

## 20 kHz Miniature TEDS Microphone Type 4958-A

### Uses

- End-of-line production testing
- Potentially damaging applications
- Cost-effective sound measurements in full audio range

### Features

- Excellent amplitude response
- Constant current line drive (CCLD\*)
- Transducer electronic datasheet (TEDS)
- SMB connector
- Combined microphone/preamplifier
- $\frac{1}{4}$ " diameter
- Small size
- Gold-plated protection grid



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### Description

20 kHz Miniature TEDS Microphone Type 4958-A is a prepolarized microphone suited for use in cost-effective production testing.

Type 4958-A is a  $\frac{1}{4}$ " microphone assembly with the microphone cartridge and preamplifier combined in one piece to reduce complexity and size. The microphone is small enough to fit into almost any test fixture or soundproof enclosure, and the standard-sized diameter makes it compatible with a wide range of couplers, calibrators and adaptors.

The microphone has a CCLD preamplifier and an SMB connector so it works with standard coaxial cables for power supply and signal transmission. The preamplifier is equipped with TEDS, so it can be used with TEDS-compatible signal conditioners or data acquisition systems, to automatically correct differences in individual microphone sensitivity.

Type 4958-A can be used in a wide range of temperatures and humidities. The microphone is front-vented for pressure equalization and has a gold-plated protection grid with an integrated heat shield that is specially designed for optimum performance.

### End-of-Line Production Testing

A product's acoustic performance is a key differentiator. Electroacoustic products like telephones and speakers are thoroughly tested at the factory, while many products, like seat actuators, have their sound evaluated against customer's expectations.

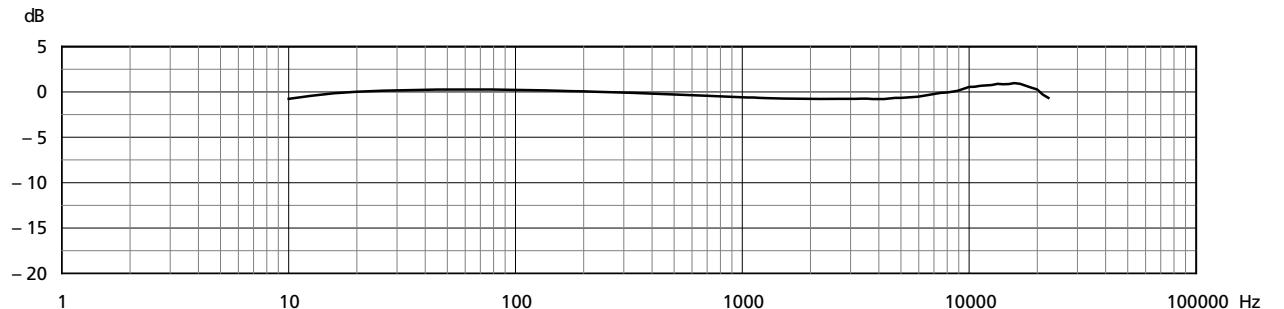
Objective testing of the sounds made by a product has many advantages over subjective testing, where an operator simply listens to the product. Objective testing provides consistent and quantified data that can be fed back into the design or sourcing areas.

Brüel & Kjær has been a pioneer in acoustic testing for over 75 years and has gained a deep understanding of sound and how to measure it. In addition to our acoustics knowledge, Brüel & Kjær is one of the world's largest manufacturers of precision measurement microphones. This makes us a reliable partner with an established capability to provide microphones in large quantities and in a timely fashion with world renowned quality and innovation.

With Type 4958-A, Brüel & Kjær combines measurement microphone experience with innovations designed for production environments. Type 4958-A is the right solution for precise and affordable end-of-line testing.

\* CCLD: also known as DeltaTron® (ICP® and IEPE compatible)

**Fig. 1** Typical free-field response



## Specifications – Type 4958-A

Specifications*	
Sensitivity (at 250 Hz)	-38.5 dB re 1 V/Pa ± 3.5 dB (7.94 to 17.78 mV/Pa)
Free-field Frequency Response (re 250 Hz)	±3 dB, 40 to 100 Hz
	-0.2 to +1 dB, 100 Hz
	±2 dB, 100 Hz to 10 kHz
	±3 dB, 10 to 20 kHz
Inherent Noise	<28 dB SPL (A-weighted)
Dynamic Range	28 to 137 dB (THD <3%)
General Specifications†	
Frequency range	10 Hz to 20 kHz
Inherent Noise (A-weighted)	28 dB (-10 to +40 °C, +14 to +104 °F)
	33 dB (-10 to +55 °C, +14 to +131 °F)
Output Impedance	<150 Ω
Output Max. Voltage Swing	>14 V pp
Output DC Bias Voltage	12 ± 3 V
Max. Load	5 kHz, 140 dB: 30 nF corresponding to 150 m cable
Output Socket	SMB coaxial plug
Polarization Voltage	Prepolarized
TEDS	IEEE 1451 V. 1.0 Template 127-0-0-0U TEDS device DS2431
Preamplifier	Built-in CCLD
Environmental	
Operating Temperature Range	-10 to +55 °C (+14 to +131 °F)
Storage Temperature	-25 to +70 °C (-13 to +158 °F)
Operating Humidity Range	0 to 90% RH without condensation
Vibration Sensitivity (20 to 1000 Hz)	Approximately 50 dB equivalent SPL for 1 m/s <sup>2</sup> axial acceleration
Magnetic Field Sensitivity	40 dB SPL for 80 A/m, 50 Hz field
Physical	
Diameter	7 mm (~1/4")
Length	34 mm (1.33")
Weight	3.8 g (0.11 oz)

\* All uncertainty values are specified at  $2\sigma$  (that is, expanded uncertainty using a coverage factor of 2).

Measured with 4.5 mA current generator with an open loop voltage of 28 V

† General specifications are typical values for reference use

Values typical at 23 °C (73.4 °F), 101.3 kPa and 50% RH unless otherwise specified

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## Ordering Information

### Type 4958-A 20 kHz Miniature TEDS Microphone

A standard microphone case accommodates one to six microphones, seven or more microphones are delivered in a mini suitcase.

Cabling Accessories*	
AO-0563	Cable, right-angled SMB (F) connectors
AO-0564	Cable, right-angled SMB (F) to BNC (M)
AO-0587	Cable, SMB (F) to BNC (M)
WB-1421	Adaptor, 7-pin LEMO (M) to BNC (M), provides CCLD supply from microphone LEMO supply
Data Acquisition	
Type 3053	12-ch. LAN-XI Input Module, SMB connectors
Type 3050	4- or 6-ch. LAN-XI Input Module, BNC connectors
Calibration	
Type 4231†	Sound Calibrator
Type 4228†	Pistonphone
DP-0775	1/4" Adaptor
Calibration Services	
4958-CAF	Accredited sensitivity calibration, includes certificate
4958-CFF	Factory standard calibration, includes calibration chart

\* Note: Specify cable length

† Includes 1/4" Adaptor DP-0775

## COMPLIANCE WITH STANDARDS

