Voice Buzzers

B7VA Series

PRODUCT MANUAL

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

CE UK CA c (UL) US LISTED

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ **Warning** Failure to follow instructions may result in serious injury or death.

01. **Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.(e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**
Failure to follow this instruction may result in explosion or fire.
02. **Do not use or store the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
03. **Check 'Connections' before wiring.**
Failure to follow this instruction may result in fire.
04. **Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire or electric shock.
05. **Do not use this product close to the ears.**
Failure to follow this instruction may result in personal injury.
06. **Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire.

⚠ **Caution** Failure to follow instructions may result in injury or product damage.

01. **This unit shall not be used outdoors.**
Failure to follow this instruction may result in shortening the life cycle of the product.
02. **Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or product damage.
03. **When connecting the power input, use AWG 22-16 (0.30 to 1.25 mm^2) cable or over and tighten the terminal screw with a tightening torque of 0.4 to 0.6 N m.**
Failure to follow this instruction may result in fire or malfunction due to contact failure.
04. **For wiring the product, do not pull the wiring excessively or apply excessive force.**
Failure to follow this instruction may result in product damage or malfunction.
05. **Use a dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire or electric shock.
06. **Keep the product away from metal chip, dust, and wire residue which flow into the unit.**
Failure to follow this instruction may result in fire or product damage.

Cautions during Use

- Follow instructions in 'Cautions during Use'.
Otherwise, it may cause unexpected accidents.
- The power supply should be insulated and limited voltage/current or Class 2, SELV Power supply device.
- Keep away from high voltage lines or power lines to prevent inductive noise.
When installing the power line and input signal line closely, use a line filter or varistor at the power line and a shielded wire at the input signal line.
Do not use this product near the equipment which generates strong magnetic force or high-frequency noise.
- This unit may be used in the following environments.
- Indoors (in the environment condition rated in 'Specifications')
- Altitude max. 2,000 m
- Pollution degree 2
- Installation category II

Ordering Information

This is only for reference, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics website.

B7VA	-	❶	❷	❸	-	❹

❶ Channels
8: 8 channels (8-bit input)
A: 6 channels (6-bit input) or
    63 channels (binary input)

❷ Case color
K: Black

❸ Power supply
D: 12 - 24 VDC

❹ Memory
No mark: Internal memory
E: External memory

Product Components

• Product / Instruction manual × 1   • [External memory model] Micro SD card × 1

Sold Separately

• Micro SD card: BSD-16G

Software

Download the installation file and the manuals from the Autonics website.

■ DAQMaster
It is the comprehensive device management program for Autonics' products, providing parameter setting, monitoring and data management. In case of external memory model, set the audio source for each channel and playback mode.

## Unit Descriptions

■ Front part
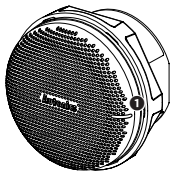
❶ Status indicator

LED status	Description
Green ON (●)	Power ON [01] / Completed file transfer from the SD card.
Green flashing (◑)	Transferring the file from the SD card.
Orange ON (●)	An error occurred during transferring. / No audio source exists in the sound channel.
Orange flashing (◑)	Playing audio [01]

01) The internal memory model supports this LED status only.

■ Rear part
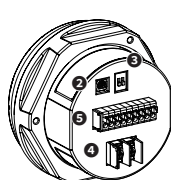
Internal memory model   External memory model
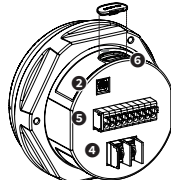
❷ Volume control switch (VOL.)
Adjusts the volume of the buzzer.

❸ Playback count setting switch (MODE/REPEAT)
Sets the single play or loop play.

❹ Power terminal
⊕: Power (12 - 24 VDC⎓)
⊖: Grounding (GND)

❺ Input terminal

Terminal	Description
S□	Sound terminal [B7VA-8KD-□ model]S1 to S8 [B7VA-AKD-E model] S1 to S6
VOL DOWN	[B7VA-AKD-E model] When ON, decrease volume (factory spec.: 80%) When OFF, return to preset volume
STOP	[B7VA-AKD-E model] ON: Playback paused / OFF: Standby
COM	COMMON terminal

❻ Micro SD card slot

Audio Sources (factory default)

• One audio source per channel is provided by default.
• In the case of external memory model, the audio source can be changed in DAQMaster. When the audio source is changed, the existing sound source is deleted. 16 audio sources are supported per channel.
• You can download the default audio source from Autonics website.
• The sound terminal input is different depending on the channel and input method. Refer to 'Connection Example' and 'Input'.

Channel	Audio	Channel	Audio
CH1	Police siren	CH5	Alarm
CH2	Fire alarm	CH6	Doorbell ring
CH3	Ambulance	CH7 [01]	Ringtone 1
CH4	Warning	CH8 [01]	Ringtone 2

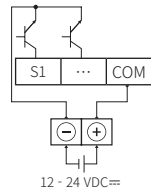01) Only for 8 channels models.

Connection Example

⚠ **Be sure not to supply the power to the sound terminals. Otherwise, it may result in the circuit damage or malfunction of the product.**
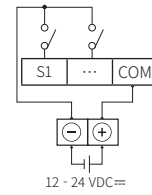
• **When wiring, connect to 12 - 24 VDC⎓ for NPN input.**
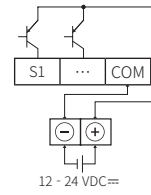 **Connect to the GND for PNP input.**
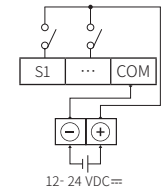
■ NPN input

• Non-contact input   • Contact input

12 - 24 VDC⎓   12 - 24 VDC⎓

■ PNP input

• Non-contact input   • Contact input

12 - 24 VDC⎓   12- 24 VDC⎓

Input

• The input method supported by each model is different.
• Input the signal for each channel according to the set input method.
• For the B7VA-AKD-E model, set the input method in DAQMaster. (factory default: BIT)

■ BIT input
Supports 1 channel per terminal.
When a signal is input to the sound terminal (S1 to S6/8), the corresponding channel is played. When multiple signals are input simultaneously, the channel with the lower number is played with priority.

■ [B7VA-AKD-E model] Binary input

Input the signal by combining it to the sound terminal (S1 to S6). Play the corresponding channel.
Supports up to 63 channels.

Terminal CH	S1	S2	S3	S4	S5	S6
CH1	ON	OFF	OFF	OFF	OFF	OFF
CH2	OFF	ON	OFF	OFF	OFF	OFF
CH3	ON	ON	OFF	OFF	OFF	OFF
...			...			
CH61	ON	OFF	ON	ON	ON	ON
CH62	OFF	ON	ON	ON	ON	ON
CH63	ON	ON	ON	ON	ON	ON

Crimp Terminal Specifications

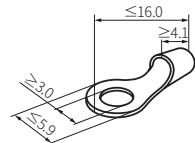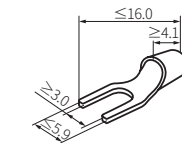Use UL approved crimp terminals that meet the specifications. (unit: mm)

■ Crimp terminal for sound terminals
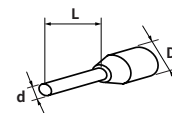
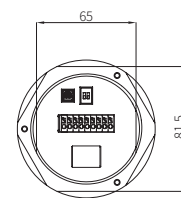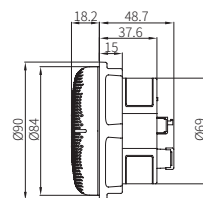| Cable	L	d	D
AWG24-16	8	Ø 1.1	Ø 2.5
	10	Ø 1.3	Ø 3.2
		Ø 1.6	Ø 3.4
		Ø 1.7	Ø 3.6

■ Crimp terminal for power terminals

• Fork crimp terminal: Cable AWG22-16   • Round crimp terminal: Cable AWG22-16

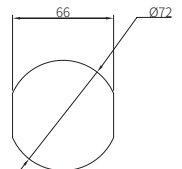## Dimensions

• Unit: mm, For the detailed drawings, follow the Autonics website.
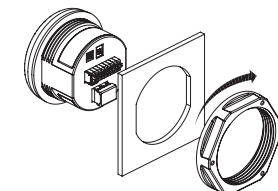• This dimensions shows the internal memory type.

■ Panel cut-out
• Panel thickness: ≤ 6 mm

Installation

01. Firstly, make a hole with reference to the panel cut-out.
02. Insert the buzzer into the hole, and wheel the nut clockwise(CW) to firmly fix it.
    • The nut tightening torque: 5 to 6 N m

Volume Control

■ Volume control switch

By adjusting the volume control switch, control buzzer volume. Use a cross-head screwdriver to turn the switch. Be sure not to turn the switch with excessive force to prevent product damage. (Recommended torque: 2 to 20 mN m)

Volume control	Description
MIN　MAX	Volume UP: Turn the switch clockwise(CW).
	Volume Down: Turn the switch counterclockwise(CCW). The MIN point does not play muted sound.

■ [B7VA-AKD-E model] VOL DOWN terminal

Plays audio source at reduced volume while signal is input to VOL DOWN terminal.
Set the volume reduction ratio in DAQMaster based on the volume control switch (100%).
(Setting range: 1 to 100%, factory default: 80%)

Playback Mode

■ [B7VA-8KD model] Sound playback count switch

Be sure to input sound signals or supply power again to apply the settings.

Playback count set	1	2	Range of sound terminals [01]	
			S1 to S4	S5 to S8
1 2 ■□ ON □■ OFF REPEAT	ON	ON	Loop play (factory settings)	
	ON	OFF	Loop play	Single play
	OFF	ON	Single play	Loop play
	OFF	OFF	Single play	

01) The playback count setting is applied to only wired terminals in this range.

■ [B7VA-8KD-E model] E playback mode

Plays as E playback mode. For more information, refer to the product manual.

■ [B7VA-AKD-E model] DAQMaster setting

Set the playback mode in DAQMaster. (Mode A to E) Mode operation may differ depending on the input method. For more information, refer to the product manual.

[External memory model] Import Audio Sources

01. Prepare the micro SD card with the playlist file (*.bin) saved. For more information of channel configuration, etc. refer to the 'DAQMaster User Manual.'
02. Supply power to the B7VA.
03. Open the micro SD card slot cover on the bottom of B7VA.
04. Insert the micro SD card into the micro SD card slot, aligning it with the indicated direction. An alert sound plays once.
05. Starts the file transfer. The status indicator, green LED, is flashing.
   The previous audio files are deleted and the transferred audio files are saved.
   Do not power off the buzzer or remove the micro SD card at this time, as it can damage the audio sources due to file transfer errors. (If an error occurs, a short beep sounds play four times and the orange LED is ON.)
06. When the file transfer is completed, an alert sound plays once.
07. After removing the micro SD card, close the micro SD card slot cover.

Specifications

| Model	B7VA-8KD	B7VA-8KD-E	B7VA-AKD-E
Sound pressure [01]	90 dB±10% (distance at 1 m)		
Signal input method	NPN / PNP input		
Channel	8 channels (8-bit)	8 channels (8-bit)	6 channels (6-bit) or 63 channels (binary)
Default audio sources	8	8	6
Import audio source	-		Configure playlist via DAQMaster No. of sources: 16 audio sources per 1 CH, Storage size: ≤ 4 MB
Audio file format			MPEG-1 Audio Layer III (MP3), Waveform Audio Format (WAV) [02]
Memory card			micro SD (SDHC) [03]
SD card format type			FAT32
Indicator	Status indicator: Green / Orange LED		
Certification	CE UK cULus LISTED		
Unit weight (packaged)	≈ 255 g (≈ 323 g)	≈ 255 g (≈ 325 g)	

01) Only based on the default audio sound.
02) The WAV file is converted to the MP3 file in DAQMaster.
03) Be sure to use the included micro SD card (BSD-16G). Otherwise, the performance cannot be guaranteed.

Power supply	12 - 24 VDC
Power consumption	7.2 W
Input impedance	3.6 kΩ
Signal ON	Voltage: ≥ 5 VDC, Current: ≈ 6.5 mA (based on 24 VDC), Time: ≥ 100 ms
Signal OFF	Voltage: ≤ 1 VDC, Time: ≥ 100 ms
Insulation resistance	≥ 1,000 MΩ (500VDC megger)
Dielectric strength	Between the charging part and the case: 500 VAC∼ 50 / 60 Hz for 1 min
Vibration	1.5 mm amplitude at frequency 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Shock	300 m/s² (≈ 30 G) in each X, Y, Z direction for 3 times
Ambient temperature	-10 to 55 °C, Storage: -20 to 65 °C (no freezing or condensation)
Ambient humidity	35 to 85%RH, Storage: 35 to 85%RH (no freezing or condensation)
Protection structure	IP65 (Front part, IEC standard)
Material	Front cover: ABS, Body: PA6

Circuit

### ■ NPN input
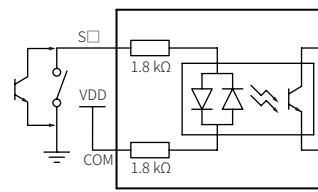
■ PNP input
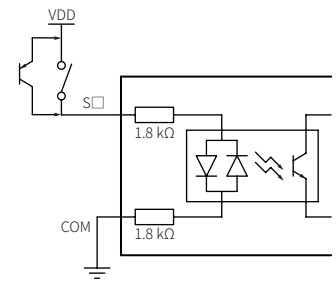
[B7VA-AKD-E model] Playback Mode

Set playback mode at DAQMaster.
Depending on input (Bit / Binary), the play may be different.
• The below describes based on S1 to S4 terminals.
• Signs

: Pulse signal input / : Level signal input /
: Completed play / : Paused play

• In case of Bit input, when signals are input to multiple channels at the same time, channels with lower numbers are played with priority.
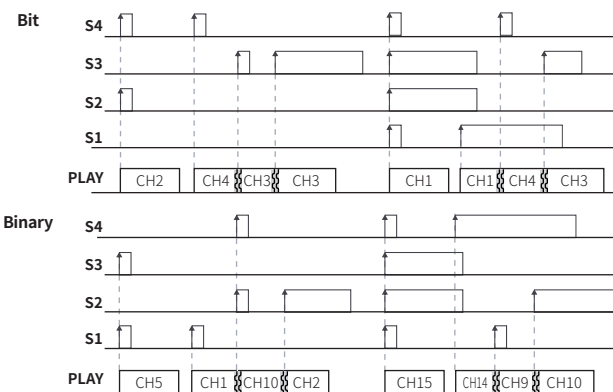• Factory default: Bit input + A mode

■ A mode

• When a level signal is input, the corresponding channel is played.
• If the signal input is maintained, the current channel is repeated.
• If the signal input is removed, the current channel is played and then it turns the standby state.
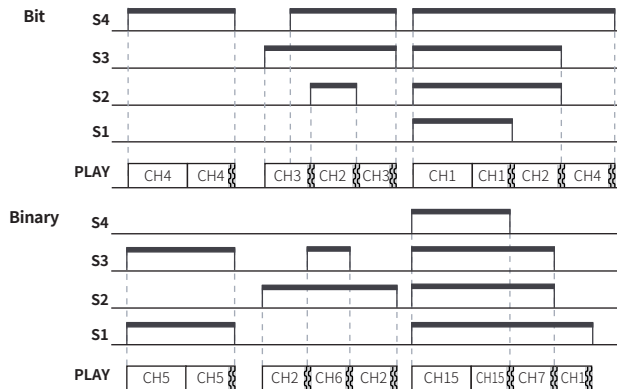• During playback, signal inputs from other channels are ignored.
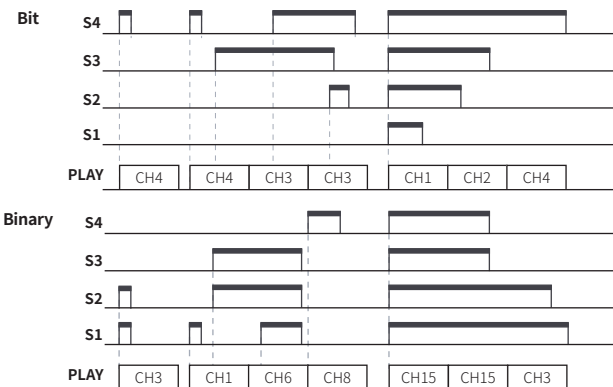
■ B mode

• When a pulse signal is input, the corresponding channel is played.
• Even if the signal input is maintained, the current channel is played only once.
• If a signal is input to another channel during playback, the channel is immediately changed and played.
   If a signal is input again to the same channel during playback, the sound source is played again from the beginning.
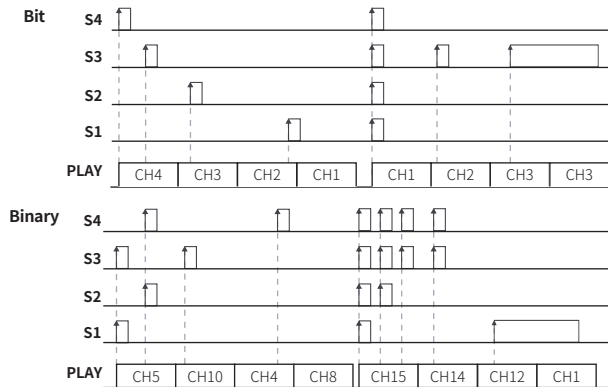
■ C mode

- When a level signal is input, the corresponding channel is played.
- If the signal input is maintained, the current channel is repeated.
- When the signal input is removed, playback of the current channel is immediately stopped.
- If a signal is input to another channel during playback, the channel is immediately changed and played.

■ D mode

- When a pulse signal is input, the corresponding channel is played.
- Even if the signal input is maintained, the current channel is played only once.
- When signal is input to another channel during playback, only the channel with the first signal input is played after the current channel is played.

■ E mode

- When a level signal is input, the corresponding channel is played.
- If the signal input is maintained, the current channel is repeated.
- When the signal input is removed, it will play only the individual audio source (A□) of the channel being played and then it turns standby state. (it will not play the channel to the end.)
- During playback, signal inputs from other channels are ignored.
- B7VA-8KD-E model operates as fixed E mode with Bit input.