PATLITE®

Interface Converter

NBM Series

User's Manual

Supported Models

NBM-D88N

PATLITE Corporation

Introduction

Thank you for purchasing the PATLITE "NBM-D88" (henceforth, written as "this product") Interface Converter. Before installation and use, please read this manual (henceforth referred to as "this book") and follow the cautions and guidelines presented. In addition, store this manual for future reference when performing maintenance, repairs or inspections. When performing maintenance and repairs, etc., be sure to reread this book.
In addition, if there are any questions concerning this product, feel free to contact your PATLITE Sales Representative indicated at the end of this book.

Notice

■ The copyrights of this book is owned by the PATLITE Company, Inc. (henceforth referred to as "our company"). Any reproduction, duplication, alteration, or extracting portions of this book, etc., without written permission from our company is forbidden.

■ Specifications, the design, and other contents written in this book may be changed for improvements without prior notice and may result in differences from the actual product purchased.

■ 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.

■ This product has been tested and found to comply with the limits for a Class A device, pursuant to EMC DIRECTIVE.

■ These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

■ This product must not be used in residential areas.

■ An AC Adaptor with UL listings is required, in order for this product to comply with UL certifications.

■ This product contains no contents of controlled substances which exceeds the threshold of the RoHS Directive.

For safe application, observe the following:

The following symbols classifies the following into different categories and explains the level of harm inflicted if the cautions are disregarded.

⚠ WARNING	Indicates an imminently dangerous condition: failure to follow the instructions may lead to death or serious injury.
⚠ CAUTION	Indicates a potentially dangerous condition: Failure to follow the instructions may lead to slight injury or property damage.
🚫 Prohibited	This symbol indicates "Prohibited", which should not be carried out by all means.
❶ Enforced	This symbol indicates "Enforced", which should be observed and carried out by all means.
Attention	Indicates something to observe before using this product.
MEMO	Notice regarding supplementary information or convenient explanation is indicated

Cautionary Notes

Prior to installation, read all notes and use this product correctly.

	⚠ WARNING
🚫 Prohibited	• Do not disassemble or alter the product. Failure to comply may result in fire, electric shock, or failure. • Do not touch the electric socket with wet hands. It may result in electric shock. • Do not allow the voltage to exceed the specified voltage tolerance. Exceeding the voltage ratings beyond the rated voltage will cause internal circuitry damage. Moreover, possible fire may also occur. • After attaching this product onto the machinery, Do not remove the cover, hook anything onto the product or use the product as a step when climbing onto the machinery. Failure to comply may result in falling off the machinery or product damage may occur.
❗ Enforced	• Do not disconnect and re-insert the DC plug while the AC Adaptor is plugged in. Possible electric shock and damage may occur. • When plugging into the power receptacle, be sure to check there is no dust accumulation on the plug, and insert into the power receptacle completely. By allowing dust to adhere, it can be the result of fire or failure from short-circuiting. • Since dust can accumulate After a long time, and with moisture, can cause the dust to become conductive, in order to prevent the phenomenon of ignition from dust accumulation, it is best to periodically wipe the transformer and socket terminal with a damp cloth. By allowing dust to adhere to the power receptacle, it can be the result of fire or failure from short-circuiting. • When installing, wiring, or replacing parts, be sure to turn off the power first to prevent electric shock. • When an unusual odor, sound or smoke comes out of the product, immediately disconnect the power, then contact your nearest PATLITE Sales Representative.

	⚠ CAUTION
❗ Enforced	• Place this product on a level surface, such as a desk etc. • When installing in high places, such as a top shelf, fix the Main Unit so it cannot move or fall.
🚫 Prohibited	• Do not expose it to high temperatures, such as near a fire and do not use it in humid places. Moreover, do not use this machine in locations where corrosive or combustible gas is present. • If foreign substances, such as water, medicine; or metals, such as copper, low carbon steel wire, fall into this product, please do not use it. Possible cause of failure may occur. • Do not disassemble or attempt to repair this product by any means. Failure to comply will result in equipment damage or fire. • Do not bend the power supply cables or signal wires recklessly. Failure to comply will result in possible malfunction due to disconnection. • Do not install or run wiring near, or where equipment (such as solenoids, etc.) generate strong electric or magnetic fields, or near any power lines. Failure to comply may result in malfunction due to inductive noise. • Do not place any part of this product (Main Unit, terminal cover, AC Adaptor, rubber feet) where infants can reach it. If it is swallowed accidentally, it could be detrimental. If it is suspected of being swallowed, please consult an emergency medical center immediately.

Registered Trademarks

Microsoft Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries.
Firefox is the trademark or registered trademark in the U.S. and other countries for the U.S. Mozilla Foundation.
In addition, company and product names indicated are the trademark, or registered trademark for each company.

Product Checklist

The following items are contained with this product. Although our company takes all possible quality control measures to ensure proper packing of this product, if there should be any missing items, please refer to the last page to contact your nearest PATLITE Sales Representative.

- NBM-D88 Main body (one unit)
- Setup Manual (one book)
- Rubber Feet (4 pieces)

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Revision History

1. Product Outline

1.1 Dimensional Drawing

1.1.1 Main Unit

Rear

Side   Top

(13)

124.5

Front

MODEL NBM-D88

42
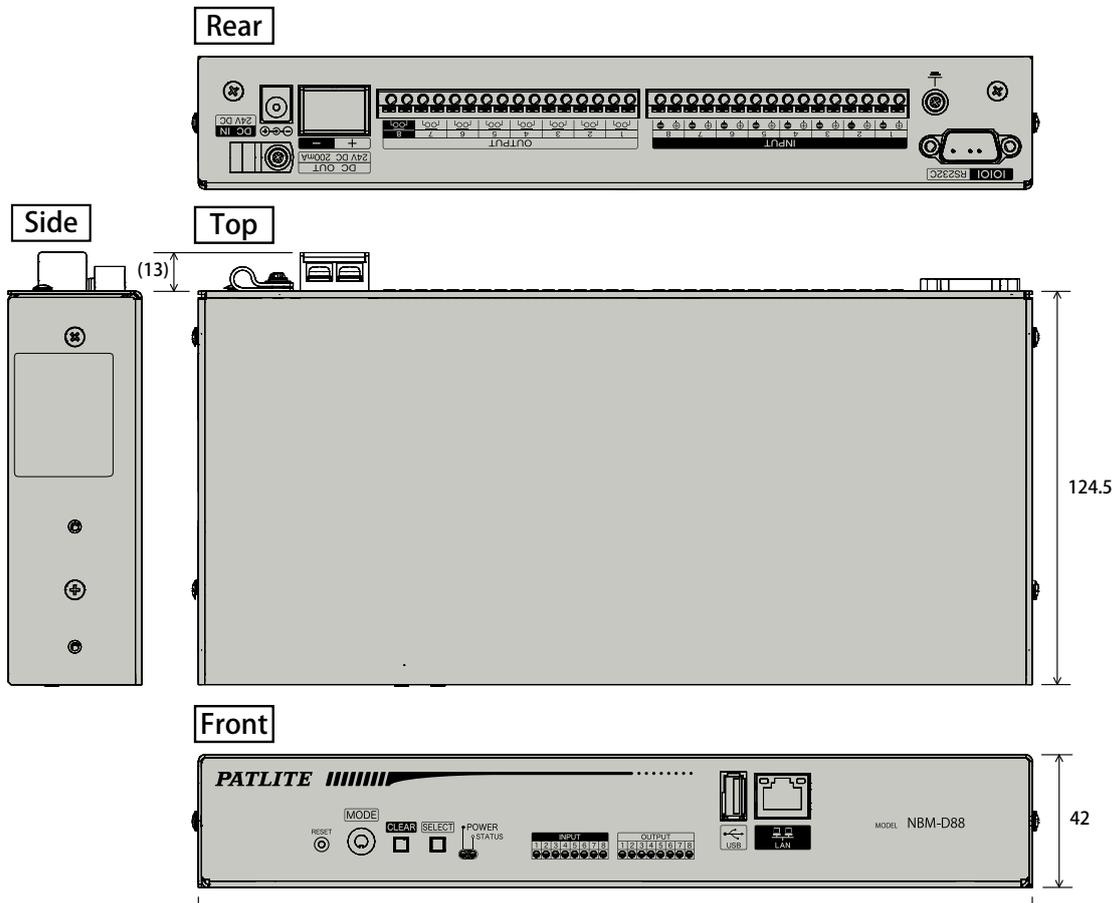
1.2 AC Adaptor Specifications

When ordering an AC Adaptor separately, use the following specifications.

Failure to comply may result in failure of this product.

[Recommended AC Adaptor Specifications]

DC Secondary Output

Voltage	:	24V DC ±5%
Current	:	0.75A to 1A max.
Plug Length	:	9.5mm or more.
Plastic Housing	:	10mm dia or less.
Plug Connector Outer Diameter	:	5.5mm dia.
Plug Connector Inner Diameter	:	2.1mm dia.

9.5
Ø5.5
Ø2.1
Ø10
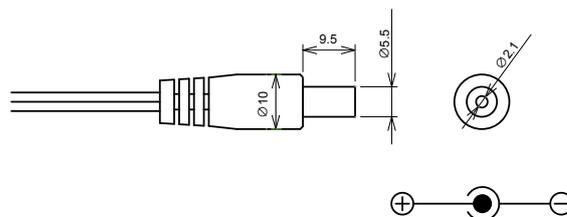
1.3 Part Names
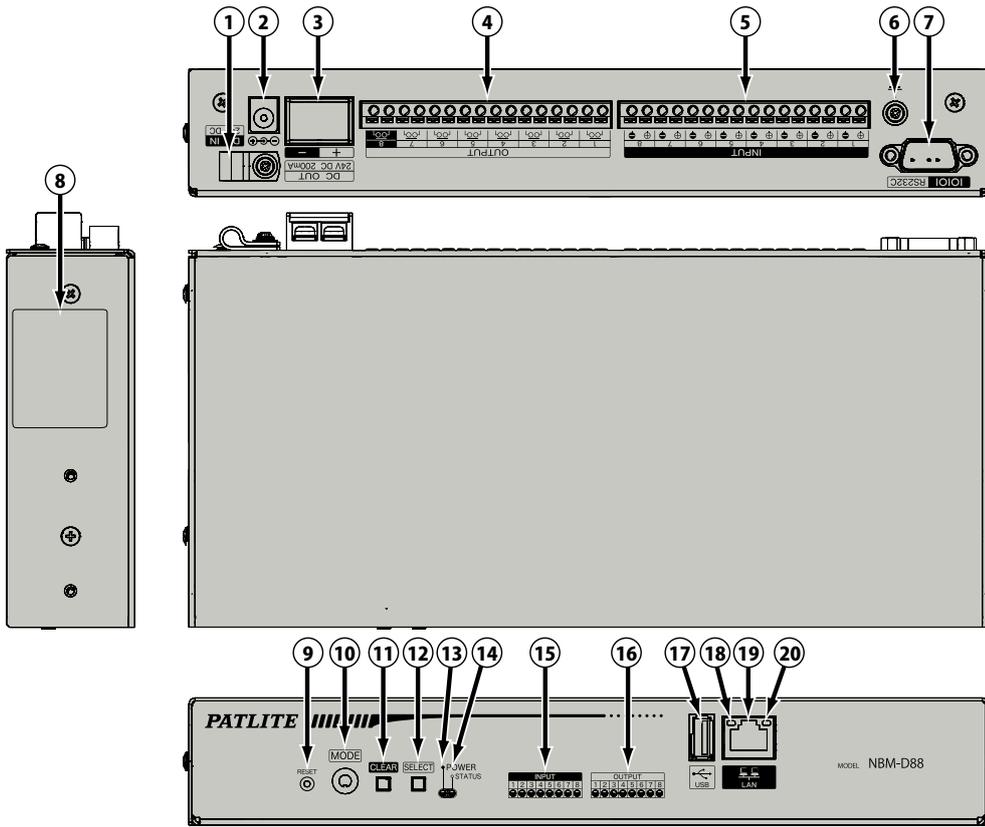
Number	Name	Number	Name
1	Cable Clamp	11	"CLEAR" Button
2	DC Jack	12	Select Switch
3	Power Output Terminal	13	Power LED
4	Output terminal	14	Status LED
5	Input terminal	15	Input Indication LED
6	Functional Earthing	16	Output Indication LED
7	D_SUB_9pin	17	USB Connector
8	Nameplate	18	LINK Indication
9	"Reset" Switch	19	LAN Connector
10	"Mode" Switch	20	ACT Indication

1.4 Model Number Configuration

	Model	Input Type	AC Adaptor
Model No.	NBM-D88	N	N

N AC Adaptor Not included

N NPN Transistor (Non-voltage Contact)

1.5   General Specifications

Item	Specifications		
Model	NBM-D88NN		
Main Unit Rated Voltage	24V DC		
Rated Current Consumption	0.6A		
Operating Temperature Range	0 - 40°C (No freezing, dew or condensation)		
Storage Temperature Range	-20 - 65°C (No freezing)		
Operating Humidity Range	20 - 80% RH (No freezing)		
Vibration Resistance	9.8m/s2		
Communication Method	LAN Communication		
	Physical Layer	Ethernet (IEEE802.3 Conformity) 10BASE-T / 100BASE-TX (Auto-negotiation / Full / Half Duplex)	
	Connector Type	Model RJ-45; 8 poles	
	Data Link Layer	CSMA / CD Method	
	Network Layer	IP / ARP / ICMP	
	Transport Layer	TCP / UDP	
	Application Layer	HTTP / NTP / Socket (PHN / PNS), SMTP / SNMP (v1, v2c) / DHCP / DNS / POP3 / RSH	
Digital Output (Contact A)	Number of Contacts	8 Contacts	
	Contact capacity	Ports 1-7: 30VDC, 3A Inrush Current: 5A or less Minimum Current: 1mA Minimum Voltage: 5VDC (Reference Values) Port 8: 30VDC, 3A Inrush Current: 78A or less (TV-5 Rating) Minimum Current: 10mA Minimum Voltage: 5VDC (Reference Values)	
	Wire Gauges	Solid Wire: φ0.4-1.2mm (AWG26-16) Twisted Wire: 0.2-1.25mm2 (AWG24-16)	
	Wiring Method	Screwless Terminal Buss	
Digital Input (Contact A)	Input Contacts	Non-voltage Contact NPN Transistor	
	Number of Contacts	8 Contacts	
	Contact capacity	Output ON Current: 6mA or less / Port OFF Bias Voltage: 24VDC	
	Wire Diameter	Solid Wire: φ0.4-1.2mm (AWG26-16) Twisted Wire: 0.2-1.25mm2 (AWG24-16)	
	Wiring Method	Screwless Terminal Buss	
USB (Host)	USB2.0/1.1 TYPE-A, 1 Port used for log data storage, firmware updates, configuration data uploads and downloads		
Power Output	Screw terminals rated at DC24V±10%, maximum current of 200mA		
D_SUB_9pin	Extended Functionality		
Display Part	Total of 18 Green LED Indicators (Power: 1, Status:1, DO: 8, DI: 8)		
Switch Inputs	"Select" Switch, "Reset" Switch, "Clear" Button, "Mode" Switch		
Conformities	EMC Directive (EN55032 (Class A), EN55024), RoHS Directive (EN50581), FCC Part 15 Subpart B Class A, UL/CSA 60950-1, KC		
Mounting Location	Indoors		
Installation Method	Stationary/EIA Rack Attachment (Optional Part)		
Mounting Direction	Upright Only		
Mass	Main Unit: 1150g		
Protection Rating	IP20 (Self-declaration, based on IEC60529)		
Accessories	Rubber Feet (4 pcs.)		
Optional Parts	Server Rack Mounting Bracket		

Attention
- If the HUB is not set for auto-negotiation, it may be impossible to communicate.
- Use Port 8 as the output terminal when connecting to a product with a large inrush current, such as a revolving light, etc.

1.6   Functionality Description

The following explains the functions for this product.

1.6.1   Monitoring Function

This product can monitor the function of a network device or device connected to the contact output.

PING MONITOR

The network device existence monitor

For this product, a maximum of 24 nodes can be monitored. When an abnormal response in the network of this product is not obtained, it judges an abnormal state and warns the administrator promptly with light and sound.

SNMP v1v2c

Monitor networking equipment at a low cost.

This product can warn an administrator of generated abnormalities and hindrances promptly with an SNMP command to respond with light and sound to an SNMP TRAP from the equipment (UPS, a printer, a router, a switch, etc.) via the network.
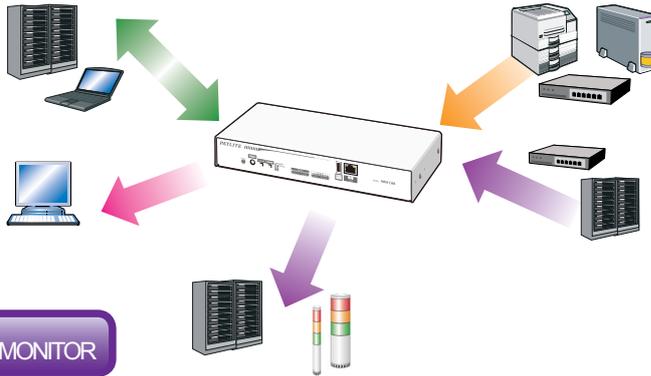
- It can distinguish the variable-bindings.
- Registration of 16 groups (4 nodes per group) is possible.

APPLICATION MONITOR

Monitoring Application Status

By the user creating an additional commands, the monitoring of a program application' operating condition can be done.
(Maximum of 4 nodes)

DIGITAL OUTPUT

This product has eight independently controllable output terminals and contact inputs.

DIGITAL INPUT

Contact Output Equipment Monitoring

This product has 8 digital inputs to monitor signal inputs from equipment, and has a contact output. The operation of this product needs to be set up beforehand to correspond to changes of the input state from the equipment.

1.6.2   Communication Commands

RSH

Controllable with General RSH protocol

The digital output is easily controllable by RSH commands, which is a flexible protocol. Various network integrated management software and event information, including various monitor tools etc., can be turned into a trigger to work in synchronicity with the digital output.

HTTP COMMAND

Controllable with HTTP command
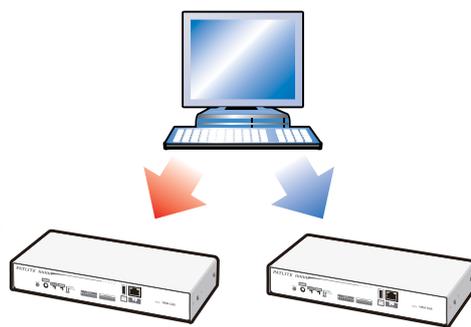
SOCKET TRANSMISSION

PHN Command Compatibility

The digital output can be controlled with 2 byte commands.

* Compatible with NHE-NHC-NHM Series

NHS-NHP-NHL Series

and PHN-3FBE1 Series.

* Some functions are limited.

Event Occurance: Command Execution
(Digital output ports 1, 3, 5, and 7 are operated)
PHN Example Command: 57H, 55H

Event Occurance: Command Execution (with digital output port 1 ON, port 3 OFF, other ports with no change.)
For RSH: rsh 192.168.10.10 -l root alert 19099999

PNS Command Compatibility

The PNS Commands can control the digital outputs. All patterns are controllable.

Event Occurance: Command Execution (with digital output port 1 ON, port 3 OFF and other ports with no change.)
For PNS Command: 58H,43H,53H,00H,00H,08H,01H,09H,00H,09H,09H,09H,09H,09H

1.6.3   Communication Function Setup

Commands for RSH or socket can be transmitted when an event occurs, and e-mails or traps can also be sent.

Send up to 8 (selected) RSH commands.

The RSH commands can be created in accordance with events. A command with a maximum of 255 characters (full size or half size) can be sent.

Send a maximum of 8 selectable registered E-mails.

The subject name and text corresponding to a event can be created. Uses POP and SMTP authentication protocol.

Send up to 16 commands (selected) by Socket Transmission

Commands can be created by hexadecimal notation separated by commas. Commands with a maximum of 30 bytes of can be transmitted.

Transmit an SNMP Trap to a maximum of 8 nodes.

A maximum of 8 nodes are available for SNMP TRAP transmission events.

1.6.4   Setup and Updates

With the web setup tool containing the IP address and detailed setup for the Main Unit, the digital output and "Clear" operation, as well as firmware upgrades and reading/writing configuration data can be done remotely. In addition, changes to the network setup can be done from the PNS Manager. Refer to the "PNS Manager" operation manual for the directions on the PNS Manager.

Fig. 1.6.4–1   Web Setup Tool Screen

2. Installation Procedure and Flowchart

2.1 Installation Procedure and Flowchart

This product offers two methods for configuring the network, "Manual Setup" and "Automatic Network Setup" with the DHCP function.

2

Product Main Unit Installation

Install this product on a level surface. When an installation location is decided, use the rubber feet accessories, or a server rack mounting angle (Optional Parts) if needed.

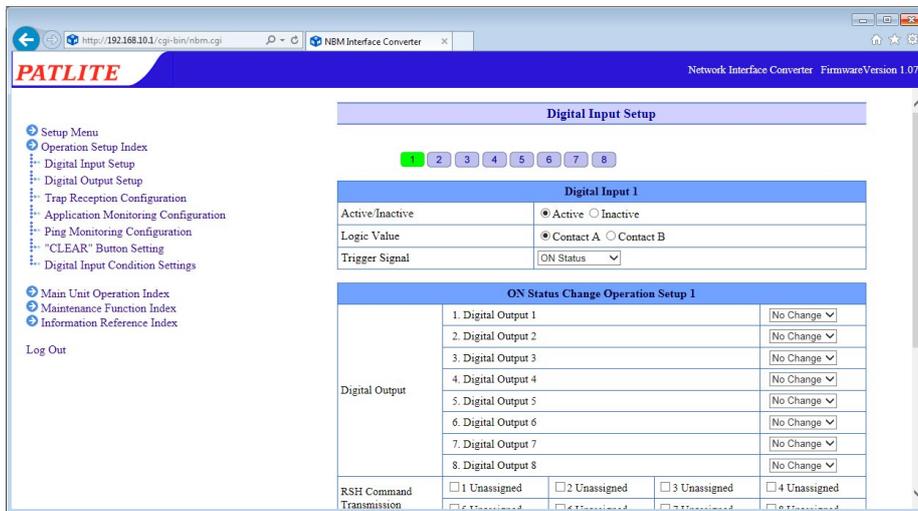> **Attention** | When installing in a high location be sure to secure it so it will not fall.

Terminal Buss Wiring

Wire the Terminal Buss output and input.

LAN Connection

Connect the LAN cable to this product.

Power Supply Input

Connect the AC adaptor to this product. Connect the AC adaptor to this product.

Network Setup

• Manually Setting up Network :
  Set up the network environment configuration.
  For details, refer to "2.6 Network Setup" on pg. 20.
• Setting up a network with the DHCP Function :
  Enable the DHCP function and set up the environment.
  For details, refer to "2.7 Network Setup with the DHCP Function" on pg. 24.
Once set up, the DHCP function will start as soon as it is active.

Operation Settings

Setup the parameters in combination with the environmental conditions to satisfy the purpose for use of this product.

> **Attention** | After completing the desired setup configuration, reboot this product by pressing the "Reset" switch, or removing the power for a few seconds and reapplying it for the changes to take effect.

Start-up

This product is now ready to be used.

> **Attention** | Once the DHCP function is working, it will automatically start up the next time the product is turned on, or rebooted.

2.2   Product Installation

	⚠ CAUTION
🚫 Prohibited	• This product is for indoor use only. Do not use it outdoors. • When installing this product, please avoid installation in the following places: • Where its exposed to direct sunlight • Where high temperatures, such as near fire, or in a humid place • Where drastic temperature and humidiy changes are present • Where its exposed to an environment with poor ventillation • Where its exposed to vibrations exceeding the specifications • Where its exposed to corrosive gas • Where its exposed to a salty air environment • Where its exposed to dust, iron powder, etc. • Where its exposed to high concentrations of chemicals or oil mist • Where its exposed to rain, or other types of wet environments

• This product is to be installed on a level surface.
• Use the rubber feet accessory for this product when needed.
• When attaching an EIA rack, be sure to set up the optional "Angle type server rack attachment", first.

2.2.1   Placing in an unfixed location

When necessary, adhere the rubber feet (four pieces) included to the bottom of this product.

Main Unit

Remove the protective paper off the rubber feet and stick it to the four corners of the Main Unit.

Rubber Feet (four pieces)
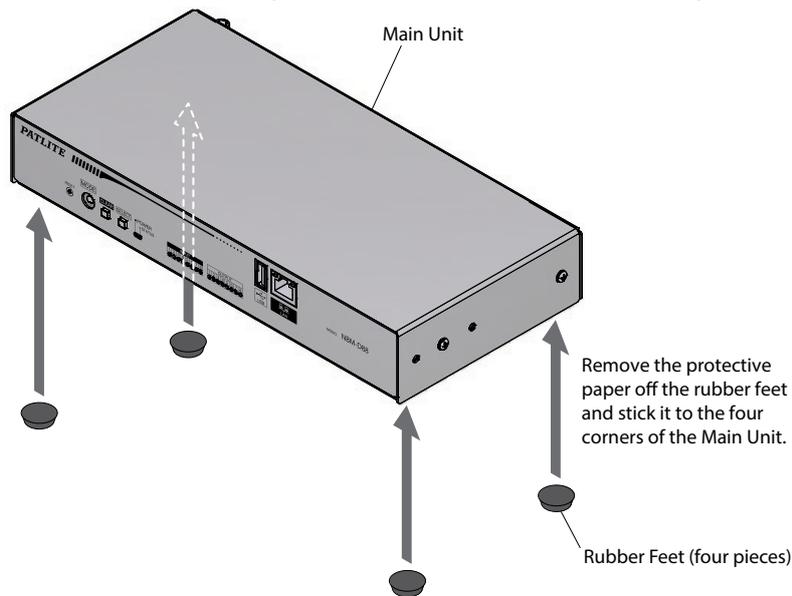
2.2.2　When using the Server Rack Mounting Bracket (Optional)

Use the screws included with angle-type server rack when attaching, and as shown in the following figure.

Recommended Torque
0.6 N·m

Atachment Screws
Optiona Accessory

Server Rack Mounting Bracket (Optional Part)

Main Unit

Rack Attachment Holes

Product
Front

Server Rack Mounting Bracket
(Optional Part)

Atachment Screws
Optiona Accessory

Recommended Torque
0.6 N·m

Rack Attachment Holes

Server Rack Mounting Bracket Dimensional Drawings

31.7

8.4

56

38

8.4

80

31.7

42

110
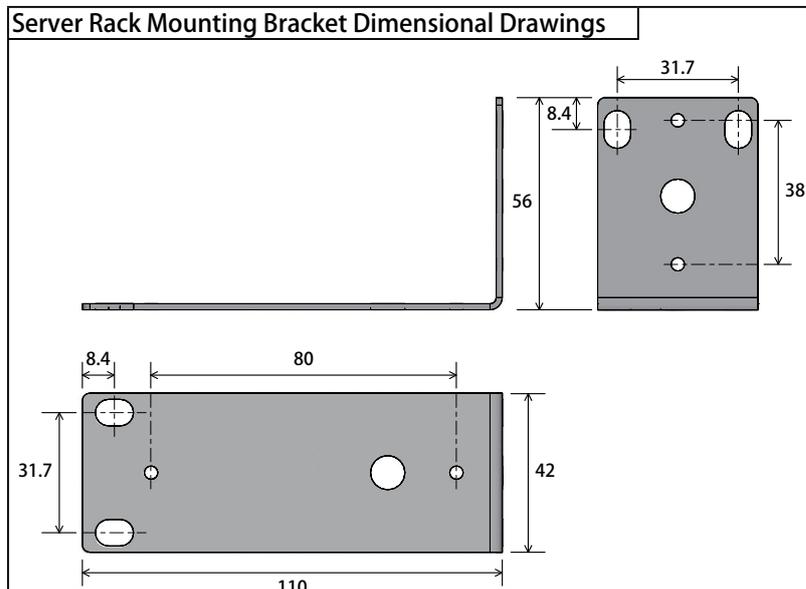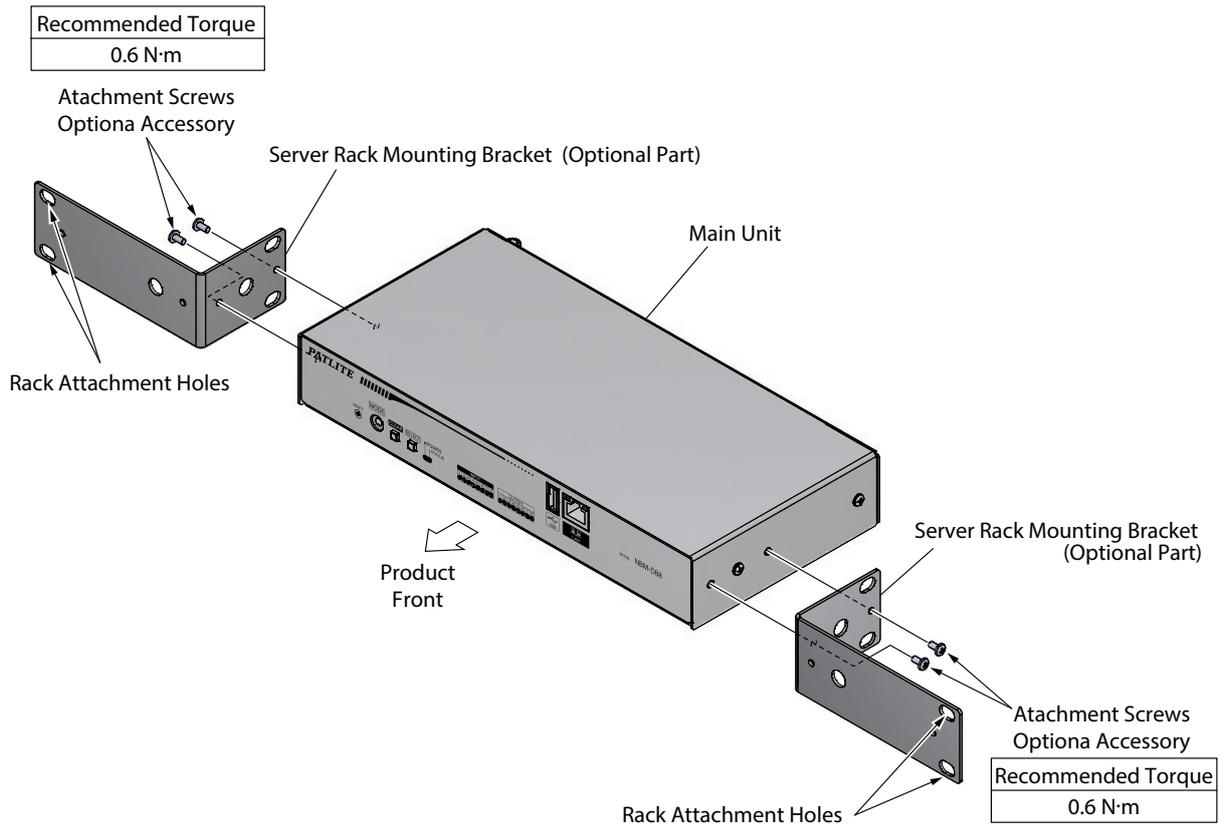
MEMO Read the "Server Rack Mounting Bracket" operation manual for the details of "Server Rack Mounting Bracket" installation.

2.3   LAN Connection

	⚠ **CAUTION**
🔴 Enforced	When connecting the LAN cable, be sure to turn off the power first.

Connect the LAN cable to this product.
- The LAN cable should be a category 5 twisted-pair cable (UTP or STP).
- The LAN cable can either be a straight or cross cable.

2.4   Terminal Buss Wiring

	⚠ **CAUTION**
🔴 Enforced	• Be sure the power is turned off before performing any electric wiring activity. Failure to comply may result in electric shock. • Double check the wiring to prevent mistakes. Failure to comply will result in equipment damage or fire. • Wire the product so that the lead Wire does not protrude from the terminal. Failure to comply will result in damage due to short-circuiting. • After wiring, verify that there are no loose wires, or they are easy to pull out.

2.4.1   Input Terminal and Output Terminal Mount Wiring

Wire the input terminal stand and output terminal mount in according to the following steps.

   [Wiring Method]

①   Use a minus driver(*) and push in the tab of the control unit's terminal buss slot.
②   Insert a signal line lead wire into the slot. (Keep pushing the tab while inserting)
③   Release the minus driver to lock the lead wire in place.
 * Use the following type of minus driver.

Name	Tolerable Dimensions
Minus Driver	Blade diameter 1.8-2.1 mm Width 0.7-0.8 mm

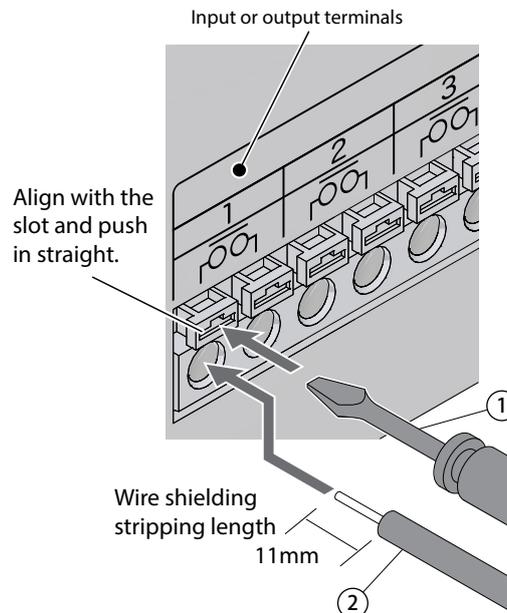

Fig. 2.4.1–1   Input/Output Wires

- The following are the gauge sizes used for the terminal buss.
  Solid Wire: φ0.4-1.2mm (AWG26-16)
  Twisted Wire: 0.2-1.25mm^2 (AWG24-16)
- Be sure the voltage and current of the equipment connected to the Main Unit output does not exceed its rated values.
  Port 1-7: 30VDC, 3A; Inrush Current 5A or less
  Minimum Current: 1mA; Minimum Voltage: 5VDC (Reference values)
  Port 8: 30V DC, 3A; Inrush current 78A or less (TV-5 rating)
  Minimum Current: 10 mA; Minimum Voltage 5VDC (Reference values)
- Be sure the voltage and current of the equipment connected to the Main Unit input does not exceed its rated values.
  Output ON current at 6mA or less / Port OFF Terminal voltage at 24V
- Be sure to use a minus driver suitable for the driver groove.
- If a screwdriver with an improper dimension is used, or any screwdriver other than a minus screwdriver, the driver groove on the lever part of the terminal may be damaged, causing operation to become impossible.
- The flat blade should be applied vertically to the driver groove. If it is at a slant, there is a possibility that the lever part will be damaged.
- Do not apply excessive strength to the lever section. It may result in cause of failure due to damage or deformation.
- Removal of wiring is done in the reverse order of the wiring method.

2.4.2   Power Output Terminal Wiring

Wire the power output terminal according to the following steps.

[Wiring Method]

① Remove the Terminal Buss cover.
② Loosen the screw with a phillips screwdriver.
③ Insert the lead wire etc. into the Terminal Buss to wire it.
④ Tighten the screw and attach the Terminal Buss cover.
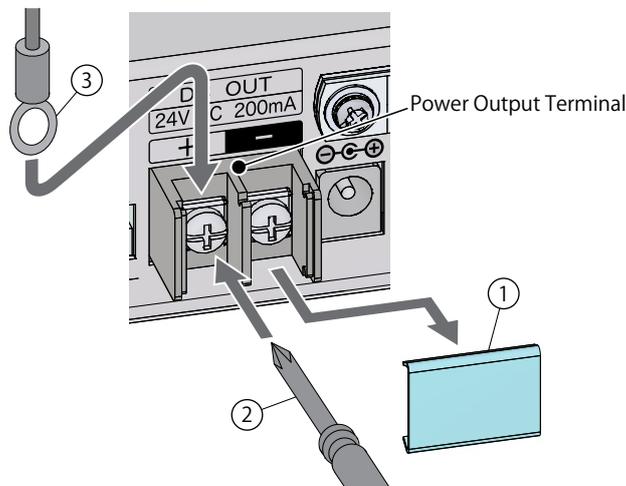
Fig. 2.4.2–1   Power Output Terminal

- Be sure to attach the terminal Buss cover. Failure to comply will result in damage due to short-circuiting.
- Do not apply voltage to the output power source terminal buss. Failure to comply will result in equipment damage or fire.
- Be sure the voltage and current of the equipment connected to the power supply output terminal does not exceed its rated values.
  - Power Supply Output Terminal: Output Current Maximum of 200mA
  - Output Voltage Range: DC 21.6-26.4V

- Be sure to properly crimp the round terminals at the lead wire tip.
  - Specifications for suitable round terminals are as follows.
  - Round Terminals: Inner Diameter ofφ3.2mm or more.
  - Outer Diameter of φ8.0mm or more.
- Removal of wiring is done in the reverse order of the wiring method.

2.5 Power Supply Input

Attach the power plug for this product in accordance with the figure below. It takes about 60 seconds from the time the power has been applied until start-up is complete.

[Connecting Power]

① Loosen the screws with a phillips screwdriver and remove the cable clamp.
② Pass the AC Adaptor power cable through the cable clamp.
③ Fix the cable clamp with a screw.
④ Insert the DC plug into the Main Unit. Allow cable slack of about 15 mm from the DC plug.
⑤ Insert the AC Adaptor into an electric socket.
⑥ When power is switched on, the power LED will light up.

It takes about 60 seconds to complete, from power on to startup. During that time, each LED on the front of the product turns on and flashes as follows.
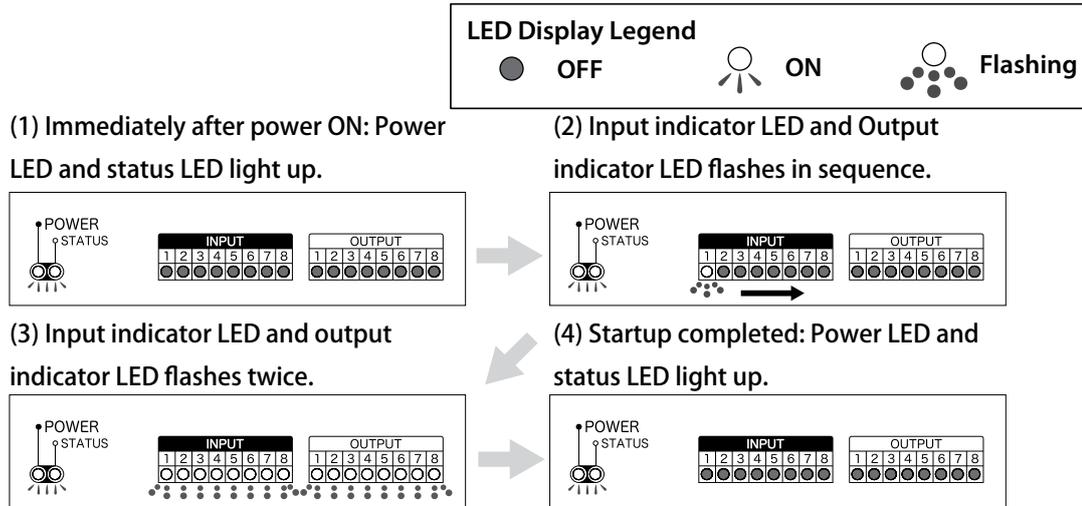
LED Display Legend

● OFF   ON   Flashing

(1) Immediately after power ON: Power LED and status LED light up.

(2) Input indicator LED and Output indicator LED flashes in sequence.

(3) Input indicator LED and output indicator LED flashes twice.

(4) Startup completed: Power LED and status LED light up.

Figure 2.5.0.1 LED display at startup

(4) If startup is not completed, refer to "8 Troubleshooting" on pg. 103.

Fig. 2.5.0–1   LED display at startup
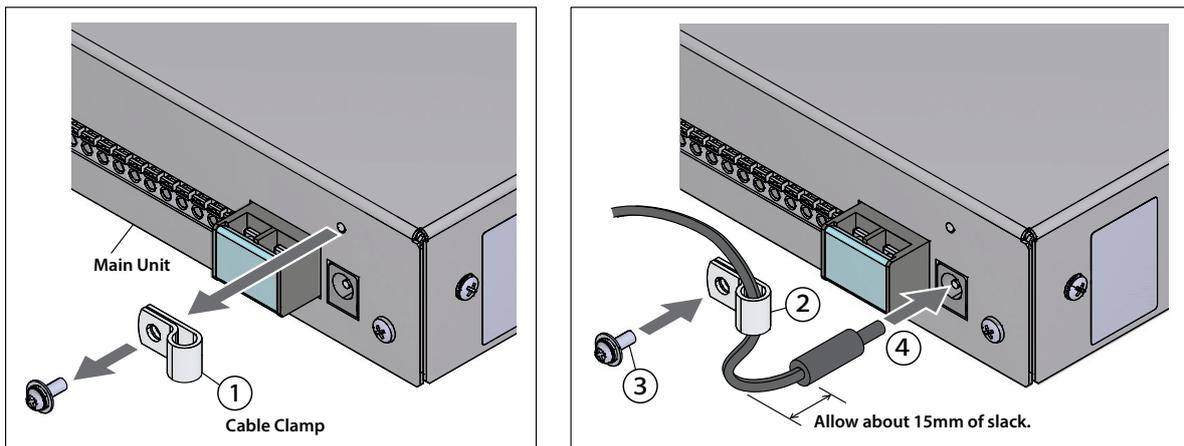
Fig. 2.5.0–2   Power Supply Switching Method

⚠ WARNING	• Do not disconnect and re-insert the DC plug while the AC Adaptor is plugged in. Possible electric shock and damage may occur. • Check whether dust has built-up on the electric socket or receptacle plug. If dust has built-up, insert the plug after cleaning. Ensure maintenance to avoid dust build-up, because dust accumulation may result in fire. • Do not touch the electric socket with wet hands. Failure to comply may result in electric shock.

2.6   Network Setup

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

The IP address change should be done by logging in to the web browser of the personal computer (henceforth, PC) to change the setup. Refer to "2.6.1 Login" on pg. 20 for the login method.

> (MEMO) | Recommended browsers are Internet Explorer 10 or higher, or Firefox 12 or higher.

2.6.1   Login

Various setups for this product is done by logging in from a web browser. In order to log in, the IP address for this product is entered into the address portion of the web browser. (Refer to Fig. 2.6.1-1)

<<Web browser address entry >>   http://192.168.10.1/index.htm
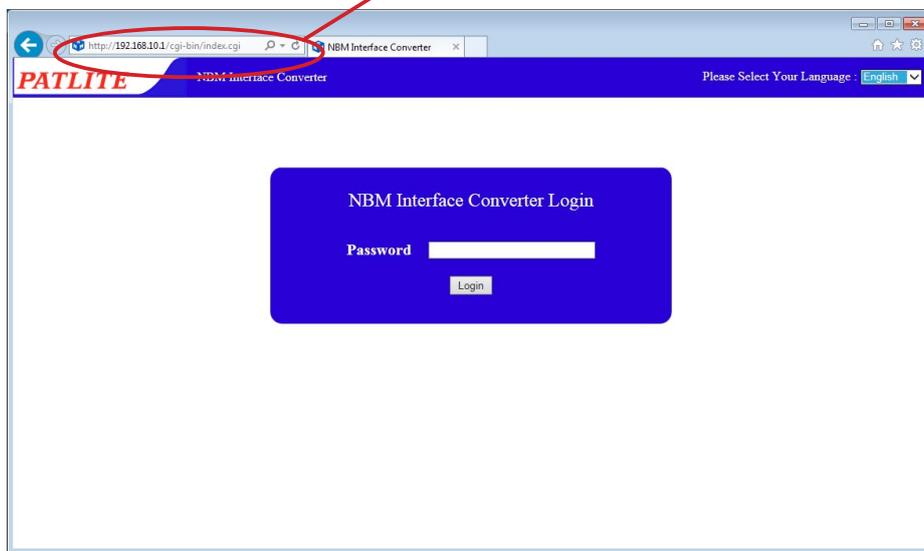
Fig. 2.6.1–1   Login screen

> (Attention) | • When the login screen is displayed, enter "patlite" in the password field, then click the "Logging In" button. The default password is set to "patlite". Please be sure to change the password to prevent any security breaching.
> • If there is no activity for 10 minutes or more during login, it logs out automatically. Please log in again.
> • If the login displays garbled characters, set the browser for Unicode (UTF-8) alphabetic code for it to display normally.
> • This product does not support Double log-ins. This prevents being able to access from two or more places.

> (MEMO) | Refer to "8 Troubleshooting" on pg. 103 if the login screen is not displayed.

Select the preferred language from the pull down menu in the upper right side of the login screen. (Refer to Fig. 2.6.1-2) There are three kind of languages available, "Japanese", "Traditional Chinese", and "English."

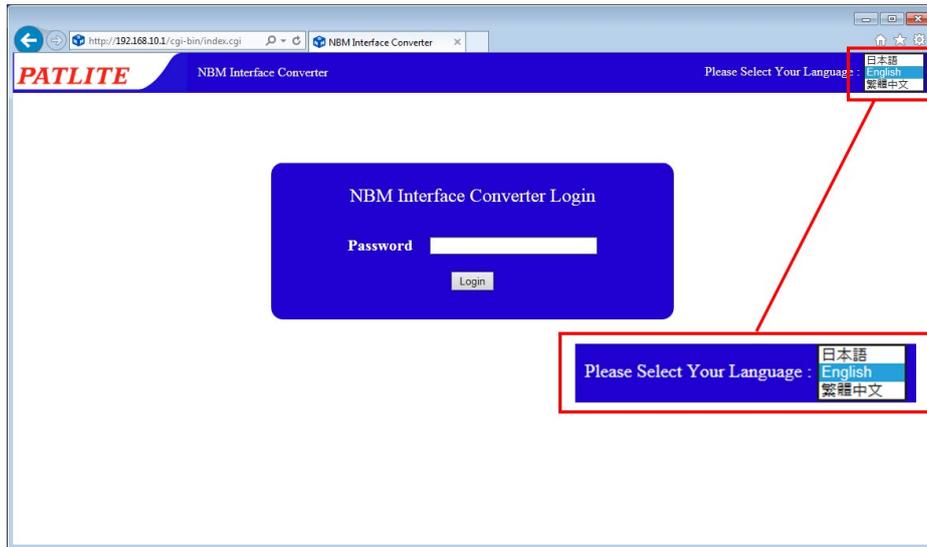Once selected, the language will be displayed on each screen in the Web setup tool. (Refer to Fig. 2.6.1-2, 1-4)

Fig. 2.6.1–2 Login Screen (when selecting "English")

Fig. 2.6.1–3 Login Screen (when selecting "Japanese")

Fig. 2.6.1–4 Login Screen (when selecting "Traditional Chinese")

2.6.2 Setting the IP Address

After logging in, the web setup tool will be executed and the "System Setup" screen will be displayed. (Refer to Fig. 2.6.2-1)

① Click "Setup Menu" in the Setup Table Entry on the left-hand side of the setting screen.
② Click "System Configuration" from the tree menu.

The System Setup Screen is displayed. (Refer to Fig. 2.6.2-2)

Fig. 2.6.2–1 Web setup tool screen

In the System Setup Screen, the network can be changed.

[Setup Method]

③ Enter the IP address for the Main Unit.
④ Set up a net mask, default gateway, etc. for the customer if needed.
⑤ Click the "Set" button to apply the setting.

Fig. 2.6.2–2 System Setup Screens

⑥ Click the "Network Reboot" button to activate the settings. (Refer to Fig. 2.6.2-3)
⑦ Rebooting the network takes about 20 seconds. If there is a delay, click "To the Login screen".
    (Refer to Fig. 2.6.2-3)
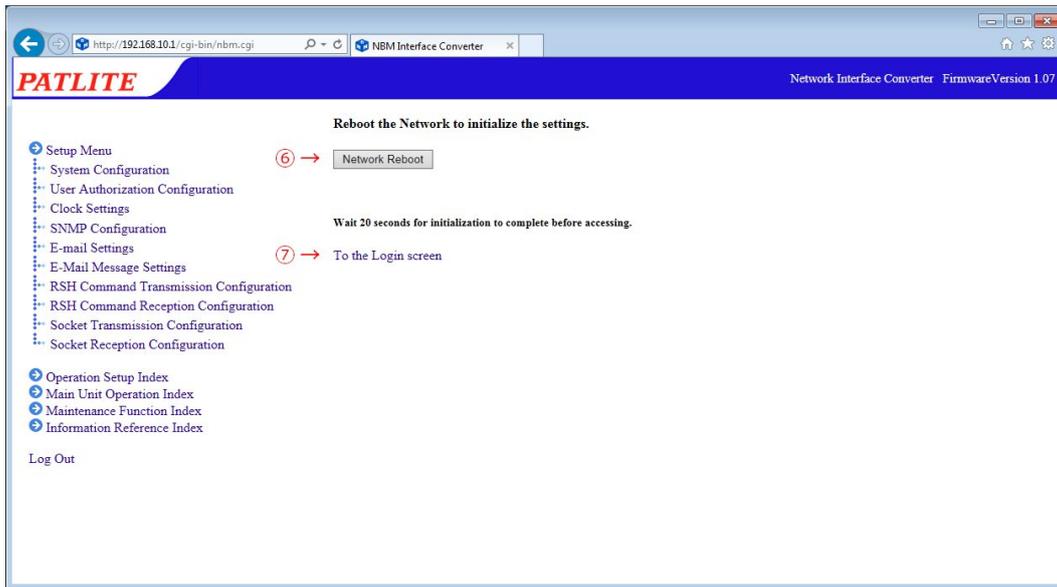
Fig. 2.6.2–3   Network setup reboot screen

2.6.3   Setup Confirmation

After clicking "To the Login screen", the web browser address will show the value of the IP address which was changed into, and if the login screen is displayed, the IP address setup is completed. Verify that it can log in. Moreover, when checking the setup values from other networks, check whether the values are shown in the "System Screen".

Check to verify the IP address has changed (an example is it changed into "192.168.10.2").
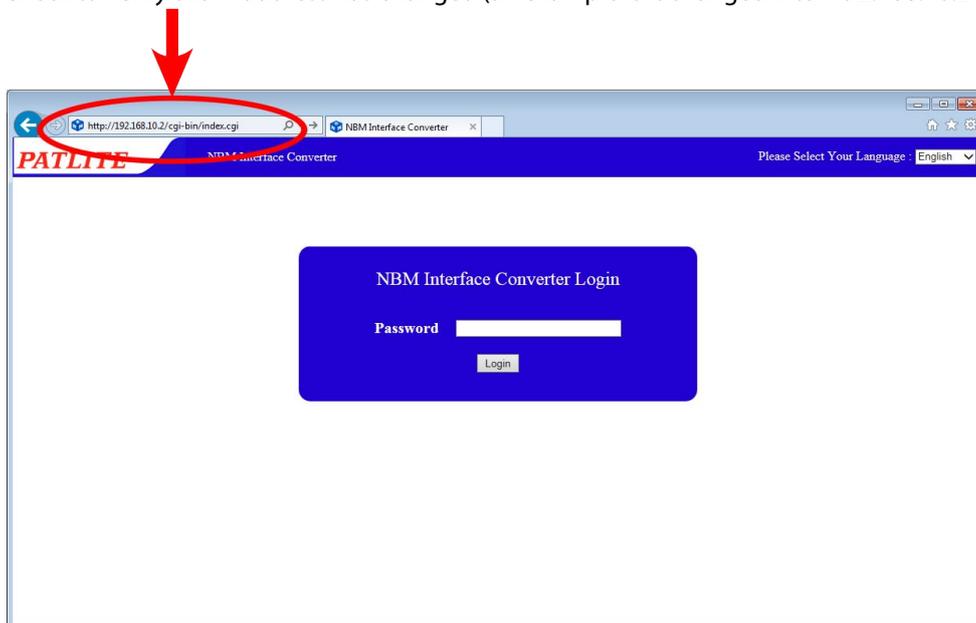
Fig. 2.6.3–1   Setup confirmation

MEMO
• Depending on the PC network environment, it may be necessary to change the IP address.
• Even if after logging in and the "System Screen" does not display, refer to "8 Troubleshooting" on pg. 103.

2.7 Network Setup with the DHCP Function

This product can access a DHCP Server to acquire network information. Use the following processes to enable the DHCP function in the Web setup tool. Explanation from the setup items.

[Setup Method]

① Select "Setup Automatically" for the IP address Configuration method. (Refer to Fig. 2.7.0-1)

② Setup the device and host name, etc. as needed.

③ After changing, be sure to click the "Set" button to apply the setting.

Fig. 2.7.0–1 System Setup Screen (when DHCP function is selected)

④ After clicking the "Set" button, click the "Network Reboot" button to reflect the setting. (Refer to Fig. 2.7.0-2) Rebooting the network takes about 20 seconds.

Fig. 2.7.0–2 Network setup reboot screen

Attention	• If this product is unable to access a DHCP Server, it will return to the factory default network information. When the DHCP function is set for "Setup Automatically", future connections are started after they have become activated. • When it is necessary to use the manual settings, please use the Web Setup Tool or the PNS Manager. Refer to the "PNS Manager" operation manual for the directions on the PNS Manager.

2.8   Clock Settings

The clock for this product can be set up. For setting the clock on this product, the following are two methods.

■ PC clock time is reflected when logging in.
■ Communicates with an NTP server to adjust the time for this product.
Refer to "4.3 Clock Settings Screen" on pg. 63 for details on setting the time.

Attention	• This product uses a capacitor as a battery backup for the time stamp. • Depending on the charge status of the capacitor, it may last up to a half-day, and if the power supply is not applied during the day, a gap in time or the need to reset the clock may be necessary. • If an application environment requires a time entry, be sure to set up the time before the application. • If the backup is depleted and the time entry resets, the set time will be labeled as "Jan 1, 2010".

2

3. Functionality Details

Explains the functions of this product.

3.1 Digital Input/Output Function

This product can monitor or control the status of eight digital input ports and eight digital output port. This function can set up various operations automatically, when changed to the status of each designated input/output port. The following explains the input/output function.

3.1.1 Digital Contact

The Digital Contact indicates the status condition of the contact for the digital input or output. When the "A" contact ("Contact A") is closed, it is recognized to be "ON". When the "B" contact ("Contact B") is open, it is recognized to be "ON". For example, a button switch may use "Contact A" as a point of contact (if the switch is pushed, the point of contact will close and is set to "ON"), and a motion sensor (if motion is detected and the electricity goes out, the point of contact has closed, electricity turns on and it is recognized as "ON") becomes a "B Contact". It may be called "Contact A" and "Contact B".

Table 3.1.1–1 Digital input/output Contact Status

Operating Status		ON	OFF	Description
Digital Logic Value		1 01H	0 00H	
Contact Status	Contact A (Make Contact) (Normally Open)	Circuit Closed	Circuit Opened	The closed contact turns on, allowing electricity to flow and is to be "ON". The open contact turns off, stopping electricity flow, and is to be OFF.
	Contact B (Break Contact) (Normally Closed)	Circuit Opened	Circuit Closed	The closed contact turns on, allowing electricity to flow, but is to be "OFF". The open contact turns on, stopping electricity flow, but is to be "ON".
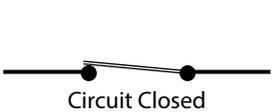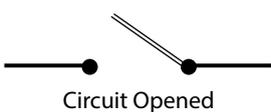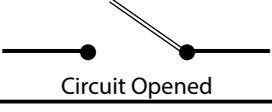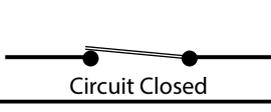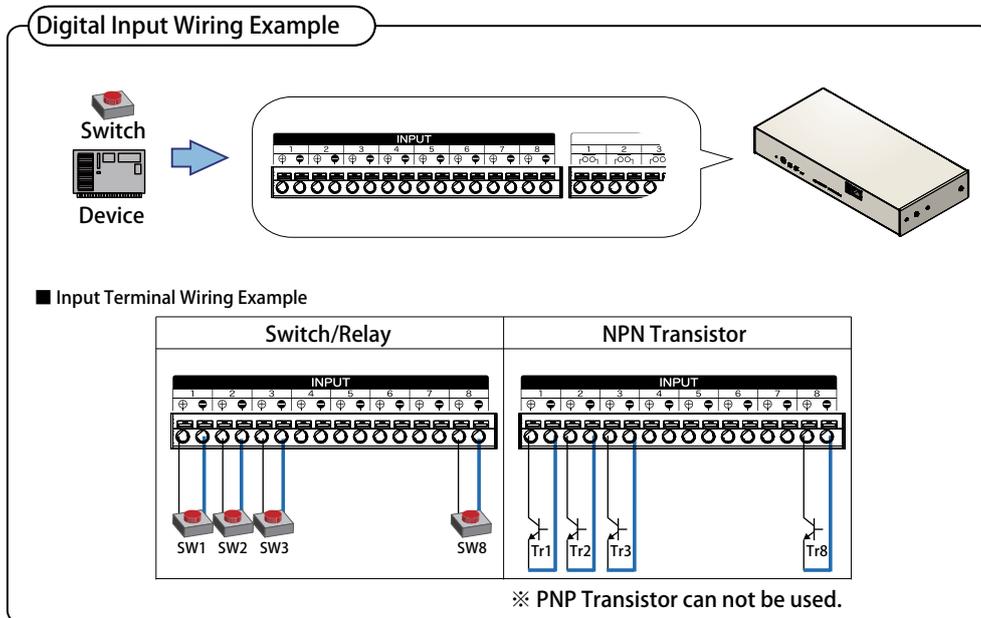
Fig. 3.1.1–1 Digital Input Wiring Example
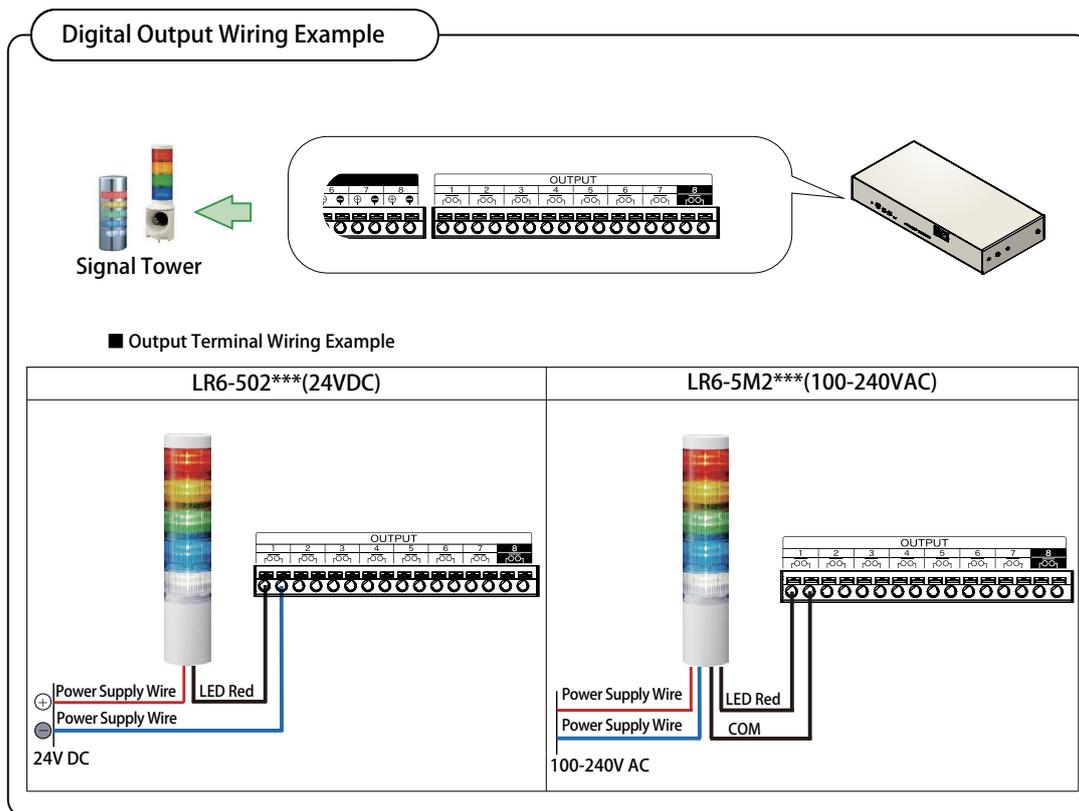
Fig. 3.1.1–2   Digital Output Wiring Example

3.1.2   Digital Input Monitoring Function

With the digital input monitoring function, the digital signal entered into one of the eight port input terminals is monitored at regular intervals as a digital input. The digital input can be specified as to which port is to be used in the digital logic setup, which type of contact ("Contact A" or "Contact B"), or a signal definition. In cases where the digital input status change is detected, various controls can be done according to the setup for each port.

In this product, an input trigger can have each digital input port as a signal definition based on conditions set up. The timing for this operation can be created when the digital input status changes.

Below, the "A Contact" digital input signal definition for this product is explained.
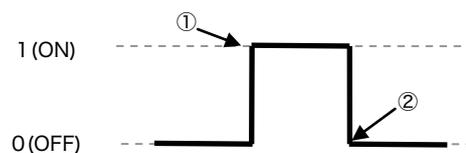
Fig. 3.1.2–1   Definition of a status change

Table 3.1.2–1   Status Change Definitions

ON Status Change	When the digital input turns ON (①), it judges that a status change occurred, and executes an operation according to the setting.
OFF Status Change	When the digital input turns OFF (②), it judges that the status change occurred, and executes an operation according to the setting.
Status Change	When a digital input is ON (①) or OFF (②), it judges that the status change has occured, and it is controlled according to their individual setup conditions.

The digital input monitor operation setup can be accessed in the "digital input setup" in the "operation setting item" from the Web setup tool. For details, refer to "4.11 Digital Input Setup Screen" on pg. 74.

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3.1.3 Digital Input Circuit Diagram
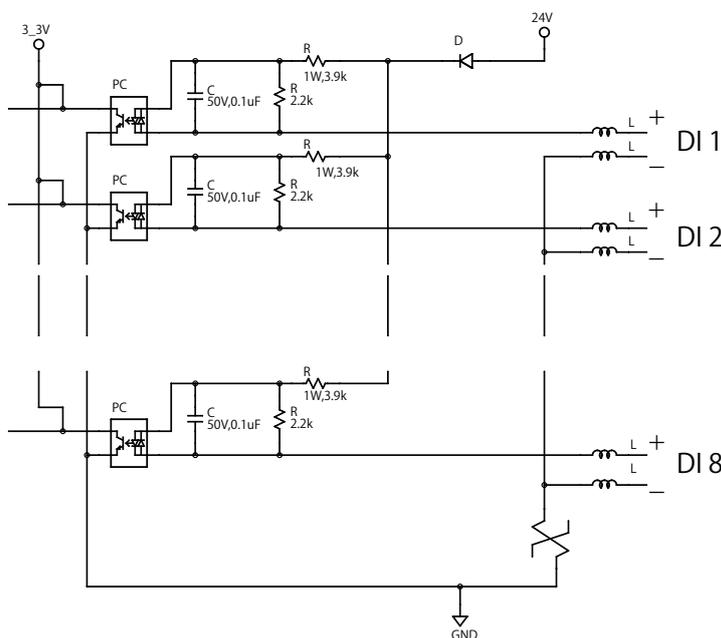
3.1.4 Digital-Output-Control Function

With the digital output function, various events are triggered to control the 8-port output terminal block contacts. Each digital output port controlled is prioritized in the order of event occurrence, and independent output control is also possible, respectively. For each digital output port, the digital contact (contact A or contact B), can be set whether or not to be used, as well as an automatic OFF function for the digital output.

MEMO	• The digital output status takes effect on the output terminal every 100 ms. • The "Automatic OFF digital output function" is a function that can be automatically turned OFF from a certain period when time has elapsed after the digital output was turned ON. It can be set from 0 to 600 seconds for each output port. • When the output Port is set for the RSH alert timer restore Function and the automatic off Function, the RSH alert timer restoration Function takes precedence.

Each digital output port can be operated from the following functions.

■ Web Setup Tool
The digital output can be operated from the Web setup tool. For details, refer to "4.20 Digital Output Operation Screen" on pg. 91.

■ SNMP Manager
By specifying the digital output port OID from the SNMP manager, the digital output port of the specified OID can be operated. Refer to "5 MIB" on pg. 98 for the operation from an SNMP manager.

■ Digital Input Monitoring Function
With the digital input monitoring function, it is possible to operate the digital output according to the status of each input port. Refer to "3.1.2 Digital Input Monitoring Function" on pg. 27 for details.

■ Trap Reception Function
When a trap set by the trap reception function is received from the outside, the digital output can be operated. Refer to "3.3 SNMP Function" on pg. 31 for details.

■ PHN Command
Each digital output port can be operated by a PHN Command. Refer to "3.7 RSH Command Function" on pg. 36 for details of each command.

■ PNS Command
Each digital output port can be operated by a PNS Command. Each digital output port can be operated by a PNS Command.

■ RSH Command
Each digital output port can be operated by the RSH command. Refer to "3.7 RSH Command Function" on pg. 36 for details of each command.

■ Ping Monitoring Function
With the Ping monitoring function, when the network equipment to be monitored is stopped or restored, the digital output can be operated. Refer to "3.9 Ping Monitoring Function" on pg. 41 for details.

■ Application Monitoring Function
With the application monitoring function, the digital output can be operated when the monitored application software is stopped or restored. Refer to "3.10 Application Monitoring Function" on pg. 43 for details.

■ "Clear" Switch Function
The digital output can be operated with the "Clear" switch function. For details, refer to "3.11 Status Clear Function" on pg. 44.

■ Digital Input Condition Setup Function
The digital output can be operated with a digital input condition setting function. For details, refer to "3.13 Digital Input Condition Setup Function" on pg. 45.

Refer to "4.12 Digital Output Setup Screen" on pg. 76 for setting up a digital output.

MEMO • When the contact of the digital output closes, the "Output display LED" corresponding to each port on the front of the main unit lights up (This light will illuminate, regardless of the digital logic setting).

3.1.5 Automatic Digital Output OFF Function

The automatic output OFF of the "Automatic Digital Output Function" automatically turns OFF when a certain time (0 to 600 seconds) elapses from the time when the digital output is turned ON. This function operates as follows.
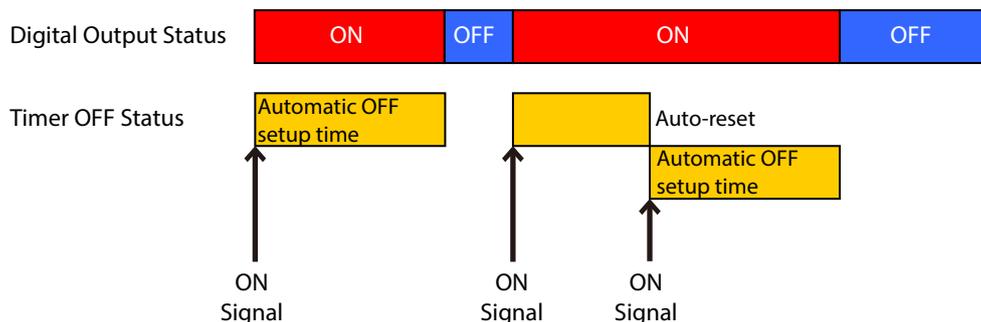
Fig. 3.1.5–1 Automatic Digital Output OFF Function detailed drawing

This function maintains an ON status digital output in seconds, when used with the Web setup tool, after receiving the signal which changes the digital output into a digital logic ON status value. If another ON signal is received during an automatic OFF setup time, the automatic OFF setup time will be re-set, so the digital output signal ON status will be extended.
However, if the automatic OFF setup time is set as 0 seconds, then the automatic OFF function will become invalid.

3.1.6　Digital Output Part Graphical Diagram
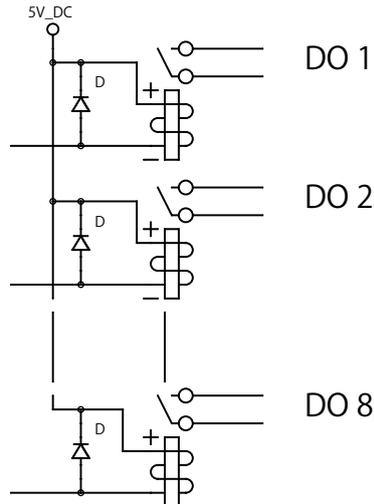
Fig. 3.1.6–1　Digital Output Circuit Schematic

3.2　Test Functions

The test function is a function to check the operation by sequentially turning on the digital output. When the test function is executed, it turns on in sequence every second from digital output 1 to digital output 8. During the execution of the test function, it cannot be stopped.

[Test Function Startup Method]

• When the "test" or "dotest" commands are sent by the RSH command.
After completion of the test function, the digital output can be turned off by the following method.
• Press the CLEAR button
• Use an RSH "clear" or "doclear" command
• Set the value to "clearAction" from the SNMP function
• From the digital output operation screen of the Web setup tool
• Send a clear command with a PNS command
• Use an HTTP "clear" command

When the test is executed, the digital outputs 1 to 8 are turned "OFF" first. (Open contact for Contact A) (Close contact for Contact B)

This point indicates the completion of the test function, so it is possible to stop the operation after this.

Fig. 3.2.0–1　Detailed Test Operation

3.3   SNMP Function

This product can control the digital output, obtain the status, send and retrieve TRAPs using the SNMP function.
For customers who purchased this product, Please download the MIB file for use with the SNMP functions.
Refer to "4.4 SNMP Configuration Screen" on pg. 66 for more details on the setup method.

| **MEMO** | • Refer to "8 Troubleshooting" on pg. 103 for diagnosing issues before requesting customer service. |

3.3.1   SNMP SET Digital Output Control Function

The digital output can be controlled by the SNMP SET command. Here is a digital output control as an example for the execution of the state clear function.

[**Application Example 1**]   Make the settings as followed for turning ON digital output 1.

Object	Object ID	Value
doEntry1	1.3.6.1.4.1.20440.4.4.1.2.2.1	1

[**Application Example 2**]   Make the settings as followed for turning OFF digital output 2.

Object	Object ID	Value
doEntry2	1.3.6.1.4.1.20440.4.4.1.2.2.2	0

[**Application Example 3**]   To execute a status "Clear" function, it is set up as followed.

Object	Object ID	Value
clearAction	1.3.6.1.4.1.20440.4.4.1.2.3.1	1

3.3.2   SNMP GET Digital-Input/output Status Acquisition Function

The status of a digital Input/Output can be acquired by the SNMP GET command. The following is an example of a digital input/output status acquisition.

[**Application Example 1**]   The digital input 3 is "ON", when the GET command is transmitted.

Object	Object ID	GET Value
diEntry3	1.3.6.1.4.1.20440.4.4.1.2.1.3	1

[**Application Example 2**]   The GET command is transmitted when digital output 4 is "OFF".

Object	Object ID	GET Value
doEntry4	1.3.6.1.4.1.20440.4.4.1.2.2.4	0

3.3.3   Trap Reception Function

Receives traps, including the designated sender set up, or the trap containing the set-up OID. When receiving a trap, it can report via digital output, sent RSH command, sent socket, sent mail, and sent trap. For details on the setting method, refer to "4.13 Trap Reception Configuration Screen" on pg. 77.

3.3.4   Trap Transmission Function

When this product is functioning, it sends a trap to the specified destination. For further details on the setting method, refer to "4.4 SNMP Configuration Screen" on pg. 66.

3.4　PHN Command Reception Function

With this product, the digital output can be controlled by using the control protocol used in the PHN series via socket communication. The Socket Communication protocol can select a select from "TCP" - "UDP", and the port number can select "10000-65535." The following explains the PHN commands used by the socket communication function. refer to "4.10 Socket Reception Configuration Screen" on pg. 73 for the details on the Setup method.

<Writing Command>
Data in the following format can transmit and control the digital output.

"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

Digital Output							
8	7	6	5	4	3	2	1

• Sending the Write Command Transmission Example
　When turning on digital output ports 1, 3, 5 and 7:
　In the operation data, input "1" for the bit to turn on, and "0" for the bit to turn OFF.
　　[Command]

"W" (57H) 8 bits								Operation Data (55H)							
0	1	0	1	0	1	1	1	0	1	0	1	0	1	0	1

> **MEMO**
> • "ON" and "OFF" here represent the digital logic value of each port.
> • The contact open/close state differs depending on whether it is an "A contact" or "B contact".

[Response from this product]
• Normal Response (Output Response)

「A」 (41H)	「C」 (43H)	「K」 (4BH)
1 byte	1 byte	1 byte

• Response Error (Output Failed)

「N」 (4EH)	「A」 (41H)	「K」 (4BH)
1 byte	1 byte	1 byte

<Reading Command>
The current operating status of this product is requested.

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

[Response from this product]
• Normal Response (Output Response)

"R" (52H) 8 bits								Digital Output							
0	1	0	1	0	0	1	0	8	7	6	5	4	3	2	1

• Data Acquisition Response Example
When the digital output ports 1 and 2 are ON,　　　　Response Data: **0000 0011 = 03H**

"R" (52H) 8 bits								Response Data: (03H)　8 bits							
0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	1

When the digital output ports 4 and 8 are ON,　　　　Response Data: **1000 1000 = 88H**

"R" (52H) 8 bits								Response Data: (88H)　8 bits							
0	1	0	1	0	0	1	0	1	0	0	0	1	0	0	0

Response Error (Output Failed)

「N」 (4EH)	「A」 (41H)	「K」 (4BH)
1 byte	1 byte	1 byte

> **MEMO**
> • "ON" and "OFF" here represent the digital logic value of each port.
> • The contact open/close state differs depending on whether it is an "A contact" or "B contact".

3.5　PNS Command Reception Function

The PNS Command is a special command which controls the digital output of the NBM series. The Socket Communication protocol can be selected from "TCP" or "UDP", and the communication port is from "10000-65535". The following explains the PNS commands being used with a socket communication setup.

<Writing Command>

Data in the following format can transmit and control the digital output.

Product Category "XC"		Identifier "S"	(Open)	Data Size		Data Area 8 bytes
58H	43H	53H	00H	00H	08H	See Below

Product Category

The product is classified in "XC".

Identifiers

"S" is used.

Data Size

Capacity of data control bits (data to transmit)

Data Area

Data Area 8 bytes							
Digital Output							
1	2	3	4	5	6	7	8

[Each Port Output]

ON	01H
OFF	00H
No Change	09H

MEMO
- "ON" and "OFF" here represent the digital logic value of each port.
- The contact open/close state differs depending on whether it is an "A contact" or "B contact".

• **Sending the Write Command Transmission Example**

When wanting to operate the digital output as "port 1: ON; port 3: OFF; other ports: No Change":

[Command]

Product Category "XC"		Identifier "S"	(Open)	Data Size		Data Area							
58H	43H	53H	00H	00H	08H	01H	09H	00H	0s9H	09H	09H	09H	09H

[Response from this product]

• **Normal Response (Output Response)**

ACK
06H

• **Response Error (Output Failed)**

NAK
15H

<Reading Command>

Transmitting the following data will execute the status of the digital output.

Product Category "XC"		Identifier "G"	(Open)	Data Size	
58H	43H	47H	00H	00H	00H

Read Command Response

Response Data: 16 bytes															
Digital Output								Digital Input							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8

• Data Acquisition Response Example

When "digital input ports 1, 2, 5 and 8 are ON; 3, 4, 6 and 7 ports are OFF; digital output ports 3, 5 and 6 are ON; 1, 2, 4 are OFF ":

Response Data: 16 bytes															
Digital Output								Digital Input							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
00H	00H	01H	00H	01H	01H	00H	00H	01H	01H	00H	00H	01H	00H	00H	01H

<Status Condition "Clear" Command>

All digital outputs are turned OFF and it returns from the monitoring abnormal condition to the monitoring condition. The values (time and number) accumulated in the input condition setting is erased.
refer to "3.11 Status Clear Function" on pg. 44 for command run-time operations.

Product Category "XC"		Identifier "C"	(Open)	Data Size	
58H	43H	43H	00H	00H	00H

3.6　Mail Transmission Function

Up to eight E-mail subjects can be registered to transmit. Up to 16 possible registrations combining the subject and the body of outgoing mail can be sent. The user authentication method during transmission can be selected from either "SMTP Authentication", "POP Authentication", or "No Authentication". Refer to "3.11 Status Clear Function" on pg. 44 and "4.6 E-Mail Message Settings Screen" on pg. 69 for details on the Setup method.

3.6.1　E-mail Message Contents

The subject and the body of outgoing mail can be selected from 16 possible registrations. The e-mail text would include the equipment name, its location, the sender, the message, and supplementary information indicated in Table 3.6.1–1 below. The contents of the registered subject is indicated.   E-mail is transmitted with the following contents.

Table 3.6.1–1　E-mail Transmission Contents

System Location	:	<The setup location is indicated>
System Name	:	<The device name setup is indicated>
Contact Address	:	<The contact set up is indicated>
Generated Event	:	<The E-mail Sending opportunity event used is indicated>
Supplementary Information	:	<Indicates accompanied information for an event>

<The selected text is registered>

Table 3.6.1–2　E-mail Transmission Timing Event

Classification	Contents
Digital input status change	When the status changes in a digital input, a transmission is sent.
Application monitoring object status change	When an Application monitored object is in an abnormal condition, or is restored from an abnormal condition, a transmission is executed.
Ping monitoring object status change	When a Ping monitored object is in an abnormal condition, or is restored from an abnormal condition, a transmission is executed.
Trap Reception	Sent when a trap is sent from the registered sender address.
Pressing the "Clear" button	It transmits when the clear switch to this product is pushed.
During a digital input condition setup agreement	When conditions agree on the set up by the digital input condition, a transmission is sent.

Table 3.6.1–3　E-mail registered event and accompanied information

Written Event	Written Supplementary Information
Digital input was set to ON.	Port [1-8]
Digital input was set to OFF.	Port [1-8]
Application Monitor Abnormality detected.	Equipment Name : Registration Address : Port No.
Application Monitor Recovery detected.	Equipment Name : Registration Address : Port No.
Ping Monitor Abnormality detected.	Equipment Name : Registration Address
Ping Monitor Recovery detected.	Equipment Name : Registration Address
Trap was received.	Group Name : IP Address
"Clear" Button was pushed.	None
Digital input conditions agree.	Conditions [1-5]

3.7   RSH Command Function

RSH (remote shell) is a CUI program which executes a shell command from one computer to another computer via a computer network. Explains how to control a digital output from the RSH command.

3.7.1   RSH Command Reception

The command syntax which this product can receive is indicated below. For details on the "RSH Command Connection Authentication /Operation after Reception" setting method, refer to "4.8 RSH Command Reception Configuration Screen" on pg. 71.

Table 3.7.1–1   Receivable Commands

Command	Contents
alert	Digital output control is possible.
clear/doclear	Returns to a normal status.
status	The digital input/output status can be acquired.
test/dotest	Operation test is performed.
read	The digital input status can be acquired.

Using the RSH Commands

Command Input Method

rsh IP Address [-l account] Command [Option]

Command Input Method (when the designated sender address is inactive)

rsh_IP address_-l_designated sender address invalid common account__command _ [Option]

MEMO	• "_ ": indicates a space. [_]: Indicates an optional command. The account abbreviation condition is limited to where the IP address and account name (half-width alphanumeric character) of the PC transmitting the RSH command is registered on a command reception setup screen. • Here, "ON" and "OFF" expresses the digital logic value for each port. The contact switching conditions vary by the "A-contact" and "b-contact".

<<alert Command>>

Contents: Digital output control is possible.
Format: alert_DO1 - DO8_ [sec]
Return Value: Status after Command Execution
Option: Refer to Table 3.7.1-2.

Table 3.7.1–2   Option Explanation

Classification	Description
DO1-DO8	About digital outputs 1-8, OFF "0", ON "1", no operation "9" are entered.
sec	Restores the Signal Tower to its previous command status. (Timer restore function) When the set time elapses, the operation returns to the digital output operation before setting the timer restore function. The time can be set from zero to 99. The status will not return if no input or a zero has been entered.

• **Command Transmission Example**

Example 1   Product IP address "192.168.10.10" Account "root"
                When operating "Port 1 ON; Port 3 OFF; others not operating."
                 rsh_192.168.10.10_-l_root_alert_19099999

Example 2   Product IP Address "192.168.10.10" Designated sender IP address account "patlite"
                When operating "Port 1 ON; Port 3 OFF; others not operating."
                rsh_192.168.10.10_-l_patlite alert_19099999

Example 3   When the product IP address is "192.168.10.10", and "Port 1 ON; port 3 OFF; others not operating" for 20 seconds to operate. (When the account is omitted)
                rsh_192.168.10.10_alert_19099999_20

<<clear / doclear Command>>

Contents: All digital outputs are turned OFF and change from the monitoring abnormal condition to the monitoring condition.
The values (time and number) accumulated in the input condition setting is erased.
Refer to "3.11 Status Clear Function" on pg. 44 for command run-time operations.

Format: clear, doclear

Return Value: Status after Command Execution

- **Command Transmission Example**

Example 1   Transmit the command to the product's IP address "192.168.10.10."
When using an invalid designated sender address account "patlite".
rsh_192.168.10.10_-l_patlite_clear
When an account abbreviation is made.
rsh_192.168.10.10_clear

<<status Command>>

Contents: The current digital output status is returned.

Format: **status_[di]_[do] or, status_[do]_[di]**

Return Value: Current Condition

Option: Refer to Table 3.7.1-3

Table 3.7.1–3   Option Explanation

Classification	Description
di	The digital input status is returned.
do	The digital output status is returned.

- **Command Transmission Example**

The IP address of a product: 192.168.10.10
Status of a digital input:
      The ports 1, 2, 4, 6, and 7: OFF
      The ports 3, 5, and 8: ON
Status of a digital output:
      The ports 2, 3, 6, and 8: OFF
      The ports 1, 4, 5, and 7: ON
Designated sender account: patlite

Example 1   For the "status". The digital output status is returned.
rsh_192.168.10.10_-l_patlite_status
Acknowledge: 10011010

Example 2   In the case of a "di" option. The digital input status is returned.
rsh_192.168.10.10_-l_patlite_status_di
Acknowledge: 00101001

Example 3   In the case of a "do" option. The digital output status is returned.
rsh_192.168.10.10_-l_patlite_status_do
Acknowledge: 10011010

Example 4   In the case of a "do" and "di" option. At the head of a sentence, the "DO:" is attached for the status of a digital output and the "DI:" is attached to it for the status of a digital input to be returned to it. (The status is returned as an option.)
rsh_192.168.10.10_-l_patlite_status_do_di
Acknowledge: DO: 10011010
**   DI: 00101001**

rsh_192.168.10.10_-l_patlite_status_di_do
Acknowledge: DI: 00101001
**   DO: 10011010**

<<test / dotest Command>>

Contents: Execute confirmation of a digital output operation.
              After all digital outputs are turned off, the ON status is set at a 1 second interval from port 1 to port 8.

Format: test, dotest
Return Value: 00000000
              10000000
              11000000
              11100000
              11110000
              11111000
              11111100
              11111110
              11111111
              (It is not displayed, in cases where it is performed by PRSH.)

• **Command Transmission Example**

Example 1   When checking the operation of the digital output of the product's IP address "192.168.10.10".
              When using invalid designated sender address account "patlite"
              rsh_192.168.10.10_-l_patlite_test
              rsh_192.168.10.10_-l_patlite_dotest
              Acknowledge: The above "return value"

              When checking the operation of the digital output. (When the account is omitted)
              rsh_192.168.10.10_test
              rsh_192.168.10.10_dotest
              Acknowledge: The above "return value"

              When confirming the operation of the digital output of the IP address "192.168.10.100" of the product.
              When the account "root" is used.
              rsh_192.168.10.100_-l_root_test
              rsh_192.168.10.100_-l_root_dotest
              Acknowledge: The above "return value"

              When checking the operation of the digital output. (When the account is omitted)
              rsh_192.168.10.100_test
              rsh_192.168.10.100_dotest
              Acknowledge: The above "return value"

<<read>>

Contents: The current digital input status is returned.
Format: read
Return Value: Current Condition

• **Command Transmission Example**

Example 1   When acquiring an input state of a product whose IP address is "192.168.10.10" and whose status is "digital input port 1 and port 3:ON; all others are OFF."
              When using the designated sender account "patlite" to obtain the product status.
              rsh_192.168.10.10_-l_patlite_read
              Acknowledge: 10100000

3.7.2 RSH alert Timer Reset Function

The procedure and operation of the timer restoration function which can set up the operating time of a digital output are explained.

[Process]

① Transmit the command to the products IP address "192.168.10.10."
Account executes the command for "root," which operates "digital output 1 is ON" for 10 seconds.
r<u>sh_192.168.10.10_-l_root_alert_19999999_10</u>

② 3 seconds after ① , the command was transmitted to the products IP address "192.168.10.10".
A command is executed to activate the "root" account, and "digital output 5: ON" for 10 seconds.
<u>rsh_192.168.10.10_-l_root_alert_99991999_10</u>

The digital output port that is set to "9" (no operation) by the alert command is not affected by the timer interval of the command executed later.
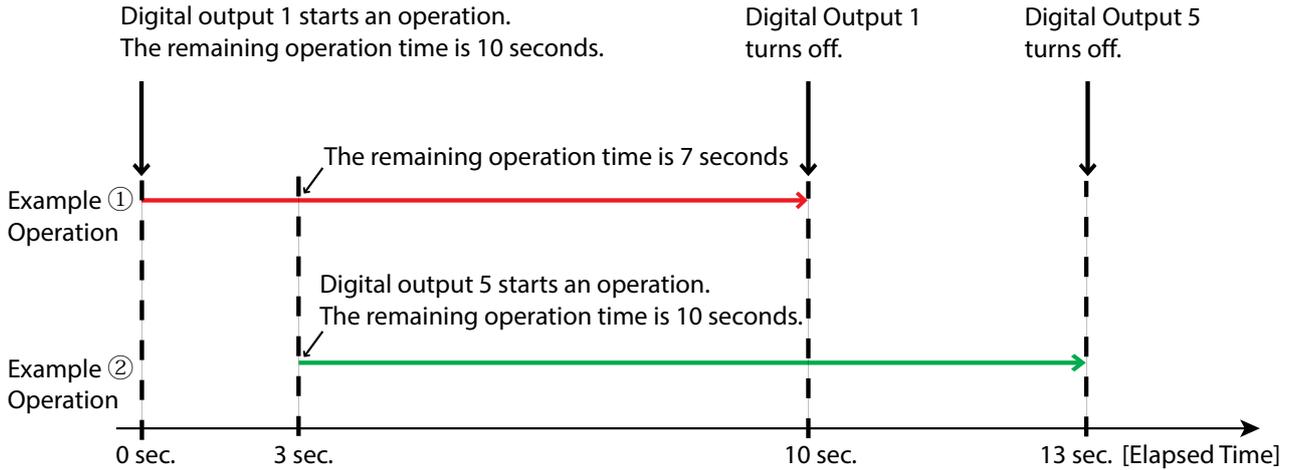

Fig. 3.7.2–1   Timer Restore Function Operation

> **Attention** · When the output Port is set for the RSH alert timer restore Function and the automatic off Function, the RSH alert timer restoration Function takes precedence.

3.7.3 RSH Command Transmission Function

When various inputs, operations, and preset events occur, the RSH commands are transmitted of up to 8 locations. To set up, register the destination address, account, and send command.
Depending on the destination device, since the operation of each command differs, check the specifications of the destination device.
The RSH command setting is done by the Web setup tool. Refer to "4.7 RSH Command Transmission Configuration Screen" on pg. 70.
Events which can be set up are as follows.

Table 3.7.3–1   RSH Command Transmission Timing

Event	Description
Digital input status change	The RSH command is transmitted when a digital input status change occurs.
application monitoring object status change	An RSH command is sent when the application monitoring target becomes an abnormal state, or when recovering from an abnormal state.
Ping monitoring object status change	An RSH command is sent when the Ping monitoring target becomes an abnormal state, or when recovering from an abnormal state.
Trap Reception	The RSH command is transmitted when a trap is received from the designated sender address registered.
Pressing the "Clear" button	The RSH command is transmitted when the clear switch is pushed.
Digital input condition setting function (When matched)	An RSH command is sent when conditions set in the digital input condition settings agree.

> **MEMO** When the product is sending an RSH command transmission back to itself, set the loopback address to (127.0.0.1) as the destination address.

> **Attention** When sending the RSH command to itself, keep the event occurrence interval, such as digital input, to at least 500ms.

3.8   Socket Transmission Function

When various inputs, operations, and preset events occur, send commands via Socket communication.
The setup is made by registering the transmission destination address, the TCP (or UDP) protocol, and port numbers between 5001-65535.
Commands are expressed in hexadecimal notation from the beginning and the comma separates values in one byte units to describe it. Up to 30 bytes per command can be registered, of up to 16 commands.
The Socket Transmission setting can be done in the Web setup tool. Refer to "4.9 Socket Transmission Configuration Screen" on pg. 72.
Events which can be set up are as follows.

Table 3.8.0–1   Socket Transmission opportunity

Event	Description
Digital input status change	A command is transmitted when a digital input status change occurs.
application monitoring object status change	A command is transmitted when the application monitoring object becomes abnormal, or when it restores from it's abnormal condition.
Ping monitoring object status change	A command is transmitted when the Ping monitoring object becomes abnormal, or when it restores from it's abnormal condition.
Trap Reception	A command is sent when a registered trap is received.
Pressing the "Clear" button	A command is sent when the "Clear" switch is pushed.
Digital input condition setting function (When matched)	A command is sent when the conditions set in the digital input condition settings agree.

[Command Transmission Example]

Example 1   When using the PNS command to operate the digital output of another NBM-D88 as "Port 1: ON, Port 3: OFF, other ports: maintain status"
58,43,53,00,00,08,01,09,00,09,09,09,09,09

Example 2   When using the PHN command to operate the digital output of another NBM-D88 as "Port 2, 5, 7: ON, Port 1, 3, 4, 6, 8: OFF"
57,52

Example 3   When using the PNS command to operate the Network Monitoring Signal Tower NHL-3FB1-RYG as "Red:Lighting; Amber: Flashing Pattern 1; Green: Flashing Pattern 2; Buzzer: sounding Pattern 4"
58,58,53,00,00,06,01,02,03,00,00,04

Example 4   When using the PHN command to operate the Network Monitoring Signal Tower NHL-3FB1-RYG as "Red: Flashing Pattern 1; Amber: off; Green: Lighting; Buzzer: sounding Pattern 1"
57,2C

MEMO   When the product is sending a transmission back to itself, set the loopback address to the destination address.

3.9　Ping Monitoring Function

The Ping transmission is used to monitor the response of a device in a network. A maximum of 24 nodes can be monitored and the control of abnormality detection and abnormality recovery can be set up separately.

3.9.1　Ping Monitoring Function

The following explains how to set up the Cycle count Error threshold and Pings per test cycle for the Ping Monitoring Function. The Pings per test cycle can set up from 1 to 600 seconds and the number of cycles can be set from 1-3.

The following is an example of setting the Pings per test cycle with a value of "2" and "3".

- If a Cycle count Error threshold is set to "2", in cases where abnormality detection was generated twice, the Ping monitor abnormality function will operate.
- If the Pings per test cycle is set to "3", then the Pings per test cycle will send three "packets" during the Ping test cycle period. (Refer to the following figure)

An abnormality judgement is detected during a Ping test cycle period.

①　No abnormality is detected when a Ping response is 1 out of 3.

②　When a Ping monitoring response does not respond to a 3 out of 3, the abnormality judgment is counted as 1 time.

③　Even if there is no Ping response during the next interval, the abnormality judgment is counted as 1 time.The total number of transmission times is set to "2", and the Ping Monitoring Abnormality Condition is executed.

MEMO　When the Abnormality Judgement Value is set as a "1", if the next Ping Monitoring Abnormality Condition is judged as "no abnormality", then the number of judging abnormality is cleared (back to "0").
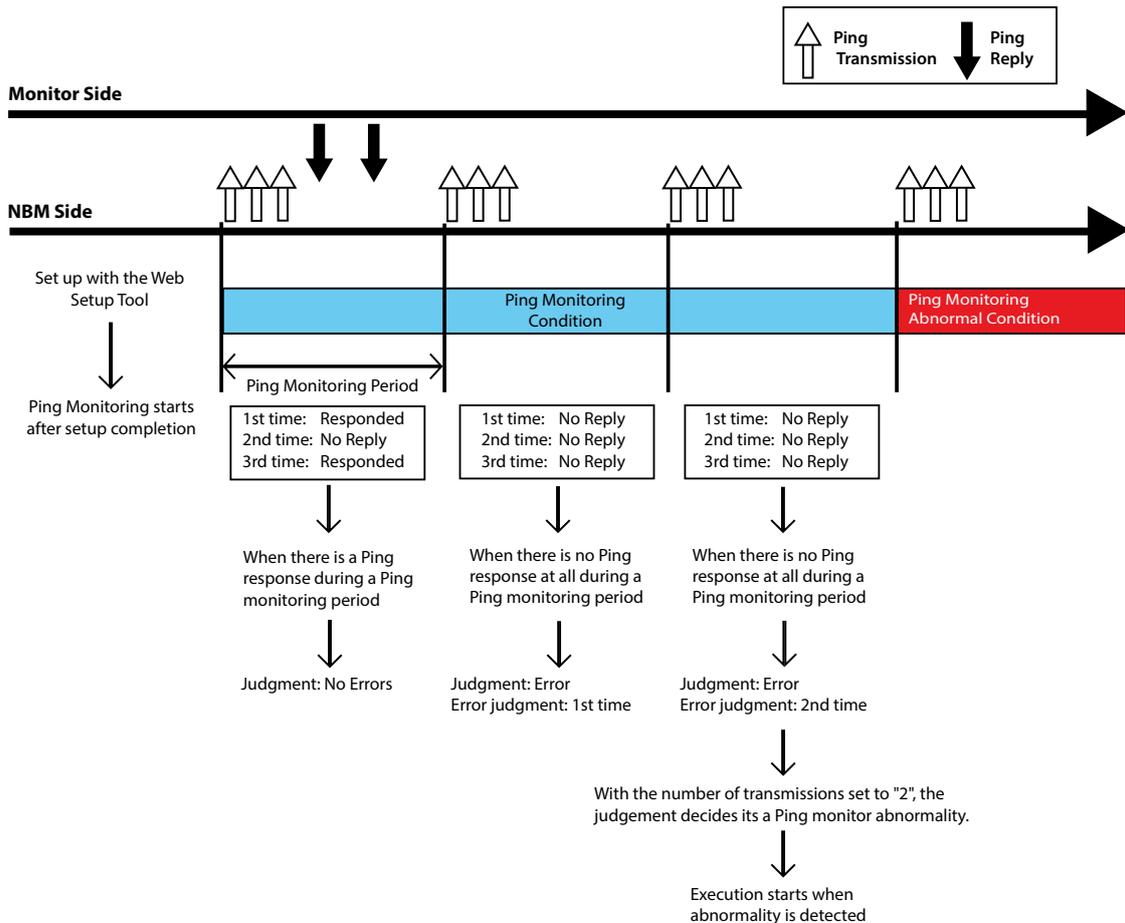
Fig. 3.9.1–1   detailed sample image for Cycle count Error threshold of "2" and Pings per test cycle at "3"

Attention
- When the abnormality recovery operation is performed, it is restored from the monitor abnormality status.
- When a clear operation (Execute a "Clear" operation from the Web setup tool, a "Clear" command via RSH-PRSH, PNS Command, or an SNMP clear) is made when a monitoring abnormality occurs, it will be restored to the monitoring condition.

3.9.2　Ping Monitoring Function ("Clear" Command Outside Sources)

A detailed explanation when a "Clear" operation is received (Executed a "Clear" operation from the Web setup tool, received "Clear" commands via RSH / PRSH, PNS Command, or an SNMP clear) from the outside by a monitor abnormality with the Ping monitoring function.

Example:　　　When a clear command is received from the outside in the event of a Ping monitor abnormality

　① 　When a monitoring abnormality occurs from the monitoring condition, the digital output operates at the time of the monitor abnormality.

　② 　When a clear operation is received in a monitor abnormality status, the monitor abnormality status is cleared and it returns to the monitoring condition.

　③ 　If there is a response at the next Ping monitoring, the monitoring condition will continue. If there is no response, the condition will immediately return to the abnormality detection mode.
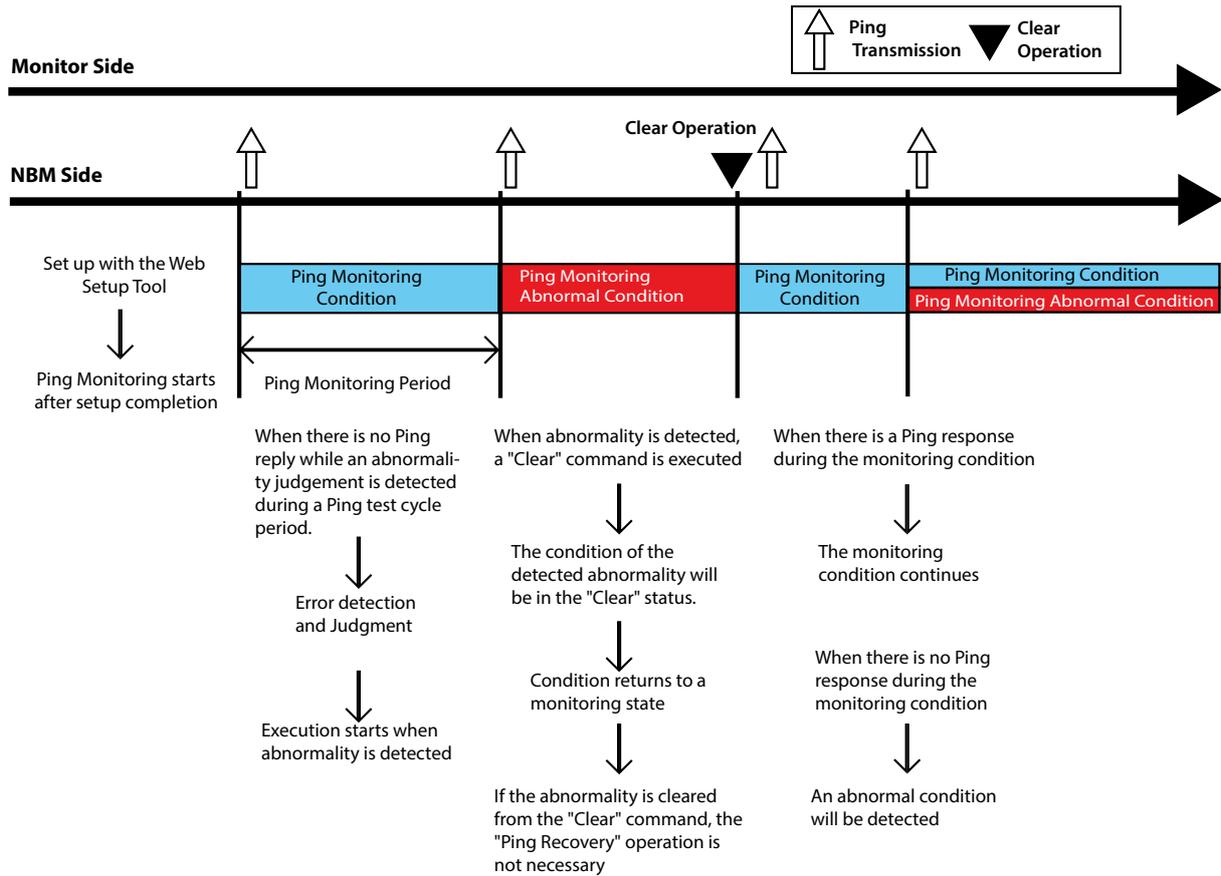
Fig. 3.9.2–1　Detailed sample of "Clear" operation received from the outside during monitor abnormality

| **Attention** | When a clear operation returns it to a monitoring condition, monitor abnormality restoration control does not occur. |

3.10 Application Monitoring Function

By creating an additional send command to an application, this product can receive data from the application and can monitor the life and death of the application. If data is not received within the Ping test cycle period, a communication abnormality is judged, and a monitoring error sends a status change to the Signal Tower. After a generated event, if data is received from the monitored candidate, it will detect a recovery from the abnormal operation. For further details on the setting method, refer to "4.4 SNMP Configuration Screen" on pg. 66.

Example: When the monitor cycle is set at 30 seconds to monitor the data reception from the monitored application.

① After setting, the monitoring is started once it receives data from the address to be monitored.
② If data is received before the monitor cycle of 30 seconds elapses, it will be judged as having no abnormality.
③ If data can not be received within the next monitor cycle of 30 seconds from the judgment, it is judged as a monitor abnormality.
   Once judged as abnormal, the operation at the time of the detected abnormality is carried out.
④ After a monitoring abnormality judgment, if data is received from the application to be monitored, it is judged as an abnormality recovery. The operation at the time of recovery from the abnormal condition will return to its monitoring condition again.
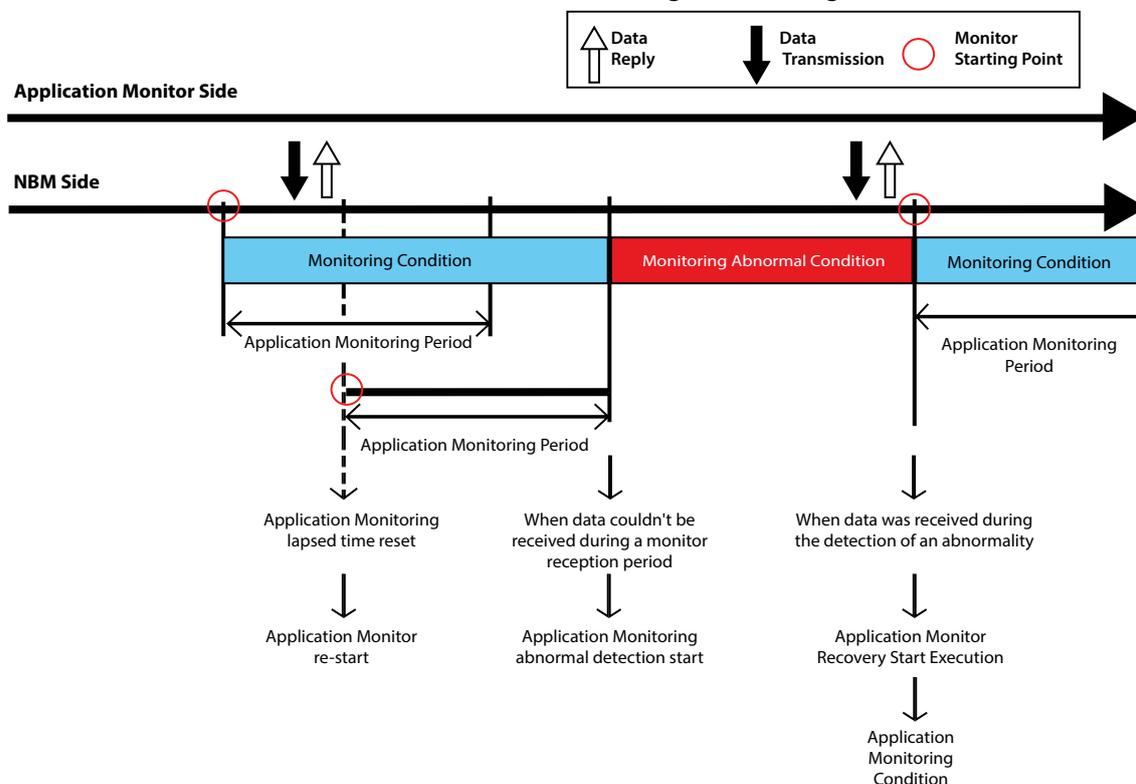

Fig. 3.10.0–1   Detail drawing of application monitoring operation example

Attention
- Monitoring starts from the time data is received.
- Terminating the connection will stop the monitoring.
- Recovery from an abnormal operation can only occur if a monitored condition was detected as abnormal.

3.11 Status Clear Function

A "Status Clear Function" is a function which changes each function of this product into the following status.
- For the digital output function, it sets all 8 ports to the OFF state.
- The test function turns off all digital outputs after execution.
- The digital input condition setting function erases the data for the number of accumulation times and the time stamp data.
  (When "Number of Detections" and "detection of durations" are set)
- The application monitoring function returns all the monitor abnormality conditions to the monitoring condition.
- The Ping monitoring function returns all the monitor abnormality conditions to the monitoring condition.

Attention	• Ports set as "Inactive" by "Digital Output Settings" are not cleared. • Execution of a "Clear" operation actually turns off the output terminal block. Be very careful when executing a status clear. • When the status clear function is executed in the monitoring condition, the monitoring condition is maintained as is. • When returning to a monitoring condition, operation at abnormality recovery cannot be done. Moreover, when the monitoring object is still in an abnormal condition (No Ping Acknowledgement for the application monitor), in accordance to the monitor set up, the monitor abnormality operation is performed again.

There are five methods to execute a status "Clear" function.
- Execution from the Web setup tool (Refer to "4.21 "Clear" Operation Screen" on pg. 92)
- Execution of the RSH commands, "clear" and "doclear" (refer to "3.7.1 RSH Command Reception")
- Execution of an operation status clear command with the PNS Command (Refer to "3.5 PNS Command Reception Function" on pg. 33)

Product Category "XC"		Identifier "C"	(Open)	Data Size	
58H	43H	43H	00H	00H	00H

- Set the "clearAction" value to "1" with the SNMP SET command.
  (Refer to "3.3.1 SNMP SET Digital Output Control Function" on pg. 31)

Object	Object ID	Value
clearAction	1.3.6.1.4.1.20440.4.4.1.2.3.1	1

- Execution of the HTTP command, "clear".
  (Refer to HTTP Command Control)

3.12 "Clear" Switch Function

The clear switch function is the function to operate as follows, according to the setting when pressing the "Clear" button on the front of this product.
- Digital Output Control
- RSH Command Transmission
- Socket Transmission
- Trap Transmission
- E-mail Transmission
- Clear the number of times and time data during integration in the digital input condition setting.
- * When the "operation at a clear switch depression" and "Condition Clear" from the "Digital Input Condition Settings" in the Web setup tool are "Active".

Attention	• When the clear switch is pressed during the monitor abnormality status, the monitor abnormality status is maintained. • After the clear switch is pressed, no action will occur unless the monitoring object recovers from an abnormal condition.

3.13 Digital Input Condition Setup Function

The status change of a digital input condition is met when the set-up operation is set up to be executed. The digital input is detected as an ON condition. (Refer to "3.1.2 Digital Input Monitoring Function" on pg. 27) Condition "Setup 1" through "Setup 5" serves as independent control and judgment.

The sequence for operation setup is "Setup 1" -> "Setup 2" -> ---> "Setup 5", and when the setup agrees, the operation is executed. (Priority is given to the last set up operation)

The following set up can be executed.

Table 3.13.2–1   Condition Pattern

Pattern	Conditions
AND detection	It detects the input of the digital input ports 1-8 (up to four ports can be set).
Number of detection times	It is valid when detecting a certain number of inputs during the measuring time. The time which can be set for the measuring time is from 0 to 86400 seconds, or 99999 seconds. It does not operate when set to 0. When it is set for 99999 seconds, the time setting becomes unlimited, and the condition setting of only the predetermined number of times is set. The number of possible settings depends on the measuring time. When the measuring time is 1 second It is 0 to 4 times. When the measuring time is 2 seconds It is 0 to 8 times. When the measuring time is 3 seconds or more It is 0 to 10 times. It becomes invalid when it is set to 0.
Time Continuation Detection	When the fixed time input is set to be detected, it is considered as "Active." The settable number is from 0 to 86400 seconds. It is inactive when 0 is used.

Table 3.13.2–2   Operates when the "Clear" switch is pressed.

"Clear" Condition (For "Number of detection times", "Time Continuation Detection")	When the clear button is pushed, it is set up as to whether the measured number of detection times and count is erased. When set to "Active", an initialization will occur when the "Clear" switch is pressed. When set to "Inactive", there is no change, even if the "Clear" switch is pressed.

Table 3.13.2–3   Operation After Condition Agreement

Re-detection (For "Number of detection times", "Time Continuation Detection")	After a detection condition agrees, it is set up to detect again. When set to "does", it detects when detection conditions agree and operates. When set to "doesn't", after the setup, it only operates when the detection condition agrees at the beginning, and even if it agrees after that, it does not operate. To make it detect again, execute a "Clear" operation, or set up the "Clear' condition" as "Active", and push the "Clear" switch.

Table 3.13.2–4   Condition Agreement Operation

Classification	Contents
Digital Output Control	The digital output will be ON or OFF.
RSH Command Transmission	The RSH command is sent to the device with the set-up address.
Socket Transmission	The registered command is sent to the device with the set-up address.
Trap Transmission	The SNMP trap is sent to the device with the set-up address.
E-mail Transmission	E-mail is transmitted to the set-up mail server.

MEMO
- The detection delay for a digital input is 110 ms.
- The input trigger condition cannot be changed from a fixed on condition.

3.14 Reinitialization Function

From the Web Setup Tool, this unit can be reinitialized to revert all settings back to the default (factory) settings, while leaving the network settings as is when resetting the other settings. Refer to "4.18 Reinitialization Setup Screen" on pg. 89 for the details of the operation method. The switch on this product can also be operated by the following methods, and only the network setup can be initialized to the factory default values. Refer to "3.21 Mode Switching Functions" on pg. 51 for the details of the operation method.

[Method for initialization, including the network setup]
① Set the mode selector switch to "3".
② Turn on the power of this product again or press the reset switch.
③ Make sure port 3 of the input display LED is flashing, then press the select switch.
④ Initialization is executed and lights switch on in sequence from port 1 of the input display LED.
⑤ When all the input display LEDs and output display LEDs are in a lighted state, initialization is complete.
⑥ Turn off the power, then turn the mode switch to "0."
⑦ Turn on The Main Unit and connect with the factory default IP address at "192.168.10.1."
   * If the Ping monitor etc. are set up, an abnormal operation detection may occur.
   * If port 1 of the output display LED lights up, initialization has failed.

[Method for initialization, reverting back to default values]
① Set the mode selector switch to "4."
② Turn on the power of this product again or press the reset switch.
③ Check that the display LED of Port 4 Is flashing, then press the select switch.
④ Initialization is executed and lights switch on in sequence from port 1 of the input display LED.
⑤ When all the input display LEDs and output display LEDs are in a lighted state, initialization is complete.
⑥ Turn off the power, then turn the mode switch to "0."
⑦ Turn on the Main Unit and connect with the factory default IP address at "192.168.10.1."

Table 3.14.0–1   Setting after default function executed

Item	Execution Method				
	WEB Setup Tool		Mode Switch Functions		
	When checking with the network initialization	When not checking with the network initialization	No.4 Factory default	No.3 network setting initialization	No.7 password initialization
Network Setup	Set to default value	Setting is Saved	Set to default value	Set to default value	Setting is Saved
Password	Set to "patlite"	Set to "patlite"	Set to "patlite"	Set to "patlite"	Set to "patlite"
Setup Menu (Except password/network item)	Set to default value	Set to default value	Set to default value	Setting is Saved	Setting is Saved
Operation Settings	Set to default value	Set to default value	Set to default value	Setting is Saved	Setting is Saved
Status/Operation Log	Erased	Erased	Erased	Retain value	Retain value

Attention
• Do not overexert pressure to the "Clear" switch, select switch or mode switch.
• Configuration data or logs deleted in "Network setting initialization mode" or "Factory setting mode" can not restored. Before initialization, be sure to backup any necessary setup information and log data.

MEMO
• "Network setting" refers to the "main unit IP address, netmask, default gateway, DNS server address, host name, domain name" items on the system setting screen.

3.15　Configuration Data Save/Load Setup

The setting items of this product can be read and saved onto the PC or a USB memory as configuration data.
Also, the configuration data can be selected and it can loaded into this product.
The Configuration Save/Load Setup can be done from the Web setup tool, or by the use of the switches on this product. The configuration data can be read or saved to the PC through the use of the Web setup tool. Refer to "4.23 Configuration Data Setup Screen" on pg. 94 for details.
When operating the switch of this product, changing modes with the changeover switch can be used to read the configuration data onto a USB memory, then writing that configuration data saved in the USB memory into this product.
For details, refer to "4.23 Configuration Data Setup Screen" on pg. 94 and "3.21 Mode Switching Functions" on pg. 51.

Table 3.15.0–1 Read and Write Configuration Data Contents

Network Setup	×
Password	×
Setup Menu (Except password/network item)	○
Operation Settings	○
Status/Operation Log	×

3.16　Status Log Function

This product can store the digital input/output status log in the flash memory inside this product. The saved status log can be checked and downloaded via the Web setup tool.
A download can be exported as a CSV file, or can be saved to the USB memory connected to the USB connector output of this product. Refer to "3.20 USB Memory Function" on pg. 50 for details.

Table 3.16.0–1 Status Log Function (Specifications)

Output Method	Polling/Event Method
Download file's default file name	nbm-statlog.csv
Number of storable logs	100,000 cases (An overdelivery is deleted in order of oldest)

[Status Log Format]

Date_time, digital input status (8 figures of comma separated values), digital output status (8 figures of comma separated values)

[Status Log Format]

2012/12/13 17:16:38,1,0,0,0,1,1,0,1,1,1,0,1,0,0,1,0

Table 3.16.0–2 Status Log (Output Contents)

Item	Contents
Date and Time	It is the recorded date and time of log data.
Digital input status	It shows the logical value of each port of the digital input. 0: OFF　1: ON
Digital Output Status	It shows the logical value of each port of the digital output. 0: OFF　1: ON

Conditions to save the status log can be selected from the "polling" or "event" method.

Table 3.16.0–3 Status Log Output Method

Output Method	Description
Polling Method	Preset to save the status log at intervals. The time intervals which can be set up is from 1 to 300 seconds.
Event Method	Each time the digital input/output status changes, the status log is saved.

3.17 Operation Log Function

This product can store the operation log of the created event, etc., in the flash memory inside this product.

The saved operation log can checked and the contents downloaded via the Web setup tool.

The download can be exported as a TXT file, or stored onto a USB memory from the USB connector. It can also transmitted to another host via the network. Refer to "3.20 USB Memory Function" on pg. 50 for details.

> (MEMO)
> • In order to transfer the operation log to the host, the "syslog server" must be running on the host side.
> • The UDP port No. 514 is used for log transfer.
> • The destination of the operation log can be checked from the Web Setup tool. Refer to "4.1 System Setup Screen" for the details of the Setup method.
> • When an event occurs, the log is stored inside the product, and it is transferred at the same time to the set host.
> • The format of the log transferred to the host is in syslog format, not the operation log format.

Table 3.17.0–1   Operation Log Function Specifications

Download file's default file name	nbm-actlog.txt
Number of storable logs	50,000 cases (An overdelivery is deleted in order of oldest)

[Operation Log Format]

date time host name log type: -- message 1[-- :message 2]

[Operation Log Display Example]

Jan 1 01:23:45 hostname START:system started

Table 3.17.0–2   Operation Log Output Contents

Log Type	Message 1	Message 2	Description
START	system started	Version host name	It exports when this product is starting up.
MAIL	send mail	—	It exports when sending an E-mail.
PING	error occurred	Error occurrence target address	When a Ping monitoring error occurs, it is recorded together with the address of the target device.
	error recovered	Error recovery target address	When a Ping monitoring error recovery occurs, the address of the target device is recorded.
APL	error occurred	Error occurrence IP address Port number	It records when an application monitoring error occurs.
	error recovered	IP address Port number to be restored	It will be recording when restoring an application monitoring error.
TRAP	received	Designated sender IP address reception OID (specific-trap value)	When the registered trap is received, it is recorded together with the designated sender IP address.
CLEAR	clear button	—	It records when the "Clear" button of this product is pushed.
	snmp command	—	It records, when a clear operation is executed with the SNMP Set.
	rsh command	IP Address	It records when a clear is executed by the RSH command.
	web tool	—	It records when the clear operation is executed from the Web setup tool.
	pns command	—	It records when a "CLEAR" has been executed by the PNS Command.
	http command	—	It records when a "CLEAR" has been executed by the HTTP Command.
RSH	Command Name	IP Address	It records when the RSH Command is executed. (Except the "Clear" command) * When the designated sender address is invalid, the IP address is not displayed.
SNMP	digital output was controlled	Operated digital output (DO1-DO8)	It records when a digital output is operated by the SNMP Set command.
DIN	digital input state change ON	Operated digital input (DI1-DI8)	It records when the digital input operates.
	digital input state change OFF		
DOUT	digital output state change ON	Operated digital output (DO1-DO8)	It records, when the digital output operates.
	digital output state change OFF		
CONDON	matched the condition setting	Matched Number	It records when the conditions set up by the condition function matches.
HTTP	command	Parameter	It records when the HTTP Command is executed. (Except the "clear").

3.18 Firmware Update Function

The Firmware Update can be done from the Web setup tool, or by the use of the switches on this product. When using the Web setup tool, the firmware can be saved onto the PC etc., and selected to be updated from there. Refer to "4.22 Firmware Update Screen" on pg. 93 for details.

When updating the firmware from the USB memory connected to this product, the switch on this product can be used to execute the firmware update. For details, refer to "3.20 USB Memory Function" on pg. 50 and "3.21 Mode Switching Functions" on pg. 51.

3.19 XML Data Output Function

The digital output status for this product is acquirable from an XML data format. Two kinds of XML data acquisition methods are indicated below.

■ Access the URL of http:// IP address / cgi-bin/get_xml.cgi to get the data.
■ Download the XML file from the "XML Data" screen of the Web setup tool.

> MEMO
> • When XML data is acquired, set up the XML file output to "Active".
> • When accessesing the URL to acquire XML data, login certification can be made. Except for when using it in a safe Network, it is recommended to use the login certification when considering security.
> • Refer to "4.26 XML data screen" for more details.

XML data can be obtained in the format shown below:

```
<?xml version="1.0" encoding="utf-8"?>
<server>
<port>
<port name="DIN-1" value="0"/>
<port name="DIN-2" value="0"/>
<port name="DIN-3" value="0"/>
<port name="DIN-4" value="0"/>
<port name="DIN-5" value="0"/>
<port name="DIN-6" value="0"/>
<port name="DIN-7" value="0"/>
<port name="DIN-8" value="0"/>
<port name="DOUT-1" value="0"/>
<port name="DOUT-2" value="0"/>
<port name="DOUT-3" value="0"/>
<port name="DOUT-4" value="0"/>
<port name="DOUT-5" value="0"/>
<port name="DOUT-6" value="0"/>
<port name="DOUT-7" value="0"/>
<port name="DOUT-8" value="0"/>
</port>
</server>
```

Fig. 3.19.0–1   XML data format for digital output

Table 3.19.0–1   XML Data Item Explanation

Classification	Description
port name	The digital input/output port is shown. DIN-1 - DIN-8: digital input ports 1 to 8 DOUT-1 - DOUT-8: digital output ports 1 to 8
value	The status of each port is shown. 0: OFF 1: ON

3.20   USB Memory Function

By connecting a USB memory to the USB connector on the front of this product, firmware updates, log storage, and configuration data uploads and downloads can be done.

> **Attention**
> • Prior to connection, it is necessary to format the USB memory in form of FAT or FAT32 for appointed folder structuring.
> • The USB memory cannot be partitioned.
> • If a USB-HUB is used, it may not operate properly.
> • After connecting a USB memory to this product, wait about 5 seconds for connection for it to be recognized. The time until it is recognized depends on the type of USB memory which is being connected, and may take longer.

Functions which can be done, using USB memory

Table 3.20.0–1   USB Memory Operation Functions

Functions	Details
Firmware update function	Firmware updates can be done from the USB memory. Change the firmware update file name into "nbm_update" before executing the update.
Status Log function	A status log can be downloaded onto USB memory. The file name to download is "nbm-statlog.csv."
Operation Log Function	An operation log can be downloaded to USB memory. The file name to download is "nbm-actlog.txt."
Configuration Save/Load Setup Function	Configuration data can be uploaded to this product from USB memory. The upload configuration file name is "nbm_w.ini." Configuration data can be downloaded from the Main Unit to the USB memory. The download configuration file name is "nbm.ini."

USB memory Folder structure

In order to use the USB memory for this product, build the following folder structure.

USB Memory

NBM ※

update — Firmware Strage Folder

nbm_update — Firmware Update File

log ※ — Log Download Target Folder

nbm-statlog.csv
nbm-actlog.csv — Status Log Download FIle (*)
Event Log Download FIle (*)

conf ※ — Configuration Data Storage/Export Folder

nbm_w.ini
nbm.ini — Upload Configuration File
Download Configuration File (*)
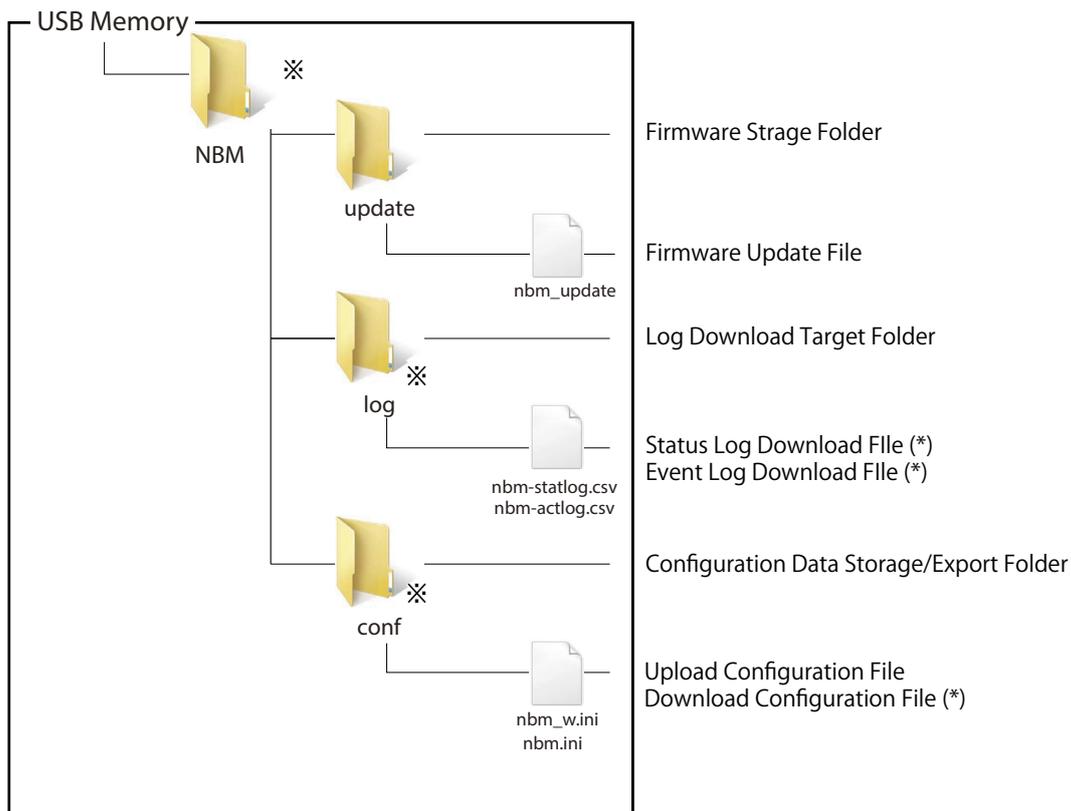
Fig. 3.20.0–1   USB Memory Folder Structure

※ The folder and files marked with an asterisks are automatically generated, when each data file is downloaded.

> **Attention**
> • Enter the USB memory folder name and file name, using half-width alphanumeric characters. Since it is case sensitive, refer to Fig. 3.20.1. when entering folder and file names.

3.21 Mode Switching Functions

The mode switch on the front of this product can be operated by changing the operational mode of this product. Use the mode switch when the Web setup tool cannot be used.
To change the mode, after switching the mode switch, turn the power to this product on again, or press the reset switch on the front of this product to restart.
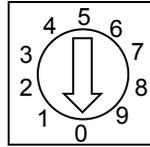
Fig. 3.21.0–1   Mode Switch

※ Use the following tools to operate the mode switch.

Name	Tolerable Dimensions
Minus Driver	Blade diameter 1.8-2.1 mm Width 0.7-0.8 mm

Table 3.21.0–1   Operational Mode List

MEMO
- If a screwdriver with an improper dimension is used, or any screwdriver other than a minus screwdriver, the driver groove on the lever part of the terminal may be damaged, causing operation to become impossible.
- The flat blade should be applied vertically to the driver groove. If it is at a slant, there is a possibility that the lever part will be damaged.
- Do not apply excessive strength to the lever section.

Table 3.21.0–2   Operational Mode List

Mode Switch No.	Mode	Details
0	Normal Mode	It is a normal operation mode. All functions of this product will work.
1	Configuration Download Mode	Configuration data can be downloaded to USB memory.
2	Configuration Upload Mode	Configuration data can be uploaded to USB memory.
3	Network set-up initialization mode	By pressing the selection switch, the network setting and password are reset to the initial state and the log is deleted.
4	Factory Default Mode	By pressing the selection switch, the setting status including the network is returned to the initial state and the log is deleted.
5	Reserved	Each function will not operate, even if it is set as a reserved number.
6	Upgrade mode	Pressing the selection switch can start the update from the USB memory.
7	Password Initialization Mode	By pressing the selection switch, the password can be returned to the initial state (patlite).
8	Reserved	Each function will not operate, even if it is set as a reserved number.
9	Reserved	Each function will not operate, even if it is set as a reserved number.

Attention Configuration data or logs deleted in "Network setting initialization mode" or "Factory setting mode" can not restored. Before initialization, be sure to backup any necessary setup information and log data.

<< **Log Acquisition Mode** >>

The USB memory is connected during the Normal Mode (No.0):

NBM Main Unit

USB Memory

LED Display Legend
● OFF
○ ON
○ Flashing
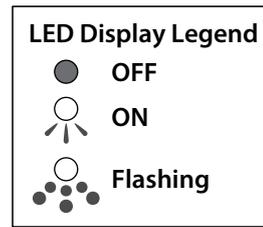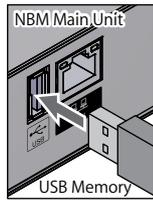
Conditions are displayed by the status LED.

POWER
STATUS

Press the selection switch.

POWER
STATUS
SELECT
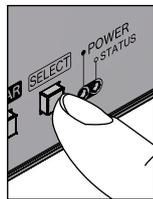
Status LED flashes at a high speed.

POWER
STATUS

Task Completed.

POWER
STATUS

Remove the USB memory.

Error Occured

Status LED flashes at a low speed.

POWER
STATUS

Press the selection switch.

POWER
STATUS
SELECT
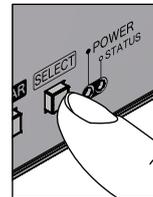
The power LED and status LED light up.

POWER
STATUS

Remove the USB memory.
(The log is not acquirable)

3

<< **Configuration Download Mode** >>

A mode switch is set as "configuration download mode" (No.1), and starts as:

digital input LED 1 flashes.

INPUT
1 2 3 4 5 6 7 8
OUTPUT
1 2 3 4 5 6 7 8

LED Display Legend
● OFF
○ ON
○ Flashing

Connect the USB memory.

NBM Main Unit

USB Memory

INPUT
1 2 3 4 5 6 7 8
OUTPUT
1 2 3 4 5 6 7 8

Press the selection switch.

POWER
STATUS
SELECT

Error Occured

The USB memory file format cannot be recognized.

INPUT
1 2 3 4 5 6 7 8
OUTPUT
1 2 3 4 5 6 7 8

An error occurred when writing to the USB memory.

INPUT
1 2 3 4 5 6 7 8
OUTPUT
1 2 3 4 5 6 7 8

Lights switch on sequentially, starting from digital input 1.

INPUT
1 2 3 4 5 6 7 8
OUTPUT
1 2 3 4 5 6 7 8

In Sequence

Task Completed.

INPUT
1 2 3 4 5 6 7 8
OUTPUT
1 2 3 4 5 6 7 8

Remove the USB memory.

Return the mode switch to the normal mode (No.0), then reboot.

3

<< **Configuration Upload Mode** >>

A mode switch is set as "configurations upload mode" (No.2), and starts as:
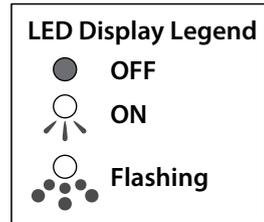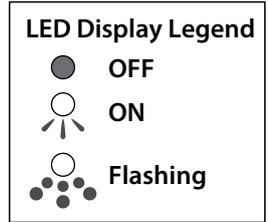
digital input LED 2 flashes.

LED Display Legend

⬤ OFF

☼ ON

☼ Flashing
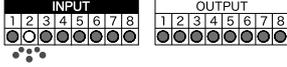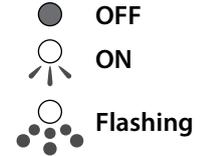
Connect the USB memory.
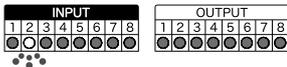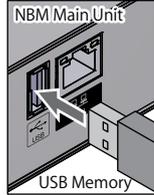
Press the selection switch.
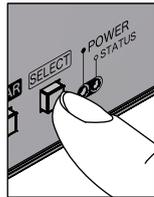
Error Occured

The USB memory file format cannot be recognized.
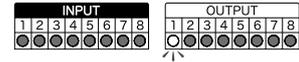
The USB memory does not contain any data.
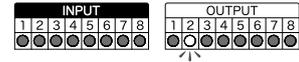
The configuration data is incorrect.
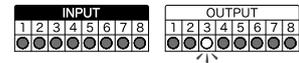
Lights switch on sequentially, starting from digital input 1.
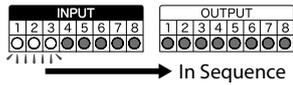
In Sequence

Task Completed.
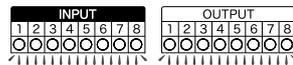
Remove the USB memory.

Return the mode switch to the normal mode (No.0), then reboot.

<< **Network Setup Initialization Mode** >>

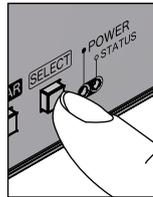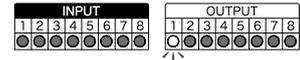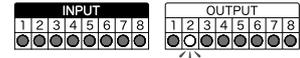By setting the mode switch to Network Setup Initialization Mode (No.3), the startup is:

LED Display Legend
- ⬤ OFF
- ☼ ON
- ⚬ Flashing

digital input LED 3 flashes.
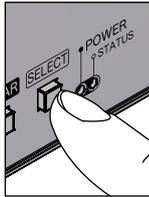
```
      INPUT              OUTPUT
 1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
 ⬤⬤○⬤⬤⬤⬤⬤    ⬤⬤⬤⬤⬤⬤⬤⬤
```

Press the selection switch.

SELECT POWER STATUS

Lights switch on sequentially, starting from digital input 1.

```
      INPUT              OUTPUT
 1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
 ○○○⬤⬤⬤⬤⬤    ⬤⬤⬤⬤⬤⬤⬤⬤
```
→ In Sequence

Task Completed.

```
      INPUT              OUTPUT
 1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
 ○○○○○○○○    ○○○○○○○○
```

Remove the USB memory.

Return the mode switch to the normal mode (No.0), then reboot.

3
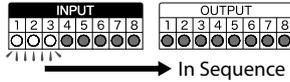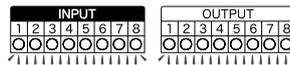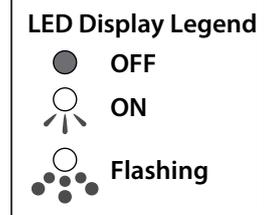
<< **Factory Setup Mode** >>

By setting the mode switch to Factory Setup Mode (No.4), the startup is:

LED Display Legend
⬤ OFF
ON
Flashing

digital input LED 4 flashes.
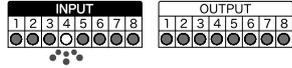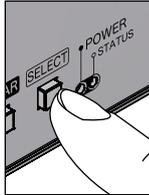
INPUT
1 2 3 4 5 6 7 8

OUTPUT
1 2 3 4 5 6 7 8

Press the selection switch.

SELECT POWER STATUS

Lights switch on sequentially, starting from digital input 1.

INPUT
1 2 3 4 5 6 7 8

OUTPUT
1 2 3 4 5 6 7 8

→ In Sequence

Task Completed.

INPUT
1 2 3 4 5 6 7 8

OUTPUT
1 2 3 4 5 6 7 8

Remove the USB memory.

Return the mode switch to the normal mode (No.0), then reboot.

3

<< **Version Upgrade Mode** >>

By setting the mode switch to "version upgrade mode" (NO.6), it starts as:

LED Display Legend
- ● OFF
- ○ ON
- ○ Flashing

digital input LED 6 flashes.
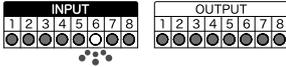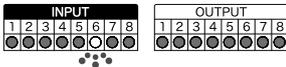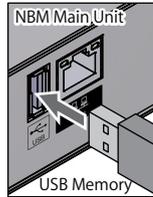
```
INPUT              OUTPUT
1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
○○○○○○○○           ○○○○○○○○
```

Connect the USB memory.

NBM Main Unit

USB Memory

```
INPUT              OUTPUT
1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
○○○○○○○○           ○○○○○○○○
```

Press the selection switch.

POWER
STATUS
SELECT

Error Occured →

The USB memory file format cannot be recognized.

```
INPUT              OUTPUT
1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
○○○○○○○○           ○○○○○○○○
```

The USB memory does not contain any data

```
INPUT              OUTPUT
1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
○○○○○○○○           ○○○○○○○○
```

Firmware update failed.

```
INPUT              OUTPUT
1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
○○○○○○○○           ○○○○○○○○
```

Lights switch on sequentially, starting from digital input 1.

```
INPUT              OUTPUT
1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
○○○○○○○○           ○○○○○○○○
```
→ In Sequence

Task Completed.

```
INPUT              OUTPUT
1 2 3 4 5 6 7 8    1 2 3 4 5 6 7 8
○○○○○○○○           ○○○○○○○○
```

Remove the USB memory.

Return the mode switch to the normal mode (No.0), then reboot.

<< Password Initialization Mode >>

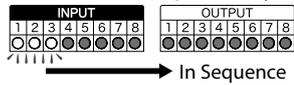A mode switch is set as "Password Initialization Mode" (No.7), and starts as:
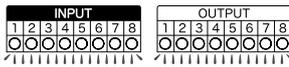
digital input LED 7 flashes.
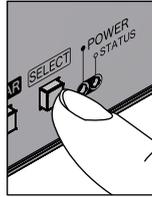
LED Display Legend

● OFF

○ ON

○ Flashing

Press the selection switch.

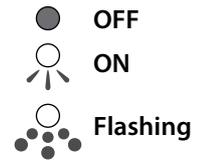Lights switch on sequentially, starting from digital input 1.

→ In Sequence

Task Completed.

Remove the USB memory.

Return the mode switch to the normal mode (No.0), then reboot.

3.22 "Reset" Function

Pressing the "Reset Switch" located on the front of this product will execute a power source reset. A switch is located inside the hole of the front panel of this product to prevent any unintentional reset from occurring. Use a wire with the diameter of about 1 mm (such as a paper clip), and push it inside the hole to press the internal switch.

Attention	• Do not exert excessive force when pushing the button. Failure to comply may damage the unit. • When the reset switch is pressed, it will cause the product to reboot, but all terminal outputs become open during that time. Be careful when resetting the product, only perform this step when it is an unavoidable situation. • Part of the status log and operation log data may be lost without saving before pressing the reset switch. If the log is required, be sure to backup before pressing the reset switch.

3.23 HTTP Command Control Function

This product can be controlled by transmitting a HTTP command from the HTTP client.
In the System Configuration Screen, "Active" or "Inactive" of this function can be set.

[Specification of HTTP command control]

Protocol	HTTP	
Method	GET	
Syntax	http://<IP address>/api/control?<parameter name>=<value>	
Response	Success.	This message is returned when the control was successful.
	Error. [Error code]	This message is returned when the control was unsuccessful.

Error code	Description
001	Unsupported Method.
002	No such parameter name.
003	Parameter is not specified.
004	Parameter value is not specified.
005	Illegal parameter values.

Parameter	Values	Description
alert=< integer value >	8 digits	Digital output can be controlled.
		Specify the pattern in order of [DO 1 - DO 8]
		OFF "0", ON "1", no operation "9" are entered.
clear=< integer value >	1	All digital outputs are turned OFF and change from the monitoring abnormal condition to the monitoring condition.
		The values (time and number) accumulated in the input condition setting is erased.

> **Attention**
> When using the HTTP Command Control function, set "HTTP Command Control Function" to "Active" on System Configuration Screen.
> Refer to "4.1 System Configuration Screen"

3.23.1 Example

<alert>

When operating "Port 1 ON; Port 3 OFF; others not operating."
http://192.168.10.1/api/control?alert=19099999

When operating "Port 1 - 3 ON; Port 4 - 6 no operation; Port 7 and 8 OFF."
http://192.168.10.1/api/control?alert=11199900

<clear>

All digital outputs are turned OFF and change from the monitoring abnormal condition to the monitoring condition.

http://192.168.10.1/api/control?clear=1

4

4. Function Setup

The function setup is available in order to take advantage of the various functions. To access the settings, click the setup items on the left-hand side of the Web Setup Tool to open the set up screen for the various functions.

Table 4.0.0–1 Function List

Setup Category	Setting Screen	Setup Contents
Setup Menu	System Configuration	Sets up the network parameters.
	User Authorization Configuration	Sets up the login password for this product.
	Clock Settings	Sets up the clock's time for this product.
	SNMP Configuration	The Setup of SNMP SET/GET and a trap transmission function is performed.
	E-mail Settings	Sets up the e-mail transmissions for this product.
	E-Mail Message Settings	Setup for writing the message contents to be transmitted by E-mail.
	RSH Command Transmission Configuration	Set up the RSH command destination and the command.
	RSH Command Reception Configuration	Sets up the RSH command for receiving.
	Socket Transmission Configuration	Set up the command destination, the sending port, and command.
	Socket Reception Configuration	Sets up the ports to receive the PHN and PNS Commands.
Operation Setup Index	Digital Input Setup	Each digital input can be set up.
	Digital Output Setup	Each digital output can be set up.
	Trap Reception Configuration	Set up traps that allow trap reception and the operation after the trap has received a transmission.
	Application Monitoring Configuration	The setup of the address for the monitored equipment and the management when an abnormality and abnormality recovery is detected.
	Ping Monitoring Configuration	The setup of the address for the monitored equipment and the management when an abnormality and abnormality recovery is detected.
	"CLEAR" Button Setting	Set up the digital output, command transmission and E-mail transmission when pressing the "Clear" button.
	Digital Input Condition Settings	Set up for the digital input conditions and the operation when condition agreements occur.
Main Unit Operation Index	Reinitialization	The settings return to factory default values.
	Reboot	After settings have been changed, in order to put them into effect, this product is rebooted.
	Digital Output Operation	The digital output operation is set up.
	"Clear" Operation	"Clear" Operation
Maintenance Function Index	Firmware Update	The Firmware can be updated with this function.
	Configuration Data Setup	Set up to save the config data items and be reloaded at any time.
Information Reference Index	Status Log	The status log can be download and checked.
	Event Log	The event log can be downloaded and checked.
	XML Settings	TheXML data Output can be set and the data downloaded.

> **Attention** After completing the desired setup configuration, reboot this product by pressing the "reset" button, or removing the power for a few seconds and reapplying it for the changes to take effect.

4.1 System Configuration Screen

The network parameters for this product can be setup through a browser. The default IP address is "192.168.10.1". The parameters can be setup from the System Configuration Screen (Fig. 4.1.0–1 System Configuration Screen) from the default values as shown in Table 4.1.0–1.

Fig. 4.1.0–1　System Configuration Screen

Table 4.1.0–1　System Configuration Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
System Name	The name for this product can be set.	NBM-D88	Full/Half width Characters; Max. 31 Characters	O
System Location	The setup location of this product can be entered.	Blank	Half-width alphanumeric characters and underscore "_": Max. 31 Characters	O
Contact Address	Setup the contact address.	nbm@patlite.jp	Mail address format: Max. 63 Characters	O
Log Host Address	Set up the operation log destination.	Blank	Host name or IP address format: Max. 63 Characters	O
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	Setup the IP address of this product.	192.168.10.1	IP Address Format	×
Net Mask	Setup the subnet mask of this product.	255.255.255.0	IP Address Format	×
Default Gateway	Setup the default gateway of this product.	0.0.0.0	IP Address Format	O
DNS Server Address	Setup the DNS server of this product.	0.0.0.0	IP Address Format	O
Host Name	Set up a host name	nbm.patlite.jp	The host name, or host name IP address format, and the domain name can be a maximum of 62 characters in all.	×
Domain Name	Set up the domain name.	Blank		O
HTTP command control function	Select "Active" or "Inactive" for the HTTP command control function.	Active	—	—

* 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. Be sure to enter a value.
The place where "-" is written cannot be omitted, or becomes the item to set by selecting the item. The value has to be entered in accordance to the customer's environment.

4.2   User Authorization Configuration Screen

Setup a password to log into the Setup Screen for this product. The next time for logging in will ask for the new password.

The set up password to be used can be up to 16 half-width alphanumeric characters and a "." (period). Table 4.2.0–1 shows the item to be set up on the user authentication screen.

[Setup Method]

①   Enter a new password in the "Password" field.
②   Enter the new password again in the "Re-enter Password" field.
③   Click the "Set" button to activate the setup.

Log in with the new password the next time a login screen appears.
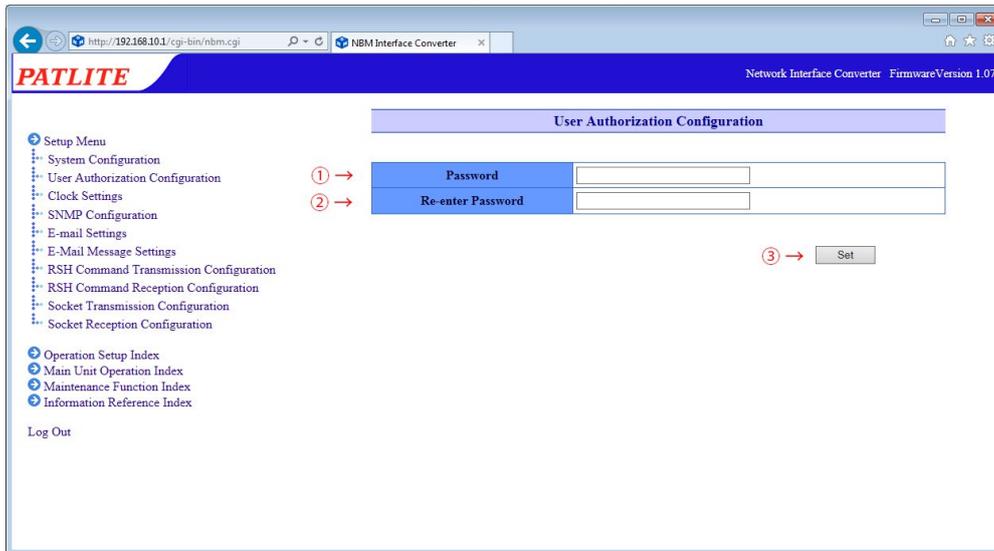
Fig. 4.2.0–1   User Authorization Configuration screen

Table 4.2.0–1   User Authorization Configuration Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Password	Enter a new password.	Blank	A half-width alphanumeric character and period; Max. 16 Characters	X
Re-enter Password	Re-enter the new password for confirmation.	Blank	A half-width alphanumeric character and period; Max. 16 Characters	X

4.3   Clock Settings Screen

The clock setup for this product can be done through a browser.   The items set on the time setting screen are shown in Table 4.3.0–1.
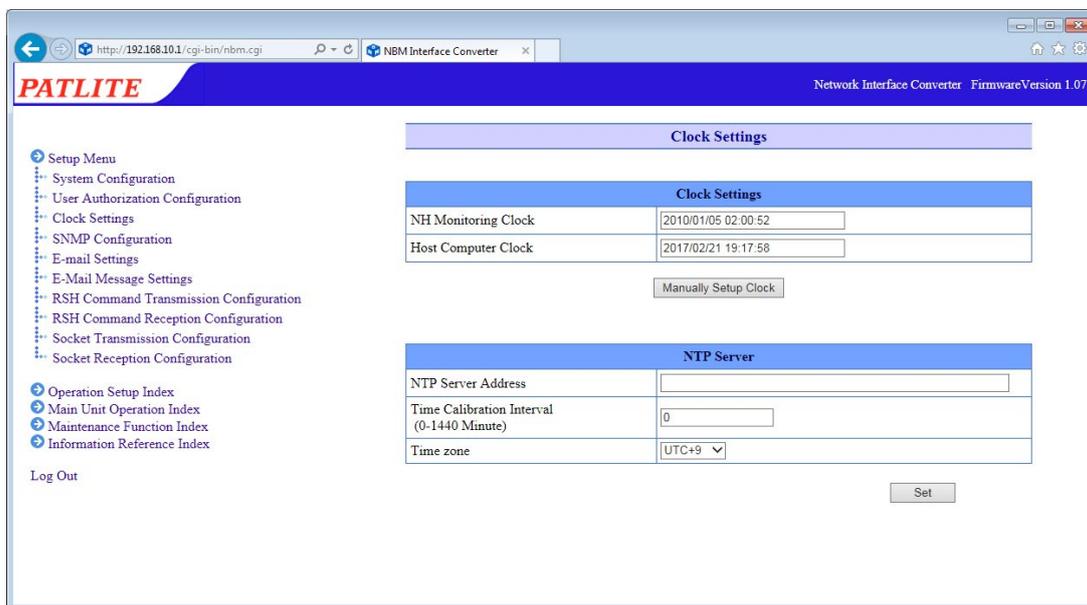
Fig. 4.3.0–1   Clock Settings Screen

Table 4.3.0–1   Clock Settings Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
NTP Server Address	Set the NTP server address.	Blank	Host name or IP address format: Max. 63 Characters	O
Time Calibration Interval	Sets the interval to communicate with an NTP server.	0	Half-width numbers from 0-1440 (minutes)	O
Time zone	Setup the time zone.	UTC+9	—	—

Two kind of clock setup methods are indicated below:

■ The PC clock's time is reflected in this product.

■ It communicates with an NTP server and corrects the time of this product.

4.3.1   PC Clock Synchronization

When the "Manually Setup Clock" button is clicked, the time of the logged-in PC will be reflected in the time of this product.

[Setup Method]

① Compare the columns between the "NH Monitor Time" and the "Host Computer Time".
② Click the "Manually Setup Clock" button to synchronize the time with the PC which is logged in.

Attention	■ In some cases, this product may not reflect the exact time as the PC, and the clock may be off by several seconds. ■ When not using an NTP server, periodically check the clock on this product. ■ This product uses a capacitor as a battery backup for the time stamp. Depending on the charge status of the capacitor, it may last up to a half-day, and if the power supply is not applied during the day, a gap in time or the need to reset the clock may be necessary. If an application environment requires a time entry, be sure to set up the time before the application. ■ If the backup is depleted and the time entry resets, the set time will be labeled as "Jan 1, 2010".
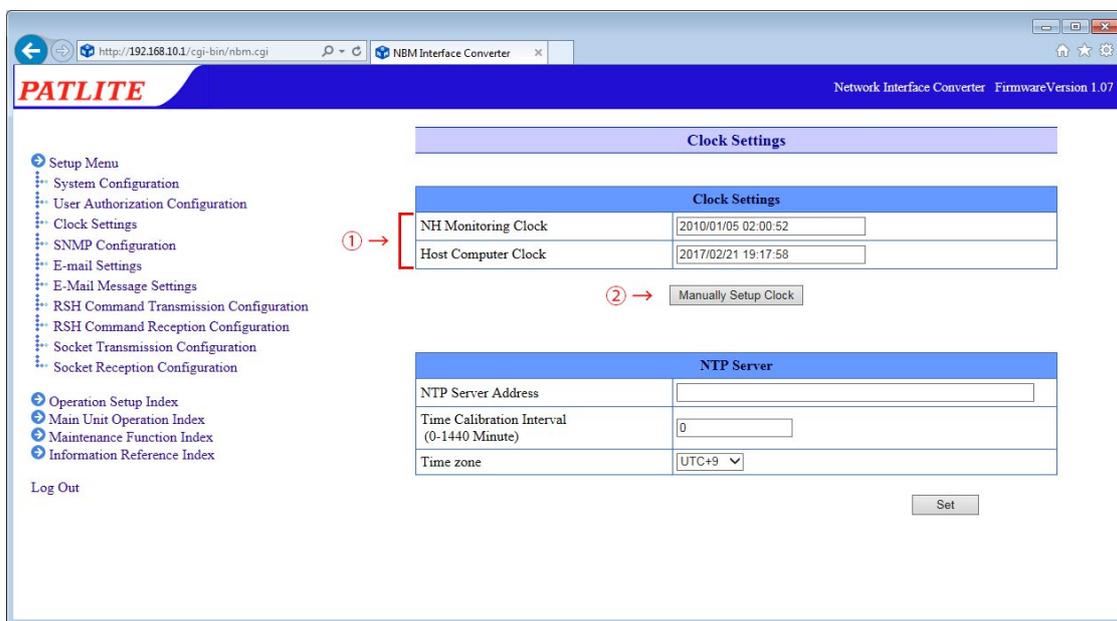
Fig. 4.3.1–1   Setup Screen before "Manually Setup Clock" button is clicked
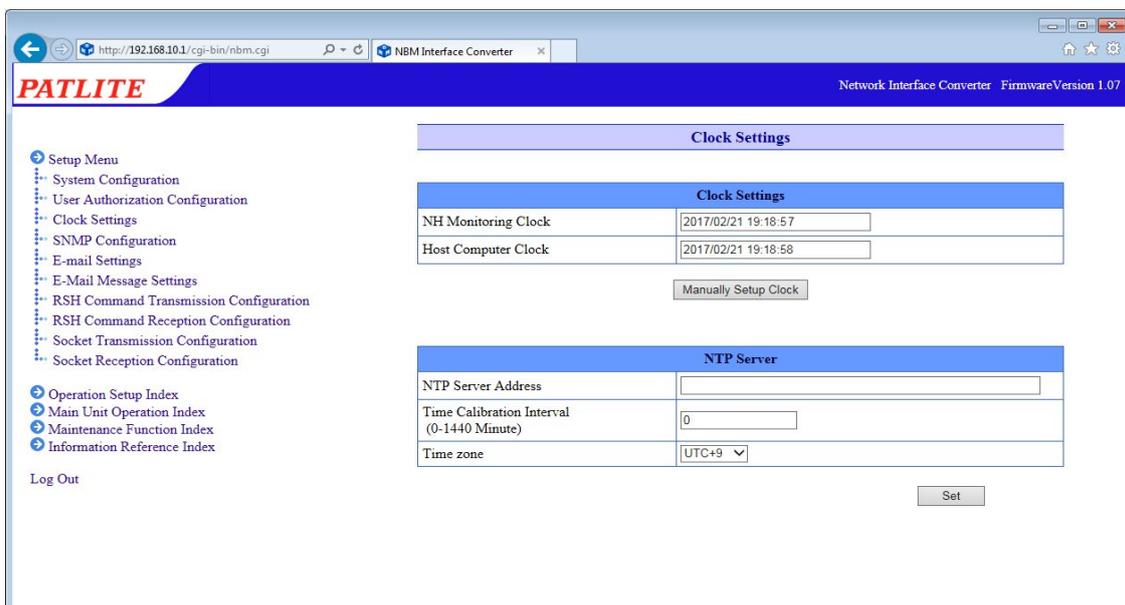
Fig. 4.3.1–2   Setup Screen after "Manually Setup Clock" button is clicked

4.3.2 Synchronizing with an NTP server

An NTP server can be linked by entering the NTP server address to synchronize with the clock in this product.

[Setup Method]

① Enter the NTP server address in the "NTP Server Address" column.

② In the "Time Calibration Interval" field, enter between 0 and 1440 minutes for the interval to communicates with an NTP server.

③ Click the "Set" button to activate the setup.
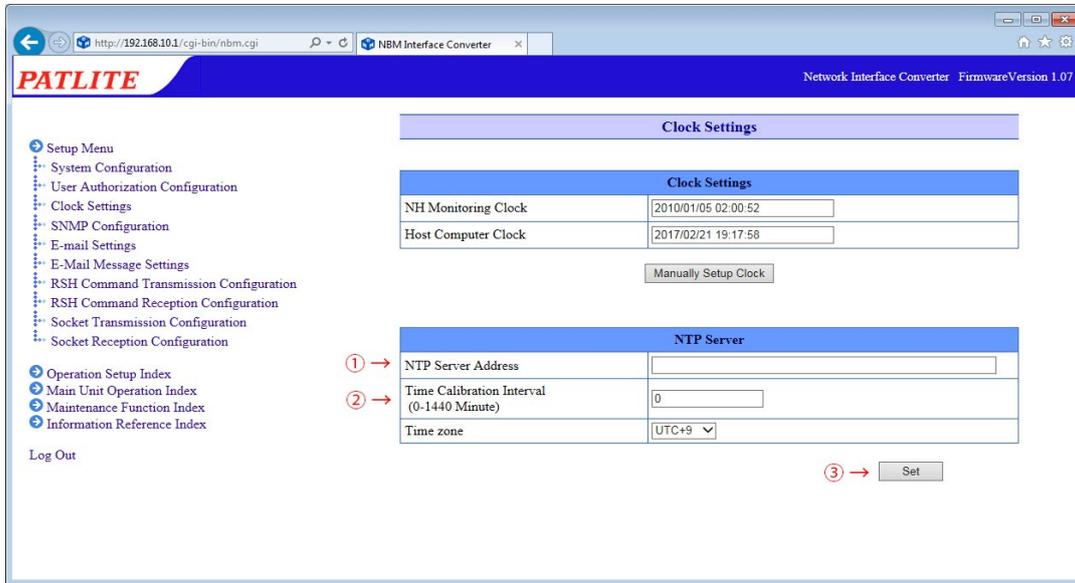
Fig. 4.3.2–1 Clock Setup screen for an NTP Server

4.3.3 Setting Time Zone

Determine the area to be used when setting the time zone.

[Setup Method]

① Select from the "Time zone" column and click to set.

② Click the "Set" button to activate the setup.
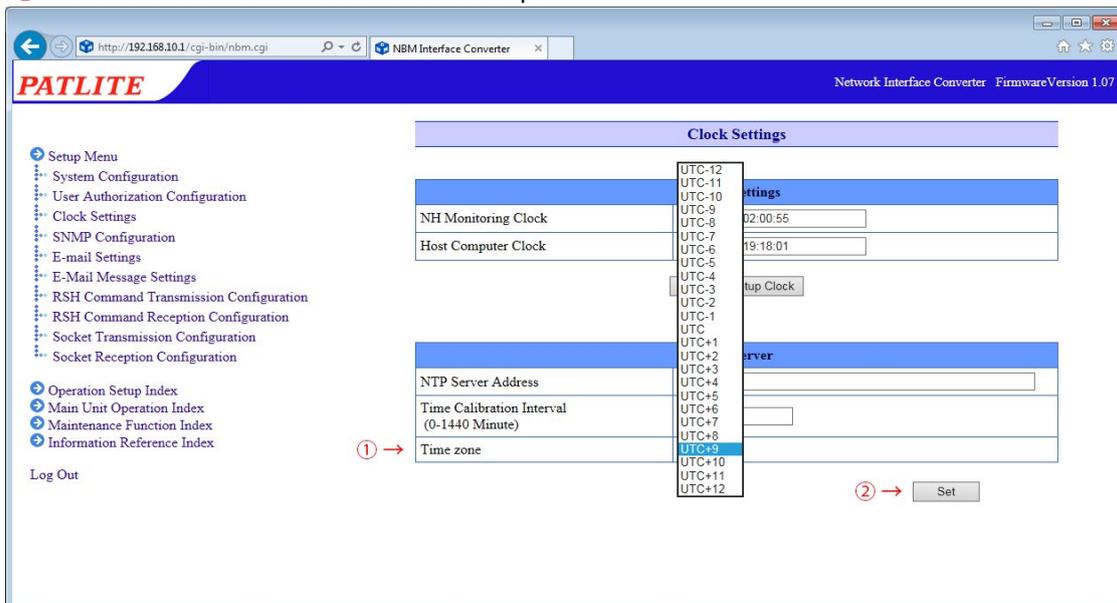
Fig. 4.3.3–1 Time zone setting screen

4.4   SNMP Configuration Screen

With an SNMP, this product can communicate outside the community name for the notification of a TRAP, using the SNMP SET/GET in reference to each item for this product, and generate the event with this product. The items in Table 4.4.3–1 can be set up for the SNMP Setup Screen.

4.4.1   SNMP SET/GET

An SNMP SET/GET can be setup.

[Setup Method]

① Select the "Active" radio button to enable the SNMP Function.
② Enter the SET/GET Community name.

4.4.2   SNMP Trap Reception

The SNMP trap reception can be set up.

[Setup Method]

③ Enter the Trap Reception Community name.

4.4.3   SNMP Trap Transmission

The SNMP trap transmission can be set up.

[Setup Method]

④ Set the Trap Transmission Function to "Active", to enable it.
⑤ Enter the TRAP transmission community name and Number of TRAP Transmissions (1-10).
⑥ Enter in the TRAP Receiver Address field, the IP address for sending the TRAP notification to.
⑦ Click the "Set" button to activate the setup.

Fig. 4.4.3–1   SNMP Configuration screen

Table 4.4.3–1　SNMP Configuration Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
SNMP Function (SET/GET)	Select "Active" or "Inactive" for the SNMP function.	Active	—	—
SET Community	Enter the name used when reading an SNMP setting.	private	Half-width alphanumeric character and underscore: Max. 32 Characters	—
GET Community	Enter the community name of the trap to be received.	public	Half-width alphanumeric character and underscore: Max. 32 Characters	—
TRAP Reception Community	Enter the community name of the Trap to be received.	public	Half-width alphanumeric character and underscore: Max. 32 Characters	—
Trap Transmission Function	Select "Active" or "Inactive" for the Trap transmission function.	Inactive	—	—
Trap transmission community	Enter the community name of the trap to be sent.	public	Half-width alphanumeric character and underscore: Max. 32 Characters	—
Number of Trap Transmissions	When sending a trap, enter how many times to send the same trap.	1	1 Half-width Digit from 1-10 (frequency)	—
Trap Receiver Address	Enter the address to send the trap.	Blank	IP address format. Characters which can be used for host names (Max. 63 Characters)	O

4

4.5　E-mail Setttings Screen

This product can be set up to send E-mail messages. The following are events which will transmit E-mail messages.
When transmitting an E-mail, it is transmitted in sequence from the smaller address number to the larger address number of the Receiver. The items to be set up on the e-mail contents setting screen are shown in Table 4.5.0–1.

<< E-mail Transmitting Event >>

The digital input at a status change
When receiving a trap
At the time of a Ping monitoring abnormality and Ping recovery event.
At the time of an application monitoring abnormality and recovery event.
At the time when the "CLEAR" button is pressed.
When the digital input condition agrees

[Setup Method]

① 　Enter an SMTP mail server address and port number.
② 　Enter the account name and SMTP authentication password when using the SMTP authentication. When making an encryption connection, select either "SSL" or "TLS". When using POP authentication, enter the POP server address, POP port number, POP account name, and POP authentication password. "No Authentication" is selected when authentication is not necessary.
③ 　Enter the e-mail address for the designated sender.
④ 　Enter the transmission destination address.
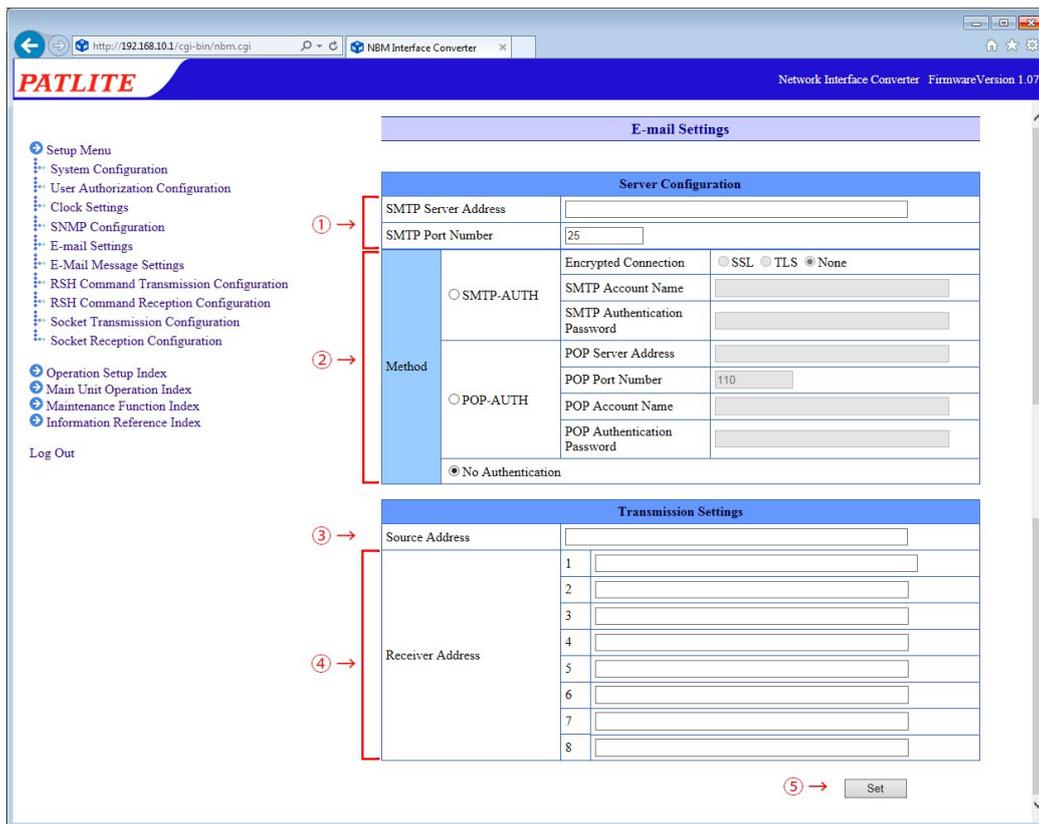⑤ 　Click the "Set" button to activate the setup.

Fig. 4.5.0–1 E-mail Settings Screen

Table 4.5.0–1 E-mail Settings Protocol

Item	Contents	Default Value	Input Parameter	Setup Option
SMTP Server Address	Enter the SMTP server address.	Blank	Use characters for the server address; Max. 63 Characters	—
SMTP Port Number	Enter the SMTP server port number.	25	Half-width digit 1 - 65535	—
Method	Select among: "SMTP-AUTH"/"POP-AUTH"/"No Authentication"	No Authentication	—	—
Encrypted Connection	Select among "SSL"/"TLS"/"None"	None	—	—
SMTP Account Name	Enter the account name for the SMTP authentication.	Blank	Characters which can be used for e-mail addresses; Max. 32 Characters	—
SMTP Authentication Password	Enter the password for SMTP authentication.	Blank	Half-width alphanumeric characters; Maximum 32 Characters	—
POP3 Server Address	Enter the POP3 server address.	Blank	Characters which can be used for a server address; Max. 63 Characters	—
POP3 port number	Enter the port number for the POP3 server.	110	Half-width digits 1 - 65535	—
POP Account Name	Enter the account name for the POP authentication.	Blank	Half-width alphanumeric characters, characters which can be used for E-mail addresses; Max. 32 characters	—
POP Authentication Password	Enter the password for POP Authentication.	Blank	Half-width alphanumeric characters; Max. 32 Characters	—
Source Address	Enter the e-mail address for the designated sender.	Blank	Character which can be used for an E-mail address; Max. 63 characters	O
Receiver Address1-8	Enter the e-mail address for the Transmission destination addresses.	Blank	Character which can be used for an E-mail address; Max. 63 characters	O

4.6 E-Mail Message Settings Screen

The following is the setup of E-mail titles and message contents for E-mail Sending. When sending E-mails, the contents can be personalized to match the coinciding mail notifications by entering a title and message contents to transmit. The items to be set up on the e-mail contents setting screen are shown in Table 4.6.0–1.

[Setup Method]

① Enter a title in the subject field to transmit by e-mail. (Full size or half-size alphanumeric characters up to 31 characters)

② Enter text to transmit for e-mail. (Full size or half-size alphanumeric characters up to 63 characters)

③ Click the "Set" button to activate the setup.

Attention	When using full width characters for a subject, use JIS level-1 kanji (except for special characters). Characters may be lost if other characters are entered.

Fig. 4.6.0–1 E-Mail Message Settings Contents

Table 4.6.0–1 E-Mail Message Settings Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Subjects	Enter the subject titles 1-16.	Blank	Full or half size; Max. 31 Characters	O
Messages	Enter the texts 1-16.	Blank	Full or half size; Max. 31 Characters	O

4.7   RSH Command Transmission Configuration Screen

When an event occurs, it is set for the RSH command to be sent to another device. (Maximum: 8 events)

[Setup Method]

① Enter the name of the command to be set.
② Enter the address of the command transmission destination.
③ Enter the login name to use when sending the command.
④ Enter the command.
⑤ Click the "Set" button to activate the setup.

Fig. 4.7.0–1   RSH Command Transmission Configuration screen

Table 4.7.0–1   RSH Command Transmission Configuration Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Name	Enter the name of the command to be set.	Blank	Full or half-size; Max. 16 Characters	—
Receiver Address	Enter the address of the command transmission destination.	Blank	Characters which can be used for the IP address and host name; Max. 63 Characters	—
Login Name	Enter the account to use when sending the command.	Blank	Half-width alphanumeric characters, period, hyphen; Max. 63 Characters	—
Transmission command	Enter the command and arguments to be executed at the destination.	Blank	Full or half-size; Max. 255 Characters	—

4.8　RSH Command Reception Configuration Screen

Sets up the RSH command for receiving.

[Setup Method]

① 　Select "Active" or "Inactive" for the "RSH Server Function."
② 　When performing the address restriction for the sender of the RSH command, set the "Designated Sender Address" to "Active". "Inactive" is used when address restrictions are not set.
③ 　When "Designated Sender Address" is set to "Inactive", enter the common account when the sender address is invalid.
④ 　In the designated sender IP address field, enter the IP address that allows command execution. (Maximum: 16 events) Enter the account which permits a command execution account.
⑤ 　Click the "Set" button to activate the setup.

Fig. 4.8.0–1　RSH Command Reception Configuration Screen

Table 4.8.3–1　RSH Command Reception Configuration Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
RSH Server Function	Select among "effective"/"Inactive" for the "RSH Server Function"	Active	—	—
Designated Sender Address	Select between "Active"/"Inactive" for command designated sender address restrictions.	Active	—	—
Common login name when designated sender address is inactive	Enter the account to be used when disabling the designated sender address specification.	Blank	Half-width alphanumeric characters, period, hyphen: Max. 63 Characters	O
Sender IP Address	Enter the authorized IP address for command execution.	Blank	IP Address Format	O
Login Name	Enter the account to permit command execution.	Blank	Half-width alphanumeric characters, period, hyphen: Max. 63 Characters	O

4.9   Socket Transmission Configuration Screen

Configure settings for sending commands via Socket Communication.

Table 4.9.0–1 shows the items to be set on the socket transmission setting screen.

[Setup Method]

①   Enter the name of the command to be set.

②   Enter the address of the command transmission destination.

③   Select a communication method between "TCP" or "UDP."

④   Enter the destination port number (5001-65535).

⑤   Enter the command to be sent.

     Commands are entered in hexadecimal notation with each byte separated by commas.

⑥   Click the "Set" button to activate the setup.

Fig. 4.9.0–1   Socket Transmission Configuration screen

Table 4.9.0–1   Socket Transmission Configuration parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Name	Enter the name of the command to be set.	Blank	Full or half size; Max. 16 Characters	—
Receiver Address	Enter the address of the command transmission destination.	Blank	Characters which can be used for the IP address and host name; Max. 63 Characters	—
Protocol	Select between "TCP" or "UDP."	TCP	—	—
Port Number	Enter the destination port number.	0	Half-width digit: 5001-65355	—
Transmission command	Enter the command to be sent. Enter with hexadecimal notation (comma separated values).	Blank	Half-width digit and comma; Max. 90 Characters, 30 bytes with one comma separating values and counting as 1 byte.	—

4.10 Socket Reception Configuration Screen

It uses Socket Communication to make settings for receiving PHN and PNS commands.

The items to be set on the Socket reception setting screen are shown in Table 4.10.0–1.

[Setup Method]

①   Select either "TCP" or "UDP" in the "protocol" field for the communication method.

②   Enter the port number (10000-65535) to be used.
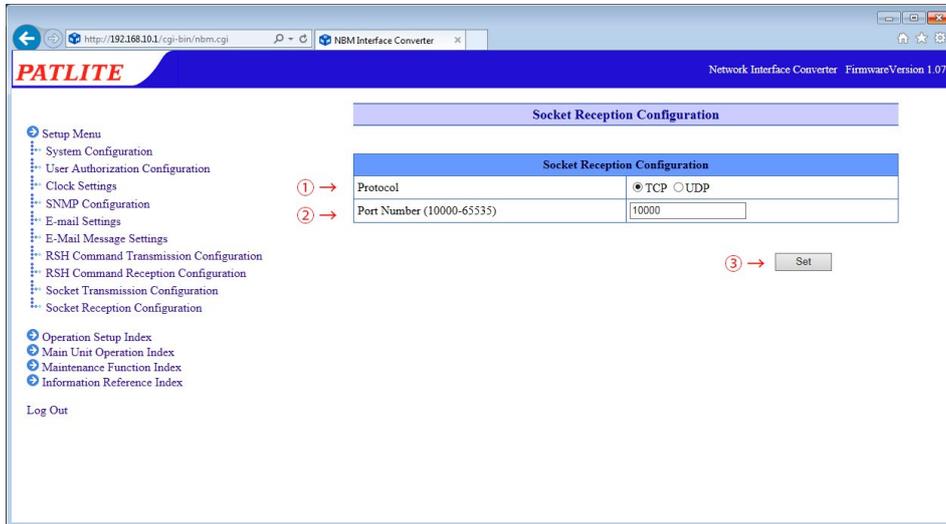
③   Click the "Set" button to activate the setup.

Fig. 4.10.0–1   Socket Reception Configuration screen

Table 4.10.0–1   Socket Reception Configuration parameters

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 digits 10000-65535	—

> MEMO
> - For the PHN Command, refer to "3.4 PHN Command Reception Function."
> - For the PNS Command, refer to "3.5 PNS Command Reception Function."

4.11　Digital Input Setup Screen

It sets the operation when the digital input status changes.　Refer to Table 4.11.0-1 for the items set up in the Digital Input Setup Screen.

　　　[Setup Method]

① 　Select the input port number (1 to 8) to be set.
② 　To enable the setting, select "Active."
③ 　Select the logical value (Contact A / Contact B) for the input port.
④ 　Select the Trigger Signal from "ON Status", "OFF status" and "Status Change."
⑤ 　Set up the operation for when there is a signal present.
⑥ 　Select the E-mail Sending Setup for when a signal is present.　If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "Subject" and "Message" after activation.
⑦ 　To send a trap, select "Active."

<<The "TRAP Command" for this product to receive when the TRAP condition occurs>>

　　When the digital input is turned "ON":
　　　　OID:　1.3.6.1.4.1.20440.4.4.1.1.1.1 - 1.3.6.1.4.1.20440.4.4.1.1.1.8
　　　　Name:　diStateChangeON1 - diStateChangeON8
　　When the digital input is turned "OFF":
　　　　OID: 1.3.6.1.4.1.20440.4.4.1.1.2.1 - 1.3.6.1.4.1.20440.4.4.1.1.2.8
　　　　Name: diStateChangeOFF1 - diStateChangeOFF8
⑧ 　Click the "Set" button to activate the setup.

4

┌─────────┐
│ MEMO │　When the signal definition is set to "OFF Status", the "ON Status Change for Operation Setting 1" is
└─────────┘　displayed as "OFF Status Change for Operation Setting 1."

<< Signal definition screen display when selecting "ON Status" and "OFF Status" >>

Fig.　4.11.0–1　Digital Input Setup Screen (when "ON Status" is selected)

<< Signal definition screen display when selecting "Status Change" >>

When the "Status Change" is selected for the signal definition, the setup parameters in the Setup Screen are described in Table 4.11.0–12.

The operation setting input column is displayed for both the "at time of ON Status change", and the "at time of OFF Status change."

Fig. 4.11.0–2   Digital Input Setup Screen (when "Status Change" is selected)

Table 4.11.0–1   Digital Input Setup Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Active/Inactive	Select "Active" or "Inactive" for the digital input function.	Active	—	—
Logic Value	Select a logical value between "Contact A" - "Contact B."	Contact A	—	—
Trigger Signal	Select from "ON Status", "OFF Status", "Status Change" for signal definition.	ON Status	—	—
Digital Outputs 1-8	Select from "ON", "OFF", "No Change" for each port.	No Change	—	—
RSH Command Transmission 1-8	Select the transmission destination of the RSH command.	Unassigned	—	—
Socket transmission 1-16	Select the destination of the registered command.	Unassigned	—	—
E-mail Transmission	Select E-mail Sending as "Active" or "Inactive."	Inactive	—	—
Subject	Select the E-mail title	1.	—	—
Message	Select the E-mail text	1:	—	—
E-mail Receiver	Select the recipient to send E-mail to.	Unassigned	—	—
Trap Transmission	Select "Active" or "Inactive" for sending traps.	Inactive	—	—

4.12　Digital Output Setup Screen

Set the output for the digital output port.

Table 4.12.0–1 shows the items to be set on the digital output setting screen.

[Setup Method]

① 　Enter the name of each port (1 to 8).

② 　Select "Active" or "Inactive" for each port.

③ 　Select the logical value (Contact A / Contact B) for the output port.

④ 　Enter the number of seconds (0 to 600) of the "Automatic OFF" function.
　　　When a "0" is entered, the "Automatic OFF" function is inactive.

⑤ 　To send a trap, select "Active."

<< The "TRAP Command" for this product to receive when the TRAP condition occurs >>

When the digital output is turned "ON":
　　　OID: 1.3.6.1.4.1.20440.4.4.1.1.3.1 - 1.3.6.1.4.1.20440.4.4.1.1.3.8
　　　Name: doStateChangeON1 - doStateChangeON8

When the digital output is turned "OFF":
　　　OID: 1.3.6.1.4.1.20440.4.4.1.1.4.1 - 1.3.6.1.4.1.20440.4.4.1.1.4.8
　　　Name: doStateChangeOFF1 - doStateChangeOFF8

⑥ 　Click the "Set" button to activate the setup.
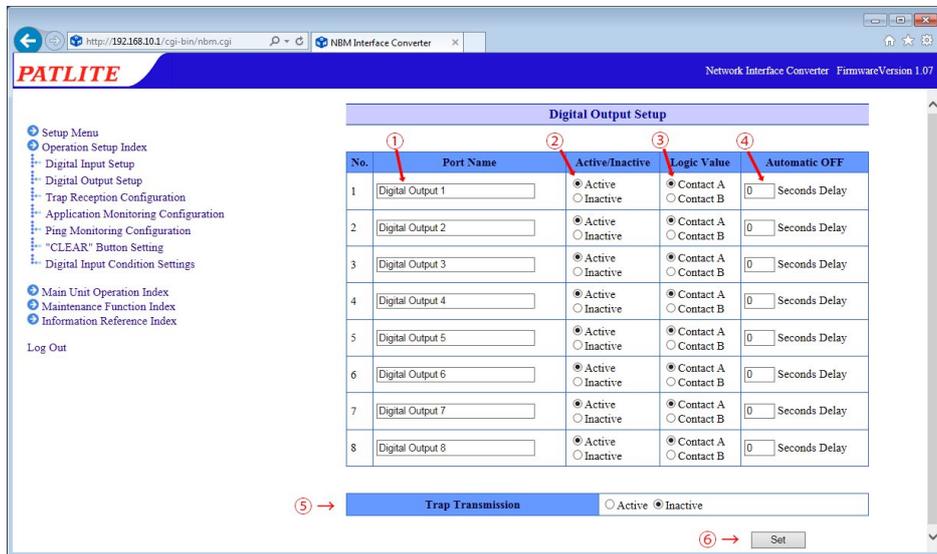
Fig. 4.12.0–1　　Digital Output setting screen

Table 4.12.0–1　　Digital Output Setup Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Port Name	Enter the name of the digital output port.	Digital output 1 - 8	Full and half-width size:Max. 16 Characters	O
Active/Inactive	Select "Active" or "Inactive" for the digital output function.	Active	—	—
Logic Value	Select a logical value between "Contact A" - "Contact B."	Contact A	—	—
Automatic OFF	Enter the time for the automatic OFF function.	0	Half-width digit 0-600 (Seconds)	O
Trap Transmission	Select "Active" or "Inactive" for sending traps.	Inactive	—	—

> **MEMO**　The Port Name is set to the initial value of the selected language at initialization.

> **Attention**　• When the digital output port is set as "Inactive", it cannot be operated from each function, including a post-setup status.
> • Maintains the status of the port when it is set to "Inactive."

4.13   Trap Reception Configuration Screen

The traps can be set to allow trap operation and trap reception after being received.
Table 4.13.0–1 shows the items to set on the trap reception setting screen.

[Setup Method]

① Select a reception setting number (1-16).
② Enter a group name.
③ Enter a trap designated sender address. *
④ Enter the OID in the "Trap OID" field for the trap to be received. *
⑤ Enter the OID in the "variable-bindings" field. *
⑥ Set up the operation of this product when a trap is received.
⑦ Select the E-mail Sending configuration when receiving a TRAP. If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after activation.
⑧ To send a trap, select "Active."

<<The "TRAP Command" for this product to receive when the TRAP condition occurs>>
   OID「1.3.6.1.4.1.20440.4.4.1.1.11.1 ～ 1.3.6.1.4.1.20440.4.4.1.1.11.16」
   Name: snmpTrapReceived1 - snmpTrapReceived16

⑨ Click the "Set" button to activate the setup.

* Refer to the following "MEMO" and "Attention" below:

MEMO

- When the trap transmission source address is entered, the "trap number" column and the "variable bindings" column can be omitted. When the TRAP "number column" and "variable bindings" columns are omitted, then all operations will be received by the TRAP transmission address which was setup for the TRAP transmission source address.
- When a TRAP transmission source address name is omitted, the operation is determined by the TRAP number.
- For two "variable bindings", the 1st registration can be used among the existing registered items.
- If both the "trap transmission source address" and "trap number" are omitted, even with "variable bindings" registered, it won't operate.
- When the "GenericTrap type" TRAP Reception is 6 (enterprisespecific), add the value "0. (specific-trap value)" to the last part of the specific-trap for the TRAP Reception.
- If the type of variable-bindings is specified as an integer, enter the value in half-width numbers. If the model is specified as a string, register the value in half-width characters.

Attention

- When the TRAP transmission source address name is omitted, the TRAP number cannot be omitted. If both the "trap transmission source address" and "trap number" are omitted, no operation after a reception will work.
- When a TRAP number has been duplicated and is registered into the group, the least significant setup number in the group is used. The following group number after that number is not used.
- Judgement can be made by the reception function with the number of variable-bindings as 64 with one per trap. To receive more than 65 variable bindings, the traps 1-64 must first be set to operate in the OID at the time of reception. Be aware that the OID after the 65th piece does not operate, even after it is set.

Browser address: http://192.168.10.1/cgi-bin/nbm.cgi — NBM Interface Converter

PATLITE — Network Interface Converter FirmwareVersion 1.07

Sidebar:
- Setup Menu
- Operation Setup Index
  - Digital Input Setup
  - Digital Output Setup
  - Trap Reception Configuration
  - Application Monitoring Configuration
  - Ping Monitoring Configuration
  - "CLEAR" Button Setting
  - Digital Input Condition Settings
- Main Unit Operation Index
- Maintenance Function Index
- Information Reference Index

Log Out

Trap Reception Configuration

① → 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

TRAP Reception Configuration Group 1

② → Group Name1 [ ]

③ → Trap Source Address [ ]
④ → Trap OID [ ]

⑤ →
1 variable bindings 1 OID: [ ] Type: integer ▾ Value: [ ]
  variable bindings 2 OID: [ ] Type: integer ▾ Value: [ ]

Trap Source Address [ ]
Trap OID [ ]
2 variable bindings 1 OID: [ ] Type: integer ▾ Value: [ ]
  variable bindings 2 OID: [ ] Type: integer ▾ Value: [ ]

Trap Source Address [ ]
Trap OID [ ]
3 variable bindings 1 OID: [ ] Type: integer ▾ Value: [ ]
  variable bindings 2 OID: [ ] Type: integer ▾ Value: [ ]

Trap Source Address [ ]
Trap OID [ ]
4 variable bindings 1 OID: [ ] Type: integer ▾ Value: [ ]
  variable bindings 2 OID: [ ] Type: integer ▾ Value: [ ]

Trap Reception Operation Setting 1

⑥ →
Digital Output:
1. Digital Output 1 — No Change ▾
2. Digital Output 2 — No Change ▾
3. Digital Output 3 — No Change ▾
3. Digital Output 3 — No Change ▾
4. Digital Output 4 — No Change ▾
5. Digital Output 5 — No Change ▾
6. Digital Output 6 — No Change ▾
7. Digital Output 7 — No Change ▾
8. Digital Output 8 — No Change ▾

RSH Command Transmission:
☐1 Unassigned ☐2 Unassigned ☐3 Unassigned ☐4 Unassigned
☐5 Unassigned ☐6 Unassigned ☐7 Unassigned ☐8 Unassigned

Socket Transmission:
☐1 Unassigned ☐2 Unassigned ☐3 Unassigned ☐4 Unassigned
☐5 Unassigned ☐6 Unassigned ☐7 Unassigned ☐8 Unassigned
☐9 Unassigned ☐10 Unassigned ☐11 Unassigned ☐12 Unassigned
☐13 Unassigned ☐14 Unassigned ☐15 Unassigned ☐16 Unassigned

⑦ →
E-mail Transmission: ○ Active ◉ Inactive Subject 1 ▾ Message 1 ▾
E-mail Receiver:
☐1 Unassigned ☐2 Unassigned ☐3 Unassigned ☐4 Unassigned
☐5 Unassigned ☐6 Unassigned ☐7 Unassigned ☐8 Unassigned

⑧ → Trap Transmission: ○ Active ◉ Inactive

⑨ → Set

Fig. 4.13.0–1   Trap Reception Configuration screen

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Table 4.13.0–1   Trap Reception Configuration parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Group Name	Enter the group's name.	Blank	Full or half-size; Max. 32 Characters	O
Trap Source Address	Enter the source address of the trap to receive. (1-4 events)	Blank	IP Address Format	O
Trap OID	Enter the OID of the trap to receive. (1-4 events)	Blank	Number and period; Max. 127 Characters	O
OID (variable-bindings)	Enter the OID into the column of the variable-bindings being received. (1-4 events)	Blank	Number and period; Max. 127 Characters	O
Type (variable-bindings)	Select the type of variable-bindings OID to receive from "integer" or "string". (1-4 events)	integer	—	—
Value (variable-bindings)	Enter the value into the column of the variable-bindings being received. (1-4 events)	Blank	Numbers (0 to 65535) or Full/half-width characters; Maximum 63 Characters Full-width characters are extended functions, so they will not work even if they are registered.	O
Digital Outputs 1-8	For each port, select "ON", "OFF", "No Change".	No Change	—	—
RSH Command Transmission 1-8	Select the transmission destination of the RSH command.	Unassigned	—	—
Socket transmission 1-16	Select the destination of the registered command.	Unassigned	—	—
E-mail Transmission	Select E-mail Sending as "Active" or "Inactive."	Inactive	—	—
Subject	Select the E-mail title.	1.	—	—
Message	Select the E-mail text.	1:	—	—
E-mail Receiver	Select the recipient to send E-mail to.	Unassigned	—	—
Trap Transmission	Select "Active" or "Inactive" for sending traps.	Inactive	—	—

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4.14 Application Monitoring Configuration Screen

Setup for monitoring an application. The data reception of the target is monitored.
If data is not received within the Ping test cycle period, it detects a monitor abnormality, and generates an abnormality event. After a generated event, if data is received from the monitored candidate, it will detect a recovery from the abnormal operation.

[Setup Method]

① Select a number between 1 and 4 for four different application monitor Setups.
② Enter the IP address for a target to monitor. (When an abbreviation or 0 is entered, the monitoring function becomes inactive)
③ Enter the Receiving Port Number (0, or 9000-9999).
④ Enter a device name.
⑤ Enter the number of seconds for a monitoring interval (0-60000).

<< Operation Setting for Monitoring Abnormality >>

⑥ Set the operation up for this product when monitor abnormality occurs.
⑦ Select from the E-mail Sending Setup when monitor abnormality occurs.
   If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after activation.
⑧ To send a trap, select "Active."

<< The "TRAP Command" for this product to receive when the TRAP condition occurs >>

   OID: 1.3.6.1.4.1.20440.4.4.1.1.8.1 - 1.3.6.1.4.1.20440.4.4.1.1.8.4
   Name: appError1 - appError4

Fig. 4.14.0–1   Application Monitoring Configuration Screen No. 1

## << Operation Setting for Recovering Monitoring Abnormality >>

⑨   Set up the operation setting for this product to recover from monitoring abnormality.

⑩   Select the E-mail Sending Setup when restoring from a monitor abnormality.
If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after activation.

⑪   To send a trap, select "Active."

<< The "Active" Trap Command which this product transmits >>

OID: 1.3.6.1.4.1.20440.4.4.1.1.9.1 - 1.3.6.1.4.1.20440.4.4.1.1.9.4

Name: appRecover1 - appRecover4

⑫   Click the "Set" button to activate the setup.
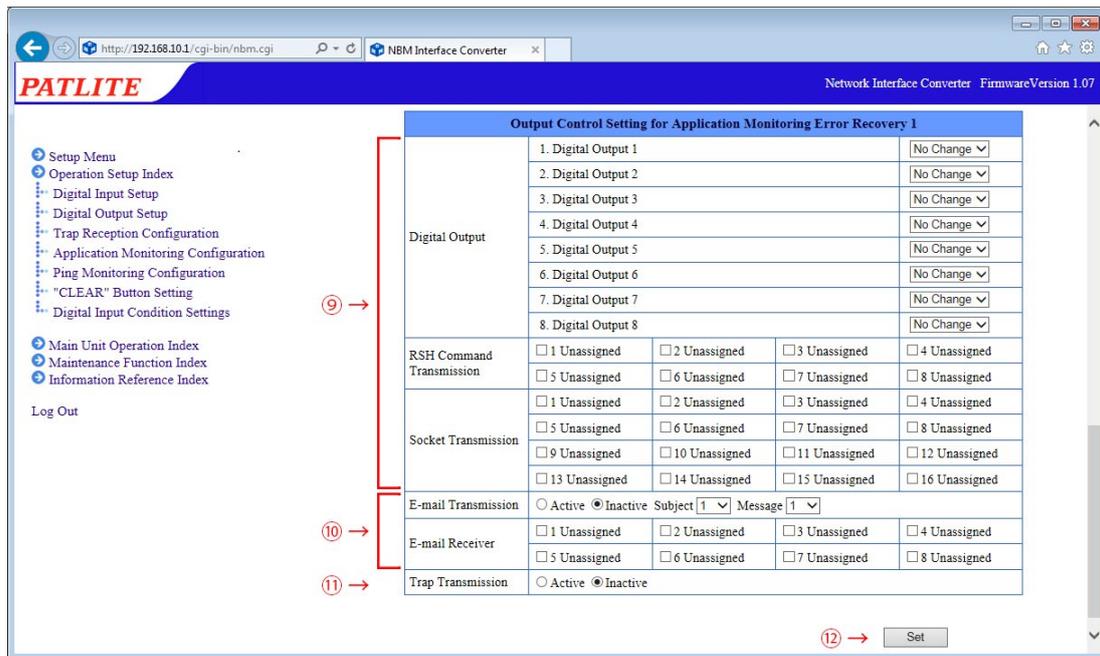
Fig. 4.14.0–2　Application Monitoring Configuration Screen No. 2

Table 4.14.0–1　Application Monitoring Configuration Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Monitoring Target Address	Enter the IP address for transmission monitoring.	Blank	IP Address Format	O
Reception Port Number	Enter the receiving port to be used for the application monitor.	0	Half-width digits 0, 9000-9999	—
Equipment Name	Enter the name for the Ping transmission monitoring.	Blank	Full or half size; Max. 32 Characters	O
Monitoring Interval	Set the interval for receiving data.	0	Full or half size 0: Monitor Disabled 1-60000 (Seconds)	O
Digital Outputs 1-8	For each port, select "ON", "OFF", "No Change".	No Change	—	—
RSH Command Transmission 1-8	Select the transmission destination of the RSH command.	Unassigned	—	—
Socket transmission 1-16	Select the destination of the registered command.	Unassigned	—	—
E-mail Transmission	Select E-mail Sending as "Active" or "Inactive."	Inactive	—	—
Subject	Select the E-mail title	1.	—	—
Message	Select the E-mail text	1:	—	—
E-mail Receiver	Select the recipient to send E-mail to.	Unassigned	—	—
Trap Transmission	Select "Active" or "Inactive" for sending traps.	Inactive	—	—

4.15 Ping Monitoring Configuration Screen

The Ping monitor can be set up.

When the Ping monitor detects an abnormality, as a result, it generates a monitor abnormality condition.

After a monitor abnormality is generated, if there is a response from a Ping request, it will then determine a recovery from the abnormal condition, and will continue its normal operate after restoration.

A maximum number of 24 Ping monitors can be registered.

[Setup Method]

① Select the screen setup numbers from No. 1-20, to setup the Ping monitoring parameters.
② Enter the IP address for a target to monitor.
③ Enter the device name for a target to monitor.
④ Enter a Cycle count Error threshold value (0-30).
⑤ Enter the number of seconds for a monitoring cycle (0-600).
⑥ Enter a number for Pings per test cycle (1-3).

<< Operation Setting for Monitoring Abnormality >>

⑦ Set the operation up for this product when monitor abnormality occurs.
⑧ Select from the E-mail Sending Setup when monitor abnormality occurs.
   If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after activation.
⑨ To send a trap, select "Active."

<< The "TRAP Command" for this product to receive when the TRAP condition occurs >>

OID: 1.3.6.1.4.1.20440.4.4.1.1.6.1 - 1.3.6.1.4.1.20440.4.4.1.1.6.24

Name: pingError1 - pingError24

Fig. 4.15.0–1   Ping Monitoring Configuration Screen No. 1

### << Operation Setting for Recovering Monitoring Abnormality >>

⑩　Set up the operation setting for this product to recover from monitoring abnormality.

⑪　Use the E-mail Sending Setup when recovering from monitoring abnormality.
　　If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after activation.

⑫　To send a trap, select "Active."

<< The "TRAP Command" for this product to receive when the TRAP condition occurs >>

　　　OID: 1.3.6.1.4.1.20440.4.4.1.1.7.1 - 1.3.6.1.4.1.20440.4.4.1.1.7.24

　　　Name: pingRecover1 - pingRecover24

⑬　Click the "Set" button to activate the setup.
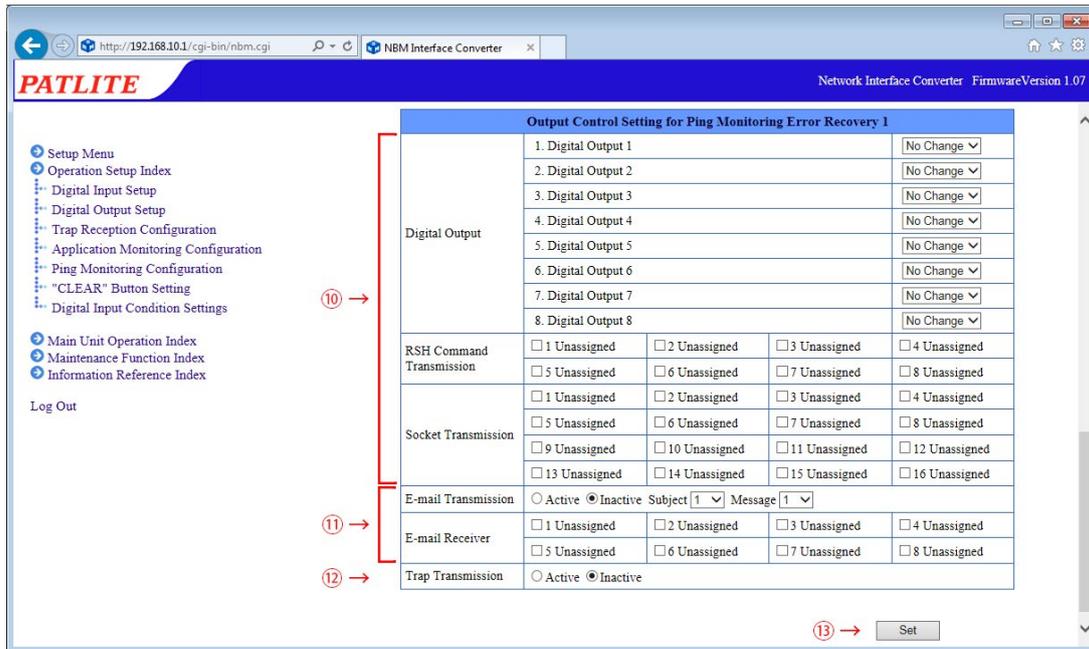
Fig. 4.15.0–2　Ping Monitoring Configuration Screen No. 2

Table 4.15.0–1　Ping Monitoring Configuration Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Monitoring Target Address	Enter the IP address or host name for the ping monitoring.	Blank	Characters which can be used for the IP address and host name: Max. 63 Characters	O
Equipment Name	Enter the name for the Ping transmission monitoring.	Blank	Full or half size: Max. 32 Characters	O
Cycle count Error Threshold	Enter the Ping response judgement value for determining Ping abnormality. It does not operate when set to 0.	0	Half-width digits 0-30 (cycles)	—
Pings test cycle period	Enter the period which transmits the Ping.	60	1-600 (Seconds)	—
Ping Per Test Cycle	Enter the number of Pings to transmit per period.	1	1-3 (per period)	—
Digital Output	For each port, select "ON", "OFF", "No Change".	No Change	—	—
RSH Command Transmission	Select the transmission destination of the RSH command.	Unassigned	—	—
Socket transmission	Select the destination of the registered command.	Unassigned	—	—
E-mail Transmission	Select E-mail Sending as "Active" or "Inactive."	Inactive	—	—
Subject	Select the E-mail title.	1.	—	—
Message	Select the E-mail text.	1:	—	—
E-mail Receiver	Select the recipient to send E-mail to.	Unassigned	—	—
Trap Transmission	Select "Active" or "Inactive" for sending traps.	Inactive	—	—

4.16 "Clear" Button Setting Screen

Set the operation to be performed when the "Clear" switch has been pressed.

[Setup Method]

① Set the operation of this product when the "Clear" switch has been pressed.

② Select the E-mail Sending Setup for when the "Clear" switch has been pressed.
   If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after activation.

③ To send a trap, select "Active."

<< The trap this product sends when it is Active >>

OID: 1.3.6.1.4.1.20440.4.4.1.1.5.1
Name: clearSwitch

④ Click the "Set" button to activate the setup.

Fig. 4.16.0–1 "Clear" button setting screen

Table 4.16.0–1 "Clear" button setting parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Digital Output	For each port, select "ON", "OFF", "No Change".	OFF	—	—
RSH Command Transmission	Select the transmission destination of the RSH command.	Unassigned	—	—
Socket transmission	Select the destination of the registered command.	Unassigned	—	—
E-mail Transmission	Select E-mail Sending as "Active" or "Inactive."	Inactive	—	—
Subject	Select the E-mail title	1.	—	—
Message	Select the E-mail text	1:	—	—
E-mail Receiver	Select the recipient to send E-mail to.	Unassigned	—	—
Trap Transmission	Select "Active" or "Inactive" for sending traps.	Inactive	—	—

4.17 Digital Input Condition Settings Screen

Set up the Digital Input conditions.

[Setup Method]

(The Setup Screen should show the following page)

<< When "AND detection" is selected >>

① Select a number (1-4) for the condition setup.

② Select the pattern to detect "AND detection".
Select from the condition pull-down menu (digital inputs 1 to 8). Up to 4 ports can be set.

③ Set the operation when the conditions agree.

④ Select the mail transmission setting when the condition agrees.
If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after activation.

⑤ To send a trap, select "Active."

<< The "TRAP Command" for this product to receive when the TRAP condition occurs >>
OID: 1.3.6.1.4.1.20440.4.4.1.1.10.1 - 1.3.6.1.4.1.20440.4.4.1.1.10.5
Name: diConditionMatch1 - diConditionMatch5

⑥ Click the "Set" button to activate the setup.

Fig. 4.17.0–1 Digital Input Condition Settings screen ("AND detection" pattern)

<< When "Number of detection times" is selected >>
①　Select a number (1-5) for the condition setup.
②　Select the detection pattern "Number of detection times".
　　Select from the condition pull-down menu (digital inputs 1 to 8).
　　Enter the measurement time and number of measurements.
③　Select the operation when pressing the clear switch from "Active" or "Inactive."
④　Select whether to detect the second or subsequent condition match with "Yes" or "No."
⑤　Set the operation when the conditions agree.
⑥　Select the mail transmission setting when the condition agrees.
　　If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after
　　activation.
⑦　To send a trap, select "Active."

<< The "TRAP Command" for this product to receive when the TRAP condition occurs >>
　　　　OID: 1.3.6.1.4.1.20440.4.4.1.1.10.1 - 1.3.6.1.4.1.20440.4.4.1.1.10.5
　　　　Name: diConditionMatch1 - diConditionMatch5
⑧　Click the "Set" button to activate the setup.

Fig. 4.17.0–2　Digital Input Condition Settings screen ("Number of Detection Times" pattern)

<< When "Continued Detection Duration" is selected >>

① Select a number (1-5) for the condition setup.
② Select the detection pattern "Time Continuation Detection".
   Select from the condition pull-down menu (digital inputs 1 to 8).
   Enter the measurement time.
③ Select the operation when pressing the clear switch from "Active" or "Inactive."
④ Select whether to detect the second or subsequent condition match with "Yes" or "No."
⑤ Set the operation when the conditions agree.
⑥ Select the mail transmission setting when the condition agrees.
   If the E-mail Sending is made "Active", the "E-mail Receiver" is selected for "subject" and "message" after activation.
⑦ To send a trap, select "Active."

<< The "TRAP Command" for this product to receive when the TRAP condition occurs >>

   OID: 1.3.6.1.4.1.20440.4.4.1.1.10.1 - 1.3.6.1.4.1.20440.4.4.1.1.10.5
   Name: diConditionMatch1 - diConditionMatch5
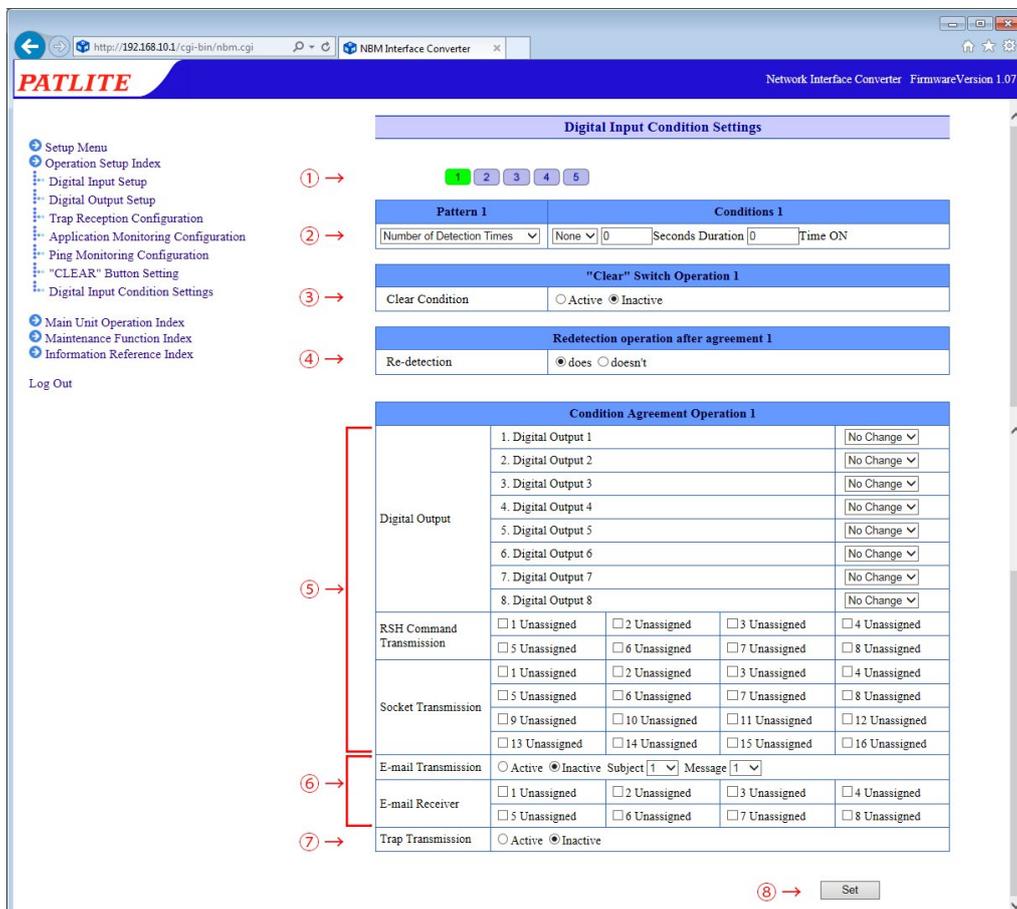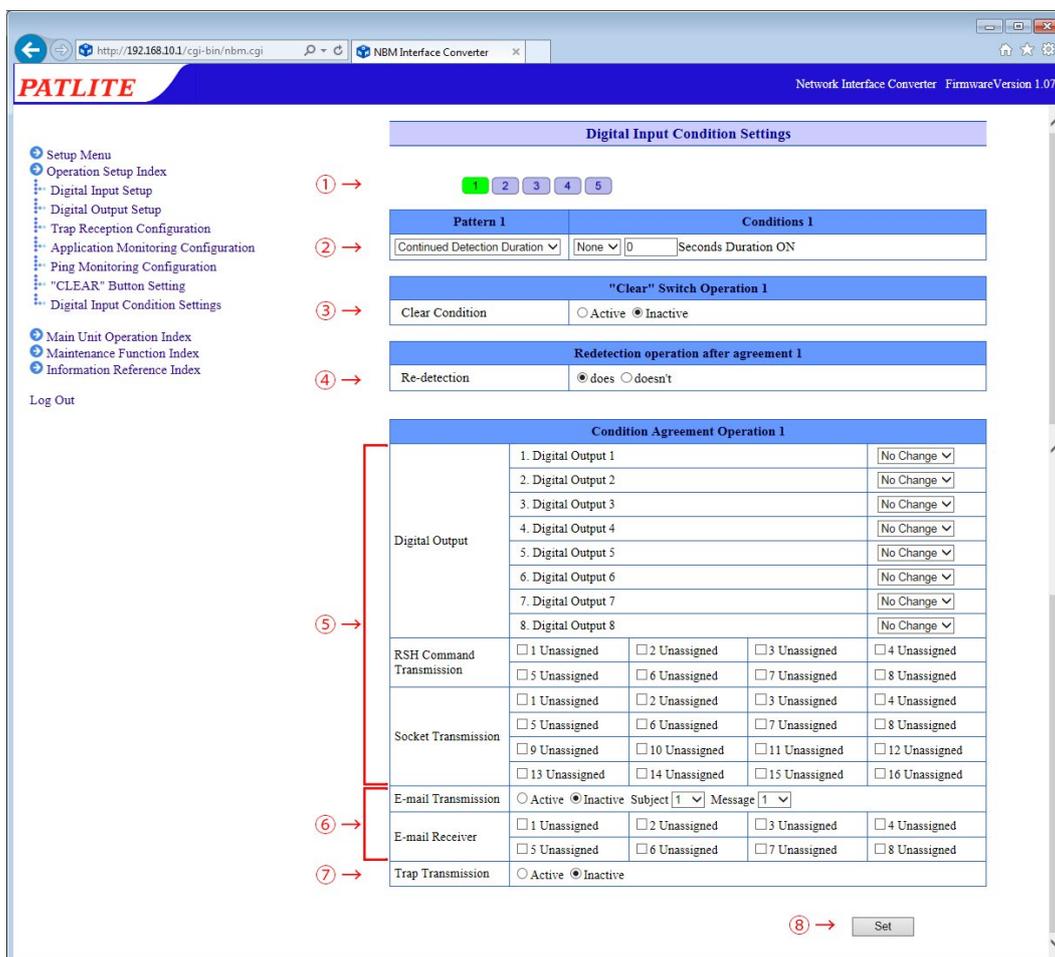
⑧ Click the "Set" button to activate the setup.

Fig. 4.17.0–3   Digital Input Condition Settings screen ("Continued Detection Duration" pattern)

Table 4.17.0–1 Digital Input Condition Settings Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Pattern	Select the pattern to be detected from "AND detection", "count detection", "Time Continuation Detection."	AND detection	—	—
Digital input detection	Select the digital input (ports 1-8) to detect from the pull down menu. It will not operate if "None" is selected.	None	—	—
When "Number of detection times" is Selected.				
Measured time	Enter the time to measure. It does not operate when set to 0. When it is set to 99999, the time setting becomes an unlimited status and will become a condition setting of only a predetermined number.	0	Half-width digits; 0-86400, or 99999	—
Measured frequency	Enter the number of times to measure. Depending on the value entered for "Number of seconds", the upper limit of the number of times that can be set, can only be changed to 4, 8, or 10.	0	Half-width digits; Measurement times: - 1 second: 0-4 - 2 seconds: 0-8 - 3 seconds or more: 0-10	—
Condition clear	Based on the "Clear" condition , a clear will occur when the "Clear" button is pressed. When set to "Active", an initialization will occur when the "Clear" button is pressed. When set to "Inactive", there is no change, even if the "Clear" button is pressed.	Inactive	—	—
Redetection	Re-detection can be set up. When set to "does", it detects when detection conditions agree and operates. When set to "doesn't", after the setup, it only operates when the detection condition agrees at the beginning, and even if it agrees after that, it does not operate.	does	—	—
When "Continued Detection Duration" is Selected.				
Number of seconds	Enter the time to measure. It does not operate when set to 0.	0	Half-width digits; 0-86400,	—
Condition clear	Based on the "Clear" condition , a clear will occur when the "Clear" button is pressed. When set to "Active", an initialization will occur when the "Clear" button is pressed. When set to "Inactive", there is no change, even if the "Clear" button is pressed.	Inactive	—	—
Redetection	Re-detection can be set up. When set to "does", it detects when detection conditions agree and operates. When set to "doesn't", after the setup, it only operates when the detection condition agrees at the beginning, and even if it agrees after that, it does not operate.	does	—	—
Digital Outputs	For each port, select "ON", "OFF", "No Change".	No Change	—	—
RSH Command Transmission	Select the transmission destination of the RSH command.	Unassigned	—	—
Socket transmission	Select the destination of the registered command.	Unassigned	—	—
E-mail Transmission	Select E-mail Sending as "Active" or "Inactive."	Inactive	—	—
Subject	Select the E-mail title.	1.	—	—
Message	Select the E-mail text.	1:	—	—
E-mail Receiver	Select the recipient to send E-mail to.	Unassigned	—	—
Trap Transmission	Select "Active" or "Inactive" for sending traps.	Inactive	—	—

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4.18 Reinitialization Setup Screen

The setup parameters can be reset to their default values by initializing this product. The network setup can be selected to be excluded from initialization. If the "Network also reinitializes." is checked, it reverts back to the factory default status. If it is not checked, initialization of the other settings, excluding the network settings, is executed.

> **MEMO** "Network setting" refers to the "main unit IP address, netmask, default gateway, DNS server address, host name, domain name" items on the system setting screen.

[Setup Method]

<< Network Initialization setting >>
① Put a check in the "Network also reinitializes." box.
② Click the "Execute Reinitialization" button.
<< When initializing only other settings without changing network settings >>
② Click the "Execute Reinitialization" button.

> **Attention** If the network setup is also initialized, since the IP address will return to its factory default value, the network has to be setup again.
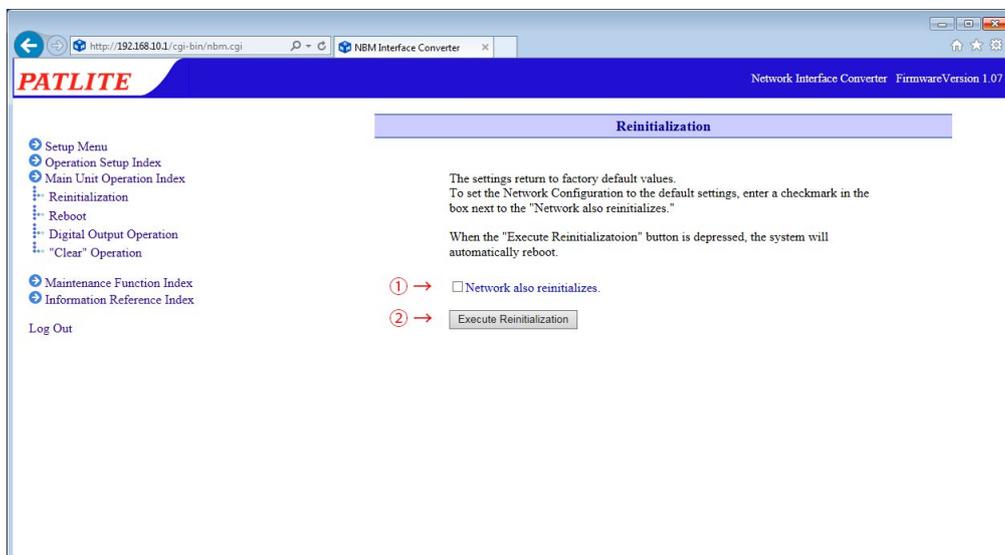
Fig. 4.18.0–1 Reinitialization screen

4.19 Reboot Screen

This product can be rebooted just by clicking the "Reboot" button.

① Once the "Reboot" button is clicked, a new screen will display a message indicating it is rebooting.

② Click "To the Login Screen" on the new screen to log back in. (Refer to Fig. 4.19.0-1)

> MEMO If a log is required, be sure to download the logs from the status log screen and operation log screen in advance.

Fig. 4.19.0–1   Reboot screen 1
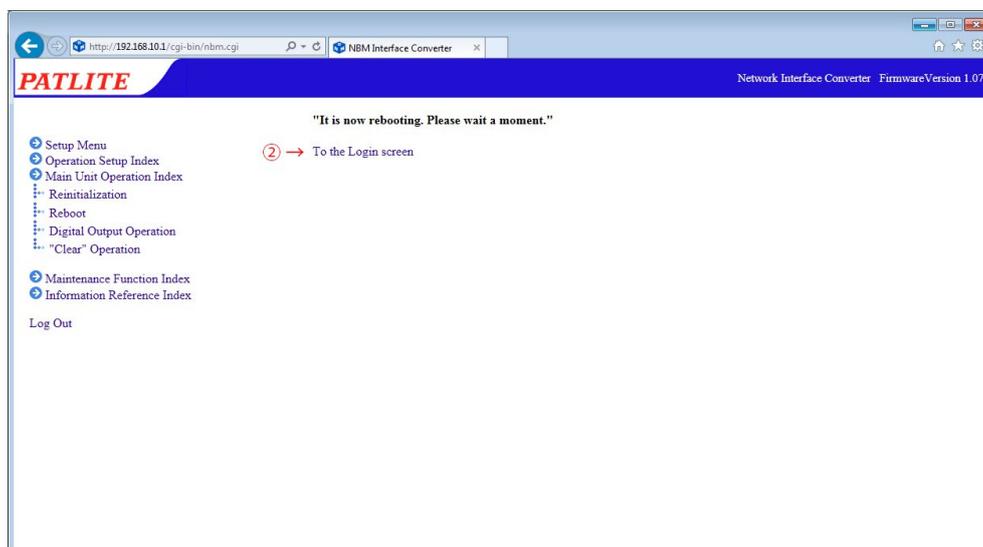
Fig. 4.19.0–2   Reboot screen 2

4.20　Digital Output Operation Screen

Configure the output operation of the digital output port.

[Setup Method]

① Select the operation of each port among "ON", "OFF", "Not operating".
② Click the "Execute" button.
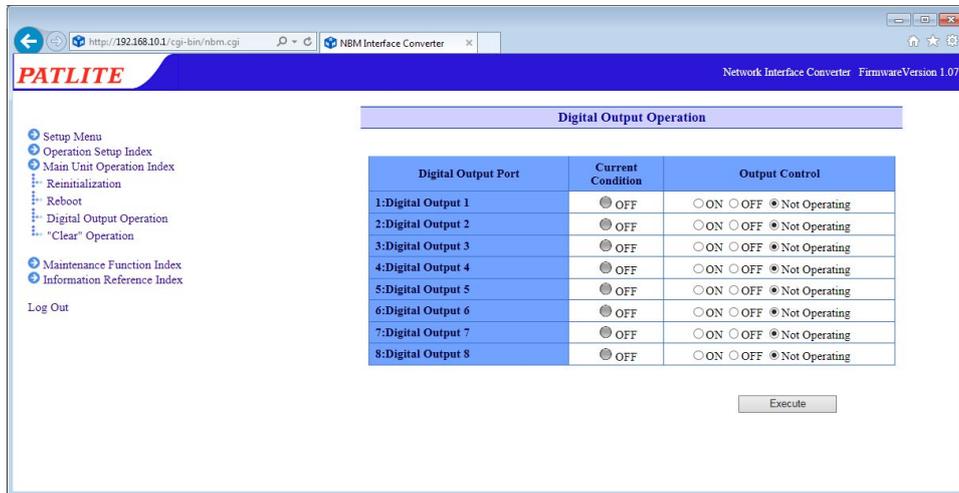
Fig. 4.20.0–1   Digital output operation setting screen

Table 4.20.3–1   Digital Output Operation Setting Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Current Condition	Displays the current status of the digital output.	—	—	—
Output Control	Select the operation of each digital output port among "ON", "OFF", "Not operating".	Not operating	—	—

4.21 "Clear" Operation Screen

Execute the "Clear" operation.
Execute the "Clear" operation.
When "Execute Clear" is performed, all 8 of the digital output ports are turned OFF.
Application monitoring and Ping monitoring are changed from abnormal state to monitoring state. The values (time and number) accumulated in the input condition setting is erased.

[**Setup Method**]

① Click the "Execute Clear" button.

|	
Attention	• When an "Execute Clear" is performed, the output terminal block is actually turned OFF, according to the "Digital Output Settings" set up. Be very careful when executing a "Clear" operation. • When a "Clear" execution is performed during the monitor abnormality status, it returns to the monitoring status. • Ports set as "Inactive" by "Digital Output Settings" are not cleared. • When returning to a monitoring condition, it will not work for an abnormality recovery. Moreover, when the monitoring object is still in an abnormal condition (No Ping Acknowledgement for the application monitor), in accordance to the monitor set up, the monitor abnormality operation is performed again.
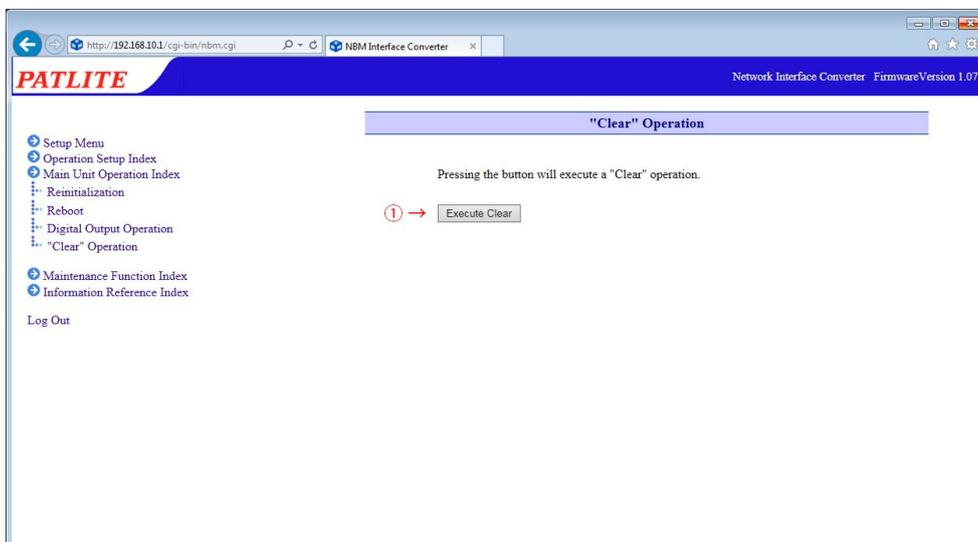
Fig. 4.21.0-1　"Clear" operation screens

4.22 Firmware Update Screen

The firmware for this product can be updated.

[Setup Method]

① Click the "Browse..." button to select the firmware to be written into this product.
② Clicking the "update" button will start the firmware update.

The update may take up to 5 minutes. When the update is complete, the message "It is now rebooting. Please wait a moment." will play and the product will reboot automatically.

> **Attention**
> - Do not disconnect the power cable or LAN cable during the update. Possible cause of failure may occur.
> - 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.

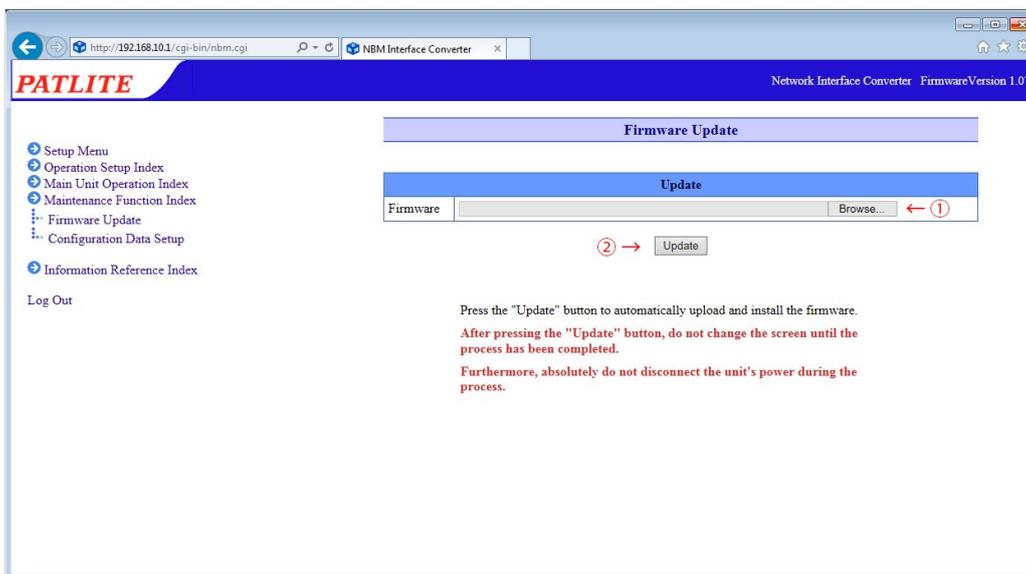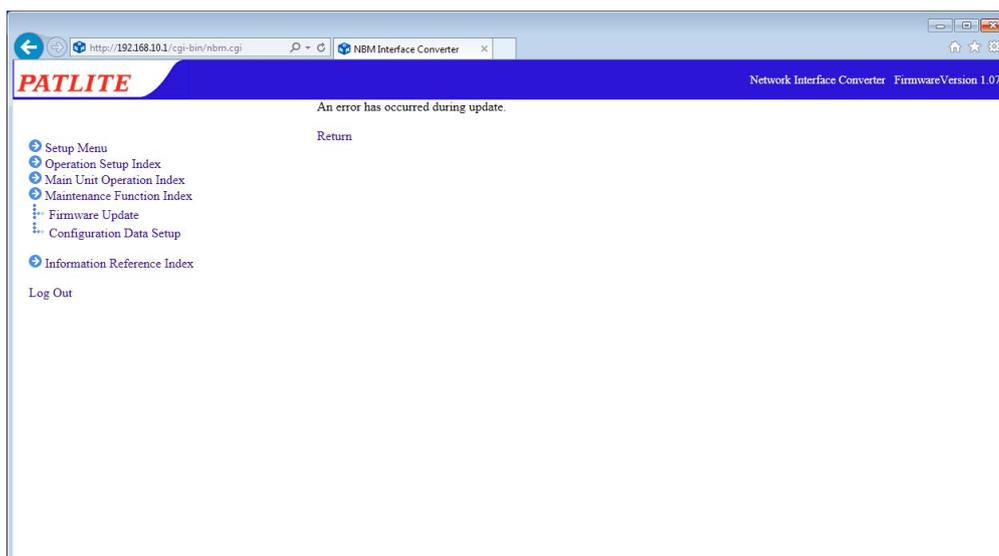Fig. 4.22.0–1   Firmware Update setting screen

Fig. 4.22.0–2   Firmware Update Failure screen

> **MEMO**
> Fig. 4.22.2 shows the type of screen in case an error occurs during the firmware update. If the update fails, make sure that the firmware, then update again after confirmation.
> If an error repeatedly occurs during the firmware update process, please contact your nearest Patlite Sales Representative.

4.23 Configuration Data Setup Screen

The setting menu for this product is read and can be saved as configuration data on the PC. Moreover, the configuration file read off of this product can be selected and uploaded.

> MEMO The network setup and user information is not included in the config data.

[Setup Method]

<< Reading Configuration Data >>
① Click the "Load" button to save the configuration data on the PC.

<< Writing Configuration Data >>
② Click the "Browse..." button and select the configuration data to be written to this product.
③ Click the "Write" button to start the uploading of the configuration data. After the configuration data is uploaded, this product will automatically reboot.
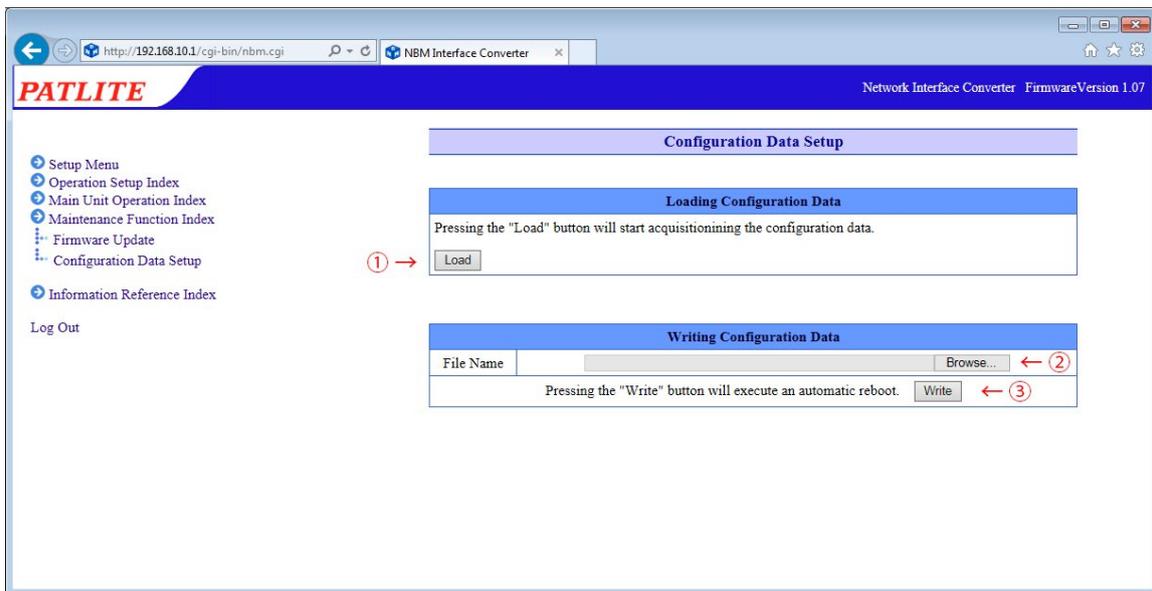
Fig. 4.23.0–1   Configuration Data Setup screen

4.24 Status Log Screen

To retrieve the status log for this product, set the output method and display, then download the log. In addition, 100 status logs are displayed in the newest order.

[Setup Method]

① Select between "polling" or "event" from "Log Output Format."
② When "Polling" is selected, enter the number of seconds (1 to 300) for "Polling Output Interval."
③ Click the "Set" button to activate the setup.

[Downloading Method]

④ Click the "Download" button.
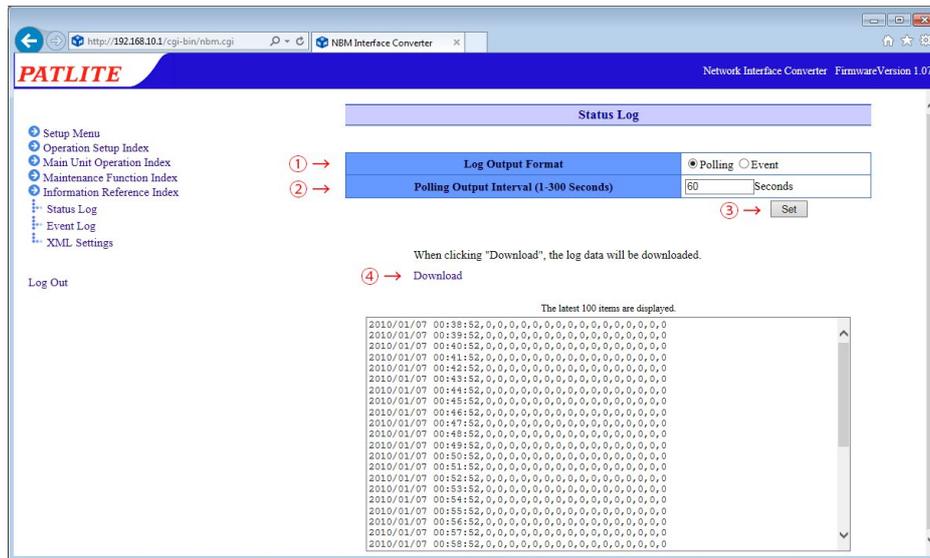
Fig. 4.24.0–1   Status Log screen

Table 4.24.3–1   Status log parameters

Item	Contents	Default Value	Input Parameter	Setup Option
Log Output Format	Select the trigger to export the status log from "Polling"/"Event".	Polling	—	—
Polling Output Interval	The inteval which outputs a log is entered.	60	1-300	—

4.25 Event Log Screen

The event log of this product can be downloaded and checked. Moreover, 100 operation logs are displayed on new order.

      [Setup Method]

①   Click the "Download" button.

Fig. 4.25.0–1　Event Log screen

MEMO | The number of saved logs is up to 50,000. Overdrafts are deleted in order of oldest.

4.26 XML Settings Screen

The following is the setup and download for the XML data output from this product.

[Setup Method]

① Select "Active" to export XML data. Select "Inactive", when not exporting an XML data output.
② Be sure to select the authentication method among "Login Authentication" or "No Authentication" when directly specifying the URL and acquiring the data.
③ Click "Download" to download the XML data.
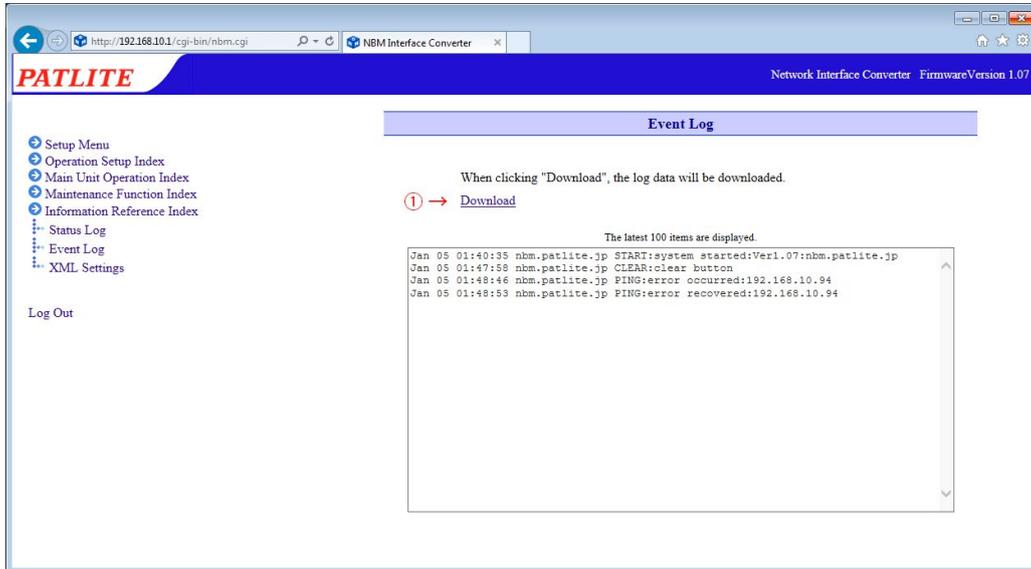 (It will only be downloadable when the "XML file output" is set as "Active")
④ Click the "Set" button to activate the setup.
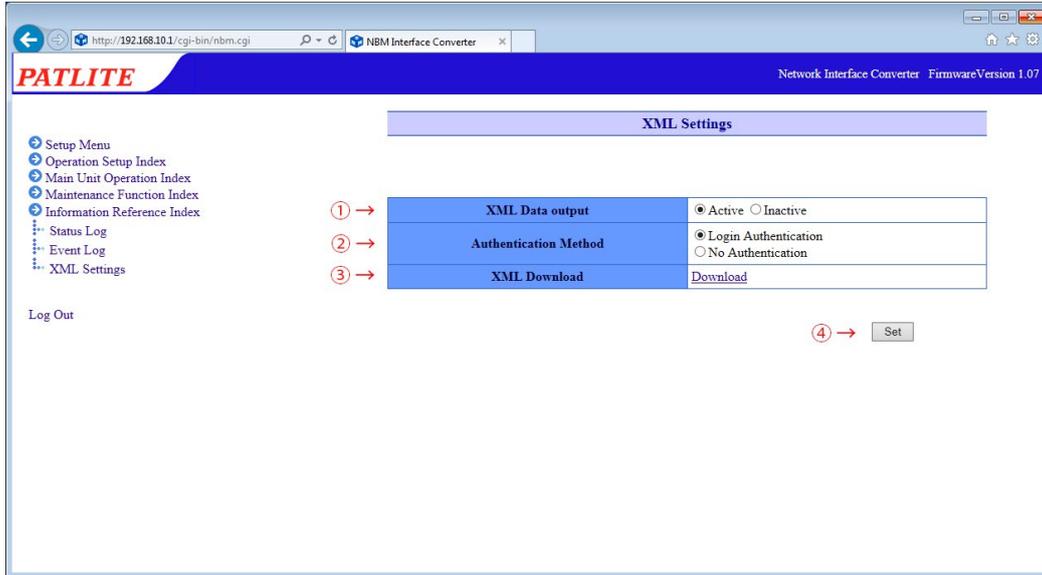
Fig. 4.26.0−1   XML Data screen

Attention
- If the authentication method is set for "No Authentication", the XML data can be acquired without logging in for authentication of a Web setup tool.
- If set to "Login Authentication", login authentication of the Web setup tool is necessary when acquisitioning an XML file.

MEMO | An XML file is downloadable only when the XML file output is set as "Active."

Table 4.26.0−1   XML Data Setup Parameters

Item	Contents	Default Value	Input Parameter	Setup Option
XML Data Output	Set either "Active" or "Inactive" for the XML data output function.	Inactive	—	—
Authentication Method	Select the authentication, when designating directly with a URL and acquisitioning an XML data output.	Login Authentication	—	—
XML Download	XML data is downloaded.	—	—	—

5. MIB

With this product, there is an exclusive MIB (Management Information Base) for the NBM Series, and the monitor controls can be operated by the SNMP manager, etc.

```
1 [iso]
    └─3 [org]
          └─6 [dod]
                └─1 [internet]
                        └─4 [private]
                               └─1 [enterprises]
 ┌─────────────────────────────────────────────────┘
 └─20440 [patlite]
       └─4 [patlite Module]
              └─4 [patliteNetworkSystem]
                      └─1 [nbm]
                             └─1 [trap]
                                    ├─1 [diStateChangeOn]
                                    │        ├─1     diStateChangeOn1
                                    │        ⋮
                                    │        └─8     diStateChangeOn8
                                    ├─2 [diStateChangeOff]
                                    │        ├─1     diStateChangeOff1
                                    │        ⋮
                                    │        └─8     diStateChangeOff8
                                    ├─3 [doStateChangeOn]
                                    │        ├─1     doStateChangeOn1
                                    │        ⋮
                                    │        └─8     doStateChangeOn8
                                    ├─4 [doStateChangeOff]
                                    │        ├─1     doStateChangeOff1
                                    │        ⋮
                                    │        └─8     doStateChangeOff8
                                    ├─5 [operation]
                                    │        └─1     clearSwitch
                                    ├─6 [pingError]
                                    │        ├─1     pingError1
                                    │        ⋮
                                    │        └─24    pingError24
                                    ├─7 [pingRecover]
                                    │        ├─1     pingRecover1
                                    │        ⋮
                                    │        └─24    pingRecover24
                                    ├─8 [appError]
                                    │        ├─1     appError1
                                    │        ⋮
                                    │        └─4     appError4
                                    ├─9 [appRecover]
                                    │        ├─1     appRecover1
                                    │        ⋮
                                    │        └─4     appRecover4
                                    ├─10 [diConditon]
                                    │        ├─1     diConditionMatch1
                                    │        ⋮
                                    │        └─5     diConditionMatch5
                                    └─11 [snmpTrapReceived]
                                             ├─1     snmpTrapReceived1
                                             ⋮
                                             └─16    snmpTrapReceived16
```
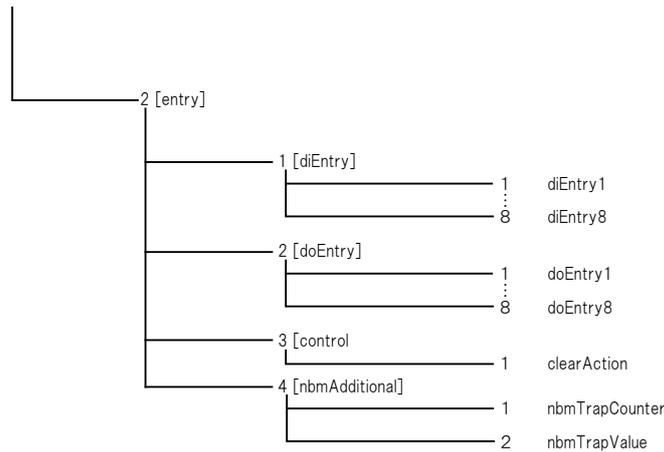
5

Table 5.0.0–1   Generic Trap

OID	Name	Type	MAX-ACCESS	Description
1.3.6.1.6.3.1.1.5.1	coldStart	OBJECT-IDENTIFIER	not-accessible	It sends as soon as the Main Unit starts.

Table 5.0.0–2   net-snmp

OID	Name	Type	MAX-ACCESS	Description
1.3.6.1.2.1.1	system			
1.3.6.1.2.1.1.3	sysUpTime	TimeTick	read-only	The time elapsed after the SNMP management system has rebooted. (in 1/100 seconds)
1.3.6.1.2.1.1.4	sysContact	DisplayString (SIZE (0..255))	read-only	It is the contact for the Web setup tool System Setup.
1.3.6.1.2.1.1.5	sysName	DisplayString (SIZE (0..255))	read-only	It is the host name for the Web setup tool System Setup.
1.3.6.1.2.1.1.6	sysLocation	DisplayString (SIZE (0..255))	read-only	It is a installation location for the Web setup tool System Setup.

Table 5.0.0–3   NBM-D88 OID Characteristics

OID	Name	Type	MAX-ACCESS	Description
4	Patlite Module			
4.4	patliteNetworkSystem			
4.4.1	NBM			
4.4.1.1	Trap			
4.4.1.1.1	diStateChangeON			
4.4.1.1.1.1 - 4.4.1.1.1.8	diStateChangeOn1 - 8	OBJECT-IDENTIFIER	not-accessible	It will transmit when the digital inputs 1-8 are turned on.
4.4.1.1.2	diStateChangeOFF			
4.4.1.1.2.1 - 4.4.1.1.2.8	diStateChangeOff1 - 8	OBJECT-IDENTIFIER	not-accessible	It will transmit when the digital inputs 1-8 are turned OFF.
4.4.1.1.3	doStateChangeON			
4.4.1.1.3.1 - 4.4.1.1.3.8	doStateChangeOn1 - 8	OBJECT-IDENTIFIER	not-accessible	It will transmit when the digital outputs 1-8 are turned ON.
4.4.1.1.4	doStateChangeOFF			
4.4.1.1.4.1 - 4.4.1.1.4.8	doStateChangeOff1 - 8	OBJECT-IDENTIFIER	not-accessible	It will transmit when the digital outputs 1-8 are turned OFF.
4.4.1.1.5	operation			
4.4.1.1.5.1	clearSwitch	OBJECT-IDENTIFIER	not-accessible	It will transmit when the "Clear" switch is pushed.

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Table 5.0.0–4 (Continuation of Table 5.0.0–3) NBM-D88 OID Characteristics

OID	Name	Type	MAX-ACCESS	Description
4.4.1.1.6	pingError			
4.4.1.1.6.1 - 4.4.1.1.6.24	pingError1 - 24	OBJECT-IDENTIFIER	not-accessible	The monitoring object set up for the Ping monitor setups 1-24 can transmit when abnormalities occur.
4.4.1.1.7	pingRecover			
4.4.1.1.7.1 - 4.4.1.1.7.24	pingRecover1 - 24	OBJECT-IDENTIFIER	not-accessible	The monitoring object set up for the Ping monitor setups 1-24 can transmit when recovery from an abnormality occurs.
4.4.1.1.8	appError			
4.4.1.1.8.1 - 4.4.1.1.8.4	appError1 - 4	OBJECT-IDENTIFIER	not-accessible	The monitoring object set up for when the Application monitor setups 1-24 can transmit when abnormalities occur.
4.4.1.1.9	appRecover			
4.4.1.1.9.1 - 4.4.1.1.9.4	appRecover1 - 4	OBJECT-IDENTIFIER	not-accessible	The monitoring object set up for when the Application monitor setups 1-24 can transmit when recovery from an abnormality occurs.
4.4.1.1.10	diConditionMatch			
4.4.1.1.10.1 - 4.4.1.1.10.5	diConditionMatch 1 - 5	OBJECT-IDENTIFIER	not-accessible	It transmits when the conditions set up in the digital input condition setup 1-5 agrees.
4.4.1.1.11	snmpTrapReceived			
4.4.1.1.11.1 - 4.4.1.1.11.16	snmpTrapReceived 1 - 16	OBJECT-IDENTIFIER	not-accessible	It will transmit when the TRAP, set up by the TRAP reception setting 1-16, is received.
4.4.1.2	Entry			
4.4.1.2.1	diEntry			
4.4.1.2.1.1 - 4.4.1.2.1.8	diEntry1 - 8	INTEGER { off(0), on(1) }	read-only	The digital input status 1-8 is stored.
4.4.1.2.2	doEntry			
4.4.1.2.2.1 - 4.4.1.2.2.8	doEntry1 - 8	INTEGER { off(0), on(1) }	read-write	The digital output status 1-8 is stored. The digital output can be controlled by an SNMP SET command.
4.4.1.2.3	control			
4.4.1.2.3.1	clearAction	INTEGER { nop(0), execute(1) }	read-write	The digital output and abnormal condition can be cleared with an SNMP SET command. Do nothing (0) / Execute (1)
4.4.1.2.4	nbmAdditional			
4.4.1.2.4.1	nbmTrapCounter	INTEGER { 0.. 2147483647 }	read-only	It stores the number of times the Trap was sent since the product started up. Traps are transmitted multiple times. When set, the same numerical value is stored in the Trap for the same event.
4.4.1.2.4.2	nbmTrapValue	INTEGER { off(0), on(1) }	read-only	Stores the value of the port that triggered the event transmission when sending a Trap, due to a digital input/output event. OFF(0) / ON(1)

MEMO In order to transmit the trap OID that notifies the occurrence of each event from the main unit, it is necessary to set the "Trap Transmission" in the condition Setup of each function as "Active."

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6. Replacement and Option Parts

This section covers replacement parts for repair and optional items for this product.

6.1 Replacement Parts List

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.

Table 6.1.0–1 NBM Series Replacement Parts

Model Name	Part Name	Part Number
NBM-D88	Rubber Feet	T81800027-F1
	Terminal Buss Cover	Z69544921-F1

6.2 Option Parts

The following option parts for this product are available.

Table 6.2.0–1 Optional Parts

Model Name	Part Name	Part Number
NBM-ANG	Angle type server rack attachment	NBM-ANG

* For further details on the server rack mounting angle, refer to "2.2.2 When using the Angle Type Server Rack Attachment (Optional)."

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7. Maintenance and Inspection

Cleaning
- When cleaning, be sure to disconnect the power before starting.
- The cleaning of this product should be with a soft cloth and a neutral detergent (such as dish soap), diluted with water and should be wiped lightly.
- Do not wipe this product with volatile chemicals, or chemically treated dustcloth containing benzine, thinner etc.
- Do not wipe with a cloth containing too much moisture. If moisture gets inside the product, it can cause short circuiting, electric shock, or fire.
- Periodically remove dust from the electric socket to prevent a fire hazard. By allowing dust to adhere to the power supply terminal, it can be the result of fire or failure from short-circuiting.

Inspection
- Be sure to check the following points when inspecting this product.

Table 7.2.3–1   Inspection Checklist

Inspection Items		Inspection Contents
Supplied Power Source	Power Supply Voltage Tolerance	Tolerable Voltage Range should be from 100 to 240V AC
Surrounding Environment	Operation at ambient temperature	Operating temperature range is between 0 and 40°C.
	Ambient Humidity	Operating ambient humidity is between 20 and 80%.
	Presence of Dust	No dust should be accumulated
Is the wiring or cord loose or have too much slack?		Be sure no excessive slack or looseness is present.

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8. Troubleshooting

Problem	Possible Cause
The power source is not turned on.	Check whether the AC Adaptor is properly connected.
Voltage is not supplied from the output power source Terminal Bus.	The protection circuit may have worked. Turn off the power to this product and check the wiring and equipment connected to the output power source Terminal Bus. Please turn on this product after a while to check that it is starting up normally. Since there is a possibility of internal damage if it does not start, disconinue the use of this product and contact your nearest PATLITE Sales Representative.
The LED on the Main Unit will stop half-way.	Even by doing nothing but wait 1 minute or more as it is, it should start, bu in cases where it does not change, contact the place of purchase or a PATLITE Sales Representative.
It does not operate in DHCP mode.	Check that the environment is connectable with a DHCP server.
The Web setup tool is not displayed.	Check that the LAN cable is connected (LINK display LED lights up).
When logging into the Web setup tool, a browser error occurs.	Check whether the IP address etc. which is displayed on the address bar of the browser is correct.
	Also check if the network Setup of the PC using the browser is connected with this product.
The output terminal block does not move. The output terminal block does not operate as it is supposed to be controlled to do.	Be sure whether the digital output is set as "Active" or not. **[Where to Check]** [Web Setup Tool] -> "Operation Setup Intex" -> "Digital Output Setup"
	Check whether the digital output status is changing for a short time. An output terminal reflects the digital output status in a 100 ms cycle. The digital output status is updated as required in the order of received control content. (Priority is given to the last) For this reason, when the digital output status changes within 100 ms, only that portion of the status occurs in the output terminal. * Various transmission commands and E-mail Sending reflects the order of control content.
	When a lot of management happens in other functions or when management takes time, an output terminal operation may be delayed.
	Check whether the "Automatic OFF" is set.
	Contact parts may be damaged. Refer to the information at the end of this bood, or ask the store where the product was purchased. Check whether the rated current of the equipment linked to the Terminal Buss and the inrush current were over the output terminal ratings.
A digital input does not turn on (status change is not detected). The digital input does not turn off.	Check whether the "Digital Input Setup" is set to "Active." **[Where to Check]** [Web Setup Tool] -> "Operation Setup Intex" -> "Digital Input Setup"
	Check whether there are no open circuits, unconnected wires, short circuit, etc. in the input terminal wiring.
	Check whether the input signal is correctly transmitting to the input terminal. The input signal requires a current value of 1 mA or more and a duration of 110 ms or more.

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Problem	Possible Cause

Socket transmission and RSH command transmission are not sent with the following functions:
  • Digital input Monitoring Function
  • Application Monitoring Function
  • Ping Monitoring Function
  • "Clear" Switch Function
  • Digital input condition Setup Function
	Check the Settings which can be received be the destination equipment. (Port number, protocol, account etc.)

	Check whether the setting of the information to the addressee is correct. **[Where to Check]** [Web Setup Tool] -> "Setup Menu" -> "Socket Transmission Configuration" or "RSH Command Transmission Configuration"
	Please check the settings of the communication devices on the route to the destination; such as the firewall, filtering, port block functions etc., to ensure communication is not cut off.
	When the setup is by the host name, check whether the DNS server address is correctly set up. **[Where to Check]** [Web Setup Tool] -> "Setup Menu" -> "System Configuration"
	If a large amount of socket transmissions or RSH command transmissions occurs in a short time, the transmission processing can not catch up and the newly generated transmission processing is discarded and is not transmitted. Be sure to reduce the number of socket transmission or RSH command transmission functions, or allow enough time between events to trigger transmissions.

It takes time until the socket transmission or RSH transmission is transmitted with the following functions:
  • Digital input Monitoring Function
  • Application Monitoring Function
  • Ping Monitoring Function
  • "Clear" Switch Function
  • Digital input condition Setup Function
	If a large amount of socket transmissions or RSH command transmissions occurs in a short time, the transmission processing can not catch up and the newly generated transmission processing is discarded and is not transmitted. Be sure to reduce the number of socket transmission or RSH command transmission functions, or allow enough time between events to trigger transmissions.

	Check whether the setting of the information to the addressee is correct. If the incorrect information is set, it will take time to send. **[Where to Check]** [Web Setup Tool] -> "Setup Menu" -> "Socket Transmission Configuration" or "RSH Command Transmission Configuration"
The status logs and the operation logs are not recorded.	The status log and operation log are first written to the main memory (DRAM) and written to the internal flash memory at regular intervals. Among these, the main memory log is not saved, and it is erased when either "Power Off", "Restart", or "Press the reset button" is done before the flash memory was written to.
It takes time to display the status log and the operation log on the Web setup tool.	The log displayed by the Web setting tool is the log written to the internal flash memory. When a large amount of logs are generated in a short time, the writing process to the flash memory can not keep up and a delay occurs. Since log information is kept in the main memory, wait until the display is updated.
HTTP command cannot be controlled.	Check whether the "HTTP command control function" is set to "Active." **[Where to Check]** [Web Setup Tool] -> "Setup Menu -> "System Configuration"

Problem	Possible Cause
RSH command cannot be controlled.	The "Designated Sender Address" should be checked as to whether the "designated sender IP address" and "account" are set up correctly, if it is activated.
	If the "Designated Sender Address" is invalid, the "common account" should be checked if it is set up correctly.
	When the command to omit an account is transmitted, check whether the correct account was registered. **[Where to Check]** [Web Setup Tool] -> "Setup Menu" -> "RSH Command Reception Configuration"

	Check that the equipment setup for the designated sender, and the transmission route to the communication facility for the RSH command is not intercepted (whether the RSH command is transmitted to this product, or is going through a firewall, being filtered, or by a port block function, etc.).
	The following is the structure of the communication ports during an RSH command reception.
	  Client NBM-D88
	  ANY ———— FW ————> 514
	  ANY <———— FW ———— ANY
	 ANY is automatically set up between 512-1023.

The application monitor is not operating.	Check whether the Socket Communication is disconnected from the monitoring object application. (If it is disconnected, the monitoring function will stop.)
No operation occurs when there are abnormalities during the application monitor. No operation occurs when there are abnormalities during a Ping monitor.	If a "Clear" switch function is executed during an abnormal condition run time of the operation, because this product is continuing a monitor abnormality status, it will not operate on a monitor abnormality again. A status "Clear" function, or monitoring object acknowledgement has to be performed for this product to return to a monitoring condition.
Even when the "Clear" switch is pushed, the digital output does not turn OFF.	Check to see that the digital output is not set to ON by the "Clear' Button Setting."
The digital output and various transmission do not work with the digital input conditions set up.	Check whether the set-up conditions are conflicting. Priority is given to the Setup number operation in which the "Digital Input Condition Settings" was processed in an order from Setup 1, and was processed after.
	Without pressing the "Clear" switch, check the operating condition in the "Clear" Condition" status to make sure it is set as "Active", and that the conditions will clear when the "Clear" switch is pressed. **[Where to Check]** [Web Setup Tool] -> "Operation Setup Index" -> "Digital Input Condition Settings"
The e-mail transmission does not work.	Check the authentication method and setup for the mail server.
	When the set up is by the host name, check whether the DNS server address is correctly set up. **[Where to Check]** [Web Setup Tool] -> "Setup Menu" -> "System Configuration"
The SNMP SET/GET does not work.	Check whether each community name is set up correctly.

9

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Revision History

The upper right corner of the cover indicating the revision of this manual can be compared with previous revisions according to the table below.

T95100245 [ ]
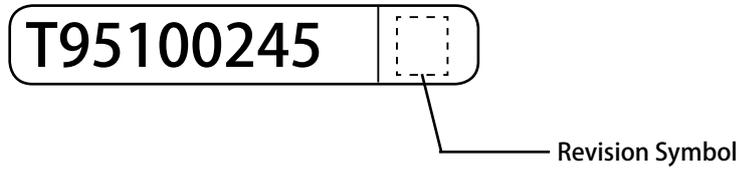
Revision Symbol

Revision Symbol	Revision Date	Revision Contents
A	2017/03/06	New Creation
B	2017/08/25	Added HTTP command control function.

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