

BRÜEL & KJÆR® Acoustic transducers

Microphone Preamplifier Type 1711

A short, ½-inch, CCLD preamplifier for prepolarized microphone cartridges

Uses

- Coupler measurements
- Measurements where space is limited
- Direct connection to CCLD* signal conditioning and data acquisition hardware

Features

- Short length: 35.6 mm (1.4 in)
- SMB output connector
- Low output impedance which allows the use of long extension cables
- ICP® compatible
- TEDS (transducer electronic data sheet) according to IEEE P1451.4



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Introduction

Microphone Preamplifier Type 1711 is a half-inch, CCLD preamplifier. The preamplifier's main application is in confined spaces and/or in setups where it is connected directly to CCLD input modules which also support other types of CCLD transducers.

What is CCLD?

CCLD is a generic name for Brüel&Kjær transducers and signal conditioning products which operate on a constant current power supply and give output signals in the form of voltage modulation on the power supply line. As no polarization voltage is available, only prepolarized condenser microphone cartridges can be used with CCLD microphone preamplifiers. One of the advantages of CCLD products is that they allow you to use inexpensive coaxial cables.

As with other Brüel&Kjær CCLD microphone preamplifiers, the power supply line of Type 1711 is designed as 12 V DC to give maximal voltage swing and is normally called bias voltage. Type 1711 is so well designed and manufactured that the bias voltage stays stable through changes in humidity and temperature, ensuring that there is minimal change to the dynamic range of the instrument over the course of a measurement.

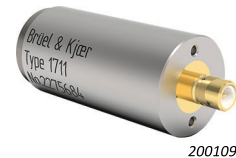
Microphone cartridges

Type 1711 features a 11.7 mm – 60 UNS screw thread for connecting CCLD-compatible (that is, prepolarized) microphone cartridges. The preamplifier has a very high input impedance, so it presents virtually no load to the microphone cartridge.

Cables

For cables, Type 1711 has an SMB connector. Being a CCLD preamplifier, you can use coaxial cables. Also, the preamplifier has a low output impedance, which means that you can use long cables between the preamplifier and your data acquisition or signal conditioning hardware.

Fig. 1 SMB connector of Type 1711



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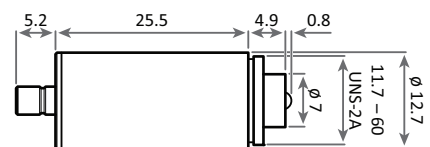
Data acquisition hardware

Type 1711 can be used with data acquisition hardware that supports CCLD-compatible microphones, such as Brüel&Kjær LAN-XI Input Module Type 3050.

Size and environment

Type 1711 has a compact, robust design which enables it to fit in small spaces and to operate in a wide range of environmental conditions. The preamplifier operates in temperatures from 10 to 60 °C (50 to 140 °F) and in 0 to 90% relative humidity. If a reduced dynamic range can be tolerated, the operating temperature range is even larger.

Fig. 2 Dimensions of Type 1711



Dimensions in mm

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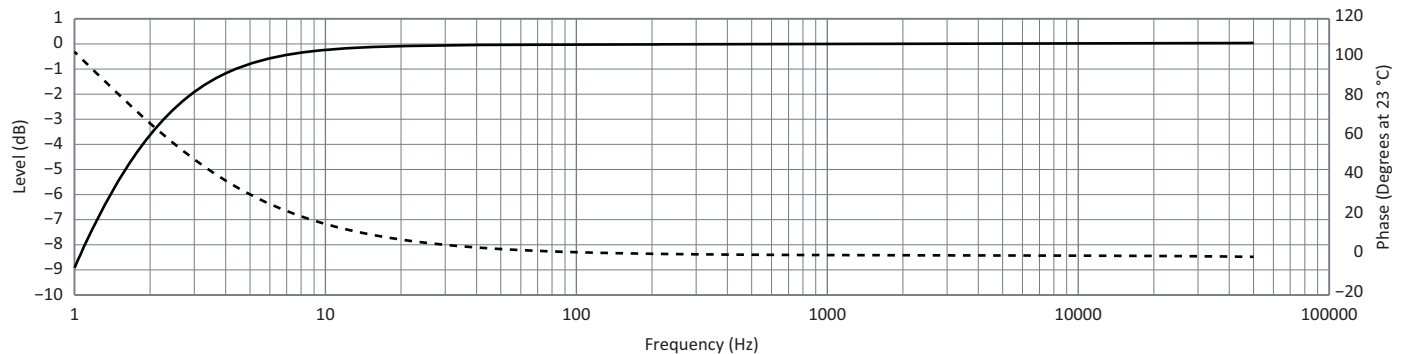
* Constant current line drive, also known as DeltaTron® (ICP and IEPE compatible)

GENERAL

Frequency response (re 250 Hz)	20 Hz to 20 kHz: ± 0.2 dB 10 Hz to 50 kHz: +0.2 dB, -0.5 dB Lower -3 dB limit at <3 Hz
Phase linearity	200 Hz to 10 kHz: $< \pm 1^\circ$ 20 Hz to 20 kHz: $< -1^\circ, +10^\circ$
Attenuation	0.2 dB (typical)
Input impedance	6 G Ω <0.4 pF
Output impedance	<75 Ω
Max. output current	3 mA (peak) (19 mA with 20 mA CCLD supply current)
Max. output voltage	7 V peak (< -30 dB THD, 1 kHz) at 23 °C (73.4 °F) corresponding to: 141 dB SPL for microphone sensitivity of 30 mV/Pa 138 dB SPL for microphone sensitivity of 50 mV/Pa
DC output level	12 V \pm 2 V
Distortion (THD)	< -70 dB at 1 V _{out} , 1 kHz
Output slew rate	2 V/ms (typical)
Noise	<6 μ V A-weighted <10 μ V Lin., 22.4 Hz to 22.4 kHz
Power requirements	CCLD supply: 2 to 20 mA, Nominal: 4 mA
Shock	Max. 100 m/s ²
Influence of magnetic fields	80 A/m, 50 Hz: Max. < 4 mV A-weighted

Note: All values are typical at 23 °C (73.4 °F), 101.3 kPa, 50% RH, ≥ 4 mA power supply, <40 m cable length and 15 pF microphone capacitance unless specified otherwise.

Fig. 3 Typical frequency response re 1 kHz (solid line) and phase response (dashed line) for Type 1711



Ordering information

Type 1711 Short 1/2-inch CCLD Microphone Preamplifier

OPTIONAL ACCESSORIES

- AO-0587 Cable, single-screened coaxial, SMB to BNC connectors
- AO-0564 Cable, single-screened coaxial, SMB (right angle) to BNC connectors

ENVIRONMENTAL

Temperature range	Operating: • 10 to 60 °C (50 to 140 °F) • -20 to +60 °C (-4 to +140 °F) with reduced dynamic range Storage: -25 to +70 °C (-13 to +158 °F)
Humidity	0 to 90% RH, non-condensing at 40 °C (104 °F)

PHYSICAL

Dimensions	ϕ 12.7 x 35.6 mm (ϕ 0.5 x 1.4 in) including connector
Thread for microphone cartridge	11.7 mm – 60 UNS-2A
Output connector	SMB socket

COMPLIANCE MARKINGS

- The CE marking is the manufacturer's declaration that the product meets the requirements of the applicable EU directives
- RCM mark indicates compliance with applicable technical standards – that is, for telecommunications, EMC and EME
- China RoHS mark indicates compliance with administrative measures on the control of pollution caused by electronic information products according to the Ministry of Information Industries of the People's Republic of China
- WEEE mark indicates compliance with the EU WEEE Directive

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