

# PRODUCT DATA

## DeltaTron Pressure-field 1/4-inch Microphone — Type 4944 A

Type 4944 A is a Prepolarized Pressure-field 1/4-inch Microphone laser welded to a 1/4-inch DeltaTron® preamplifier. The preamplifier connects to CCLD input conditioning and supports IEEE P1451.4. (TEDS/SMART). This makes it possible for you to set up its calibrated sensitivity automatically on an IEEE P1451.4 supporting front-end.

### USES

- High-level measurements
- High-frequency measurements
- Flush mounting
- Connects to CCLD input

### FEATURES

- Sensitivity: 0.9 mV/Pa
- Frequency: 16 – 70000 Hz
- Dynamic Range: 48 dB(A) – 169 dB
- Temperature: –20 to 60°C  
(–4 to 140°F)
- TEDS – IEEE P1451.4



### Use of Type 4944 A

A pressure-field microphone is designed to be used in small closed couplers, close to hard reflective surfaces or flush-mounting. The sensitivity has been optimise 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 Disk

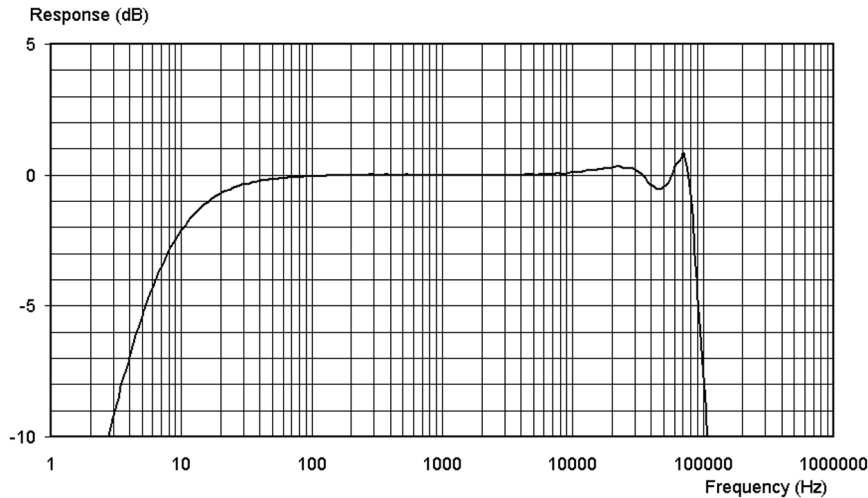
The microphone is supplied with a 3½-inch microphone data disk. This disk carries all individual calibration data as well as random-incidence and pressure-field corrections. The influence of the 1/4-inch Nose Cone UA 0385 is also available.

### Calibration

The sensitivity can be calibrated at 250 Hz using Pistonphone Type 4228 with 1/4-inch 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.

**4944 A**

**Fig. 1**  
Type 4944 A  
pressure-field re-  
sponse without  
grid



## Specifications – DeltaTron Pressure-field ¼-inch Microphone Type 4944 A

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

**Nominal Diameter:** ¼-inch

**Sensitivity (250 Hz):**  $-61 \pm 3$  dB re 1 V/Pa, 0.9 mV/Pa

**Frequency Response\*:**

**Pressure-field response 16 Hz to 70 kHz:**  $\pm 2$  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)

**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  $\pm$  2 V

**Max. Output Voltage:** 7 V peak for  $f \leq 70$  kHz (4 mA supply)

**Output Impedance:** <90  $\Omega$ , typ. 60  $\Omega$

**Temp. 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 and > 1 year/dB at 50°C (122°F) and 90%RH

### Dimensions

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

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

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

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

**Output Socket:** SMB coaxial socket, male

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

**CE** compliance with EMC Directive

### Environmental

**Operating Temperature Range:**

-20 to 60°C (-4 to 140°F)

**Storage Temperature:** In case: -25 to 70°C (-13 to 158°F)

With data disk: 5 to 50°C (41 to 122°F)

\*Individually calibrated

## Ordering Information

**Type 4944 A** DeltaTron Pressure-field ¼-inch Microphone  
Includes the following accessories:  
BC 5002 Microphone Data Disk†

DB 0264  
UA 0033  
UA 0385  
UA 1588  
AO 0587  
ZG 0328

½-inch to ¼-inch Adaptor for UA 0033  
Electrostatic Actuator  
Nose Cone for ¼-inch microphones  
¼-inch Microphone Holder  
Cable 3 m SMB-BNC  
DeltaTron Power Supply (for Brüel & Kjær 7-pin sockets)

### Optional Accessories

DP 0775 Calibration Adaptor for ¼-inch microphones

†Quote microphone serial number if re-ordering

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