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.

030106

USES

- Sound measurement with optimum channel cost
- Sound measurements using ½-inch, prepolarized microphones
- In-car measurements to ANSI S 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
- 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 preamplifiers 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.

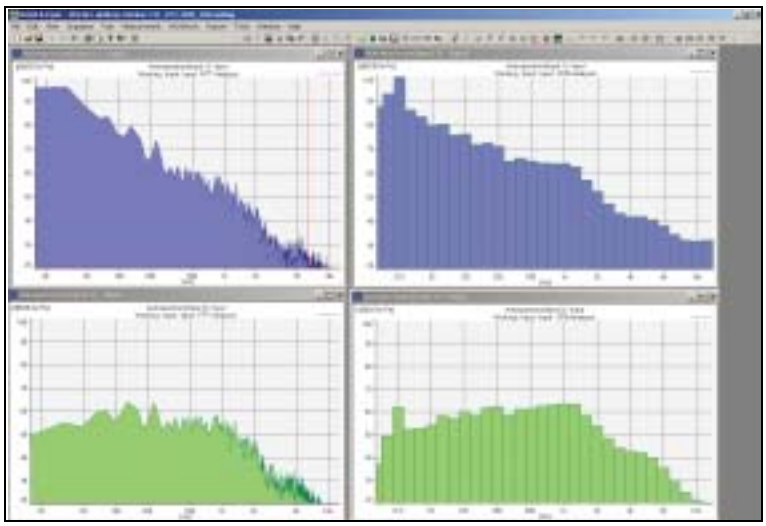
Through Power Supply Adaptor ZG 0328, the preamplifier can also be used on instruments with standard Bruel & Kjaer microphone sockets.

Note – A-weighting

Frequency weighting A is defined in the international Sound Level Meter standard IEC 61672 (former IEC 60651) and in the US ANSI S 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 preamplifier. 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



DeltaTron A-weighted Microphone Preamplifier — Type 2699

COMPLIANCE WITH STANDARDS

CE Compliance with EMC Directive

Compliance with EMC Requirements of Australia and New Zealand

MECHANICAL SPECIFICATIONS

Connector Type: BNC socket
Dimensions: Ø12.7 mm × 90 mm (including connector)
Thread for Preamplifier 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/s^2)

Ordering Information

Type 2699	DeltaTron A-weighted Microphone Preamplifier
Types 41884189	Recommended microphones
Type 2699 – CAI	Initial calibration of 2699
Type 2699 – CAF	Re-calibration of 2699

BNC-TO-BNC COAXIAL CABLES

AO 0087	1.2 m (3.9 ft.)
AO 0142	3.0 m (9.8 ft.)
AO 0430	10 m (32.8 ft.)

BNC TO BNC DOUBLE-SCREENED CABLES

AO 0429	1.2 m (3.9 ft.)
AO 0426	3.0 m (9.8 ft.)
AO 0427	10 m (32.8 ft.)

POWER SUPPLY ADAPTOR
Supplies constant current from microphone sockets

ZG 0328	Brüel & Kjær 7-pin to BNC (3 mA supply max. 30 m cable)

HEADQUARTERS: DK-2850 Nærum · Denmark · Telephone: +45 4580 0500
Fax: +45 4580 1405 · bksv.com · e-mail: info@bksv.com

Australia (+61) 2 9889-8888 · Austria (+43) 1 865 74 00 · Brazil (+55) 11 5188-8166
Canada (+1) 514 695-8225 · China (+86) 10 680 29906 · Czech Republic (+420) 2 6702 1100
Finland (+358) 9-755 950 · France (+33) 1 69 90 71 00 · Germany (+49) 421 17 87 0
Hong Kong (+852) 2548 7486 · Hungary (+36) 1 215 83 05 · Ireland (+353) 1 807 4083
Italy (+39) 0257 68061 · Japan (+81) 3 3779 8671 · Republic of Korea (+82) 2 3473 0605
Netherlands (+31) 318 55 9290 · Norway (+47) 66 77 11 55 · Poland (+48) 22 816 75 56
Portugal (+351) 21 47 11 4 53 · Singapore (+65) 377 4512 · Slovak Republic (+421) 25 443 0701
Spain (+34) 91 659 0820 · Sweden (+46) 8 449 8600 · Switzerland (+41) 1 880 7035
Taiwan (+886) 22 713 9303 · United Kingdom (+44) 14 38 739 000 · USA (+1) 800 332 2040

Local representatives and service organisations worldwide

Brüel & Kjær

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