PATLITE®

Audible Alarm
Instruction Manual
TYPE : BD

We thank you for purchasing PATLITE Audible Alarm. 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.
- Take care to perform wiring correctly. If the wiring in incorrect, internal circuit may be damaged by fire, and it may also be a cause of fire.
- As for the power source, be sure to use this product within the allowable range of voltage. Failure to do so may be a cause of fire or damage to the product.
- When the product is used for security purposes in which safety is emphasized, be sure to perform daily maintenance, and design a system which is capable of tackling the occurrence of unlikely event such as malfunctions or failure.
- Be sure to let specialists perform installation task which requires construction work. Failure to do so may cause electric shock, fire, or falling.

⚠ Caution
- Before you start working on the product, discharge static electricity from your body. By touching another grounded metal part with bare hand, the static electricity can be discharged.
- 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
- Use the product in an environment where there is no electromagnetic or inductive noise. Speakers are known to generate noise.
- Use the product in an environment where there is no corrosive gas. Failure to do so may cause malfunction.
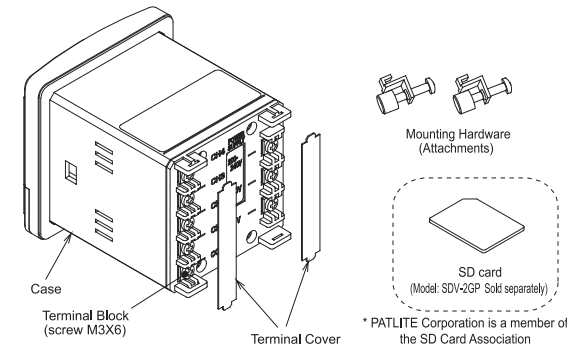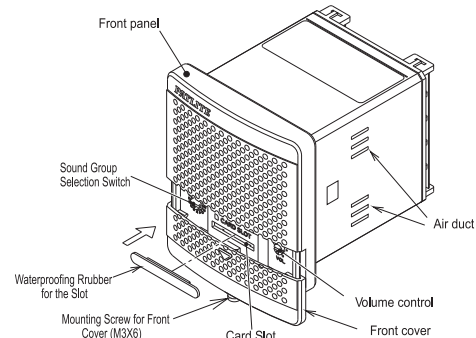- Do not use the product as fire alarm.

※Cautionary note of the built-in Alarm/Melody
Although copyright licensing in Japan for the A, C, D type melodies have been obtained for the BD-□AA/C/D at our company, since copyright licensing for other countries outside Japan has not been acquired, it is recommended the customer acquires it.
However, the melodies in the BD-□AE (E type) do not require copyright consent, therefore it is the recommended Sound to use in countries other than Japan.

2. Model Indicating Format

BD − 24 A A − J

- ■Normal-rated voltage
  24 : 12-24V DC
  100 : 100/220V AC
- ■Sound Chart type
  A : Type A
  C : Type C
  D : Type D
  E : Type E
- ■Color of body front
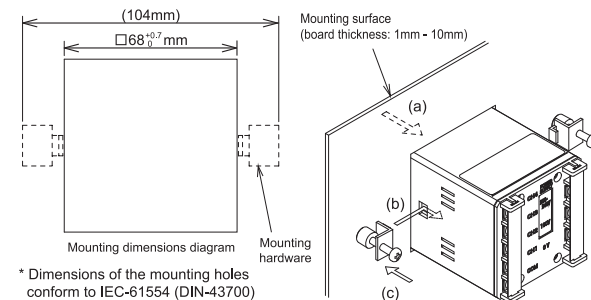 J : Light gray
  K : Dark gray

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3. Part Names

Front panel
Sound Group Selection Switch
Air duct
Waterproofing Rrubber for the Slot
Mounting Screw for Front Cover (M3X6)
Card Slot
Volume control
Front cover
Case
Terminal Block (screw M3X6)
Terminal Cover
Mounting Hardware (Attachments)
SD card (Model: SDV-2GP Sold separately)
* PATLITE Corporation is a member of the SD Card Association

4. How to Install

Install the product according to the procedure below.
① Create mounting holes on a mounting surface (board thickness: 1mm - 10mm) where there is enough space for the mounting hardware. (See the mounting dimensions diagram)
② (a) Insert the product from the front of the mounting surface.
   (b) Attach the mounting hardware which comes with the product to the holes on the side of the product.
   (c) Then fasten the screws of the mounting hardware. (Recommended fastening torque: 0.7±0.1N・m)
③ Confirm that the product and the mounting hardware are installed properly.

(104mm)
□68$^{+0.7}_{0}$ mm
Mounting surface (board thickness: 1mm - 10mm)
(a)
(b)
(c)
Mounting dimensions diagram
Mounting hardware

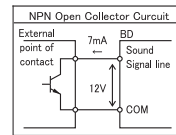* Dimensions of the mounting holes conform to IEC-61554 (DIN-43700)

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

⚠ Caution
- Choose a location for the mounting surface where it has enough strength to support the weight of the product, and where there is less vibration. Failure to do so may be the cause of injury or damage to the product.
- Be sure to use both pieces of mounting hardware, and fasten them with the recommended fastening torque. Failure to do so may be the cause of injury or damage to the product.

Other Precautions
- Secure a enough space in which the mounting hardware can also be installed when choosing a mounting surface.
- Install the product on a flat surface without bumps and dips. Failure to do so may weaken its resistance to water and dust. To prevent the product from falling in places where vibration may be generated, apply thread locking adhesive or the like, and perform periodic checking of the tightness of the mounting hardware.
- Install the product in a way the air ducts are not blocked.
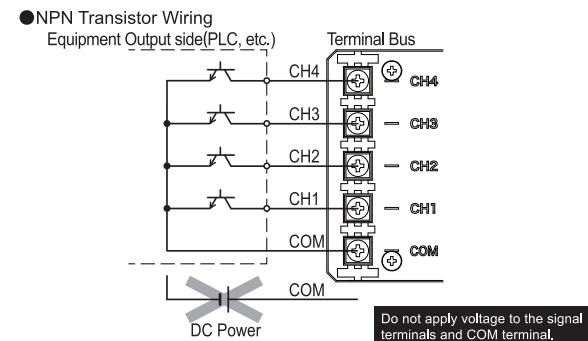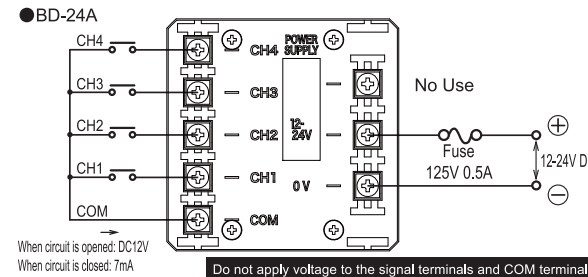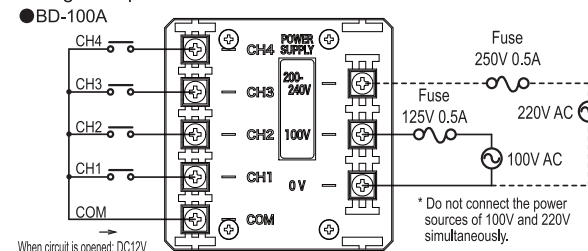- Keep a space more than 6.3mm between the terminal block and the metal surface.

5. How to Perform Wiring

Before wiring the product, remove the terminal cover. And after the completion of the wiring attach the terminal cover.
For the external contact of signal line, use no-voltage contact circuit such as relay switch or open collector circuit (NPN type). As for the contact capacity, see the table below.

● Contact capacity

Withstand voltage	DC12V or higher
Current capacity	7mA or higher
Leakage current	0.1mA or lower
ON voltage (Vsat)	1V or lower (0.5V or lower in case of DC12V)

NPN Open Collector Ccuruit
External point of contact
7mA
BD Sound Signal line
12V
COM

● Inrush current

BD-24A	2.5A
BD-100A	9.5A

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Wiring examples

●BD-100A

CH4
CH3
CH2
CH1
COM
CH4 POWER SUPPLY
CH3 200-240V
CH2 100V
CH1
COM 0V
Fuse 250V 0.5A
Fuse 125V 0.5A
220V AC
100V AC
* Do not connect the power sources of 100V and 220V simultaneously.

When circuit is opened: DC12V
When circuit is closed: 7mA

Do not apply voltage to the signal terminals and COM terminal.

●BD-24A

CH4
CH3
CH2
CH1
COM
CH4 POWER SUPPLY
CH3 12-24V
CH2
CH1
COM 0V
No Use
Fuse 125V 0.5A
12-24V DC

When circuit is opened: DC12V
When circuit is closed: 7mA

Do not apply voltage to the signal terminals and COM terminal.

●NPN Transistor Wiring
Equipment Output side(PLC, etc.)
Terminal Bus

CH4
CH3
CH2
CH1
COM
COM
CH4
CH3
CH2
CH1
COM
DC Power
Do not apply voltage to the signal terminals and COM terminal.

⚠ Warning
- Make sure the power is off before wiring to avoid short-circuiting, electric shock, or burns.
- Ensure proper wiring has been done to avoid any mistakes in wiring.
- Do not apply voltage to the signal terminals (channel 1-channel 4) and COM terminal. Possible error in wiring may cause fire or result in product failure.
- More ever wire for neither 100V nor 220V at the same time in the case of BD-100A. Failure to do so may cause damage to the internal circuit by fire, and it may cause fire.
- The terminal screws should be fastened with the recommended fastening torque (0.3N·m). Failure to do so may cause short circuit due to disconnection of wire, and damage to the product.
- When the product is used in places where vibration occurs, perform periodical checking of the tightness of the terminal screws to prevent letting go of the wires.

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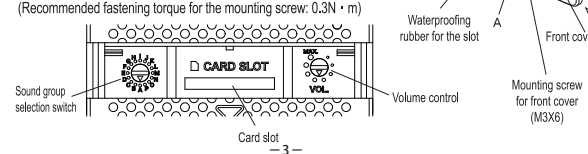- To protect the power source circuit and the internal circuit of the product, be sure to install an external fuse.

Other Precautions
- Be careful not to lose the terminal cover.
- The use of M3 ring terminals with insulating coating is recommended for the wiring of terminal block to prevent disconnection of wires.Recommended product: N1.25-3 produced by JST Mfg. Co., Ltd. (Product confirming to RoHS)
- When the product is to be used in a condition in which it is connected to power source, install a switch near the main body to be able to turn off the power easily for safety reasons.
- Confirm that the wiring has been performed correctly before turning on the power.

6. How to Use the Product

6-1 Opening and Closing the Front Cover

Open or close the front cover according to the procedure shown below when performing tasks such as adjusting the volume of the sound or selecting the tone color group.
① Loosen the mounting screw (M3X6) for the front cover. (An screw does not fall out.)
② Push the lower front cover section (part A in the figure on the right) lightly with finger to slide it downward.
③ When a SD card is to be used, remove the waterproofing rubber for the slot.
④ After completing tasks, attach the parts removed in the procedure from ① to ③ in the opposite order.
(Recommended fastening torque for the mounting screw: 0.3N・m)

Sound group selection switch
Card slot
Waterproofing rubber for the slot
A
Front cover
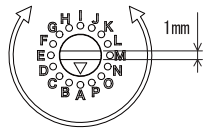Volume control
Mounting screw for front cover (M3X6)

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Other Precautions
- Be careful not to lose the waterproofing rubber for the slot.
- Do not try too hard to slide down the front cover. To do so may cause the front cover to disassemble.
- Attach the waterproofing rubber for the slot securely. Failure to do so may weaken the product's resistance to water and dust.
- Fasten the mounting screw for front cover with the recommended fastening torque. In places where vibrations occur, the front cover may fall or the product may be damaged.
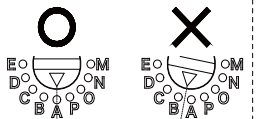
6-2. Selecting a Sound Group

Use the sound group selection switch to select a group from the 16 types from A to P. Use a flat-blade screwdriver with the blade thickness of 1.0mm or thinner for turning the switch. (Factory default setting: Sound group A)

When the sound group P is selected, any sound may be combined freely using an SD card. (Factory default setting: See the table below)
Refer to the section 6-3. How to Combine Sounds for details.

1mm

Other Precautions
- Make sure that there is no misalignment with the sound group selection switch when selecting.
  If there is misalignment as shown in the figure on the right, the sound group selected may not play.

O ✗

●Sound Chart type A (BD-□AA)
Sound List

01	Beep (slow intermittent horn)	09	Stutter(rapid intermittent horn) Bell(clear highpitched bell)	17	London Bridge is Falling Down	25	Amaryllis
02	Stutter (rapid intermittent horn)	10	Synthesized Melody Chime	18	Holdiridia	26	Symphony No, 40
03	Bell (clear highpitched bell)	11	Chime	19	Mary Had a Little Lamb	27	Silent Lakeside
04	Yelp (rapid siren)	12	Call Sign	20	The Camptown Races	28	Mountain musician
05	Rapid Hi-Lo	13	Fur Elise	21	Cuckoo	29	Romance De Amour
06	Melody Chime	14	Maiden's Prayer	22	Blacksmith in the village	30	Petrouchka
07	Synthesized Piano	15	Minuet	23	On the Avignon bridge	31	Grandfather's Clock
08	Synthesized Bell	16	Annie Laurie	24	Daydream Believer	32	Ave Maria

Author 13:BEETHOVEN VAN LUDWIG 14:BADARZEWSKA BARANOWSKA TEKLA 15:BACH JOHANN SEBASTIAN 16:SCOTT LADY JOHN DOUGLAS 17·18·21·25·28·29:TRADITIONAL 19·27:PD 20:FOSTER STEPHEN COLLINS 22:Song authorized by the Ministry of Education 23:WERNER HEINRICH (DE 2) 24:STEWART JOHN C26:MOZART WOLFGANG AMADEUS 30:BLANTER MATVEJ ISAAKOVICH 31:WORK HENRY CLAY 32:SCHUBERT FRANZ ※24, 30
JASRAC T-06B0152

Sound groups

Group	CH 1	CH 2	CH 3	CH 4
A	Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear highpitched bell)	Yelp (rapid siren)
B	Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
C	Stutter(rapid intermittent horn) Bell(clear highpitched bell)	Synthesized Melody Chime	Chime	Call Sign
D	Fur Elise	Maiden's Prayer	Chime	Call Sign
E	Minuet	Annie Laurie	Chime	Call Sign
F	London Bridge is falling down	Holdiridia	Chime	Call Sign
G	Mary had a little lamb	The Camptown Races	Chime	Call Sign
H	Cuckoo	Blacksmith in the village	Chime	Call Sign
I	On the Avignon bridge	Daydream Believer	Chime	Call Sign
J	Amaryllis	Symphony No. 40	Chime	Call Sign
K	Silent Lakeside	Mountain musician	Chime	Call Sign
L	Romance De Amour	Petrouchka	Chime	Call Sign
M	Grandfather's Clock	Ave Maria	Chime	Call Sign
N	Holdiridia	Mountain musician	Stutter(rapid intermittent horn) Bell(clear highpitched bell)	Synthesized Melody Chime
O	Mary had a little lamb	Romace De Amour	Stutter(rapid intermittent horn) Bell(clear highpitched bell)	Synthesized Melody Chime
P	The Camptown Races	Cuckoo	Petrouchka	Grandfather's Clock

●Sound Chart type C (BD-□AC)
Sound List

01	Beep (slow intermittent horn)	09	Stutter(rapid intermittent horn) Bell(clear highpitched bell)	17	Amairono Kamino Otome	25	I Don't Want to Miss a Thing
02	Stutter (rapid intermittent horn)	10	Synthesized Melody Chime	18	Les Champs-Elysees	26	Yozorano Mukou
03	Bell (clear highpitched bell)	11	Chime	19	Canon	27	Aiwa Katsu
04	Yelp (rapid siren)	12	Call Sign	20	Rara Sanshain	28	Truth
05	Rapid Hi-Lo	13	Can't Take My Eyes off of You	21	Uchuusenkan Yamato	29	Gattsudaze
06	Melody Chime	14	Top of the World	22	Oshiete	30	Odoru Ponpokorin
07	Synthesized Piano	15	The Entertainer	23	Makenaide	31	Imasugu Kisu Mi
08	Synthesized Bell	16	Amazing Grace	24	Gonra Fly Now (Theme for "Rocky")	32	Haruyo Koi

Author 13:CREWE BOB 14:CARPENTER RICHARD LYNN 15:JOPLIN SCOTT 16:CARRELL JAMES P 17:Kouichi Sugiyama 18:WILSHAW MICHAEL 19:PACHELBEL JOHANN 20:Ijichi Hiromasa 21:Hiroshi Miyagawa 22:Takeo Watanabe 23, 30:Tetsuro Oda 24:CONTI BILL 25:WARREN DIANE EVE 26:Yuka Kawamura 27:KAN 28:Masahiro Andoh 29:Totasu Matsumoto 31:Tatsuya Hirakawa 32:Yumi Matsutoya ※13～14, ※32
20～31 JASRAC T-0710139 0017677JRCL JRC

Sound groups

Group	CH 1	CH 2	CH 3	CH 4
A	Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear highpitched bell)	Yelp (rapid siren)
B	Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
C	Stutter(rapid intermittent horn) Bell(clear highpitched bell)	Synthesized Melody Chime	Chime	Call Sign
D	Can't Take My Eyes off of You	Top of the World	Chime	Call Sign
E	The Entertainer	Amazing Grace	Chime	Call Sign
F	Amairono Kamino Otome	Les Champs-Elysees	Chime	Call Sign
G	Canon	Rara Sanshain	Chime	Call Sign
H	Uchuusenkan Yamato	Oshiete	Chime	Call Sign
I	Makenaide	Gonra Fly Now (Theme for "Rocky")	Chime	Call Sign
J	I Don't Want to Miss a Thing	Yozorano Mukou	Chime	Call Sign
K	Aiwa Katsu	Truth	Chime	Call Sign
L	Gattsudaze	Odoru Ponpokorin	Chime	Call Sign
M	Imasugu Kisu Mi	Haruyo Koi	Chime	Call Sign
N	Les Champs-Elysees	Truth	Stutter(rapid intermittent horn) Bell(clear highpitched bell)	Synthesized Melody Chime
O	Canon	Gattsudaze	Stutter(rapid intermittent horn) Bell(clear highpitched bell)	Synthesized Melody Chime
P	Rara Sanshain	Uchuusenkan Yamato	Odoru Ponpokorin	Imasugu Kisu Mi

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●Sound Chart type D (BD-□AD)

Sound List

01	Beep (slow intermittent horn)	09	Chime	17	Saafu Tengoku Sukii Tengoku	25	Wiegenlied
02	Stutter (rapid intermittent horn)	10	Call Sign	18	Iro Howaitoburendo	26	Rudolph the Red-nosed Reindeer
03	Bell (clear highpitched bell)	11	Runner	19	Happy Birthday	27	She Wore a Yellow Ribbon
04	Yelp (rapid siren)	12	Mamotte Agetai	20	Hi Ho	28	Oh My Darling Clementine
05	Rapid Hi-Lo	13	Oribiao Kikinagara	21	I've been working on the Railroad	29	Yellow Rose of Texas
06	Melody Chime	14	A September	22	Bear Song	30	Yankee doodle
07	Synthesized Piano	15	Doyoubino Koibito	23	Toys Go Cha Cha Cha	31	When the Saints Go Marching In
08	Synthesized Bell	16	Akino Kehai	24	Konnako Irukana	32	Londonderry Air

Author 11:New Funky Sueyoshi 12・17:Yumi Matsutoya 13:Ami Ozaki 14:Tetsuji Hayashi 15:Tatsuro Yamashita
16:Kazumasa Oda 18:Maria Takeuchi 19:HILL MILDRED J 20:CHURCHILL FRANK E
21・22・27・29・30・31・32:TRADITIONAL 23:Nobuyoshi Koshibe 24:Takeshi Shibuya 25:SCHUBERT FRANZ
26:MARKS JOHN D 28:American folk song
※11・13～18・23～24・26 JASRAC T-0710140 ※12 JRCL 0017678JRCL

Sound groups

Group	CH 1	CH 2	CH 3	CH 4
A	Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear highpitched bell)	Yelp (rapid siren)
B	Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
C	Runner	Mamotte Agetai	Chime	Call Sign
D	Oribiao Kikinagara	A September	Chime	Call Sign
E	Doyoubino Koibito	Akino Kehai	Chime	Call Sign
F	Saafu Tengoku Sukii Tengoku	Iro Howaitoburendo	Chime	Call Sign
G	Hi Ho	Bear Song	Chime	Call Sign
H	Konnako Irukana	Rudolph the Red-nosed Reindeer	Chime	Call Sign
I	Oh My Darling Clementine	Yankee doodle	Chime	Call Sign
J	Runner	Mamotte Agetai	Oribiao Kikinagara	A September
K	Doyoubino Koibito	Akino Kehai	Saafu Tengoku Sukii Tengoku	Iro Howaitoburendo
L	Happy Birthday	Hi Ho	I've been working on the Railroad	Bear Song
M	Toys Go Cha Cha Cha	Konnako Irukana	Wiegenlied	Rudolph the Red-nosed Reindeer
N	She Wore a Yellow Ribbon	Oh My Darling Clementine	Yellow Rose of Texas	Yankee doodle
O	When the Saints Go Marching In	Londonderry Air	Runner	Mamotte Agetai
P	HIHO	I've been working on the Railroad	Yankee doodle	When the Saints Go Marching In

●Sound Chart type E(BD-□AE)

Sound List

01	Beep (slow intermittent horn)	09	Stutter+Bell	17	Inverted Reveille	25	Annie Laurie
02	Stutter (rapid intermittent horn)	10	Synthesized Melody Chime	18	Garactic Motor	26	London bridge is falling down
03	Bell (clear highpitched bell)	11	Chime	19	Ringing Phone	27	Mary had a little Lamb
04	Yelp (rapid siren)	12	Call sign	20	Two Tone	28	The camptown Races
05	Rapid Hi-Lo	13	Train Ride	21	Alarm Clock	29	Amaryllis
06	Melody Chime	14	Galloping Hi-Lo	22	Ringing Hi-Lo	30	Symphony No.40
07	Synthesized Piano	15	Alien Chatter	23	Fur Elise	31	Ave Maria
08	Synthesized Bell	16	Falling Crystals	24	Minuet	32	Grandfather's Clock

Sound groups

Group	CH 1	CH 2	CH 3	CH 4
A	Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear highpitched bell)	Yelp (rapid siren)
B	Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
C	Stutter+Bell	Synthesized Melody Chime	Chime	Call Sign
D	Train Ride	Galloping Hi-Lo	Chime	Call Sign
E	Alien Chatter	Falling Crystals	Chime	Call Sign
F	Inverted Reveille	Garactic Motor	Chime	Call Sign
G	Ringing Phone	Two Tone	Chime	Call Sign
H	Alarm Clock	Ringing Hi-Lo	Chime	Call Sign
I	Fur Elise	Minuet	Chime	Call Sign
J	Annie Laurie	London bridge is falling down	Chime	Call Sign
K	Mary had a little Lamb	The camptown Races	Chime	Call Sign
L	Amaryllis	Symphony No.40	Chime	Call Sign
M	Ave Maria	Grandfather's Clock	Chime	Call Sign
N	Fur Elise	London bridge is falling down	Chime	Call Sign
O	Annie Laurie	Minuet	Chime	Call Sign
P	Two Tone	Alarm Clock	Symphony No.40	Ave Maria

6-3.How to Combine Sounds

When the sound group P is selected, sounds can be chosen from the 32 sounds and combined freely using an SD card.
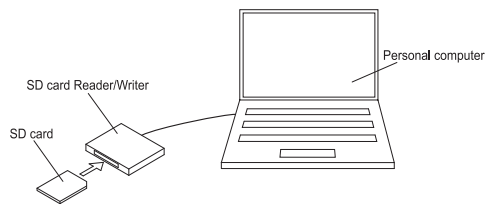
●Items prepared by customers
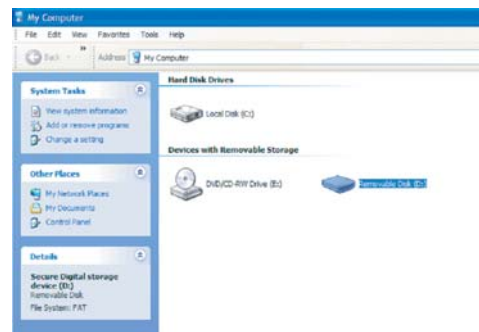SD card (Type: SDV-2GP Sold separately), Personal computer, SD card Reader/Writer

1.Creating the sound combination data

By using a personal computer, data consisting of different sounds is created.
①Connect SD card Reader/Writer to PC, and then insert an SD card.
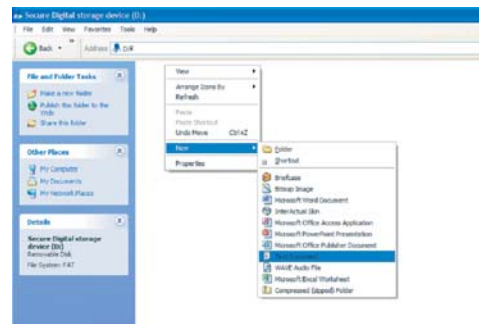
SD card Reader/Writer
Personal computer
SD card

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②In the My Computer of the PC, open the drive into which the SD card is inserted.

③Within the window opened, click with the right mouse button, and point New Document and then choose Text Document.
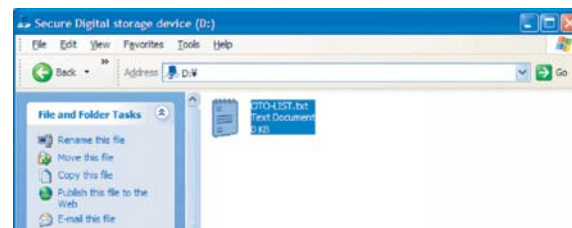* The name may vary such as notepad depending on the OS and its version.
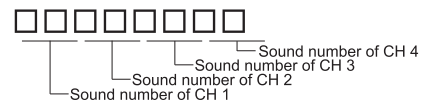
④Change the file name of the created text document to
【　OTO-LIST.txt　】

* Use half-size upper- or lowercase letters for the file name.
If the extension ".txt" is not displayed when the text document is created, change the file name to [OTO-LIST].
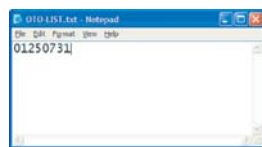
Enter the number of the sound (see 6-2. Sound List) you want to combine into the text document created in ④ and store it in the SD card. * Enter the sound number with half-size numbers of 8 digits.

□□□□□□□□
Sound number of CH 4
Sound number of CH 3
Sound number of CH 2
Sound number of CH 1

Example

When a combination of the following sounds are to be created with the type BD-□A.
CH 1: Beep CH 2: Amaryllis CH 3: Synthesized Piano CH 4: Grandfather's Clock
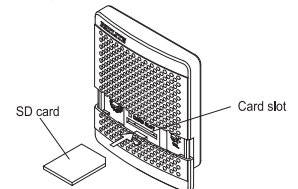Enter the number shown below into the text document, and save the file.

【 01250731 】

2.Transferring the sound combination data

The sound combination data created in "1. Creating the sound combination data" is transferred to this product.
① Turn off the power of this product.
② Open the front cover, and insert the SD card, in which the data created in "1. Creating the sound combination data" is stored, into the card slot.
③ Turn on the power of this product.
④ When transferring the sound data is completed, you will hear a high-pitched tone. After hearing the sound, pull out the SD card.
* The writing completes in 1 second or less. When you hear the high-pitched tone repeatedly or hear no sound at all, it means that the writing was unsuccessful. Confirm the descriptions for the procedures 1 and 2.
But take note that if the volume control is set to the minimum, you will not hear the sound of completion.
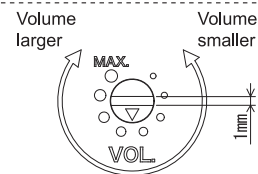⑤ Set the sound group selection switch to P, and confirm the sound of each channel.

SD card   Card slot

Other Precautions

● As for the SD card, use the type SDV-2GP 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 FAT12 or FAT16.
● When inserting the SD card, 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 SD card and/or the product.
● Pay attention that no foreign object enter into the card slot.

6-4.Adjusting the Sound Volume

The sound volume can be adjusted using the volume control. Use a flat-blade screwdriver with the blade thickness of 1.0mm or thinner for turning the volume control.

Volume larger   Volume smaller

Other Precautions

● Turn the volume control lightly. It may be damaged if a torque of 0.3N・m or more is applied.

Information

● When the volume is set to high, the sound may be distorted in some sounds.
● In some cases the volume may not be zero even if the volume control is set to the minimum.
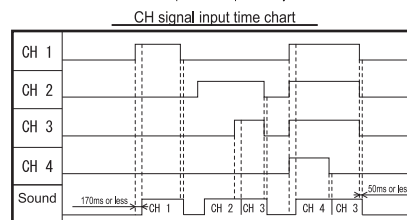
6-5.How to Play Sounds

When the COM terminal and the terminal CH 1 - CH 4 are short-circuited after turning on the power, the sound of the channel of the selected group is played.
● Sound is played while the terminals are short-circuited.
● When 2 or more CH terminals are short-circuited to the COM terminal, the sound of the channel with a larger number will be played.
　Priority order for the channels　CH 4＞CH 3＞CH 2＞CH 1
● When this product is operated by turning on the power, it takes about 1 second to play a sound.
● Refer to the table below for the time chart when this product is operated by the CH terminals.

CH signal input time chart

CH 1
CH 2
CH 3
CH 4
Sound   170ms or less   CH 1   CH 2 CH 3   CH 4 CH 3   50ms or less

Information

● Pop noise may be generated when the power is turned on or off, or at the beginning of playing a sound. But it is normal.
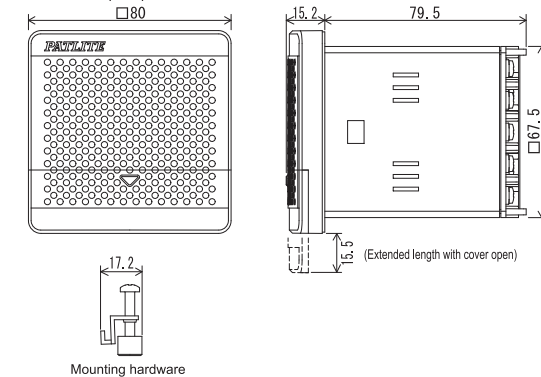
7. Before You Request a Repair

Symptom	Points to be checked	Coping strategies
No sound is played	Is the power supplied?	Confirm the wiring.
	Are the COM terminal and CH terminal short-circuited correctly?	Confirm the wiring.
	Is the volume control not set to the minimum?	Adjust the volume.
A sound of a different channel is played	Are the COM terminal and CH terminal short-circuited correctly?	Confirm the wiring.
	It is correctly selected with the tone color group selection switch?	Confirm the tone color group selection switch.
It does not read SD card	Is the power supplied?	Confirm the wiring.
	Is the SD card correctly inserted?	Confirm the orientation of the insertion.
	Is there a text document stored in the SD card?	Create a text document in the SD card.
	Are the file name and the content of the text document correct?	Confirm the file name and the content of the text document.
	Is the extension of text document ".txt"?	Confirm the extension of document file name.
	Is the data not placed in a folder?	Confirm the location of the stored file.
	Is the volume control not set to the minimum?	Adjust the volume.

● 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.

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8. Specifications

【External view】(mm)
□80   15.2   79.5
PATLITE
67.5
5.5
17.2   (Extended length with cover open)

Mounting hardware

Model	BD-24A□	BD-100A□
Rated Voltage	12-24V DC	100V AC / 220V AC 50/60Hz
Voltage Range	10.8–26.4V DC	100V±10% AC / 220V±10% AC
Power Consumption	4W / Standby power consumption 0.5W	5W / Standby power consumption 1.1W
Sound Pressure Level	Max. :90dB (at a distance of 1m when the panel is attached)Volume adjustment is possible. * The sound pressure level may be lower depending on the tone color, usage environment, and supplied voltage.	
CH Input	Bit input	
Input Method	Level hold input (Sound is played while COM terminal and CH terminal are short-circuited.))	
Starting Time	Operation by turning on the power: 1s or less Operation by CH signal: 170ms or less	
Number of Channels	4 channels	
Priority Order for the Channels	CH4＞CH3＞CH2＞CH1	
Operating Temperature Range	-20 ～ 55 ℃	
Relative Humidity	RH 85% or lower (no condensation)	
Mounting Direction	Indoor use only: * Normal, * reverse, and * lateral direction are possible (Normal direction only in places where water may be splashed on it).	Indoor : * Normal, * reverse, and * lateral direction are possible (Normal direction only in places where water may be splashed on it). Outdoor:*Normal direction only.
Protection Level	IP54 (When the panel is mounted in normal direction; Front only)	
Resistance to Vibration	19. 6m/s²	
Mass	160g±10%	180g±10%

● For Model BD-24A□
This product conforms to EN standard and shows the CE Marking.
This product has been tested and found to comply with the limits for a Class A device, pursuant to EMC DIRECTIVE. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This product must not be used in residential areas.
● 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.