Voice Synthesizer Unit for LU7

Signal Voice

生産終了 Production end

Instruction Manual

Type: LU7-V1

Thank you for purchasing our PATLITE Signal Voice. Read this manual thoroughly before use and use the product properly. Keep this manual carefully after use; and be sure to read it again before performing maintenance/service or repairs. If any question arises concerning the product or the information in this manual, contact our sales office or customer service listed on the last page.

Important safety instructions

Safety Precautions

Ensure to observe the following warnings and cautions as they contain information that can prevent personal injury (to the users and other people) and damage to property.

■ In this manual, the following two labels indicate the degree of injury and/or damage that could be generated due to neglecting the description and incorrectly handling the device.

> This label indicates that neglecting the description Warning "could result in death or severe injury". This label indicates that neglecting the description Caution "could result in injury or cause physical damage"

♠ Warning

- Be sure to disconnect the power supply before performing electric wiring, assembly, or disassembly of the product in order to prevent burnout of internal circuits or electric shock
- Do not touch electric parts or circuit patterns on the printed circuit board except jumper plugs when performing electric wiring, assembly, or disassembly of the product in order to prevent personal injury caused by the pins of parts, or to prevent damage to the parts due to static electricity.
- . When construction work is necessary, always seek a professional help to install the product in order to prevent danger such as electric shock, a fire, or falling from a
- · When the product is used for safety purpose, where a highest priority is given to safety, be sure to conduct daily inspections and use it in combination with other devices to prepare for unexpected malfunction or breakdown.
- · After the product is installed to equipment, exercise extreme caution not to catch a cover of the equipment on the product when you remove the cover and never use the product for climbing on the equipment. Otherwise, it may lead to extreme danger caused by falling of the device, falling from the equipment, etc.
- · Be sure to install the product only in the normal position (where the speaker unit is the upper side). Otherwise, the product may come off.
- Our warranty does not cover failures caused by improper handling that ignores the warnings or cautions, or failures caused by modification or by act of God, Use the product only for the intended use described in this manual.

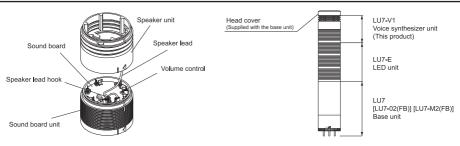
⚠ Caution

- This product is a voice synthesizer unit exclusively designed for use with Signal Tower LU7 [LU7-02(FB)] [LU7-M2(FB)] and cannot be used separately. Do not attach a unit of any other product in order to prevent a failure.
- Attach the product to the top of the tower. The attachment to any other place is impossible.
- Do not use the product under vibration exceeding the specified limit. Otherwise, it may damage the product.
- . The product is only intended for indoor use. (Outdoor use is prohibited.)
- Do not leave or use the product without attaching an LED unit or head cover in order to prevent a failure. · Use a head cover that comes with the base unit.
- Ensure that tools etc. do not make contact with the speaker. Otherwise, it may damage the speaker.

Model No. Configuration



3. Part Name



* Refer to [4-1 How to disassemble the unit], [4-3 How to assemble the unit] and [5, Installation procedures] for assembly and disassembly of the unit,

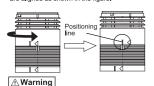
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Set up the audio channel and signal line as described below.

4-1. How to disassemble the unit

[Step1]

Turn off the power and rotate the speaker unit in the direction of the arrow until the positioning lines are aligned as shown in the figure



 Working while the power is on may cause burnout of internal circuits due to a short circuit or electric shock Before commencing work, ensure the power is turned off.

[Step 2]

Detach the speaker unit from the sound board unit.



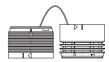
⚠Caution Detach the unit slowly so as not to

[Step 4] Place the units as shown in the

figure.

[Step 3] Unlatch the speaker lead from the lead hook.





pull the speaker lead tight.

4-2. How to set up the unit

1. Make the following settings by connecting jumper plugs to the sound board unit.

1-1. Signal line setup [R, A, G, B, W pins]

From R. A. G. B. and W pins, select one signal line for the audio output and connect a jumper plug to the selected pins. The different combination of the signal line and the LED unit allows different operation patterns.

Linked Operation of LED Unit & Audio

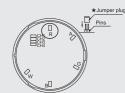
The LED indication and audio output are linked in this operation. From R. A. G. B, and W pins, select one color of the LED unit to link the audio output and connect the jumper plug to the pins.

Setup example

In this example, LED Units - Red, Amber, Green, Blue (4 lights) and Voice synthesizer unit are used

Select R pins if you want to produce a sound/voice when Red LED lights up. The terminal No.1 on the base unit is used as the signal line for both the Red LED unit and audio output.

★ JM-2BK-61 of J.S.T. Mfg. Co., Ltd. is used for the jumper plug.



Signal line setupj				
Jumper plug position	Base unit terminal No. (Terminal Color)			
R	No.1 (Red)			
А	No.2 (Amber)			
G	No.3 (Green)			
В	No.4 (Blue)			
W *	No.5 (White)			

Jumper plug position at the factory setting

Non-linked operation of LED Unit & Audio

The LED indication and audio output are not performed simultaneously in this operation, From R. A. G. B. and W pins, select one color of the LED unit which is not to be used and connect the jumper plug to the pins.
*This operation type is not available when all colors of the LED unit – Red, Amber, Green, Blue,

and White - are used. Since one of the LED units is bound to be linked with the audio output. either reduce the number of the LED units to be used or use the linked operation.

Setup example In this example, LED Units - Red, Amber, Green, (3 lights) and

Select R pins if you want to produce a sound/voice when Red LED lights up. The terminal No.1 on the base unit is used as the signal line for both the Red LED unit and audio output.

JM-2BK-61 of J.S.T. Mfg. Co., Ltd.

Voice synthesizer unit are used



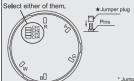
[Signal line setup]			
Jumper plug position	Base unit terminal No. (Terminal Color)		
R	No.1 (Red)		
Α	No.2 (Amber)		
G	No.3 (Green)		
В	No.4 (Blue)		
W *	No.5 (White)		
	Jumper plug position R A		

* Jumper plug position at the factory setting

1-2. Audio channel setting [CH1 to CH4 Pins]

From CH1 to CH4, select one audio channel for audio output.

★ JM-2BK-61 of J.S.T. Mfg. Co., Ltd. is used for the jumper plug.



[CH Selection] Jumper plua Audio Outpu CH No position CH1* CH1 CH2 CH2 СНЗ СНЗ CH4 CH4

* Jumper plug position at the factory setting

. Do not touch electric parts or circuit patterns on the printed circuit board except jumper plugs when performing electric wiring of the product in order to prevent personal injury caused by the pins of parts, or to prevent damage to the parts due to static electricity.

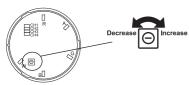
⚠Caution

. Make sure that the speaker lead is not pinched when assembling the unit after setup.

Caution

- Be careful not to lose the jumper plug.
- . Securely and fully connect the jumper plug to the pins. Otherwise, a sound/voice may not be emitted
- . Do not control an LED indication with the signal line set for the audio output. The sound/voice will not be played properly.

2. Adjust the volume control



Caution

 Use a flathead screwdriver of the following size for the volume control. Do not apply excessive force when turning.

Using a screwdriver of improper size or applying an excessive turning force (torque) breaks the volume control <Recommended screwdriver>



VESSEL: Adjusting screwdriver with ceramic blade No.9000 (

1.8×30)

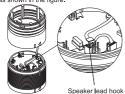
Do not touch the other components with the driver nor damage components with it.

^{*}The volume is set to the maximum level at the factory setting.

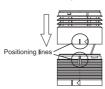
4-3. How to assemble the unit

(Step 1)

Latch the speaker lead onto the lead book as shown in the figure.

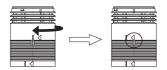


(Step 21 Align the positioning lines and attach the speaker unit.



Product i (Step 3) Turn the sneaker

arrow until the postioning line comes to the position shown in the figure.



⚠ Warning

. Working while the power is on may cause burnout of internal circuits due to a short circuit or electric shock. Before commencing work, ensure the power is turned off.

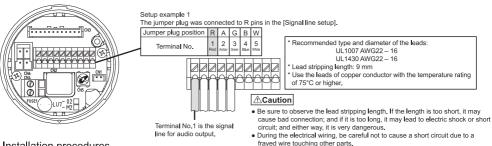
∆Caution

 Make sure that the speaker lead is not pinched between the units.

4-4. Electrical wiring

Connect the leads to the base unit if it is not done yet.

Connect the lead to the terminal that corresponds to the signal line (color) for audio output set with the jumper plug in [4-2 How to set up]. * Refer to the instruction manual of "LU7 Base Unit" for the details of the wiring.



Installation procedures

[Step 1]

Remove the head cover of the LU7 main unit.



Turn the head cover in the direction of the arrow until the positioning line comes to the position shown in the figure.

Pull the head cover in the direction of Positioning line

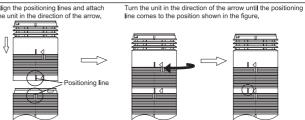
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· Working while the power is on may cause burnout of internal circuits due to a short circuit or electric shock. Before commencing work, ensure the power is turned off.





Align the positioning lines and attach the unit in the direction of the arrow



Install the head cover in the same way.



∆Caution

• Check the vibration resistance listed in [8. Specifications] before assembly. The vibration exceeding the limit may break the unit.

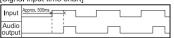
6. Notes concerning audio output

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A sound/voice is played after an input signal is sent to the signal line selected in [4-2,-1-1]. The input must be maintained during the audio output. The unit does not support "one-shot input" function (which plays the sound/voice to the end once a signal is input to the signal line).

[Signal input time chart]



Caution

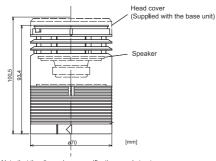
- There is a maximum time lag of 500 ms between the signal input and the resulting audio output.
 "Pop noise" is generated at the beginning and end of each audio output, which is inevitable in the
- "Pop noise" is generated at the beginning and end of each audio output, which is inevitable in the specifications, and not a malfunction.

7. Before requesting repairs

Problems	Check Points		
No sound is produced.	Ensure that speaker lead is connected. Ensure that the jumper plug is connected to the sound board unit. Ensure that the jumper plug position and wiring are correct. Ensure that the volume control is not set to the minimum level.		
Sound is interrupted.	Ensure that the LED units are not used in the blinking mode.		
Unusual sound	o Ensure that no foreign object is placed on the speaker.		

8. Specifications

[External view]



Note that the dimensions, specifications, and structure are subject to change without notice.

Model name	LU7-V1			
Rated power voltage	24V DC			
Allowable voltage range	24V DC ± 10%			
Rated power consumption	3.5W (when the sine wave data of -6dB 1kHz is played)			
Sound pressure level	80dB (when the sine wave data of -6dB 1kHz is played at 1 m distance) Adjustable with volume control from 0dB			
Audio file	MPEG1-Audio Layer III (MP3)			
Bit rate	64kbit/s (Standard): Fs=44.1kHz			
Sound/Voice	Defined by user (Max. 32 s)			
Input signal holding time	Continuously			
Lag time before audio output	Max. 500 ms			
Operating temperature range	−10 to 55°C			
Operating humidity	Max. 90% RH (with no condensation)			
Operating environment	ent Indoor use only			
Installation position	Uplight position only			
Installation method	Only on the top of the tower			
Protection class	IP65			
Vibration resistance	Refer to the table below			
Mass	170 g ± 10%			
External dimensions	ø70×93.4 (H)[mm] (* not including the head cove			

[Vibration resistance]

Number of LED units	0 (only used for sound unit)	1	2	3	4	5	4	5
LU7-02	2.5G 24.5m/s ²	1.3G 12.74m/s ²	1G 9.8m/s ²	1G 9.8m/s ²	0.5G 4.9m/s ²	0.5G 4.9m/s ²	1G 9.8m/s ²	1G 9.8m/s ²
LU7-M2	2.5G 24.5m/s ²	2G 19.6m/s ²	1.5G 14.7m/s ²	1.5G 14.7m/s ²	0.5G 4.9m/s ²	0.5G 4.9m/s ²	1G 9.8m/s ²	1G 9.8m/s ²
Allowable vibration frequency	10 - 150Hz				40 -	150Hz		

^{*} When the base unit is installed directly

⚠ Caution

We are not liable for any damage or loss caused by improper handling that ignores the warnings or cautions described in this manual.



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