

# SHURE®

LEGENDARY  
PERFORMANCE™

Wired Microphones  
BETA 98A

## BETA 98A

Instrument Microphone

Microphone pour instruments

Instrumentenmikrofon

Microfono per strumento

Micrófono para instrumentos

Инструментальный микрофон

楽器用マイクロホン

악기 마이크

乐器话筒



## General Description

The Shure Beta 98A is a compact, high-output, condenser microphone for professional sound reinforcement and studio recording. An extremely uniform cardioid polar pattern provides excellent gain before feedback and off-axis rejection of unwanted noise. Its high sound pressure level (SPL) capability makes it useful for a variety of acoustic or amplified instruments including drums, piano, reed, wind, and strings.

## Variations

- **Beta 98A/C** includes microphone, 7.6 m (25 ft) lightweight interconnect cable, preamplifier, and RK282 shockmount swivel adapter.
- **Beta 98AD/C** includes microphone, 4.6 m (15 ft) heavy-duty interconnect cable, preamplifier, and A98D microphone drum mount.

## Features

- Premier live performance microphone with Shure quality, ruggedness, and reliability
- Uniform cardioid pick-up pattern for maximum gain before feedback and superior rejection of off-axis sound
- Tailored frequency response specifically shaped for drums, percussion, reeds, and horns
- Compact design reduces stage clutter
- Wide dynamic range for use in high SPL environments
- Optional A98D mount is unobtrusive, versatile, and easy to adjust
- Enamel-coated metal construction and stainless steel inner grille resist wear and abuse

## Performance Characteristics

- Exceptional low-frequency reproduction
- Extremely high SPL handling
- High output level
- No crossover distortion

## Interconnecting Cable

The supplied cable connects the BETA 98A to the preamplifier. If necessary, up to 23 m (75 ft) of cable can be used between the microphone and preamplifier without signal loss.

## Applications and Placement

### General Rules for Use

- Aim the microphone toward the desired sound source; angle unwanted sounds toward its *null* point.
- Use the fewest amount of microphones as practical to increase the *Potential Acoustic Gain* and prevent feedback.
- Follow the *3 to 1 Rule* by spacing each microphone by at least three times the distance to its source to reduce *Phase Cancellation*.
- Place microphones as far as possible from reflective surfaces to reduce *Comb Filtering*.
- When using directional microphones, work closely to the microphone for extra bass response to take advantage of *Proximity Effect*.
- Avoid excessive handling to minimize pickup of mechanical noise and vibration.
- Do not cover any part of the microphone grille, as this will adversely affect microphone performance.
- Add a windscreen when using the microphone outdoors.

The following table lists the most common applications and placement techniques. Keep in mind that microphone technique is largely a matter of personal taste; there is no one “correct” microphone position.

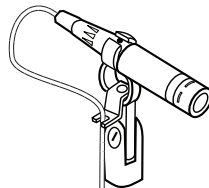
APPLICATION	SUGGESTED MICROPHONE PLACEMENT	TONE QUALITY
Tom-Toms	One mic on each tom or between a pair of toms, 2.5 to 7.5 cm (1 to 3 in.) above drum heads.	Medium attack; full, balanced sound.
	Remove bottom head and place a mic inside pointing up toward top drum head.	Maximum isolation; full, balanced sound.
Snare Drum	2.5 to 7.5 cm (1 to 3 in.) above rim of top head of drum. Aim mic at drum head.	Most “snap” from drumstick.
Cymbals	Close-mike with an A98D mount for maximum isolation, but place out of cymbal movement range.	Bright, with plenty of attack.
Brass & Woodwinds	Brass: 30 to 90 cm (1 to 3 ft.) away, on-axis with bell of instrument.	Bright, clear sound.
	Woodwinds: 2.5 to 15 cm (1 to 6 in.) away, on-axis with bell of instrument.	Bright, clear sound.
	Bell of instrument 90° off-axis from front of mic.	Softer, mellow sound.

**NOTE:** Before each use, make sure the cartridge is tightly secured on the microphone, as vibration and accidental hits with drumsticks may loosen it, resulting in signal loss.

## Shockmount Swivel Adapter

Use the following procedures to mount the Beta 98A on the swivel adapter:

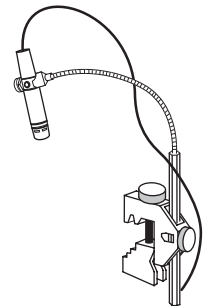
1. Connect the microphone to the adapter.
2. Thread the cable through the C-clamp and slide the connector into the C-clamp until snug.
3. To reduce wear on the cable, snap it into the stress reliever clip leaving 5 to 7 cm (2 to 3 inches) of slack on the connector side.



**BETA 98A MOUNTED WITH SWIVEL ADAPTER**

## A98D Drum Mount

The Shure A98D mounts the Beta 98A on a drum or cymbal stand. Reference the furnished A98D guide to correctly mount the microphone.



**BETA 98A MOUNTED WITH A98D**

## Load Impedance

Maximum SPL capability, output clipping level, and dynamic range vary with the input load impedance of the preamplifier to which you connect the microphone. Shure recommends a minimum input load impedance of 1000  $\Omega$ . Most modern microphone preamplifiers meet this requirement. Higher impedance results in better performance for these specifications.

## Power Requirements

This microphone requires phantom power and performs best with a 48 Vdc supply (IEC-61938). However, it will operate with slightly decreased headroom and sensitivity with supplies as low as 11 Vdc.

Most modern mixers provide phantom power. You must use a **balanced** microphone cable: XLR-to-XLR or XLR-to-TRS.

## SPECIFICATIONS

<b>Cartridge Type</b>	Electret Condenser	
<b>Polar Pattern</b>	Cardioid	
<b>Frequency Response</b>	20 to 20,000 Hz	
<b>Output Impedance</b> @ 1 kHz	179 $\Omega$	
<b>Sensitivity</b> open circuit voltage, @ 1 kHz, typical	-48.0 dBV/Pa <sup>[1]</sup> (4.0 mV)	
<b>Maximum SPL</b> 1 kHz at 1% THD <sup>[2]</sup>	2500 $\Omega$ load	150.5 dB 144.0 dB
<b>Signal-to-Noise Ratio</b> <sup>[3]</sup>	64 dB	
<b>Dynamic Range</b> @ 1 kHz	2500 $\Omega$ load	120.5 dB 114.0 dB
<b>Clipping Level</b> 20 Hz to 20 kHz, 1% THD	2500 $\Omega$ load	8.0 dBV 1.0 dBV
<b>Self Noise</b> equivalent SPL, A-weighted, typical	30.0 dB SPL-A	
<b>Connector</b>	Three-pin professional audio (XLR), male, balanced	
<b>Polarity</b>	Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3	
<b>Power Requirements</b>	11–52 V DC <sup>[4]</sup> phantom power (IEC-61938), 3.6 mA	
<b>Net Weight</b>	12 g (0.6 oz.)	

<sup>[1]</sup> 1 Pa=94 dB SPL

<sup>[2]</sup> THD of microphone preamplifier when applied input signal level is equivalent to cartridge output at specified SPL

<sup>[3]</sup> S/N ratio is the difference between 94 dB SPL and equivalent SPL of self noise, A-weighted

<sup>[4]</sup> All specifications measured with a 48 Vdc phantom power supply. The microphone operates at lower voltages, but with slightly decreased headroom and sensitivity.

## Accessories and Parts

### Furnished Accessories

Zipped Carrying Bag	95A2314
In-Line Preamplifier (1 piece)	RPM626
Snap-fit Windscreen	95A2064
Shock-Mount Swivel Adapter (BETA 98A/C)	RK282
7.6 m (25 ft.) light-weight cable (BETA 98A/C)	95A2398
Beta 98 Drum Mount (BETA 98AD/C)	A98D
4.6 m (15 ft.) Heavy-Duty Cable (BETA 98AD/C)	C98D

### Optional Accessories

Metal Locking Windscreen	A412MWS
Universal Microphone Mount	A75M

### Replacement Parts

Cardioid Cartridge	RPM98A/C
98A Replacement Housing	RPM98A-HT
Clamp Assembly (A98D)	RPM618
Snap-Fit Windscreen (4 per package)	RK183WS

## CERTIFICATION

Eligible to bear CE Marking. Conforms to European EMC Directive 2004/108/EC. Meets Harmonized Standards EN55103-1:1996 and EN55103-2:1996, for residential (E1) and light industrial (E2) environments.

The Declaration of Conformity can be obtained from:

Authorized European representative:

Shure Europe GmbH

Headquarters Europe, Middle East & Africa

Department: EMEA Approval

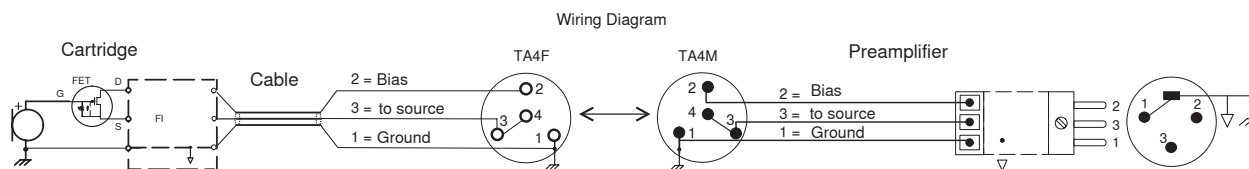
Wannenacker Str. 28

D-74078 Heilbronn, Germany

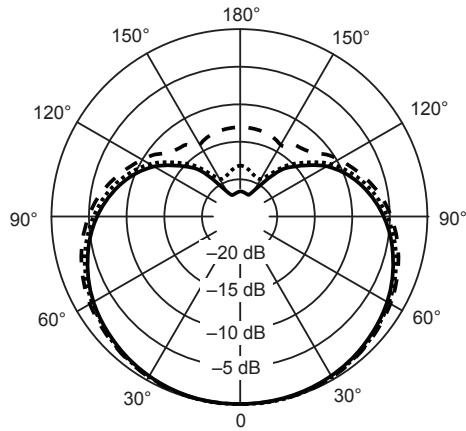
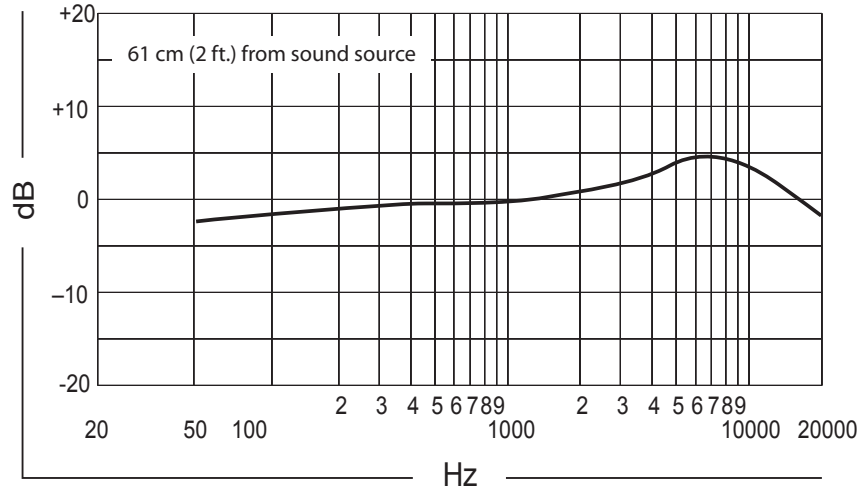
Phone: +49 7131 72 14 0

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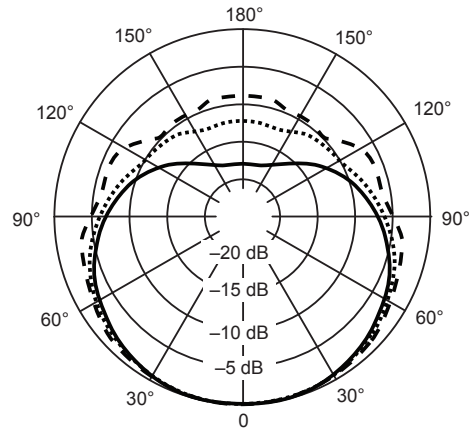
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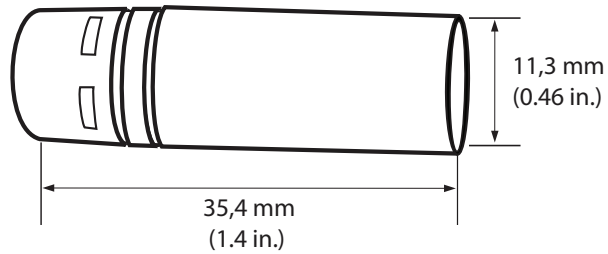
# Beta 98A



--- 250 Hz  
 ..... 500 Hz  
 ——— 1000 Hz



——— 2500 Hz  
 ..... 6300 Hz  
 --- 10000 Hz





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