

PRODUCT DATA

High-temperature CCLD Microphone Preamplifier Type 1706

High-temperature CCLD Microphone Preamplifier Type 1706 enables you to make acoustical measurements at temperatures up to 125°C (257°F) with a constant-current line drive (CCLD) 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 1706 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

- Optimised noise specifications
- BNC connector for easy installation and use with inexpensive BNC cables



- Connects directly to CCLD sockets and to LEMO sockets with adaptor
- Low output impedance allows long extension cables to be used
- Supports "Smart Transducer Interface" IEEE 1451.4 containing TEDS (Transducer Electronic Data Sheet)

Introduction

CCLD Microphone Preamplifier Type 1706 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. Its low output impedance means that you can connect long cables between the preamplifier and measurement equipment.

Description

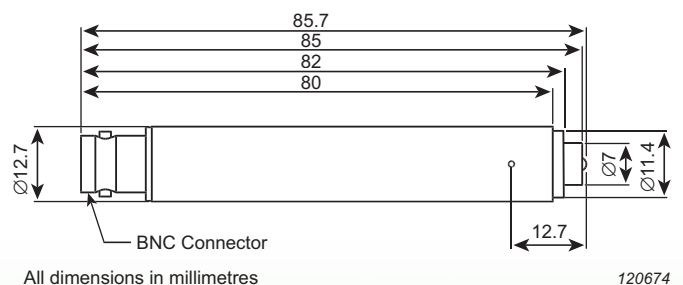
CCLD products operate on a constant-current power supply and give output signals in the form of voltage modulation on the power supply line. One of the advantages of this is that you can use inexpensive BNC coaxial cables.

The preamplifier converts the CCLD supply, which must be between 2 and 20 mA (nominal 4 mA), into a constant 12 V DC voltage 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.

TEDS

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

Fig. 1 Dimensions of Type 1706



Specifications – High-temperature CCLD Microphone Preamplifier Type 1706

Specification	Value
Frequency Response (re 250 Hz)	20 Hz to 50 kHz, ± 0.2 dB 10 Hz to 100 kHz, $+0.5$ dB Lower -3 dB limit at <3 Hz Upper -0.5 dB limit at >100 kHz
Attenuation	-0.3 dB (typical)
Gain Matching	50 Hz to 10 kHz, 0.1 dB
Phase Linearity	250 Hz to 20 kHz, $\pm 1^\circ$ 20 Hz to 100 kHz, $< -3^\circ$, $+10^\circ$
Phase Matching	1.5° at 50 Hz 1° at 100 Hz
Input Impedance	$15 \text{ G}\Omega \parallel 0.5 \text{ pF}$
Output Impedance	$<50 \Omega$
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 Voltage	$12 \pm 2.0 \text{ V}^*$
Distortion (THD)	< -70 dB at $1.0 V_{\text{out}}$, 1 kHz < -60 dB at $1.0 V_{\text{out}}$, 10 kHz
Output Slew Rate	$5 \text{ V}/\mu\text{s}$ (typical)
Noise	At 23°C: $<3.5 \mu\text{V}$ (2.2 μV) A-weighted $<7 \mu\text{V}$ (5 μV) Lin. [†] At 120°C: $<7.5 \mu\text{V}$ (6.5 μV) A-weighted $<27 \mu\text{V}$ (22 μV) Lin. [†] At 125°C: $<9 \mu\text{V}$ (7.8 μV) A-weighted $<45 \mu\text{V}$ (29 μV) Lin. [†]
Start-up Time	Signal within 0.1 dB within <60 s
Power Requirements	CCLD supply, 2 to 20 mA. Nominal 4 mA
Connector Type	BNC socket
Dimensions	$\varnothing 12.7 \text{ mm} \times 85 \text{ mm}$ ($\varnothing 1/2'' \times 3.3''$) (including connector) (see Fig. 1)
Thread for Preamplifier Mounting	$11.7 \text{ mm} - 60 \text{ UNS}$
Temperature Range	Operating: -20°C to $+125^\circ\text{C}$ (-4° to $+257^\circ\text{F}$) Storage: -25°C to $+70^\circ\text{C}$ (-13° to $+158^\circ\text{F}$)
Humidity	0 to 93% RH, non-condensing at 40°C (104°F)
Shock	Max. 100 g
Influence of 80 A/m, 50 Hz Magnetic Field	Max. 4 μV

* $12 \text{ V} \pm 2.0 \text{ V}$ over the specified operating temperature range

† Lin.: 22.4 Hz to 22.4 kHz

Note: The 1 mm hole on the side of Type 1706 is for acoustic ventilation and must not be blocked

Unless otherwise specified, the data above are valid for 4 mA supply microphone capacitance 15 pF and cable length < 10 m

Ordering Information

Cables to 85°C (185°F)	
AO-0087-D-xxx*	Single-screen coaxial cable, BNC (M) to BNC (M)
Cables to 250°C (482°F)	
JP-0185	BNC (M) to 10 – 32 UNF (F) Adaptor
AO-0038	Super low-noise cable 10 – 32 UNF (M) to 10 – 32 UNF (M)
AO-0406	Kit comprising JP-0185 and AO-0038
Tripods	
UA-0587	Portable Tripod: includes Mounting Adaptor UA-0558
UA-0801	Light-weight Tripod
UA-0588	Mounting Adaptor
Power Supply Adaptors	
WB-1421	LEMO to BNC Adaptor

* Cables are available in different lengths: xxx is the length in decimetres



Compliance with EMC Directive and Low Voltage Directive of the EU

Compliance with the EMC requirements of Australia and New Zealand

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