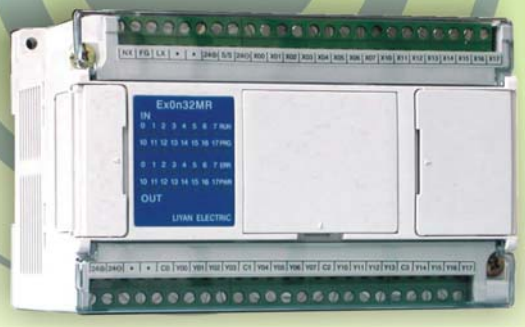
Liyan

PROGRAMMABLE LOGIC CONTROLLER

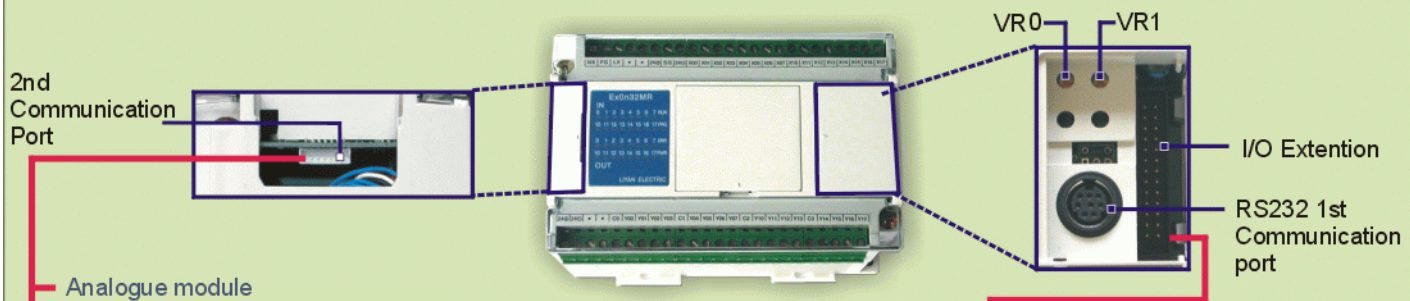
Ex0n series

Economical Unit
EEprom Inside

http://www.liyanplc.com

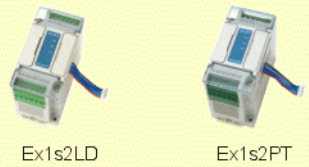


System Configuration



Analogue module

Ex1s2AD	2CH analog input module
Ex1s2TC	2CH Thermocouple
Ex1s2LD	2CH Load Cell
Ex1s2PT	2CH Pt100



Ex0n series main unit

Ex0n16MR	08IN/08OUT Relay output
Ex0n16MT	08IN/08OUT Transistor output
Ex0n24MR	16IN/08OUT Relay output
Ex0n24MT	16IN/08OUT Transistor output
Ex0n32MR	16IN/16OUT Relay output
Ex0n32MT	16IN/16OUT Transistor output

Extension I/O module

Ex1s8EX	08IN/00OUT
Ex1s8ER	04IN/04OUT Relay
Ex1s8ET	04IN/04OUT Transistor
Ex1s8EYR	00IN/08OUT Relay
Ex1s8EYT	00IN/08OUT Transistor
Ex1n16EX	16IN/00OUT
Ex1n16ER	08IN/08OUT Relay
Ex1n16ET	08IN/08OUT Transistor
Ex1n16EYR	00IN/16OUT Relay
Ex1n16EYT	00IN/16OUT Transistor
Ex1n24ER	16IN/08OUT Relay
Ex1n24ET	16IN/08OUT Transistor
Ex1n32ER	16IN/16OUT Relay
Ex1n32ET	16IN/16OUT Transistor

Communication module

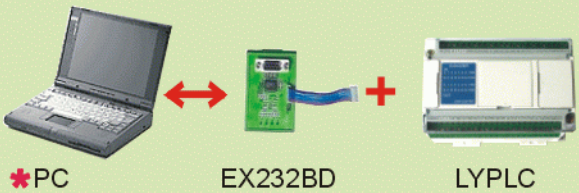
EX232BD	RS232 without photo-coupler
EX485BD	RS422/RS485 without photo-coupler
EX485ADP	RS422/RS485 with photo-coupler

◊ MT type : 2KHz without slope pulse output

Analogue module

Ex1n2DA	Analog output module
Ex1n8AD	8CH analog input module
Ex1n8TC	8CH Thermocouple

Programming



Ethernet

✱Other brand's product

Specification Performance

Item		Ex0n series	
Operating control method		Cyclic operation by stored program	
I/O control method		Batch processing method (when END instruction is executed)	
Operation time	Basic instruction	0.5μs/instructions	
	Applied instruction	Several 10 ~ several 100μs	
Programming language		Relay symbolic language + Step ladder	
Program capacity / memory		2000steps	
Number of instruction	Basic/Step instruction	Basic instruction : 20、Step ladder instruction : 2	
	Applied instruction	44 pcs	
Input Relay		128 points X0~X177	total 256 points
Output Relay		128 points Y0~Y177	
Auxiliary Relay	Latched	500 points M000~M499	
	General	12 points M500~M511	
	Special	M8000~M8255	
State Relay	Latched	S0~S127	
Timer	100ms	64 points T0~T63	
Counter	Count up Latched	16 points(16bits) C0~C31	
	High speed (C235~C254)	1 phase 5KHz 6 points (total 5KHz or less) or 2 phase 2KHz 2 points (32bits Count up/Count down)	
Data register	Latched	D0~D255	
	Special	256 points (16bits) D8000~D8255	
	Index	2 points (16bits) V,Z	
Pointer	分岐用	64 points P0~P63	
	Interrupt	4 points I00□~I30□	
多層分岐回路		8 points N0~N7	
Constant	Decimal K	16bits : -32,768 ~ +32,767 32bits : -2,147,483,648 ~ +2,147,483,647	
	Hexadecimal H	16bits : 0~FFFF(H) 32bits : 0~FFFFFFFF(H)	

◆ Basic Instruction

Mnemonic	Function	Devices	Mnemonic	Function	Devices
LD	LoaD	X . Y. M . S . T . C	SET	SET	Y . M . S
LD I	LoaD Inverse	X . Y. M . S . T . C	RST	ReSeT	X . Y . M . S . T . C
OUT	OUT	Y. M . S . T . C	PLS	PuLSe	Y . M .
AND	AND	X . Y. M . S . T . C	PLF	PuLse Falling	Y . M .
AN I	AND Inverse	X . Y. M . S . T . C	MC	Master Control	Y . M .
OR	OR	X . Y. M . S . T . C	MCR	Master Control Reset	N/A
OR I	OR Inverse	X . Y. M . S . T . C	MPS	Point Store	N/A
ANB	ANd Block	N/A	MRD	Read	N/A
ORB	OR Block	N/A	MPP	PoP	N/A
NOP	No Operation	N/A	END	END	N/A

◆ STL Instruction

Mnemonic	Function	Devices	Mnemonic	Function	Devices
STL	Beginning of stage Ladder	S	RET	End of Stage Ladder	N/A

◆ Applied Instruction

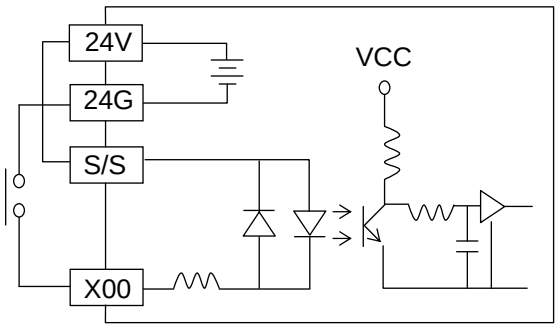
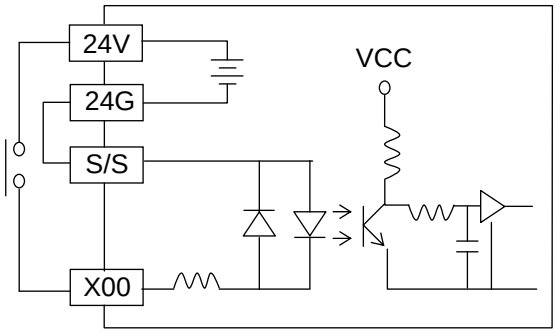
FNC NO.	Mnemonic	(D)	(P)	Function	Ex1s	Ex1n	Ex2n	FNC NO	Mnemonic	(D)	(P)	Function	Ex1s	Ex1n	Ex2n
0	CJ		○	Conditional Jump	○	○	○	26	WAND	○	○	Logical word AND (S1) AND (S2) → (D)	○	○	○
1	CALL		○	Call subroutine	○	○	○	27	WOR	○	○	Logical word OR (S1) OR (S2) → (D)	○	○	○
2	SRET			Subroutine return	○	○	○	28	WXOR	○	○	Logical exclusive OR (S1)⊻(S2) → (D)	○	○	○
3	I RET			Interrupt return	○	○	○	34	SFTR		○	Bit Shift Right	○	○	○
4	E I			Enable interrupts	○	○	○	35	SFTL		○	Bit Shift Left	○	○	○
5	D I			Disable interrupts	○	○	○	40	ZRST		○	Zone Reset	○	○	○
6	FEND			First end	○	○	○	41	DECO		○	Decode	○	○	○
7	WDT		○	Watch dog timer refresh	○	○	○	42	ENCO		○	Encode	○	○	○
8	FOR			Start of a FOR-NEXT loop	○	○	○	50	REF		○	Refresh	○	○	○
9	NEXT			End of a FOR-NEXT loop	○	○	○	53	HSCS	○		High speed counter set	○	○	○
10	CMP	○	○	Compare	○	○	○	54	HSCR	○		High speed counter reset	○	○	○
11	ZCP	○	○	Zone compare	○	○	○	57	PLSY	○		Pulse Y output	○	○	○
12	MOV	○	○	Move	○	○	○	58	PWM			Pulse width modulation	○	○	○
15	BMOV		○	Block move	○	○	○	66	ALT		○	Alternate state	○	○	○
18	BCD	○	○	B I N → BCD Binary coded decimal	○	○	○	67	RAMP			Ramp variable value	○	○	○
19	B I N	○	○	BCD → B I N Binary	○	○	○	78	FROM	○	○	FROM	–	○	○

20	ADD	○	○	Addition (S1) + (S2) → (D)	○	○	○	79	TO	○	○	TO	–	○	○
21	SUB	○	○	Subtract (S1) – (S2) → (D)	○	○	○	80	RS			Serial Communications instruction	○	○	○
22	MUL	○	○	Multiplication (S1) × (S2) → (D)….(D)	○	○	○	82	ASCI		○	Converts HEX to ASCII	○	○	○
23	DIV	○	○	Division (S1) ÷ (S2) → (D)….(D)	○	○	○	83	HEX		○	Converts ASCII to HEX	○	○	○
24	I NC	○	○	Increment (D)+1 → (D)	○	○	○	84	CCD		○	Check Code	○	○	○
25	DEC	○	○	Decrement (D) -1 → (D)	○	○	○	85	VRRD		○	Volume read	○	○	○

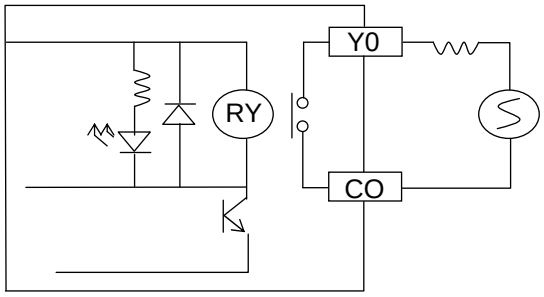
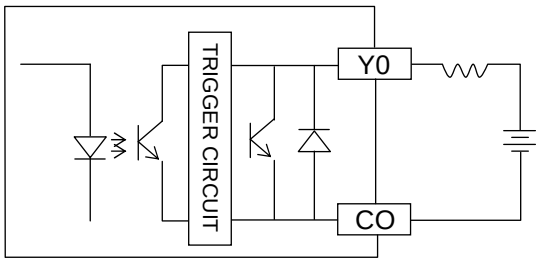
◆ Power Source Specification

Item	AC Power source
Source Voltage	AC 85~264V 50/60Hz
Momentary power failure	Keep operation in 10 ms
Power fuse	250V 2A
Consume the electricity	30 VA
Output amount	DC24V ±15% 500mA

◆ Input Specification

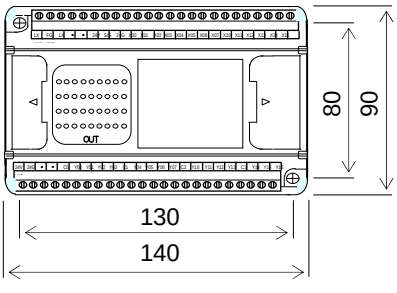
Item	DC input (Sink)	DC input (Source)
Circuit		
Input voltage	DC24V+10%, -15%	DC24V+10%, -15%
Input current	7mA / DC24V	7mA / DC24V
Impedance	3.3 KΩ	3.3 KΩ
Response time	About 10 ms (X00~X07 High Speed)	About 10 ms (X00~X07 High Speed)
Input pattern	No voltage contact or NPN open collector	No voltage contact or PNP open collector
Circuits isolation	Photo coupler	Photo coupler

◆ Output Specification

Item	Relay output	Transistor output
Circuit		
Load voltage	Under AC250V DC30V	DC5V ~ 30V
Rated current	2A / 1 point	0.5A / 1 point
Rated capacity	100W	12W
Response time	About 10ms	Under 1 ms
Circuits isolation	Machine isolation	Photo coupler

■ Dimension (unit : mm)

A



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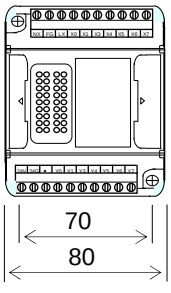

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