LX3 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 use. 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, maintenaning and overhaul of the product, please be sure to read the user manual and other related manuals to ensure correct use.
⚠ WARNING Failure to follow the instructions in the manual may result in improper installation , use and storage of the equipment, which may result in personal injury or even death, and property damage.

Part 1 Design Precautions

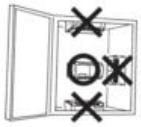
⚠ WARNING

To ensure safety system operation, please configure emergency braking circuit, positive inversion circuit or other similar protection circuit for PLC, which protection circuit 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 be 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.
●Do not leave anything in the vent. when installation or wiring is completed.
●Always make sure to remove the dust proof sheet from the PLC’s vent when installation or wiring is completed.

Part 3 Wiring Precautions

WARNING

●Before installation and wiring, you must cut off the power.
●Before running, please make sure to attach the cover for terminal on PLC.
●That positive inversion contactor is working on at the same time will be dangerous.
●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. The range of AC source must be from 100V to 240V.
●Please never directly connect terminal with external power supply which is over 24V.
●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 10ms. Long-term power failure or low voltage will cause the PLC to stop working, and the all the output of this PLC will be OFF. The PLC would continue work automatically with normal 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 attempting to install or program.

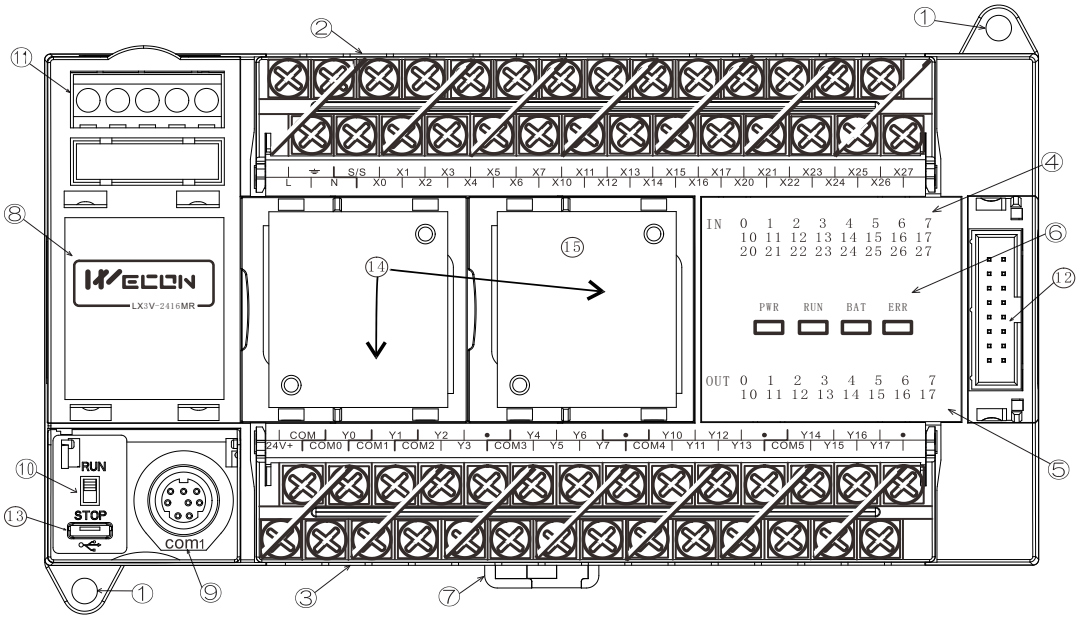
CAUTION

●Never modify 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:
Keep far away from directing sunshine or other heating element, because that would raise the temperature of PLC.
Make sure there is no dust or electrical 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

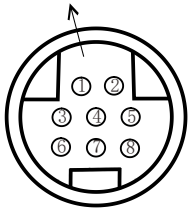


① Mounting hole
② Input blocks
③ Output blocks
④ Output display
⑤ Input display
⑥ Power LED
Run LED
Error LED
⑦ DIN pin installation joint
⑧ Cover
⑨ Programming Port COM1(Standard)
⑩ RUN/ STOP
⑪ COM2 (Optional)
⑫ Socket for additional module
⑬ USB download port
⑭ Socket for BD module
⑮ Button battery (under the BD module)

Part 7 Communication Interface

The LX3V series PLC has two communication port, supporting RS422 (standard) and RS485 (optional).

COM1
programming port

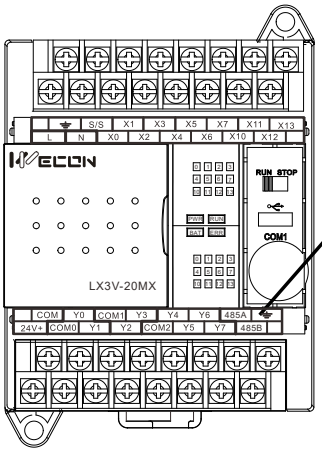


(Rs422 and RS485 in this port can’ t be used at the same time)

Pin out of COM1 and COM2

	Pin	Signal	Description
COM1 (RS 422 standard)	1	RXD-	Received data (negative)
	2	RXD+	Received data (positive)
	3	GND	Signal ground
	4	TXD-	Transmitted data (negative)
	5	NC	Empty
	6	NC	Empty
	7	TXD+	Transmitted data (positive)
	8	NC	Empty
COM1/COM2 (RS 485 optional)	**Pin**	**Signal**	**Description**
	A+	485+	Received data (positive)
	B-	485-	Received data (negative)

② The models of LX3V-0806MX and LX3V-1208MX has RS485 communication port.

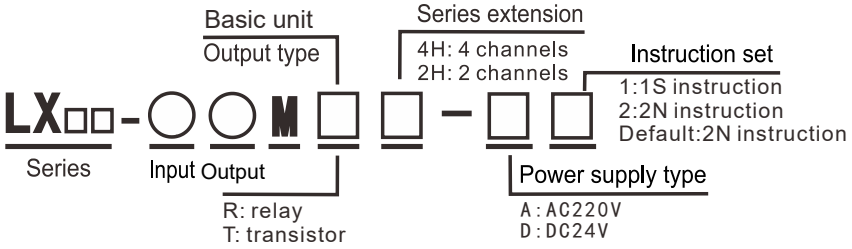


COM2 RS485 PIN

485A	⏚
Y7	485B

PIN	Signal	Description
485A	485+	485+
485B	485-	485-

Part 8 Model



Part 9 Electrical Specification

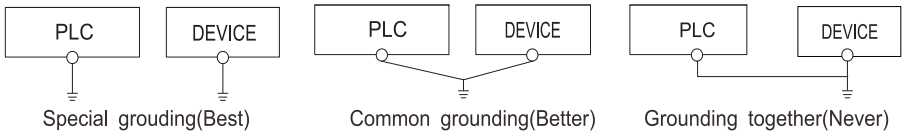
AC Power Supply

Model	LX3V/ LX3VP/ LX3VE/ LX3VM 26 points and below	LX3V/ LX3VP/ LX3VE/ LX3VM above 26 points
Rated voltage	AC 100V ~ 240V	
Voltage range	AC 85V ~ 264V	
Rated frequency	50/60HZ	
Power outage time	continue to work with less than 10ms power outage time	
Power fuse	250V 1A	250V 3.15A
Impulse current	<20A 5ms/AC100V	
Power (W)	20W	50W
Sensor power supply	DC 24V 700mA	

DC Power Supply

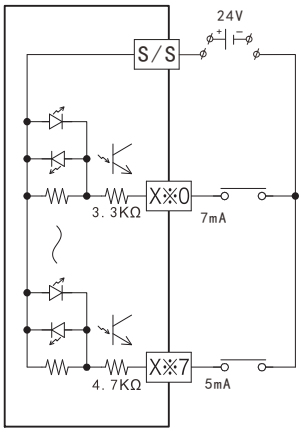
Model	LX3V/ LX3VP/ LX3VE/ LX3VM
Rated voltage	DC 24V
Voltage range	DC 24V±10%
Power fuse	250V 3.15A
Impulse current	< 15A 1 ms/AC100V
Power (W)	<30W

Part 10 Environmental Specifications

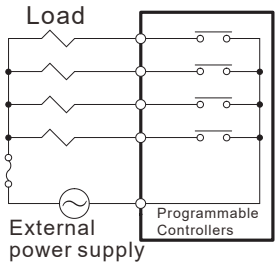
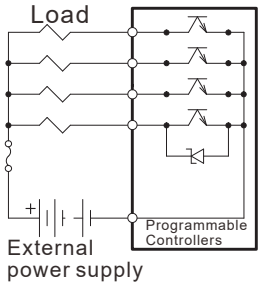
<table>
<tr><td>Temperature</td><td colspan="5">Using:0~55℃ Saving: -20~70℃</td></tr>
<tr><td>Humidity</td><td colspan="5">35~85%RH (no condensation)</td></tr>
<tr><td rowspan="6">Resistance to vibration</td><td colspan="5">JISC0040 standards</td></tr>
<tr><td></td><td>Frequency</td><td>Acceleration</td><td>Amplitude</td><td rowspan="5">10 times of X, Y, Z (80 minutes from every direction)</td></tr>
<tr><td rowspan="2">DIN rail installed</td><td>10~57Hz</td><td>--</td><td>0.035mm</td></tr>
<tr><td>57~150Hz</td><td>4.9m/S^2</td><td>--</td></tr>
<tr><td rowspan="2">Directly installed</td><td>10~57Hz</td><td>--</td><td>0.075mm</td></tr>
<tr><td>57~150Hz</td><td>9.8m/S^2</td><td>--</td></tr>
<tr><td>Impact resistance</td><td colspan="5">JISC0041 standard</td></tr>
<tr><td>Voltage resistance</td><td colspan="3">AC1500V (1 minute)</td><td colspan="2" rowspan="2">Confirm with JEM- 1021</td></tr>
<tr><td>Insulation resistance</td><td colspan="3">DC500V is more than 5MΩ</td></tr>
<tr><td>Grounding</td><td colspan="5"> 
</td></tr>
<tr><td>Environment</td><td colspan="5">No corrosive gas, combustible gas, or electrical dust.</td></tr>
</table>

Part 11 Input Specifications

Model	**LX3V/ LX3VP/ LX3VE/ LX3VM**
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
	X000-X005 change D8020 into 0-15ms by the x built-in digital filter inside
Input single type	Contact input or NPN, PNP Open electrode transistor input
Insulated return	Optocoupler insulation
Input status	When input is on, LED is on

Input circuit components		The picture is NPN connection, if S / S connection 24V negative, X then Positive, namely PNP connection.

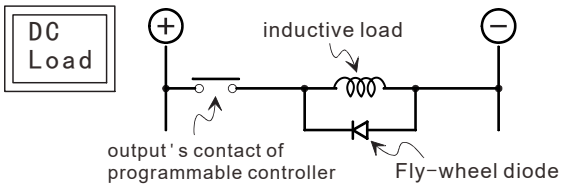
Part 12 Output Specifications

Model		**LX3V/ LX3VP/ LX3VE/ LX3VM**	
Output type		**Relay**	**Transistor**
Output circuit components			
Power supply		Less than AC250V/DC30V	DC5~30V
Loop insolation		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

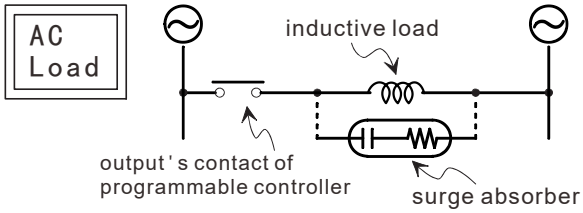
Output Circuit Constitutions

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

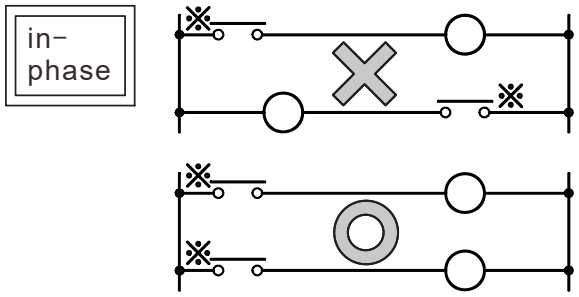
Reverse voltage of Fly-wheel diode is 5-10 times bigger than the load voltage, positive current value is higher than load current.



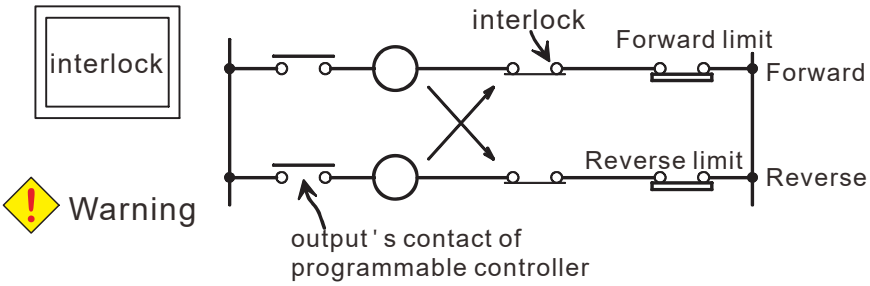
●If this is AC inductive load, make load and surge absorber in parallel, the noise can be reduced.



●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.

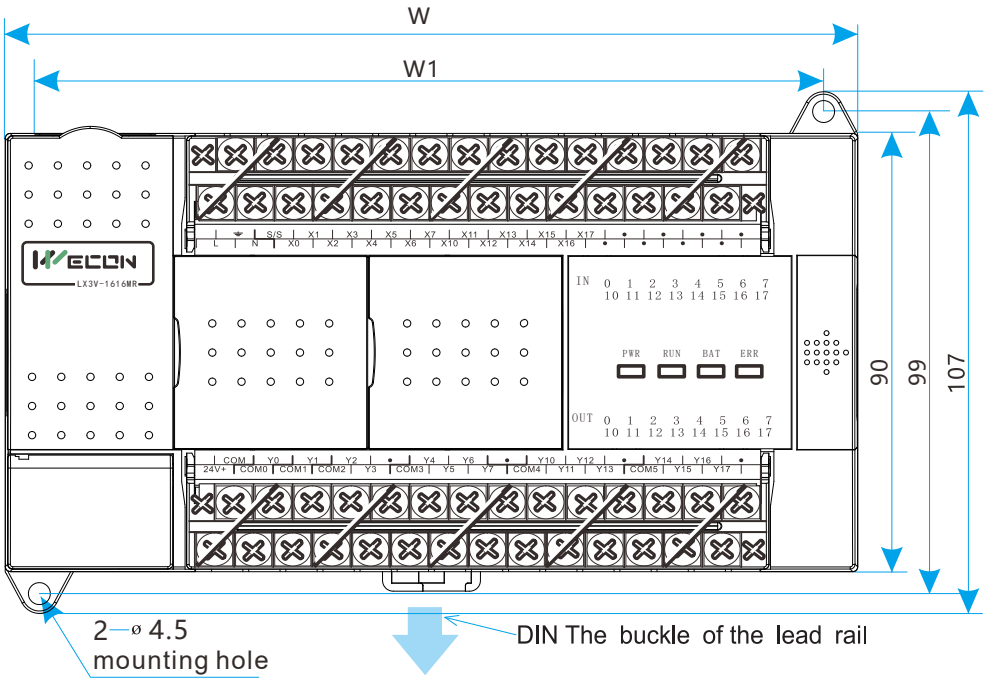


Part 13 Terminal

Pin	LX3V/LX3VP/LX3VE/LX3VM series
L/N	AC 100V~240V
24V+/COM	Output +24V
⏚	Grounding
•	The empty post, never be connected
S/S	Support leakage input (connected to 24V+) or source input (connected to COM).
X0-Xn	External input terminal
Y0-Yn, COMn	Output terminal, Group number

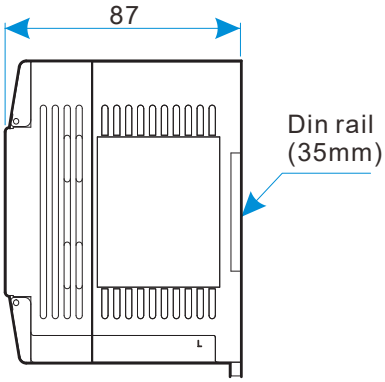
Part 14 Installation

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

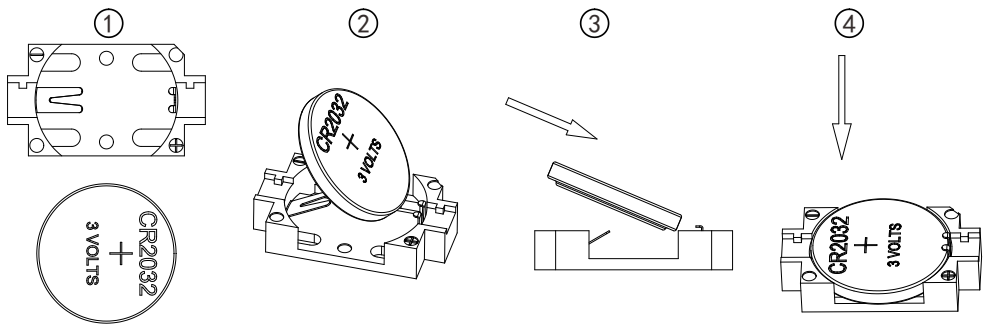


Use the M4 screw to install the PLC. The distance and the location refer to the right figure.

Model	W(mm)	W1(mm)
LX3V/LX3VP/LX3VE/LX3VM-0806MX	75	61
LX3V/LX3VP/LX3VE/LX3VM-1208MX	75	61
LX3V/LX3VP/LX3VE/LX3VM-1212MX	136	123
LX3V/LX3VP/LX3VE/LX3VM-1410MX	136	123
LX3V/LX3VP/LX3VE/LX3VM-1412MX	136	123
LX3V/LX3VP/LX3VE/LX3VM-1616MX	175	161
LX3V/LX3VP/LX3VE/LX3VM-2416MX	175	161
LX3V/LX3VP/LX3VE/LX3VM-2424MX	221	207
LX3V/LX3VP/LX3VE/LX3VM-3624MX	221	207



Part 15 Battery Installation Instructions

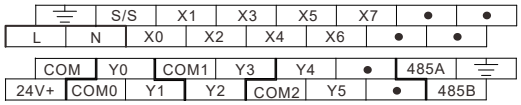


Part 16 The arrangement of terminal for LX3V series

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

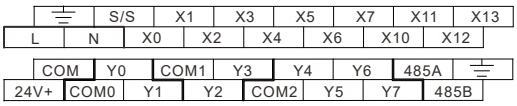
<LX3V-0806MX-A>(※Note1)

<LX3V-0806MX-D>(※Note2)



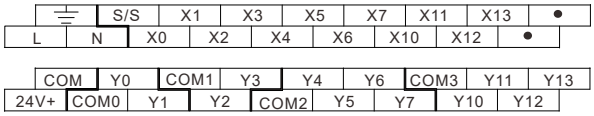
<LX3V/LX3VP-1208MX-A>(※Note1)

<LX3V/LX3VP-1208MX-D>(※Note2)



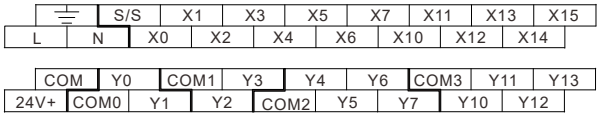
<LX3V/LX3VP-1212MX-A>(※Note1)

<LX3V/LX3VP-1212MX-D>(※Note2)



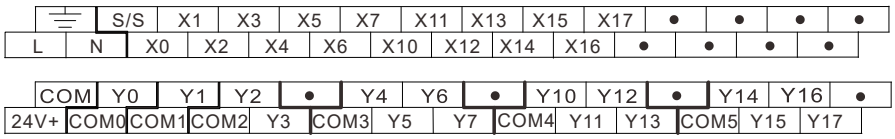
<LX3V/LX3VP/LX3VE/LX3VM-1412MX-A>(※Note1)

<LX3V/LX3VP/LX3VE/LX3VM-1412MX-D>(※Note2)



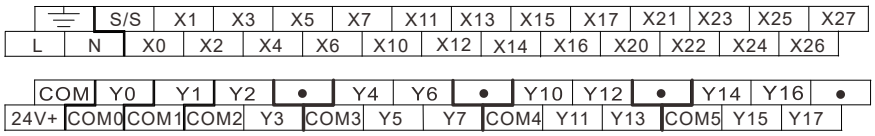
<LX3V/LX3VP/LX3VE/LX3VM-1616MX-A>(※Note1)

<LX3V/LX3VP/LX3VE/LX3VM-1616MX-D>(※Note2)



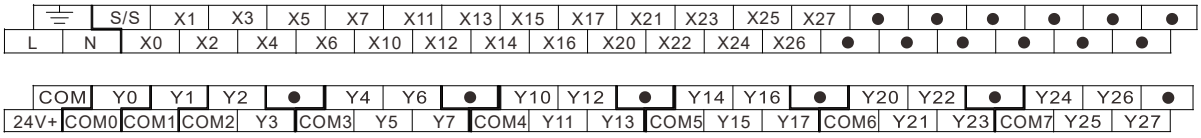
<LX3V/LX3VP/LX3VE/LX3VM-2416MX-A>(※Note1)

<LX3V/LX3VP/LX3VE/LX3VM-2416MX-D>(※Note2)



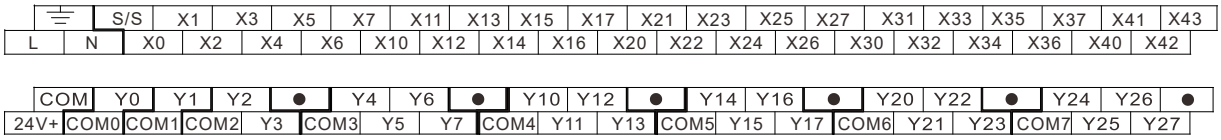
<LX3V/LX3VP/LX3VE/LX3VM-2424MR-A>(※Note1)

<LX3V/LX3VP/LX3VE/LX3VM-2424MT-D>(※Note2)



<LX3V/LX3VP/LX3VE/LX3VM-3624MR-A>(※Note1)

<LX3V/LX3VP/LX3VE/LX3VM-3624MT-D>(※Note2)



※ Note1 ： AC power type, the Land N terminal is power supply terminal, the COM and 24V+ is transducer supply output.

※ Note2 ： DC power type, the COM and 24V+ terminal is power supply terminal.

Notice

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

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