



LAN connection type IO controller  
LANIO series  
Manual

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LA-5R / LA-5P-P / LA-3R3P-P

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The latest instruction manual is in the attached CD as PDF format.

(3rd Edition)

## Introduction

Thank you for your purchase of LANIO series. To use it correctly, you are advised to read and understand this instruction manual thoroughly. Keep this together with the warranty.

### ■ ■ Notice ■ ■

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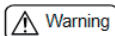
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## Safety Information

Be sure to read the following !!

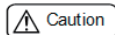
LINEEYE has developed and manufactured this product for purpose of using with electrical devices such as a computer, a personal device, a measurement device, semiconductor manufacturing equipment, a vending machine, a sequencer, display equipment and so on. LINEEYE does not manufacture this product under the purpose of using with equipment, which may cause malfunction to do harm to the human body: control equipment for nuclear, aircraft equipment, life maintenance equipment, traffic signals, etc. Therefore, LINEEYE makes no guarantee with the mentioned-above use. If you use this product for the purposes mentioned above, please contact LINEEYE considering safety like Fail Safe under your responsibilities.

### Danger Level



Warning

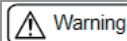
There is a possibility of getting a serious injury or a death if the device is not used properly.



Caution

There is a possibility of getting an injury or material damage if the device is not used properly.

\*\*“Injury” indicates injury, burn, an electric shock, or the like which does not require hospitalization or the extended hospital visit. “Material damage” indicates damage related to a house, a building, furniture, apparatus, livestock or a pet.



Warning

- Do not wire or mount when the unit is powered. It leads to electric shock or failure.
- When you use the LANIO to the conditions in which an external factor such as cable break, power failure, and a failure of LANIO leads to a serious incident, exteriorly set a safety circuit such as inter-lock or emergency stop circuit. An irregular action of the system leads to serious incident such as system runaway, fire, fall, or electric shock.
- When wiring, firmly screw the terminal by specified torque 0.5 – 0.6 Nm. If these screws are not stable, the wires will be disconnected and the contact resistance turns to be greater. It will lead to heat, fire, electric shock, or failure.
- Insert a protective fuse and breaker on the load-side in preparation for a short circuit to occur on output. When a short circuit occurs on the load, it will lead to fire, electric shock, or failure.
- Use the attached power cable or cable indicated by LINEEYE when power the unit from DC source. Otherwise a heat, fire, electric shock, or injury will cause.
- Use the AC adapter indicated by LINEEYE when power the unit from AC source. Otherwise a heat, fire, electric shock, or brake will cause.
- Do not apply a voltage not within the specification to the power connector or terminal block. It leads to heat, fire, electric shock, injury, or failure.
- Do not disassemble or alter the LANIO or the AC adapter. It leads to heat, fire, electric shock, injury, or failure.

- When the unit emits smoke, unusual odor, or unusual sound, stop using immediately. Continuous usage in this case leads to burn injury, fire, or electric shock.
- Do not wet the unit. It leads to heat, electric shock, or failure.
- Do not insert a metallic fragment or a dust of conducting wire into the unit from an opening section. It leads to heat, electric shock, or failure.
- Do not touch the powered unit or the AC adapter with a wet hand. It leads to electric shock.
- Do not use the unit neat inflammable gas or corrosive gas exists. It leads to fire or failure.
- Do not mount or wire the unit where excessive noise exists. It leads to malfunction or failure.
- Do not use deteriorated (such as broken) cables. It may heat and cause fire.
- Do not put many loads on one electrical outlet. It may heat and cause fire.



- Do not mount on an unstable place or where shake happens. It may fall and leads to injury or failure.
- Do not mount on a place where thermal condition is over the specification or where sudden temperature change occurs. High temperature or condensation leads to failure.
- Do not mount on a place where exposed to direct sunshine. The body temperature over 50°C leads to fire or failure.
- Do not short the pins of the connector. It leads to failure or injury.
- Do not use the AC adapter for the models other than specified ones. It leads to heat, fire, or injury.
- Pull out the AC adapter from an outlet by holding the body. Otherwise the code breaks and it leads to fire or electric shock.
- Do not put the code of AC adapter close to a heat. The covering of code melts and it leads to fire or electric shock.

# Chapter 1 Product Overview

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## 1-1. Overview of LANIO series

---

LANIO series is a low-cost and compact IO unit with which you can monitor/measure remote signal and control ON/OFF of the signal via Ethernet LAN. You can remotely control the I/O by sending simple control commands from a PC to the unit via Ethernet.

Also with some of these models, you can extend an input signal by Ethernet LAN without using PC.

### ■ Lineup

Each model has different numbers of I/O. And, for almost all the models there are standard version and extended version (G version). The extended version has a LAN device with an extended firmware and supports TCP multi-session (up to 4 devices) and mail server which needs SMTP-AUTH to send an alert mail.

I/O numbers and contact type	Standard model name <sup>*1</sup>	Extended model name <sup>*2</sup>
3 relay outputs (1a) and 3 dry contact inputs	LA-3R3P-P	LA-3R3P-P(G)
5 relay outputs (1a)	LA-5R	LA-5R(G)
5 dry contact inputs	LA-5P-P	LA-5P-P(G)

\*1: Standard model supports one-on-one TCP connection. Only the mail server which does not need authentication when connecting is supported. The standard models has XPort-05R (by Lantronix) as its LAN device.

\*2: The G version (model name ends with G) has xPico (by Lantronix) with extended firmware.

In this manual, we only use standard model name except when describing difference of the standard model and extended model.

## 1-2. Unpacking and Product Composition

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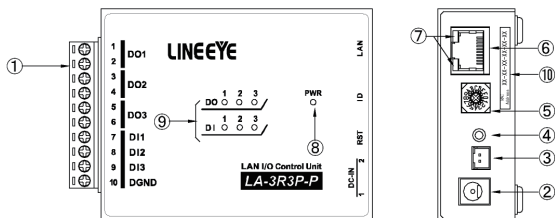
Make sure of the following when unpacking the product.

Please let your LINEEYE distributor or LINEEYE know if you find any damage to the product caused by transportation, or if there are accessories lacking.

- LANIO : 1
- Power cable (Model: LAH-15XH) : 1 XH connector cable 1.5m length
- Utility CD-ROM : 1 Setting tool, sample software, and manual PDF
- Instruction Manual : 1 This document
- Warranty : 1

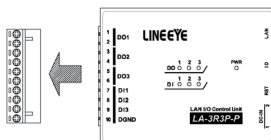
## 1-3. Panel Explanation

The shape and arrangement of the terminal block, connector, and switches are same in all the models. The number of I/O LED differs depending on the model.



No.	Name	Explanation	Note																					
1.	Detachable I/O terminal block	5.08mm pitch, 10 terminals	*1																					
2.	Power jack DC-IN1	AC adapter jack (non-polar)	→ 2-2.																					
3.	Power jack DC-IN2	XH connector (non-polar)	→ 2-2.																					
4.	Reset switch	reset the unit by pushing this switch	*2																					
5.	Rotary switch	set an ID number of the unit	→ 7-3.																					
6.	LAN connector (RJ45)	connector for 10/100Base-TX LAN	→ 2-3.																					
7.	10/100Base-TX link LED	<table border="1"> <thead> <tr> <th>Left LED</th> <th>Right LED</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>No light</td> <td></td> <td>not connected (no link)</td> </tr> <tr> <td>Amber</td> <td></td> <td>Connected by 10Base-T</td> </tr> <tr> <td>Green</td> <td></td> <td>Connected by 100Base-TX</td> </tr> <tr> <td></td> <td>No light</td> <td>No communication</td> </tr> <tr> <td></td> <td>Amber</td> <td>Communicating in half-duplex</td> </tr> <tr> <td></td> <td>Green</td> <td>Communicating in full-duplex</td> </tr> </tbody> </table>	Left LED	Right LED	Meaning	No light		not connected (no link)	Amber		Connected by 10Base-T	Green		Connected by 100Base-TX		No light	No communication		Amber	Communicating in half-duplex		Green	Communicating in full-duplex	*3
Left LED	Right LED	Meaning																						
No light		not connected (no link)																						
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Green		Connected by 100Base-TX																						
	No light	No communication																						
	Amber	Communicating in half-duplex																						
	Green	Communicating in full-duplex																						
8.	power LED	Lights in green when powering	*4																					
9.	I/O status LED	Lights in red when I/O is ON	*5																					
10.	MAC address seal	A hardware (MAC) address of the unit																						

\*1 : When you remove the terminal, pull off the terminal directly to the arrow direction. Please do not twist it.



\*2 : By resetting the unit, the unit returns to the state when the power is turned on. If the unit is connected with LAN, the link will be disconnected and all the output status of the unit will be OFF.

\*3 : The LED lights in amber for both full-duplex and half-duplex communication for G version.

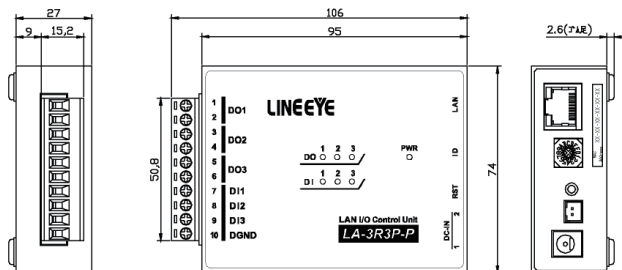
\*4 : The LED of G version and LA-3R3P-P changes the lighting to amber when TCP connection is established.

\*5 : Number of LEDs are different in each model.



## 1-4. Common Specification

- External Dimension : 74 x 106 x 30 mm ( W x D x H )      Weight : About 280g



### ■ LAN Interface

LAN Interface	RJ45 Connector 10Base-T/100Base-TX auto-detection Ethernet : IEEE 802.3
LAN Protocol *1	TCP/IP, UDP/IP, ARP, ICMP, SNMP, TFTP, Telnet, DHCP, BOOTP, HTTP, AutoIP, SMTP
Insulated Transformer	1500V

\*1 : Other protocols than TCP/IP, UDP/IP are not available from a user application.

### ■ General Specification

Power	DC8 - 30V non-polar *1
Power Consumption	Max 3 W
Operating Temperature and Humidity	-20 - +55°C , 10 - 95%RH (No condensation)
Storage Temperature and Humidity	-25 - +75°C, 10 - 95%RH (No condensation)
Vibration Resistant	10 - 60 - 150Hz 50m/s <sup>2</sup> , Amplitude of vibration 0.35mm, for each direction X,Y,Z, Sweep 20 cycles, Conformed to JIS C60068-2-6 (JIS C0040)
Shock Resistant	500m/s <sup>2</sup> , Period of time 11ms, Sine half wave pulse for each direction X,Y,Z for 3 times, Conformed to JIS C60068-2-27 (JIS C0041)
Noise Resistant	±1500Vp-p by noise simulator, width 1μS/50nS, Normal/Common mode
Voltage Resistant	AC2000V for 1 munite For between relay output terminals in lump, input terminals in lump, the body, and the power source
Insulation Resistance	50 MΩ or more by DC500V mega For between I/O terminals in lump, the body, and the power source For Output terminals in lump and Input terminals in lump
Usage Atmosphere	No flammable gas or corrosive gas Not much dust (especially conductive one)

\*1 : DC-IN1 matches with an optional AC adapter (6A-181WP09).

DC-IN2 matches with an attached power cable or optional power branch cable (LAH-2XH).

→ “2-2. Power supply”

## Chapter 2 Setup and Installation

### 2-1. Installation

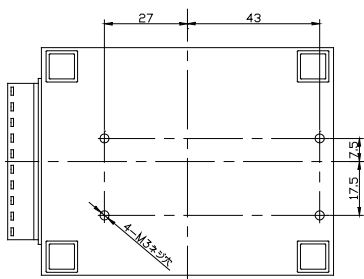
#### ■ Stationary Installation

Install the unit on the flat and stable place.

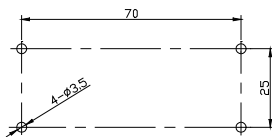
#### ■ Screwing the unit to a board such as a control panel

Use four M3 screw halls on the back side of the unit when you attach the unit to a board such as a control panel by screwing it.

[ The position of M3 screw halls on the back side ]



[ An example figure of screw hall planning on a panel ]



- Do not use a screw which can be inserted into the unit more than 4mm depth from the top of the case. For example, when you attach the unit to a panel of 1mm thickness use M3 screw of less than 6mm length.
- When the rubber legs impede the attachment of a panel, remove the rubber legs and screw it.

#### ■ Attachment to a DIN rail

You can attach the unit to a 35mm DIN rail by using SI-DIN70 (optional). Also you can use an optional vertical mounting plate (SI-DIN30).

1. Screw DIN rail mounting plate (SI-DIN70) to four M3 screw halls on the bottom of the product with the knob of SI-DIN70 to the direction of LAN connector side.
2. Insert it by pushing it into the DIN rail from the front side of the rail. To insert it, tilt a little bit and put the non-knob side into the rail first. Then put the knob side into the rail until a click sounds.
3. To remove the plate from the DIN rail, pull up the knob using the screwdriver etc. and remove the unit from the DIN rail.

DIN rail mounting plate  
(SI-DIN70) [ Option ]



→ “20-5. Option”

- Before screwing the unit or mounting the unit to a DIN rail, make sure to disconnect power source from the unit.
- When placing the unit, make sure not to put it near a high-voltage instrument or an electric power equipment.

## 2-2. Power supply

You can power the unit from DC1 or DC-IN2 (power input connector) with the range of 8 to 30V.

### ■ When powering by DC source

1. Prepare a DC source of 8 to 30V, more than 3W.
2. Confirm that the DC source is OFF, then connect the attached power cable to the +- terminal of the DC power socket of the unit. The unit is non polar, thus which side is + or - does not matter.
3. Connect the power cable to DC-IN2.
4. Turn on the power of DC source.

When you make a cable by yourself, use following materials.

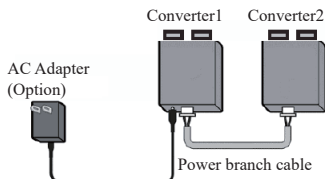
Wire	: Cable of AWG24 - 22	
Connector	: XHP-2	(Japan Solderless Terminal)
Contact	: SXH-001T-P0.6	(Japan Solderless Terminal)

### ■ When powering by AC source

1. Connect the optional AC adapter (6A-181WP09) with the power jack DC-IN1 of the unit.
2. Connect the AC adapter with a AC power socket to power the unit. The optional AC adapter can be used with AC 90-264V<sub>m</sub> 50/60Hz AC source.

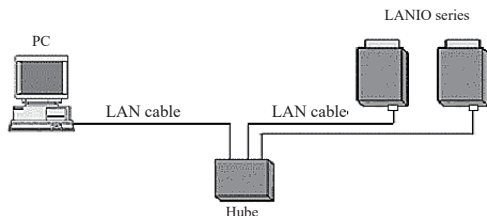
#### How to branch the power

You can branch the power from the unit which is powered by an AC adapter to the second unit by connecting them with an optional power branch cable LAH-2XH.



## 2-3. Connection with a LAN network

For normal use, connect the unit to a hub which is connected with a LAN network in which a PC to control the unit belongs. Connect the LAN connector of the unit and the LAN connector of the hub by a proper LAN cable (category 5 or more).



### ■ About the length of the LAN cable

The standard for Ethernet define the length of the cable as max 100m. When you use the cable in the noisy circumstances, use the short cable as possible.

\* Use a cross cable when you connect the unit directly with a PC because the LAN port of the unit does not have AutoMDI/MDI-X.

## 2-4. IP Address Assignment

---

As default settings, DHCP and Auto-IP are valid for the unit. IP address is automatically assigned with this setting.

- When the network has a DHCP server  
When turning on the power of the unit, the server assigns a dynamic IP address to the unit.
- When the network does not have a DHCP server  
When turning on the power of the unit, the Auto-IP function works and an IP address of the range 169.254.1.0 - 169.254.254.255 is assigned to the unit.

Contact the network administrator of the network in which you use the unit and confirm the rules for the network and a proper IP address to assign to set it to the unit by using the attached software etc.

Before setting, make sure to make a note of the MAC address of the unit and the IP address to be assigned. If you forget the IP address, it will pose a problem for resetting.

- Hardware (MAC) address\*1..... [ 00 - 80 - A3 -        -        ]
- IP Address..... [                        -        -        ]
- Subnet Mask..... [                        -        -        ]
- Default Gateway..... [                        -        -        ]

\*1: An unique address to identify the unit written under the LAN connector of the unit. It is necessary to identify the unit when you use setting software to configure the unit.

### 2-4-1. Setting by LANIOset

---

LANIOset is a Windows software to set an IP address and major parameters to the unit.

Supported OS : Windows 7/8/8.1/10

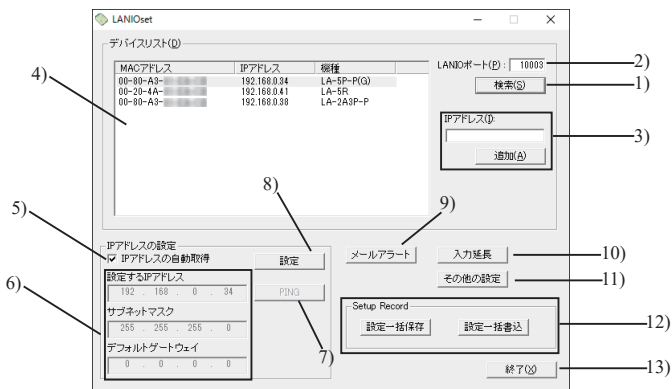
[ Preparation ]

1. Make a folder to work (such as c: \lanio) and copy all the files in \LINEEYE \LANIOset folder of the attached CD-ROM. You can also download the files from our website.
2. Set the rotary switch to the number other than F to deactivate the I/O extension function.  
→ " 7-3 Rotary Switch "
3. Connect the unit to the network and turn on the power of it.

[ How to use the software ]

1) Run LANIOset

Double click "LANIOset" in the folder to run it. You do not need to install it to run.



2) Search the unit to configure

Click 1) [ 検索 ] to search all the LANIOs (or Lantronix devices) on the network in which the PC belongs and display their MAC address / IP address / Xn (model number) on 4) デバイスリスト. Xn will be X9 (when the device used for LANIO is XPort05R) or X6 (when the device used for LANIO is xPico) etc. When you search by inputting a control port of LANIO (default value is 10003) into 2) LANIO ポート, model name (model number) will be displayed too. By the way, 3) IP アドレス and [ 追加 ] are used to add a device which does not belong to the network in which PC belongs to the device list, but we do not use them for initial setting.

3) Select the unit

Select the unit to be configured from 4) デバイスリスト by confirming the MAC address. The selected line will be highlighted and the current setting of the target unit will be displayed on the setting area of IP address.

4) IP address setting

When 5) IP アドレスの自動取得 is checked, DHCP and Auto-IP are valid. When you want to set a fixed IP address, uncheck 5) and set 6) 設定する IP アドレス, subnet mask, and default gateway. You can send PING to the IP address by clicking 7) [PING] to check if the answer comes.

5) Writing an IP address

Click 8) [ 設定 ] and the confirmation message about the setting appears. Click [ OK ] to write the set values to the target unit. Then a confirmation message for reboot appears, click [ OK ]. The setting will be reflected about 10 minutes later. When you want to confirm the values set to the unit on the device list, click [ 検索 ] again.

Note : After clicking [ 設定 ] or [ OK ], do NOT turn off the power until the message of confirmation for reboot. The setting does not finish completely and the unit may work improperly.

6) After setting, click 13) [ 終了 ] to finish the software.

Beside the above, following settings are available, Refer to the related page for the detail.

9) is to open the setting window for mail alert function. → "16-1. Mail Alert Function"

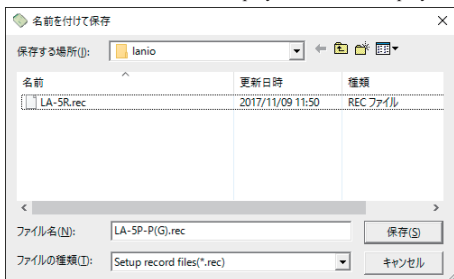
10) is to open the TCP connection setting window for I/O extension mode.

→ "Capter 15 I/O extension without PC"

11) is not used for the abroad models.

12) is to save or write the setting information (setup record) of the LAN device built in the unit selected on the device list.

Click [設定一括保存] to display the file save display.



Specify the folder to save the file and the name of SetupRecord file, and then click [ Save ] to save the setting contents of the LAN device selected on the device list as a SetupRecord file. The file name will be "searched name on the device list".rec as default. When you do not want to save it, click [ Cancel ].

[ 設定一括書込 ] is to write SetupRecord selected on the window which opens by this button to the target unit. → "12-2. How to apply the factory setting"

## 2-4-2. Setting by Device Installer

Device Installer is a setting software by the device manufacture of the LAN device built in the unit.

System Requirement : Windows Server 2008/2012, Windows 7/ 8/ 8.1/ 10

Microsoft .NET Framework v4.0.

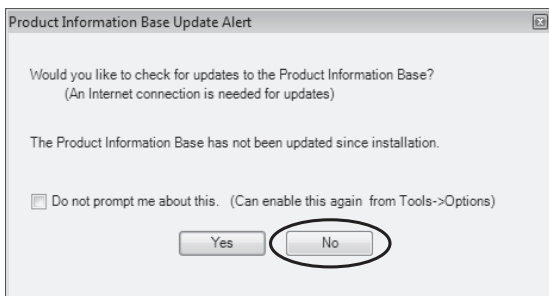
[ Preparation ]

1) Login a PC as an administrator and double click the "setup\_di\_x86x64cd\_4.4.0.4.exe" in the "\lantronix\DeviceInstaller\ver4.4.x.x" folder of the CD-ROM. If the version is newer than this, use the new one.

\* : If the older version has been installed to the PC, uninstall it before installing the new version.

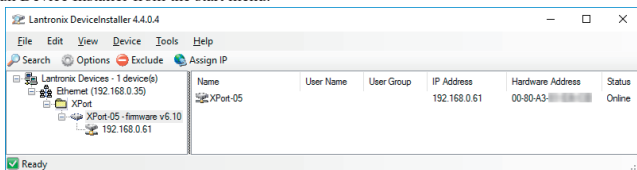
2) Follow the install wizard to proceed the installation.

\* : Click "No" when the following display appears.



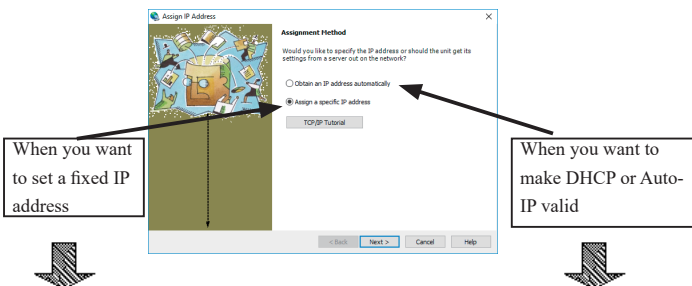
[ How to use the software ]

- 1) Connect the unit to the network and power the unit.
- 2) Run Device Installer from the start menu.



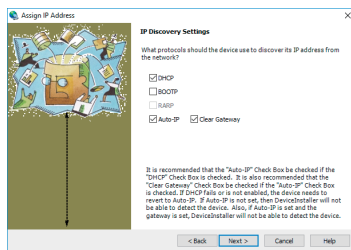
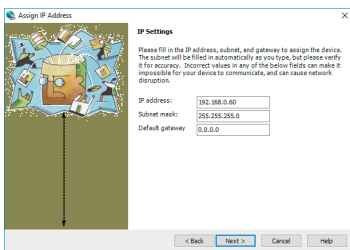
- 3) Select the MAC address of the unit from the list.
- 4) Click “IP assignment” and then select the way of assignment and click “Next”.

Note : You can access the web manager by clicking [ → ] in the address bar of web configuration tab which appears by double clicking the target unit on the list. You can configure the detail of the LAN device with this web manager.



- 5) Input a value of IP address to set at “IP Settings” and click “Next”.
- 5) Select the function to be made valid at “IP Discovery Settings” and click “Next”.

\* We recommend not to make the Auto-IP invalid.



- 6) Click “Assign” at IP address assignment display and then the unit will reboot and the changed configuration will be valid.

Note : After clicking “Assign”, do NOT turn off the power of the unit until the unit finish rebooting. If the configuration writing incompletely finishes, after that the unit will not work properly.

\* Refer to the online help of Device Installer for the detail of how to use Device Installer.

### 2-4-3. Configuration by Telnet connection

---

You can set an IP address to the unit by Telnet connection and command line control. First, validate “Telnet Client” at “Windows の機能の有効化と無効化 ” in “Program” of the control panel. Then right-click “Command Prompt” from the start menu to run it as an administrator. The followings is an example of how to for the command prompt of Windows (DOS prompt).

- 1) Make an ARP table entry. Input the following command.

```
arp -s xxx.xxx.xxx.xxx yy-yy-yy-yy-yy-yy
```

(xxx.xxx.xxx.xxx an IP address to set)

(yy-yy-yy-yy-yy-yy A hardware address of the device to configure)

Note : The IP address to be set to the unit must be in the same IP group as that of the PC which connecting by Telnet.

Note : When this command does not work properly, send a ping to another device running on the network and then execute this APR command.

- 2) Connect with the port 1 by Telnet.

This connection will fail but by this request the unit temporarily change its IP address to the specified one.

```
telnet xxx.xxx.xxx.xxx 1 (xxx.xxx.xxx.xxx is the IP address specified by the ARP command at 1)
```

Note : The IP address set by this procedure is a temporal one. If you do not execute the process 3) and the later, the IP address setting will be return when you power off the unit.

- 3) Connect with the port 9999 by Telnet again. When the connection succeeds a message “Press Enter for Setup Mode” appears, then press the enter key.

```
MAC address XXXXXXXXXXXXX
```

```
Software version XX.X (XXXXXXX) XPTEXE
```

```
Press Enter for Setup Mode
```

- 4) After entering the set up mode, the current setting displays and then the following menu appears.

```
Change Setup:
```

```
0 Server
```

```
1 Channel 1
```

```
3 E-mail
```

```
5 Expert
```

```
6 Security
```

```
7 Defaults
```

```
8 Exit without save
```

```
9 Save and exit Your choice ?
```



- 5) Select "0 Server" from the menu and set an IP address, subnet mask, and (if necessary) gateway address.

The underlined part is where to input data.

IP Address : (000) 192.(000) 168.(000) 0.(000) 0

Set Gateway IP Address (N) N ←Set "Y" when you set a gateway address.

Netmask : Number of Bits for Host Part (0=default) (0) 0

Set DNS Server IP addr (N) N

Change telnet config password (N) N

Change DHCP device name (not set) (N) N

Enable DHCP FQDN option : (N) N

The subnet mask is to be specified by the bit numbers of the host part.

The setting example of Netmask is shown on the right.

Please refer to it when setting.

If you set 0 as the bit number of the host part, a standard subnet mask corresponding to the class of IP address will be applied.

Subnet mask	Netmask set value
255.255.255.248	3
255.255.255.240	4
255.255.255.0	8
255.255.0.0	16
255.0.0.0	24

\* When the setting of IP Address: is 0.0.0.0 (default value), it means that DHCP and Auto-IP are valid. When it is 0.0.1.0, only the DHCP is valid.

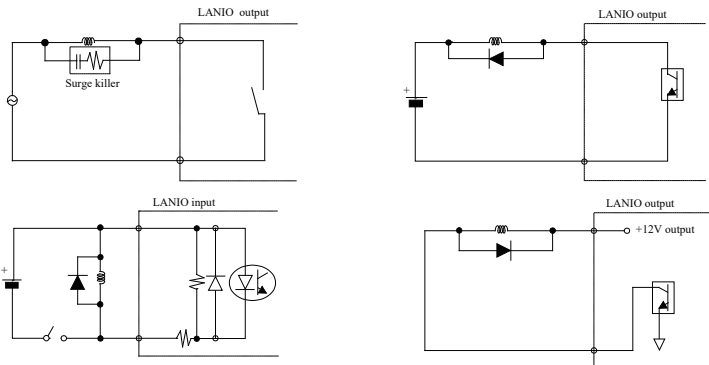
- 6) The menu appears again, then select "9 Save and Exit". The setting will be saved and the it will reboot.

## 2-5. Note for external wiring

When wiring for the unit, confirm the load of the device to be connected and the specification of the device such as a sensor to be connected.

### ■ Note for when connecting an inductive load.

When connecting an inductive load such as relay coil or solenoid to the I/O terminal of the unit, insert a proper diode, a surge killer, or a varistor by parallel to the load as indicated in the following figure.



Use a surge killer / varistor for AC and a diode for DC.

\* The condition to select a surge protection diode

Forward current : More than the rated current of the load

Reverse breakdown voltage : more than 3 times of the source voltage

### ■ Note for when you connect a load with inrush current

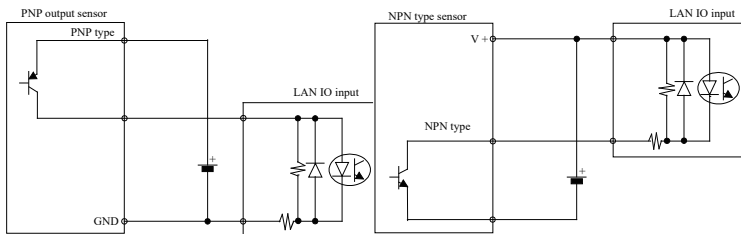
For an incandescent lamp or a mercury lamp, a inrush current of 10 to 40 times bigger than the rated current sometimes flows. Measure the inrush current and make sure that the current does not over the limit of the current for this unit.

■ Note for when connecting with the dry contact input

Do NOT apply a voltage to the contact input because the circuit is only for dry contact. It leads to failure of the internal circuit.

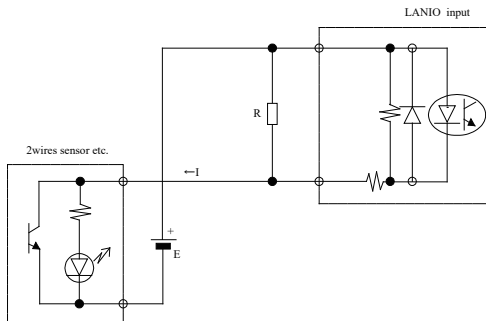
■ How to connect depending on the output type of PNP or NPN sensor.

When you connect a sensor to the input terminal of the unit, connect as follows depending on the output type.



■ Note for when connecting a sensor which flows leakage current

When you connect a sensor such as a limit switch with LED or a 2 wires proximity switch which flows leakage current of 1.5mA or more when the power of the sensor is OFF, connect a bleeder resistance R as described in the following figure to prevent a malfunction by the leakage current.

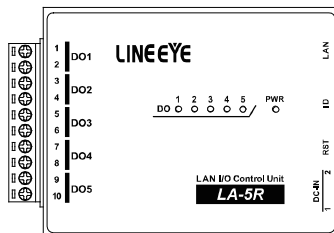


E : External power voltage (V)      I : leakage current (mA) when sensor is OFF  
R : Bleeder resistance (KΩ)      W : Bleeder resistance allowable electricity P(W)  
For example, when you use a sensor with 2mA leakage current by 24V power source, you can calculate as follows.  
 $R \leq 7 / (2 \cdot 1.5) = 14(K\Omega)$      $P \geq 24 \times 24 \times 3 / 1000 \times 14 = 0.12(W)$   
For this case, use 12K Ω (1/4W) carbon resistance which is easy to buy.

### 3-1. LA-5R Overview

LA-5R is a digital I/O unit with which you can control the five relay outputs of the unit via LAN (Ethernet).

\* For how to control from a PC, refer to the chapter 6, 9, and 10.



### 3-2. I/O specification of LA-5R

- I/O specification of LA-5R

Output	5 Relay (1a) contacts	
Rated control voltage	AC250V / DC30V (when 5A) ,DC110V (when 0.3A)	
Limit of load current	Up to 5A per 1 contact (Resistance load) Up to 20A for 5 contacts all (Resistance load)	*1
Minimum applicable load	DC5V, 10mA	
Relay lifetime	Electric lifetime: More than 50 thousands times (Resistance load is AC250V,5A. When the open/close interval is 30 times per minute) Mechanical lifetime: More than 10 million times (When the open/close interval is 300 times per minute)	
Detachable I/O terminal	European terminal 5.08mm pitch, 10 terminals	
Applicable wire	Single wire $\phi$ 2.06 - $\phi$ 0.51mm (AWG24 - 12) Stranded wire 3.31 - 0.21mm <sup>2</sup> (AWG24 - 12) Peeled length of the coating: 5mm	*2
Torque	0.5 - 0.6 Nm	
I/O status display	Output : 5 red LED Power : 1 green LED	
Conformed standard	EMC(EN61326-1:2013)	*3

\*1 : When all the five outputs are connected with loads, the limit of the load for an output is 4A or less.

\*2 : Use a rod terminal when it is a stranded wire.

\*3 : Supported only by the G version "LA-5R(G)". The standard version "LA-5R" has equivalent quality but it does not have a test port.

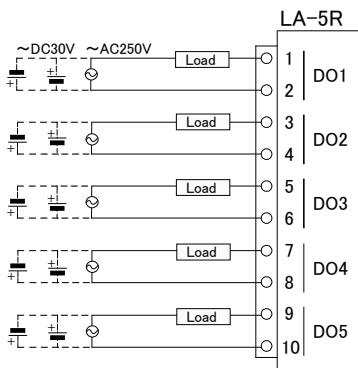
### 3-3. External wiring example of LA-5R

The signal arrangement of I/O terminal and the circuit structure of I/O part are as follows.

The signal arrangement of I/O terminal			The circuit structure of I/O part
Terminal	Description	I/O	
1	DO1	Relay contact output 1	
2			
3	DO2	Relay contact output 2	
4			
5	DO3	Relay contact output 3	
6			
7	DO4	Relay contact output 4	
8			
9	DO5	Relay contact output 5	
10			

Connect the external wire to the terminal by reference to the following figure. When you connect them screw the terminal by the specified torque (0.5 - 0.6 Nm) to fix it. The output circuit does not have any fuse or protection component. Please be careful when you connect it with an external power source.

[An example of external wiring for LA-5R]



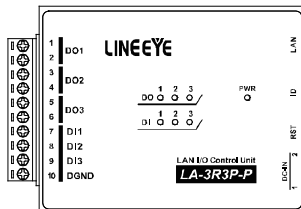
- When connecting or removing a wire or a terminal, be sure to turn off the power before doing so.
- The unit does not have short circuit protection such as a fuse. Make a short circuit protection by adding a fuse or a circuit protector to the external power source side to prevent a short circuit.
- Connect the unit following the specification of a device to be connected such as a load. Also make sure to set a surge protection which is proper for the device. See “2-5 Note for external wiring” and the manual of the device to be connected.
- Use another duct than that of high-voltage instrument or a power apparatus. Leave the unit and its wiring from those devices as far as possible.

## Chapter 4 LA-3R3P-P Usage

### 4-1. LA-3R3P-P Overview

LA-3R3P-P is a digital I/O unit with which you can monitor/control three dry contact inputs and three relay outputs of the unit via LAN (Ethernet). It also has some additional functions - an input-extension function in which the unit sends the input status autonomously to the other LA-3R3P-P, and a pulse-count function with which you can count how many times the input status changed.

- \* For how to monitor or control the I/O of LA-3R3P-P from a PC, refer to the chapter 6, 9, and 10. For other additional functions, refer to chapter 7 and 8.



### 4-2. I/O specification of LA-3R3P-P

- I/O specification of LA-3R3P-P

Output	3 Relay (1a) contacts	
Rated control voltage	AC250V / DC30V (when 5A)	
Limit of load current	Up to 5A per 1 contact (Resistance load) Up to 15A for 3 contacts all (Resistance load)	
Minimum applicable load	DC5V, 10mA	
Relay lifetime	Electric lifetime: More than 50 thousands times (Resistance load is AC250V,5A. When the open/close interval is 30 times per minute) Mechanical lifetime: More than 10 million times (When the open/close interval is 300 times per minute)	
Input circuit	3 Dry contact inputs	
Rated input resistor	off → on 1K $\Omega$ or less on → off 10K $\Omega$ or more	
Detachable I/O terminal	European terminal 5.08mm pitch, 10 terminals	
Applicable wire	Single wire $\varnothing$ 2.06 - $\varnothing$ 0.51mm (AWG24 - 12) Stranded wire 3.31 - 0.21mm <sup>2</sup> (AWG24 - 12) Peeled length of the coating: 5mm	* 1
Torque	0.5 - 0.6 Nm	
I/O status display	Output : 3 red LED, Input : 3 red LED, Power : 1 green LED	* 2
Conformed standard	EMC(EN61326-1:2013)	* 3
Power/ Power consumption	DC8 ~ 30V, Max 3W.	
Size/ Weight	74 × 106 × 30mm (W × D × H), Approx.280g	

\*1 : Use a rod terminal when it is a stranded wire.

\*2 : (PWR)LED lights in green before TCP connection is established and lights in amber after TCP connection is established.

\*3 : Supported only by the standard version "LA-3R3P-P". The G version "LA-3R3P-P(G)" has equivalent quality but it does not have a test port.

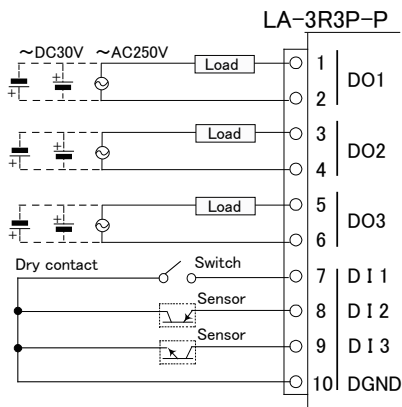
## 4-3. External wiring example of LA-3R3P-P

The signal arrangement of I/O terminal and the circuit structure of I/O part are as follows.

The signal arrangement of I/O terminal			The circuit structure of I/O part	
Terminal	Description	I/O		
1	DO1	Relay contact output 1	<p>The diagram shows the internal circuitry of the I/O terminals. Terminals 1, 3, and 5 are connected to a relay contact output. Terminals 2, 4, and 6 are connected to a common output line. Terminals 7, 8, and 9 are connected to an isolated input circuit using a photocoupler, which includes a 1K resistor, a 4.3K resistor, and a diode. Terminal 10 is connected to ground (DGND).</p>	
2				
3				
4	DO2	Relay contact output 2		
5				
6				
7	DI1	Dry contact input 1		
8	DI2		Dry contact input 2	
9	DI3			
10	DGND	Ground		

Connect the external wire to the terminal by reference to the following figure. When you connect them screw the terminal by the specified torque (0.5 - 0.6 Nm) to fix it. The output terminals do not have a polar but the input terminals have it, thus connect the wire with attention to it.

[An example of external wiring for LA-3R3P-P]



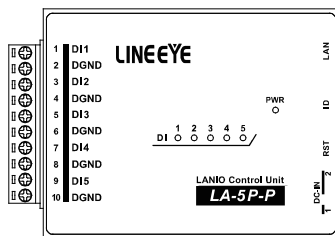
- When connecting or removing a wire or a terminal, be sure to turn off the power before doing so.
- The unit does not have short circuit protection such as a fuse. Make a short circuit protection by adding a fuse or a circuit protector to the external power source side to prevent a short circuit.
- Connect the unit following the specification of a device to be connected such as a load. Also make sure to set a surge protection which is proper for the device. See "2-5 Note for external wiring" and the manual of the device to be connected.
- Use another duct than that of high-voltage instrument or a power apparatus. Leave the unit and its wiring from those devices as far as possible.

## Chapter 5 LA-5P-P Usage

### 5-1. LA-5P-P Overview

LA-5P-P is a digital I/O unit with which you can monitor five dry contact inputs of the unit via LAN (Ethernet). It also has some additional functions - an input-extension function in which the unit sends the input status autonomously to another specified LANIO unit, and a pulse-count function with which you can count how much the input status changed.

- \* For how to monitor the I/O of LA-5P-P from a PC, refer to the chapter 6, 9, and 10. For the other additional functions, refer to chapter 7 and 8.



### 5-2. I/O specification of LA-5P-P

- I/O specification of LA-5P-P

Input circuit	5 Dry contact inputs	
Rated input resistor	off → on 1K $\Omega$ or less	
	on → off 10K $\Omega$ or more	
Detachable I/O terminal	European terminal 5.08mm pitch, 10 terminals	
Applicable wire	Single wire $\phi$ 2.06 - $\phi$ 0.51mm (AWG24 - 12) Stranded wire 3.31 - 0.21mm <sup>2</sup> (AWG24 - 12) Peeled length of the coating: 5mm	* 1
Torque	0.5 - 0.6 Nm	
I/O status display	Input : 5 red LED Power : 1 green LED	
Conformed standard	EMC(EN61326-1 : 2013)	* 2

\*1 : Use a rod terminal when it is a stranded wire.

\*2 : Supported only by the G version "LA-5P-P(G)". The standar version "LA-5P-P" has equivalent quality but it does not have a test port.



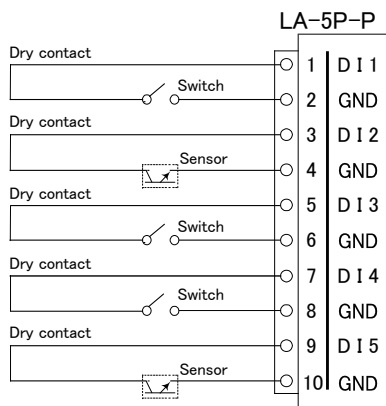
### 5-3. External wiring example of LA-5P-P

The signal arrangement of I/O terminal and the circuit structure of I/O part are as follows.

The signal arrangement of I/O terminal			The circuit structure of I/O part
Terminal	Description	I/O	
1	DI1	Dry contact input 1	
2	DGND	Ground	
3	DI2	Dry contact input 2	
4	DGND	Ground	
5	DI3	Dry contact input 3	
6	DGND	Ground	
7	DI4	Dry contact input 4	
8	DGND	Ground	
9	DI5	Dry contact input 5	
10	DGND	Ground	

Connect the external wire to the terminal by reference to the following figure. When you connect them screw the terminal by the specified torque (0.5 - 0.6 Nm) to fix it. The input terminals have a polar, thus connect the wire with attention to it.

[An example of external wiring for LA-5P-P]



- When connecting or removing a wire or a terminal, be sure to turn off the power before doing so.
- Connect the unit following the specification of a device to be connected such as a load. Also make sure to set a surge protection which is proper for the device. See "2-5 Note for external wiring" and the manual of the device to be connected.
- Use another duct than that of high-voltage instrument or a power apparatus. Leave the unit and its wiring from those devices as far as possible.

## Chapter 6 Controlling Software(LA-PC20)

### 6-1. About Controlling Software(LA-PC20)

This software is for finding the LANIO from a PC, controlling it via LAN, and confirming its operation. It is possible to save the log files of inputting status as CSV format.

### 6-2. Preparation and Startup

Connect the LANIO to the network and set the IP address etc. → " 2-4. IP Address Assignment "

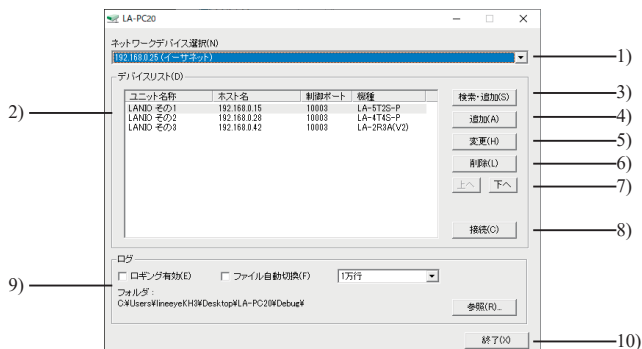
Set the rotary switch of LANIO unit to other than "F".

While using the Input Extension function, you cannot use this software.

<Startup>

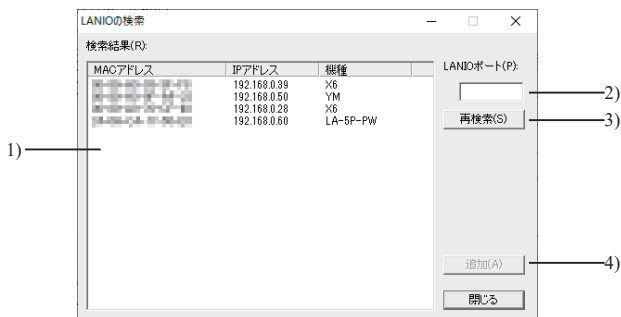
Copy "LAPC20.exe" in the "LINEEYE/LAPC20" folder in the attached CD into the appropriate folder of the PC. Click "LEPC20.exe" to run the software.

### 6-3. Find and Connect the LANIO



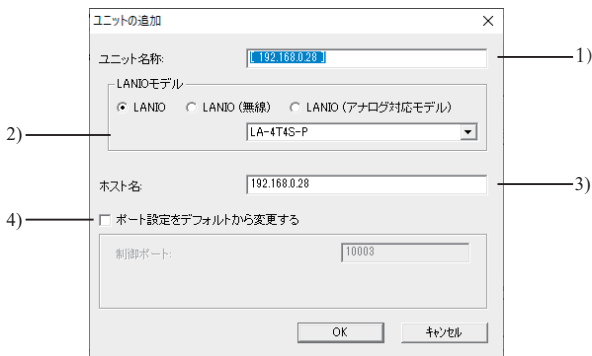
1)	Select the network device of the PC.
2)	Registered LANIO units are displayed.
3)	Search the units existed in the LAN.
4)	Set manually to register LANIO unit existed over the LAN.
5)	Change setting.
6)	Delete setting.
7)	Change the display order of LANIO units.
8)	Connect to the selected unit.
9)	To save the log file, mark on "ロギング有効". If mark on "ファイル自動切替", selected numbers of files are saved. Click "参照" and select the saving folder shown on the "フォルダ" field. If using only outputting unit (such as LA-5P-P), it cannot save the status of outputting in the log file.
10)	Close the application Disconnect the units.

## ■ LANIO の検索ダイアログ



1)	Result of searched data.
2)	When inputting the local port number (factory setting: 10003) and clicking [再検索], search commands for LANIO are sent to the port number, and then displayed responses (model name and ID number). Note: Search commands will be sent to all Lantronix devices which have same port number in the same network. If using the Lantronix devices other than LANIO, do not put anything in the “LANポート” field to prevent malfunction for the Lantronix devices.
3)	Search again.
4)	Add the selected unit to the “デバイスリスト” in the main window. If selected unit is used for other purpose, or it is not the LANIO, the unit cannot be added.

## ■ ユニットの追加ダイアログ

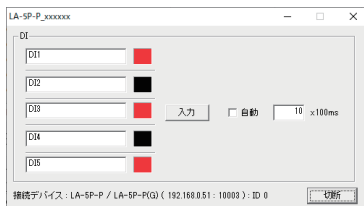


1)	Register the unit name. This name will be used for the log file name.
2)	Select the model.
3)	Select the IP address or host name
4)	Normally control port is “10003”. To use other port, mark on this box.

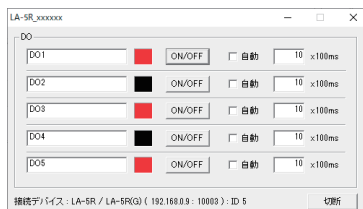
## 6-4. Operation

Each model has different control window (buttons and displays).

LA-5P-P



LA-5R



A square with gray color stands for “OFF”, and red color stands for “ON” in the control window.

Output            [ON/OFF]    Change ON/OFF of outputting.

Operation :    [Auto]        Change ON/OFF of outputting when reaching the selected time (0.1 to 999.9sec, unit 100ms).

Input            [Input]        Display the status of inputting when clicking.

Operation:    [Auto]        Display the status of inputting when reaching the selected time (0.1 to 999.9sec, unit 100ms). If marking on [ ロギング有効 ], inputting status with outputting status (for only input/output model) will be saved in the log file.

Edit signal    [Edit]        Edit the signal name (8 characters).  
name:

To end the connection, click [ 切断 ] or close the control window.

## Chapter 7 About Input Extension Function without a PC

### 7-1. About Input Extension Function without a PC

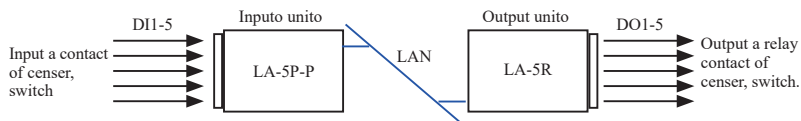
This function sends the input status of input units to the output units directly without using a PC. This function is useful to pass the status of sensor/switch (etc.) to a faraway place.

Compatible models

Input unit	Output unit	Note
LA-5P-P	LA-5R, LA-5R(G)	1 to 1 connection
LA-5P-P(G)	LA-5R, LA-5R(G)	1 to multiple connection (max.4) → "7-5 One to Multiple connection"
LA-3R3P-P	LA-3R3P-P, LA-3R3P-P(G)	1 to 1 connection
LA-3R3P-P(G)	LA-3R3P-P, LA-3R3P-P(G)	1 to multiple connection (max.4) → "7-5 One to Multiple connection"

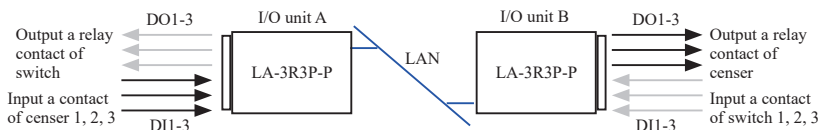
- It is possible that the LANIO may not work properly with the wireless LAN or in the network with communication delays.

#### One-Way Digital Transmit (if using LA-5P-P)



Transmit the input status of DI1 ~ DI5 to the relay contacts of DO1 ~ DO5.

#### Two-Way Digital Transmit (if using LA-3R3P-P)



Transmit the input status of DI1 ~ DI3 to the relay contacts of DO1 ~ DO3. For example, input status of DI1 for unit A (censer) is sent to DO1 for unit B, and input status of DI3 for unit B (switch) is sent to DO3 for unit A.

## 7-2. Rotary Switch

### ■ Setting of rotary switch

Set the rotary switch of input unit to "F". Turn on the power of the LANIO to validate the setting.

Setting of rotary switch	"0"to"E"	It is used as ID number. Input Extension function cannot be used.
	"F"	Valid the Input Extension function. Cannot control the device from the PC.

- The LANIO needs approx. 6 seconds to initialize after turning of the power.
- "F" can be used to specify the ID number for output devices.

## 7-3. One to One Connection

### ■ Set the fixed IP address

Input the fixed IP address for output device.

- \* : It is not recommended to use the device under the condition of DHCP validness, because the IP address might be changed.

→ "2-4. IP Address Assignment."

### ■ Set the Input Extension Function

[Preparation]

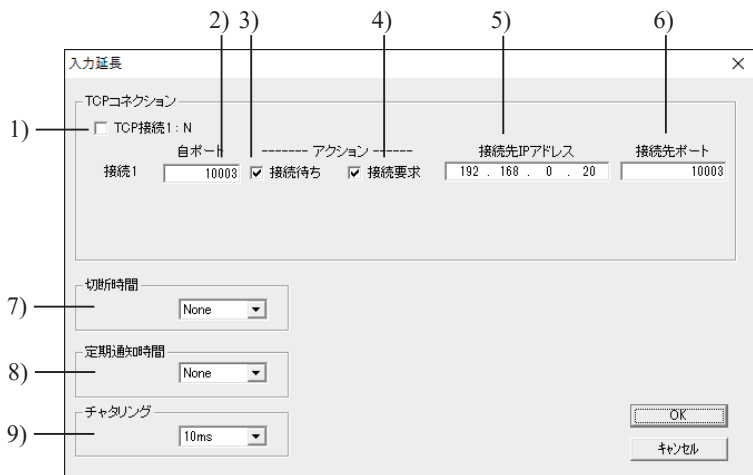
Set the rotary switch other than "F".

(Set the rotary switch to "F" when completing the settings.)

[Operation]

Connect the output device and input device to the network and turn on the power. Start the "LANIOset" and press [ 検索 ] to select the target device in the device list. Click [ 入力延長モード ] to set the configuration.

→ "2-4-1 Setting by LANIOset"



Setting of output units:

1),4): Do not mark on this box. 5),6): Do not put anything. 2): Leave it as a factory setting.

Setting of input units:

1) Do not mark on this box. 4) Mark on this box. 5),6): Set the IP address and control port number of output unit to connect. 2): Leave it as a factory setting. 7),9) Unnecessary to set for normal use. 8)Set if necessary.

Click [OK] to apply settings. Click [ キャンセル ] to correct.

1.	Only G-version have this setting (Normal version do not have). Do not mark this for one-to-one connection. Additional settings will appeared if marking on this box to set one-to-multiple connection.	*1
2.	Input the port number for itself. Leave it as the factory setting (10003) for one-to-one connection.	
3.	Mark on this box to make the device waiting for the TCP connection.	
4.	Mark on this box and the device will try to connect to the target device set on 5)6).	*6
5.	Set the IP address of target device. This will be invalid if no mark on 4).	
6.	Set the port number of target device. This will be invalid if no mark on 4).	
7.	If selecting "None"(factory setting), input device will try to keep the TCP connection. If setting any time (0 to 50 minutes, 15 units), input device will cut the TCP connection after reaching the setting time in case nothing is changed on input signal.	*2 *3 *5
8.	None (factory setting): The input device sends the LAN packet to notify the input status to the target unit (when turning on the power or changing the input status). Time (10, 30, 60, 180 seconds): The input device sends the LAN packet when reaching the set time.	*2 *4 *5
9.	Input change less than set time (4 ~ 20ms, factory setting 10ms) does not count for chattering.	*2

\*1 : → "7-5. One to Multiple Connection "

\*2 : It is for input device only.

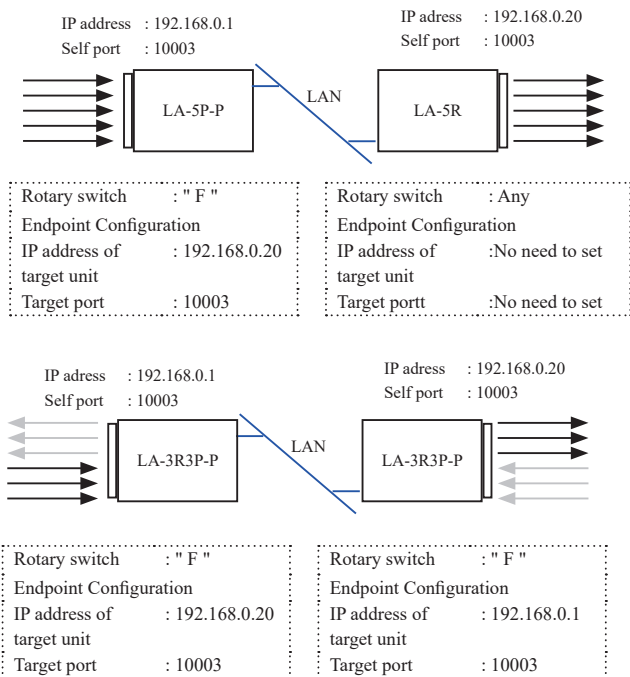
\*3 : If setting time is too short compared to the frequency of input changing, it causes the network load from connecting and disconnecting TCP repeatedly. Set "NONE " for one to multiple connection.

\*4 : It can be used when there is no power on the output device but would like to send the input status immediately after recovering the power supply of output device.

\*5 : 7) and 8) cannot be used at the same time.

\*6 : Do not mark on the box if not using the input extension function.

[Example of Settings]





## 7-4. One to Multiple Connection

Only G-version is able to set "One to Multiple TCP connection" (up to 4 units).

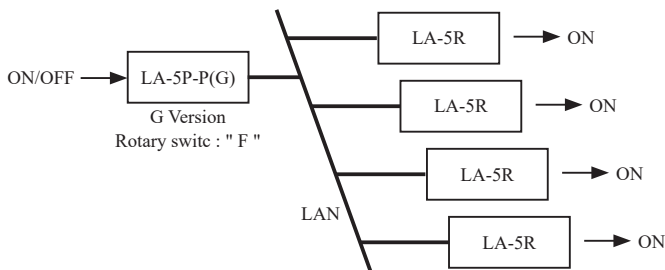
### ■ Attention

- Connect only G-version of LANIO to the network and set each unit one by one. (Do not connect other LANIO to the same network while setting.)
- Set the configuration from one PC.  
LINEEYE does not warrant the performance if using multiple G-versions controlled by multiple PCs using attached software.
- Set the rotary switch of LANIO other than "F" while setting. And then set the rotary switch of above LANIO to "F" while using them with Input Extension function.

### ■ Example: Send the contact information of LA-5P-P(G) to multiple LA-5R.

Send the DI1(DI2 ~ DI5) information to DO1(DO2 ~ DO5) on 4 units of LA-5R to be the relay ON/OFF.

Output device can be LA-5R(G), LA-5T2S, LA-5T2S(G) or LA-5T2S-P.



### ■ Example of setting

Turn on the power of LA-5R. Send the request of TCP connection from LA-5R to LA-5P-P(G).

- 1) Set the fixed IP address (for ex.: 192.168.0.100) on LA-5P-P(G).  
→ "2-4. IP Address Assignment"
- 2) Set the rotary switch of LA-5P-P(G) other than "F" and connect it to the network. Turn on the power of LA-5P-P(G). Start "LANIOset" and press [ 検索 ]. Select LA-5P-P(G) in the device request and click [ 入力延長 ].  
→ " 2-4-1. Setting by LANIOset "

Example of LA-5P-P(G) setting.

Mark on [TCP 接続 1-N] and [ 接続待ち ] on Connection 1, 2, and 3,4 to wait for the connection requests from 4 units of LA-5R. Do not mark [ 接続要求 ] on Connection 1 and 2 to prohibit LA-5P-P(G) sending the connection requests to LA-5R.

入力遅延

TCPコネクション

TCP接続1: N

	自ポート	----- アクション -----	接続先IPアドレス	接続先ポート
接続1	10003	<input checked="" type="checkbox"/> 接続待ち <input type="checkbox"/> 接続要求		
接続2	10004	<input checked="" type="checkbox"/> 接続待ち <input type="checkbox"/> 接続要求		
接続3,4	10005	<input checked="" type="checkbox"/> 接続待ち		

切替時間:

定期通知時間:

チャタリング:

OK  
キャンセル

\* Set [ 切替時間 ] to "None" for one to multiple connection.

\* Set [ 定期通知時間 ] other than "None" if turning of the power of LA-5R is later than LA-5P-P(G).

- 3) Connect LA-5R to the network and set it using "LANIOset" as followings.

Mark on [ 接続要求 ]. Input IP address and control port of LA-5P-P(G) in the [ 接続先 IP アドレス ] and [ 接続先ポート ].

Example of setting: LA-5R Number 1

Send a connection request to Connection 1 on LA-5P-P(G)

	自ポート	----- アクション -----	接続先IPアドレス	接続先ポート
接続1	10003	<input checked="" type="checkbox"/> 接続待ち <input checked="" type="checkbox"/> 接続要求	192 . 168 . 0 . 100	10003

Example of setting: LA-5R Number 2

Send a connection request to Connection 2 on LA-5P-P(G)

	自ポート	----- アクション -----	接続先IPアドレス	接続先ポート
接続1	10003	<input checked="" type="checkbox"/> 接続待ち <input checked="" type="checkbox"/> 接続要求	192 . 168 . 0 . 100	10004

Example of setting: LA-5R Number 3

Send a connection request to Connection 3,4 on LA-5P-P(G)

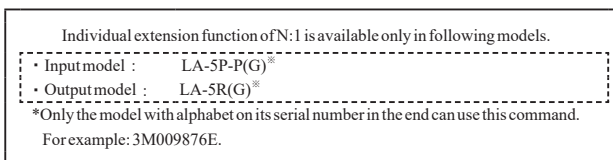
	自ポート	----- アクション -----	接続先IPアドレス	接続先ポート
接続1	10003	<input checked="" type="checkbox"/> 接続待ち <input checked="" type="checkbox"/> 接続要求	192 . 168 . 0 . 100	10005

Example of setting: LA-5R Number 4

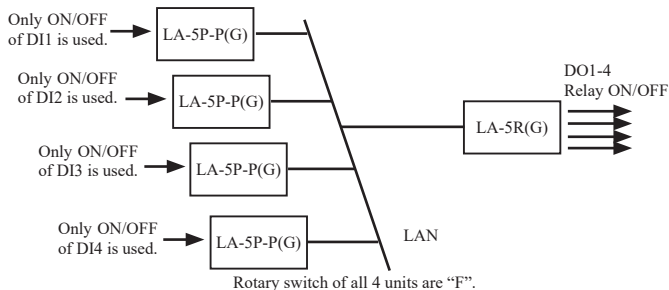
Send a connection request to Connection 3,4 on LA-5P-P(G)

	自ポート	----- アクション -----	接続先IPアドレス	接続先ポート
接続1	10003	<input checked="" type="checkbox"/> 接続待ち <input checked="" type="checkbox"/> 接続要求	192 . 168 . 0 . 100	10005

- Example of transmitting multiple inputs to one output unit. (Individual extension function of N:1)



In this case, 4 sets of LA-5P-P(G) sends each input status (DI1 to DI5) to one LA-5R(G). (DO number should not be duplicated.)



- Example of setting

Supply power to the LA-5P-P(G). Set configuration of LA-5P-P(G) to accept TCP connection to LA-5R(G).

1) Set the fixed IP address (for ex.: 192.168.0.100)

→ " 2-4 IP Address Assignment "

2) Connect LA-5R(G) to the network. Start "LANIOset" and press [ 検索 ]. Select LA-5R(G)

from the device request and click [ 入力延長 ].

Mark on 「TCP 接続 1:N」. Mark on 「接続待ち」 on Connection1 ( 接続 1), Connection2( 接続 2), Connection3,4( 接続 3, 4) to accept the connection requests from 4 sets of LA-5P-P(G) once at the same time.

Do not mark on 「接続要求」 (connection request) on Connection1 and Connection2 not to send the connection request from LA-5R(G) to LA-5P-P(G).

Click [OK].

→ " 2-4-1. Setting by LANIOset "

入力延長

TCPコネクション

TCP接続 1 : N

	自ポート	----- アクション -----		接続先IPアドレス	接続先ポート
接続1	10003	<input checked="" type="checkbox"/> 接続待ち	<input type="checkbox"/> 接続要求		
接続2	10004	<input checked="" type="checkbox"/> 接続待ち	<input type="checkbox"/> 接続要求		
接続3,4	10005	<input checked="" type="checkbox"/> 接続待ち			

3) Set the rotary switch of LA-5P-P(G) other than “F”. Connect LA-5P-P(G) to the network. Set LA-5P-P(G) using LANIOset (Ver2.15 or above).

Mark on 「接続要求」 (connection request) and set the 「接続先 IP アドレス」 (IP address) and 「接続先ポート」 (control port) of LA-5P-P(G).

Mark on 「個別延長有効」 (individual extension) and select the DI number to be controlled. (It is possible to select more than one DI. However, do not select the DI which is already selected in other unit of LA-5P-P(G).)

Example of setting of LA-5P-P(G) ①

Mark on [ 接続要求 ] (connection request) to the Connection1 of LA-5R(G) and select DI1 on individual extension.

----- アクション -----		接続先IPアドレス	接続先ポート
<input checked="" type="checkbox"/> 接続待ち	<input checked="" type="checkbox"/> 接続要求	192 . 168 . 0 . 100	10003

Example of setting of LA-5P-P(G) ②

Mark on [ 接続要求 ] (connection request) to the Connection2 of LA-5R(G) and select DI2 on individual extension

----- アクション -----		接続先IPアドレス	接続先ポート
<input checked="" type="checkbox"/> 接続待ち	<input checked="" type="checkbox"/> 接続要求	192 . 168 . 0 . 100	10004

Example of setting of LA-5P-P(G) ③

Mark on [ 接続要求 ] (connection request) to the Connection3/4 of LA-5R(G) and select DI3 on individual extension

----- アクション -----		接続先IPアドレス	接続先ポート
<input checked="" type="checkbox"/> 接続待ち	<input checked="" type="checkbox"/> 接続要求	192 . 168 . 0 . 100	10005

4Example of setting of LA-5P-P(G) ④

Mark on [ 接続要求 ] (connection request) to the Connection3/4 of LA-5R(G) and select DI4 on individual extension

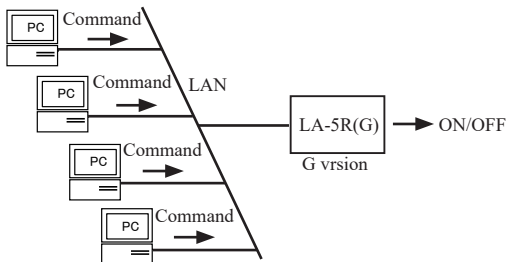
----- アクション -----		接続先IPアドレス	接続先ポート
<input checked="" type="checkbox"/> 接続待ち	<input checked="" type="checkbox"/> 接続要求	192 . 168 . 0 . 100	10005

■ Example of controlling one LA-5R(G) from multiple PCs

4 set of PCs are able to control one unit of LA-5R(G).

In the case of using F0h command (controlling relays at once), the relay keeps the status (ON/OFF) according to the F0h command which the last PC sends.

In the case of using FCh command (controlling each relay), each PC controls only designated relay (output NO.) to prevent overwriting the command.



Set configuration of LA-5R(G) to accept TCP connections from multiple PCs.

- 1) Set the fixed IP address (for ex.: 192.168.0.200) on LA-5R(G).  
→ " 2-4 IP Address Assignment "
- 2) Connect LA-5R(G) to the network. Start "LANIOset" and press [ 検索 ]. Select LA-5R(G) from the device request and click [ 入力延長 ].  
→ " 2-4-1. Setting by LANIOset "

Mark on [TCP 接続 1:N]. When controlling from 2 set of PCs, mark on [ 接続待ち ] on Connection 1 and 2. When controlling from 3 or 4 set of PCs, mark on [ 接続待ち ] on Connection 1, 2, and 3,4.

Example of setting LA-5R

The screenshot shows the '入力延長' (Input Extension) dialog box. It has a title bar with '入力延長' and a close button. The main area is titled 'TCPコネクション' (TCP Connection) and contains a table of connection settings. The table has columns for '自ポート' (Self Port), 'アクション' (Action), '接続先IPアドレス' (Destination IP Address), and '接続先ポート' (Destination Port). The 'アクション' column has sub-columns for '接続待ち' (Connection Waiting) and '接続要求' (Connection Request). The '接続先IPアドレス' and '接続先ポート' columns are currently empty.

接続	自ポート	アクション	接続先IPアドレス	接続先ポート
接続1	10003	<input checked="" type="checkbox"/> 接続待ち <input type="checkbox"/> 接続要求		
接続2	10004	<input checked="" type="checkbox"/> 接続待ち <input type="checkbox"/> 接続要求		
接続3,4	10005	<input checked="" type="checkbox"/> 接続待ち		

At the bottom right of the dialog box, there are two buttons: 'OK' and 'キャンセル' (Cancel).

- 3) Set the IP address "192.168.0.200" of LA-5R(G) from each PCs. Connect to either of 3 control ports ( 接続 1, 2 or 3,4) using TCP connection.

LANIO G-version responds to a control command sent from one PC (or to a connection processing), and replies to all PCs which are connected (or to the connection processing). Please consider not only about the commands from your PC, but also from all connected PCs (and also for the connection processing).

## 7-5. Spontaneous notification function to PC

---

As an application of the PC extension input extension function, it is possible to receive a command including input information from the input unit voluntarily to the PC.

With this method, you can construct a system that monitors the input state without sending frequent input confirmation commands from the PC.

In this case, it is necessary to install software to process the command transmitted from the input unit on the PC.

→ "9-3. Commands at input extension / spontaneous notification function."

(Applicable models of spontaneous notification function)

LA-5P-P/ LA-5P-P(G)/ LA-3R3P-P/ LA-3R3P-P(G)

### ■ Sever sample software

In the "LANIOset", mark on [ 接続要求 ] and set the IP address and port number of PC on " 入力延長 " window. Set the rotary switch of the target LANIO to "F" and supply the power.

With the "Server sample software", you can confirm the performance of spontaneous notification function.

<How to use>

Copy "LA-PC5R.exe" in the "LINEEYE/LA-PC5R\_LA-PC3R3P-P" folder in the attached CD in the appropriate folder of the PC. Click "LA-PC5R.exe" to run the software. Input necessary items and click [ サーバ←待機を開始する (S) ]. For more information, refer to the "read me file" in the same folder.

(Applicable models)

Sever software	LANIO model
LA-PC5R.exe	LA-5P-P, LA-5P-P(G)
LA-PC3R3P-P.exe	LA-3R3P-P, LA-3R3P-P(G)

## Chapter 8 Other Functions

### 8-1. Email Alert Function

Send an email to registered address when changing the input signals.

- \* LANIO normal version does not support the SMTP-AUTH mail.

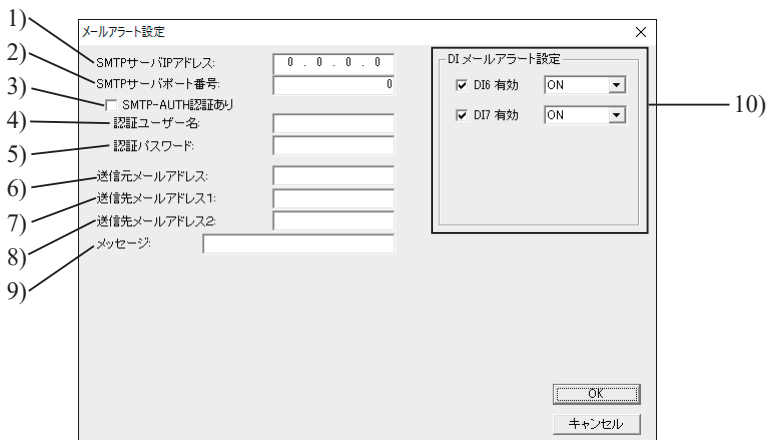
#### ■ Setting of Email alert function

[ Preparation ]

Set the rotary switch other than "F" for LA-5P-P(G), LA-3R3P-P(G) and LA-2R3P-(G).

[ Operation ]

Connect the LANIO to the network. Start "LANIOset" and press [ 検索 ]. Select the target LANIO from the device request. Click [ メールアラート ]. → " 2-4-1.Setting by LANIOset "



1.	SMTP server IP address: Input an IP address of SMTP server.	
2.	SMTP server port No.: Input a port number of SMTP server.	
3.	With SMTP-AUTH: Mark this to have the SMTP Authentication.	*1
4.	AUTH user name: Input the use name for SMTP Authentication.	*1
5.	AUTH password: Input the password for SMTP Authentication.	*1
6.	Sender address: Input the sender email address. It will be appeared on the receiver's email as the sender name.	*2 *3
7.	Receiver address1: Input 1st receiver Email address.	*2
8.	Receiver address2: Input 2nd receiver Email address.	*2
9.	Message: Input the title of Email to send.	*4
10.	DI Email alert: Set the digital input terminal and ON/OFF.	*5

- \*1: Configuration of the Email alert is only for G-version. The input contents are appeared in unreadable characters and registered in the application. We recommend you to make a note of this information.
- \*2: You cannot use “space” and unique characters which cannot be used for Email address.
- \*3: Email address before @ are used as “Unit Name” in the email alert setting. And the email address after @ are used as “Domain name”.
- \*4: Cannot use any Japanese character.
- \*5: LA-5P-P, LA-3R3P-P: When one of the marked terminals is reached to the specified status (ON/OFF), an email will be sent.

LA-5P-P

LA-3R3P-P

Confirm with the person who is in charged of the internet. Click [OK] after setting all configurations. Click [キャンセル] to revise.

The email alert function of LANIO uses the changing of CP terminals of embedded LAN devices (XPort, xPico). The relationship of input terminals and CP terminals are following.

Model	Input	Relationship of input terminals and CP terminals
LA-5P-P	DI1-DI5	Relationship of input terminals and CP terminals*
LA-3R-P-P	DI1-DI3	When either one of inputs becomes specified status, CP1 terminal of XPort becomes H(Active). *

\* Useful tools to set the input terminals, input status and input value are available from the attached CD and LINEYE webpage.



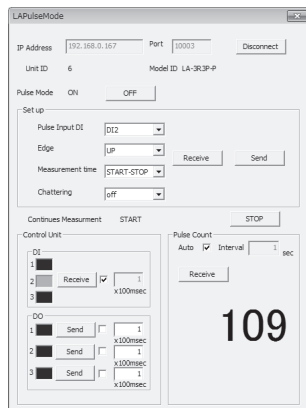
## 8-2. Pulse Count Function

LA-5P-P and, LA-3R3P-P are able to count how many times DI1 terminal have changed in the specified time automatically. Less sending commands from PC will reduce the network load.

<How to use>

Save “LAPulseMode.exe” in the “LINEEYE/LAPulseMode” folder in the attached CD. Start the “LAPulseMode.exe” and input IP address and port number. Connect the LANIO to the network and set necessary settings, then click [Start]. Refer to “Readme\_LAPulseMode.txt” for more details. The Library for input/output function is available to make your own control software.

→ "Chapter 10 Library for Input/Output Function"

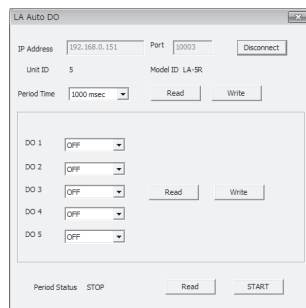


## 8-3. Auto ON/OFF Control Function

LA-5R have the Auto ON/OFF function to make the output terminal ON/OFF automatically at specified time cycle (100 ~ 14000msec). This function is useful when having ON/OFF test for a long time without sending commands repeatedly.

<How to use>

Save “LAAutoDO.exe” in the “LINEEYE/LAAutoDo” folder in the attached CD. Start the “LAAutoDO.exe” and input IP address and port number. Connect the LANIO to the network and set necessary settings, then click [Start]. Refer to “Readme\_LAAutoDO.txt” for more details.



## Chapter 9 Input/Output Controlling Commands

### 9-1. Controlling Commands

LANIO receives the controlling commands from LAN port. It is possible to make your own program which sends/receives the controlling commands to specified port number, using TCP/IP socket communication etc.

### 9-2. Controlling Commands for Input/Output Model

Controlling commands are available for following models.

LA-3R3P-P, LA-5R, LA-5P-P,

#### 9-2-1. Confirming Commands for ID number and Input Status

■ Confirming Commands for ID number and Input Status

If sending 2 bytes "55h" "55h" to the local port (factory setting: 10003), following 2 bytes of data which refers to the ID number and status of digital input (ID1 ~ ID5) will be replied.

first byte								second byte							
B7	B6	B5	B4	B3	B2	B1	B0	B7	B6	B5	B4	B3	B2	B1	B0
Input	Model ID			Unit ID				Always 1				Input	Input	Input	Input
DI1	M2	M1	M0	8P	4P	2P	1P	1	1	1	1	DI5	DI4	DI3	DI2

\*1: B7 ~ B0 refers to bit 7 (MSB) ~ bit 0 (LSB).

\*2: Unit ID (rotary switch number) is displayed in negative logic of HEX.

Example) Rotary switch number 1 = (P8, P4, P2, P1) = (1, 1, 1, 0)

Rotary switch number F = (P8, P4, P2, P1) = (0, 0, 0, 0)

\*3: Model ID is the fixed ID refers to the each model name. Followings are the model ID.

LA-5R	( M2 , M1 , M0 ) = ( 0 , 1 , 1 )
LA-5P-P	( M2 , M1 , M0 ) = ( 1 , 0 , 1 )
LA-3R3P-P	( M2 , M1 , M0 ) = ( 0 , 0 , 0 )

\*4: Input bit refers to the status of DI1 ~ DI5. "x0" stands for "OFF", and "x1" stands for "ON".

## 9-2-2. Output Controlling Commands

- Output controlling command (F0h command) for LA-5R and LA-3R3P-P

If sending following 2 bytes “F0h” “000xxxxxb”, output status of DO5 ~ DO1 are set. Then, the same 2 bytes will be returned. “xxxxx” refers to the output status.

Second byte							
B7	B6	B5	B4	B3	B2	B1	B0
Always zero			Output Setting				
0	0	0	DO5	DO4	DO3	DO2	DO1

\*1 : Output setting bit “0” stands for “OFF”, and “1” stands for “ON”.

- Output confirming request (E0h command) for LA-5R and LA-3R3P-P

If sending “E0h” to the local port (factory setting: 10003), “E0h” “000xxxxxb” (Bit0(DO1) ~ Bit4(DO5)) will be returned. “xxxxx” refers to the current output status.

- Output controlling command to the specific DO (FCh command) for LA-5R(G)/LA-5T2S(G).

Only specific DO (out of 5 DOs) can be selected to be controlled. This command is useful to control 1 set of LANIO unit from multiple PCs.

\* : Only LA-5R(G)/LA-5T2S(G) with alphabet on its serial number in the end can use this command.

For example.: 3M009876E.

Send “FCh”, “000xxxxxb”, “000yyyyyb” to the local port (factory setting: 10003). Only specific DO selected on 3rd byte becomes the status selected on the 2nd byte. Other DO keep the status from the beginning. Also, it updates the status of DO and returns 2byte (FCh, 000xxxxxb)

Second byte								Third byte							
B7	B6	B5	B4	B3	B2	B1	B0	B7	B6	B5	B4	B3	B2	B1	B0
Always 0			Output setting					Always 0			Control mask				
0	0	0	DO5	DO4	DO3	DO2	DO1	0	0	0	MO5	MO4	MO3	MO2	MO1

\*1 : Output setting bit “0” stands for “OFF”, and “1” stands for “ON”.

\*2 : Control mask (MO1 to MO5) bit “0” stands for “invalid (keeping status)” and “1” for “valid”.

Example)

Command: FCh, 01h, 03h (3byte)

Response: FCh, 05h (2byte)

This command makes DO1 to be “ON”, DO2 to be “OFF”, and other DO keep their status. And, the meaning of response is DO1 is “ON” and DO3 keeps its status of “ON”.

■ Auto ON/OFF control for LA-5R

LA-5R are able to turn ON/OFF the selected output terminal (DO1 ~ DO5) at specified time cycle. To have the Auto ON/OFF control, send following 1byte or 2byte of command. At the beginning, Auto ON/OFF control will change the status of output terminals to opposite status

Auto ON/OFF control	1st byte	2nd byte	Action of LA-5R
Start	F1h	01h	Start Auto ON/OFF control and return "F1h","01h".
Stop		00h	Stop Auto ON/OFF control and return "F1h","00h".
Set ON/OFF time cycle	F2h	000xxxxxb	Set the time cycle of Auto ON/OFF control which is set in "x". Then return the same "F2h","000xxxxxb". (*2)
Set target terminal	F3h	000xxxxxb	Set the terminal of Auto ON/OFF which is set in "x"(DO0 ~ DO5). Then return the same "F3h","000xxxxxb". (*1)
Confirm status	E1h	None	Return "E1h", "01h"(ON) or "E1h", "001h"(OFF) which stands for the current status of Auto ON/OFF
Confirm time cycle	E2h	None	Return "E2h", "000xxxxxb" which stands for the current time cycle. (*2)
Confirm terminal	E3h	None	Return "E3h", "001xxxxxb" which stands for the current control terminals. (*1)

\*1: If the second byte is "1", the corresponded terminal will be the target terminal. If setting "0", there will be no target. The factory setting is all "0" ( no target).

Second byte							
B7	B6	B5	B4	B3	B2	B1	B0
Always zero			Auto ON/OFF controlling terminal				
0	0	0	DO5	DO4	DO3	DO2	DO1

- While using the Auto ON/OFF control, output controlling commands (F0h command and FCh command) will be ignored.

\*2: If "xxxxx" is between "00h" ~ "13h", (xxxxx +1)x100ms will be set.

For ex.) F2h, 00h=100ms, F2h,01h=200ms, F2h,13h=2000ms

If "xxxxx" is between "14h" ~ "1Fh", 3+(xxxxx -20) second will be set.

For ex.) F2h,14h=3 seconds, F2h,15h=4 seconds, F2h,1Fh=14 seconds

\*3: While using the Auto ON/OFF control, output controlling commands (F0h command and FCh command) will be ignored.

\*4: It is not possible to change the time cycle for each terminal. The factory setting is 1000msec.

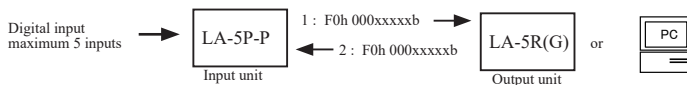
### 9-3. Commands for input extension / spontaneous notification function

An input unit whose rotary switch is set to "F" automatically sends a control command to inform the output unit of the input status according to the input change or the periodic notification time setting. A PC on which an output unit or server software is installed receives this control command and reflects the input state on its own output or for various control according to the input state.

<Input models which support spontaneous notification function>

LA-5P-P / LA-5P-P(G) / LA-3R3P-P / LA-3R3P-P(G)

#### ■ Command and response of input-only model such as LA-5P-P



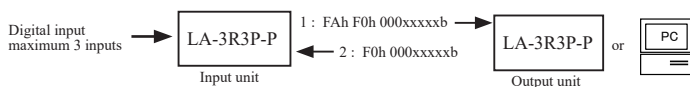
1: The input unit such as LA-5P-P transmits an output command corresponding to the input status when the status changes or according to the setting of periodic notification.

The xxxxx bit in the second byte is the value corresponding to the input status (DI5 to DI1) (1 means ON).

2: Receiving the output command the output unit such as LA-5R controls its output depending on the command and then returns the command to the input unit as a response. When you use PC to receive the input status from the input unit, return the response as the output unit does.

First byte								Second byte							
B7	B6	B5	B4	B3	B2	B1	B0	B7	B6	B5	B4	B3	B2	B1	B0
Always one				Always zero				Always zero				Input Setting			
1	1	1	1	0	0	0	0	0	0	0	DO5	DO4	DO3	DO2	DO1

## ■ Command and response of LA-3R3P-P



- 1: The unit on the input side transmits FAh plus output command (F0h, 0000xxxxb) which includes the input status when the input status changes or according to the setting of periodic notice. The xxx bit in the 3rd byte is the value corresponding to the input state (DI3 to DI1) (1 means ON).
- 2: Receiving the output command the unit on the output side controls its output depending on the command. Then deducting FAh from the output command and the unit on the output side returns the rest 2 bytes to the unit on the input side as a response. When you use PC to receive the input status from the unit on the input side, return the response as the unit on the output side does.

\* : When the input unit in the above figure is LA-3R3P-P(G), by sending FAh, F0h, 0000xxxxb (xxx corresponds to DO3 to DO1 of the input / output unit, 1 is on) commands from the PC you can control the relays of the unit.

[Note : when installing server software on PC]

- To the PC assign the IP address and the port number which is set to the LANIO unit as a destination IP address and port number for TCP connection. The IP address should be a fixed IP address.
- When setting the unit, set the rotary switch to other than "F".
- When you disconnect the TCP connection between the unit (client) and PC (server) from the PC side, send the response to the unit before disconnect it. Please note that disconnected without the response the unit resends the control command continuously.  
Please note that the control command will be continuously retransmitted from.
- After setting "F" to the rotary switch, never send the commands other than 2 bytes response starting with F0h and 3 bytes control command starting with FAh. Especially please note do NOT send status check commands such as 55h, 55h command and E0h command. (55h, 55h command, E0h command etc) Please never send.

## Chapter 10 Library for Input/Output Function

Library of input/output function for Visual Basic and Visual C++ and sample program with source code are available. These tools are useful to develop your own control system in the PC. For more details for input/output function, refer to “LIBRARY.TXT” in “LINEEYE/Library” folder in attached CD.

[Example of Input/Output Function]

LELanioInit()	Initialize LANIO.
LELanioEnd()	End LANIO.
LELanioGetLastError()	Get the error code.
LELanioSetAutoRequestIdModel(BOOL enable, int port)	Set Auto ID and request the model code.
LELanioSearch(int msec)	Search the LANIO on LAN network.
LELanioGetIpAddress(int lanio, char *ipaddress)	Get the IP address. <sup>*1</sup>
LELanioGetMacAddress(int lanio, unsigned char *macaddress)	Get the MAC address. <sup>*1</sup>
LELanioRequestIdModel(int lanio, int *id, int *model)	Request the ID and model code. <sup>*1</sup>
LELanioGetId(int lanio, int *id)	Get the ID number. <sup>*1</sup>
LELanioGetModel(int lanio, int *model)	Get the model code. <sup>*1</sup>
LELanioConnect(int lanio)	Connect the LANIO with specified number. <sup>*1</sup>
LELanioConnectByIdModel(int id, int model)	Connect with specified ID and model code. <sup>*1</sup>
LELanioConnectByIpAddress(char *ipaddr)	Connect with specified IP address. <sup>*1</sup>
LELanioConnectByMacAddress(unsigned char *macaddress)	Connect with specified MAC address. <sup>*1</sup>
LELanioConnectDirect(char *address, int msec)	Connect directly with specified IP address. <sup>*1</sup>
LELanioClose(hLANIO handle)	Close.
LELanioOutPio(hLANIO handle, int pio, BOOL active)	ON/OFF control for specified DO signal.
LELanioOutPioAll(hLANIO handle, int piobit)	Control all DO signals.
LELanioInPio(hLANIO handle, int pio, BOOL *active)	Input specified DI signal.
LELanioInPioAll(hLANIO handle, int *piobit)	Input all DI signals.
LELanioGetOut(hLANIO handle, int pio, BOOL *active)	Confirm status of specified DI signal.
LELanioGetOutAll(hLANIO handle, int *piobit)	Confirm status of all DO signals.
LELanioSetAutoSwitchingActive(hLANIO handle, BOOL active)	Start/stop the Auto ON/OFF control. <sup>*2</sup>
LELanioSetAutoSwitchingTime(hLANIO handle, int msec)	Set time cycle of Auto ON/OFF. <sup>*2</sup>
LELanioSetAutoSwitchingPio(hLANIO handle, int autoswdo)	Set terminal of Auto ON/OFF. <sup>*2</sup>
LELanioSetDisconnectionTime(hLANIO handle, int time)	Set closing time. <sup>*3</sup>
LELanioSetDiDetectTime(hLANIO handle, int time)	Set time cycle of DI detection. <sup>*3</sup>
LELanioSetDiMailEnable(hLANIO handle, int enable)	Set DI email alert. <sup>*3</sup>
LELanioSetDiMailLogic(hLANIO handle, int logic)	Set logic of DI email alert. <sup>*3</sup>

\*1 : Valid for the LANIO which is found by “LELanioSearch”.

\*2 : Valid for LA-5R

\*3 : Valid for LA-5P-PLA-3R3P-P

\* Library for output/input function and sample program are provided as a license-free. LINEEYE does not provide any support for these tools for free.

LINEEYE is able to develop the application and support with a fee. Please contact LINEEYE.

## Chapter 11 Warranty and After Sale Service

### 11-1. Trouble Shooting

- LED of “PWR” does not light

<If using AC adapter> Check the connection with the AC adapter.	Check the connection of AC adapter jack with the LANIO, and AC plug pin with the outlet.
<If supplying power form connector> Check the connection with the connector of power supplying cable.	Check the wire connection of the cable.

- LEDs for “10/100Base-TX link” do not light (no blinking)

Check the LAN cable.	Try to use another LAN cable. If connecting to a PC, used a cross wiring cable.
Check the HUB device.	Try to use another port of HUB.

- Cannot connect the LANIO from the network.

Does LANIO respond to the ping command?	<ul style="list-style-type: none"><li>• Check the IP address etc.</li><li>• Check whether the firewall or router shut off the connection.</li><li>• Change the setting of security software not to shut off the communication with the LANIO.</li></ul>
Check the port number.	Input the correct port number in the software.
Check the connection mode.	Confirm the connection mode.

- Cannot control from the controlling software (LA-PC10)

Do not mark on “Apply Defaults” in the Web configuration setting.	It is for the manufacture of XPort and different from the factory setting of LANIO. Reset the LANIO to the factory setting.
---	---

- Cannot turn ON/OFF the outputs.

Does the LEDs of input/output turn on the lights when controlling from the PC?	If not, check the operation using the controlling software.
Has ever LA-5T2S(-P) connected to the external device with wrong power polarity, or made a short-circuit?	It is possible that the relay or transistor of the LANIO broke down. Check the current on the terminal using an appropriate tester.

- Cannot confirm ON/OFF of inputs.

Do LEDs of inputs turn on lights when turning ON the external censer or switch?	If not, check the connection between LANIO and censer/switch. If the polarity of external power is wrong, LANIO would not operate @rp@er;u. If supplying power source more than the specification, it will cause the malfunction.
Confirm the input status from PC.	Do you use your own software? Try to operate the LANIO by attached software (LA-PC10).



- An Email is not sent when using Email alert function.

Do you use the Email server (for sending) which exists in the external LAN?	To use the external LAN server, IP address, Subnet Mask and Gateway are necessary to be set.
Do you use the provider's email server (for sending)?	It is common that provider's email server uses the SMTP authentication to prevent the junk mails. Normal version of LANIO does not support the SMTP authentication. If using G-version of LANIO, check the password ect. → " 8-1. Email Alert Function "

- Cannot use the input extension function.

Check the rotary switch.	Set the rotary switch to "F" for input device. → " 7-3. Rotary Switch "
Is the setting of device which accepts the TCP connection uses DHCP?	It is possible that IP address might be changed by the DHCP. Set the fixed IP address for the device accepting the TCP connection.
Do the input device and output device use the same power source?	If output device turns on the power after input device, try to use the " 定期通知時間 ".
Do you use a wireless HUB?	LANIO may not work properly if using the wireless HUB and router.

- Cannot control the LANIO from 2 PCs.

Do the 2 set of PCs try to connect LANIO at the same time?	Normal version of LANIO cannot connect to multiple PCs at the same time using TCP connection. On the other hand, G-version supports 4 set of PCs at the same time using TCP connection.
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## 11-2. Warranty and Repair

- Within a period of 12 months from the date of shipment, LINEEYE warrants that your purchased products (excepting consumable parts) are free of charge from any defects in material and workmanship, only when the products are operated in accordance with procedures described in the documents supplied by LINEEYE.

If the defects exist during the Warranty period, please send back the products to LINEEYE distributors or LINEEYE office. LINEEYE will repair or exchange them at no charge. In this case, the shipping charge will be at your own expense.

- The foregoing warranties are the sole warranties given by LINEEYE. Above warranties shall not be applied to the products that have been modified, repaired or altered (excepting by LINEEYE employees) or that have been subjected to unusual physical or electrical stress, misuses, abuse, negligence or accidents.  
LINEEYE disclaims all other warranties including the warranties of merchantability, fitness for some particular purposes and non-infringement of third party right. LINEEYE cannot promise that the software is error-free or will operate without any interruption.

- Repair

LINEEYE will repair the products at your own expense. For malfunction, please contact the LINEEYE distributors where you purchased at. Or, contact us directly. If your product needs to be repaired, please read details about a repair on our web page and ask for a repair.

### 11-3. After-Sales Service

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LINEEYE web site introduces technical information (specifications, FAQ, latest version of controlling software, library etc.). LINEEYE is able to answer your technical questions by Mail Form (click “contact us” on our web site). For any questions regarding to developing software, such as how to use the library for input/output function, source code for sampling program, will be provided with a fee. To receive any technical assistance from LINEEYE, you need to register you products from the registration page on our web site.

### 11-4. Options

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Name	Model	Explanation
Wide input AC adapter	6A-181WP09	Input: AC100-240V, 50/60Hz Output: DC9V, 2A Plug: Center Plus, external diameter 5.5mm, internal diameter 2.1mm Standard: PSE/UL/CUL/GS/CCC/CE Temperature: 0-40°C
Power brabch cable	LAH-2XH	Supply power to the 2nd LANIO. Both XH connectors. Length 0.2m. AWG#22
Power cable	LAH-15XH	Supply power from external DC. One side is XH connector cable. Length 1.5m. AGW#22 *Same as the cable included in LANIO.
LAN cable	SI-C5EL-C3	UTP straight cable. Category 5. Length 3m.
DIN rail mounting plate	SI-DIN70	
DIN vertical munting plate	SI-DNI30	
Magnet	SI-MG70	Use to insert LANIO to the steal wall etc.
5.08mm pitch terminal 10poles	LA-10ETB41	5.08mm pitch terminal 10poles

### 12-1. Connect one LANIO and one PC (1 by 1 connection)

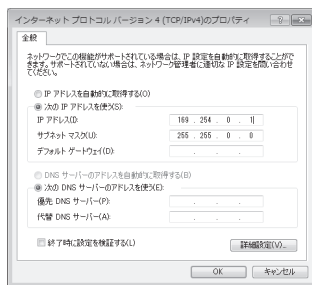
It is possible to connect one set of LANIO and a PC before connecting it to the network. However, changing the network setting of PC is necessary. This method can be used for revising the wrong IP address, subnet mask and default gateway.

\* The following descriptions are for Windows7 Professional. If using different OS, some may be different.

#### ■ Network setting of PC.

Change the network setting of PC temporary. If the PC is already connected to the network, note the current settings to memorize.

- 1) Go to [Control Panel] -> [Network and Sharing Center]
- 2) Go to [Change Adapter Setting] and right click on "Local Area Connection".
- 3) Click [Internet Protocol Version 4(TCP/IPv4)]
- 4) Click [Property]
- 5) Open [General] tab on the "Internet Protocol Version 4(TCP/IPv4)" window and mark on [Use this IP address]. If the LANIO is factory setting, set the IP address as "169.254.0.1" and subnet mask "255.255.0.0". If using specific IP address and subnet mask, input those settings. Do not put anything on other settings (default gateway etc.) for any case.
- 6) Click [OK] and close the window.



#### ■ Connect one LANIO and a PC.

Connect one set of LANIO and a PC using a cross LAN cable. Use a straight LAN cable if using them via HUB.

#### ■ Confirm operation

Confirm the operation of LANIO using controlling software (LA-PC10).

→ " Chapter 6 Controlling Software "

## 12-2. Factory Setting

Attached software “LANIOset” can save and read the which include settings of LANIO. It is useful to copy the settings to multiple devices, or set the device to the factory setting.

### [ Preparation ]

“SetupRecord” file in the attached CD has the factory settings of each model. Make an appropriate fold (ex. C:/lanio) and copy “SetupRecord” file in the “LINEEYE/SetupRecord” in the CD.

Choose the appropriate file referring following file name.

Normal version -> model name

G-version -> model name with “G”.

(ex.) LA-5P-P normal version: LA\_5P\_P\_Vxxxx.rec

LA-5P-P G-version: LA\_5P\_P(G)\_Vxxxx.rec

### Note:

- Security information such as password cannot be saved.
- Saved “SetupRecord” files can be used for same model of LANIO (same version), and cannot be used for other models. If writing to wrong models, it causes malfunctions.
- While wring the “SetupRecord” file, do not turn off the power of LANIO. It causes malfunctions.
- If firmware version of embedded LAN device is before V6.8.x.x, do not use the “SetupRecord” file in the attached CD.

### [ Operation ]

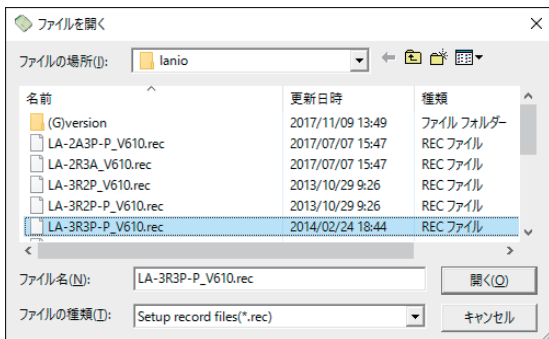
- 1) Start “LANIOset” and search target device.

Connect the LANIO to the network and turn on the power. Start “LANIOset” and click [ 検索 ]. Select the device from the device list.

→ “2-4-1. Setting by LANIOset ”

- 2) Write settings in a lump

Click [ 設定一括書込 ] and select the folder/file which saves the “SetupRecord” file (ex.C/lanio), then click [OK]. After writing the settings to the target devices, click [OK] to reboot the PC. It will take about 10 seconds to reflect the settings.



## 12-3. Factory Setting

Factory settings of LANIO are followings.

IP address : DHCP, AutoIP valid

Telnet password : None

Communication condition

Protocol : RS232, Baud Rate : 115200, Data Bits : 8, Parity : None, Stop Bits : 1

Flow Control : CTS/RTS(Hardware) or None \*1

### Channel 1

Disable Serial Port

#### Port Settings

Protocol:        Flow Control:

Baud Rate:        Data Bits:        Parity:        Stop Bits:

\*1 : "None"(No flow control) for LA-3R2P, LA-7P-A, LA-7P-P. "CTS/RTS (Hardware)" for other models including G-versions.

CP Terminals

Normal Model

Item	Setting					
	LA-3R2P	LA-7P-A LA-7P-P	LA-5R LA-5T2S	LA-5P-P LA-3R3P-P	LA-5T2S-P	LA-2R3A LA-2A3P-P
CP1	General Purpose I/O (Output)	General Purpose I/O (Input)	HW Flow Control Out	General Purpose I/O (Input)	General Purpose I/O (Input)	General Purpose I/O (Input)
CP2	General Purpose I/O (Output)	General Purpose I/O (Input)	General Purpose I/O (Input)	Modem Control Out	Modem Control Out	Modem Control Out
CP3	General Purpose I/O (Output)	General Purpose I/O (Input)	HW Flow Control In	Modem Control In	HW Flow Control In	Modem Control In
Active Level	Low	High	High	High	High	High

G-versions

Terminal	Function	I/O	Trigger	Active Level	Others
CP1	General Purpose I/O	Input	None	Active Level High	*1
CP2	General Purpose I/O	Input	None	Active Level High	*1
CP3	Modem Ctrl Channel Out	-	-	Active Level Low	
CP4	Modem Ctrl Channel In	-	-	Active Level Low	*2
	General Purpose I/O	Input	None	Active Level Low	*3
CP5 ~ 8	General Purpose I/O	Input	None	Active Level Low	

\*1 : Use the terminal as email alert terminal

→ " 8-1. Email Alert Function "

\*2 : LA-5P-P(G),LA-3R3P-P(G)

\*3 : For LA-5R(G)

Other setting

●Serial Setting

Pack Control

LA-2R3A/(GC),LA2A3P-P/(GC)

Enable Packing : Yes Match Bytes : 0xC8 0x00 Send Frame Immediate : Yes

LA-2R3A/(GC),LA-2A3P-P/(GC)

Enable Packing : No

●Connection

TCP connection setting when waiting for connection Channel 1.

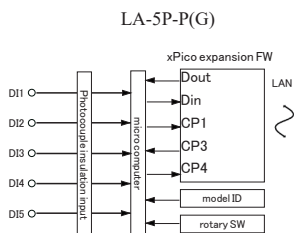
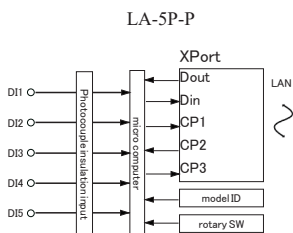
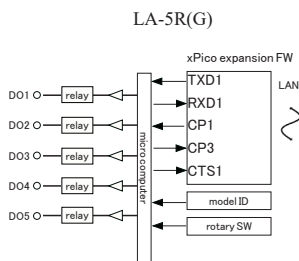
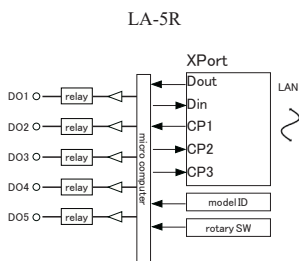
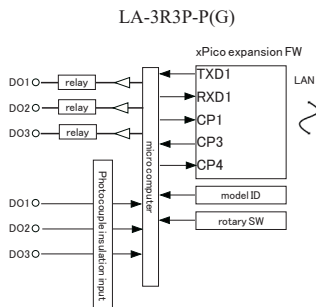
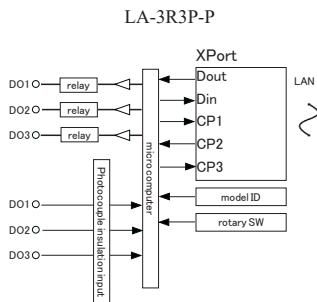
Connection Channel	Accept Incoming	Active Connect:	Local Port:
Channel 1	Yes	None	10003
Channel 2	No	None	10003
Channel 3,4	No	-	10005

Disconnect Mode

For LA-5P-P/(G) and LA-3R3P-P/(G),set "OnMdm\_Ctrl\_In Drop" to be "Yes".On Mdm\_Ctrl\_In Drop : Yes

For other models, set "OnMdm\_Ctrl\_In Drop" to be "No".

## 12-4. Hardware Block



There is a registration page on our web site.  
( <http://www.lineeye.com> )  
Please register your product for further support. We  
will provide you the firmware update information  
and sales information etc.

# LINEEYE CO., LTD.

4F., Marufuku Bldg., 39-1, Karahasi, Nishihiragaki-cho, Minami-ku, Kyoto, 601-8468, Japan  
TEL: 075-693-0161 FAX: 075-693-0163

URL: <http://www.lineeye.com>  
Email: [info@lineeye.co.jp](mailto:info@lineeye.co.jp)

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