

LKEH



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



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

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

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
Amarylilis	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
Amarylilis	Mozart Symphony No.40	Ave Maria	Grandfather's Clock

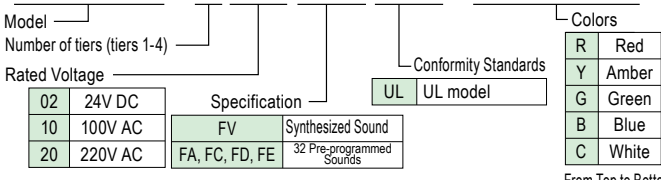


• Bit input → plays 8 sounds (see instruction manual for 8 sound grouping) Binary input → plays 32 sounds
• Alarm tones are denoted in characters for convenience's sake. Please inquire about actual tones or check our website for more details.

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

Optional Parts	Model
Wallmount Bracket	SZ-023
Wallmount Bracket	SZ-008
SD card (2GB)	SDV-2GP

The following custom specifications are available.
• PNP open collector specifications

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.

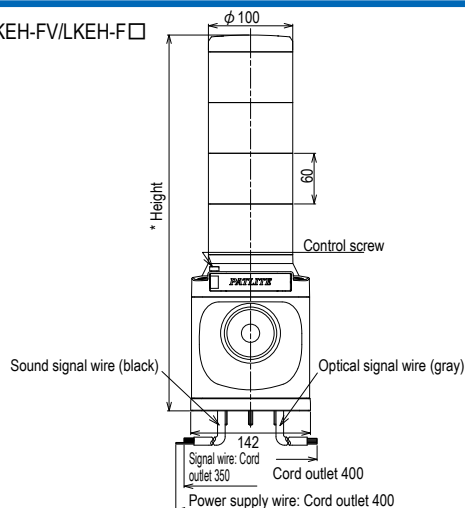
*When using multiple units, there may be variation in the playback sound even when started simultaneously with the tone. This product is not for mounting on a vehicle.

■ 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)

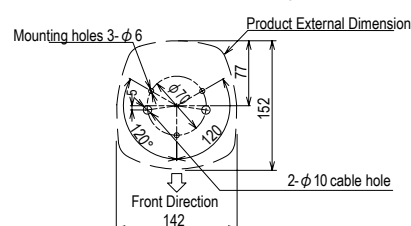
LKEH-FV/LKEH-F□



* Height

- 1 tier: 265.2
- 2 tier: 325.3
- 3 tier: 385.4
- 4 tier: 445.5

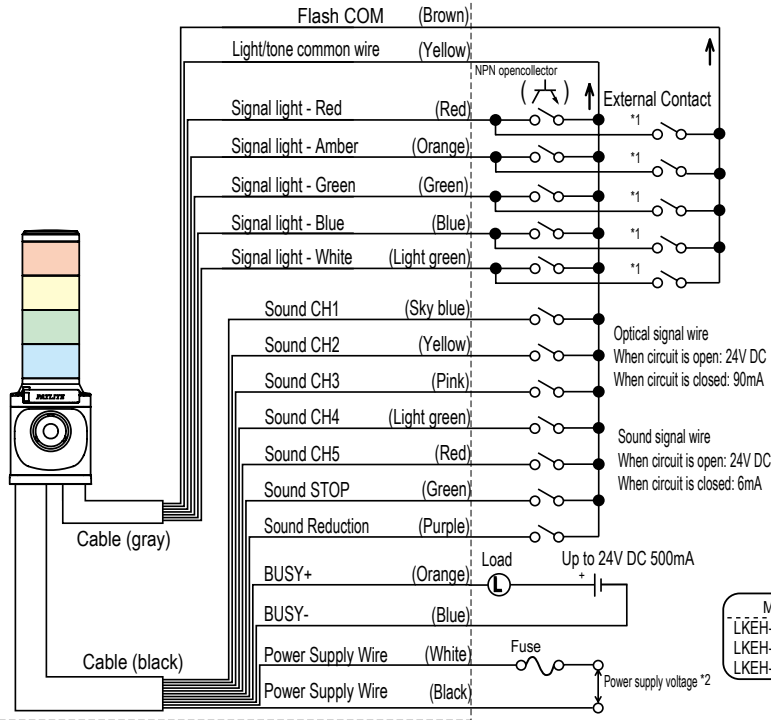
Installation Dimension Drawings



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.



Normally closed contact circuit

Optical signal wire	Sound signal wire
External Contact 90mA LKEH 24V *6 Common line	External Contact 6mA LKEH 24V *6 Common line

NPN open collector circuit

Optical signal wire	Sound signal wire
External Contact 90mA LKEH 24V *6 Common line	External Contact 6mA LKEH 24V *6 Common line

*1. Does not offer flash control.

Contact Capacity

Optical signal wire	Sound signal wire
Current Capacity 100mA or more *3 Withstand voltage of 30V DC or more Leakage Current 0.1mA or less ON voltage (sat) 1V or less	Current Capacity 10mA or more Withstand voltage of 30V DC or more Leakage Current 0.1mA or less ON voltage (sat) 1V or less

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)

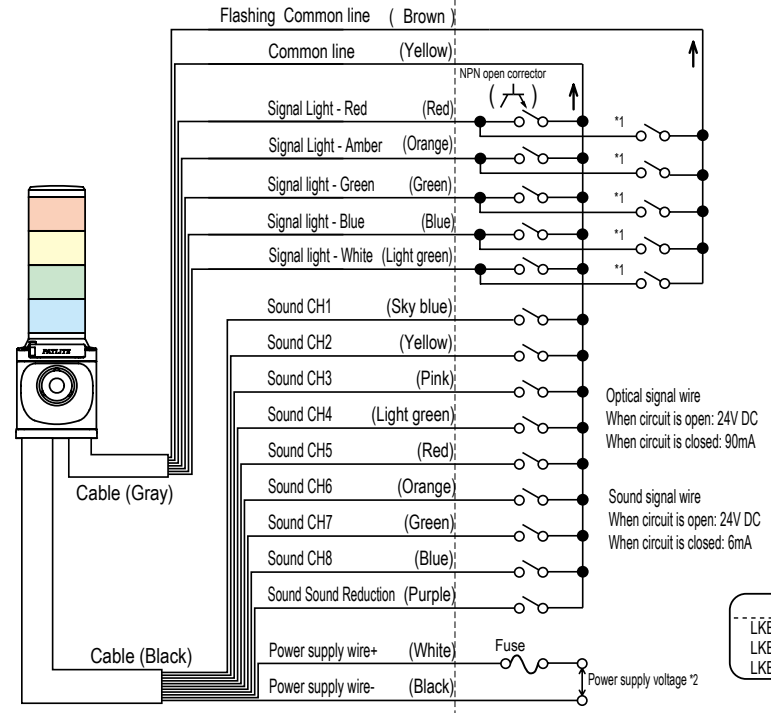
*Do not apply voltage to each wire. This may damage the product.

- *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.



Normally closed contact circuit

Optical signal wire	Sound signal wire
External Contact 90mA LKEH 24V *6 Common line	External Contact 6mA LKEH 24V *6 Common line

NPN open collector circuit

Optical signal wire	Sound signal wire
External Contact 90mA LKEH 24V *6 Common line	External Contact 6mA LKEH 24V *6 Common line

*1. Does not offer flash control.

Contact Capacity

Optical signal wire	Sound signal wire
Current Capacity 100mA or more *3 Withstand voltage of 30V DC or more Leakage Current 0.1mA or less ON voltage (sat) 1V or less	Current Capacity 10mA or more Withstand voltage of 30V DC or more Leakage Current 0.1mA or less ON voltage (sat) 1V or less

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.