












Page number	Page 33	Page 35	Page 37	Page 41	
Model Name	USB-controlled Signal Tower	Transmitter/Receiver for Wireless Data Acquisition System		Network Monitoring Signal Tower with MP3	
Model	LR6-USB	WD-LR-Z2	WD-Z2	NH-FV2	
				NHP	NHL
Product Image					
Ethernet		○ (WDR-LE-Z2)	○ (WDR-LE-Z2)	○	○
USB control	○				
RS-232C					
Size (mm)	φ 60			φ 40	φ 60
IP	65			20	20
Audible sound pressure in dB (at a distance of 1m)	80			88	88
Body	Polycarbonate				
Globe	Polycarbonate			Polycarbonate	Polycarbonate
Light Source	LED			LED	LED
Digital output		1 (WDR-LE-Z2)	1 (WDR-LE-Z2)	1	1
Digital input				4	4
SNMP v1/v2/v3				v1/v2 *	v1/v2 *
RSH				○	○
PING				24	24

* Transmission is with v2c only

Page number	Page 45	Page 48	Page 49
Model Name	Signal Tower	Interface Converter with Signal Tower	Interface Converter
Model	LA6-POE	PHE-3FB3	NBM-D88NN
Product Image			
Ethernet	○		○
USB control		○	
RS-232C		○	
Size (mm)	φ 60	φ 40	
IP	54 (20 for SN)	20	20
Audible sound pressure in dB (at a distance of 1m)	85	80	
Body	ABS		
Globe	Polycarbonate	cap	
Light Source	LED	LED	
Digital output			8
Digital input			8
SNMP v1/v2/v3			v1/v2 *
RSH			○
PING			24

* Transmission is with v2c only

Page number	Page 42		Page 51
Model Name	Network Monitoring Signal Tower		Interface Converter
Model	NH-FB2		PHC-D08N
	NHP	NHL	
Product Image			
Ethernet	<input type="radio"/>	<input type="radio"/>	
USB control			<input type="radio"/>
RS-232C			<input type="radio"/>
Size (mm)	φ 40	φ 60	
IP	20	20	20
Audible sound pressure in dB (at a distance of 1m)	80	80	
Body			
Globe	cap	cap	
Light Source	LED	LED	
Digital output			8
Digital input			
SNMP v1/v2/v3	v1/v2 *	v1/v2 *	
RSH	<input type="radio"/>	<input type="radio"/>	
PING	24	24	

* Transmission is with v2c only

* For specifications, see the product page.

LR6-USB



LR6-3USBW-RYG
LR6-3USBK-RYG
(pre-assembled product)

LR6-USBW
LR6-USBK
(body unit)

- PC or HMI controlled
- Custom programming made easy with our free software library (.DLL)
- Open architecture makes it possible to control the device with other operating systems such as Linux
- Supports HID class. No exclusive drivers necessary
- Supports solid color, clear-globe, and 7-in-1 multi-color LED units
- IP65 protection rating - High water and dust protection



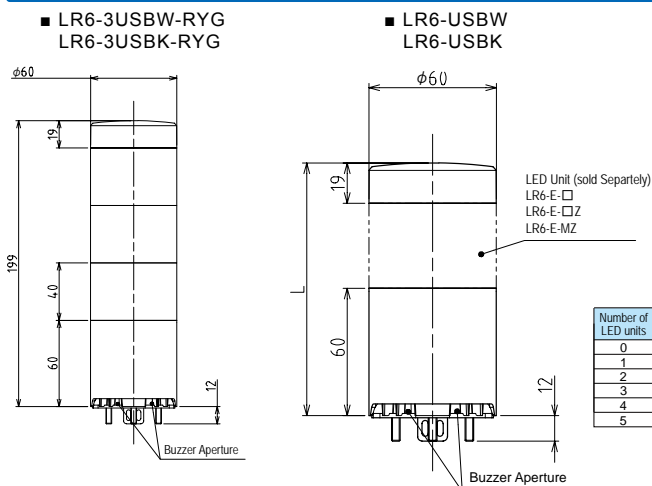
(Sold separately) (Sold separately)

Specifications

Model	LR6-3USBW-RYG LR6-3USBK-RYG (pre-assembled product)	LR6-USBW LR6-USBK (body unit)
Rated Voltage	5V DC (USB bus power)	
Operating Voltage Range	Rated voltage ±5% (Compliant with USB2.0 standard)	
Rated Current Consumption	Maximum	500mA
Ambient Operating Temperature	-20 °C to +50 °C	
Ambient Operating Humidity	90% RH or less, no condensation	
Mounting Location / Direction	Indoors, Upright	
Protection Rating	IP65 (IEC 60529)/ NEMA TYPE 4X, 13*	
Mass (Tolerance: ±10%)	320g	140g
LED unit control	Lighting, light off, pattern on (4 types)	
Audible control	Buzzer on, buzzer off, sound pattern 4 types / select from 13 pitches	
Audible sound pressure	Typ. 80dB (approximately 10dB with sound reduction) (at a distance of 1m in front of the buzzer aperture) Frequency 2349.3Hz	
Communication method	USB 2.0 Full Speed	
Software Library (DLL) supported operating systems	Windows® 7, Windows® 8 (except RT), Windows® 8.1 (except Windows® 8.1RT), Windows® 10	

* Except when using pole bracket or wall bracket.

Dimensions (mm)



Communication Specifications

※ For details, please see the Instruction Manual, which you can download from our website.

Development language and supported software (DLL)	
Development language	C, C++, C#, VB
Compatible software	Visual Studio 2008, 2012, 2013



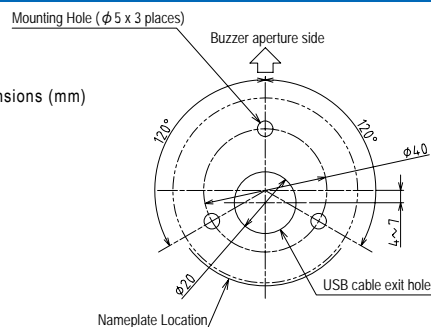
API list (Software library (DLL))

Starting USB communication	Ending USB communication	Controlling LED unit with the selected color (lighting/off)
Controlling multiple LED units	Controlling the buzzer with selected buzzer pattern (play sound)	Controlling the buzzer with selected buzzer pattern and pitch
Turning off all LED units and stopping the buzzer	Getting the firmware version with communication in progress	Getting the DLL version

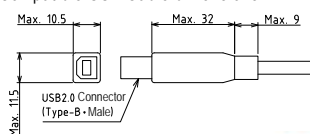
Communication Data Format (protocol specifications)

Byte 1	Byte 2	Byte 3	Byte 4
Command version	Command ID	Buzzer control	Buzzer pitch
"If you emit sound (continuous) with red lighting, buzzer pattern 1 (Sound A:D7, Sound B:off)"			
0x00	0x00	0x02	0x60
Byte 5	Byte 6	Byte 7	Byte 8
LED control			
R	Y	G	B
		C	Static
"If you emit sound (continuous) with red lighting, buzzer pattern 1 (Sound A:D7, Sound B:off)"			
0x10	0x00	0x00	0x00

Mounting Dimensions (mm)



Compatible USB Cable dimensions



* This product does not include an USB cable. Please provide your own.

Model Code

LR6-□USBW-RYG

Number of tiers		Body Color		LED Unit Colors	
Blank	Body Unit only	W	Off-white	Blank	Body Unit only
3	3 tiers	K	Black	RYG	From top; red, yellow, and green

Optional Parts

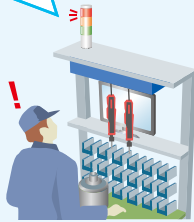
For details, see pages 182 to 187.

Optional Parts	Model
Pole Bracket	SZP-004W/SZP-004K
Wallmount Bracket	SZK-003W/SZK-003K
Circular Mounting Bracket	SZ-016A
Circular Mounting Bracket1	SZ-010
Pole (100mm)	POLE-100A21(K)
Pole (300mm)	POLE-300A21(K)
Pole (800mm)	POLE-800A21(K)

Ideal for Factory Automation, Unique Solutions for USB Connections

Production line

An error was made



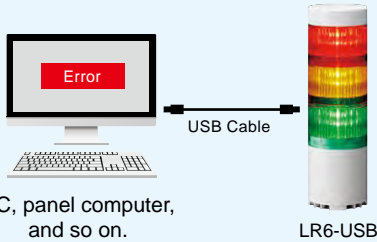
With this easy-to-use and understand signal tower, you can alert and notify users about what is happening on the production lines.

The signal tower connects to a production line PC with a single USB cable. Working with a program to notify of situations such as where an error has occurred, or when a button on the touch panel is pressed, you can control flashing LED units or sound the buzzer.

With DLL support (for Windows®), you can easily build programs.

Control is possible with other operating systems as well.

Use for a variety of purposes, such as notifying a manager.



PC, panel computer, and so on.

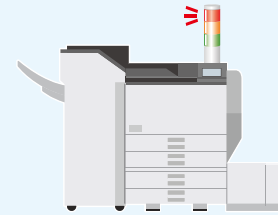


Production office



Visualize the production site status.

Installed on equipment



Works with PC controlled equipment, such as a printer. Alerts for out-of-paper or other errors.

Supports both, DLL control and protocol control

By using DLLs, you can build your programs more easily. Possible for control on other operating systems based on the protocol specifications.

As it is a HID class device, it does not require a proprietary driver.



- ◆ LED Unit
Lighting, light off, pattern on (4 types)
- ◆ Buzzer
Buzzer on, buzzer off, and 4 types of sound pattern
Select 2 from 13 pitches

Compatible LED Units



LR6-E -R/Y/G/B/C LR6-E -R/Z/YZ/GZ/BZ LR6-E-MZ

- Maximum 5 LED units (LR6-E-□,LR6-E-□Z) can be installed in total.
- Cannot be used with non-compatible LED units
- Multiple LED units of the same color (LR6-E-□,LR6-E-□Z) cannot be used.
- When LR6-E-MZ is connected, cannot connect other units.
- When LR6-E-MZ is connected, there are 2 types of patterns.

Demo Software



Confirm actual operation of the LED unit and buzzer. For details, please see our website.

Supports wall mount and pole mount

We also have wallmount brackets and optional mounting poles.



Example

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

WD-LR-Z2

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



WDR-LE-Z2



WDT-6LR-Z2 WDT-5LR-Z2



LR LED Signal Tower Series compatible Transmitters (WDT) and Receiver (WDR).

The Wireless Data Acquisition System is a cost-effective, IIoT-enabled add-on for the LR Series. This system allows signal towers to wirelessly transmit equipment status changes to a host PC for real-time monitoring and data analysis. Identify production bottlenecks, enhance supervisory control, optimize productivity, and improve Overall Equipment Effectiveness (OEE) with this complete, networked solution.



Transmitter Installation

Simply twist to unlock and remove segments. The WD transmitter is then twisted on above the Signal Tower base unit. No tools necessary for installation.

Transmitter

Receiver



Transmitter for LR6 Signal Tower
WDT-6LR-Z2

LR6 Series Current Consumption **typ.20mA**

Estimated reach of radio waves **20m**^{*2}



Transmitter for LR5 Signal Tower
WDT-5LR-Z2

LR5 Series Current Consumption **typ.20mA**

Estimated reach of radio waves **20m**^{*2}



Stationary Receiver
WDR-LE-Z2

Connection method **LAN/USB** Current Consumption **typ.65mA**

Can operate **3** multiple units^{*3} Recommended number of connected transmitters **20**^{*1} Maximum 30

*1 Because of the characteristics of radio waves, the actual number may vary depending on the installation location, communication environment, and communication frequency.
 *2 Because of the characteristics of radio waves, this number is for reference only.
 *3 Using LAN wiring, you can operate multiple transmitters / receivers simultaneously. (Please contact us for details.)

Optional



Setup Kit (for WDT-6LR-Z2)
Model: WDX-6LRB



Setup Kit (for WDT-5LR-Z2)
Model: WDX-5LRB



Hardware System Setting Software
Model: WDS-WIN01

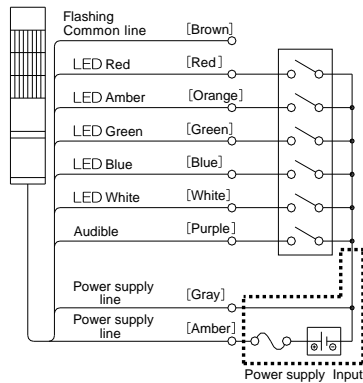


Global AC adaptor (for WDR-LE-Z2)
Model: ADP-001
Supported countries: Japan, EU, USA, China, South Korea, Taiwan, Thailand, Indonesia, Canada, Philippines, and Vietnam

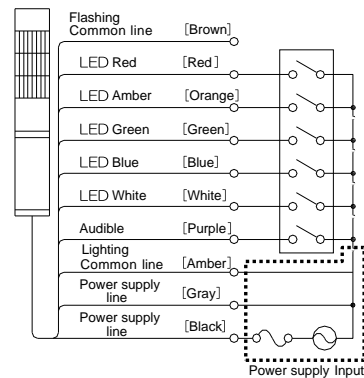
Model	WDT-5LR-Z2	WDT-6LR-Z2
Connectible types	LR5 Signal Tower Mount on top of the body unit	LR6 Signal Tower Mount on top of the body unit
Rated Voltage	24V DC	
Operating Voltage Range	19.0 - 26.4V DC	
Rated Current Consumption	Maximum 55 mA	
Ambient Operating Temperature	-10 °C to +50 °C	
Ambient Operating Humidity	85% RH or less, no condensation	
Storage Ambient Temperature	-20 °C to +60 °C	
Storage Ambient Humidity	85% RH or less, no condensation	
Mounting location	Indoors	
Mounting direction	Upright	
Protection Rating (based on LR model)	IP65 (IEC 60529)/ NEMA TYPE 4X, 13	
Mass (Tolerance: ±10%)	74 g	85g
Supported countries and regions	Japan, USA, EU, China, Indonesia, Taiwan, South Korea, Thailand, Malaysia, Singapore, Philippines, Vietnam, Canada, Mexico, and Brazil	
Communication Standard	IEEE 802.15.4 (wireless communication)	
Communication Frequency	2405MHz - 2480Mhz (16 channels)	
Input Signal	Control signal input	
Number of inputs	6 points (red, amber, green, blue, white, buzzer)	
Input Reaction Time	100 ms or longer	
Display Unit	Indicator for status display	
Operation Unit	DIP Switch for setting	

Wiring Diagram

■ Power supply Voltage: 112V DC / 24V DC

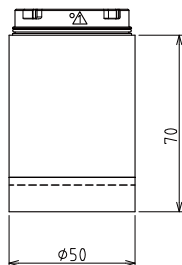


■ Power supply Voltage: 100V AC - 240V AC

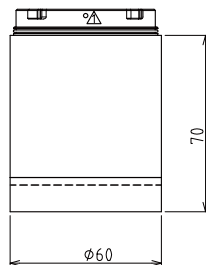


Dimensions (mm)

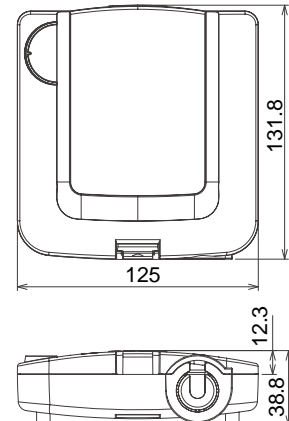
Model WDT-5LR-Z2



Model WDT-6LR-Z2



Model WDR-LE-Z2



WD-Z2

Network

Signal Tower

Signal Light

Revolving Warming Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



LME and LE LED Signal Tower Series compatible Transmitters (WDT) and Receiver (WDR).

The Wireless Data Acquisition System is a cost-effective, IIoT-enabled, retro-fit solution for the LME and LE Series. This system allows signal towers to wirelessly transmit equipment status changes to a host PC for real-time monitoring and data analysis. Identify production bottlenecks, enhance supervisory control, optimize productivity, and improve Overall Equipment Effectiveness (OEE) with this complete, networked solution.

Transmitter

Receiver

Transmitter for LME Signal Tower

WDT-6M-Z2

Compatible Signal Tower Types^{*1}
LME Series

Current Consumption
typ.20mA

Estimated reach of radio waves^{*3}
20m

Transmitter for LE Signal Tower

WDT-5E-Z2

Compatible Signal Tower Types^{*1}
LE Series

Current Consumption
typ.20mA

Estimated reach of radio waves^{*3}
20m

Stationery Receiver

WDR-LE-Z2

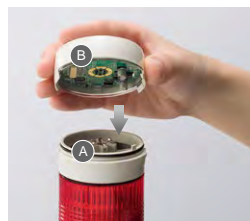
Current Consumption
LAN/USB

Current Consumption
typ.65mA

Can operate multiple units^{*4}

Recommended number of connected transmitters
20^{*2}
Maximum 30

*1 There are some restrictions on signal tower compatibility. Please contact us for details.
 *2 Because of the characteristics of radio waves, the actual number may vary depending on the installation location, communication environment, and communication frequency.
 *3 Because of the characteristics of radio waves, this number is for reference only.
 *4 Using LAN wiring, you can operate multiple transmitters / receivers simultaneously. (Please contact us for details.)



About Transmitter Installation
 Installation is simple: Attach the transmitter bracket **A** to the Signal Tower, affix the bracket with the center screw of the Signal Tower, then fit the top cover. **B**
 (Some wiring may be required.)



Global AC adaptor (for WDR-LE-Z2)
 Model: ADP-001
 Supported countries: Japan, EU, USA, China, South Korea, Taiwan, Thailand, Indonesia, Canada, Philippines, and Vietnam

Specifications

Transmitter: General Specifications

Item	Specifications	
Model Name	WDT-6M-Z2	WDT-5E-Z2
Signal Tower Conformity	LME Series	LE Series
Rated Voltage	24V DC (no polarity)	
Operating Voltage Range	21.6V DC to 26.4V DC	
Current Consumption	20mA ±10mA	
Ambient Operating Temperature	-10 to 60°C	
Relative Humidity	85% RH or less (no condensation)	
Storage Ambient Temperature	-20 to 70°C (free from freezing)	
Mounting direction (indoors only)	Upright only (indoors only)	
Protection Structure	Conforms to the mounted Signal Tower	
Mass	52g±5g	
Usable regions	Japan, The United States of America, Europe, China, Indonesia, Taiwan, Thailand, Philippines, Vietnam, Mexico	

Wireless specifications

Item	Specifications
Wireless Communication Standard	IEEE 802.15.4
Wireless Communication Frequency	2405MHz to 2480 MHz (16 channels)
Wireless Transmitting / Receiving Method	Direct Sequence (DS-SS*) method
Wireless Communication method	ZigbeePRO Stack, ZigBee2007 compliant (with proprietary profile implemented)
Wireless Communication Speed	Theoretical maximum value 250 kbps *2
Wireless Transmission Output	Maximum 3m or less (at the antenna power point)
Reach of radio waves*3	Approximately 20m from source (reference value)
Number of relays	Maximum 30

* 1: DS-SS = Direct Sequence-Spread Spectrum

* 2: Because of the characteristics of radio waves, the actual number may vary depending on the installation location and communication environment.

* 3: Because of the characteristics of radio waves, the actual number may vary depending on the installation location, communication environment, and communication frequency.

Receiver: General Specifications

Item	Specifications
Model Name	WDR-LE-Z2
Rated Voltage	24V DC
Operating Voltage Range	21.6V DC to 26.4V DC
Current Consumption	65mA ±15mA
Ambient Operating Temperature	-10 to 60°C
Relative Humidity	85% RH or less (no condensation)
Storage Ambient Temperature	-20 to 70°C
Mounting direction (indoors only)	-10 to 70°C (When using AC adaptor) (free from freezing)
Mounting direction (indoors only)	Upright (wall mount) Horizontal (horizontal installation)
Protection Structure	IP20
Mass	170g±10g
Usable regions	USA, Europe, China, Indonesia, Taiwan, Thailand, Philippines, Vietnam, Mexico, Korea, Brazil, Canada, Malaysia, Singapore

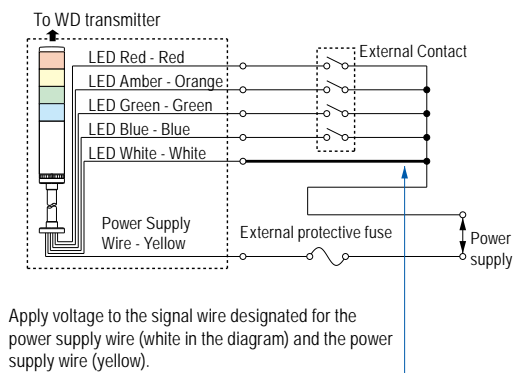
WDR-LE-Z2 does not come with an AC adaptor.

Function

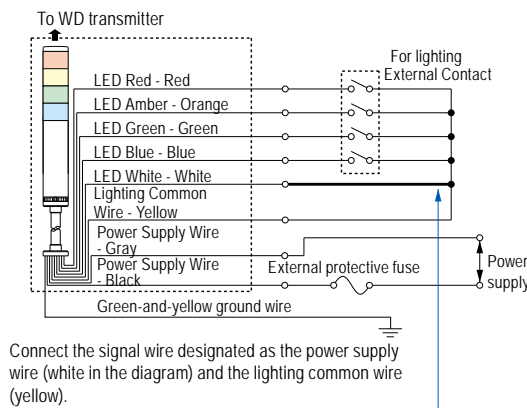
Item	Specifications
Model Name	WDR-LE-Z2
Communication Specifications	10BASE-T/100BASE-TX (Full/Half)
USB	USB1.1/USB2.0 (full speed supported) * Connection with USB hub is not supported
Output Specifications	Non-Voltage Contact: 1 point (24V DC 500mA)

Wiring Diagram

● 24V AC/DC model



● 100/120/220/200/230-240V AC Model Specifications

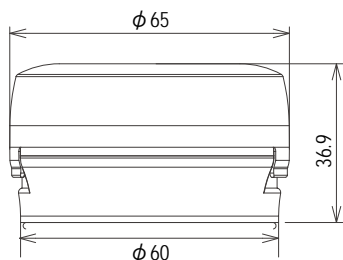


To operate the transmitter, power must always be supplied.

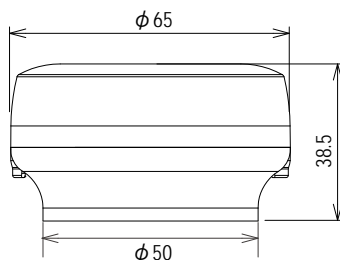
As shown in the diagram to the left, apply voltage all the time to one of the signal wires. (In the example, power is supplied using the white signal wire.)

Dimensions (mm)

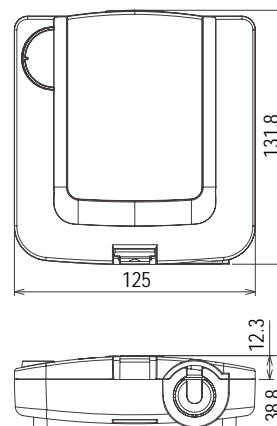
Model WDT-6M-Z2



Model WDT-5E-Z2



Model WDR-LE-Z2



How to use the WD Application Software

① When using software packages from PATLITE partners that support the WD system

You have the benefit of being able to start operations right away following installation of the WD system.

② When developing your own analysis and data acquisition applications

(1) Use generated CSV log data with Hardware System Setting Software.

(2) Without using Hardware System Setting Software, work directly with the data packets received by the transmitter on the PC or PLC.

* For details about socket communication and communication with PLCs, contact your local sales representative.

Hardware System Setting Software

Model:WDS-WIN01



Improved ease of use
by combining 3 applications

Data collection

File settings

System settings



Splitting files

Easy-to use
interface

Language settings
function

Supports WD-LR-Z2
extended format

(Recommended Operation Environment)

Windows7 (32/64bit), 8.1 (32/64bit), 10 (32/64bit),
Windows server 2012R2 (64bit), 2016 (64bit)

* Other than data collection, complimentary use of the other functions.

You can split the file according to your needs

Want to collect operation data for each machine



Generate CSV file for each transmitter



Want to collect data for each line or building



Generate CSV file for each receiver



Want to collect data for each work shift



Generate CSV file for each work shift by specifying time periods (maximum 3 shifts)



Want to avoid increasing time for data analysis because of increased data



Split CSV file by file size (between 100 and 1000 KB)



Contents of CSV file generated by Hardware System Setting Software

Updated in real time

As the equipment operation status changes, data is updated in real time. By setting up user name, you add equipment name for each transmitter.

Create a file per day

Use "Patlog_autoyyyy_mm_dd.csv" as the file name to automatically generate one file each day. (Initial settings)

Record data every second

Date/Time is determined by the PC clock data, and recorded down to the second.

Date/Time	MAC address	User name	Red information	Amber information	Green information	Blue information	White information	Buzzer information	WDT monitoring information
10/18/2017 8:10:15	58C232FFFE57811C	Device1	0	0	1	0	0	0	9
10/18/2017 9:15:35	58C232FFFE57811C	Device1	0	0	0	2	0	0	9
10/18/2017 9:30:45	58C232FFFE57811C	Device1	0	0	1	0	0	0	9
10/18/2017 9:55:50	58C232FFFE57811C	Device1	1	0	0	0	0	1	9
10/18/2017 10:5:30	58C232FFFE57811D	Device2	0	0	1	0	0	0	9

Standard Format

Extended Format


With the WDS-WIN01 extended function, you can automatically collect information like this.

Red, yellow, green, blue, and white signal light information	0: Light off, 1: Lighting, 2: Flashing,
Audible information*	0: OFF, 1: ON
WDT monitoring information	0: WDT is disconnected (equipment power off), 9: WDT is connected (equipment power on)

* The status is also 1.ON, when Audible and flashing COM are synchronized.

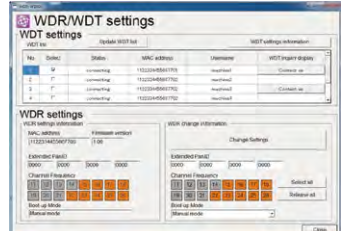
User Interface

Data collection screen*

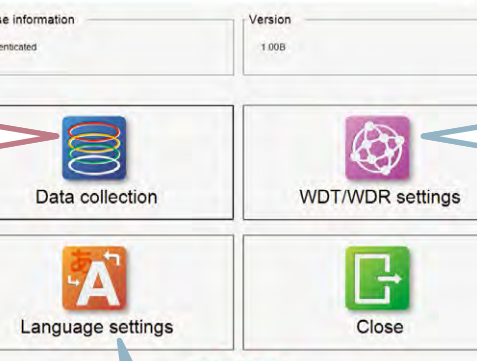


Equipment operation status is saved to the CSV file in real time.

Setting Screen



Specify various settings such as wireless Channel and group ID for transmitter/receiver



PATLITE.

Language settings

Change the display language between English and Japanese

* To use data collection, purchasing a "WDS-WIN01" license key is required.

Network
Signal Tower
Signal Light
Revolving Warning Light
Cube Tower
Audibles
Hybrid Signaling Devices
LED Illumination
Options

NHP-FV2/NHL-FV2



- Audible alarm and MP3 voice alert functions
- Built-in digital output and contact inputs
- Able to send email alerts
- Monitor network device status using SMNP protocol

Network

Signal Tower

Signal Light

Revolving Warming Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

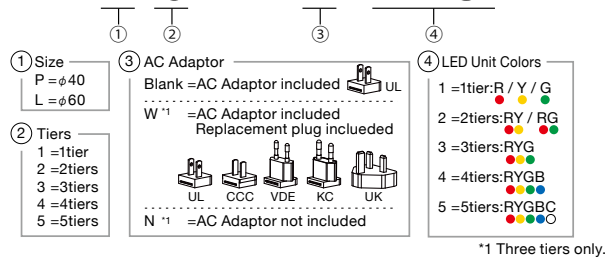
Options

Specifications

Product Model		NHP-3FV2-RYG NHL-3FV2-RYG
Network	Physical Layer	Ethernet (IEEE 802.3 compliant) 10BASE-T / 100BASE-TX (auto-negotiation, full duplex/half duplex)
	Data Link Layer	CSMA / CD
	Network Layer	IP, ICMP, ARP
	Transport Layer	TCP/UDP
	Application Layer	HTTP, SMTP, SNMP, RSH, NTP, POP, DNS, SOCKET, DHCP, SLMP
General	Clear Switch	Yes (Lights off and Stop Audio)
	Self Diagnosis Function	Yes
	Number of tiers	1 - 5 tiers (can change after purchase)
	Color Order	Standard colors (can change after purchase)
	Setting function	Web Setup
	Luminous Color	Red, Amber, Green, Blue, White (LED) Clear Globe
	Flashing Rate (Frequency)	60/minute
	Sound Pressure Level (at 1m/variable)	Maximum 88dB or more - 0
	Sound Type	Sound / Buzzer / Message
	Audio Line Output	Yes
Signal light	Number of Playback Sounds	Max 70 types
	Buzzer Sound	4 types (short intermittent beeps) (slow intermittent beeps) (2 short intermittent beeps) (*continuous beep)
	Sound Playback Mode	Playback from Latest Input / Memory Playback
	Volume Control	Stepless Analog Volume Control / Input from Web Screen
	BUSY Output	Yes
	Power Consumption	Main Unit 2.2W 3.5W
	Rated Voltage	Main Unit: 24V DC / AC Adaptor: 100 - 240V AC
	Operation Temperature Range	0 - 40°C
	Operation Humidity Range	20 - 80% RH (no condensation)
	External Contact Output	1 point
Main unit	External Contact Input	4 points
	USB port	TYPE-A 1 point
	Operation Unit	Clear Switch, Reset Switch, Test Switch, Mode Switch, Volume
Conformity standards		RoHS Directive EN50581 EMC Directive EN55032 (Class A), EN55024 FCC Part 15 Subpart B Class A, ICES-003 Class A UL1638, UL464, CSA C22.2 No.205 KC Certification KN61000-6-4, KN61000-6-2* PSE specified electrical equipment (enclosed AC adaptor only. The main unit is not PSE-specified) * N Model only

Model Code

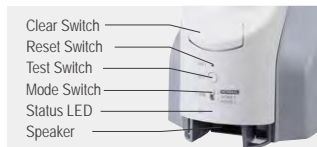
NHL-3FV2N-RYG



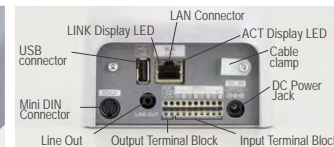
*1 Three tiers only.

Operation part / Connection part

Front Operation Interface



Back Connection Interface



Optional Parts

Wallmount Bracket
NH-WST2



Dimmer Film
NHL-TF (for NHL-FV2/FB2)
NHP-TF (for NHP-FV2/FB2/PHE-3FB3)



Supported LED Unit



LR4/6-E-R/Y/G/B/C



LR4/6-E-RZY/GZ/BZ

- The maximum number of LED unit attachments for LR4/6-E-□ and LR4/6-E-□□, is five in total.

Dimensions (mm)

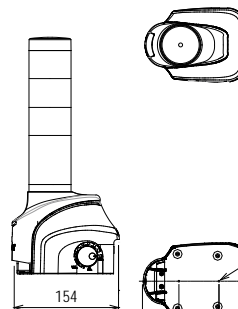
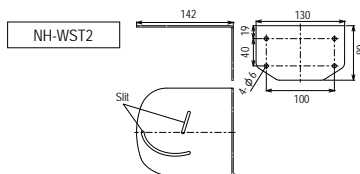
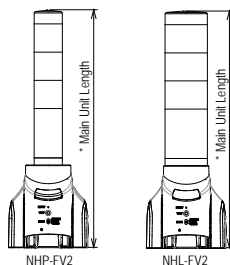
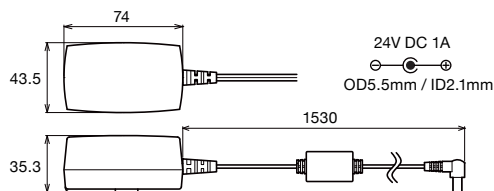
NHP-□FV2 Main Unit Length and Mass by number of tiers

Number of tiers	1 tier	2 tiers	3 tiers	4 tiers	5 tiers
Main Unit Length (mm)	256	296	336	376	416
Mass (g)	945	980	1015	1050	1085

NHL-□FV2 Main Unit Length and Mass by number of tiers

Number of tiers	1 tier	2 tiers	3 tiers	4 tiers	5 tiers
Main Unit Length (mm)	256	296	336	376	416
Mass (g)	1030	1090	1150	1210	1270

AC Adaptor



Common Portion Dimensions

NHP-FB2/NHL-FB2



- Designed to compliment office spaces
- Up to 5 LED units with 2 types of flashing patterns
- 4 audible alarm sound types

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

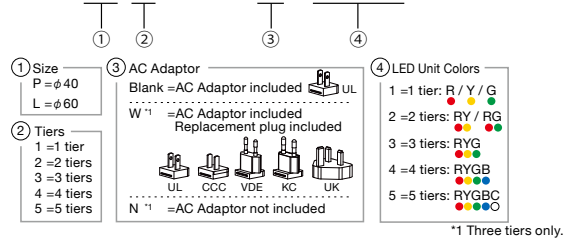
Options

Specifications

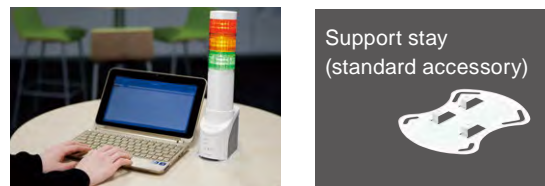
Product Model		NHP-3FB2-RYG	NHL-3FB2-RYG	
Network	Physical Layer	Ethernet (IEEE 802.3 compliant) 10BASE-T / 100BASE-TX (auto-negotiation, full duplex/half duplex)		
	Data Link Layer	CSMA / CD		
	Network Layer	IP, ICMP, ARP		
	Transport Layer	TCP / UDP		
	Application Layer	HTTP, SMTP, SNMP, RSH, NTP, POP, DNS, SOCKET, DHCP, SLMP		
General	Clear Switch	Yes (Lights off and Stop Buzzer)		
	Self Diagnosis Function	Yes		
	Number of tiers	1 - 5 tiers (can change after purchase)		
	Color Order	Standard colors (can change after purchase)		
Signal Light	Setting function	Web Setup		
	Luminous Color	Red, Amber, Green, Blue, White (LED) Clear Globe		
	Flashing Rate (Frequency)	60/minute		
	Sound Pressure Level (at 1m variable)	Maximum 80dB or more, Minimum 70dB or less		
	Sound Type	Buzzer		
	Number of Playback Sounds	4 types		
	Buzzer Sound	4 types (short intermittent beeps) (slow intermittent beeps) (2 short intermittent beeps) (*continuous beep)		
	Volume Control	Change between Large, Small, and Off with a slide switch		
	Main Unit	Power Consumption	Main Unit 2.0W 4.0W	
		Rated Voltage	Main Unit: 24V DC / AC Adaptor: 100 - 240V AC	
Operation Temperature Range		0 - 40°C		
Operation Humidity Range		20 - 80% RH (no condensation)		
Operation Unit		Clear Switch, Reset Switch, Test Switch, Mode Switch, Volume Switch		
Conformity standards		RoHS Directive EN50581 EMC Directive EN55032, EN55024 FCC Part 15 Subpart B Class B, ICES-003 Class B UL1638, UL464, CSA C22.2 No.205 KC Certification KN61000-6-2, KN61000-6-4* PSE specified electrical equipment (enclosed AC adaptor only. The main unit is not PSE-specified) * N Model only		

Model Code

NHL-3FB2N-RYG



Installation Image



Optional Parts



Supported LED Unit



- The maximum number of LED unit attachments for LR4/6-E-□ and LR4/6-E-□□, is five in total.

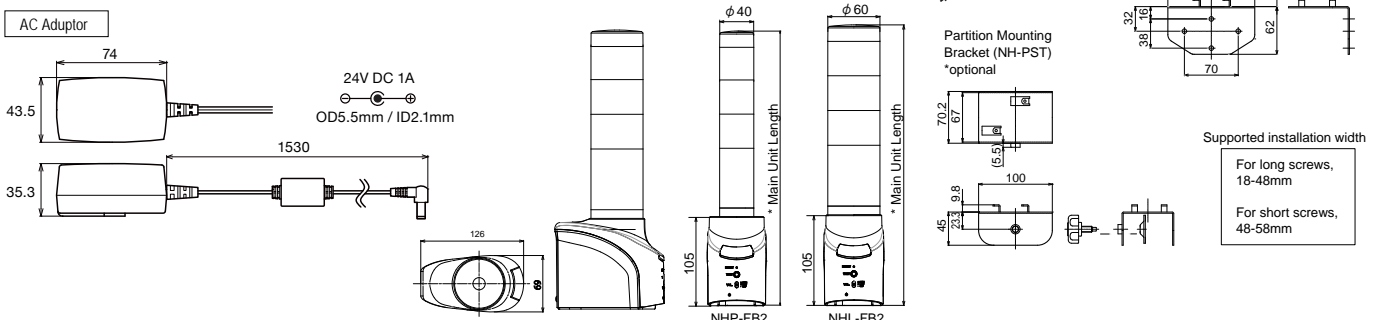
Dimensions (mm)

NHP-□FB2 Main Unit Length and Mass by number of tiers

Number of tiers	1 tier	2 tiers	3 tiers	4 tiers	5 tiers
Main Unit Length (mm)	244	284	324	364	404
Mass (g)	575	610	645	680	715

NHL-□FB2 Main Unit Length and Mass by number of tiers

Number of tiers	1 tier	2 tiers	3 tiers	4 tiers	5 tiers
Main Unit Length (mm)	244	284	324	364	404
Mass (g)	660	720	780	840	900

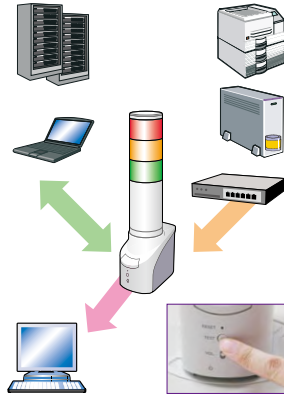


Various monitoring functions supported

PING Device Monitor

Monitors Device Existence on the Network

Each NH Tower initiates PING interaction for up to 24 network devices. When a PING response fails, light/sound signaling occurs to warn administrators.



SNMP v1 · v2c

Monitor networking equipment at a low cost

Many network devices (UPS, printers, routers, switches, etc.) generate SNMP TRAP messages when a failure occurs. The NH tower can trigger light/sound signaling based on these messages to warn the administrator.

It can distinguish the various TRAPS. Register up to 16 groups (4 nodes per group).

Application Monitoring

The tower can monitor important background applications and signal the administrator upon any failure.

Self Diagnosis Function

The test switch on the front of the Body can check the Signal Tower and buzzer operation functions easily without it being controlled through the network.

Various Communication Commands

Control with HTTP Commands

You can send HTTP communication commands to control all notification patterns.

NH-FB Series / NH-FV Series
Execute command (Red, Amber, Green, Lighting, Sound Buzzer)
`http://192.168.10.1/api/control?alert=111001`
Execute command (execute clear operation)
`http://192.168.10.1/api/control?clear=1`

NH-FV Series
Execute command (Red - Lighting, Amber - Flashing 1, Playback message on ch 10 once)
`http://192.168.10.1/api/control?led=12000&sound=10`
Execute command (digital output ON)
`http://192.168.10.1/api/control?output=1`

OUT → Revolving Light, Text Display Board, Synthesized Voice Alarm and so on.

RSH

RSH Control

It is easily controllable by RSH commands, which is a flexible protocol. Network integrated management software and event information, including various monitor tools etc., are turned into a trigger to cause lighting, flashing, and the buzzer to sound in synchronicity with the light of the Signal Tower.

NH-FB Series / NH-FV Series
Event Occurrence: Execute command (Red, Amber, Green, Lighting, Sound Buzzer)
For RSH:
`rsh 192.168.10.1 -l root alert 111001`

NH-FV Series
Event Occurrence: Execute command (Playback message on ch 10)
For RSH:
`rsh 192.168.10.1 -l patlite sound 10`

SOCKET Communication

PHN Command Compatibility

It is controllable with 2 byte commands.
* Compatible with NHE-3FB, NHC-3FB, NHM-3FB, and PHN-3FBE1.
* There are restrictions on some functions.

Event Occurrence: Execute command (Red, Amber, Green, Lighting, Sound Buzzer)
For PHN compatible commands: 0x57, 0x17

* NH-FV Series does not support sound playback using PHN compatible commands.

PNS Command Compatibility

By using PNS commands, you can control all notification patterns.

* PNS commands are the proprietary commands.

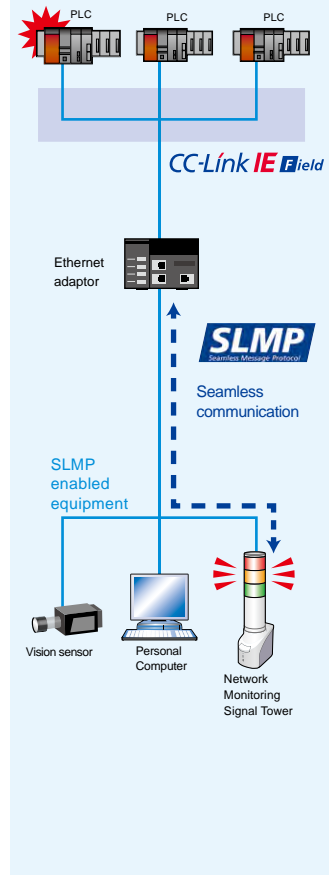
NH-FB Series / NH-FV Series
Event Occurrence: Execute command (Red, Amber, Green, Lighting, Sound Buzzer)
For PNS command: 0x58, 0x58, 0x53, 0x00, 0x00, 0x06, 0x01, 0x01, 0x01, 0x00, 0x00, 0x01

NH-FV Series
Event Occurrence: Execute command (Playback message on ch 10)
For PNS command: 58h, 58h, 56h, 00h, 00h, 04h, 01h, 00h, 00h, 10h



SLMP, MC protocols supported. You can connect the unit to a CC-Link IE field network.

The unit regularly sends commands to PLCs in the CC-Link IE field network, and can notify you of retrieved data by light, sound, email, and/or trap.

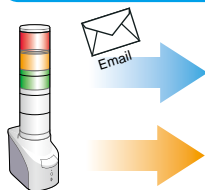


Detailed Alert Function Settings

Send e-mail with a maximum of eight events (selectable)

The subject name and text corresponding to a diverse event can be created. It exceeds in the complete e-mail authentication function securely.

Email transmission

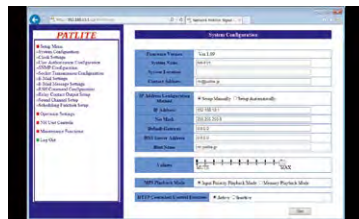


SNMP v2c

Can transmit from a maximum of eight locations.

Easy setup from a web browser

The detailed setup for the Body can be accessed over a web browser to its IP address. Firmware can also be upgraded remotely.



▲ Web Settings screen

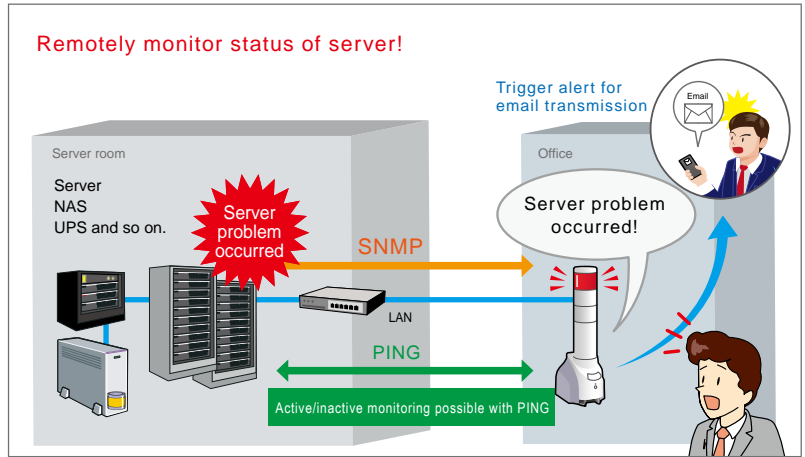
Supports DHCP

Supports DHCP client functions, such as getting network information, IP address for example, from the DHCP server.

Use for all sorts of cases.

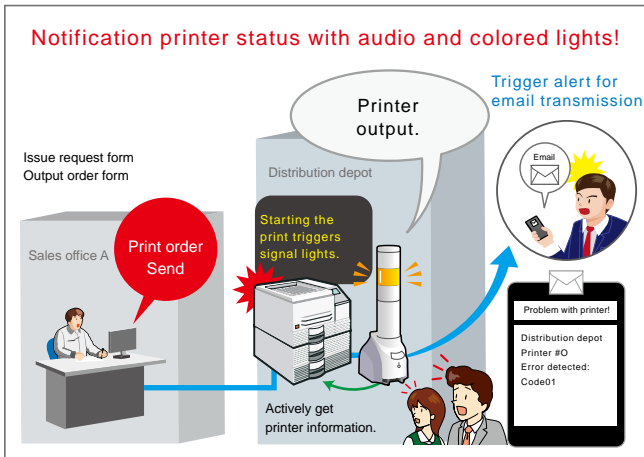


Remote monitoring of server



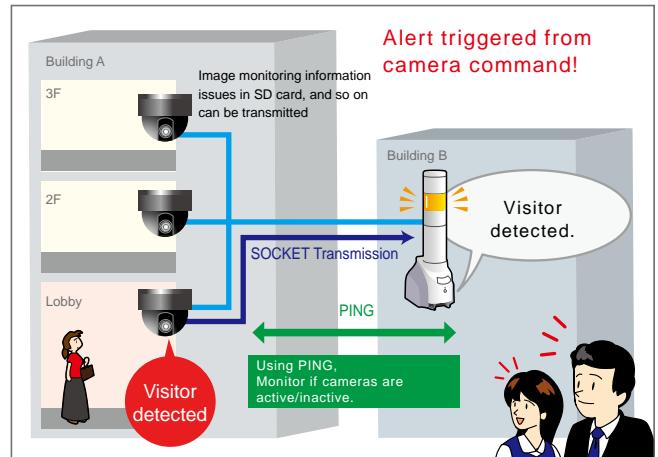
Remotely monitor the status of the server, NAS, UPS and so on. When an error occurs, a command is received via LAN, and the manager is notified as the unit works in conjunction with other equipment (contact input / output). At the same time, email notifying the problem is sent to the specified recipients.

Notification triggered by printer output



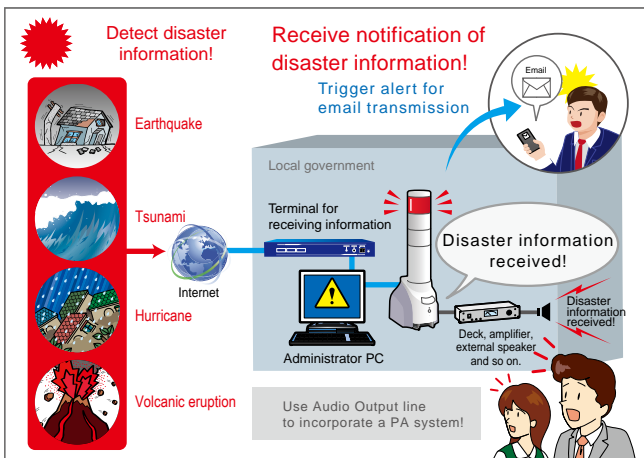
When a process starts from printer output, the person who sends the output is not necessarily the same person who receives the output. In this case, you can use the monitoring function of NH-FV to alert the status of the printer with lights and sound, so that the printout is not left unnoticed.

Notification based on information from network camera



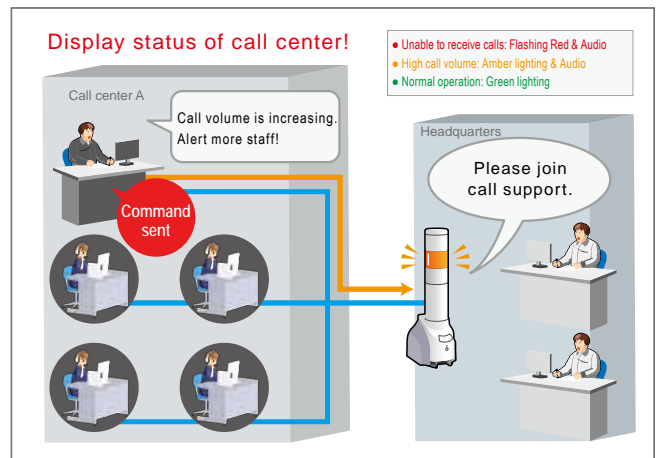
You can turn on the NH Series lights when a camera detects visitors or notify the manager to act quickly. Also, from the NH Series you can monitor if network cameras are active/inactive, ensuring stable operation of the system.

Notification disaster information



When a natural disaster alert is received, the NH Series can promptly alert you with lights and sound and notify the fire department and local government. By ensuring important information is not overlooked or left unnoticed, you can promote prompt communication with local residents.

Notification from call center



By alerting the operator's call status with signal lights, occurrences of call waiting due to call volume and an absence of operators that cause problems of getting no response can be avoided, promote follow-up by managers, and heighten awareness of operators.

LA6-POE

Network

Signal Tower

Signal Light

Revolving Warming Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



LA6-5DTNWB-POE (direct mount type)

LA6-5DSNWB-POE (stationary type)



* Direct Mount only

- Programmable, multi-color signal towers designed to replace standard stack lights
- Features 21 LED colors and 11 alarm types, all in a single part number
- Ethernet connection with PoE (Power over Ethernet) support, enabling single cable installations

What is PoE (Power over Ethernet)?

System that passes electric power along with data on twisted pair Ethernet cabling. This allows a single cable to provide both power and data to devices.

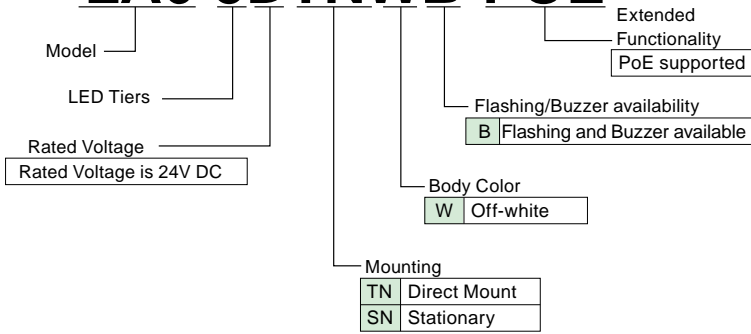


Specifications

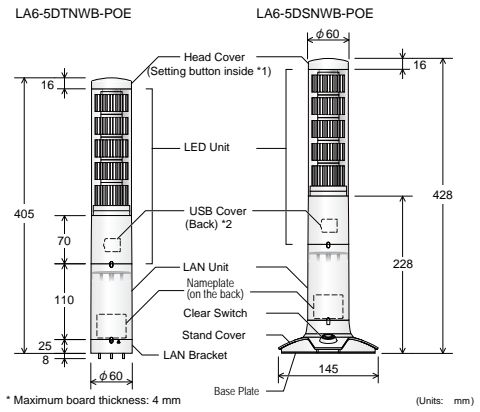
Model	LA6-5DTNWB-POE (direct mount type)	LA6-5DSNWB-POE (stationary type)
Rated Voltage	24V DC	
Power over Ethernet (PoE)	48V DC	
Operating Voltage Range	24V DC ±10%	
Power over Ethernet (PoE)	36 to 57V DC	
Rated Current Consumption	Standard	0.30A (at 24V DC) 0.18A (PoE: at 48V DC)
	Maximum	0.49A (at 26.4V DC) 0.26A (PoE: at 48V DC)
Rated Power Consumption	Standard	7.2W (at 24V DC) 8.6W (PoE: at 48V DC)
	Maximum	12.9W (at 26.4V DC) 12.5W (PoE: at 48V DC)
Signal Wire Current	420mA / 70mA (at 26.4V DC) 10mA (PoE: at 48V DC)	
Ambient Operating Temperature	-10 °C to +50 °C	
Ambient Operating Humidity	90% RH or less, freezing, no condensation	
Storage Ambient Temperature	-10 °C to +50 °C	
Storage Ambient Humidity	90% RH or less, freezing, no condensation	
Mounting location	Indoors	
Mounting direction	Upright	
Protection Rating	IP54 (IEC 60529)	IP20 (IEC 60529)
Environmental Conditions	Mounted in upright position	
Vibration Resistance	10 m/s ² (JIS C 60068-2-6)	None
Environmental Conditions	Mounted in upright position	
Mass (Tolerance: ±10%)	630g	780g
Signal Light functions	According to LA6, 5 tier, flashing, buzzer type	
Power Supply / Contact Input	Screwless Terminal Block (12 contacts)	
	Wire: 0.2 to 1.5 mm ² (solid wire), AWG24 to 16 (stranded wire)	
Interfaces	Power Supply: 2 contacts (24V DC) Contact Input (external relay/NPN/PNP): 8 contacts	
	Flashing/Pulse enable common line: 1 contact, COM: 1 contact	
LAN	RJ-45 connector	
PoE	IEEE802.3af Class 0	
Communication method	Ethernet (IEEE802.3)	
Physical Layer	10BASE-T/100BASE-TX (Auto-MDI/MDIX)	
Data Link Layer	CSMA/CD	
Network Layer	IP • ARP • ICMP	
Transport Layer	TCP/UDP	
Application Layer	HTTP • DHCP • Modbus/TCP • Socket (PHN • PNS command)	
USB	USB micro-B socket, USB 2.0	
Operation Unit	Setting button (in the head cover)	Setting button (in the head cover) Clear Switch
Indicator Light	None	1 (Green): Integrated in the Clear Switch *Always on when power is on
Various Settings	Change via Web Setup Tool	
Operation Method	Signal Wire Control/Command Control	
Supported LAN Cable	Category 5e or higher (compatible with both straight-cable and cross-cables)	
Conformity standards	RoHS Directive (EN 50581)	
	EMC Directive (EN61000-6-4, EN61000-6-2, EN55032 Class A, EN55024)	
	FCC Part15 Subpart B Class A	
	KC (KN 61000-6-4, KN 61000-6-2)	
	UL 508, CSA-22.2 No.14, Recognized Component (File No.E215660)	
	*Only for DC24V type UL 60950-1, CAN/CSA C22.2 No. UL60950-1-07 Recognized Component (File No.E480103)	
References	Conforms to CE Marking	

Model Code

LA6-5DTNWB-POE

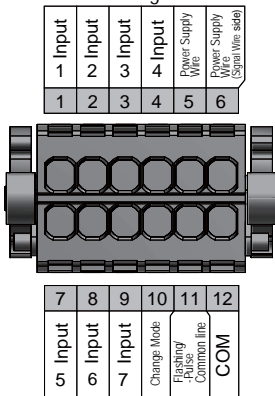


Dimensions (mm)

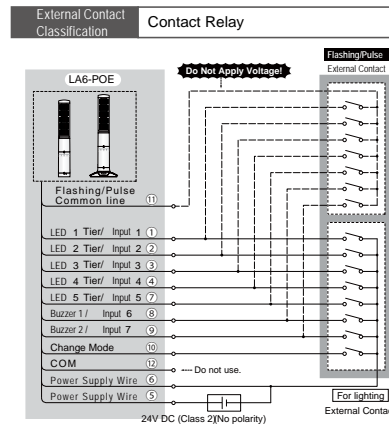


Wiring Diagram

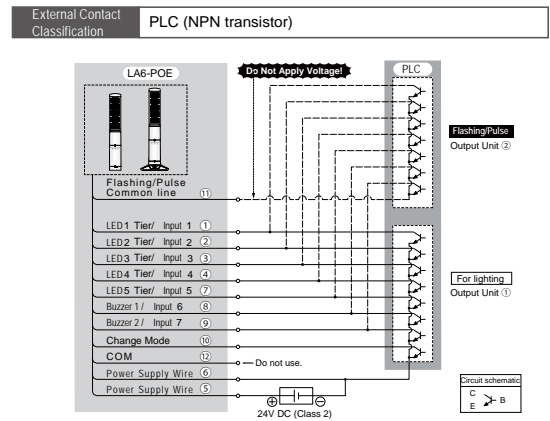
Terminal Block Connector Pin Arrangement



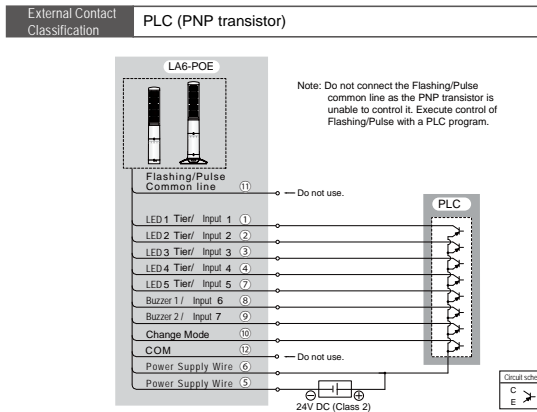
24V DC model



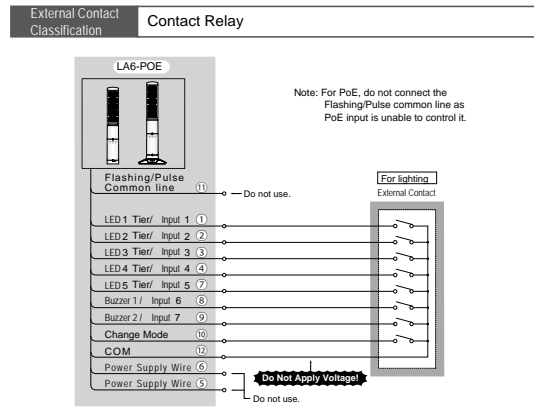
24V DC model



24V DC model



PoE Input Specifications



Optional Parts



Stationary installation bracket (magnetic installation)
Model: SZW-060W
Supported type:
LA6-5DTNWB-POE
LA6-5AWJWB-RYGBC



Wallmount Bracket (embedded wiring type)
Model: SZK-003W
Direct Mounting



Wallmount Bracket NH-WST2 Stationary Type



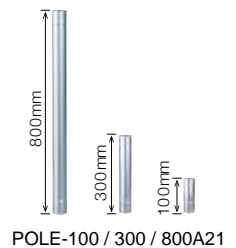
Pole Bracket SZP-004W



Circular Bracket mounting Pole SZ-016A



Circular Bracket mounting Pole SZ-010



POLE-100 / 300 / 800A21

Communication Commands

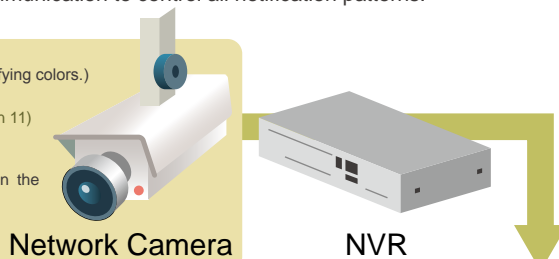
Control with HTTP Commands You can send commands via HTTP communication to control all notification patterns.

Detailed Motion Control

(You can control tier 1 to 5 of LED unit specifying colors.)
 Execute command
 (Tier 1: Green, Tier 2: Blue, Tier 3: Off, Tier 4: White, Tier 5: Red, Flashing off, Buzzer: Pattern 11)
<http://192.168.10.1/api/control?color=46091&buzzer=11>

Smart Control Command

(you can control the smart mode set up in the editing software.)
 Execute command (Run smart mode group No.10)
<http://192.168.10.1/api/control?smart=10>



SOCKET Communication

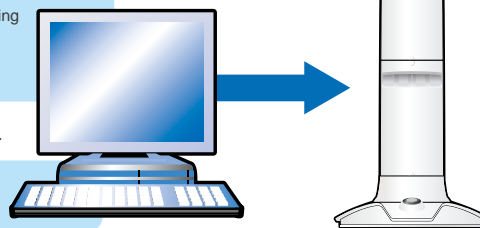
PNS Commands supported By using PNS commands, you can control all notification patterns.

Detailed Motion Control

(You can control tier 1 to 5 of LED unit specifying colors.)
 Execute command
 (Tier 1: Green, Tier 2: Blue, Tier 3: Off, Tier 4: White, Tier 5: Red, Flashing off, Buzzer: Pattern 11)
 41H, 42H, 44H, 00H, 00H, 07H, 04H, 06H, 00H, 09H, 01H, 00H, 0BH

Smart Mode Control Command

(you can control the smart mode set up in the editing software.)
 Execute command (Run smart mode group No.10)
 41H, 42H, 54H, 00H, 00H, 01H, 0AH



PHN compatible commands supported Control with 2-byte commands is available.

Execute command
 (Tier 1: Lighting, Tier 2: Flashing, Tier 3: Off, and Buzzer: Pattern 2)
 57H, 51H

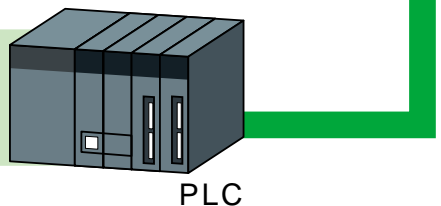
* You can control lighting, flashing, and 2 types of buzzer sound patterns on tiers 1 to 3.

Modbus/TCP

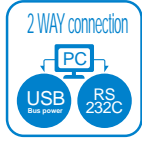
You can control the signal light by sending Modbus/TCP commands, such as from a PLC.

Smart control command

(you can control the smart mode set up in the editing software.)
 Execute command
 (When operating the Signal Tower in Smart Mode group number 15.)
 00H, 00H, 00H, 00H, 00H, 06H, 01H, 06H, 00H, 06H, 01H, 0FH



PHE-3FB3



- Signal tower features 3 LED colors and 2 flashing patterns
- Send ASCII commands over USB or RS-232C to control built-in signal tower
- Receive power over USB or a 24V DC supply source
- 4 built-in alarm sounds with adjustable volume up to 80 dB
- Built-in "Clear" button for quickly reverting the PHC to "default state" once an alert is confirmed



Specifications

Model	PHE-3FB3-RYG / PHE-3FB3N-RYG (AC adaptor not included)	
Rated Voltage	Main Unit	24V DC, 5V DC (USB bus power)
	AC Adaptor	Input: 100-240V AC (50/60Hz), Output: 24V DC
Operating Voltage Range	90 - 264V AC (When using AC adaptor)	
Rated Power Consumption	Standby mode	1.2W (at 100V AC)
	Operating at Maximum	4.4W (at 100V AC)
Ambient Operating Temperature	0-+40 degree (Celsius)	
Ambient Operating Humidity	20%-85% RH (no condensation)	
Mounting location / direction	Indoors, Upright	
Protection Rating	IP20	
Mass	545g (not including adaptor)	
Interface	USB port	Conforms to USB 2.0 (bus power support), Standard B type (female)
	Serial port	Conforms to RS-232C, D-Sub 9-pin (male)
Signal Tower *	Red, Amber, Green, Clear Lens	
Audible sound pressure	80dB or more (at a distance of 1m, in front of Main Unit)	
Accessory	AC adaptor (except N type), installation manual, rubber feet	
Supported operating systems	Windows®7 (32bit, 64bit), Windows®8 (32bit, 64bit), Windows®8.1 (32bit, 64bit), Windows®10 (32bit, 64bit), Windows Server® 2008 R2, Windows Server® 2012, Windows Server® 2012 R2	

* When operating on USB bus power, signal light is not as bright.

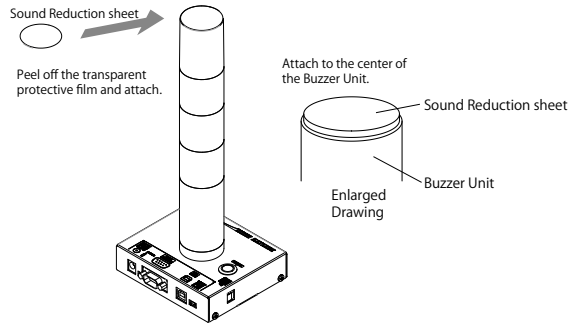
Model Code

PHE-3FB3□-RYG

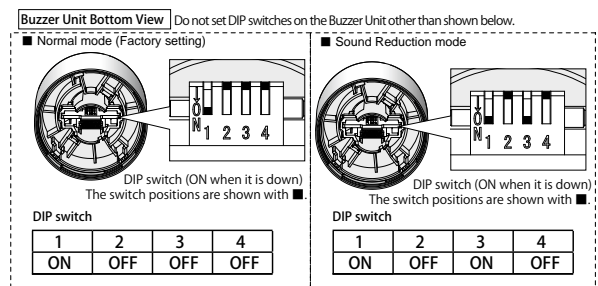
AC Adaptor
Blank: AC adaptor included
N: AC adaptor not included

Adjusting Buzzer Volume

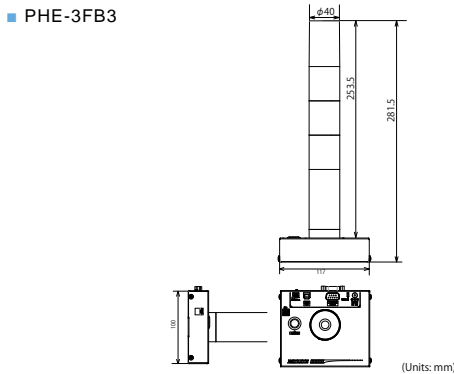
- Using enclosed Sound Reduction sheet
Please attach the Sound Reduction sheet on top of the Buzzer Unit.



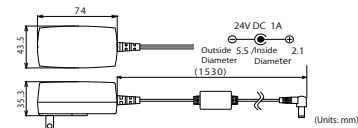
- Using the DIP switch in the Buzzer Unit
As shown below, please turn on the DIP switch 1 and 3 in order to reduce sound volume.



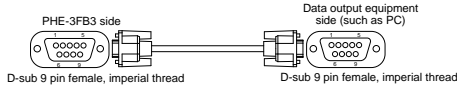
Dimensions (mm)



AC adaptor enclosed (except N type)



Wiring for RS-232C port



Signal name	Pin number	Pin number	Signal name
TXD	2	2	RXD
RXD	3	3	TXD
GND	5	5	GND
CTS	7	7	RTS
RTS	8	8	CTS

* RS-232C straight cable is not included in this product. Please provide your own.

Optional Parts

Dimmer Film
NHP-TF (for NHP-FV2/FB2/PHE-3FB3)



NBM-D88NN



8 discrete input and output channels to add non-network PATLITE signaling devices to an equipment network

Email Alerts – Send emails to up to 8 addresses per alert notification

Supports SNMP, HTTP, PNS (Developed by PATLITE), Socket Transmission command protocols

Use a web browser to send commands via the Hypertext Transfer Protocol (HTTP)

Ping up to 24 nodes or devices on your network

Built-in “Clear” button for quickly reverting the NBM to its initial state once an alert is confirmed



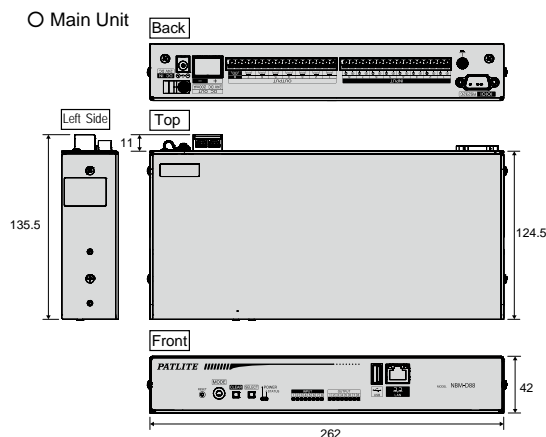
Optional Parts

Optional Parts	Model
Server Rack Angle Mount	NBM-ANG
AC Adaptor	ADP-001

Specifications

Item	Specifications	
Model	NBM-D88NN	
Main Unit Rated Voltage	24V DC	
AC Adaptor Rated Voltage	100 - 240V AC (50/60Hz)	
AC Adaptor Operating Voltage Range	90 - 264V AC (50/60Hz)	
Power Consumption	14W	
Operation Temperature Range	0 to 40°C (no freezing, no condensation)	
Storage Temperature Range	- 20 to 65°C (no freezing)	
Operation Humidity	20 - 80% RH (no condensation)	
Insulation Resistance	Between current carrying metallic part and non-current carrying metallic part: 500V DC 10MΩ or more	
Withstand Voltage	Between current carrying metallic part and non-current carrying metallic part: 1500V AC 10mA or less (for one minute)	
Vibration Resistance	9.8m/s ²	
Communication method	LAN communication	
	Physical Layer: Ethernet (IEEE 802.3 compliant) 10BASE-T / 100BASE-TX (auto-negotiation) Connector type RJ-45 8-pin	
	Data Link Layer: CSMA/CD method	
	Network Layer: IP, ARP, ICMP	
	Transport Layer: TCP, UDP	
Non-Voltage Contact Output (Normally Open Contact)	Number of Contacts	8 points
	Contact rating	Port 1-7: 125V AC, 3A/30V DC, 3A Inrush Current 5A or less Minimum current 1mA (reference value) Minimum voltage 5V DC (reference value) Port 8: 125V AC, 3A/30V DC, 3A Inrush Current 78A or less (TV-5 rating) Minimum current 10mA, Minimum voltage 5V DC
	Supported Wire Diameter	Solid Wire: φ0.4 - 1.2mm (AWG26-16) Stranded Wire: 0.2 - 1.25mm ² (AWG24-16)
	Wire connection method	Screwless Terminal Block
Contact input (Normally Open Contact)	Input specifications	D88N (NPN model)
	Supported number of input contacts	Non-Voltage Contact, NPN transistor
	Number of Contacts	8 points
	Contact rating	Output ON current 6mA or less per port Voltage between terminals when OFF: 24V
USB (host)	Supported Wire Diameter	Solid Wire: φ0.4 - 1.2mm (AWG26-16) Stranded Wire: 0.2 - 1.25mm ² (AWG24-16)
	Wire connection method	Screwless Terminal Block
Power output	USB2.0/1.1 TYPE-A 1 port for log data storage, firmware update For config data upload / download	
D-sub 9-pin	Screw terminal block, 1 point, 24V DC±10% Maximum 200mA Extended Functionality	
LED Display Area	Green LED 18 points (1 point for power, 1 point for status, DO 8 points, DI 8 points)	
Operation	Select Switch, Reset Switch, Clear Switch, Mode Switch	
Standard	EMC Directives (EN55032 (Class A), EN55024), RoHS Directive EN50581, FCC Part15 Sub part B Class A	
Mounting location	Indoors	
Mounting Methods	Stationary, EIA rack mount (optional part)	
Mounting direction	Upright	
Mass	Main Unit	1150g
	AC Adaptor	165g
Protection Rating	IP20	
Accessory	AC Adaptor, Instruction Manual, 4 rubber feet	
Optional Parts	Server Rack Angle Mount	

Dimensions (mm)



Server Rack Mounting



Server Rack Angle Mount
NBM-ANG (optional)

AC Adaptor



AC Adaptor
ADP-001 (optional)

Monitoring Function

Ping 24

PING monitoring

Active/inactive monitoring of up to 24 nodes.

SNMP v1.v2c

TRAP monitoring

SNMP Manager function is included.

- The unit can determine down to variable-bindings.
- You can register 16 groups (4 nodes per group).

Application Monitoring

You can run active/inactive monitoring with the application's send command. (Maximum 4 nodes)

- Server monitoring
- Printer problem detection
- Server/PC application monitoring

Command Transmission

RSH

RSH command transmission (8)

You can create RSH commands suitable for events.

SNMP v2c

SNMP, TRAP transmission (8)

You can send SNMP / TRAP suitable for events.

SOCKET Communication

SOCKET Transmission

You can send commands of up to 30 bytes

Send up to 8 emails

You can create titles and body text suitable for events. POP / SMTP authentication supported.

- Control network equipment
- Event notifications to monitoring server
- Send PHN / PNS commands, and so on.

Command Control

RSH

You can control digital output with the generic protocol RSH.

SOCKET Communication

PHN compatible commands supported

Control of digital output possible with 2-byte commands.

PNS commands supported

By using PNS commands, you can control digital output.

HTTP Command

You can control digital output with HTTP commands. Execute command (port 1: ON, port 3: OFF, Other: no operation) <http://192.168.10.1/api/control?alert=19099999>

- Server command control
- Receive PHN/PNS Commands
- Control commands from network camera

Contact Input/Output

Digital Input 8

Digital input: 8 points

Digital Output 8

Digital output: 8 points

With 8 input terminals and 8 output terminals, you can independently control various equipment that have input contacts.

24V Output

The converter has one 24V output. You can connect the converter with various notification equipment, such as Revolving Lights and audio equipment.

USB

You can get the log from USB memory. You can get settings from USB memory, or apply settings to USB memory.

- Contact inputs from sensors
- Contact outputs to notification equipment
- Control with contact outputs, and so on.

* PHN/PNS commands are proprietary control commands.

Condition Setting function

It can be set up with a detection condition of a digital input.

Duration Condition

The output condition setup is combined with input signal time progression.

AND condition

The output condition setup is combined with the number of input channels for a logical condition.

Input Frequency Condition

The output condition setup is combined with the increase of frequency signal inputs.

By setting up the operation when detection conditions are met, it can be used for various environments and applications. (Notifications according to preset temperatures, using a temperature sensor; notification of the infrared sensor, specified by area, etc.)

- The duration condition, AND condition and number condition can be set.

Available condition setting function operations

Digital Output Control	The digital output will be ON or OFF.
RSH Command Transmission	Sends the remote shell command to the device at the set address
Socket Transmission	Sends the PHN/PNS Command to the device at the set address
Trap Transmission	Sends the SNMP trap to the device at the set address
E-mail Transmission	Sends the E-mail to the set mail server.

PHC-D08N



- Send ASCII commands over USB or RS-232C to control PATLITE signaling devices
- Receive power over USB or a 24V DC supply source
- Built-in "Clear" button for quickly reverting the PHC to "default state" once an alert is confirmed



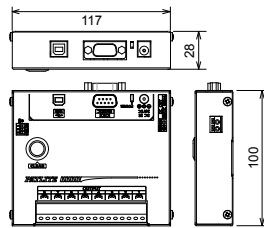
Specifications

Model	PHC-D08N (without AC adaptor)	
Operating Voltage Range	90 - 264V AC (When using AC adaptor)	
Rated Power Consumption	Standby mode	0.4W (at 100V AC)
	Operating at Maximum	16W (at 100V AC)
Ambient Operating Temperature	0-+40 degree (Celsius)	
Ambient Operating Humidity	20%-85% RH (no condensation)	
Mounting location / direction	Indoors, Upright	
Protection Rating	IP20	
Mass	370G (±10%)	
Interface	USB port	Conforms to USB 2.0 (bus power support), Standard B type (female)
	Serial port	Conforms to RS-232C, D-Sub 9-pin (male)
External Contact Output	Number of Contacts	8 points
	Contact specifications	Non-Voltage Contact Output / Normally Open Contact
	Contact rating	30V DC/3A
Power output*	Output rating	24V DC / 500mA or less
Accessory	AC adaptor (except N type), installation manual, rubber feet	
Supported operating systems	Windows®7 (32bit, 64bit), Windows®8 (32bit, 64bit), Windows®8.1 (32bit, 64bit), Windows®10 (32bit, 64bit), Windows Server® 2008 R2, Windows Server® 2012, Windows Server® 2012 R2	

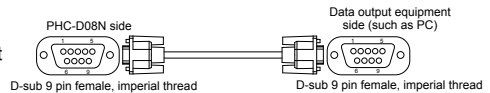
* You cannot use the power output terminal when AC adaptor is disconnected. When using the power output terminal, confirm the AC adaptor is connected.

Dimensions (mm)

PHC-D08N



Wiring for RS-232C port



Signal name	Pin number	Pin number	Signal name
TXD	2	2	RXD
RXD	3	3	TXD
GND	5	5	GND
CTS	7	7	RTS
RTS	8	8	CTS

* RS-232C straight cable is not included in this product. Please provide your own.

Communication Specifications * For details see the Instruction Manual, which you can download from our website.

Communication Data Format

	Header	ID	Command	Data	Encoding
Transmission Data	@ [40H]	?? [3FH 3FH]	See command list	Depending on the command	1 [21H]
Number of Bytes	1 byte	2 bytes	1 byte	0-8 bytes	1 byte

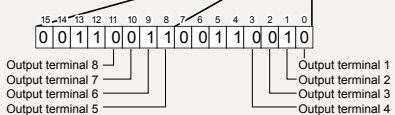
Command list

Command	Number of Bytes for Data portion	Function
1 [31H]	2 bytes	Turn ON the specified output terminal.
0 [30H]	2 bytes	Turn OFF the specified output terminal.
? [3FH]	2 bytes	Changes ID.
S [53H]	8 bytes	Control each output terminal to the specified status.
G [47H]	0 bytes	Get the output terminal status.
C [43H]	0 bytes	Turn OFF all output terminals.
M [4DH]	0 bytes	Get the product information

- Commands 1 and 0 are compatible with the Personal Computer Output Relay Unit PHC-100A.
- Command S can control ON/OFF of the output terminal at the same time.

Transmission example (turning on 2, 5, and 6 on the output terminal block)

Transmission Data						
Header	ID	Command	Data	End code		
@ [40H]	? [3FH]	? [3FH]	1 [31H]	3 [33H]	2 [32H]	1 [21H]



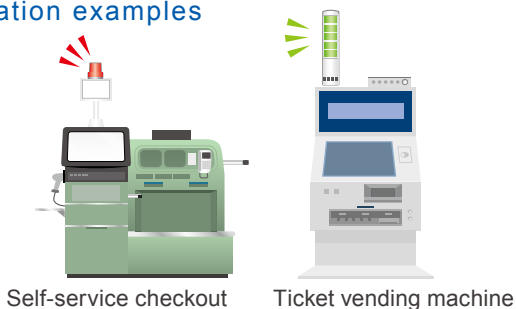
Optional Parts

Optional Parts	Model
AC Adaptor	ADP-001



AC Adaptor ADP-001 (optional)

Application examples



Self-service checkout

Ticket vending machine