

LX1 Series User Manual

Safety Precautions

Before installing, operating, and maintaining the micro-programmable control, be sure to familiarize yourself with this user manual and other related manuals to ensure proper usage. Please use it after you are familiar with the operation method, safety information and all precautions.

In this manual, safety precautions are classified into two categories: “warning” and “caution”.

⚠ CAUTION Before installation, operation, maintaining and overhaul of the product, please be sure to read the user manual and other related manuals to ensure correct usage.

⚠ WARNING Failure to follow the instructions in the manual may result in improper installation, use and storage of the equipment, which may cause severe or fatal injuries to personnel, and property damage.

Part 1 Design Precautions

WARNING

To ensure safe system operation, please configure emergency braking circuit, positive inversion circuit or other similar protection circuit for PLC, which can prevent the damage to PLC or other devices.

- External power supply would break down unexpectedly.
- All outputs will be turned off, as an error is detected by PLC CPU during self-diagnosis, such as a watch dog timer error. When error cannot be detected, internal protection circuit may be disabled.
- The output state of relay or transistor in the PLC can't be controlled, when relay or transistor is damaged.

Part 2 Installation Precautions

WARNING

- Always make sure to install PLC on vertical plane, not on broadside.
- 50mm safe distance must be kept with other devices, and far away from the high-voltage power line, high-voltage device and the power equipment.



CAUTION

- Never use the product on condition with dust, oily smoke, conductive dusts, corrosive gas, flammable gas, vibration or impacts, or expose to high temperature, fire or rain.

Part 3 Wiring Precautions

WARNING

- Before installation and wiring, you must cut off the power.
- PLC will be damaged, if the invalid terminal on the PLC being connected with other devices.

CAUTION

- Please follow the instruction to connect with power supply which provided in this manual.
- Separately grounding is recommended.
- The signal input cable and the signal output cable can't go with the same cable.
- Never put the signal input/output cable and other power cable together.
- It would be safer if the cable within 20m.

Note: The PLC would stop working, if the power-off time is over 1ms. Long-term power failure or low voltage will cause the PLC to stop working, and all the output of this PLC will be OFF. The PLC would continue work automatically with a normal power supply power supply.

Part 4 Maintenance Precautions

WARNING

- Never touch the PLC when power is on.
- Never clean up PLC when power is on, which may cause the electric shock.
- The manual should be understood before installation or programming.

CAUTION

- Never modify the structure of PLC.
- If there is something wrong with our products, please contact Wecon technology company.
- Working with high frequency and large capacity load will shorten service life.
- Please check the following items:
 - Avoid direct sunlight or proximity to other heat generators, as this can cause the temperature inside the PLC to rise abnormally.
 - Make sure there is no dust or conductive dust in the PLC.
 - Make sure there is no anomaly in the PLC.

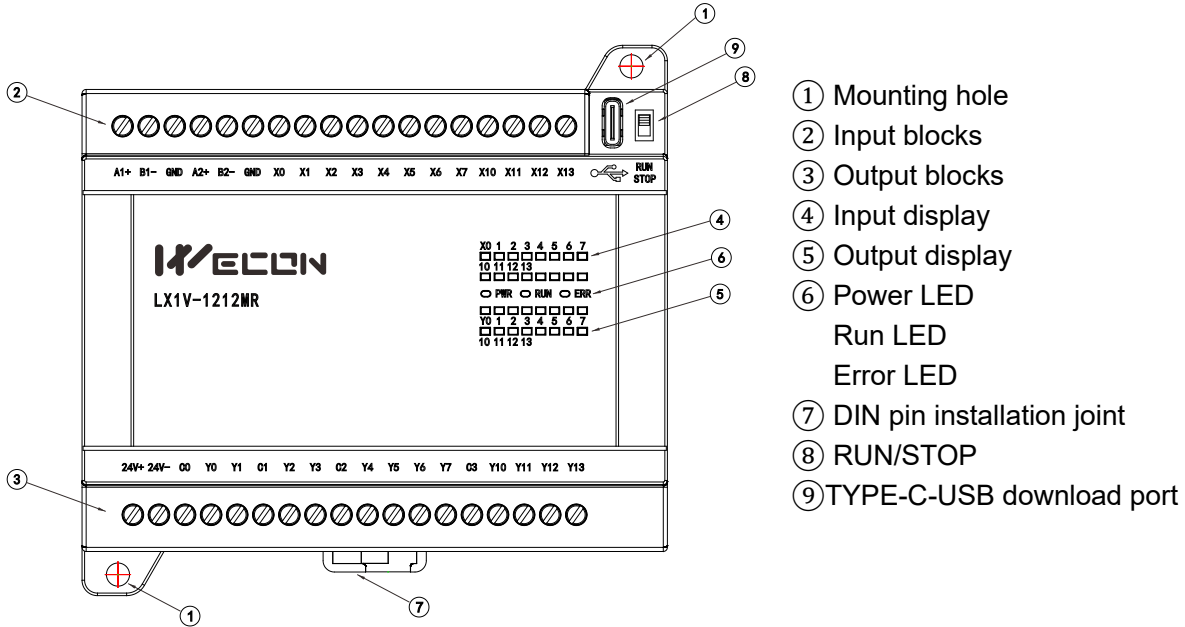
Part 5 Maintenance and Overhaul

(1) Regular check

- Whether there are short-lived consumables in the programmable controller.
- For the relay output type, if the output relay operates at abnormally high frequency or drives a large-capacity load, attention must be paid to its impact on the service life.
- Check with other equipment, please pay attention to the following points.
- Whether there any abnormal rise in temperature inside the machine due to other heating elements or direct sunlight.

- Whether there is dust or conductive dust intruding into the machine.
- Whether there are any loose wiring and terminals and other abnormalities.

Part 6 Module & Product specification

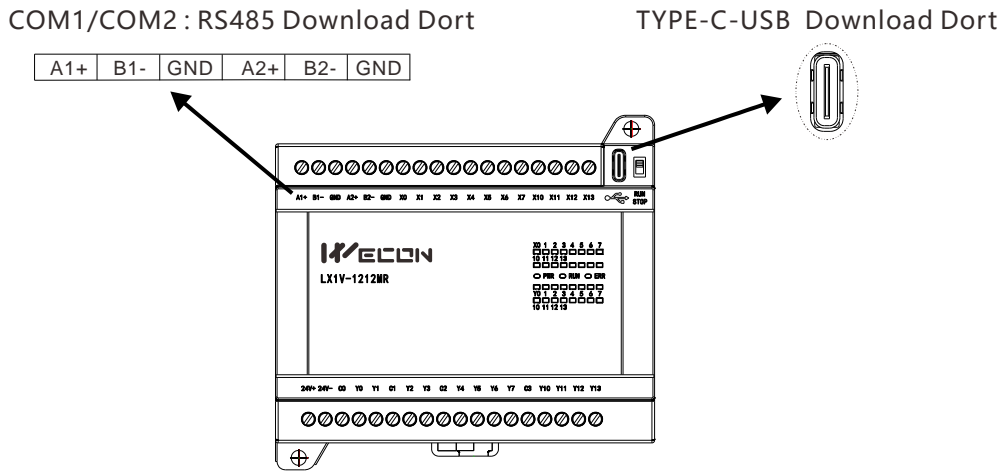


- ① Mounting hole
- ② Input blocks
- ③ Output blocks
- ④ Input display
- ⑤ Output display
- ⑥ Power LED
Run LED
Error LED
- ⑦ DIN pin installation joint
- ⑧ RUN/STOP
- ⑨ TYPE-C-USB download port

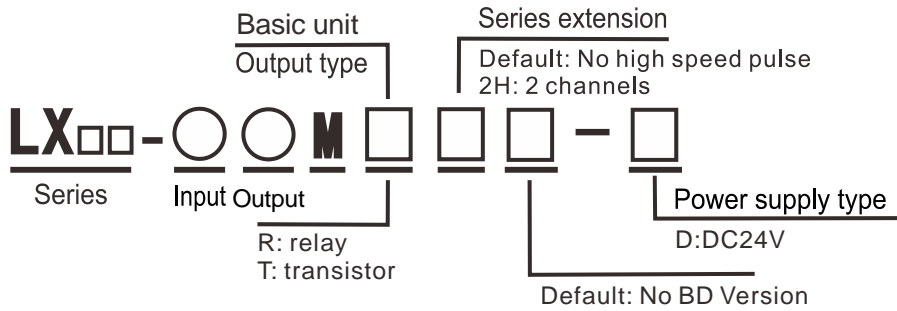
Part 7 Communication Interface

The LX1V series PLC has two communication port, supporting COM1-485、COM2-485.

Pin	Signal	COM1/COM2 (RS 485 optional)
A1+	485+	Received data (positive)
B1-	485-	Received data (negative)
GND	GND	Signal ground
A2+	485+	Received data (positive)
B2-	485-	Received data (negative)
GND	GND	Signal ground



Part 8 Model



Part 9 Electrical Specification

DC Power Supply

Model	LX1V
Rated voltage	DC 24V
Voltage range	DC 24V±10%
Power consumption	8W
Power fuse	3.15A
Impulse current	< 15A 1 ms/DC24V
Allow instant power outage time	Instantaneous power outage below 1ms can continue operation

Part 10 Environmental Specifications

Temperature	Using:0~55°C Saving: -20~70°C				
Humidity	35~85%RH (No condensation)				
Resistance to vibration	JISC0040 standards				
	DIN rail installed	Frequency	Acceleration	Amplitude	10 times of X, Y, Z (80 minutes from every direction)
		10~57Hz	--	0.035mm	
	Directly installed	57~150Hz	4.9m/S ²	--	
10~57Hz		--	0.075mm		
57~150Hz	9.8m/S ²	--			
Impact resistance	JISC0041 standard				
Voltage resistance	AC1500V (1 minute)				Confirm with JEM- 1021
Insulation resistance	DC500V is more than 5MΩ				
Grounding	<p>Special grounding(Best) Common grounding(Better) Grounding together(Never)</p>				
Environment	No corrosive gas, combustible gas, or conductive dust.				

Part 11 Input Specifications

Model	LX1V	
Power supply	AC power supply, DC output	
Input single voltage	DC24V ±10%	
Input single current	7mA/DC24V (X002 or later, 5mA/DC24V)	
Input ON current	4.5mA or more (behind X002, 3.5mA/DC24V)	
Input OFF current	Less than 1.5mA	
Input responding time	About 10ms	
Input single type	NPN input	
Insulated return	Optocoupler insulation	
Input status	When input is on, LED is on	
Input circuit components		The picture is NPN connection.

Part 12 Output Specifications

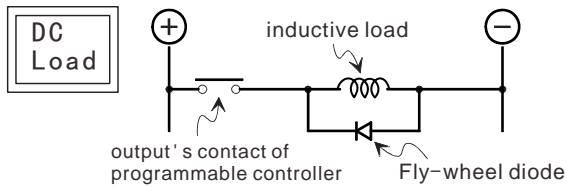
Model	LX1V		
Output type	Relay	Transistor	
Output circuit components			
Power supply	Less than AC250V/DC30V	DC5~30V	
Loop insulation	Mechanical insulation	Photoelectric coupling insulation	
Action	LED lights up when the relay coil is energized	The LED lights up when the optocoupler is driven	
Max load	Resistive	2A/point, 8A/COMx port	0.5A/point, 0.8A/4points, 0.3A/point (Y0, Y1)
	Inductive	80VA	12W/DC24V, 7.2W/DC24V (Y0, Y1)

	General	100W	0.9W/DC24V, 0.9W/DC24V (Y0, Y1)
	Leak current	--	0.1mA/DC30V
	Min load	DC5V 2mA (reference)	--
Response time	ON	About 10ms	Less than 0.2ms, 5μs (Y0, Y1)
	OFF	About 10ms	Less than 0.2ms, 5μs (Y0, Y1)
	Out single mode	--	NPN mode

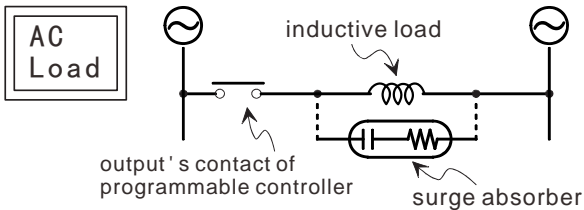
Output Circuit Constitutions

●Please put the perceptual load and dc fly-wheel diode in parallel, otherwise it will significantly reduce the service life of contact.

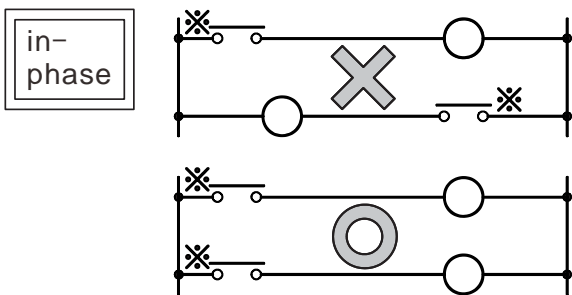
Reverse voltage of Fly-wheel diode is 5-10 times bigger than the load voltage, positive current value is higher than load current.



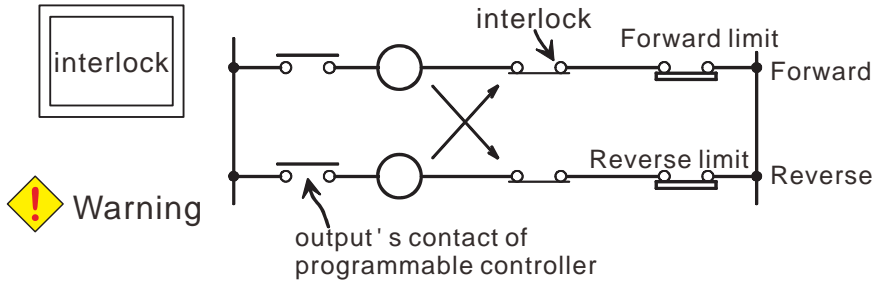
●If this is AC inductive load, make load and surge absorber in parallel, the noise can be reduced.



●The output contacts of the programmable control are best to use on the same phase side.



●If forward and reverse contactors are close at the same time, it would be very dangerous, like this load, except to use internal program to do interlock control, on the outside of the programmable controller must also set the interlock.

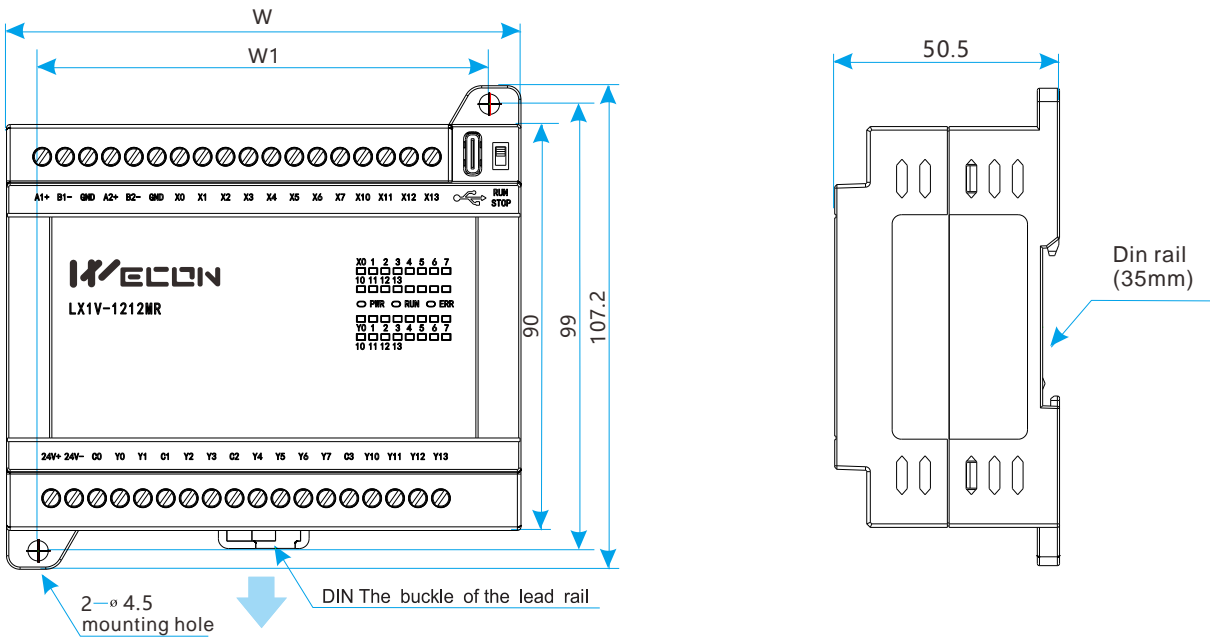


Part 13 Terminal

Pin	LX3V/LX3VP/LX3VE/LX3VM series
24V+/24V-	24V DC power input.
X0-Xn	Switching signal input terminal.
Y0-Yn、Cn	Control output terminal, group n.

Part 14 Installation

Directly installed on the DIN46277 (width 35mm) guide rail. When removing the main unit, gently pull out the IN rail mounting clip from below.



Use the M4 screw to install the PLC. The distance and the location refer to the right figure.

Model	W(mm)	W1(mm)
LX1V-0806MXX-D	114	100
LX1V-1208MXX-D	114	100
LX1V-1212MXX-D	114	100

Part 15 The arrangement of terminal for LX3V series

The type of relay and transistor have the same arrangement of terminal. (*The bold line is the boundary of each group)

<LX1V-0806MXX-D>(※Note1)

A1+	B1-	GND	A2+	B2-	GND	X0	X1	X2	X3	X4	X5	X6	X7	•	•	•	•
24V+	24V-	C0	Y0	Y1	C1	Y2	Y3	C2	Y4	Y5	•	•	•	•	•	•	•

<LX1V-1208MXX-D>(※Note1)

A1+	B1-	GND	A2+	B2-	GND	X0	X1	X2	X3	X4	X5	X6	X7	X10	X11	X12	X13
24V+	24V-	C0	Y0	Y1	C1	Y2	Y3	C2	Y4	Y5	Y6	Y7	•	•	•	•	•

<LX1V-1212MXX-D>(※Note1)

A1+	B1-	GND	A2+	B2-	GND	X0	X1	X2	X3	X4	X5	X6	X7	X10	X11	X12	X13
24V+	24V-	C0	Y0	Y1	C1	Y2	Y3	C2	Y4	Y5	Y6	Y7	C3	Y10	Y11	Y12	Y13

※ Note1 : DC power type, 24V+ and 24V- terminal is power supply terminal.

※ Note2 : Taking 1212M as an example, the output circuit is divided into four groups: C0-Y0/Y1, C1-Y2/Y3, C2-Y4~Y7, C3-Y10~Y13.

Notice

The contents of this manual are subject to change without notice.



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