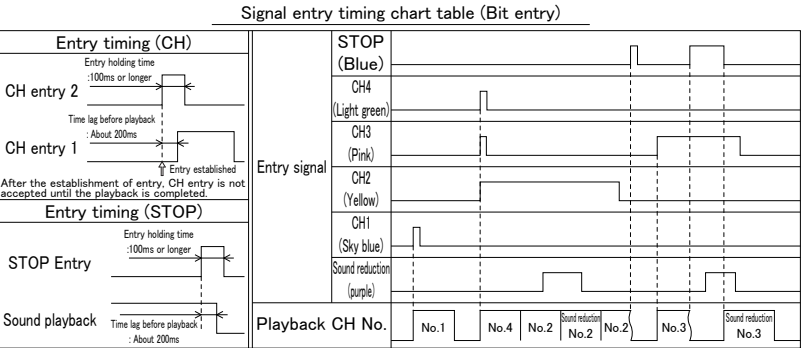
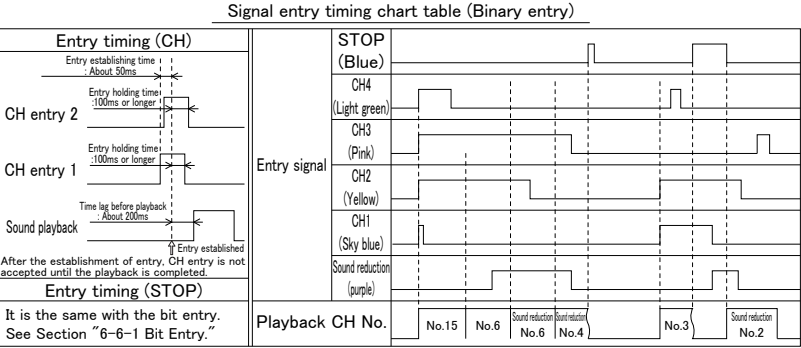


- 6-6-1 Bit Entry Mode
- A maximum of 4 messages can be played.
  - In case there are two or more of CH1 - CH4 and the common line are short circuited, the message of a CH with a larger number is played.
- Signal entry priority order: STOP > CH4 > CH3 > CH2 > CH1
- In the case of operating this product in the power turning on method, it takes about 1 second before it starts playing a message.
  - For the timing chart in the case of operating this product in the signal line control method, see the table below.



- 6-6-2 Binary Entry Mode
- A maximum of 15 messages can be played.
  - A message corresponding to the state of short circuit between a signal line among CH1 - CH4 and the common line is played. (See the binary code table)
  - In the case of operating this product in the power turning on method, it takes about 1 second before it starts playing a message.
  - For the timing chart in the case of operating this product in the signal line control method, see the table below.



Binary code table

Playback CH No.	Entry contact	Playback CH No.	Entry contact	Playback CH No.	Entry contact
	1 (Sky blue) 2 (Yellow) 3 (Pink) 4 (Light green)		1 (Sky blue) 2 (Yellow) 3 (Pink) 4 (Light green)		1 (Sky blue) 2 (Yellow) 3 (Pink) 4 (Light green)
1 •	1 0 0 0 •	6 •	0 1 1 0 •	11 •	1 1 0 1 •
2 •	0 1 0 0 •	7 •	1 1 1 0 •	12 •	0 0 1 1 •
3	1 1 0 0	8 •	0 0 0 1	13	1 0 1 1
4	0 0 1 0	9 •	1 0 0 1	14	0 1 1 1
5	1 0 1 0	10	0 1 0 1	15	1 1 1 1

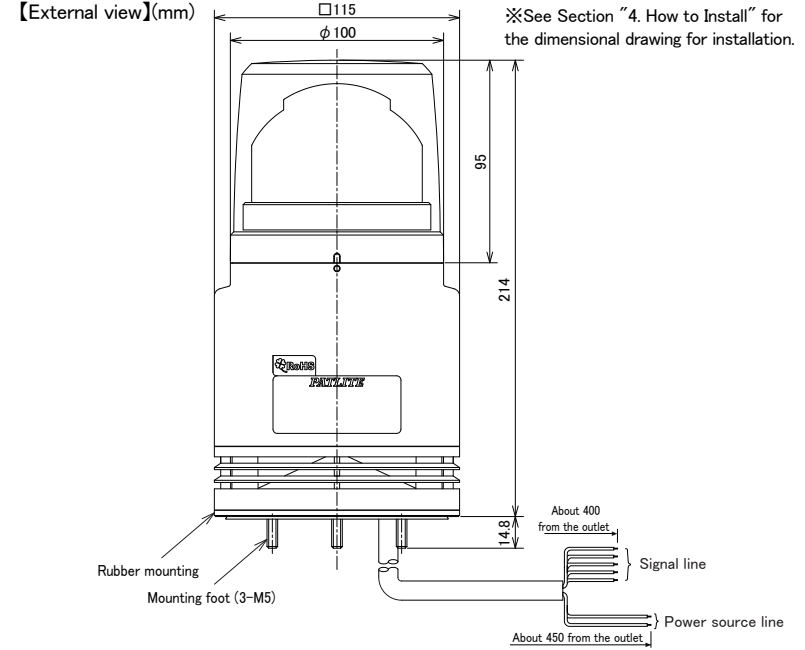
※The "1" in the table refers to the short-circuit between the signal line and the common line.

## 7. Before You Request a Repair

Symptom	Points to be checked	How to recover (Reference item)
It does not produce sound The rotating light does not operate	Is power applied to the product?	Confirm the wiring. (5. How to Perform Wiring)
	Are the common line and the signal line correctly wired?	Confirm the wiring. (5. How to Perform Wiring)
	Is the volume control set to minimum?	Adjust the volume. (6-3. Adjusting the Volume)
It plays a different CH	Are the common line and the signal line correctly wired?	Confirm the wiring. (5. How to Perform Wiring)
	Is the operation mode correctly selected?	Confirm the switch. (6-2. Operation Mode)
Rewriting the sound is not possible	Is power applied to the product?	Confirm the wiring. (5. How to Perform Wiring)
	Is the SD card correctly inserted?	Confirm the insertion direction. (6-6. Rewriting the Message)
	Is the data correctly stored in the SD card?	Confirm the data. (Instruction Manual for FV-Win)
	Is the total length of rewriting the voice message longer than 64 seconds? (In the case of 64kbit/s, Fs=44.1kHz)	Choose a lower bit rate for the voice message, or edit or delete the data.
	Is the volume control set to minimum?	When the volume control is set to minimum, the operating sound cannot be heard. Adjust the volume. (6-3. Adjusting the Volume)
	Is the operation mode correctly selected?	Confirm the switch (6-2. Operation Mode)

- If the product does not operate correctly even after it is properly installed and handled, contact a branch office or the technical support printed on the last page.

## 8. Specifications



Model	RFV-24F-□	RFV-100F-□	RFV-220F-□
Rated Voltage	24V DC	100V AC	220V AC
Voltage Range	24V ± 10%	100V ± 10%	220V ± 10%
Power Consumption	Maximum 18W	Maximum 16W	Maximum 16W
Sound Pressure Level	Maximum 95dB (at a distance of 1m in front -0dB when a 1kHz sine-wave is produced) Adjustment of volume is possible.		
Sound Reduction Level	20dB ± 2dB (when a 1kHz sine wave is produced)		
Audio file	MPEG1-Audio Layer III (MP3)		
Maximum length of time for playback	Total of 64 seconds (In the case of 64kbit/s, Fs=44.1kHz)		
CH entry method	Bit entry/Binary entry (They can be switched over)		
Starting Time	Power turning on method: 1s or less Signal line start entry method: 300ms or less		
Light source for the rotating light	LED		
Brightness	Red (R) 3000cd / Yellow (Y) 2500cd		
Number of flashes	120 ± 25 times/minute		
Operating temperature range	-10 ~ 50 °C		
Relative Humidity	RH 85% or lower (Non-condensing)		
Mounting Direction	Indoor : Normal and reverse direction are possible (When it might be splashed with water, use the normal direction only) Outdoor : Normal direction only		
Protection Level	IP54 (Normal direction installation only)		
Insulation resistance	500V DC 1MΩ or higher (Between the live metal part and the dead metal part)		
Withstand voltage	500V AC for 1 minute (Between the live metal part and the dead metal part)	1000V AC for 1 minute (Between the live metal part and the dead metal part)	1500V AC for 1 minute (Between the live metal part and the dead metal part)
Resistance to Vibration	45m/s²	19.6m/s²	19.6m/s²
Mass	0.9kg ± 10%	1.15kg ± 10%	1.15kg ± 10%

- Please note that we will not be held responsible for the failure or damage caused by handling the product in ways not observing the warnings or cautions contained in this document.
- Please note also that the contents in this document may be changed for improvement without notification in advance.

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<http://www.patlite.co.jp>

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日祝祭日と夏期・年末年始の休日は、  
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4206-A  
08.01.NHI

**PATLITE**

4206-A  
V95100112

Speech Synthesis LED Rotating Light

**シグナルボイス®**

Instruction Manual

TYPE : RFV

We thank you for purchasing PATLITE Signal Voice. Before you start using the product, please read this instruction manual carefully to use the product correctly. Please store this document in a safe place. Be sure to read this document again when you are about to perform tasks such as maintenance and repair. And if you have any questions, contact a branch office or the technical support printed on the last page.

### Safety Precautions

The precautions which must be observed to prevent damage to the person using the product, to people around it, or to property are described in a manner shown below

- The seriousness of injury or damage caused by ignoring the indication and using the product in a wrong way is categorized with the indications below and descriptions are added to each of them.

**Warning**

The sections with this indication contain "items which could cause death or serious injury" if ignored.

**Caution**

The sections with this indication contain "items which could cause injury or property damage only" if ignored.

### 1. Cautions Which Must Be Observed for Safety Use

**Warning**

- Be sure to turn the power off before wiring or installing the product. Failure to do so may cause electric shock.
- Do not disassemble or convert the product. It may cause fire or electric shock. For repair or inspection of the internal parts of the product, contact a branch office or the technical support printed on the last page.
- Take care to perform the wiring correctly. If the wiring is incorrect, the internal circuit may be damaged by fire, and it may cause fire.
- Be sure to use this product within the allowable range of voltage specified for the power source. Failure to do so may cause fire or damage to the product.
- Be sure to have specialists perform installation tasks that require construction work. Failure to do so may cause electric shock, fire, or falling.

**Caution**

- To protect power source circuit and internal circuit of the product, be sure to install external fuse.

Failures caused by using the product in ways not observing the Warnings and Cautions, by disassembling or converting the product, or by natural disaster are not covered under warranty. And do not use the product in ways other than the ways described in this document.

**Other precautions**

- Be sure to use the product with the cover on the side of the case closed. Water or dust entering the product may cause failure.
- Use the product in an environment where there are no high-intensity radiowaves or inductive noise. Failure to do so may cause outputting of noise from the speaker.
- Use the product in an environment where there is no corrosive gas. Failure to do so may cause malfunction.
- Before starting work on the product, discharge static electricity from your body to prevent electrostatic breakdown. Static electricity can be discharged by touching another grounded metal part with the bare hands.
- In case the product is used for security purposes in which safety is emphasized, be sure to perform daily maintenance, and design a system that is capable of tackling the occurrence of unlikely events such as malfunction or failure.

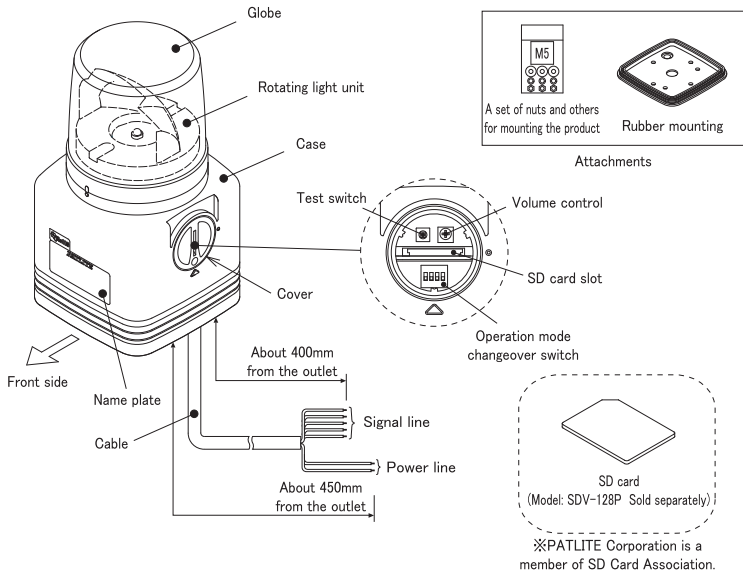
### 2. Model Indicating Format

RFV - 100 F - R

Rated voltage  
24 : 24V DC  
100: 100V AC  
220: 220V AC

Color of rotating light  
R : Red  
Y : Yellow

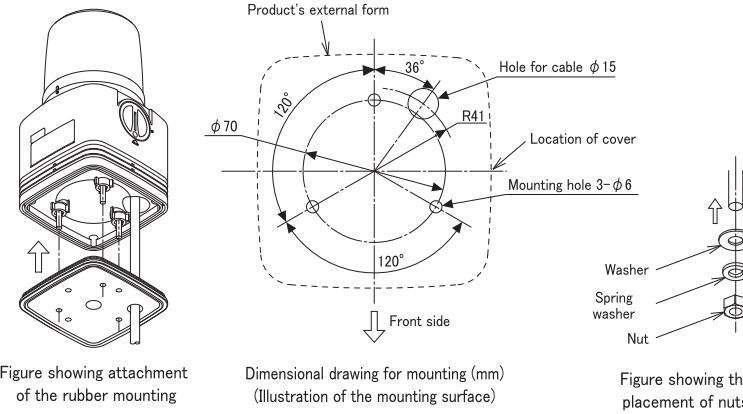
3. Part Names



4. How to Install

Perform installation according to the procedure shown below.

- ① Attach the rubber mounting to the product. (See the figure showing attachment of the rubber mounting)
- ② Make mounting holes on the mounting surface. (See the dimensional drawing for mounting)
- ③ Mount the product on the mounting surface by inserting, and place the attached nuts and others in the order of washer, spring washer, and nut, and then tighten them. (See the figure showing the placement of nuts; Recommended tightening torque: 0.7±0.1N·m)
- ④ Confirm that the product and the nuts and others are attached correctly.



⚠ Warning

- Be sure to turn the power off before installing the product. Failure to do so may cause electric shock.

⚠ Caution

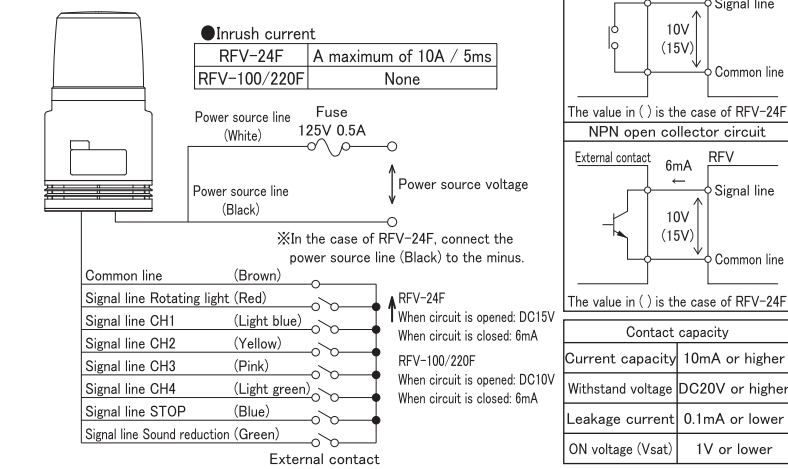
- Ensure that the mounting surface has sufficient strength to support the weight of the product, and choose a location where there are fewer vibrations. Failure to do so may cause injury or damage to the product due to the product falling over.
- Be sure to use all of the items in the set of nuts and others attached, and tighten them with the recommended tightening torque. Failure to do so may cause injury or damage to the product due to the product falling over.

Other precautions

- Be sure to attach the rubber mounting. Attach it in a manner so that there is no opening between the rubber mounting and the product. Failure to do so will make it less waterproof and dustproof.
- Install the product on a flat surface without bumps and dips. Failure to do so will make it less waterproof and dustproof.
- To prevent the product from falling in places where vibration may be generated, apply thread locking adhesive or the like, and periodically check the tightness of the mounting nuts.
- In case the product is to be installed in a high place, choose a location where there is a footing that facilitates the performance of repair work.
- When the product is to be used connected to a power source, install a switch near the body so that the power can easily be turned off for safety reasons.

5. How to Perform Wiring

For the external contact of the signal line, use a no-voltage contact circuit such as a relay switch or NPN open collector circuit. As for the circuit and contact capacity, see the table on the right.



⚠ Warning

- Be sure to turn the power off before starting the wiring. Failure to do so may cause electric shock.
- Take care to perform the wiring correctly. Failure to do so may cause damage to the internal circuit by fire, and it may cause fire.

⚠ Caution

- To protect the power source circuit and internal circuit, be sure to install an external fuse.

Other precautions

- Confirm that the wiring is performed correctly before turning on the power.
- Make the wiring to the signal line as short as possible as a preventive measure against noise. Placing the signal line alongside another high-voltage line, or in a location where it is easily influenced by inductive noise, may cause malfunction due to the influence of the noise.
- In case a no-voltage contact circuit such as a relay switch is to be connected to the power source line, choose a relay switch or the like in consideration of the value of the inrush current. Insufficient capacity may cause adhesion to the contact or malfunction.

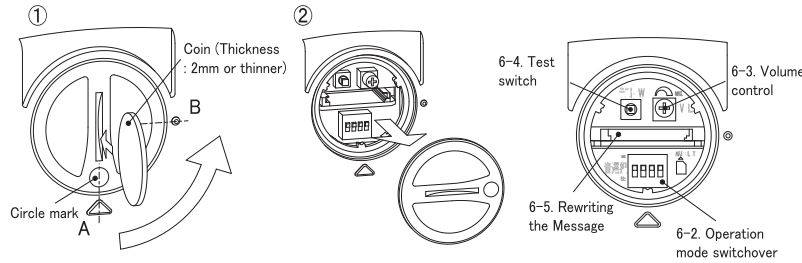
6. How to Use the Product

6-1. Opening and Closing the Cover

Open or close the cover when performing tasks such as adjusting the sound volume or rewriting the message.

- ① Use a coin or the like to turn the circle mark on the cover to Position B, ② and pull it toward you to remove it.

After completing the setting, fix the cover in the reverse order.



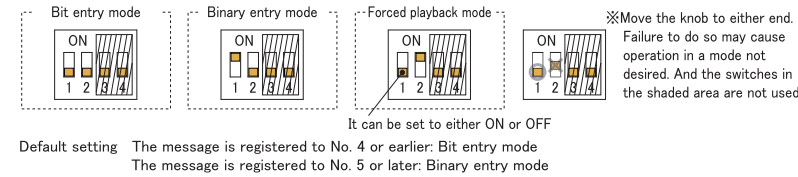
Other precautions

- Take care not to lose the cover.
- Take care to prevent foreign objects from entering the product while the cover is being removed.
- When fixing the cover, make sure to turn the circle mark to the Position A. Failure to do so may make it less waterproof and dustproof.

6-2. Switching Over the Operation Mode

By changing the switch, one of the operation modes shown below can be selected.

- Bit entry mode: CH entry is set to the bit entry. See 6-6-1 for the operation.
- Binary entry mode: CH entry is set to the binary entry. See 6-6-2 for the operation.
- Forced playback mode: The CH1 is played when the power is turned on. It does not accept any manipulation except volume control or any signal entry.



6-3. Adjusting the Volume

Volume can be adjusted using the volume control.

Adjust the volume by turning the knob with your fingers.



Other precautions

- Turn the volume control lightly. It may be damaged if a torque of 50mN·m or higher is applied.

Information

- When the volume becomes louder, the sound may be distorted in some messages.
- In some usage environments, the volume may not be zero even if the volume control is set to minimum.

6-4. Test Switch

When the test switch is pressed down once with no SD card inserted, the CH1 is played, and the rotating light operates.

When it is pressed down once again, the playback and the operation of the rotating light are stopped. Use this function for operation confirmation or volume adjustment.

And when the test switch is pressed down once with an SD card inserted, data is loaded from the SD card, and rewriting of the message is performed.

For the operation, see Section “6-5. Rewriting the Message.”



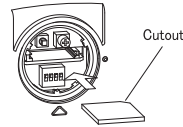
6-5. Rewriting the Message

By using an SD card (Model: SDV-128P Sold separately) and a sound writing tool (Model: FV-Win Sold separately), the message can be rewritten.

The maximum length of time for this product is a total of 64 seconds (in case of 64kbit/s, Fs=44.1kHz). For the method of creating data and storing it on an SD card, see the instruction manual for the sound writing tool.

Message rewriting procedure

- ① Turn on the power of the product, and remove the cover.
- ② Confirm that the signal entry mode is set to the bit entry or binary entry, and then insert the SD card, in which the rewriting data is stored, into the SD card slot.
  - \* Rewriting the message is not possible in the power turned on mode.
- ③ When the test switch is pressed down, a sound like “pi po” is generated, and it starts rewriting.
- ④ When the rewriting is completed, a sound like “pii” is generated. Remove the SD card.
  - \* Rewriting should be completed within 5 seconds. When a sound like “pi pi pi pi” is generated, or when there is no response, the rewriting is not successfully completed. See Section “7. Before You Request Repair.”
- ⑤ Play the messages in each CH to confirm that they are successfully rewritten.



Other precautions

- For the SD card, use type SDV-128P sold separately. Operation is not guaranteed if an SD card of any other type is used.
- When formatting the SD card, do it in either of FAT12 or FAT16.
- When inserting the SD card into the card slot, pay attention to the orientation of the SD card. And do not forcibly insert the SD card into the card slot. Doing so may cause damage to the product and the SD card.

6-6. How to Play Messages

When the common line and one of the signal lines is short-circuited after turning on the power, it operates as shown below.

- Rotating light : The rotating light operates while they are short-circuited.
- CH1 - CH4 : By short-circuiting them for 100ms or longer, a message is played once, and the rotating light operates while the message is being played.
  - While a message is being played, it does not accept any entry except STOP.
  - When there is no message stored, only the rotating light operates while they are being short-circuited.
  - \*The CH No. to be played changes according to the signal line entry mode. See Section 6-6-1 (Bit entry mode) and 6-6-2 (Binary entry mode).
- STOP : By short-circuiting them for 100ms or longer, the message being played and the operation of the rotating light are stopped.
- Sound reduction : By entering CH1 - 4 while they are being short-circuited, the sound pressure for playing the message is reduced. It is not possible to reduce the sound for the message being played.
  - Sound reduction level: 20dB±2dB (when a 1kHz sine wave is produced)