PRODUCT DATA

DeltaTron® Microphone Preamplifier — Type 2671

DeltaTron® Microphone Preamplifier Type 2671 enables you to make acoustical measurements with a DeltaTron® input module. You can connect ½" prepolarized microphones to the preamplifier. The preamplifier's low output impedance allows problem-free use of long extension cables. The robust, compact design means that you can use Type 2671 over a wide range of environmental conditions.

USES

- Low price, multichannel sound measurement setups with ½" Brüel & Kjær Prepolarized Condenser Microphones
- Multichannel signal analysis measurements
- Multichannel sound power measurements
- Industrial machinery noise measurements

FEATURES

- ICP® compatible
- BNC connector for easy installation and use with inexpensive BNC cables
- Connects directly to DeltaTron® sockets and to Brüel & Kjær microphone sockets with adaptor
- Low output impedance so that long extension cables can be used
- Falcon Range® product
- Supports "Smart transducer Interface" IEEE P 1451.4 containing TEDS (Transducer Electronic Data Sheet)

Introduction

Preamplifier Type 2671 is very compact and operates over a wide range of temperature, humidity and other environmental conditions. It has a very high input impedance, presenting virtually no load to the microphone. The low output impedance means that you can connect long cables between the preamplifier and measurement equipment.

The main application for the preamplifier is in vibration setups with DeltaTron® or ICP® input modules where it is also desired to make acoustical measurements. It presents a very price-competitive solution compared to a system with both vibration and acoustical inputs.

Description

DeltaTron® is a generic name for accelerometers and signal conditioning products from Brüel & Kjær. It identifies products that operate on a constant-current power supply and give output signals in the form of voltage modulation on the power supply line. One of the advantages of this system is that it allows you to use inexpensive BNC coaxial cables.

The preamplifier converts the DeltaTron® or ICP® constant-current line drive (CCLD) supply, which must be between 2 and 20 mA (nominal 4 mA), into a constant 12 V DC level. The output signal from the microphone swings around this DC level. Since no polarization voltage is available, only prepolarized condenser microphones can be used. The input impedance of Type 2671 is lowered to 1.5 GΩ with the purpose of making a high-pass filter at 20 Hz. This is done in order to compensate for filters which are often missing in the input modules (for example, A-weighting). Type 2671 is also available in a version without the high-pass filter, which has a flat response down to 2 Hz, and in a version with built-in A-weighting, Type 2699.

TEDS

Support of TEDS means that the preamplifier can be used with the newly developed Smart Transducer interface according to IEEE P 1451.4. The ability to store and recall TEDS data drastically reduces test setup time and allows cost savings in most measurement situations.

Electromagnetic Compatibility (EMC)

Susceptibility of the preamplifier to radio-frequency electromagnetic radiation is low. The preamplifier complies with the requirements of EMC-directive 89/336/EEC. The product is in conformity with the following standards:

EN 50081–1 (1992): EMC – Generic emission standard. Residential, commercial and light industry.

EN 50082–1 (1992): EMC – Generic immunity standard. Residential, commercial and light industry.

The product has been tested and found to comply with:

prEN 50082–2 (Aug. 1994): EMC – Generic immunity standard for industrial environments (final draft).

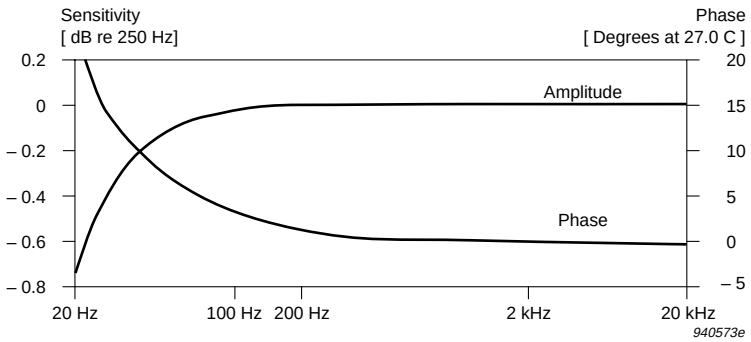
EN 50081–1 covers, e.g.:

- ❍ Radiated emission, 0.03 to 1 GHz
- ❍ Conducted emission, 0.15 to 30 MHz

prEN 50082–2 covers, e.g., the effects of:

- ❍ RF fields from 80 to 1000 MHz at a field strength of 3 and 10 V/m with an amplitude modulation of 80%
- ❍ Electrostatic discharge, 4 and 8 kV
- ❍ Transient bursts at 1 kV
- ❍ Magnetic fields with a strength of 30 A/m at 50 Hz
- ❍ Pulse modulated radio frequency fields, 900 MHz at a field strength of 3 V/m and a duty cycle of 50%

Fig. 1
Typical frequency and phase response curves for Preamplifier Type 2671



Specifications – DeltaTron Microphone Preamplifier Type 2671

Frequency Response (re 250 Hz)
200 Hz to 20 kHz, +0.2 dB, –0.2 dB
20 Hz to 50 kHz, +0.2 dB, –2 dB
Lower –3 dB limit at <12 Hz
Upper –0.5 dB limit at >50 kHz
Attenuation: –0.3 dB (typical)
Gain Matching: 200 Hz to 10 kHz, 0.1 dB
Phase Linearity:
1 kHz to 10 kHz, <±1°
100 Hz to 20 kHz, <–3°, +10°
Phase Matching:
5° at 50 Hz
2° at 100 Hz
Input Impedance: 1.5 GΩ || <0.4 pF
Output Impedance: <50 Ω
Max. Output Current:
At 4 mA supply, 3 mA (peak)
At 20 mA supply, 19 mA (peak)
Max. Output Voltage:
7 V peak for f <20 kHz
Corresponding to:
141 dB SPL for microphone sensitivity of 30 mV/Pa
138 dB SPL for microphone sensitivity of 50 mV/Pa
Max. DC Output Level: 12 V ±2 V over the specified operating temperature range
Distortion (THD):
<–70 dB at 1.0 V_{out}, 1 kHz
<–60 dB at 1.0 V_{out}, 10 kHz
Output Slew Rate: 2 V/µs (typical)
Noise:
<4 µV A-weighted
<15 µV Lin., 22.4 Hz to 22.4 kHz
Start-up Time: Signal within 0.1 dB within <10 s
Power Requirements: DeltaTron® supply, 2 to 20 mA. Nominal 4 mA
Connector Type: BNC socket
Dimensions: ∅12.7 mm × 85 mm (∅½″ × 3.3″) (including connector)
Thread for Preamplifier Mounting: 11.7 mm – 60 UNS

Temperature Range:
Operating: –20°C to +60°C (–4° to +140°F)
Storage: –25°C to +70°C (–13° to +158°F)
Humidity: 0 to 90% RH, non-condensing at 40°C (104°F)
Shock: Max. 100 g
Influence of 80 A/m, 50 Hz Magnetic Field: Max. 4 µV

Note: the 1 mm hole on the side of Type 2671 is for acoustic ventilation and must not be blocked

The data above are valid for 4 mA supply, cable length <40 m and microphone capacitance = 12 pF, unless otherwise specified

CE Compliance with EMC Directive

Ordering Information

BNC to BNC coaxial cables

AO 0429	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 00427	10 m (32.8 ft.)

Other cable lengths on request

UA 00587	Portable Tripod. Includes Mounting Adaptor UA 0588 and two Extension Rods
UA 0801	Light-weight Tripod
UA 0588	Mounting Adaptor

Power Supply Adaptors
Supplies constant current from microphone sockets

ZG 00328	Brüel & Kjær 7-pin to BNC
WB 1421	LEMO to BNC

BP 1446–14 03/08 Rosendahls Bogtrykkeri

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