

PATLITE®

GENERAL CATALOG

2019 - 2020



#1 Ranked Globally
in Signaling Devices

※ 2017, Global Info Research

www.patlite.com

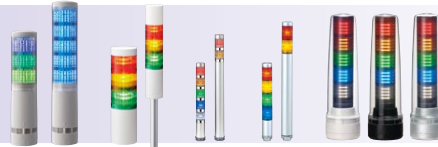
INDEX

Product Index P.3
 Glossary P.8
 New Products P.11

Network P.31



Signal Tower P.53



Signal Light P.97



Revolving Warning Light P.113



Cube Tower P.130



Audibles P.137



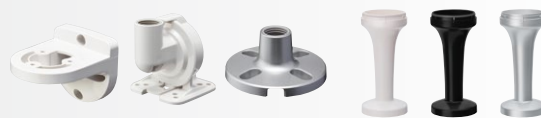
Hybrid Signaling Devices P.155



LED Illumination P.170



Options
 ■ Options P.182
 ■ Replacement Parts P.188



History of PATLITE P.191

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

Product Index

	Model	Model Name	Specifications	Page
B	BD-A	Audible Alarm	32 built-in sounds	143
	BDV	MP3 Voice Annunciator for Panel Mounting	MP3 63 seconds	145
	BK	Audible Alarm	32 built-in sounds	147
	BKV	MP3 Voice Annunciator for Panel Mounting	MP3 63 seconds	149
	BM	Audible Alarm	2 Audible Alarm sounds	139
	BSV	Slim MP3 Voice Annunciator	MP3 63 seconds	141
	BSV- L	Slim MP3 Voice Annunciator	MP3 520 seconds	140
C	CLA	LED Work Light	Polycarbonate Body,IP66/67/69K	173
	CLA-EX	Explosion proof LED Work Light	Water Resistant	29
	CLK	LED Work Light	Aluminum Body,Stainless steel,IP66G/67G/69K	177
	CLK-EX	Explosion proof LED Work Light	Water and Oil Resistant	28
	CLN	LED Work Light	Aluminum Body,IP66G/67G/69K	181
	CLN-EX	Explosion proof LED Work Light	Water and Oil Resistant	27
	CWA	LED Work Light	Polycarbonate Body,IP65	175
	CWF	LED Work Light	Switch,DC type/AC type	172
	CWK	LED Work Light	Aluminum Body,IP66G/67G	179
E	EHS	Audible Alarm Horn	32 built-in sounds	151
	EHS-EX	Explosion proof Audible Alarm Horn	32 built-in sounds	26
	EHV	MP3 Voice Annunciator Horn	63 built-in sounds	151
	EHV-EX	Explosion proof MP3 Voice Annunciator Horn	63 built-in sounds	26
F	FV-127JP	MP3 Player Circuit Board	SD card compatible, maximum 127 messages	153
H	HP	Large Revolving Light	φ180 Lighting	128
	HSST	Signal Tower with Switch Box	φ50, LED	77
K	KG	Large Revolving Light	φ186, Large Mirrored Reflector	129
	KHE	Small LED Signal Light	φ100, Flash, LED Rotating Light, Strobe LED	104
	KJ	Revolving Tower Light	□116, Revolving Light	135
	KJB	Revolving Tower Light	□116, Revolving Light, Buzzer	135
	KJS	Small Revolving Tower Light	□82, Revolving Light	133

Product Index

	Model	Model Name	Specifications	Page
K	KJSB	Small Revolving Tower Light	□82, Revolving Light, Buzzer	133
	KJT	Audible Revolving Tower Light	32 built-in sounds	164
	KP-A	Medium Revolving Light	φ162, Revolving Light	126
	KPE-A	Medium LED Chase Light/Flashing Signal Light	φ162, LED Rotating Light, Flashing	110
	KUS	Modular Signal Tower	□70, Lighting, Base Unit	95
	KUS-B	Modular Signal Tower	□70, Audible Alarm Unit	95
	KUS-C	Modular Signal Tower	□70, Lighting, Open Collector, Base Unit	95
	KUS-EA	Modular Signal Tower	□70, LED Unit	95
	KUS-F	Modular Signal Tower	□70, Lighting/Flashing, Base Unit	95
	KUS-FC	Modular Signal Tower	□70, Lighting/Flashing, Open Collector, Base Unit	95
	KUS-S	Modular Signal Tower	□70, Incandescent Bulb Unit	95
L	LA6	Signal Tower	φ60, Lighting/Flashing, LED	55
	LA6-POE	Signal Tower	φ60, Lighting/Flashing, LED, PoE Supported	45
	LFH	Small LED Flash Signal Light	φ100, Flashing, LED	106
	LGE	Large LED Signal Tower	φ100, Lighting, LED	88
	LGE-FB	Large LED Signal Tower	φ100, Lighting/Flashing, LED, Buzzer	88
	LKEH-EX	Explosion-Proof Signal Tower	φ100, Lighting/Flashing, LED Signal Tower, 32 built-in sounds	25
	LKEH-F□	Signal Tower	φ100, Lighting/Flashing, LED Signal Tower, 32 built-in sounds	157
	LKEH-FV	MP3 Voice Annunciator with LED Signal Tower	φ100, Lighting/Flashing, LED Signal Tower, 63 seconds	157
	LR4-EX	Explosion-Proof Signal Tower	φ40, Lighting/Flashing	23
	LR4-E-Z	LED Unit	φ40, Clear Globe LED Unit	62
	LR4-LJBW	Signal Tower	φ40, Lighting/Flashing, Pole Mounted L-angle, Buzzer, LED	66
	LR4-LJNW	Signal Tower	φ40, Lighting, Pole Mounted L-angle, LED	66
	LR4-PJBW	Signal Tower	φ40, Lighting/Flashing, Pole Mounted Circular Bracket, Buzzer, LED	65
	LR4-PJNW	Signal Tower	φ40, Lighting/Flashing, Pole Mounted Circular Bracket, LED	65
	LR4-QJBW	Signal Tower	φ40, Lighting/Flashing, Pole Mounted Folding Bracket, Buzzer, LED	63
	LR4-QJNW	Signal Tower	φ40, Lighting, Pole Mounted Folding Bracket, LED	63
	LR4-WJBW	Signal Tower	φ40, Lighting/Flashing, Direct Mount, Buzzer, LED	64
	LR4-WJNW	Signal Tower	φ40, Lighting, Direct Mount, LED	64
	LR5-LJBW	Signal Tower	φ50, Lighting/Flashing, Pole Mounted L-angle, Buzzer, LED	66
	LR5-LJNW	Signal Tower	φ50, Lighting, Pole Mounted L-angle, LED	66
	LR5-PJBW	Signal Tower	φ50, Lighting/Flashing, Pole Mounted Circular Bracket, Buzzer, LED	65
	LR5-PJNW	Signal Tower	φ50, Lighting, Pole Mounted Circular Bracket, LED	65
	LR5-WJBW	Signal Tower	φ50, Lighting/Flashing, Direct Mount, Buzzer, LED	64

Product Index

	Model	Model Name	Specifications	Page
L	LR5-WJNW	Signal Tower	φ50, Lighting, Direct Mount, LED	64
	LR6-E-MZ	Signal Tower	φ60, Multi-color LED Unit	62
	LR6-EX	Explosion-Proof Signal Tower	φ60, Lighting/Flashing	24
	LR6-E-Z	Signal Tower	φ60, Clear Globe LED Unit	62
	LR6-LJBW	Signal Tower	φ60, Lighting/Flashing, Pole Mounted L-angle, Buzzer, LED	66
	LR6-LJNW	Signal Tower	φ60, Lighting, Pole Mounted L-angle, LED	66
	LR6-PJBW	Signal Tower	φ60, Lighting/Flashing, Pole Mounted Circular Bracket, Buzzer, LED	65
	LR6-PJNW	Signal Tower	φ60, Lighting, Pole Mounted Circular Bracket, LED	65
	LR6-QJBW	Signal Tower	φ60, Lighting/Flashing, Pole Mounted Folding Bracket, Buzzer, LED	63
	LR6-QJNW	Signal Tower	φ60, Lighting, Pole Mounted Folding Bracket, LED	63
	LR6-USB	USB-controlled Signal Tower	φ60, Lighting/Flashing, LED, USB Supported	33
	LR6-WC	Signal Tower	φ60, Lighting, Direct Mount / M12 Connector	66
	LR6-WJBW	Signal Tower	φ60, Lighting/Flashing, Direct Mount, Buzzer, LED	64
	LR6-WJNW	Signal Tower	φ60, Lighting, Direct Mount, LED	64
	LR7-WJBW	Signal Tower	φ70, Lighting/Flashing, Direct Mount, Buzzer, LED	64
	LR7-WJNW	Signal Tower	φ70, Lighting, Direct Mount, LED	64
	LS7-BWC	LED Signal Tower	φ70, Lighting, LED, Buzzer, M12 Connector Type	85
	LS7-FBWH	LED Signal Tower	φ70, Lighting/Flashing, LED, Buzzer, Wire Type	85
	LS7-WC	LED Signal Tower	φ70, Lighting, LED, M12 Connector Type	85
	LS7-WH	LED Signal Tower	φ70, Lighting, LED, Wire Type	85
M	ME-A	Compact LED Signal Tower	φ25, Lighting, LED (Standard body)	79
	MES-A	Compact LED Signal Tower	φ25, Lighting, LED (Short body)	79
	MP	Small LED Signal Tower	φ30, Lighting, LED (Standard body)	81
	MP-C	Small LED Signal Tower	φ30, Lighting, LED (Standard body), M12 Connector Type	83
	MPS	Small LED Signal Tower	φ30, Lighting, LED (Short body)	81
	MPS-C	Small LED Signal Tower	φ30, Lighting, LED (Short body), M12 Connector Type	83
N	NBM-D88NN	Interface Converter	Ethernet	49
	NE	Small LED Signal Light	φ57, Lighting, LED	99
	NE-M1-CL7	Multi-color LED Signal Light	φ57, Lighting, LED (7 Colors)	100
	NHL-FB2/FV2	Network Monitor Signal Tower	φ60, Lighting/Flashing, Audible Alarm (FB2) / Voice, Audible Alarm (FV2)	41, 42
	NHP-FB2/FV2	Network Monitor Signal Tower	φ40, Lighting/Flashing, Audible Alarm (FB2) / Voice, Audible Alarm (FV2)	41, 42

Product Index

	Model	Model Name	Specifications	Page
P	PES-A	Small LED Signal Light	φ82, Continuous/Flashing	101
	PEW-A	Small LED Signal Light	φ82, Continuous/Flashing	102
	PEW-AB	Small LED Signal Light	φ82, Continuous/Flashing, Buzzer	102
	PFH-BT	Battery-powered Flash Signal Light	φ100, Flashing, Portable, Magnet Mounting	108
	PHC-D08N	Interface Converter	Contact Output 8 points	51
	PHE-3FB3	Interface Converter with Signal Light	φ40, USB/RS-232C Lighting/Flashing, Buzzer	48
	PSE	Small LED Flash Signal Light	φ82, Flashing	105

R	RFT	Audible Alarm with LED Revolving Light	□115, 32 sounds	166
	RFV	MP3 Voice Annunciator with LED Revolving Light	□115, MP3 Voice Synthesizer, 63 seconds	168
	RH-A	Small Revolving Light	φ100	121
	RH-AUL	Small Revolving Light	φ100, UL	121
	RHB-A	Small Revolving Light	φ100, Audible Alarm	121
	RHB-AUL	Small Revolving Light	φ100, Audible Alarm, UL	121
	RHE	Small LED Revolving Light	φ100, LED	116
	RHEB	Small LED Revolving Light	φ100, LED, Audible Alarm	116
	RLE	Compact LED Revolving Light	φ82, LED	115
	RLR	Extreme Vibration Resistant Large LED Revolving Light	φ162, LED	119
	RS	Compact Revolving Light	φ82	120
	RT-A/C/D/E	Horn Speaker Audible Alarm with Revolving Light	Revolving Light, 32 built-in Melody/Alarm sounds	160
	RT-VF	Horn Speaker Voice Annunciator with Revolving Light	Revolving Light, MP3, 63 seconds	162
	RU	Compact Revolving Light	φ82	120
	RUP	Compact Revolving Light	φ82, Mounting Pole	120

S	SKC-A	Large Revolving Light	φ187	127
	SKH-A	Small Revolving Light	φ118	122
	SKH-EA	Small Revolving Light	φ100	124

Product Index

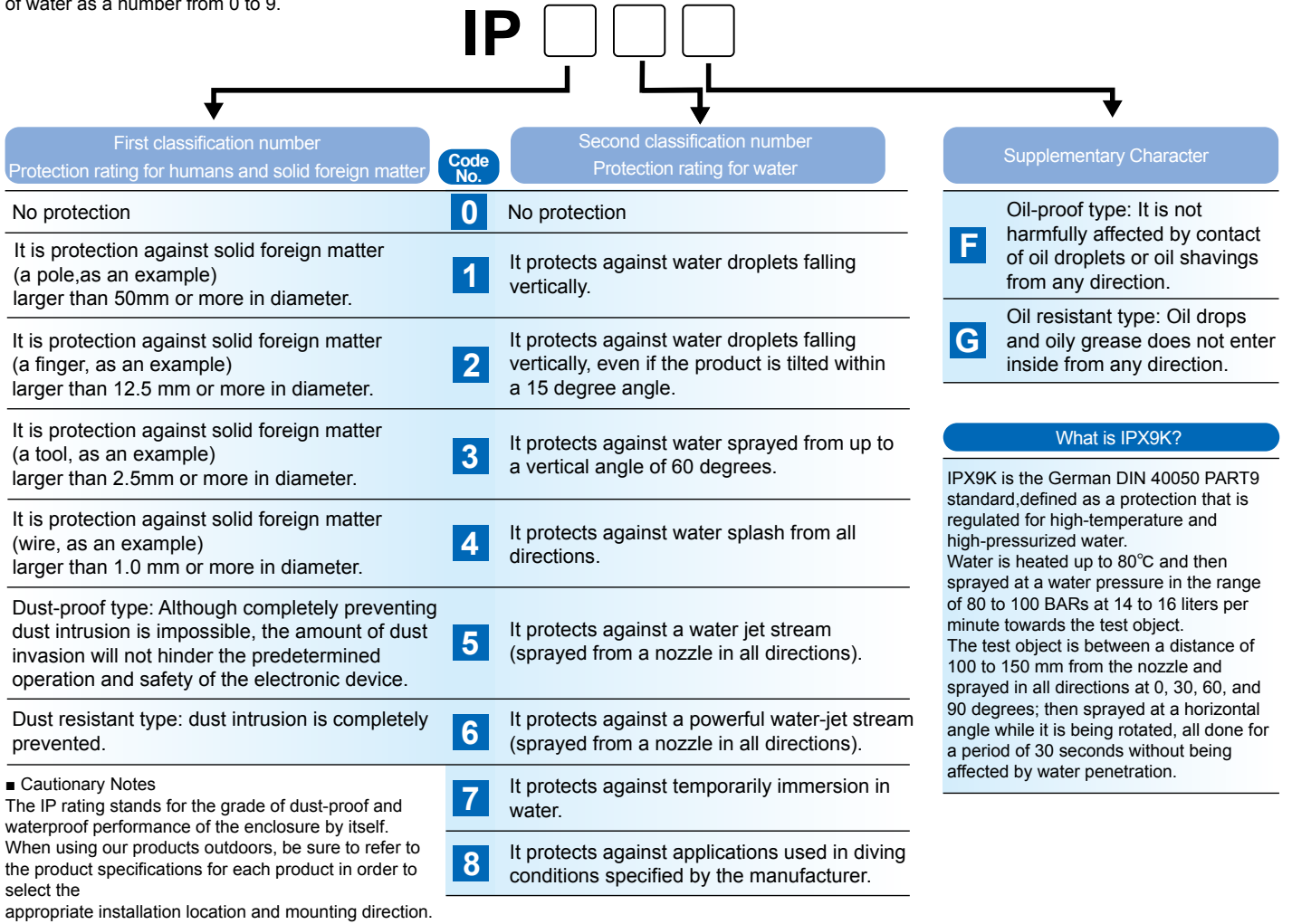
	Model	Model Name	Specifications	Page
S	SKHB-A	Small Revolving Light	φ118, Audible Alarm	122
	SKHE	Small LED Revolving Light	φ118, LED	118
	SKHEB	Small LED Revolving Light	φ118, LED, Audible Alarm	118
	SKL-CA	Large Revolving Light	φ162	126
	SKL-SA	Large Revolving Light	φ162, Stainless Steel	126
	SKP-A	Medium Revolving Light	φ138	125
	SPB-2E	Speaker	2W 8Ω	186
	SPB-5E	Speaker	5W 8Ω	186
	SPL-5E	Speaker	5W 8Ω	186
	SPW-5E	Speaker	5W 8Ω	186
	ST-PA-LR6	Explosion-Safe Signal Tower	φ60, Lighting/Flashing	21
	SZ-□	Optional Parts		183 to 185

W	WDR-LE-Z2	Wireless, Data Acquisition System	Mounted receiver (outside Japan)	35, 37
	WDT-5LR-Z2	Wireless, Data Acquisition System	LR5 Signal Tower Transmitter	35
	WDT-6LR-Z2	Wireless, Data Acquisition System	LR6 Signal Tower Transmitter	35
	WDT-5E-Z2	Wireless, Data Acquisition System	LE Signal Tower Transmitter	37
	WDT-6M-Z2	Wireless, Data Acquisition System	LME Signal Tower Transmitter	37
	WE	Wall-Mounted LED Signal Tower	Lighting, LED (Chromium-plated Body)	90
	WE-FB	Wall-Mounted LED Signal Tower	Lighting/Flashing, LED, Audible Alarm (Chromium-plated Cover)	90
	WEP	Wall-Mounted LED Signal Tower	Lighting, LED (Light-gray Body)	90
	WEP-FB	Wall-Mounted LED Signal Tower	Lighting/Flashing, LED, Audible Alarm (Light-gray Cover)	90
	WH-A	Wall-Mounted Small Revolving Light	φ100, Wall-mount	123
	WHB-A	Wall-Mounted Small Revolving Light	φ100, Audible Alarm, Wall-mount	123
	WME-D	Wall-Mounted LED Signal Tower	Lighting, LED	93
	WME-DFB	Wall-Mounted LED Signal Tower	Lighting/Flashing, LED, Audible Alarm	93

X	XME	Large LED Flash Signal Light	φ187, Flashing	109
	XPE	Medium LED Flash Signal Light	φ162, Flashing	109

Electric machinery and equipment Protection rating symbols JIS C 0920:2003 (IEC 60529:2001)

The International Protection grade code (IP) is followed by two numbers, with the first number as the symbol to represent the protection classification for human body and solid foreign matter from a number of 0 to 6; the second number as the symbol to represent the degree of protection against permeation of water as a number from 0 to 9.



UL Standard

Underwriters Laboratories Inc. (UL) is a nonprofit organization established by the National Fire Insurance Company Conference, which is an association of the American fire insurance companies in the United States since 1894.

At UL, in order to safely protect human life and property from fire, theft, or other accidents, tests are conducted on materials and parts and conduct certification work to measure the safety of products through a follow-up service. The UL mark shown on the product indicates that UL has tested and evaluated the sample of the product and judged that it conforms to UL requirements.

CE Marking

CE marking refers to a common European law called the New Approach Directive enacted by the European Commission (EC), which requires products with essential requirements for each directive to comply with requirements for the user's health and the protection of the product's safety.

Product manufacturers and importers must conduct conformity assessments before products are launched or used within the EU borders and only products satisfying them are granted the CE markings. The EN (European Norm) standard has been issued as a criterion for evaluating that each directive is satisfied.

(Source originally quoted from the Japan Standards Association published guide for CE marking for electric, electronic and mechanical workers)

The main directives are also applied to our products.

1. Low Voltage Directive

Applicable to equipment that operates at rated voltages from 50V AC to 1000V AC and DC 75V to 1500V; in which it is required to protect the equipment from dangers caused by electricity. (Compatibility specification example: EN60598-1)

2. EMC Directive

The electromagnetic compatibility (EMC) directive is established to regulate both electromagnetic noise emissions, which adversely affects other devices, and noise immunity against electromagnetic noise emitted from other devices, in accordance with their directive. (Compatibility specification example: EN61000-6-4, EN61000-6-2)



IoT Solutions from the



Manufacturing Site



Production Line



Factory Operations



Surveillance Camera A

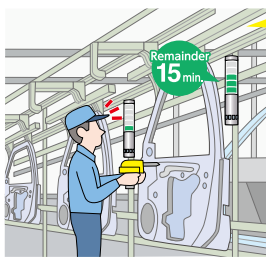


Surveillance Camera B

Visualize Work Progress

Work progress can easily be assessed with the LA6 series' programmable internal timer function to display progress.

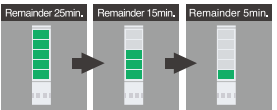
LA6 Series



Reduce variation loss by visualizing work progress



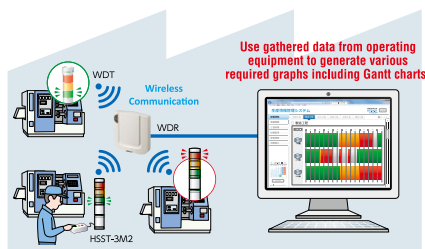
Display remaining work time with the number of tiers.



Wirelessly Acquire Equipment Data

Attach our transmitters to existing PATLITE Signal Towers to wirelessly collect equipment data. The software can organize the collected data and improve productivity and efficiency, reduce bottlenecks, etc.

WD-22 Series



Use gathered data from operating equipment to generate various required graphs including Gantt charts.

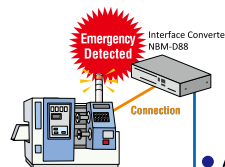


HST-3M2

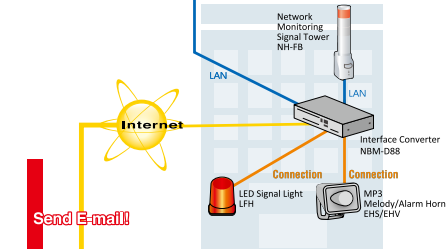
Network Existing Equipment

Improve response time by converting your existing equipment to network enabled devices capable of notifying remote personnel via e-mail.

Manufacturing Site



Administration Office



Send E-mail!!



Let's hurry back to the site.



I will check the situation.



NBM-D88

EHS/EHV

LFH

NH Series

Factory to the Office

Factory Office



Customer Support



Camera Monitoring Room



Server Room

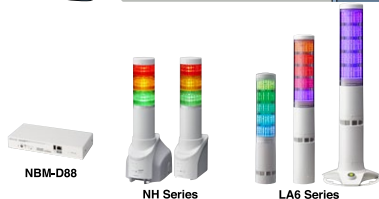
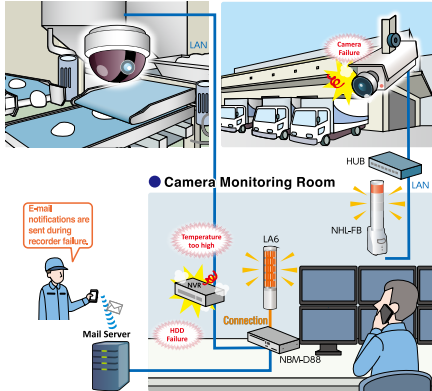


Camera System Fault Detection

Monitor surveillance equipment in order to quickly respond to failures and abnormalities.

● Surveillance Camera A

● Surveillance Camera B

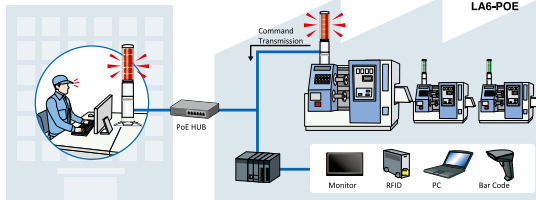


Communicate Across Multiple Locations

The LA6-POE is capable of mirroring other LA6-POE devices over an Ethernet connection. By utilizing this function, equipment information is visually communicated in other remote locations.

● Factory Office

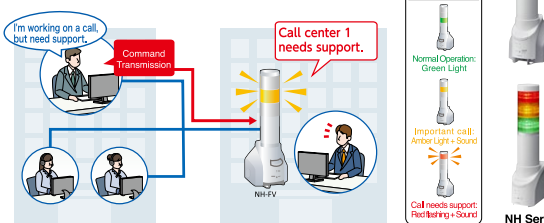
● Manufacturing Site



Notify Remote Personnel in Real-time

Create a smoother, more efficient customer service experience by notifying remote administrators of status in the call center.

● Customer Support Center ● Home Office

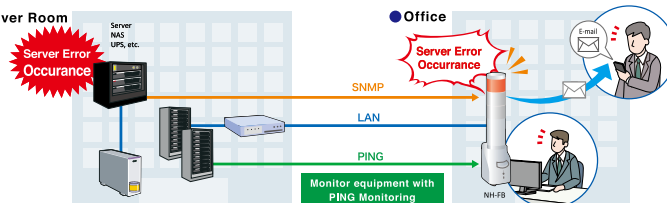


Remotely monitor server errors

Be notified immediately of server errors or failures with light, alarm or remotely by e-mail.

● Server Room

● Office





Color Change



Level Meter Monitoring



Status Condition



Cycle Time



Remote Monitoring



Ethernet PoE

The first PC programmable Signal Tower with unlimited possibilities

60mm Smart Signal Tower

■ DC24V/ 5 Tier Type

■ AC 100-240V/ 5 Tier Type

LA6



- 11 Sounds
- Open Collector
- LED 21 Colors
- IP65
- IP54 (Buzzer)
- 85 dB at 1 m



Silver Lighting Type
Off-white Flashing/Buzzer Type

60mm Smart Signal Towers with PoE

Direct Mount Type

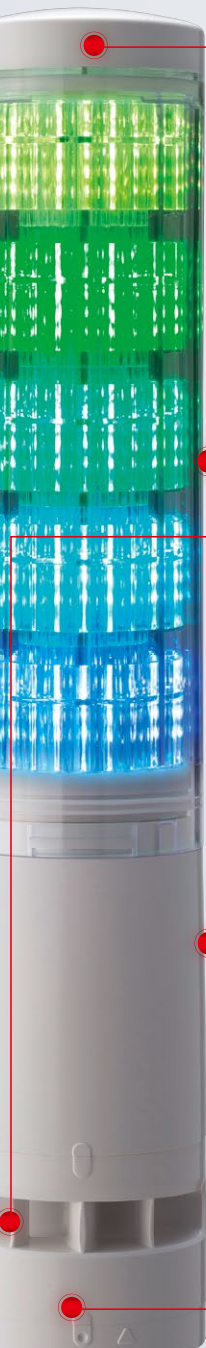
LA6-5DTNWB-POE

Stationary Type w/"Clear" Switch

LA6-5DSNWB-POE



- Easy WEB
- PoE
- Mirroring
- Modbus/TCP
- Socket
- LAN
- 85 dB at 1 m
- 11 sounds
- LED 21 Colors
- IP54 (Direct Mount)
- HTTP



Multi-function Switch for various setups

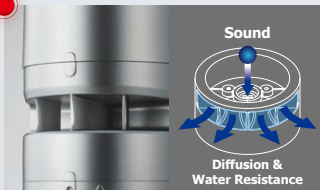
Audible Alarm SOUND SETUP
The built-in switch has four selectable settings for "Loud" (about 85dB) -> "Middle" (about 80dB) -> "Low" (about 75dB) -> "Off".

COLOR SETUP
The built-in switch can also allow a manual selection of 9 colors to be set for each tier.



A new lens design optimizes visibility.

The newly developed lens design efficiently diffuses LED light so that it is unmistakably visible, even from great distances.



The Audible Alarm has a total of 11 sounds to match various applications.

A newly developed compact loudspeaker not only can transmit a clear sound of 85 dB (at 1m), but also has added water resistance. A different alarm sound can be set up with each display pattern when in the Smart mode. (Only three of the 11 alarm patterns are selectable in the Signal Tower mode)



Use the free editing software to freely change the LA6 colors and patterns.

Upload colors and patterns to the signal tower via a USB cable.*
*The USB cable is sold separately (USB microB type with Charging/ Data Transfer capability).



Detachable Terminal Block

Equipped with 8 inputs for connecting wires or a PLC. I/O data can be recorded and stored over the network. DC power can also be supplied through the terminal block.



Conveniently connects to an existing network with PoE support.

PoE (Power over Ethernet) is a technology which lets network cables carry electrical power. PoE can bring many advantages, such as reducing costs of installing electrical cabling, by connecting it with a HUB supporting PoE, or have the flexibility of not having to be tethered to an electrical outlet.

LA6-POE Communications Protocols

SOCKET Communication

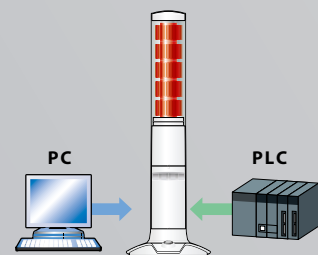
An application-level protocol called PNS (developed by PATLITE) can be used to establish connection between client and server and to control visual and audible alert functions.

HTTP (Hypertext Transfer Protocol)

HTTP commands sent through a web browser or PLC can trigger visual and audible alert functions.

Modbus TCP/UDP --remove images

Modbus, a vendor-neutral protocol, can be used to control visual and audible alert functions through a PLC.



Network Monitoring Signal Tower with MP3

NHL-3FV2 NHP-3FV2

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



Lights Off



Wall-mount Bracket NH-WST2

Easy WEB	PING	EMAIL
SNMP v1 / v2c	RSH	SLMP
Socket	LAN	MP3
88 dB at 1 m	10 Sounds	60 Messages
4 Inputs	1 Output	Line out
NHL φ 60mm	NHP φ 40mm	HTTP



Network Monitoring Signal Tower

NHL-3FB2 NHP-3FB2

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



Lights Off



Wall-mount Bracket NH-WST



Partition-mount Bracket NH-PST

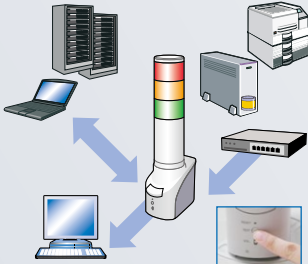
Easy WEB	PING	EMAIL
SNMP v1 / v2c	RSH	SLMP
Socket	LAN	80 dB at 1 m
4 Sounds	NHL φ 60mm	NHP φ 40mm
HTTP		



Monitoring Functions

PING Monitoring

A maximum of 24 nodes is possible when monitoring critical status information. When an abnormality occurrence in the monitored equipment network isn't obtained, the detected abnormality warns the administrator promptly with light and sound.



TRAP Monitoring

With the TRAP Monitoring function, the NHL alerts administrators to any equipment abnormalities within the IP network that uses SNMP.

- It can distinguish the variable-bindings.
- Registration of 16 groups (4 nodes per group) is possible.

Application Monitoring

Monitor important background applications and signal the administrator upon any detected abnormalities.

Self-diagnosis Function

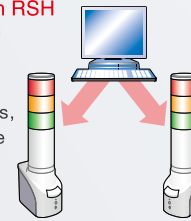
For peace of mind, manually test operation functions with the conveniently located test button.

Communication Commands

RSH

Controllable with RSH

The NHL is easily controllable by Remote Shell (RSH) commands, which is a flexible protocol.



NHL-FB / NH-FV Series
Event Occurrence: Command Execution, (Red/Amber/Green Lighting, Buzzer sounds)
RSH:
rsh 192.168.10.1 -l root alert 111001

NH-FV Series
Event Occurrence: Command Execution, (Ch10 Message Playback)
RSH:
rsh 192.168.10.1 -l patlite sound 10

SOCKET Transmission

PHN Command Compatibility

Controlled with 2 bit commands.

* Some functions are limited.

Event Occurrence: Command Execution, (Red/Amber/Green lighting, Buzzer sounds)
PHN Command: 57H, 17H

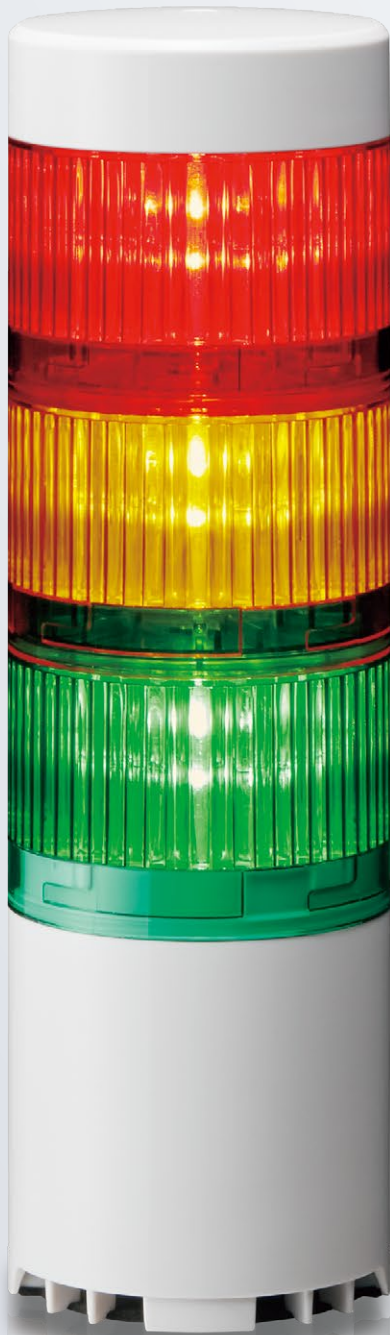
PNS Command Compatibility

* The PNS command is a unique command from PATLITE.

Control all pattern information by using the PNS commands.

NHL-FB / NH-FV Series
Event Occurrence: Command Execution, (Red/Amber/Green lighting, Buzzer sounds)
PNS Command: 58H, 58H, 53H, 00H, 00H, 06H, 01H, 01H, 01H, 00H, 00H, 01H

NH-FV Series
Event Occurrence: Command Execution, (Ch10 Message Playback)
PNS Command: 58H, 58H, 56H, 00H, 00H, 04H, 01H, 00H, 00H, 10H



DIRECTLY TRIGGERED AND POWERED VIA USB INTERFACE

PC and HMI controlled

Powered over USB for single cord installation

Open architecture for custom programming

Compatible with Windows® and Linux

Single Cable Installation

USB cable* transmits power and data



* USB cable is not included with this product.

Downloadable* Software Library

Simple to Program



* Download from our website.

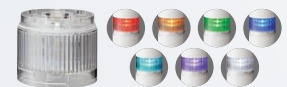
Compatible LED Units



LR6-E-R/Y/G/B/C



LR6-E-RZ/YZ/GZ/BZ



LR6-E-MZ

*Supports up to 5 LED units total

*LR6-E-MZ can be used with any other LED unit types



LR6-3USBW-RYG
LR6-3USBK-RYG



LR6-USBW
LR6-USBK

Mounting Options



SZK-003W/K



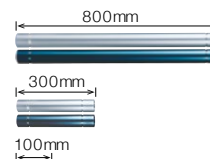
SZ-016A



SZP-004W/K



SZ-010

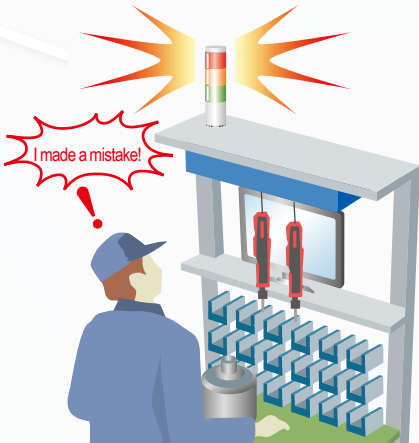


POLE-100/300/800A21(K)



example

Ideal for Factory Automation, Unique Solutions for USB Connections



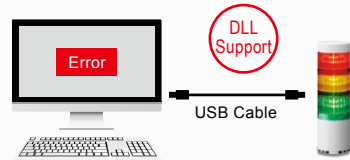
Production line

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 determine OK or not good, or situations where material is out or a button on the touch panel is pressed, you can control flashing LED units or sound the buzzer.

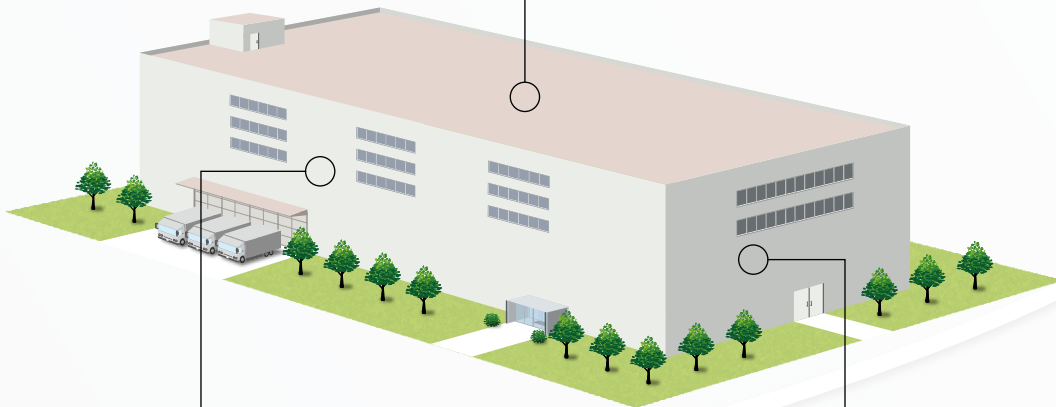
A software library (for Windows®) is available, enabling easy construction of programs. Even on other operating systems, possible for control based on protocol specifications.

The signal tower can be used for various purposes, such as notifying managers or warning operators.



PC, panel computer, and so on

LR6-USB



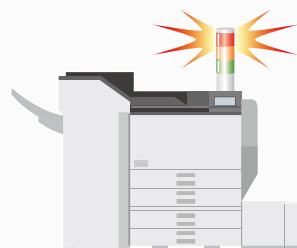
Work with PC in an office

Site visualization solution



Installed on equipment

Work with PC-controlled equipment



Make Smarter, Data-Driven Decisions

Any manufacturer

Any year/model

Wireless communication means wiring is unnecessary



1

Acquire real-time machine data regardless of machine brand or age

2

Easy installation and setup



Wirelessly transmit critical equipment data

Receiver
WDR-LE-Z2



LAN

3

Export data to CSV file for detailed analysis



Transmitter
WDT-6LR/5LR-Z2

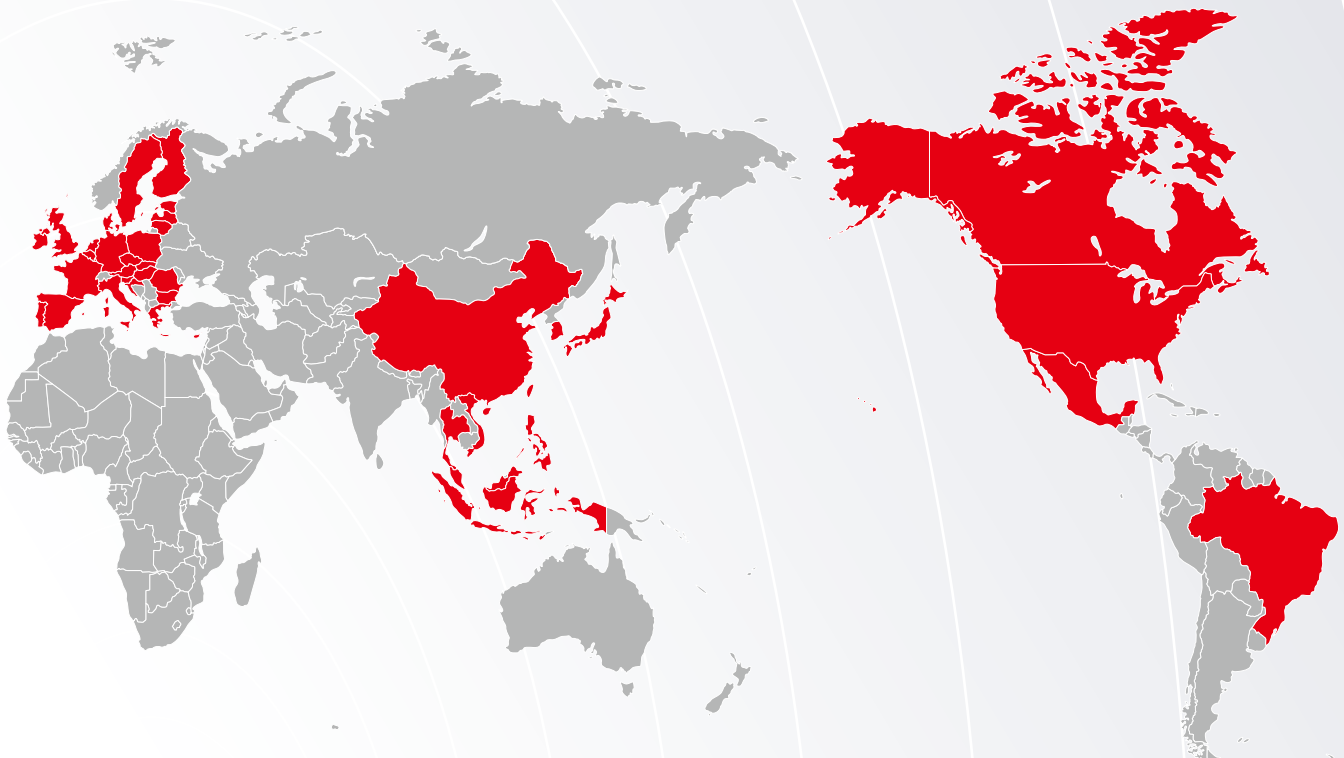
Red:Abnormal Stop Amber:Operator Call Green:Normal Operation

Facility name	11					12					13					14					15				
	10	20	30	40	50	10	20	30	40	50	10	20	30	40	50	10	20	30	40	50	10	20	30	40	50
Device1	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Device2	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Device3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Device4	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Device5	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

**Centralize
operations
management**

**Monitor
performance
across multiple
locations**

**Increase
plant-wide
visibility**



**Installed in
Over 1,000
facilities**

**Supported in
Over 10
countries**

Transmitter



Signal Tower
LR6 Transmitter
WDT-6LR-Z2



Signal Tower
LR5 Transmitter
WDT-5LR-Z2



Signal Tower
LME Transmitter
WDT-6M-Z2



Signal Tower
LE Transmitter
WDT-5E-Z2

For details, see page 35

Receiver

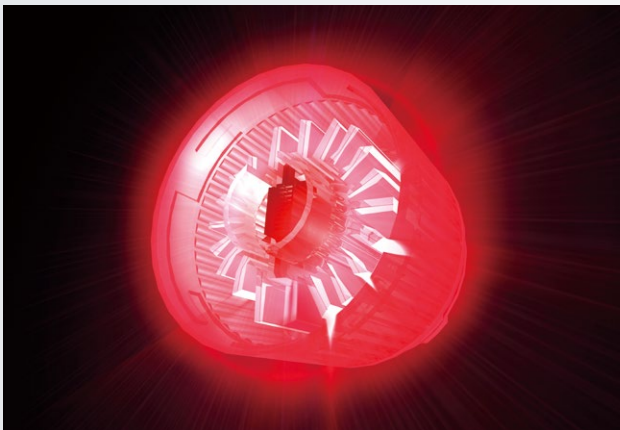


Stationary Receiver
WDR-LE-Z2

Next Evolution of Signal Towers

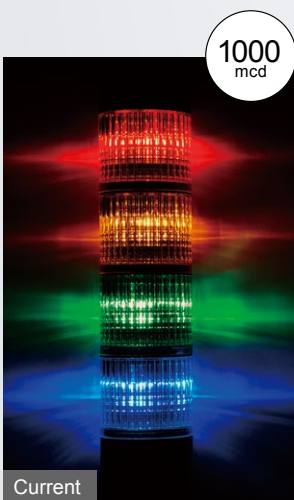


Visibility

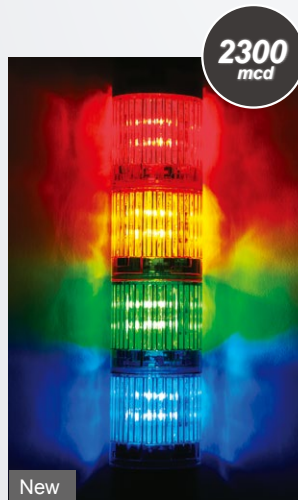


A uniform 360° Light-Emitting Design

The new LED color module features a unique interior lens construction that achieves a fuller, more uniform 360° degree light output. Light color is vibrant with more emission area for reliable indication from farther distances.



Current
LCE-A Series (φ 40)

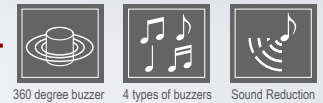


New
LR4 Series (φ 40)

More than twice the light output * Based on the φ 40 Red LED Model

The LR Series lenses distribute light more efficiently, more than doubling the luminous intensity of previous models.

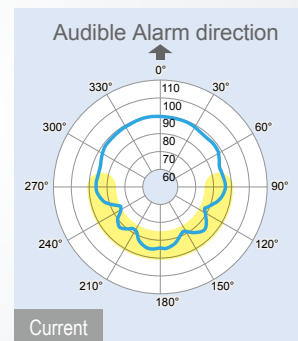
Audibility



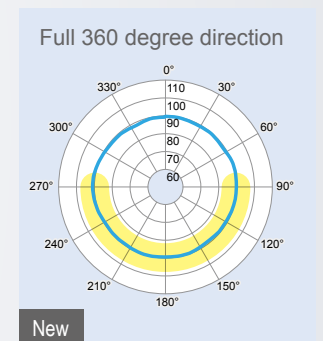
Unique, Fully-enclosed Sound Module

Inspired by the structure of a drum, the new sound module is completely enclosed. This allows the sound waves to be distributed more efficiently, producing an even, 360° sound resonance. The enclosed design also improves the resistance to water and dust.

* According to our research, December 2018



LHE Series (φ 70)

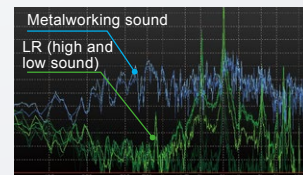


LR7 Series (φ 70)

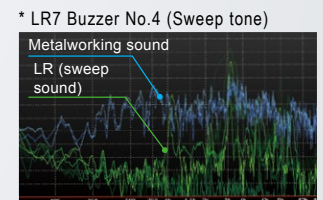
Maximum 90dB output

* LR7 Series Buzzer #4 Sweep sound

The fully enclosed sound module structure produces more efficient sound, up to 90dB, at 1 meter.



[Buzzer #3] High pitch (fast alternating intermittent)
2016Hz/3012Hz



[Buzzer #4] Sweep sound
1000Hz - 4032Hz (variable)

New Sounds Heard Above the Noise

Four Audible Alarm sounds* are built into the module. Audible Alarm sound No. 3 and No. 4 are newly developed with a higher variable frequency to be heard above the noise of surrounding machinery. A sound reduction function is also built-in to reduce the buzzer volume by approximately 10dB to suit the environment.

* Four Audible Alarm Sounds

- No.1:Rapid Intermittent sound
- No.2:Continuous sound
- No.3:Rapid Hi-Low
- No.4:Sweep sound

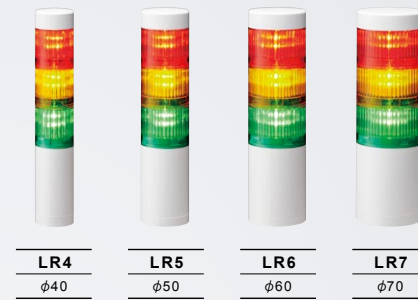
LR Series Model Conversion

As of September 2017, production of legacy models have completed.

Previous product



New product



Simplicity

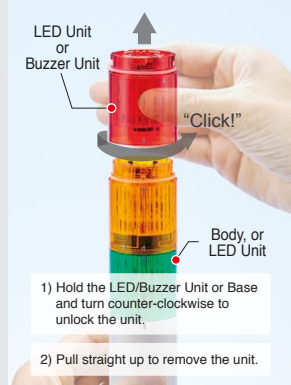
Durability



Reorganizing modules is effortless

Traditional stack lights typically require additional threaded shafts or tools to reconfigure light modules. The LR Series makes it easier than ever to change the number of light tiers or to add a sound module.

LED/Buzzer Unit Removal



- 1) Hold the LED/Buzzer Unit or Base and turn counter-clockwise to unlock the unit.
- 2) Pull straight up to remove the unit.

LED Unit Attachment



- 1) Align the bar markings on the LED Unit.
- 2) Aligning the bar with arrow, turn clockwise to lock.

Modular System Design

The fully modular allows the flexibility to change the LR to match any changes in the application. Also, in case a module is damaged, it can quickly be replaced.



Easy assembly/disassembly

Scan to see this in action



IP65
NEMA TYPE
4X, 13 *2

2 Year
Warranty

Smooth surface

The modules and body unit all line up flush, creating a smooth surface for improved water run off and easy cleaning.



Environmental Performance

The LR Series is built resistant to water and dust, carrying IP65 (NEMA Type 4X, 13*) protection ratings.



Cable wire included

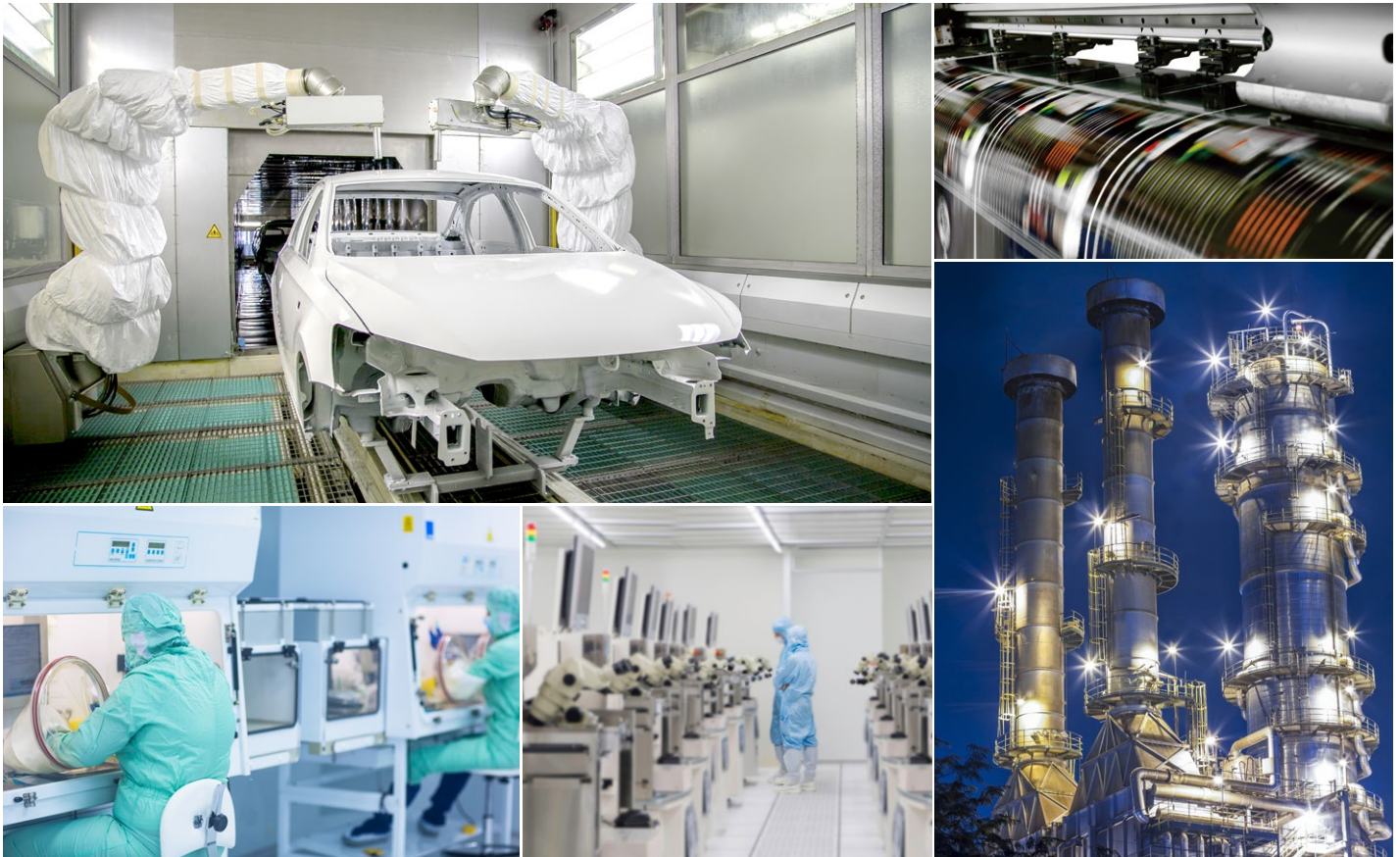
*[Type 4X] Protection against damage from corrosion, rain, foreign matter, water spray, water injection, and ice formation to the outer housing.

[Type 13] Housing for indoor use. Protection from dust, water spray, oil and non-corrosive coolant.

Explosion Proof products



Various Applications for Explosion Proof and Harsh Environments



Branch	Explosion Hazard
Power Generation Companies	● Lump Coal Dust
Woodworking Industry	● Saw Dust ● Fine Wood Chips
Metal-work Operations	● Explosive Metal Dust ● Spark-ignitable Metal Dust
Food/Beverage Industry	● Ignitable Grain Dust ● Explosive Sugar Dust
Refinery Industry	● Hydrocarbons close to their flash-points ● Oil Processing Plants
Waste Disposal Companies	● Waste-water Treatment Gases
Landfills/Civil Engineering	● Flammable Landfill Gases ● Uncontrolled Gas Emissions ● Flammable Gas from poor ventilation sources
Pharmaceutical Industry	● Alcohol Solvents ● Materials explosive when mixed
Gas Suppliers	● Natural Gas Leakage ● Natural Gas Emissions
Paint-spraying Operations	● Overspray in Spray-paint Bays ● Solvent Vapor Emissions
Recycling Operations	● Unemptied flammable gas/liquid containers ● Biodegradable Material Emitting Explosive Gases
Chemical Industry	● Flammable Gases ● Flammable Liquids ● Flammable Solids
Agriculture	● Bio-gas Production Plants ● Bio-gas Located on Farms



Wall Mount



Horizontal Mount

■ Descriptions

The ST-PA Explosion Proof Signal Tower Series features 5 ultra-bright, maintenance-free LED units and contained in a flame and dust proof housing.

■ Features

- Housing: Aluminum alloy
- Glass: Borosilicate glass
- Terminals: Easy wiring access from bottom door
- Mounting: Upright, Wall Mount, Vertical-mount, and Horizontal Mount.
- Voltage: 24V DC, 100-240V AC are available.
- Wire core size: 0.5mm²~2.5mm², AWG20~AWG14

ST-PA-LR6 is covered by the specifications shown in the **shaded** areas below

Country	Area Classification	Classification of hazardous areas			Patlite Model ST-PA-LR6		
		Constant Exposure	Occasional Exposure	Rare and Temporary	Conformity hazardous areas	Explosive atmosphere	Certification authority
Europe	ATEX Directive 94/9/EC	Zone 0 Zone 20	Zone 1 Zone 21	Zone 2 Zone 22	Zone 1,2 Zone 21,22	Gas Dust	EPS

*The ATEX directive is a CENELEC standard.

Specifications

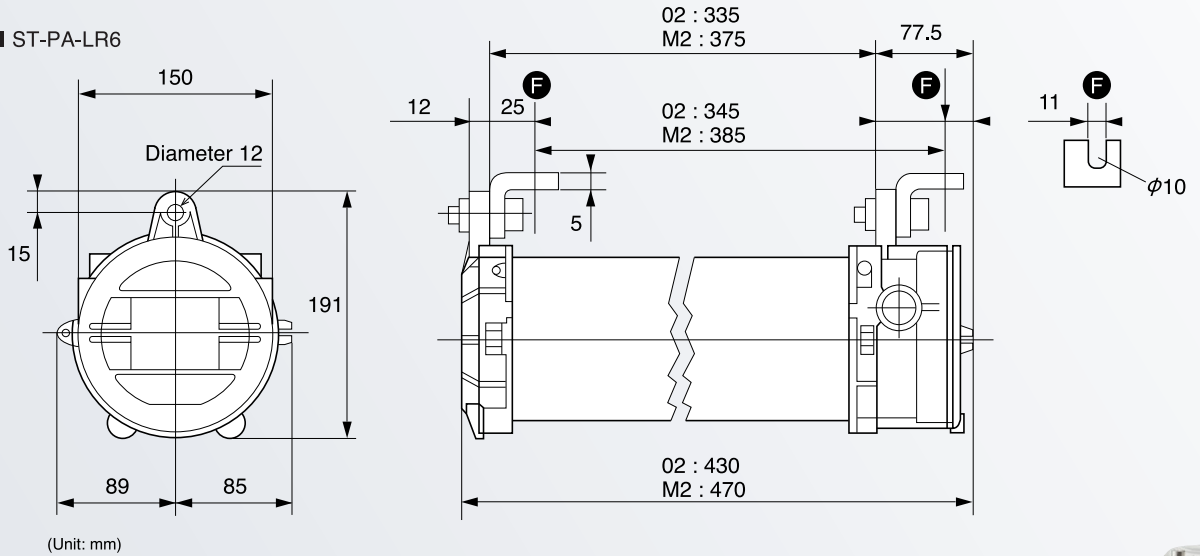
Type	ST-PA-LR6502WJBWRYGBC	ST-PA-LR65M2WJBWRYGBC
Rated voltage	24V DC (PNP/NPN No Polarity)	100-240V AC
Operating temp.	ATEX Directive:-20°C~+50°C (no ice)	
Lighting pattern	Flashing (60±12 flashes per minute) / Continuous lighting	
Protection Rating	IP66	
Mounting type	Outdoor & Indoor	Upright & Sideways
Mass (Main body)	5.7kg	6.7kg
Cable	10m Cable 10×0.75mm ²	10m Cable 12×0.75mm ²
Material	Upper & Lower case : Aluminum alloy Glass case : Borosilicate glass Bracket : Stainless steel	

■ Certifications

Certifications		EPS 16 ATEX 1099 IECEx EPS 16.0046 TC-RU C-DE.ME92.B.00342
Marking	 	
Standards	EN 60079-0, EN 60079-1, EN 60079-31	
Guideline	2014/34/EU	
Production Certification	EPS 13 ATEX Q 594	
CE	2004	

Dimensions (mm)

■ ST-PA-LR6

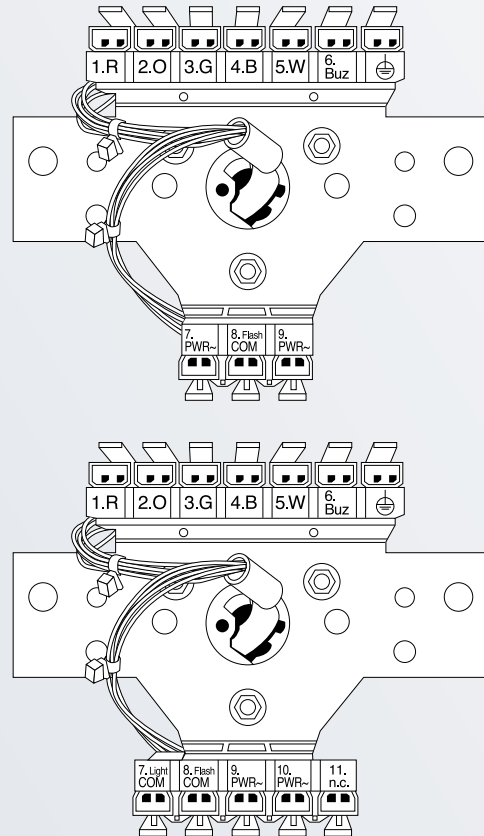


Wiring Diagram

■ The colors are wired to table

Color of wire of signal tower	Wire no. of linebushing ST-PA-LR6-02	Wire no. of linebushing ST-PA-LR6-M2
Red (Light)	R : 1	R : 1
Orange (Light)	O : 2	O : 2
Green (Light)	G : 3	G : 3
Blue (Light)	B : 4	B : 4
White (Light)	W : 5	W : 5
Violet	Buz : 6	Buz : 6
Green/yellow	PE	PE
Yellow	PWR+ : 7	Light COM : 7
Brown	Flash COM : 8	Flash COM : 8
Grey	PWR- : 9	PWR~ : 9
Black		PWR~ : 10
		n.c. : 11

■ Internal Connection



CE II 3 G Ex nA IIC T4 Gc, II 3 D Ex tc IIIC T80°C Dc IP65 2014/34/CATEX: EN 60079-0:2012 / A11:2013, EN 60079-15:2010, EN 60079-31:2014

Ø40mm Signal Towers

The LR-EX Signal Tower Series features up to five LED segments tightly secured together with screws to ensure compliance with certifications and to prevent tampering or loosening from continuous vibration. Each ultra-bright, maintenance free, LED unit is designed with intricately cut lenses with a double-reflection system to produce even, brilliant, light output, visible from further distances. The lenses and body structure is dust and water tight and constructed from durable polycarbonate to withstand harsh environments.

FEATURES

- Suitable for Zone 2 and Zone 22 applications
- CE compliance in accordance with ATEX
- Fully-enclosed sound module with 4 built-in sounds
- IP65 protection rating

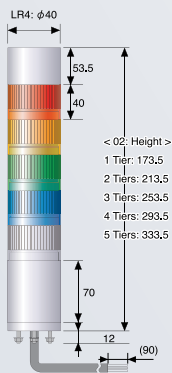
OPTIONS

- 1/2" NPT pole mount or direct mount adapter
- Wall mount brackets

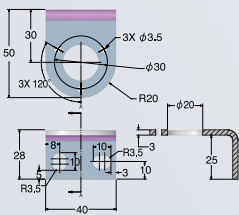


Dimensions (mm)

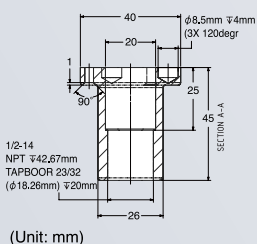
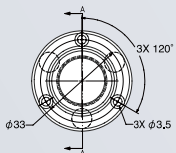
Signal Tower



WALL MOUNT BRACKET



1/2" NPT ADAPTER TYPE



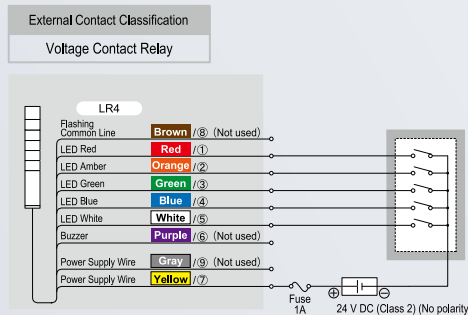
Specifications

Explosion-safety	CE II 3 G Ex nA IIC T4 Gc, II 3 D Ex tc IIIC T80°C Dc IP65
CE conformities	EN 60079-0:2012 / A11:2013, EN 60079-15:2010, EN 60079-31:2014
Certification	EC-Declaration of conformity
Ambient Temperature	-20 °C to +50 °C
Ingress Protection	IP65 to EN 60529
Material	Polycarbonate
Lighting Source	A Uniform 360° Light-Emitting Design
Acoustical Source	85 dB (at 1m) with 4 sound options
Rated Voltage	24V DC (PNP/NPN No Polarity)
Module Colors Available	Red, Amber, Green, Blue, Clear/white
Cable	Jacketed cable, Ø8mm, 3m length

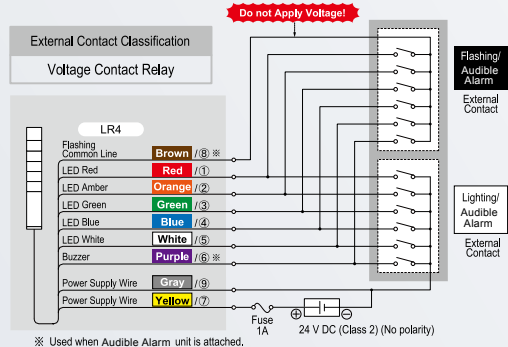
CURRENT RATINGS

LED		BUZZER	
Signal	Line Current	Signal	Inrush Current
Red, Amber	Green, Blue, Clear	approx. 40 mA	approx. 250 mA

Lighting 24V DC

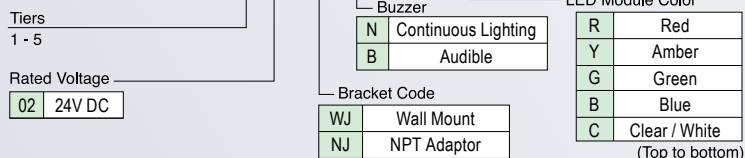


Lighting/Flashing/Alarm 24V DC



Model Code

LR4-502WJBU-RYGB-C-EX



CE II 3 G Ex nA IIC T4 Gc, II 3 D Ex tc IIIC T80°C Dc IP65 2014/34(ATEX): EN 60079-0:2012 / A11:2013, EN 60079-15:2010, EN 60079-31:2014

Ø60mm Signal Towers

The LR-EX Explosion Proof Signal Tower Series features up to five LED segments tightly secured together with screws to ensure compliance with certifications and to prevent tampering or loosening from continuous vibration. Each ultra-bright, maintenance free, LED unit is designed with intricately cut lenses with a double-reflection system to produce even, brilliant, light output, visible from further distances. The lenses and body structure is dust and water tight and constructed from durable polycarbonate to withstand harsh environments.

FEATURES

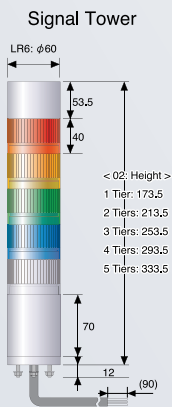
- Suitable for Zone 2 and Zone 22 applications
- CE compliance in accordance with ATEX
- Fully-enclosed sound module with 4 built-in sounds
- IP65 protection rating

OPTIONS

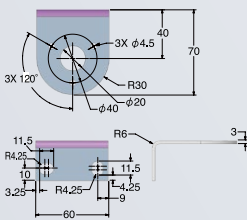
- 3/4" NPT pole mount or direct mount adapter
- Wall mount brackets



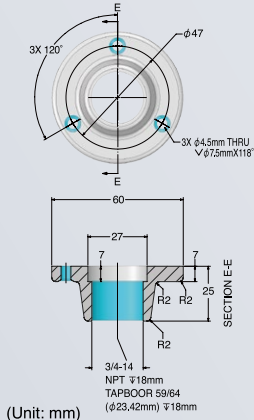
Dimensions (mm)



WALL MOUNT BRACKET



3/4" NPT ADAPTER TYPE



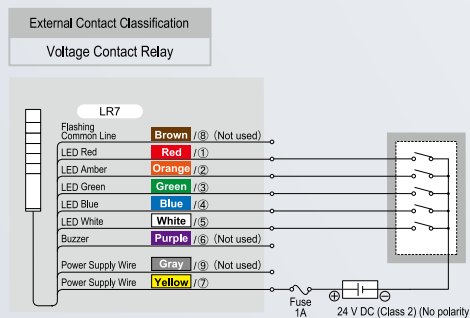
Specifications

Explosion-safety	CE Ex II 3 G Ex nA IIC T4 Gc, II 3 D Ex tc IIIC T80°C IP65
CE conformities	EN 60079-0, EN 60079-15, EN 61241-0, EN 61241-1
Certification	EC-Declaration of conformity
Ambient Temperature	-20 °C to +50 °C
Ingress Protection	IP65 to EN 60529
Material	Polycarbonate
Lighting Source	A Uniform 360° Light-Emitting Design
Acoustical Source	85 dB (at 1m) with 4 sound options
Rated Voltage	24V DC (PNP/NPN No Polarity)
Module Colors Available	Red, Amber, Green, Blue, Clear/white
Cable	Jacketed cable, Ø8mm, 3m length

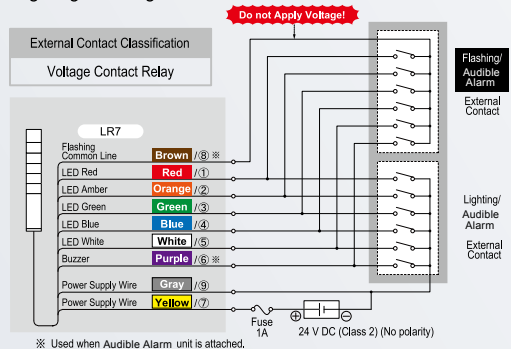
CURRENT RATINGS

LED		BUZZER	
Signal	Line Current	Signal	Inrush Current
Red, Amber	Green, Blue, Clear	approx. 40 mA	approx. 250 mA

Lighting 24V DC

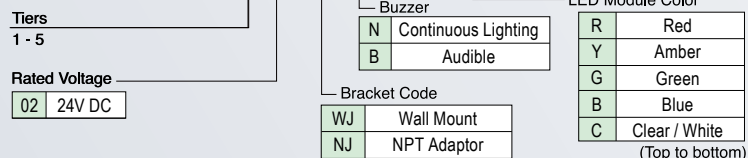


Lighting/Flashing/Alarm 24V DC



Model Code

LR6-502WJBU-RYRGB-EX



LKEH-FE-EX, LKEH-FV-EX

Explosion Proof

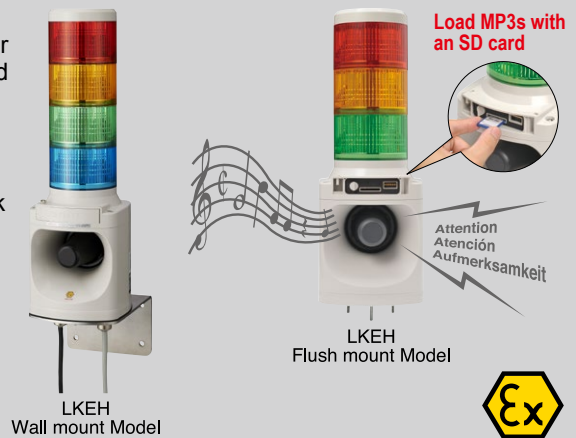
CE II 3GD Ex nA IIC T4 Gc, Ex tc IIIB T85°C Dc IP54 94/9/Ex(ATEX)CENELEC:EN 60079-0, EN 60079-15, EN 60079-31

Ø100mm Signal Tower and MP3 Annunciator / Alarm Horn Hybrid

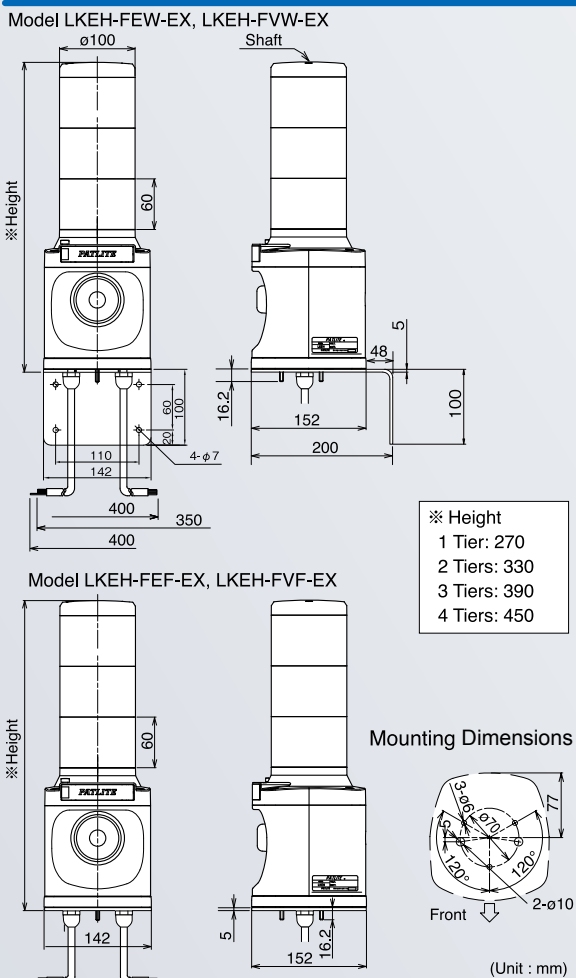


The LKEH-EX Hybrid Series features a combination of up to four ultra-bright LED segments, MP3 voice annunciation, and pre-loaded alarm sounds for highly-effective signaling and notification.

- Suitable for Zone 2 and Zone 22 applications
- CE compliance in accordance with ATEX
- Supports MP3 alerts up to 63 sec. (64kbit/s) with 5 selectable playback channels
- Comes pre-loaded with 32 tones and melodies
- Adjust playback volume from 0 to 105dB
- Field programmable with front loading SD card port
- Designed to withstand 2G vibrations
- NPN or PNP types available



Dimensions (mm)



Sound Selection Charts

- Pre-recorded on model LKEH-FE-EX.
- 8 sounds can be played back by a bit input, and 32 sounds by binary input.

Beep	Stutter + Bell	Inverted Revelle	Annie Laurie
Stutter	Synthesized Melody	Galactic Motor	London Bridge
Bell	Chime	Ringing Phone	Mary's Lamb
Yelp	Call Sign	Two Tone	Camptown Races
Rapid Hi Lo	Train Ride	Alarm Clock	Amaryllis
Melody Chime	Galloping Hi Lo	Ringing Hi Lo	Symphony #40
Synthesized Piano	Alien Chatter	Fur Elise	Ave Maria
Synthesized Bell	Falling Crystals	Minuet	Grandfather's Clock

Model	MP3	Power
LKEH-FEF-EX/LKEH-FEW-EX	—	14.2W
LKEH-FVF-EX/LKEH-FVW-EX	Supports	14.2W

SD card(SD-2GP) for the model LKEH-FVF-EX and LKEH-FVW-EX sold separately.

Model Code

LKEH-302FVF-RYG-EX

Model	LKEH-302FVF-RYG-EX		Color
Tiers	1~4		R Red
Type	FV MP3 Annunciator	F Flush mount	Y Amber
	FE 32 sounds	W Wall mount	G Green
			B Blue
			C Clear / White
			(Top to bottom)

Specifications

Model	Rated Voltage	Voltage Range	MP3, Melody	Operating Temperature Range	Recordable Duration	Sound Pressure (at 1m)	Messages	Mass
LKEH-FEF-EX	24V DC	24VDC±10%	Type-E	-10°C to +50°C, Humidity 85% or less	Prerecorded	105dB	8ch bit input, 32ch binary input	2.8Kg
LKEH-FEW-EX			Type-E		Prerecorded		8ch bit input, 32ch binary input	3.2Kg
LKEH-FVF-EX			MPEG1-Audio layer III, 64kbit/s		63 sec.		5ch bit input, 31ch binary input	2.8Kg
LKEH-FVW-EX			MPEG1-Audio layer III, 64kbit/s		63 sec.		5ch bit input, 31ch binary input	3.2Kg

The mass indicated is based on a 3 tiered LED Model LKEH. The mass will change in conjunction with the number of tiers. Add or remove 0.2 Kg per module.

EHS-EX, EHV-EX

Explosion Proof

CE II 3GD Ex nA IIC T4 Gc, Ex tc IIIC T85°C Dc IP65 94/9/EC(ATEX)CENELEC:EN 60079-0, EN 60079-15, EN 60079-31



105dB MP3 Annunciator / Alarm Horns

The EH-EX Series features a large memory storage for

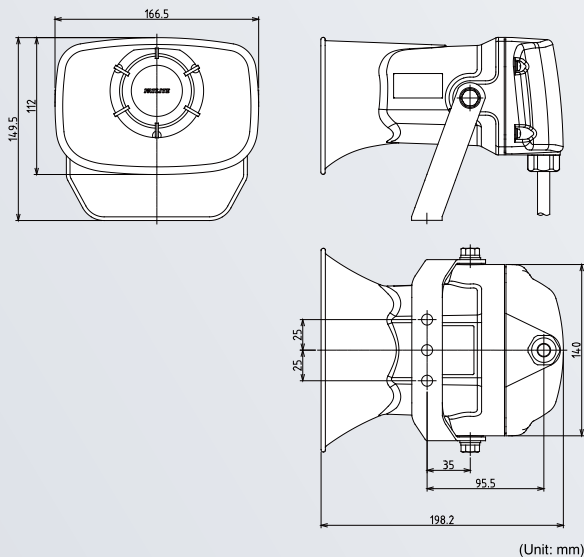
- Suitable for Zone 2 and Zone 22 applications
- CE compliance in accordance with ATEX
- Supports MP3 alerts up to 220 sec. (64kbit/s) with up to 63 selectable playback channels
- Comes pre-loaded with 32 (EHS) or 63 (EHV) tones and melodies
- Adjust playback volume from 0 to 105dB
- Field programmable with rear loading SD card port
- Designed for indoor and outdoor use, resistant to 4.5G vibrations
- Ideal for plant-wide notifications, public announcements, and process controls
- UL464, CSA-C22.2 NO.205-M1983, FCC Part 15 Subpart B Class 4
- Non-voltage (NPN) or PNP types available



EHS-EX
EHV-EX

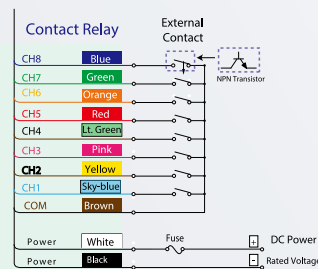


Dimensions (mm)

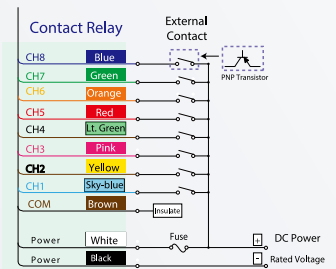


Wiring Diagram

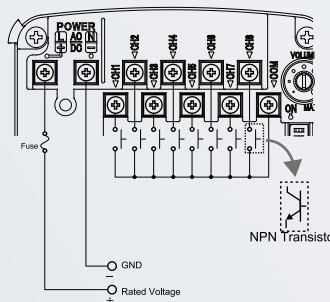
Non-voltage (NPN) Wiring



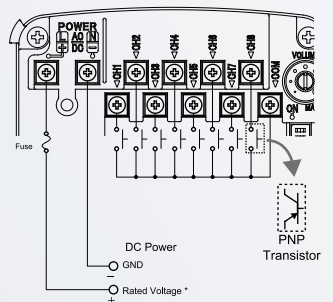
PNP Wiring



Terminal (NPN)



Terminal (PNP)



Model Code

EHV- G-EX


Model	Melody/Alarm Type
EHS Alarm Horn	G Type G(EHV Only)
EHV MP3 Annunciator	E Type E(EHS Only)
Rated Voltage	Wiring Type
M1 12-24V DC	H Cable
	T Terminal*

Specifications

Model	Rated Voltage	Voltage Range	Power Consumption	Rated Current Consumption	Sound Pressure (max)	Operating Temperature Range	No. of Playback Messages	Protection Rating	Wiring Type	Mass
EHS-M1HE-EX	12 - 24V DC	10.8V to 26.4V DC	4W (at 24V DC)	450mA (max)	Alarm: 110dB (at 1m)	-20 °C to +50°C (Less than 85% RH)	Bit Input: 8 Binary Input: 32	IP65	Cable	1.25kg
EHS-M1TE-EX									Terminal	
EHV-M1HG-EX	12 - 24V DC	10.8V to 26.4V DC	4W (at 24V DC)	400mA (max)	Alarm: 110dB (at 1m) MP3: 105dB (at 1m)	-20 °C to +50°C (Less than 85% RH)	Bit Input: 8 Binary Input: 63	IP65	Cable	1.25kg
EHV-M1TG-EX									Terminal	

Note 1: The sound pressure level is based on measurements under controlled conditions (voice-synthesized 1 kHz sine wave played back from a distance of 1 meter), therefore the surrounding environmental conditions and message content will result in different values for the sound pressure level.

Note 2: Even when starting two or more units simultaneously, a lag will occur during message playback.
MPEG Layer-3 audio coding technology licensed from Fraunhofer IIS and Thompson Licensing.(Model EHV)

CE  II 3GD Ex nA IIC T4 Gc, Ex tc IIIC T135°C Dc IP65 94/9/Ex(ATEX)CENELEC:EN 60079-0, EN 60079-15, EN 60079-31

Water and Oil Resistant LED Spot Light



The CLN-EX Series LED Spot Lights features a compact, rugged design, high intensity LEDs, and protection ratings to withstand the harshest conditions. With a 22.2mm thickness, a 820 lux output, and a 180-degree adjustable angle bracket, the CLN-EX maximizes visibility in just about any environment.

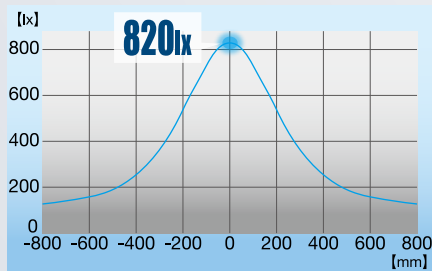
- Suitable for Zone 2 and Zone 22 applications
- CE compliance in accordance with ATEX
- 60,000 hours or about 7 years of service life
- Protection ratings: IP66G, IP67G, IP69K
- IEC62471 Compliance (Photobiological Safety Standard)
- Daylight color temperature (8,500K) suitable for detailed work
- Included angle bracket with 180-degree range of motion
- 22.2mm Thickness x 85mm Width x 126mm Height



CLN-24-CD-PT-EX



Light Distribution Characteristics



Stainless steel, 180-degree angle bracket provides versatile installation options to illuminate your work area

Floor Mount



Wall Mount



Ceiling Mount

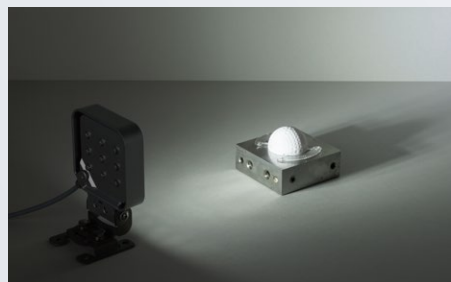


Angle bracket can be removed for direct mounting

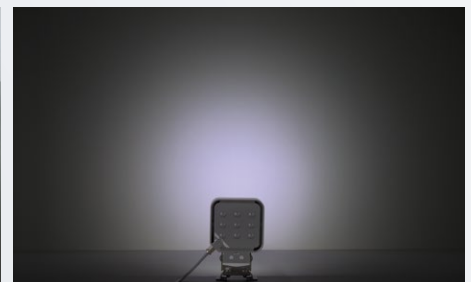
High intensity LEDs with 820 lx provides optimal illumination with only a 174mA current draw



Color temperature of 6,500K is ideal for detailed work areas



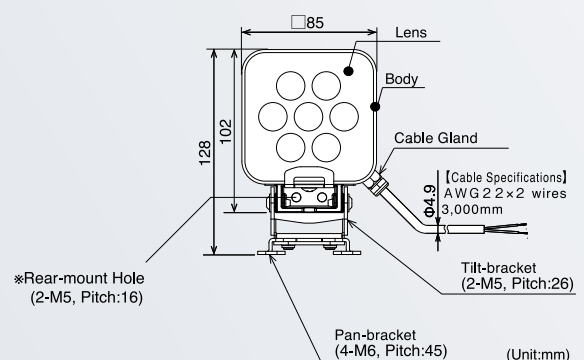
Natural, wide light distribution at 550 lumens; 40W bulb equivalent



Specifications

Model	CLN-24-CD-PT-EX
Color Code (Color)	CD (Daylight)
Color Temperature (typ.)	6500K
Illumination (typ.) (Centered at 24VDC) 1m	820 lx
Total Luminous Flux (typ.)	550 lm
Rated Voltage	24V DC (Polarized)
Operating Voltage Range	24V DC ±10%
Rated Current/Power Consumption	174mA ±10% / 4.2W
Operating Ambient Temperature	-40°C to +60°C (90% RH, No Condensation)
Main Unit Material	Body: Aluminum Alloy, Lens: Tempered Glass
Protection Rating	IP66G/67G (JIS C 0920)/69K (DIN 40050 part 9) (excluding cable end)
Mounting Location/Direction	Indoor / Any Direction
Insulation Resistance	DC 500V 5MΩ or more
Withstand Voltage	500VAC for 1 minute (Between terminals and chassis)
Vibration Resistance	30Hz total amplitude 0.3mm ^{PP} Back and forth, up and down, right and left for 2 hours each Total amplitude 0.3mm ^{PP} (10-57Hz), Acceleration 19.6m/s ²
Mass (Tolerance ±10%)	430g

Dimensions (mm)



*1 : The typical value of LED brightness is 70% of the original specification, but may vary depending on actual applications.
 *2 : IP66G and IP67G are Japanese Industrial Standards (JIS C0920-2003), and IP69K is the German DIN 40050 PART9 Standard.
 *3 : CLN-24-CD-PT-EX Spot Light can only be installed where risk of mechanical danger is limited to 2 Joules of impact energy

CE II 3GD Ex nA IIC T4 Gc, Ex tc IIIC T135°C Dc IP65 94/9/Ex(ATEx)CENELEC:EN 60079-0, EN 60079-15, EN 60079-31



Water and Oil Resistant LED Light Bar

The CLK-EX LED Light Bar Series features a rugged design, high intensity LEDs, and protection ratings to withstand the harshest conditions. The CLK Series is an ideal choice for major illumination projects.



CLK3S-24AG-CD-EX

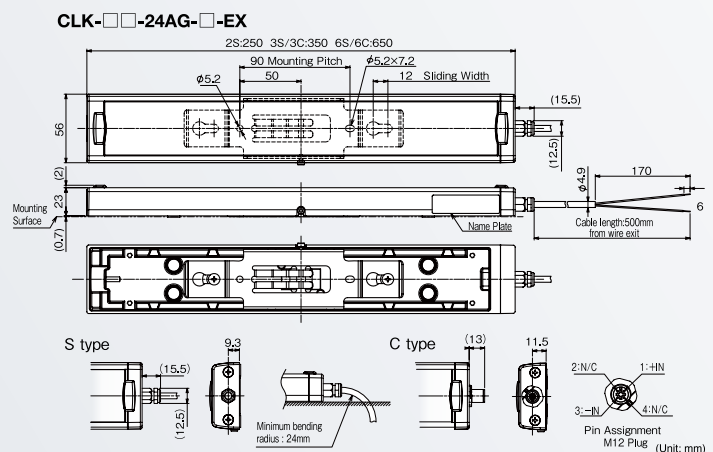
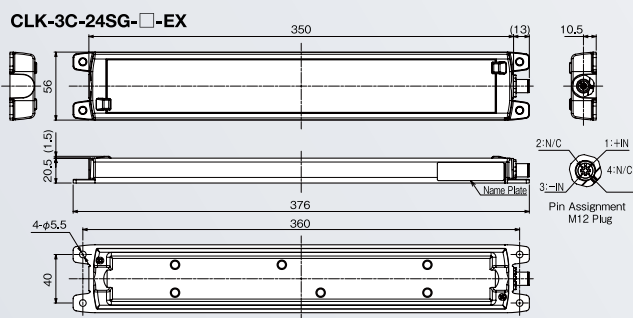


CLK6C-24AG-CD-EX

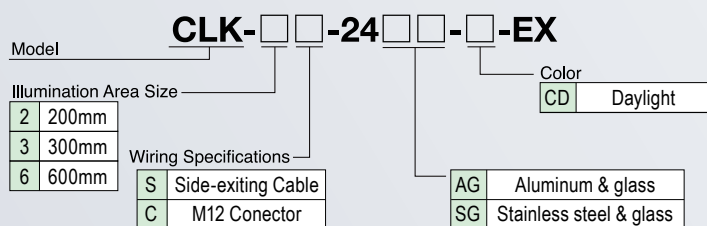
- Suitable for Zone 2 and Zone 22 applications
- CE compliance in accordance with ATEX
- Tempered glass lens to withstand flying scrap metal
- Stainless steel and aluminum body options available
- Available in 250mm, 350mm, 650mm lengths
- 1200 lx (3S/3C); 2100 lx (6S/6C)
- Color Temperature: CD 6,500K, CN 5,000K
- Protection Ratings: IP66G, IP67G, IP69K



Dimensions (mm)



Model Code



Specifications

Model	CLK-□□-24□□-□-EX
LED Color	Day light(CD) / Natural White(CN)
Rated Voltage	24V DC
Operating Voltage Range	Rated Voltage ± 10%
Current Consumption	522mA ± 40mA (3S/3C type)
Light Source	High intensity LED × 18 elements (3S/3C type)
Luminous Intensity at Optical Center (lx at 1m)	1200 lx (3S/3C); 2100 lx (6S/6C)
Main Body	Housing: Aluminum, Cover: Tempered glass
Operating Temperature Range	-40°C~+60°C (No condensation 90%RH or less)
Mounting Direction	Any Direction (for indoor use only)
Protection Rating	add IP69K
Vibration Resistance	19.6m/s ²
Mass	1490g (3C type)

The CLK-EX Series may only be installed in places where risk of mechanical danger is limited to an impact energy of 2 Joules (1 Kg mass dropped at 20cm height).

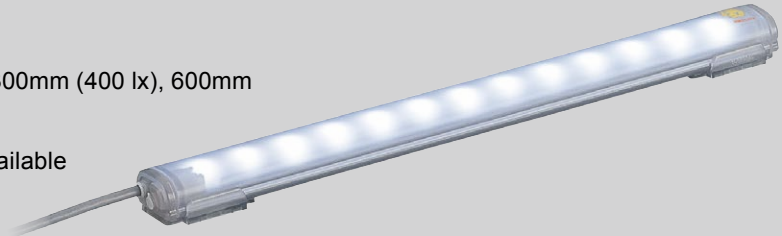
CE II 3GD Ex nA IIC T4 Gc, Ex tc IIIC T135°C Dc IP65 94/9/Ex(ATEX)CENELEC:EN 60079-0, EN 60079-15, EN 60079-31



Water Resistant LED Light Bar

The CLA-EX LED Light Bar Series features a light weight design, high intensity LEDs, and a IP69K rating to withstand wet environments. The CLA Series is an ideal choice for high temperature, high pressure washdown applications

- Suitable for Zone 2 and Zone 22 applications
- CE compliance in accordance with ATEX
- Available in 100mm (140 lx), 200mm (270 lx), 300mm (400 lx), 600mm (650 lx), 900mm (810 lx) lengths
- Protection Ratings: IP66, IP67, IP69K
- Variety of polycarbonate mounting brackets available

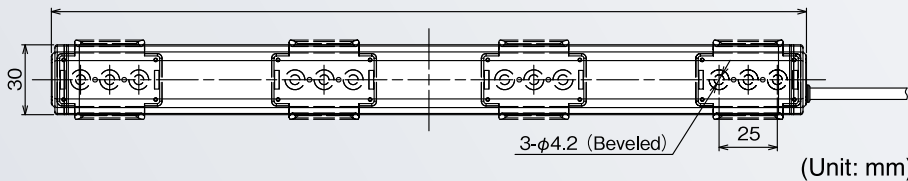


CLA3S-24-CD-30-EX



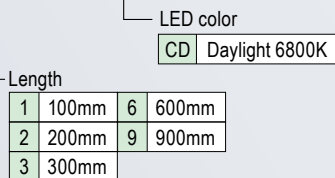
Dimensions (mm)

CLA1S:124, CLA2S:224, CLA3S:324, CLA6S:624, CLA9S:924



Model Code

CLA S-24- -30-EX



Optional Parts



Rear Attachment (Magnetic Mount)
Model SZ-310ARM






Side Attachment (Screw Mount)
Model SZ-310AS

Side Attachment Model SZ-310ASB




*Stainless steel brackets are also available.

Specifications




Models	Luminous Color	Length	Rated Voltage	Operating Voltage Range	Rated Current Consumption	Center Radiation (lx/50cm)	Mounting Direction	Vibration Resistance	Mass
CLA1S-24-CD-30-EX	Daylight	100mm	24V DC (Polarized)	24V DC±10%	104mA	140	Any Direction (Indoor Use)	19.6m/s ²	80 g
CLA2S-24-CD-30-EX	Daylight	200mm			208mA	270			130 g
CLA3S-24-CD-30-EX	Daylight	300mm			240mA	400			180 g
CLA6S-24-CD-30-EX	Daylight	600mm			480mA	650			340 g
CLA9S-24-CD-30-EX	Daylight	900mm			720mA	810			500 g

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	○	○	
USB control			○
RS-232C			○
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	○	○	
PING	24	24	

* Transmission is with v2c only

* For specifications, see the product page.

LR6-USB

Network

Signal Tower

Signal Light

Revolving Warming Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



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)

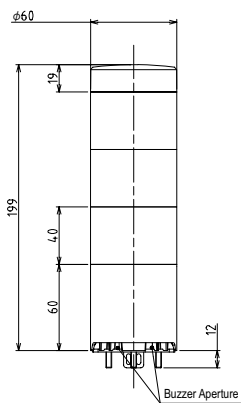
Specifications

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	

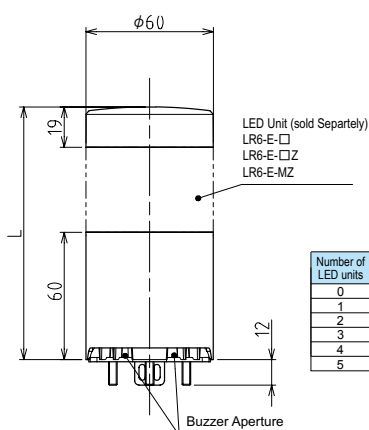
* Except when using pole bracket or wall bracket.

Dimensions (mm)

■ LR6-3USBW-RYG
LR6-3USBK-RYG



■ LR6-USBW
LR6-USBK



Number of LED units	L (mm)
0	79
1	119
2	159
3	199
4	239
5	279

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	

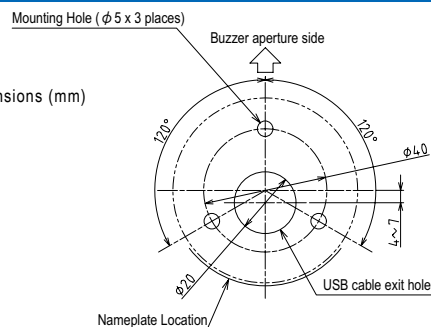
API list (Software library (DLL))

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

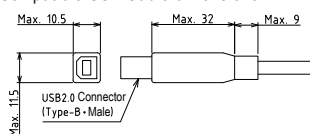
Communication Data Format (protocol specifications)

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	Empty
"If you emit sound (continuous) with red lighting, buzzer pattern 1 (Sound A:D7, Sound B:off)"						
0x10	0x00	0x00	0x00	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

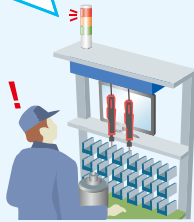
For details, see pages 182 to 187.

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)

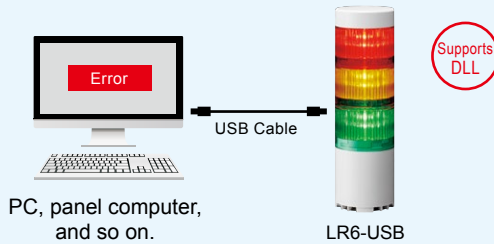
Ideal for Factory Automation, Unique Solutions for USB Connections

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.

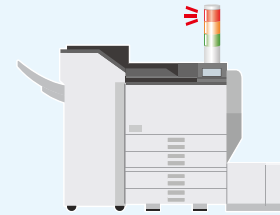


Production office



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

Demo Software



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

Compatible LED Units



- 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.

Supports wall mount and pole mount

We also have wallmount brackets and optional mounting poles.



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 Warming 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



Transmitter for LR6 Signal Tower
WDT-6LR-Z2

LR6 Series	Current Consumption typ.20mA
Estimated reach of radio waves *2 20m	



Transmitter for LR5 Signal Tower
WDT-5LR-Z2

LR5 Series	Current Consumption typ.20mA
Estimated reach of radio waves *2 20m	

Receiver



Stationary Receiver
WDR-LE-Z2

Connection method LAN/USB	Current Consumption typ.65mA
Can operate 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

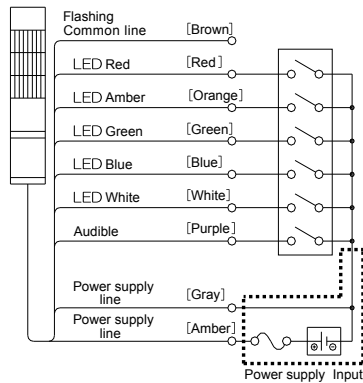


Global AC adaptor (for WDR-LE-Z2)
Model: ADP-001
Supported countries: Japan, EU, USA, China, South Korea, Taiwan, Thailand, Indonesia, Canada, Philippines, and Vietnam

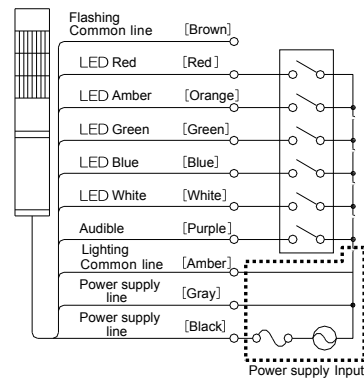
Model	WDT-5LR-Z2	WDT-6LR-Z2
Connectible types	LR5 Signal Tower Mount on top of the body unit	LR6 Signal Tower Mount on top of the body unit
Rated Voltage	24V DC	
Operating Voltage Range	19.0 - 26.4V DC	
Rated Current Consumption	Maximum 55 mA	
Ambient Operating Temperature	-10 °C to +50 °C	
Ambient Operating 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

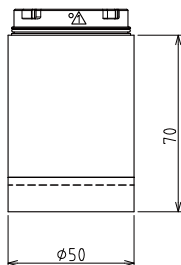


■ Power supply Voltage: 100V AC - 240V AC

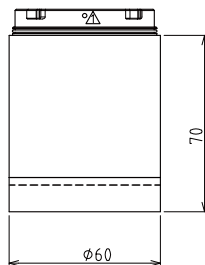


Dimensions (mm)

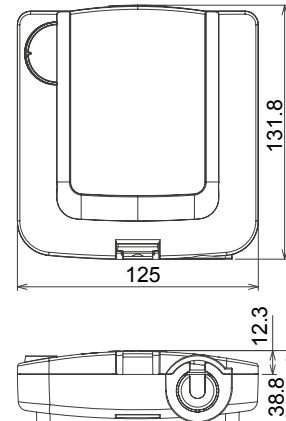
Model WDT-5LR-Z2



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



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

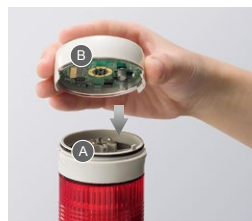
Receiver



Stationary 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)	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

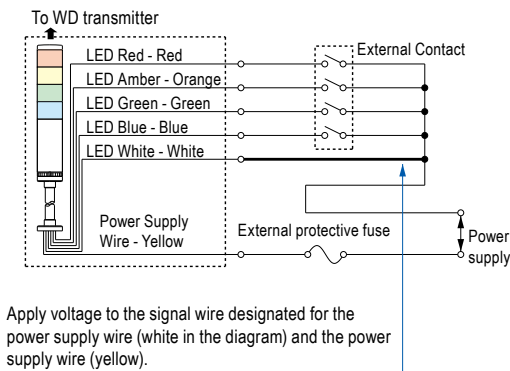
WDR-LE-Z2 does not come with an AC adaptor.

Function

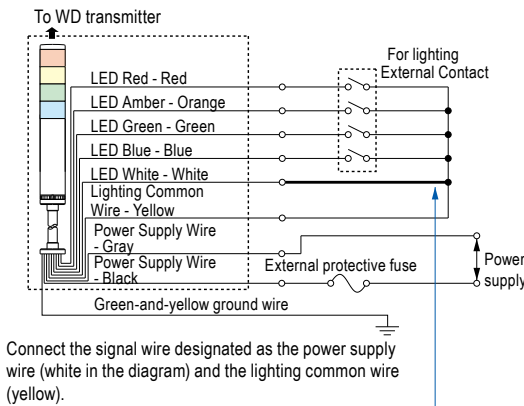
Item	Specifications
Model Name	WDR-LE-Z2
Communication Specifications	10BASE-T/100BASE-TX (Full/Half)
USB	USB1.1/USB2.0 (full speed supported) * Connection with USB hub is not supported
Output Specifications	Non-Voltage Contact: 1 point (24V DC 500mA)

Wiring Diagram

● 24V AC/DC model



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

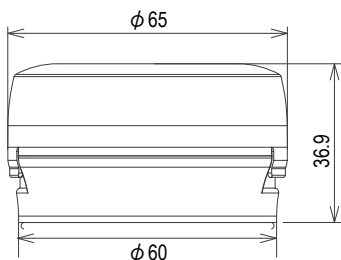


To operate the transmitter, power must always be supplied.

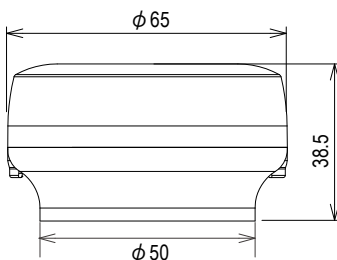
As shown in the diagram to the left, apply voltage all the time to one of the signal wires. (In the example, power is supplied using the white signal wire.)

Dimensions (mm)

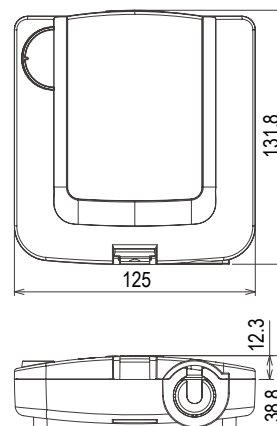
Model WDT-6M-Z2



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

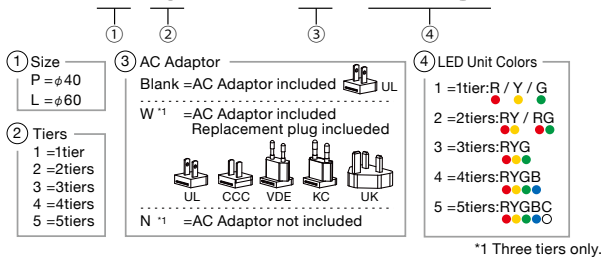
Options

Specifications

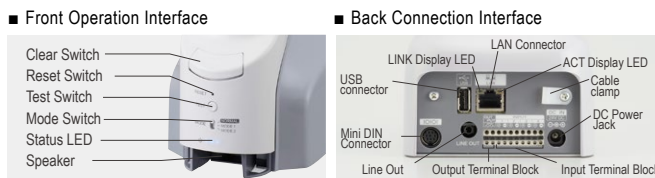
Product Model		NHP-3FV2-RYG NHL-3FV2-RYG
Network	Physical Layer	Ethernet (IEEE 802.3 compliant) 10BASE-T / 100BASE-TX (auto-negotiation, full duplex/half duplex)
	Data Link Layer	CSMA / CD
	Network Layer	IP, ICMP, ARP
	Transport Layer	TCP/UDP
	Application Layer	HTTP, SMTP, SNMP, RSH, NTP, POP, DNS, SOCKET, 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

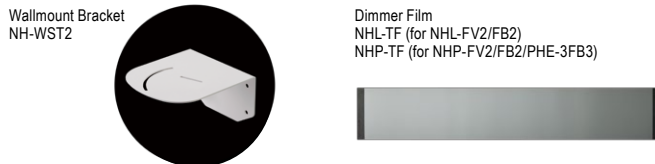
NHL-3FV2N-RYG



Operation part / Connection part



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)

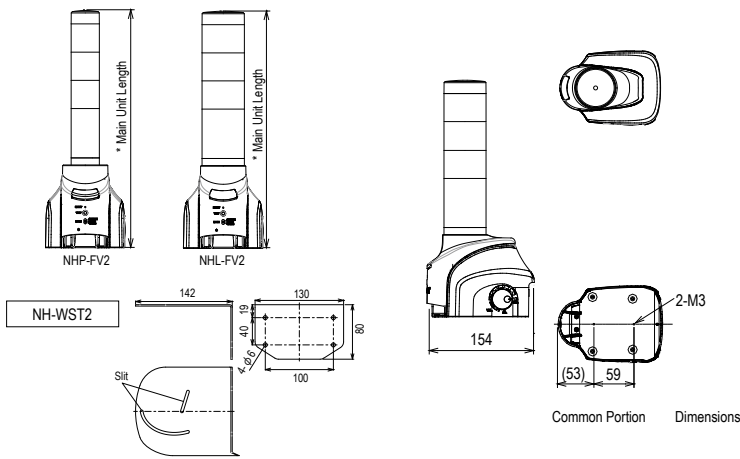
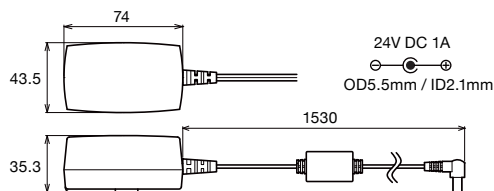
NHP-□FV2 Main Unit Length and Mass by number of tiers

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



NHP-FB2/NHL-FB2



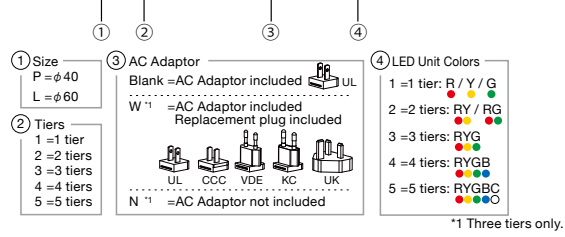
- Designed to compliment office spaces
- Up to 5 LED units with 2 types of flashing patterns
- 4 audible alarm sound types

Specifications

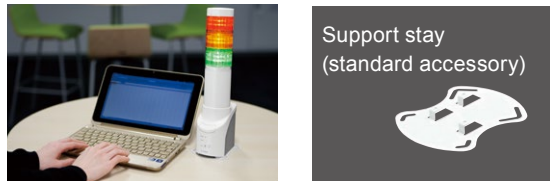
Product Model		NHP-3FB2-RYG	NHL-3FB2-RYG	
Network	Physical Layer	Ethernet (IEEE 802.3 compliant) 10BASE-T / 100BASE-TX (auto-negotiation, full duplex/half duplex)		
	Data Link Layer	CSMA / CD		
	Network Layer	IP, ICMP, ARP		
	Transport Layer	TCP / UDP		
	Application Layer	HTTP, SMTP, SNMP, RSH, NTP, 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-□Z, is five in total.

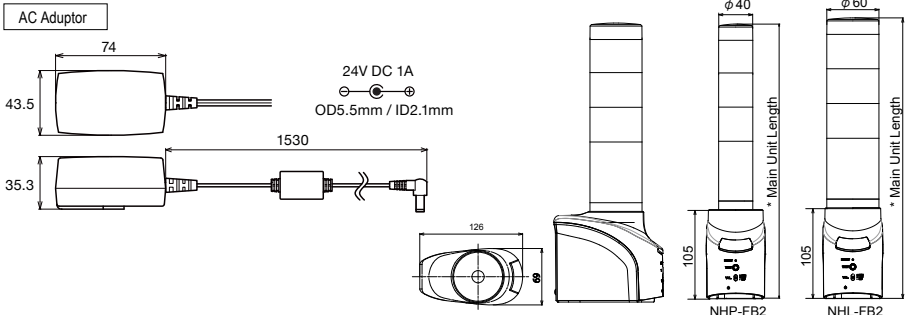
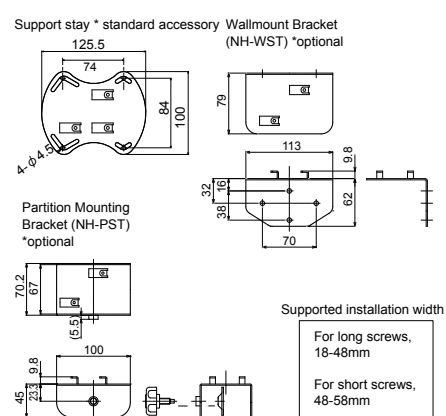
Dimensions (mm)

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



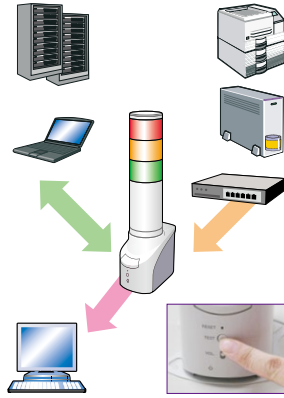
Network
Signal Tower
Signal Light
Revolving Warning Light
Cube Tower
Audibles
Hybrid Signaling Devices
LED Illumination
Options

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

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

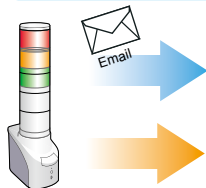
NH-FV Series
Event Occurrence: Execute command (Playback message on ch 10)
For PNS command: 58h, 58h, 56h, 00h, 00h, 04h, 01h, 00h, 00h, 10h

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

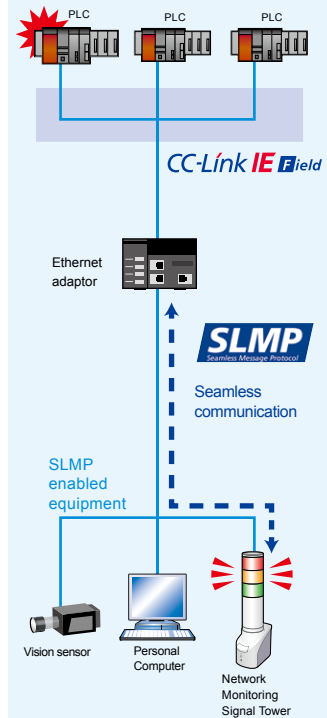
Supports DHCP

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



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.



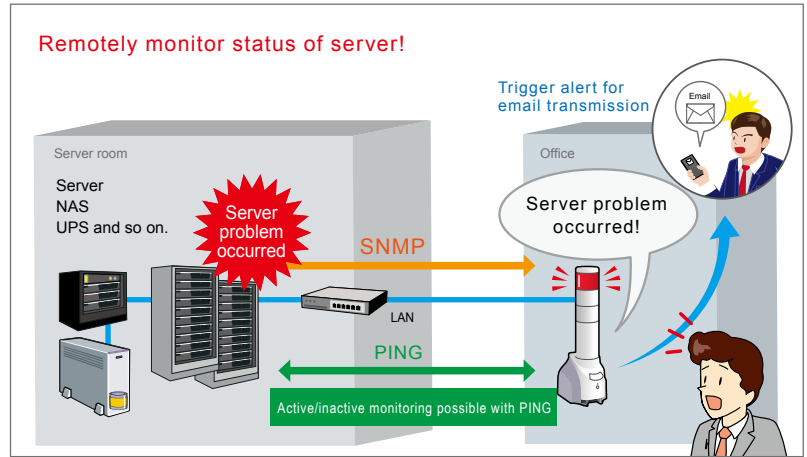
SLMP
Seamless Message Protocol
Seamless communication

NH-FV Series Examples

Use for all sorts of cases.

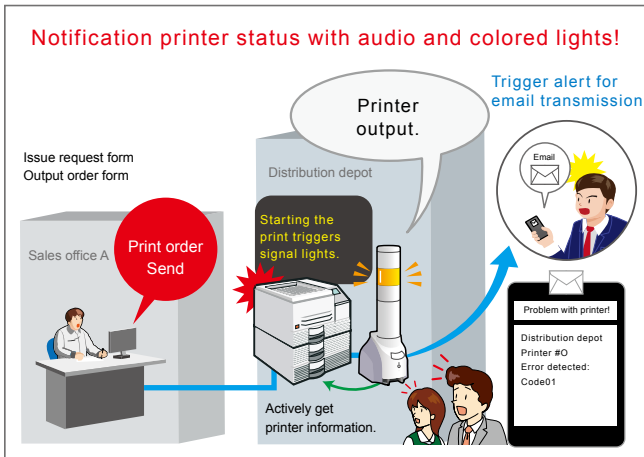


Remote monitoring of server



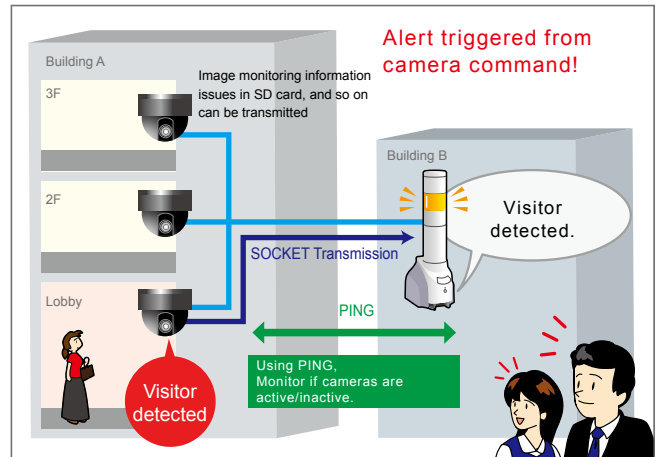
Remotely monitor the status of the server, NAS, UPS and so on. When an error occurs, a command is received via LAN, and the manager is notified as the unit works in conjunction with other equipment (contact input / output). At the same time, email notifying the problem is sent to the specified recipients.

Notification triggered by printer output



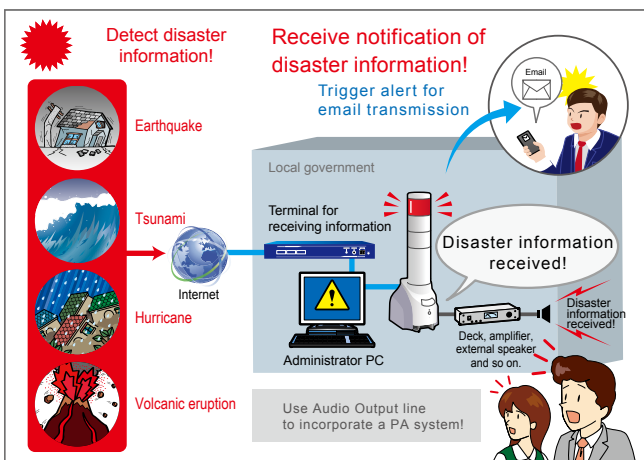
When a process starts from printer output, the person who sends the output is not necessarily the same person who receives the output. In this case, you can use the monitoring function of NH-FV to alert the status of the printer with lights and sound, so that the printout is not left unnoticed.

Notification based on information from network camera



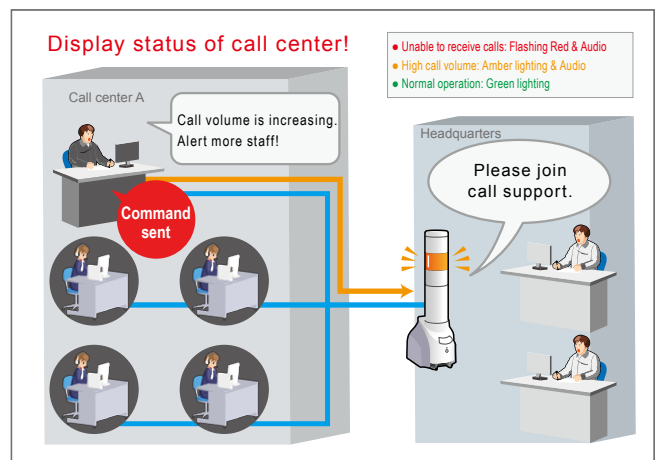
You can turn on the NH Series lights when a camera detects visitors or notify the manager to act quickly. Also, from the NH Series you can monitor if network cameras are active/inactive, ensuring stable operation of the system.

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)

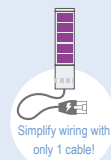
LA6-5DSNWB-POE (stationary type)



- 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.

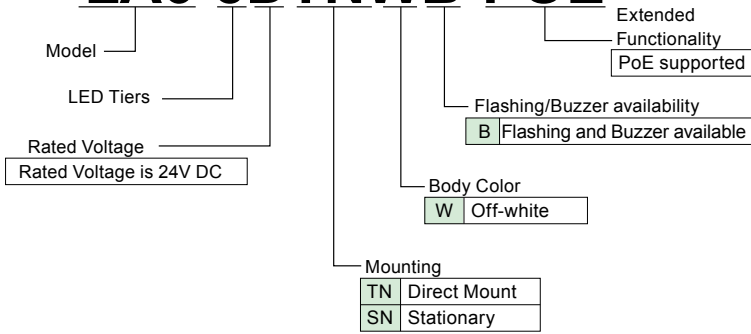


Specifications

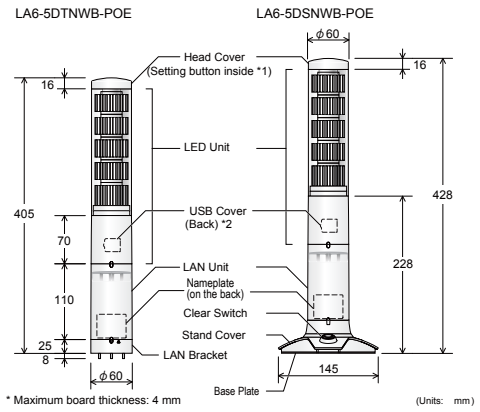
Model	LA6-5DTNWB-POE (direct mount type)	LA6-5DSNWB-POE (stationary type)
Rated Voltage	24V DC	
Power over Ethernet (PoE)	48V DC	
Operating Voltage Range	24V DC ±10%	
Power over Ethernet (PoE)	36 to 57V DC	
Rated Current Consumption	Standard	0.30A (at 24V DC) 0.18A (PoE: at 48V DC)
	Maximum	0.49A (at 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)	
LAN	Power Supply: 2 contacts (24V DC) Contact Input (external relay/NPN/PNP): 8 contacts	
	Flashing/Pulse enable common line: 1 contact, COM: 1 contact	
PoE	RJ-45 connector	
Communication method	IEEE802.3af Class 0	
Physical Layer	Ethernet (IEEE802.3)	
Data Link Layer	10BASE-T/100BASE-TX (Auto-MDI/MDIX)	
Network Layer	CSMA/CD	
Transport Layer	IP • ARP • ICMP	
Application Layer	TCP/UDP	
USB	HTTP • DHCP • Modbus/TCP • Socket (PHN • PNS command)	
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	
References	UL 60950-1, CAN/CSA C22.2 No. UL60950-1-07 Recognized Component (File No.E480103)	
	Conforms to CE Marking	

Model Code

LA6-5DTNWB-POE

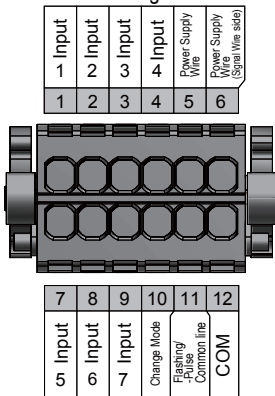


Dimensions (mm)

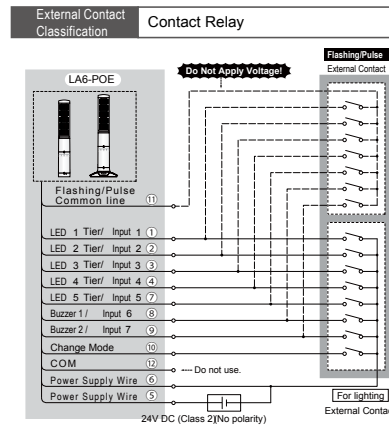


Wiring Diagram

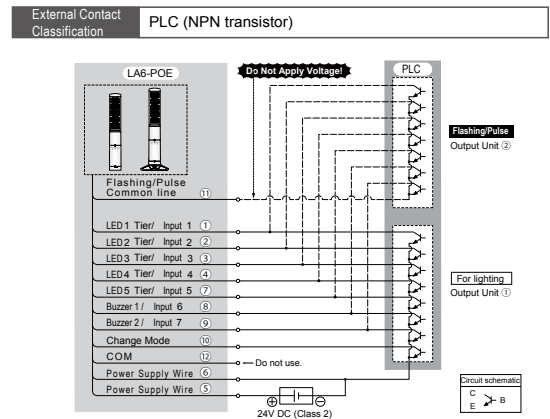
Terminal Block Connector Pin Arrangement



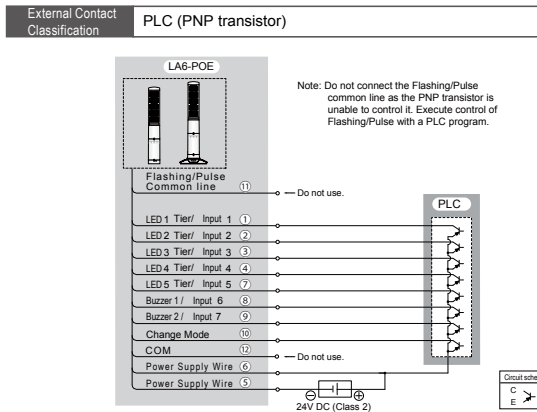
24V DC model



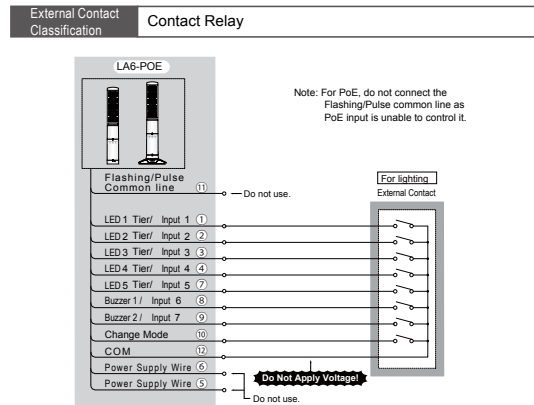
24V DC model



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



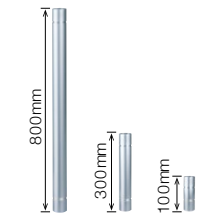
Pole Bracket SZP-004W



Circular Bracket mounting Pole SZ-016A



SZ-010



POLE-100 / 300 / 800A21

Communication Commands

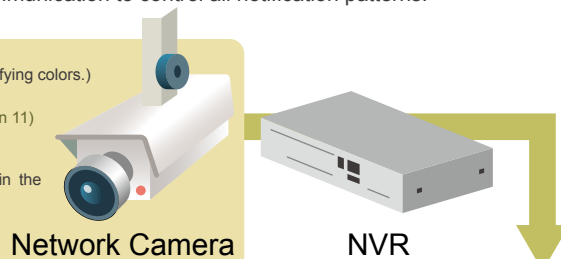
Control with HTTP Commands You can send commands via HTTP communication to control all notification patterns.

■ **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

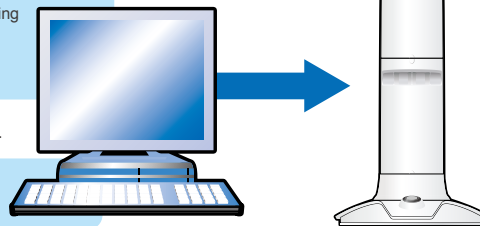
PNS Commands supported By using PNS commands, you can control all notification patterns.

■ **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

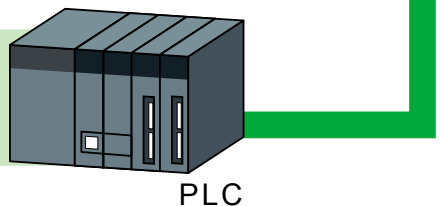
* You can control lighting, flashing, and 2 types of buzzer sound patterns on tiers 1 to 3.

Modbus/TCP

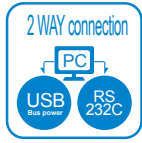
You can control the signal light by sending Modbus/TCP commands, such as from a PLC.

■ **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.

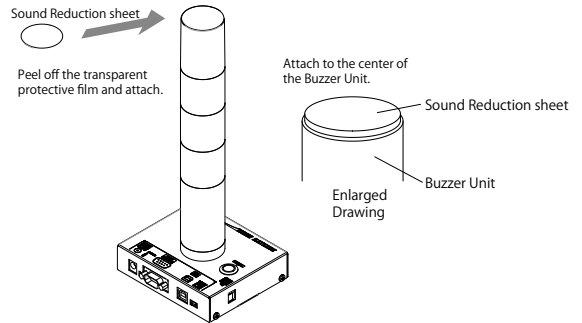
Model Code

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.

Buzzer Unit Bottom View Do not set DIP switches on the Buzzer Unit other than shown below.

■ Normal mode (Factory setting)

DIP switch (ON when it is down)
The switch positions are shown with ■

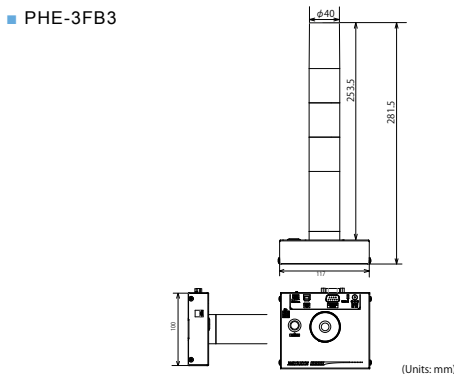
1	2	3	4
ON	OFF	OFF	OFF

■ Sound Reduction mode

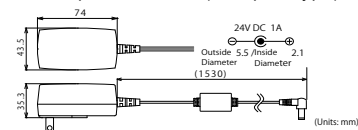
DIP switch (ON when it is down)
The switch positions are shown with ■

1	2	3	4
ON	OFF	ON	OFF

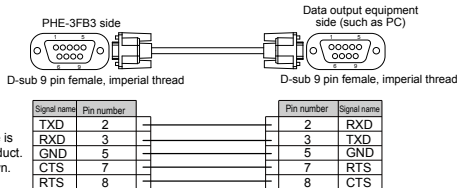
Dimensions (mm)



■ AC adaptor enclosed (except N type)



■ Wiring for RS-232C port



* 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)



Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

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



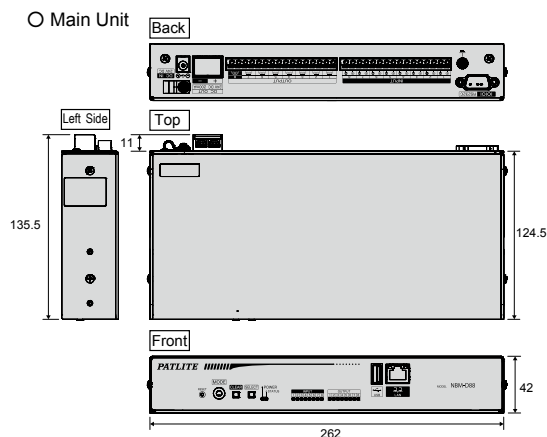
Optional Parts

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)
	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)	Application Layer: HTTP, NTP, Socket (PHN, PNS) SMTP, SNMP (V1, V2C), DHCP, DNS, POP3, RSH
	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
	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	
USB (host)	USB2.0/1.1 TYPE-A 1 port for log data storage, firmware update For config data upload / download
Power output	Screw terminal block, 1 point, 24V DC±10% Maximum 200mA
D-sub 9-pin	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

Email **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



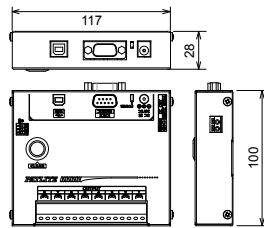
Specifications

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	

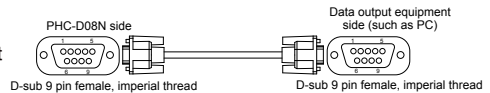
* You cannot use the power output terminal when AC adaptor is disconnected. When using the power output terminal, confirm the AC adaptor is connected.

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

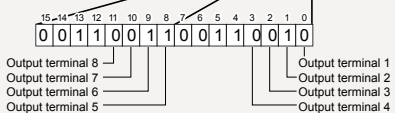
Command list

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]



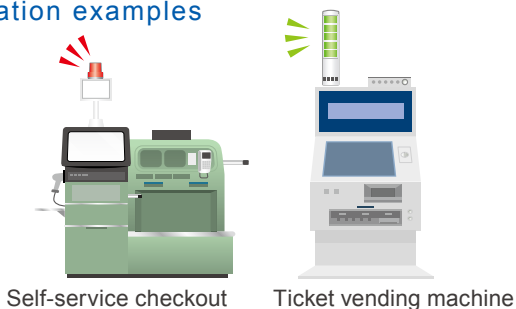
Optional Parts

Optional Parts	Model
AC Adaptor	ADP-001



AC Adaptor ADP-001 (optional)

Application examples



Self-service checkout






Ticket vending machine

LED Signal Tower Series'

Page number	Page 55		Page 61					
Model Name	Programmable LED Signal Tower		Modular LED Signal Tower					
Model	LA6		LR4		LR5		LR6	
Product image								
Rated Voltage	24V DC	100 - 240V AC	24V DC	100 - 240V AC	12V DC	24V DC	24V DC	100 - 240V AC
Size (mm)	φ 60		φ 40		φ 50		φ 60	
IP	65 (54 for B)		65 (54 for LJ type)		65 (54 for LJ type)		65 (54 for LJ type)	
Buzzer sound pressure in dB (at a distance of 1m)	85		85		80	85	88	
Body	ABS		Polycarbonate		Polycarbonate		Polycarbonate	
Globe	PC		Polycarbonate		Polycarbonate		Polycarbonate	
Light Source	LED		LED		LED		LED	
Unit structure *1			⊙		⊙		⊙	
Terminal Block	○				○ (Body Unit)			
Open collector	NPN/PNP		NPN/PNP	NPN	NPN/PNP		NPN/PNP	NPN
CE Marking	○		○		○		○	
RoHS	○		○		○		○	
UL Standard	○ 24V model only		○		○		○	

Page number	Page 77	Page 79	Page 81	Page 83	Page 85
Model Name	Signal Tower with switch box	Slim LED Signal Tower	Slim LED Signal Tower	Slim LED Signal Tower	LED Signal Tower
Model	HSST	ME-A/ MES-A	MP/MPS	MP-C/MPS-C	LS7
Product image					
Rated Voltage	100 - 240V AC*	24V DC	24V AC/DC	24V DC	24V DC
Size (mm)	φ 50	φ 25	φ 30	φ 30	φ 70
IP	54 (20 switch box)	42	65	65	65 (54 for FB and B)
Buzzer sound pressure in dB (at a distance of 1m)					85
Body	Polycarbonate	Aluminum	ABS	ABS	ABS
Globe	Polycarbonate	Polycarbonate	AS	AS	AS
Light Source	LED	LED	LED	LED	LED
Unit structure *1	⊙	○	○	○	
Terminal Block					
Open collector		NPN	○ (DC only)	○	○
CE Marking		○	○	○	○
RoHS	○	○	○	○	○
UL Standard	○	○	○	○	○

*1⊙: One-touch unit structure ○: Unit structure * With AC adaptor

Page number	Page 61	Page 88			Page 90	Page 93		Page 95		
Model Name	Modular LED Signal Tower	Large LED Signal Tower			Wall-Mounted LED Signal Tower	Wall-Mounted LED Signal Tower		Modular Signal Tower		
Model	LR7	LGE			WE/WEP	WME-D		KUS		
Product image										
Rated Voltage	24V DC	24V AC/DC	100V AC	220V AC	24V AC/DC	24V DC	100 - 240V AC	24V AC/DC	100V AC	220V AC
Size (mm)	φ 70	φ 100			W90 x D37.5	W70 x D80		□70		
IP	65	54			65 (54 for FB)	54		54		
Buzzer sound pressure in dB (at a distance of 1m)	90	85			90	90		80		
Body	Polycarbonate	ABS			ABS	Polycarbonate		ABS		
Globe	Polycarbonate	Polycarbonate			Polycarbonate	Polycarbonate		Polycarbonate		
Light Source	LED	LED			LED	LED		LED / Bulb		
Unit structure *1	⊙	○				○		○		
Terminal Block	○(Body Unit)									
Open collector	NPN/PNP	○ (DC only)			○ (DC only)	NPN/PNP	NPN	○(C and FC model)		
CE Marking	○	○			○	○				
RoHS	○				○	○		KUS-24 (F)○		
UL Standard	○				○	○		○		

*1⊙: One-touch unit structure ○: Unit structure

* For specifications, see the product page.

LA6

■ 24V DC model



* In Smart Mode you can use the flashing operation.

Ultra-bright multi-color LEDs capable of producing 21 distinct colors.
 Built-in audible alarm is capable of producing 11 distinct tones.
 Single part number - streamlines your supply chain.
 Smart Mode allows users to create light motion patterns to more clearly define more complex equipment statuses.
 USB port to locally program device.
 Available in DC24V and AC100-240V (M2 type)

■ Examples

- Display duration of equipment down-time - Raise awareness to decrease non-operational time
- Display time remaining for automated equipment process - Reduce stress of workers responsible for multiple equipment
- Display takt time for an assembly line - Stabilize quality by leveling work speed
- Display the work speed for manual process lines - Raise awareness of the number of processes involved by displaying takt time
- Display remaining material by combining sensors - Assist with refills of outdoor tanks or cutting oil
- Display detailed information on the equipment status - Remotely review information shown on the operation panel

Model	Rated Voltage	LED Tiers	Body Color	Specifications
LA6-3DTNWB-RYG	24V DC	3 tiers	Off-white	Direct mount, terminal block, with buzzer
LA6-3DTNWN-RYG			Off-white	Direct mount, terminal block, without buzzer
LA6-3DTNUB-RYG			Silver	Direct mount, terminal block, with buzzer
LA6-3DTNUN-RYG			Silver	Direct mount, terminal block, without buzzer
LA6-3DLJWB-RYG			Off-white	L-type Pole, Cabtyre, with buzzer
LA6-3DLJWN-RYG			Off-white	L-type Pole, Cabtyre, without buzzer
LA6-3DWJWB-RYG			Off-white	Direct mount, Cable, with buzzer
LA6-3DWJWN-RYG			Off-white	Direct mount, Cable, without buzzer
LA6-3DWJUB-RYG			Silver	Direct mount, Cable, with buzzer
LA6-3DWJUN-RYG			Silver	Direct mount, Cable, without buzzer
LA6-5DTNWB-RYGBC		5 tiers	Off-white	Direct mount, terminal block, with buzzer
LA6-5DTNWN-RYGBC			Off-white	Direct mount, terminal block, without buzzer
LA6-5DTNUB-RYGBC			Silver	Direct mount, terminal block, with buzzer
LA6-5DTNUN-RYGBC			Silver	Direct mount, terminal block, without buzzer
LA6-5DLJWB-RYGBC			Off-white	L-type Pole, Cabtyre, with buzzer
LA6-5DLJWN-RYGBC			Off-white	L-type Pole, Cabtyre, without buzzer
LA6-5DWJWB-RYG			Off-white	Direct mount, Cable, with buzzer
LA6-5DWJWN-RYG			Off-white	Direct mount, Cable, without buzzer
LA6-5DWJUB-RYG			Silver	Direct mount, Cable, with buzzer
LA6-5DWJUN-RYG			Silver	Direct mount, Cable, without buzzer
LA6-5AWJWB-RYGBC	100 - 240V AC		Off-white	Direct mount, Cabtyre, with buzzer

Specifications

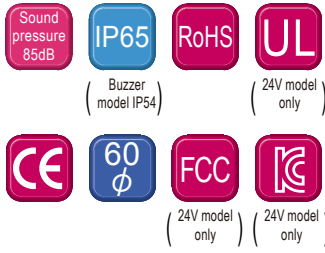
Model	LA6-□□□□□□ (see model code)			LA6-5AWJWB		
Rated Voltage	24V DC			100 - 240V AC (50Hz / 60Hz)		
Operating Voltage Range	Rated Voltage ±10%			90 - 250V AC (50Hz/60Hz)		
Rated Power Consumption	Standard	LA6-5D□□□□-RYGBC	5W	LA6-5D□□□□-RYGBC	6.5W	
		LA6-3D□□□□-RYG3.5W		LA6-3D□□□□-RYG4.5W		
	Maximum	LA6-5D□□□□-YYYYY7W		LA6-5D□□□□-YYYYY8W		
		LA6-3D□□□□-YYY4.5W		LA6-3D□□□□-YYY5.5W		
Environmental Conditions*	Buzzer sound: No. 1, maximum volume					
Signal Wire Current	Maximum 70mA			Maximum 20mA		
Ambient Operating Temperature	-25°C to +60°C					
Storage Ambient Temperature	-25°C to +60°C					
Mounting location	Indoors					
Protection Rating	IP65 (buzzer model: IP54) IEC 60529					
Environmental Conditions*	Mounted in upright position					
Display color	Red (1000mcd), amber (1700mcd), green (2600mcd), blue (1000mcd), white (1250mcd) purple (800mcd), pink (850mcd), lemon yellow (2150mcd), sky blue (2150mcd)					
Flashing Rate	60±2 /minute					
Buzzer Sound (Frequency Typ)	No.1	2400Hz	Beep (continuous beep)	No.2	2400Hz	Fast Intermittent (beep 0.05 sec. / off 0.05 sec.)
	No.3	2400Hz	Slow Intermittent (beep 1.5 sec. / off 1.5 sec.)	No.4	2400Hz	Medium Intermittent (beep 0.5 sec. / off 0.5 sec.)
	No.5	3600Hz	Beep (continuous beep)	No.6	3600Hz	Fast Intermittent (beep 0.05 sec. / off 0.05 sec.)
	No.7	3600Hz	Slow Intermittent (beep 1.5 sec. / off 1.5 sec.)	No.8	3600Hz	Medium Intermittent (beep 0.5 sec. / off 0.5 sec.)
	No.9	2400Hz & 3375Hz	Fast Alternating Intermittent (0.25sec/0.25sec)	No.10	2400Hz & 3600Hz	Fast Alternating Intermittent (0.25sec/0.25sec)
	No.11	4000Hz & 4800Hz	Medium Alternating Intermittent (0.5sec/0.5sec)			
	Sound Pressure Level	Maximum: 85dB				
	Environmental Conditions*	Buzzer sound No.1, in front of the buzzer aperture at a distance of 1 m				
	Volume Control	Four setting levels (Factory default: Maximum)				
	Data Transmission Interface	Main Unit	USB micro-B socket, Female			
			USB2.0 / 1.1 interface, Transmission rate: USB2.0 / 1.1 / 1.0			
		Micro USB Cable (not included), Data Communication / Charging Cable Connector Type: USB (Type A) Male - USB (micro-B) Male				
Data Creation Application Software	Proprietary Application Software (Download from our website)					
Mass (±10%)	LA6-3DTN□	480g	LA6-5DTN□B	590g	LA6-5AWJWB	740g
	LA6-3DTN□N	420g	LA6-5DTN□N*	530g		
	LA6-3DWJ□	450g	LA6-5DWJ□B*	560g		
	LA6-3DWJ□N	400g	LA6-5DWJ□N	510g		
	LA6-3DLJ□	980g	LA6-5DLJ□B	1090g		
	LA6-3DLJ□N	930g	LA6-5DLJ□□	1040g		
Conformity standards	UL508, CSA-C22.2 No. 14		EMC Directives EN 61000-6-4, EN 61000-6-2		EMC directives EN61000-6-3, EN61000-6-2	
	FCC Part15 Subpart B Class A		KC (KN 61000-6-4, KN 61000-6-2)		Low Voltage Directives IECEN 60947-5-1, EN62471	
	RoHS Directive EN 50581				RoHS Directive EN 50581	
References	Conforms to CE Marking UL Recognized Component (File No.E215660)				Conforms to CE Marking	

* Overseas only

■ 100 - 240V AC model



Steel pole type (LJ)



Colors	Signal Tower Mode: 9 colors / Smart Mode: 21 colors
Globe	Polycarbonate resin, high shock resistance and heat resistance

New Information Display Style

A new concept is born for the Information Display Terminal.

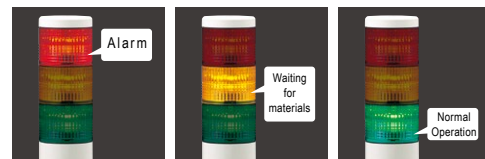
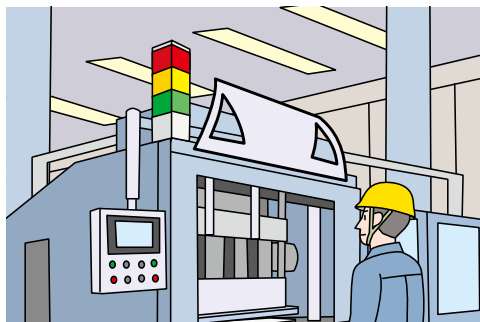
Previous products notified us of the status of equipment with lights and sound only. But with our new products, you can also display the equipment operation process.

As the CPU is embedded in the Main Unit, our new units do not require an external control program. By combining a maximum 21 luminous colors, 3 operating modes, and 11 buzzer sounds, you can display all kinds of information, such as time, amounts remaining, and levels.

As a result, without a large capital investment you can overcome challenges such as "managing the cycle time of equipment" and "visualizing non-operating time", which are common pain-points for manufacturing sites.

An information display terminal for the visualization age, the LA6 can solve –with your imagination– all sorts of problems.

Traditional Information Display



Display Equipment Status

Traditional information displays showed only the equipment status. There was no understanding about the equipment status provided in real time.

	Signal Tower	Information Signal Tower LA6
Colors	Maximum 5 Colors	Maximum 21
Color Setting	Static	Flexible
Sound	2 tones	11 tones

New Information Display



Display elapsed time until complete

You can visualize the progress, amount of material remaining, and so on, in real time. By recognizing the progress of processes and amount of various materials that remain, you can understand which equipment needs attention first, and reduce the stress of workers who are responsible for multiple equipment. You can also display the amount of time that has elapsed from when a problem occurred, allowing you to respond quickly.

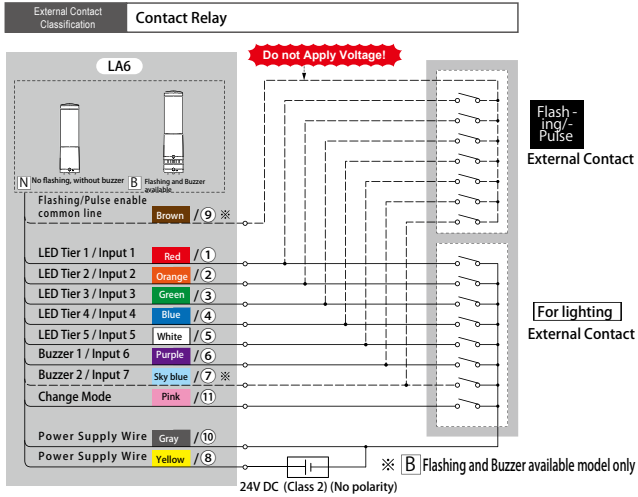


- Work Progress Time
- Elapsed Time for Problem
- Amount Remaining
- Level
- All Tiers Identification

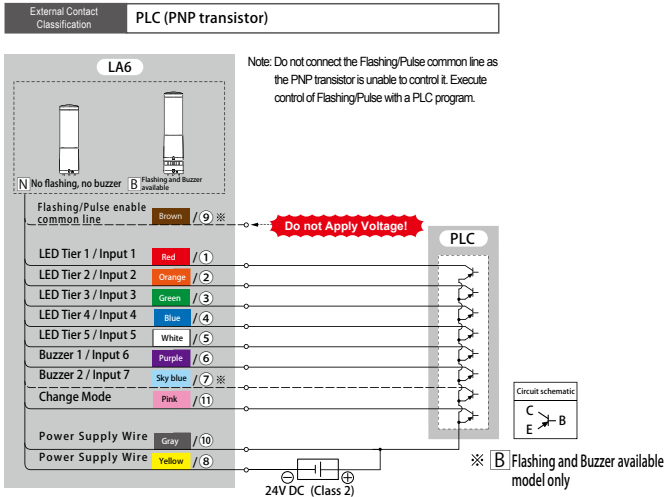
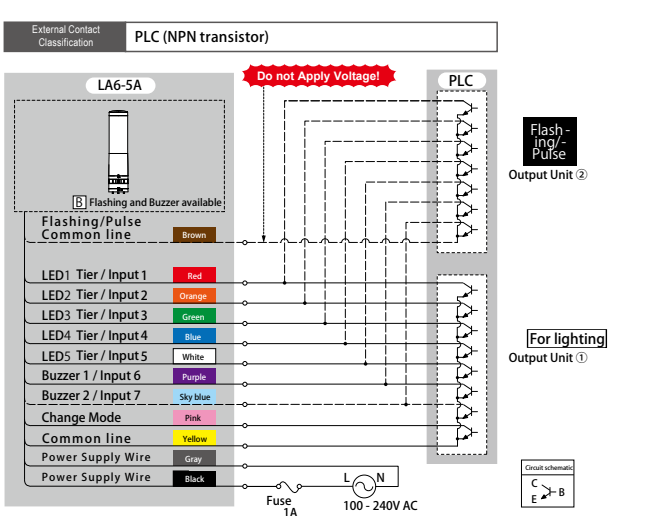
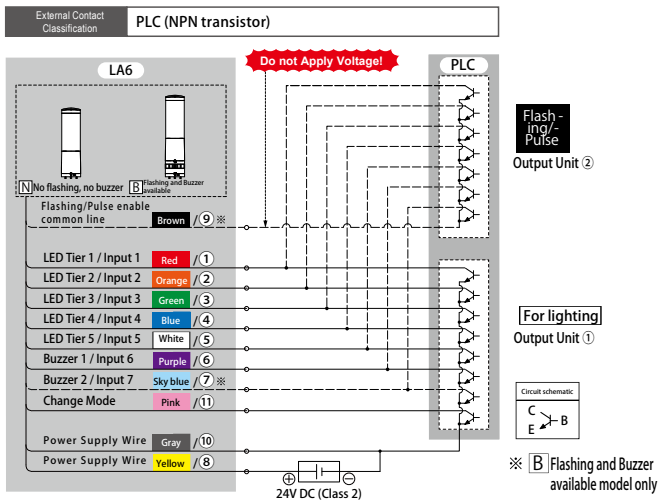
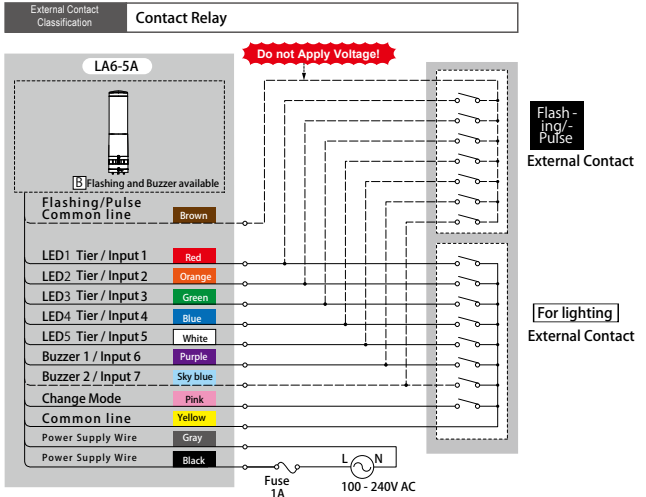
- Network
- Signal Tower
- Signal Light
- Revolving Warning Light
- Cube Tower
- Audibles
- Hybrid Signaling Devices
- LED Illumination
- Options

Wiring Diagram

24V DC model



100 - 240V AC model



Wiring Example / Legend

LED Tier 1 / Input 1 Red / 1

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

Pin Number (TN Direct Mount, Screw-less Terminal Block model)

The color of wire (Cable model only)

Note: The color of the wire does not correspond to the color of the LED light.

Rated Fuse Current

250V / 1 A

5 x 20 mm Fast-blow glass tube fuse

Inrush Current value (cold start)

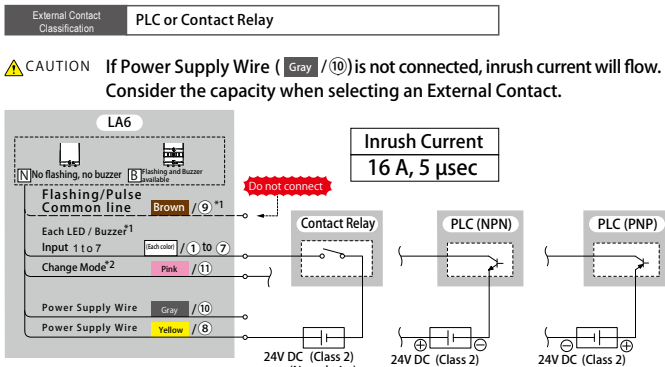
With Ambient Operating Temperature 25°C	16 A, 2 ms
With Ambient Operating Temperature 50°C	50 A, 2 ms

NOTICE

If you are not using a regulated power supply, use a fuse that meets or exceeds Class CC.

Signal Wire Contact Capacity

Current Capacity	100 mA or higher
Withstand Voltage	35V DC or more
Leakage Current	0.1 mA or less
Voltage when ON (V _{sat})	1V or less



When using Smart Mode (Mode Change Pink)

	① Time Trigger Type	② Pulse Trigger Type	③ Single Display Type
Input 1 Red	Display Input (Maximum 15 binary inputs)	Display Input (Maximum 15 binary inputs)	Display Input (Maximum 31 binary inputs)
Input 2 Orange			
Input 3 Green			
Input 4 Blue			
Input 5 White	STOP	Trigger	
Input 6 Purple	Mute	Mute	Mute
Input 7 Sky blue	Clear	Clear	Clear
Switch Pink	At Input		

* For connection diagrams, please see the Instruction Manual.

Visit our LA6 product microsite to see the LA6 Series in action.

www.patlite.com/la6



Product site

* Design of the site may change without notice.

You can download "Editing Software" for free from the product site. Simplify creating and implementing your program.

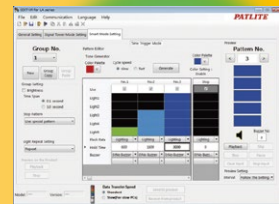
Use the editing software to set up "luminous colors" and "illumination patterns".



1. Select from the top page.



2. Proceed to the software download page.



3. Download and Setup

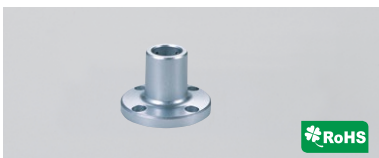
Optional Parts



Mounting Pole: SZ-70L



Circular mounting Bracket: SZ-010



Circular mounting Bracket : SZ-016A



Wallmount Bracket: SZK-003W



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

Replacement Parts



Head Cover
Off-white B31310001-7F1
Silver B31310001-9F1



USB Cover
Off-white B22100071-7F1
Silver B22100071-9F1

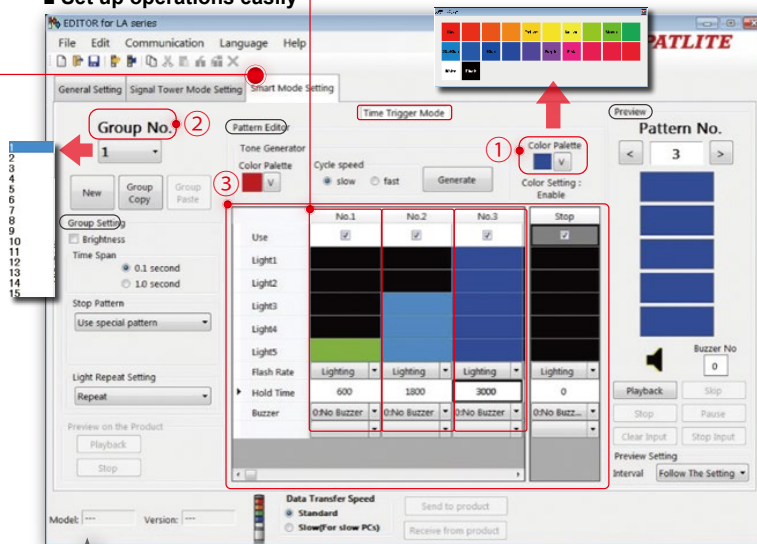


Waterproof Ring B (2 pieces)
B25110042-F1



Pole Bracket (Off-white only)
(Pole waterproof ring, screws included)
B22210134-7F1
* A waterproofing ring for the pole is available.

■ Set up operations easily



* The screen above may be different from the actual screen (displayed buttons may vary depending on usage)

① Color settings (maximum 21 colors)

Select any color from the 21 color palette.

② Group registration (maximum 15 groups*)

After setting up operations, you can register a series of operations as a group. Register a maximum 15 groups.

* You can register up to 31 groups in a Single Display Type.

③ Operation Settings (maximum 63 patterns)

Set up operations by selecting colors (21 colors), flashing frequency, illumination duration * (maximum 3,600 seconds), and buzzer sound (11 tones).

* In Signal Tower mode, you can select from 9 colors and only 3 buzzer sounds.

● Settings

- Group Settings (various detailed setup is possible)

- *Dimmer
- *Time span (0.1 / 1.0 seconds)
- *Repeating Light Setting

- Generating sign patterns (9 colors)

- *Color selection, cycle speed (slow / fast)

- Simulation

You can verify the luminous patterns on applications without having to send data to the actual machine.

- Transmission with actual machine

Not only can you send data to the machine, but you can also load data from the machine.

* Even when the machine is off, you can still send data with USB bus power only.

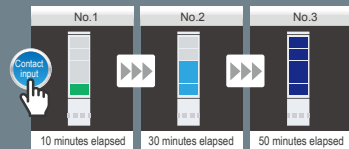
Smart Mode



1. Time Trigger Type

Maximum Display Patterns	63 Patterns
Maximum Number of Groups	15 Groups

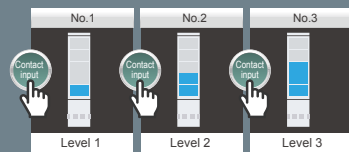
You can specify the timing for pattern transitions with "Editing Software".



2. Pulse Trigger Type

Maximum Display Patterns	63 Patterns
Maximum Number of Groups	15 Groups

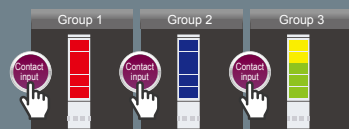
Use input (one shot pulse) to set up pattern transition timing.



3. Single Display Type

Maximum Display Patterns	—
Maximum Number of Groups	31 Groups

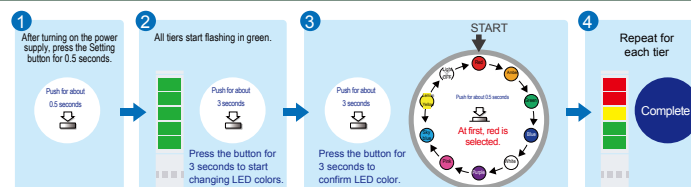
Call and trigger by combining the ON/OFF value of inputs 1 to 5.



Signal Tower Mode



No editing software required. Set up colors using the Setting button.



LR

LR

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



Signal Tower LR Series Modular LED Signal Tower

- φ40mm LR4
- φ50mm LR5
- φ60mm LR6
- φ70mm LR7

- Standard Colors:
1-Tier model / Red (-R), Amber (-Y), Green (-G)
2-Tier model / Red-Amber (-RY), Red-Green (-RG), 3-Tier model / Red-Amber-Green (-RYG)
4-Tier model / Red-Amber-Green-Blue (-RYGB), 5-Tier model / Red-Amber-Green-Blue-White (-RYGBC)

IP65 (IP54 for LJ type only)
 RoHS
 UL
 CE
 Clear globe (LR4LR6 only)
 Multi color (LR6 only)
 FCC
 WD-Z2 Series Enabled

Colors	Red, Amber, Green, Blue, White
Globe	Polycarbonate resin, high shock resistance and heat resistance

Next generation signal tower series featuring ultra-bright LEDs, a modular design, and a wide-selection of options to take on the most challenging applications.

Re-designed lens and improved module construction delivering bright, even light for visibility from further distances. (2000mcd output)

Re-engineered, completely enclosed sound module, maintains substantial water and dust protection while producing loud, omni-directional sound. (LR5 DC12V: 80dB LR4 & LR5: 85dB, LR6: 88dB, LR7: 90dB at 1m)

A modular, "Twist and Lock", design to easily customize and field configure LED units and sound modules.

A sleek, smooth form factor and a rugged body construction for performance in harsh environments, carrying an IP65 protection rating.

Four mounting options: Direct, pole with L-bracket, pole with circular bracket, and pole with folding bracket (Off-white only).

Available in DC24V and AC100-240V (Off-white only).

Available in Off-white and Silver bodies.

Available with Clear lens (special order).

Specifications

LR Series Assembled Products / Common Specifications

Ambient Operating Temperature	-20°C - +50°C *
Ambient Operating Humidity	90% RH or less, no condensation
Storage Ambient Temperature	-30°C - +60°C
Storage Ambient Humidity	90% RH or less, no condensation
Mounting location	Indoors
Mounting direction	Upright
Protection Rating	IP65 (IEC 60529) / NEMA TYPE 4X, 13 * for LJ type only, IP54
Environmental Conditions	Upright
Insulation Resistance	1 MΩ or more at 500V DC between the live part and non-current carrying metallic part
Withstand Voltage	500V AC* for 1 minute, between the live part and non-current carrying metallic part. * 1500V AC for M2 type
Flashing Rate	60±2 /minute
Sound pressure	LR4 Typ.85dB LR5 Typ.85dB LR6 Typ.88dB LR7 p.90dB LR5 12V DC Typ.80dB With Sound Reduction: Approximately -10dB (can be switched using DIP switch)
Environmental Conditions	With buzzer sound "No.4 Sweep sound", at a distance of 1 m from the surface in all directions
Buzzer Sound	4 patterns *Switch using DIP switch No.1 Fast Intermitten No.2 Continuous No.3 Fast Alternating No.4 Sweep sound * By short-circuiting the buzzer line and flashing common line, you can emit a buzzer tone that turns on and off every 0.5 seconds.
Transistor	NPN/PNP (*NPN only for 100 - 240V AC type)
Conformity standards	<ul style="list-style-type: none"> UL 508, CSA-C22.2 No.14 RoHS Directive EN 50581 KC (KN 61000-6-4, KN 61000-6-2) *Except ABS and AS models EMC directives EN61000-6-4, EN61000-6-2 FCC Part 15 Subpart B Class A Low Voltage Directives IEC/EN60947-5-1, EN62471 *M2 type only (excluding LJ type)

External Contact Capacity

Rated Load Voltage		[01] 12V DC	[02] 24V DC	[M2] 100 - 240V AC
LED Unit (per tier)	Signal Wire Current (Maximum) / Voltage	100mA / Power supply voltage	45mA / Power supply voltage	45mA / 24V DC
	Recommended Contact Capacity	Is ≥ 100mA Vs ≥ DC20V (*1)	Is ≥ 100mA Vs ≥ DC35V	Is ≥ 100mA Vs ≥ DC35V
Buzzer	Signal Wire Current (Maximum) / Voltage	250mA / Power supply voltage	250mA / Power supply voltage	250mA / 24V DC
	Recommended Contact Capacity	Is ≥ 300mA Vs ≥ DC20V (*1)	Is ≥ 300mA Vs ≥ DC35V	Is ≥ 300mA Vs ≥ DC35V
Power supply	Current Consumption (Maximum)	500mA (*2)	250mA (*2)	150mA (*2)
	Recommended Contact Capacity	Is ≥ 700mA Vs ≥ DC20V	Is ≥ 500mA Vs ≥ DC35V	Inrush Current Value or more
Inrush Current	Signal Wire	No LED (*1) No Buzzer (*1)	No LED No Buzzer (*3)	None
	Power Supply Wire	0.7A, 15ms or less	None (*4)	With Ambient Operating Temperature 25°C: 25A, 2.0ms or less (with cold start) With Ambient Operating Temperature 50°C/45°C: 50A, 2.0ms or less (with cold start) (*5)
Transistor Contact Leakage Current		IL ≤ 0.1 mA		

*1 When the power supply wire (Gray / WT: 9 Black) is not connected, inrush current of 0.7 amps flow through the signal line. Recommended Contact Capacity is: Is ≥ 700mA and Vs ≥ DC20V * 2... 5 LED tiers and buzzer operating *3... Signal Wire Current (maximum) or less *4... Sum Total of Signal Wire Current (maximum) or less *5... [W] Off-white (PC) model: When ambient operating temperature is 50°C

LED Units / Common Specifications

Luminous Color	Red Amber Green Blue White Multi color
Rated Voltage	24V DC
Rated Current	Typ. 0.04A/1W
Consumption / Rated Power Consumption	Maximum 0.045A/1.3W

Audible Units / Common Specifications

Rated Voltage	24V DC
Rated Current	Typ. 0.04A/1W
Consumption / Rated Power Consumption	Maximum 0.25A/1.3W

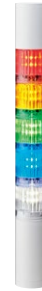


New Lineup

Clear-globe LED Unit

LR4-E-RZ

- 4 (φ 40) R (Red)
- 5 (φ 50) Y (Amber)
- 6 (φ 60) G (Green)
- B (Blue)



LR4 LR5 LR6

Clear globes for R,Y,G,B

Individual Unit

Pre-assembled*

* LR4, LR6 Only

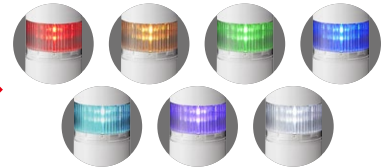
Multi-color LED Unit

LR6-E-MZ

7 colors



LR6



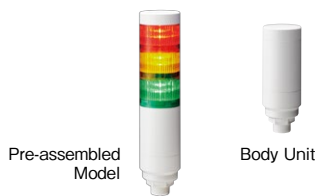
By connecting (red, green, blue) wires, the colors light up.

Wire Color	Red	Red/ Green	Blue	Green	Blue/ Green	Red/ Blue	Red/ Green/ Blue
LED Color	Red	Amber	Blue	Green	Cyan	Purple	White

Individual Unit

It displays 7 colors in one unit.
(Red/Green/Blue/Amber/
Cyan/Purple/White)

Direct Mount with M12 Connector



	Model	Tiers	Rated Voltage	Mounting/Wiring	Buzzer	Body Color	LED Unit Color
Assembly Model	LR 6 - - 3	02	WC	N	W	-	RYG
Unit Model (Body Unit)	LR 6 - -	02	WC	N	W		

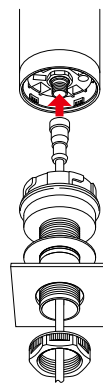
6	1 - 5	02	24V DC	B	W
φ60	Tiers	24V DC	Buzzer	Off-white	
			No Buzzer		

WC Direct Mount / M12 Connector

LED Color: R (Red)/Y (Amber)/G (Green)/B (Blue)/C (White) (From top to bottom)

Direct Mount Installation

Direct Mount



Easy Wiring

The M12 connection type provides a convenient, single cable mating point.



Easy direct-mount installation

If one hole is placed in the mounting position, it can easily be attached. It can easily be secured with an M30 nut.

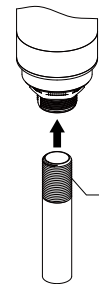
* The M12 Connector & Cable (SZ-120) is sold separately.



Installation Method 2

Pole Mount

1/2" NPT Support Bracket is designed to fit a 1/2 inch NPT threaded pipe.



1/2" NPT

LR5/LR7 Screwless Terminal Knock-out Mount

Dual mount base unit allows for direct or pole mounting



φ 50 Body Unit



φ 70 Body Unit

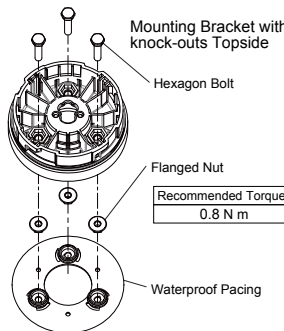
Screw and nut accessories included.

Accessory			
LR5 - KT	Hexagon Bolt (M3 x 20)	Hexagon Nut with Flange (M3)	3 pcs.
LR7 - KT	Hexagon Bolt (M4 x 20)	Hexagon Nut with Flange (M4)	3 pcs.

Installation Method 1

Direct Mount (Using accessories)

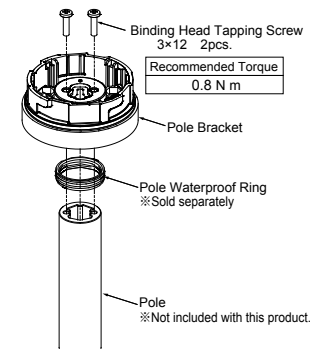
Mount on pole bracket by knocking out holes with the tapping screws included with the bracket.



Installation Method 2

Pole Mount (Not Using accessories)

Mount directly by knocking out holes in the bracket and securing with nuts and bolts.



*Please refer to the Complete Operation Manual for details of installation.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

Signal Tower

LR Series Pre-assembled Models

φ40mm Model Code

(Ex.) **LR4-502WJBW-RYGBCZ**

Model ① ② ③ ④ ⑤ ⑥ ⑦

- ① Tiers
1 = 1 Tier
2 = 2 Tiers
3 = 3 Tiers
4 = 4 Tiers
5 = 5 Tiers
- ② Rated Voltage
02 = 24V DC
M2 = 100 - 240V AC *1
- ③ Mounting/Wiring
WJ = Direct Mount/Cable
LJ = Pole Mount with L-bracket/Cable
PJ = Pole Mount with Circular Bracket/Cable
QJ = Pole Mount with Folding Bracket/Cable *2
- ④ Flashing/Buzzer
B = With Flashing/Buzzer
N = No Flashing/Buzzer
- ⑤ Body Color
W = Off-white
U = Silver *3
- ⑥ LED Module Color
R = Red
Y = Amber
G = Green
B = Blue
C = White
- ⑦ Globe Type
Blank = Color Globe
Z = Clear Globe

*1 For WJ, LJ and PJ type only *2 For 24V DC and Off-white type only *3 For 24V DC type WJ, LJ and PJ type only

φ50mm Model Code

(Ex.) **LR5-502WJBW-RYGBCZ**

Model ① ② ③ ④ ⑤ ⑥ ⑦

- ① Tiers
1 = 1 Tier
2 = 2 Tiers
3 = 3 Tiers
4 = 4 Tiers
5 = 5 Tiers
- ② Rated Voltage
01 = 12V DC
02 = 24V DC
- ③ Mounting/Wiring
WJ = Direct Mount/Cable
LJ = Pole Mount with L-bracket/Cable
PJ = Pole Mount with Circular Bracket/Cable
- ④ Flashing/Buzzer
B = With Flashing/Buzzer
N = No Flashing/Buzzer
- ⑤ Body Color
W = Off-white
- ⑥ LED Module Color
R = Red
Y = Amber
G = Green
B = Blue
C = White
- ⑦ Globe Type
Blank = Color Globe
Z = Clear Globe

φ60mm Model Code

(Ex.) **LR6-502WJBW-RYGBCZ**

Model ① ② ③ ④ ⑤ ⑥ ⑦

- ① Tiers
1 = 1 Tier
2 = 2 Tiers
3 = 3 Tiers
4 = 4 Tiers
5 = 5 Tiers
- ② Rated Voltage
02 = 24V DC
M2 = 100 - 240V AC *1
- ③ Mounting/Wiring
WJ = Direct Mount/Cable
LJ = Pole Mount with L-bracket/Cable
PJ = Pole Mount with Circular Bracket/Cable
QJ = Pole Mount with Folding Bracket/Cable *2
WC = Direct Mount/M12 Connector *2
- ④ Flashing/Buzzer
B = With Flashing/Buzzer
N = No Flashing/Buzzer
- ⑤ Body Color
W = Off-white
U = Silver *3
- ⑥ LED Module Color
R = Red
Y = Amber
G = Green
B = Blue
C = White
M = Multi Color
- ⑦ Globe Type
Blank = Color Globe
Z = Clear Globe


*1 For WJ, LJ and PJ type only *2 For 24V DC and Off-white type only *3 For 24V DC type WJ, LJ and PJ type only

φ70mm Model Code

(Ex.) **LR7-502WJBW-RYGBC**

Model ① ② ③ ④ ⑤ ⑥

- ① Tiers
1 = 1 Tier
2 = 2 Tiers
3 = 3 Tiers
4 = 4 Tiers
5 = 5 Tiers
- ② Rated Voltage
02 = 24V DC
- ③ Mounting/Wiring
WJ = Direct Mount/Cable
- ④ Flashing/Buzzer
B = With Flashing/Buzzer
N = No Flashing/Buzzer
- ⑤ Body Color
W = Off-white
- ⑥ LED Module Color
R = Red
Y = Amber
G = Green
B = Blue
C = White

Mounting Type	Rated Voltage	Size	Flash/Buzzer	Tiers	Model	Power Consumption	Mass
 <p>Pole Mount with Folding Bracket</p>	24V DC	φ 40	-	1	LR4-102QJNW	1.0W	0.455kg
				2	LR4-202QJNW	2.0W	0.490kg
				3	LR4-302QJNW	3.0W	0.525kg
				4	LR4-402QJNW	4.0W	0.560kg
				5	LR4-502QJNW	5.0W	0.595kg
			O	1	LR4-102QJBW	2.0W	0.490kg
				2	LR4-202QJBW	3.0W	0.525kg
				3	LR4-302QJBW	4.0W	0.560kg
				4	LR4-402QJBW	5.0W	0.595kg
				5	LR4-502QJBW	6.0W	0.630kg
		φ 60	-	1	LR6-102QJNW	1.0W	0.520kg
				2	LR6-202QJNW	2.0W	0.580kg
				3	LR6-302QJNW	3.0W	0.640kg
				4	LR6-402QJNW	4.0W	0.700kg
				5	LR6-502QJNW	5.0W	0.760kg
			O	1	LR6-102QJBW	2.0W	0.580kg
				2	LR6-202QJBW	3.0W	0.640kg
				3	LR6-302QJBW	4.0W	0.700kg
				4	LR6-402QJBW	5.0W	0.760kg
				5	LR6-502QJBW	6.0W	0.820kg

Network

Signal Tower

Signal Light

Revolving Warning Light


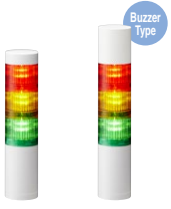
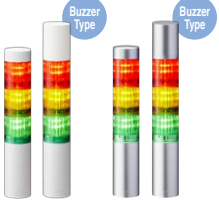

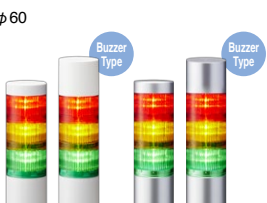

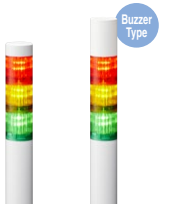

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

Mounting Type	Rated Voltage	Size	Flash/Buzzer	Tiers	Model	Power Consumption	Mass
 <p>Direct Mount</p>	12V DC	ϕ 50 	-	1	LR5-101WJNW	1.0W	0.240kg
				2	LR5-201WJNW	2.0W	0.280kg
				3	LR5-301WJNW	3.0W	0.320kg
				4	LR5-401WJNW	4.0W	0.360kg
				5	LR5-501WJNW	5.0W	0.400kg
			O	1	LR5-101WJBW	2.1W	0.290kg
				2	LR5-201WJBW	3.1W	0.330kg
				3	LR5-301WJBW	4.1W	0.370kg
				4	LR5-401WJBW	5.1W	0.410kg
				5	LR5-501WJBW	6.1W	0.450kg
	24V DC	ϕ 40 	-	1	LR4-102WJNW[U]	1.0W	0.205kg/0.355kg
				2	LR4-202WJNW[U]	2.0W	0.240kg/0.390kg
				3	LR4-402WJNW[U]	4.0W	0.310kg/0.460kg
				4	LR4-502WJNW[U]	5.0W	0.345kg/0.495kg
				5	LR4-502WJNBW[U]	6.0W	0.380kg/0.530kg
		O	1	LR4-102WJBW[U]	2.0W	0.240kg/0.390kg	
			2	LR4-202WJBW[U]	3.0W	0.275kg/0.425kg	
			3	LR4-302WJBW[U]	4.0W	0.310kg/0.460kg	
			4	LR4-402WJBW[U]	5.0W	0.345kg/0.495kg	
			5	LR4-502WJBW[U]	6.0W	0.380kg/0.530kg	
	ϕ 50 	-	1	LR5-102WJNW	1.0W	0.240kg	
			2	LR5-202WJNW	2.0W	0.280kg	
			3	LR5-302WJNW	3.0W	0.360kg	
			4	LR5-402WJNW	4.0W	0.360kg	
5			LR5-502WJNW	5.0W	0.400kg		
O		1	LR5-102WJBW	2.0W	0.290kg		
		2	LR5-202WJBW	3.0W	0.330kg		
		3	LR5-302WJBW	4.0W	0.370kg		
		4	LR5-402WJBW	5.0W	0.410kg		
		5	LR5-502WJBW	6.0W	0.450kg		
ϕ 60 	-	1	LR6-102WJNW[U]	1.0W	0.280kg/0.410kg		
		2	LR6-202WJNW[U]	2.0W	0.340kg/0.470kg		
		3	LR6-302WJNW[U]	3.0W	0.400kg/0.530kg		
		4	LR6-402WJNW[U]	4.0W	0.460kg/0.590kg		
		5	LR6-502WJNW[U]	5.0W	0.520kg/0.650kg		
	O	1	LR6-102WJBW[U]	2.0W	0.340kg/0.470kg		
		2	LR6-202WJBW[U]	3.0W	0.400kg/0.530kg		
		3	LR6-302WJBW[U]	4.0W	0.460kg/0.590kg		
		4	LR6-402WJBW[U]	5.0W	0.520kg/0.650kg		
		5	LR6-502WJBW[U]	6.0W	0.580kg/0.710kg		
ϕ 70 	-	1	LR7-102WJNW	1.0W	0.305kg		
		2	LR7-202WJNW	2.0W	0.370kg		
		3	LR7-302WJNW	3.0W	0.435kg		
		4	LR7-402WJNW	4.0W	0.500kg		
		5	LR7-502WJNW	5.0W	0.565kg		
	O	1	LR7-102WJBW	2.0W	0.375kg		
		2	LR7-202WJBW	3.0W	0.440kg		
		3	LR7-302WJBW	4.0W	0.505kg		
		4	LR7-402WJBW	5.0W	0.570kg		
		5	LR7-502WJBW	6.0W	0.635kg		
100 - 240V AC	ϕ 40 	-	1	LR4-1M2WJNW	1.5W	0.285kg	
			2	LR4-2M2WJNW	3.0W	0.320kg	
			3	LR4-3M2WJNW	4.5W	0.355kg	
			4	LR4-4M2WJNW	6.0W	0.390kg	
			5	LR4-5M2WJNW	7.5W	0.425kg	
			O	1	LR4-1M2WJBW	3.0W	0.320kg
				2	LR4-2M2WJBW	4.5W	0.355kg
	3	LR4-3M2WJBW		6.0W	0.390kg		
	4	LR4-4M2WJBW		7.5W	0.425kg		
	5	LR4-5M2WJBW		9.0W	0.460kg		
	ϕ 60 	-	1	LR6-1M2WJNW	1.5W	0.380kg	
			2	LR6-2M2WJNW	3.0W	0.440kg	
			3	LR6-3M2WJNW	4.5W	0.500kg	
			4	LR6-4M2WJNW	6.0W	0.560kg	
5			LR6-5M2WJNW	7.5W	0.620kg		
O			1	LR6-1M2WJBW	3.0W	0.440kg	
			2	LR6-2M2WJBW	4.5W	0.500kg	
	3	LR6-3M2WJBW	6.0W	0.560kg			
	4	LR6-4M2WJBW	7.5W	0.620kg			
	5	LR6-5M2WJBW	9.0W	0.680kg			

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

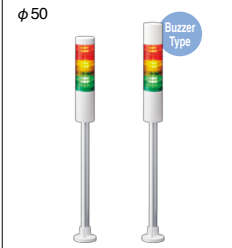
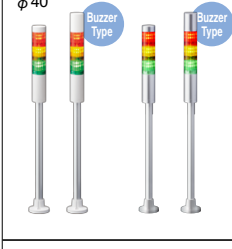
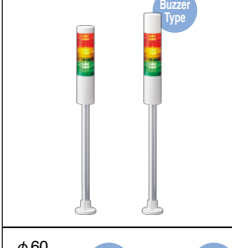
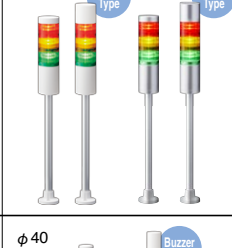
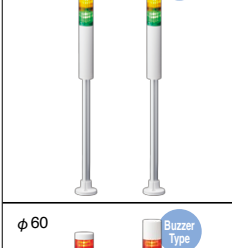



Hybrid Signaling Devices

LED Illumination

Options





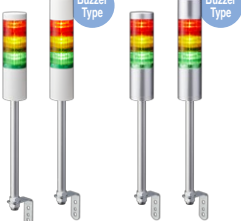




Signal Tower

LR Series Pre-assembled Models

Mounting Type	Rated Voltage	Size	Flash/Buzzer	Tiers	Model	Power Consumption	Mass	
Network	12V DC		-	1	LR5-101PJNW	1.0W	0.420kg	
				2	LR5-201PJNW	2.0W	0.460kg	
				3	LR5-301PJNW	3.0W	0.500kg	
				4	LR5-401PJNW	4.0W	0.540kg	
				5	LR5-501PJNW	5.0W	0.580kg	
			O	1	LR5-101PJBW	2.1W	0.470kg	
				2	LR5-201PJBW	3.1W	0.510kg	
				3	LR5-301PJBW	4.4W	0.550kg	
				4	LR5-401PJBW	5.1W	0.590kg	
				5	LR5-501PJBW	6.1W	0.630kg	
Signal Tower	24V DC		-	1	LR4-102PJNW[U]	1.0W	0.395kg/0.545kg	
				2	LR4-202PJNW[U]	2.0W	0.430kg/0.580kg	
				3	LR4-302PJNW[U]	3.0W	0.465kg/0.615kg	
				4	LR4-402PJNW[U]	4.0W	0.500kg/0.650kg	
				5	LR4-502PJNW[U]	5.0W	0.535kg/0.685kg	
			O	1	LR4-102PJBW[U]	2.0W	0.430kg/0.580kg	
				2	LR4-202PJBW[U]	3.0W	0.465kg/0.615kg	
				3	LR4-302PJBW[U]	4.0W	0.500kg/0.650kg	
				4	LR4-402PJBW[U]	5.0W	0.535kg/0.685kg	
				5	LR4-502PJBW[U]	6.0W	0.570kg/0.720kg	
	Signal Light	24V DC		-	1	LR5-102PJNW	1.0W	0.420kg
					2	LR5-202PJNW	2.0W	0.460kg
					3	LR5-302PJNW	3.0W	0.500kg
					4	LR5-402PJNW	4.0W	0.540kg
					5	LR5-502PJNW	5.0W	0.580kg
O				1	LR5-102PJBW	2.0W	0.470kg	
				2	LR5-202PJBW	3.0W	0.510kg	
				3	LR5-302PJBW	4.0W	0.550kg	
				4	LR5-402PJBW	5.0W	0.590kg	
				5	LR5-502PJBW	6.0W	0.630kg	
Revolving Warning Light	24V DC		-	1	LR6-102PJNW[U]	1.0W	0.460kg/0.590kg	
				2	LR6-202PJNW[U]	2.0W	0.520kg/0.650kg	
				3	LR6-302PJNW[U]	3.0W	0.580kg/0.710kg	
				4	LR6-402PJNW[U]	4.0W	0.640kg/0.770kg	
				5	LR6-502PJNW[U]	5.0W	0.700kg/0.830kg	
			O	1	LR6-102PJBW[U]	2.0W	0.520kg/0.650kg	
				2	LR6-202PJBW[U]	3.0W	0.580kg/0.710kg	
				3	LR6-302PJBW[U]	4.0W	0.640kg/0.770kg	
				4	LR6-402PJBW[U]	5.0W	0.700kg/0.830kg	
				5	LR6-502PJBW[U]	6.0W	0.760kg/0.890kg	
Cube Tower	100 - 240V AC		-	1	LR4-1M2PJNW	1.5W	0.475kg	
				2	LR4-2M2PJNW	3.0W	0.510kg	
				3	LR4-3M2PJNW	4.5W	0.545kg	
				4	LR4-4M2PJNW	6.0W	0.580kg	
				5	LR4-5M2PJNW	7.5W	0.615kg	
			O	1	LR4-1M2PJBW	3.0W	0.510kg	
				2	LR4-2M2PJBW	4.5W	0.545kg	
				3	LR4-3M2PJBW	6.0W	0.580kg	
				4	LR4-4M2PJBW	7.5W	0.615kg	
				5	LR4-5M2PJBW	9.0W	0.650kg	
Audibles	100 - 240V AC		-	1	LR6-1M2PJNW	1.5W	0.560kg	
				2	LR6-2M2PJNW	3.0W	0.620kg	
				3	LR6-3M2PJNW	4.5W	0.680kg	
				4	LR6-4M2PJNW	6.0W	0.740kg	
				5	LR6-5M2PJNW	7.5W	0.800kg	
			O	1	LR6-1M2PJBW	3.0W	0.620kg	
				2	LR6-2M2PJBW	4.5W	0.680kg	
				3	LR6-3M2PJBW	6.0W	0.740kg	
				4	LR6-4M2PJBW	7.5W	0.800kg	
				5	LR6-5M2PJBW	9.0W	0.860kg	
Hybrid Signaling Devices	100 - 240V AC		-	1	LR4-1M2PJNW	1.5W	0.475kg	
				2	LR4-2M2PJNW	3.0W	0.510kg	
				3	LR4-3M2PJNW	4.5W	0.545kg	
				4	LR4-4M2PJNW	6.0W	0.580kg	
				5	LR4-5M2PJNW	7.5W	0.615kg	
			O	1	LR4-1M2PJBW	3.0W	0.510kg	
				2	LR4-2M2PJBW	4.5W	0.545kg	
				3	LR4-3M2PJBW	6.0W	0.580kg	
				4	LR4-4M2PJBW	7.5W	0.615kg	
				5	LR4-5M2PJBW	9.0W	0.650kg	
LED Illumination	100 - 240V AC		-	1	LR6-1M2PJNW	1.5W	0.560kg	
				2	LR6-2M2PJNW	3.0W	0.620kg	
				3	LR6-3M2PJNW	4.5W	0.680kg	
				4	LR6-4M2PJNW	6.0W	0.740kg	
				5	LR6-5M2PJNW	7.5W	0.800kg	
			O	1	LR6-1M2PJBW	3.0W	0.620kg	
				2	LR6-2M2PJBW	4.5W	0.680kg	
				3	LR6-3M2PJBW	6.0W	0.740kg	
				4	LR6-4M2PJBW	7.5W	0.800kg	
				5	LR6-5M2PJBW	9.0W	0.860kg	
Options	100 - 240V AC		-	1	LR6-1M2PJNW	1.5W	0.560kg	
				2	LR6-2M2PJNW	3.0W	0.620kg	
				3	LR6-3M2PJNW	4.5W	0.680kg	
				4	LR6-4M2PJNW	6.0W	0.740kg	
				5	LR6-5M2PJNW	7.5W	0.800kg	
			O	1	LR6-1M2PJBW	3.0W	0.620kg	
				2	LR6-2M2PJBW	4.5W	0.680kg	
				3	LR6-3M2PJBW	6.0W	0.740kg	
				4	LR6-4M2PJBW	7.5W	0.800kg	
				5	LR6-5M2PJBW	9.0W	0.860kg	



Pole Mount with Circular Bracket

Mounting Type	Rated Voltage	Size	Flash/Buzzer	Tiers	Model	Power Consumption	Mass
 <p>Pole Mount with L-bracket</p>	12V DC	 <p>φ50</p>	—	1	LR5-101LJNW	1.0W	0.530kg
				2	LR5-201LJNW	2.0W	0.570kg
				3	LR5-301LJNW	3.0W	0.610kg
				4	LR5-401LJNW	4.0W	0.650kg
				5	LR5-501LJNW	5.0W	0.690kg
			O	1	LR5-101LJBW	2.1W	0.580kg
				2	LR5-201LJBW	3.1W	0.620kg
				3	LR5-301LJBW	4.1W	0.660kg
				4	LR5-401LJBW	5.1W	0.700kg
				5	LR5-501LJBW	6.1W	0.740kg
	24V DC	 <p>φ40</p>	—	1	LR4-102LJNW[U]	1.0W	0.495kg/0.645kg
				2	LR4-202LJNW[U]	2.0W	0.530kg/0.680kg
				3	LR4-302LJNW[U]	3.0W	0.565kg/0.715kg
				4	LR4-402LJNW[U]	4.0W	0.600kg/0.750kg
				5	LR4-502LJNW[U]	5.0W	0.635kg/0.785kg
			O	1	LR4-102LJBW[U]	2.0W	0.530kg/0.680kg
				2	LR4-202LJBW[U]	3.0W	0.565kg/0.715kg
				3	LR4-302LJBW[U]	4.0W	0.600kg/0.750kg
				4	LR4-402LJBW[U]	5.0W	0.635kg/0.785kg
				5	LR4-502LJBW[U]	6.0W	0.670kg/0.820kg
 <p>φ50</p>	—	1	LR5-102LJNW	1.0W	0.530kg		
		2	LR5-202LJNW	2.0W	0.570kg		
		3	LR5-302LJNW	3.0W	0.610kg		
		4	LR5-402LJNW	4.0W	0.650kg		
		5	LR5-502LJNW	5.0W	0.690kg		
	O	1	LR5-102LJBW	2.0W	0.580kg		
		2	LR5-202LJBW	3.0W	0.620kg		
		3	LR5-302LJBW	4.0W	0.660kg		
		4	LR5-402LJBW	5.0W	0.700kg		
		5	LR5-502LJBW	6.0W	0.740kg		
 <p>φ60</p>	—	1	LR6-102LJNW[U]	1.0W	0.560kg/0.700kg		
		2	LR6-202LJNW[U]	2.0W	0.620kg/0.760kg		
		3	LR6-302LJNW[U]	3.0W	0.680kg/0.820kg		
		4	LR6-402LJNW[U]	4.0W	0.740kg/0.880kg		
		5	LR6-502LJNW[U]	5.0W	0.800kg/0.940kg		
	O	1	LR6-102LJBW[U]	2.0W	0.620kg/0.760kg		
		2	LR6-202LJBW[U]	3.0W	0.680kg/0.820kg		
		3	LR6-302LJBW[U]	4.0W	0.740kg/0.880kg		
		4	LR6-402LJBW[U]	5.0W	0.800kg/0.940kg		
		5	LR6-502LJBW[U]	6.0W	0.860kg/1.000kg		
100-240V AC [※]	 <p>φ40</p>	—	1	LR4-1M2LJNW	1.5W	0.575kg	
			2	LR4-2M2LJNW	3.0W	0.610kg	
			3	LR4-3M2LJNW	4.5W	0.645kg	
			4	LR4-4M2LJNW	6.0W	0.680kg	
			5	LR4-5M2LJNW	7.5W	0.715kg	
	O	1	LR4-1M2LJBW	3.0W	0.610kg		
		2	LR4-2M2LJBW	4.5W	0.645kg		
		3	LR4-3M2LJBW	6.0W	0.680kg		
		4	LR4-4M2LJBW	7.5W	0.715kg		
		5	LR4-5M2LJBW	9.0W	0.750kg		
 <p>φ60</p>	—	1	LR6-1M2LJNW	1.5W	0.660kg		
		2	LR6-2M2LJNW	3.0W	0.720kg		
		3	LR6-3M2LJNW	4.5W	0.780kg		
		4	LR6-4M2LJNW	6.0W	0.840kg		
		5	LR6-5M2LJNW	7.5W	0.900kg		
O	1	LR6-1M2LJBW	3.0W	0.720kg			
	2	LR6-2M2LJBW	4.5W	0.780kg			
	3	LR6-3M2LJBW	6.0W	0.840kg			
	4	LR6-4M2LJBW	7.5W	0.900kg			
	5	LR6-5M2LJBW	9.0W	0.960kg			
 <p>Direct Mount With M12 Connector</p>	24V DC	 <p>φ60</p>	—	3	LR6-302WCNW	3.0W	0.350kg

※ Not suitable for KC (KN 61000-6-4, KN 61000-6-2) and Low Voltage Directive (TEC / EN 60947-5-1, EN 62471).

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

Signal Tower

LR Series Modular Models

Select a Audible Alarm Unit (for Flashing / Audible Alarm function)



Size	Color	Model
ϕ 40		LR4-B□
ϕ 50		LR5-B□
ϕ 60		LR6-B□
ϕ 70		LR7-B□

□•••W: Off-white U: Silver K: Black

Select an LED Unit



Size	Color	Model
ϕ 40		LR4-E-R/Y/G/B/C
		LR4-E-RZ/YZ/GZ/BZ CLEAR
ϕ 50		LR5-E-R/Y/G/B/C
		LR4-E-RZ/YZ/GZ/BZ CLEAR
ϕ 60		LR6-E-R/Y/G/B/C
		LR6-E-RZ/YZ/GZ/BZ CLEAR
ϕ 70		LR7-E-R/Y/G/B/C
ϕ 60		LR6-E-MZ Multi-color

Select a Body Unit

Mounting Type	Rated Voltage	Size	Model
 Direct Mount/Cable	12V DC	ϕ 50	LR5-01WJNW
		ϕ 40	LR4-02WJNW[U]
	24V DC	ϕ 50	LR5-02WJNW
		ϕ 60	LR6-02WJNW[U]
		ϕ 70	LR7-02WJNW
		ϕ 40	LR4-M2WJNW
100 - 240V AC	ϕ 60	LR6-M2WJNW	
	24V DC	ϕ 50	LR5-02WTNW[U][K]
ϕ 70		LR7-02WTNW[U][K]	
 Knock-out Mount/Screwless Terminal	24V DC	ϕ 50	LR5-02KTNW[U][K]
		ϕ 70	LR7-02KTNW[U][K]
 Direct Mount/M12 Connector	24V DC	ϕ 60	LR6-02WCNW

Body Unit Model Code

(Ex.) **LR6-02WJNW**

Model ① ② ③ ④ ⑤

- ① Size
4 = ϕ 40
5 = ϕ 50
6 = ϕ 60
7 = ϕ 70
- ② Rated Voltage
01 = 12V DC*1
02 = 24V DC
M2 = 100 - 240V AC *2
- ③ Mounting/Wiring
WJ = Direct Mount/Cable
WT = Direct Mount/Terminal *3
KT = Knock-outs Mount/Terminal *3
WC = Direct Mount/M12 Connector *4
LJ = Pole Mount with L-bracket/Cable *5
PJ = Pole Mount with Circular Bracket/Cable *5
QJ = Pole Mount with Folding Bracket/Cable *6
- ④ Flashing/Buzzer
N = No Flashing/Buzzer
- ⑤ Body Color
W = Off-white
U = Silver
K = Black*7

*1 For LR5 models only
*2 For WJ, LJ and PJ mounting with LR4 and LR6 models
*3 For LR5, LR7 DC24V models only
*4 For LR6 DC24V models only
*5 For LR4, LR5 and LR6 models
*6 With LR4 and LR6 DC24V Off-white models only
*7 For LR5, LR7 models only

3 Easy Steps

1 Remove the headcover to setup the body unit



2 Attach from bottom to top, one LED unit at a time to the body unit






3 Replace the headcover, or attach the audible unit



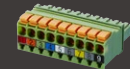
See the Movie!!

Scan the QR code to see how easy the LR is to configure.

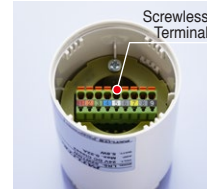


Mounting Type	Rated Voltage	Size	Model
 Pole Mount with Circular Bracket/Cable	12V DC	ϕ 50	LR5-01PJNW
	24V DC	ϕ 40	LR4-02PJNW[U]
		ϕ 50	LR5-02PJNW
	ϕ 60	LR6-02PJNW[U]	
 Pole Mount with L-bracket/Cable	12V DC	ϕ 50	LR5-01LJNW
	24V DC	ϕ 40	LR4-02LJNW[U]
		ϕ 50	LR5-02LJNW
		ϕ 60	LR6-02LJNW[U]
	100 - 240V AC	ϕ 40	LR4-M2LJNW
		ϕ 60	LR6-M2LJNW
 Pole Mount with Folding Bracket/Cable	24V DC	ϕ 40	LR4-02QJNW
		ϕ 60	LR6-02QJNW

Removable Screwless Terminal



A new removable terminal for easier wiring.

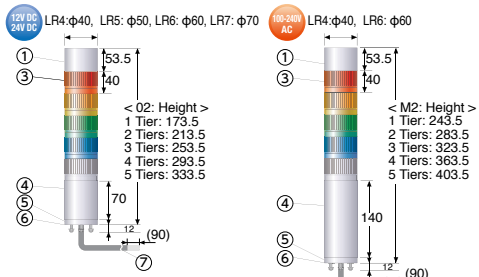


The terminal can be pulled out



Outer Dimensional Drawing (Unit: mm)

Mount A [WJ] Direct Mount/Cable (01: 12V DC / 02: 24V DC) (M2: 100-240V AC)

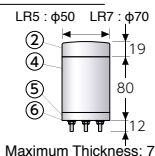


Maximum Thickness: 7
Cable Length: (1300)
U type: (3300)
Cable Diameter: $\phi 7.5$

Maximum Thickness: 7
Cable Length: (1300)
U type: (3300)
Cable Diameter: $\phi 7.5$

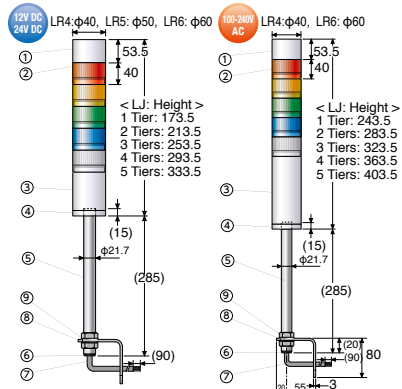
No.	Description	Material
①	Buzzer Unit	PC
②	Head Cover	PC
③	LED Unit	Globe: PC
④	Body	PC
⑤	Direct Mount Bracket	PC
⑥	Waterproof Packing	Silicon Rubber
⑦	Cable	PVC

Mount A [WT] Direct Mount/
Screwless Terminal (Body Unit)



Maximum Thickness: 7

Mount B [LJ] Pole Mount with L-bracket & Cable (01: 12V DC / 02: 24V DC) (M2: 100-240V AC)

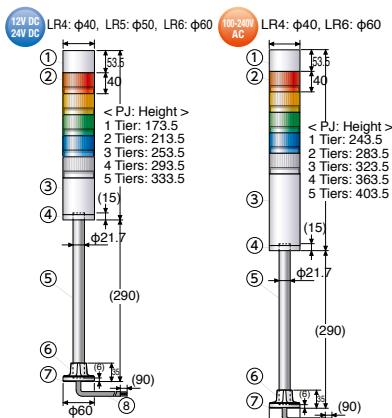


Cable Length: (1000)
U type: (3000)
Cable Diameter: $\phi 7.5$

Cable Length: (1000)
U type: (3000)
Cable Diameter: $\phi 7.5$

No.	Description	Material
①	Buzzer Unit	PC
②	LED Unit	Globe: PC
③	Body	PC
④	Pole Bracket	PC
⑤	Pole	AL
⑥	Rubber Bushing	EPR Rubber
⑦	Cable	PVC
⑧	L-bracket	Steel
⑨	Hexagon Nut M22	SUM

Mount A [PJ] Pole Mount with/Circular Bracket & Cable (01: 12V DC / 02: 24V DC) (M2: 100-240V AC)

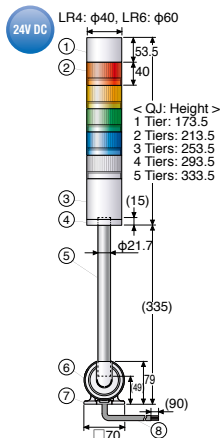


Cable Length: (1000)
U type: (3000)
Cable Diameter: $\phi 7.5$

Cable Length: (1000)
U type: (3000)
Cable Diameter: $\phi 7.5$

No.	Description	Material
①	Buzzer Unit	PC
②	LED Unit	Globe: PC
③	Body	PC
④	Pole Bracket	PC
⑤	Pole	AL
⑥	Circular Bracket	PC
⑦	Waterproof Packing	Silicon Rubber
⑧	Cable	PVC

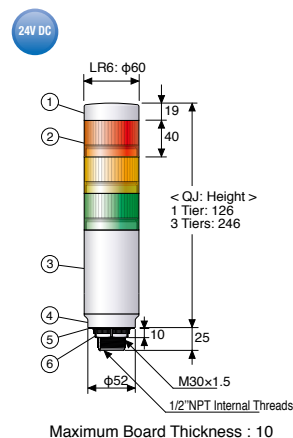
Mount C [QJ] Pole Mount with/Folding Bracket & Cable (02: 24V DC)



Cable Length: (950)
Cable Diameter: $\phi 7.5$

No.	Description	Material
①	Buzzer Unit	PC
②	LED Unit	Globe: PC
③	Body	PC
④	Pole Bracket	PC
⑤	Pole	AL
⑥	Folding Bracket	PC
⑦	Waterproof Packing	CR
⑧	Cable	PVC

Mount D [WC] Direct Mount with M12 Connector (02: 24V DC)



Maximum Board Thickness : 10

No.	Description	Material
①	Head Cover	PC
②	LED Unit	Globe: PC
③	Body	PC
④	Direct Mount Bracket	PC
⑤	Waterproof Packing (t=1)	Silicone Rubber
⑥	M30 Nut	PC

Mounting Dimensions (Unit: mm)

Mount A Mounting Diagram [WJ] / [PJ] / [WT] / [KT]

Mounting Holes x3	Nut/Screw	(*) [KT] Direct Mount when using accessory)
LR4/S-WJ	$\phi 4$ M3	LR4/S-WJ
LR5-WT/KT*		LR5-WT/KT* $\phi 30$
LR4/S/P-PJ		LR4/S/P-PJ
LR6/7-WJ	$\phi 5$ M4	LR6/7-WJ
LR7-WT/KT*		LR7-WT/KT* $\phi 40$

Recommended Torque: 0.6 N/m

Mount B Mounting Diagram [LJ]

Recommended Torque: 30 N/m

Point: When not using an L-bracket, make a fitting hole of $\phi 22-23$ mm.

Recommended Bolt Torque: 12.2 N/m

- Make holes for the mounting and wire-distribution. Refer to the suitable attachment or mounting dimension figure for the model. (Select among the two mounting options for the [KT] model.)
- Run wiring through the mounting hole.
- Secure the product with the bolts, nuts and screws. Required nuts and bolts for [LJ] are not included.

Mount C Mounting Diagram [QJ]

Recommended Torque: 1.4 N/m

Mount D Mounting Dimensional Drawing (M30 x 1.5 Installation)

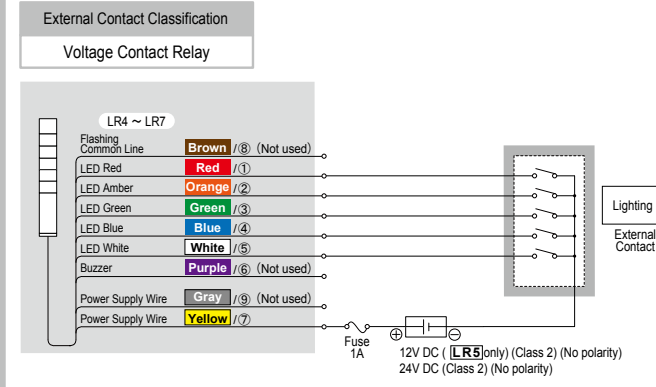
Recommended Torque: 4.5 N/m

Wiring Diagrams

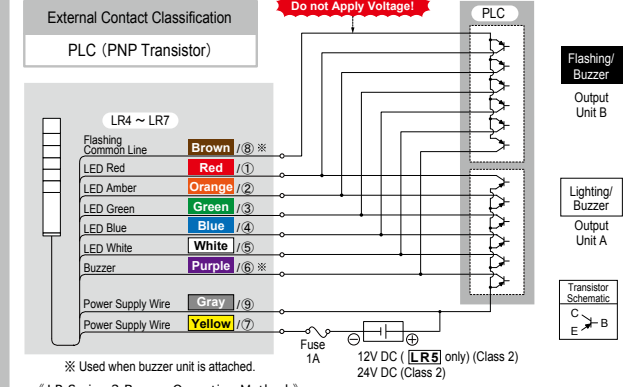
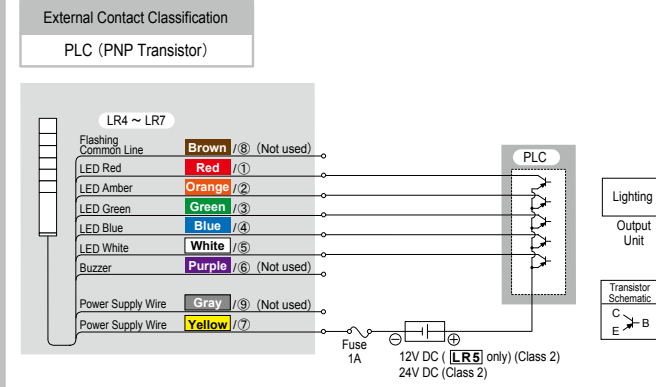
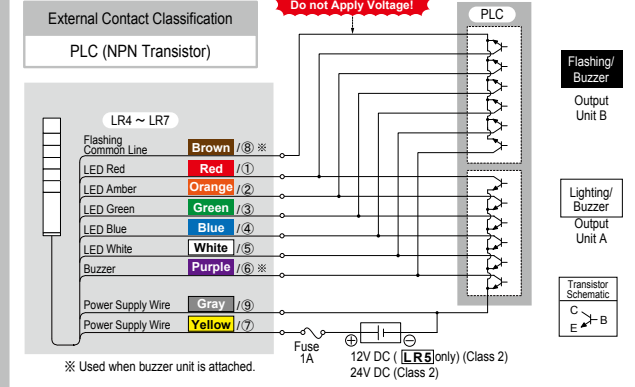
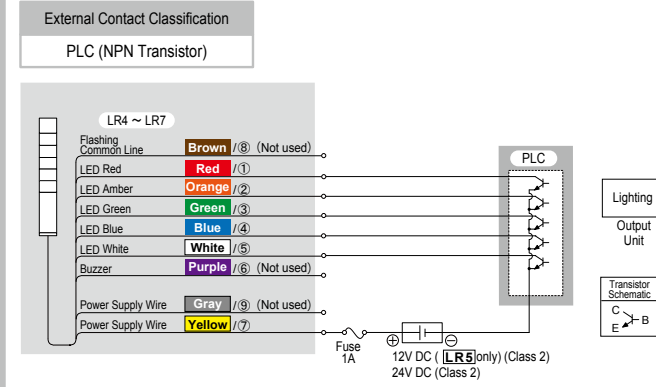
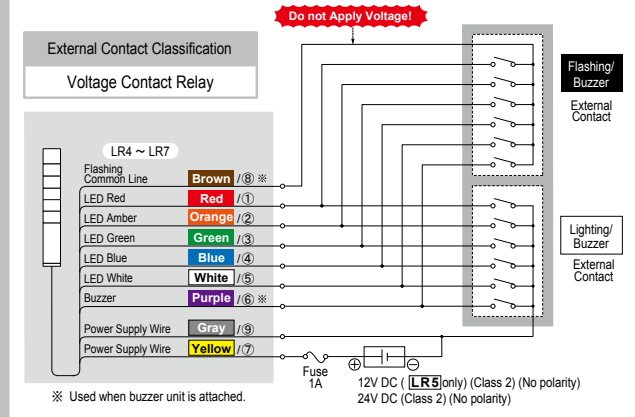
Wire Type & Wire Gauge
 Wire Type.....UL2464
 Wire Gauge...[01] 12V DC [02] 24V DC
 Signal Wire : AWG24
 Power Supply Wire : AWG24

Wiring Example Index	LED Red	RED / ①	PIN No. WT Direct Mount with Terminal Block, KT Mounting Bracket with knock-outs Terminal Block <small><Note> The lead wire color does not indicate the LED luminescence color. Refer to pg. 16 "Terminal Block Array"</small>
	Function Name	Lead Wire Color (Cable type)	

Product Specifications **01** 12V DC **02** 24V DC

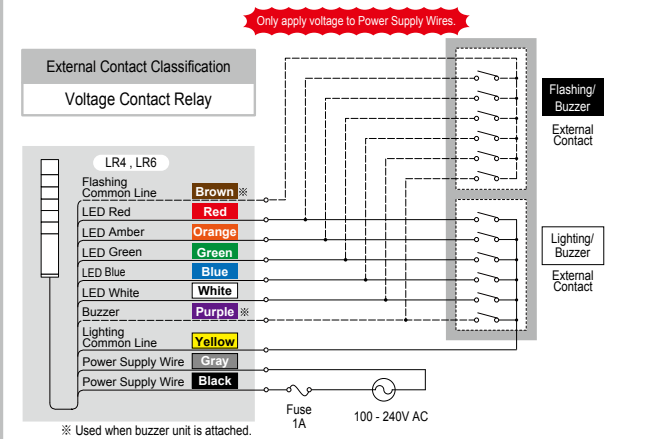


Product Specifications **01** 12V DC **02** 24V DC

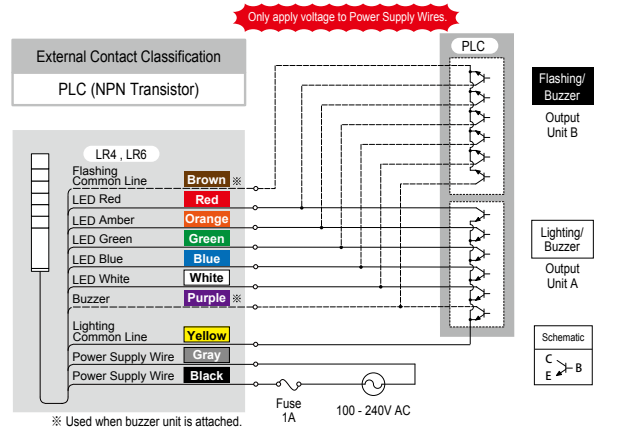


《 LR Series 2-Buzzer Operation Method 》
 Connecting the Buzzer wire (Purple) with the Flashing Common wire (Brown) will control the selection of two different buzzer sounds.

Product Specifications **M2** 100 - 240V AC



Wire Type & Wire Gauge
 Wire Type.....UL2464
 Wire Gauge...[M2] 100-240V AC
 Signal Wire : AWG24
 Power Supply Wire : AWG18



Multi-color Wiring Diagrams

Multi-color LED Unit wire colors are **Red** / ①; **Green** / ③; **Blue** / ④. Wire colors **Orange** / ② and **White** / ⑤ are not used.

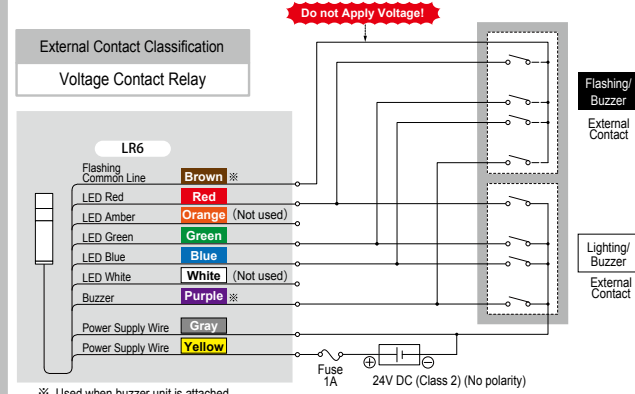
Refer to the Complete User's Manual for details.

LR6-E-MZ Lighting

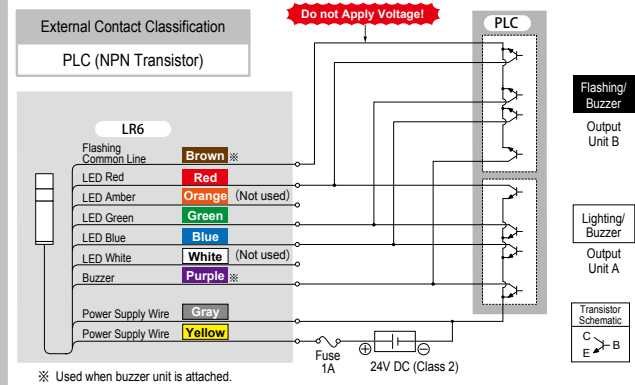
LED Color	Wire Color
Red	Red
Green	Green
Blue	Blue
Amber	Red + Green
Purple	Red + Blue
Cyan	Green + Blue
White	Red + Green + Blue

Lighting / Flashing / Buzzer (LR6-E-MZ)

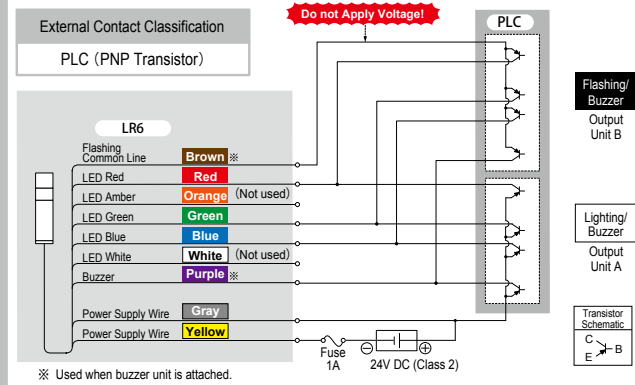
Product Specifications **02** 24V DC



※ Used when buzzer unit is attached.



※ Used when buzzer unit is attached.



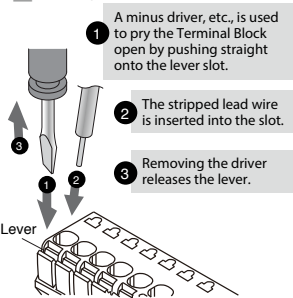
※ Used when buzzer unit is attached.

Point

- When flashing the LR6-E-MZ simultaneously with the LR6-E-R(Z)/Y(Z)/G(Z)/B(Z)/C, the flashing cycle of the LR6-E-MZ may shift from the other LED units.

[WT],[KT] Terminal Type

Wiring Method



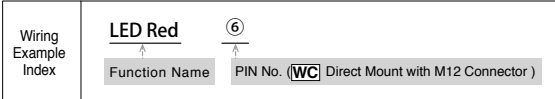
Terminal Block Array

9	Black	Power (Signal)
8	Grey	Flashing Common
7	Yellow	Power (Common)
6	Grey	Buzzer
5	White	LED White
4	Blue	LED Blue
3	Green	LED Green
2	Orange	LED Yellow
1	Red	LED Red

Wire Type	Wire (Solid)	Wire (Frayed)
UL1007 / UL1430	0.14 - 1.5mm	AWG30 - 14

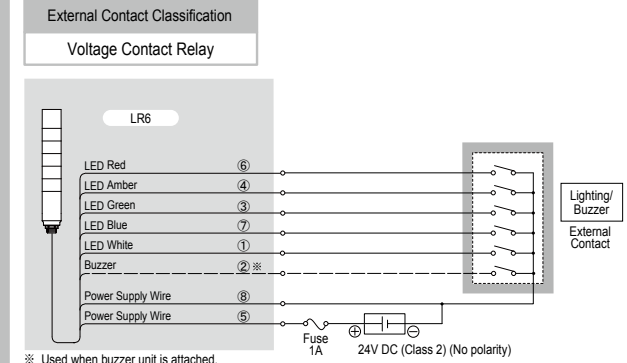
• Temperature rating should be above 75°C, and the conductor material should be of copper wire.

M12 (LR6-WC)Wiring Diagrams

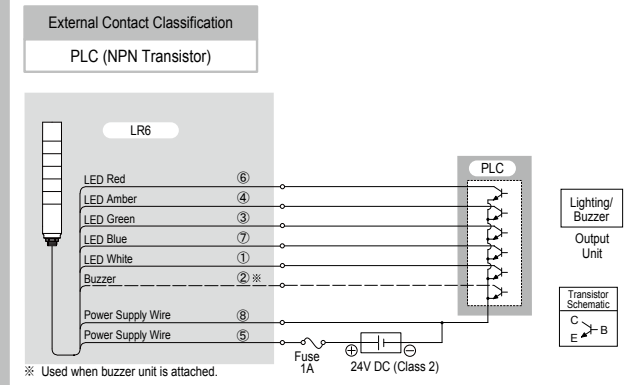


Lighting / Buzzer (LR6-WC)

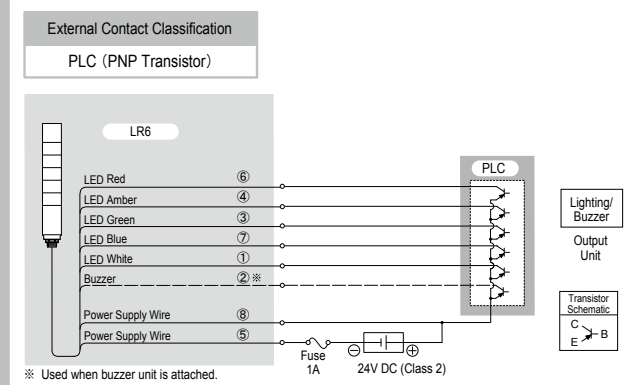
Product Specifications **02** **WC** 24V DC



※ Used when buzzer unit is attached.



※ Used when buzzer unit is attached.

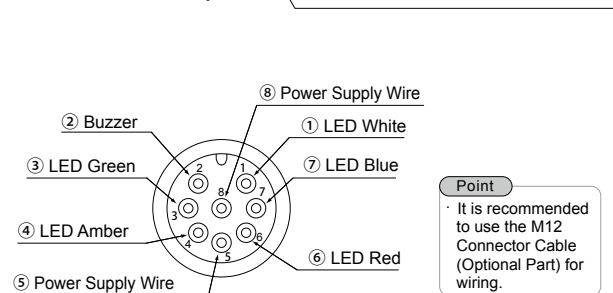


※ Used when buzzer unit is attached.

Point

- The flashing function cannot be used.

M12 Connector Pin Layout



Point

It is recommended to use the M12 Connector Cable (Optional Part) for wiring.

Wiring Diagrams

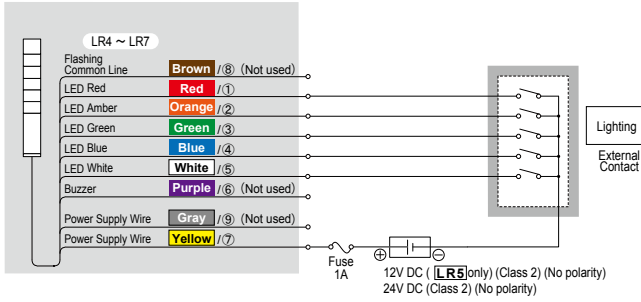
■ Wire Type & Wire Gauge
 Wire Type.....UL2464
 Wire Gauge...[01] 12V DC [02] 24V DC
 Signal Wire : AWG24
 Power Supply Wire : AWG24

Wiring Example Index	LED Red	RED / ①	PIN No. WT Direct Mount with Terminal Block, KT Mounting Bracket with knock-outs Terminal Block <small>*Note- The lead wire color does not indicate the LED luminescence color. Refer to pg. 16 "Terminal Block Array"</small>
	Function Name	Lead Wire Color (Cable type)	

Product Specifications **01** 12V DC **02** 24V DC

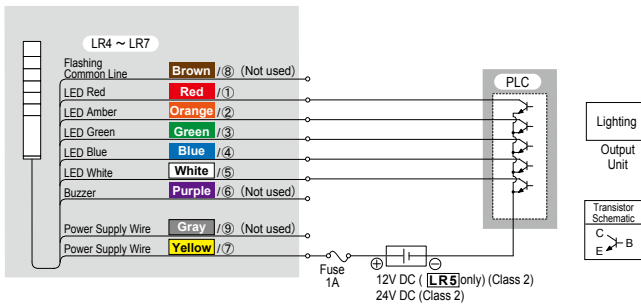
External Contact Classification

Voltage Contact Relay



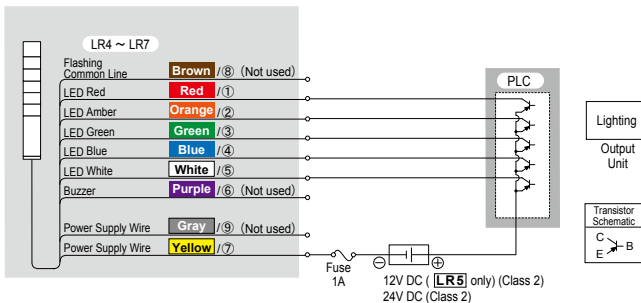
External Contact Classification

PLC (NPN Transistor)



External Contact Classification

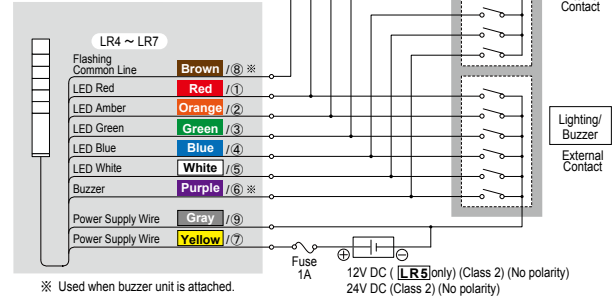
PLC (PNP Transistor)



Product Specifications **01** 12V DC **02** 24V DC

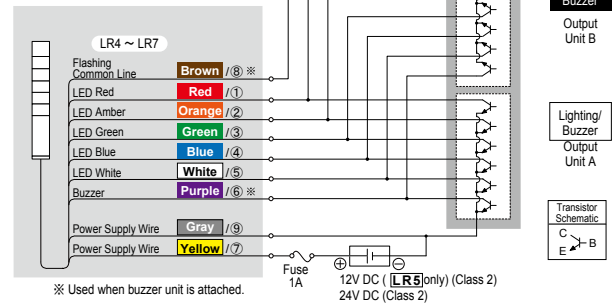
External Contact Classification

Voltage Contact Relay



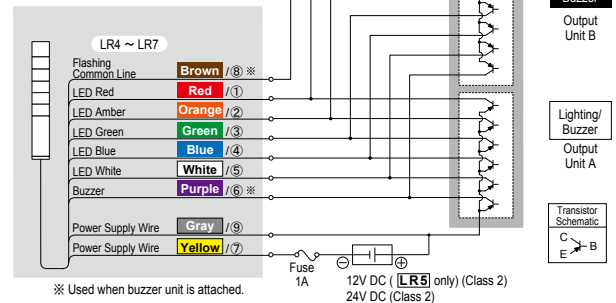
External Contact Classification

PLC (NPN Transistor)



External Contact Classification

PLC (PNP Transistor)

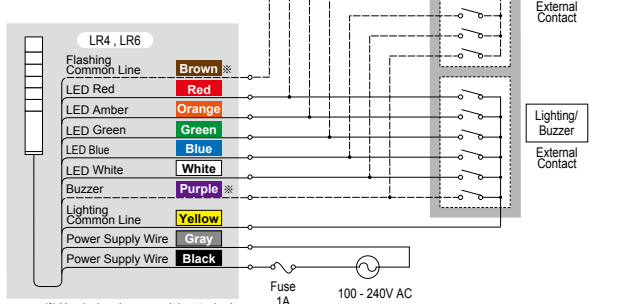


《 LR Series 2-Buzzer Operation Method 》
 Connecting the Buzzer wire (Purple) with the Flashing Common wire (Brown) will control the selection of two different buzzer sounds.

Product Specifications **M2** 100 - 240 V AC

External Contact Classification

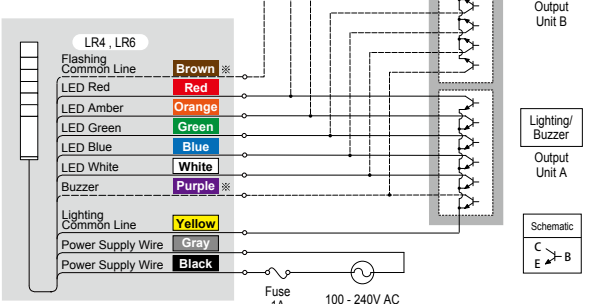
Voltage Contact Relay



Product Specifications **01** 12V DC **02** 24V DC

External Contact Classification

PLC (NPN Transistor)



■ Wire Type & Wire Gauge
 Wire Type.....UL2464
 Wire Gauge...[M2] 100-240V AC
 Signal Wire : AWG24
 Power Supply Wire : AWG18

LR

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

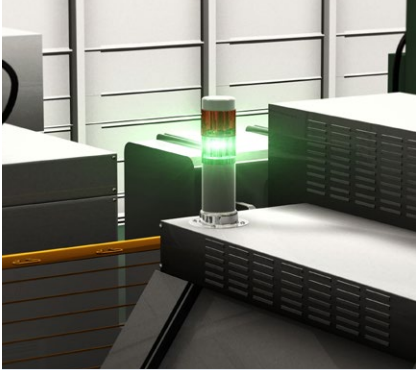
Audibles

Hybrid Signaling Devices

LED Illumination

Options

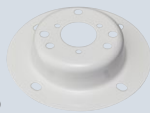
Direct Mount Brackets



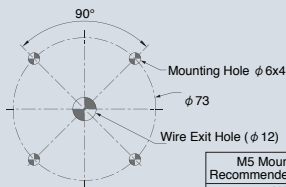
Circular Bracket

Model: SZW-001W

Material: SPCE



■ Mounting Dimensions (Unit: mm)



M5 Mounting Recommended Torque 1.4 N/m

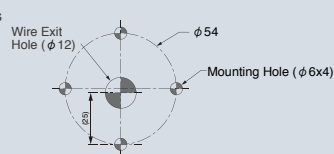
Wall-mount Bracket

Model: SZK-002W/U/K

Material: PC



■ Mounting Dimensions (Unit: mm)



M5 Mounting Recommended Torque 1.4 N/m

Model: SZK-003W/U/K

Material: PC



Model: SZK-004W

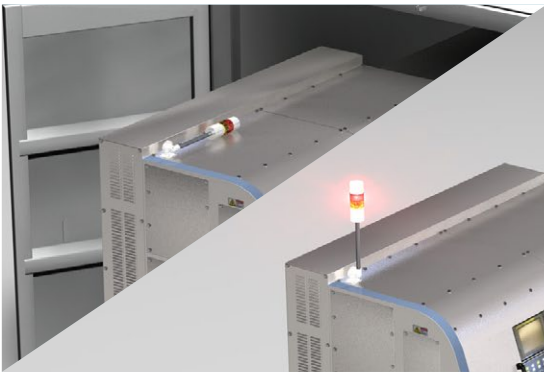
Material: PC



The wiring can exit through the bracket.

※An M16xP1.5 cable gland attachment needs to be purchased in addition

N Type Aluminum Pole Brackets



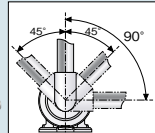
Folding Bracket

Model: SZQ-001W

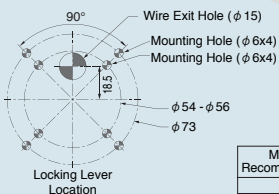
Accessories: Pole Waterproof Ring Binding Head Tapping Screw (2 pcs.)
Material: PC



■ Folding Range



■ Mounting Dimensions (Unit: mm)

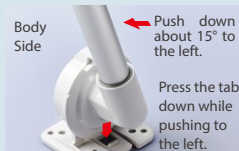


M5 Mounting Recommended Torque 1.4 N/m

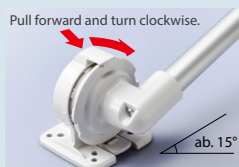


See the Movie!

1 Depressing a locking lever on the left side of the folding bracket releases it to be lowered.



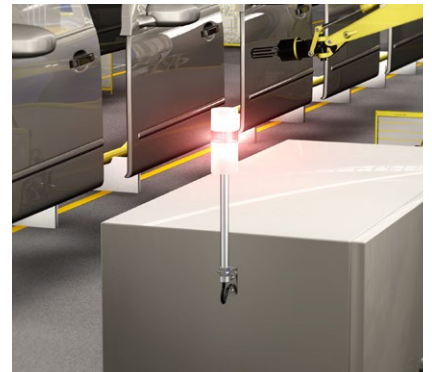
2 Press the folding bracket forward and push about 15° in the clockwise direction.



3 The folding bracket is pushed down to the right (clockwise) until it locks in place with a "Click" sound.



T Type Aluminum Pole Brackets



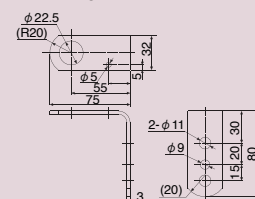
L-bracket

Model: SZL-001

Material: SPHC-P



■ Mounting Dimensions (Unit: mm)



Screw Nut
※1 : M8×2pcs.
※2 : M10×2pcs.
Recommended screw Torque 12.2 Nm

Network

Signal Tower

Signal Light

Revolving Warming Light

Cube Tower

Audibles

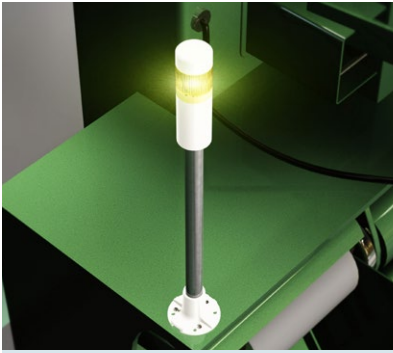
Hybrid Signaling Devices

LED Illumination

Options



N Type Aluminum Pole Brackets



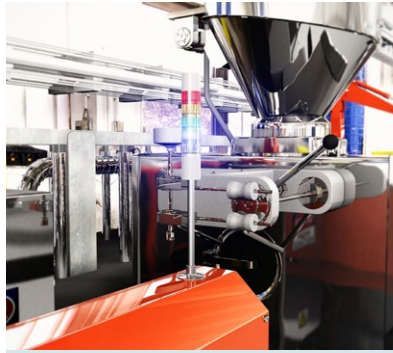
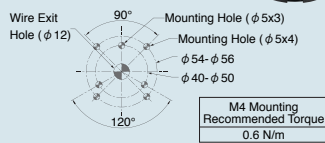
Circular Multiple-mount Bracket

Model: SZP-001W/U/K

Accessories: Waterproof Packing Pole Waterproof Ring Binding Head Tapping Screw (2 pcs.)

Material: PC

■ Mounting Dimensions (Unit: mm)



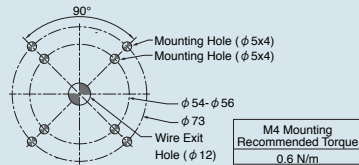
Circular Bracket

Model: SZP-002U

Accessories: Pole Waterproof Ring Binding Head Tapping Screw (2 pcs.)

Material: ADC12

■ Mounting Dimensions (Unit: mm)



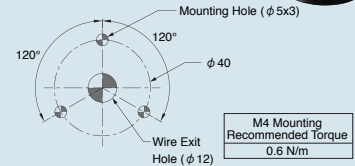
Circular Bracket

Model: SZP-003W/U/K

Accessories: Waterproof Packing Pole Waterproof Ring Binding Head Tapping Screw (2 pcs.)

Material: PC

■ Mounting Dimensions (Unit: mm)



N & T Aluminum Pole Brackets



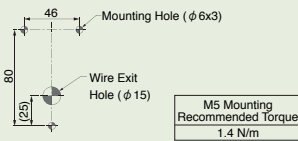
Wall-mount Bracket

Model: SZK-001U

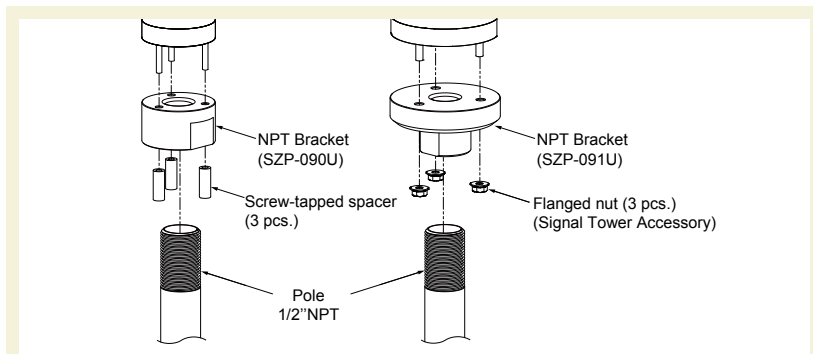
Accessories: Hexagon Socket Set Screw (2 pcs.)

Material: ADC12

■ Mounting Dimensions (Unit: mm)



1/2" Type Pole Brackets



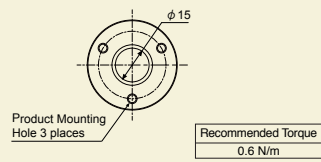
NPT Bracket

Model: SZP-090U

Accessories: Screw-tapped spacer (3 pcs.)

Material: AL

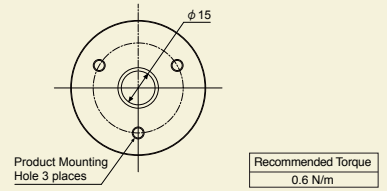
■ Mounting Dimensions (Unit: mm)



Model: SZP-091U

Material: AL

■ Mounting Dimensions (Unit: mm)



Replacement Parts

■ O-ring (5 per pack)/Headcover

O-ring 40 Model: B25110065-F1	Headcover 40 Model: [W] B32310070-7F1 [U] B32310070-9F1	O-ring 50 Model: B25110066-F1	Headcover 50 Model: [W] B32310071-7F1 [K] B32310071-8F1 [U] B32310071-9F1	O-ring 60 Model: B25110067-F1	Headcover 60 Model: [W] B32310072-7F1 [U] B32310072-9F1	O-ring 70 Model: B25110068-F1	Headcover 70 Model: [W] B32310073-7F1 [K] B32310073-8F1 [U] B32310073-9F1

■ Base Unit

- Adaptor for Aluminum Pole O-ring, Binding Head Tapping Screw for pole fixing and Pole Waterproof Ring are included.

LR4 Model: [W] B22210159-7F1 [U] B22210159-9F1	LR5 Model: [W] B22210160-7F1 [K] B22210160-8F1 [U] B22210160-9F1	LR6 Model: [W] B22210161-7F1 [U] B22210161-9F1	LR7 Model: [W] B22210178-7F1 [K] B22210178-8F1 [U] B22210178-9F1

■ Terminal Block (LR5 & LR7 only)



■ Filter Sheet (5 per pack)

LR4 LED Unit Sheet Model: B25310067-4F1	LR5 LED Unit Sheet Model: B25310067-5F1	LR6 LED Unit Sheet Model: B25310067-6F1	LR7 LED Unit Sheet Model: B25310067-7F1

Corresponding Model · Pole List

Each Bracket Compatible Model

Model	Model Name	LR4	LR5	LR6	LR7
	SZP-001W[U][K]	PJ, QJ	PJ, KT *1	PJ, QJ	KT *1
	SZP-002U	PJ, QJ	PJ, KT *1	PJ, QJ	KT *1
	SZP-003W[U][K]	PJ, QJ	PJ, KT *1	PJ, QJ	KT *1
	SZP-090U	WJ	WJ, WT, KT *2	-	-
	SZP-091U	-	-	WJ	WJ, WT, KT *2
	SZL-001	LJ	LJ, KT *1	LJ	LJ, KT *1
	SZQ-001W	PJ, QJ	PJ, KT *1	PJ, QJ	KT *1
	SZK-001U	PJ, QJ	PJ, KT *1	PJ, QJ	KT *1
	SZK-002W[U][K]	WJ	WJ, WT, KT *2	-	-
	SZK-003W[U][K]	-	-	WJ	WJ, WT, KT *2
	SZK-004W	-	-	WJ	WJ, WT, KT *2
	SZW-001W	WJ	WJ, WT, KT *2	WJ	-



*1 Required pole and pole waterproof ring are not included with KT. *2 KT Direct Mount (Using accessory)

Aluminum Poles

Aluminum Poles (Binding Head Tapping Screw (2pcs.) included.)

*If the pole is to be cut by the customer, it cannot be cut with a pole cutter. Please use a band saw, jigsaw, or sawing machine, etc.

*To convert from direct mount to pole mount, be sure to purchase the appropriate bracket and pole combination to make the change.

Model Type	Model Name	SZP-001W	SZP-002U	SZP-003W	SZQ-001W	SZK-001U	SZL-001
 AN Type ANK Type	POLE22-0100AN[K] 100mm	○	○	○	○	○	×
	POLE22-0300AN[K] 300mm	○	○	○	○	○	×
	POLE22-0500AN 500mm	×	○	×	×	○	×
	POLE22-0800AN[K] 800mm	×	○	×	×	○	×
	POLE22-1000AN 1000mm	×	○	×	×	○	×
 T Type	POLE22-0100AT 100mm	×	×	×	×	○	○
	POLE22-0300AT 300mm	×	×	×	×	○	○
	POLE22-0500AT 500mm	×	×	×	×	○	○
	POLE22-0800AT 800mm	×	×	×	×	○	○
	POLE22-1000AT 1000mm	×	×	×	×	○	○

Compatible Direct Mount Bracket



SZW-940U



SZW-950U

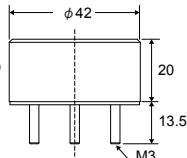


SZW-960U



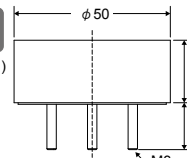
SZW-970U

External Dimensions
(Unit: mm)



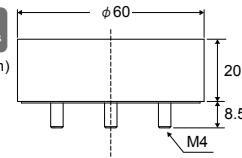
Maximum Board Thickness: 10

External Dimensions
(Unit: mm)



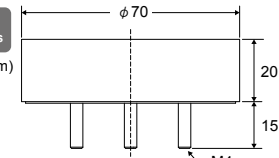
Maximum Board Thickness: 10

External Dimensions
(Unit: mm)



Maximum Board Thickness: 4

External Dimensions
(Unit: mm)

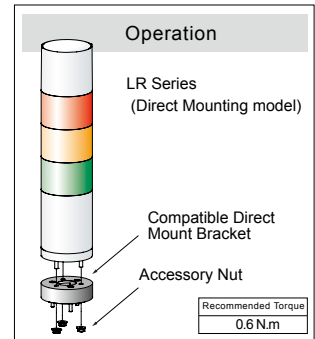


Maximum Board Thickness: 10

Use these conversion brackets to mount the LR Series Direct Mounting model with mounting holes that already exist for the Signal Tower. If you cannot draw new mounting holes where you were using a previous model, use a compatible direct mount bracket to mount the LR Series.

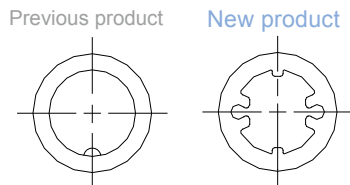
Accessory	
SZW-940U	Nut with Flange (M3) x 3
SZW-950U	
SZW-960U	Nut with Flange (M4) x 3
SZW-970U	

Model Name	Size of Corresponding Signal Tower	Corresponding Models	
		Previous	New
SZW-940U	φ 40	LCE-W LCE-AW	LR4-WJ
SZW-950U	φ 50	LE-W LES-AW LU5	LR5-WJ LR5-WT
SZW-960U	φ 60	LME-W	LR6-WJ
SZW-970U	φ 70	LHE LU7	LR7-WJ LR7-WT



⚠ Pole mounting is not compatible.

■ Pole Sectional View
(Unit: mm)



	Type	Material	Pole Diameter
Previous product	LCE-A, LCS	Steel	φ 17.3
	LE, LES	Steel	φ 17.3
	LU5	-	-
	LME, LMS	L: Steel, P: Aluminum	φ 21.7
	LHE	-	-
New product	LU7	-	-
	LR	Aluminum	φ 21.7

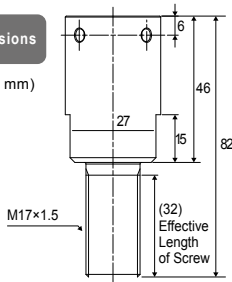
Pole-compatible Adaptor

This conversion adaptor enables mounting LR Series Pole model (21.7mm) where a previous pole model (17.3mm) Signal Tower was mounted. By using this adaptor, you can mount a new unit where you were using a previous pole (17.3mm).

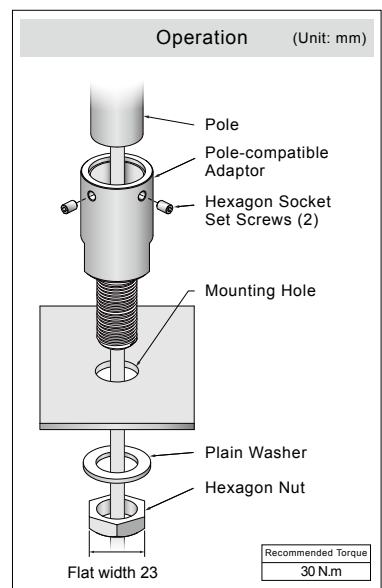


SZP-917U

Dimensions
(Unit: mm)



Accessory	
Hexagon Socket Set Screws x 2	
Hexagon Nut (M17) x 1	
Plain Washer (φ 17.5 × φ 28 × t2.0) x 1	



Model Name	Corresponding Models	
	Previous	New
SZP-917U	LCE/LCE-A LCS/LCS-A LE/LES-A	LR□-□□□LJ□□ POLE22-□□□□AT

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

HSST

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



Compatible with WD-Z2 Series



[When lights are off]

Control signal lights ON and OFF with a 3-point switch for red, amber, and green.
*Cannot control flashing / buzzer.

Colors	Red, Amber, Green, (Clear globe)
Globe	Polycarbonate resin, high shock resistance and heat resistance

Maintenance-free LED illumination
3-button switch box with mounting screws
AC power adapter (100-240VAC) with 5ft. cable
LED colors: red, amber, green.



Contents

- The HSST Kit Includes:
- ① Signal Tower x1
 - ② Long pole x 1
 - ③ Metal fitting for mounting x 1
 - ④ Screw x 1
 - ⑤ Bracket x 1
 - ⑥ Mounting screws x 2
 - ⑦ Double-sided tape x 1
 - ⑧ Switch box x 1
 - ⑨ AC adaptor x 1

Assembly Process



Mounting example

Assembly Process Alarms

- Problem Alarm
- Parts Low Alarm
- Help Needed Alarm

Call center



Call status display

- Call for Help
- Oh hold
- Call in progress

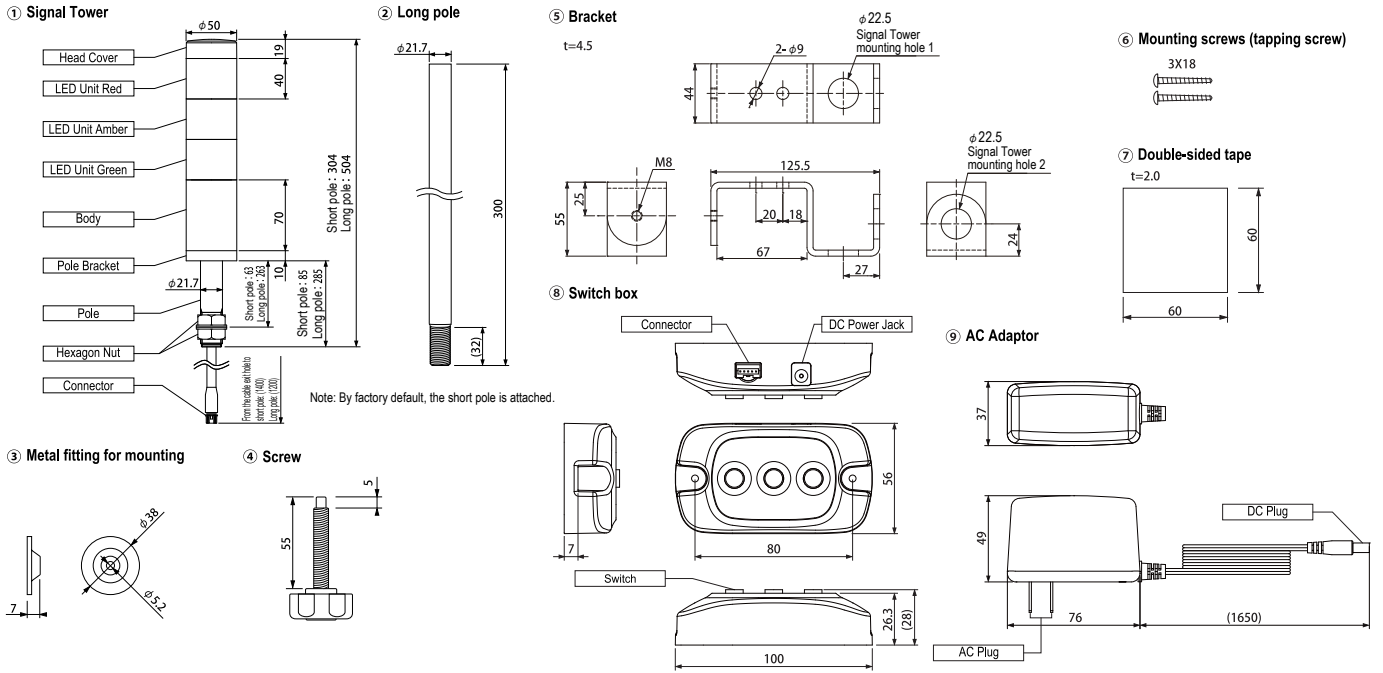


(For signals only, switch box is IP20)

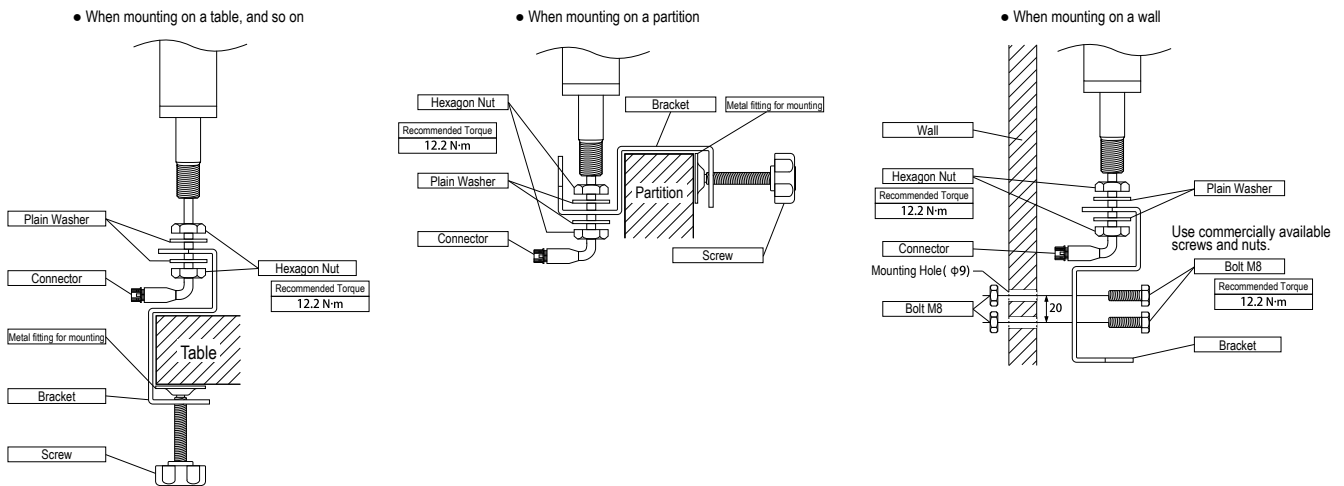
Specifications

Model	HSST-3M2-RYG		Mass (Tolerance: ±10%)	Signal Tower (short pole)	0.36kg	
Rated Voltage	100 - 240V AC (50/60Hz)			Signal Tower (long pole)	0.47kg	
Operating Voltage Range	Rated Voltage ±10%			Bracket	0.33kg	
Rated Power Consumption	Maximum	When all tiers are illuminated		Switch box	0.07kg	
		4W		AC Adaptor	0.14kg	
Operating Temperature Range	0°C - +40°C			Metal fitting for mounting, screw	0.05kg	
Mounting location	Indoors					
Mounting direction	Upright					

Dimensions (mm)



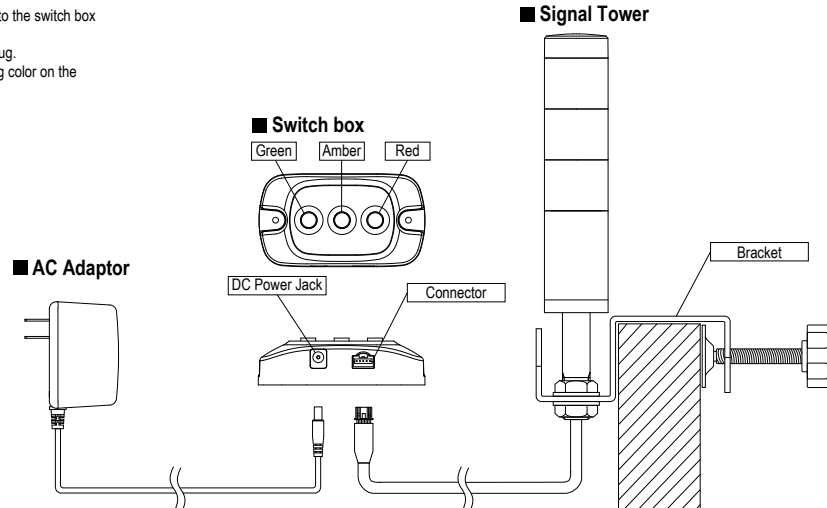
Mounting Method



Wiring Diagram

- Connect the Signal Tower cable and AC Adaptor to the switch box connector and DC jack. Apply the rated voltage to the AC Adaptor's AC plug. Each time you press the switch, the corresponding color on the Signal Tower's LED Unit turns on and off.

Switch status	
Light off	Lighting
Switch	Switch



Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

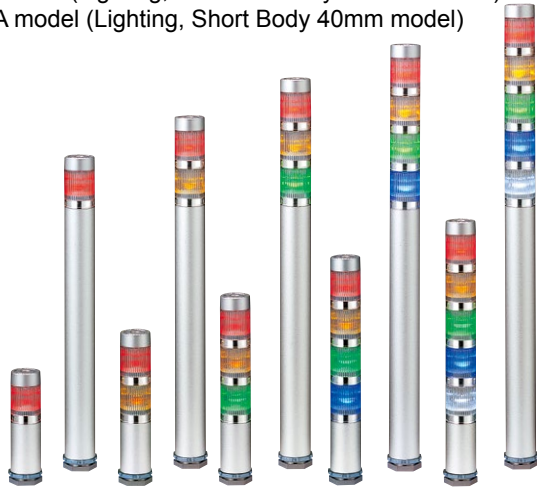
Hybrid Signaling Devices

LED Illumination

Options

ME-A/MES-A

ME-A model (Lighting, Standard Body 200mm model)
 MES-A model (Lighting, Short Body 40mm model)



Colors	Red, Amber, Green, Blue, White
Globe	Polycarbonate lens with high shock resistance and heat resistance

Direct mounted, 25mm diameter, super slim signal towers featuring corrosion resistant aluminum bodies. LED unit lenses are clear when off and color when activated to reduce false indication.

- Hybrid prism-cut lens enhance visibility from any direction and distance
- Direct mounts to a single hole
- Interchangeable modules eliminate the need to rewire
- Superior impact and heat resistant polycarbonate lens for superior durability and light emission
- Available Colors: Red, Amber, Green, Blue, Clear/White

- Standard Colors:
 - 1 Tier model / Red (-R), Amber (-Y), Green (-G), Blue (-B), White (-C)
 - 2 Tier model / Red-Amber (-RY), Red-Green (-RG)
 - 3 Tier model / Red-Amber-Green (-RYG)
 - 4 Tier model / Red-Amber-Green-Blue (-RYGB)
 - 5 Tier model / Red-Amber-Green-Blue-White (-RYGBC)

Specifications

Standard Body (mm)				
Model	Rated Voltage	Number of tiers	Power Consumption	Mass
ME-102A	24V DC	1	0.6W	0.22kg
ME-102A			0.6W	
ME-102A			0.5W	
ME-102A			0.5W	
ME-102A			0.5W	
ME-202A	24V DC	2	1.2W	0.23kg
ME-202A			1.1W	
ME-202A			1.1W	
ME-202A			1.1W	
ME-202A			1.1W	
ME-302A	24V DC	3	1.7W	0.24kg
ME-302A			1.7W	
ME-302A			1.7W	
ME-302A			1.7W	
ME-302A			1.7W	
ME-402A	24V DC	4	2.3W	0.25kg
ME-402A			2.3W	
ME-502A	24V DC	5	2.8W	0.26kg

Short Body (mm)				
Model	Rated Voltage	Number of tiers	Power Consumption	Mass
MES-102A	24V DC	1	0.6W	0.12kg
MES-102A			0.6W	
MES-102A			0.5W	
MES-102A			0.5W	
MES-102A			0.5W	
MES-202A	24V DC	2	1.2W	0.13kg
MES-202A			1.1W	
MES-202A			1.1W	
MES-202A			1.1W	
MES-202A			1.1W	
MES-302A	24V DC	3	1.7W	0.14kg
MES-302A			1.7W	
MES-302A			1.7W	
MES-302A			1.7W	
MES-302A			1.7W	
MES-402A	24V DC	4	2.3W	0.15kg
MES-402A			2.3W	
MES-502A	24V DC	5	2.8W	0.16kg

• To use Green, Blue, White instead of Red, Amber, there is an additional cost per unit.

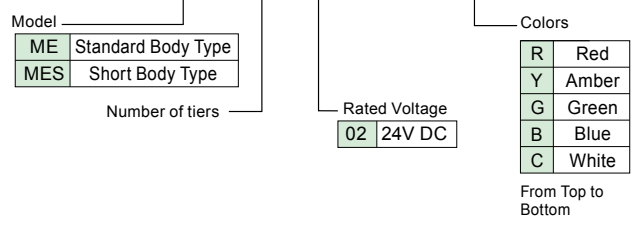
■ Replacement Parts for Changing Colors

Replacement Parts	Part Number
Red LED Unit (Clear lens model)	B72100223-1F1
Amber LED Unit (Clear lens model)	B72100223-2F1
Green LED Unit (Clear lens model)	B72100115-3F1
Blue LED Unit (Clear lens model)	B72100115-4F1
White LED Unit (Clear lens model)	B72100115-7F1

Replacement Parts	Part Number
Shaft for 1 tier	S33552110-0346F1
Shaft for 2 tiers	S33552110-0376F1
Shaft for 3 tiers	S33552110-03108F1
Shaft for 4 tiers	S33552110-03138F1
Shaft for 5 tiers	S33552110-03168F1

Model Code

ME-302A-RYG

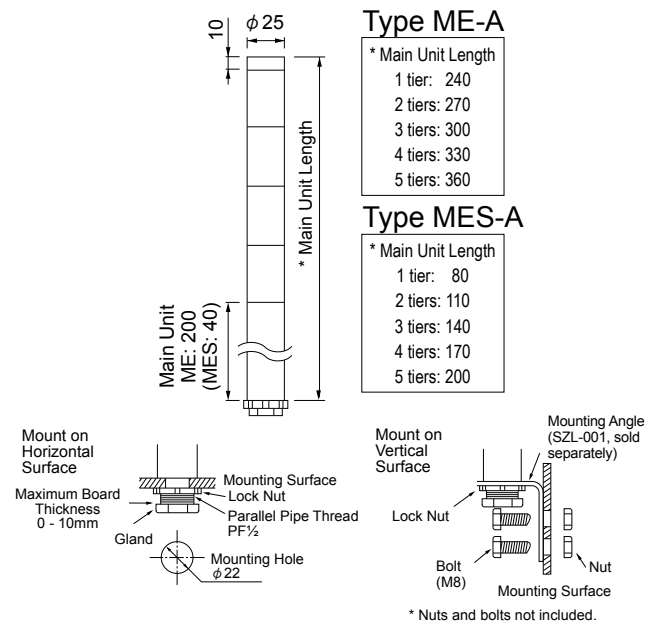


Optional Parts

For details, see pages 182 to 187.

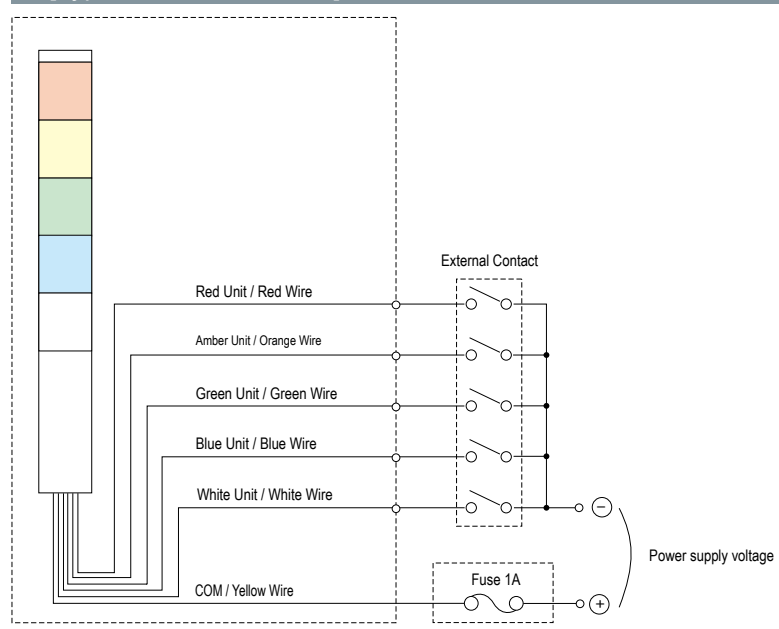
Optional Parts	Model
L Angle	SZL-001

Dimensions (mm)



Wiring Diagram

[Type ME/MES-□□□A]



Corresponding Signal Wire Colors

LED Unit Colors	Corresponding Signal Wire Color
Red	Red
Amber	Orange
Green	Green
Blue	Blue
White	White

Nominal Cross-sectional Area : Wire Type : Wire Length
 Type ME-A 0.3mm² : UL1007 : 300mm
 Type MES-A 0.3mm² : UL1007 : 460mm

(For multiple LED units of the same color, they illuminate at the same time.)

Signal Wire Voltage and Current per tier

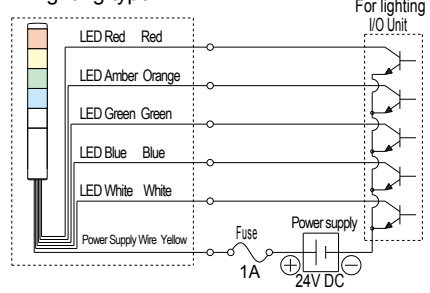
Voltage	Signal Wire Voltage	Signal Wire Current
24V DC	24V DC	Red-Amber: 25.2mA Green-Blue-White: 13.3mA

* Set aside ample capacity for the external contact, considering the Signal Wire Current and Inrush Current.

Example: 24V DC driven by NPN Transistor

24V DC, NPN type transistor

Lighting type



Transistor Capacity

Model	Transistor (NPN)
Current Capacity	I _c ≥ 50mA
Withstand Voltage	V _c ≥ 35V
Leakage Current	I _L < 0.1mA

MP/MPS

Type MP (Lighting, Standard Body 220mm model)
 Type MPS (Lighting, Short Body 45mm model)

Colors Red, Amber, Green, Blue, White
Globe The material is AS resin, with high weather resistance and translucence.

Network

Signal Tower

Signal Light

Revolving Warming Light

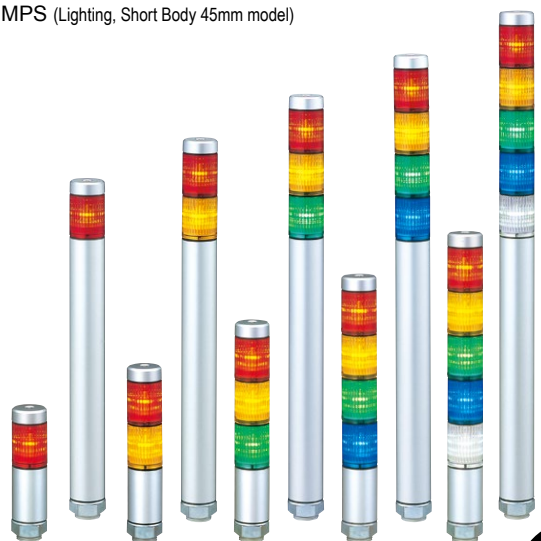
Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



Optional MP-B Buzzer

30mm diameter, slim signal towers featuring corrosion resistant aluminum bodies and an optional 80 dB audible alarm.

- Hybrid prism-cut lens enhance visibility from any direction and distance
 - Direct mounts to a single hole
 - Interchangeable modules eliminate the need to rewire
 - Sleek and smooth form carrying an IP65 protection rating for dust and water resiliency
 - Available Colors: Red, Amber, Green, Blue, Clear/White
- Standard Colors:
 - 1 Tier model / Red (-R), Amber (-Y), Green (-G), Blue (-B), White (-C)
 - 2 Tier model / Red-Amber (-RY), Red-Green (-RG)
 - 3 Tier model / Red-Amber-Green (-RYG)
 - 4 Tier model / Red-Amber-Green-Blue (-RYGB)
 - 5 Tier model / Red-Amber-Green-Blue-White (-RYGBC)

Specifications

Standard Body				
Model	Rated Voltage	Number of tiers	Power Consumption	Mass
MP-102	24V AC/DC	1	0.7W	0.21kg
MP-202		2	1.4W	0.23kg
MP-302		3	2.0W	0.25kg
MP-402		4	2.6W	0.27kg
MP-502		5	3.2W	0.29kg

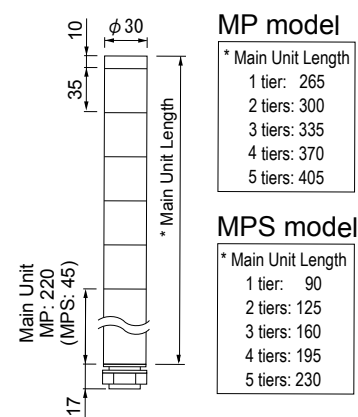
Short Body				
Model	Rated Voltage	Number of tiers	Power Consumption	Mass
MPS-102	24V AC/DC	1	0.7W	0.11kg
MPS-202		2	1.4W	0.13kg
MPS-302		3	2.0W	0.15kg
MPS-402		4	2.6W	0.17kg
MPS-502		5	3.2W	0.19kg

- You can order custom color combinations from one unit. Contact us for the lead time on custom orders.
- There may be additional unit costs when using multiple units in the same color, or a custom combination that uses only non-standard colors. Please contact us for details.

Replacement Parts for Changing Colors

Replacement Parts	Part Number	Replacement Parts	Part Number
Red LED Unit	B72100182-1F1	Shaft for 1 tier	S33552120-0355F1
Amber LED Unit	B72100182-2F1	Shaft for 2 tiers	S33552120-0390F1
Green LED Unit	B72100182-3F1	Shaft for 3 tiers	S33552120-03125F1
Blue LED Unit	B72100182-4F1	Shaft for 4 tiers	S33552120-03160F1
White LED Unit	B72100182-7F1	Shaft for 5 tiers	S33552120-03195F1

Dimensions (mm)



MP model

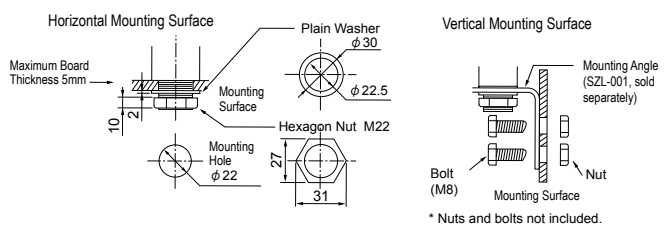
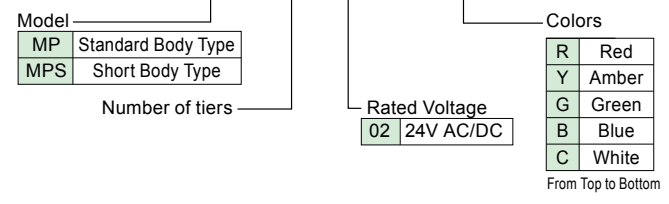
* Main Unit Length
1 tier: 265
2 tiers: 300
3 tiers: 335
4 tiers: 370
5 tiers: 405

MPS model

* Main Unit Length
1 tier: 90
2 tiers: 125
3 tiers: 160
4 tiers: 195
5 tiers: 230

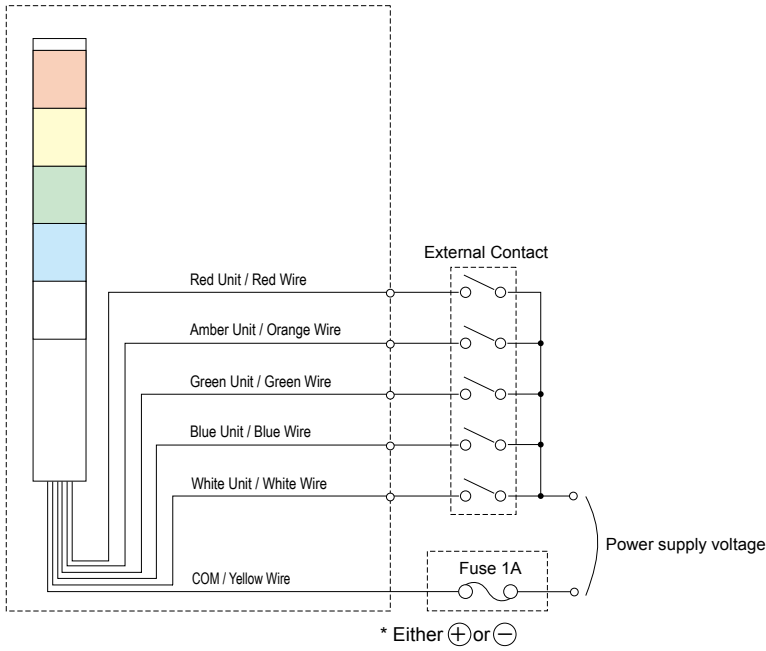
Model Code

MP-302-RYG



Wiring Diagram

[MP/MPS-□□□ model]



Corresponding Signal Wire Colors

LED Unit Colors	Corresponding Signal Wire Color
Red	Red
Amber	Orange
Green	Green
Blue	Blue
White	White

	Nominal Cross-sectional Area	Wire Type	Wire Length
MP model	0.3mm ²	UL1007	1000mm
MPS model	0.3mm ²	UL1007	1180mm

(For multiple LED units of the same color, they illuminate at the same time.)

Signal Wire Voltage and Current per tier

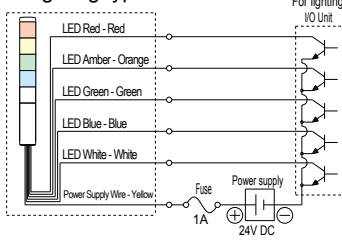
Voltage	Signal Wire Voltage	Signal Wire Current
24V DC	24V DC	Red: 29.0mA, Amber: 29.5mA
24V AC	24V AC	Green-Blue-White: 17.1mA

* Set aside ample capacity for the external contact, considering the Signal Wire Current.

Example: 24V DC driven by NPN/PNP Transistor

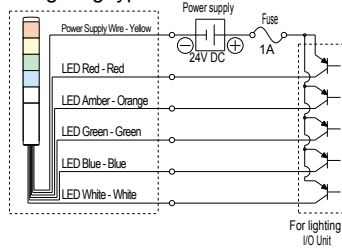
24V DC, NPN type transistor

Lighting type



24V DC, PNP type transistor

Lighting type



Transistor Capacity

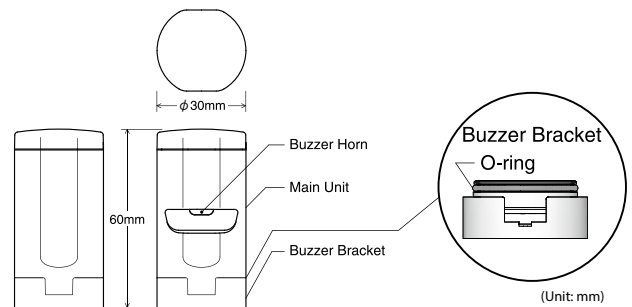
Model	Transistor (NPN)
Current Capacity	I _c ≥ 50mA
Withstand Voltage	V _c ≥ 35V
Leakage Current	I _L < 0.1mA

Optional Parts

For details, see pages 182 to 187.

Model	Rated Voltage	Sound Level	Power Consumption
MP-B	24V AC/DC	80dB (at 1m)	0.7W

- Double-insulation for enhanced durability and safety.
- Direct mount installation with just a single screw.
- Main body made of heat resistant ABS resin for superior impact resistance.
- Compatible with the MP and MPS Signal Tower.
- (The Red module is required when using the optional MP-B)
- Operates in conjunction with the Red LED module. (Alarm activation with other colors must be special ordered)



Optional Parts	Model
L Angle	SZL-001

MP-C/MPS-C

Network

Signal Tower

Signal Light

Revolving Warning Light

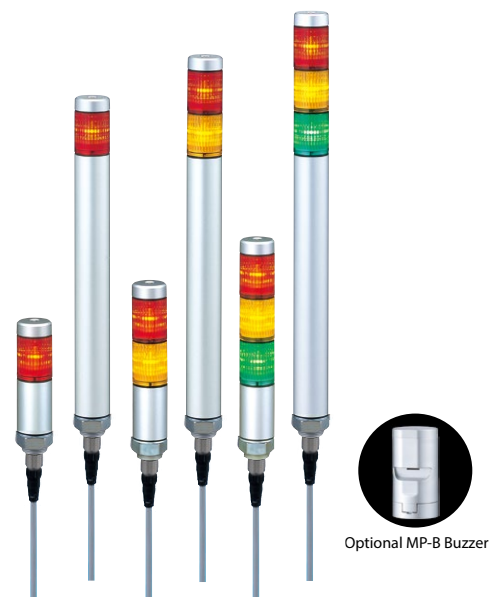
Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



Colors	Red, Amber, Green
Globe	Polycarbonate resin, high shock resistance and heat resistance

30mm diameter, slim signal towers featuring corrosion resistant aluminum bodies and an M12 connection. Hybrid prism-cut lens enhance visibility from any direction and distance

- Direct mounts to a single hole
- Interchangeable modules eliminate the need to rewire
- Sleek and smooth form carrying an IP65 protection rating for dust and water resiliency
- Available Colors: Red, Amber, Green, Blue, Clear/White

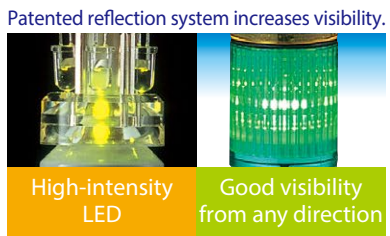
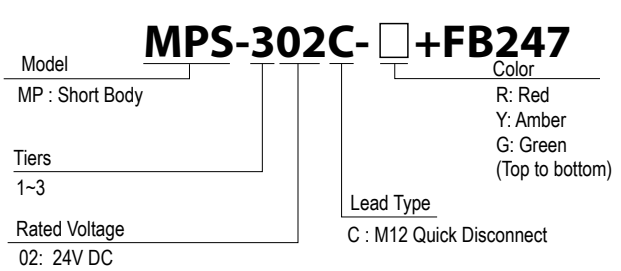
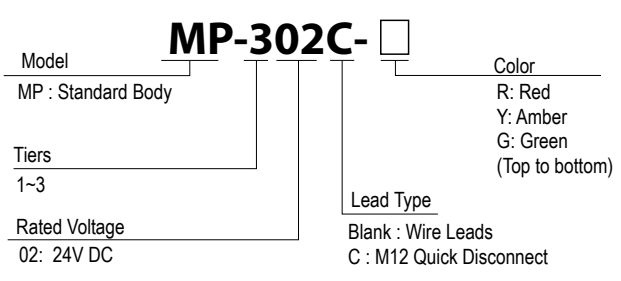


Specifications

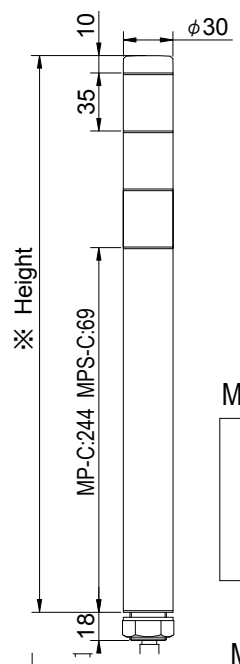
Standard Body				
Stack Number	Model	Rated Voltage	Power Consumption	Mass
1 Tier	MP-102	24V DC	0.7W	240g
2 Tiers	MP-202		1.4W	260g
3 Tiers	MP-302		2.0W	280g

Short Body				
Stack Number	Model	Rated Voltage	Power Consumption	Mass
1 Tier	MPS-102C-□+FB247	24V DC	0.7W	140g
2 Tiers	MPS-202C-□+FB247		1.4W	160g
3 Tiers	MPS-302C-□+FB247		2.0W	180g

Model Code



Dimensions (Unit:mm)



MP-C

※ Height
1 Tier : 289
2 Tiers : 324
3 Tiers : 359

MPS-C

※ Height
1 Tier : 114
2 Tiers : 149
3 Tiers : 184

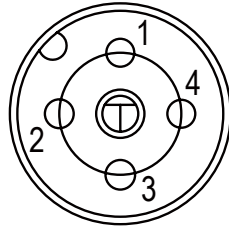
Wiring Diagram

External Contact Capacity		Is: Current Capacity	Vs: Withstand Voltage
LED Unit (1 Tier)	Current Consumption	Red: 29.0mA Amber: 29.5mA Green: 23.9mA	
	Capacity	Is≥50mA	Vs≥35V DC
Power Supply	Current Consumption	200mA	
	Capacity	Is≥200mA	Vs≥35V DC

• MP-C M12 Connector

M12 Connector Pin No.

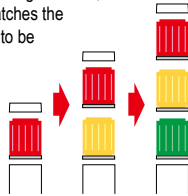
Pin No.	LED Unit Color
1	Green
2	Red
3	Common
4	Amber



M12 Connector Pin Layout

Easy to add and remove

- When adding or removing modules, the center shaft that matches the amount of tiers has to be purchased.



Interchangeable LED Modules

Changeable color sequence: Easy to add/ remove up to 3 colored modules even after installation.
 Note: LED modules of the same color within a signal tower will light up simultaneously.



Wiring doesn't change

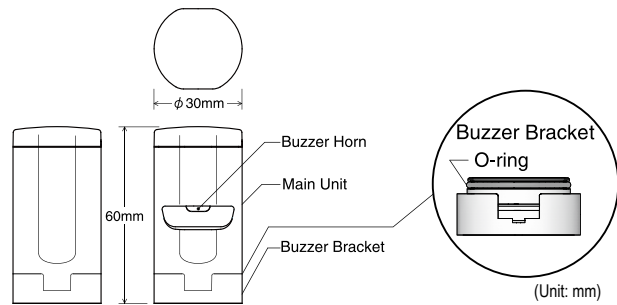
- The LED Module colors correspond to the wiring, so re-wiring is not necessary.

Optional Parts

For details, see pages 182 to 187.

Model	Rated Voltage	Sound Level	Power Consumption
MP-B	24V AC/DC	80dB (at 1m)	0.7W

- Double-insulation for enhanced durability and safety
- Direct mount installation with just a single screw
- Main body made of heat resistant ABS resin for superior impact resistance
- Compatible with the MP and MPS Signal Tower (The Red module is required when using the optional MP-B)
- Operates in conjunction with the Red LED module (Alarm activation with other colors must be special ordered).



Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

LS7

LS7

Network

Signal Tower

Signal Light

Revolving Warming Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

Lighting model

LS7-WH model
Lighting (Wire model)
LS7-WC model
Lighting on (M12 Connector model)

Buzzer model

Model LS7-FBWH
Lighting / Flashing / Buzzer (2 sounds) (Wire model)
Model LS7-BWC
Lighting / Buzzer (1 sound) (M12 Connector model)

Colors

Red, Amber, Green, Blue, White

Globe

Polycarbonate lens with high shock resistance and heat resistance

The LS7 Series features a sleek, smooth body design ideal for hygienic and sanitary cleaning applications. Models available with an M12 connector.

- IP65 standard; IP54 with audible alarm
- Smooth-surface, polycarbonate, shock resistant body design.
- Audible alarm sound options can be heard above machine noise
- High-contrast LED visibility
- Polycarbonate brackets available

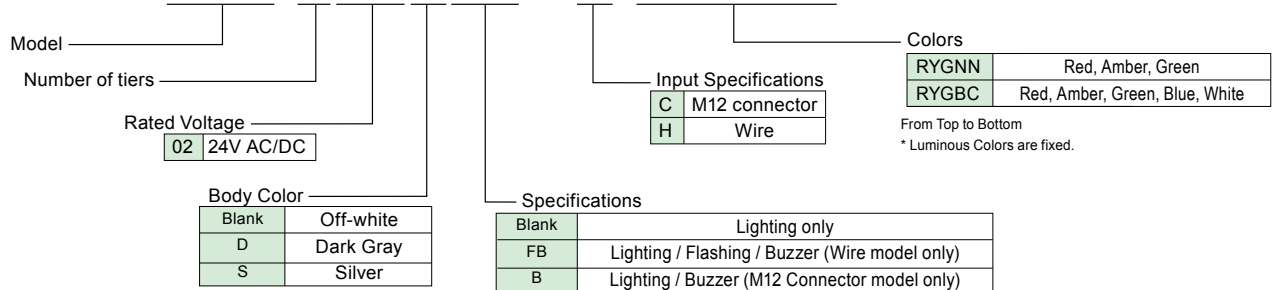


Specifications

Model	Number of Luminous Units	Rated Voltage	Mounting Method	Rated Current Consumption	Maximum Current Consumption	Maximum sound pressure	Operation Temperature Range	Protection Rating	Mass (±10%)	Body Color
LS7-302	3	24V DC (±10%)	Direct Mounting (Indoors Only)	Red: 20mA	Red: 35mA	Buzzer 1, approximately 82dB, Wire model (Fast Intermittent) M12 connector model (Continuous beep)	-30°C	Lighting model IP65	With buzzer: 0.26kg	Off-white (Blank) Off-darkgray (D) Silver (S)
LS7-502	5			Amber, Green, Blue, White: 30mA	Amber, Green, Blue, White: 40mA	Buzzer 2, approximately 85dB, Wire model (Fast Alternating Intermittent) M12 connector model (No Buzzer)	60°C	Buzzer model IP54	Without buzzer: 0.35kg	Off-white (Blank) Off-darkgray (D) Silver (S)

Model Code

LS7-502SFBWH-RYGBC



* F Lighting / Flashing model has H wire only.
* For C (M12 Connector model), the buzzer sound is continuous.

Example: LS7-302WC-RYGNN

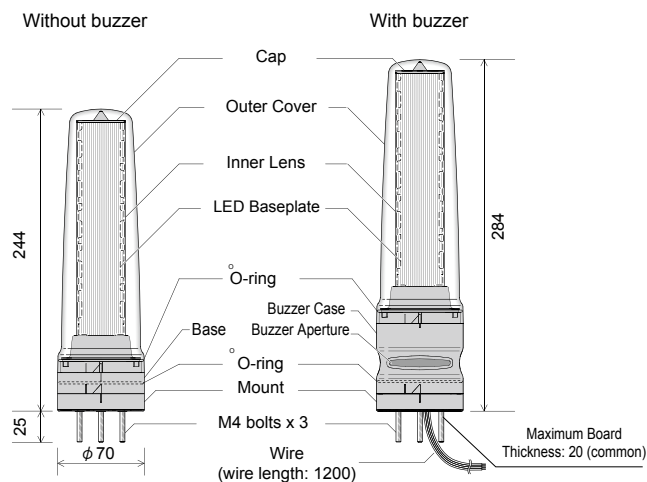
- Body color: Off-white
- Buzzer availability: not available
- LED Color: Red Amber Green (none) (none)
- Illumination specification - Lighting only
- Input specification M12 connector

Optional Parts

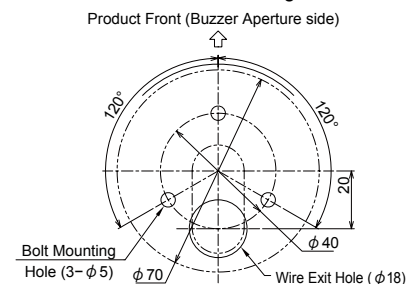
For details, see pages 182 to 187.

Optional Parts	Model
Platform Bracket (Off-white)	Model SZ-100
Platform Bracket (Off-darkgray)	Model SZ-100D
Platform Bracket (Silver)	Model SZ-100S
Wallmount Bracket (Off-white)	Model SZ-110
Wallmount Bracket (Off-darkgray)	Model SZ-110D
Wallmount Bracket (Silver)	Model SZ-110S
Multi-mount Bracket (Off-white)	Model SZ-130
Multi-mount Bracket (Off-darkgray)	Model SZ-130D
Multi-mount Bracket (silver)	Model SZ-130S
Connector with cable, cable length 2m (Omron model)	SZ-120-02 (XS2F-D821-DH0-R)
Connector with cable, cable length 5m (Omron model)	SZ-120-05 (XS2F-D821-GH0-R)
Connector with cable, cable length 10m (Omron model)	SZ-120-10 (XS2F-D821-JH0-R)

Dimensions (mm)



Installation Dimension Drawings



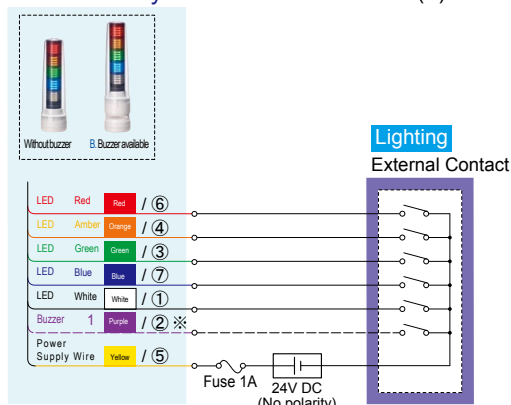
Wiring Diagram

LS7-□□□□ (WH) (WC) (BWC) model

■ Without Lighting / Audible, B. Audible available

Contact Relay

Model: LS7-502□(B)W□

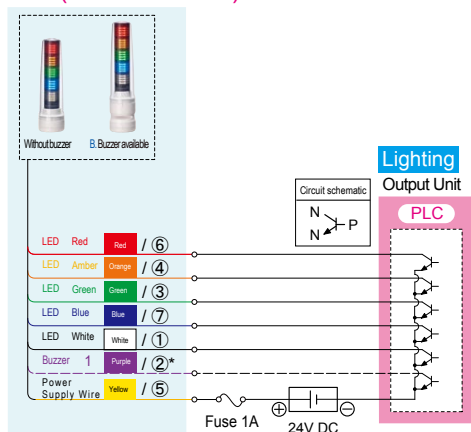


* Only products with audible available

Example) BWC model

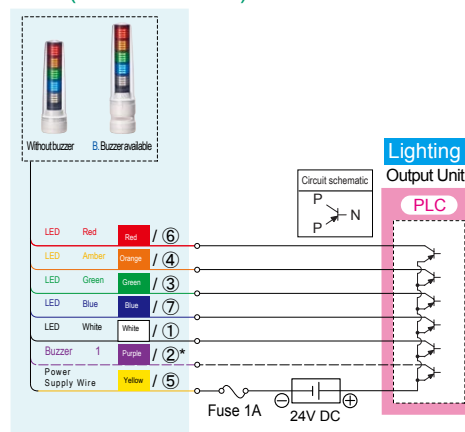
	Tone	Sound pressure
Audible 1 (Purple)	Continuous Beep	70dB - 82dB

PLC (NPN transistor)



* Only products with audible available

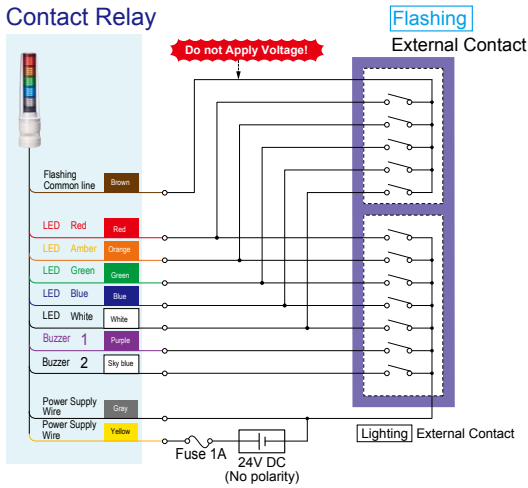
PLC (PNP transistor)



* Only products with audible available

■ F. Lighting / Flashing. B. Audible available Model: LS7-502□FBWH

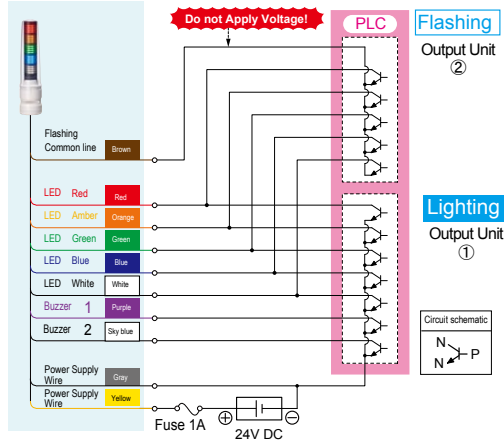
Contact Relay



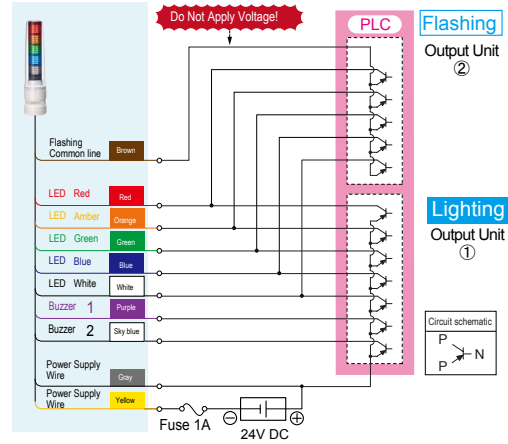
Example) FBWH model

	Tone	Sound pressure
Audible 1 (Purple)	Fast Intermittent	70dB - 82dB
Audible 2 (Sky blue)	Fast Alternating Intermittent	70dB - 85dB

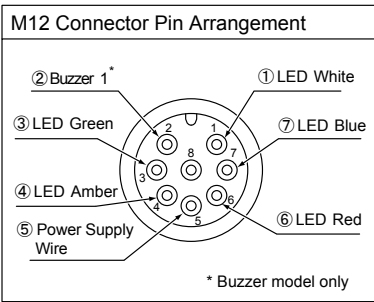
PLC (NPN transistor)



PLC (PNP transistor)



Note: To turn on the lamp and flash the lamp, you need to prepare two separate output units for turning the lamp on and for flashing the lamp.



External Contact specifications

■ Contact Relay (switch)

Rated Load Voltage	Rated Amperes	
	LED	Buzzer
24V DC	100mA or more per tier	200mA or higher

■ PLC Output Unit

Rated Load Voltage	Rated Amperes		Leakage Current
	LED	Buzzer	
24V DC	100mA or more per tier	200mA or higher	0.1mA or less

LGE model (Lighting)
LGE-FB model (Lighting / Flashing / Buzzer)



Colors	Red, Amber, Green, Blue, White
Globe	Polycarbonate lens with high shock resistance and heat resistance

The LGE Series features a modular design and 100mm diameter with enhanced visibility; suitable for larger machines.

- Up to 5 LED units with a built-in 85dB audible alarm
- Triple reflection lens design for enhanced visibility from multiple angles
- Direct mount or pole mount options
- No need to rewire when rearranging or adding LED units
- Open collector supported

- Standard Colors:
1-Tier model / Red (-R), Amber (-Y), Green (-G)
2-Tier model / Red-Amber (-RY)
3-Tier model / Red-Amber-Green (-RYG)
4-Tier model / Red-Amber-Green-Blue (-RYGB)

Specifications

Without audible				
Model	Rated Voltage	Number of tiers	Power Consumption	Mass
LGE-102	24V AC/DC	1	2.0W	0.4kg
LGE-202		2	4.0W	0.6kg
LGE-302		3	6.0W	0.8kg
LGE-402	100V AC	4	8.0W	0.9kg
LGE-110		1	5.2W	1.0kg
LGE-210		2	7.7W	1.2kg
LGE-310		3	10.2W	1.4kg
LGE-410	220 - 240V AC	4	12.7W	1.5kg
LGE-120		1	5.2W	1.0kg
LGE-220		2	7.7W	1.2kg
LGE-320		3	10.2W	1.4kg
LGE-420		4	12.7W	1.5kg

Flashing, with audible (Flashing frequency approximately 60/minute)				
Model	Rated Voltage	Number of tiers	Power Consumption	Mass
LGE-102FB	24V AC/DC	1	2.5W	0.4kg
LGE-202FB		2	4.5W	0.6kg
LGE-302FB		3	6.5W	0.8kg
LGE-402FB	100V AC	4	8.5W	0.9kg
LGE-110FB		1	5.7W	1.0kg
LGE-210FB		2	8.2W	1.2kg
LGE-310FB		3	10.7W	1.4kg
LGE-410FB	220 - 240V AC	4	13.2W	1.5kg
LGE-120FB		1	5.7W	1.0kg
LGE-220FB		2	8.2W	1.2kg
LGE-320FB		3	10.7W	1.4kg
LGE-420FB		4	13.2W	1.5kg

- The price for 1 to 3 tier models are for Red, Amber, and Green only.
- The price for 4 tier model is for Red, Amber, and Green, plus Blue and White only.
- If you want to use Blue and White instead of Red, Amber, and Green, there is an additional cost per unit.

Replacement Parts for Changing Colors

Replacement Parts	Part Number
Red LED Unit	B32100004-1F1
Amber LED Unit	B32100004-2F1
Green LED Unit	B32100004-3F1
Blue LED Unit	B32100004-4F1
White LED Unit	B32100004-7F1

Replacement Parts	Part Number
Shaft for 1 tier	B62910028-1F1
Shaft for 2 tiers	B62910028-2F1
Shaft for 3 tiers	B62910028-3F1
Shaft for 4 tiers	B62910028-4F1

Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-008
Wallmount Bracket	SZ-023

* When using SZ-008 or SZ-023, the cord exits from the side.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

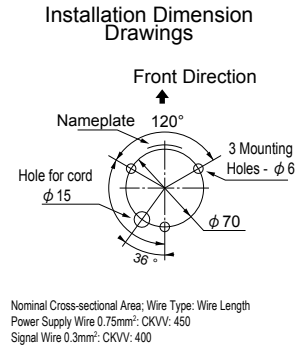
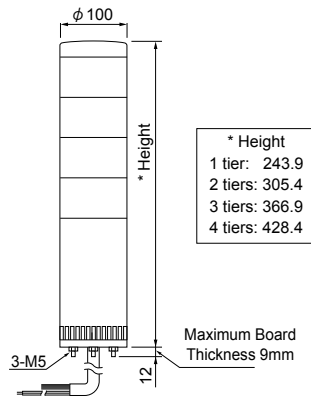
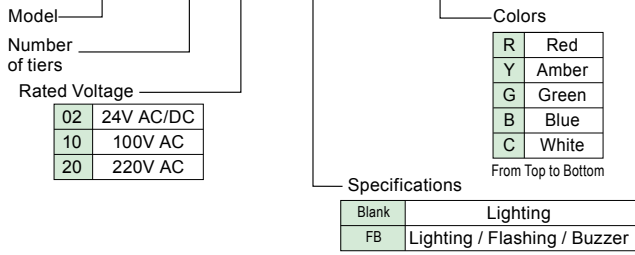
LED Illumination

Options

Model Code

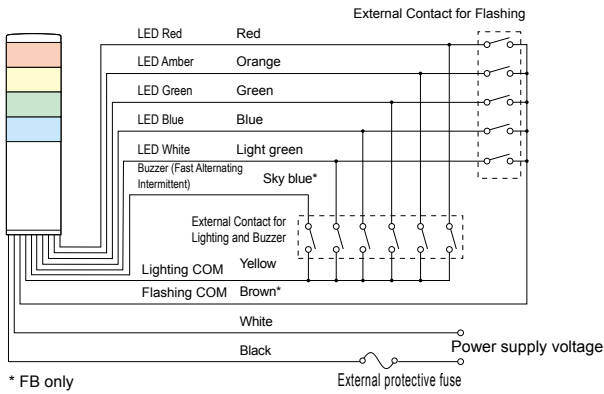
Dimensions (mm)

LGE-402FB-RYGB



Wiring Diagram

[LGE-□□□(FB) model]



- For FB models, avoid simultaneous Lighting and Flashing inputs to a tier from an external contact as it may illuminate other tiers.
- Please note that the FB model requires 2 common signal lines on the PC output unit, for lighting and flashing.
- Do not connect the buzzer line to the Flashing COM. Otherwise the sound will not be intermittent and the tone quality will be poor.
- For safety, please make sure you have an external protective fuse in place.
- For Signal Light wiring, Lighting signal takes precedence over Flashing.

■ Signal Wire Voltage and Current per tier

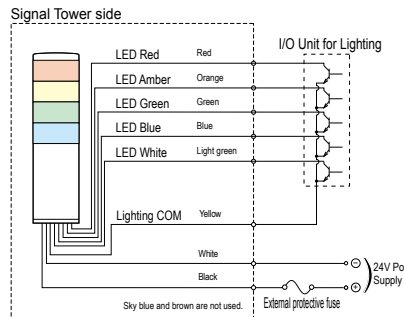
Voltage	Signal Wire Voltage	LGE model		
		LED	Buzzer	
		Signal Wire Current	Signal Wire Current	Inrush Current
24V AC/DC	24V AC/DC	90mA	20mA	250mA
100V AC	24V AC			
220V AC				

* Set aside ample capacity for the external contact, considering the Signal Wire Current and Inrush Current.

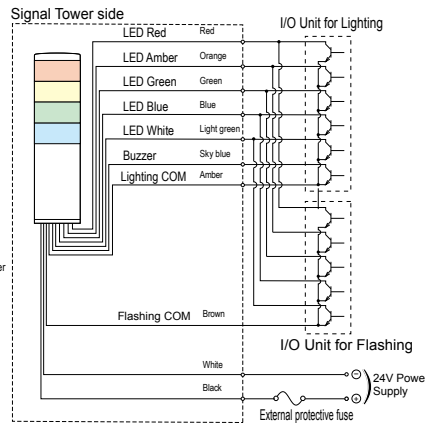
24V DC Example: NPN (PNP) Transistor Driver

When controlled by NPN Transistor

- LGE model



- LGE-FB model

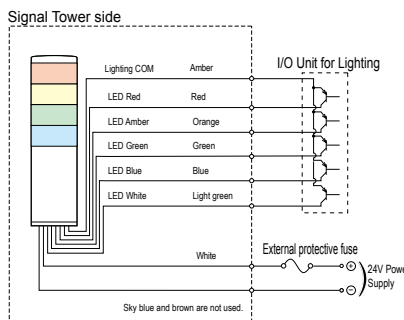


■ Internal Fuse Capacity

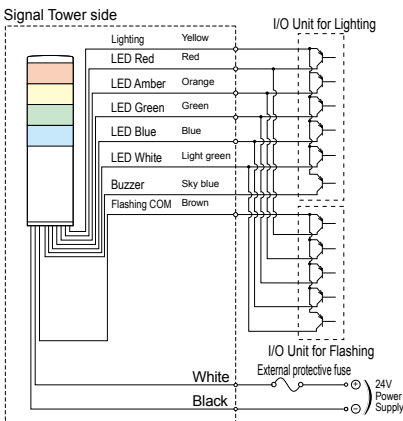
Type	LGE
Voltage	All Specifications
Model	Miniature Glass Tube Fuse
Dimensions	φ 5 x 20mm
Rated Current	1A

When controlled by PNP Transistor

- LGE model



- LGE-FB model



■ Transistor Capacity (NPN/PNP)

Model	LGE
Current Capacity	Ic ≥ 0.1A (Lights) Ic ≥ 0.3A (Buzzer)
Withstand Voltage	Vc ≥ 35V

Wall-Mounted LED Signal Tower

WEP/WE

Light-gray body
 WEP model (Lighting)
 WEP-FB model (Lighting / Flashing / Audible)

Chrome-plated body
 WE model (Lighting)
 WE-FB model (Lighting / Flashing / Audible)



Colors Red, Amber, Green, Blue, White
Globe Polycarbonate lens with high shock resistance and heat resistance

The WEP/WE Series features an ultra-slim, 37.5mm depth, half-moon profile, and 5 LED units for effective signaling without adding additional bulk to the hosting equipment.

- Clear, vertically cut lenses for wider light distribution
- Built-in audible alarm with up to 90dB (FB type)
- Can be installed vertically or horizontally
- Available in chrome plated (WE) or ivory white (WEP) body styles
- NPN/PNP compatible (24V DC ONLY)
- IP65 - dust and water resistant (IP54 for FB type)

- Standard Colors:
 3-Tier model / Red-Amber-Green (-RYG), Red-Amber-Blue (-RYB), Red-Amber-White (-RYC)
 4-Tier model / Red-Amber-Green-Blue (-RYGB), Red-Amber-Green-White (-RYGC)
 5-Tier model / Red-Amber-Green-Blue-White (-RYGBC)
- * This Uses clear globes; the globe is clear when the light is off.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

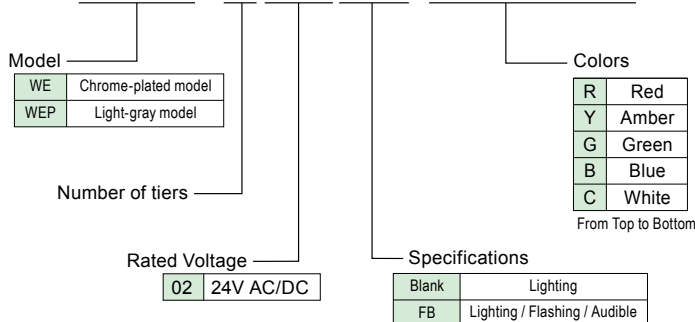
Specifications

Without buzzer					
	Model	Rated Voltage	Number of tiers	Power Consumption	Mass
Light-gray model	WEP-302	24V AC/DC	3	1.7W	0.26kg
	WEP-402		4	2.0W	0.31kg
	WEP-502		5	2.7W	0.31kg
Chromium-plated model	WE-302	24V AC/DC	3	1.7W	0.26kg
	WE-402		4	2.0W	0.31kg
	WE-502		5	2.7W	0.31kg

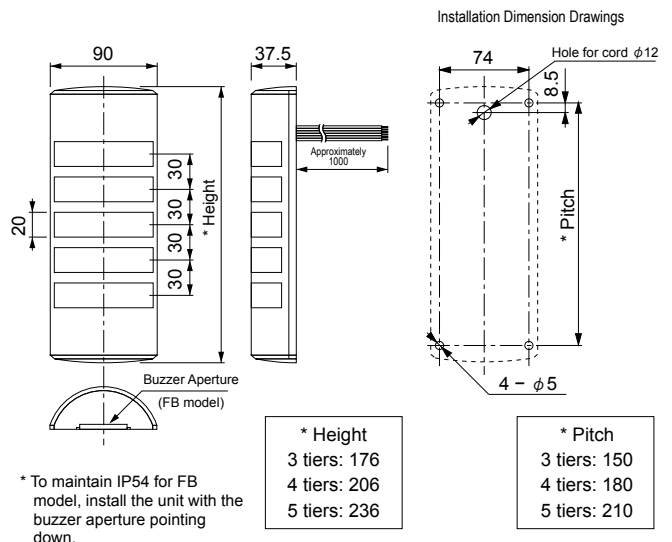
Flashing, with buzzer (Flashing frequency approximately 60/minute)					
	Model	Rated Voltage	Number of tiers	Power Consumption	Mass
Light-gray model	WEP-302FB	24V AC/DC	3	2.7W	0.30kg
	WEP-402FB		4	3.2W	0.35kg
	WEP-502FB		5	3.7W	0.35kg
Chromium-plated model	WE-302FB	24V AC/DC	3	2.7W	0.30kg
	WE-402FB		4	3.2W	0.35kg
	WE-502FB		5	3.7W	0.35kg

Model Code

WEP-502FB-RYGBC



Dimensions (mm)



* Height
3 tiers: 176
4 tiers: 206
5 tiers: 236

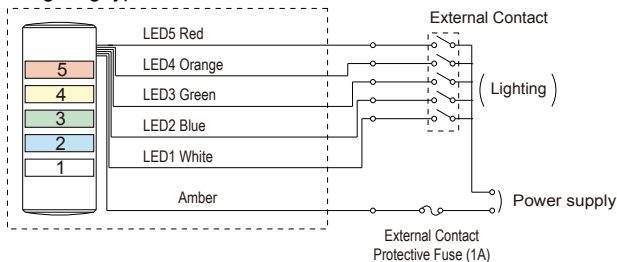
* Pitch
3 tiers: 150
4 tiers: 180
5 tiers: 210

Nominal Cross-sectional Area; Wire Type:
 Wire Length
 0.3mm²: UL1007: 1000

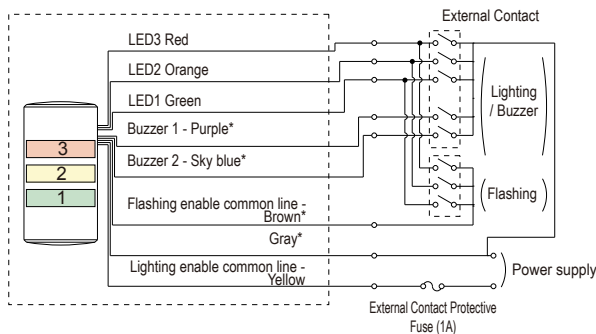
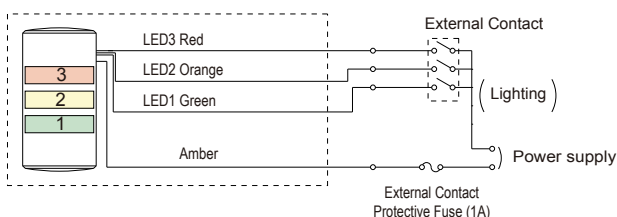
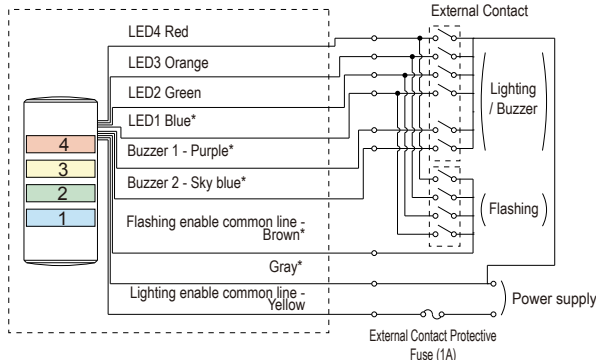
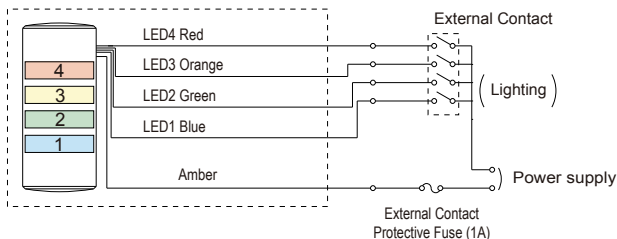
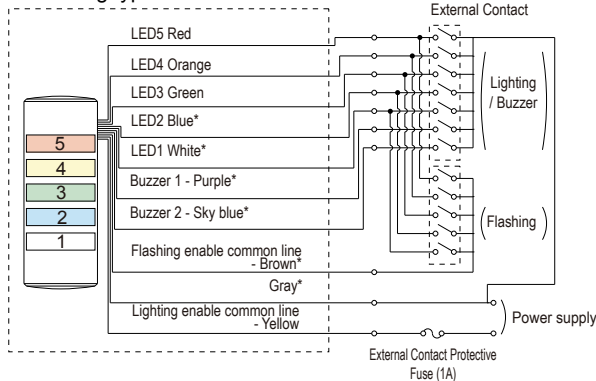
Wiring Diagram

[WEP-□□□(FB) model] / [WE-□□□(FB) model]

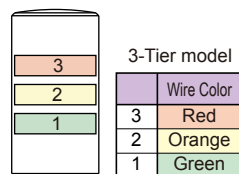
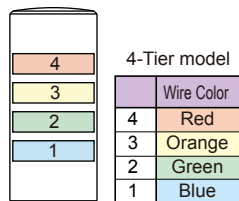
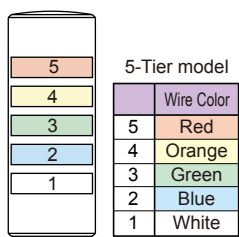
● Lighting type



● Flashing type



■ Signal Wire Color List



■ Audible

	Wire Color	Type of Sound
None	—	—
Audible 1	Purple - Signal Wire	Fast Intermittent
Audible 2	Sky blue - Signal Wire	Slow Intermittent

■ Signal Wire Voltage and Current per tier

Model	Voltage	Signal Wire Voltage	LED		Audible	
			Signal Wire Current	Inrush Current	Signal Wire Current	Inrush Current
WEP/WE	24V AC/DC	24V AC/DC	24.0mA	14.3mA	40mA	250mA

* Set aside ample capacity for the external contact, considering the Signal Wire Current and Inrush Current.

- For FB models, avoid simultaneous Lighting and Flashing inputs to a tier from an external contact as it may illuminate other tiers.
- Please note that the FB model requires 2 common signal lines on the PC output unit, for lighting and flashing.
- For safety, please make sure you have an external protective fuse in place.
- A malfunction may occur if you connect multiple units serially. Please control each unit with a separate contact.

* For non-FB mode, there is no sky blue, purple, gray, and brown lead lines.

Network

Signal Tower

Signal Light

Revolving Warming Light

Cube Tower

Audibles

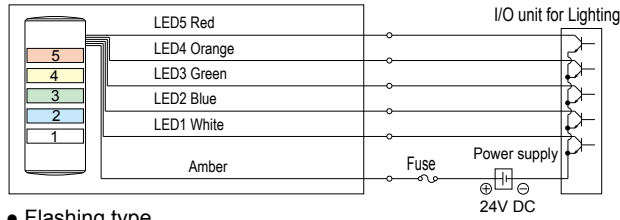
Hybrid Signaling Devices

LED Illumination

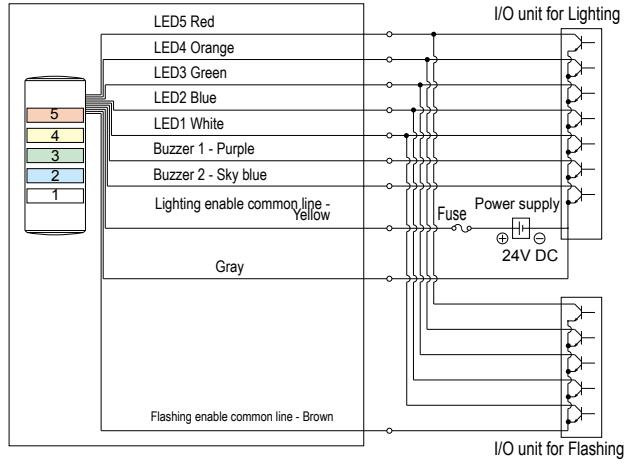
Options

NPN transistor

• Lighting type

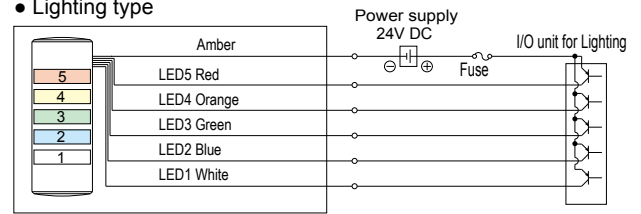


• Flashing type

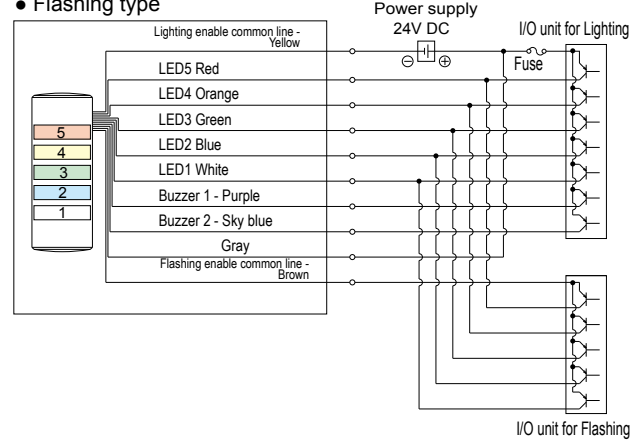


PNP transistor

• Lighting type



• Flashing type



Model	Transistor (NPN or PNP)	Withstand Voltage	$V_c \geq 35V$
Current Capacity	$I_c \geq 0.1A$, Buzzer 300mA or more	Leakage Current	$I_L \leq 1mA$

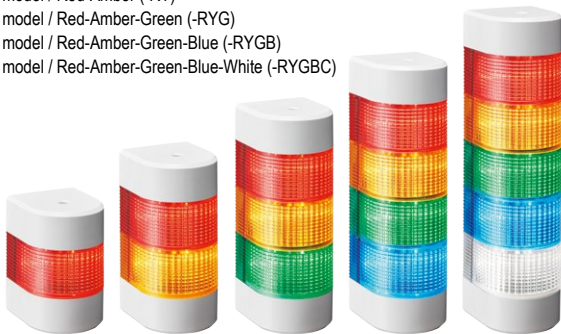
■ External contact protective fuse

Voltage	Rated Fuse Current
All Voltages	1A

WME-D

WME-D model, Lighting WME-DFB model (Lighting / Flashing / Buzzer)

- Standard Colors:
 1-Tier model / Red (-R), Amber (-Y), Green (-G)
 2-Tier model / Red-Amber (-RY)
 3-Tier model / Red-Amber-Green (-RYG)
 4-Tier model / Red-Amber-Green-Blue (-RYGB)
 5-Tier model / Red-Amber-Green-Blue-White (-RYGBC)



Colors	Red, Amber, Green, Blue, White
Globe	Polycarbonate resin, high shock resistance and heat resistance

The WME Series features an 80mm diameter modular design, up to 5 ultra-bright LED units, and a 93dB audible alarm for effective signaling and enhanced durability.

- Next generation LR Series illumination and modularity technology
- Built-in audible alarm with up to 93dB
- Can be installed vertically or horizontally
- Easy to install with included metal fittings
- NPN/PNP compatible (NPN only for AC models)
- IP65 rating - dust and water resistant (IP54 for FB type)

Specifications

Without buzzer				
Model	Rated Voltage	Number of tiers	Power Consumption	Mass
WME-102D	24V DC	1	0.9W	0.28kg
WME-202D		2	1.8W	0.37kg
WME-302D		3	2.7W	0.46kg
WME-402D		4	3.6W	0.55kg
WME-502D	100 - 240V AC	5	4.5W	0.64kg
WME-1M2D		1	1.6W	0.35kg
WME-2M2D		2	2.9W	0.44kg
WME-3M2D		3	4.2W	0.53kg
WME-4M2D		4	5.5W	0.62kg
WME-5M2D	5	6.8W	0.71kg	

Flashing, with buzzer (Flashing frequency approximately 60/minute)				
Model	Rated Voltage	Number of tiers	Power Consumption	Mass
WME-102DFB	24V DC	1	2.1W	0.28kg
WME-202DFB		2	3.0W	0.37kg
WME-302DFB		3	3.9W	0.46kg
WME-402DFB		4	4.8W	0.55kg
WME-502DFB	100 - 240V AC	5	5.7W	0.64kg
WME-1M2DFB		1	2.8W	0.35kg
WME-2M2DFB		2	4.1W	0.44kg
WME-3M2DFB		3	5.4W	0.53kg
WME-4M2DFB		4	6.7W	0.62kg
WME-5M2DFB	5	8.0W	0.71kg	

- You can order custom color combinations from one unit. Contact us for the lead time on custom orders.
- Custom orders with multiple units in the same color – Green (G), Blue (B), or White (C) – an additional cost per unit is added.

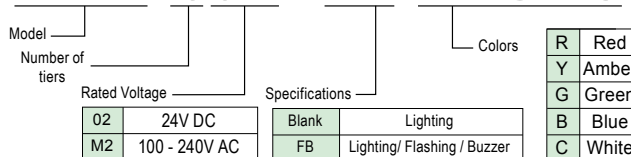
Replacement Parts for Changing Colors

Replacement Parts	Part Number	Replacement Parts	Part Number
Red LED Unit	B72100259-1F1*	Shaft for 4 tiers	S33552120-04180F1
Amber LED Unit	B72100259-2F1*	Shaft for 5 tiers	S33552120-04220F1
Green LED Unit	B72100259-3F1*	Metal Fitting for 1 tier	B85130021-5F1
Blue LED Unit	B72100259-4F1*	Metal Fitting for 2 tiers	B85130021-4F1
White LED Unit	B72100259-7F1*	Metal Fitting for 3 tiers	B85130021-3F1
Shaft for 1 tier	S33552120-0455F1	Metal Fitting for 4 tiers	B85130021-2F1
Shaft for 2 tiers	S33552120-04100F1	Metal Fitting for 5 tiers	B85130021-1F1
Shaft for 3 tiers	S33552120-04140F1	Head Cover	B3210085-F1*

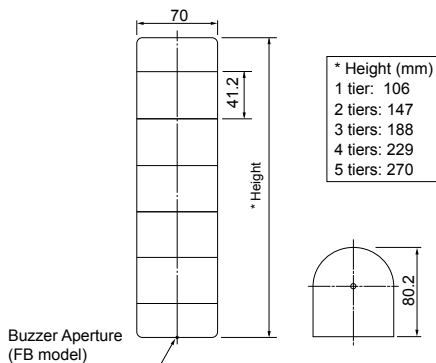
* LED Units and head cover for WME-A Series cannot be used with this product.

Model Code

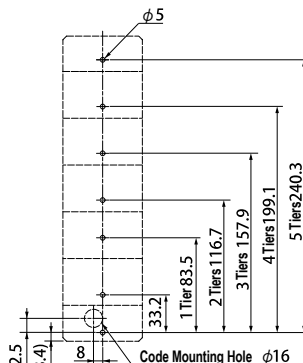
WME-502DFB-RYGBC



Dimensions (mm)



Installation Dimension Drawings



	Nominal Cross-sectional Area	Wire Type	Wire Length
Power Supply Wire	0.2mm ²	UL1061	1100
Signal Wire	0.2mm ²	UL1061	1100

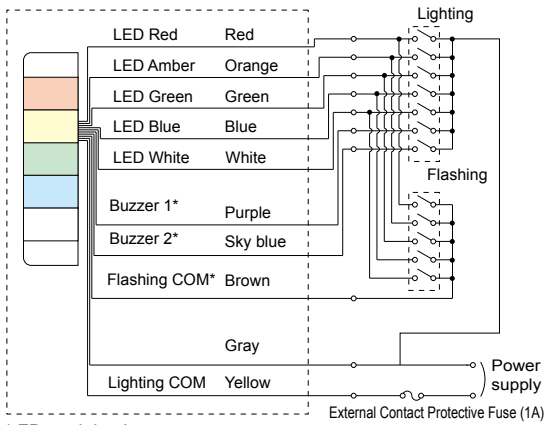
	Nominal Cross-sectional Area	Wire Type	Wire Length
Power Supply Wire	0.8mm ²	UL1015	1100
Signal Wire	0.2mm ²	UL1061	1100

- * To maintain IP54 for FB model, install the unit with the buzzer aperture pointing down.
- * A special metal fitting for each tier model is included

Wiring Diagram

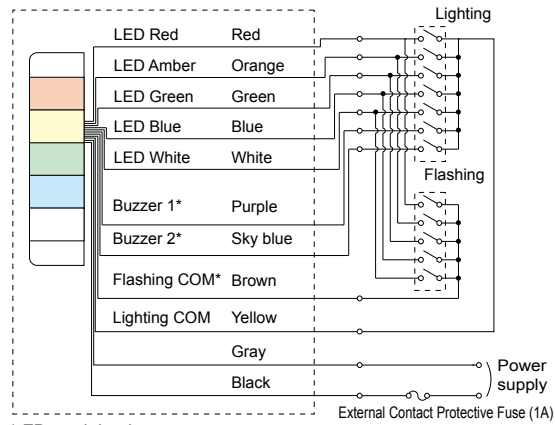
[WME-□□□□(FB) model]

• 24V DC



* FB model only

• 100 - 240V AC



* FB model only

■ Signal Wire Voltage and Current per tier

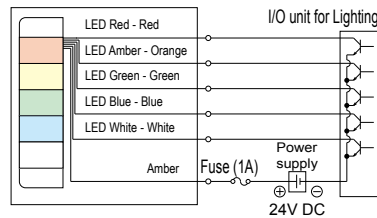
Model	Voltage	Signal Wire Voltage	LED					Audible	
			Signal Wire Current					Signal Wire Current	Inrush Current
			Red	Amber	Green	Blue	White		
WME-D	24V DC	24V DC	22 mA	26 mA	15 mA	29mA		40mA	100mA
	100 - 240V AC								None

- For FB models, avoid simultaneous Lighting and Flashing inputs to a tier from an external contact as it may illuminate other tiers.
- Please note that the FB model requires 2 common signal lines on the PC output unit, for lighting and flashing.
- For safety, please make sure you have an external contact protective fuse in place.

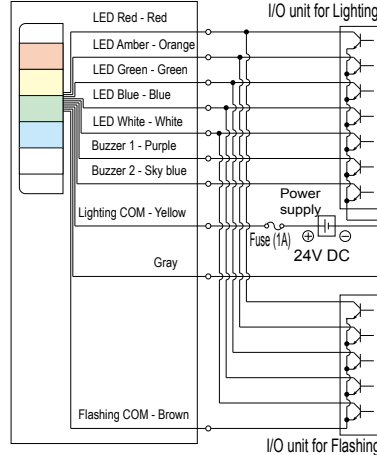
Wiring Examples: NPN (PNP) Transistor Driver

24V DC, NPN type transistor

• Flashing model

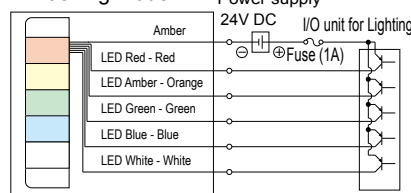


• Lighting / Flashing / Audible model

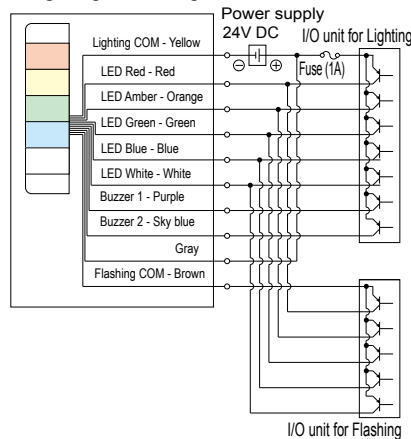


24V DC, PNP type transistor

• Flashing model

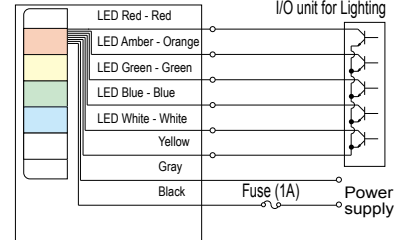


• Lighting / Flashing / Audible model

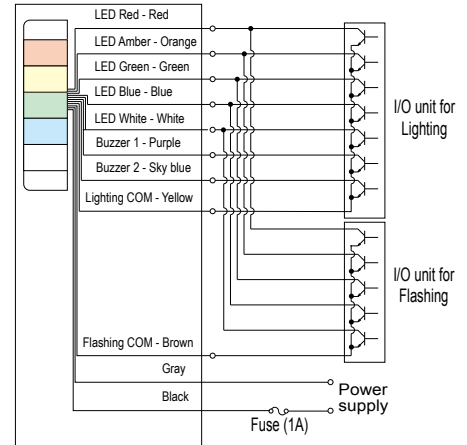


100 - 240V AC, NPN type transistor

• Flashing model



• Lighting / Flashing / Audible model



Model	Transistor (NPN or PNP)	Withstand Voltage	$V_c \geq 35V$
Current Capacity	$I_c \geq 100mA$ (LED Units) $I_c \geq 300mA$ (Buzzer)	Leakage Current	$I_L \leq 0.1mA$

KUS

Signal Units

KUS-EA model (LED Unit)
 KUS-S model (Incandescent Bulb Unit)
 KUS-B model (Buzzer Unit)

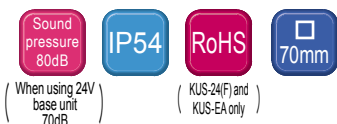
Base Unit

KUS model (Lighting)
 KUS-F model (Lighting / Flashing)
 KUS-C model (Lighting, supports Open Collector)
 KUS-FC model (Lighting / Flashing, supports Open Collector)

Colors	EA type: Red, Amber, Green, Blue, White. S type: Red, Amber, Green, Blue, Clear
Globe	Polycarbonate resin, high shock resistance and heat resistance

The KUS Series features a 70mm diameter modular design, up to 4 LED or incandescent bulb units, and an optional 80dB audible alarm for effective, flexible signaling.

- Up to 4 light and audible alarm modules
- Each light module has a built-in DIP switch to toggle 'on' and 'off' for easy reconfiguration
- Maximum operating capacity of base unit is 21 watts
- Optional 80dB audible alarm module
- NPN/PNP compatible. Open collector outputs on KUS-FC, C, F models.



Specifications

(Flashing Rate - 60/minute)

KUS Base Unit Specifications

Function	Model	Rated Voltage	Power Consumption
Lighting	KUS-24	24V AC/DC	Maximum 21W
	KUS-100	100V AC	
	KUS-220	220V AC	
Lighting / Flashing	KUS-24F	24V AC/DC	
	KUS-100F	100V AC	
	KUS-220F	220V AC	
Open Collector Lighting	KUS-24C	24V AC/DC	
	KUS-100C	100V AC	
	KUS-220C	220V AC	
Open Collector Lighting / Flashing	KUS-24FC	24V AC/DC	
	KUS-100FC	100V AC	
	KUS-220FC	220V AC	

* When ordering, please specify Signal Units, Buzzer Unit, and Base Unit (Power Supply Unit).

Signal Unit Specifications

Model	Power Consumption	Bulb	Number
KUS-S (Incandescent Bulb)	6W	24V 6W	19
KUS-EA (LED) -R/-Y/-G	R, Y: 1.2W / G, B, C: 0.9W	—	—
KUS-EA(LED) -B/-C			

Bulb Shape . . . Glass Bulb G14, Base BA9S

- For light bulb part number for each model, see "Light Bulb Options" at the end of this catalog.
- The base unit supplies power.

Buzzer Unit Specifications

Model	Power Consumption	Sound Pressure
KUS-B	0.5W	80dB (at a distance of 1m)*

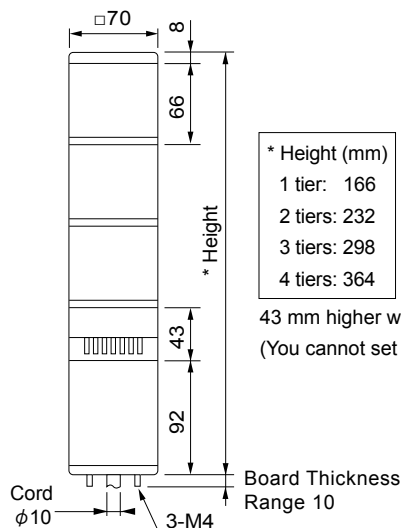
* 70dB at a distance of 1m when using 24V AC/DC base unit

- Signal Units and Base Units are interchangeable, regardless of power supply voltage.
- The base unit supplies power.

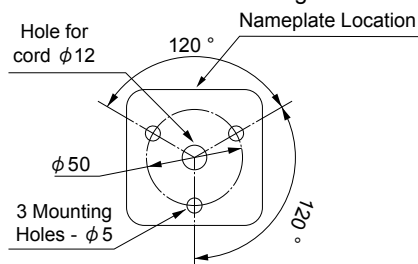
Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Mounting Pole	SZ-40L
Mounting Pole	SZ-40T
Wallmount Bracket	SZ-007

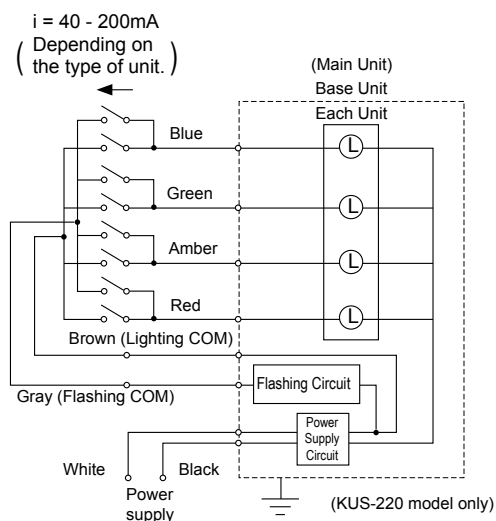


Installation Dimension Drawings



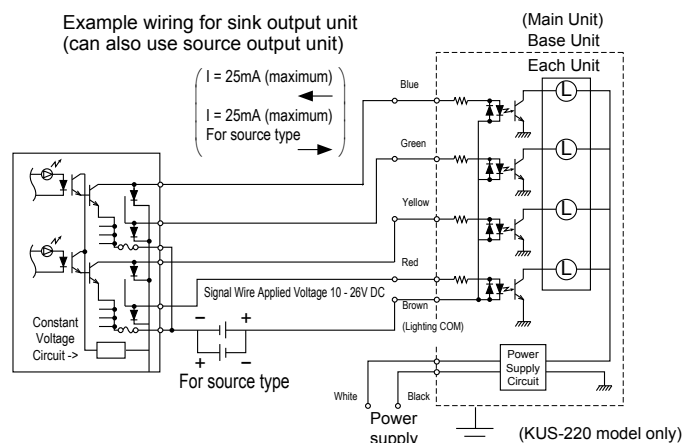
Wiring Diagram

Contact Input model Base Unit (KUS, KUS-F)



- * Use contact relay (Withstand voltage: 45V or more, Current Capacity: 1A or more) for external contact.
- * Turn the power off before changing the order or adding units
- For Signal Light wiring, Lighting signal takes precedence over Flashing.

Open Collector supported Base Unit (KUS-FC, C)




- * For Open Collector enabled models, apply voltage externally between COM on the Main Unit and PLC. (Voltage Range 10 - 26V DC)
- * If you use transistors or non-voltage contacts for signal wires, use the following capacity when wiring.

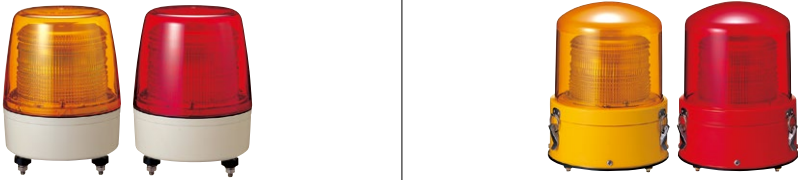
Transistor Capacity (Recommended) (NPN/PNP)





Model	NPN (2SC, 2SD)	PNP (2SA, 2SB)
Current Capacity	$I_c > 50\text{mA}$	
Withstand Voltage	$V_c > 45\text{V}$	

Nominal Cross-sectional Area: Wire Type: Wire Length
 KUS-24 model: Power Supply Wire AWG20: UL1007: 400mm
 KUS-100/220 model : Power Supply Wire 0.75mm²: VSF: 400mm

Signal Light

Page number	Page 99	Page 100	Page 101					Page 102				
Model Name	Small LED Signal Light	Multi-color LED Signal Light	Small LED Signal Light									
Model	NE	NE-M1-CL7	PES-A					PEW-A				
Product image												
Rated Voltage	24V DC	12 - 24V DC	24V AC/DC	100V AC	120V AC	200V AC	230V AC	24V AC/DC	100V AC	120V AC	200V AC	230V AC
Size (mm)	φ 57	φ 57	φ 82					φ 82				
IP	65	66/67	23 (55 when mount rubber –sold separately– is used)					54 (23 when the cord sticks out at the side)				
Buzzer sound pressure in dB (at a distance of 1m)			70 - 85									
Body	ABS	ABS	ABS					ABS				
Globe	Polycarbonate	Polycarbonate	AS					AS				
Light Source	LED	LED	LED					LED				
Lighting, flashing pattern	Lighting	Lighting	Lighting, flashing (in 3 stages)					Lighting, flashing (in 3 stages)				
Terminal Block												
Open collector			NPN					NPN				
CE Marking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					<input type="radio"/>				
RoHS	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>					<input type="radio"/>		
UL Standard		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>

Page number	Page 109			Page 109		
Model Name	Medium LED Flash Signal Light			Large LED Flash Signal Light		
Model	XPE			XME		
Product image						
Rated Voltage	12V DC	24V DC	100/200/230V AC	12V DC	24V DC	100/200/230V AC
Size (mm)		φ 162			φ 187	
IP		23			23	
Buzzer sound pressure in dB (at a distance of 1m)						
Body		AES			SPCD	
Globe		AS			Polycarbonate	
Light Source		LED			LED	
Lighting, flashing pattern		Triple flash			Triple flash	
Terminal Block						
Open collector						
CE Marking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RoHS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
UL Standard						

Page number	Page 104	Page 105		Page 106				Page 108
Model Name	Small LED Signal Light	Small LED Flash Signal Light						Battery-powered Flash Signal Light
Model	KHE	PSE		LFH				PFH-BT
Product image								
Rated Voltage	24V DC	12/24V DC	100 - 230V AC	12V DC	24V DC	48V DC	100/120/200/230V AC	AA battery cell x 4
Size (mm)	φ 100	φ 82		φ 100				φ 100
IP	23 (55 when mount rubber is used-sold separately)	23 (55 when mount rubber is used-sold separately)		66				55
Buzzer sound pressure in dB (at a distance of 1m)								
Body	ABS	ABS		ABS				Polycarbonate
Globe	Polycarbonate	Polycarbonate		Polycarbonate				Polycarbonate
Light Source	LED	LED		LED				LED
Lighting, flashing pattern	Flashing, chase rotation, strobe	Triple flash		Triple flash				Double flash/Single flash
Terminal Block								
Open collector								
CE Marking	○	○		○ (excluding LFH-S)			○ (excluding LFH-S)	○
RoHS	○	○				○		○
UL Standard	○			○ (excluding LFH-S)				

Page number	Page 110		Page 111			Page 112	
Model Name	Medium LED Chase Light/Flashing Signal Light		Large LED Chase Light			Small Signal Light	
Model	KPE-A		KLE			PS	
Product image							
Rated Voltage	100V AC	220V AC	24V AC/DC	100V AC	200V AC	12V AC/DC	24V AC/DC
Size (mm)	φ 162		φ 162			φ 82	
IP	23		23			23 (55 when mount rubber is used-sold separately)	
Buzzer sound pressure in dB (at a distance of 1m)							
Body	AES		SPCD/SUS304			ABS	
Globe	AS		AS			Polycarbonate	
Light Source	LED		LED			Bulb	
Lighting, flashing pattern	Lighting, flashing (variable)		Chase light (variable)			Lighting	
Terminal Block							
Open collector							
CE Marking							
RoHS							
UL Standard							

* For specifications, see the product page.

NE

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



Colors Red, Amber, Green, Blue, White

Globe Polycarbonate resin with superb shock resistance and heat resistance.

The NE Series features a compact design with long-life, zero maintenance LEDs. The NE signal lights are easy to install and carries an IP65 rating with high vibration resistance for operation in wet environments.

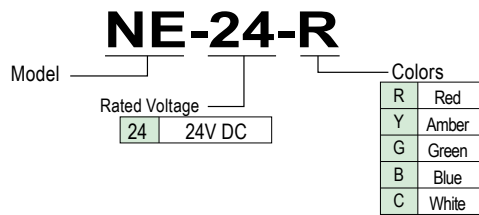
- Unique lens cut for enhanced visibility from all angles
- Built-in terminal block for easy wiring
- Very low power consumption
- IP65 rating - dust and water resistant



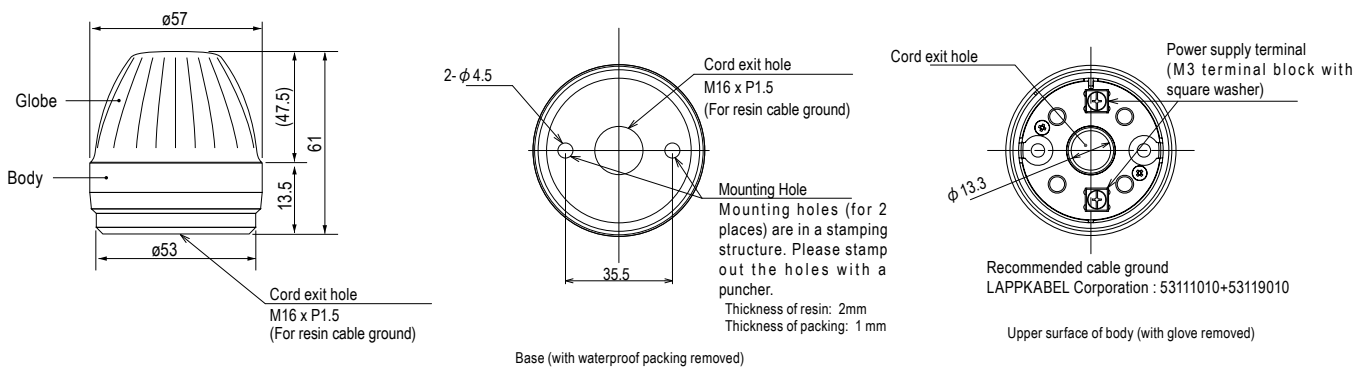
Specifications

Model	Rated Voltage	Power consumption (maximum)	Operating Temperature Range	Mounting location	Protection Rating	Mass
NE-24-R	24V DC	0.63W	-30 °C - +50 °C (90%RH or less)	Indoors only (specific circuit board)	IP65	55g
NE-24-Y		0.63W				
NE-24-G		0.56W				
NE-24-B		0.53W				
NE-24-C		0.45W				

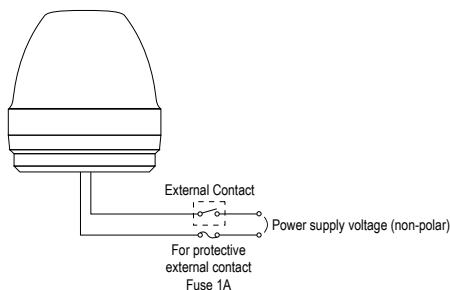
Model Code



Dimensions (mm)



Wiring Diagram



NE-M1-CL7



Colors	Red, Amber, Green, Blue, Aqua, Purple, White
Globe	Polycarbonate resin with superb shock resistance and heat resistance.

The NE-CL7 Series features a compact design with multi-color, 7 color LEDs. The NE-CL7 signal lights is easy to install and carries an IP66, and 67 ratings with high vibration resistance, ideal for sanitary cleaning applications.

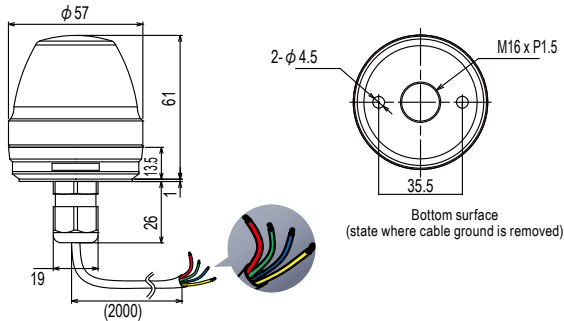
- Clear, frosted lens for reducing false indication and even light distribution
- Very low power consumption
- IP66, 67 rating - dust and water resistant
- Jacketed-cable line out



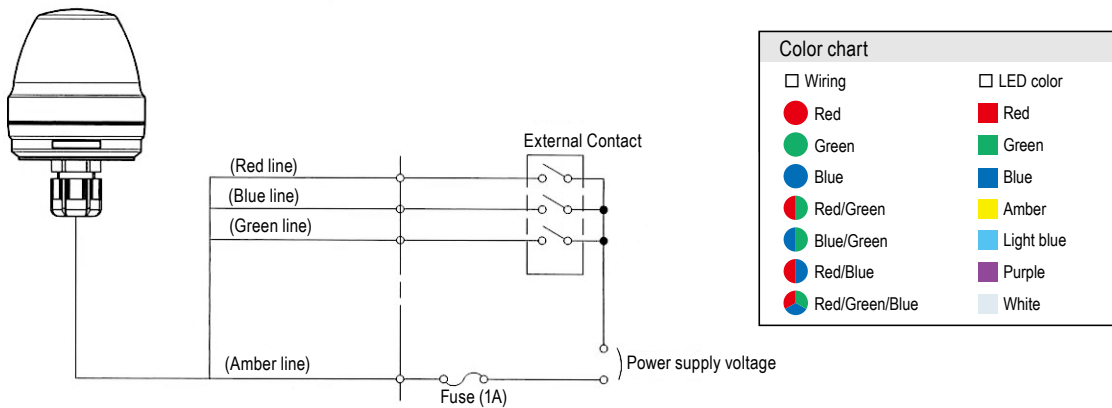
Specifications

Model	Rated Voltage	Power consumption (Standard)	Operating Temperature Range	Mounting location	Protection Rating	Mass
NE-M1-CL7+B0953	12 - 24V DC	1.35W	-20 °C - +50 °C (90%RH or less)	Indoors (specific circuit board)	IP66/IP67	150g

Dimensions (mm)



Wiring Diagram



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

PES-A

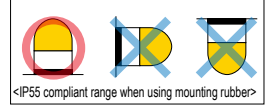


Colors Red, Amber, Green, Blue

Globe The material is AS resin, which is translucent and highly weather resistant.

The PES Series features an 82mm diameter, maintenance-free LEDs, and comes in multiple voltage types

- Triple-reflection system for enhanced visibility and low power consumption
- 3 flashing patterns - 60/120/180 FPM with toggle switch
- Maintenance-free, high efficiency LEDs
- Outdoor weather resistant with effective light emission
- IP55 with gasket (SZ-210); IP23 without gasket
- Available Colors: Red, Amber, Green, Blue

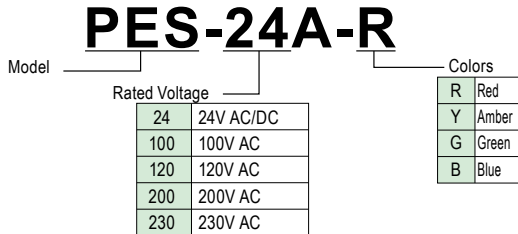


Specifications

Model	Colors	Rated Voltage	Inrush Current	Power Consumption	Number of flashes	Mass
PES-24A	-R/-Y	24V AC/DC	2.5A	1.5W	High-speed approximately 180/minute Medium-speed approximately 120/minute Low-speed of approximately 60/minute (Change with internal Switch)	0.24kg
	-G/-B					
PES-100A	-R/-Y	100V AC	1.0A	3.3W		
	-G/-B					
PES-120A	-R/-Y	120V AC	1.0A	3.5W		
	-G/-B					
PES-200A	-R/-Y	200V AC	0.5A	3.2W		
	-G/-B					
PES-230A	-R/-Y	230V AC	0.5A	3.8W		
	-G/-B					

* Products with specifications for 120V or 230V have not been manufactured for domestic use in Japan, thus if you want to use them in Japan, please use products with specifications for 100V or 200V.

Model Code



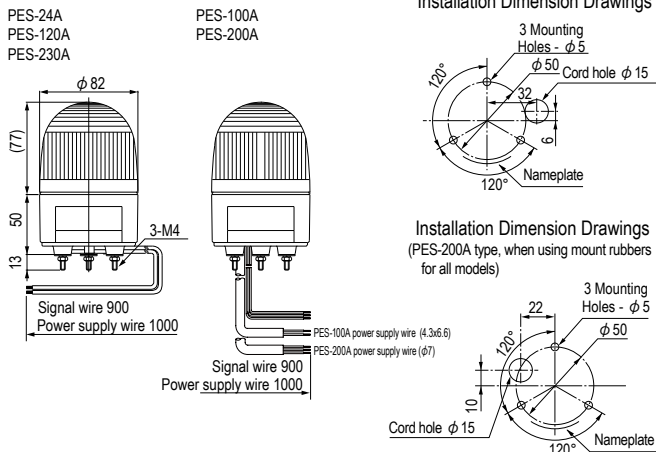
Optional Parts

For details, see pages 182 to 187.

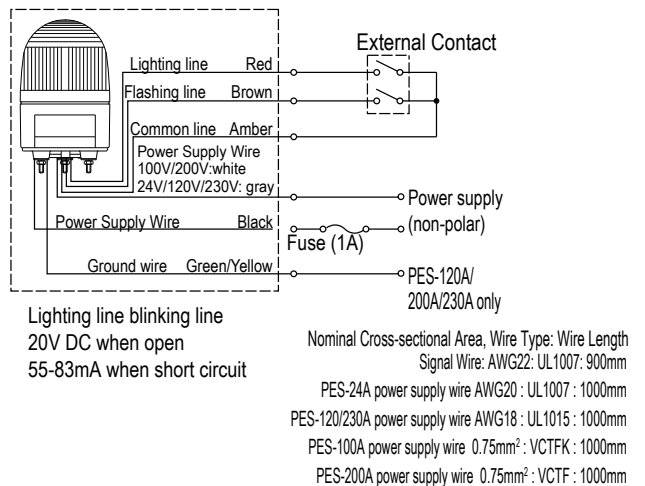
Optional Parts	Model
Mount rubber	SZ-210
Wallmount Bracket	SZ-008
Wallmount Bracket	SZ-007
Wallmount Bracket	SZ-023

* When using a bracket for mounting on the wall-face, the IP value will still be 23, even when using the mount rubber.

Dimensions (mm)



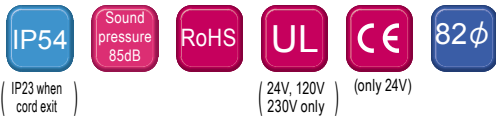
Wiring Diagram



* Connecting multiple units in parallel may cause a malfunction. Control using individual contacts.

PEW-A

PEW-A model
PEW-AB model (with audible)



Colors	Red, Amber, Green, Blue
Globe	The material is AS resin, which is translucent and highly weather resistant.
Volume	Maximum 85dB (at 1m) (PEW-AB type)

The PEW Series features an 82mm diameter, maintenance-free LEDs, and comes in multiple voltage types.

- Triple-reflection system for enhanced visibility and low power consumption
- Built-in 85dB audible alarm (PEW-AB model)
- 3 flashing patterns - 60/120/180 FPM with toggle switch
- Maintenance-free, high efficiency LEDs
- Outdoor weather resistant with effective light emission
- IP54; IP23 - when using side wire exit
- Available Colors: Red, Amber, Green, Blue

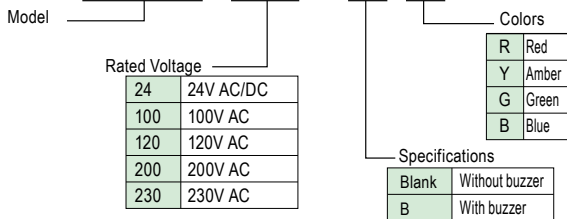
Specifications

Model	Colors	Rated Voltage	Inrush Current	Power Consumption	Number of flashes	Mass
PEW-24A	-R/-Y	24V AC/DC	2.5A	1.5W	High-speed approximately 180/minute Medium-speed approximately 120/minute Low-speed of approximately 60/minute (Change with internal Switch)	0.32kg
	-G/-B			2.7W		0.34kg
PEW-100A	-R/-Y	100V AC	1.0A	3.3W		0.52kg
	-G/-B			5.0W		0.54kg
PEW-120A	-R/-Y	120V AC	1.0A	3.5W		0.52kg
	-G/-B			5.2W		0.54kg
PEW-200A	-R/-Y	200V AC	0.5A	3.2W		0.52kg
	-G/-B			4.9W		0.54kg
PEW-230A	-R/-Y	230V AC	0.5A	3.8W		0.52kg
	-G/-B			5.5W		0.54kg

*Products with specifications for 120V or 230V have not been manufactured for domestic use in Japan, thus if you want to use them in Japan, please use products with specifications for 100V or 200V.

Model Code

PEW-24AB-R



Optional Parts

Optional Parts	Model
Wallmount Bracket	SZ-007
Wallmount Bracket	SZ-008
Wallmount Bracket	SZ-023

* When using SZ-007, SZ-008, or SZ-023, the cord will exit from the side.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

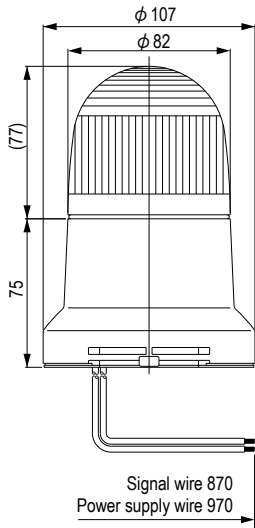
Hybrid Signaling Devices

LED Illumination

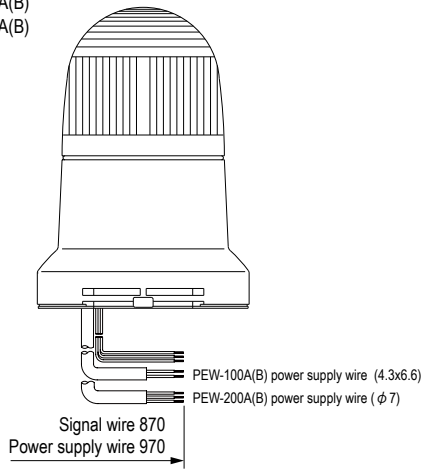
Options

Dimensions (mm)

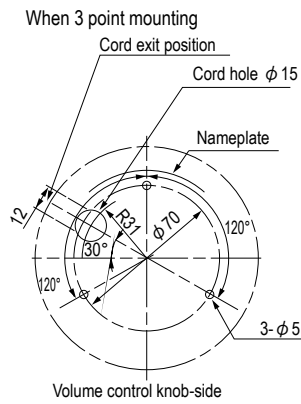
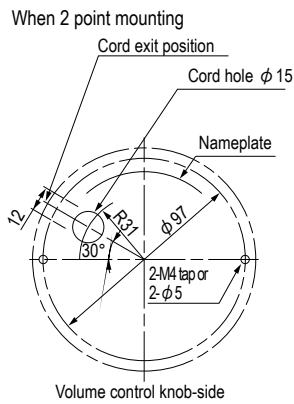
PEW-24A(B)
PEW-120A(B)
PEW-230A(B)



PEW-100A(B)
PEW-200A(B)



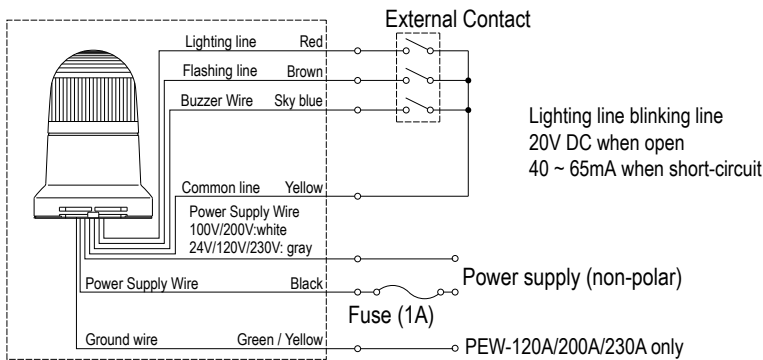
Installation Dimension Drawings



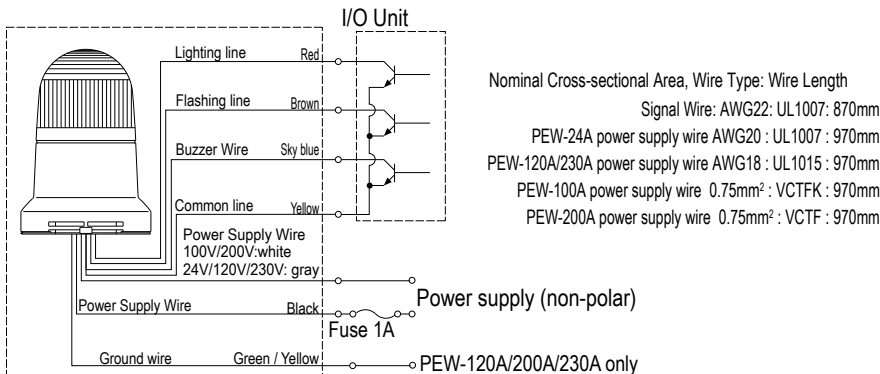
* For the length of the tap screw for 3 point mounting, please use those within the thickness of the clamp face +8mm. (Maximum board thickness: 5mm)

* Maximum board thickness when using the attached screw in 2 point mounting: 6mm

Wiring Diagram



NPN transistor



*Specifications for products without buzzers do not have a blue wire sticking out from the main body.
*Connecting multiple units in parallel may cause a malfunction. Control using individual contacts.



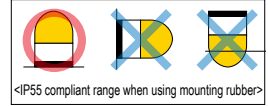
(IP55 when mount rubber is used—sold separately)

Colors Red, Amber, Green, Blue

Globe Polycarbonate resin with superb shock resistance and heat resistance

The KHE Series features a 100mm diameter, clear lenses to reduce false indication, and 3 distinct signaling patterns including simulated rotation.

- Unique lens cut for enhanced visibility from all angles
- 3 light pattern options: simulated rotation, strobe, flashing
- Rotating light option without a motor for longer product life
- Very low power consumption
- Available Colors: Red, Amber, Green, Blue

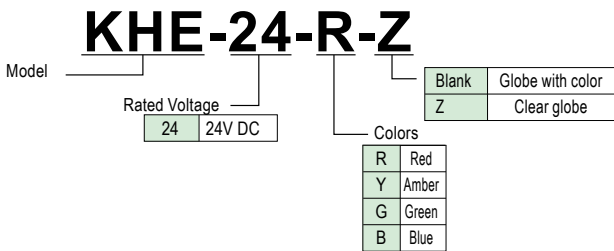


Specifications

Model	Rated Voltage	Power Consumption	Number of flashes			Mass
			When flashing pattern	simulated rotation	When strobe pattern	
KHE-24-R	24V DC	8.2W	55 times±10 minutes	175 times±10 minutes	Double flash 75 times±10 minutes	0.45kg
KHE-24-Y						
KHE-24-G						
KHE-24-B						

*Regarding the clear globe specification, size, price are the same for (-Z).

Model Code



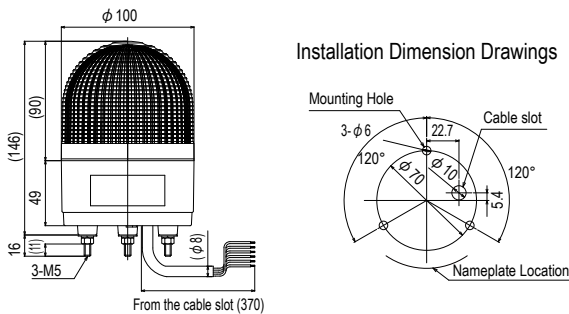
Optional Parts

For details, see pages 182 to 187.

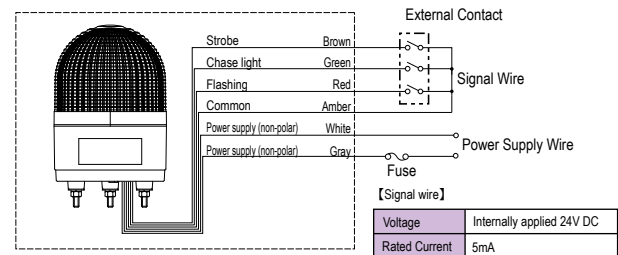
Optional Parts	Model
Mount rubber	SZ-200
Wallmount Bracket	SZ-007
Wallmount Bracket	SZ-023

* When using a bracket for mounting on the wall-face, the IP value will still be 23, even when using the mount rubber.

Dimensions (mm)



Wiring Diagram



*Regarding the fuse, use a fuse that suits the rated value of the machine on which the product is mounted.
*Maximum 20A, 5μs in-flow current flow in the power line. Please use a power source with consideration to capacity for this in-flow current.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

PSE



(IP55 when mount rubber is used—sold separately)

Colors Red, Amber, Green, Blue

Globe The material is AS resin, which is translucent and highly weather resistant.

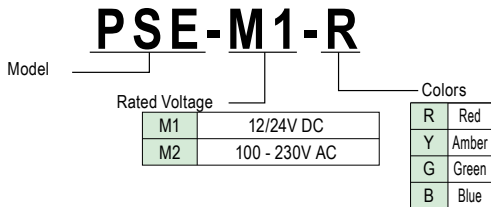
The PSE Series features an 82mm diameter, maintenance-free LEDs, and an unique triple-flash light pattern.

- Triple-flash light pattern with a rate of 110 flashes per minute
- Available in 12V or 24V and free range voltage input of AC 100-230V
- Available colors: Red, Amber, Green, Blue

Specifications

Model	Rated Voltage	Power Consumption	Flashing Rate	Mass
PSE-M1-R/Y	12/24V DC	3.0W	110 ±10/minute (triple flash)	0.30kg
PSE-M2-R/Y	100 - 230V AC	3.2W		0.35kg

Model Code



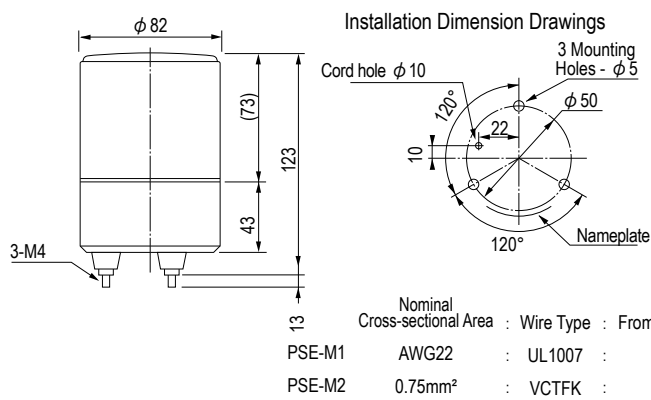
Optional Parts

For details, see pages 182 to 187.

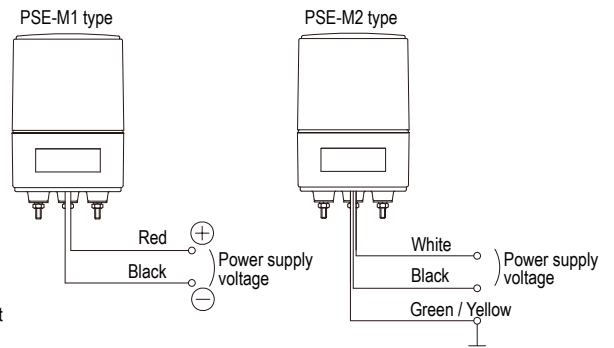
Optional Parts	Model
Mount rubber	SZ-210
Wallmount Bracket	SZ-007

* When using a bracket for mounting on the wall-face, the IP value will still be 23, even when using the mount rubber.

Dimensions (mm)



Wiring Diagram



LFH



Colors	Red, Amber, Green, Blue, White
Globe	Polycarbonate resin with superb shock resistance and heat resistance.

The LFH Series features a 100mm diameter, ultra-bright, maintenance-free LEDs, and comes in multiple voltage types.

- Outdoor-rated with ultra-bright LEDs
- Triple-flash light patterns with rates of 110 and 140 flashes per minute
- Light dimming function for use in close proximities or at night
- High vibration resistance, ideal for mounting on moving vehicles
- IP66 - dust, oil, water and non-corrosive material resistance
- Available Colors: Red, Amber, Green, Blue, White/Clear
- 3-year free-servicing after purchase

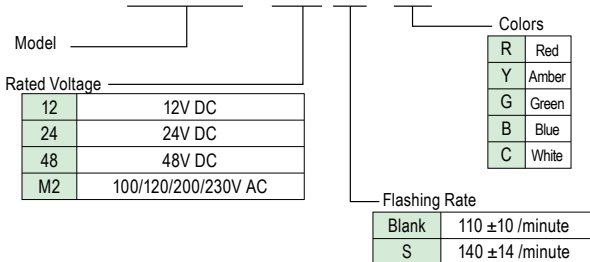


Specifications

Model	Rated Voltage	Operating Voltage Range	Power consumption (Standard) rated power Consumption (Upper: Standard Lower: Maximum)	Ambient Operating Temperature	Storage Ambient Temperature	Mounting location	Mounting direction	Protection Rating	Vibration Resistance	Flashing Rate	Mass
LFH-12	12V DC	9.5 - 15V DC	5.0W 6.0W	-30 °C - +70 °C	-40 °C - +80 °C	Indoor/ Outdoor	Forward, side, reverse directions (forward direction only in wet places)	IP66 (IEC 60529) when installed in the forward direction	90m/s2	110 ±10 /minute (triple flash)	570g
LFH-24	24V DC	20 - 30V DC	4.5W 5.5W								
LFH-48	48V DC	35 - 60V DC	6.5W 7.5W								
LFH-M2	100/120/200/230V AC (50/60Hz)	90 - 250V AC	5.7W 6.8W	-20 °C - +60 °C	-30 °C - +70 °C						
LFH-12S	12V DC	9.5 - 15V DC	5.0W 6.0W	-30 °C - +70 °C	-40 °C - +80 °C	Indoor/ Outdoor	Forward, side, reverse directions (forward direction only in wet places)	IP66 (IEC 60529) when installed in the forward direction	90m/s2	140±14 /minute (triple flash)	570g
LFH-24S	24V DC	20 - 30V DC	4.5W 5.5W								
LFH-48S	48V DC	35 - 60V DC	6.5W 7.5W								

Model Code

LFH-12S-R



Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-170
Wallmount Bracket	SZ-007

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

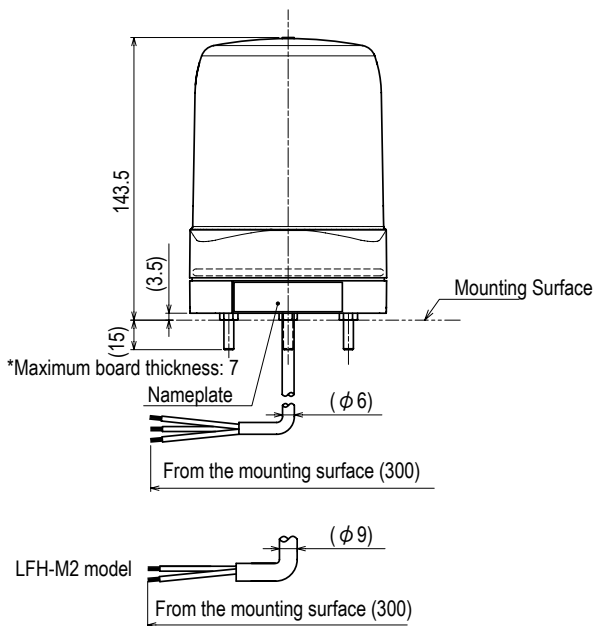
Hybrid Signaling Devices

LED Illumination

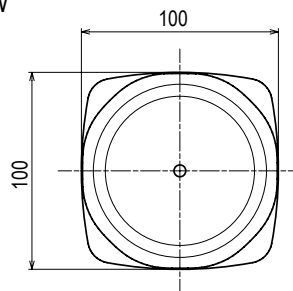
Options

Dimensions (mm)

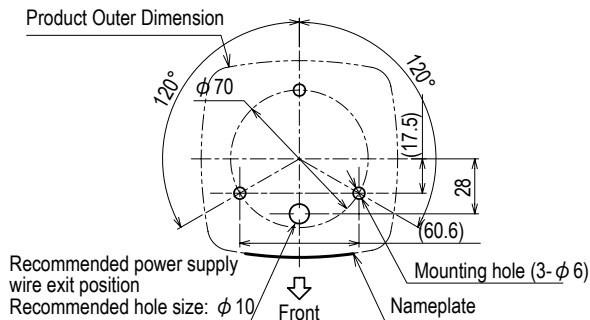
Side view



Top view

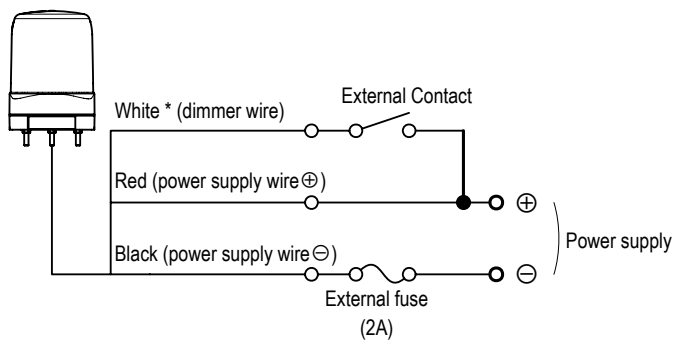


Installation Dimension Drawings

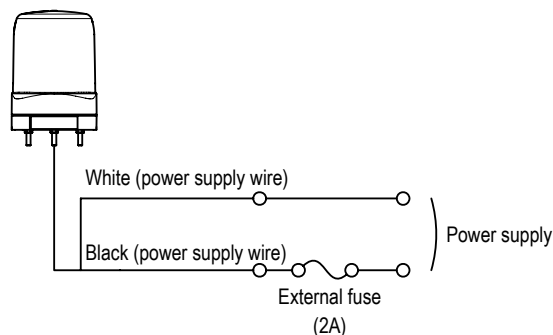


Wiring Diagram

LFH-12/24/48/12S/24S/48S model



LFH-M2 model



*Insulate the ends of the cable when the light dimmer function is not in use.

Conformity Standards

LFH-12	UL 1638, CAN/ULC-S526-M87 RoHS Directive EN 50581
LFH-24	EMC Directives (EN 55015, EN 61547) FCC Part 15 Subpart B Class A, ECE regulation No.10
LFH-48	UL 1638, CAN/ULC-S526-M87
LFH-M2	UL 1638, CAN/ULC-S526-M87 RoHS Directive EN 50581 EMC Directives (EN 61000-6-4, EN 61000-6-2) Low Voltage Directives (EN 60598-1, EN 60598-2-1, EN 62031, EN 61347-1, EN 61347-2-13, EN 62471) FCC Part 15 Subpart B Class A
LFH-12S	ECE Regulation No.10
LFH-24S	

PFH-BT

Battery U



- IP55
- 100φ
- RoHS
- With magnet
- LED flash
- AA battery x 4

- Colors Red, Amber
- Globe Polycarbonate resin, high shock resistance and heat resistance

The PFH Series features an 101mm diameter and an AA battery power supply and a strong magnetic base, ideal for temporary maintenance and "lock out, tag out" applications.

- Power is supplied by 4 standard AA batteries
- 2 built-in flash patterns with toggle switch
- 2 modes for efficient battery use with toggle switch
- IP55 protection rating White/Clear
- 3-year free-servicing after purchase

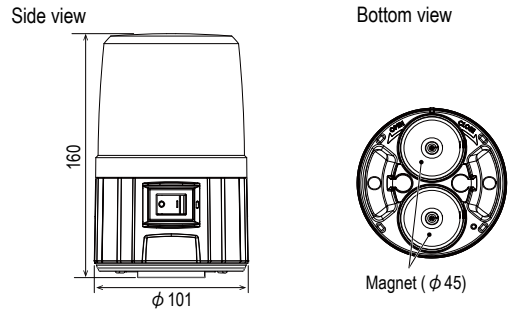


Specifications

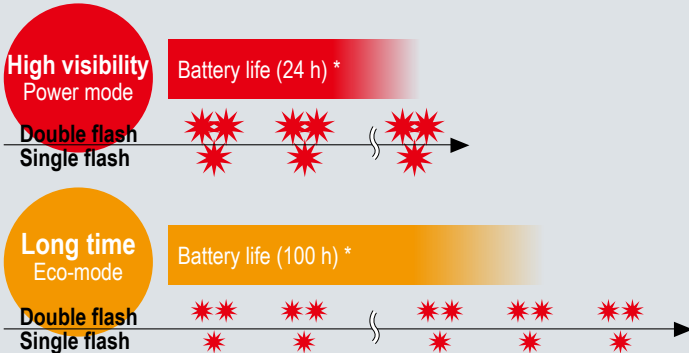
Model	PFH-BT-R/-Y
Power Supply	4 - AA Sized Alkaline/Nickel Metal Hydride Batteries
Battery life	Power mode: 24 hours, Eco mode: 100 hours*
Ambient Operating Temperature / Humidity	-10 °C - 50 °C 90% RH or less, no condensation (not including the battery)
Mounting Location / Direction	Indoors/outdoors, front/side direction (power switch facing downward)
Protection Rating	IP55 (Front)
Peak luminous intensity (Typ.)	Red: Over 40 cd, Amber: Over 140 cd (in power mode)
Mass	510g (excluding batteries)
Conformity Standards	RoHS Directive EN 50581, EMC Directives (EN61000-6-4, EN61000-6-2)

*Changes depending on the type of batteries, and conditions and environment in which it is used.

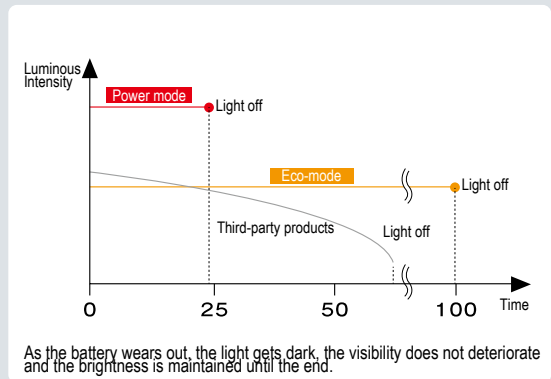
Dimensions (mm)



- Toggle between "Flash pattern" and "Lighting mode" depending on your application: Indoors, outdoors, day or night.



* Changes depending on the type of batteries, and conditions and environment in which it is used.



As the battery wears out, the light gets dark, the visibility does not deteriorate and the brightness is maintained until the end.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

XPE



Colors Red, Amber, Green, Blue

Globe Polycarbonate resin with superb shock resistance and heat resistance

The XPE Series features a 162mm diameter, a triple-flash rate pattern, and multiple voltage options.

- Triple-flash pattern with 110 flash rate per minute
- Durable structure with stainless steel bolts
- Built-in dimmer function
- Available colors: Red, Amber, Green, Blue

Specifications

Model	Rated Voltage	Power Consumption	Flashing Rate	Mass
XPE-12	12V DC	5.0W	110±10 /minute (Triple flash)	1.2kg
XPE-24	24V DC	4.5W		
XPE-M2	100/200/230V AC	5.7W		

Model Code

XPE-12-R

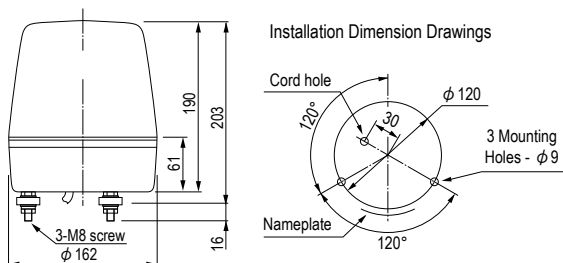
Rated Voltage		Colors	
12	12V DC	R	Red
24	24V DC	Y	Amber
M2	100/200/230V AC	G	Green
		B	Blue

Optional Parts

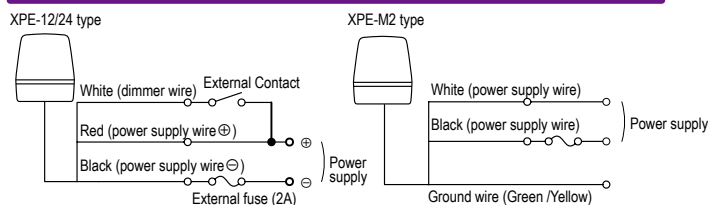
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

Dimensions (mm)



Wiring Diagram



XME



Colors Red, Amber, Blue

Globe Polycarbonate resin with superb shock resistance and heat resistance

The XME Series features a 182mm diameter, a triple-flash rate pattern, and multiple voltage options.

- Triple-flash pattern with 110 flash rate per minute
- Durable structure with stainless steel lens mounts and bolts
- Built-in dimmer function
- Available colors: Red, Amber, Blue

Specifications

Model	Rated Voltage	Power Consumption	Flashing Rate	Mass
XME-12	12V DC	5.0W	110±10 /minute (Triple flash)	1.8kg
XME-24	24V DC	4.5W		
XME-M2	100/200/230V AC	5.7W		

Model Code

XME-12-R

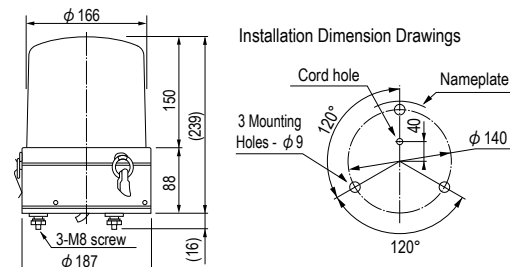
Rated Voltage		Colors	
12	12V DC	R	Red
24	24V DC	Y	Amber
M2	100/200/230V AC	B	Blue

Optional Parts

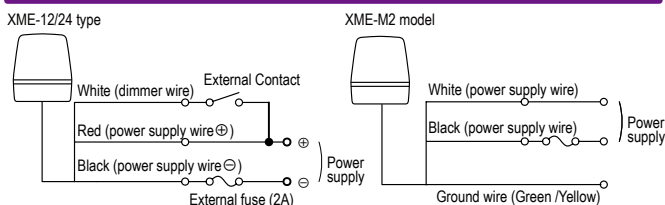
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-008

Dimensions (mm)



Wiring Diagram



KPE-A

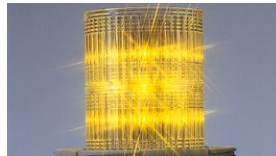


Colors	Red, Amber
Globe	The material is AS resin, which is translucent and highly weather resistant.

The KPE Series features a 162mm diameter, ultra-bright LEDs, and a unique LED simulated rotation light pattern option.

- Ultra-bright LEDs; 4-times brighter than our standard models, i.e. KPE, KME
- Adjustable rotating light option without a motor for longer product life
- Available Colors: Red, Amber, Green, Blue

IP23 162φ



LED chase light

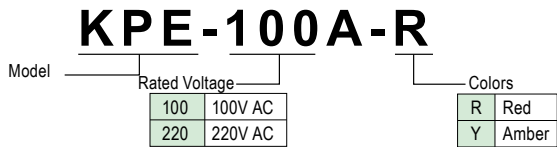
LED are laid out evenly over 8 sides and light up in turn in a circular direction as a result of the electronic circuits, and they light as though they are flowing. Moreover, the light is further dispersed through the globe. You can change the chase light rotation speed with the volume in the main body.

Specifications

Model	Rated Voltage	Power consumption (chase light / when flashing)	Chasing Rotation Rate/Flashing Rate	Vibration Resistance	Mass
KPE-100A	100V AC	8.5W/13W	50 - 200/minute (chase light)	44.1m/s ² JIS D 1601-1990	1.5kg
KPE-220A	220V AC	9.5W/14W	60/minute (when flashing)	Stage 4, Type 3, Class B compliant	

Operating Temperature Range: -30 °C to +60 °C, Mounting Direction: Indoors - Forward, Side, Reverse directions; Outdoors - Forward.

Model Code

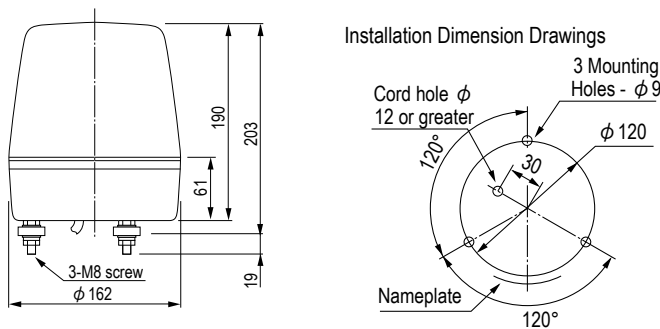


Optional Parts

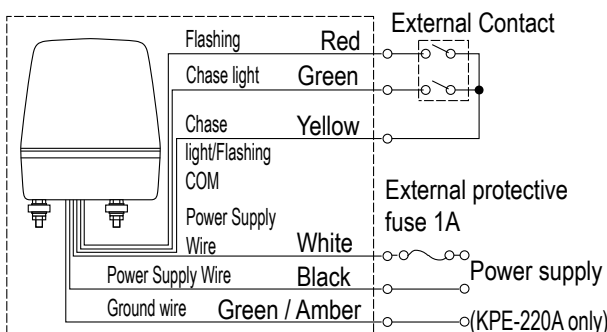
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

Dimensions (mm)



Wiring Diagram



5V DC when signal wire is open
5mA when short-circuit

Nominal Cross-sectional Area : Wire Type:
Wire Length
Signal Wire: AWG22: UL1007: 270mm
KPE-100A power supply wire 0.75mm² : VCTFK : 330mm
KPE-220A power supply wire 0.75mm² : VCTF : 330mm

*Connecting multiple units in parallel may cause a malfunction. Control using individual contacts.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

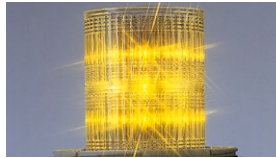
KLE

KLE model

KLE-S model (Stainless steel)



IP23 162φ



Colors	Red, Amber
Globe	The material is AS resin, which is translucent and highly weather resistant.

The KLE Series features a 162mm diameter, ultra-bright LEDs, and a unique LED simulated rotation light pattern option.

- 32 high-intensity LEDs with efficient light distribution
- Adjustable rotating light option without a motor for longer product life
- Durable structure design
- Available Colors: Red, Amber, Green, Blue

LED Chase Light

LED are laid out evenly over 8 sides and light up in turn in a circular direction as a result of the electronic circuits, and they light as though they are flowing. Moreover, the light is further dispersed through the globe. You can change the chase light rotation speed with the volume in the main body.

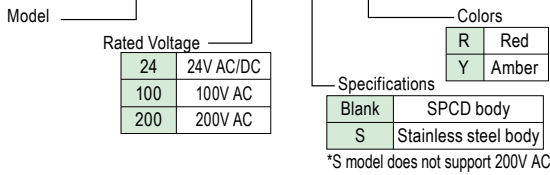
Specifications

Model	Rated Voltage	Power Consumption	Number of flashes	Vibration Resistance	Mass
KLE-24 KLE-24S	24V AC/DC	5.8W	50 to 200/minute	45m/s2 JIS D 1601-1995 Stage 4, Type 3, Class B compliant	1.2kg
KLE-100 KLE-100S	100V AC	10.9W			1.5kg
KLE-200	200V AC	10.7W			

Operating Temperature Range: -30 °C to +60 °C, Mounting Direction: Indoors - Forward, Side, Reverse directions; Outdoors - Forward.

Model Code

KLE-24S-R

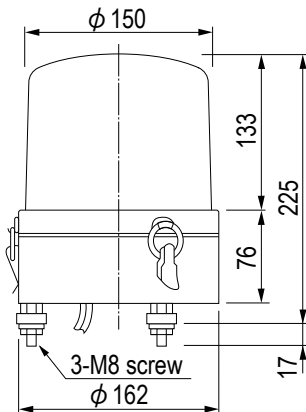


Optional Parts

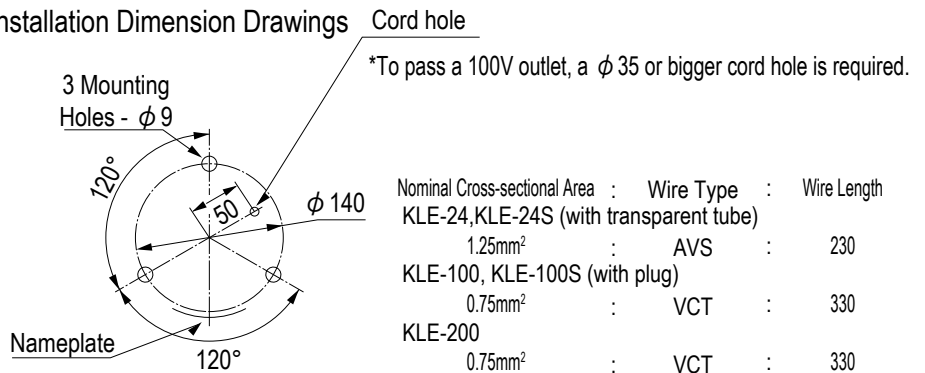
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

Dimensions (mm)



Installation Dimension Drawings



Nominal Cross-sectional Area	Wire Type	Wire Length
KLE-24, KLE-24S (with transparent tube)	AVS	230
KLE-100, KLE-100S (with plug)	VCT	330
KLE-200	VCT	330

PS-12 Scheduled to end production

PS model (Lighting)



When mount rubber (sold separately) is used



Colors Red, Amber, Green, Blue

Globe Polycarbonate resin with superb shock resistance and heat resistance

The PS Series features an 82mm diameter with incandescent bulbs as the light source as a low upfront cost option.

- IP55 with rubber mount (SZ-210); IP23 without rubber mount
- Available colors: Red, Amber, Green, Blue



IP23 **82φ**
(IP55 when mount rubber is used—sold separately)

Specifications

Model	Rated Voltage	Power Consumption	Bulb		Mass
				Number	
PS-12	12V AC/DC	10W	12V 10W	9	0.3kg
PS-24	24V AC/DC		24V 10W	10	

Bulb Shape 12V/24V Glass Bulb G18, Base BA15S

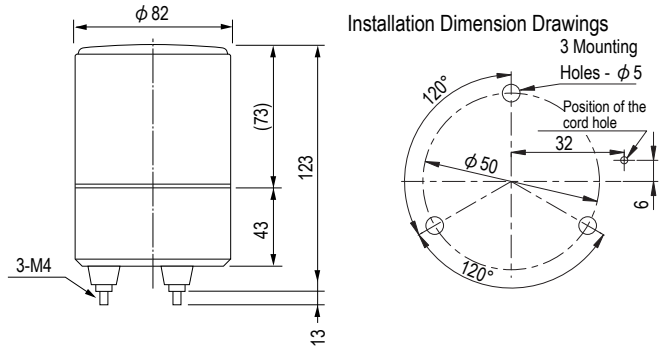
Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Mount rubber	SZ-210
Wallmount Bracket	SZ-007

*When using a wallmount bracket, even with the mount rubber the IP value is 23.

Dimensions (mm)



Nominal Cross-sectional Area : Wire Type : Wire Length
 0.75mm²: VCTFK: From the cord outlet (340)
 From the code hook (300)

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower





Audibles

Hybrid Signaling Devices



LED Illumination




Options


Revolving Warning Light

Page number	Page 115				Page 116					Page 118				Page 119			
Model Name	Compact LED Revolving Warning Light				Small LED Revolving Warning Light									Extreme Vibration Resistant Large LED Revolving Warning Light			
Model	RLE				RHE					SKHE				RLR			
Product image																	
Rated Voltage	12V DC	24V DC	100V AC	220V AC	12V DC	24V DC	48V DC	100V AC	200V AC	12V DC	24V DC	100V AC	200V AC	12/24V DC	48V DC	100-240V AC	
Size (mm)	φ 82				φ 100					φ 118				φ 162			
IP	23 (55 when mount rubber –sold separately– is used)				23 (55 when mount rubber –sold separately– is used)					23				66			
Buzzer sound pressure in dB (at a distance of 1m)					Typ.88					Typ.88							
Body	ABS				ABS					ABS (bracket part)				ABS			
Globe	Polycarbonate				Polycarbonate					AS				Polycarbonate			
Light Source	LED				LED					LED				LED			
Terminal Block	LED				O												
Open collector																	
CE Marking					O	O	O				O	O			O	O	O
RoHS					O	O	O	O	O		O	O	O	O	O	O	
UL Standard					O (UL model)		O (UL model)										
Other																	
Explosion protection																	

Page number	Page 123			Page 124				Page 125					Page 126		
Model Name	Wall-Mounted Small Revolving Warning Light			Small Revolving Warning Light				Medium Revolving Warning Light							
Model	WH-A			SKH-EA				SKP-A					KP-A		
Product image															
Rated Voltage	24V DC	100V AC	200V AC	12V DC	24V DC	100V AC	200V AC	12V DC	24V DC	48V DC	100V AC	200V AC	24V DC	100V AC	200V AC
Size (mm)	φ 100			φ 100				φ 138					φ 162		
IP	54 (23 with buzzer)			23				23					23		
Buzzer sound pressure in dB (at a distance of 1m)	90														
Body	ABS			Steel Plate (coated)				Steel Plate (coated)					AES		
Globe	Polycarbonate			AS				Polycarbonate					AS		
Light Source	Bulb			Bulb				Bulb					Bulb		
Terminal Block															
Open collector															
CE Marking	O			O	O			O	O				O		
RoHS															
UL Standard															
Other	Switch box compatible														
Explosion protection															

Page number	Page 127				Page 128		Page 129		
Model Name	Large Revolving Warning Light				Large Revolving Warning Light		Large Revolving Warning Light		
Model	SKC-A				HP		KG		
Product image									
Rated Voltage	12V DC	24V DC	100V AC	200V AC	12V DC	24V AC	12V DC	24V DC	100V AC
Size (mm)	φ 187				φ 180		φ 186		
IP	23						23		
Buzzer sound pressure in dB (at a distance of 1m)									
Body	Steel Plate (coated)				ABS		ABS		
Globe	AS				AS		Yellow: polystyrene Red: AS		
Light Source	Bulb				Halogen		Bulb		
Terminal Block									
Open collector									
CE Marking	O	O							
RoHS									
UL Standard							Two-sided mirror		
Other	Two-sided mirror								
Explosion protection									

Page number	Page 120					Page 121						Page 122				
Model Name	Compact Revolving Warning Light					Small Revolving Warning Light										
Model	RU/RS					RH-A						SKH-A				
Product image																
Rated Voltage	12V DC	24V DC	100V AC	220V AC	24V AC	12V DC	24V DC	100V AC	120V AC	200V AC	240V AC	12V DC	24V DC	100V AC	200V AC	24V AC
Size (mm)	φ 82					φ 100						φ 118				
IP	23 (55 when mount rubber –sold separately– is used)					23 (55 when mount rubber –sold separately– is used)						23 (IP54 for watercraft)				
Buzzer sound pressure in dB (at a distance of 1m)						Typ.90						Typ.90				
Body	ABS					ABS						ABS (bracket part)				
Globe	Polycarbonate					Polycarbonate						AS				
Light Source	Bulb					Bulb						Bulb				
Terminal Block						○										
Open collector																
CE Marking	○	○			○	○	○					○	○			○
RoHS																
UL Standard						○ (UL model)										
Other																
Explosion protection																

Page number	Page 126						
Model Name	Large Revolving Warning Light						
Model	SKL-A						
Product image							
Rated Voltage	12V DC	24V DC	48V DC	100V AC	200V AC	240V AC	
Size (mm)	φ 162						
IP	23						
Buzzer sound pressure in dB (at a distance of 1m)							
Body	Steel plate (coating)/stainless steel (SUS 304)						
Globe	Polycarbonate						
Light Source	Bulb						
Terminal Block							
Open collector							
CE Marking	○	○					
RoHS							
UL Standard							
Other							
Explosion protection							

* For specifications, see the product page.

RLE



IP23 82φ

(IP55 when mount rubber: sold separately)

Colors	Red, amber, green (colors cannot be changed by replacing the globe)
Globe	Polycarbonate resin with superb shock resistance and heat resistance
Body	ABS resin

The RLE Series features an 82mm diameter, ultra-bright, maintenance-free LEDs, and comes in multiple voltage types.

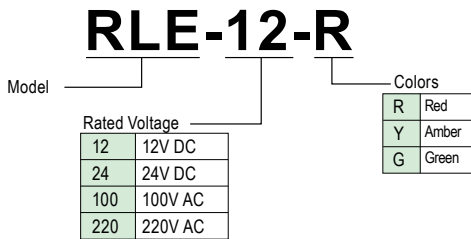
- Unique rotation reflection system for efficient warning signals
- IP55 with rubber mount (SZ-210); IP23 without rubber mount
- Available colors: Red, Amber, Green



Specifications

Model	Rated Voltage	Power Consumption	Number of flashes	Mass
RLE-12	12V DC	Max. 2.5W	120/minute	0.4kg
RLE-24	24V DC	Max. 3.0W		
RLE-100	100V AC	2.6W		
RLE-220	220V AC	2.6W		0.6kg

Model Code



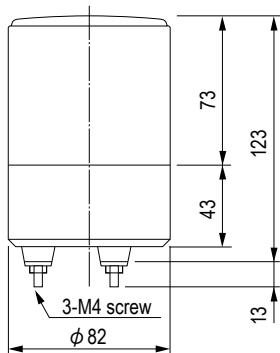
Optional Parts

For details, see pages 182 to 187.

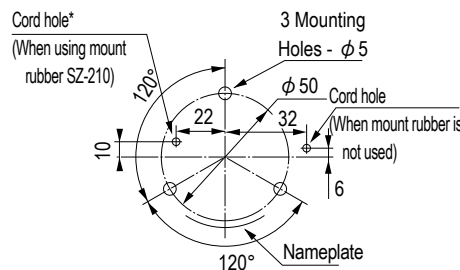
Optional Parts	Model
Mount rubber	SZ-210
Wallmount Bracket	SZ-007

*When using a wallmount bracket, IP value is 23 even with a mount rubber.

Dimensions (mm)



Installation Dimension Drawings



Nominal Cross-sectional Area : Wire Type : Wire Length

RLE-12,24	0.5mm ² : AV : 200
RLE-100 (with plug)	0.75mm ² : VCTFK : 300
RLE-220	0.75mm ² : VCTF : 340

*To pass a 100V outlet, a φ 30 cord hole is required.

RHE

RHE model
RHEB model
(with audible)



Colors Red, amber, green, blue (You cannot change colors by replacing the globe)

Globe Polycarbonate resin with superb shock resistance and heat resistance

The RHE Series features an 82mm diameter, ultra-bright, energy-efficient LED system, and comes with a built-in 90dB audible alarm.

- 1 LED chip light source for high energy-efficiency without sacrificing visibility
- Built-in 90dB audible alarm
- IP55 with rubber mount (SZ-220A); IP23 without rubber mount
- Built-in terminal block for easy wiring
- Available colors: Red, Amber, Green, Blue



Sound pressure 88dB
IP23
RoHS
UL
CE
100φ

(IP55 when mount rubber is used—sold separately)
 (RHE-UL only)
 (12V, 24V, 48V only)

Specifications

RHE specifications

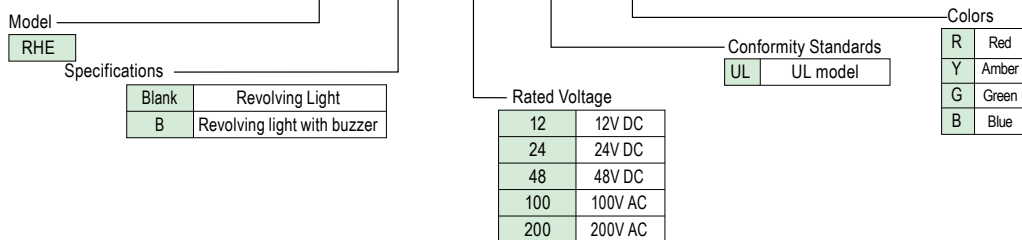
Model		Rated Voltage	Current Consumption () with buzzer	Inrush Current	Number of flashes	Mass	Colors
RHE	RHEB						
RHE-12	RHEB-12	12V DC	0.25A (0.28A)	1.5A/100msec	120/minute	0.4kg	R: Red or Y: Amber G: Green or B: Blue
RHE-24	RHEB-24	24V DC	0.16A (0.19A)	5.0A/4msec			R: Red or Y: Amber G: Green or B: Blue
RHE-48	—	48V DC	0.08A	—			R: Red or Y: Amber G: Green or B: Blue
RHE-100	RHEB-100	100V AC	0.042A (0.045A)	1.0A/20msec	120/minute	0.6kg	R: Red or Y: Amber G: Green or B: Blue
RHE-200	RHEB-200	200V AC	0.022A (0.025A)	0.5A/20msec			R: Red or Y: Amber G: Green or B: Blue
							R: Red or Y: Amber G: Green or B: Blue

RHE-UL model (UL model)

Model		Rated Voltage	Current Consumption () with buzzer	Inrush Current	Number of flashes	Mass	Colors
RHE	RHEB						
RHE-12UL	RHEB-12UL	12V DC	0.25A (0.28A)	1.5A/100msec	120/minute	0.4kg	R: Red or Y: Amber G: Green or B: Blue
RHE-24UL	RHEB-24UL	24V DC	0.16A (0.19A)	5.0A/4msec			R: Red or Y: Amber G: Green or B: Blue

Model Code

RHEB-24UL-R



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

Optional Parts

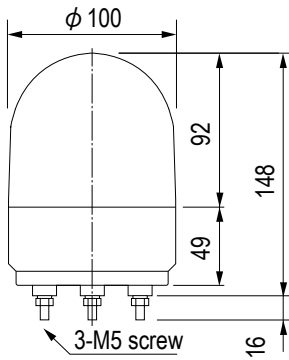
For details, see pages 182 to 187.

Optional Parts	Model
Mount rubber	SZ-200
Wallmount Bracket	SZ-007

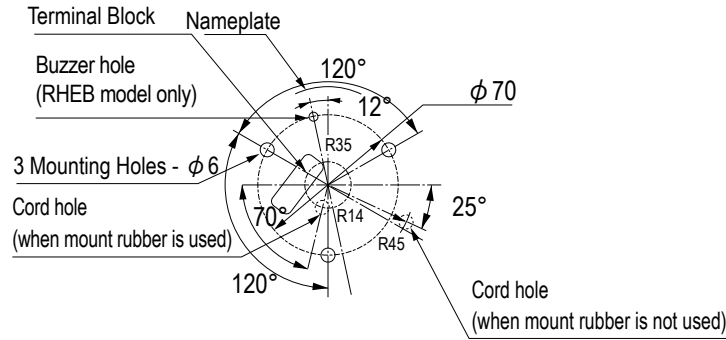
*When using a wallmount bracket, IP value is 23 even with a mount rubber.

Dimensions (mm)

RHE

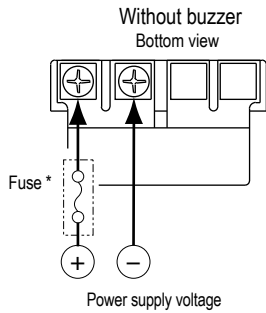


Installation Dimension Drawings



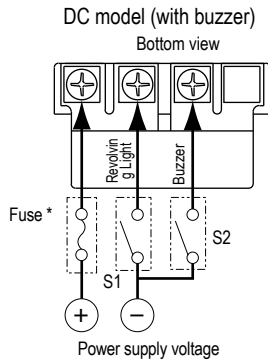
*The applicable crimp terminal has a thread hole diameter of 3 mm. The outer diameter can be up to phi 8mm.

Wiring Diagram

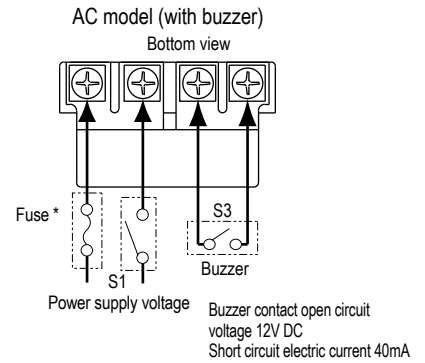


For AC type, there is no + / - polarity.

* For the fuse, please use a 3A fuse.
(RHE (B)-100/200, UL model is 1A)



Contact S1	Contact S2	Description
ON	OFF	Revolving Light
OFF	ON	Buzzer
ON	ON	Revolving light & buzzer



Contact S3	Description
OFF	Revolving Light
ON	Revolving light & buzzer

Buzzer contact open circuit voltage 12V DC
Short circuit electric current 40mA

* Terminal block system wiring is not included. (UL1007 0.5mm² wiring for RHE-12,24,48; UL1430 0.5mm² wiring for RHE-12UL,24UL have been set for 240±30mm)

SKHE

SKHE model
SKHEB model (with audible)



Colors Red, amber, green, blue (You cannot change colors by replacing the globe)

Globe The material is AS resin, which is translucent and highly weather resistant.

The SKHE Series features an 118mm diameter, ultra-bright, high energy-efficient LED system, and comes with a built-in 90dB audible alarm.

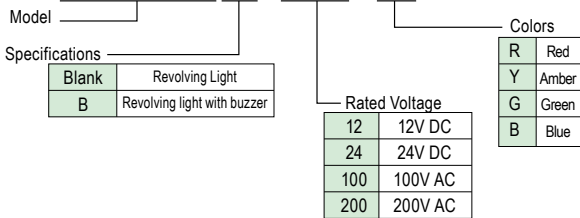
- 1 LED chip light source for high energy-efficiency without sacrificing visibility
- Built-in 90dB audible alarm
- Built-in terminal block for easy wiring
- Available colors: Red, Amber, Green, Blue

Specifications

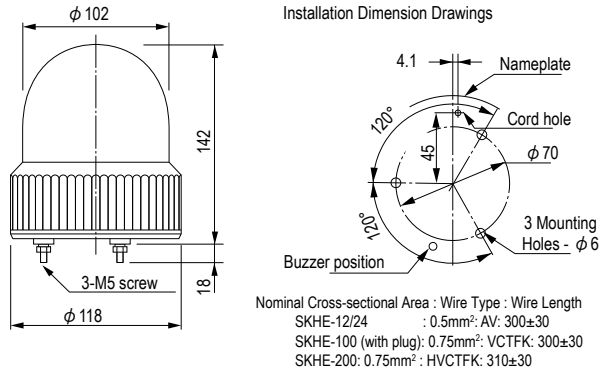
Model		Rated Voltage	Current Consumption	Number of flashes	Mass	Colors
SKHE	SKHEB					
SKHE-12	SKHEB-12	12V DC	0.22A	120/minute	0.4kg	R: Red or Y: Amber
SKHE-24	SKHEB-24	24V DC	0.16A			G: Green or B: Blue
SKHE-100	SKHEB-100	100V AC	0.042A			R: Red or Y: Amber
SKHE-200	SKHEB-200	200V AC	0.022A			G: Green or B: Blue

Model Code

SKHEB-24-R



Dimensions (mm)

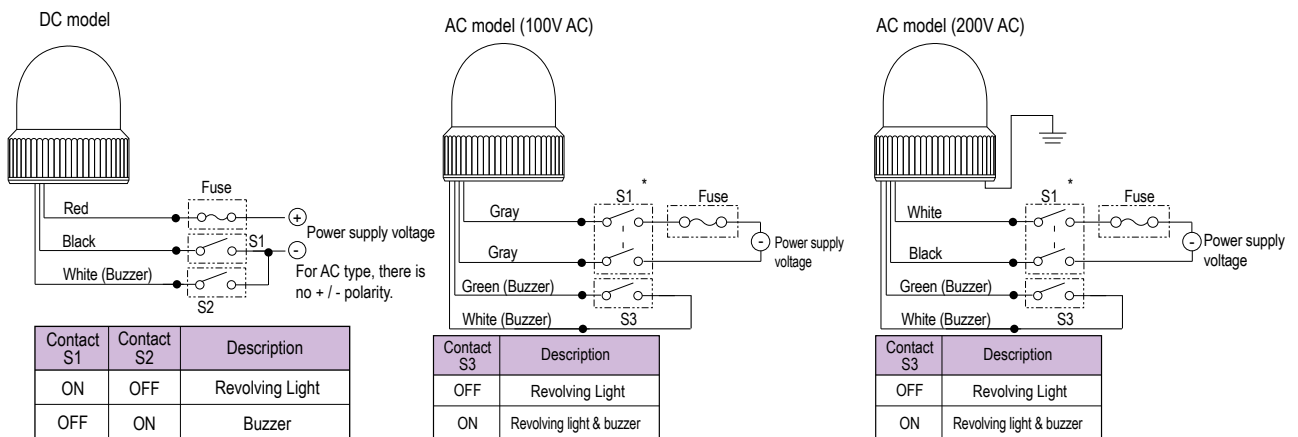


Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-007

Wiring Diagram



Contact S1	Contact S2	Description
ON	OFF	Revolving Light
OFF	ON	Buzzer
ON	ON	Revolving light & buzzer

*Wiring diagram is for model B. There is no white wire for units without a buzzer.

Contact S3	Description
OFF	Revolving Light
ON	Revolving light & buzzer

*Wiring diagram is for model B. There are no white and green wires for units without a buzzer. Buzzer contact open circuit voltage 12V DC Short circuit current 40mA

Contact S3	Description
OFF	Revolving Light
ON	Revolving light & buzzer

*Wiring diagram is for model B. There are no white and green wires for units without a buzzer. Buzzer contact open circuit voltage 12V DC Short circuit current 40mA

*In addition to a two-way switch, you can also use a one-way switch.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

RU/RS

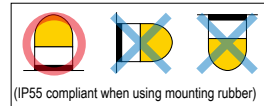
RU/RS model
RUP model
(with a pole, for indoors)



Colors	Red, Amber, Green, Blue
Globe	Polycarbonate resin with superb shock resistance and heat resistance
Body	ABS resin

The RU/RS Series features an 82mm diameter and automobile incandescent bulbs as a light source for high vibration resistance, ideal for moving vehicles.

- Automobile incandescent bulbs for high vibration resistance
- Comes in a rounded dome (RU models) and circular dome shapes (RS models)
- IP55 with rubber mount (SZ-210); IP23 without rubber mount
- Available colors: Red, Amber, Green, Blue



(IP55 when mount rubber is used-sold separately)

(12V, 24V only)

Specifications

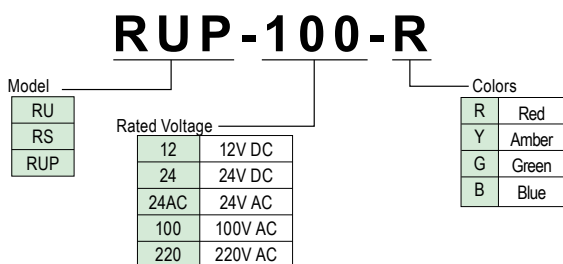
Model			Rated Voltage	Current Consumption	Number of flashes	Bulb		Mass	
RU	RUP	RS				Number	RU/RS	RUP	
RU-12	RUP-12	RS-12	12V DC	0.5A	120/minute	12V 6W	18	0.4kg	0.8kg
RU-24	RUP-24	RS-24	24V DC	0.3A		24V 6W	19		
RU-100	RUP-100	RS-100	100V AC	0.075A		12V 6W	18	0.6kg	1.0kg
RU-220	RUP-220	RS-220	220V AC	0.035A		24V 6W	19	0.4kg	0.8kg
RU-24AC	RUP-24AC	—	24V AC	0.3A					

Bulb Shape Glass Bulb G14, Base BA9S

- *Light bulbs come in packs of 10.
- *Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Light bulb No.	Model
18	D01200604-F1
19	D02400604-F1

Model Code



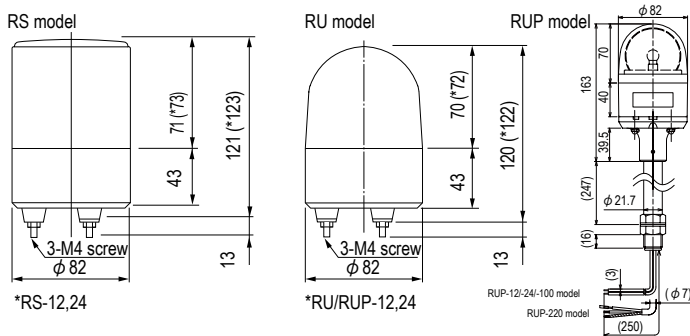
Optional Parts

For details, see pages 182 to 187.

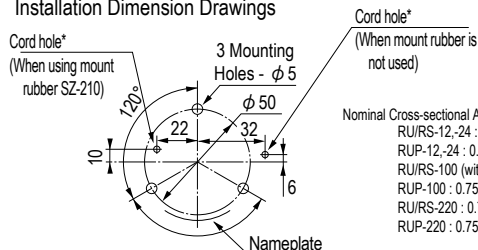
Optional Parts	Model
Mount rubber	SZ-210
Wallmount Bracket	SZ-007

- *Mount rubber cannot be used for RUP-models
- *When using a wallmount bracket, IP value is 23 even with a mount rubber.

Dimensions (mm)



Installation Dimension Drawings



*To pass a 100V outlet, a φ 30 or bigger cord hole is required.

Nominal Cross-sectional Area : Wire Type : Wire Length

RU/RS-12,-24 : 0.5mm ² : AV : 280
RUP-12,-24 : 0.5mm ² : AV : 250
RU/RS-100 (with plug) : 0.75mm ² : VCTFK : 300
RUP-100 : 0.75mm ² : VFF : 250
RU/RS-220 : 0.75mm ² : VCTF : 340
RUP-220 : 0.75mm ² : VCTF : 250

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

RH-A

RH-A model
RHB-A model
(With electronic buzzer)
RH-AUL model
RHB-AUL model
(With electronic buzzer)



RH-A model When mount rubber is used (sold separately)



Colors	Red, Amber, Green, Blue
Globe	Polycarbonate resin with superb shock resistance and heat resistance
Body	ABS resin

The RH Series features an 100mm diameter, built-in 90dB audible alarm, and automobile incandescent bulbs as a light source for high vibration resistance, ideal for moving vehicles.

- Automobile incandescent bulbs for high vibration resistance
- Built-in 90dB audible alarm
- Built-in terminal block for easy wiring
- IP55 with rubber mount (SZ-220A); IP23 without rubber mount
- Available colors: Red, Amber, Blue



Specifications

Model		Rated Voltage	Current Consumption		Number of flashes	Bulb	Number	Mass
RH	RHB		RH	RHB				
RH-12A	RHB-12A	12V DC	0.8A	0.85A	170/minute	12V 10W	9	0.4kg
RH-24A	RHB-24A	24V DC	0.5A	0.55A		24V 10W	10	
RH-24AUL	RHB-24AUL							
RH-100A	RHB-100A	100V AC	0.065A	0.115A		12V 5W	12	0.6kg
RH-120AUL	RHB-120AUL	120V AC	0.065A	0.115A				
RH-200A	RHB-200A	200V AC	0.03A	0.08A				
RH-240AUL	RHB-240AUL	240V AC	0.03A	0.08A				

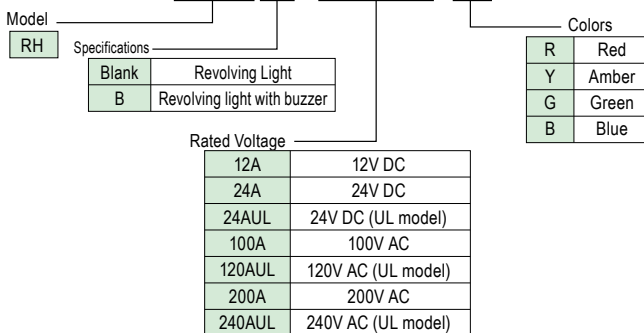
Bulb Shape Glass Bulb G18, Base BA15S

Light bulb No.	Model
9	D01201003A-F1
10	D02401003A-F1
12	D01200503A-F1

*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Model Code

RHB-24A-R



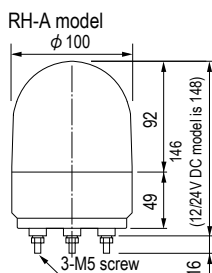
Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Mount rubber	SZ-200
Wallmount Bracket	SZ-007

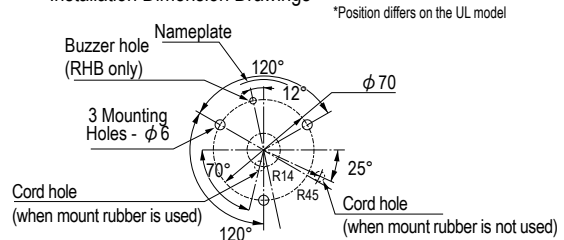
*When mount rubber is used, the buzzer sound becomes degraded, and sound pressure will deteriorate.
*When using a wallmount bracket, IP value is 23 even with a mount rubber.

Dimensions (mm)



12V, 24V specification includes a wire. (UL1430 AWG20 cord outlet is 240±30mm)

Installation Dimension Drawings



*The applicable crimp terminal has a thread hole diameter of 3 mm External shape may be used up to φ 8mm.

Small Revolving Warning Light

SKH-A

SKH-A model
SKHB-A model (with electronic buzzer)



(For watercraft, IP54) (12V, 24V only)
*SKH-102AAC excluding SKHB-24AAC

Colors	Red, Amber, Green, Blue, Purple
Globe	The material is AS resin, which is translucent and highly weather resistant.

The SKH Series features an 118mm diameter, built-in 90dB audible alarm, and automobile incandescent bulbs as a light source for high vibration resistance, ideal for moving vehicles.

- Automobile incandescent bulbs for high vibration resistance
- Built-in 90dB audible alarm
- Available colors: Red, Amber, Green, Blue

Specifications

Model		Rated Voltage	Power current		Number of flashes	Bulb		Mass
SKH model	SKHB model		SKH model	SKHB model			Number	
SKH-101A	SKHB-12A	12V DC	0.8A	0.85A	170/minute	12V 10W	9	0.4kg
SKH-102A	SKHB-24A	24V DC	0.5A	0.55A		24V 10W	10	
SKH-110A	SKHB-100A	100V AC	0.065A	0.115A		12V 5W	12	0.6kg
SKH-120A	SKHB-200A	200V AC	0.030A	0.080A		24V 10W	10	0.4kg
SKH-102AAC	SKHB-24AAC	24V AC	0.5A	0.55A	170/minute	24V 10W	10	0.4kg
Boats only SKH-102SA	—	24V DC	0.5A	—		24V 10W	10	0.4kg
SKH-110SA	—	100V AC	0.065A	—		12V 5W	12	0.6kg

Bulb Shape Glass Bulb G18, Base BA15S

Light bulb No.	Model
9	D01201003A-F1
10	D02401003A-F1
12	D01200503A-F1

* Light bulbs come in packs of 10.
* Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Model Code

SKHB-100A-R

Model: SKH

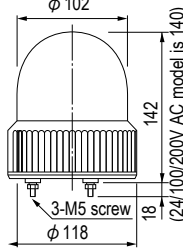
Specifications: Blank (Revolving Light), B (Revolving light with buzzer)

Rated Voltage: 12V DC, 24V DC, 24V AC, 100V AC, 200V AC

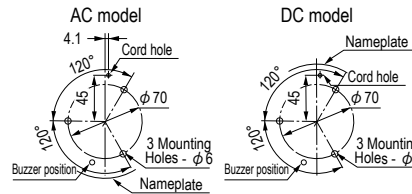
Rated Voltage	SKH	SKHB	SKH (exclusively for watercraft)
12V DC	101A	12A	—
24V DC	102A	24A	102SA
24V AC	102AAC	24AAC	—
100V AC	110A	100A	110SA
200V AC	120A	200A	—

Colors: R (Red), Y (Amber), G (Green), B (Blue), P (Purple)

Dimensions (mm)



Installation Dimension Drawings



Nominal Cross-sectional Area : Wire Type:
Lead Line Length
SKH-101A, 102A, 102AAC
0.5mm² : AV : 300
SKHB-12A, 24A, 24AAC
0.5mm² : AV : 300
SKH-110A (with plug), 120A
0.75mm² : VCTKF : 310
SKHB-100A (with plug), 200A
0.75mm² : VCTKF : 310
(Signal Wire : 0.5mm² : AV : 300)

*Please be careful, as the position of the name plate against the installation surface changes according to how the globe is fastened.
*To pass a 100V outlet, a φ 30 cord hole is required.

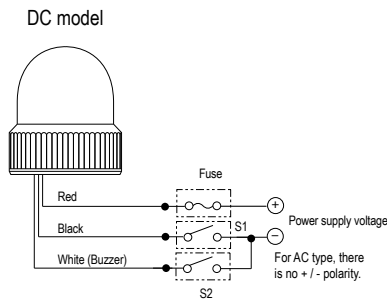
*Please send inquiries for the size of watercraft specifications (SKH-SA type).

Optional Parts

For details, see pages 182 to 187.

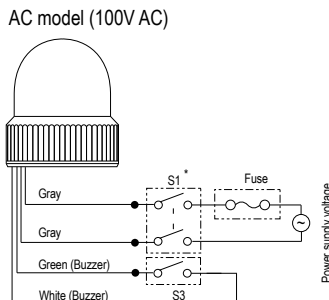
Optional Parts	Model
Wallmount Bracket	SZ-007

Wiring Diagram



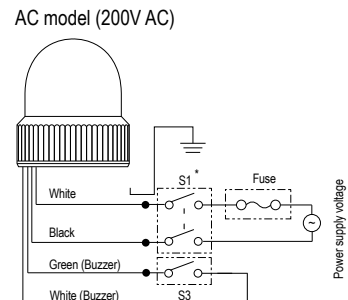
Contact S1	Contact S2	Description
ON	OFF	Revolving Light
OFF	ON	Buzzer
ON	ON	Revolving light & buzzer

*Wiring diagram is for model B.
There is no white wire for units without a buzzer.



Contact S3	Description
OFF	Revolving Light
ON	Revolving light & buzzer

* Wiring diagram is for model B.
There are no white and green wires for units without a buzzer.
Buzzer contact open circuit voltage 12V DC Short circuit current 40mA



Contact S3	Description
OFF	Revolving Light
ON	Revolving light & buzzer

* Wiring diagram is for model B.
There are no white and green wires for units without a buzzer.
Buzzer contact open circuit voltage 12V DC Short circuit current 40mA

*In addition to a two-way switch, you can also use a one-way switch.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

WH-A

WH-A model
WHB-A model
Round Globe



Colors Red, Amber, Green, Blue

Globe Polycarbonate resin with superb shock resistance and heat resistance

Body ABS resin

The WH Series features an 100mm diameter, side wall-mount design, built-in 90dB audible alarm, and automobile incandescent bulbs as a light source for high vibration resistance.

- Automobile incandescent bulbs for high vibration resistance
- Built-in 90dB audible alarm
- Built-in terminal block for easy wiring
- IP54 rating for dust and water resistance
- Available colors: Amber, Blue



(Product with a buzzer is IP23) (24V only)

Specifications

WH-A model

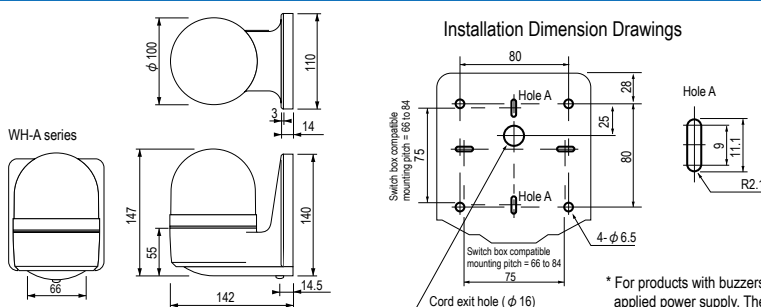
	Model	Rated Voltage	Current Consumption	Number of flashes	Bulb		Mass
	WH-A					Number	
Without buzzer	WH-24A	24V DC	0.5A	170/minute	24V 10W	10	0.55kg
	WH-100A	100V AC	0.065A		12V 5W	12	0.75kg
	WH-200A	200V AC	0.03A				
With buzzer	WHB-24A	24V DC	0.55A		24V 10W	10	0.55kg
	WHB-100A	100V AC	0.115A		12V 5W	12	0.75kg
	WHB-200A	200V AC	0.08A				

Bulb Shape Glass Bulb G18, Base BA15S

Light bulb No.	Model
10	D02401003A-F1
12	D01200503A-F1

*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

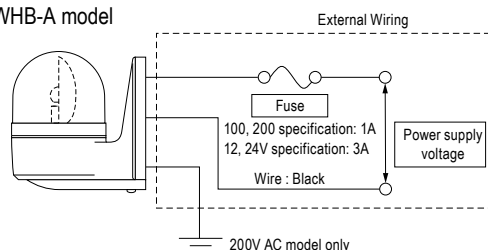
Dimensions (mm)



* For products with buzzers, the revolving light and buzzer work simultaneously with the applied power supply. They cannot be controlled separately.

Wiring Diagram

WH-A model
WHB-A model



200V AC model only

SKH-EA



Colors Red, Amber, Green, Blue

Globe The material is AS resin, which is translucent and highly weather resistant.

The SKH Series features an 100mm diameter, durable body design, and automobile incandescent bulbs as a light source for high vibration resistance, ideal for moving vehicles.

- Automobile incandescent bulbs for high vibration resistance
- Durable, weather-resistant metal and acrylic body structure
- Comes in multiple voltage types
- Available colors: Red, Amber, Green, Blue

Specifications

Model	Rated Voltage	Current Consumption	Number of flashes	Bulb		Mass
					Number	
SKH-12EA	12V DC	0.8A	170/minute	12V 10W	9	0.4kg
SKH-24EA	24V DC	0.5A		24V 10W	10	
SKH-100EA	100V AC	0.065A		12V 5W	12	0.6kg
SKH-200EA	200V AC	0.03A				

Bulb Shape Glass Bulb G18, Base BA15S

Light bulb No.	Model
9	D01201003A-F1
10	D02401003A-F1
12	D01200503A-F1

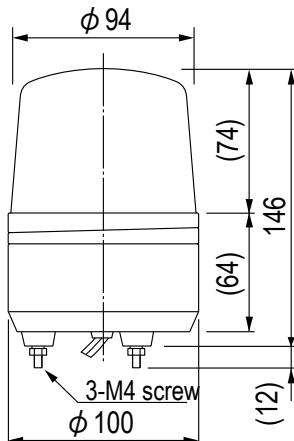
* Light bulbs come in packs of 10.
 * Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Optional Parts

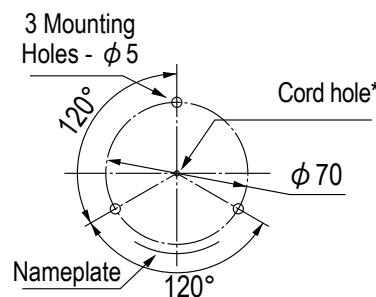
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-007

Dimensions (mm)



Installation Dimension Drawings



Nominal Cross-sectional Area : Wire Type: Lead Line Length

- SKH-12EA,24EA
0.5mm² : AV : 300
- SKH-100EA (with plug), 200EA
0.75mm² : VCTFK : 330

*To pass a 100V outlet, a $\phi 30$ cord hole is required.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

SKP-A

Colors Red, Amber, Green, Blue

Globe Melanine with superb shock resistance and heat resistance



The SKP Series features an 138mm diameter and automobile incandescent bulbs as a light source for high vibration resistance, ideal for moving vehicles.

- Automobile incandescent bulbs for high vibration resistance
- Silent and stable light rotation system
- Weather resistant and corrosion proof body design
- Available colors: Red, Amber, Green, Blue



Specifications

Model	Rated Voltage	Current Consumption	Number of flashes	Bulb		Mass
					Number	
SKP-101A	12V DC	2.6A	140/minute	12V 35W	1	0.8kg
SKP-102A	24V DC	1.2A		24V 35W	2	
SKP-104A	48V DC	0.8A		48V 35W	5	0.9kg
SKP-110A	100V AC	0.3A		120V 40W	36	
SKP-120A	200V AC	0.13A	120/minute	220V 30W	37	1.0kg

Light bulb shape... 12V/24V / Glass ball RP35 base BA15S 48V/100V/200V / Glass ball RP35 base BA15D

Light bulb No.	Model	Light bulb No.	Model
1	D01203501-F1	36	D12004024-F1
2	D02403501-F1	37	D22003024-F1
5	D04803502-F1		

*Light bulbs come in packs of 10.

*Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

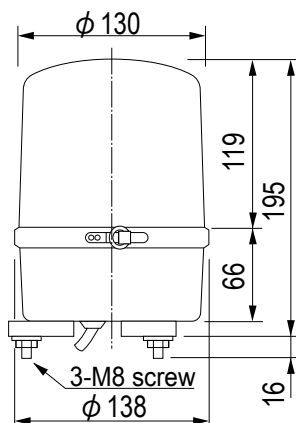
Optional Parts

For details, see pages 182 to 187.

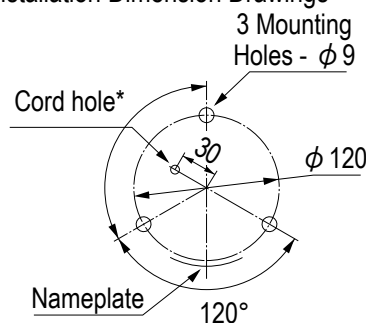
Optional Parts	Model
Rubber cover that is compliant with external projection	SKP-001
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

*Only SKP-101A will be compliant with external projection regulation using the SKP-001 model.

Dimensions (mm)



Installation Dimension Drawings



*To pass a 100V outlet, a $\phi 35$ or bigger cord hole is required.

Nominal Cross-sectional Area : Wire Type: Lead Line Length

- SKP-101A,102A,104A
1.25mm² : AVS : 270
- SKP-110A (with plug)
0.75mm² : VCT : 330
- SKP-120A
0.75mm² : VCT : 330

KP-A



Colors	Red, Amber, Green, Blue
Globe	The material is AS resin, which is translucent and highly weather resistant.

The KP Series features an 162mm diameter, splash resistant body design, and automobile incandescent bulbs as a light source for high vibration resistance, ideal for moving vehicles.

- Automobile incandescent bulbs for high vibration resistance
- Weather resistant and corrosion proof body design
- Able to operate in temperatures as low as -30
- Available colors: Red, Amber, Green, Blue

Specifications

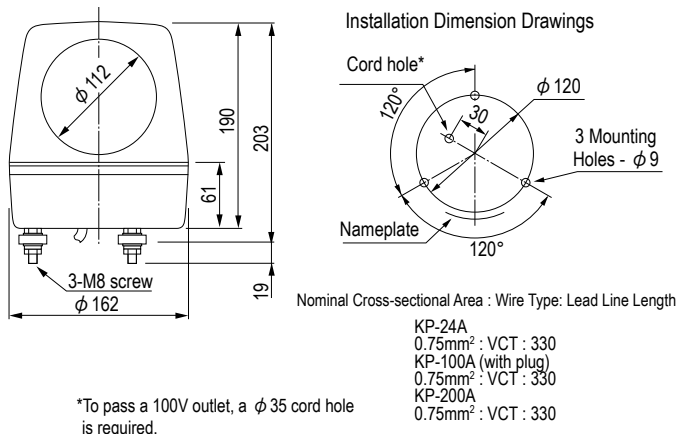
Model	Rated Voltage	Current Consumption	Number of flashes	Bulb		Mass
					Number	
KP-24A	24V DC	1.2A	140/minute	24V 35W	2	1.0kg
KP-100A	100V AC	0.3A		120V 40W	36	1.2kg
KP-200A	200V AC	0.13A	120/minute	220V 30W	37	1.2kg

Light bulb form... 24V / Glass ball RP35 base BA15S 100V/200V Glass ball RP35 base BA15D
 Light bulb No. Model Light bulb No. Model
 2 D02403501-F1 37 D22003024-F1
 36 D12004024-F1
 *Light bulbs come in packs of 10.
 *Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Optional Parts

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

Dimensions (mm)



SKL-A

SKL-CA model
 SKL-SA model (stainless steel)



Colors	Red, Amber, Green *, Blue*
Globe	Polycarbonate resin with superb shock resistance and heat resistance
Body	CA type: Steel plate (Coating) SA type: Non-rusting stainless steel (SUS 304)

The SKL Series features an 162mm diameter, comes in multiple voltage types, and automobile incandescent bulbs as a light source for high vibration resistance, ideal for moving vehicles.

- Automobile incandescent bulbs for high vibration resistance
- Weather resistant and corrosion proof body design
- Available colors: Red, Amber, Green, Blue

Specifications

Model	Rated Voltage	Current Consumption	Number of flashes	Bulb		Mass
					Number	
SKL-101CA	12V DC	2.6A	140/minute	12V 35W	1	1.3kg
SKL-101SA				24V 35W	2	
SKL-102CA	24V DC	1.2A	140/minute	24V 35W	2	1.4kg
SKL-102SA				48V 35W	5	
SKL-104CA	48V DC	0.8A	120V 40W	48V 35W	5	1.4kg
SKL-110CA	100V AC	0.3A		36	1.5kg	
SKL-110SA	100V AC	0.3A	36			
SKL-120CA	200V AC	0.13A	120/minute	220V 30W	37	1.5kg
SKL-120SA				220V 30W	37	
SKL-102ACSA	24V AC	1.2A	140/minute	24V 35W	2	1.4kg

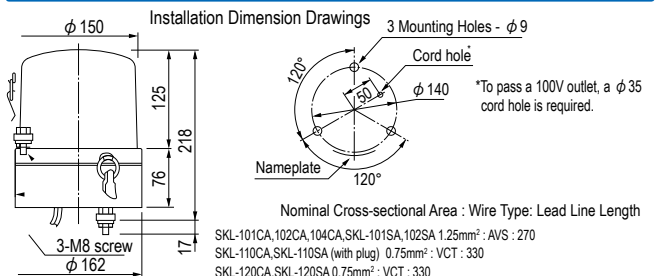
Light bulb shape... 12V/24V / Glass ball RP35 base BA15S 48V/100V/200V / Glass ball RP35 base BA15D
 Light bulb No. Model Light bulb No. Model
 D01203501-F1 36 D12004024-F1
 D02403501-F1 37 D22003024-F1
 D04803502-F1
 *Light bulbs come in packs of 10.
 *Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Optional Parts

Optional Parts	Model
Rubber cover that is compliant with external projection	HKM-001
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

*Using HKM-001, only SKL-101□A is compliant with external projection regulations.

Dimensions (mm)



SKC-A

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



Colors Red, Amber, Blue, Green

Globe The material is AS resin, which is translucent and highly weather resistant.

The SKC Series features an 187mm diameter, comes in multiple voltage types, and automobile incandescent bulbs as a light source for high vibration resistance, ideal for moving vehicles.

- Belt-drive rotation system for silent and stable signaling
- Weather resistant and corrosion proof body design
- Available colors: Red, Amber, Green, Blue

Specifications

Model	Rated Voltage	Current Consumption	Number of flashes	Bulb		Mass
					Number	
SKC-201A	12V DC	2.6A	200/minute	12V 35W	1	1.6kg
SKC-202A	24V DC	1.2A		24V 35W	2	
SKC-210A	100V AC	0.4A	160/minute	120V 40W	36	1.8kg
SKC-220A	200V AC	0.2A		220V 30W	37	

Light bulb shape... 12V/24V / Glass ball RP35 base BA15S 100V/200V Glass bulb RP35 Base BA15D

Light bulb No.	Model	Light bulb No.	Model
1	D01203501-F1	36	D12004024-F1
2	D02403501-F1	37	D22003024-F1

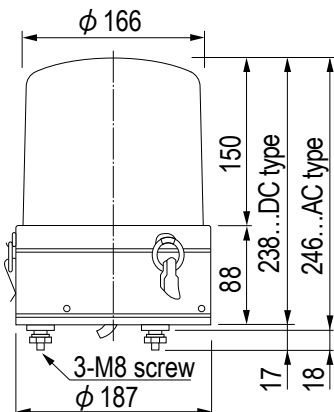
*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Optional Parts

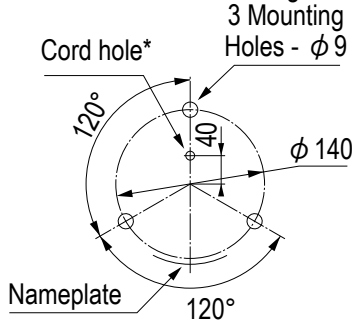
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-008

Dimensions (mm)



Installation Dimension Drawings



Nominal Cross-sectional Area: Wire Type: Lead Line Length

- SKC-201A,202A
1.25mm² : AVS : 250
- SKC-210A (with plug)
0.75mm² : VCT : 330
- SKC-220A
0.75mm² : VCT : 330

*To pass a 100V outlet, a $\phi 35$ cord hole is required.

HP



Colors	Red, Amber, Blue
Globe	The material is AS resin, which is translucent and highly weather resistant.
Body	ABS resin

The HP Series features an 186mm diameter, comes in multiple voltage types, and halogen bulbs as a light source.

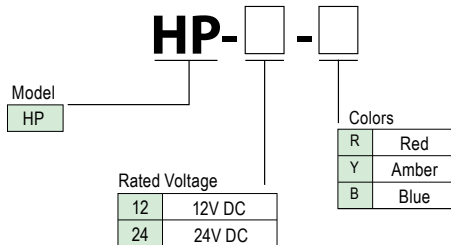
- Halogen bulb light source; more efficient than incandescent bulb types
- Durable, weather resistant, ABS structure
- Available colors: Red, Amber, Blue

IP23 186φ

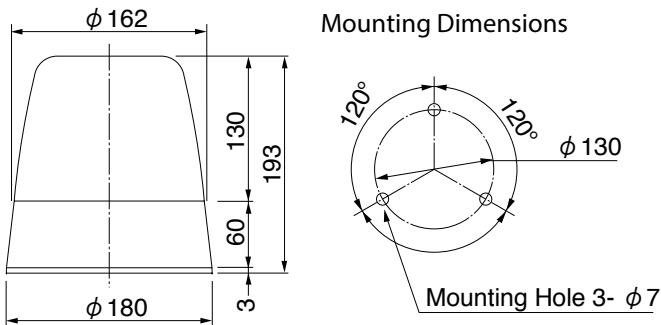
Specifications

Model	Rated Voltage	Halogen Bulb	Flash Rate (fpm)	Mass
		Bulb sold separately		
HP-12	12V/24V DC	0.5A	160	1.0kg
HP-24				

Model Code



Dimensions (mm)



Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

KG

Colors Red (KG-100 model only) Amber

Globe A polystyrene resin * that has superior weather resistance and translucency.

The KG Series features an 186mm diameter and comes in multiple voltage types, and incandescent bulbs as a light source.

- Belt-drive rotation system for silent and stable signaling
- Large, 2-sided reflecting mirror for intense rotating light flashing
- Weather resistant and corrosion proof body design
- Available colors: Red, Amber



IP23 186φ

Specifications

Model	Rated Voltage	Current Consumption	Number of flashes	Light bulb		Mass
					Number	
KG-12	12V DC	2.7A	180/minute	12V 35W	1	0.7kg
KG-24	24V DC	1.2A		24V 35W	2	
KG-100	100V AC	0.32A		120V 40W	36	0.9kg

Light bulb shape... 12V/24V / Glass ball RP35 Base BA15S 100V Glass ball RP35 Base BA15D

Light bulb No.	Model
1	D01203501-F1
2	D02403501-F1
36	D12004024-F1

*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued.

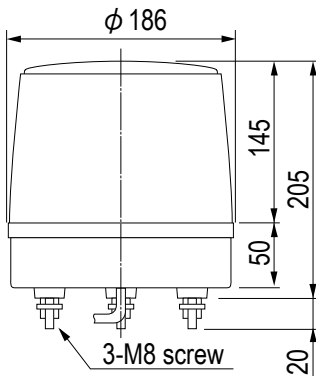
We ask for your understanding in this regard.

Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

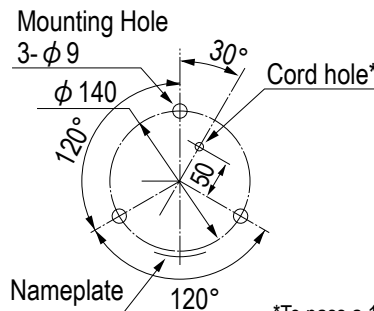
Dimensions (mm)



Installation Dimension Drawings




Nominal Cross-sectional Area : Wire Type: Lead Line Length

KG-12/24 : 1.75mm² : AV : 230
KG-100 (with plug): 0.75mm² : VCT : 450



*To pass a 100V outlet, a φ 30 or bigger cord hole is required.

Cube Tower

Page number	Page 131			Page 133				Page 135		
Model Name	Small LED Cube Tower			Small Cube Tower				Cube Tower		
Model	KES			KJS				KJ		
Product image										
Rated Voltage	24V DC	100V AC	220V AC	12V DC	24V DC	100V AC	220V AC	24V DC	100V AC	220V AC
Size (mm)		□82			□82			□116		
IP		23			23			23		
Buzzer sound pressure in dB (at a distance of 1m)		85			85			85		
Body		ABS			ABS			ABS		
Globe		AS			AS			AS		
Light Source		LED			Light bulb (with spare light bulb)			Light bulb (with spare light bulb)		
Open collector		NPN			NPN					

* For specifications, see the product page.

Network

Signal Tower

Signal Light

Revolving
Warning Light

Cube Tower

Audibles

Hybrid
Signaling
Devices

LED
Illumination

Options

KES

KES type
KESB type <with buzzer>



Colors	Red, Amber, Green
Globe	The material is AS resin, which is translucent and highly weather resistant.
Volume	Maximum 85dB (at 1m) (volume not adjustable)

The KES Series features an 82mm width, maintenance-free LEDs, and a rotating motor for enhanced signaling.

- Built-in 85dB audible alarm
- Built-in, motor-based, rotating LED light
- Weather resistant body design
- NPN type
- Available colors: Red, Amber, Green

- Standard Colors:
1-Tier model / Red (-R), Amber (-Y), Green (-G)
2-Tier model / Red-Amber (-RY), Red-Green (-RG)
3-Tier model / Red-Amber-Green (-RYG)

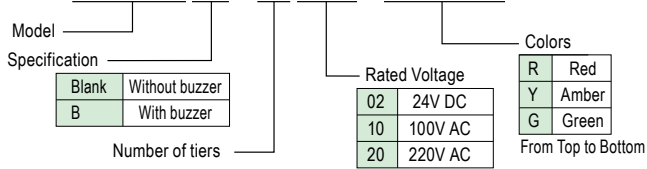
Specification

Number of tiers	Model	Rated Voltage	Power Consumption	
			KES type	KESB type
1-Tier model	KES-102	24V DC	6.5W	7.5W
	KESB-102			
	KES/KESB-110	100V AC	6.4W	7.3W
2-Tier model	KES/KESB-120	220V AC	13.0W	13.0W
	KES/KESB-202	24V DC		
	KES/KESB-210	100V AC	10.5W	11.0W
3-Tier model	KES/KESB-220	220V AC	19.5W	19.5W
	KES/KESB-302	24V DC		
	KES/KESB-310	100V AC	14.0W	15.0W
	KES/KESB-320	220V AC		

Number of flashes . . . 100/min

Model Code

KESB-302-RYG

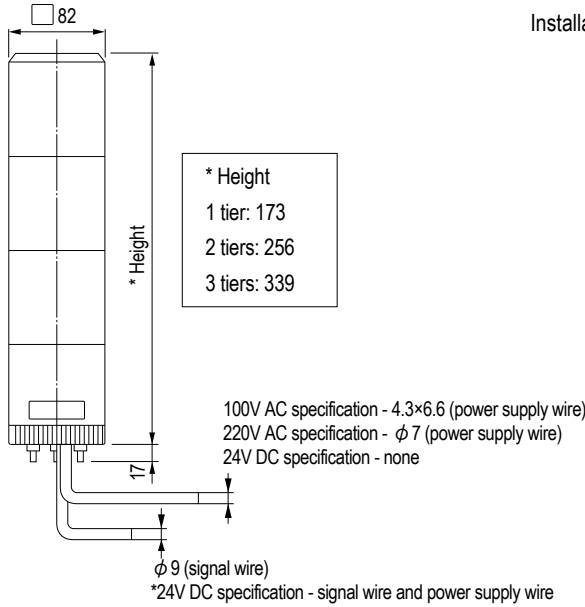


Optional Parts

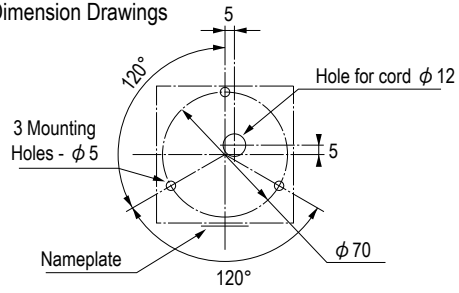
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-007

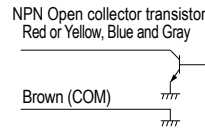
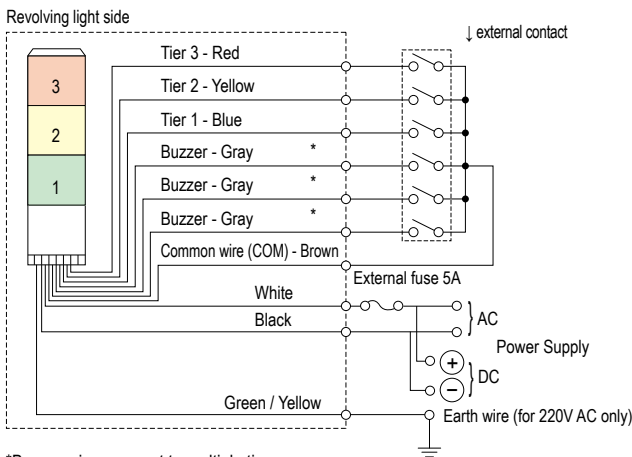
Dimensions (mm)



Installation Dimension Drawings



Wiring Diagram



Transistor Capacity (Recommended) (NPN)

Model	KES (KESB)
Current Capacity	$I_c \geq 50mA$ ($I_c \geq 300mA$)
Withstand Voltage	$V_c \geq 45V$

Signal wire current and contact capacity per tier

Voltage	Revolving light wire current	Buzzer wire current	Revolving light wire contact capacity	Buzzer wire contact capacity
24V DC	34mA	80mA	50mA or more	300mA or more
100V AC				
220V AC				

Nominal Cross-sectional Area : Wire Type: Wire Length

Signal wire AWG22 : UL1007 : 250mm
 24V DC power supply wire AWG20 : UL1007 : 280mm
 AC100V power supply wire 0.75mm² : VCTFK : 280mm
 AC220V power supply wire 0.75mm² : VCTF : 280mm

- *Buzzer wire goes out to multiple tiers.
- *Only 1 buzzer sound. (continuous beep sound)
- *Customer cannot change the color scheme or increase/decrease tiers.
- *KES does not have a buzzer (Gray) wire.
- *When finished wiring, please be sure to insulate the tip of the unused wire with insulation tape.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

KJS

KJS type
KJSB type <with buzzer>



Colors	Red, Amber, Green, Blue
Globe	The material is AS resin, which is translucent and highly weather resistant.
Volume	Maximum 85dB (at 1m) (volume not adjustable)

The KJS Series features an 82mm width, a built-in 85dB audible alarm, and incandescent bulbs as the light source.

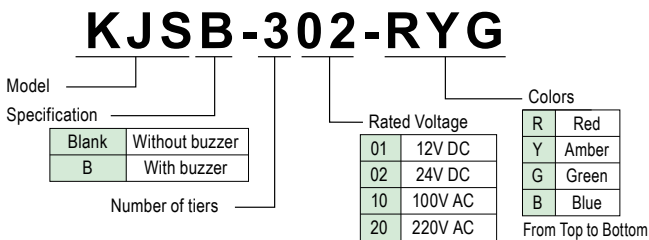
- Built-in 85dB audible alarm
- Light flash rate of 160 per minute
- Weather resistant body design
- NPN type
- Comes in multiple voltages
- Available colors: Red, Amber, Green, Blue
- Standard Colors:
Single-tier type/red (-R), yellow (-Y), green (-G), blue (-B)
2-Tier model / Red-Amber (-RY), Red-Green (-RG)
3-Tier model / Red-Amber-Green (-RYG)

Specification

Number of tiers	Model	Rated Voltage	Power Consumption		Bulb	Number
			KJS type	KJSB type		
1-Tier model	KJS(B)-101	12V DC	Max.5.8W	Max.6.1W	12V 10W	9
	KJS(B)-102	24V DC	Max.13.3W	Max.14.4W	24V 10W	10
	KJS(B)-110	100V AC	Max.9.0W	Max.9.5W	12V 5W	12
	KJS(B)-120	220V AC				
2-Tier model	KJS(B)-201	12V DC	Max.11.5W	Max.11.9W	12V 10W	9
	KJS(B)-202	24V DC	Max.26.5W	Max.27.6W	24V 10W	10
	KJS(B)-210	100V AC	Max.17.2W	Max.17.8W	12V 5W	12
	KJS(B)-220	220V AC				
3-Tier model	KJS-301	12V DC	Max.17.3W	Max.17.6W	12V 10W	9
	KJS-302	24V DC	Max.39.7W	Max.40.9W	24V 10W	10
	KJS(B)-310	100V AC	Max.25.8W	Max.26.4W	12V 5W	12
	KJS(B)-320	220V AC				

*Standard stock products do not have a buzzer.
Bulb Shape ··· glass bulb G18; base BA15S; number of flashes ··· 160/min

Model Code



Optional Parts

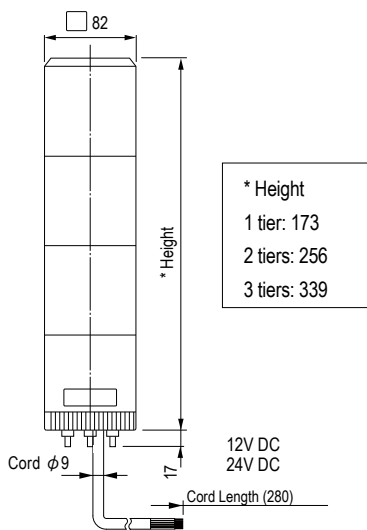
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-007

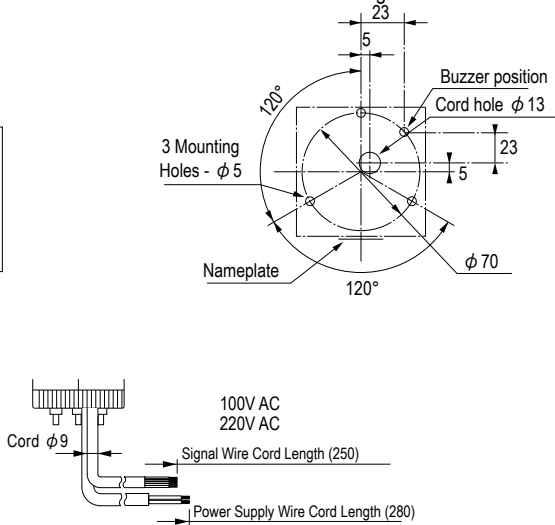
Light bulb No.	Model
9	D01201003A-F1
10	D02401003A-F1
12	D01200503A-F1

*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued.
We ask for your understanding in this regard.

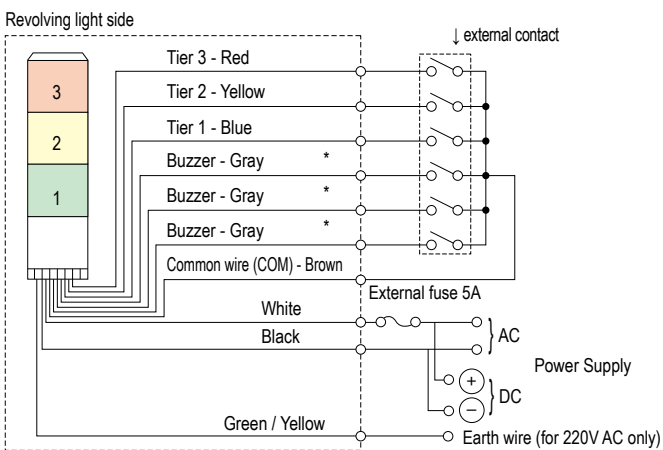
Dimensions (mm)



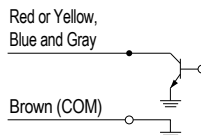
Installation Dimension Drawings



Wiring Diagram



NPN Open collector transistor



Transistor capacity (recommended) (NPN)

Model	KJS (KJSB)
Current Capacity	Ic ≥ 50mA (Ic ≥ 300mA)
Withstand Voltage	Vc ≥ 45V

Signal wire current and contact capacity per tier

Voltage	Revolving light wire current	Buzzer wire current	Revolving light wire contact capacity	Buzzer wire contact capacity
12V DC	34mA	80mA	50mA or more	300mA or more
24V DC				
100V AC				
220V AC				

Nominal Cross-sectional Area : Wire Type : Wire Length
 12/24V DC power supply wire 0.5mm² : UL1007 : 280mm
 100V AC power supply wire 0.75mm² : VCTFK : 280mm
 220V AC power wire 0.75mm² : VCTF : 280mm

- *Buzzer wire goes out to multiple tiers.
- *Only 1 buzzer sound. (continuous beep sound)
- *Customer cannot increase/decrease tiers.
- *KJS does not have a buzzer (Gray) wire.
- *When finished wiring, please be sure to insulate the tip of the unused wire with insulation tape.

KJ type
KJB type <with buzzer>



Colors Red, Amber, Green, Blue

Globe The material is AS resin, which is translucent and highly weather resistant.

Volume Maximum 85dB (at 1m) (volume adjustable within 70-85dB (at 1m))

The KJS Series features an 116mm width, a built-in 85dB audible alarm, and incandescent bulbs as the light source.

- Built-in 85dB audible alarm
- Light flash rate of 160 per minute
- Weather resistant body design
- Comes in multiple voltages
- Available colors: Red, Amber, Green, Blue

• Standard Colors:

Single-tier type/Red (-R), Amber (-Y), Green (-G), Blue (-B)

2-Tier model / Red-Amber (-RY), Red-Green (-RG)

3-Tier model / Red-Amber-Green (-RYG)

4-Tier model / Red-Amber-Green-Blue (-RYGB)

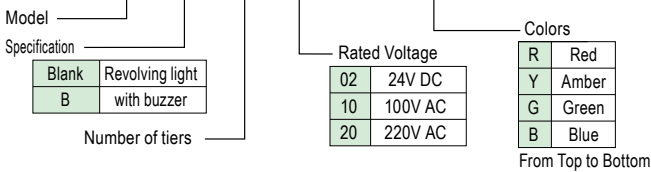
Specification

Number of tiers	Model	Rated Voltage	Power Consumption		Bulb	Number
			KJ type	KJB type		
1-Tier model	KJ(B)-102	24V DC	Max.13.3W	Max.13.9W	24V 10W	10
	KJ(B)-110	100V AC	Max.7.5W	Max.7.8W	12V 5W	12
	KJ(B)-120	220V AC				
2-Tier model	KJ(B)-202	24V DC	Max.26.6W	Max.27.2W	24V 10W	10
	KJ(B)-210	100V AC	Max.12.5W	Max.12.9W	12V 5W	12
	KJ(B)-220	220V AC				
3-Tier model	KJ(B)-302	24V DC	Max.40.0W	Max.40.6W	24V 10W	10
	KJ(B)-310	100V AC	Max.17.3W	Max.17.7W	12V 5W	12
	KJ(B)-320	220V AC				
4-Tier model	KJ(B)-402	24V DC	Max.53.3W	Max.53.9W	24V 10W	10
	KJ(B)-410	100V AC	Max.22.1W	Max.22.5W	12V 5W	12
	KJ(B)-420	220V AC				

Bulb Shape · · · glass bulb G18; base BA15S; number of flashes · · · 130/min

Model Code

KJB-420-RYGB



Optional Parts

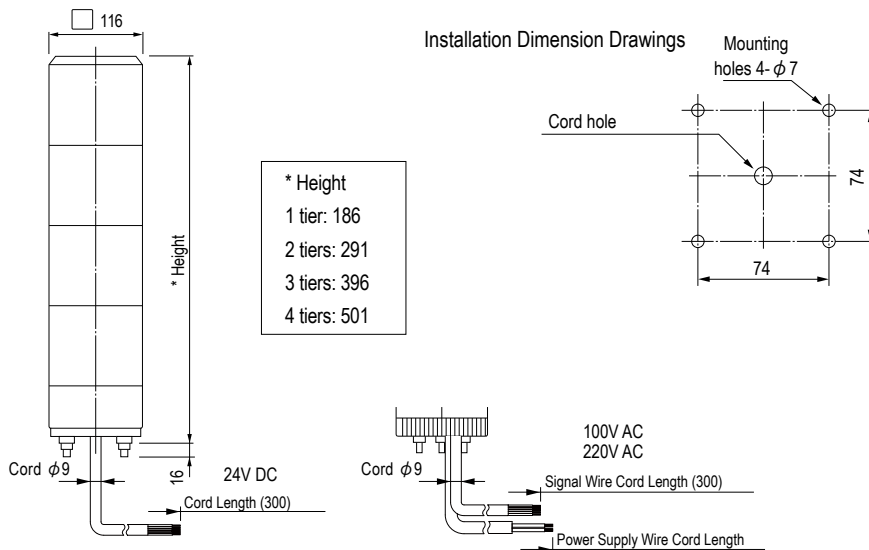
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

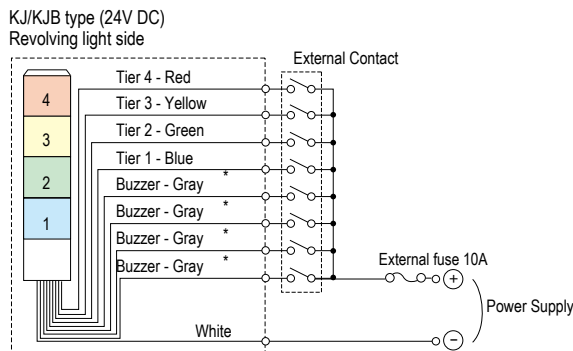
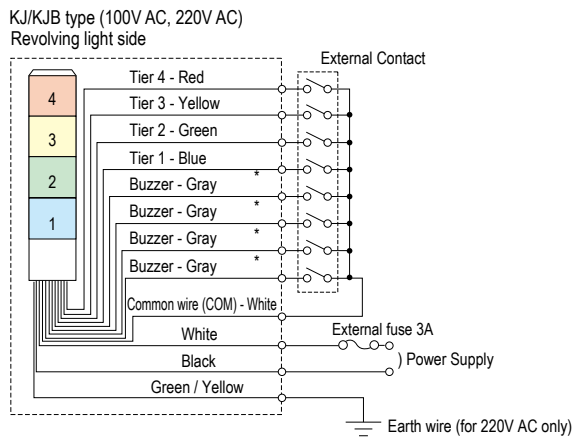
Light bulb No.	Model
10	D02401003A-F1
12	D01200503A-F1

*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued.
We ask for your understanding in this regard.

Dimensions (mm)



Wiring Diagram



■ Signal wire current and contact capacity per tier

Voltage	Signal Wire Current	Inrush Current	External Contact Capacity	Buzzer wire current	Buzzer inrush current
24V DC	450mA	4.5A	50mA or more	Current 30mA	Inrush current 0.3A
AC100V/AC220V					

Nominal Cross-sectional Area : Wire Type : Wire Length

24V DC power supply wire 0.5mm² : UL1430 : 300mm




100V AC 0.75mm² : VCTF : 280mm



220V AC power wire 0.75mm² : VCTF : 280mm

Signal wire 0.3mm² : UL1430 : 300mm

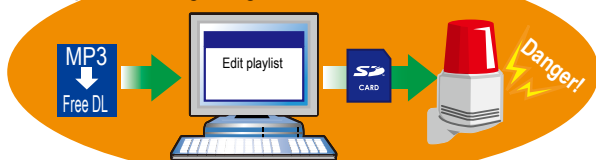
- *Buzzer wire goes out to multiple tiers.
- *Only 1 buzzer sound. (continuous beep sound)
- *Customer cannot increase/decrease tiers.
- *KJ does not have a buzzer (Gray) wire.
- *When finished wiring, please be sure to insulate the tip of the unused wire with insulation tape.
- *KJ single-tier type (100V AC, 220V AC) has driving power supply. (Has power supply wire only; no signal wire)

Audible Alarms and MP3 Voice Annunciators

Page number	Page 139				Page 140	Page 141	Page 143	
Model Name	Audible Alarm				Slim MP3 Voice Annunciator		Audible Alarm	
Model	BM				BSV-L	BSV	BD-A	
Product image								
Rated Voltage	24V AC/DC	100V AC	120V AC	220V AC	12-24V DC	12-24V DC	12-24V DC	100/220V AC
Size (mm)	φ 30				□75	□75	□80	
IP	34 (D type)				54	54	54	
Sound pressure dB (at 1m)	90 (H type)		(H type)		87	87	90	
Case	ABS				ABS	ABS	ABS	
Terminal Block	○						○	
Number of tones	2				15	15	32	
Recording method					MP3	MP3		
Maximum Playback Time					520 s	63 s		
Message editing					○	○		
Maximum number of messages								
Number of channels (bit input)					4	4	○	
Number of channels (binary input)					15	15		
Test mode								
Sound Reduction					○	○		
Open collector					Either NPN or PNP	Either NPN or PNP	NPN	
CE Marking	○				○	○	○	○
RoHS					○	○		○
UL standards					○	○	○	
Switch box compatible								
Built-in amp output								

Page number	Page 151					
Model Name	Audible Alarm Horn			MP3 Voice Annunciator Horn		
Model	EHS			EHV		
Product image						
Rated Voltage	12-24V DC	12-48V DC	100-240V AC	12-24V DC	12-48V DC	100-240V AC
Size (mm)						
IP	65			65		
Sound pressure dB (at 1m)	110			110		
Case	PC			PC		
Terminal Block	Terminal block or cable			Terminal block or cable		
Number of tones	32			63		
Recording method				MP3		
Maximum Playback Time				220 s		
Message editing				○		
Maximum number of messages						
Number of channels (bit input)	8			8		
Number of channels (binary input)	32			63		
Test mode						
Sound Reduction	○			○		
Open collector	NPN/PNP		NPN	NPN/PNP		NPN
CE Marking	○	○		○	○	
RoHS	○			○		
UL standards	○		○	○		○
Switch box compatible						
Built-in amp output						

Simple message registration with various tools







<https://www.patlite.com/oto/index0910.html>

SD card slot

Messages can be changed using an SD card.



Page number	Page 145		Page 147			Page 149		
Model Name	MP3 Voice Annunciator		Audible Alarm			MP3 Voice Annunciator		
Model	BDV		BK			BKV		
Product image								
Rated Voltage	12-24V DC	100/220V AC	12-24V DC	100V AC	220V AC	12-24V DC	100V AC	220V AC
Size (mm)	□80		□120			□120		
IP	54		54			54		
Sound pressure dB (at 1m)	87		95			95		
Case	ABS		ABS			ABS		
Terminal Block	○		○			○		
Number of tones			32					
Recording method	MP3					MP3		
Maximum Playback Time	63 s					63 s		
Message editing	○					○		
Maximum number of messages								
Number of channels (bit input)	4		8			5		
Number of channels (binary input)	15		32			31		
Test mode	○		○			○		
Sound Reduction								
Open collector	NPN		NPN			NPN		
CE Marking	○		○			○		
RoHS	○		○			○		
UL standards								
Switch box compatible								
Built-in amp output								

Page number	Page 153
Model Name	MP3 Player Circuit Board
Model	FV-127JP
Product image	
Rated Voltage	24V DC
Size (mm)	100×144
IP	
Sound pressure dB (at 1m)	
Case	
Terminal Block	○
Number of tones	
Recording method	MP3
Maximum Playback Time	240 minutes (when using SD card)
Message editing	○
Maximum number of messages	127
Number of channels (bit input)	7
Number of channels (binary input)	127
Test mode	
Sound Reduction	
Open collector	○
CE Marking	
RoHS	○
UL standards	
Switch box compatible	
Built-in amp output	4W

* For specifications, see the product page.

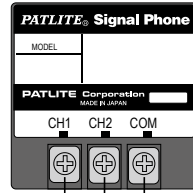
[Use of Copyrighted Material]

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded for Type-A, Type-C and Type-D melody charts outside of Japan. Therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. Melody chart Type-E is recommended for use outside of Japan as this playlist does not include copyrighted music or songs, and permission is not required.

BM

BM type <standard type>
 BM-H type <maximum volume type>
 BM-D type <Splash resistant type>

D type only



Back
Terminal Block



(BM-H type) (BM-D type) (only 24V)

The BM Series features a compact design with a 30mm diameter speaker, comes loaded with 2 distinct tones with a 90dB sound output.

- Ultra-small, lightweight, audible with up to 90dB sound output
- 2 built-in sound tones to suitable for emergency alarms
- Up to 90dB sound output at 1m
- Designed for indoor mounting on a wall up to 7mm thick
- Can be operated by switching on/off power to the unit
- NPN/PNP types

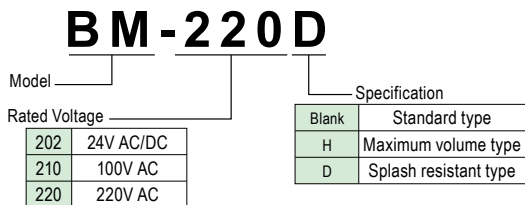
Channel	Channel 1	Channel 2
Tone	Intermittent Buzzer	Continuous Buzzer

Specification

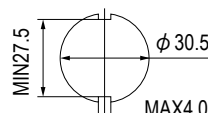
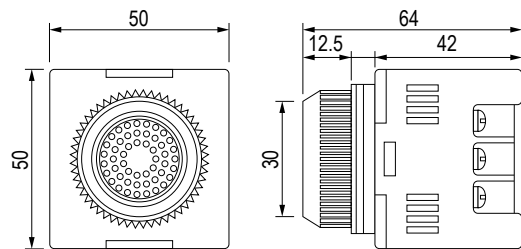
Model	Rated Voltage	Operating Voltage Range	Power Consumption	Sound Pressure Level	External Contact Capacity	Operating Temperature Range	Contact Input Method	Playback Channel	Protection Rating	Mass
Standard type	BM-202	24V AC/DC	24V AC/DC (±10%)	0.4W	Maximum 80 dB (at 1m)	100mA or more	-10°C to +60°C (humidity 85% or less)	Power supply input method	2	IP30 (only the front)
	BM-210	100V AC	100V AC (±10%)	2.5W	Maximum 85dB (at 1m) 990 - 1228Hz					
	BM-220	220V AC	220V AC (±10%)	3.5W						
Maximum volume type	BM-202H	24V AC/DC	24V AC/DC (±10%)	0.4W	Maximum 85 dB (at 1m)					
	BM-210H	100V AC	100V AC (±10%)	2.5W	Maximum 90dB (at 1m) 3803- 4715Hz					
	BM-220H	220V AC	220V AC (±10%)	3.5W						
Splash resistant type	BM-202D	24V AC/DC	24V AC/DC (±10%)	0.4W	Maximum 75 dB (at 1m)	IP34 (only the front)				
	BM-210D	100V AC	100V AC (±10%)	2.5W	Maximum 80dB (at 1m) 990- 1228Hz					
	BM-220D	220V AC	220V AC (±10%)	3.5W						

(Note) The indicated sound pressure level is at maximum volume and the actual level may be lower than the indicated sound pressure level due to tone and voltage fluctuations.
 *When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone.

Model Code

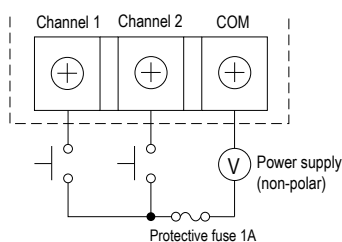


Dimensions (mm)



Board thickness = t; 7mm or less
 Open with a ϕ 30.5mm hole if the tab is not necessary.

Wiring Diagram



■ Tone order of priority

Channel 1 > Channel 2

*If multiple signals are input simultaneously, it will prioritize Channel 1.

BSV-L



-W (off-white)

-D (off-dark gray)

-S (Silver)

Simple message registration with various tools



The BSV-L Series features programmable voice signaling, an ultra-thin design and up to 520 seconds playback time with a 87dB sound output.

- Ultra-thin 19.9mm profile
- Maximum total playback time of 520 seconds
- Manual volume control located on back of unit and can also be adjusted by input signal
- IP54 rating for dust and water resistance
- NPN/PNP compatible



Synthetic sound

Full scale



Panel mounting

Wall mounting

Compatible with multilingual voice guidance

- Scenario: Commercial facility, public facility, transportation facility, tourist site
- Application: facility guidance, event guidance, evacuation order, exhibit explanation

4 times the playback time for playback in 4 languages



With service enhancements based on multilingual support at commercial facilities, transportation facilities, and tourist sites on the rise, providing the voice guidance in the 4 languages of Japanese, English, Chinese, and Korean will require about 4 times the one language playback time. The BSV-L type enables a maximum 520 seconds playback, so easily ensures capacity for multilingual messages.

Many different messages in a single unit

- Scenario: Public washroom, elevator, escalator
- Application: guidance on usage of facilities

Support facility use with voice guidance



Support elderly and disabled users by providing voice guidance to enable them to use the facilities with ease. For example, at the entrance to public washrooms you can use the speaker to provide location and information of the multipurpose washrooms.

Specification

Model	Corresponding Transistor	Rated Voltage	Operating Voltage Range	Maximum Power Consumption	Sound Pressure Level	Operating Temperature Range	Maximum Seconds of Playback	Playback Channel	Protection Rating	Mass	Color of Body Front Cover	Registered Data
BSV-24NLM	NPN transistor	12-24V DC	10.8 - 26.4V DC	3.5W	Maximum 87dB (at 1m) 1kHz sine wave playback	-10°C - +50°C (humidity 85% or less)	520 s	4 (bit input) 15 (binary input)	IP54 Only forward panel-mounted front	100g ±10%	Off-white (-W) Off-dark gray (-D) Silver (-S)	Voice
BSV-24NL								Alarm				
BSV-24PLM	PNP transistor	12-24V DC	10.8 - 26.4V DC	3.5W	Maximum 87dB (at 1m) 1kHz sine wave playback	-10°C - +50°C (humidity 85% or less)	520 s	*3 (bit input) and 7 (binary input) when used with sound reduction feature.	IP54 Only forward panel-mounted front	100g ±10%	Off-white (-W) Off-dark gray (-D) Silver (-S)	Voice
BSV-24PL								Alarm				

Audio files: MPEG1-Audio Layer III (mp3) standard bitrate: 64kbit/s, Fs=44.1kHz

(Note) The indicated sound pressure level is the maximum volume (synthetic sound type: sine wave (1KHz)) and the actual level may be lower than the indicated sound pressure level due to message content, tone, and voltage fluctuations.

*When using multiple units, there may be variations in the playback sound even when started simultaneously with the tone. This product is not for mounting on a vehicle.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

BSV



-W (off-white)

-D (off-dark gray)

-S (Silver)

Simple message registration with various tools



The BSV Series features programmable voice signaling, an ultra-thin design and 15 built-in alarm sounds with a 87dB sound output.

- Ultra-thin 19.9mm profile
- 15 built-in standard alarm sound options
- Up to 87dB sound output at 1m
- Manual volume control located on back of unit and can also be adjusted by input signal
- IP54 rating for dust and water resistance
- NPN/PNP compatible



Synthetic sound

Full scale


 Panel mounting

 Wall mounting


Standard equipped with an SD card slot. Able to rewrite mp3 data on an SD card.
In addition to rewriting data using existing dedicated application software, this system is able to rewrite data just by changing the file name of mp3 data without having to use dedicated software.

- Plays maximum 15 messages (BSV-M type)
- 15 built-in standard alarm sounds (BSV type)

Contains 15 standard alarm sounds.

No.1	Chime	No.2	Beep	No.3	Stutter	No.4	Bell	No.5	Yelp
No.6	Rapid Hi-Lo	No.7	Melody Chime	No.8	Synthesized Piano	No.9	Synthesized Bell	No.10	Stutter & Bell
No.11	Synthesized Melody	No.12	Call Sign	No.13	Inverted Reveille x3	No.14	Galactic Motor	No.15	Two Tone

*All standard alarm sounds and mp3 data in the main unit memory is deleted when rewriting a message.

- Multicolored operation mode

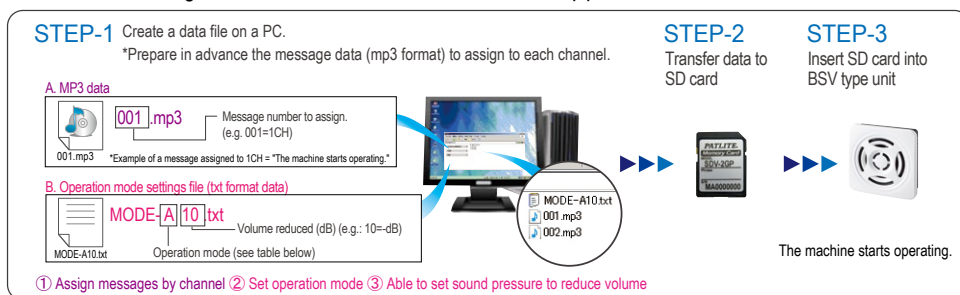
Variety of 8 operation modes.

Operating Mode					
A	Bit input and normal playback	C	Bit input and hold playback	E	Binary input and normal playback
B	Playback prioritizing bit input and subsequent input	D	Bit input and memory playback	F	Playback prioritizing binary input and subsequent input
G	Binary input and hold playback	H	Binary input and memory playback		

*Changing operation modes requires an SD card (SDV-2GP sold separately). Operation is not guaranteed when using other types of SD cards.

*While initial registered alarm data includes 15 sounds, operation mode must be changed to binary input when using all of them.

- Data rewriting method without the dedicated application.



Using the special application software enables additional features, such as produce a combination of messages and make individual volume adjustments.

Specification

Model	Corresponding Transistor	Rated Voltage	Operating Voltage Range	Maximum Power Consumption	Sound Pressure Level	Operating Temperature Range	Maximum Seconds of Playback	Playback Channel	Protection Rating	Mass	Color of Body Front Cover	Registered Data
BSV-24NM	NPN transistor	12-24V DC	10.8 - 26.4V DC	3.5W	Maximum 87dB (at 1m) 1kHz sine wave playback	-10°C - +50°C (humidity 85% or less)	63 s	4 (bit input) 15 (binary input) *3 (bit input) and 7 (binary input) when used with sound reduction feature.	IP54 Only forward panel-mounted front	100g ±10%	Off-white (-W) Off-dark gray (-D) Silver (-S)	Voice
BSV-24N-W/D												Alarm
BSV-24PM	PNP transistor											Voice
BSV-24P-W												Alarm

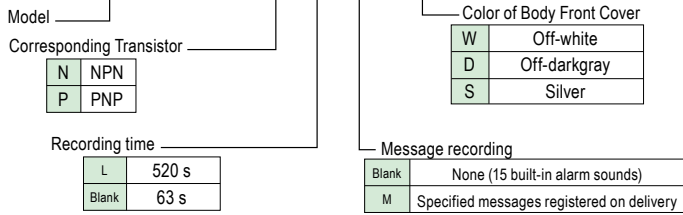
Voice files: MPEG1-audio Layer III (mp3), standard bit rate: 64kbit/s, Fs=44.1kHz

(Note) The indicated sound pressure level is the maximum volume (synthesized sound type: sine wave (1kHz)) and the actual level may be lower than the indicated sound pressure level due to message content, tone, and voltage fluctuations.

*When using multiple units, there may be variations in the play back sound even when started simultaneously with the tone. This product is not intended for the use of mounting on a vehicle.

Model Code

BSV-24NLM-W

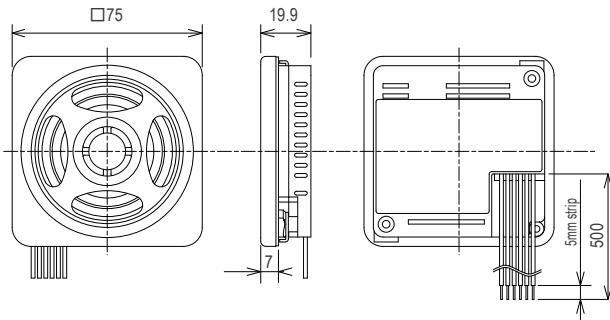


Optional Parts

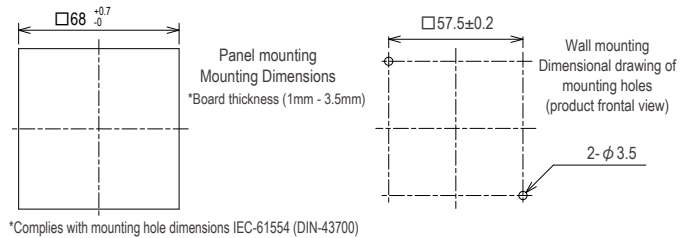
For details, see pages 182 to 187.

Optional Parts	Model
SD card (2GB)	SDV-2GP

Dimensions (mm)

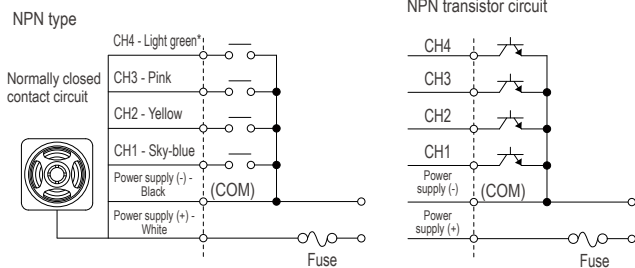


Mounting Dimensions

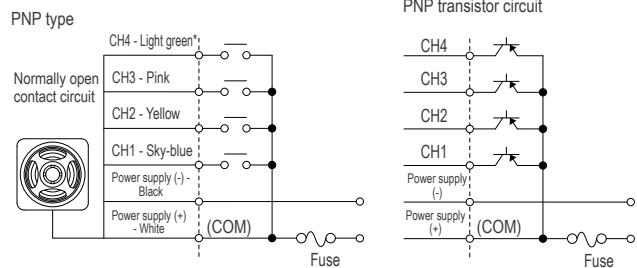


Wiring Diagram

BSV-24NL (M) / BSV-24N (M)



BSV-24PL (M) / BSV-24P (M)



*Signal wire CH4 (Light green) is used for the sound reduction feature. When the feature is used, the number of playback messages is 3 channels (for bit input) and 7 channels (for binary input).

Speaker

□BSV shaped speakers are also available in the lineup.

We have also added BSV shaped speakers to the lineup, which you can use for purposes that do not require synthesized sounds.

With an IP54 (forward-mounted front only, when panel mounted) the compact speakers do not take much space to install.



SPB-2E type (2W 8 Ω)
-W (Off-white)

BD-A



-J (Light gray)



-K (Dark gray)

The BD Series features an embedded mounting design and comes pre-loaded with 32 built-in sounds with a 90dB sound output.

- Front switch and volume control access
- 32 built-in standard alarm sound options
- Up to 90dB sound output at 1m
- IP54 rating for dust and water resistance
- NPN compatible



Table of tones

32 Built-in Tones. Every unit has 32 tones built-in.
Four built-in variations include BD-AA, BD-AC, BD-AD and BD-AE.

Type A

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Fur Elise	A Maiden's Prayer	Minuet in Gmjr	Annie Laurie
London bridge is falling down	Holdiridia	Mary had a little Lamb	Camptown Races
Cuckoo Song	Village Blacksmith	On the Avignon Bridge	Daydream Believer
Amaryllis	Mozart Symphony No.40	Quiet Lakeside	Mountain Musician
Spanish Romance	Katyusha	Grandfather's Clock	Ave Maria

Type C

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Can't take my eyes off of You	Top of the World	The Entertainer	Amazing Grace
Maiden with the flaxen hair	Aux Champs-Elysees	Canon	La-la Sunshine
Space Battleship Yamato	Oshiete	Makenai de	Theme Song
I Don't Want to Miss a Thing	Yozora no Mukou	Ai wa Katsu	Truth
Guts Daze!!	Odoru Ponpokorin	Ima sugu Kiss Me	Haru yo, Koi

Type D

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Chime	Call Sign	Runner	Mamotte Agetai
While listening to Olivia	September	Douyobi no Koibito	Aki no Kihai
Surf Tengoku, Ski Tengoku	Iro, White Blend	Happy Birthday	Hi Ho
I've been working on the Railroad	The Bear Song	Toys Go Cha-Cha-Cha	Konnako Irukana
Shubert's Lullaby	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Aire

Type E

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Bee-boh sound	Galloping Hi-Lo	Alien Chatter	Falling Crystals
Inverted Reveille x3	Galactic Motor	Ringling Phone	Two Tone
Alarm Clock	Ringling Hi-Lo	Fur Elise	Minuet in Gmjr
Annie Laurie	London bridge is falling down	Mary had a little Lamb	Camptown Races
Amaryllis	Mozart Symphony No.40	Ave Maria	Grandfather's Clock

Use of Copyrighted Material

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded for Type-A, Type-C and Type-D melody charts outside of Japan. Therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. Melody chart Type-E is recommended for use outside of Japan as this playlist does not include copyrighted music or songs, and permission is not required.

- 4-sound playback (see instruction manual for 4 sound grouping)
- Alarm tones are denoted in characters for convenience' sake. Please inquire about actual tones or check our website for more details.

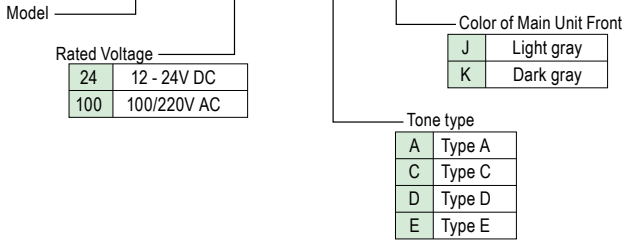
Specification

Model	Rated Voltage	Operating Voltage Range	Maximum Power Consumption	Sound Pressure Level	Operating Temperature Range	Contact Input Method	Playback Channel	Protection Rating	Mass
BD-24AA-J/-K BD-24AC-J/-K BD-24AD-J/-K BD-24AE-J/-K	12-24V DC	10.8 - 26.4V DC	4W	Maximum 90 dB (at 1m)*	-20°C to +55°C (humidity 85% or less)	1 bit input	4	IP54 (Mount on forward-facing panel) Front only	160g
BD-100AA-J/-K BD-100AC-J/-K BD-100AD-K BD-100AE-J	100/220V AC	100V AC±10% 220V AC±10%	5W						180g

*The sound pressure level changes based on tone, use environment, and working voltage.

Model Code

BD-24AA-J

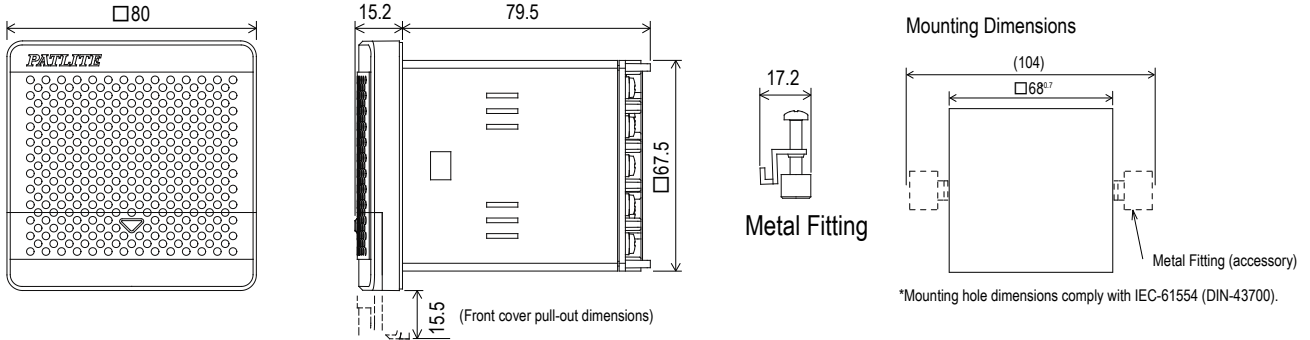


Optional Parts

For details, see pages 182 to 187.

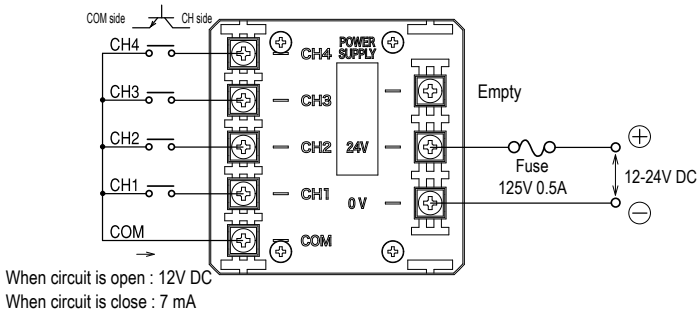
Optional Parts	Model
SD card (2GB)	SDV-2GP

Dimensions (mm)

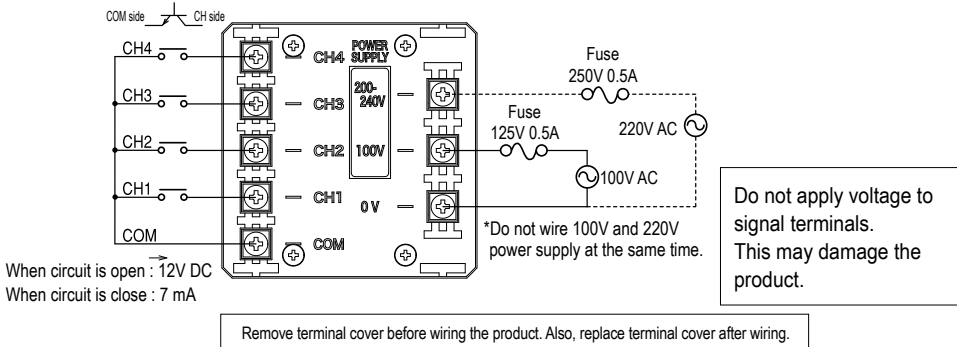


Wiring Diagram

Example: BD-24A NPN transistor connection diagram



Example: BD-100A NPN transistor connection diagram



Remove terminal cover before wiring the product. Also, replace terminal cover after wiring.

BDV



-K (Dark gray)



-J (Light gray)

The BDV Series features programmable voice signaling, an embedded mounting design and a sound output of 90dB.

- Front switch and volume control access
- Up to 90dB sound output at 1m
- IP54 rating for dust and water resistance
- NPN compatible



Simple message registration with various tools



Sound Playback Mode

Select various playback modes based on their application.

A	Bit input mode	Plays back up to 4 messages using Channels 1 to 4.	F	Playback mode prioritizing binary input and subsequent input	Plays back up to 15 messages using Channels 1 to 4. If a message input occurs during playback of another message, the message will stop and allow the input message to play back.
B	Binary input mode	Plays back up to 15 messages using Channels 1 to 4.	G	Bit input and hold playback mode	Plays back up to 4 messages using Channels 1 to 4. As long as the input is held on, the message is played back, once the input is removed, the message playback stops.
C	Bit input and sound reduction mode	Plays back up to 3 messages using Channels 1 to 3. When Channel 4 receives an input, the volume is reduced by about -10dB.	H	Binary input and hold playback mode	Plays back up to 15 messages using Channels 1 to 4. As long as the input is held on, the message is played back, once the input is removed, the message playback stops.
D	Binary input and sound reduction mode	Plays back up to 7 messages using Channels 1 to 3. When Channel 4 receives an input, the volume is reduced by about -10dB.	I	Test mode	Plays back Message No. 1
E	Playback mode prioritizing bit input and subsequent input	Plays back up to 7 messages using Channels 1 to 3. If a message input occurs during playback of another message, the message will stop and allow the input message to play back.			

Specification

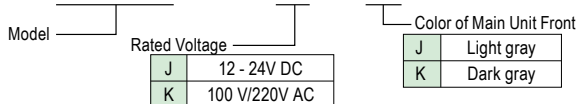
Model	Rated Voltage	Operating Voltage Range	Maximum Power Consumption	Sound Pressure Level	Audio File	Operating Temperature Range	Maximum Seconds of Playback	Playback Channel	Protection Rating	Mass
BDV-15JF	12-24V DC	10.8 - 26.4V DC	4W	Maximum 87 dB (at 1m)	MPEG1-Audio Layer III (mp3) Standard bitrate : 64kbit/s, Fs=44.1kHz	-10°C to +50°C (humidity 85% or less)	63 s	4 (bit input) 15 (binary input)	IP54 (Mount on forward-facing panel) Front only	0.22kg
BDV-15KF	100/220V AC	100V AC±10% 220V AC±10%	5W							0.34kg

(Note) The indicated sound pressure level is the maximum volume (synthesized sound type: sine wave (1kHz)) and the actual level may be lower than the indicated sound pressure level due to message content, tone, and voltage fluctuations.

*When using multiple units, there may be variations in the playback sound even when started simultaneously with the tone. This product is not for mounting on a vehicle.

Model Code

BDV-15JF-J

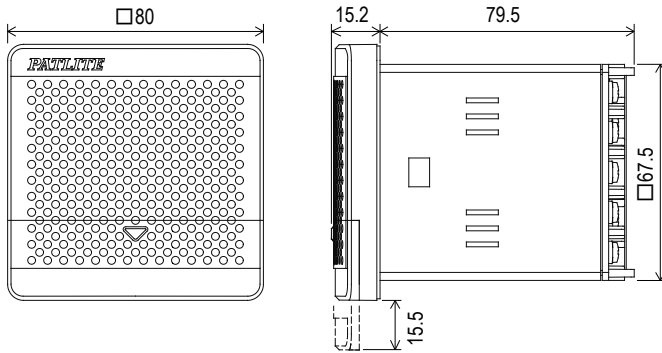


Optional Parts

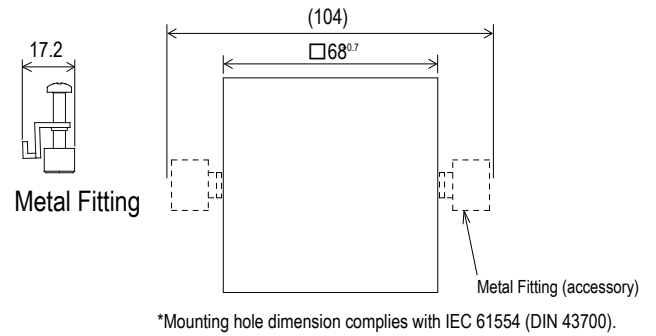
For details, see pages 182 to 187.

Optional Parts	Model
SD card (2GB)	SDV-2GP

Dimensions (mm)

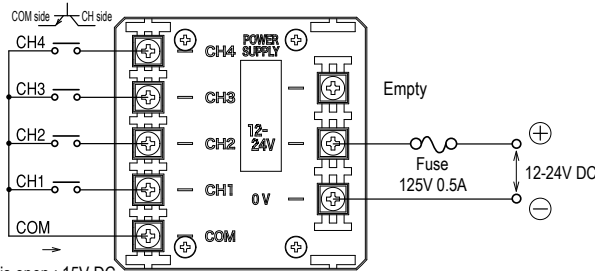


Mounting Dimensions



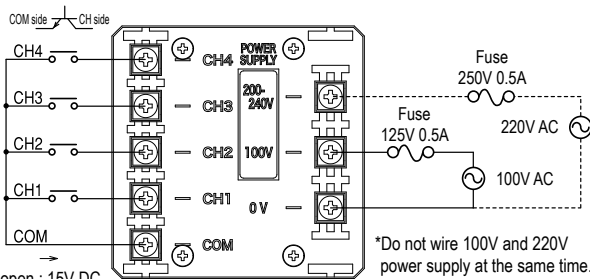
Wiring Diagram

BDV-15JF



When circuit is open : 15V DC
When circuit is close : 7 mA

BDV-15KF



When circuit is open : 15V DC
When circuit is close : 7 mA

Remove terminal cover before wiring the product. Also, replace terminal cover after wiring.

Table 1: Signal circuit

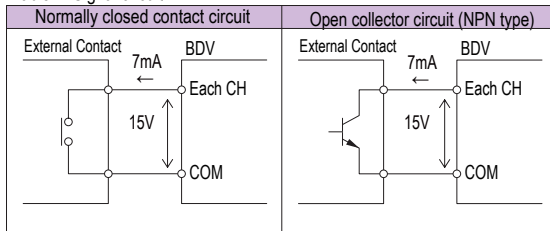


Table 2: Signal contact capacity

Current Capacity	10mA or more
Withstand Voltage	20V DC or more
Leakage Current	0.1mA or less
ON voltage (Vsat)	1V or less

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

BK



-J (Light gray)



-K (Dark gray)

The BK Series features an embedded mounting design, a sound output of 95dB, and comes pre-loaded with 32 sound tones.

- Front switch and volume control access
- Pre-loaded with 32 tone and alarm sound options
- Up to 95dB sound output at 1m
- IP54 rating for dust and water resistance
- NPN compatible



Table of tones

32 Built-in Tones. Every unit has 32 tones built-in.
Four built-in variations include BD-AA, BD-AC, BD-AD and BD-AE.

Type A

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Fur Elise	A Maiden's Prayer	Minuet in Gmjr	Annie Laurie
London bridge is falling down	Holdiridia	Mary had a little Lamb	Camptown Races
Cuckoo Song	Village Blacksmith	On the Avignon Bridge	Daydream Believer
Amaryllis	Mozart Symphony No.40	Quiet Lakeside	Mountain Musician
Spanish Romance	Katyusha	Grandfather's Clock	Ave Maria

Type C

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Can't take my eyes off of You	Top of the World	The Entertainer	Amazing Grace
Maiden with the flaxen hair	Aux Champs-Elysees	Canon	La-la Sunshine
Space Battleship Yamato	Oshiete	Makenai de	Theme Song
I Don't Want to Miss a Thing	Yozora no Mukou	Ai wa Katsu	Truth
Guts Daze!!	Odoru Ponpokorin	Ima sugu Kiss Me	Haru yo, Koi

Type D

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Chime	Call Sign	Runner	Mamotte Agetai
While listening to Olivia	September	Douyobi no Koibito	Aki no Kihai
Surf Tengoku, Ski Tengoku	Iro, White Blend	Happy Birthday	Hi Ho
I've been working on the Railroad	The Bear Song	Toys Go Cha-Cha-Cha	Konnako Irukana
Shubert's Lullaby	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Aire

Type E

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Bee-boh sound	Galloping Hi-Lo	Alien Chatter	Falling Crystals
Inverted Reveille x3	Galactic Motor	Ringling Phone	Two Tone
Alarm Clock	Ringling Hi-Lo	Fur Elise	Minuet in Gmjr
Annie Laurie	London bridge is falling down	Mary had a little Lamb	Camptown Races
Amaryllis	Mozart Symphony No.40	Ave Maria	Grandfather's Clock

Use of Copyrighted Material

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded for Type-A, Type-C and Type-D melody charts outside of Japan. Therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. Melody chart Type-E is recommended for use outside of Japan as this playlist does not include copyrighted music or songs, and permission is not required.

- Bit input → plays 8 sounds (see instruction manual for 8 sound grouping) Binary input → plays 32 sounds
- Alarm tones are denoted in characters for convenience' sake. Please inquire about actual tones or check our website for more details.

Specification

Colors not listed in stock products, and any products other than stock products are made-to-order.

Model	Rated Voltage	Operating Voltage Range	Maximum Power Consumption	Sound Pressure Level	Operating Temperature Range	Playback Channel	Protection Rating	Mass
BK-24A-JI-K	12-24V DC	10.8 - 26.4V DC	12W	Maximum 95 dB (at 1m)*	-20°C to +50°C (humidity 85% or less)	Bit input: 8 Binary input: 32	IP54 (Mount on forward-facing panel) Front only	0.35kg
BK-24C-J								0.53kg
BK-24E-J								0.53kg
BK-100A-J	100V AC	100V AC±10%	10W					
BK-220A-J	220V AC	220V AC±10%	11W					

*The sound pressure level changes based on tone, use environment, and working voltage.

BKV



-J (Light gray)



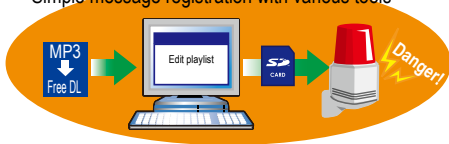
-K (Dark gray)

The BKV Series features programmable voice signaling, an embedded mounting design, and a sound output of 95dB.

- Front switch and volume control access
- Comes pre-loaded with select voice messages but can be easily overwritten
- Up to 95dB sound output at 1m
- IP54 rating for dust and water resistance
- NPN compatible



Simple message registration with various tools



Sound Playback Mode

Select various playback modes based on their application.

A	Bit input mode	Plays back up to 5 messages using Channels 1 to 5.	F	Playback mode prioritizing binary input and subsequent input	Plays back up to 31 messages using Channels 1 to 5. If a message input occurs during playback of another message, the message will stop and allow the input message to play back.
B	Binary input mode	Plays back up to 31 messages using Channels 1 to 5.	G	Bit input and hold playback mode	Plays back up to 5 messages using Channels 1 to 5. As long as the input is held on, the message is played back, once the input is removed, the message playback stops.
C	Bit input and sound reduction mode	Plays back up to 4 messages using Channels 1 to 4. When Channel 5 receives an input, the volume is reduced by about -15dB.	H	Binary input and hold playback mode	Plays back up to 31 messages using Channels 1 to 5. As long as the input is held on, the message is played back, once the input is removed, the message playback stops.
D	Binary input and sound reduction mode	Plays back up to 15 messages using Channels 1 to 4. When Channel 5 receives an input, the volume is reduced by about -15dB.	I	Test mode	Plays back Message No. 1
E	Playback mode prioritizing bit input and subsequent input	Plays back up to 5 messages using Channels 1 to 5. If a message input occurs during playback of another message, the message will stop and allow the input message to play back.			

Specification

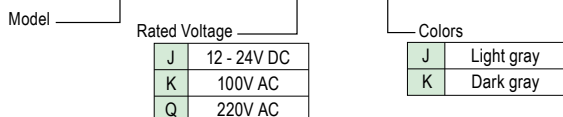
Model	Rated Voltage	Operating Voltage Range	Maximum Power Consumption	Sound Pressure Level	Audio File	Operating Temperature Range	Maximum Seconds of Playback	Playback Channel	Protection Rating	Mass
BKV-31JF	12-24V DC	10.8 - 26.4V DC	9W	Maximum 95 dB (at 1m)	MPEG1-Audio Layer III (MP3) Standard bitrate : 64kbit/s, Fs=44.1kHz	-10°C to +50°C (humidity 85% or less)	63 s	5 (bit input) 31 (binary input)	IP54 (Mount on forward-facing panel) Front only	0.35kg
BKV-31KF	100V AC	100V AC±10%	10W							0.53kg
BKV-31QF	220V AC	220V AC±10%	10W							0.53kg

(Note) The indicated sound pressure level is the maximum volume (synthesized sound type: sine wave (1KHz)) and the actual level may be lower than the indicated sound pressure level due to message content, tone, and voltage fluctuations.

*When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone and voice. This product is not for mounting on a vehicle.

Model Code

BKV-31JF-J



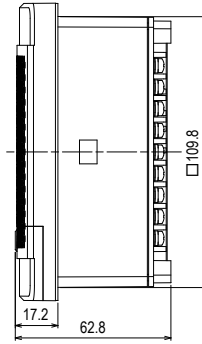
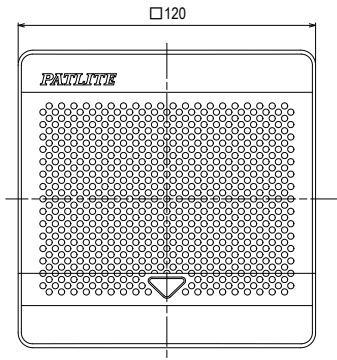
Optional Parts

For details, see pages 182 to 187.

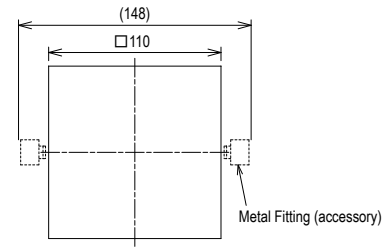
Optional Parts	Model
Mounting bracket	BK-001 (2 fixed seals attached)
Mounting bracket	BK-002-J
Mounting bracket	BK-002-K
SD card (2GB)	SDV-2GP

*The BK-001 type can use □130 embedded mounting holes.

Dimensions (mm)



Mounting Dimensions



Wiring Diagram

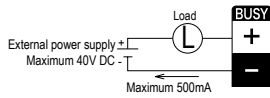
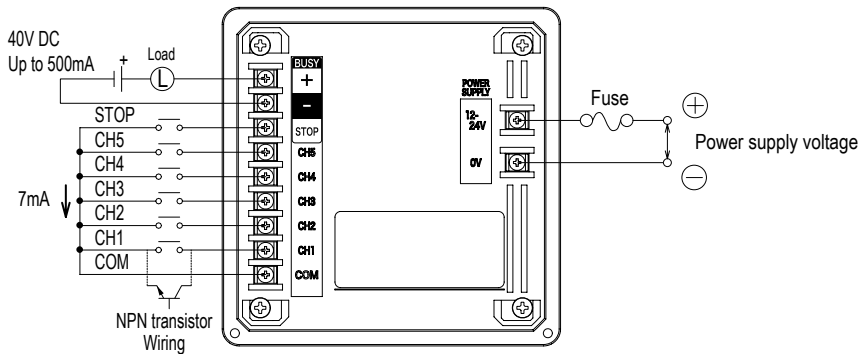


Table 1: Signal circuit

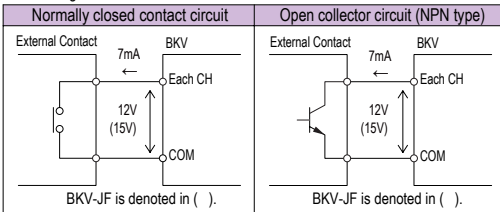


Table 2: Power supply inrush current and fuses

Model	Inrush current	Fuse
BKV-JF	Maximum 10A/5ms	125V 1A
BKV-KF	Maximum 1.5A/12ms	125V 0.5A
BKV-QF	Maximum 1.2A/0.5ms	250V 0.5A

Table 3: Signal contact capacity

Current Capacity	10mA or more
Withstand Voltage	20V DC or more
Leakage Current	0.1mA or less
ON voltage (Vsat)	1V or less

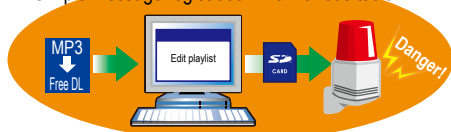
Do not apply voltage to signal terminals.

Do not apply an overload, reverse polarities or an over-voltage to the Busy terminal. Product damage may occur.

EHS/EHV



Simple message registration with various tools



- M3 specifications have achieved anti-vibration 7G and passed vibration testing standards for automobile parts <JIS D 1601-1995, types 3 and B> by attaching anti-vibration rubber.
- 4 operation modes can be selected. (EHS type has Hold Playback only)

The EH Series features programmable voice signaling, high vibration resistance, and a high sound output of 110dB, designed to be heard above machine noise.

- Vibration resistant up to 4.5G, ideal for moving vehicles
- Comes pre-loaded with tone and alarm sounds
- Up to 110dB sound output at 1m
- IP65 rating for dust and water resistance
- Built-in sound reduction feature for quieter environments
- NPN/PNP compatible



Table of tones

■EHS Tone List

Type A

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Fur Elise	A Maiden's Prayer	Minuet in Gmjr	Annie Laurie
London bridge is falling down	Holdiridia	Mary had a little Lamb	Camptown Races
Cuckoo Song	Village Blacksmith	On the Avignon Bridge	Daydream Believer
Amaryllis	Mozart Symphony No.40	Quiet Lakeside	Mountain Musician
Spanish Romance	Katyusha	Grandfather's Clock	Ave Maria

Type C

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Can't take my eyes off of You	Top of the World	The Entertainer	Amazing Grace
Maiden with the flaxen hair	Aux Champs-Elysees	Canon	La-la Sunshine
Space Battleship Yamato	Oshiete	Makenai de	Theme Song
I Don't Want to Miss a Thing	Yozora no Mukou	Ai wa Katsu	Truth
Guts Daze!!	Odoru Ponpokorin	Ima sugu Kiss Me	Haru yo, Koi

Type D

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Chime	Call Sign	Runner	Mamotte Agetai
While listening to Olivia	September	Douyobi no Koibito	Aki no Kihai
Surf Tengoku, Ski Tengoku	Iro, White Blend	Happy Birthday	Hi Ho
I've been working on the Railroad	The Bear Song	Toys Go Cha-Cha-Cha	Konnaku Irukana
Shubert's Lullaby	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Aire

Type E

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Bee-boh sound	Galloping Hi-Lo	Alien Chatter	Falling Crystals
Inverted Reveille x3	Galactic Motor	Ringling Phone	Two Tone
Alarm Clock	Ringling Hi-Lo	Fur Elise	Minuet in Gmjr
Annie Laurie	London bridge is falling down	Mary had a little Lamb	Camptown Races
Amaryllis	Mozart Symphony No.40	Ave Maria	Grandfather's Clock

■EHV Tone List

Type F

Galactic Hovercraft	Game Intermission	Spring Melody	Jalopy Horn
ET Doorbell	RR-crossing	Train Whistle	Train Ride
Starting Notice Chime1	Starting Notice Chime2	Starting Notice Chime3	Ending Notice Chime1
Ending Notice Chime2	RHYTHM AND POLICE	ZANKOKUNA TENSHINO TEEZE	MAJINGAA ZETTO
HATARAKU KURUMA	NINGENTTE IINA	ROBINSON	WORLD FOOTBALL ANTHEM
BANZAI SUKIDE YOKATTA	NAMONAKI UTA	SOUSEIKO AKUERION	MAMBO NO 5
The Parade of the Tin Soldiers	Turkey in the Straw	Aka tombo	Funiculi, Funicula
Furusato	Beautiful Dreamer	JOLLY HOLIDAY	

The above 31 tones & 32 EHS type A tones are built-in

Type G

Galactic Hovercraft	Game Intermission	Spring Melody	Jalopy Horn
ET Doorbell	RR-crossing	Starting Notice Chime1	Starting Notice Chime2
Ending Notice Chime1	Ending Notice Chime2	The Parade of the Tin Soldiers	If You're Happy and You Know It
Flea Waltz	Turkey in the Straw	The Battle Hymn of the Republic	J'ai perdu le do de ma clarinette
Can-can	Radetzky March	Funiculi, Funicula	Csikos Post
Polka Trablanka	O Vreneli	KAERUNO GASSHOU	El Condor Pasa (If I Could)
Hungarian Dance No.5	William Tell Overture	Pomp and Circumstance	Greensleeves
Nedelka	Moonlight Serenade	WAREWA UMINO KO	

The above 31 tones & 32 EHS type E tones are built-in

Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
SD card (2GB)	SDV-2GP

- Alarm tones are denoted in characters for convenience' sake. Please check our website for more details.
- Tone group settings are described in the list of tones in the specification and general instruction manual, so please check our website for more details.

Use of Copyrighted Material

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded for Type-A, Type-C and Type-D melody charts outside of Japan. Therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. Melody chart Type-E is recommended for use outside of Japan as this playlist does not include copyrighted music or songs, and permission is not required.

Specification

EHS specifications

Model	Rated Voltage	Operating Voltage Range	Rated Power Consumption	Sound Pressure Level	Operating Temperature Range	Playback Channel	Wiring method	Mass
EHS-M1HA	12 - 24V DC	10.8 - 35V DC	5.0W (12V DC when using normally closed/NPN)	Alarm: maximum 110dB (at 1m)*	-20°C to +50°C (humidity 85% or less)	Bit input: 8 Binary input: 32	Cable	1.25kg±10%
EHS-M1TA			5.9W (24V DC when using normally open/PNP)				Terminal Block	
EHS-M1TE								
EHS-M2HA	100 - 240V AC	90 - 264V AC	6.9W (240V AC when using normally closed/NPN)			Cable		
EHS-M2TA				Terminal Block				
EHS-M2TE								
EHS-M3HA	12 - 48V DC	10 - 60V DC	5.1W (48V DC when using normally closed/NPN)				Cable	

*The sound pressure level changes based on tone, use environment, and working voltage.

EHV specifications

Model	Rated Voltage	Operating Voltage Range	Rated Power Consumption	Sound Pressure Level	Operating Temperature Range	Maximum Seconds of Playback	Playback Channel	Wiring method	Mass
EHV-M1H	12 - 24V DC	10.8 - 35V DC	4.0W (12V DC when using normally closed/NPN)	Alarm: maximum 110dB (at 1m)* MP3: maximum 105dB (at 1m)* (1kHz sine wave upon data playback) Standard bitrate: 64kbit/s Fs=44.1kHz	-20°C to +50°C (humidity 85% or less)	220 s	Bit input: 8 Binary input: 63	Cable	1.25kg±10%
EHV-M1HM			5.0W (24V DC when using normally open/PNP)					Terminal Block	
EHV-M1TG									
EHV-M2H	100 - 240V AC	90 - 264V AC	5.3W (240V AC when using normally closed/NPN)				Cable		
EHV-M2HM				Terminal Block					
EHV-M2TM									
EHV-M3H	12 - 48V DC	10 - 60V DC	5.6W (48V DC when using normally closed/NPN)				Cable		

*The sound pressure level changes based on tone, use environment, and working voltage.

Model Code

Model

EHS	Audible Alarm Horn
EHV	MP3 Voice Annunciator Horn

Rated Voltage

M1	12 - 24V DC
M3	12 - 48V DC (mountable in vehicle)
M2	100 - 240V AC

Wiring method

H	Cable
T	Terminal Block

*M3 specifications
H: cable type specifications only

EHV-M1HFM

Tone type

EHS	EHV
A	Type A
C	Type C
D	Type D
E	Type E

Message recording

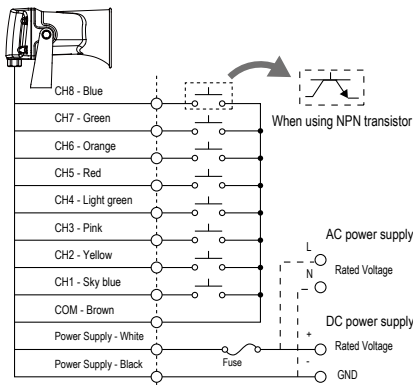
Blank	None
M	Registered shipping of designated messages (EHV type only)

Wiring Diagram

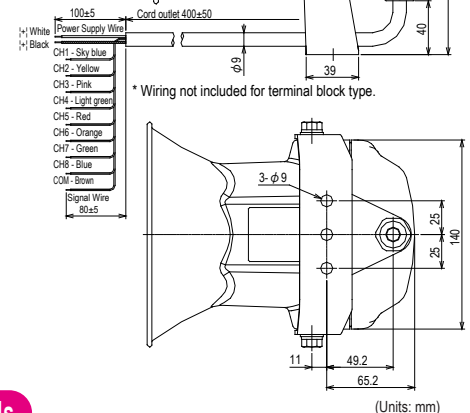
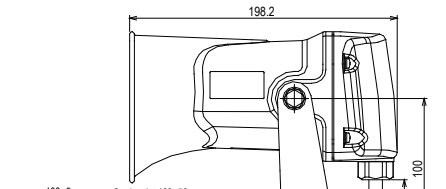
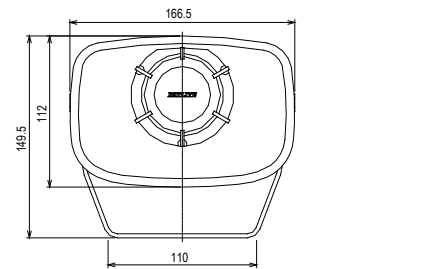
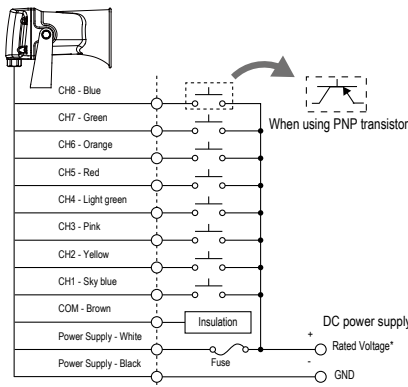
Dimensions (mm)

Wiring Example (Cable Type)

Normally Closed Contact Wiring



When using normally open contact (only EH□-M1)



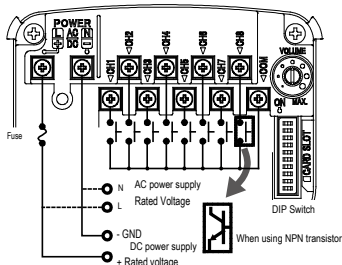
100±5
Cord outlet 40±5

* Wiring not included for terminal block type.

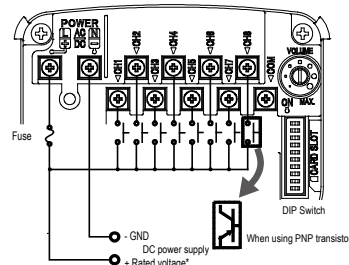
(Units: mm)

Wiring Example (Terminal Block Type)

Normally Closed Contact Wiring



Normally Open Contact Wiring (EH□-M1 only)



Signal Wire Contact Capacity

	Normally closed contact	Normally open contact (EH□-M1) Applied voltage less than 26.4V	Normally open contact (EH□-M1) Applied voltage at least 26.4V
Current Capacity	10mA or more	10mA or more	15mA or more
Withstand Voltage	At least 35V DC		
Leakage Current	0.1 mA or less		
ON voltage (Vsat)	1V or less		

Recommended fuses

	Rated Voltage	Rated Current	Fusing type
EH□-M1	250V	500mA	Normal A type
EH□-M2	250V	800mA	Normal A type
EH□-M3	250V	800mA	Normal A type

Power supply inrush current

EH□-M1	12.5A	EH□-M2	23A	EH□-M3	45A
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*Set input voltage to 10.8 - 31.6V DC for normally open contact input.

•We recommend using the following cable when wiring to a terminal block.
•Diameter: φ 8.5mm - φ 10.5mm / terminal: M3 round terminal with insulating layer, made by Japan Solderless Terminals N1.2S-3 (RoHS compliant)

Conformity Standards

M1	EMC Directive (EN 61000-6-4, EN 61000-6-2) RoHS Directive (EN 50518) UL 464, CSA-C22.2 No. 205-M1983 FCC Part 15 Subpart B Class A KC (KN22, KN24)
M2	UL 464, CSA-C22.2 No. 205-M1983 FCC Part 15 Subpart B Class A KC (KN22, KN24)
M3	EMC Directive (EN 13309) ECE Regulation No. 10

There are no contents of controlled substances exceeding the threshold for the RoHS Directive.

There are no contents of controlled substances exceeding the threshold for the RoHS Directive.

EHS/EHV

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

FV-127JP



The FV Series circuit board is designed to add audible or voice message playback to various types of machinery. It can be installed inside or on the rear of a machine for a more streamlined design.

- Installs seamlessly on the inside of machinery
- Up to 240 minutes total playback time
- Audio files can be registered to 127 available channels
- Built-in sound reduction feature
- Built-in terminal block for easy wiring
- Speaker output included in the terminal



Simple message registration with various tools



Specification

Model	Rated Voltage	Operating Voltage Range	Power Consumption	External Contact Capacity	Operating Temperature Range	Contact Input Method	Number of playback channels	AUX Output	BUSY Output	Maximum Playback Time	Maximum Output	Output Load Impedance	Mass
FV-127JP	24V DC	19 - 29V DC	15W	35V15mA or more	-10°C to +50°C (humidity 85% or less)	Normally closed contact or NPN open collector	When using binary input: 127, when using bit input: 7	0dBv 600Ω	Maximum load 40V DC 500mA	About 8 minutes of main unit memory (when using)	4W	8Ω	160g±10%

■ Product price including the message registration fee (tax excluded)

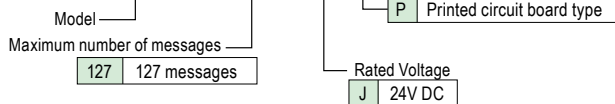
*The above FV-127JP base price does not include the message registration fee.

FV-127JP-064 (001-064 phrases)	FV-127JP-128 (065-128 phrases)	FV-127JP-192 (129-192 phrases)	FV-127JP-256 (193-256 phrases)
FV-127JP-320 (257-320 phrases)	FV-127JP-384 (321-384 phrases)	FV-127JP-448 (385-448 phrases)	FV-127JP-512 (449-512 phrases)

Messages are free if you choose from over 3,000 standard messages. (An additional cost applies for other custom messages)

Model Code

FV-127JP

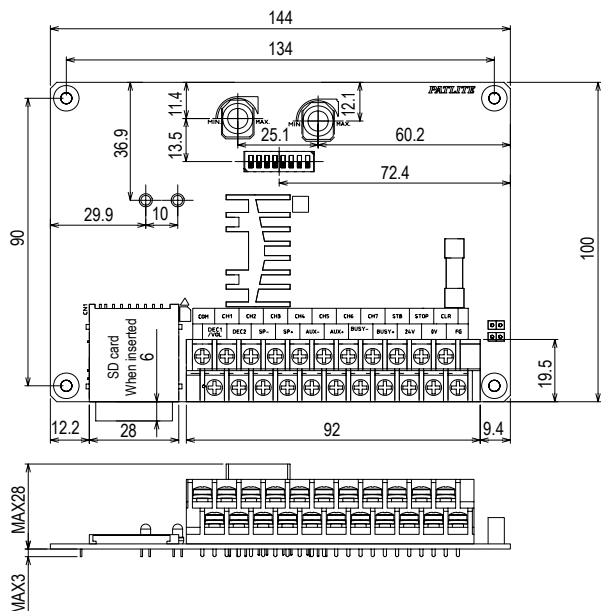


Optional Parts

For details, see pages 182 to 187.



Optional Parts	Model
Speakers (2W 8Ω)	SPB-2E-W
Speakers (5W 8Ω)	SPB-5E
Speakers (5W 8Ω)	SPW-5E
Speakers (5W 8Ω)	SPL-5E
SD card (2GB)	SDV-2GP




Dimensions (mm)





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

Page number	Page 157					
Model Name	MP3 Voice Annunciator with LED Signal Tower			Audible Alarm with LED Signal Tower		
Model	LKEH-FV			LKEH-F□		
Product image						
Rated Voltage	24V DC	100V AC	220V AC	24V DC	100V AC	220V AC
Size (mm)	φ 100			φ 100		
IP	53			53		
Sound pressure dB (at 1m)	105			105		
Body	AES			AES		
Globe	Polycarbonate			Polycarbonate		
Light Source	LED			LED		
Unit Structure	○			○		
Terminal Block						
Synthetic Sound	MP3					
Electronic sound				○		
Message	Bit input 5/binary input 31					
Tone				Bit input 8/binary input 32		
Sound Reduction	○			○		
Open collector	NPN			NPN		
CE Marking	○			○		
RoHS	○			○		
UL standards	○ (LKEH-FVUL) 24V DC only			○ (LKEH-F□UL) 24V DC		
Other characteristics	Enabled for SDV-2GP			only		

Page number	Page 164			Page 166			Page 168		
Model Name	Audible Cube Tower			Audible Alarm with LED Revolving Warning Light			MP3 Voice Annunciator with LED Revolving Warning Light		
Model	KJT			RFT			RFV		
Product image									
Rated Voltage	24V DC	100V AC	200V AC	24V DC	100V AC	220V AC	24V DC	100V AC	220V AC
Size (mm)	□116			□115			□115		
IP	23			54			54		
Sound pressure dB (at 1m)	90 *1			90			95		
Body	ABS			ABS			ABS		
Globe	Acrylic			Polycarbonate			Polycarbonate		
Light Source	Bulb			LED			LED		
Unit Structure									
Terminal Block									
Synthetic Sound							MP3		
Electronic sound	○			○					
Message							Bit input 4/binary input 15		
Tone	Bit input 8/binary input 32			Bit input 8/binary input 32					
Sound Reduction				○ *2			○		
Open collector	NPN			NPN			NPN		
CE Marking				○			○		
RoHS				○			○		
UL standards									
Other characteristics							Enabled for SDV-2GP		

*1 24V specifications 90dB (at 1m) 100V, 200V specifications 85dB (at 1m) *2 When using binary input

Page number	Page 160			Page 162		
Model Name	Horn Speaker Audible Alarm with Revolving Warning Light			Horn Speaker Audible Alarm with Revolving Warning Light		
Model	RT-A/C/D/E			RT-VF		
Product image						
Rated Voltage	24V DC	100V AC	200V AC	24V DC	100V AC	200V AC
Size (mm)	φ 162			φ 162		
IP	23			23		
Sound pressure dB (at 1m)	105			105		
Body	ABS			ABS		
Globe	AS			AS		
Light Source	Bulb			Bulb		
Unit Structure						
Terminal Block						
Synthetic Sound				MP3		
Electronic sound	○					
Message				Bit input 4/binary input 15		
Tone	Bit input 8/binary input 32					
Sound Reduction						
Open collector	NPN			NPN		
CE Marking						
RoHS						
UL standards				○ (RT-VFUL)		
Other characteristics				Enabled for SDV-2GP		

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

LKEH



Voice type LKEH-FV



- 63-second (at 64kbits/s) playback capacity with 5 channels with bit input or 31 channels with binary
- Field programmable with an SD card (SDV-2GP recommended, sold separately)
- SD card can be used to freely arrange messages in groups
- Easily accessible DIP switch to select binary or bit input and testing recorded messages

Table of tones (sound type LKEH-F□)

Type A			
Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Fur Elise	A Maiden's Prayer	Minuet in Gmjr	Annie Laurie
London bridge is falling down	Holdiridia	Mary had a little Lamb	Camptown Races
Cuckoo Song	Village Blacksmith	On the Avignon Bridge	Daydream Believer
Amaryllis	Mozart Symphony No.40	Quiet Lakeside	Mountain Musician
Spanish Romance	Katyusha	Grandfather's Clock	Ave Maria

Type D			
Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Runner	Mamotte Agetai	Chime	Call Sign
While listening to Olivia	September	Douyobi no Koibito	Aki no Kihai
Surf Tengoku, Ski Tengoku	Iro, White Blend	Happy Birthday	Hi Ho
I've been working on the Railroad	The Bear Song	Toys Go Cha-Cha-Cha	Konnako Irukana
Shubert's Lullaby	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Aire

- Colors Red, Amber, Green, Blue, White
- Globe Uses shock-resistant polycarbonate resin.

The LKEH Series features a 100mm diameter signal tower, programmable voice signaling, with a 105dB horn for highly effective signaling.

- Ultra-bright, maintenance-free LEDs
- Up to 105dB sound output at 1m
- Vibration resistant up to 2G
- Message capacity up to 64 seconds with 5 channel bit input or 31 channel binary input
- IP53 protection rating
- Built-in sound reduction feature for quieter environments
- NPN/PNP compatible



Sound type LKEH-F□



- 32 built-in sounds where 8 can be accessed with bit input and 32 with binary
- SD card can be used to freely arrange sounds into groups (SDV-2GP recommended, sold separately)
- Easily accessible DIP switch to select binary or bit input and testing built-in sounds

Type C			
Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Can't take my eyes off of You	Top of the World	The Entertainer	Amazing Grace
Maiden with the flaxen hair	Aux Champs-Elysees	Canon	La-la Sunshine
Space Battleship Yamato	Oshiete	Makenai de	Theme Song
I Don't Want to Miss a Thing	Yozora no Mukou	Ai wa Katsu	Truth
Guts Daze!!	Odoru Ponpokorin	Ima sugu Kiss Me	Haru yo, Koi

Type E			
Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Bee-boh sound	Galloping Hi-Lo	Alien Chatter	Falling Crystals
Inverted Reveille x3	Galactic Motor	Ringing Phone	Two Tone
Alarm Clock	Ringing Hi-Lo	Fur Elise	Minuet in Gmjr
Annie Laurie	London bridge is falling down	Mary had a little Lamb	Camptown Races
Amaryllis	Mozart Symphony No.40	Ave Maria	Grandfather's Clock

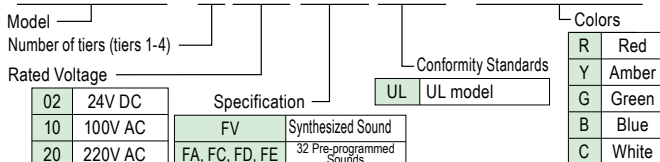


- Bit input → plays 8 sounds (see instruction manual for 8 sound grouping) Binary input → plays 32 sounds
- Alarm tones are denoted in characters for convenience' sake. Please inquire about actual tones or check our website for more details.

Use of Copyrighted Material
 PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded for Type-A, Type-C and Type-D melody charts outside of Japan. Therefore, contact the local copyright association for permission before using the product outside Japan.

Model Code

LKEH-402FVUL-RYGB



Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008
SD card (2GB)	SDV-2GP

- The following custom specifications are available.
- PNP open corrector specifications

From Top to Bottom

Specifications

Colors not listed in stock products, and any products other than stock products are made-to-order.

LKEH-FV specifications

(Number of flashes...about 60/min)											
	Model	Rated Voltage	Operating Voltage Range	Number of tiers	Power Consumption	Sound Pressure Level	Audio File	Operating temperature range	Maximum Seconds of Playback	Number of messages	Mass
Voice type	LKEH-102FV	24V DC	24V DC±10%	1	10.6W	Maximum 105 dB (at 1m)	MPEG1-AudioLayer III (MP3)Standard bitrate : 64kbit/s, Fs=44.1kHz	-10°C to +50°C (humidity 85% or less)	63 s	5 (bit input) 31(binary input)	1.4kg
	LKEH-202FV			2	12.4W						1.6kg
	LKEH-302FV			3	14.2W						1.8kg
	LKEH-402FV			4	16.0W						2.0kg
	LKEH-110FV	100V AC	100V AC±10%	1	17W						2.1kg
	LKEH-210FV			2	20W						2.3kg
	LKEH-310FV			3	23W						2.5kg
	LKEH-410FV			4	26W						2.7kg
	LKEH-120FV	220V AC	220V AC±10%	1	17W						2.1kg
	LKEH-220FV			2	20W						2.3kg
	LKEH-320FV			3	23W						2.5kg
	LKEH-420FV			4	26W						2.7kg

(Note) The indicated sound pressure level is the maximum volume (synthetic sound type: sine wave (1KHz)) and the actual level may be lower than the indicated sound pressure level due to message content, tone, and voltage fluctuations.*When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone and voice. This product is not for mounting on a vehicle.

LKEH-FVUL specifications (UL certified model)

(Number of flashes...about 60/min)											
	Model	Rated Voltage	Operating Voltage Range	Number of tiers	Power Consumption	Sound Pressure Level	Audio File	Operating temperature range	Maximum Seconds of Playback	Number of messages	Mass
Voice type	LKEH-102FVUL	24V DC	24V DC±10%	1	10.6W	Maximum 105 dB (at 1m)	MPEG1-AudioLayer III (MP3)Standard bitrate : 64kbit/s, Fs=44.1kHz	-10°C to +50°C (humidity 85% or less)	63 s	5 (bit input) 31 (binary input)	1.4kg
	LKEH-202FVUL			2	12.4W						1.6kg
	LKEH-302FVUL			3	14.2W						1.8kg
	LKEH-402FVUL			4	16.0W						2.0kg

(Note) The indicated sound pressure level is the maximum volume (synthetic sound type: sine wave (1KHz)) and the actual level may be lower than the indicated sound pressure level due to message content, tone, and voltage fluctuations.*When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone and voice. This product is not for mounting on a vehicle.

LKEH-F□ specifications

(Number of flashes...about 60/min)										
	Model	Rated Voltage	Operating Voltage Range	Number of tiers	Power Consumption	Sound Pressure Level	Operating temperature range	Playback Channel	Mass	
Sound type	LKEH-102FA	24V DC	24V DC±10%	1	10.6W	Maximum 105 dB (at 1m)	-10°C to +50°C (humidity 85% or less)	8 (bit input) 32 (binary input)	1.4kg	
	LKEH-202FA			2	12.4W				1.6kg	
	LKEH-302FA			3	14.2W				1.8kg	
	LKEH-402FA			4	16W				2.0kg	
	LKEH-110FA	100V AC	100V AC±10%	1	17W				2.1kg	
	LKEH-210FA			2	20W				2.3kg	
	LKEH-310FA			3	23W				2.5kg	
	LKEH-410FA			4	26W				2.7kg	
	LKEH-120FA	220V AC	220V AC±10%	1	17W				2.1kg	
	LKEH-220FA			2	20W				2.3kg	
	LKEH-320FA			3	23W				2.5kg	
	LKEH-420FA			4	26W				2.7kg	

*Changes the sound pressure level based on tones, use environment, and working voltage.

*When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone. This product is not for mounting on a vehicle.

LKEH-FVUL specifications (UL certified model)

(Number of flashes...about 60/min)										
	Model	Rated Voltage	Operating Voltage Range	Number of tiers	Power Consumption	Sound Pressure Level	Operating temperature range	Playback Channel	Mass	
Sound type	LKEH-102FAUL/FCUL/FDUL/FEUL	24V DC	24V DC±10%	1	10.6W	Maximum 105 dB (at 1m)	-10°C to +50°C (humidity 85% or less)	8 (bit input) 32 (binary input)	1.4kg	
	LKEH-202FAUL/FCUL/FDUL/FEUL			2	12.4W				1.6kg	
	LKEH-302FAUL/FCUL/FDUL/FEUL			3	14.2W				1.8kg	
	LKEH-402FAUL/FCUL/FDUL/FEUL			4	16W				2.0kg	

*Changes the sound pressure level based on tones, use environment, and working voltage.

*When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone. This product is not for mounting on a vehicle.

Replacement Parts for Changing Colors

Replacement Parts	Part Number
Red globe unit	B72100151-1F1
Amber globe unit	B72100151-2F1
Green globe unit	B72100151-3F1
Blue globe unit	B72100151-4F1
White globe unit	B72100151-7F1
Shaft for 1 tier	B62910033-1F2
Shaft for 2 tier	B62910033-2F2
Shaft for 3 tier	B62910033-3F2
Shaft for 4 tier	B62910033-4F2

Dimensions (mm)

* Height

- 1 tier: 265.2
- 2 tier: 325.3
- 3 tier: 385.4
- 4 tier: 445.5

Installation Dimension Drawings

LKEH

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

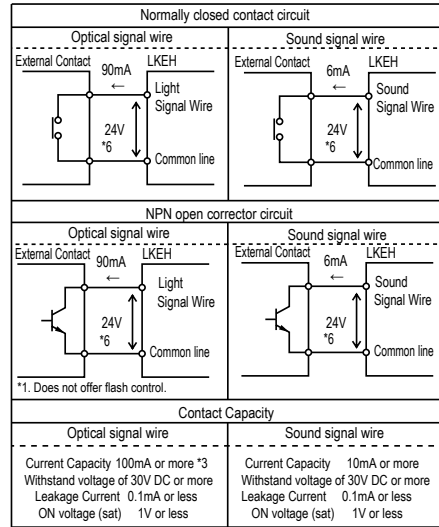
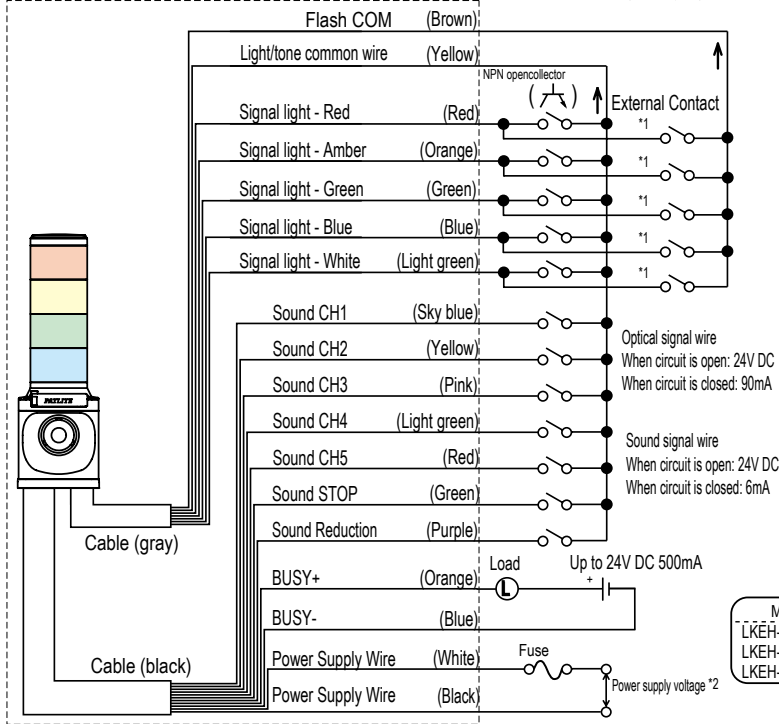
LED Illumination

Options

Wiring Diagram

LKEH-FV type

• Use a normally closed contact circuit such as a relay switch, or an open collector circuit (NPN type) for the external contact on the signal wire. See the table below for circuit and contact capacity.



Model	Rated Voltage	Inrush current *4	Fuse capacity *5
LKEH-□02FV	24V DC	10A	2A (normal)
LKEH-□10FV	100V AC	12A	0.5A (time lag)
LKEH-□20FV	220V AC	6A	0.5A (normal)

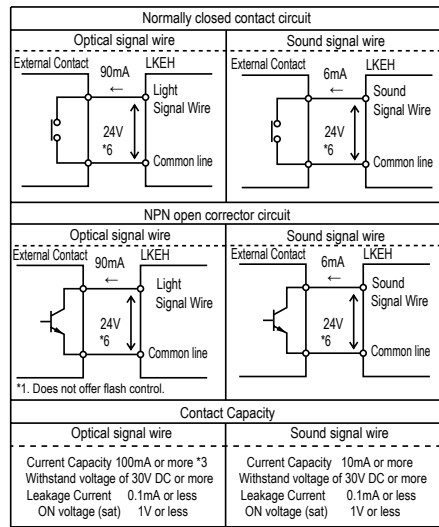
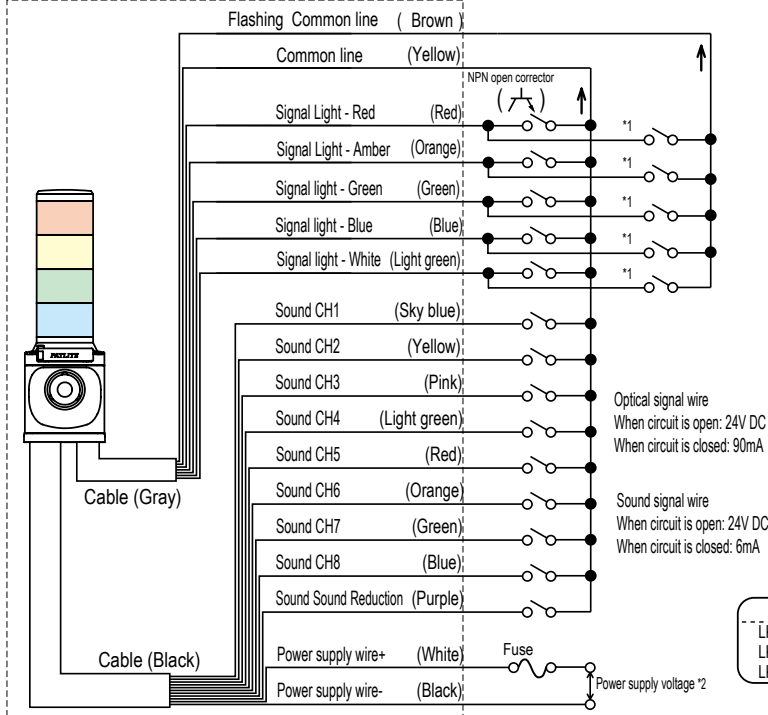
*Do not apply voltage to each wire. This may damage the product.

- *1. Flashing control is for non-voltage contact circuit applications only.
- *2. For the LKEH- □ 02FV, connect the Power Supply (Black) to the negative terminal. For the LKEH- □ 02UL (UL Standard), connect to a Class 2 power supply.
- *3. Indicates the rated contact capacity per LED light unit.
- *4. Rated at maximum operating voltage when power is first switched on.
- *5. Use a slow-blow fuse for the LKEH- □ 10FV. If a fast-blow type is used, there is a risk of blowing the fuse from the inrush current.
- *6. Indicates the supply voltage of the LKEH-□02FV.

- When using multiple units, there may be variation in voice playback and flash cycle even when the power supply or signal wire is entered simultaneously.
- Do not short circuit the sound and signal light wire together to the flash common wire. Sound and voice will not play properly.
- Do not connect the common wire to the flash common wire. The signal light unit will stop flashing normally.

LKEH-F□type

• Use a normally closed contact circuit such as a relay switch, or an open collector circuit (NPN type) for the external contact on the signal wire. See the table below for circuit and contact capacity.



Model	Rated Voltage	Inrush current *4	Fuse capacity *5
LKEH-□02	24V DC	10A	2A (normal)
LKEH-□10	100V AC	12A	0.5A (time lag)
LKEH-□20	220V AC	6A	0.5A (normal)

*Do not apply voltage to each wire. This may damage the product.

- *1. Flashing control is for non-voltage contact circuit applications only.
- *2. For the LKEH- □ 02, connect the Power Supply (Black) to the negative terminal. For the LKEH- □ 02UL (UL Standard), connect to a Class 2 power supply.
- *3. Indicates the rated contact capacity per LED light unit.
- *4. Rated at maximum operating voltage when power is first switched on.
- *5. Use a slow-blow fuse for the LKEH- □ 10. If a fast-blow type is used, there is a risk of blowing the fuse from the inrush current.
- *6. Indicates the supply voltage of the LKEH-□02.

- When using multiple units, there may be variation in toneplayback and flash cycle even when the power supply or signal wire is entered simultaneously.
- Do not short circuit the sound and signal light wire together to the flash common wire. Sound and voice will not play properly.
- Do not connect the common wire to the flash common wire. The signal light unit will stop flashing normally.

Horn Speaker Audible Alarm with Revolving Warning Light

RT-A/C/D/E



- Sound pressure 105dB
- IP23
- 162φ

- Colors Red, Amber, Green, Blue
- Globe Acrylic resin with superior weather resistance and translucency.

The RT Series features a 162mm diameter rotating incandescent light, pre-loaded alarm sounds, with a 105dB horn for highly effective signaling.

- Comes pre-loaded with 32 tone and alarm sounds
- High weather resistance for outdoor use
- Up to 105dB sound output at 1m
- IP65 rating for dust and water resistance (Available by special order)
- Easily accessible volume control
- Comes in multiple voltages
- NPN compatible

Table of tones

RT-A/C/D/E type

Electronic sound

- 32 built-in tones available in four sets: A, C, D and E
- Selector switch to playback 8 sounds with bit input method or 32 sounds with binary.

Type A

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Fur Elise	A Maiden's Prayer	Minuet in Gmjr	Annie Laurie
London bridge is falling down	Holdiridia	Mary had a little Lamb	Camptown Races
Cuckoo Song	Village Blacksmith	On the Avignon Bridge	Daydream Believer
Amaryllis	Mozart Symphony No.40	Quiet Lakeside	Mountain Musician
Spanish Romance	Katyusha	Grandfather's Clock	Ave Maria

Type C

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Cant take my eyes off of You	Top of the World	The Entertainer	Amazing Grace
Maiden with the flaxen hair	Aux Champs-Elysees	Canon	La-la Sunshine
Space Battleship Yamato	Oshiete	Makenai de	Theme Song
I Don't Want to Miss a Thing	Yozora no Mukou	Ai wa Katsu	Truth
Guts Daze!!	Odoru Ponpokorin	Ima sugu Kiss Me	Haru yo, Koi

Type D

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Runner	Mamotte Agetai	Chime	Call Sign
While listening to Olivia	September	Douyobi no Koibito	Aki no Kihai
Surf Tengoku, Ski Tengoku	Iro, White Blend	Happy Birthday	Hi Ho
I've been working on the Railroad	The Bear Song	Toys Go Cha-Cha-Cha	Konnako Irukana
Shubert's Lullaby	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Aire

Type E

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Bee-boh sound	Galloping Hi-Lo	Alien Chatter	Falling Crystals
Inverted Reveille x3	Galactic Motor	Ringling Phone	Two Tone
Alarm Clock	Ringling Hi-Lo	Fur Elise	Minuet in Gmjr
Annie Laurie	London bridge is falling down	Mary had a little Lamb	Camptown Races
Amaryllis	Mozart Symphony No.40	Ave Maria	Grandfather's Clock

Use of Copyrighted Material

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded for Type-A, Type-C and Type-D melody charts outside of Japan. Therefore, contact the local copyright association for permission before using the product outside Japan.

- Bit input → plays 8 sounds (see instruction manual for 8 sound grouping) Binary input → plays 32 sounds
- Alarm tones are denoted in characters for convenience. Please inquire about actual tones or check our website for more details.

Specifications

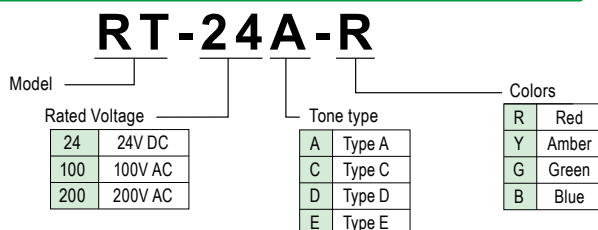
Model	Rated Voltage	Operating Voltage Range	Power Consumption	Bulb		Number of flashes	Sound Pressure Level	External Contact Capacity	Operating Temperature Range	Contact Input Method	Playback Channel	Protection Rating	Quality
				Number									
RT-24A-R-Y	24V DC	21 - 27V DC	24W	24V 20W	55	115/minute	Maximum 105dB (at 1m)	10mA or more	-20°C - +50°C (humidity 85% or less)	Normally closed contact input (1 bit per 9 points)	Bit input 8 Binary input 32	IP23	2.0kg
RT-100A-R-Y	100V AC	90 - 110V AC	32W	12V 15W	54	95/minute							2.5kg
RT-200A-R-Y	200V AC	180 - 240V AC	30W										2.5kg

Bulb Shape: glass bulb G18 base BA15S

(Note) The indicated sound pressure level is at maximum volume and the actual level may be lower than the indicated sound pressure level due to tone and voltage fluctuations.

*When using multiple units, there may be variation in the playback sound even when started simultaneously.

Model Code



Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Wall Mount Bracket	SZ-023
Wall Mount Bracket	SZ-008

Light bulb No.	Model
54	D01201503-F1
55	D02402003-F1

*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

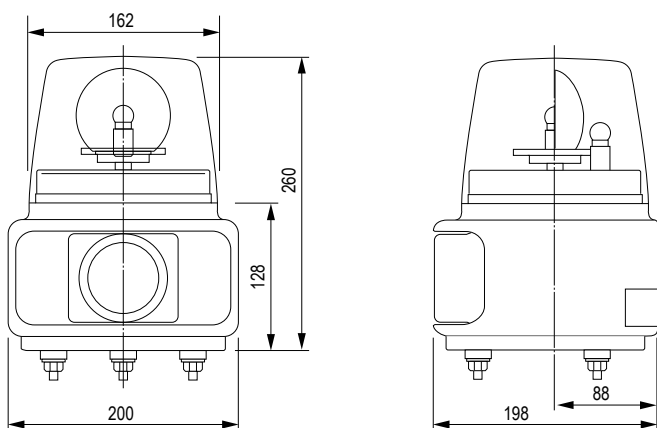
Audibles

Hybrid Signaling Devices

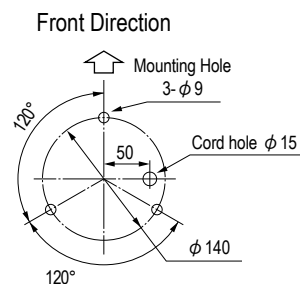
LED Illumination

Options

Dimensions (mm)

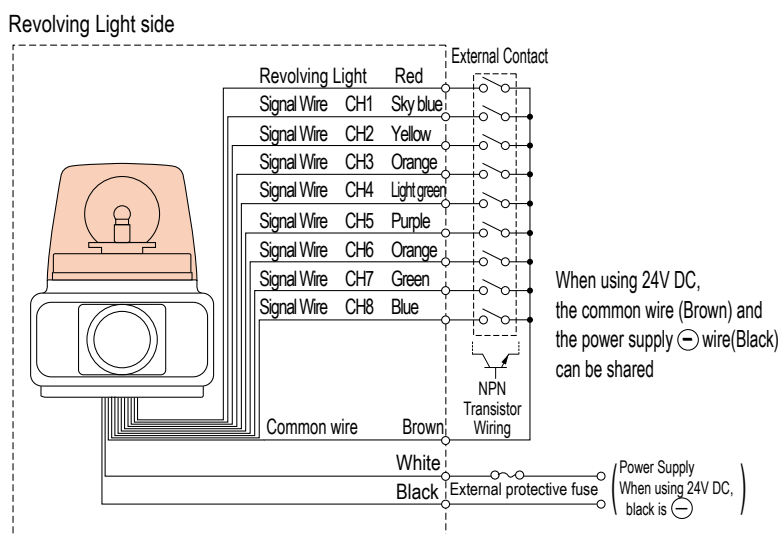


Installation Dimension Drawings



Wiring Diagram

RT-A/C/D/E types



Channel Priority

CH8 (Blue) > CH7 (Green) > CH6 (Orange) > CH5 (Purple) > CH4 (Light green) > CH3 (Pink) > CH2 (Yellow) > CH1 (Sky blue)
 *If multiple signals are input simultaneously, it will prioritize the channel with the highest number.

Model	Inrush Current	Fuse
RT-24	Maximum 10A/20ms	250V 2A
RT-100	None	250V 0.5A
RT-200	None	250V 0.5A

Power supply voltage	RT-A/C/D/E
100V AC 200V AC	Revolving light, sound signal wire When circuit is open: DC18V When circuit is closed: maximum 6mA
24V DC	Revolving light, sound signal wire When circuit is open: 24V When circuit is closed: maximum 6mA

*Also connectable with an NPN open collector transistor.

RT-24 □

RT-100 □ / 200 □

Rated cross sectional area : Wire type : Wire length
 Power supply wire : 0.75mm² : CKVV : 320mm
 Signal wire : 0.3mm² : CKVV : 300mm

Power supply wire : 0.75mm² : VCTF : 320mm
 Signal wire : 0.3mm² : CKVV : 300mm

RT-VF



- Colors** Red, Amber, Green, Blue
- Globe** Acrylic resin with superior weather resistance and translucency.

■ RT-VF/FUL

The RT-VF Series features a 162mm diameter rotating incandescent light, programmable voice signaling, with a 105dB horn for highly effective signaling.

- High weather resistance for outdoor use
- Up to 105dB sound output at 1m
- Message capacity up to 63 seconds with 5 channel bit input or 31 channel binary input
- Easily accessible volume control
- Comes in multiple voltages
- NPN compatible



(UL specifications only)

Specifications

RT-VF specifications

Model	Rated Voltage	Operating Voltage Range	Power Consumption	Bulb		Number of flashes	Sound Pressure Level	External Contact Capacity	Operating Temperature Range	Contact Input Method	Playback Channel	Protection Rating	Quality
				Number	Power								
RT-24VF	24V DC	21 - 27V DC	24W	24V 20W	55	115/minute	Maximum 105dB (at 1m)	10mA or more	-10 °C to +50 °C (humidity 85% or less)	Normally closed contact input (1 bit per 6 points)	Bit input: 4 Binary input: 15 When using sound reduction mode Bit input: 3 Binary input: 7	IP23	2.0kg
RT-100VF	100V AC	90 - 110V AC	32W	12V 15W	54	105/minute							2.4kg
RT-200VF	200V AC	180 - 240V AC	30W		95/minute	2.4kg							

Bulb Shape ··· glass bulb G18 base BA15S

(Note) The indicated sound pressure level is the maximum volume (sine wave (1KHz)) and the actual level may be lower than the indicated sound pressure level due to message content, tone, and voltage fluctuations. *When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone and voice.

RT-VFUL specifications (UL certified model)

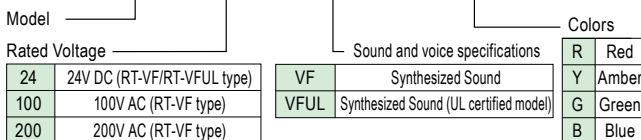
Model	Rated Voltage	Operating Voltage Range	Power Consumption	Bulb		Number of flashes	Sound Pressure Level	External Contact Capacity	Operating Temperature Range	Contact Input Method	Playback Channel	Protection Rating	Quality
				Number	Power								
RT-24VFUL	24V DC	21 - 27V DC	24W	24V 20W	55	115/minute	Maximum 105dB (at 1m)	10mA or more	-10 °C to +50 °C (humidity 85% or less)	Normally closed contact input (1 bit per 6 points)	Bit input: 4 Binary input: 15 When using sound reduction mode Bit input: 3 Binary input: 7	IP23	2.0kg

Bulb Shape ··· glass bulb G18 base BA15S

(Note) The indicated sound pressure level is the maximum volume (sine wave (1KHz)) and simultaneously indicated sound pressure level due to message content, tone, and voltage fluctuations. *When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone and voice.

Model Code

RT-24VFUL-R



Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Wall Mount Bracket	SZ-023
Wall Mount Bracket	SZ-008
SD card (2GB)	SDV-2GP

Light bulb No.	Model
54	D01201503-F1
55	D02402003-F1

*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

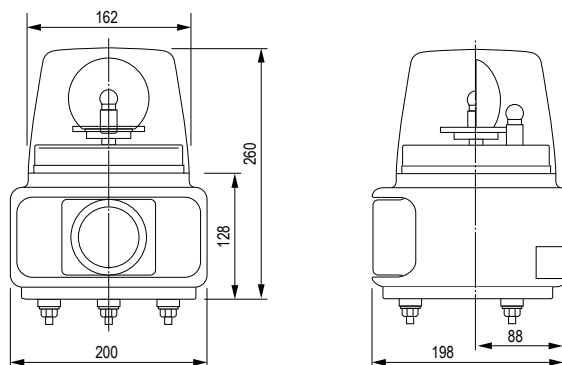
Audibles

Hybrid Signaling Devices

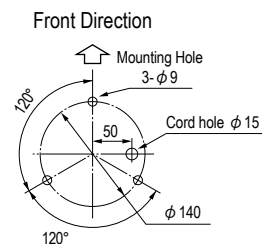
LED Illumination

Options

Dimensions (mm)

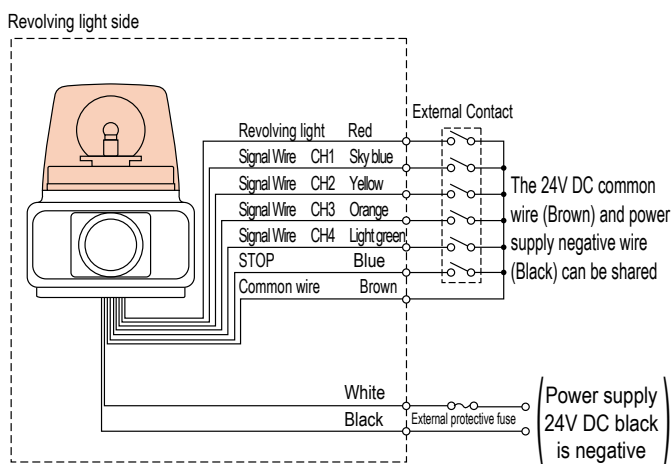


Installation Dimension Drawings



Wiring Diagram

RT-VF/VFUL



Channel Priority

STOP (Blue) > CH4 (Light green) > CH3 (Orange) > CH2 (Yellow) > CH1 (Sky blue)

*If multiple signals are input simultaneously, it will prioritize the channel with the highest number.

The beginning of the message may be cut off when starting a message with the ON/OFF power supply switch.

Model	Fuse
RT-24VF	250V 2A
RT-100VF	250V 0.5A
RT-200VF	250V 0.5A

Power supply voltage	RT-VF
100V AC	When circuit is open: 18V
200V AC	When circuit is closed: 6mA
24V DC	When circuit is open: power supply voltage
	When circuit is closed: 6mA

*Also connectable with an NPN open collector transistor.

RT-24VF, RT-24VFUL

Rated cross-sectional area : Wire type : Wire length
 Power supply wire : 0.75mm² : CKVV : 320mm
 Signal wire : 0.3mm² : UL1007 : 300mm

RT-100VF, RT-200VF

Rated cross-sectional area : Wire type : Wire length
 Power supply wire : 0.75mm² : VCTF : 320mm
 Signal wire : 0.3mm² : CKVV : 300mm

Playback mode (-VF/-VFUL)

Select various playback modes based on their application.

A	Bit input mode	Plays back up to 4 messages using Channels 1 to 4.
B	Binary input mode	Plays back up to 15 messages using Channels 1 to 4.
C	Bit input sound reduction mode	Plays back up to 3 messages using Channels 1 to 3. When Channel 4 receives an input, the volume is reduced by about -10dB.
D	Binary input sound reduction mode	Plays back up to 7 messages using Channels 1 to 3. When Channel 4 receives an input, the volume is reduced by about -10dB.
E	Playback prioritizing bit input subsequent input Mode	Plays back up to 7 messages using Channels 1 to 3. If a message input occurs during playback of another message, the message will stop and allow the input message to play back.
F	Playback mode prioritizing binary input subsequent input	Plays back up to 15 messages using Channels 1 to 4. If a message input occurs during playback of another message, the message will stop and allow the input message to play back.
G	Bit input hold playback mode	Plays back up to 4 messages using Channels 1 to 4. As long as the input continues, the message keeps playing. Once the input is removed, the message playback stops.*
H	Binary input hold playback mode	Plays back up to 15 messages using Channels 1 to 4. As long as the input continues, the message keeps playing. Once the input is removed, the message playback stops.*
I	Test mode	Plays back Message No. 1

KJT



Colors	Red, Amber, Green, Blue
Globe	Uses acrylic resin with superior weather resistance and translucency.

The KJT Series features an 116mm width, a 90dB audible alarm, and comes in multiple voltages.

- Incandescent bulb light source type
- Up to 90dB audible alarm at 1m
- Easily accessible volume control
- Modular design for field customizing
- NPN compatible

* sound pressure maximum values: 24V models: 90dB (at 1m); 100V, 200V models 85dB (at 1m). Sound pressure values change, based on tones and surrounding environment.

Sound pressure 90dB (24V model)
IP23
116 mm

- Standard Colors:
 - 1-Tier model / Red (-R), Amber (-Y), Green (-G)
 - 2-Tier model / Red-Amber (-RY), Red-Green (-RG)
 - 3-Tier model / Red-Amber-Green (-RYG)

Table of tones

■ KJT-A/C/D/E type

Electronic sound

- We provide 32 built-in sounds per unit across 4 types: A, C, D, and E.
- Enabled to play 8 sounds with a bit input method and 32 sounds with a binary input method using selection switch settings.

Type A

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Fur Elise	A Maiden's Prayer	Minuet in Gmjr	Annie Laurie
London bridge is falling down	Holdiridia	Mary had a little Lamb	Camptown Races
Cuckoo Song	Village Blacksmith	On the Avignon Bridge	Daydream Believer
Amaryllis	Mozart Symphony No.40	Quiet Lakeside	Mountain Musician
Spanish Romance	Katyusha	Grandfather's Clock	Ave Maria

Type C

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Can't take my eyes off of You	Top of the World	The Entertainer	Amazing Grace
Maiden with the flaxen hair	Aux Champs-Elysees	Canon	La-la Sunshine
Space Battleship Yamato	Oshiete	Makenai de	Theme Song
I Don't Want to Miss a Thing	Yozora no Mukou	Ai wa Katsu	Truth
Guts Daze!!	Odoru Ponpokorin	Ima sugu Kiss Me	Haru yo, Koi

Type D

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Runner	Mamotte Agetai	Chime	Call Sign
While listening to Olivia	September	Douyobi no Koibito	Aki no Kihai
Surf Tengoku, Ski Tengoku	Iro, White Blend	Happy Birthday	Hi Ho
I've been working on the Railroad	The Bear Song	Toys Go Cha-Cha-Cha	Konnako Irukana
Shubert's Lullaby	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Aire

Type E

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Bee-boh sound	Galloping Hi-Lo	Alien Chatter	Falling Crystals
Inverted Reveille x3	Galactic Motor	Ringin Phone	Two Tone
Alarm Clock	Ringin Hi-Lo	Fur Elise	Minuet in Gmjr
Annie Laurie	London bridge is falling down	Mary had a little Lamb	Camptown Races
Amaryllis	Mozart Symphony No.40	Ave Maria	Grandfather's Clock

- Bit input → plays 8 sounds (see instruction manual for 8 sound grouping) Binary input → plays 32 sounds
- Alarm tones are denoted in characters for convenience' sake. Please inquire about actual tones or check our website for more details.

Use of Copyrighted Material

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded for Type-A, Type-C and Type-D melody charts outside of Japan. Therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. Melody chart Type-E is recommended for use outside of Japan as this playlist does not include copyrighted music or songs, and permission is not required.

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

Specifications

Model	Rated Voltage	Operating Voltage Range	Power Consumption	Bulb		Number of flashes	Sound Pressure Level	External Contact Capacity	Operating Temperature Range	Contact Input Method	Playback Channel	Protection Rating	Mass											
				Number	Number																			
1 tier Electronic sound	KJT-102□	24V DC	21 - 27V DC	21W	24V 10W	10	120±30 /minute	Maximum 90dB (at 1m)	10mA or more	-20°C - +45°C (humidity 85% or less)	Normally closed contact input (1 bit per 9 points)	Bit input 8 Binary input 32	IP23	1.3kg										
	KJT-110□	100V AC	90 - 110V AC	20W	12V 5W	12	120±20 /minute	Maximum 85dB (at 1m)						1.7kg										
	KJT-120□	200V AC	180 - 240V AC											1.9kg										
2 tier	KJT-202□	24V DC	21 - 27V DC	31W	24V 10W	10	120±30 /minute	Maximum 90dB (at 1m)						10mA or more	-20°C - +45°C (humidity 85% or less)	Normally closed contact input (1 bit per 10 points)	Bit input 8 Binary input 32	IP23	2.4kg					
	KJT-210□	100V AC	90 - 110V AC	26W	12V 5W	12	120±20 /minute	Maximum 85dB (at 1m)											2.5kg					
	KJT-220□	200V AC	180 - 240V AC																3.0kg					
3 tier	KJT-302□	24V DC	21 - 27V DC	41W	24V 10W	10	120±30 /minute	Maximum 90dB (at 1m)											10mA or more	-20°C - +45°C (humidity 85% or less)	Normally closed contact input (1 bit per 11 points)	Bit input 8 Binary input 32	IP23	2.5kg
	KJT-310□	100V AC	90 - 110V AC	32W	12V 5W	12	120±20 /minute	Maximum 85dB (at 1m)																3.0kg
	KJT-320□	200V AC	180 - 240V AC																					3.0kg

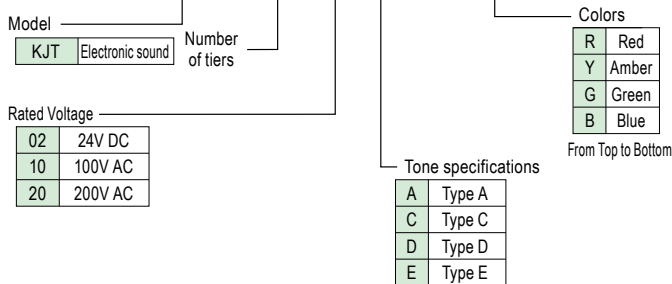
Bulb Shape ··· glass bulb G18 base BA15S

(Note) The indicated sound pressure level is at maximum volume and the actual level may be lower than the indicated sound pressure level due to tone and voltage fluctuations.

*When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone.

Model Code

KJT-302A-RYG



Optional Parts

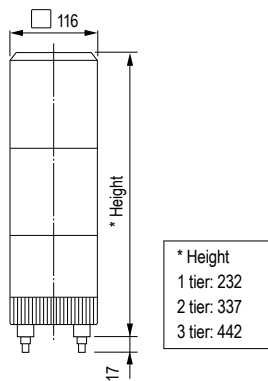
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008

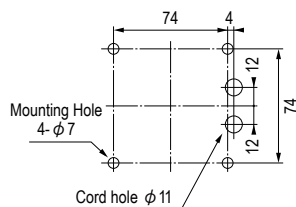
Light bulb No.	Model
10	D02401003A-F1
12	D01200503A-F1

*Light bulbs come in packs of 10.
*Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

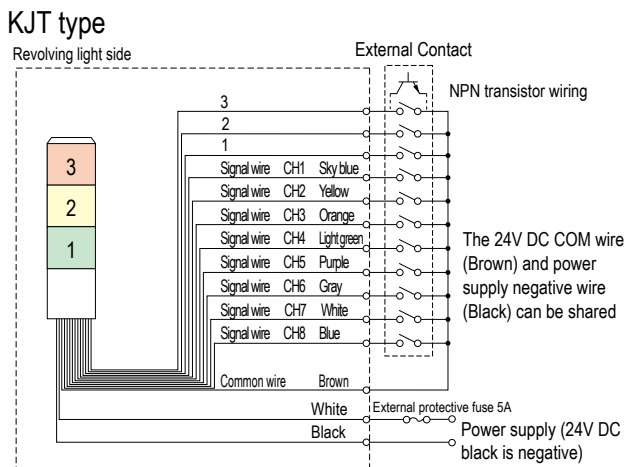
Dimensions (mm)



Installation Dimension Drawings



Wiring Diagram



Order of priority

CH8 (Blue) > CH7 (White) > CH6 (Gray) > CH5 (Purple) > CH4 (Light green) > CH3 (Pink) > CH2 (Yellow) > CH1 (Sky blue)

*If multiple signals are input simultaneously, it will prioritize the channel with the highest number.

Power supply voltage	KJT-A/C/D/E
24V DC	Revolving light, sound signal wire When circuit is open: 24V When circuit is closed: 6mA

Revolving light signal wire classification table

Type	Wire Color		
	1	2	3
1-Tier model	Red R	—	—
2-Tier model	Orange O	Red R	—
3-Tier model	Green G	Orange O	Red R

Nominal Cross-sectional Area :	Wire Type :	Wire Length
Power Supply Wire 0.75mm ²	VCT	330mm
Signal Wire 0.3mm ²	UL1007	340mm

RFT



Colors	Red, Amber, Green, Blue
Globe	Polycarbonate resin with superb shock and heat resistance

- The RFT Series features a 100mm diameter rotating LED light, pre-loaded audible alarm sounds, with a 90dB horn for highly effective signaling.
- Efficient, maintenance-free LEDs
 - Gear-method system for controlling light source and motor significantly increases product life
 - High weather resistance for outdoor use
 - Up to 90dB sound output at 1m
 - 32 pre-loaded tone and alarm sounds
 - IP54 protection rating
 - Easily accessible volume control
 - NPN compatible



Table of tones

32 Built-in Tones. Every unit has 32 tones built-in. Four built-in variations include RFT-A, RFT-C, RFT-D and RFT-E.

Type A

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Fur Elise	A Maiden's Prayer	Minuet in Gmjr	Annie Laurie
London bridge is falling down	Holdiridia	Mary had a little Lamb	Camptown Races
Cuckoo Song	Village Blacksmith	On the Avignon Bridge	Daydream Believer
Amaryllis	Mozart Symphony No.40	Quiet Lakeside	Mountain Musician
Spanish Romance	Katyusha	Grandfather's Clock	Ave Maria

Type C

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Can't take my eyes off of You	Top of the World	The Entertainer	Amazing Grace
Maiden with the flaxen hair	Aux Champs-Elysees	Canon	La-la Sunshine
Space Battleship Yamato	Oshiete	Makenai de	Theme Song
I Don't Want to Miss a Thing	Yozora no Mukou	Ai wa Katsu	Truth
Guts Daze!!	Odoru Ponpokorin	Ima sugu Kiss Me	Haru yo, Koi

Type D

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Runner	Mamotte Agetai	Chime	Call Sign
While listening to Olivia	September	Douyobi no Koibito	Aki no Kihai
Surf Tengoku, Ski Tengoku	Iro, White Blend	Happy Birthday	Hi Ho
I've been working on the Railroad	The Bear Song	Toys Go Cha-Cha-Cha	Konnako Irukana
Shubert's Lullaby	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Aire

Type E

Beep	Stutter	Bell	Yelp
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter & Bell	Synthesized Melody	Chime	Call Sign
Bee-boh sound	Galloping Hi-Lo	Alien Chatter	Falling Crystals
Inverted Reveille x3	Galactic Motor	Ringling Phone	Two Tone
Alarm Clock	Ringling Hi-Lo	Fur Elise	Minuet in Gmjr
Annie Laurie	London bridge is falling down	Mary had a little Lamb	Camptown Races
Amaryllis	Mozart Symphony No.40	Ave Maria	Grandfather's Clock

Use of Copyrighted Material

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded for Type-A, Type-C and Type-D melody charts outside of Japan. Therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. Melody chart Type-E is recommended for use outside of Japan as this playlist does not include copyrighted music or songs, and permission is not required.

- Bit input →8 sound playback (See instruction manual for 8 sound grouping) Binary input →32 sound playback
- Alarm tones are denoted in characters for convenience. Please inquire about actual tones or check our website for more details.

Specifications

Model	Rated Voltage	Operating Voltage Range	Maximum power consumption	Sound Pressure Level	Channel input (number of playback tones)	Operating Temperature Range	Number of flashes	Mass
RFT-24	24V DC	24V DC ±10%	12W	Maximum 90dB (at 1m)	Bit input (8CH) Binary input (32CH)	-10 °C to +50 °C (humidity 85% or less)	115±15 /minute	1.0kg±10%
RFT-100A-R	100V AC	100V AC±10%	13W					1.2kg±10%
RFT-220	220V AC	220V AC±10%	13W					1.2kg±10%

(Note) The sound pressure level changes based on tone, use environment, and working voltage. *When using multiple units, there may be variation in the playback sound even when started simultaneously.

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

Model Code

RFT-100A-R

Rated Voltage

24	24V DC
100	100V AC
220	220V AC

Tone specifications

A	Type A
C	Type C
D	Type D
E	Type E

Revolving light colors

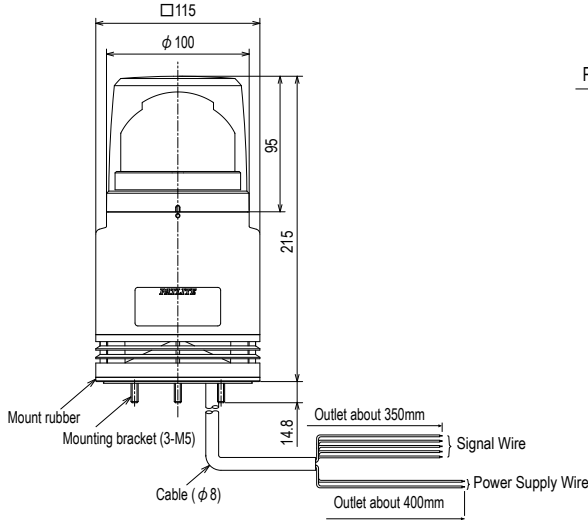
R	Red
Y	Amber
G	Green
B	Blue

Optional Parts

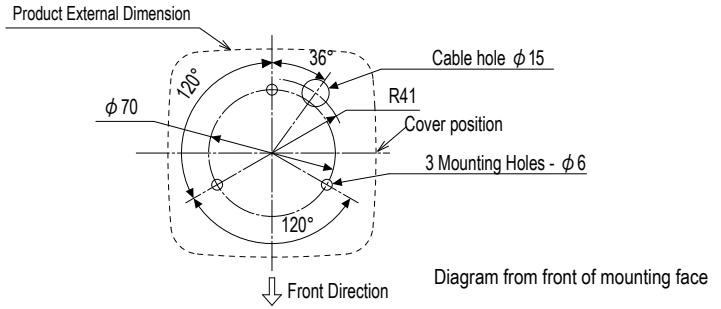
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	RF-001
Overhead mounting bracket	RF-002
SD card (2GB)	SDV-2GP

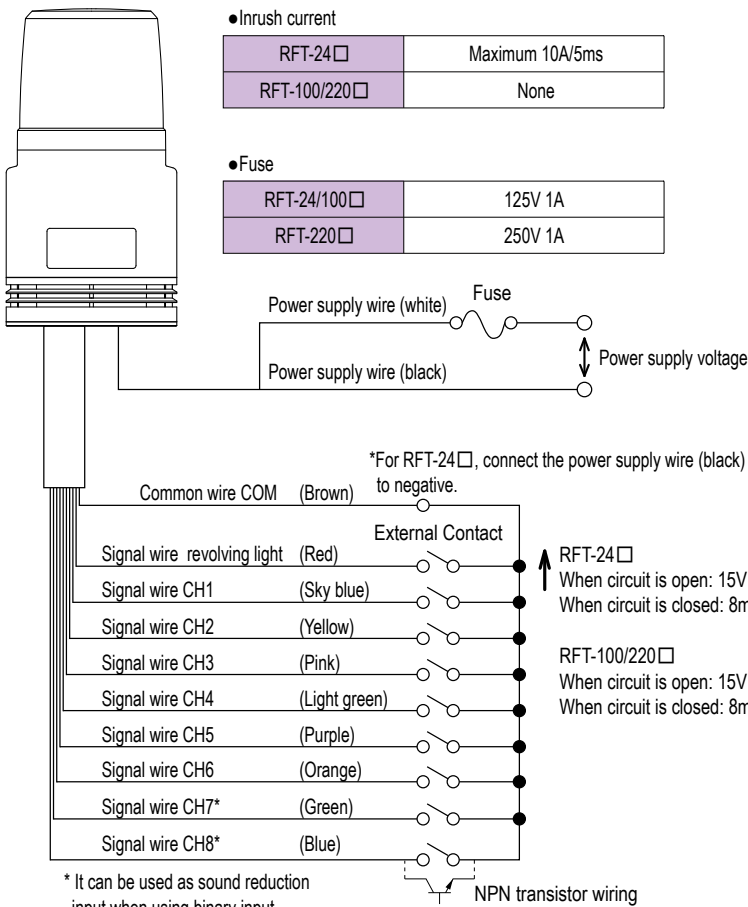
Dimensions (mm)



Installation Dimension Drawings



Wiring Diagram

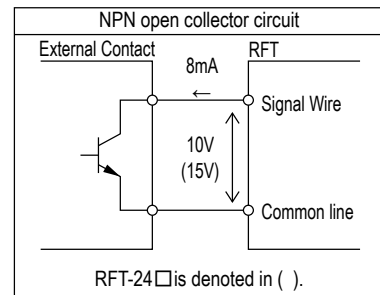
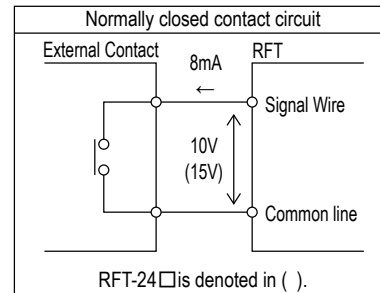


● Inrush current

RFT-24□	Maximum 10A/5ms
RFT-100/220□	None

● Fuse

RFT-24/100□	125V 1A
RFT-220□	250V 1A



Contact Capacity	
Current Capacity	10mA or more
Withstand Voltage	20V DC or more
Leakage Current	0.1mA or less
ON voltage (Vsat)	1V or less

Nominal cross-sectional area : Wire type
 RFT-24: power supply wire : AWG18 : UL1061
 Signal wire : AWG22 : UL1061
 RFT-100/220: power supply wire : 0.75mm² : VSF
 Signal wire : AWG22 : UL1061

● The revolving light operates simultaneously when a tone is played back.

* It can be used as sound reduction input when using binary input.

RFV



Colors	Red, Amber, Green, Blue
Globe	Polycarbonate resin with superb shock and heat resistance

The RFV Series features a 100mm diameter rotating LED light, pre-loaded audible alarm sounds, with a 90dB horn for highly effective signaling.

- Efficient, maintenance-free LEDs
- Gear-method system for controlling light source and motor significantly increases product life
- Message capacity up to 63 seconds with 4 channel bit input or 15 channel binary input
- High weather resistance for outdoor use
- Up to 90dB sound output at 1m
- Vibration resistant up to 4.5G
- IP54 protection rating
- Easily accessible volume control
- NPN compatible



Sound pressure 95dB | IP54 | RoHS | CE | 100φ (only 24V)

Specifications

Model	Rated Voltage	Operating Voltage Range	Power Consumption	Number of flashes	Sound Pressure Level	Audio File	Operating temperature range	Maximum Number of Playback Seconds	Number of messages	Protection Rating	Mass	Colors
RFV-24F	24V DC	24V DC ±10%	Maximum 18W	115±15 time/min	Maximum 95dB (at 1m)	MPEG1-Audio Layer 3 (MP3) Standard bitrate: 64kbit/s, Fs=44.1kHz	-10 °C to +50 °C (humidity 85% or less)	63 s	4 (bit input) 15 (binary input)	IP54 (Mounted in the upright direction)	1.0kg±10%	R, Y G, B
RFV-100F	100V AC	100V AC±10%	Maximum 16W									R, Y G, B
RFV-220F	220V AC	220V AC±10%										R, Y G, B

(Note) The indicated sound pressure level is the maximum volume (synthetic sound type: sine wave (1KHz)) and the actual level may be lower than the indicated sound pressure level due to message content, tone, and voltage fluctuations.
*When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone and voice.

Model Code

RFV-100F-R

Rated Voltage

24	24V DC
100	100V AC
220	220V AC

Revolving light colors

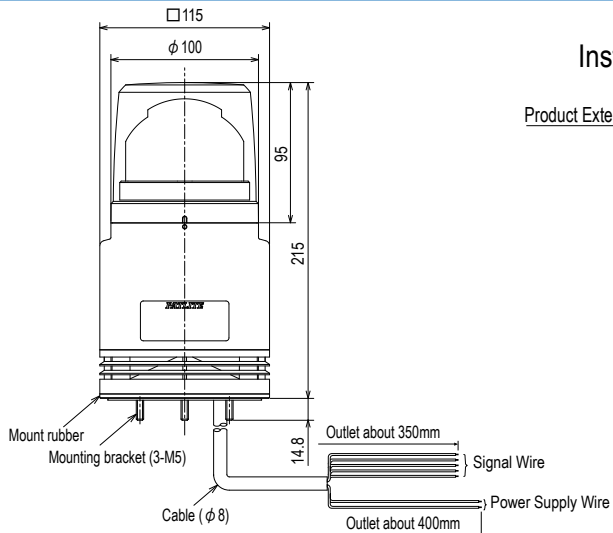
R	Red
Y	Amber
G	Green
B	Blue

Optional Parts

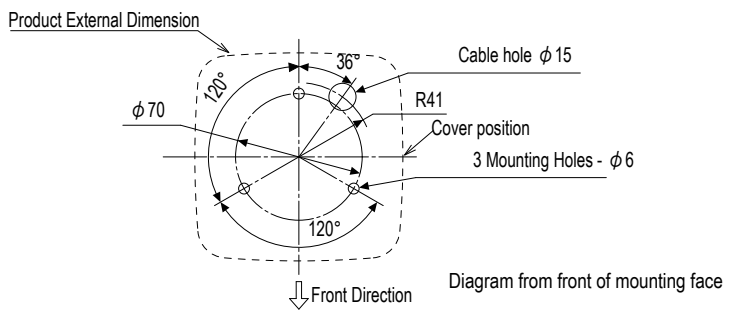
For details, see pages 182 to 187.

Optional Parts	Model
Wallmount Bracket	RF-001
Overhead mounting bracket	RF-002
SD card (2GB)	SDV-2GP

Dimensions (mm)

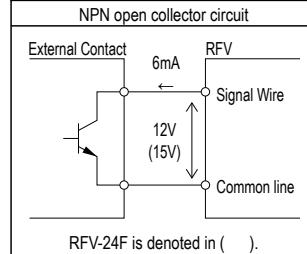
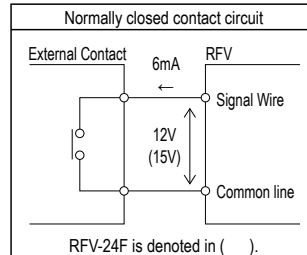
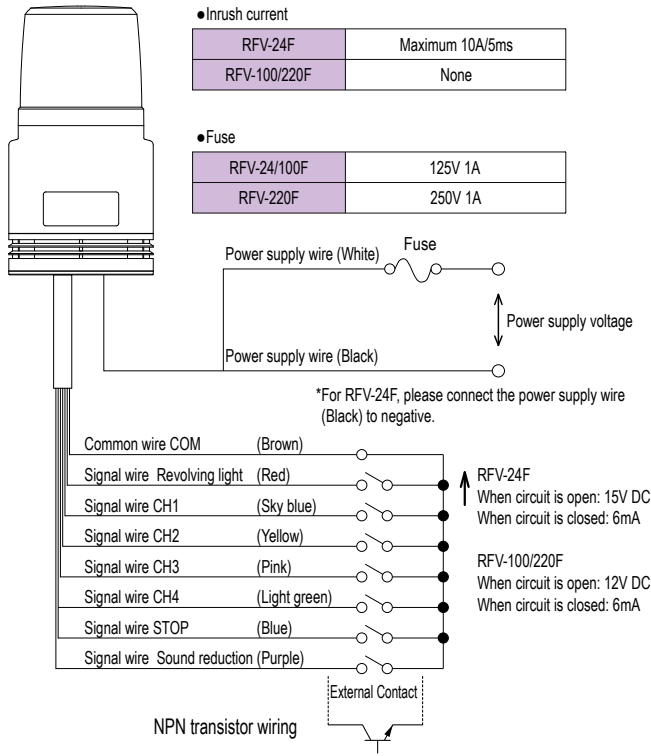


Installation Dimension Drawings



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

Wiring Diagram



Contact Capacity	
Current Capacity	10mA or more
Withstand Voltage	20V DC or more
Leakage Current	0.1mA or less
ON voltage (Vsat)	1V or less

● The revolving light operates simultaneously when a message is played back.
(Note) Input requires at least 100msec.

Nominal cross sectional area : Wire type
 RFV-24F : Power supply wire : AWG18 : UL1061
 Signal wire : AWG22 : UL1061
 RFV-100F/220F : power supply wire : 0.75mm² : VSF
 Signal wire : AWG22 : UL1007

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower




Audibles

Hybrid Signaling Devices

LED Illumination

Options

LED Work Lights

Page number	Page 172	Page 173	Page 175
Model Name	LED Work Light		LED Work Light
Model	CWF	CLA	CWA
Product image			
Rated Voltage	100-240V AC	24V DC	24V DC
Size	300/600/900	100/200/300/600/900/1200	300/600/900
IP	20	66/67/69K	65
Body	Aluminum	Polycarbonate	Polycarbonate
Cover	Polycarbonate	Polycarbonate	Polycarbonate
Color temperature	5700K(-CD)	6800K(-CD)	6500K(-CD)
Mounting			
CE	○	○	○
RoHS	○	○	○
UL	○	○	○

Page number	Page 177	Page 179	Page 181
Model Name	LED Work Light		LED Work Light
Model	CLK	CWK	CLN
Product image			
Rated Voltage	24V DC	24V DC	24V DC
Size	200/300/600	200/300/600	□85
IP	66G/67G/69K	66G/67G	66G/67G/69K
Body	Aluminum/Stainless steel	Aluminum	Aluminum
Cover	Tempered Glass	Tempered glass	Tempered glass
Color temperature	6500K(-CD),5000K(-CN)	6500K(-CD)	6500K
Mounting			
CE	○	○	○
RoHS	○	○	○
UL	○*	○	○

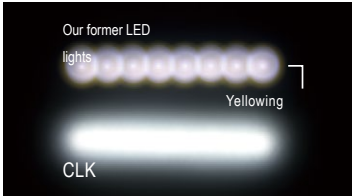
*AG (aluminum) specifications only

Shows Shadows and Light



Virtual midday sunlight color remarkably distinguishes shadows and edges. It's suitable for use with detailed lighting or lighting up displays.

Yellow Ring Reduction (CLK)



The new PATLITE "micro-array lens" is designed to even-out light refraction, reduce unevenness and "Yellow Ring", a bad influence on lighting.

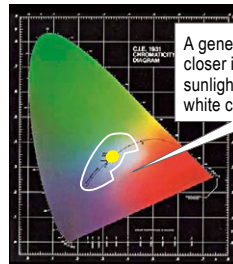
○Microarray lens



Daylight



The daylight color is the color temperature close to the sunlight at noon, and it is suitable for identifying shapes, precision work and inspection for research applications. (Approximately equivalent to a D65 light source)



□ White spectrum inside the white line
The natural white general spectrum

- IP6X= The product is placed in a dust chamber with a negative pressure state so that dust is made to float for 8 hours, and there is no invasion inside.
- IPX6= A water nozzle with a diameter of 12.0mm is placed at a range from 2.5 to 3.0 meters with a water velocity of 100 litres per minute injected towards the
- IPX7= test piece in an omni-direction for three minutes or more without being affected by any harmful influences.
- IPXXG= The outline of the product is submerged at a distance of 1m from the bottom of a tank, and it is held submerged for 30 minutes.
- IPX9K= A non-water soluble N3 class No. 8 as specified in JIS K2241 (for coolants) is dropped on top of the upper part of a product at a rate of 0.5L/h for 48 hours. IPX9K is the German DIN 40050 PART9 standard. It is defined as a protection regulation for high temperature and high-pressurized water. Water is heated up to 80 and sprayed at a water pressure in the range from 80 to 100 BARs at 14 to 16 liters per minute at the test object. The test object is at a distance of 100 to 150 mm from the nozzle and sprayed in all directions at 0, 30, 60, and 90 degrees, then sprayed at a horizontal angle while it is being rotated, all done for a period of 30 seconds without being affected by water penetration.

Tough aluminum materials and stainless steel body

Aluminum specifications (CLK-AG)



Light-emitting component: tempered glass

Stainless steel specifications (CLK-SG)



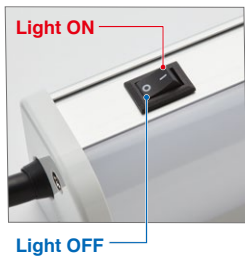
Light-emitting component: tempered glass or acrylic

- Compliant with 3 different protection ratings; IP66 and 67G (JIS C0920:2003) and IP 69K (DIN 40050 part 9) in waterproof performance for the demand which needs 80 underpressure hot water washing in the field for meat / food processing, medicine manufacturing and beverage industries.
 - Product lineup of four types with three different sizes (200-600 mm), 2 colors (Daylight, Natural White), Main Unit selection of material, and the type of cable connection. It can adapt to various scenes.
 - The operating temperature limit of -40 to +60 allows the possibility for installation in a sub-freezing temperature environment, such as a cold storage warehouse.
 - Corresponds to Europe's RoHS Directive.
 - CE Marking Compliant
 - UL Listed (File No.E306141) for Cable and aluminium body
 - UL Recognized Component (File No.E306141) for M12 connector / M12 link and aluminium body
- *Water-proof and oil resistance varies according to the model.

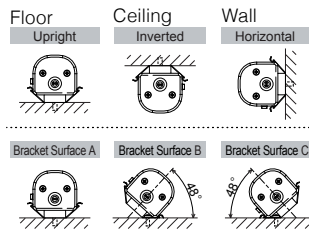


User-Friendly Operation

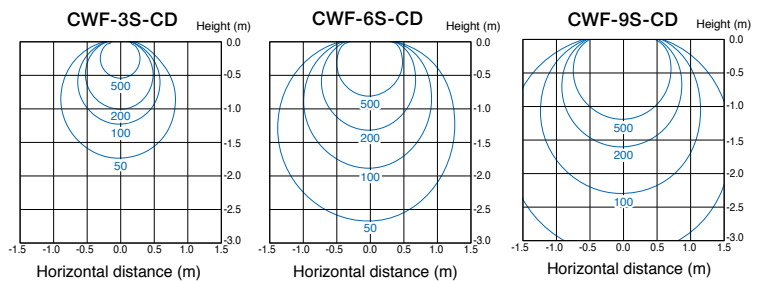
Rocker Switch



Simple Installation



Illuminance Distribution Chart (Ix)



Specifications

Model	CWF3S-24	CWF6S-24	CWF3S-M2	CWF6S-M2	CWF9S-M2
Color Temperature (typ.)	5700K				
Illuminance (typ.) (Center) 1.0m	165 lx	320 lx	150 lx	320 lx	445 lx
Total Luminous Flux (typ.)	500 lm	1000 lm	500 lm	1000 lm	1500 lm
Rated Voltage	24V DC		100-240V AC (50/60Hz)		
Operating Voltage Range	21.6-26.4V DC		90-264V AC		
Rated Power Consumption	5W	10W	5W	10W	15W
Operating Ambient Temperature	-25°C ~ +60°C		-20°C ~ +50°C		
Operating Ambient Humidity	90% RH or less, no condensation				
Mounting Location	Indoor				
Mounting Direction	All Directions				
Protection Rating	IP20				
Mass (Tolerance ±10%)	0.42kg	0.57kg	M2U:0.53kg M2C:0.46kg	M2U:0.68kg M2C:0.6kg	M2U:0.84kg M2C:0.76kg

Model Code

CWF-□-□-CD

Full Length

3S	300mm
6S	600mm
9S	900mm

Luminous Color

CD	Daylight
----	----------

Rated Voltage / Standards

24	24V DC / UL LISTED, CE #1
M2U	100-240V AC / UL LISTED
M2C	100-240V AC / CE, KC

*1 CWF [3S][6S] type only

Dimensions (mm)

LED Work Light

Unit : mm

CWF Standard Mounting Bracket (2 pcs)

Model	Dimension A Body Length	Dimension B Bracket Pitch
CWF3S-□-CD	300	260
CWF6S-□-CD	600	560
CWF9S-□-CD	900	860

Optional Parts

Standard Mounting Bracket

Option Swivel Bracket CWF-001

Option Magnetic Mounting Bracket CWF-002

Adjustment Angle 130°

* Mounting screws not included. Recommended Torque : 1.5Nm

* Accessory Bracket Screw 2pcs included

* Accessory Bracket Screw 2pcs included. Mounting screws not included.

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

CLA

Network

Signal Tower

Signal Light

Revolving Warming Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options



The CLA Series is built for use in high-pressure, high-temperature cleaning and sub-zero environments. The rugged polycarbonate construction means there is no glass or other contamination to be concerned about. Its various lengths allow it to be used in small and large areas and the daylight color temperature enables objects to be seen clearly.

- First in industry (based on self investigation) IP66, IP67 and IP69K rated LED work light
- Ideal for use in wet or high-pressure, high-temperature applications in food processing, beverage, and pharmaceutical industries.
- 34% less heat generated compared to 20W fluorescent lights, thus keeping the work environment cooler.
- Ultra-bright, maintenance-free LEDs

- IP6X= The product is placed in a dust chamber with a negative pressure state so that dust is made to float for 8 hours, and there is no invasion inside.
- IPX6= A water nozzle with a diameter of 12.0mm is placed at a range from 2.5 to 3.0 meters with a water velocity of 100 litres per minute injected towards the test piece in an omni-direction for three minutes or more without being affected by any harmful influences.
- IPX7= The outline of the product is submerged at a distance of 1m from the bottom of a tank, and it is held submerged for 30 minutes.
- IPX9K= A non-water soluble N3 class No. 8 as specified in JIS K2241 (for coolants) is dropped on top of the upper part of a product at a rate of 0.5L/h for 48 hours. IPX9K is the German DIN 40050 PART9 standard. It is defined as a protection regulation for high temperature and high-pressurized water. Water is heated up to 80 and sprayed at a water pressure in the range from 80 to 100 BARs at 14 to 16 liters per minute at the test object. The test object is at a distance of 100 to 150 mm from the nozzle and sprayed in all directions at 0, 30, 60, and 90 degrees, then sprayed at a horizontal angle while it is being rotated, all done for a period of 30 seconds without being affected by water penetration.

Passed dust-proof and water resistance tests listed below:

Specifications

Model	Light source color	Rated Voltage	Operating Voltage Range	Rated Current Consumption	Central Illuminance (lx/50cm)	Body Materials	Operating Temperature Range	Mounting direction (Mounting specification)	Protection Rating	Vibration Resistance	Mass	Cable length
CLA1S-24-CD	Daylight color	24V DC (has polarity)	24V DC±10%	104mA	140	Cover: Polycarbonate	-40°C - +60°C (90%RH or less, no condensation)	All Directions (indoor use)	IP66/67/69K	19.6m/s	80 g	0.5m
CLA1S-24-CD-30	Daylight color											3.0m
CLA2S-24-CD	Daylight color			208mA	270						130 g	0.5m
CLA2S-24-CD-30	Daylight color											3.0m
CLA3S-24-CD	Daylight color			240mA	400						180 g	0.5m
CLA3S-24-CD-30	Daylight color											3.0m
CLA3S-24-Y	Amber			220	180 g						0.5m	
CLA6S-24-CD	Daylight color			480mA	650						340 g	0.5m
CLA6S-24-CD-30	Daylight color											3.0m
CLA9S-24-CD	Daylight color			720mA	810						500 g	0.5m
CLA9S-24-CD-30	Daylight color											3.0m
CLA12S-24-CD	Daylight color			960mA	890						660 g	0.5m
CLA12S-24-CD-30	Daylight color	3.0m										

Model Code

CLA1S-24-CD-30

Light-emitting component dimension

1	100mm
2	200mm
3	300mm
6	600mm
9	900mm
12	1200mm

Light source color

CD	Daylight color
Y	Amber

*Y is a 300mm type only

Cable length

Blank	0.5m
30	3.0m

Optional Parts

For details, see pages 182 to 187.

Optional Parts	Model
Back mount (fastening screw)	SZ-310AR
Back mount (magnet specifications)	SZ-310ARM
Side mount (fastening screw)	SZ-310AS
Side mount 2 (fastening screw)	SZ-310ASB (dedicated compatibility with CLB-24N)

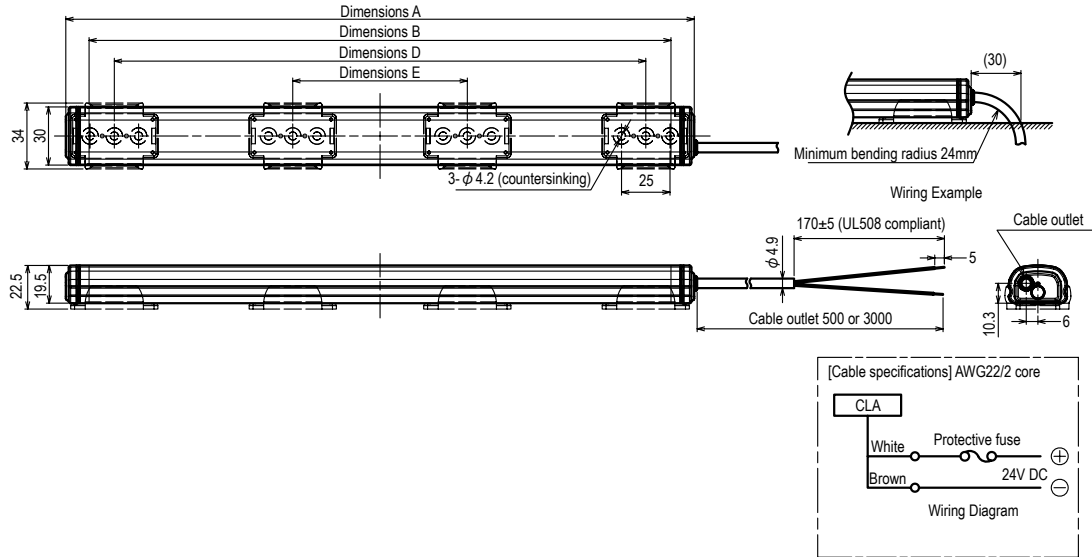
*Please exercise caution to prevent dropping magnet specifications (SZ-310ARM). Please use fastening screw specifications during normal installation.

[Recommended products]

Recommended power supply for CLA series: Omron Corporation

- Universal type...S8JX type (open type/type with cover) 24V 0.65A/1.5A/2.1A/4.5A/6.5A
 - UL Class 2 type...S8VS type 24V 0.65A/1.3A/2.5A/3.75A/5A/7.5A/10A/20A
- <http://www.fa.omron.co.jp>

Dimensions (mm)



Model Name	Dimensions A	Dimensions B	Dimensions D	Dimensions E	Bracket (SZ-310AR) Number included
	Full-length part	Light-emitting component	Recommended mounting pitch		
CLA1S-	124	100	74	—	2
CLA2S-	224	200	174	—	2
CLA3S-	324	300	274	—	2
CLA6S-	624	600	574	—	2
CLA9S-	924	900	874	290	4
CLA12S-	1224	1200	1174	390	4

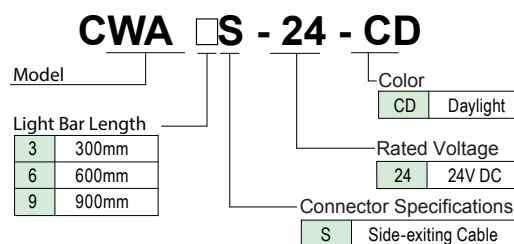
CWA



The CWA Series slim LED light bar is an affordable replacement for conventional fluorescent lamps. It outperforms them in several ways and has an IP65 rating which allows installation in most common environments. Bright, long-lasting LEDs (40,000 hrs. to 70% of original brightness) greatly reduce maintenance costs.

- 24V DC rated voltage
- -30°C to +60°C operating temperature range
- 6500K LED color temperature - Daylight white

Model Code



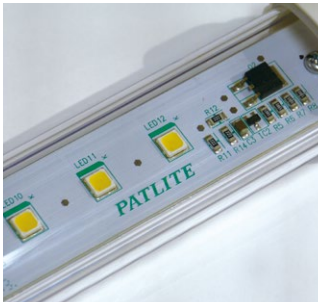
Specifications

Model	CWA3S-24-CD	CWA6S-24-CD	CWA9S-24-CD
Luminous Color	Daylight		
Color Temperature (typ.)	6500K		
Illuminance (at 24V DC) 1.0m	440 lx	800 lx	990 lx
Total Luminous Flux (typ.)	350 lm	700 lm	1050 lm
Operating Voltage Range	24V DC ±10%		
Current Consumption	180mA	360mA	540mA
Rated Power Consumption	6W	12W	18W
Operating Ambient Temperature	-30°C - +60°C		
Operating Ambient Humidity	90% RH or less, no condensation		
Main Unit Material	Body: Polycarbonate Resin; Packing: Silicon		
Cable Length	3 meters		
Mounting Location	Indoors		
Protection Rating	IP65 (Cable ends not included)		
Insulation Resistance	500V DC 5MΩ or more		
Withstand Voltage	500V AC for 1 minute (Between terminals and screw)		
Vibration Resistance	30Hz 19.6m/s ²		
Mass (Tolerance ±10%)	215g	385g	540g

Optional Parts



Highly reliable LED chips are used

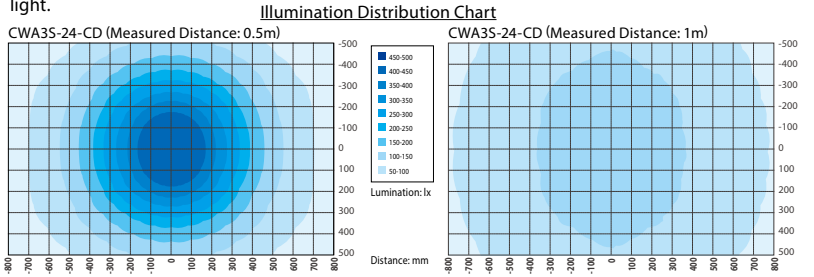


High-definition LED chip

The highly reliable LED chip, which is the core of LED lighting, has nearly 10 times (about 40,000 hours) the lifespan (based on LED brightness of 70%) in comparison to the common fluorescent light, it also does not contain any mercury.

A uniform light that subdues glare

In comparison to an LED luminous source, we take advantage of the straight beam optical characteristic of the LED without dropping brightness or overdoing it, but reproducing a natural light.



Cost Saving

Energy ab. **82.7%** Less

Based on 10 hrs. per day for 365 days

Annual Power Consumption	100V20W Fluorescent	CWA LED Light Bar
	88kWh	15.3kWh

Earth Friendly

CO2 Emissions ab. **80.7%** Less*

Based on 10 hrs. per day for 365 days

CO2 Annual Power Consumption	100V20W Fluorescent	CWA LED Light Bar
	31kg	6kg

Long Life

Lifespan **9** times more

Lifespan	Conventional Fluorescent	CWA LED Light Bar
	4,000 to 13,000Hrs.	36,000Hrs.

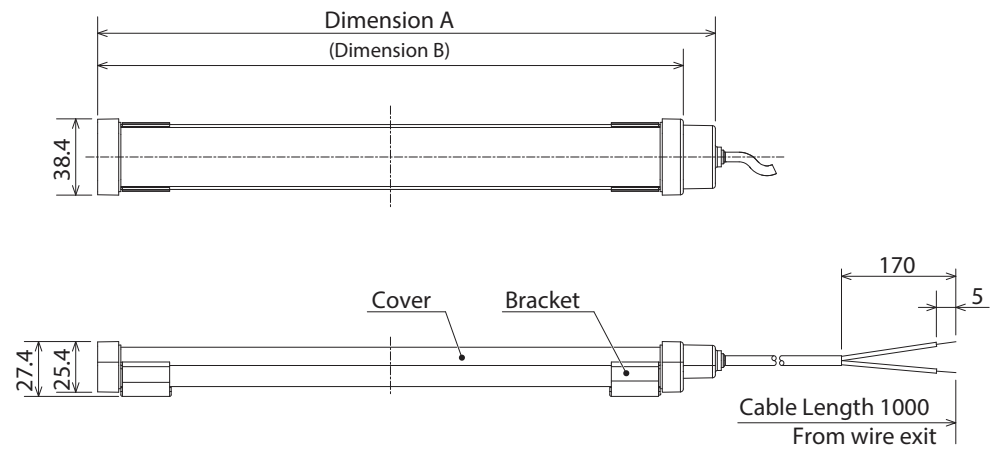
Low Heat

In Comparison ab. **31%** Less

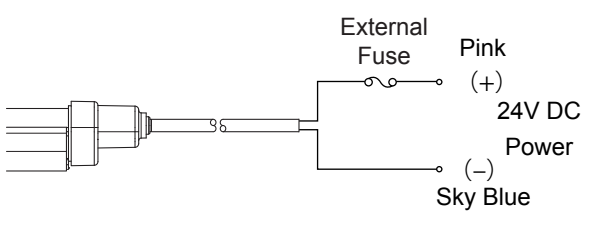
Measured 1 hr. after lighting

Heat Radiation	Flourescent (FL2055)	CWA LED Light Bar
	60°C At Room Temperature	41.5°C At Room Temperature

Dimensions (mm)



Wiring Diagram



[Enforced]

There is no protection rating for the area surrounding the tip of the cable. To ensure insulation of water intrusion, the use of fillers (such as silicon, etc.) to plug up the tip part is recommended.

CLK

Network



CLK6C-24AG-CD

Signal Tower



CLK3C-24SG-CD

Signal Light



CLK3C-24AG-CN

Revolving Warming Light



CLK2S-24AG-CD

Cube Tower



*UL standards are AG (aluminum) specifications only

Audibles

Hybrid Signaling Devices

Specifications

LED Illumination

Model	Cable length Connection method	Luminous Color	Rated Voltage	Operating Voltage Range	Power Consumption	Size of light-emitting component	Central illuminance (at 1m)	Total luminous flux	Body materials	Light-emitting component with transparent front surface	Operating Temperature Range	Protection Rating	Mass		
CLK2S-24AG-CD	0.5m Cable takeout	Daylight color	24V DC	24V DC±10%	8.4W	200mm	820lx	865lm	Waterproof and oil-proof type/ Aluminum alloy	Tempered glass	-40°C ~+60°C (90%RH or less)	IP66G/ 67G/ 69K	450g		
CLK3S-24AG-CD		Daylight color			12.5W	300mm	1,200lx	1,300lm					600g		
CLK3S-24AG-CN		Neutral white			25W	600mm	2,100lx	2,600lm					1,070g		
CLK6S-24AG-CD	Daylight color	8.4W			200mm	820lx	865lm	450g							
CLK2C-24AG-CD+FL005	M12 connector	Daylight color			24V DC	24V DC±10%	8.4W	200mm	820lx	865lm	Waterproof and highly anti-corrosive/ SUS316	Tempered glass	-40°C ~+60°C (90%RH or less)	IP66G/ 67G/ 69K	450g
CLK3C-24AG-CD		Daylight color					12.5W	300mm	1,200lx	1,300lm					600g
CLK3C-24AG-CN		Neutral white					25W	600mm	2,100lx	2,600lm	1,070g				
CLK6C-24AG-CD		Daylight color					12.5W	300mm	1,200lx	1,300lm	1,490g				
CLK3C-24SG-CD		Daylight color					12.5W	300mm	1,200lx	1,300lm	1,490g				
CLK3C-24SG-CN	Neutral white	12.5W			300mm	1,200lx	1,300lm	1,490g							

The CLK Series was designed especially for the machine tool industry where oil, oil mist, other cutting fluids and debris is constantly present (rated IP66G and IP67G). It has the lowest, space saving profile in the industry but puts out up to 2100 lx, illuminating large areas. The aluminum or stainless steel body and tempered glass protect the unit from hot flying debris. Various lengths are available along with the capability to daisy link them so that the CLK can be used in various equipment sizes.

A stainless steel with acrylic lens unit that is rated IP69K is also available for the food, beverage and pharmaceutical industries where high-pressure and high-temperature wash down is required.

- Cable or M12 connection methods
- 24V DC rated voltage
- -30o to +60oC operating temperature range

- IP6X= The product is placed in a dust chamber with a negative pressure state so that dust is made to float for 8 hours, and there is no invasion inside.
- IPX6= A water nozzle with a diameter of 12.0mm is placed at a range from 2.5 to 3.0 meters with a water velocity of 100 litres per minute injected towards the test piece in an omni-direction for three minutes or more without being affected by any harmful influences.
- IPXXG= The outline of the product is submerged at a distance of 1m from the bottom of a tank, and it is held submerged for 30 minutes. A non-water soluble N3 class No. 8 as specified in JIS K2241 (for coolants) is dropped on top of the upper part of a product at a rate of 0.5L/h for 48 hours. IPX9K is the German DIN 40050 PART9 standard. It is defined as a protection regulation for high temperature and high-pressurized water. Water is heated up to 80 and sprayed at a water pressure in the range from 80 to 100 BARs at 14 to 16 liters per minute at the test object. The test object is at a distance of 100 to 150 mm from the nozzle and sprayed in all directions at 0, 30, 60, and 90 degrees, then sprayed at a horizontal angle while it is being rotated, all done for a period of 30 seconds without being affected by water penetration.

Passed dust-proof, water resistance, and oil-proof tests listed below:.

Model Code

CLK2S-24AG-CD

Light-emitting component dimension

2	200mm
3	300mm
6	600mm

Wiring

S	Cable takeout
C	M12 connector connection

Body materials

AG	Body/aluminum Illumination Area: Tempered Glass
SG	Body/stainless steel Illumination Area: Tempered Glass

Luminous Color

CD	Daylight color
CN	Natural White

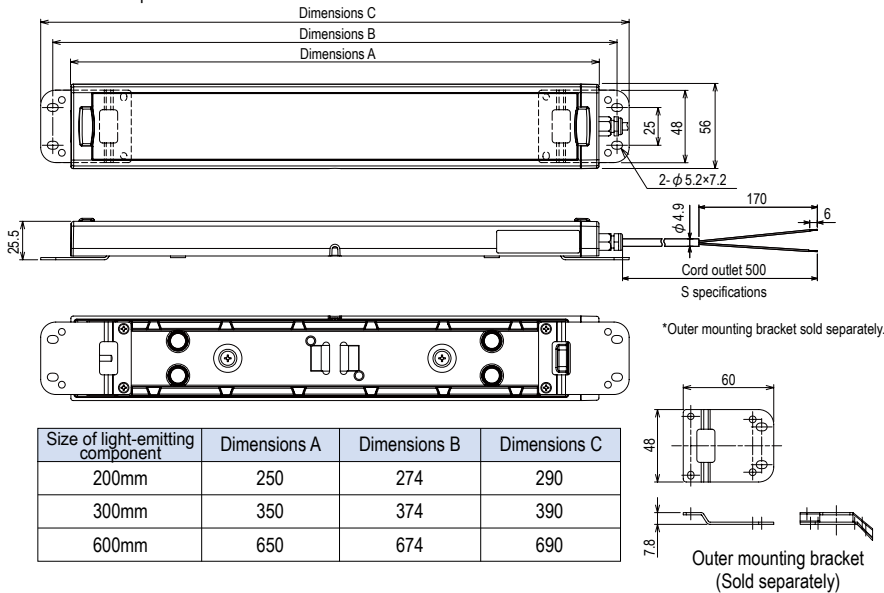
Optional Parts

For details, see pages 182 to 187.

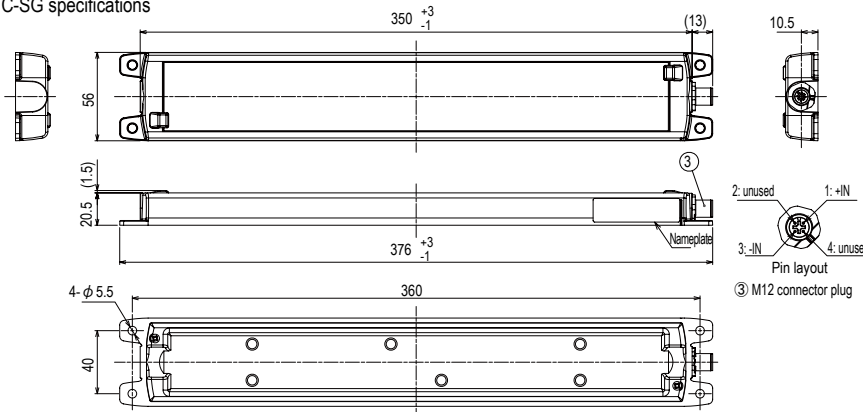
Optional Parts	Model
Outer mounting bracket	CLK-001
Angle adjustment bracket	SZ-320KS <symmetrical pair>

Dimensions (mm)

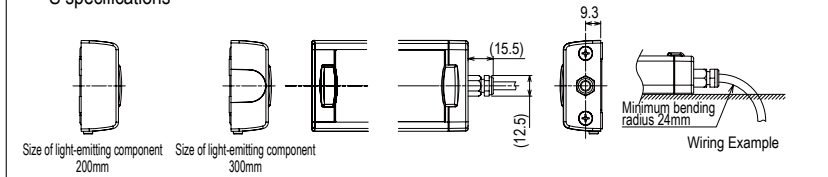
S-AG/C-AG specifications



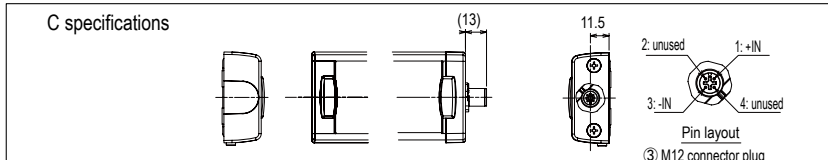
C-SG specifications



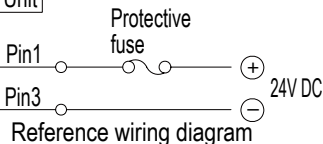
S specifications



C specifications



Main Unit



Caution

If the cable tip component comes into contact with water or is in a low temperature environment, please waterproof and oil-proof the cable tip component.

Oil proof test

The product has passed the oil-proof test in the following cutting oils!

Diluted 20 times in the following oils and soaked at 55°C for 240 hours (10 days).

Name of company
Hangsterfer's
Yushiro Chemical Industry Co., Ltd.
Castrol
Blaser Swisslube

Name of oil
Hangsterfer S500
Yushiroken Synthetic #663
Syntilo 9954
Blasocut BC35LFSW

Confirmation in result of swelling, contraction, dissolution, exfoliation, separation, cracks, and discoloration by the accelerated impregnation examination with the above-mentioned cutting fluid for diluted oil at 55 °C for 240 hours (for ten days) was made. Due to the additive agents in oil, the application of oils other than the ones above may influence physical properties, therefore, please investigate before purchasing.
*The mentioned company names, product names, trademarks, etc. are the registered trademarks or trademarks.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

Hybrid Signaling Devices

LED Illumination

Options

CLK

CWK



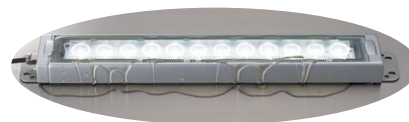
These brackets are included.



The CWK Series was designed especially for the machine tool industry where oil, oil mist, other cutting fluids and debris is constantly present (rated IP66G and IP67G). It has one of the lowest, space saving profiles in the industry but puts out up to 1500 lx, illuminating large areas. In addition to this, a specially designed lens disperses the light so a wider area is illuminated. The aluminum and tempered glass protect the unit from hot flying debris. Various lengths are available along so that the CWK can be used in various equipment sizes.



The body is protected by the tempered glass which disperses the flying debris.



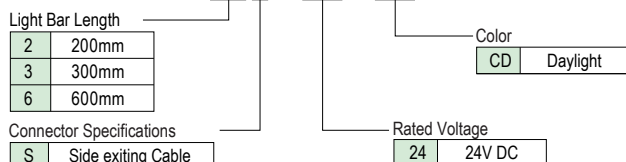
Passed oil resistant test with commonly used cutting oils. [Accelerated aging test with diluted oil at 55°C for 240 hours (10 days) sprayed onto the test object]

Specifications

Model	CWK2S-24	CWK3S-24	CWK6S-24
Luminous Color	Daylight		
Color Temperature (typ.)	6500K		
Illuminance (typ.) (at DC24V) 1.0m	600 lx	850 lx	1500 lx
Total Luminous Flux (typ.)	800 lm	1200 lm	2400 lm
Operating Voltage Range	24V DC ±10%		
Rated Current Consumption	360mA ±10%	480mA ±10%	960mA ±10%
Rated Power Consumption	8.6W	11.5W	23.0W
Operating Ambient Temperature	-10 °C - +50 °C		
Operating Ambient Humidity	90% RH or less, no condensation		
Main Unit Material	Body: Aluminum Alloy; Lens: Tempered Glass		
Cable Length	3 meters		
Mounting Location	Indoors		
Protection Rating	IP66G/ IP67G (JIS C0920)		
Insulation Resistance	500V DC 5MΩ or more		
Withstand Voltage	500V AC for 1 minute (Between terminals and chassis)		
Vibration Resistance	30Hz 20m/s ²		
Mass (Tolerance ±10%)	600g	750g	1230g

Model Code

CWK S - 24 - CD



Dimensions (mm)

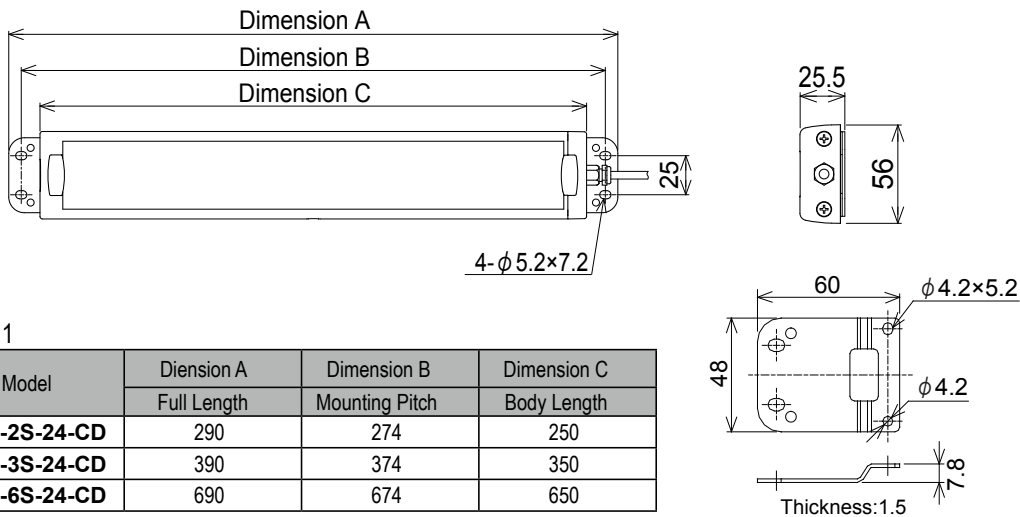
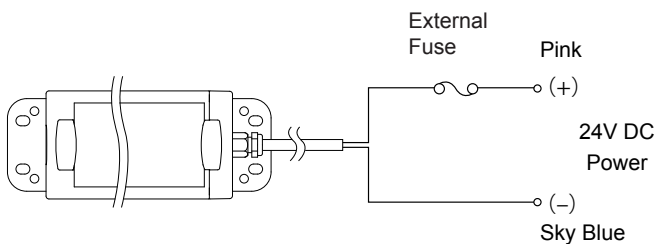


Table 1

Model	Dimension A	Dimension B	Dimension C
	Full Length	Mounting Pitch	Body Length
CWK-2S-24-CD	290	274	250
CWK-3S-24-CD	390	374	350
CWK-6S-24-CD	690	674	650

Wiring Diagram



[Enforced]

There is no protection rating for the area surrounding the tip of the cable. To ensure insulation of water intrusion, the use of fillers (such as silicon, etc.) to plug up the tip part is recommended.

Oil proof test

It has passed the oil resistant test from the following common cutting oils.

Company	Oil Type
Hangsterfer's	Hangsterfer's S-500
Yushiro Chemical Industry Co., Ltd.	Yushiroken Synthetic #663
Castrol	Syntilo 9954
BlaserSwisslube Inc.	Blasocut BC35LFSW

Confirmation in result of swelling, contraction, dissolution, exfoliation, separation, cracks, and discoloration by the accelerated impregnation examination with the oil types indicated in the table on the left for diluted oil at 55°C for 240 hours (ten days) was made.

Due to the additive agents in oil, the application of oils other than the ones mentioned may influence physical properties, therefore, please inquire in advance.

* The mentioned company names, product names, trademarks, etc. are the registered trademarks or trademarks in Japan for each company, and/or other countries.

Optional Parts

The following brackets can be used to fit various mounting applications.

■ Angle-adjustment Brackets



CLN

Tilt only (T type)



Daylight color

Pan & Tilt (PT type)



Daylight color

The CLN Series was designed especially for the machine tool industry where oil, oil mist, other cutting fluids and debris is constantly present (rated IP66G and IP67G). Its ability to pan and tilt allows operators to point the light where it's needed most. The aluminum body and tempered glass protect the unit from hot flying debris. The 6500K color temperature (daylight white) allow objects to be seen clearly.

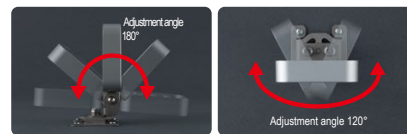
Flexible Angle Adjustment

■ Tilt only (T type)



Can tilt 180o and can be folded to 33mm for easier installation.

■ Pan & Tilt (PT type)



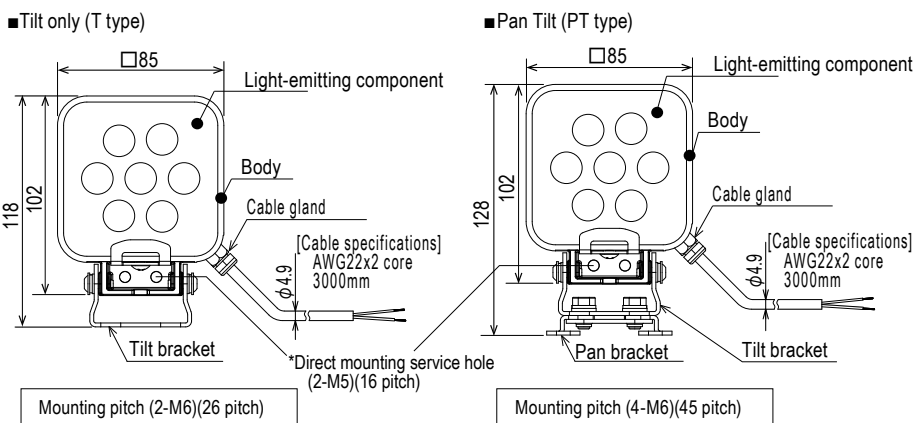
Can tilt 180o or rotated 120o to fit any application. Can be folded to 43mm for easier installation.



Specifications

Model	Light source color	Rated Voltage	Operating Voltage Range	Rated Current Consumption	Total luminous flux (typ.)	Central illuminance (lx/1.0m)	Body materials	Operating Temperature Range	Mounting location/ mounting direction	Protection Rating	Vibration Resistance	Mass
CLN-24-CD-T	Daylight color	24V DC	Rated Voltage ±10%	174mA ±10%/4.2W	550lm	820	Body: aluminum alloy/ Light-emitting component: tempered glass	-40°C - +60°C (90%RH or less, no condensation)	Indoor/ omnidirectional	IP66G/IP67G (JIS C0920) IP69K (DIN 40050 part 9) (Excludes cable tip component)	30Hz total amplitude 0.3mmp-p 2 hours each up-down, left-right, forward-back Total amplitude 0.3mmp-p (10-57Hz), Acceleration 19.6ms ² (57-150Hz) (JIS C80068-2-6)	0.36kg
CLN-24-CD-PT	Daylight color				550lm	820						0.43kg

Dimensions (mm)



Model Code

CLN-24-CD-PT

Movable Type

T	Tilt
PT	Pan/Tilt

Oil-Proof Test

Passed Oil-proof Test

Product was immersed in the oils listed below in 1:20 dilution at 55oC for 240 hours (10 days).

Company Name	Oil Name
Hangsterfer's	Hangsterfer S500
Yushiro Chemical Industry Co., Ltd.	Yushiroken Synthetic #663
Castrol	Syntilo 9954
Blaser Swisslube	Blasocut BC35LFSW

At the conclusion of each test the product was examined and it was confirmed that there was no swelling, contraction, dissolution, exfoliation, separation, cracks, discoloration, and penetration.

It is recommended that careful investigation be made before purchase since additive agents in oil may differ from those tested and may influence the physical properties of the product.

*Company names, product names, trademarks, etc. of those listed in the table are each company's registered trademarks in Japan or other countries.

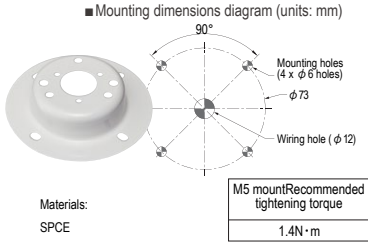
Optional

Signal Tower LR series optional parts

For direct mounted models

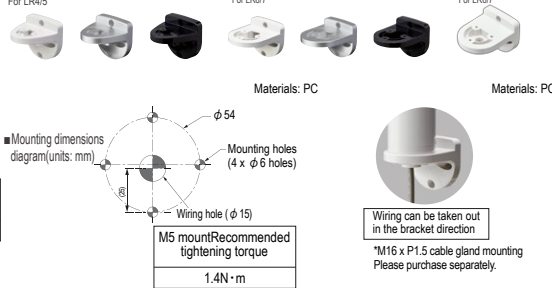
Circular Bracket

Model: SZW-001W



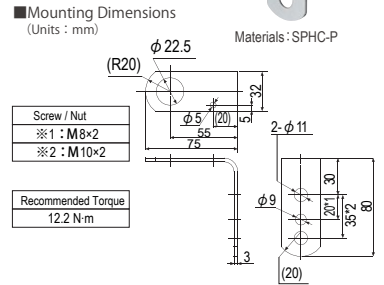
Wallmount Bracket

Model: SZK-002W/U/K



L Angle

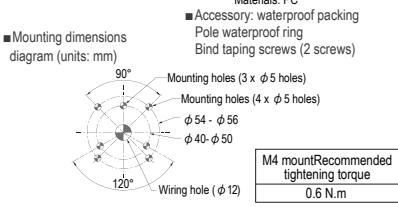
Model: SZL-001



For aluminum pole (N type)

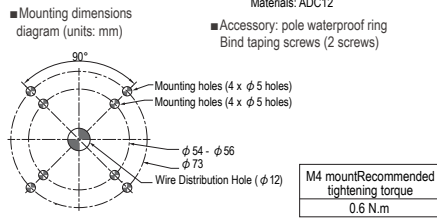
Circular Multi Pitch Bracket

Model: SZP-001W/U/K



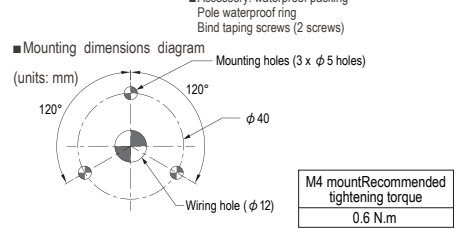
Circular Bracket

Model: SZP-002U



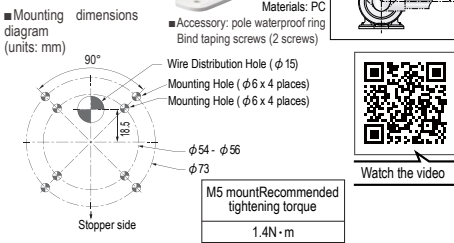
Circular Bracket

Model: SZP-003W/U/K



Tilt Bracket

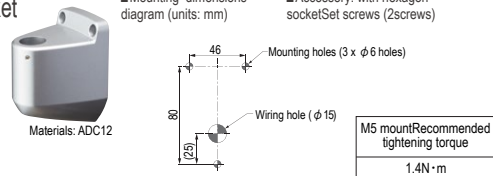
Model: SZQ-001W



For aluminum pole (N/T type)

Wallmount Bracket

Model: SZK-001U



Aluminum pole

(Bind tapping screw for affixing pole (2 screws) included)

*When cutting the poles, do not cut with pole cutters. Use a fret saw, power saw, or jigsaw.

*If changing from direct mounting specifications to pole mounting specifications, please purchase pole brackets (repair parts) together with the aluminum pole as a single item.

N type	100mm	Type: POLE22-0100AN(K)	T type	100mm	Type: POLE22-0100AT
	300mm	Type: POLE22-0300AN(K)		300mm	Type: POLE22-0300AT
	500mm*	Type: POLE22-0500AN		500mm	Type: POLE22-0500AT
	800mm*	Type: POLE22-0800AN(K)		800mm	Type: POLE22-0800AT
	1000mm*	Type: POLE22-1000AN		1000mm	Type: POLE22-1000AT

*Compatible brackets: SZK-001U, SZP-002U, SZ-010

*We accommodate pole lengths other than the above as custom orders.

Compatible pole lengths: 150mm, 200mm, 250mm, 350mm, 400mm, 450mm, 600mm, 700mm, 900mm

Compatible Direct Mount Bracket

Model Name	SZW-940U	SZW-950U	SZW-960U	SZW-970U
Signal Tower Size	φ40mm	φ50mm	φ60mm	φ70mm
Product Conversion	LCE-AW → LR4-WJ	LE-WLES-AW/LUS → LRS-WJ	LME-WJ → LR6-WJ	LHE/LU7 → LR7-WJ

Current Products

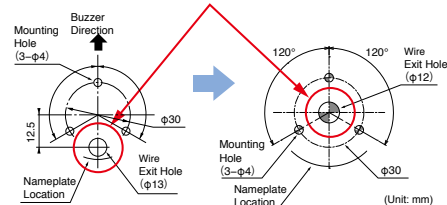
New Product

LE φ50

LR4 φ40

LR5 φ50

Note : Cable exit hole for current products and New products is different



Pole-compatible Adaptor

Model Name	SZP-917U
Pole diameter compatibility	21.7mm → 17.3mm

	Model	Material	Compatible with LR Pole?
Current Product	LCE, LCS	Iron	No
	LE, LES	Iron	No
	LU5	-	-
	LME, LMS	L: Iron P: Aluminum	Yes
	LHE	-	-
New Product	LU7	-	-
	LR	Aluminum	Yes

Optional

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

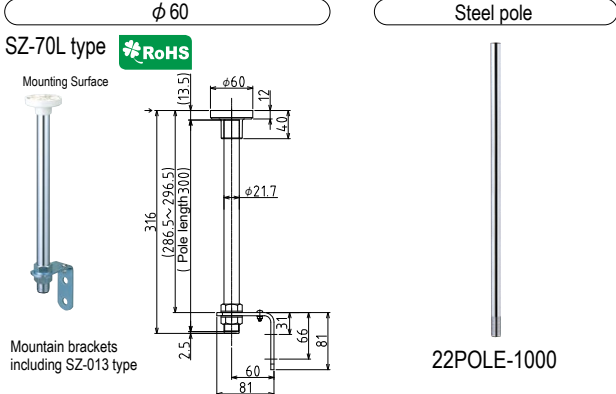
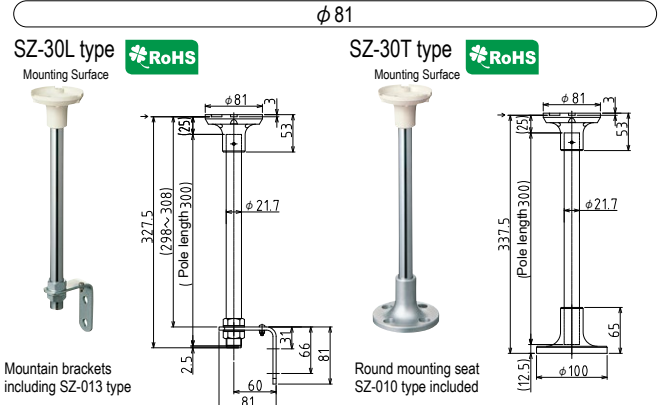
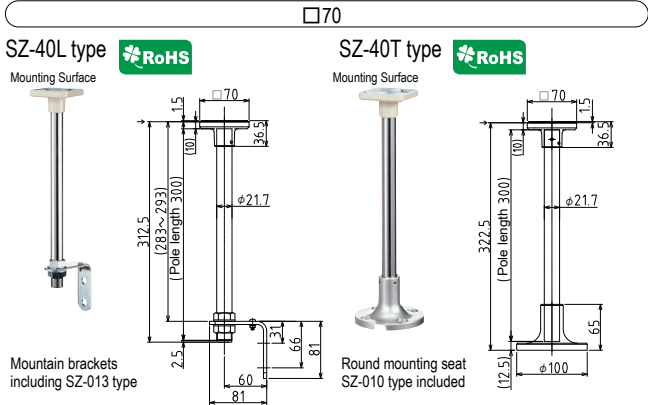
Hybrid Signaling Devices

LED Illumination

Options

Mounting Pole

■ Units of each dimension diagram are in mm.

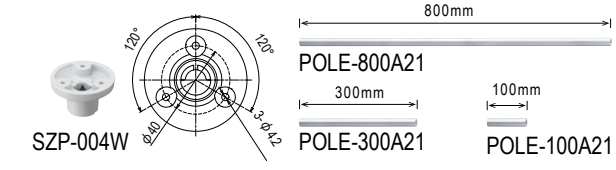


*Cannot be combined with mounting rubber (SZ-200A, SZ-210).

Model	Mounting Pole					
	Bracket	Pole	L type bracket	Cord Bushing	Round mounting base	Compatible models
SZ-70L		Carbon steel pipe 11-A for mechanical structure				LA6
SZ-30L	ABS resin		SPHC	EPT	-	RS, RLE, RU, RH-A, PS, PES-A, RHE(B), SKH-A, SKH-EA, SKHE
SZ-30T			-	-	ADC12	
SZ-40L	ADC12		SPHC	EPT	-	KUS
SZ-40T			-	ADC12		

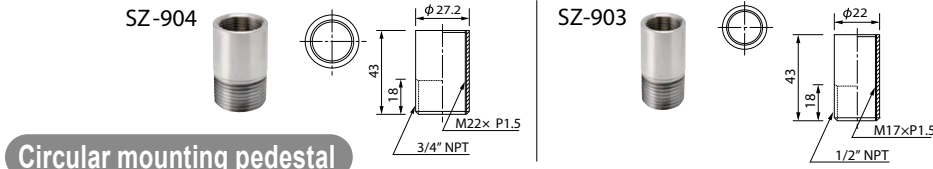
ADC12...12 types of aluminum alloy die casting SPHC...hot rolled soft sheet steel (general use) EPT...ethylene-propylene rubber
*When using the SZ-□type mounting bracket, a cable extension may be necessary depending on the product.

For LR6-USB

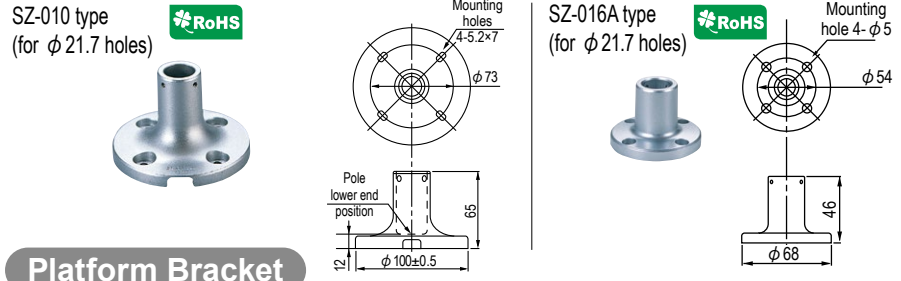


Model	Material	Specification	Compatible models
22POLE-300	Carbon steel pipes for ordinary piping	φ 21.7mm pole300mm	LA6
22POLE-500		φ 21.7mm pole500mm	
22POLE-1000		φ 21.7mm pole1,000mm	
POLE-100A21	Aluminum	φ 21.7mm pole100mm	LR6-USBUse with SZW-004W
POLE-300A21		φ 21.7mm pole300mm	
POLE-800A21		φ 21.7mm pole800mm	

NPT Adaptor



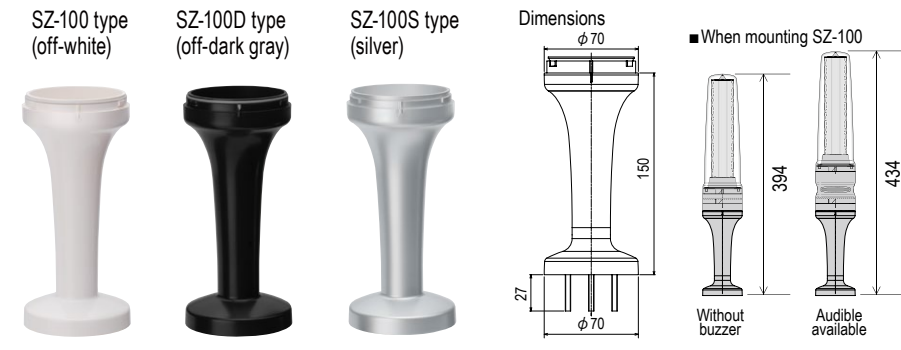
Circular mounting pedestal



Model	Material	Compatible models
SZ-010	12 types of aluminum alloy die casting	LR, LA6, RUP, LR6-USB
SZ-016A		LA6, RUP, LR6-USB

■ Units of each dimension diagram are in mm.

Platform Bracket



Model	Material	Compatible models
SZ-100	Heat-resistant ABS	LS7
SZ-100D		
SZ-100S	Heat-resistant ABS (silver paint)	

■ Units of each dimension diagram are in mm.

Network

Signal Tower

Signal Light

Revolving Warning Light

Cube Tower

Audibles

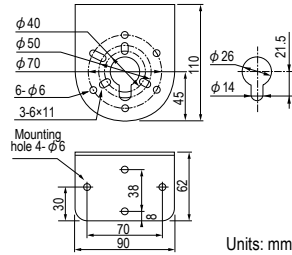
Hybrid Signaling Devices

LED Illumination

Options

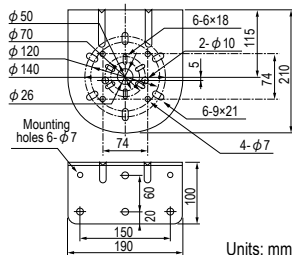
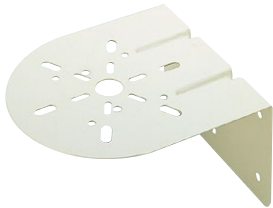
Wall Mount Bracket

SZ-007



Units: mm

SZ-008



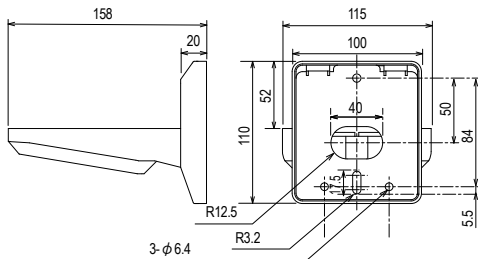
Units: mm

*RFT type is not compatible.

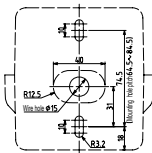
RF-001



Installation Image



Installation Dimension Drawings

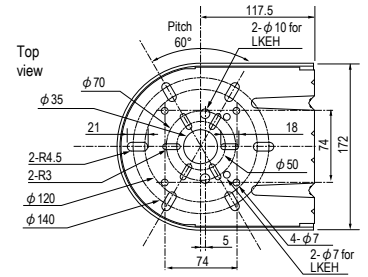


*Attach using the M6 screw in 2 places



Units: mm

SZ-023



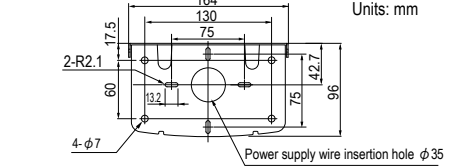
Front View

Side view



Installation image *RFT type is not compatible.

Installation Dimension Drawings



Units: mm

SZ-110 (off-white)



SZ-110D (off-dark gray)



SZ-110S type (silver)



Multi-mount Bracket SZ-130



SZ-130

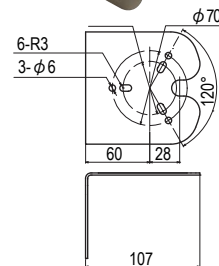


SZ-130S

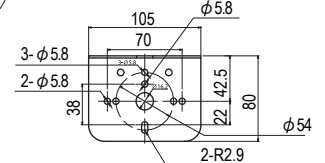


SZ-130D

SZ-170



Units: mm



Model	Material	Compatible models
SZ-023	Bracket: steel (powder coating) Bracket cover: resin (AES)	φ 50, 70, 120, and 140 mounting pitch type. and □74 type*1
RF-001	ABS resin	RFV, RFT
SZ-007	Electro galvanized zinc plated steel	LHE and φ 50, 70 mounting pitch type*2
SZ-008		φ 50, 70, 120, and 140 mounting pitch type. and □74 type
SZ-310AR	Polycarbonate	CLA
SZ-310ARM		
SZ-310AS		
SZ-310ASB		
SZ-110	Heat-resistant ABS	LS7
SZ-110D		
SZ-110S	Heat-resistant ABS (silver paint)	LFH and φ 50, 70 mounting pitch type*3
SZ-170	SUS304	

■ Units of each dimension diagram are in mm.

*1 Mounting direction may be restricted depending on the wall surface direction.

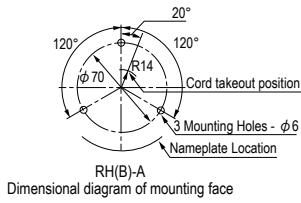
Parts which protrude from the main body cannot be mounted backwards.

*2 SZ-007 is not compatible with LGE/LKEH.

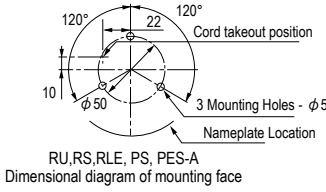
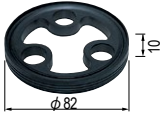
*3 Please note that SKHE (B), SKH (B) -A, and SKH-EAAC100V specifications do not pass through the center hole of the side panel as they come with a power socket.

Mounting Gasket

SZ-200A



SZ-210



Model	Material	Compatible models
SZ-200A	Ethylene - propylene rubber	RH(B)-A, RHE(B)
SZ-210		RU, RS, RLE, PS, PES-A, PSE

■ Units of each dimension diagram are in mm.

Locking Ring Rubber Cover

SKP-001 model



Model	Compatible models
SKP-001	SKP-A

■ Units of each dimension diagram are in mm.

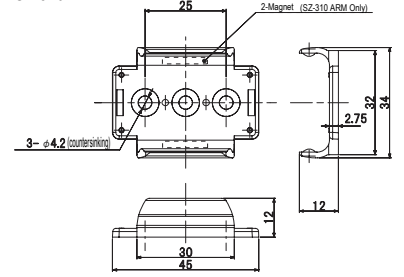
Mounting Bracket for LED Work Light

SZ-310AR

Rear attachment screw mount (2 included)



SZ-310AR and SZ-310ARM



SZ-310ARM

Rear attachment magnetic mount (2 included)

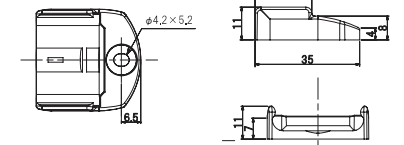


SZ-310AS

Side attachment screw mount (2 included)



SZ-310AS

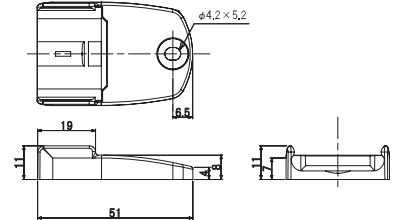


SZ-310ASB

Rear attachment screw mount. Compatible with CLB-24N. (2 included)



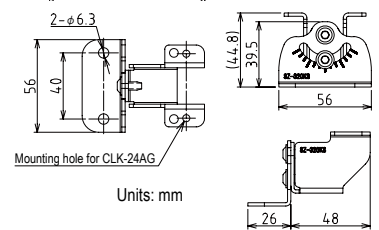
SZ-310ASB



SZ-320KS

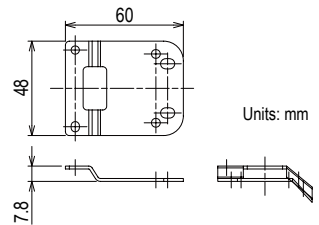


Installation Image



Mounting hole for CLK-24AG
Units: mm

CLK-001 type

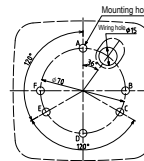
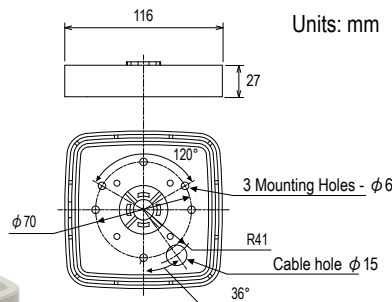


Ceiling Mount Bracket

RF-002



Installation Image



Installation Dimension Drawings

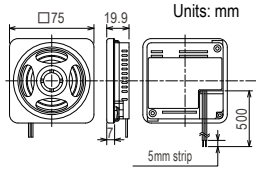
*If screwing in 2 locations, use A-D and B-F; if mounting in 3 locations, use A-C-E. Please mount with M6 screws.

Model	Material	Compatible models
RF-002	ABS resin	RFV, RFT

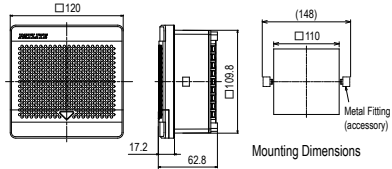
*Cannot be used in a location where it will in contact with water.

Speaker

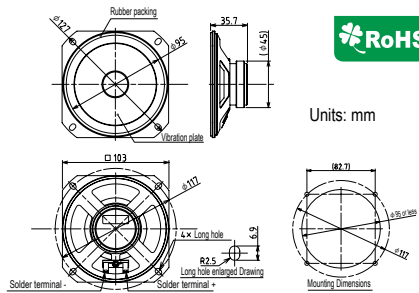
SPB-2E-W (2W 8Ω)
(off-white)



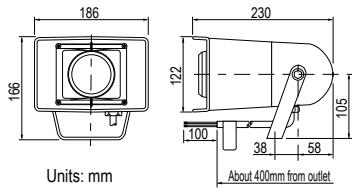
SPB-5E (5W 8Ω)



SPL-5 (5W 8Ω)



SPW-5E (5W 8Ω)

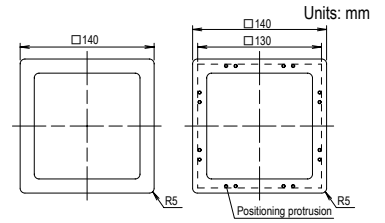


Mounting bracket

BK-001

Use 1 seal for installation (2 included)
Compatible models: BK, BKV, SPB-5E

BK-001 cannot be used with legacy products
with embedded □130mm mounting holes.



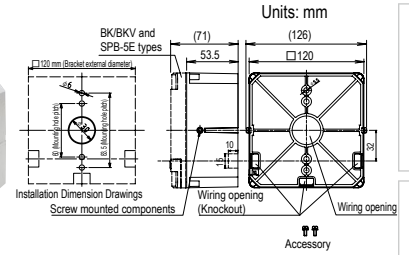
BK-002-J (light gray)

BK-002-K (dark gray)

Compatible models: BK, BKV,
SPB-5E



Mounting image



Cable

Connector with cable
 (Omron model)
 SZ-120-02 (2m)
 (XS2F-D821-DH0-R)
 SZ-120-05 (5m)
 (XS2F-D821-GH0-R)
 SZ-120-10 (10m)
 (XS2F-D821-JH0-R)
 Supported type: LS7,LR6-WC



Network

SD card

SD card (2GB)
 SDV-2GP



Signal Tower

Signal Light

Global AC adaptor

ADP-001
 Compatible models
 NH series, NBM-D88NN, PHE-3FB3,
 PHC-D08, WDR-LE-Z2
 Compatible countries
 Japan, Europe, U.S., China, Korea, Taiwan, Thailand, Indonesia, Canada,
 Philippines, Vietnam



Revolving
 Warning Light

Cube Tower

Audibles

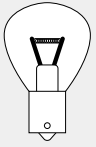






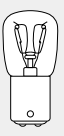
Hybrid
 Signaling
 Devices


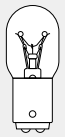


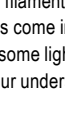
LED
 Illumination

Options

Replacement Parts

Bulb

Shape	Bulb No.	Ratings	Part No.
 Bulb Shape: RP35/BA15S	1	12V 35W	D01203501-F1
	2	24V 35W	D02403501-F1
 Bulb Shape: RP35/BA15D	5	48V 35W	D04803502-F1
 Bulb Shape: G18/BA15S	8	6V 3W	D00600303-F1
	9	12V 10W	D01201003A-F1
	10	24V 10W	D02401003A-F1
	11	48V 10W	D04801003-F1
	12	12 V5W	D01200503A-F1
 Bulb Shape: T20/E12	13	30V 10W	D03001006A-F1
	14	110V 10W	D11001006A-F1
	15	220V 10W	D22001006A-F1
	16	110V 15W	D11001506A-F1
	17	220V 15W	D22001506A-F1
 Bulb Shape: G14/BA9S	18	12V 6W	D01200604-F1
	19	24V 6W	D02400604-F1
 Bulb Shape: T10/E10	22	110V 3W	D11000307-F1
	27	12V 0.11A	D012/1107-F1
	28	24V 0.11A	D024/1107-F1
 Bulb Shape: RP35/BA15D	36	120V 40W (for vibration resistance)	D12004024-F1
	37	220V 30W	D22003024-F1
Vibration Resistant  Bulb Shape: T20/BA15D	39	28V 11W	D02801111-F1
	40	110V 12W	D11001211-F1
	41	250V 11W	D25001111-F1

Shape	Bulb No.	Ratings	Part No.
 Bulb Shape: S25/BA15S	42	12V 23W	D01202305-F1
	43	24V 25W	D02402505-1F1
Vibration Resistant  Bulb Shape: T20/BA15D	50	28V 20W	D02802011-F1
Vibration Resistant  Bulb Shape: T20/BA15D	51	110V 20W	D11002011-F1
 Bulb Shape: G18/BA15S	53	250V 20W	D25002011-F1
	54	12V 15W	D01201503-F1
 Bulb Shape: G18/BA15S	55	24V 20W	D02402003-F1

*Bulb Shape: glass bulb shape/base shape

*Light bulb filament shape may vary from diagram by light bulb.

*Light bulbs come in packs of 10.

*Stock for some light bulbs may be limited, as products become discontinued. We ask for your understanding in this regard.

Replacement Parts

Please refer to website for repair parts

*We cannot replace the lowest tier of the LES-A type. In addition, wiring is based only on unit color at the time of sale, so there are restrictions on replacement and number of tiers.

[Production for the main unit is discontinued, below are only replacement parts]

Product Model	Product name	Specifications	Part Number
ME(S)-A	Red globe unit (Clear lens type)	LED-UT red ME(S)-A	B72100223-1F1
	Amber globe unit (Clear lens type)	LED-UT amber ME(S)-A	B72100223-2F1
	Green globe unit (Clear lens type)	LED-UT green ME(S)-A	B72100115-3F1
	Blue globe unit (Clear lens type)	LED-UT blue ME(S)-A	B72100115-4F1
	White globe unit (Clear lens type)	LED-UT white ME(S)-A	B72100115-7F1
	1 Tier Shaft	Screw 1-tier ME(S)-A	S33552110-0346F1
	2 Tier Shaft	Screw 2-tier ME(S)-A	S33552110-0376F1
	3 Tier Shaft	Screw 3-tier ME(S)-A	S33552110-03108F1
	4 Tier Shaft	Screw 4-tier ME(S)-A	S33552110-03138F1
	5 Tier Shaft	Screw 5-tier ME(S)-A	S33552110-03168F1

Product Model	Product name	Specifications	Part Number
MP(S)	Red globe unit	LED-UT red MP, MPS	B72100182-1F1
	Amber globe unit	LED-UT amber MP, MPS	B72100182-2F1
	Green globe unit	LED-UT green MP, MPS	B72100182-3F1
	Blue globe unit	LED-UT blue MP, MPS	B72100182-4F1
	White globe unit	LED-UT white MP, MPS	B72100182-7F1
	1 Tier Shaft	Screw 1-tier MP, MPS	S33552120-0355F1
	2 Tier Shaft	Screw 2-tier MP, MPS	S33552120-0390F1
	3 Tier Shaft	Screw 3-tier MP, MPS	S33552120-03125F1
	4 Tier Shaft	Screw 4-tier MP, MPS	S33552120-03160F1
	5 Tier Shaft	Screw 5-tier MP, MPS	S33552120-03195F1

Product Model	Product name	Specifications	Part Number
LGE	Red globe unit	LED-UT red LGE(H)	B32100004-1F1
	Amber globe unit	LED-UT amber LGE(H)	B32100004-2F1
	Green globe unit	LED-UT green LGE(H)	B32100004-3F1
	Blue globe unit	LED-UT blue LGE(H)	B32100004-4F1
	White globe unit	LED-UT white LGE(H)	B32100004-7F1
	1 Tier Shaft	Screw 1-tier LGE, LGEH	B62910028-1F1
	2 Tier Shaft	Screw 2-tier LGE, LGEH	B62910028-2F1
	3 Tier Shaft	Screw 3-tier LGE, LGEH	B62910028-3F1
	4 Tier Shaft	Screw 4-tier LGE, LGEH	B62910028-4F1

Product Model	Product name	Specifications	Part Number
WME-A	Red globe unit	LED-UT red WME-A	B72100117-1F1
	Amber globe unit	LED-UT amber WME-A	B72100117-2F1
	Green globe unit	LED-UT green WME-A	B72100117-3F1
	Blue globe unit	LED-UT blue WME-A	B72100117-4F1
	White globe unit	LED-UT white WME-A	B72100117-7F1
	2 Tier Shaft	Screw 2-tier LM□, LHE, WME	S33552120-04100F1
	3 Tier Shaft	Screw 3-tier LM□, LHE, WME	S33552120-04140F1
	4 Tier Shaft	Screw 4-tier LHE, WME	S33552120-04180F1
	5 Tier Shaft	Screw 5-tier LHE and 3-tier SE	S33552120-04220F1
	2 Tier Metal Fitting	Metal Fitting 2-tier WME-A	B85130021-4F1
	3 Tier Metal Fitting	Metal Fitting 3-tier WME-A	B85130021-3F1
	4 Tier Metal Fitting	Metal Fitting 4-tier WME-A	B85130021-2F1
	5 Tier Metal Fitting	Metal Fitting 5-tier WME-A	B85130021-1F1

Product Model	Product name	Specifications	Part Number
LKEH	Red globe unit	LED-UT red LKEH	B72100151-1F1
	Amber globe unit	LED-UT amber LKEH	B72100151-2F1
	Green globe unit	LED-UT green LKEH	B72100151-3F1
	Blue globe unit	LED-UT blue LKEH	B72100151-4F1
	White globe unit	LED-UT white LKEH	B72100151-7F1
	1 Tier Shaft	Shaft LKEH for 1 x 1-tier unit	B62910033-1F2
	2 Tier Shaft	Shaft LKEH for 2 x 1-tier unit	B62910033-2F2
	3 Tier Shaft	Shaft LKEH for 3 x 1-tier unit	B62910033-3F2
	4 Tier Shaft	Shaft LKEH for 4 x 1-tier unit	B62910033-4F2

Product Model	Product name	Specifications	Part Number
LCE-A, LCS-A	Red globe unit	LED-UT red LC□-A	B72100208-1F1
	Amber globe unit	LED-UT amber LC□-A	B72100208-2F1
	Green globe unit	LED-UT green LC□-A	B72100208-3F1
	Blue globe unit	LED-UT blue LC□-A	B72100208-4F1
	White globe unit	LED-UT white LC□-A	B72100208-7F1
	Red globe unit (Clear lens type)	LED-UT Translucent red LC□-AZ	B72100209-1F1
	Amber globe unit (Clear lens type)	LED-UT Translucent amber LC□-AZ	B72100209-2F1
	Green globe unit (Clear lens type)	LED-UT Translucent green LC□-AZ	B72100209-3F1
	Blue globe unit (Clear lens type)	LED-UT Translucent blue LC□-AZ	B72100209-4F1
	1 Tier Shaft	Screw 1-tier LC□-A	S33552120-0351F1
	2 Tier Shaft	Screw 2-tier LC□-A	S33552120-0386F1
	3 Tier Shaft	Screw 3-tier LC□-A	S33552120-03121F1
	4 Tier Shaft	Screw 4-tier LC□-A	S33552120-03158F1
	5 Tier Shaft	Screw 5-tier LC□-A	S33552120-03193F1

Product Model	Product name	Specifications	Part Number
LE, LES*	Red globe unit	LED-UT red LE, LES	B72100210-1F1
	Amber globe unit	LED-UT amber LE, LES	B72100210-2F1
	Green globe unit	LED-UT green LE, LES	B72100210-3F1
	Blue globe unit	LED-UT blue LE, LES	B72100210-4F1
	White globe unit	LED-UT white LE, LES	B72100210-7F1
	Red globe unit (for 12V DC type)	LED-UT for red LE 12V	B72100211-1F1
	Amber globe unit (for 12V DC type)	LED-UT for amber LE 12V	B72100211-2F1
	Green globe unit (for 12V DC type)	LED-UT for green LE 12V	B72100211-3F1
	Blue globe unit (for 12V DC type)	LED-UT for blue LE 12V	B72100211-4F1
	White globe unit (for 12V DC type)	LED-UT for white LE 12V	B72100211-7F1
	1 Tier Shaft	Screw 1-tier LE, LES	S33552120-0445F1
	2 Tier Shaft	Screw 2-tier LE, LES	S33552120-0475F1
	3 Tier Shaft	Screw 3-tier LE, LES	S33552120-04105F1
	4 Tier Shaft	Screw 4-tier LE, LES	S33552120-04135F1
	5 Tier Shaft	Screw 5-tier LE, LES	S33552120-04165F1

Product Model	Product name	Specifications	Part Number
LME LMS	Red globe unit	LED-UT red LM□	B72100206-1F1
	Amber globe unit	LED-UT amber LM□	B72100206-2F1
	Green globe unit	LED-UT green LM□	B72100206-3F1
	Blue globe unit	LED-UT blue LM□	B72100206-4F1
	White globe unit	LED-UT white LM□	B72100206-7F1
	Red globe unit (Clear lens type)	LED-UT translucent red LM□-Z	B72100207-1F1
	Amber globe unit (Clear lens type)	LED-UT translucent amber LM□-Z	B72100207-2F1
	Green globe unit (Clear lens type)	LED-UT translucent green LM□-Z	B72100207-3F1
	Blue globe unit (Clear lens type)	LED-UT translucent blue LM□-Z	B72100207-4F1
	1 Tier Shaft	Screw 1-tier LM□, LHE, WME	S33552120-0455F1
	2 Tier Shaft	Screw 2-tier LM□, LHE, WME	S33552120-04100F1
	3 Tier Shaft	Screw 3-tier LM□, LHE, WME	S33552120-04140F1
	4 Tier Shaft	Screw for 4-tier LM□	S33552120-04185F1
	5 Tier Shaft	Screw for 5-tier LM□	S33552120-04225F1

Product Model	Product name	Specifications	Part Number
LHE-A	Red globe unit	LED-UT red LHE	B72100147-1F1
	Amber globe unit	LED-UT amber LHE	B72100147-2F1
	Green globe unit	LED-UT green LHE	B72100147-3F1
	Blue globe unit	LED-UT blue LHE	B72100147-4F1
	White globe unit	LED-UT white LHE	B72100147-7F1
	1 Tier Shaft	Screw 1-tier LM□, LHE, WME	S33552120-0455F1
	2 Tier Shaft	Screw 2-tier LM□, LHE, WME	S33552120-04100F1
	3 Tier Shaft	Screw 3-tier LM□, LHE, WME	S33552120-04140F1
	4 Tier Shaft	Screw 4-tier LHE, WME	S33552120-04180F1
	5 Tier Shaft	Screw 5-tier LHE, 3-tier SE	S33552120-04220F1

Replacement Parts

● We stock parts that can be replaced by the customer as repair parts.

You can refer to the list of replacement or repair parts on our website by going to: www.patlite.com/

You can search for replacement or repair parts by going to our homepage and clicking on "Customer Support" and then scroll down to "Replacement Parts" on the menu.

Purchase from the retail store you purchased your product from, or contact your PATLITE sales representative for more information.

Information on discontinued models

For next generation models, you can go to our homepage and click on "Customer Support" and then scroll down to "Discontinued Products" on the menu.

If the information you are looking for is not found, contact your PATLITE sales representative for more information.

■ Next-generation models

Some compatibility between legacy and next-generation models may not have been kept for mounting structure, wiring, operating environment and power consumption

Refer to the catalog, product specifications, webpage and instruction manual for details on next-generation models.

■ Period to maintain support and repair part sales availability

Due to the unpredictable circumstances to maintain stock for consumption parts, please understand that the support period for the sale period of repair parts may be shortened due to the consumption of parts and procurement status.

Caution on long-term use

In general, products may experience safety-related issues such as aging degradation, insulation failures of electronic components and circuit boards, and smoke, fire, and electrification from products due to contact failures when using products for a long period of time.

In addition, products may experience problems such as deformation damage, water intrusion, and malfunction due to material degradation, such as resins, metals, and rubber parts.

While the product lifespan varies upon conditions such as frequency of use, environmental conditions, it is recommended to not use products for more than 10 years, unless specified in the product specifications or instruction manual.

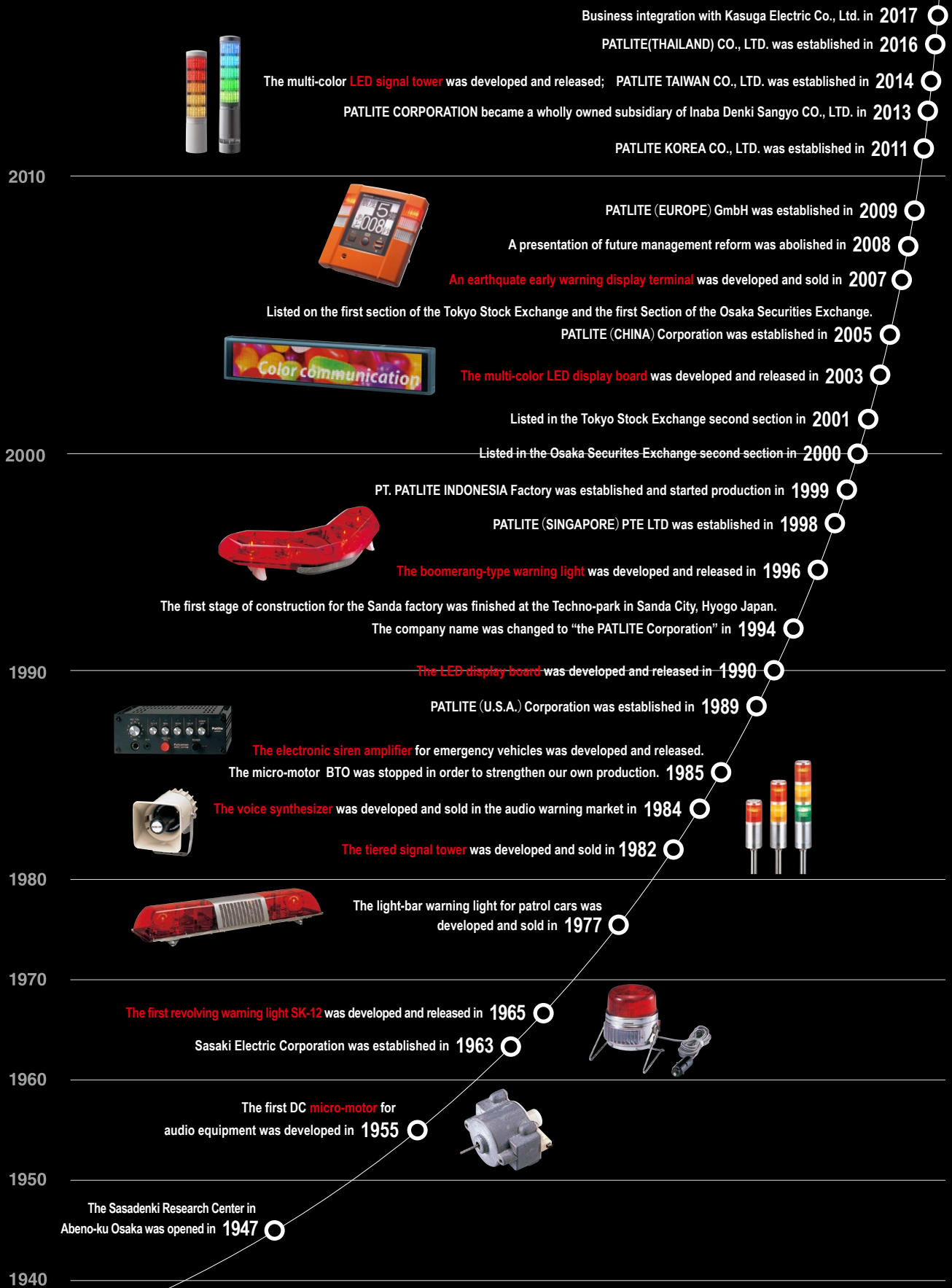
If the products are used in environments with vibration and shock, it may cause mounted products to come loose, become damaged from falling or may lead to injury to the customer.

Be sure to regularly inspect the products at least one to two times per year that the mountings are tightly fastened and re-tighten them when necessary.

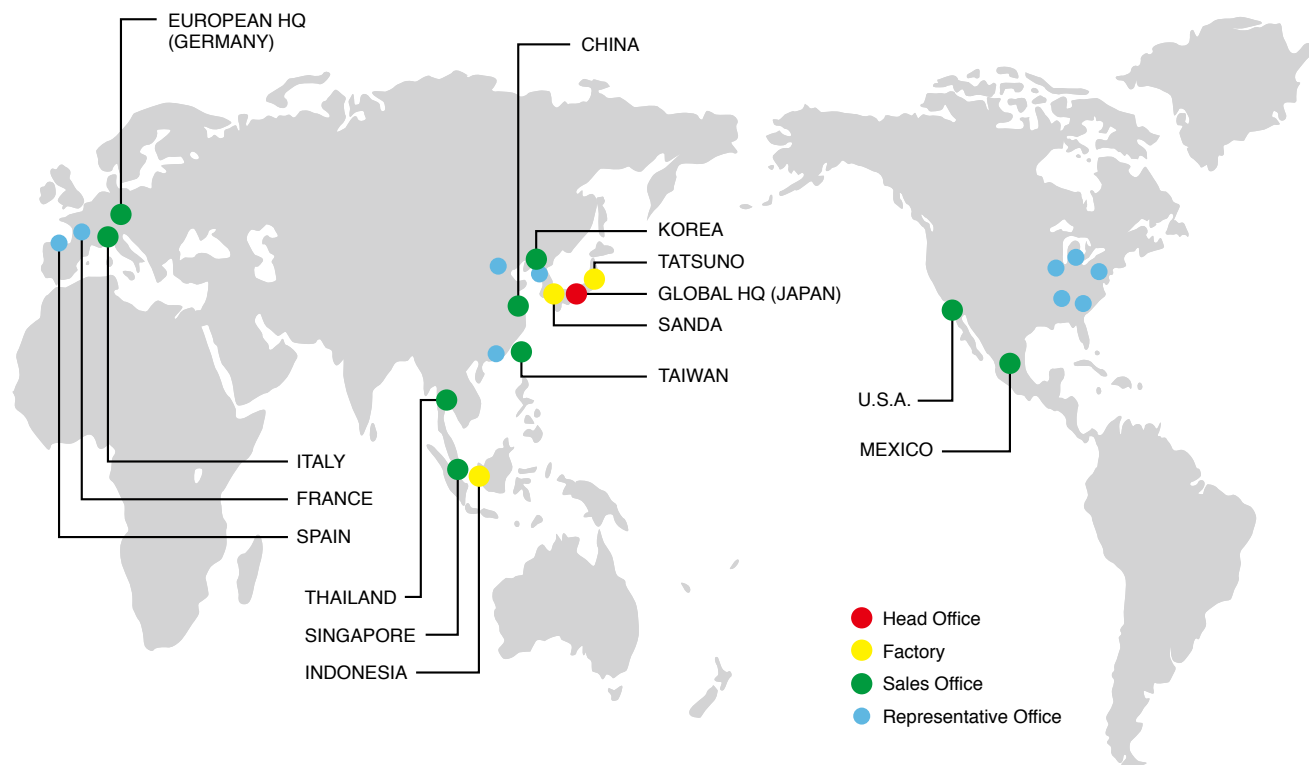
The lifespan of consumable parts (motors, light bulbs, rotor bushings, packing, O-rings, bearings and xenon boards, etc.) may vary based on their environment.

History of PATLITE

KASUGA Electric was merged with the PATLITE CORPORATION. 2017



PATLITE Global Network



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To ensure correct use of these products, read the "Instruction Manual" prior to use. Failure to follow all safeguards can result in fire, electric shock, or other accidents. Specifications are subject to change without notice.

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