 (X6, X7) are non-multiplying 2-phase counters.

3.8 High-speed pulse output and pulse width modulation:

Supports 8-channel pulse output (Y0-Y7: PLSY, PLSV, PLSR, DRVA, DRVI) or 6-channel pulse width modulation (PWM: Y0-5) at 100KHz frequency.

Pulse	Output pulse count	Output tag	Pulse inhibit	Pulse inhibit	Acceleration and deceleration time	Dszr dvit direction	DVIT interrupt input address 0-17	Origin regression rate	Origin regression crawling velocity	ZRN crawling pulse count
Y0	D8132	M8147	M8141	D8144	D8145	M8080	D8080	D8220	D8090	D8072
Y1	D8134	M8148	M8142	D8146	D8147	M8081	D8081	D8221	D8091	D8073
Y2	D8136	M8149	M8143	D8148	D8149	M8082	D8082	D8222	D8092	D8074
Y3	D8138	M8150	M8144	D8150	D8151	M8083	D8083	D8223	D8093	D8075
Y4	D8140	M8151	M8145	D8152	D8153	M8084	D8084	D8224	D8094	D8076
Y5	D8142	M8152	M8146	D8154	D8155	M8085	D8085	D8225	D8095	D8077
Y6	D8166	M8153	M8155	D8156	D8157	M8086	D8086	D8226	D8096	D8078
Y7	D8168	M8154	M8156	D8158	D8159	M8087	D8087	D8227	D8097	D8079

3.9 Interrupt Description

1、External interrupts support X0-X5, with interrupt numbers listed in the table below:

	Rising edge	Trailing edge	Interrupt inhibit
X0	I0	I1	M8050
X1	I100	I101	M8051
X2	I200	I201	M8052
X3	I300	I301	M8053
X4	I400	I401	M8054
X5	I500	I501	M8055

2、The timer interrupt pointer is I600, and the interrupt disable is M8056. The interrupt time range is I601 (1ms) to I699 (99ms).

3、Counter Interrupt Pointer

Pointer number	Interrupt inhibit
I10	M8059
I20	
I30	
I40	
I50	
I60	

3.10 Product wiring diagram

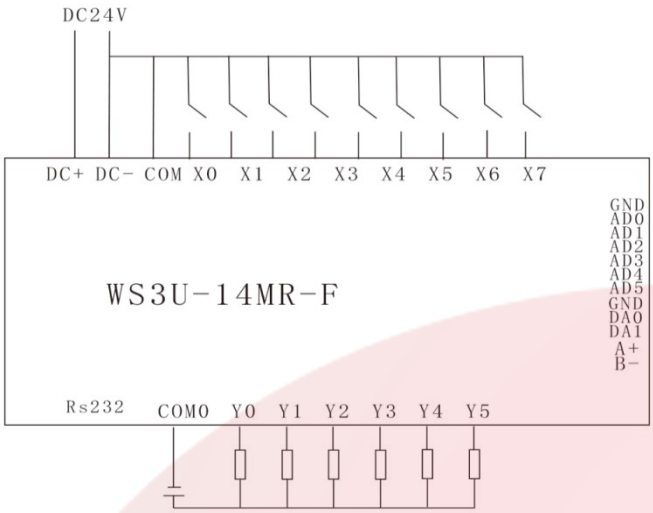


Figure 3-11

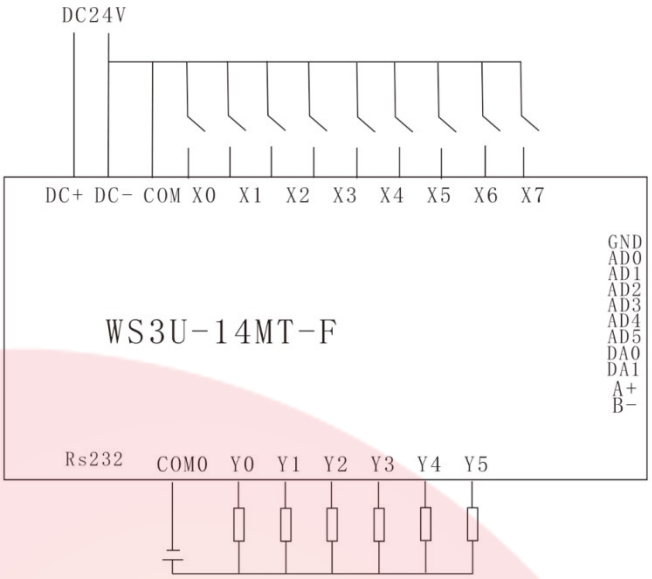


Figure3-12

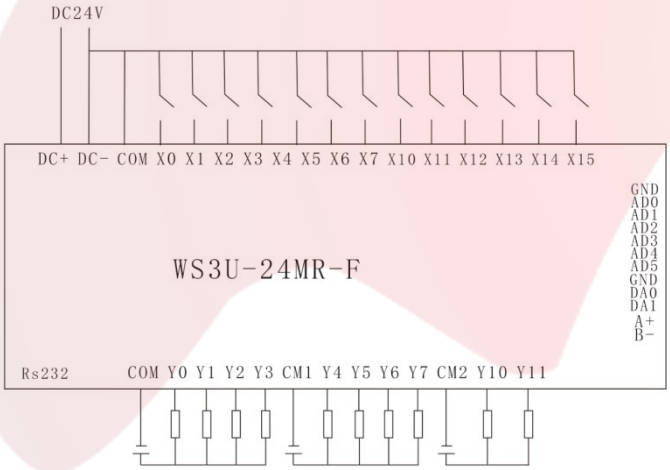


Figure 3-13

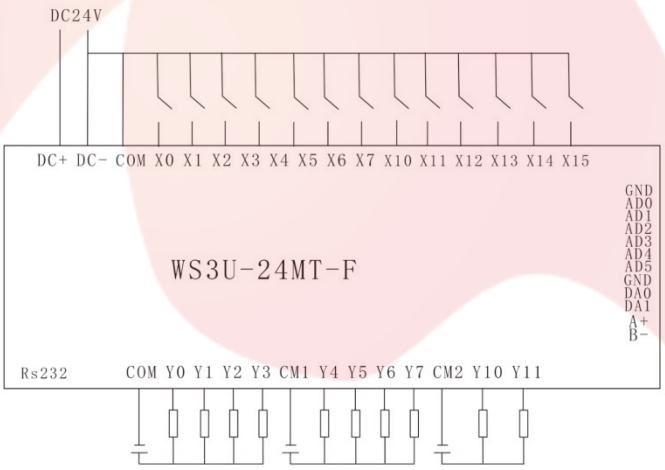


Figure 3-14

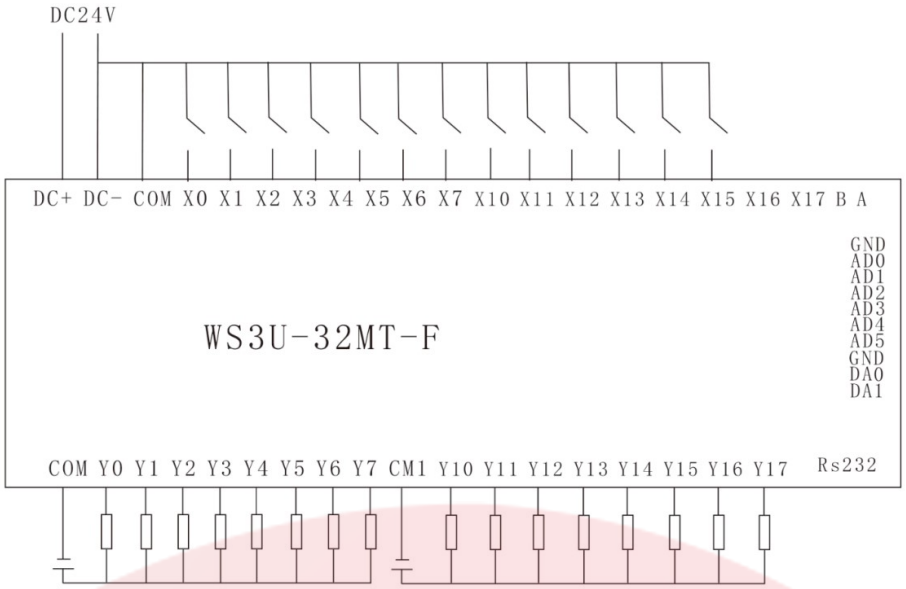


Figure 3-15

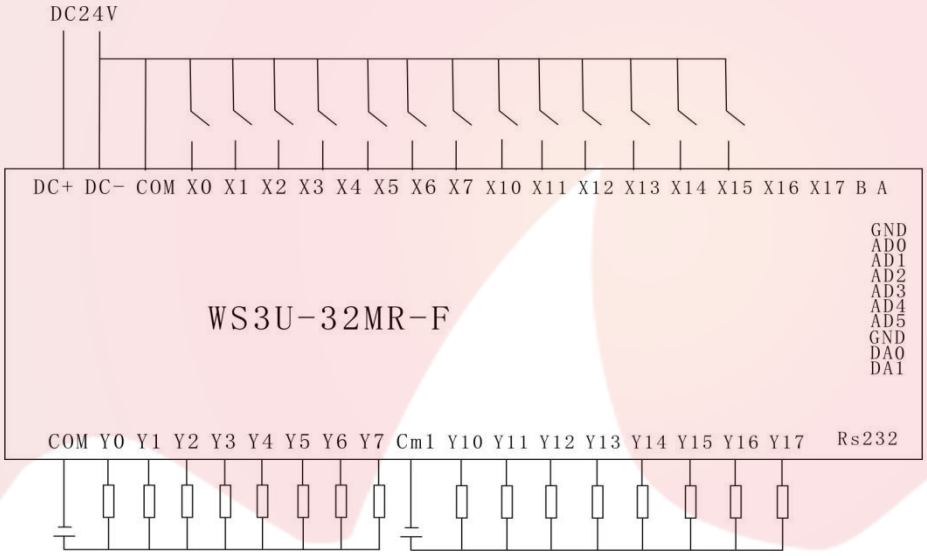


Figure 3-16

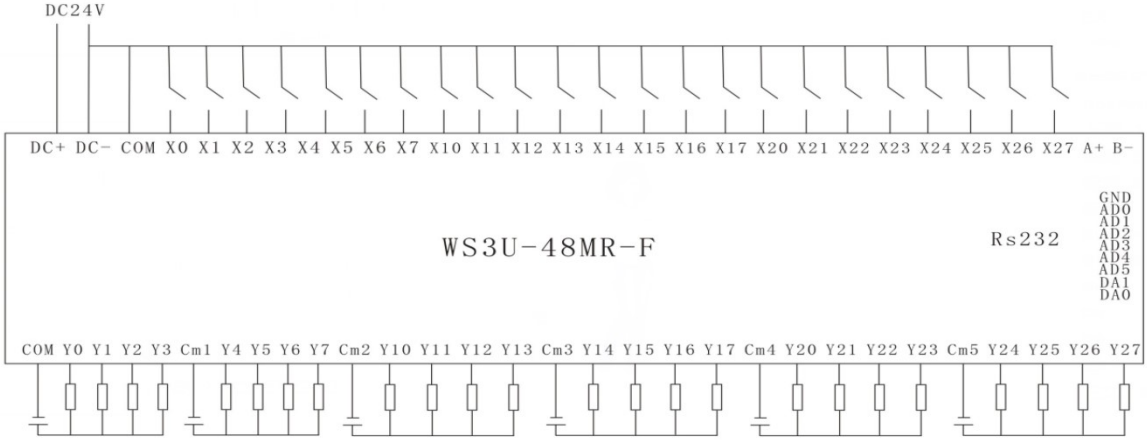


Figure 3-17

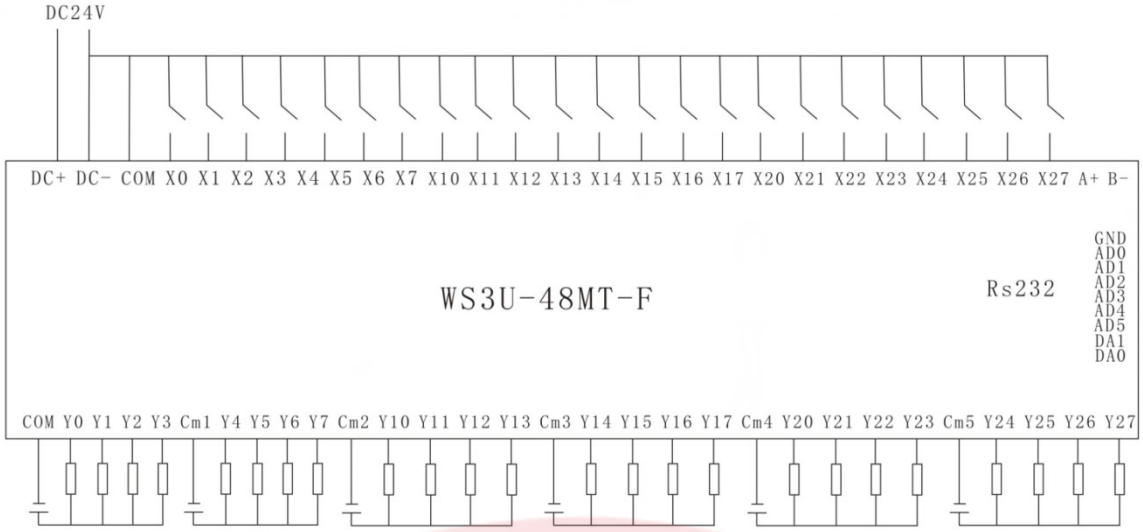


Figure3-18

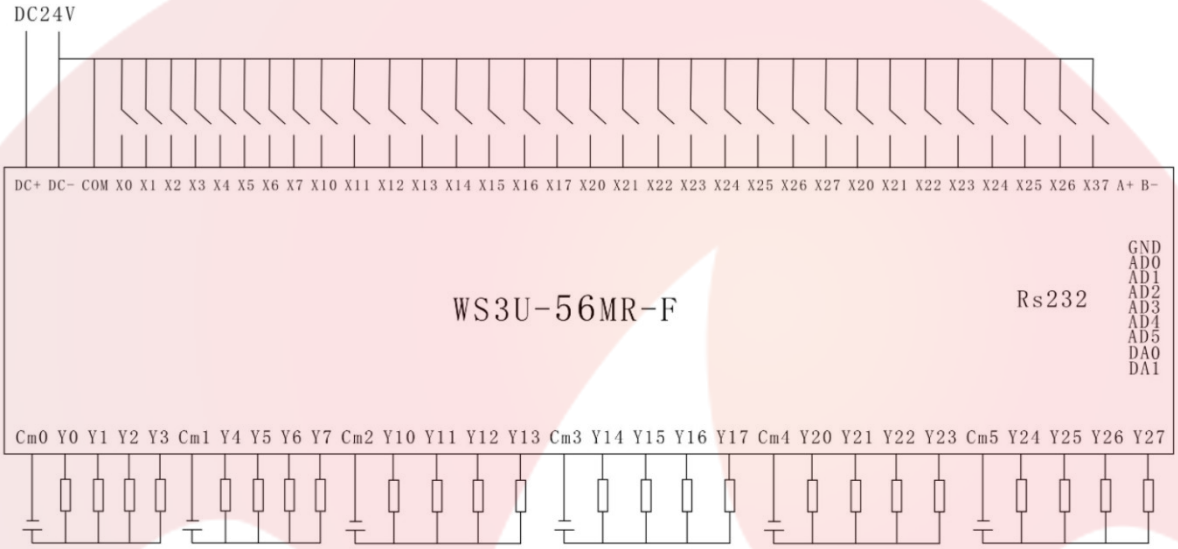


Figure 3-19

Chapter 4 Programming Reference

4.1 Application environment

1. GX Developer (compatible with XP and 32-bit Windows 7 systems)
2. GX Works2 (compatible with 64-bit Windows 7, Windows 8, and Windows 10 systems)

4.2 Soft Component Function Overview

Auxiliary relay M	M0-M3071 (with M500-M1023 supporting power loss save range)
Step point S	S0-1023 (where S500–S1023 denotes the power-off save range)
100ms timer	T0-T199 (where T184-T199 represents the cumulative power loss range)
10Ms Timer	T200-T249 (where T246-T249 represents the cumulative power failure range)
1Ms Timer	T250-T383 (where T250-T255 represents the cumulative power failure range)
16-bit counter	C0-C199 (where C100-C195 are the supported power loss recovery ranges)
32-bit counter	C200-C234 (with C220-C234 supporting power loss recovery range)
32-bit high-speed counter	C235-255 and C235-240 are single-phase counters without frequency doubling; C241-240 is a single-phase counter with 2x frequency doubling; C247-249 is a two-phase counter without frequency doubling; C250-252 is a two-phase counter with 2x frequency doubling; C253-255 is a two-phase counter with 4x frequency doubling.
Register D	D0-D7999 (where D200-D7999 represents the power-loss save range)
Indirectly addressed pointers V and Z	V0-7，Z0-7
P subroutine jump number	P0-63
Interrupt	X0-5 External interrupt. Timer interrupt (1MS units). Counter interrupt.
Special M element	The M8000 operates with continuous operation mode, the M8002 uses power-on pulses, the M8011 delivers 10ms pulses, the M8012 provides 100ms pulses, the M8013 generates 1-second pulses, and the M8014 outputs 1-minute pulses.

Table 4-1 Summary of Soft Component Functions

4.3 Basic Instructions

No.	Mnemonic	Function
1	LD	The operation starts with Normally Open Contact

No.	Mnemonic	Function
17	RST	Releasing coil action holding

2	LDI	The operation starts with Normally Closed Contact	18	PLS	Coil rising edge output
3	LDP	Rising edge detecting with operation beginning.	19	PLF	Coil falling edge output
4	LDF	Falling edge detecting with operation beginning.	20	ALT	Alternate output
5	AND	Normally Open Contact in series	21	MC	Common string contact with coil command
6	ANI	Normally Closed Contact in series	22	MCR	The command of releasing common contact
7	ANDP	Rising edge detecting in Series connection	23	MPS	Operation storage
8	ANDF	Falling edge detecting in Series connection	24	MRD	Storage reading
9	OR	Normally Open Contact in parallel	25	MPP	Storage reading and resetting
10	ORI	Normally Closed Contact in parallel	26	INV	Negation of operation result
11	ORP	Rising edge detecting in parallel connection	27	END	The end of program
12	ORF	Falling edge detecting in parallel connection	28	STL	Step ladder start
13	ANB	Circuit blocks are connected in series.	29	RET	The end of step ladder
14	ORB	Circuit blocks are connected parallel		CALL	Subroutine call
15	OUT	Coil output driving		SRET	Subroutine return
16	SET	Coil action holding			

Table 4-2 Basic Instructions

4.4 Application Instruction

Classification	Serial Number	Instruction mnemonic	Function
Process Flow	1	CJ	Conditional Jump
	2	CALL	Subprogram call, subroutine call
	3	SRET	Subroutine return
	4	FEND	Main program ends
	5	FOR	Start of range
	6	NEXT	End of cycle range
Transfer and Comparison	7	CMP	Compare
	8	ZCP	Regional Comparison

	9	MOV	Transfer
	10	CML	Inverted transfer
	11	BMOV	Send together
	12	FMOV	Multicast
	13	XCH	Exchange
	14	BCD	BCD change
	15	BIN	BIN change
Four logical operations	16	ADD	BIN addition
	17	SUB	BIN subtraction
	18	MUL	BIN multiplication
	19	DIV	BIN Division
	20	INC	BIN plus 1
	21	DEC	BIN minus 1
	22	WAND	Logical characters and
	23	WPR	Logical word or
	24	WXOR	Logical XOR
	25	NEG	Complement code
Cyclic Shift	26	ROR	Rotate right
	27	ROL	Ring shift left
	28	RCR	Dextroposition
	29	RCL	Shift left
	30	SFTL	Left shift
	31	SFTR	Rightward shift
bit data processing	32	ZRST	Batch reset
	33	MEAN	Average value
	34	FLT	Convert BIN integer to 2-based floating-point number
	35	GRY	BIN integer → Gray code conversion
	36	GBIN	Gray code → BIN integer
High-speed processing	37	DHSCS	High-speed comparison set
	38	DHSCR	High-speed comparative reset
	39	SPD	Pulse density, and pulse width (pulse interval time) can also be measured.
	40	PLSY	Pulse output
	41	PLSV	Output direction-controlled pulse signals
	42	PWM	Pulse width modulation, 0-32767μs
	43	PLSR	Pulse output with acceleration and deceleration
	44	DRVA	Absolute position control

	45	DRVI	Relative position control
	46	ABSD	Cam control (absolute type)
Peripheral devices	47	RS	Serial data transfer,serial data transmission
	48	ASCI	HEX-ASCII conversion
	49	HEX	ASCII-HEX conversion
	50	CCD	Check code
	51	CRC	CRC operation
	52	PID	PID operation
	53	SEGD	BCD to 7-segment digital display
Floating-point operation	54	ECMP	2 Floating-point Number Comparison
	55	EZCP	2 Comparison of floating-point number ranges
	56	EBIN	10-Base floating-point number-2-Base floating-point number conversion
	57	EADD	2 Binary floating-point addition
	58	ESUB	2 Binary floating-point subtraction
	59	EMUL	2 Binary floating-point multiplication
	60	EDIV	2 Division of Fixed-Point Floating-Point Numbers
	61	INT	2 Floating-point number conversion-BIN integer conversion
	62	SIN	Floating-point SIN operation
	63	TAN	Floating-point TAN operation
	64	COS	Floating-point COS operation
	65	ASIN	Floating-point SIN-1 operation
	66	ATAN	Floating-point number TAN-1 operation
	67	ACOS	Floating-point number COS-1 operation
	68	EXP	2 Exponential operations for floating-point numbers
	69	LOGE	2 Natural logarithm operation for floating-point numbers
	70	LOGE10	2 Common logarithmic operations for floating-point numbers
	71	SWAP	Byte byte conversion
Convenient instruction	72	SER	Data Search
	73	ALT	Alternating output
	74	RAMP	Ramp signal
	75	BON	ON position determination
	76	SUM	ON digit count
	77	ANS	Alarm setting
	78	ANR	Alarm reset
	79	HOUR	Calculagraph

Clock instruction	80	TRD	Clock data readout
	81	TWR	Clock data write
Contact comparison	82	LD=	(S1=(S2))
	83	LD>	(S1)>(S2)
	84	LD<	(S1)<(S2)
	85	LD◇	(S1)≠(S2)
	86	LD≦	(S1)≤(S2)
	87	LD≧	(S1)≥（S2）
	88	AND=	(S1=(S2))
	89	AND>	(S1)>(S2)
	90	AND<	(S1)<(S2)
	91	AND◇	(S1)≠(S2)
	92	AND≦	(S1)≤(S2)
	93	AND≧	(S1)≥（S2）
	94	OR=	(S1=(S2))
	95	OR>	(S1)>(S2)
	96	OR<	(S1)<(S2)
	97	OR◇	(S1)≠(S2)
	98	OR≦	(S1)≤(S2)
	99	OR≧	(S1)≥（S2）

Table 4-3 Application Instructions

Note: Supports 32-bit instructions and pulse execution instructions

4.5 This version does not support command lists

No.	Mnemonic	Function
1	ZRN	Regression Through the Origin, only 16-bit command supported
2	DSZR	Regression Through the Origin with DOG search
3	DVIT	Interrupt positioning

Chapter 5 Frequently Asked Questions and Solutions

No.	Questions/Problem	Solutions
1	Wiring method of Analog	The negative electrode to GND. The positive electrode to AD port.
2	Analog reading	Please refer to the section 3.5
3	Encryption	On the condition of communication confirmed: 1,Turn the switch to STOP, and the running light will flash 2, Click and write "keyword" 3, Set the same 8-digit number twice, and then turn the switch back to the original position.
4	RS232 Cable sequence	The sequence : 2-2 3-3 5-5
5	PLC power consumption	Please refer to the section 3.1
6	The PLC doesn't communicate	1, Check if the cable is plugged in and the driver is installed. 2, Check the PLC configuration of SW, baud rate, Com port correct or not.
7	Wiring method	All input ports are NPN input, negative conduction.

Chapter 6 Warranty Clause

6.1 Warranty period: 12 months

The product is covered by a one-year warranty from the date of shipment. During the warranty period, our company will provide free repair services for the product.

6.2 Not covered by warranty

■ Improper wiring (e.g., reversed polarity of power supply terminals)

■ Use beyond voltage range or environmental requirements

■ Unauthorized modification of internal components