PATLITE®

B95100524_01

Signal Tower

Operation Manual

Model LA6-POE

PATLITE Corporation

Table of Contents

1. Introduction

Thank you very much for purchasing our PATLITE product.

- Request the installation and wiring be performed by a professional contractor if construction work is involved.
- Prior to installation, read this manual thoroughly before using this product to ensure correct use.
- After reviewing this manual, if there are any questions regarding this product, please contact the nearest PATLITE office listed on the back cover of this manual.

Notice

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- This product meets severe quality control and inspection requirements prior to shipment, but if some failure or defect is found, please contact the place of purchase, or your PATLITE Sales Representative (indicated on the last page) to solve the issue.
- Please understand that our company does not take any responsibility for damage and other disadvantages this product (software is included) has caused due to the customer using this product outside its designed application, such as for home, office and industrial use, high security applications such as medical or systems related to human life, directly or inderectly, or from claims from any third parties.
  Also understand, prior to use, no responsibility is taken at our company for damages or other disadvantages, due to customers use of this product beyond the scope of its general application, or from any claims made from third parties.
  When using this product for applications in which equipment of higher reliability than the general application demands, such as a computer system, etc., please use suitable safety design countermeasures against system failure, etc.
- Please understand that our Company does not take any responsibility for damage and other disadvantages this product (software is included) has caused due to the customer using this product, or any claims from third parties.

1.1. Safety Precautions

- In order to prevent any damage to the user and other personnel or to assets, note the following:
- The following symbol classifies and explains the level of harm inflicted when caution is disregarded while using the product.

⚠ WARNING	This symbol indicates an imminently dangerous condition: failure to follow the instructions may lead to death or serious injury.
⚠ CAUTION	This symbol indicates a potentially dangerous condition: failure to follow the instructions may lead to slight injury or property damage.
⚠ NOTICE	Indicates something to observe before using this product. The disregard to this indication may lead to product malfunction or failure.

■ Meaning of the symbols

Degree	Symbol	Contents
Prohibited		Indicates it is forbidden.
Caution		Indicates to show caution.
Directions		Indicates when a procedure must be performed.
Description	MEMO	Indicates a supplementary explanation.

1.2. For safe application, observe the following:

⚠ WARNING

- To prevent from shock, short-circuits or damage, observe the following:
  - Be sure the power is disconnected before replacement (fuse exchange, etc.) or repair.
  - Use this product in a properly maintained condition. (Replace or repair if the body, LED unit, etc. are damaged.)
- Request the installation and wiring be performed by a professional contractor if construction work is involved. Failure to comply may result in fire, electric shock or falling from high places may occur.

⚠ CAUTION

- Do not listen to a buzzer at close range. Failure to observe this may lead from irritation to permanent damage to the ears.
- In order to maintain protection of this product against dust and waterproofing performance, be sure to use the head cover, buzzer unit, USB cover and LAN Bracket in the condition that it was originally attached. (TN Direct Mount Type)
- Do not operate this product with the 'O' ring or waterproof packing removed. Waterproof performance will drop and possibility cause failure. (TN Direct Mount Type)
- **By all means, do not apply voltage to the Common wire (COM) or Flashing Common line. Product failure will occur.**
- When removing covers or packing from the equipment, which is attached to this product, be careful not to snag the product. Failure to comply may result in damage to the product.
- Do not drop, or allow this product to fall. Failure to comply may result in damage to the product.

⚠ NOTICE

- To ensure proper safety while using the signal tower, observe the following:
  - Perform periodic pre-maintenance.
  - As a precaution against problems occurring, Use this product together with other equipment.
- Be sure to discharge any static electricity from the body before handling static sensitive parts of this product. (To prevent damage from static electricity, touch hands or other body parts to metals or an earth ground to discharge the body from static charge.)
- Use a soft cloth, etc., dampened with water to wipe the main signal tower unit. (Do not use cleaners containing chemicals such as thinner, alcohol, gasoline or oil.)
- To ensure safety when this product is installed onto equipment, observe the following:
  - Do not remove parts beyond those designed to be removed from this product.
  - Do not modify or disassemble this product.
  - Use only the specified replacement parts listed in comprehensive manual.

Contrary to Warnings and Cautions indicated in this document, product failure due to mishandling, disassembly, modifications or natural disasters, etc. is not covered by any Warranty.
Moreover, avoid any applications outside those indicated in this document.

1.3. Product Features

This product has a new "Smart Mode" function; in addition to the"Signal Tower Mode", which can directly control the LED and buzzer like a standard signal tower. In the "Smart Mode", various displays can be shown, such as a slow flashing rate, simulating that of a firefly and a display that can be used as a level meter.
In addition to the signal line input control, since it is compatible with the Power over Ethernet (henceforth, PoE), it can be operated through a LAN Cable to acquire signal tower status conditions via the network, and control it in the Signal Tower Mode or Smart Mode. Also, this product can use the mirroring function, in which one signal tower can show the same status as the other, but in a different location.
Since the Signal Tower is the LA6, the dedicated application software, "EDITOR for LA series" can be used to reflect the setting data via the network.
* Visit our company's home page and download the latest application software for free.

1.4. Trademarks

Internet Explorer is a trademark or registered trademark of Microsoft Corporation.
Google Chrome is a trademark or registered trademark of Google Inc.

2. Model Number Configuration

2.1. Model Number Configuration

	Model	LED Tiers	Rated Voltage	Mounting Specifications	Body Color	Flashing/ Buzzer	Extended Functionality
Model Number	LA6-	5	D	↓	W	B	-POE

Common to all models
Rated voltage: DC24V.

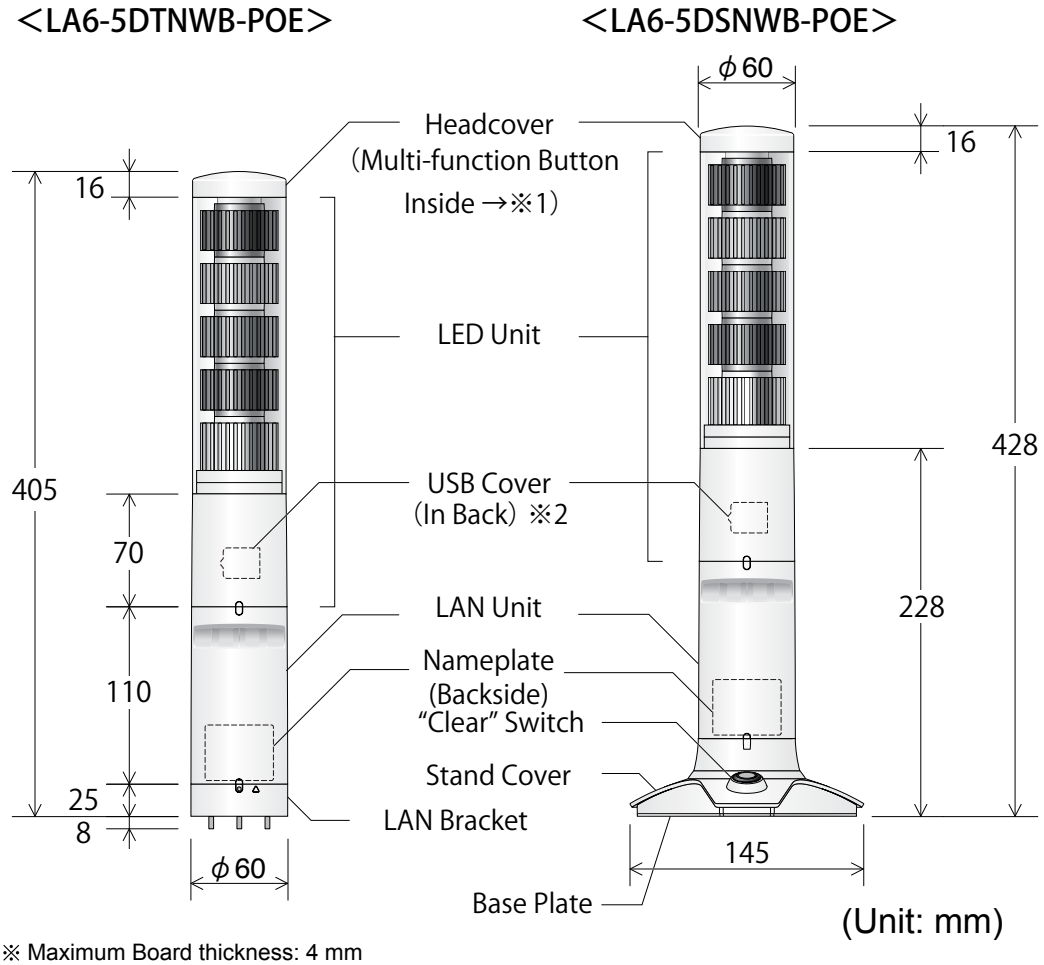
TN Direct Mount
SN Stationary

Common to all models
W Off-white

Common to all models
B Flashing/Buzzer

Common to all models
PoE Supported

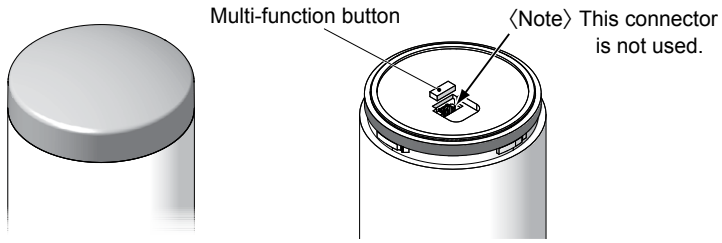
2.2. Part Names and Dimensions



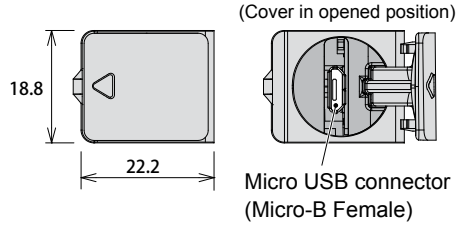
※ Maximum Board thickness: 4 mm

※ 1 Multi-function Button (Remove Head Cover)

Remove the head cover by turning it to the left to release it from the locked position.
(To re-assemble, perform the steps in the reverse order.)



※ 2 USB Cover (Detailed Parts)



<NOTE> - To open the USB Cover, insert a minus driver (blade-edge width of 3mm, thickness of 0.5 mm or less) in the indented part and lightly pry it open. (Use an object made of ceramic to avoid scratching or damaging the Body.)
- Ensure the USB cover is closed at all times. If not securely closed, the waterproof performance will decrease.

3. Installation

⚠ CAUTION

- The clamping surface should be sufficient enough to tolerate the weight and surface of the product. Do not use the product in a place where vibrations exceeds the specifications. Failure to comply may result in the prevention of the product detaching and falling, causing injury to a passer-by, etc.
- Install the signal tower in an upright position.
- In cases where the installation placement is unavoidably irregular, and waterproof performance is required, use a sealant to the crevice between the product and the installation surface. (TN)
- If an IP54 rating is required, when clamping each bracket, place sealant to the distribution hole area and the screw thread or nut. (TN)
- Do not run LAN cable from outside. There is a risk of exposure to lightning strikes or other adverse weather conditions.
- The LAN Unit and Stand Cover cannot be separated. (SN)
- Before placing the rubber sheet onto the bottom plate, be sure to removedust, water, oil, etc., on the bottom plate and the installation location. (SN)
- The LAN cable and wiring is not included.

3.1. How to Install

3.1.1. Direct-mount Type

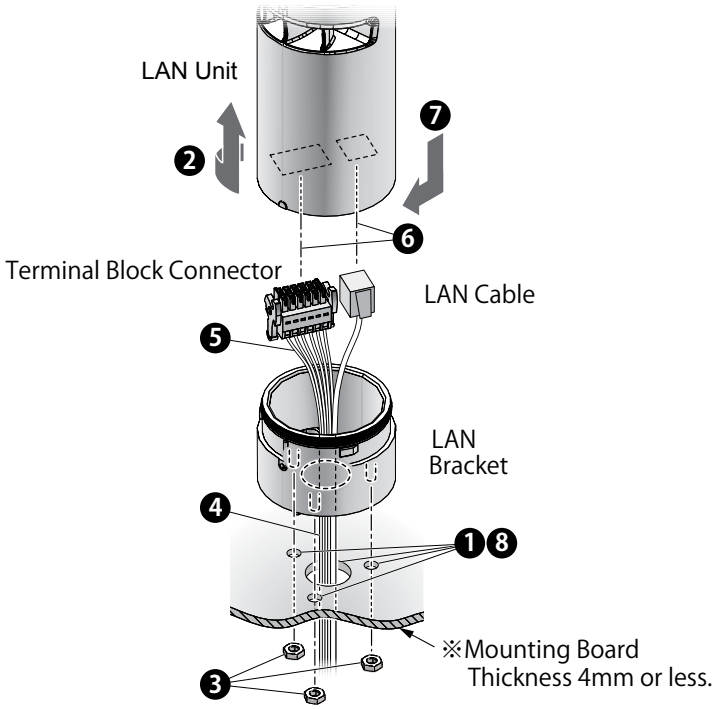
1. Make holes for the mount and wire distribution hole for the product.
2. Firmly hold the LAN Unit, and the turn to the left to remove it.
3. Secure the LAN bracket with the accessorized nuts.

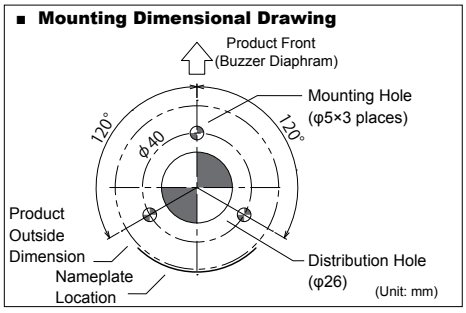
Recommended Torque
0.75N/m (Standard)

4. It allows the LAN cable wiring to pass through the distribution hole.
5. The lock on the terminal block connector can be unlocked and removed for wiring.

   (Refer to "3.3.3. Terminal block connector detachment method")
   (Refer to "3.4. Wiring")
6. The LAN unit is connected to the terminal block connector and LAN cable.
7. The LAN unit is attached.
8. Sealing around the mounting holes and the distribution hole is done if necessary.

※ The figure shows the most common installation circumstances, but cannot show for every possible circumstance.





3.1.2. Stationary Type

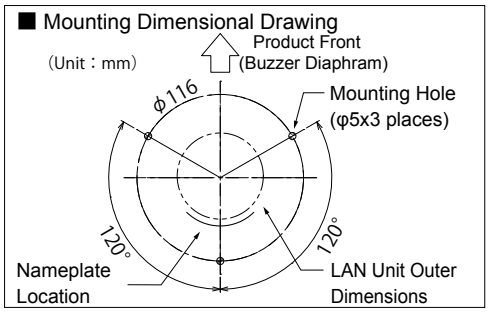
1. Loosen the screw to remove the bottom plate. (Do not completely remove the screw.)
2. The lock on the terminal block connector can be unlocked and removed for wiring.

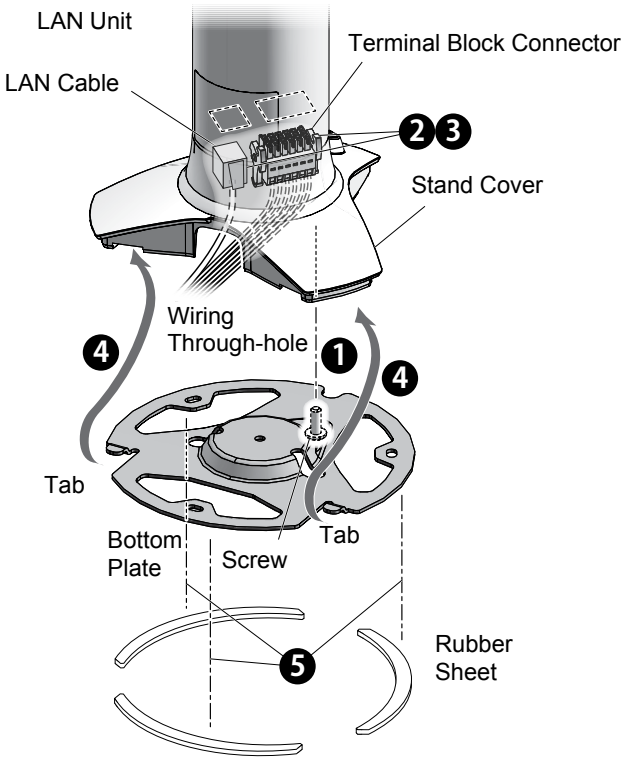
(Refer to 3.1.3. Terminal block connector (Detachment Method))(Refer to 3.2. Wiring)

3. The LAN unit is connected to the terminal block connector and LAN cable.

Recommended Torque
0.6N/m (Standard)

4. The tab on the bottom of the stand cover is hooked in place and secured with a screw.
5. Apply the rubber sheet onto the bottom plate. The rubber sheet is peeled from the yellow releasing paper, and is to be stuck onto the bottom plate.
The transparent protection sheet on the rubber sheet is to be removed after attachment.



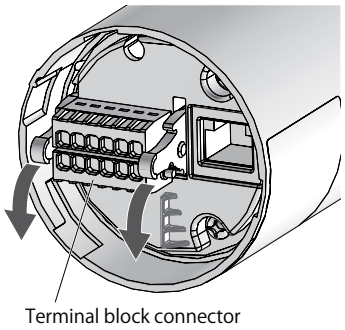


※ The figure shows the most common installation circumstances, but cannot show for every possible circumstance.

3.1.3. Terminal block connector (Detachment Method)

<Removing>

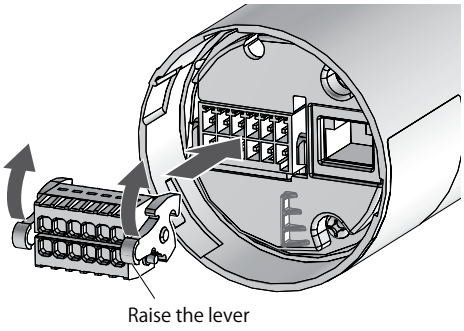
〈Figure of LAN unit from the underside〉



Referring to the drawing, depress the lever on the right and left of the terminal block connector to unlock it, and pull the terminal block connector straight out.

<Attaching>

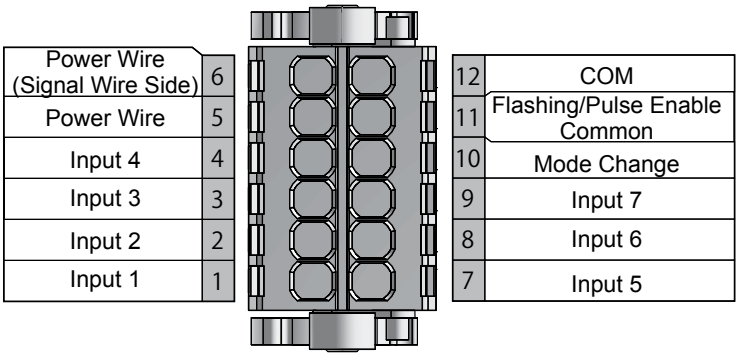
※ The example figure shows the TN model.



Push the terminal block connector into the LAN unit until the levers can be locked in place.
(When pushing the terminal block connector in place, the lever will temporarily move up, before it moves down and locks into place.)

3.2. Wiring

3.2.1. Terminal Block Connector Pin Arrangement

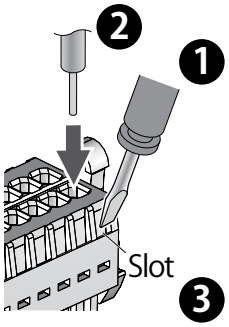


■ Recommended lead wire specifications

Wire Type	UL1007/UL1430
Wire Gauge (Solid Wire)	0.2-1.5mm^2
Wire Gauge (Frayed Wire)	AWG24-16

Temperature rating should be above 75°C, and the conductor material should be of copper wire.

3.2.2. Wiring the Terminal Block



1. A minus driver etc. is placed on the slot and pushed into the slot of the terminal block connector. (at a slight angle)
2. The stripped side of the lead wire is inserted in the slot.
3. The driver is then extracted from the slot. (Check to make sure the lead wire has been locked in place.)

Point

The minus driver blade should be no less than 2.5mm in width and 0.4mm in thickness. Any object that fits the dimensions is also ok.
Do not forcibly push the slot more than necessary with the driver. Failure to comply may damage the unit.
Strip 6-7mm of wire insulation from the wire before inserting it in the Terminal Block.
When removing the lead wire, Do not just pull to remove.
(Be sure to slide the minus driver etc. into the slot to unlock it.)

3.2.3. Wiring Example

The following is a basic wiring example.
If there are any special applications that require asking questions concerning this product, feel free to contact your PATLITE Sales Representative.
* When lighting and flashing are used together in the Signal Tower mode with a PLC, it is necessary to separate the flashing and non-flashing circuit outputs on the PLC side.

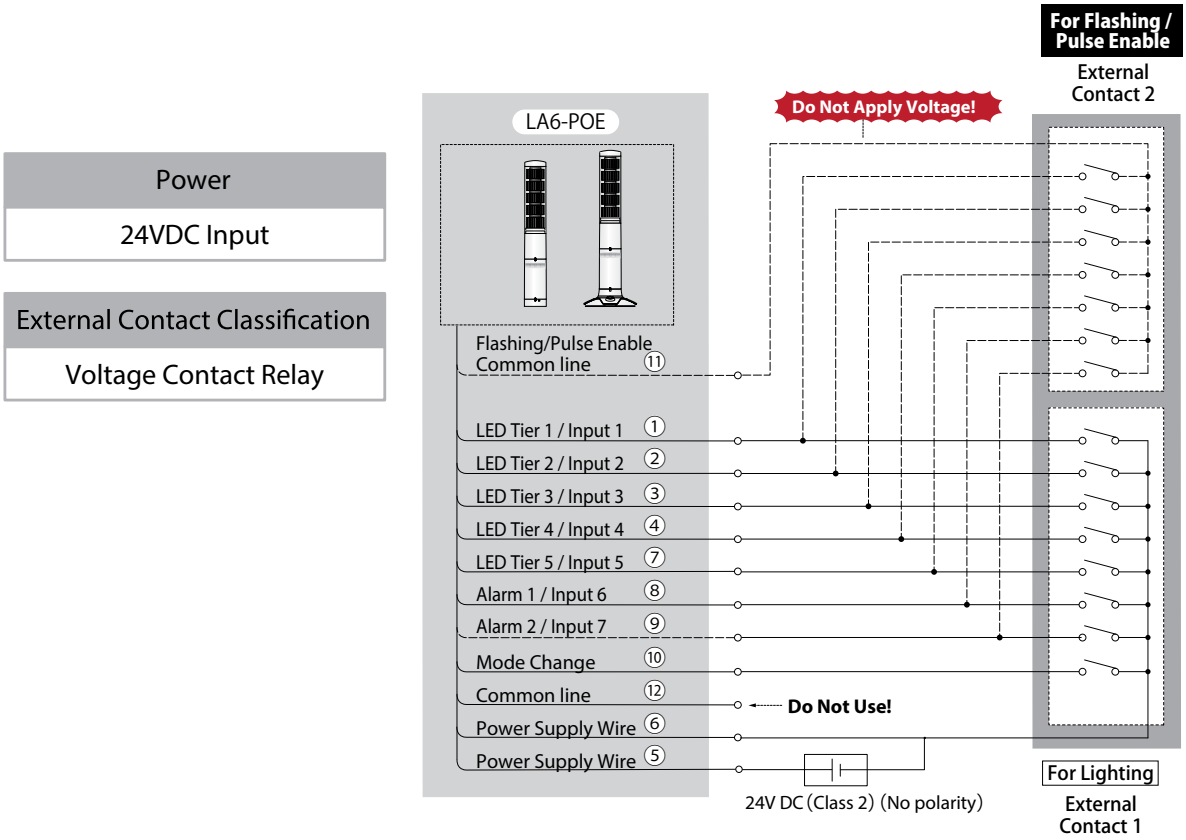
Wiring Example Index

LED Tier 1 / Input 1 ①

Function Name
[Signal Tower] mode/
[Smart Mode]

Pin No.
(Refer to 3.2.1 Terminal Connector Pin Layout)

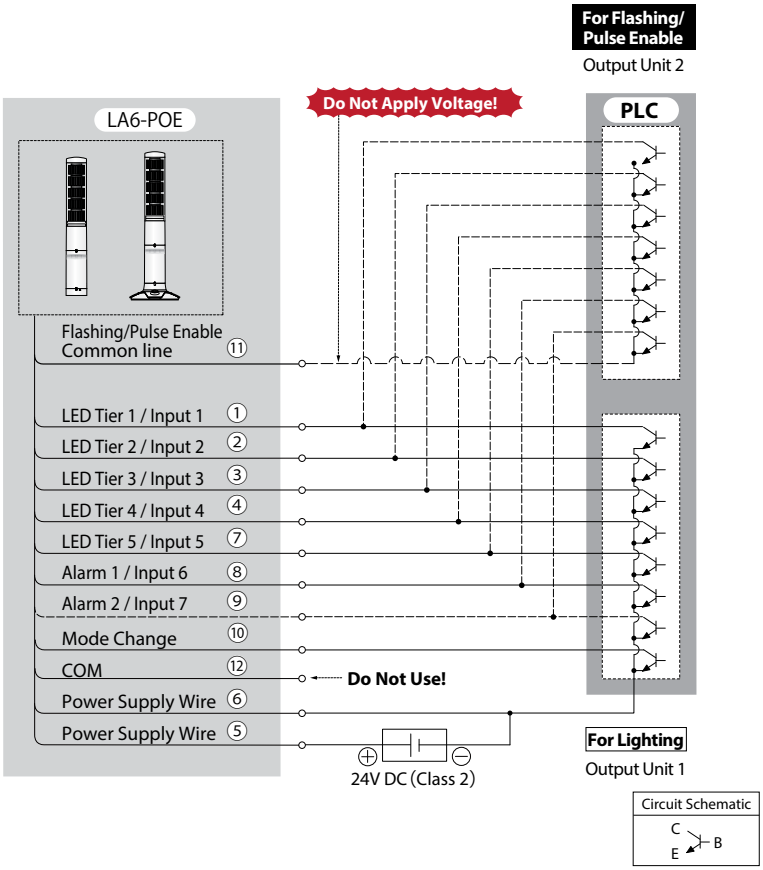
3.2.3.1. Connecting to Contact Relays with DC24V Input



3.2.3.2. Connecting to a PLC (NPN Type Transistor) with DC24V Input

Power
24VDC Input

External Contact Classification
PLC (NPN Transistor)

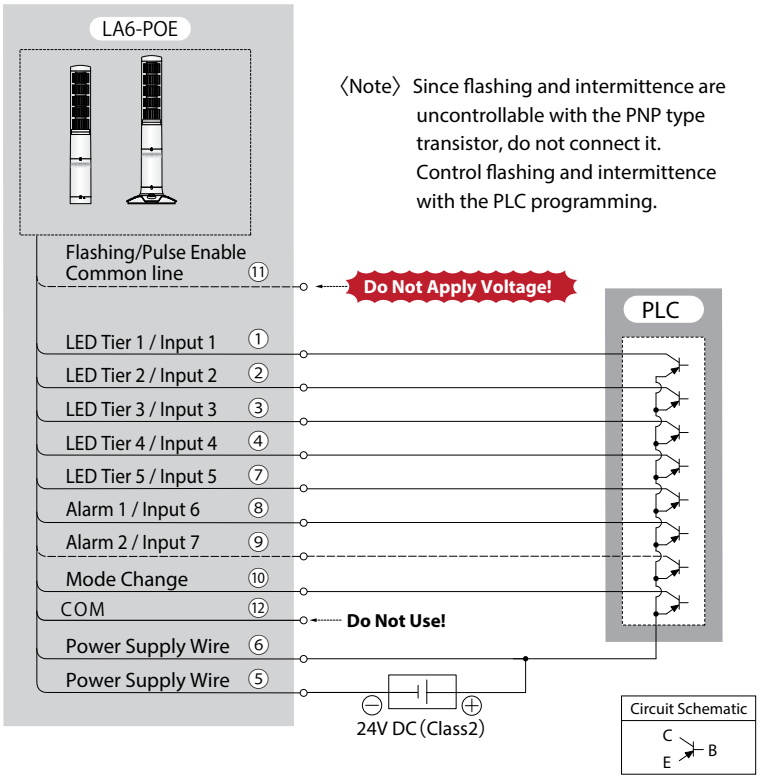


3.2.3.3. Connecting to a PLC (PNP Type Transistor) with DC24V Input

Power
24VDC Input

External Contact Classification
PLC (PNP Transistor)

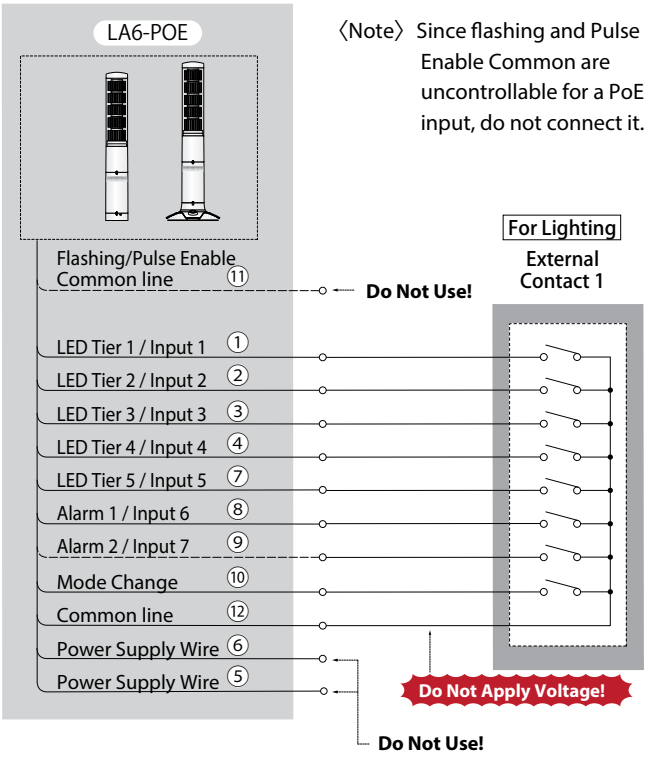
〈Note〉 Since flashing and intermittence are uncontrollable with the PNP type transistor, do not connect it. Control flashing and intermittence with the PLC programming.



3.2.3.4. Connecting to Contact Relay with PoE Input

Power
PoE Input

External Contact Classification
Voltage Contact Relay



3.2.4. LAN Cable Connection

The LAN cable should be rated for category 5e or higher. A straight or cross cable can be used.

MEMO

- Be sure to use the IEEE802.3af compliant products for the PoE power feeder systems.
- Priority is given to the DC24V power source when both the DC24V power source and PoE power feeder systems are connected simultaneously.
- If both power sources are simultaneously connected, when disconnecting the DC24V source, this product may reboot.

3.3. Contact Capacity

Signal Wire Contact Capacity

Current Capacity	No more than 500 mA (DC24V) No more than 100 mA (PoE)
Withstand Voltage	DC 35V or greater
Leakage Current	0.1 mA or less
ON voltage (V_{sat})	Less than 1V

* Inrush current does not flow into the Mode Change line.

4. How to Operate

4.1. Operating Procedure

4.1.1. Controlling with Commands

① Set up the LA6-POE network.
- Set the IP address for the network. (Refer to "4.3 Network Setup" on page 19)

② Set up the LED unit colors and combinations.
- Use the data setup application to create the LED unit colors and combinations. (Refer to the help section in the data setup application.)
- Use the Web Setup Screen to set up. (Refer to "4.4.2 WEB Setup" on page 22)

③ Load the Setup Data information into the LA6-POE.
- Use the Web Setup Screen to load the data. (Refer to "4.4.1 Loading Setup Data" on page 20)

④ Set up the control method.
- Use a command control system in the Main Unit to set up with. (Refer to "4.5 Main Unit Setup" on page 24)

⑤ Set up the receiving command protocols.
- When controlled by PNS or PHN Commands:
  Set up for receiving commands. (Refer to "4.6 Command Configuration" on page 25)
- When being controlled by Modbus/TCP:
  Set up for Modbus/TCP commands. (Refer to "4.7 Modbus/TCP Setup" on page 26)
- When controlling with HTTP command, no configuration is required.

⑥ Set up the contact inputs.
- Set up the operation sequence for when an input occurs at the contact input. (Refer to "4.8 Contact Input Detection" on page 27)
  * The contact inputs are: clear/mute/trigger/STOP

4.1.2. When Controlling with the Signal Line Inputs

① Set up the LA6-POE network.
- Set the IP address for the network. (Refer to "4.3 Network Setup" on page 19)

② Set up the LED unit colors and combinations.
- Use the data setup application to create the LED unit colors and combinations. (Refer to the help section in the data setup application.)
- Use the Web Setup Screen to set up. (Refer to "4.4.2 WEB Setup" on page 22)

③ Load the Setup Data information into the LA6-POE.
- Use the Web Setup Screen to load the data. (Refer to "4.4.1 Loading Setup Data" on page 20)

④ Set up the control method.
- Use a command control system to set up with the signal lines. (Refer to "4.5 Main Unit Setup" on page 24)

⑤ Set up the receiving command protocols.
- When acquiring status conditions by PNS or PHN Commands:
  Set up for receiving commands. (Refer to "4.6 Command Configuration" on page 25)
- When acquiring status conditions by Modbus/TCP:
  Set up for Modbus/TCP commands. (Refer to "4.7 Modbus/TCP Setup" on page 26)

4.1.3. When Mirroring

① Set up the LA6-POE network.
- Set the IP address for the network. (Refer to "4.3 Network Setup" on page 19)

② Set up the LED unit colors and combinations.
- Use the data setup application to create the LED unit colors and combinations. (Refer to the help section in the data setup application.)
- Use the Web Setup Screen to set up. (Refer to "4.4.2 WEB Setup" on page 22)

③ Load the Setup Data information into the LA6-POE.
- Use the data setup application to load the data. (Refer to "4.4.1 Loading Setup Data" on page 20R)

  * Be sure to write the same information for the mirroring point and mirroring origin.

④ Mirroring Setup
- Setup mirroring for the point of origin, establishing the "Master." (Refer to "4.9.1 Setting up the Mirroring Source" on page 29)
- Setup mirroring for the target point, establishing the "Slave." (Refer to "4.9.2 Setup Mirroring Destination Point" on page 30)

4.1.4. When Collecting the Signal Tower Information

[Retrieving the Signal tower information submitted by a LA6-POE]

① Set up the LA6-POE network.
- Set the IP address for the network. (Refer to "4.3 Network Setup" on page 19)

② Set up the LED unit colors and combinations.
- Use the data setup application to create the LED unit colors and combinations. (Refer to the help section in the data setup application.)
- Use the Web Setup Screen to set up. (Refer to "4.4.2 WEB Setup" on page 22)

③ Load the Setup Data information into the LA6-POE.
- Use the Web Setup Screen to load the data. (Refer to "4.4.1 Loading Setup Data" on page 20R)

  * When writing data using the USB cable,be sure to synchronize the data in the "Main unit setup" screen.

④ Set up the control method.
- In the "Main Unit Setup" screen, set to the "Signal Wire control." (Refer to "4.5 Main Unit Setup" on page 24)

⑤ Set up the Signal Tower Information Transmission.
- Set the receiver address. (Refer to "4.10 Information Transmission Setup" on page 31)
- Configure the Signal Tower Input Judgment. (Refer to "4.10 Information Transmission Setup" on page 31)
- Select the smart mode information to send. (Refer to "4.10 Information Transmission Setup" on page 31)

[Send a command to LA6-POE and collect information]

① Set up the LA6-POE network.
- Set the IP address for the network. (Refer to “4.3 Network Setup” on page 19)

② Set up the LED unit colors and combinations.
- Use the data setup application to create the LED unit colors and combinations. (Refer to the help section in the data setup application.)
- Use the Web Setup Screen to set up. (Refer to "4.4.2 WEB Setup" on page 22)

③ Load the Setup Data information into the LA6-POE.
- Use the Web Setup Screen to load the data. (Refer to "4.4.1 Loading Setup Data" on page 20)

* When loading data using the USB cable,be sure to synchronize the data in the "Main unit setup" screen.

④ Set up the control method.
- In the "Main Unit Setup" screen, set to the ”Signal Wire control.” (Refer to "4.5 Main Unit Setup" on page 24)

⑤ Command receiving setup.
- Set up for receiveing commands. (Refer to "4.6 Command Configuration" on page 25)

⑥ Set up the Signal Tower Information Transmission.
- Configure the Signal Tower Input Judgment. (Refer to "4.10 Information Transmission Setup" on page 31)

4.2. Web Setup Screen

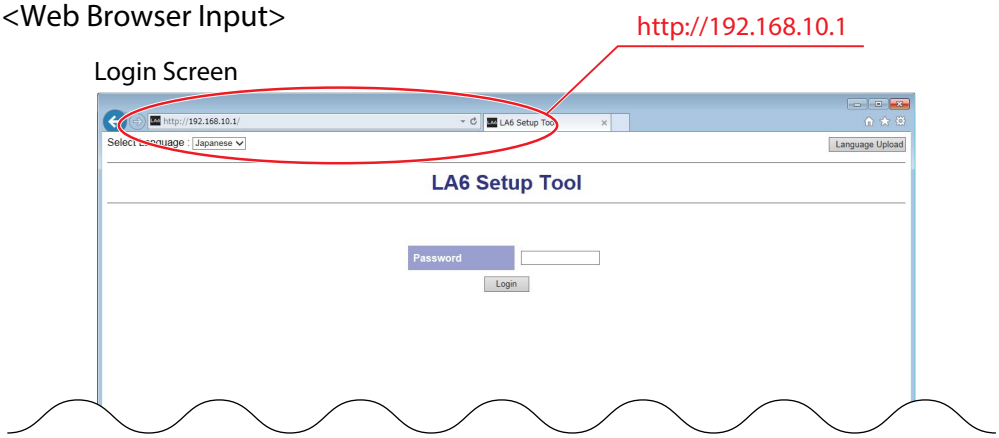
4.2.1. Login

Once the power supply is switched on and startup is complete, enter the IP address of this product into the web browser address section.

The default IP address for this product is "192.168.10.1".

<Web Browser Input>

Login Screen

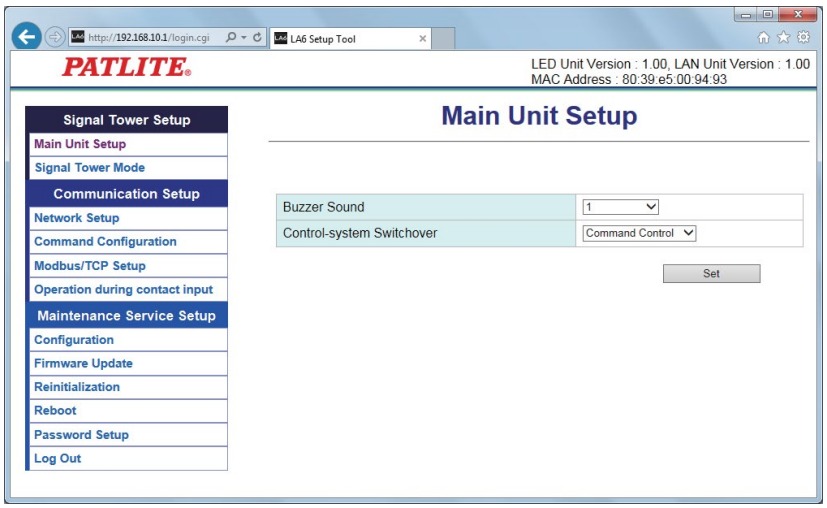


Recommended Browsers: Internet Explorer 11, Google Chrome

When the login screen is displayed, enter "patlite" in the password field, then click the "Login" button.
The default password is "patlite", all in lower case letters. Be sure to change the password to prevent any security breaching.

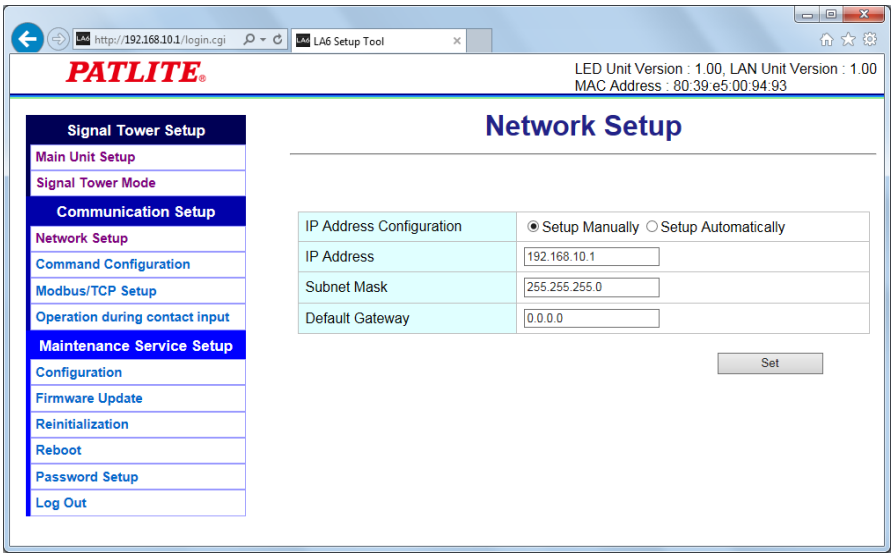
Be sure to change the network setup of the personal computer for the application as follows before communicating via a browser.
The personal computer IP address: 192.168.10.2-254
Subnet Mask: 255.255.255.0
(The default IP address at the time of factory shipment)

After Login



4.3. Network Setup

The network parameters for this product can be setup through a browser. The default IP address is "192.168.10.1". The items that can be set up through the System Setup Screen is as follows for "Network Setup."
If "Setup Automatically" is selected, this product can accesses a DHCP server to acquire network information.



Network Setup

Item	Contents	Default Value	Input Parameter	Setup Option
IP Address Configuration Method	The method for setting up the IP address to this product as manual or automatic is selected.	Setup Manually	*	×
IP Address	Enter the IP address of this product.	192.168.10.1	IP Address Format	×
Subnet Mask	Enter the subnet mask of this product.	255.255.255.0	IP Address Format	×
Default Gateway	Enter the default gateway of this product.	0.0.0.0	IP Address Format	×

* The "Setup Option" indication is explained below to indicate in the diagram whether a value input is omissible (a blank is used) or not.
The "O" indicates where it is omissible.
The "x" indicates where is not omissible, or is selected from an item menu.

⚠ CAUTION

⚠ Even when the network Setup is changed to "Setup Automatically", if the DHCP server cannot be able to be accessed, the network settings will not be changed.
⚠ If the DHCP server is not able to be accessed at the time of startup, the network settings start with the default values.

4.4. LED Unit Setup

This product can control the Signal Tower in two modes, Signal Tower mode and smart mode.

■ Signal Tower Mode

It is a mode to set the tone color of each LED tier and buzzer in advance for this product and control it by the signal line and commands.

■ Smart Mode

There are three types for the Smart Mode, "Time Trigger Type", "Pulse Trigger Type", and "Single Display Type":

- Time Trigger Type
  The pattern transitions can be controlled in accordance to time.
- Pulse Trigger Type
  The pattern transitions can be controlled in accordance to the trigger input.
- Single Display Type
  The registered pattern is executed.

In each mode, every motion pattern is set in advance for this product and the pattern is executed in accordance to the signal line and command settings.

There are two ways to set up this product, writing and loading data that was set up, or using Web settings.

4.4.1. Loading Setup Data

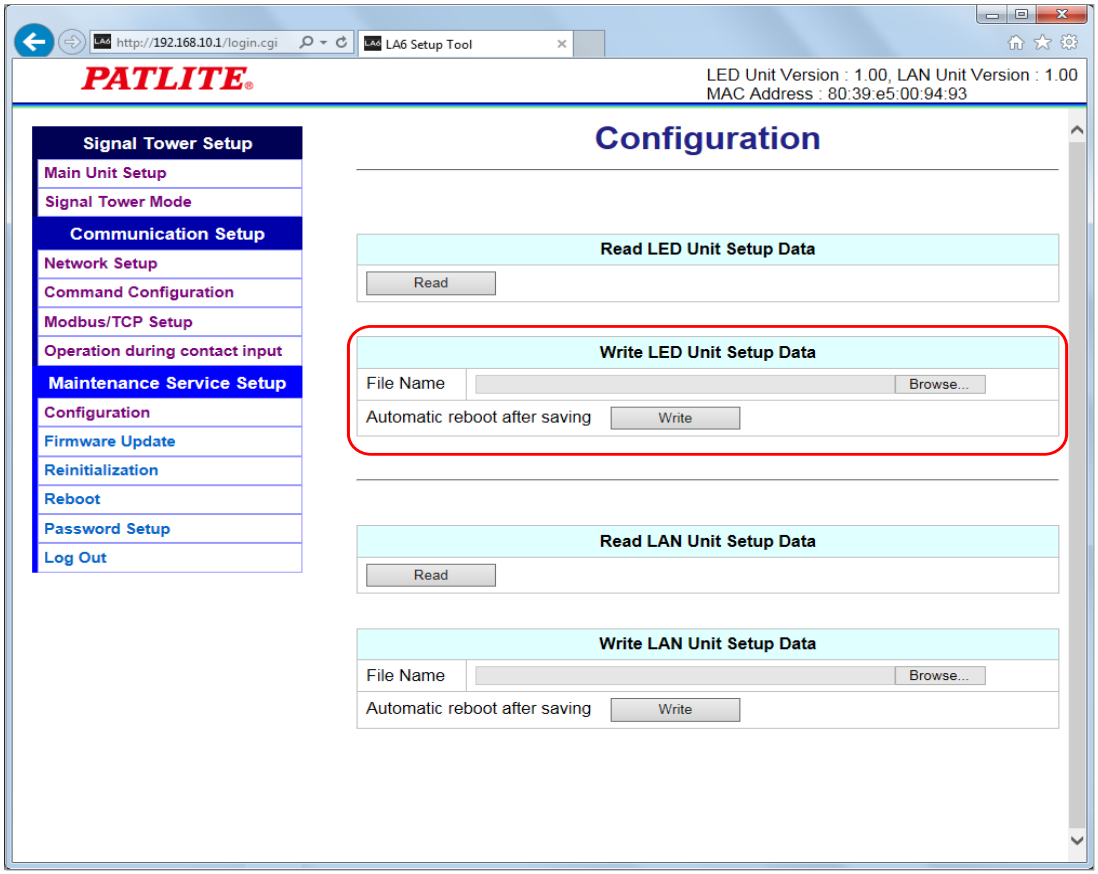
The LED unit can be Setup from the "EDITOR for LA series". The set data can be written from the "Configuration" screen.

* For the Setup method, refer to the help section in the "EDITOR for LA series".

[Data writing method in Web Setting]

In "Write LED Unit Setup Data", the data is selected in the "EDITOR for LA series".

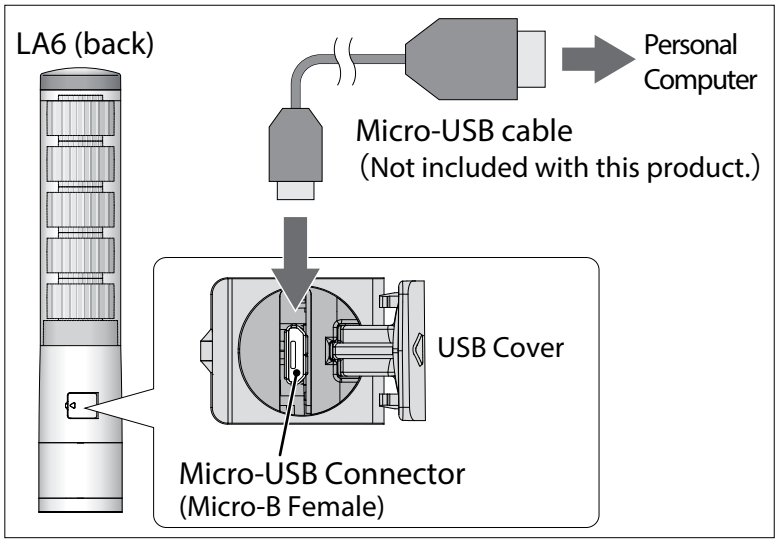
The "Write" button is clicked to update the LED unit Settings. It reboots automatically after updating.



[Data writing method in "EDITOR for LA series"]

① The product changes to standby status (all signal inputs OFF).
(Power supply input can be ON or OFF, whichever is easier)

② Open the USB cover to the product, use the MicroUSB cable to connect the product to the personal computer.



③ Click the "Send" button for the "EDITOR for LA series".

④ From the start of data transfer, it takes about 15 seconds before the "Transfer was completed" prompt is displayed.

⑤ Remove the micro-USB cable and close the USB cover completely.

⚠ WARNING

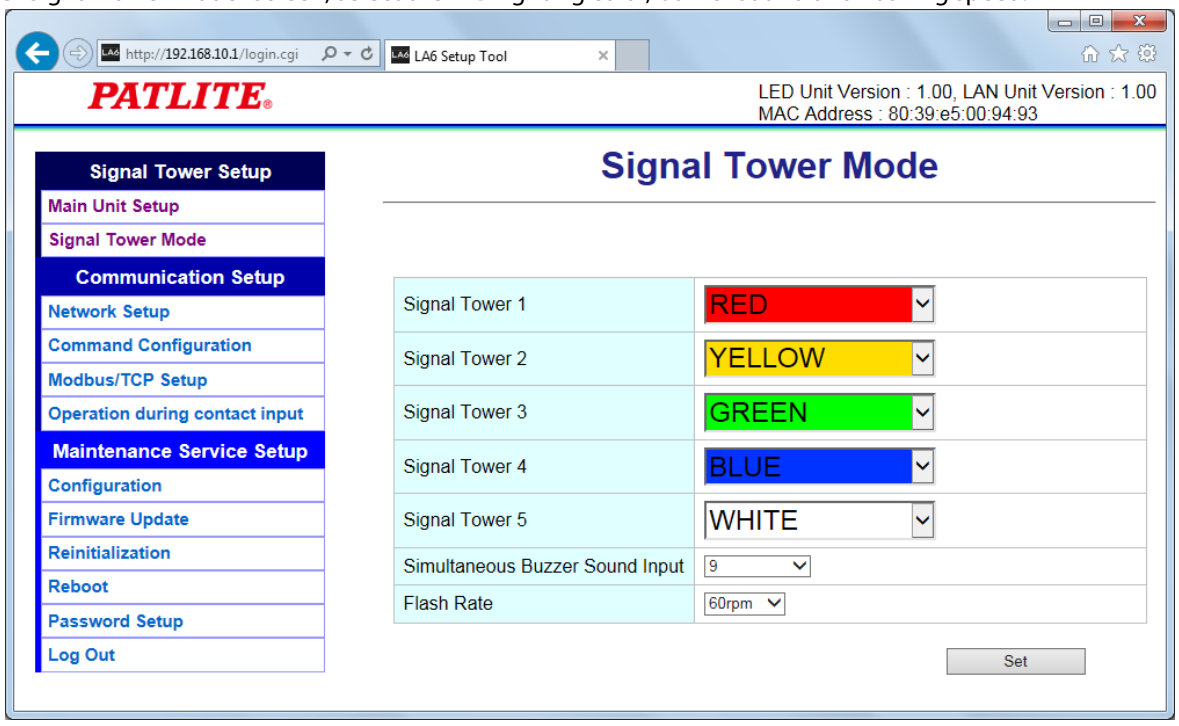
■ When transferring data via USB connection, do not allow the supply voltage from this product to contact with the personal computer, or it's peripheral devices. Failure to comply will result in product damage due to combustion or fire.
As an example, if the positive power terminal is connected to ground and the personal computer FG (housing), which in turn, makes a connection with this product via the USB connection, it should not be grounded because of the reverse polarity.
There are some personal computers which have the USB port connector and negative terminal of the personal computer in contact with the FG (housing).
Personal computers with such USB connections made, should have the FG (housing) of the personal computer and the negative terminal of the USB port of the product connected.
If the case is where the personal computer has the metal chassis as the positive grounding of the supplied power source to the product, the product will have a 24V potential applied to the negative terminal of the USB port of the product, thus will damage product by burning-up.

⚠ NOTICE

When acquiring the Signal Tower Information, click the "Sync" button in Main Unit Setup after writing data.

4.4.2. WEB Setup

On the "Signal Tower Mode" screen, select the LED lighting color, buzzer sound and flashing speed.



Item	Contents	Default Value	Input Parameter	Setup Option
Signal Tower 1	Select among: BLACK, RED, YELLOW, LEMON, GREEN, SKYBLUE, BLUE, PURPLE, PINK, WHITE	RED	-	×
Signal Tower 2		YELLOW	-	×
Signal Tower 3		GREEN	-	×
Signal Tower 4		BLUE	-	×
Signal Tower 5		WHITE	-	×
Buzzer (At simultaneous buzzer inputs)	Select among patterns 0-11.	9	-	×
Flashing Cycle (Flash per Minute = fpm)	Selections are for Lighting: 30 fpm: 60 fpm: 120 fpm	60/fpm	-	×

* Only the Signal Tower mode can be set up in the WEB Setup.
  To set up the Smart Mode, use the "EDITOR for LA series".
  For the Setup method, refer to the help section in the "EDITOR for LA series".
* The "Setup Option" indication is explained below to indicate in the diagram whether a value input is omissible (a blank is used) or not.
  The "x" indicates where is not omissible, or is selected from an item menu.

MEMO

- The tier where BLACK is selected will not light up.
- When 0 is selected, the buzzer will not sound at the same time.
- Reboots automatically after the setup changes.

4.4.3. Read Setup Data

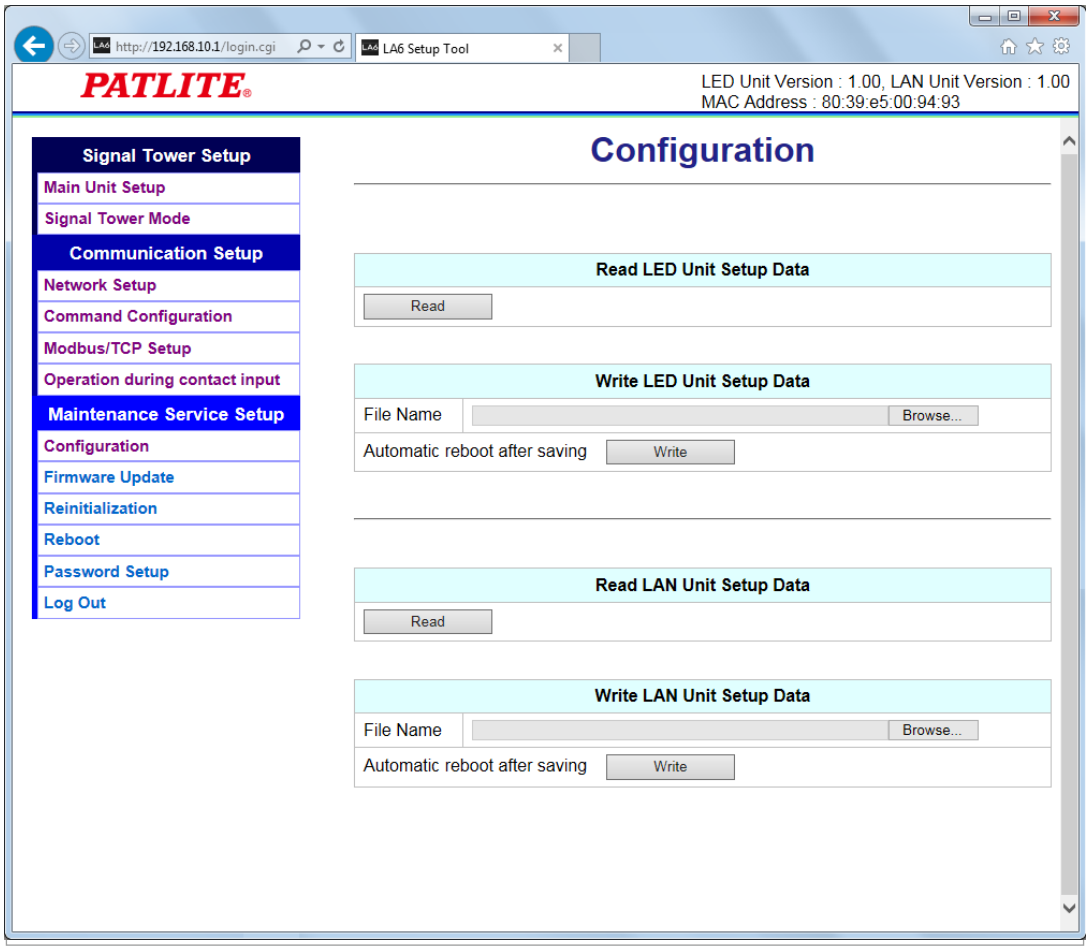
The setting data for this product can be read. There are two types of data which can be read, the LED unit setting data and LAN unit setting data.

<<Reading the setting data of the LED unit>>

Click the "Read" button for reading the LED unit setting data and save it on a personal computer. The setting data of the read LED unit can be written to another LA6-POE, and the contents can be checked with the “EDITOR for LA series”.

<<Reading the setting of the LAN unit>>

Click the "Read" button of the LAN unit setting data readout and save it on a personal computer. The setting data of the read LAN unit can be written to another LA6-POE.



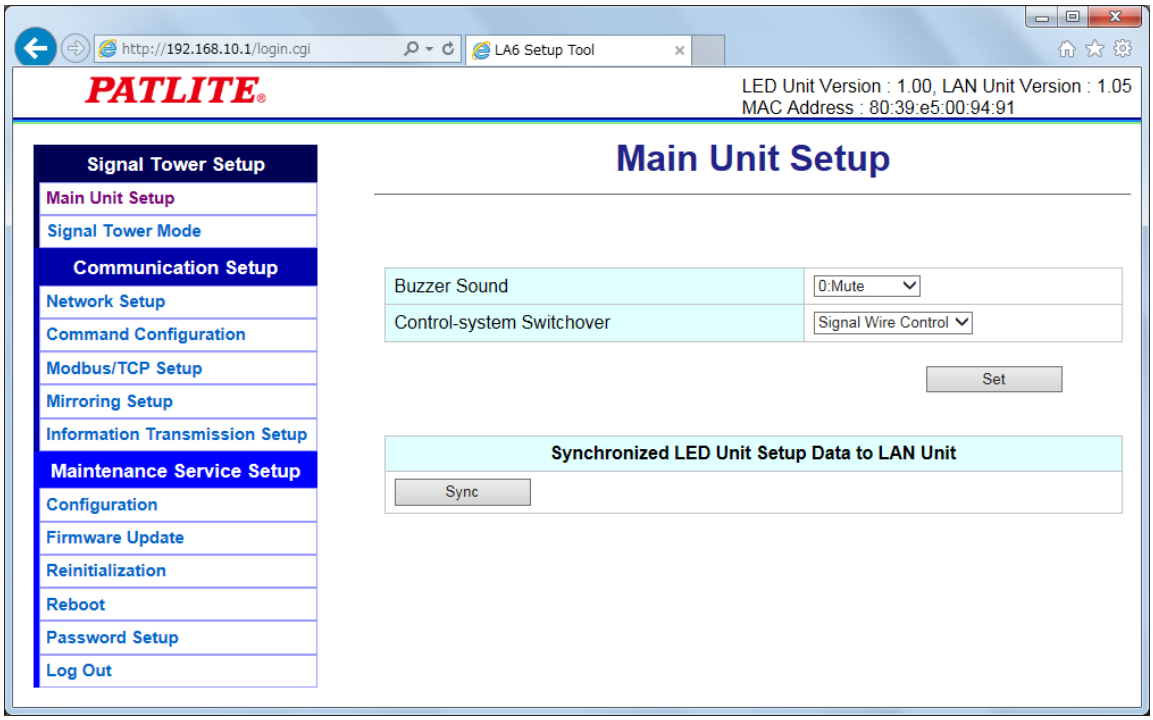
MEMO When reading the setting data of the LED unit, turn off all signal line inputs and do not perform mirroring.

⚠ CAUTION

⚠ Sending a command while reading the LED unit setting data will not work.

4.5. Main Unit Setup

The buzzer volume and the control method can be set up.
The LED unit setup data can be synchronized.



Item	Contents	Default Value	Input Parameter	Setup Option
Buzzer Sound	Select among 0 (Mute), 1, 2, and 3 (Maximum).	3 (Maximum)	-	×
Control-system Switchover	Select among "Command Control" and "Signal Wire Control".	Command Control	-	×

* The "Setup Option" indication is explained below to indicate in the diagram whether a value input is omissible (a blank is used) or not.
The "x" indicates where is not omissible, or is selected from an item menu.

MEMO

- When 0 (Mute) is set, the buzzer won't sound.
- When the command control method is selected, the LED unit can not be controlled by the signal line input.
- When the signal line control method is selected, control can not be done by commands. Only status acquisition and reboot is possible.
- Reboots automatically after the setup changes.
- Click "Sync" button when writing setup data using usb cable.

4.6. Command Configuration

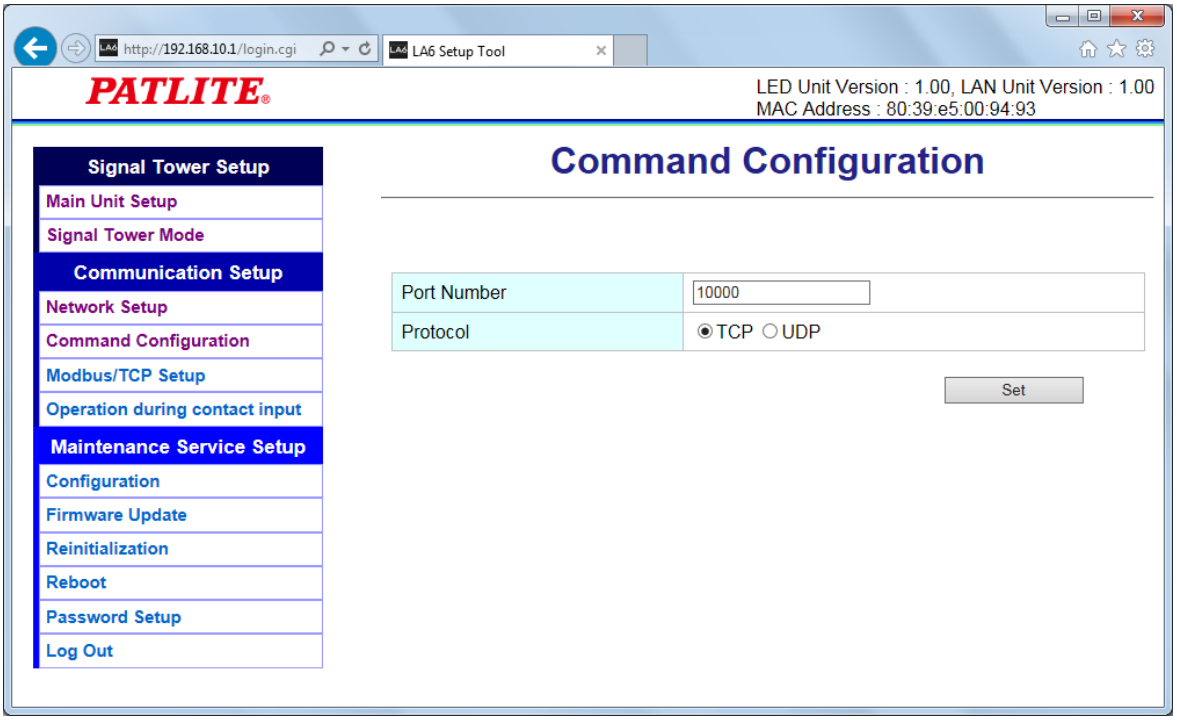
Set up for receiving PNS and PHN Commands.

[Setup Method]

① Select either "TCP" or "UDP" in "Protocol."

② Enter the port to be used for "Port Number."

③ Click the "Set" button to apply the setting.



Item	Contents	Default Value	Input Parameter	Setup Option
Protocol	Select between TCP or UDP.	TCP	-	×
Port Number	Enter the receiving port number.	10000	Half-width numbers from 10000-65535*	×

* The same port number as Modbus/TCP, and 60001-60008, 61001 cannot be set.
* The "Setup Option" indication is explained below to indicate in the diagram whether a value input is omissible (a blank is used) or not.
The "x" indicates where is not omissible, or is selected from an item menu.

MEMO

- PNS Commands (Refer to "5.1. PNS Command")
- PHN Commands (Refer to "5.2. PHN Command")

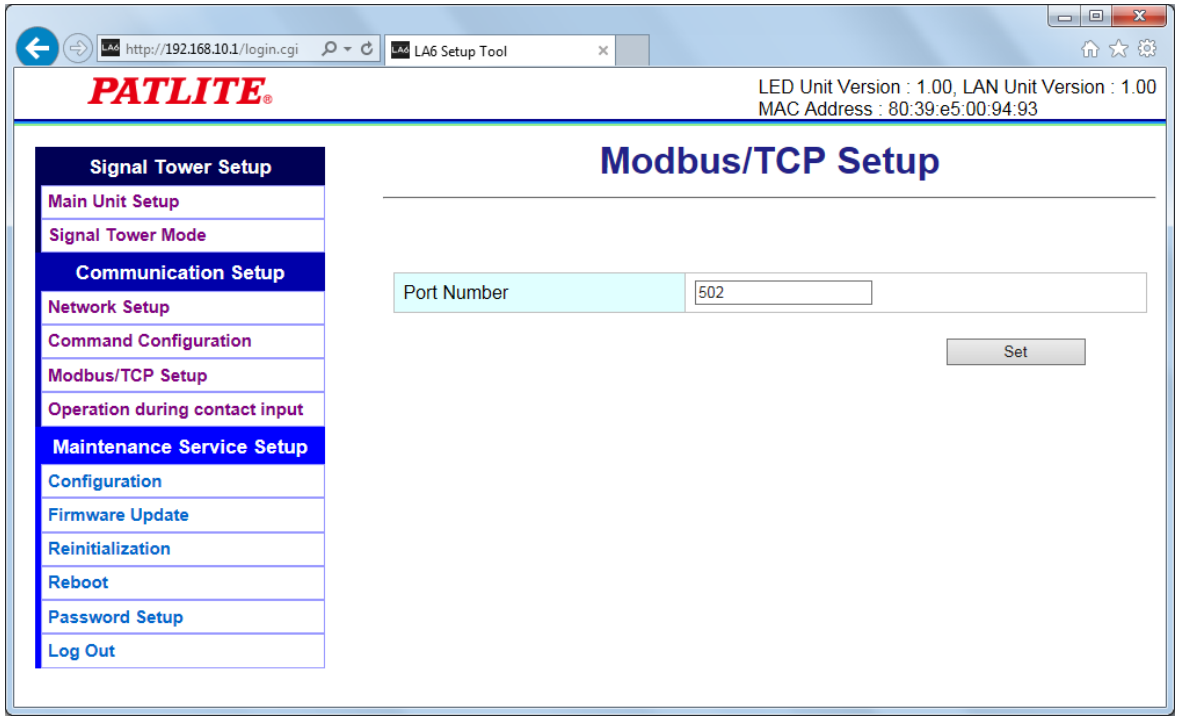
4.7. Modbus/TCP Setup

Set the port number to be used in Modbus/TCP.

[Setup Method]

① Enter the port to be used for "Port Number."

② Click the "Set" button to apply the setings.



Item	Contents	Default Value	Input Parameter	Setup Option
Port Number	Enter the port number.	502	Half-width digit 502, Or 1024-65535*	×

* The same port number as the command receiption function, and 60001-60008, 61001 cannot be set.
* The "Setup Option" indication is explained below to indicate in the diagram whether a value input is omissible (a blank is used) or not.
The "x" indicates where is not omissible, or is selected from an item menu.

MEMO	Modbus/TCP Command (Refer to "5.3. Modbus/TCP")

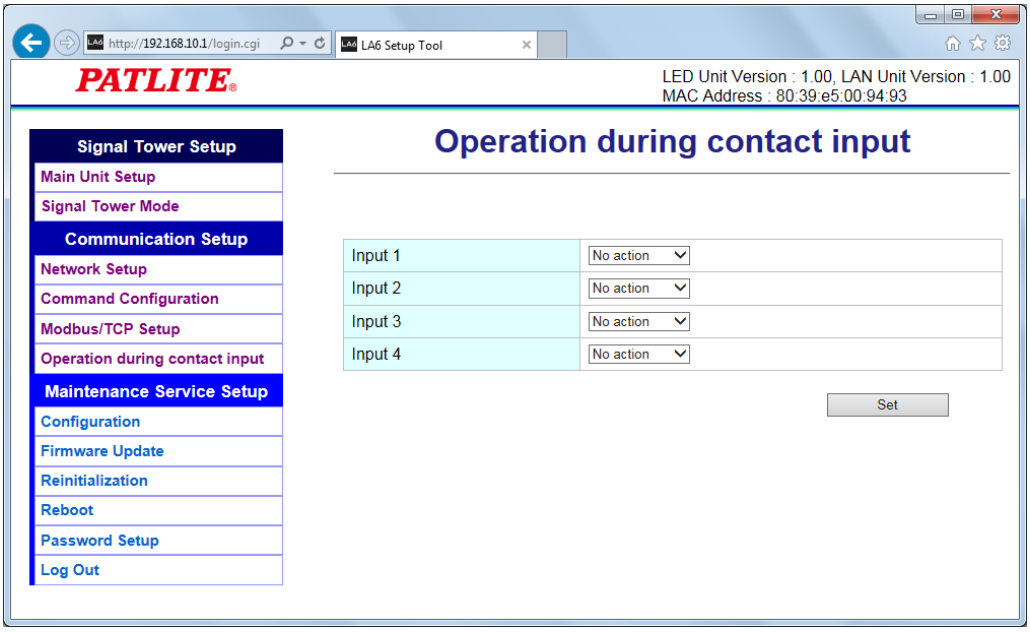
4.8. Contact Input Detection

It detects the status change of the contact input and perform the set-up process.
The setup for the contact input detection is done in the Web Setup.

① Set the action to be executed when the setting input status 1 to 4 changes.

② Press the "Set" button to apply the settings.

> **MEMO** Only when the command control method is selected, the operation screen is displayed during contact input.



The contents that operates for each contact input can be selected.

Select Operation	Operation Contents	Available Modes
No Operation	Even if contact input is turned ON/OFF, it will not operate.	-
Clear	When the contact input is turned ON, clearing is executed. Nothing will operate when it is OFF.	Signal Tower Mode Smart Mode (Single Display, Time Trigger, Pulse Trigger)
Mute	While the contact input is turned on, Mute is ON. While the contact input is turned off, Mute is OFF.	Smart Mode (Single Display, Time Trigger, Pulse Trigger)
STOP	While the contact input is turned on, STOP is turned ON. While the contact input is turned off, STOP is OFF.	Smart Mode (Time Trigger, Pulse Trigger)
Pulse Trigger	While the contact input is turned on, the Pulse Trigger is turned ON. Nothing will operate when it is OFF.	Smart Mode (Pulse Trigger)

[Table of Available Modes]

		Signal Tower Mode	Smart Mode		
			Single Display	Time Trigger	Pulse Trigger
Operation	Clear	OK	OK	OK	OK
	Mute	No	OK	OK	OK
	STOP	No	No	OK	OK
	Pulse Trigger	No	No	No	OK

> **MEMO**
> - When it is not in an available mode, even if the contacts operate, it won't operate.
> - The Mute and STOP can only be controlled in Smart Mode.

4.9. Mirroring Setup

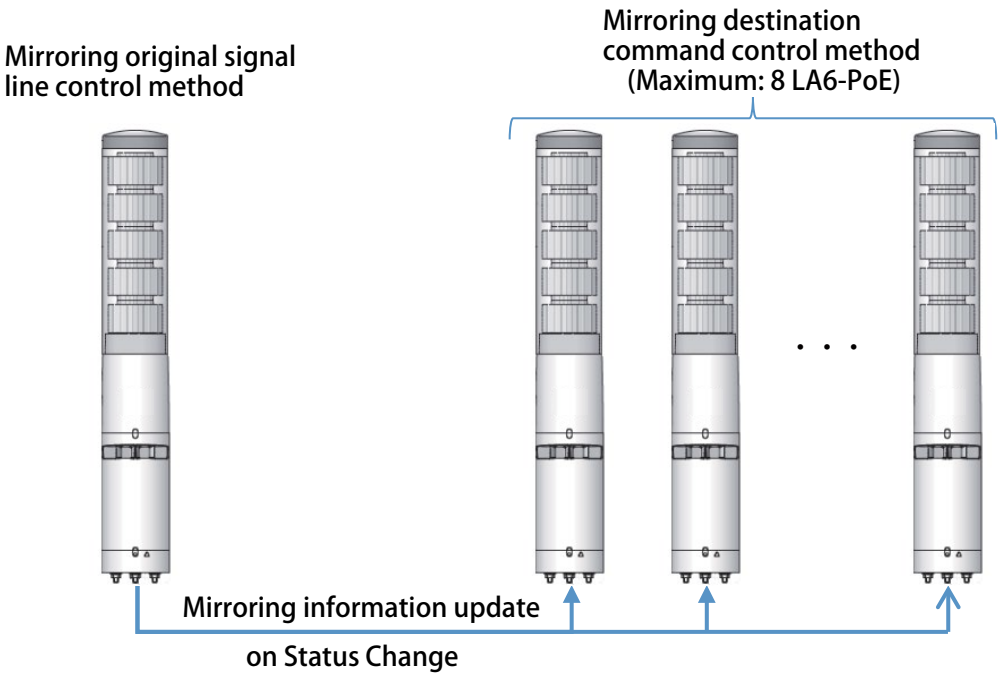
This section explains how to configure Mirroring settings.

[Mirroring Source Settings]

1	Attach the lead wires.	"3.2. Wiring" on page 11
2	Attach the LAN cable.	
3	Display the "Main Unit Setup" screen.	"4.9.1. Setting up the Mirroring Source" on page 29
4	Set to the "Signal Wire Control".	
5	Display the "Mirroring Set up" screen.	
6	Register the IP address of mirroring destination.	

[Mirroring Destination Point Settings]

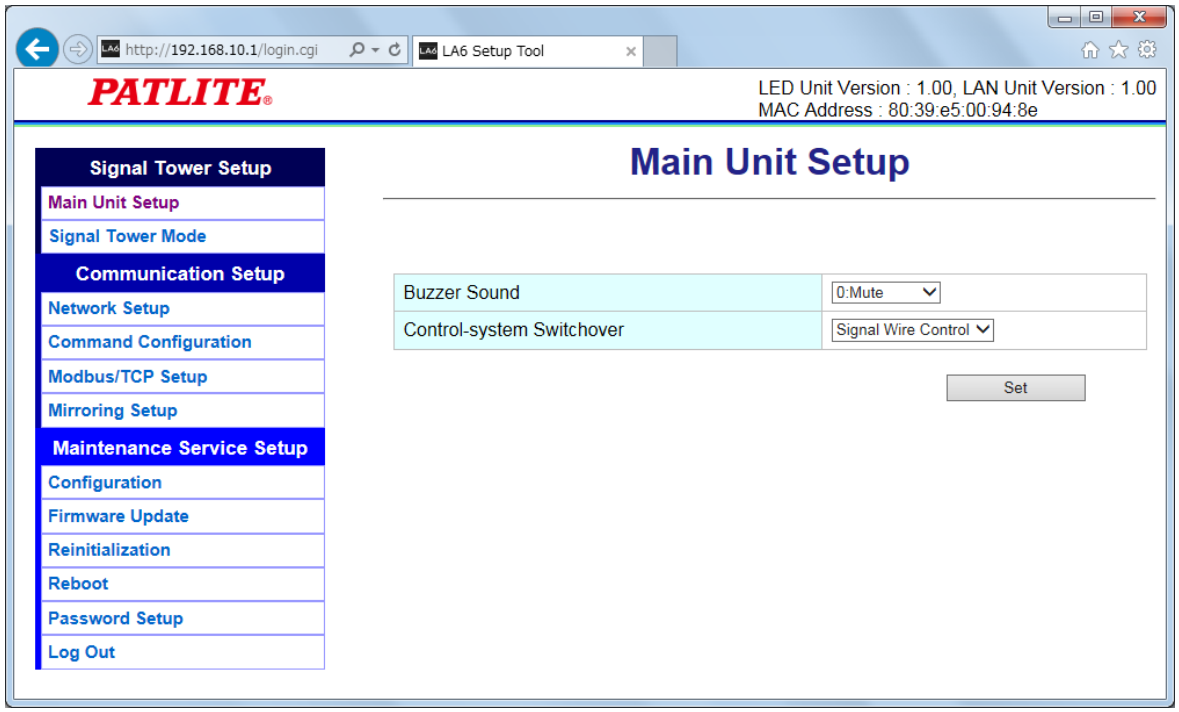
1	Attach the LAN cable.	"3.2. Wiring" on page 11
2	Display the "Main Unit Setup" screen.	"4.9.2. Setup Mirroring Destination Point" on page 30
3	Set to the "Command Control".	



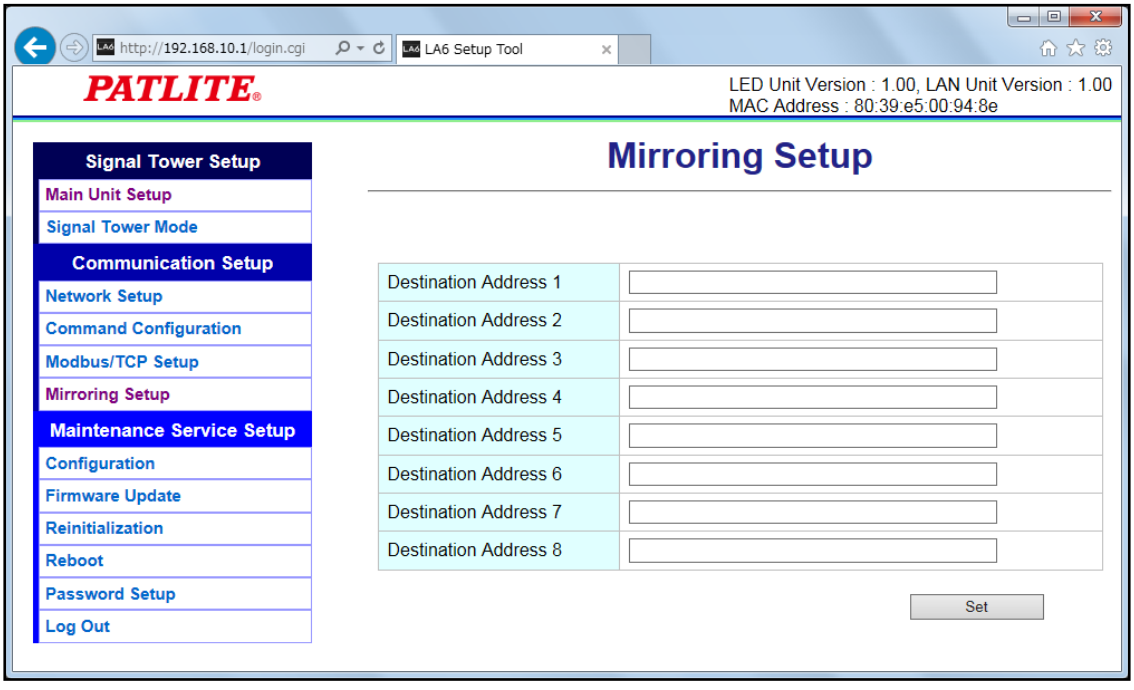
Up **to nine** LA6-POE Signal Towers can be in the same status by sending the status of the LA6-POE which is being controlled by the Master via the signal line, to another **one of eight** LA6-POE Signal Towers connected within the network.
The maximum possible number of mirrored LA6-POE Signal Towers is **eight units**.
Mirroring information is updated when the status changes.
Even if status does not change, the mirroring information is updated every 10 seconds.

4.9.1. Setting up the Mirroring Source

In the "Main Unit Setup" screen, set the Control-system Switchover to the signal wire control method.



Register the IP address of the mirroring destination in the "Mirroring Setup" screen.

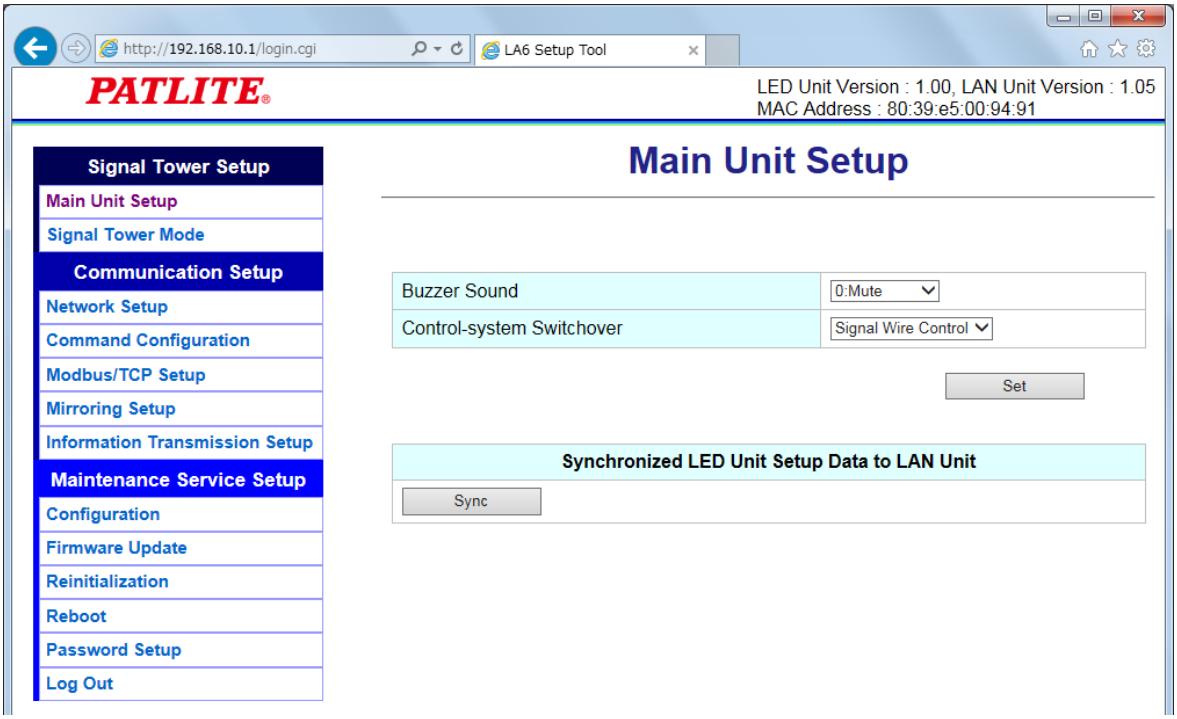


⚠ CAUTION

Set a different IP address for the destination address.

4.9.2. Setup Mirroring Destination Point

In the "Main Unit Setup" screen, set the control method to the command control method.



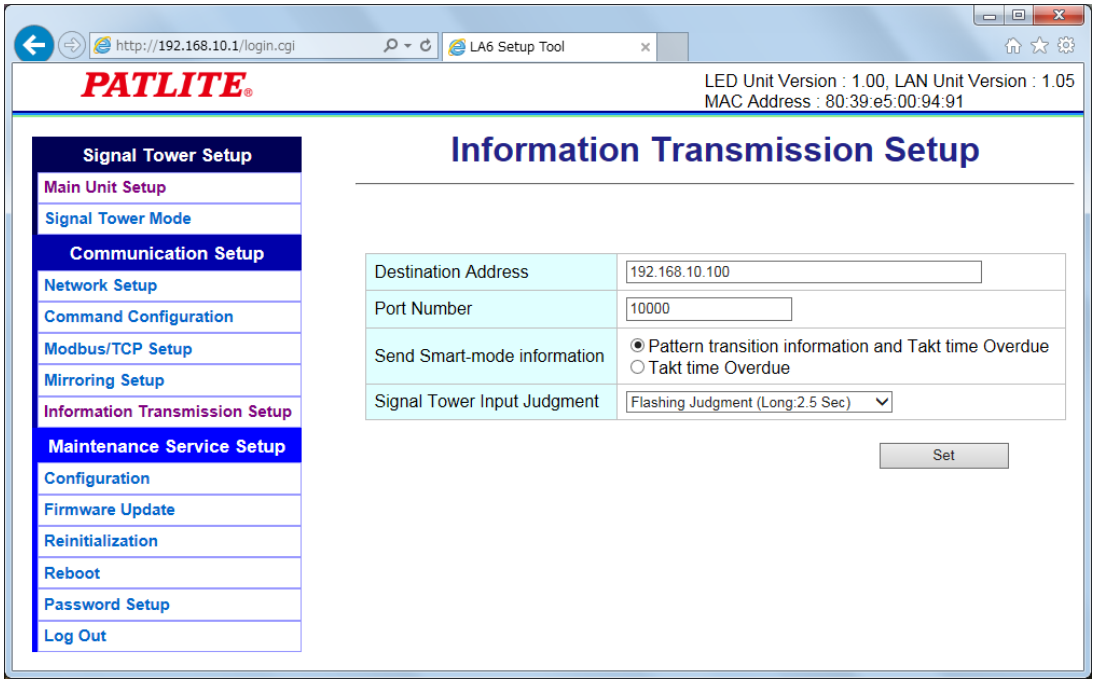
⚠ CAUTION

To mirror, set the same LED unit in the mirroring source and mirroring destination.
"4.4. LED Unit Setup" on page 20

4.10. Information Transmission Setup

Set the Destination Address of the signal tower information, signal tower input judgment,smart-mode information to send.

1	Attach the lead wires.	"3.2. Wiring" on page 11
2	Attach the LAN cable.	
3	Display the "Main Unit Setup" screen.	"4.5. Main Unit Setup" on page 24
4	Set to the "Signal Wire Control".	
5	Display the "Information Transmision Setup" screen.	On this page
6	Enter the IP address and port number to transmit Signal Tower Information	
7	Select Smart-mode information to send.	
8	Select Signal Tower input judgment.	



Item	Contents	Default Value	Input Parameter
Destination Address	Enter the destination IP address of Signal Tower Information.		IP Address Format
Port Number	Enter the destinatio Port Number of Signal Tower Information.	10000	1024-65535
Send Smart-mode information	Select the transmitted infromation when operating in Smart Mode. <Pattern transition information > Every time a pattern transition, send the Signal Tower information. <Takt time Overdue> When the takt time overdue,send the Signal Tower information.	Takt time Overdue	-
Signal Tower input judgment	Select the process used to determine the Signal Tower input status. <Flashing Judgment (Short : 0.7 Sec) > Flashing is determined when there are two status changes within 0.7 seconds. <Flashing Judgment (Medium : 1.5 Sec) > Flashing is determined when there are two status changes within 1.5 seconds. <Flashing Judgment (Long : 2.5 Sec) > Flashing is determined when there are two status changes within 2.5 seconds.	Medium	-

5. Operating Procedure

5.1. PNS Command

By sending PNS commands from a PC etc., you can control and obtain the status of this product. The protocol can be selected from “TCP” or “UDP.”
Communication port numbers are “10000-65535.”

MEMO
- The PNS command setup can be executed with the command reception setting. (Refer to "4.6. RSH Command Configuration.")
- The number of simultaneous connections with a PNS Command and PHN Command is 8 connections.

Identifier List

Identifiers	Command Name	Outline
T(54H)	Smart Mode Control	Execute the Smart Mode.
M(4DH)	Mute	Switches the buzzer ON/OFF when operating in Smart Mode.
P(50H)	STOP/Pulse Input	An input can be entered in the Smart Mode operation. Time Trigger Type Operation: STOP Input ON/OFF Pulse Trigger Type Operation: Pulse Trigger Input
S(53H)	Motion Control	Control 1-5 tiers of the LED unit with a set color.
D(44H)	Detailed Motion Control	Control 1-5 tiers of the LED unit by specifying the color.
C(43H)	Clear	Turn off the LED unit. Stop the buzzer.
B(42H)	Reboot	This product is rebooting.
G(47H)	Status Acquisition	The status of this machine is acquired.
E(45H)	Detailed Status Acquisition	The detailed status of this machine can be acquired.

Excecutable command in each control method (● is executable)

Identifiers	Command Name	Command Control Method	Signal Wire Control Method
T(54H)	Smart Mode Control	●	×
M(4DH)	Mute	●	×
P(50H)	STOP/Pulse Input	●	×
S(53H)	Motion Control	●	×
D(44H)	Detailed Motion Control	●	×
C(43H)	Clear	●	×
B(42H)	Reboot	●	●
G(47H)	Status Acquisition	●	●
E(45H)	Detailed Status Acquisition	●	●

5.1.1. Smart Mode Control Command

Command Description

The Smart Mode can be executed with the number specified in the data area.

Transmission Data Format

Product Category AB		Identifier T	Open	Data Size		Data Area 1 byte
41H	42H	54H	00H	00H	01H	See Below

Product Category

The product is classified in "AB."

Identifiers

"T" is used.

Data Area

Data area byte: 1Byte
01H (Group No. 1)- 1FH (Group No. 31)

Reply Data

Normal Response (1 byte)

ACK
06H

Abnormal Response (1 byte)

NAK
15H

Command Transmission Example

Smart Mode group 10 is executed.

Product Category AB		Identifier T	Open	Data Size		Data Area 1 byte
41H	42H	54H	00H	00H	01H	0AH

MEMO

- When executing single display type, or group No., up to 31 (01H-1FH) can be designated.
- To execute the time trigger type or pulse trigger type, up to 15 (01H - 0FH) groups can be specified when setting up.

5.1.2. Mute Command

Command Description

The ON/OFF of the buzzer is controllable when executing in Smart Mode.

Transmission Data Format

Product Category AB		Identifier M	Open	Data Size		Data Area 1 byte
41H	42H	4DH	00H	00H	01H	See Below

Product Category

The product is classified in "AB."

Identifiers

"M" is used.

Data Area

Data area byte: 1Byte
Mute ON: 01H Mute OFF: 00H

Reply Data

Normal Response (1 byte)

ACK
06H

Abnormal Response (1 byte)

NAK
15H

Command Transmission Example

Turn Mute ON.

Product Category AB		Identifier M	Open	Data Size		Data Area 1 byte
41H	42H	4DH	00H	00H	01H	01H

⚠ CAUTION

⚠When set to ON with the MUTE command, the buzzer will be muted until the MUTE is turned off.

MEMO

- It is effective only during the Smart mode operation.
- When a "Clear" command is received or the "Clear" button is pressed, mute is also turned OFF.
- If it is being controlled by anything other than Smart mode, the Mute and STOP will be OFF.

5.1.3. STOP/Pulse Input Command

Command Description

When transmitting during the time trigger mode operation, the pattern stop/restart can be controlled. (STOP Input)

When transmitting during the pulse trigger mode operation, the pattern can be changed. (Pulse Trigger Input)

Transmission Data Format

Product Category AB		Identifier P	Open	Data Size		Data Area 1 byte
41H	42H	50H	00H	00H	01H	See Below

Product Category

The product is classified in "AB."

Identifiers

"P" is used.

Data Area

Data area byte: 1Byte
STOP input ON/Pulse Trigger input: 01H STOP Input OFF: 00H

Reply Data

Normal Response (1 byte)

ACK
06H

Abnormal Response (1 byte)

NAK
15H

Command Transmission Example

A trigger input is executed.

Product Category AB		Identifier P	Open	Data Size		Data Area 1 byte
41H	42H	50H	00H	00H	01H	01H

⚠ CAUTION

⚠ If the STOP input is set to ON with the STOP/Pulse Input Command, the pattern will stop until STOP is turned off.

MEMO

- It is effective only during the Smart mode operation.
- When a "Clear" command is received or the "Clear" button is pressed, STOP is also turned OFF.
- If it is being controlled by anything other than Smart mode, the STOP will be OFF.

5.1.4. Managing Command Control

Command Description

Each LED unit tier and buzzer (1-3) can be controlled with the pattern specified in the data area.
It operates with the color and buzzer set up in the Signal Tower mode.

Transmission Data Format

Product Category AB		Identifier S	Open	Data Size		Data Area 6 bytes
41H	42H	53H	00H	00H	06H	See Below

Product Category

The product is classified in "AB."

Identifiers

"S" is used.

Data Area

Data Area 6 bytes					
LED Unit					Buzzer
1	2	3	4	5	6
Tier 1 Pattern	Tier 2 Pattern	Tier 3 Pattern	Tier 4 Pattern	Tier 5 Pattern	Patterns 1,2,3

LED Unit
00H: Off
01H: On
02H: Flashing
09H: No Change

Buzzer
00H: Stop
01H: Pattern 1
02H: Pattern 2
03H: Buzzer sound at a simultaneous buzzer input
09H: No Change

Command Transmission Example

1st Tier: lighting, 2nd tier/3rd tier: flashing, 4th tier: Off, 5th tier: no change, buzzer: pattern 1

Product Category AB		Identifier S	Open	Data Size		Data Area					
41H	42H	53H	00H	00H	06H	01H	02H	02H	00H	09H	01H

Reply Data

Normal Response (1 byte)

ACK
06H

Abnormal Response (1 byte)

NAK
15H

5.1.5. Managing Detailed Command Control

Command Description

In the data area, the color and behavior pattern of each LED unit tier and buzzer pattern (1 to 11) can be controlled when being specified.

Transmission Data Format

Product Category AB		Identifier D	Open	Data Size		Data Area 7 bytes
41H	42H	44H	00H	00H	07H	See Below

Product Category

The product is classified in "AB."

Identifiers

"D" is used.

Data Area

Data Area 7 bytes						
LED Unit					Flashing Operation	Buzzer
1	2	3	4	5	6	7
Tier 1 Color	Tier 2 Color	Tier 3 Color	Tier 4 Color	Tier 5 Color	Flashing Operation	Patterns 1-11

LED Unit
00H: Off
01H: Red
02H: Amber
03H: Lemon
04H: Green
05H: Sky Blue
06H: Blue
07H: Purple
08H: Pink
09H: White

Flashing Operation
00H: Flashing OFF
01H: Flashing ON

Buzzer
00H: Stop
01H: Pattern 1
02H: Pattern 2
03H: Pattern 3
04H: Pattern 4
05H: Pattern 5
06H: Pattern 6
07H: Pattern 7
08H: Pattern 8
09H: Pattern 9
0AH: Pattern10
0BH: Pattern 11

Reply Data

Normal Response (1 byte)

ACK
06H

Abnormal Response (1 byte)

NAK
15H

Command Transmission Example

1st Tier : Green, 2nd Tier: Blue, 3rd Tier: Off, 4thTier: White, 5th Tier: Red, Flashing: Off, Buzzer: Pattern 11

Product Category AB		Identifier D	Open	Data Size		Data Area						
41H	42H	44H	00H	00H	07H	04H	06H	00H	09H	01H	00H	0BH

MEMO

- The color set in the signal Tower mode becomes invalid.
- When the flashing operation is turned ON, all tiers will flash.

5.1.6. Clear Command

Command Description

Turn off the LED unit and stop the buzzer.

Transmission Data Format

Product Category AB		Identifier C	Open	Data Size	
41H	42H	43H	00H	00H	00H

Product Category

The product is classified in "AB."

Identifiers

"C" is used.

Data Area

There is no data area.

Reply Data

Normal Response (1 byte)

ACK
06H

Abnormal Response (1 byte)

NAK
15H

5.1.7. Reboot Command

Command Description

This product can be rebooted.

Transmission Data Format

Product Category AB		Identifier B	Open	Data Size		Data Area 1-16 bytes
41H	42H	42H	00H	00H	01H-10H	See Below

Product Category

The product is classified in "AB."

Identifiers

"B" is used.

Data Size

Enter the number of bytes for the data area.

When the value is "patlite".

00H	07H

Data Area

Enter the password which is set up in the password setting of the Web Setup as an ASCII code.

Reply Data

Normal Response (1 byte)

ACK
06H

Abnormal Response (1 byte)

NAK
15H

Command Response Example

When the password is set to "patlite".

Product Category AB		Identifier B	Open	Data Size		Data Area						
						p	a	t	l	i	t	e
41H	42H	42H	00H	00H	07H	70H	61H	74H	6CH	69H	74H	65H

5.1.8. Status Acquisition Command

Command Description

The status of the signal line/contact input, the LED unit and buzzer status can be acquired.

Transmission Data Format

Product Category AB		Identifier G	Open	Data Size	
41H	42H	47H	00H	00H	00H

Product Category

The product is classified in "AB."

Identifiers

"G" is used.

Data Area

There is no data area.

Reply Data

Normal Response (15 bytes): When running in Signal Tower Mode

1 byte	2 bytes	3 bytes	4 bytes	5 bytes	6 bytes	7 bytes	8 bytes
Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8
00H: OFF 01H: ON							

9 bytes	10 bytes	11 bytes	12 bytes	13 bytes	14 bytes	15 bytes
Mode	LED unit/buzzer Status					
	1st Tier	2nd Tier	3rd Tier	4th Tier	5th Tier	Buzzer
00H (Signal Tower mode)	00H: Off 01H: On 02H: Flashing					00H: Stop 01H: Buzzer Pattern 1 02H: Buzzer Pattern 2 03H: Buzzer Pattern 3/ buzzer sounds when the buzzer inputs are simultaneously entered (Cont) 0AH: Buzzer pattern 10 0BH: Buzzer pattern 11

Normal Response (15 bytes): When running in Smart mode

1 byte	2 bytes	3 bytes	4 bytes	5 bytes	6 bytes	7 bytes	8 bytes
Signal line/contact status							
Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8
00H: OFF 01H: ON							

9 bytes	10 bytes	11 bytes	12 bytes	13 bytes	14 bytes	15 bytes
Mode	Smart Mode Status					
	Group Number	Mute	STOP Input	Pattern Number	Open	Open
01H (Smart Mode)	01H: Group 1 02H: Group 2 (Cont) 1EH: Group 30 1FH: Group 31	00H: Mute Off 01H: Mute ON	00H: STOP OFF 01H: STOP ON	01H: Group 1 02H: Group 2 (Cont) 3EH: Group 62 3FH: Group 63	00H	00H

Abnormal Response (1 byte)

NAK
15H

Command Response Example

Conditions are; Inputs 1, 3, 5, and 8 are ON, smart mode group number: 5, mute input: ON, STOP input: OFF, pattern number: 15.

1 byte	2 byte	3 byte	4 byte	5 byte	6 byte	7 byte	8 byte	9 byte	10 byte	11 byte	12 byte	13 byte	14 byte
Signal line/Contact Status								Smart Mode Status					
Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8	Group Number	Mute	STOP Input	Pattern Number	Open	Open
01H	00H	01H	00H	00H	01H	00H	01H	05H	01H	00H	0FH	00H	00H

MEMO

- When in the signal light mode operation (input 8 is OFF), the signal line/contact and LED unit/buzzer returns to its status.
- In smart mode operation (input 8 is ON), it returns to the smart mode status.
- 03H (Buzzer Pattern 3) can be acquired when the buzzer sounds simultaneously at a buzzer input.
- Up to 11 buzzer patterns can acquired during managing detailed command control.

5.1.9. Detailed Status Acquisition Command

Command Description

The following information can be acquired.

- The status of the signal line/contact input.
- The LED unit status.
- The LED unit color information.
- The MAC address of this product.

Transmission Data Format

Product Category AB		Identifier E	Open	Data Size	
41H	42H	45H	00H	00H	00H

Product Category

The product is classified in "AB."

Identifiers

"E" is used.

Data Area

There is no data area.

Reply Data

[Normal Response (40 bytes): When running in Signal Tower Mode]

1 byte	2 bytes	3 bytes	4 bytes	5 bytes	6 bytes	7 bytes	8 bytes	9 bytes	10 bytes	11 bytes	12 bytes	13 bytes	14 bytes
MAC address						Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8
The MAC address of this product is stored.						00H: OFF 01H: ON							

15 bytes	16 bytes	17 bytes	18 bytes	19 bytes	20 bytes	21 bytes	22 bytes	23 bytes
Mode	Open				1st Tier of LED unit			
					Status	R	G	B
00H (Signal Tower mode)	00H	00H	00H	00H	00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH

24 bytes	25 bytes	26 bytes	27 bytes	28 bytes	29 bytes	30 bytes	31 bytes
2nd Tier of LED unit				3rd Tier of LED unit			
Status	R	G	B	Status	R	G	B
00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH

32 bytes	33 bytes	34 bytes	35 bytes	36 bytes	37 bytes	38 bytes	39 bytes	40 bytes
4th Tier of LED unit				5th Tier of LED unit				Buzzer
Status	R	G	B	Status	R	G	B	Status
00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	00H: Stop 01H: Buzzer Pattern 1 02H: Buzzer Pattern 2 03H: Buzzer Pattern 3/ buzzer sounds when the buzzer inputs are simultaneously entered (Cont) 0AH: Buzzer pattern 10 0BH: Buzzer pattern 11

MEMO

- The color information of the LED unit is stored in the RGB color model.
Refer to " Correspondance tabele of RGB color model" on page 93

[Normal Response (45 bytes): When running in Smart Mode]

1 byte	2 bytes	3 bytes	4 bytes	5 bytes	6 bytes	7 bytes	8 bytes	9 bytes	10 bytes	11 bytes	12 bytes	13 bytes	14 bytes
MAC address						Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8
The MAC address of this product is stored.						00H: OFF 01H: ON							

15 bytes	16 bytes	17 bytes	18 bytes	19 bytes	20 bytes	21 bytes	22 bytes
Mode	Open				Smart Mode Status		
					Group No.	Mute	STOP Input
01H (Smart Mode)	00H	00H	00H	00H	01H: Group 1 02H: Group 2 (Cont) 1EH: Group 30 1FH: Group 31	00H: Mute Off 01H: Mute ON	00H: STOP OFF 01H: STOP ON

23 bytes	24 bytes	25 bytes	26 bytes	27 bytes	28 bytes
Smart Mode Status		1st Tier of LED unit			
Pattern No.	Takt Time Overdue	Status	R	G	B
01H: Group 1 02H: Group 2 (Cont) 3EH: Group 62 3FH: Group 63	00H: Not occurred 01H: Occurred	01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH

29 bytes	30 bytes	31 bytes	32 bytes	33 bytes	34 bytes	35 bytes	36 bytes
2nd Tier of LED unit				3rdTier of LED unit			
Status	R	G	B	Status	R	G	B
01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH

37 bytes	38 bytes	39 bytes	40 bytes	41 bytes	42 bytes	43 bytes	44 bytes	45 bytes
4thTier of LED unit				5th Tier of LED unit				Buzzer
Status	R	G	B	Status	R	G	B	Status
01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	00H: Stop 01H: Buzzer Pattern 1 02H: Buzzer Pattern 2 03H: Buzzer Pattern 3 (Cont) 0AH: Buzzer pattern 10 0BH: Buzzer pattern 11

Abnormal Response (1 byte)

NAK
15H

■ Command Response Example 1

[MAC address of this machine] 80:39:E5:00:1A:2F
[Mode] Signal Tower Mode
[LED unit] 1st Tier: Red On, 2nd Tier: Yellow On, 3rd Tier: Green Flashing, 4th Tier: Blue On, 5th Tier: White Flashing
[Buzzer] Pattern 1,
[Input] Input 1,3,4,6 are ON

1	2	3	4	5	6	7	8	9	10	11	12	13	14
MAC address						Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8
80H	39H	E5H	00H	1AH	2FH	01H	00H	01H	01H	00H	01H	00H	00H

15	16	17	18	19	20	21	22	23	24	25	26	27
Mode	Open				1st Tier of LED unit				2nd Tier of LED unit			
					Status	R	G	B	Status	R	G	B
00H	00H	00H	00H	00H	01H	FFH	00H	00H	00H	FFH	CCH	00H

28	29	30	31	32	33	34	35	36	37	38	39	40
3rd Tier of LED unit				4th Tier of LED unit				5th Tier of LED unit				Buzzer
Status	R	G	B	Status	R	G	B	Status	R	G	B	Status
02H	00H	FFH	00H	01H	00H	33H	FFH	02H	FFH	FFH	FFH	01H

■ Command Response Example 2

[MAC address of this machine] 80:39:E5:00:1A:2F
[Mode] Smart Mode
[Smart Mode] Group number: 10, Mute input: ON, STOP input: OFF, Pattern Number: 5, Takt Time Overdue: Occurred
[LED unit] 1st Tier : Blue, 2nd Tier: Blue, 3rd Tier: Black (Off), 4th Tier: Purple, 5th Tier: Pink, Flashing
[Buzzer] Mute
[Input] Input 2,4,6,8 are ON

1	2	3	4	5	6	7	8	9	10	11	12	13	14
MAC address						Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8
80H	39H	E5H	00H	1AH	2FH	00H	01H	00H	01H	00H	01H	00H	01H

15	16	17	18	19	20	21	22	23	24
Mode	Open				Smart Mode Status				
					Group No.	Mute	STOP Input	Pattern No.	Takt Time Overdue
01H	00H	00H	00H	00H	0AH	01H	00H	05H	01H

25	26	27	28	29	30	31	32	33	34	35	36
1st Tier of LED unit				2nd Tier of LED unit				3rdTier of LED unit			
Status	R	G	B	Status	R	G	B	Status	R	G	B
02H	00H	33H	FFH	02H	00H	33H	FFH	02H	00H	00H	00H

37	38	39	40	41	42	43	44	45
4thTier of LED unit				5th Tier of LED unit				Buzzer
Status	R	G	B	Status	R	G	B	Status
02H	CCH	00H	DDH	02H	FFH	00H	CCH	00H

MEMO

- The color information of the LED unit is stored in the RGB color model.
  Refer to " Correspondance tabele of RGB color model" on page 93
- When running in Smart Mode, if the LED unit Light off, the black on or black Flashing can be required.
- The pattern number set to 0 (00H) in the following cases.
  - » When the smart mode is executed with STOP input on.
  - » When STOP input on int the final pattern. (For a group that is set to repeat.)
- When the pattern number is 0, 0 (00H) is stored in the LED unit and buzzer information.

5.2. PHN Command

By sending a PHN command from a personal computer, it is possible to turn on and flash the LED unit tiers 1 to 3, and control buzzer patterns 1 and 2. The protocol can be selected from "TCP" or "UDP."
Communication port numbers are "10000-65535."

MEMO
- The PHN Command Setup can be executed with the command reception setting. (Refer to "4.6. RSH Command Configuration.")
- The number of simultaneous connections with a PNS Command and PHN Command is 8 connections.

Write Command

Data can be transmitted in the following formats to control the LED unit tiers 1-3 (from the top) and buzzer (patterns 1 and 2).

"W" (57H) 8 bits								Operation Data 8 bits
0	1	0	1	0	1	1	1	Refer to Operation Data Contents

Details of operation data

Operation Data 8 bits							
LED unit Flashing			Buzzer Pattern		LED Unit Lighting		
3rd Tier	2nd Tier	1st Tier	Pattern 2	Pattern 1	3rd Tier	2nd Tier	1st Tier

Reply Data

Normal Response (1 byte)

A	C	K
41H	43H	4BH

Abnormal Response (1 byte)

N	A	K
4EH	41H	4BH

Command Transmission Example

1st Tier: Lighting, flashing, 2nd Tier: flashing, 3rd Tier: OFF, Buzzer: pattern 2

W (57H)								Operation Data (51H)							
0	1	0	1	0	1	1	1	0	1	0	1	0	0	0	1

⚠ CAUTION

⚠ The status of the 4th and 5th LED tiers cannot be controlled.
⚠ The smart mode cannot be executed.

MEMO
- Priority is given to the lighting input over the flashing input when simultaneous signals are applied.
- Priority is given to buzzer pattern 1 over buzzer pattern 2 when simultaneous signals are applied.

Read Command

Data can be transmitted in the following format to request the current operating status for the LED unit tiers 1-3 (from the top) and buzzer.

"R" (52H) 8 bit							
0	1	0	1	0	0	1	0

Reply Data

R (52H)								Operation Data 8 bit							
								LED unit Flashing			Buzzer Pattern		LED Unit Lighting		
0	1	0	1	0	0	1	0	3 Tiers	2 Tiers	1 Tier	Pattern 2	Pattern 1	3 Tiers	2 Tiers	1 Tier

Data Acquisition Response Example

1st Tier: lighting, 2nd Tier: OFF, 3rd Tier: flashing, Buzzer: pattern 1

R (52H)								Operation Data (89H)							
0	1	0	1	0	0	1	0	1	0	0	0	1	0	0	1

⚠ CAUTION

⚠ The status of the 4th and 5th LED tiers cannot be acquired.
⚠ The smart mode status cannot be acquired.
⚠ The Signal line/contact input status cannot be acquired.
⚠ Buzzer patterns 3-11 cannot be acquired. The buzzer pattern data contains zeros.

Excecutable command in each control method (● is executable)

Command Name	Command Control Method	Signal Wire Control Method
Write Command (W)	●	×
Read Command (R)	●	●

5.3. Modbus/TCP

This product can be controlled and obtain its status by transmitting a command from the master that is corresponding to Modbus/TCP protocol.

The communication port numbers are "502, 1024-65535."

MEMO
- The setup of the Modbus/TCP can be done by the Modbus/TCP settings. (Refer to "4.7. Modbus/TCP Setup")
- The number of simultaneous connections in Modbus/TCP is eight.

- Modbus/TCP Data Structure

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data
2 bytes	2 bytes	2 bytes	1 byte	1 byte	n bytes

- Transaction Identifier : 0000-FFFFH
- Protocol Identifier : 0000H Fixed
- Field Length : The number of bytes following the Unit Identifier.
- Unit Identifier : 00-FFH
- Function Code : The code which identifies the function defined in Modbus.
- Data : The data string defined for each function code.

5.3.1. Function Code

The list of function codes supported by this product.

Code (Hex)	Function Name	Functional Description
02H	Read Input Status	The contact input status is read.
03H	Read Holding Registers	The present status of the Signal Tower and buzzer are read.
06H	Write Single Register	1 byte of the data address in the Register is changed, and the Signal Tower and buzzer are controlled.
08H	Diagnostics	Reads the energized state of the Signal Tower control board.
10H	Write Multiple Registers	Two or more bytes of the data address in the Register is changed, and the Signal Tower and buzzer are controlled.

5.3.2. Input Address

The input address list supported by this product.

Input Address	Control Allocation	Condition
1 (01H)	Contact Input 1	0: OFF 1: ON
2 (02H)	Contact Input 2	0: OFF 1: ON
3 (03H)	Contact Input 3	0: OFF 1: ON
4 (04H)	Contact Input 4	0: OFF 1: ON
5 (05H)	Contact Input 5	0: OFF 1: ON
6 (06H)	Contact Input 6	0: OFF 1: ON
7 (07H)	Contact Input 7	0: OFF 1: ON
8 (08H)	Contact Input 8	0: OFF 1: ON

5.3.3. Register Address

The register address list supported by this product.

Register Address	Control Allocation	Data	Condition
1 (01H)	1st LED Unit Tier	MSN	00H: doesn't control, 01H: controls
		LSN	00H: OFF, 01H : ON, 02H: flashing, 09H: No Change
2 (02H)	2nd LED Unit Tier	MSN	00H: doesn't control, 01H: controls
		LSN	00H: OFF, 01H : ON, 02H: flashing, 09H: No Change
3 (03H)	3rd LED Unit Tier	MSN	00H: doesn't control, 01H: controls
		LSN	00H: OFF, 01H : ON, 02H: flashing, 09H: No Change
4 (04H)	4th LED Unit Tier	MSN	00H: doesn't control, 01H: controls
		LSN	00H: OFF, 01H : ON, 02H: flashing, 09H: No Change
5 (05H)	5th LED Unit Tier	MSN	00H: doesn't control, 01H: controls
		LSN	00H: OFF, 01H : ON, 02H: flashing, 09H: No Change
6 (06H)	Buzzer	MSN	00H: doesn't control, 01H: controls
		LSN	00H: STOP, 01H-0BH: buzzer patterns 1-11
7 (07H)	Smart Mode	MSN	00H: doesn't control, 01H: controls
		LSN	01H-1FH: Group Numbers 1-31
8 (08H)	Clear	MSN	00H (Fixed settings)
		LSN	Clear (00H: No Change, 01H: Execute Clear)
9 (09H)	Mute	MSN	00H (Fixed settings)
		LSN	Mute (00H:Mute cancel, 01H: Mute execution)
10 (0AH)	STOP	MSN	00H (Fixed settings)
		LSN	STOP (00H:STOP cancel, 01H:STOP execution)
11 (0BH)	Pulse Trigger Input	MSN	00H (Fixed settings)
		LSN	Pulse Trigger (00H: No Change, 01H: pattern change)

MEMO

- When executing smart mode, set register addresses 1-6 to "doesn't control" (00H).
- Execution priority is in the order of "Clear", "LED Unit", "Smart mode".
- The buzzer pattern that can be specified with "Write Single Register" or "Write Multiple Registers" is 1 to 3.
- PNS Commands Up to 11 buzzer patterns can acquired during detailed motion control.
- When executing single display type, up to 31 (01H-1FH) group numbers in smart mode can be designated.
- To execute the time trigger type or pulse trigger type, up to 15 (01H - 0FH) smart mode groups can be specified when setting up.

5.3.4. Example

Coil/Register Numbers	Input Address	Control Allocation	Example Data Integer
10001	1 (01H)	Contact Input 1	Input 1 on: 1
10002	2 (02H)	Contact Input 2	Input 2 on: 1
10003	3 (03H)	Contact Input 3	Input 3 on: 1
10004	4 (04H)	Contact Input 4	Input 4 on: 1
10005	5 (05H)	Contact Input 5	Input 5 on: 1
10006	6 (06H)	Contact Input 6	Input 6 on: 1
10007	7 (07H)	Contact Input 7	Input 7 on: 1
10008	8 (08H)	Contact Input 8	Input 8 on: 1

Coil/Register Numbers	Register Address	Control Allocation	Example Data Integer
40001	1 (01H)	1st LED Unit Tier	Does Control, Steady on: 0101H = 257 Does Control, Flashing: 0102H = 258
40002	2 (02H)	2nd LED Unit Tier	Does Control, Steady on: 0101H = 257 Does Control, Flashing: 0102H = 258
40003	3 (03H)	3rd LED Unit Tier	Does Control, Steady on: 0101H = 257 Does Control, Flashing: 0102H = 258
40004	4 (04H)	4th LED Unit Tier	Does Control, Steady on: 0101H = 257 Does Control, Flashing: 0102H = 258
40005	5 (05H)	5th LED Unit Tier	Does Control, Steady on: 0101H = 257 Does Control, Flashing: 0102H = 258
40006	6 (06H)	Buzzer	Does Control, buzzer pattern 1 on: 0101H = 257 Does Control, buzzer pattern 2 on: 0102H = 258
40007	7 (07H)	Smart Mode	Does Control, Group Number 1: 0101H = 257 Does Control, Group Number 15: 010FH = 271
40008	8 (08H)	Clear	Execute Clear: 0001H = 1
40009	9 (09H)	Mute	Mute cancel: 0000H = 0 Mute execution: 0001H = 1
40010	10 (0AH)	STOP	STOP cancel: 0000H = 0 STOP execution: 0001H = 1
40011	11 (0BH)	Pulse Trigger Input	Pattern change: 0001H = 1

5.3.5. Command Transmission Example

<Read Input Status (02H)>

Control Command

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					Start Address	Number of inputs
00H 00H	00H 00H	00H 06H	01H	02H	00H 00H	00H 08H

Specify -1 as the first input address to obtain the status for the start address.
For the number of inputs, specify the number of inputs to get a status from.

Reply Command

In this example, contact input 2 is set to ON and all other contact inputs are OFF.

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					byte Count	Input 1-8
00H 00H	00H 00H	00H 04H	01H	02H	01H	02H

Input (8 Bits)	8	7	6	5	4	3	2	1
Status (02H)	0	0	0	0	0	0	1	0

<Read Holding Registers (03H)>

Control Command

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					Start Address	Number of inputs
00H 01H	00H 00H	00H 06H	01H	03H	00H 00H	00H 06H

Specify -1 as the first register address to obtain the status for the start address.
For the number of registers, specify the number of registers to obtain the status from.

Reply Command

When the Signal Tower is in the Signal Tower mode, the 1st tier is lighting, the 2nd tier flashing, the 3rd to 5th tier is off, and buzzer pattern 1 is on.

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code
00H 01H	00H 00H	00H 0FH	01H	03H

Data						
byte Count	Register 1	Register 2	Register 3	Register 4	Register 5	Register 6
0CH	00H 01H	00H 02H	00H 00H	00H 00H	00H 00H	00H 01H

<Write Single Register (06H)>

Control Command

The Signal Tower is switched to group number 15 of the smart mode.

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					Address	Register 7
00H 02H	00H 00H	00H 06H	FFH	06H	00H 06H	01H 0FH

For the address, specify -1 of the register address to control.
In the register, specify the desired status to control.

Reply Command

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					Address	Register 7
00H 02H	00H 00H	00H 06H	FFH	06H	00H 06H	01H 0FH

<Diagnostics (08H)>

Control Command

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					Diagnostic Sub-code	Data
00H 03H	00H 00H	00H 06H	00H	08H	00H 00H	00H 00H

Diagnostic Sub-code : 00H 00H Fixed
Data : 00H 00H Fixed

Reply Command

When the LA6-POE control board inside the Signal Tower can be turned on.

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					Diagnostic Sub-code	Data
00H 03H	00H 00H	00H 06H	00H	08H	00H 00H	00H 01H

Response data when PCB is broken. : 00H 00H
Response data when PCB is working normally. : 00H 01H

<Write Multiple Registers (10H)>

Control Command

Where the 1st Signal Tower tier is on, the 2nd tier is flashing, the 3rd tier has no change, the 4th and 5th tiers are off, and buzzer pattern 2 is sounding.

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code
00H 04H	00H 00H	00H13H	FFH	10H

Data								
Start Address	Register No.	byte Count	Register 1	Register 2	Register 3	Register 4	Register 5	Register 6
00H 00H	00H 06H	0CH	01H 01H	01H 02H	00H 00H	01H 00H	01H 00H	01H 02H

For the start address, specify -1 of the first register address to control.
For the number of registers, specify the number of registers to transmit.
For the number of bytes, specify the number of bytes of the register to be transmitted.

Reply Command

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					Start Address	Register No.
00H 04H	00H 00H	00H 06H	FFH	10H	00H 00H	00H 06H

<Exception Response>

The list of exceptions which this product answers responses to.

Code Hex	Function Name	Functional Description
01H	illegal Function	It responds to an unmatched function code which is received.
02H	illegal Data Address	It responds when an un-assigned data address is specified.
03H	illegal Data Value	It responds when unassigned data values are specified.

The exception response is set to where 1 is the most significant bit of the received function code (80H is added) when it responds.

Unsupported function code command

Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Data	
					Start Address	Number of inputs
00H 00H	00H 00H	00H 06H	01H	09H	00H 00H	00H 08H

Exception Response

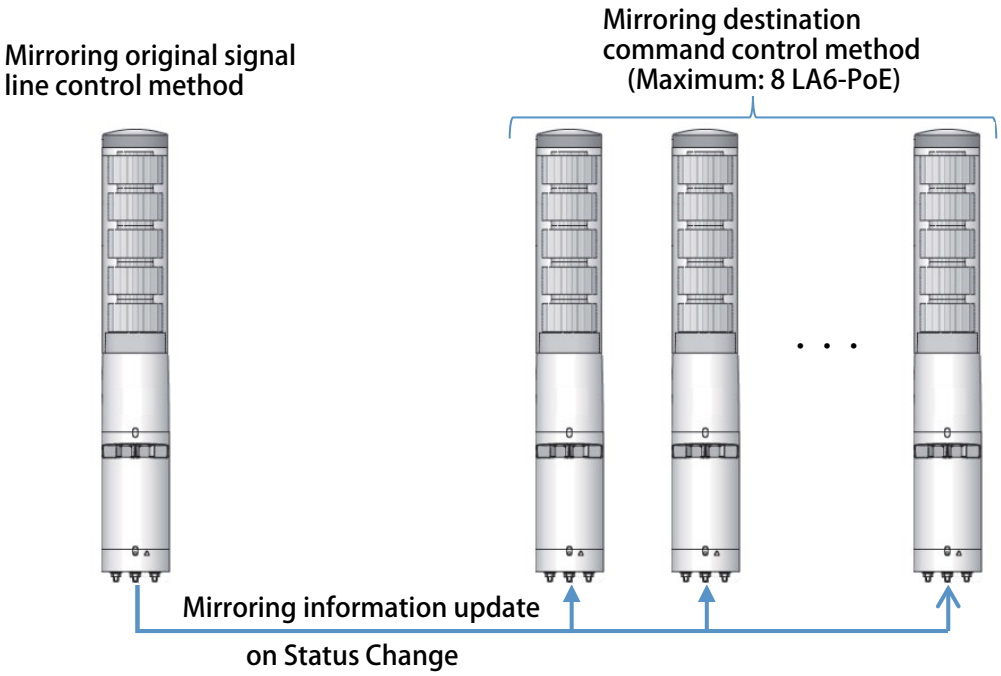
Transaction Identifier	Protocol Identifier	Field Length	Unit Identifier	Function Code	Exception Code
00H 00H	00H 00H	00H 03H	01H	89H	01H

Excecutable code in each control method (● is executable)

Function code name	Command Control Method	Signal Wire Control Method
Read Input Status	●	●
Read Holding Registers	●	●
Write Single Register	●	×
Diagnostics	●	●
Write Multiple Registers	●	×

5.4. Mirroring

Up **to nine** LA6-POE Signal Towers can be in the same status by sending the status of the LA6-POE which is being controlled by the Master via the signal line, to another **one of eight** LA6-POE Signal Towers connected within the network.



When setting the LA6-POE control by a signal line, (Refer to "4.9.1 Setting up the Mirroring Source" on page 29)
When setting the LA6-POE control by command, (Refer to "4.9.2 Setup Mirroring Destination Point" on page 30)

MEMO

- The maximum possible number of mirrored LA6-POE Signal Towers is eight units.
- Even if the mirroring source status does not change, the mirroring information is updated every 10 seconds.
- Even if a clear is executed at the mirroring destination, if 10 seconds elapse, or the signal line status changes, the mirroring source status will be reflected.

5.5. Signal Wire Control

This product has two methods of control, by a signal line input or controlling by commands. This item describes the control method by a signal line.
There are two kind of signal line control modes, "Signal Tower Mode" and "Smart Mode". Switching between the "Signal Tower Mode" and "Smart Mode is done by the ON/OFF of the "Mode Change".

- Mode Change Switch ON: Smart mode
- Mode Change Switch OFF: Signal Tower mode

Although a fundamental level hold controls the inputs, only a trigger input in the pulse trigger type for the smart mode turns into a one shot input.

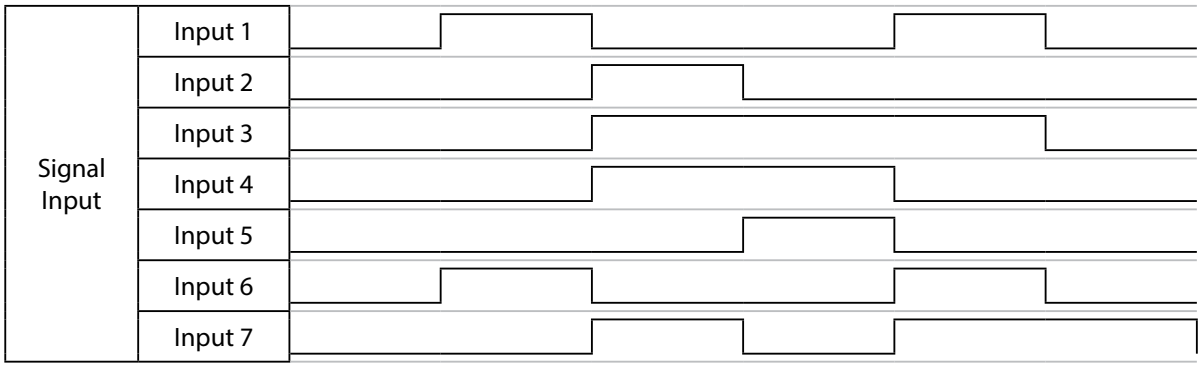
5.5.1. Signal Tower Mode

The Signal Tower Mode controls operation with ON/OFF inputs from the wires currently assigned to each LED and buzzer, like our conventional Signal Towers. When short-circuiting each input to the "Flashing/Pulse Enable Common", The LED will flash, and an intermittent buzzer sound will occur.
For the LED unit setup, (Refer to “4.4 LED Unit Setup” on page 20)

<Operation Example>

For inputs 1-7, an example of an output of the operation is shown.

Operating Status	LED Tier 1	Off	Red ON	Off	Off	Red ON	Off
	LED Tier 2	Off	Off	Amber On	Off	Off	Off
	LED Tier 3	Off	Off	Green ON	Green ON	Green ON	Off
	LED Tier 4	Off	Off	Blue On	Blue On	Off	Off
	LED Tier 5	Off	Off	Off	White ON	Off	Off
	Buzzer	Mute	Sound No.1	Sound No.2	Mute	Sound No.3	Sound No.2



* Factory settings

5.5.2. Smart Mode

There are three kind of modes, "Time-trigger Type", "Pulse Trigger Type", and "Single-display Type". The main mode has common functions for each type and has the following at this mode.

<Input 6 (Mute input)>

The buzzer sound stops when an "ON" input occurs, and muffles the sound.

<Input 7 (clear input)>

If an input for each type is set to ON, the pattern contents which are controlling the operation will be initialized and it will return to the first pattern. Also, LED's from all the tiers will go out at an "ON" input, and the buzzer is also muffled.
For the LED unit setup, (Refer to "4.4 LED Unit Setup" on page 20)

> **MEMO** The "Flashing/Pulse Enable Common" cannot be used in the smart mode.

5.5.2.1. Time-trigger Type

The pattern transitions can be controlled in accordance to time. Execute up to a maximum of 15 groups, with inputs 1-4.

<Input-group compatibility table>
For inputs 1-4, group No. in the combination of ON/OFF can be put into the diagram.

Group No.	Input 1	Input 2	Input 3	Input 4
1	ON			
2		ON		
3	ON	ON		
4			ON	
5	ON		ON	
6		ON	ON	
7	ON	ON	ON	
8				ON
9	ON			ON
10		ON		ON
11	ON	ON		ON
12			ON	ON
13	ON		ON	ON
14		ON	ON	ON
15	ON	ON	ON	ON

An empty cell indicates the "OFF" condition.

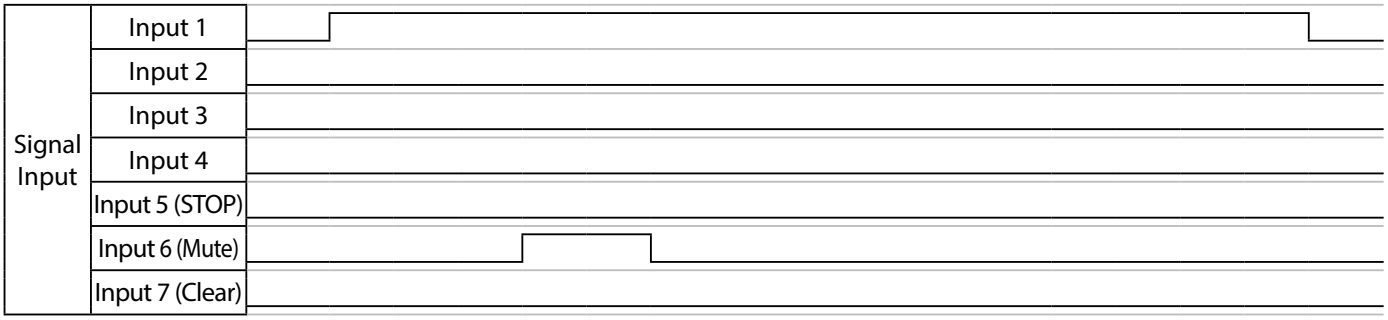
* The following control can be done with the time trigger type.
- Turn on input 5 → Use STOP to halt the progress of pattern changes.
- Turn on input 6 → Mute the buzzer.
- Turn on input 7 → The operation and time progress is controlled with a "Clear" (reset)

<Operation Example>

The following are examples of the time trigger type operation. In addition to time progress and pattern changes, the figure also shows the mute input operation.

[Group/Pattern No.]

Operating Status	LED / Buzzer	OFF / Mute	1/1	1/2	1/3	1/4 / 1/5 MUTE	- - -	1/60	1/61	1/62	1/63	OFF / Mute

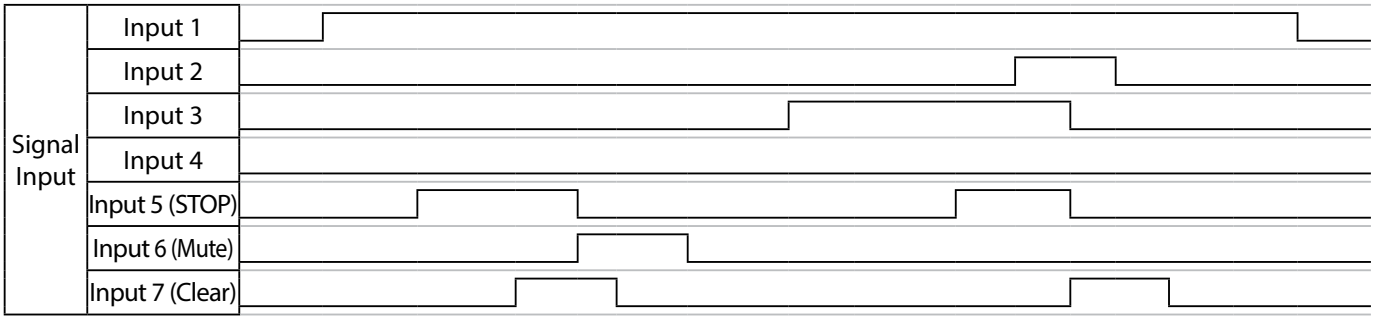


* The time trigger type operating state is an example for setting data.

In addition to time progress and pattern changes, the figure also shows the STOP input operation, the mute input, and the clear input. A STOP input setup shows an indication of the pattern at a STOP input by flashing.

[Group/Pattern No.]

Operating Status	LED / Buzzer	OFF / Mute	1/1	1/2 STOP	Clear	1/1 Mute	1/2	5/1	5/2	5/3 STOP	Clear	1/1	1/2	OFF / Mute



* The time trigger type operating state is an example for setting data.

5.5.2.2. Pulse Trigger Type

Pattern transition is changed by a pulse trigger (one shot pulse) input.
A pulse trigger is entered using input 5. Execute up to a maximum of 15 groups, with inputs 1-4.

<Input-group compatability table>

For inputs 1-4, group No. in the combination of ON/OFF can be put into the diagram.

Group No.	Input 1	Input 2	Input 3	Input 4
1	ON			
2		ON		
3	ON	ON		
4			ON	
5	ON		ON	
6		ON	ON	
7	ON	ON	ON	
8				ON
9	ON			ON
10		ON		ON
11	ON	ON		ON
12			ON	ON
13	ON		ON	ON
14		ON	ON	ON
15	ON	ON	ON	ON
An empty cell indicates the "OFF" condition.				

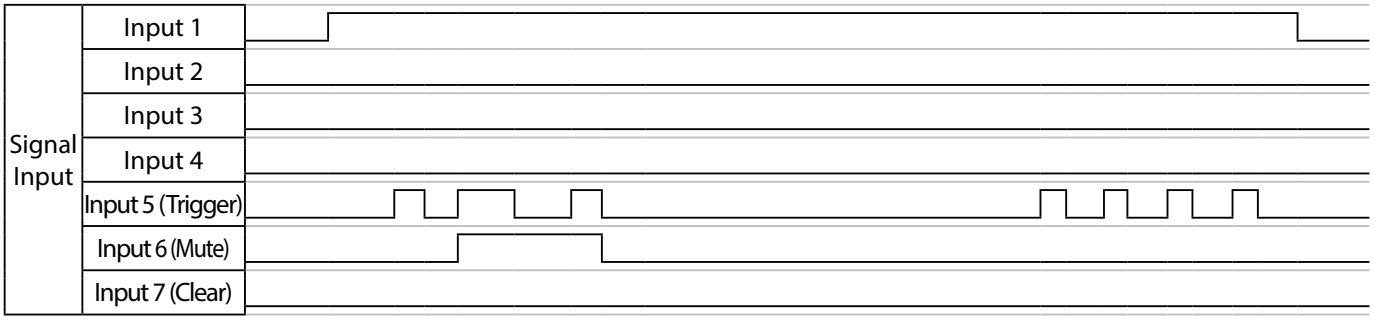
* The following control can be done with the pulse trigger type.
- Turn on input 5 (one shot pulse) → Pattern changes.
- Turn on input 6 → Mute the buzzer.
- Turn on input 7 → The operation and pulse number is controlled with a "Clear" (reset)

<Operation Example>

The following are examples of the pulse trigger type operation. In addition to trigger input and pattern changes, the figure below shows the operation of the mute input.

[Group/Pattern No.]

Operating Status	LED / Buzzer	OFF / Mute	1/-	1/1	1/2 / MUTE	1/3	- - -	1/60	1/61	1/62	1/63	OFF / Mute

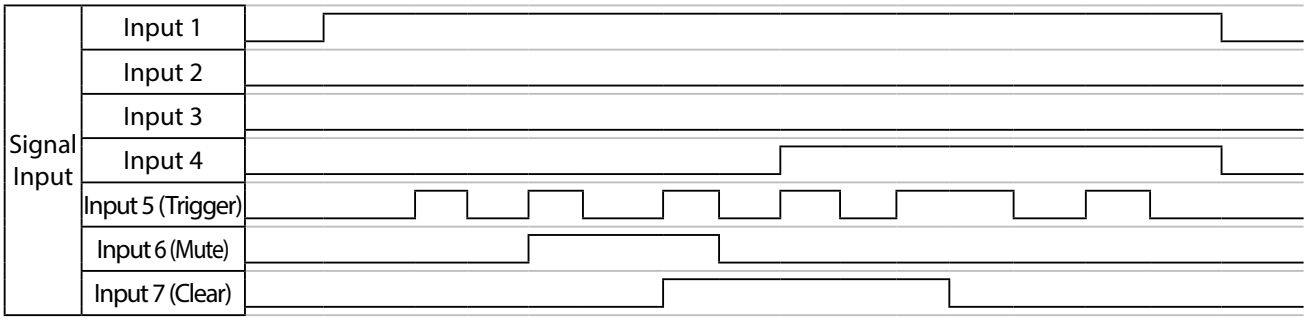


* The pulse trigger type operating state is an example for setting data.

In addition to trigger input and pattern changes, the figure below shows the operation of the mute input and the clear input.

[Group/Pattern No.]

Operating Status	LED / Buzzer	OFF / Mute	1/-	1/1	1/2 / MUTE	Clear	9/-	9/1	OFF / Mute



MEMO | The one shot trigger input pulse acquires only the rise-time of the input.

5.5.2.3. Single-display Type

Execute 31 registered pattern selections with inputs 1 to 5.

<Input- Group Compatibility Table>
For inputs 1-5, Pattern numbers in combination of ON/OFF can be put into the diagram.

Pattern No.	Input 1	Input 2	Input 3	Input 4	Input 5
1	ON				
2		ON			
3	ON	ON			
4			ON		
5	ON		ON		
6		ON	ON		
7	ON	ON	ON		
8				ON	
9	ON			ON	
10		ON		ON	
11	ON	ON		ON	
12			ON	ON	
13	ON		ON	ON	
14		ON	ON	ON	
15	ON	ON	ON	ON	
16					ON

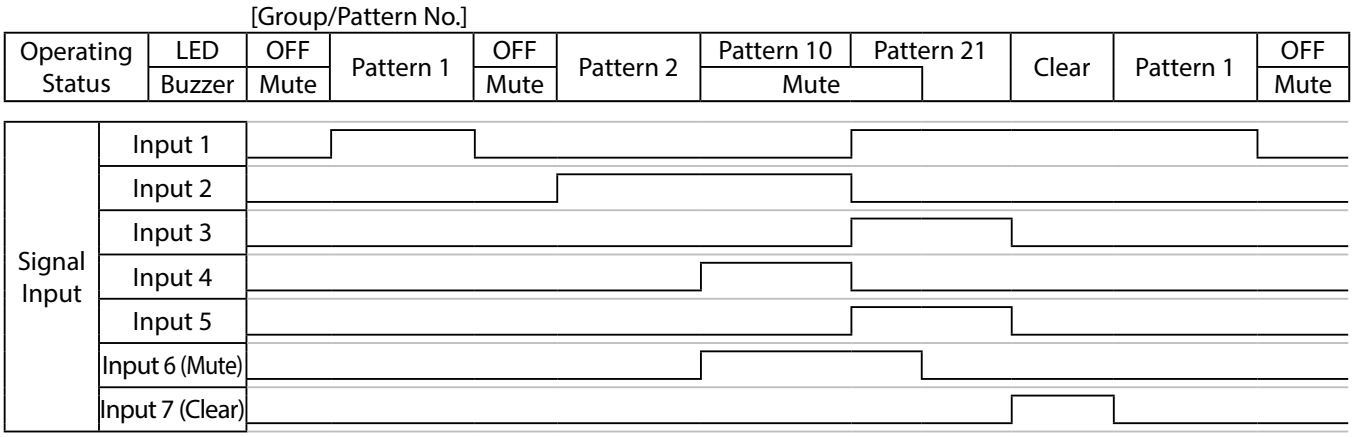
Pattern No.	Input 1	Input 2	Input 3	Input 4	Input 5
17	ON				ON
18		ON			ON
19	ON	ON			ON
20			ON		ON
21	ON		ON		ON
22		ON	ON		ON
23	ON	ON	ON		ON
24				ON	ON
25	ON			ON	ON
26		ON		ON	ON
27	ON	ON		ON	ON
28			ON	ON	ON
29	ON		ON	ON	ON
30		ON	ON	ON	ON
31	ON	ON	ON	ON	ON

An empty cell indicates the “OFF” condition.

* The following control can be done with the single display type.
- Turn on input 6 → Mute the buzzer.
- Turn on input 7 → Operation "Clear" (reset)

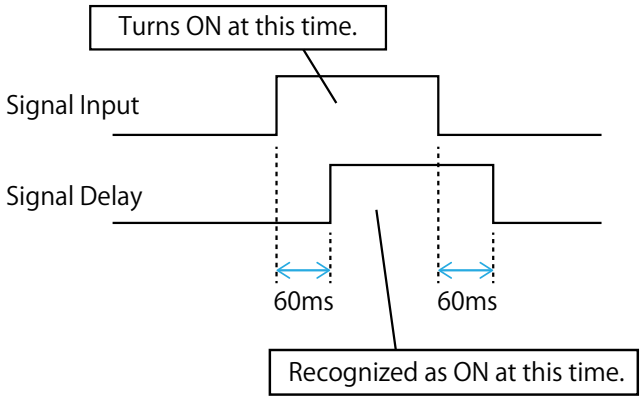
<Operation Example>

The following are examples of the single display type operation.



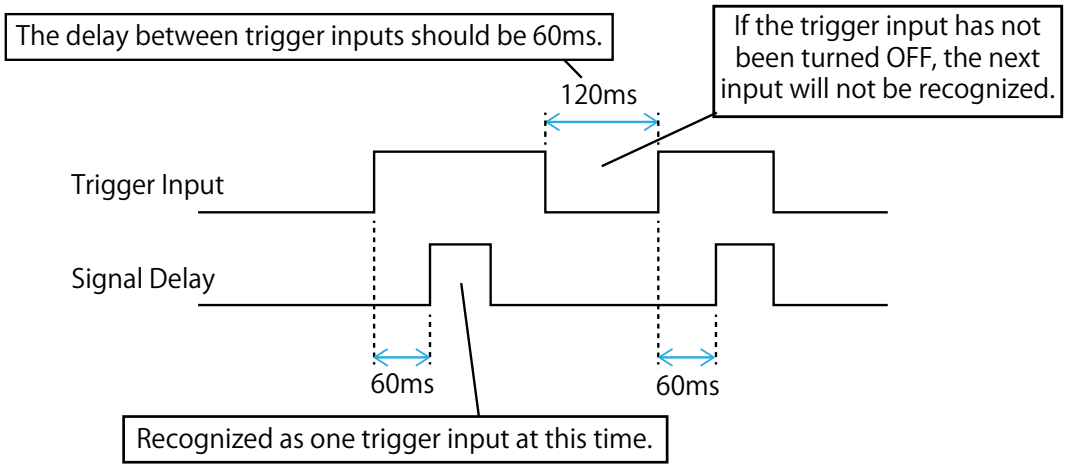
5.5.3. Input Signal Time Chart

If an input signal status is maintained by the data lead time indicated for this product, the input status is decided inside the product.



5.5.4. Trigger Input Signal Time Chart

Unlike other inputs, the trigger input in the "Smart Mode" turns into a one shot input. As the time in detection rises, and is maintained, the next detection is not recognized.



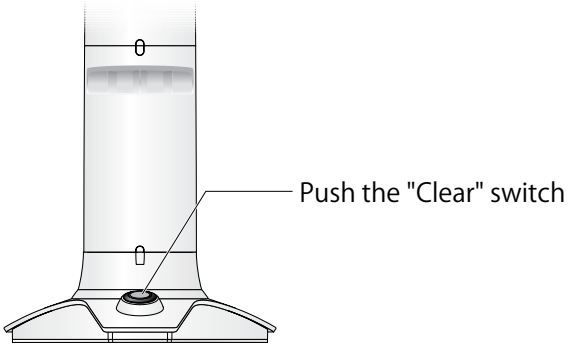
5.6. "Clear" Function

This product can be cleared by using the "Clear" function. The clear function only operates while using the command control method.

- The Clear status indicates the following status:
  - To turn an LED Unit OFF
  - To STOP the Buzzer sound
  - To turn the Mute input OFF
  - To turn the STOP input OFF

The method of executing the clear function is as follows:

- Push the "Clear" switch (SN)



- Perform "Clear" with the contact input detection function (Refer to "5.7 Contact Input Detection" on page 60).

⚠ CAUTION

⚠While using the signal line control method, the "Clear" operation will not operate, even if the "Clear" switch is pushed.

5.7. Contact Input Detection

Use the contact inputs 1-4 to perform the operation set up by operating the contacts. The operation can be selected from "No operation", "Clear", "mute", "STOP", and "Trigger". (Refer to “4.8 Contact Input Detection” on page 27)

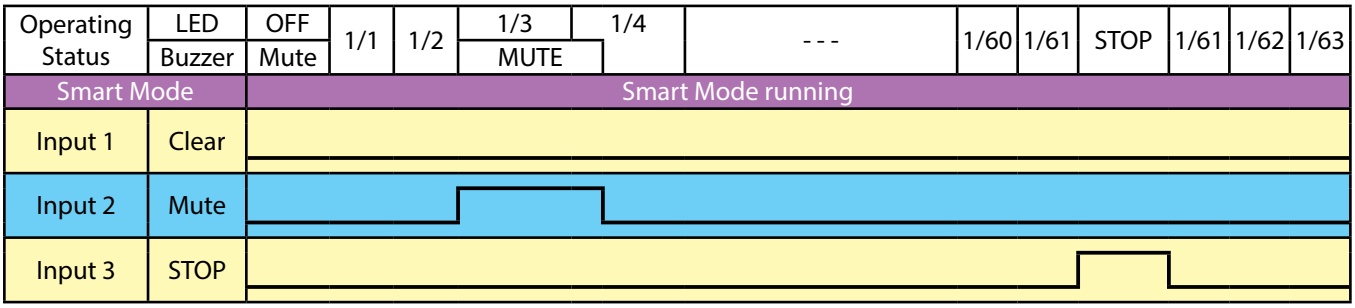
Select Operation	Operation Contents
No Operation	• It doesn't operate.
Clear	• By turning on the contact set up to clear, the "Clear" operation will be executed. (Refer to "5.6 "Clear" Function" on page 59)
Mute	• By turning on the contact set up for mute, the Mute input is turned on. • While the mute input is set to ON, the buzzer will not sound. • When the contact is turned off, the Mute input will also turn off.
STOP	• By turning on the contact set up for STOP, the STOP input will turn ON. • While the STOP input is ON, the operation for the STOP input is executed. • When the contact is turned OFF, the STOP input will also turn off.
Pulse Trigger	• By turning on the contact set up for the pulse trigger input, the operation for the pulse trigger is turned on. • Whenever the contact is turned on, the pattern changes.

MEMO

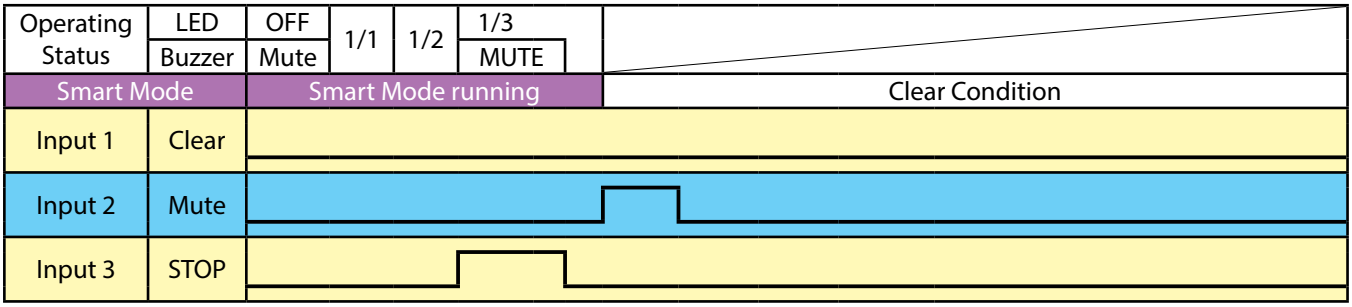
- The contact input detection function can be performed only while using the command control method.
- The Mute input is effective only while the Smart mode is running.
- The STOP input is effective only when the time trigger type in Smart mode is running.
- The trigger input is effective only during pulse trigger mode when Smart mode is running.

<Operation Example>

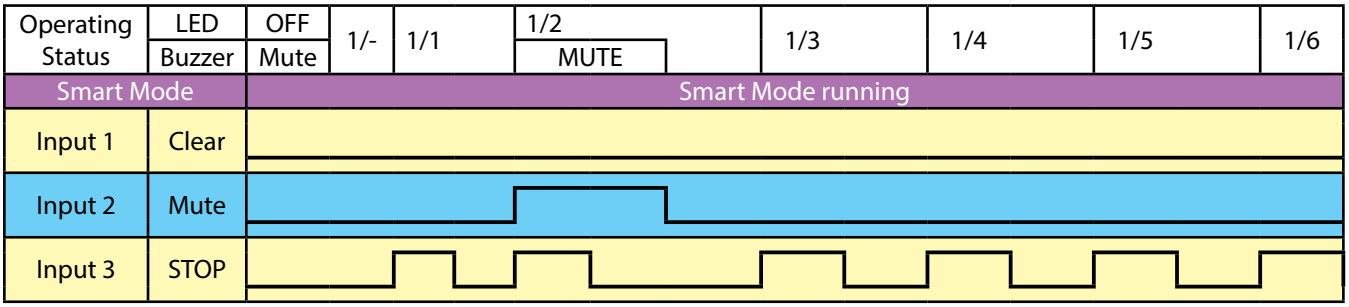
Execute in smart mode (Time-trigger Type) with identifier "T" in a PNS Command.



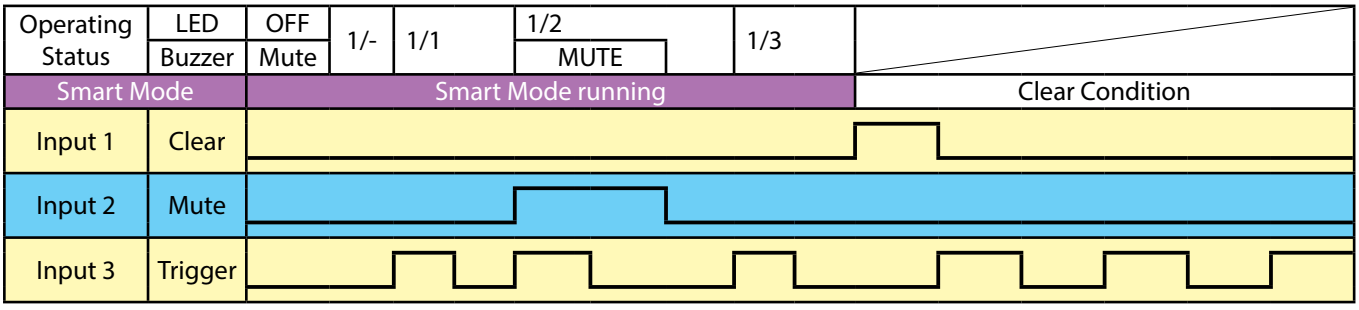
Execute in smart mode (Time-trigger Type) with identifier "T" in a PNS Command.



Execute in smart mode (pulse trigger type) with identifier "T" in a PNS command.



Execute in smart mode (pulse trigger type) with identifier "T" in a PNS command.



5.8. HTTP Command Control

This product can be controlled by transmitting a HTTP command from the HTTP client.

[Specification of HTTP command control]

Protocol	HTTP	
Method	GET	
Syntax	http://<IP address>/api/control?<parameter name>=<value>[&<parameter name>=<value>]	
Response	Success.	The parameter name is correct.
	Error.	The parameter name is incorrect.

Parameter	Values	Description
alert=< integer value >	6 digits	Each LED unit tier and buzzer can be controlled with the pattern. Specify the pattern in order of [Tier 1, Tier 2, Tire 3, Tier 4, Tier 5, Buzzer]. [Tier 1 -5] 0 : Off, 1 : On, 2 : Flashing, 9 : No Change [Buzzer] 0 : Stop, 1 : Pattern 1, 2 : Pattern 2, 3 : Buzzer sound at a simultaneous buzzer input, 9 : No Change
smart=< integer value >	1 - 31	The Smart Mode can be executed with the number.
pulse=< integer value >	1	The pattern can be changed when the pulse torigger mode operation.
mute=< integer value >	0, 1	The On/Off of the buzzer is controllable when executing in Smart Mode.
stop=< integer value >	0, 1	The pattern stop/restart can be controlled when the time torigger mode operation.
color=< integer value >	5 digits	The color of each LED unit tier can be controlled. 0 : Off, 1 : Red, 2 : Amber, 3 : Lemon, 4 : Green, 5 : Sky Blue, 6 : Blue, 7 : Purple, 8 : Pink, 9 : White
buzzer=< integer value >	0 - 11	Buzzer pattern can be controlled. 0 : Stop, 1 - 11 : Buzzer patterns 1 - 11.
flash=< integer value >	1	The LED unit will flash.
clear=< integer value >	1	Turn off the LED unit and stop the buzzer.

MEMO

- Please specify "color" and "buzzer" with one command.
- The parameters that can be specified at the one command are as follows.
  - » smart&pulse
  - » color&buzzer
  - » color&buzzer&flash

5.8.1. Example

<alert>
1st Tier : lighting, 2nd Tier / 3rd Tier : flashing, 4th Tier : Off, 5th Tier : No Change, Buzzer : Pattern 1
http://192.168.10.1/api/control?alert=122091

<smart>
Smart Mode group 10 is executed.
http://192.168.10.1/api/control?smart=10

<pulse>
A trigger input is executed.
http://192.168.10.1/api/control?pulse=1

<smart and pulse>
Simultaneously with a trigger input, Smart Mode group 10 is executed.
http://192.168.10.1/api/control?smart=1&pulse=1

<mute>
Turn Mute On.
http://192.168.10.1/api/control?mute=1
Turn Mute Off.
http://192.168.10.1/api/control?mute=0

<stop>
STOP is turned On.
http://192.168.10.1/api/control?stop=1
STOP is Off.
http://192.168.10.1/api/control?stop=0

<color and buzzer>
1st Tier : Green, 2nd Tier : Blue, 3rd Tier : Off, 4th Tier : White, 5th Tier : Red, Buzzer : Pattern 11
http://192.168.10.1/api/control?color=46091&buzzer=11

<color and buzzer and flash>
1st Tier : Green, 2nd Tier : Blue, 3rd Tier : Off, 4th Tier : White, 5th Tier : Red, Buzzer : Pattern 11, Flashing : On
http://192.168.10.1/api/control?color=46091&buzzer=11&flash=1

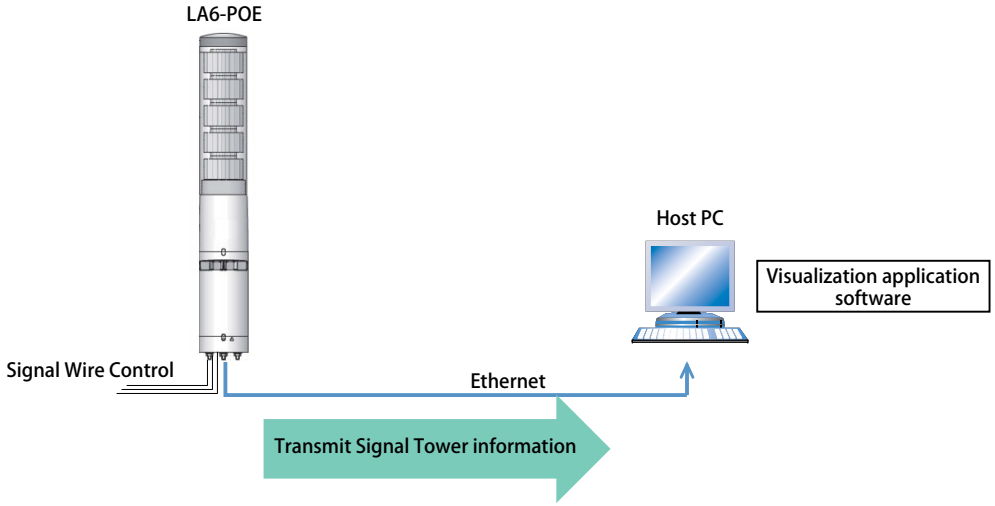
<clear>
Turn off the LED unit and stop the buzzer.
http://192.168.10.1/api/control?clear=1

5.9. Signal Tower Information Transmission Function

Send the Signal Tower Information from LA6-POE. By using "Visualization application software", you can use collected Signal Tower Information to visualization.

What is About Visualization application software ?
Application software installed on the PC. Use this application to display information collected by LA6-POE in a Gantt chart or graph. Must be provided by the customer. (Refer to "5.9.8 Visualization Application Software" on page 69)

5.9.1. System Overview



5.9.2. Communication specifications

LA6-POE will automatically TCP connection to the receiver (ex: Visualization application software) , and Signal Tower Information is transmitted when status changes occurs.
Automatic reconnection every 3 seconds when LA6-POE cannot connect or disconnect to receiver.

5.9.3. Transmission condition

Signal Tower Information is transmitted when the following conditions.

- When the signal input status changes "light on".
- When the signal input status changes "light off".
- When the signal input status changes "flashing".
- When the smart mode executed.
- When the smart mode pattern transitioned.
- When a takt time over occurred.
- When connected to receiver.
- When Mute input, STOP input and Clear input changed ON.

5.9.4. Transmission Data Contents

Send the following data.

- Signal Tower status information.
- Signal Tower color information.
- Smart Mode status information (Group Number, Mute, STOP Input, Pattern Number)
- Takt time overdue information.
- MAC addrres of this product.

5.9.5. Transmission Data Format

Data Format

Product Category AB		Identifier	Open	Data Size		Data Area
41H	42H	00H	00H	00H	20H or 25H	See Below

Product Category

The product is classified in “AB.”

Identifiers

00H is fixed.

Data Size

The number of bytes for the data area is stored.

- When in Signal Tower Mode, the data size is 20H.
- When in Smart Mode, the data size is 25H.

Data Area

The Signal Tower Information is stored.

<< When running in Signal Tower Mode >>

1	2	3	4	5	6	7	8	9	10	11
MAC address						Mode	Time counter		Open	Packet No.
The MAC address of this product is stored.						00H : Signal Tower mode	0000H - FFFFH		00H	00H - FFH

12	13	14	15	16	17	18	19
1st Tier of LED unit				2nd Tier of LED unit			
Status	R	G	B	Status	R	G	B
00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH

20	21	22	23	24	25	26	27
3nd Tier of LED unit				4rd Tier of LED unit			
Status	R	G	B	Status	R	G	B
00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH

28	29	30	31	32
5th Tier of LED unit				Buzzer
Status	R	G	B	Status
00H: Off 01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	00H: Stop 01H: Buzzer Pattern 1 02H: Buzzer Pattern 2 03H: buzzer sounds when the buzzer inputs are simultaneously entered

<< When running in Smart Mode >>

1	2	3	4	5	6	7	8	9	10	11
MAC address						Mode	Time counter		Open	Packet No.
The MAC address of this product is stored.						01H : Smart mode	0000H - FFFFH		00H	00H - FFH

12	13	14	15	16
Smart Mode Status				
Group No.	Mute	STOP Input	Pattern No.	Takt Time Overdue
01H: Group 1 02H: Group 2 (Cont) 1EH: Group 30 1FH: Group 31	00H: Mute Off 01H: Mute ON	00H: STOP OFF 01H: STOP ON	01H: Group 1 02H: Group 2 (Cont) 3EH: Group 62 3FH: Group 63	00H: Not occurred 01H: Occurred

17	18	19	20	21	22	23	24
1st Tier of LED unit				2nd Tier of LED unit			
Status	R	G	B	Status	R	G	B
01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH

25	26	27	28	29	30	31	32
3nd Tier of LED unit				4rd Tier of LED unit			
Status	R	G	B	Status	R	G	B
01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH

33	34	35	36	37
5th Tier of LED unit				Buzzer
Status	R	G	B	Status
01H: On 02H: Flashing	00H-FFH	00H-FFH	00H-FFH	00H: Stop 01H: Buzzer Pattern 1 02H: Buzzer Pattern 2 03H: Buzzer Pattern 3 (Cont) 0AH: Buzzer pattern 10 0BH: Buzzer pattern 11

MEMO

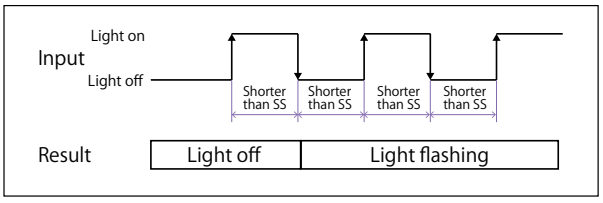
Time counter : After the Signal Tower status change occurs, it is time (in 100 ms) to the signal tower transmission information.

When no group number is specified or the pattern is not executed, 0 (00H) is stored in the following values.

Group Number ,Pattern Number , LED unit (Status, RGB), Buzzer.

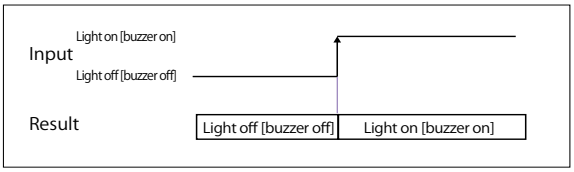
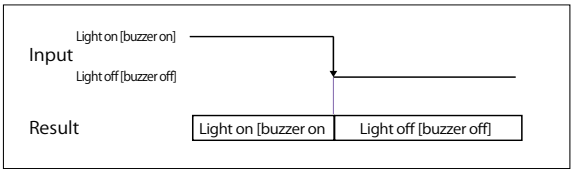
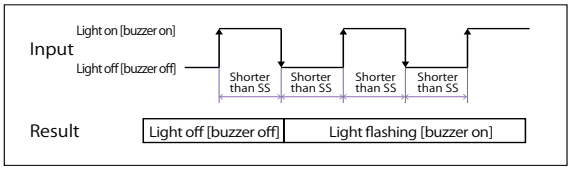
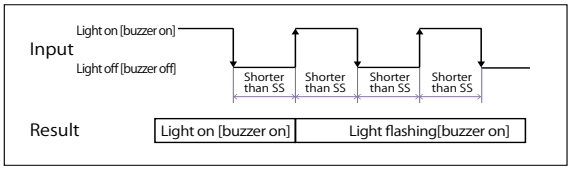
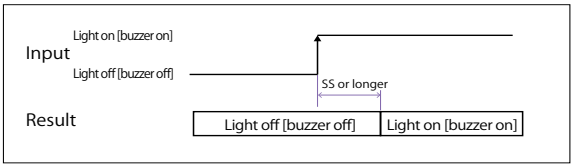
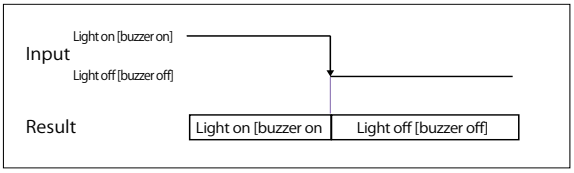
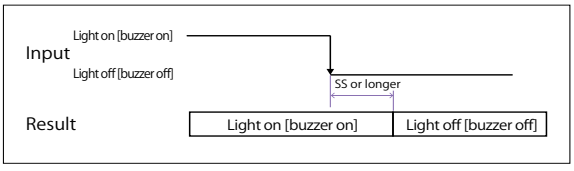
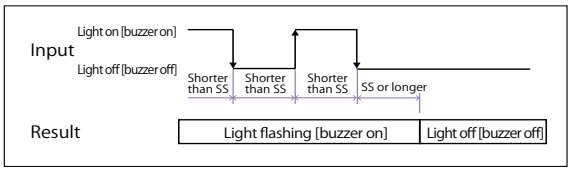
5.9.6. Determine Signal Tower Input

There are two types of decisions for signal tower inputs, Normal and Flashing.
If there is no flashing state, use "Normal".

<table>
<tr><th>Setting</th><th>Determination</th><th>Description</th></tr>
<tr><td rowspan="2">Normal</td><td>Light on</td><td>When the signal input status changes from "Light off" to "Light on", the result is "light on" and information is transmitted.</td></tr>
<tr><td>Light off</td><td>When the signal input status changes from "Light on" to "Light off", the result is "light off" and information is transmitted.</td></tr>
<tr><td rowspan="4">Flashing*</td><td>Flashing</td><td>When the signal input repeatedly changes "Light on" to "Light off" to "Light on" to "Light off" and so on, the result is "Flashing" and information is transmitted.
You can select from 3 different time periods in Web setup tool before flashing is determined.
• Flashing (short)
• Flashing (medium)
• Flashing (long)</td></tr>
<tr><td>Light on</td><td>When the signal input status changes from "Light off" to "Light on", the result is "Light on" and information is transmitted.</td></tr>
<tr><td>Light off</td><td>When the signal input status changes from "Light on" to "Light off", the result is "Light off" and information is transmitted.</td></tr>
<tr><td colspan="2">* Flashing is determined when there are two status changes within a defined period.
This period is called "SS seconds".
 

You can select "SS seconds" from three different time periods.
• Flashing (short): SS seconds = 0.7 seconds
• Flashing (medium): SS seconds = 1.5 seconds
• Flashing (long): SS seconds = 2.5 seconds</td></tr>
</table>

The status and determination operations are as follows. (Information in square brackets "[ ]" represent buzzer operation.)

<table>
<tr><th rowspan="2">Setting</th><th rowspan="2">Determination</th><th colspan="2">Description</th></tr>
<tr><th>Change in state</th><th>Operation result</th></tr>
<tr><td rowspan="2">Normal</td><td>Light on</td><td>Light off → Light on</td><td> 
</td></tr>
<tr><td>Light off</td><td>Light on → Light off</td><td> 
</td></tr>
<tr><td rowspan="6">Flashing</td><td rowspan="2">Flashing</td><td>Light off → Flashing</td><td> 
</td></tr>
<tr><td>Light on → Flashing</td><td> 
</td></tr>
<tr><td rowspan="2">Light on</td><td>Light off → Light on</td><td> 
</td></tr>
<tr><td>Flashing → Light on</td><td> 
</td></tr>
<tr><td rowspan="2">Light off</td><td>Light on → Light off</td><td> 
</td></tr>
<tr><td>Flashing on → Light off</td><td> 
</td></tr>
</table>

5.9.7. Maintain Signal Tower Status

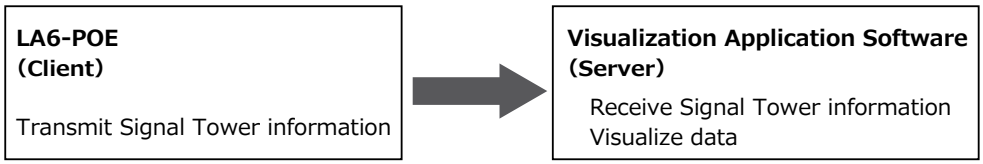
- When a transmission failure occurs between the signal tower and the Host PC, afeter that this function temporarily retains the transmission information in the product.
- Once communication is possible again, information that was retained is transmitted in sequential order from old to new.
- The function can retain up to 32 units of information.

5.9.8. Visualization Application Software

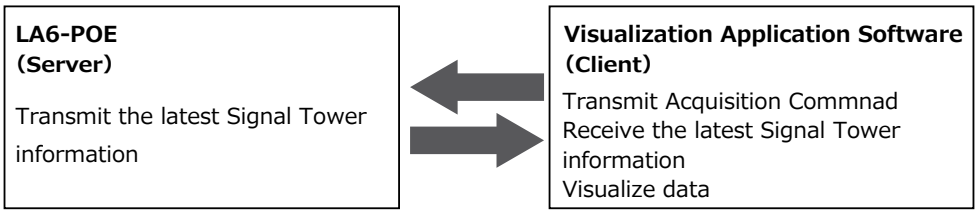
There are two ways the visualization application software to collect the Signal Tower information.

- Acquire with "Signal Tower Information Transmission Function".
- Acquire with "Detailed Status Acquisition Command".

■ Signal Tower Information Transmission Function



■ Detailed Status Acquisition Command.



MEMO | When using software packages from PATLITE partners, please contact our sales office.

6. Maintenance

6.1. Initialization

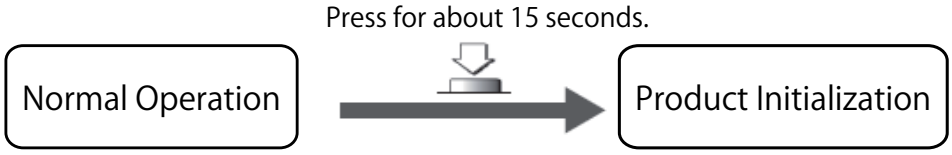
Please proceed following steps when it is required for initialization.
When you want to return to the factory settings.
When you forget the IP address of this product.
When you forget the Login Password of this product.

Initialization of this product can be done by the following methods.

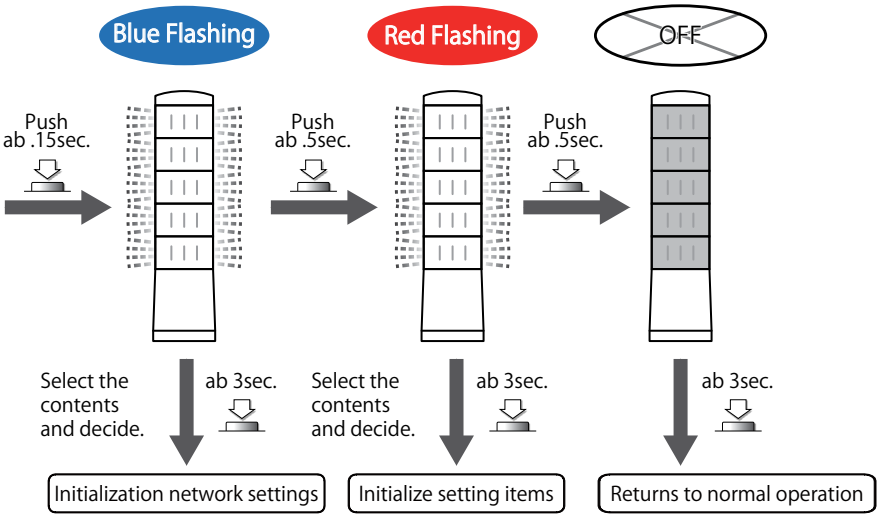
- Initialize by operating the Multi-function button.
  "Initialize Network Settings" and "Initialize Setting Items" can be executed.
- Initialize in the Web setting Screen.
  Either "Initialize settings other than network settings" or "Network settings are also re-initialized" can be executed.

Initialization Method	Selected initialization contents	Setting items that can be initialized (● is initialized)							
		Signal Tower mode setting	Buzzer Sound/ Volume	Flashing Cycle	Smart Mode Setup	Network Setup	Password	Control System	Command Configuration Modbus/TCP Setup Contact Input Operation Setting Mirroring Setup Signal Tower information transmission setup
Multi-function Button	Initialization network settings	×	×	×	×	●	●	×	×
	Initialize setting items	●	×	×	×	●	●	●	●
WEB Setting Screen	Initialize settings outside network settings	×	×	×	×	×	●	●	●
	Network settings also re-initialize	×	×	×	×	●	●	●	●

[How to reinitialize by operating the Multi-function button]

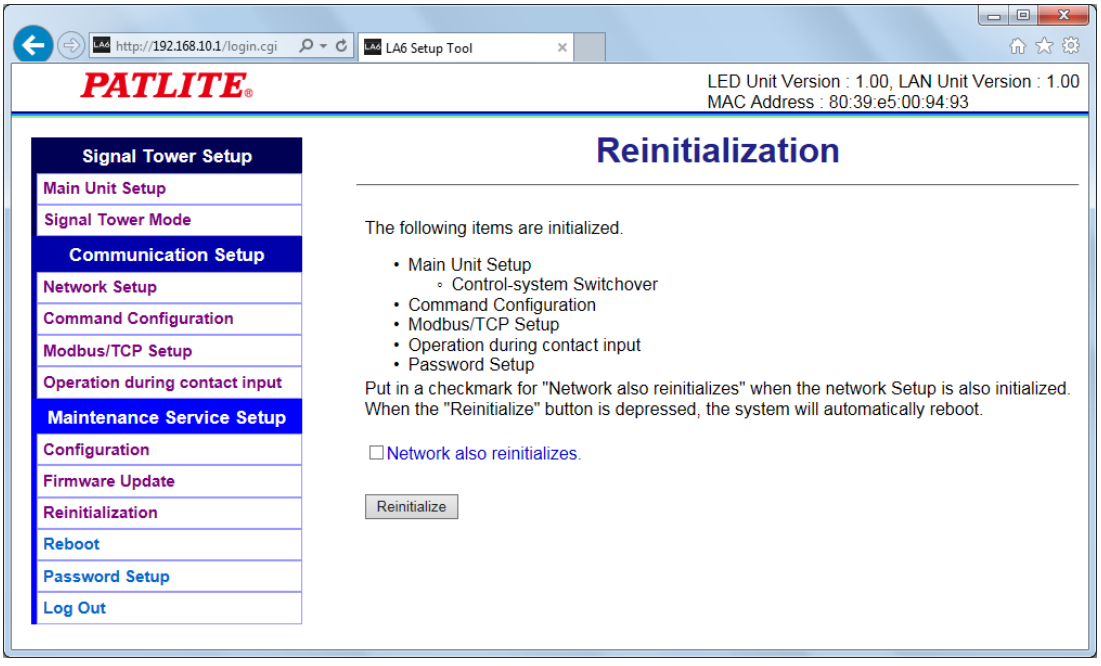


- When the Multi-function button is pressed and released after about 15 seconds, the LEDs of all the tiers flash in blue and the network setting can be initialized.
- From the flashing blue status, pressing and holding the Multi-function button for about 2 seconds will initialize the network settings.
- When the Multi-function button is pushed briefly (about 0.5 seconds), from the blue flashing status, the LEDs of all the tiers will flash in red and the setting items can be initialized.
- From the red flashing status, by pressing and holding the Multi-function button for about a second, the setting items are initialized.
- When initialization is completed, it automatically restarts.



[How to initialize in the Web Setting Screen]

① Log into the Web Setting Screen. (Refer to "4.2.1 Login" on page 18.)
② Select "Initialization" from the menu items.
③ To also initialize the network settings, check "Reinitialize Network".
④ Click the "Initialization Execution" button.



⚠ CAUTION

⚠ If the "Initialize network" is checked and initialization is executed, the network setting for this product will be reset to the default values, so network reconfiguration is required.

6.2. Reboot

Please proceed following steps when it is required for initialization.
Mirroring does not display.
Cannot operate Socket Communication.

Rebooting this product can be done by the following methods.

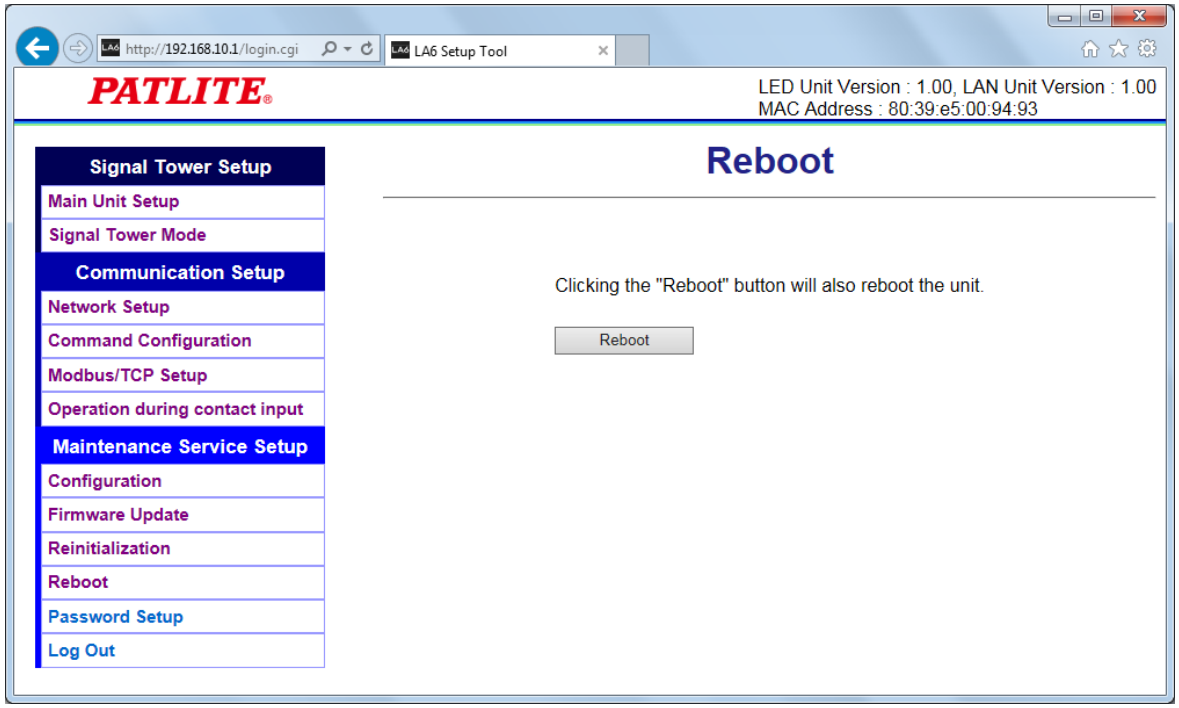
- Reboot in the Web setting Screen.
- Reboot via command control.

[How to reboot in the Web Setting Screen]

① Log into the Web Setting Screen. (Refer to "4.2.1 Login" on page 18.)

② Select "Reboot" from the menu items.

③ Click the "Reboot" button.



[How to reboot via command control]

This product can be rebooted by sending a PNS restart command.
Refer to "5.1 PNS Command" on page 32 for details.

6.3. Web Login Password Change

The password can be changed in the Web Setting Screen.
The password is used for the following applications.

- Log in to the Web Setting Screen.
- Adding to a Reboot command.

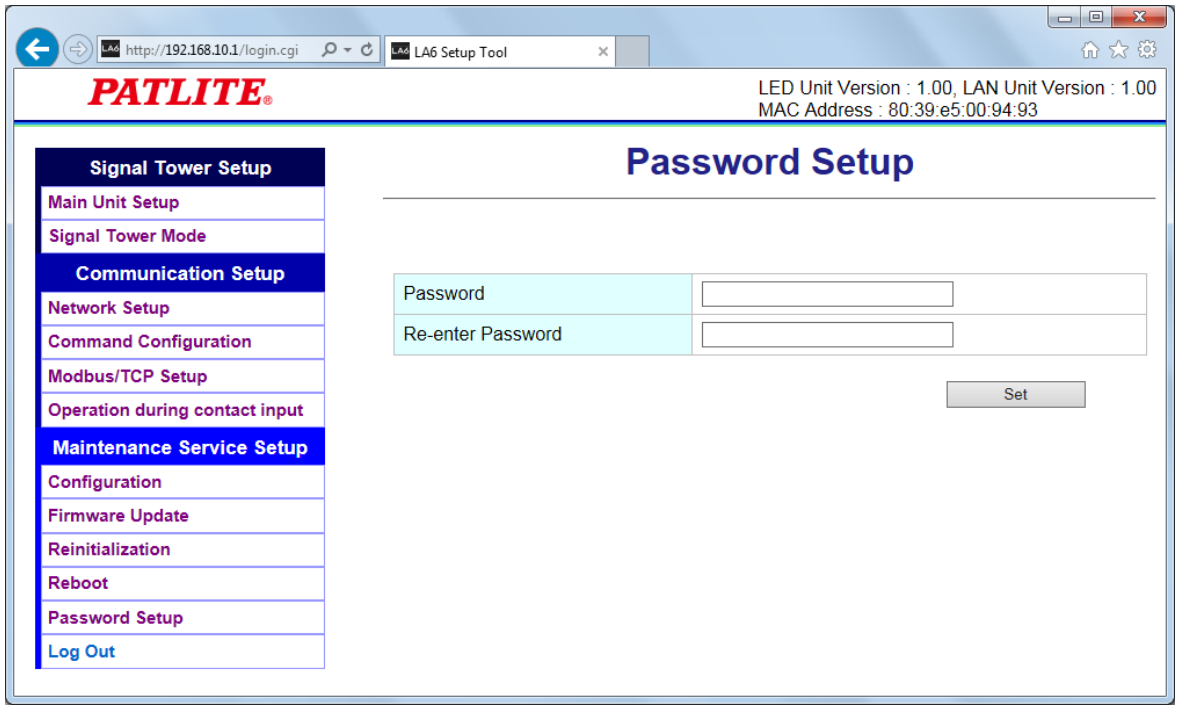
> MEMO | Refer to "5.1.7. reboot command" for details on the reboot command.

[The method to change a password]

① In the "Password setting" screen, enter the new password to change in the password field. (Up to 16 single-byte English characters)

② Enter the new password the same way in the re-entry field, to verify the password was entered correctly.

③ When the "Set" button is pushed, the entered value will be set as the new password.



6.4. Version Confirmation

The version of this product can be checked by the following methods.

- Operate the Multi-function button to confirm.
- Check in the Web Setting Screen.

This product has an LED unit section and LAN unit section, in which each version is available separately.

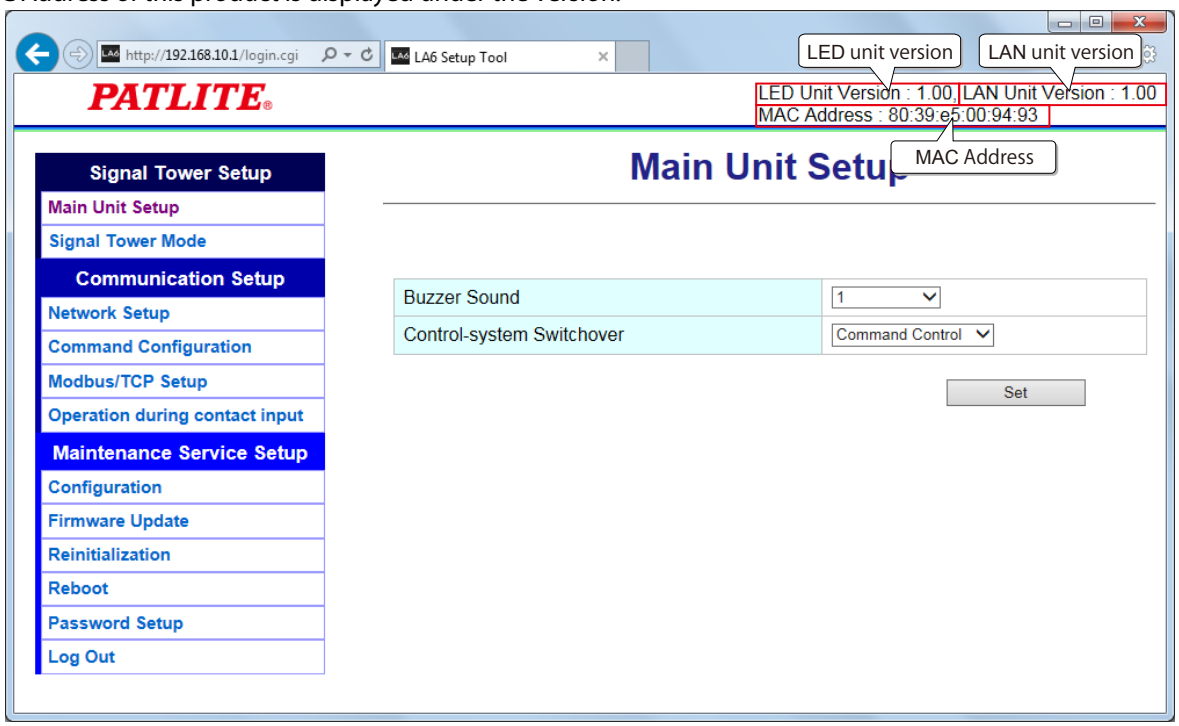
How to check the version of LED unit section	Multi-function button Web Setting Screen
How to check the version of the LAN unit section	Web Setting Screen

[How to check in the Web Setting Screen]

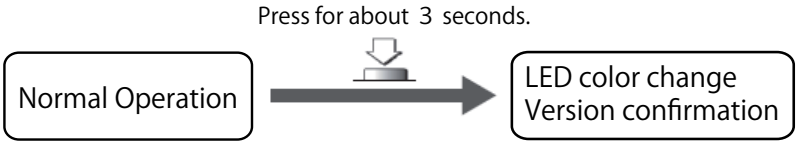
Log into the Web Setting Screen for this product.

> **MEMO** For details on how to log in to the Web setting screen, refer to "4.2.1. Login".

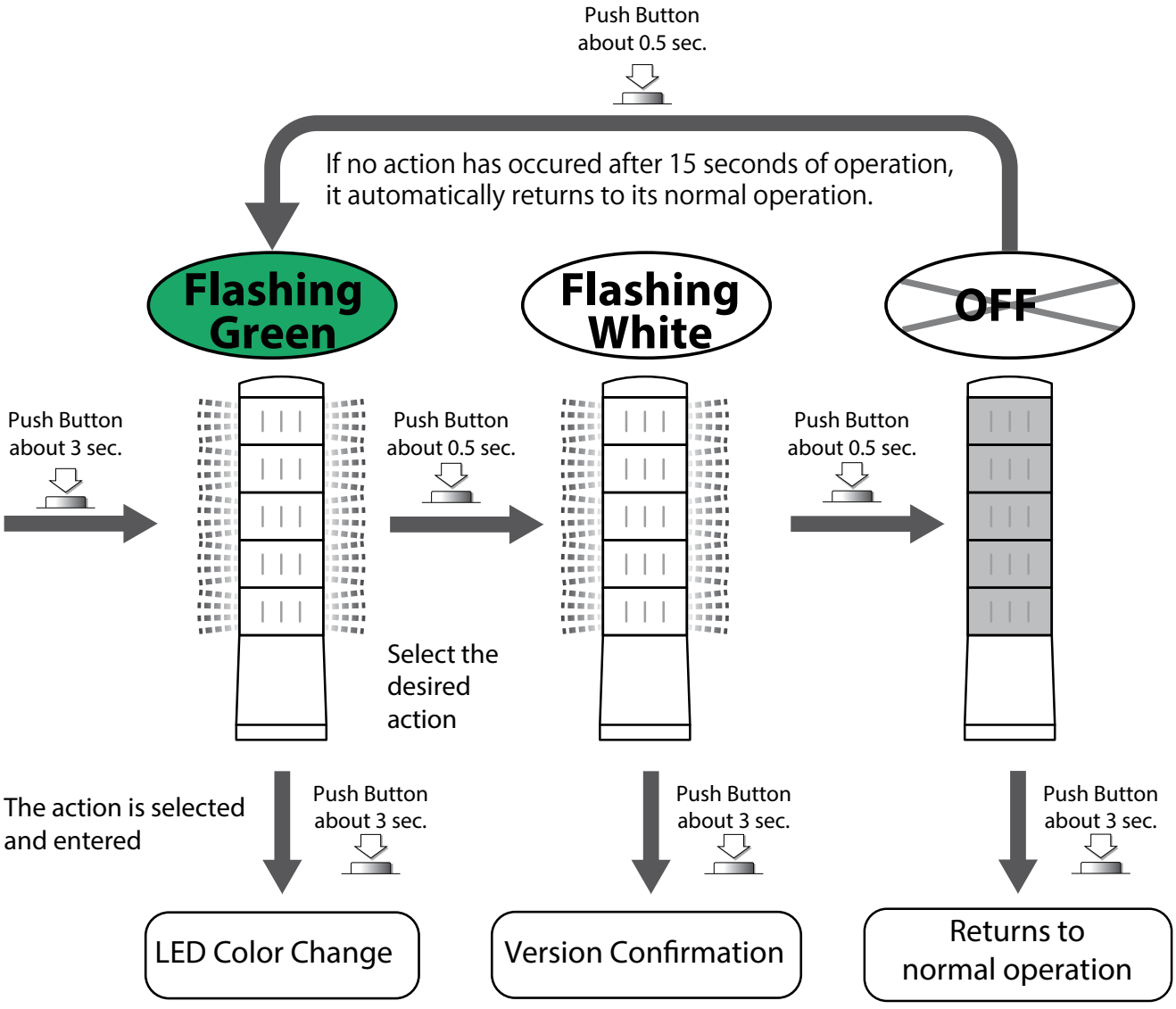
On the upper part of the screen, the LED unit version and LAN unit version are displayed.
The MAC Address of this product is displayed under the version.



[How to check the LED unit section version with the Multi-function button]



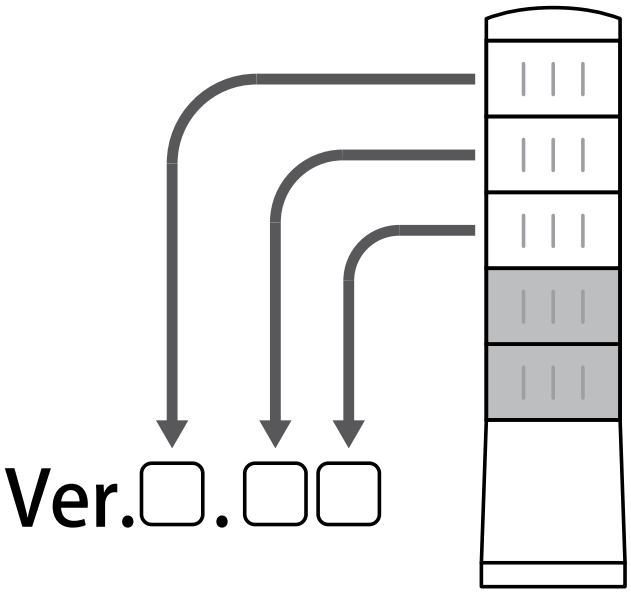
When the Multi-function button is pressed for about 3 seconds and released, the LEDs on all the tiers flicker in green and the LED color change and version can be checked.
As shown in the figure below, each time the Multi-function button is pressed briefly (about 0.5 seconds), 3 types of LED color changes, version check, and return to normal status can be selected.
When the Multi-function button is pushed briefly (about 0.5 seconds) from the green flashing status, all the LED tiers will flash in white.
From the flashing white status, if the Multi-function button is pressed and held for about 3 seconds, the version confirmation status is activated.



To verify the firmware version, three LED tiers will light up in accordance to the current firmware version, indicated from top to bottom. Refer to the following table for the meaning of each LED color.

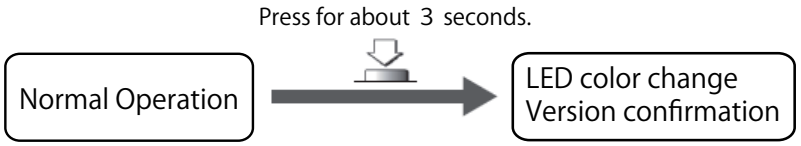
LED Color	Corresponding Number
OFF	0
Red	1
Amber	2
Green	3
Blue	4
White	5
Purple	6
Pink	7
Sky Blue	8
Lemon	9

The version is expressed in the order from the LED top to bottom, as shown in the figure below.

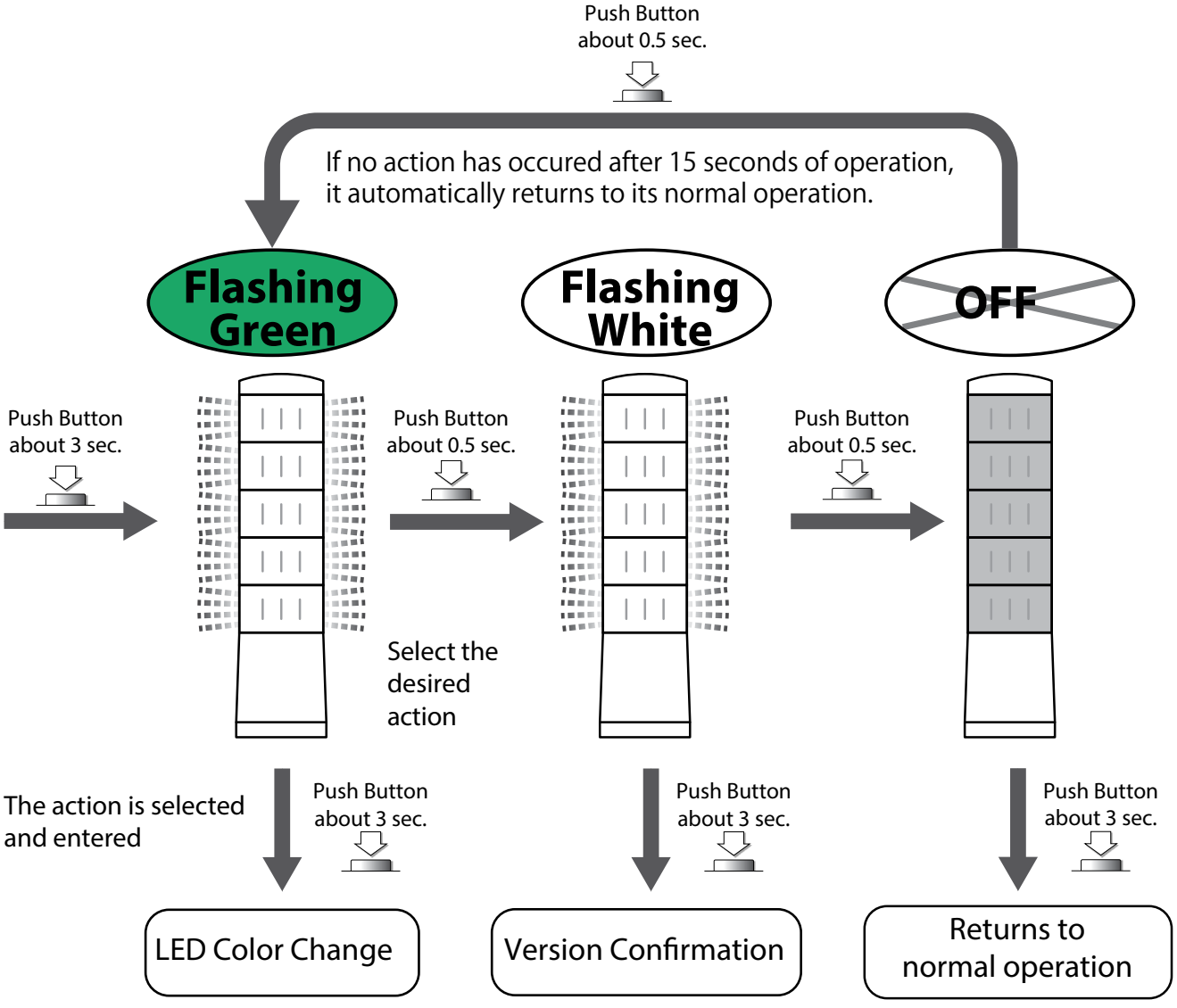


6.5. LED Color Change

The LED color can be changed from that of the default color when operating in the "Signal Tower Mode" and the Multi-function button for this product is pressed.

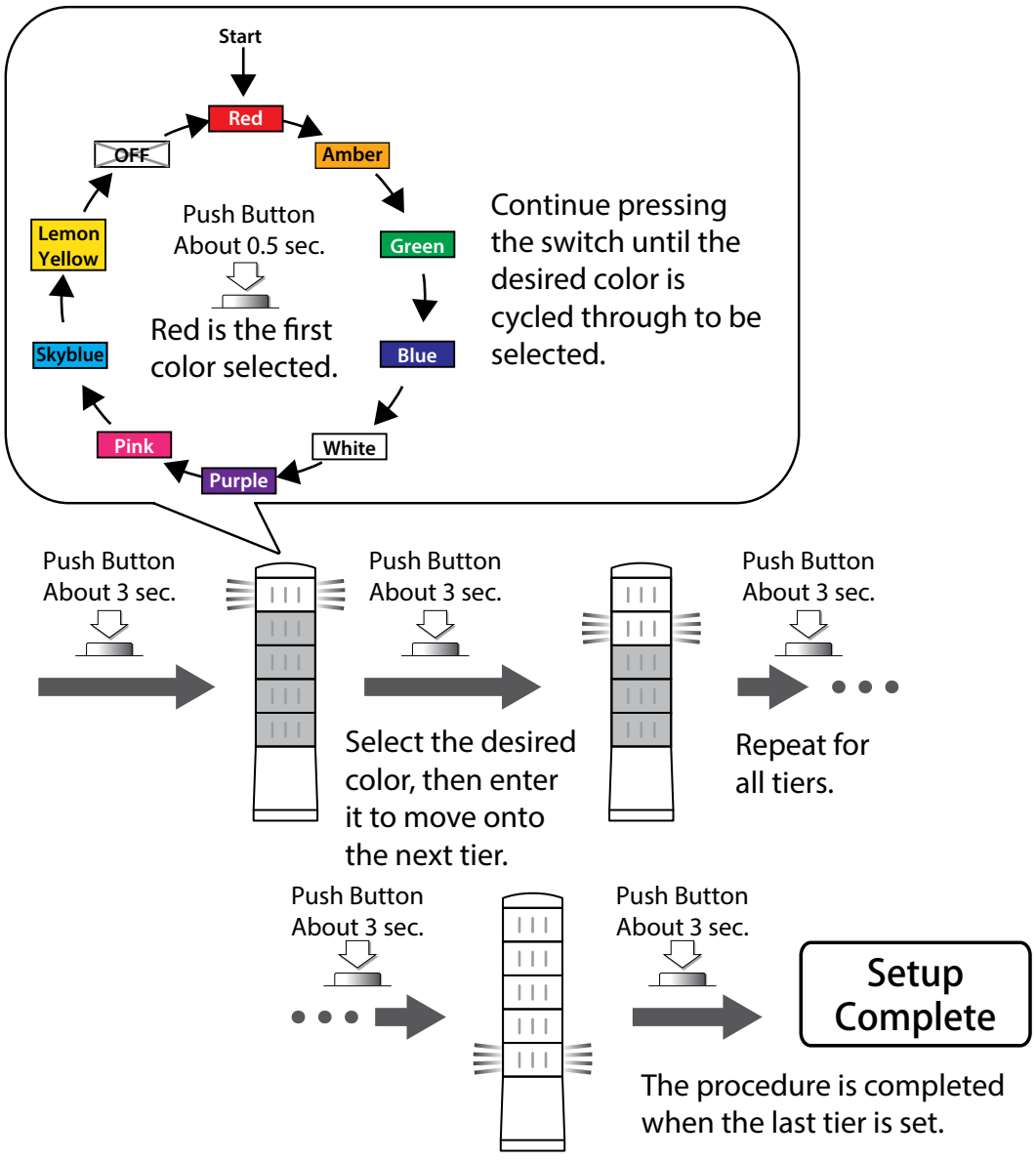


When the Multi-function button is pressed for about 3 seconds and released, the LEDs on all tiers flash in green and the LED color change and version confirmation can be checked.
As shown in the figure below, each time the Multi-function button is pressed briefly (about 0.5 seconds), 3 types of LED color changes, version check, and return to normal status can be selected.
From the flashing green status, if the Multi-function button is pressed and held for about 3 seconds, the LED color change function is activated.



<LED Color Change>

The LED color which operates in the Signal Tower mode can be changed.
First, the LED color change starts from the1st tier where the red LED turns on.
As shown in the figure below, whenever the Multi-function button is pushed for a short time (Ab. 0.5 sec.), the 1st tier of the LED lighting color changes in order.
With the desired color lit, if the Multi-function button is pressed a little longer (about 3 seconds), the LED color of the second tier can be changed to the desired color while the LED of the first tier remains lit with the selected color.
As with the first LED tier, change the LED color up to the last tier and push the Multi-function button a little longer (about 3 seconds) to complete the color change for all the LED tiers.

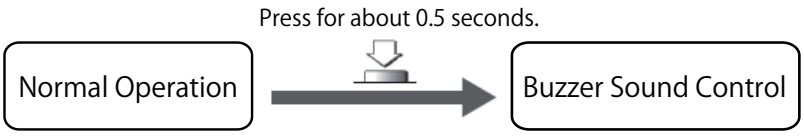


⚠ CAUTION

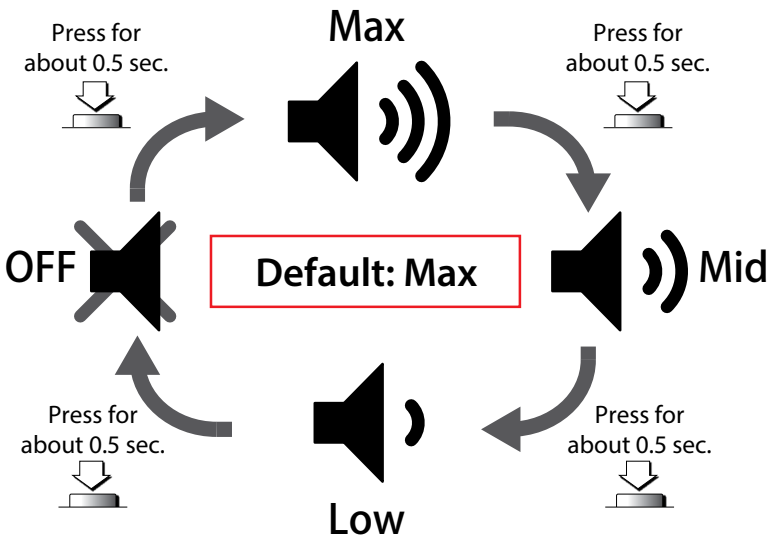
- If there is a tier which does not change color, be sure to reset all tiers and do over.
- None of the LED tier colors are saved until the last tier is set up.
- If the operation is not done within 15 seconds or more, the LED colors return to normal operation without saving the selected LED colors.

6.6. Buzzer Sound Control

There are two ways to adjust the buzzer sound volume for this product; using the Web setting method and setting the button operation method. Refer to "4.5 Main Unit Setup" on page 24 for the method to set up via the Web Setting Screen.
The method to set up by operating the setting buttons is as follows.



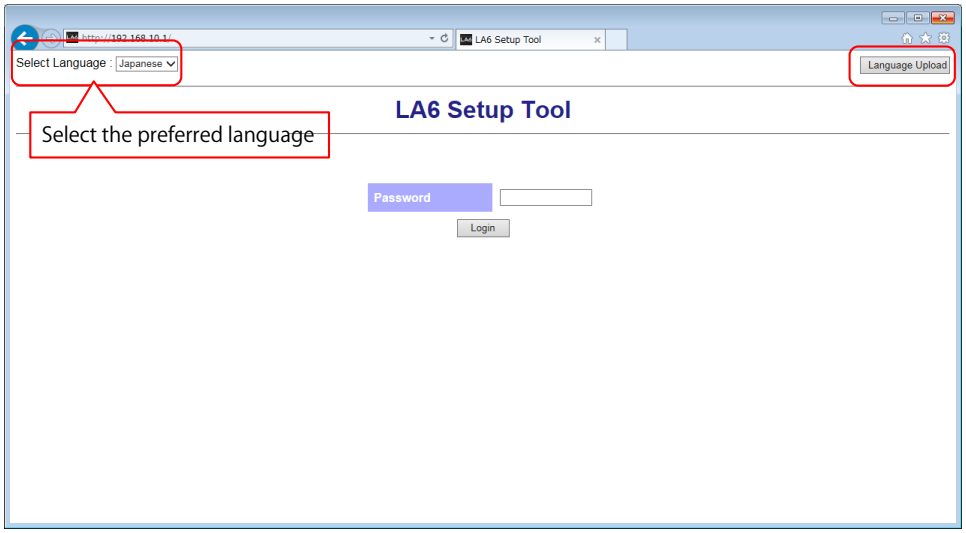
To adjust the buzzer volume, press the Mode Switch for a short time (about 0.5 seconds). Whenever the Mode Switch is pushed, the volume changes in the order according to the following figure, and a beep sound is heard with the changing of the volume. Volume adjustment is completed when the beep sound is done.



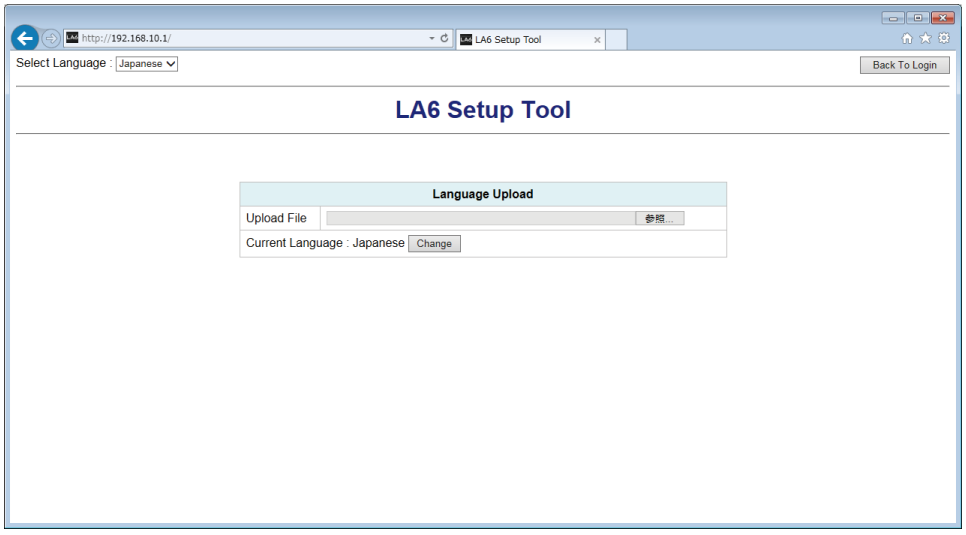
6.7. Language Data Update

This product can display up to two languages on the Web Setting Screen.
The default language is "English", but the language can be selected to display "Japanese".
By uploading language data to this product from the login screen, the language displayed in the Web setting screen can be changed.

① Click the "Language Upload" button. Up to two languages can be saved.



② The uploaded language is displayed on the screen.



③ Select the uploaded language data to change to, then click the "Change" button.

MEMO

When the language data is uploaded, English will not be replaced. The other language will be written and replaced.

<Rewriting Example>

English	Upload French →	English	Upload German →	English
Japanese		French		German

6.8. Firmware Update

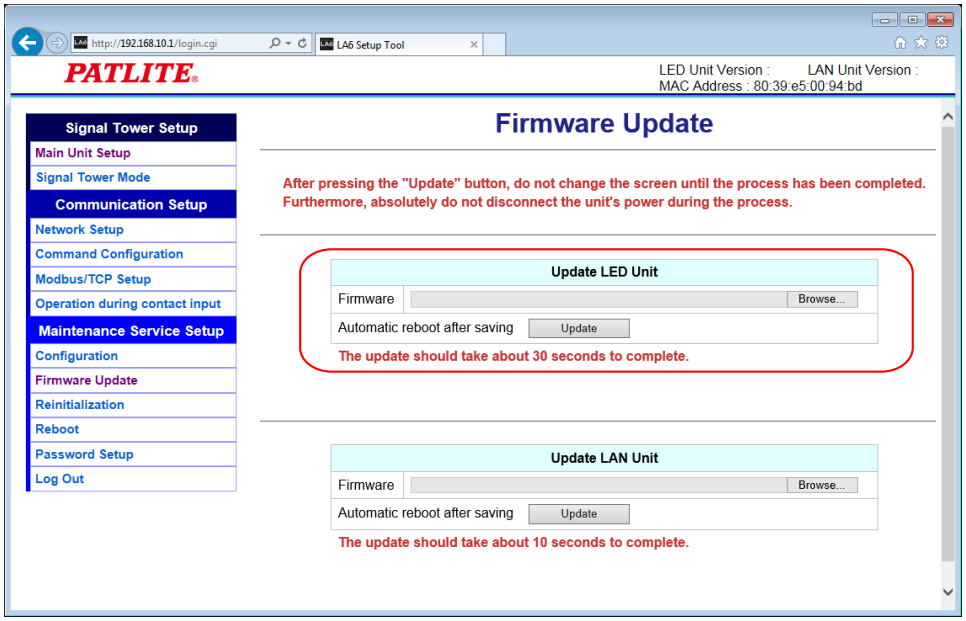
6.8.1. Firmware update of the LED unit

The firmware can be updated in the Web Setting Screen.

[Update Method]

① Log into the Web Setting Screen.
② Select "Firmware Update" from the menu items.
③ In "Update LED Unit", Click the "Browse" button to select the firmware of the LED unit.
④ Clicking the "Update" button will start the firmware update.

When the update is complete, the product will reboot automatically.



⚠ CAUTION

- After pressing the "Update" button, do not operate the Web Browser until firmware updates complete.
- Do not disconnect the unit's power or LAN cable during the update.
- Be sure to verify the object model and firmware version before executing an update.
  If an object is not is selected when the firmware is to be updated , it will result in a cause of failure to this product.

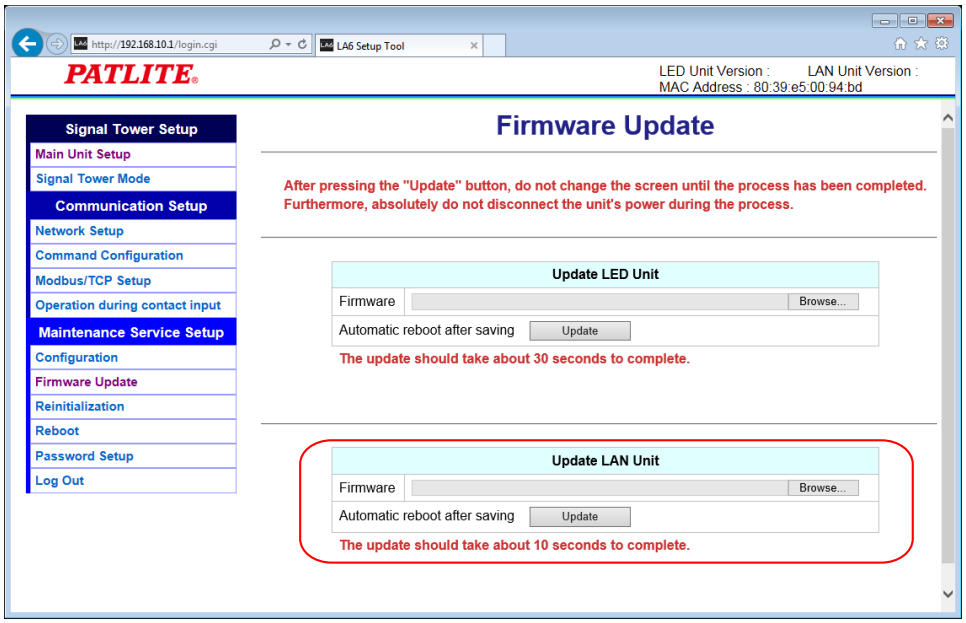
6.8.2. Firmware update of the LAN unit

The firmware can be updated in the Web Setting Screen.

[Update Method]

① Log into the Web Setting Screen.
② Select "Firmware Update" from the menu items.
③ In "Update LAN Unit", Click the "Browse" button to select the firmware of the LAN unit.
④ Clicking the "Update" button will start the firmware update.

When the update is complete, the product will reboot automatically.



⚠ CAUTION

- After pressing the "Update" button, do not operate the Web Browser until firmware updates complete. If operated the Web Browser, please reboot this product before re-run the firmware update
- Do not disconnect the unit's power or LAN cable during the update.
- Be sure to verify the object model and firmware version before executing an update. If an object is not is selected when the firmware is to be updated , it will result in a cause of failure to this product.

7. Troubleshooting

If trouble is encountered while using this product, check the table below for applicable items and implement the contents described in "Cause / Countermeasure". If there is no applicable explanation, or if the "Cause/Countermeasure" can not be solved, contact your nearest PATLITE Sales Representative listed at the end of this book.

Problem	Cause/Countermeasure	Reference
The Web Setting Screen is not displayed.	Is the LAN cable connected correctly? Check that it is connected properly.	"3.1 How to Install", pg. 9
	Is the connected LAN cable a category 5e or higher? Use a LAN cable rated at category 5e or higher.	"3.2.4 LAN Cable Connection", pg. 14
	Is the IP address setup for this product correct? Check the IP address for this product.	"4.3 Network Setup", pg. 19
	Is the set IP address for this product duplicated with other equipment? Check the IP address for this product.	"4.3 Network Setup", pg. 19
	Is the IP address setup on the personal computer side set up wrong? Check the IP address for the personal computer.	-
	Is Java Script disabled in the browser security setting? Enable the Java Script.	-
	Clear the browsing history, then check it.	-
The Web Setting Screen is not displayed correctly.	Update the browser information, then check it.	-
When logging in the Web Setting Screen, an error is displayed.	Was the wrong IP address accessed? Check the IP address currently displayed in the address column of the browser.	-
"Unable to communicate with the LED Unit." is displayed on the WEB setting screen.	Is the DC power properly applied at the correct voltage? Be sure to use it with the proper voltage.	"10. General Specifications" on page 89
	Was this product booted while it was unable to communicate with a DHCP server? Check whether it can communicate with a DHCP server. Wait for a while before accessing the Web setting screen again.	-
	The LED unit may be faulty. Contact your nearest PATLITE Sales Representative	-
The LED does not light up or flash.	Is it connected to the PoE power supply? Connect it to the PoE power supply.	"3.2.4 LAN Cable Connection", pg. 14
	Is the power properly supplying the correct voltage? Check that the supply voltage is at the rated voltage.	-
	Is "BLACK" selected in the LED unit setting? Set a color to light up.	"4.4 LED Unit Setup", pg. 20
	Is the control method set up correctly? Make sure the setup matches the control method.	"4.5 Main Unit Setup", pg. 24
	Is the electric wiring connected correctly? Check whether the wiring is connected correctly.	"3.2 Wiring", pg. 11
A different LED tier from what I thought lights up when I make it turn on.	Is the setup data correct? Check that the contents of the setup data is correct.	"4.4 LED Unit Setup", pg. 20
	Is the electric wiring connected correctly? Check whether the wiring is connected correctly.	"3.2 Wiring", pg. 11

Problem	Cause/Countermeasure	Reference
The buzzer does not sound.	Is the buzzer sound set to "Mute"? Set the buzzer sound to an audible level.	“6.6 Buzzer Sound Control”, pg. 79
	Is the "Buzzer: No sound" selected in the smart mode setting? Set up the desired buzzer pattern.	“EDITOR for LA series” help
	Is the power properly supplying the correct voltage? Please check that the supply voltage is at the rated voltage.	-
	Is the electric wiring connected correctly? Check whether the wiring is connected correctly.	“3.2 Wiring”, pg. 11
The buzzer sound volume is small.	Is the buzzer volume set to minimum? Set the buzzer sound to an audible level.	“6.6 Buzzer Sound Control”, pg. 79
	Is the setup data correct? Check that the contents of the setup data is correct.	“4.4 LED Unit Setup”, pg. 20 “EDITOR for LA series” help
Cannot operate Socket Communication.	Is the communication port correct? Check the port number setting.	“4.6 Command Configuration”, pg. 25 “4.7 Modbus/TCP Setup”, pg. 26
	Is the communications protocol correct? Check the protocol setting.	“4.6 Command Configuration”, pg. 25
	Is the transmitted data correct? Check the transmitted data.	“5.1 PNS Command”, pg. 32 “5.2 PHN Command”, pg. 44 “5.3 Modbus/TCP”, pg. 46
It does not operate in DHCP mode.	Check that the environment is connectable with a DHCP server.	-
The Signal Tower will not switch off, even if the "Clear" switch is pressed.	Is the control method set to the signal wire control method? Please set it to the command control method.	“4.5 Main Unit Setup”, pg. 24
The LED flashes red in all tiers immediately after switching on the power.	The setting data is damaged. Rewrite the setting data.	“4.4 LED Unit Setup”, pg. 20
The writing of the setting data failed.	Was the setting data for the LED unit and LAN unit written wrong? Make sure the setting data to be written is correct.	-
The firmware writing has failed.	Was the firmware for the LED unit and LAN unit written wrong? Make sure the firmware to the proper unit is written correctly.	-
Mirroring does not display.	Is the mirroring destination set up for the signal line control method? Please set it to the command control method.	“4.9 Mirroring Setup”, pg. 28
	Is the IP address for the mirroring destination set in the destination of the mirroring setting? Set the IP address correctly.	“4.9 Mirroring Setup”, pg. 28
	Was the LAN cable linked to the product substituted for another HUB port? Reboot the HUB.	-
	Was the LED unit setting data read during the mirroring operation? Reboot this product.	-
The adhesive strength of this rubber sheet becomes weak.	Is there dirt or oil adhered to the rubber sheet to weaken it? Remove the bottom plate from the product, remove the dirt etc., with water, then dry it thoroughly before reuse.	“3.1 How to Install”, pg. 9

Problem	Cause/Countermeasure	Reference
The HTTP command cannot be controlled.	Are you logged in the Web Setting Screen? Please log out the Web Setting Screen.	-
	Is the control method set to the signal wire control method? Please set it to the command control method.	“4.5 Main Unit Setup”, pg. 24
Transmission data of Signal Tower information is different from setting value.	Was the LED unit setting data written with a USB cable? Please click the "Sync" button.	“4.5 Main Unit Setup”, pg. 24

8. Replacement Parts

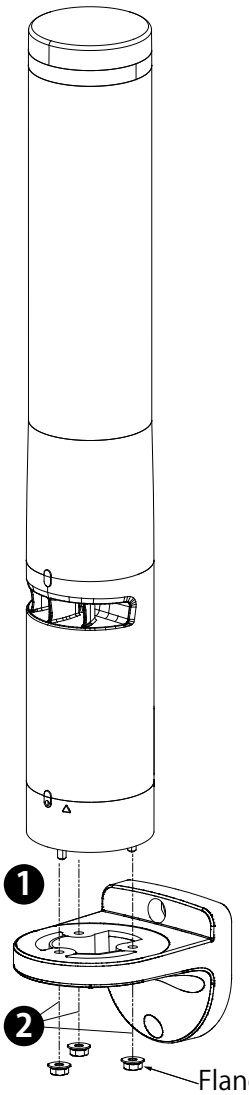
The replacement parts list for this products is shown in the table below. When replacement parts are necessary, direct your inquiries to the store where this product was purchased.

Head Cover
USB Cover
Waterproofing Ring B (2 pc. set)
LAN bracket assembly
Rubber sheet (3 pcs.)
Terminal connector

9. Option Parts

9.1. Wall-mount Bracket (Direct Mounting Type [TN])

Supported Option Model	SZK-003W



1. Place the product (LA 6 - 5 DTNWB - POE) directly onto the wall-mount bracket (SZK - 003W) as shown on the left.

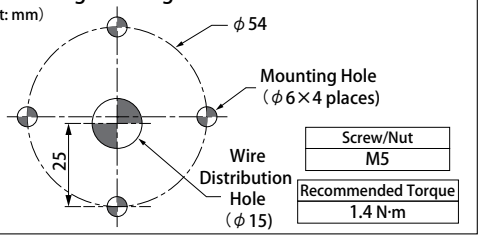
2. Secure the product with flanged nuts (3 pieces) included with the product.

Recommended Torque
0.75N/m (Standard)

⚠ CAUTION

- Be sure to use both mounting screws and to tighten them with the recommended torque.
- The clamping surface should be level and sufficient enough to tolerate shock, vibrations and the weight of the product.

■Mounting Drawing
(Unit: mm)

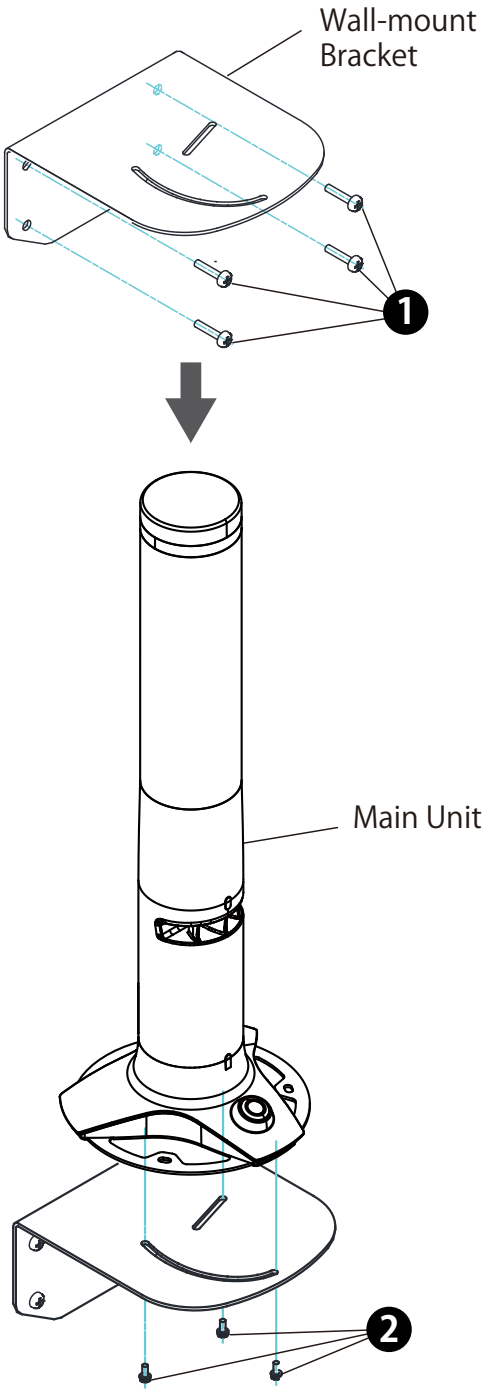


Screw/Nut
M5
Recommended Torque
1.4 N·m

MEMO For details of the wall-mount Bracket (SZK - 003W), refer to the operation manual for the wall-mount Bracket (SZK - 003W).

9.2. Wall-mount Bracket (Stationary Type [SN])

Supported Option Model	NH-WST2



1 Use 4 M5 screws (or equivalent) to mount the Wall-mount Bracket (NH - WST 2).
Adjust the bolting torque in accordance with the quality of the surface material of the wall, or the screw length.

⚠ CAUTION

⚠ The clamping surface should be level and sufficient enough to tolerate shock, vibrations and the weight of the product.

(!) All four mounting screws should be used.

MEMO

- The screws needed to mount to the surface of the wall is not included.
- The customer needs to supply the mounting screws in accordance to the construction material of the wall surface to be mounted on.

2 Using the three mounting screws supplied with the wall mounting bracket (NH - WST 2), attach the product (LA 6 - 5 DSNWB - POE) to the NH - WST 2 as shown on the left.

Recommended Torque
0.6N/m (Standard)

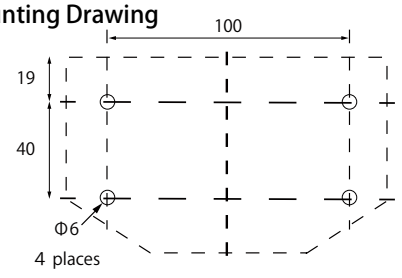
⚠ CAUTION

(!) Be sure to use both mounting screws and to tighten them with the recommended torque.

MEMO

- Don't use the protective sheet provided with the wall-mount bracket.
- Attach the rubber sheet to the product without it sticking onto the bottom plate.

■ Mounting Drawing
(Unit: mm)



10. General Specifications

Model		LA6-5DTNWB-POE
Rated Voltage		DC24V
Power over Ethernet (PoE)		DC48V
Operating Voltage Range		DC24V ±10%
Power over Ethernet (PoE)		DC36 - 57V
Rated Current Consumption	Typ.	DC24V supply: 0.30A; PoE at DC48V supply: 0.18A ※1
	Max.	DC26.4V supply: 0.49A; PoE at DC48V supply : 0.26A ※1
Rated Power Consumption	Typ.	DC24V supply: 7.2W; PoE at DC48V supply: 8.6W ※1
	Max.	DC26.4V supply: 12.9W; PoE at DC48V supply: 12.5W ※1
Signal Wire Current		DC26.4V supply: 420mA ※1/70mA ※2; PoE at DC48V supply: 10mA ※1
Operating Ambient Temperature		-10°C - +50°C
Operating Ambient Humidity		Less than 90%RH (No condensation)
Storage Ambient Temperature		-10°C - +50°C
Storage Ambient Humidity		Less than 90%RH (No condensation)
Mounting Location		Indoors
Mounting Direction		Upright
Protection Rating		IP54 (IEC 60529)
Environmental Condition		Upright
Vibration Resistance		10m/s² (JIS C 60068-2-6)
Environmental Condition		Upright
Insulation Resistance		More than 1MΩ at 500VDC Between live part and non-current carrying metallic part
Withstand Voltage		500VAC applied for 1min between live part and non-current carrying metallic part without breaking insulation
Mass (Tolerance ±10%)		630g
Outer Dimensions		Refer to "2.2. Part Names and Dimensions" on page 8
LED Tiers		5
Display Color Variations		Signal Tower Mode: 9 Colors / Smart Mode: 21 Colors
Sound Pressure Level		85dB or more
Environmental Condition		Maximum volume, Buzzer Sound No.1 measured from the front direction of the buzzer aperture at 1m
"Buzzer Sound (Typical Frequency)"	No.1	2400Hz Continuous beep sound
	No.2	2400Hz Rapid intermittent beep (0.05 sec. sound / 0.05 sec. silence)
	No.3	2400Hz Long intermittent beep (1.5 sec. sound / 1.5 sec. silence)
	No.4	2400Hz Fast intermittent beep (0.5 sec. sound / 0.5 sec. silence)
	No.5	3600Hz Continuous beep Sound
	No.6	3600Hz Rapid intermittent beep (0.05 sec. sound / 0.05 sec. silence)
	No.7	3600Hz Long intermittent beep (1.5 sec. sound / 1.5 sec. silence)
	No.8	3600Hz Fast intermittent beep (0.5 sec. sound / 0.5 sec. silence)
	No.9	2400Hz & 3375Hz Multiplexed Beep (0.25 sec. / 0.25 sec.)
	No.10	2400Hz & 3600Hz Multiplexed Beep (0.25 sec. / 0.25 sec.)
	No.11	4000Hz & 4800Hz Multiplexed Beep (0.25 sec. / 0.25 sec.)
Volume Control		The set up button is the fourth step (Factory Default: Maximum, Switchable by Web setup tool) [Maximum] -> [-5dB drop from maximum (standard)] -> [-10dB drop from maximum (standard)] -> [OFF] (-> Returns to [Maximum]) Switchable by Web setup tool

※ 1 Environmental Condition: All tiers lighting Amber, buzzer sounding Buzzer No.1 at maximum volume.

※ 2 Environmental Condition: Tier 1 lighting Amber with no sound.

Model			LA6-5DTNWB-POE
Luminous Intensity (typ) ※3			Red (1000mcd), Amber (1700mcd), Green (2600mcd), Blue (1000mcd), White (1250mcd) Purple (800mcd), Pink (850mcd), Lemon (2150mcd), Sky blue (2150mcd)"
Flashing Rate			"30±2 Flashes Per Minute, 60±2 Flashes Per Minute, 120±2 Flashes Per Minute (Factory Default: 60 Flashes Per Minute) Switchable by Web setup tool"
Interface	Power/Contact Input		Screwless Terminal Block (Number of Contacts: 12) Wire Diameter: 0.2 -1.5mm^2 (Solid Wire), AWG24-16 (Stranded Wire)
			"Power: 2(DC24V) Contact Input: (External relay/NPN/PNP): 8 Flashing/Pulse Enable: 1 COM: 1"
	LAN		RJ-45 Connector
		PoE	Corresponding to IEEE802.3af Class 0 Conformity
		Communication Method	Ethernet (IEEE802.3 Conformity)
		Physical Layer	10BASE-T/100BASE-TX (Auto-MDI/MDIX)
		Data Link Layer	CSMA/CD
		Network Layer	IP/ARP/ICMP
		Transport Layer	TCP/UDP
		Application Layer	HTTP/DHCP/Modbus TCP/Socket (Corresponds to PHN/PNS Commands)
	USB		USB micro-B Terminal USB2.0
Operation Part			Multi-function Button (Set in Head Cover)
Indicator Light			None
Various Settings			Switchable by Web setup tool
Operational Method			Signal Wire Control/Command Control
Accessory			Hexagon Nut with Flange (M4) 3pcs, Screw (M4×20) 3pcs
Optional Parts			Installation Bracket (SZW-060W), Wallmount Bracket (SZK-003W)
Connectable LAN cable			Category 5e or higher (Both Straight Cable and Cross Cable can be used)
Conformity Standards			RoHS Directive (EN 50581) EMC Directive (EN 61000-6-4, EN 61000-6-2, EN55032 Class A, EN55024) FCC Part 15 Subpart B Class A KC (KN 61000-6-4, KN 61000-6-2) UL 508, CSA-C22.2 No.14 Recognized Component (File No.E215660) ※DC24V supply only UL 60950-1, CAN/CSA C22.2 No. UL60950-1-07 Recognized Component (File No.E480103)
Remarks			CE Marking
※ 3 Due to the characteristics of the LED elements, a variation in difference of the color tone and brightness of every product may occur."			

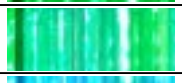
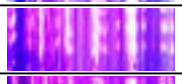
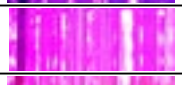
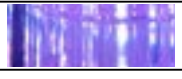
Model		LA6-5DSNWB-POE
Rated Voltage		DC24V
Power over Ethernet (PoE)		DC48V
Operating Voltage Range		DC24V ±10%
Power over Ethernet (PoE)		DC36 - 57V
Rated Current Consumption	Typ.	DC24V supply: 0.30A; PoE at DC48V supply: 0.18A ※1
	Max.	DC26.4V supply: 0.49A; PoE at DC48V supply : 0.26A ※1
Rated Power Consumption	Typ.	DC24V supply: 7.2W; PoE at DC48V supply: 8.6W ※1
	Max.	DC26.4V supply: 12.9W; PoE at DC48V supply: 12.5W ※1
Signal Wire Current		DC26.4V supply: 420mA ※1/70mA ※2; PoE at DC48V supply: 10mA ※1
Operating Ambient Temperature		-10°C - +50°C
Operating Ambient Humidity		Less than 90%RH (No condensation)
Storage Ambient Temperature		-10°C - +50°C
Storage Ambient Humidity		Less than 90%RH (No condensation)
Mounting Location		Indoors
Mounting Direction		Upright
Protection Rating		IP20 (IEC 60529)
Environmental Condition		Upright
Vibration Resistance		None
Insulation Resistance		More than 1MΩ at 500VDC between live part and non-current carrying metallic part.
Withstand Voltage		500VAC applied for 1min between live part and non-current carrying metallic part without breaking insulation.
Mass (Tolerance ±10%)		780g
Outer Dimensions		Refer to "2.2. Part Names and Dimensions" on page 8
LED Tiers		5
Display Color Variations		Signal Tower Mode: 9 Colors / Smart Mode: 21 Colors
Sound Pressure Level		85dB or more
Environmental Condition		Maximum volume, Buzzer Sound No.1 measured from the front direction of the buzzer aperture at 1m
"Buzzer Sound (Typical Frequency)"	No.1	2400Hz Continuous beep sound
	No.2	2400Hz Rapid intermittent beep (0.05 sec. sound / 0.05 sec. silent)
	No.3	2400Hz Long intermittent beep (1.5 sec. sound / 1.5 sec. silent)
	No.4	2400Hz Fast intermittent beep (0.5 sec. sound / 0.5 sec. silent)
	No.5	3600Hz Continuous beep Sound
	No.6	3600Hz Rapid intermittent beep (0.05 sec. sound / 0.05 sec. silent)
	No.7	3600Hz Long intermittent beep (1.5 sec. sound / 1.5 sec. silent)
	No.8	3600Hz Fast intermittent beep (0.5 sec. sound / 0.5 sec. silent)
	No.9	2400Hz & 3375Hz Multiplexed Beep (0.25 sec. / 0.25 sec.)
	No.10	2400Hz & 3600Hz Multiplexed Beep (0.25 sec. / 0.25 sec.)
	No.11	4000Hz & 4800Hz Multiplexed Beep (0.25 sec. / 0.25 sec.)
Volume Control		The set up button is the fourth step (Factory Default: Maximum, Switchable by Web setup tool) [Maximum] -> [-5dB drop from maximum (standard)] -> [-10dB drop from maximum (standard)] -> [OFF] (-> Returns to [Maximum]), Switchable by Web setup tool

※ 1 Environmental Condition: All tiers lighting Amber, buzzer sounding Buzzer No.1 at maximum volume.

※ 2 Environmental Condition: Tier 1 lighting Amber with no sound.

Model			LA6-5DTNWB-POE
Luminous Intensity (typ) ※3			Red (1000mcd), Amber (1700mcd), Green (2600mcd), Blue (1000mcd), White (1250mcd) Purple (800mcd), Pink (850mcd), Lemon (2150mcd), Sky blue (2150mcd)"
Flashing Rate			"30±2 Flashes Per Minute, 60±2 Flashes Per Minute, 120±2 Flashes Per Minute (Factory Default: 60 Flashes Per Minute) Switchable by Web setup tool"
Interface	Power/Contact Input		Screwless Terminal Block (Number of Contacts: 12) Wire Diameter: 0.2 -1.5mm^2 (Solid Wire), AWG24-16 (Stranded Wire)
			"Power: 2(DC24V) Contact Input: (External relay/NPN/PNP): 8 Flashing/Pulse Enable: 1 COM: 1"
	LAN		RJ-45 Connector
		PoE	Corresponding to IEEE802.3af Class 0 Conformity
		Communication Method	Ethernet (IEEE802.3 Conformity)
		Physical Layer	10BASE-T/100BASE-TX (Auto-MDI/MDIX)
		Data Link Layer	CSMA/CD
		Network Layer	IP/ARP/ICMP
		Transport Layer	TCP/UDP
		Application Layer	HTTP/DHCP/Modbus TCP/Socket (Corresponds to PHN/PNS Commands)
	USB		USB micro-B Terminal USB2.0
Operation Part			Multi-function Button (Set in Head Cover) Clear Switch
Indicator Light			1 (Green): Built in Clear Switch ※ Always ON when Power is applied
Various Settings			Switchable by Web setup tool
Operational Method			Signal Wire Control/Command Control
Accessory			Rubber Sheet
Optional Parts			Wallmount Bracket (NH-WST2)
Connectable LAN cable			Category 5e or higher (Both Straight Cable and Cross Cable can be used)
Conformity Standards			RoHS Directive (EN 50581) EMC Directive (EN 61000-6-4, EN 61000-6-2, EN55032 ClassA, EN55024) FCC Part 15 Subpart B Class A KC (KN 61000-6-4, KN 61000-6-2) UL 508, CSA-C22.2 No.14 Recognized Component (File No.E215660) ※DC24V supply only UL 60950-1, CAN/CSA C22.2 No. UL60950-1-07 Recognized Component (File No.E480103)
Remarks			CE Marking
※ 3 Due to the characteristics of the LED elements, a variation in difference of the color tone and brightness of every product may occur."			

■ Correspondance tabele of RGB color model

Color Number		Image	RGB color mode
1	red		#FF0000
2			#FF3300
3			#FF6600
4			#FFAA00
5	yellow		#FFCC00
6			#FFEE00
7	lemon		#EEFF00
8			#CCFF00
9	green		#00FF00
10			#00FF66
11	skyblue		#00BBDD
12			#0099EE
13	blue		#0033FF
14			#6699EE
15			#9966EE
16	purple		#CC00DD
17	pink		#FF00CC
18			#FF0099
19			#FF0066
20			#FF0033
21	white		#FFFFFF
22	(Off)	-	#000000

PATLITE Corporation G2G

PATLITE Corporation ※Head office
4-1-3, Kyutaromachi, Chuo-ku, Osaka 541-0056 Japan
■*http://www.patlite.com/*

PATLITE (U.S.A.) Corporation ■*http://www.patlite.com/*
PATLITE Europe GmbH ※Germany ■*http://www.patlite.eu/*
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