

### BETA 98A Instrument Microphone



#### 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) light-weight 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

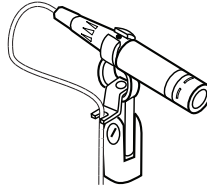
#### Performance Characteristics

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

#### 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.



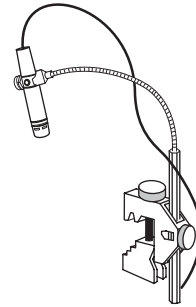
BETA 98A MOUNTED WITH  
SWIVEL ADAPTER

#### 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.

#### 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

#### 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.

## 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><br>@ 1 kHz                              | 179 $\Omega$  |          |
| <b>Sensitivity</b><br>open circuit voltage, @ 1 kHz,<br>typical | -48.0 dBV/Pa <sup>[1]</sup> (4.0 mV)  |          |
| <b>Maximum SPL</b><br>1 kHz at 1% THD <sup>[2]</sup>            | 2500 $\Omega$ load  | 150.5 dB |
|   | 1000 $\Omega$ load  | 144.0 dB |
| <b>Signal-to-Noise Ratio<sup>[3]</sup></b>                      | 64 dB   |          |
| <b>Dynamic Range</b><br>@ 1 kHz                                 | 2500 $\Omega$ load  | 120.5 dB |
|   | 1000 $\Omega$ load  | 114.0 dB |
| <b>Clipping Level</b><br>20 Hz to 20 kHz, 1% THD                | 2500 $\Omega$ load  | 8.0 dBV  |
|   | 1000 $\Omega$ load  | 1.0 dBV  |
| <b>Self Noise</b><br>equivalent SPL, A-weighted,<br>typical     | 30.0 dB SPL-A   |          |
| <b>Connector</b>  | Three-pin professional audio (XLR),<br>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

|  |         |
|--|---------|
| Zippered 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

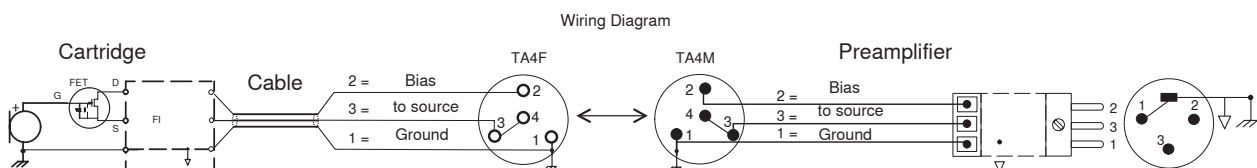
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|-------------------------------------|-----------|
| Cardioid Cartridge                  | RPM98A/C  |
| 98A Replacement Housing             | RPM98A-HT |
| Clamp Assembly (A98D)               | RPM618    |
| Snap-Fit Windscreen (4 per package) |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

## CERTIFICATION

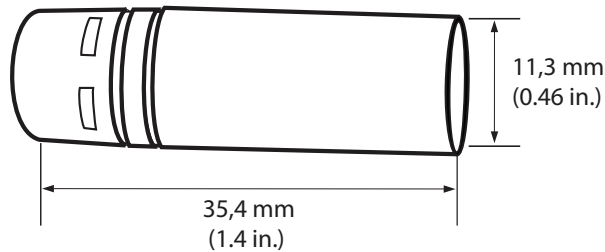
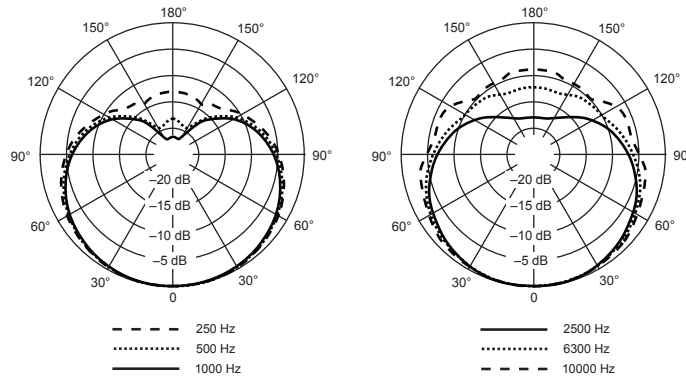
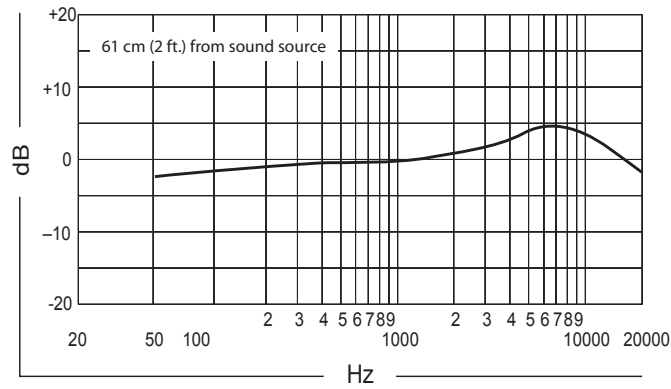
Eligible to bear CE Marking. Conforms to European EMC Directive 2004/108/EC. Meets Harmonized Standards EN55103-1:1996 and EN55103-2:1996, for residential (E1) and light industrial (E2) environments.

The Declaration of Conformity can be obtained from:

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# Beta 98A



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