

# PRODUCT DATA

## 1/4" DeltaTron<sup>®</sup> Pressure-field Microphones — Types 4944-A and 4944-B

Types 4944-A and 4944-B are 1/4" Prepolarized Pressure-field Microphones laser welded to 1/4" DeltaTron preamplifiers.

The preamplifier connects to CCLD input conditioning and supports IEEE P 1451.4 V 0.9 TEDS (Transducer Electronic Data Sheet).

### USES

- High-level measurements
- High-frequency measurements
- Flush mounting

### FEATURES

- Sensitivity: 0.9 mV/Pa
- Frequency: 16 – 70000 Hz
- Dynamic Range: 48 dB(A) – 169 dB
- Temperature: –20 to +100°C (–4 to +212°F)



- TEDS: IEEE P1451.4
- SMB or 10–32 UNF socket
- Connects to CCLD input

## Description

### Uses of Types 4944-A and 4944-B

A pressure-field microphone is designed to be used in small closed couplers, close to hard reflective surfaces or flush-mounted. The sensitivity has been optimised to allow measurements of high sound pressure levels without clipping in the built-in DeltaTron preamplifier.

### Design and Robustness

The shape of the microphone front ensures excellent microphone performance when flush-mounted. The laser-welded diaphragm on the microphone housing ensures that the sensitivity is resistant to rough handling during flush mounting.

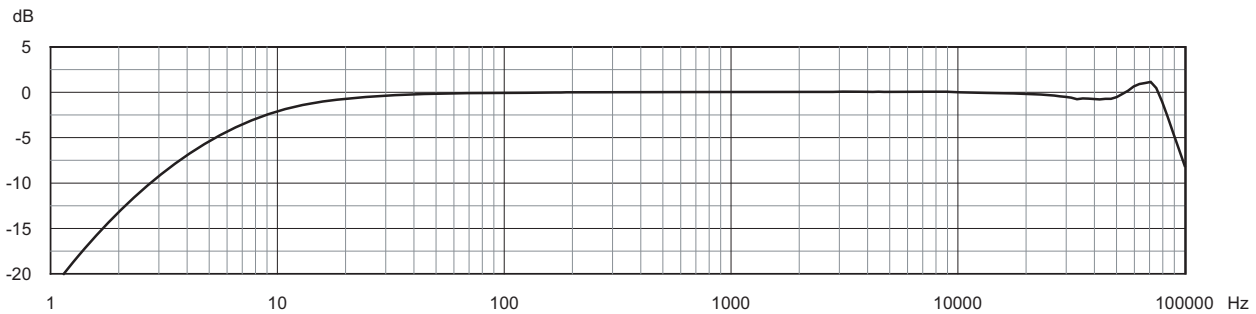
### Microphone Data CD

The microphone is supplied with a mini-CD. This mini-CD carries all individual calibration data as well as random-incidence and free-field corrections. The influence of 1/4" Nose Cone UA-0385 is also available.

### Calibration

The sensitivity can be calibrated at 250 Hz using Pistonphone Type 4228 with 1/4" Adaptor DP-0775. The pressure-field response can be measured using Actuator UA-0033 with Adaptor DB-0264. The pressure-field response is equal to the actuator response.

Fig. 1 Type 4944-A pressure-field response without grid



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## Specifications – 1/4" DeltaTron Pressure-field Microphones Type 4944-A and 4944-B



Compliance with EMC Directive<sup>a</sup> and Low Voltage Directive of the EU  
Compliance with the EMC requirements of Australia and New Zealand

### Typical Uses:

For measurements in confined spaces and small cavities. High-level, high-frequency measurements. Optimised for flush mounting

**Nominal Diameter:** 1/4"

**Sensitivity (250 Hz):**

-61 ±3 dB re 1 V/Pa, 0.9 mV/Pa

**Frequency Response<sup>b</sup>:**

**Pressure-field Response 16 Hz to 70 kHz:** ±2 dB

**Lower Limiting Frequency (-3 dB):**

7 Hz to 9 Hz

**Pressure Equalization Vent:** Side vented

**Diaphragm Resonance Frequency:**

60 kHz (90° phase-shift)

**Equivalent Air Volume:** 0.25 mm<sup>3</sup> (250 Hz)

**Thermal Noise:**

48 dB(A), 58 dB (Lin, 20 - 100 kHz)<sup>a</sup>

a. Without conducted RF noise

b. Individually calibrated

**Upper Limit of Dynamic Range (3% Distortion):** > 169 dB SPL

**Maximum Sound Pressure Level:** 182 dB (peak)

**Power Requirements:**

DeltaTron Supply 2 to 20 mA, nom. 4 mA

**DC Output Level:** 12 V ±2 V

**Max. Output Voltage:**

7 V peak for  $f \leq 70$  kHz (4 mA supply)

**Output Impedance:** <90 Ω, typ. 60 Ω

### ENVIRONMENTAL

**Operating Temperature Range:**

-20 to +100°C (-4 to +212°F)

**Storage Temperature:**

In case: -25 to +70°C (-13 to +158°F)

With data CD: 5 to 50°C (41 to 122°F)

**Temperature Coefficient (250 Hz):**

+0.008 dB/°C (-10 to +50°C, 14 to 122°F)

**Pressure Coefficient:**

-0.003 dB/kPa, typical

**Operating Humidity Range:**

0 to 90% RH (without condensation)

**Influence Of Humidity:**

<0.1 dB in the absence of condensation

**Vibration Sensitivity (<1000 Hz):**

69 dB equivalent SPL for 1 m/s<sup>2</sup>

**Magnetic Field Sensitivity:**

<48 dB(A), 58 dB (Lin, 20 - 100 kHz for 80 A/m, 50 Hz field)

**Estimated Long-term Stability:**

>1000 years/dB at 20°C (68°F) and dry air

>40 years/dB at 20°C (68°F) and 90% RH

>1 year/dB at 50°C (122°F) and 90% RH

### DIMENSIONS

**Diameter with Grid:** 7 mm (0.28")

**Diameter without Grid:** 6.35 mm (0.25")

**Length with Grid:** 65 mm (2.56")

**Length without Grid:** 63.5 mm (2.50")

**Output Socket:**

**4944-A:** SMB coaxial socket, male

**4944-B:** 10-32 UNF socket

**Note:** All values are typical at 23°C (73.4°F), 101.3 kPa, 50% RH and ≥4 mA power supply, unless measurement uncertainty or tolerance field is specified. All uncertainty values are specified at 2σ (i.e., expanded uncertainty using a coverage factor of 2)

## Ordering Information

**Type 4944-A** 1/4" DeltaTron Pressure-field Microphone with SMB socket

**Type 4944-B** 1/4" DeltaTron Pressure-field Microphone with 10-32 UNF socket

**Include the following accessories:**

BC-5002 Microphone Data CD<sup>c</sup>

c. Quote microphone serial number if re-ordering

### Optional Accessories

- Type 4231: Sound Calibrator
- DP-0775: Calibration Adaptor for 1/4" Microphones
- DB-0264: 1/2" to 1/4" Adaptor for UA-0033
- UA-0033: Electrostatic Actuator
- UA-0385: Nose Cone for 1/4" Microphones
- UA-1588: 1/4" Microphone Holder

- AO-0587-D-030: SMB-BNC Cable 3 m (10 ft.)

- ZG-0328: DeltaTron Power Supply (for Brüel & Kjær 7-pin sockets)

### Service Products

- 4944-CAF: Accredited Calibration
- 4944-CFF: Factory Standard Calibration (included with delivery)

Brüel & Kjær reserves the right to change specifications and accessories without notice

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