

PRODUCT DATA

DeltaTron[®] A-weighted Microphone Preamplifier — Type 2699

DeltaTron Microphone Preamplifier Type 2699 uses a built-in, A-weighting filter to eliminate low-frequency disturbance caused by body boom and road noise which would otherwise be a source of error during in-car measurements.

USES

- Sound measurement with optimum channel cost
- Sound measurements using ½-inch, prepolarized microphones
- In-car measurements to ANSIS 1.4, IEC 60651 and IEC 61672 standards

FEATURES

- Connects directly to DeltaTron input
- Current output allows use of long, inexpensive, coaxial cables
- Built-in, A-weighting filter for in-car noise-signal reduction
- Dual-polarity overload-detection facility



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- Low noise and high dynamic range
- CE and Australian C-tick compliance

Description

Reducing the noise signal at the very start of the measurement chain allows a higher gain in the analyzer input without overload, thus increasing the signal-to-noise ratio.

The preamplifier's low output impedance allows the problem-free use of long extension cables. Its robust, compact design means that you can use Type 2699 in a wide range of environmental conditions.

Type 2699 provides TEDS (Transducer Electronic Data Sheet) which means that the preamplifier can be used with the Smart Transducer interface, according to standard IEEE P 1451.4.

This feature enables you to store and recall TEDS data, drastically reducing set-up time and allowing cost savings in many measurement situations.

Through Power Supply Adaptor ZG 0328, the preamplifier can also be used on instruments with standard Brüel & Kjær microphone sockets.

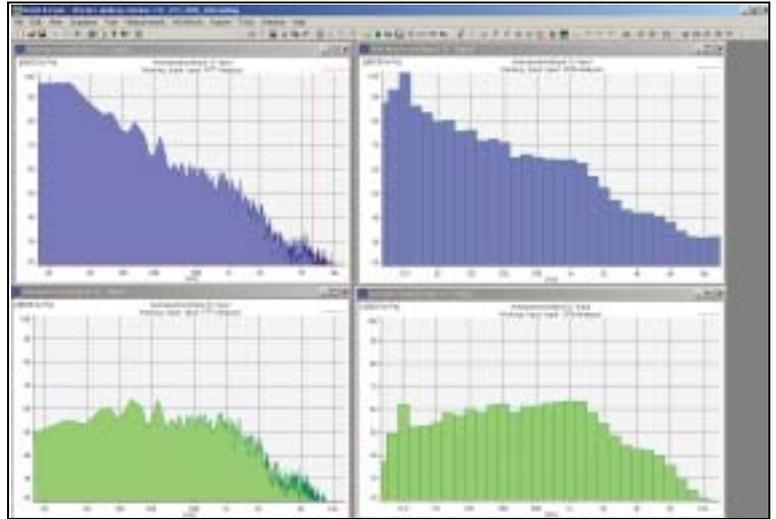
Note – A-weighting

Frequency weighting A is defined in the international Sound Level Meter standard IEC 61672 (former IEC 60651) and in the US ANSIS 1.4 standard. These standards specify the performance of the complete sound-level meter, i.e., the influence of the microphone, electronic circuits and SLM cabinet on the sound field.

Type 2699 uses a carefully selected set of filter tolerances, such that the complete measurement chain complies with the Type 1 frequency-weighting, A-weighting specifications. This applies when Type 2699 is used with a recommended microphone and followed by a measuring chain with a frequency response of ± 0.1 dB from 10 Hz to 20 kHz.

Fig. 1

In-car measurements clearly show the advantage of the Type 2699 A weighted pre-amplifier as compared to a traditional linear pre-amplifier. The A-filter attenuates low-frequency components, thus allowing a gain increase of up to 35 dB without overload, which will mean an improvement in signal-to-noise ratio



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COMPLIANCE WITH STANDARDS



Compliance with EMC Directive
Compliance with EMC Requirements of Australia and New Zealand

MECHANICAL SPECIFICATIONS

Connector Type: BNC socket
Dimensions: Ø12.7 mm x 90 mm (including connector)

Thread for Pre-amplifier Mounting:

11.7 mm – 60 UNS

Note: the 1 mm hole on the side of Type 2699 is for acoustic ventilation and must not be blocked

TECHNICAL SPECIFICATIONS VALID AT 23°C ±10°C

Frequency Response:

Exceeds IEC/ANSI A-weighting, Type-1 requirements (see note on page 1)

Gain at 1 kHz: 0 dB ±0.3 dB

Input Impedance: 10 GΩ +20 – 40% // <0.5 pF

Max. Input Voltage: ±5 V_{peak} corresponding to 138 dB_{peak} SPL for microphone sensitivity of 31 mV/Pa
134 dB_{peak} SPL for microphone sensitivity of 50 mV/Pa

Distortion (THD): < –60 dB @ input 5 V_{peak} and 1 kHz

Noise: Max. 8 μV, Lin. 22.4 Hz to 22.4 kHz corresponding to approx. 18 dB SPL with a 50 mV/Pa microphone

Overload Detection: Overload is detected before the filter and converted to an easily detectable, positive-going pulse signal at the output

Max. Output Current:

- 2 mA @ 4 mA supply
- 18 mA @ 20 mA supply

Output Impedance: Less than 50 Ω @ 1 kHz

Max. DC Output Level: 14.75 V ±0.5 V

TEDS UTID 1025

Start-up Time: Signal within 0.1 dB in less than 10 s

Power Requirements: DeltaTron supply, 4 to 20 mA.

Note: Unless otherwise specified, the data above is valid for 4 mA supply, cable length < 50 m and microphone capacitance = 15 pF

ENVIRONMENTAL RANGE

Operating: –20°C to +65°C (–4°F to +140°F)

Storage: –25°C to +70°C (–13°F to +150°F)

Humidity: 0 to 90% RH, non-condensing at 40°C (104°F)

Shock: Max. 1000 g (10000 m/s²)

Ordering Information

Type 2699	DeltaTron A-weighted Microphone Preamplifier	BNC-TO-BNC COAXIAL CABLES	AO 0427	10 m (32.8 ft.)
		AO 0087		
		AO 0142		
Types 41884189	Recommended microphones	AO 0430		
		BNC TO BNC DOUBLE-SCREENED CABLES	ZG 0328	Brüel & Kjær 7-pin to BNC (3 mA supply max. 30 m cable)
Type 2699 – CAI	Initial calibration of 2699	AO 0429		
Type 2699 – CAF	Re-calibration of 2699	AO 0426		

POWER SUPPLY ADAPTOR

Supplies constant current from microphone sockets

TRADEMARKS

DeltaTron is a registered trademark of Brüel & Kjær Sound & Vibration Measurement A/S

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

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